STORMWATER POLLUTION PREVENTION PLAN for CONSTRUCTION ACTIVITIES at

SUNSET BAY RV PARK EXPANSION
TOWN OF MAYFIELD, NY

Prepared for

SUNSET BAY RV PARK, INC.
61 ELMWOOD AVE #138
GLOVERSVILLE, NY 12078

Prepared by
The Environmental Design Partnership, LLP
900 Route 146
Clifton Park, NY 12065
Telephone: (518) 371-7621
Facsimile: (518) 371-9540

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NOI Permittee: SUNSET BAY RV PARK, INC.
SUNSET BAY RESORT EXPANSION

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SECTION 1

Written Stormwater Pollution Prevention Plan

I. SCOPE

A. **PURPOSE:** Sunset Bay RV Park, Inc. intends to implement the appropriate Stormwater Pollution Prevention Plan measures in accordance with the SPDES general permit governing stormwater discharges during construction, and in accordance with erosion control practices. This section provides a descriptive explanation of the means by which Sunset Bay RV Park, Inc. will comply with the National Stormwater Pollution Prevention Program.

B. **NPDES GENERAL PERMITS FOR STORMWATER DISCHARGE FROM CONSTRUCTION SITES:** Regulations promulgated by the New York State Department of Environmental Conservation (NYSDEC) regulate the discharge of storm water from construction activities on sites where one (1) or more acres of soil is disturbed. One of the ways to comply with these regulations for affected sites is to request coverage under the General Permit for Construction Activities. (Copy enclosed herewith) In order to be authorized to discharge under the General Permit, a Stormwater Pollution Prevention Plan (SWPPP) for the site must be prepared in accordance with all applicable requirements of this permit and followed during the construction activities. If the construction activity is **not** subject to the requirements of a regulated, traditional land use control MS4 a Notice of Intent (NOI) form must be completed and received by the New York State Department of Environmental Conservation at least 5-days prior to any earth-disturbing activities. If the construction activity is subject to the requirements of a regulated, traditional land use control MS4, then the owner/operator must have its SWPPP reviewed and accepted by the MS4 prior to submitting the NOI to the Department. The owner/operator shall have the "MS4 SWPPP Acceptance" form signed and then submit that form along with the NOI to the Department.

C. **RESPONSIBILITIES OF CONTRACTOR REGARDING THE GENERAL PERMIT:** The CONTRACTOR shall manage the discharge of stormwater from the site in accordance with the SPDES General Permit for Construction Activities conditions and the following provisions of this section of the specifications. The CONTRACTOR shall be responsible for conducting the stormwater management practices in accordance with the permit. The CONTRACTOR shall be responsible for providing qualified inspectors to conduct the inspections required by the SWPPP. The CONTRACTOR shall be responsible for any enforcement action taken or imposed by federal, state, or local agencies, including the cost of fines, construction delays, and remedial actions resulting from the CONTRACTOR'S failure to comply with the permit provisions. It shall be the responsibility of the CONTRACTOR to make any changes to the SWPPP necessary when the CONTRACTOR or any of his subcontractors elects to use borrow or fill or material storage sites, either contiguous to or remote from the construction site, when such sites are used solely for this construction site. Such sites are considered to be part of the construction site covered by the permit and this SWPPP. Off-site borrow, fill, or material storage sites which are used for multiple construction projects are not subject to this requirement, unless specifically required by state or local jurisdictional entity regulations. The CONTRACTOR should consider this requirement in negotiating with earthwork subcontractors, since the choice of an off-site borrow, fill, or material storage site may impact their duty to implement, make changes to, and perform inspections required by the SWPPP for the site.

D. **NOTICE OF INTENT:** The NOI Permittee petitions the New York State Department of Environmental Conservation for the stormwater discharges during construction at this site to be covered by the SPDES General Permit for Construction Activity for the State of New York. A Notice of Intent (NOI) (using the form required by the NYSDEC) to be covered under this permit is hereby filed. An Erosion and Sediment Control Plan has been prepared and is attached herewith.

E. **CONTRACTOR RESPONSIBILITIES**: The SWPPP and associated Erosion and Sediment Control Plans represent the **MINIMUM** erosion and sediment control measures that will be required to protect the site during construction. Sunset Bay RV Park, Inc. and the CONTRACTOR understand that additional erosion and sediment control measures will be necessary during construction. It will be the responsibility of the CONTRACTOR to implement additional erosion and sediment control measures as necessary to protect the site

during construction. Sunset Bay RV Park, Inc. and the CONTRACTOR shall designate a Project Manager prior to commencing construction. The Project Manager will ensure that all construction managers and sub-contractors are appropriately assigned and understand the importance of the following topics:

- Erosion and Sedimentation Control for Water Quality Protection
- Implementation of the Erosion and Sedimentation Control Plan
- The Importance to Proper Installation of Erosion and Sedimentation Control Measures
- Regular Inspection by qualified personnel of Erosion and Sedimentation Control Measures
- Diligent Maintenance of Erosion and Sedimentation Control Measures
- Contemporaneous preparation of accurate and complete records regarding inspection and maintenance of Erosion and Sedimentation Control Measures
- Record Keeping for Inspections and Maintenance activities

F. **REQUIREMENTS FOR THE CONTRACTOR AND SUBCONTRACTOR(S):** The *SWPPP Ledger* shall provide a "Contractor's Certification Log" **(Form 2)**, identifying the Company Name, Business Address and Telephone Number along with the Responsible Person for the CONTRACTOR and all subcontractors' who will implement the measures identified in the SWPPP. Each of the entities identified on **Form 2** shall sign a "Contractor's Certification" **(Form 3)**, verifying they have been instructed and fully understand the requirements of the New York State Department of Environmental Conservation and SWPPP. **This certification must be signed, by a fully qualified individual on behalf of each entity, prior to the beginning of any construction activities and shall be filed in the project's *SWPPP* Ledger.**

Additionally, the "Trained Contractor" must be identified on Form 3 and his/her credentials should be kept on-site in the SWPPP ledger.

G. **STORMWATER POLLUTION PREVENTION PROGRAM LOCATION REQUIREMENTS:** The *SWPPP Ledger* is meant to be a working document that shall be maintained at the site of the Construction Activities at all times throughout the project, shall be readily available upon request by the NOI Permittee's personnel or New York State Department of Environmental Conservation or any other agency with regulatory authority over stormwater issues, and shall be kept on-site until the site complies with the Final Stabilization section of this document. Refer to Part VII., F., Duty to Provide Information, of the General Permit for additional public viewing requirements.

H. **SWPPP LEDGER:** The SWPPP Ledger shall be a 3-ring Binder, tabbed and indexed for the following sections:

SECTION 1:
- **Written SWPPP**

SECTION 2:
- **Site Map and General Location Map**
- **Erosion and Sediment Control Plan(s)**

SECTION 3:
- **New York State Notice of Intent**
- **New York State NOI Acknowledgement Letter**
- **New York State MS4 SWPPP Acceptance Form**

SECTION 4:

- **New York State SPDES General Permit**

SECTION 5:

- **NOI Permittee's Certification (Form 1)**
- **Contractor's/Subcontractor's Certification Log (Form 2)**
- **Contractor's Certification for each contractor listed on Form 2 (Form 3)**
- **Inspection Report (Form 4)**
- **Modification Report (Form 5)**
- **Record of Stabilization and Construction Activities Report (Form 6)**
- **Record of Temporary Erosion and Sediment Control Practices (Form 6A)**
- **Project Rainfall Log (Form 7)**
- **Final Stabilization/Termination Checklist (Form 8)**

SECTION 6:

- **Supplemental Information**
  – Stormwater Management Report

SECTION 7:

- **Completed Inspection Forms**

The Project Manager must review and evaluate for compliance the *SWPPP Ledger* at each Project Review meeting. All Inspection and Maintenance Forms (*Forms 4 - 7*) will be initialed by the Project Manager at each reporting interval.

I. **INSPECTIONS AND RECORD KEEPING:** Inspections are required at least weekly by a "Qualified Inspector". Sites that have a waiver to disturb greater than five (5) acres require two (2) inspections every seven (7) days with at least two (2) days between inspections. Inspections shall continue until the site complies with the "Final Stabilization" section of this document and a Notice of Termination (NOT) has been filed with the NYSDEC. Each inspection must be followed up by a report documenting the inspector's findings and request the required maintenance and/or repair for the erosion and sedimentation control measures. The inspector shall notify the Project Manager within one day of the inspection of any deficiencies. Within one day of this notification the Project Manager must commence with corrective measures. It is imperative that the Project Manager documents the Inspection and Maintenance of all erosion and sedimentation control measures as soon as possible after the inspection and/or maintenance is completed. These records are used to prove that the required inspection and maintenance were performed and shall be placed in the *SWPPP Ledger*. In addition to inspection and maintenance reports, records should be kept of the Construction Activities that occur on the site. The Project Sponsor shall retain copies of the SWPPP, all reports and data for a minimum of five (5) years after the project is complete. The following list identifies the **required** Inspection and Maintenance documentation that must be maintained by the Project Manager under this SWPPP.

- **Form 4 Inspection Report for SWPPP**
- **Form 5 Requested Changes to the SWPPP (Modification Report)**
- **Form 6 Record of Stabilization and Construction Activities**
- **Form 6A Record of Temporary Erosion and Sediment Control Practices**
- **Form 7 Project Rainfall Log**

J. **SWPPP MODIFICATIONS:** The inspection report should also identify if any revisions to the SWPPP are warranted due to unexpected conditions. The SWPPP is meant to be a dynamic working guide that is to be kept current and amended whenever the design, construction, operation, or maintenance of the site changes in a way which significantly affects the potential for the discharge of pollutants or when the plan proves to be ineffective in eliminating or significantly minimizing pollutant discharges. Any such changes to the SWPPP must be made in writing on the Modification Report Form **(Form 5)** within 7 days of the date such modification or amendment is made. The CONTRACTOR'S failure to monitor or report deficiencies to the NOI Permittee will

result in the CONTRACTOR being liable for fines and construction delays resulting from any federal, state, or local agency enforcement action.

K. **FINAL STABILIZATION AND TERMINATION OF PERMIT COVERAGE:** The site will be considered finally stabilized when all soil disturbing activities have been completed and a uniform perennial vegetative cover for the unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures have been established and the development area no longer discharges stormwater associated with construction activities and a Notice of Termination (NOT) form filed by the NOI Permittee with the New York State Department of Environmental Conservation. This filing terminates coverage under the General Permit and terminates the CONTRACTOR'S responsibility to implement the SWPPP. Requirements of the SWPPP, including periodic inspections, must be continued until the NOT is filed.

II. SITE DESCRIPTION

A. PROJECT NAME AND LOCATION

The Sunset Bay RV Park Expansion project site is geographically situated at Latitude N 43° 7' 37", Longitude W 74° 14' 28" in the Town of Mayfield, Fulton County, New York. The site is located on the north side of Paradise Point Road, south of the intersection with Lakeview Road. The project site is comprised of 57 +/- acres of land. The overall disturbance area is 41 acres. The project is bounded on the north and east by Sacandaga Lake, on the south by Paradise Point Road and on the west by NYS ROUTE 30 and PRIVATE PROPERTY. Access to the project will be from Paradise Point Road. The entire parcel will remain privately owned and maintained. Approximately 13.9 acres of impervious surfaces, including travel surfaces and buildings will be constructed. Reclamation of disturbed areas will be conducted on an ongoing basis as construction progresses.

B. NOI PERMITTEE'S NAME AND ADDRESS

SUNSET BAY RV PARK, INC.
61 ELMWOOD AVE #138
GLOVERSVILLE, NY 12078

C. PROJECT DESCRIPTION

This project will involve the construction of an RV Park Expansion of 373 RV sites with an entrance road from NYS ROUTE 30 and Paradise Point Road as approved by the Town of Mayfield. Also included, as permanent elements of the development are on-site sewer, water service and stormwater management. The estimated time for completion of the construction project is approximately one (1) year. Soil disturbing activities will include:

1. Construction of stabilized construction access points
2. Clearing and grubbing
3. Installation of storm sewer pipes and inlets
4. Construction of sediment basins and stormwater detention ponds
5. Construction of utilities on site
6. Construction of roadways, and travel surfaces
7. Construction of landscaped areas
8. Final grading

D. RUNOFF COEFFICIENT, SOILS, AND RAINFALL INFORMATION

The predevelopment Curve Number (CN) for green areas was determined to be 79. Soils within the project area consist of poorly drained loam and silt loam that fall in the hydrologic soil group C or D, as described by the Soil Conservation Service. The post development CN for disturbed green areas is 78 and the weighted CN for the post-development contributing area is 80. A CN of 98 was used for all post-development impervious surface areas.

The site is in Fulton County, which receives an average of 47 inches of rainfall annually with the highest amounts of rainfall received in the months of June and July.

E. NAME OF RECEIVING WATERS

Drainage will be directed via on-site vegetated swales through a series of stormwater management areas (riparian buffers, dry swales, wet ponds and bioretention areas) with emergency overflow swales directed to existing drainage corridors on the project site. The main drainage corridor is an on-site APA regulated wetland.

F. INDIAN COUNTRY LANDS

The site is not located on any known current or previously designated Indian Country lands.

G. ENDANGERED OR THREATENED SPECIES

A review of the New York State Department of Environmental Conservation's (NYSDEC) Environmental Resource Mapper (http://www.dec.ny.gov/imsmaps/ERM/viewer.htm) indicated no known State regulated rare plants, rare animals or significant natural communities on-site. A letter has been directed to NYSDEC New York Natural Heritage Program requesting they provide us with a determination as to whether the proposed activity is likely to result in the take or taking of any species listed as endangered or threatened in 6 NYCRR Part 182.

H. HISTORIC PLACES

A review of the New York State Historic Preservation Office (OPRHP) Geographic Information System Mapper (http://www.oprhp.state.ny.us/nr/main.asp) indicated that the site is located in an archeo sensitive area. A Phase 1A Archaeological Survey has been recommended and the applicant is currently requesting proposals to perform a Phase 1A survey.

III. CONTROLS

A. EROSION AND SEDIMENT CONTROLS

The following section describes the anticipated Erosion and Sediment Controls required for use during construction of the proposed site. These controls represent the **MINIMUM** erosion and sediment control measures that will be required to protect the site during construction. **Additional erosion and sediment control measures will be necessary during construction.** It will be the responsibility of the NOI permittee to authorize the CONTRACTOR to implement all additional erosion and sediment control measures necessary to protect the site during construction.

1. Stabilization practices include (but not limited to):
   a) Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed
   b) Frequent watering of excavation and fill areas to minimize wind erosion during construction.
   c) Use of stabilization fabric for all slopes having a slope of 1V:3H or greater.

d) Seeding and planting of all unpaved areas
   - Temporary seedings should be made within 24 hours of construction or disturbance. If not, the soil must be scarified prior to seeding.
   - Broadcasting or hydroseeding may be used as seeding methods.
   - Seeding mixtures should be as follows
     a) Ryegrass (annual or perennial) applied at 30 lbs. per acre (0.7 lbs./1000 sq. ft.)
     b) Certified "Aroostook" winter rye (cereal rye) applied at 100 lbs. per acre (2.5 lbs./1000 sq. ft.) *Winter rye shall be used if seeding in October/November.

e) Topsoiling
   - Scarify all compact, slowly permeable, medium and fine textured subsoil areas. Scarify at approximately right angles to the slope direction in soil areas that are steeper than 5 percent.
   - Remove refuse, woody plant parts, stones over 3 inches in diameter, and other liter.
   - Topsoil material shall have at least 2 percent by weight of fine textured stable organic material, and no greater than 6 percent.
   - Topsoil shall have no less than 20 percent fine textured material (passing the No. 200 sieve) and not more than 15 percent clay.
   - Topsoil shall not be placed when it is partly frozen, muddy, or on frozen slopes or over ice, snow, or standing water.

f) Mulching
   - For grass / legume establishment apply straw mulch applied at 2 ton/acre (90 lbs./1000 sq. ft.) and anchor with wood fiber mulch (hydromulch) at 500-750 lbs./acre (11 – 17 lbs./1000 sq. ft.)

g) Protecting Vegetation During Construction
   - Limit soil placement over existing tree and shrub roots to a maximum of 3 inches.
   - Use retaining walls and terraces to protect roots of trees and shrubs when grades are lowered. Lowered grades should start no closer than the dripline of the tree.
   - Avoid trenching within the dripline of the tree.
   - Construction limits should be identified and clearly marked to exclude equipment.

2. Structural practices include (but not limited to):

a) Inlet protection and outlet protection using silt fences
   - See detail on Erosion and Sediment Control Plans

b) Perimeter protection using silt fences

c) Sediment basin(s)

d) Stabilized construction exit points
   - Aggregate size shall be 2 inch stone or reclaimed / recycled concrete equivalent
   - Thickness shall be not less than 6 inches
   - Width to be the full width of the access point, but not less than 12 ft
   - Length shall be as required, but not less than 50 ft.
   - Filter cloth shall be applied over the entire area to be covered with aggregate
   - The entrance shall be maintained in a condition which will prevent tracking of sediment onto public rights-of-way or streets. When necessary, wheels must be cleaned to remove sediment prior to entrance onto public rights-of-way.

e) Storm sewer, curbs and gutters

f) Stormwater detention ponds (which may also serve as a temporary sediment basin)

g) Water Bar
   - Used where runoff protection is needed to prevent erosion on access roads or other narrow slopping areas (generally less than 100 ft in width).
   - Water bars shall cross at approximately 60 degrees with stable outlets.
   - Constructed with a minimum height of 18 inches from the channel bottom to the ridge top.

- Horizontal spacing shall be 125 ft for slopes less than 5 percent, 100 ft for slopes between 5 and 10 percent, 75 ft for slopes between 10 and 20 percent, and 50 ft for slopes between 20 and 35 percent.

h) Straw Bale Dike
- Straw bale dikes have an estimated design life of three months.
- Shall only be used where no other practice is feasible

i) Stone Check Dam
- Use graded stone 2 to 15 inches in size
- Sediment accumulated behind the check dam shall be removed as needed to allow drainage through the check dam and prevent large flows from carrying sediment over the dam.

3. Sequence of Major Activities

The CONTRACTOR will be responsible for implementing erosion and sediment control measures outlined in the SWPPP and any additional erosion and sediment control measures required to stabilize the site. The CONTRACTOR may designate these tasks to certain subcontractors as appropriate, but the ultimate responsibility for implementing these controls and ensuring their proper functioning remains with the CONTRACTOR. The order of activities will be as follows (refer to Stormwater Pollution Prevention Plan Sheet contained in this SWPPP for additional details):

a) Construct temporary construction exits at locations shown on the SWPPP plan sheet.

b) Install perimeter silt fences and stormwater ponds. Stormwater ponds are to be used as temporary sediment basins during construction.

c) Begin clearing and grubbing operations. Clearing and grubbing shall be done only in areas where earthwork will be performed and only in areas where building is planned to commence within 7 days after clearing and grubbing. Clearing and grubbing operations shall be limited so that no more than 5 acres of disturbed soil exists at any one time without prior written approval from the NYS DEC.

d) Frequent watering of the excavation and fill areas shall be done to minimize wind erosion.

e) Commence site grading and new building construction.

f) Disturbed areas of the site where construction activity has ceased for more than 7 days should be temporarily seeded and watered.

g) Install protective silt fences at all grate inlets, curb inlets, and at the ends of all exposed storm sewer pipes.

h) Finalize pavement subgrade preparation.

i) Construct all curb and gutter, gutter inlets, area inlets, and storm sewer manholes, as shown on the plans. Place required riprap at locations shown on the plans.

j) Remove silt fences around inlets and manholes no more than 48 hours prior to placing stabilized base course.

k) Install base material as required for pavement.

l) Carry out final grading and seeding and planting, including stormwater management basins.

m) Remove silt fencing only after all paving is complete and exposed surfaces are stabilized.

n) Remove temporary construction exits only prior to pavement construction in these areas (These areas are to be paved last).

4. Stormwater Management

The proposed stormwater management system was designed by The Environmental Design Partnership, Clifton Park, NY. The following paragraphs summarize the stormwater management measures to be incorporated on the site to control pollutants in stormwater discharges after construction is completed. A copy of the Stormwater Management Report is enclosed under Section 6 – Supplemental Information.

Nine (9) stormwater management areas, constructed as one (1) riparian buffer, one (1) dry swale, two (2) wet ponds, and five (5) bioretention areas, will be constructed to provide sufficient volume to hold all storm events up to 100 years and allow the water to slowly release over an extended time period. The basin will have an emergency overflow spillway area to provide a safe overland flow path in the event that the basin capacities may be exceeded.

5. Post-Construction Maintenance of the Stormwater Management System

Post construction maintenance and protection of the Stormwater Management System shall be performed in accordance with Section VI. LONG TERM OPERATION AND MAINTENANCE PROCEDURES of the SWPPP.

B. OTHER CONTROLS

1. Waste Disposal

All waste materials will be collected and stored in a securely lidded metal dumpster rented from a local waste management company which must be a solid waste management company licensed to do business in New York State. The dumpster will comply with all local and state solid waste management regulations.

All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as often as necessary, and the trash will be hauled to a landfill approved by New York State and the local government authority. No construction waste materials will be buried on site. All personnel will be instructed regarding the correct procedures for waste disposal. Notices stating these practices will be posted in the job site construction office trailer, and the job site superintendent will be responsible for seeing that these procedures are followed.

2. Sanitary Waste

All sanitary waste will be collected from the portable units a minimum of two times per week by a licensed portable facility provider in complete compliance with local and state regulations.

3. Off-Site Vehicle Tracking

A stabilized construction exit will be provided to help reduce vehicle tracking of sediments. The paved streets adjacent to the site entrance will be inspected daily and swept as necessary to remove any excess mud, dirt, or rock tracked from the site. Dump trucks hauling material from the construction site will be covered with a tarpaulin. The job site superintendent will be responsible for seeing that these procedures are followed.

4. Concrete Waste From Concrete Trucks

a) Emptying of excess concrete and/or washout from concrete delivery trucks will be allowed on the job site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or washout and stormwater which will

be discharged from the site or (2) in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

b) The hardened residue from the concrete washout diked areas will be disposed of in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations. The job site superintendent will be responsible for seeing that these procedures are followed.

5. Hazardous Substances and Hazardous Waste

a) All hazardous waste materials will be disposed of by the CONTRACTOR in the manner specified by local, state, and/or federal regulations and by the manufacturer of such products. Site personnel will be instructed in these practices by the job site superintendent, who will also be responsible for seeing that these practices are followed. Material Safety Data Sheets (MSDS's) for each substance with hazardous properties that is used on the job site will be obtained and used for the proper management of potential wastes that may result from these products. An MSDS will be posted in the immediate area where such product is stored and/or used and another copy of each MSDS will be maintained in the SWPPP file at the job site construction trailer office. Each employee who must handle a substance with hazardous properties will be instructed on the use of MSDS sheets and the specific information in the applicable MSDS for the product he/she is using, particularly regarding spill control techniques.

b) The CONTRACTOR will implement the Spill Prevention Control and Countermeasures (SPCC) Plan found within this SWPPP and will train all personnel in the proper cleanup and handling of spilled materials. No spilled hazardous materials or hazardous wastes will be allowed to come in contact with stormwater discharges. If such contact occurs, the stormwater discharge will be contained on site until appropriate measures in compliance with state and federal regulations are taken to dispose of such contaminated stormwater. It shall be the responsibility of the job site superintendent to properly train all personnel in the use of the SPCC plan.

c) Any spills of hazardous materials which are in quantities in excess of Reportable Quantities as defined by EPA regulations shall be immediately reported to the EPA National Response Center 1-800-424-8802.

d) In order to minimize the potential for a spill of hazardous materials to come into contact with stormwater, the following steps will be implemented:

- All materials with hazardous properties (such as pesticides, petroleum products, fertilizers, detergents, construction chemicals, acids, paints, paint solvents, cleaning solvents, additives for soil stabilization, concrete curing compounds and additives, etc.) will be stored in a secure location, under cover, when not in use. All such materials shall have secondary containment to prevent contamination of soil and runoff.

- The minimum practical quantity of all such materials will be kept on the job site.

- A spill control and containment kit (containing, for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

- All of the product in a container will be used before the container is disposed of. All such containers will be triple-rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with stormwater discharges.

- All products will be stored in and used from the original container with the original product label.
- All products will be used in strict compliance with instructions on the product label.
- The disposal of excess or used products will be in strict compliance with instructions on the product label.

6. Contaminated Soils

a) Any contaminated soils (resulting from spills of materials with hazardous properties) which may result from construction activities will be contained and cleaned up immediately in accordance with the procedures given in the Spill Prevention Control and Countermeasures (SPCC) Plan and in accordance with applicable state and federal regulations.

b) The job site superintendent will be responsible for seeing that these procedures are followed.

IV. COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

A. The CONTRACTOR will obtain copies of any and all local and state regulations that are applicable to stormwater management, erosion control, and pollution minimization at this job site and will comply fully with such regulations. The CONTRACTOR will submit written evidence of such compliance if requested by any agent of a regulatory body. The CONTRACTOR will comply with all conditions of the New York State Department of Environmental Conservation SPDES General Permit for Construction Activities, including the conditions related to maintaining the SWPPP and evidence of compliance with the SWPPP at the job site and allowing regulatory personnel access to the job site and to records in order to determine compliance.

V. MAINTENANCE/INSPECTION PROCEDURES DURING CONSTRUCTION

A. Erosion and Sediment Control and Stabilization Measures Maintenance and Inspection Practices

1. The following is a list of erosion and sediment controls to be used on this site during construction practice.

a) Stabilization practices for this site include:
- Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed
- Frequent watering of excavation and fill areas to minimize wind erosion during construction.
- Use of stabilization fabric for all slopes having a slope of 1V:3H or greater.
- Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.

b) Structural practices for this site include:
- Perimeter protection using silt fences
- Inlet protection and outlet protection using silt fences
- Storm sewer, curbs and gutters
- Stabilized construction exit points
- Stormwater detention ponds (which may also serve as a temporary sediment basin)

2. The following inspection and maintenance practices will be used to maintain erosion and sediment controls and stabilization measures.

a) All control measures will be inspected once every seven (7) days at a minimum. Sites that have a waiver to disturb greater than five (5) acres require two (2) inspections every seven (7) days with at least two (2) days between inspections.

b) All measures will be maintained in good working order; if repairs are found to be necessary, they will be initiated within 24 hours of report.
c) Built up sediment will be removed from silt fence when it has reached one-third the height of the fence.
d) Silt fences will be inspected for depth of sediment, tears, etc., to see if the fabric is securely attached to the fence posts, and to see that the fence posts are securely in the ground.
e) The sediment basins will be inspected for depth of sediment, and built up sediment will be removed when it reaches 50 percent of the capacity.
f) Temporary and permanent seeding and all other stabilization measures will be inspected for bare spots, washouts, and healthy growth.
g) A maintenance inspection report will be made after each inspection. Copies of the report forms to be completed by the inspector are included in this SWPPP.
h) The job site superintendent will be responsible for selecting and training the individuals who will be responsible for these inspections, maintenance and repair activities, and filling out inspection and maintenance reports.
i) Personnel selected for the inspection and maintenance responsibilities will receive appropriate instruction from the job site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls that are used onsite in good working order. They will also be trained in the completion of, initiation of actions required by, and the filing of the inspection forms. Documentation of this personnel training will be kept on site with the SWPPP.
j) Disturbed areas and material storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.
k) Report to the NYS Department of Environmental Conservation within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event.

B. Inspection and Maintenance Report Forms

Once installation of any required or optional erosion control device or measure has been implemented, weekly inspections of each measure shall be performed by the CONTRACTOR'S inspection personnel. The Inspection and Maintenance Reports found in this SWPPP shall be used by the inspectors to inventory and report the condition of each measure to assist in maintaining the erosion and sediment control measures in good working order.

These report forms shall become an integral part of the SWPPP and shall be made readily accessible to governmental inspection officials, the NOI Permittee's Engineer, and the NOI Permittee for review upon request during visits to the project site. In addition, copies of the reports shall be provided to any of these persons, upon request, via mail or facsimile transmission. Inspection and maintenance report forms are to be maintained by the NOI Permittee for five years following the final stabilization of the site.

C. Other Record-Keeping Requirements

The CONTRACTOR shall keep the following records related to construction activities at the site:
- Dates when major grading activities occur and the areas that were graded
- Dates and details concerning the installation of structural controls
- Dates when construction activities cease in an area
- Dates when areas are stabilized, either temporarily or permanently
- Dates of rainfall and the amount of rainfall
- Dates and descriptions of the character and amount of any spills of hazardous materials
- Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

D. Winter Operations

The following is a list of erosion and sediment controls and inspection and maintenance practices for winter operations for this site.

a) **Prior to November 1st of any given year all exposed soil areas must be covered with:**
   - Mulch
   - Seed and mulch
   - Geotextile
   - Erosion control matting
   - Rock or
   - Other approved mulch to prevent soil from eroding

b) Install sediment barriers (silt fence or drop inlet protection) at ALL necessary perimeter and sensitive locations BEFORE SOIL FREEZES.

c) Slopes and Stockpiles:
   - Protect slopes and stockpiles with anchored straw or mulch, rolled erosion control product or other durable covering.
   - Sediment barrier must be installed around piles and at slope toes to prevent soil transport from the pile or slope.
   - Stabilize exposed areas BEFORE snow covers them.

d) All entrance/exit locations must be properly stabilized and maintained to accommodate snow management.

e) Inspections:
   - If soil disturbance is COMPLETELY suspended AND site is PROPERLY STABILIZED, qualified inspection frequency may be reduced with written notification to NYSDEC or MS4.
   - Confirmation must be received from NYSDEC prior to reducing inspection frequency.
   - Monthly inspections must be performed at a minimum.
   - Sediment control measures should be checked after rain or snowmelt events.
   - Regular inspections must resume by March 15th.

VI. LONG TERM OPERATION AND MAINTENANCE PROCEDURES

The proposed Sunset Bay Resort Expansion project will be privately owned and the operation and maintenance requirements will be the responsibility of the private owner.

The entire Stormwater Management System shall be inspected on a yearly basis to ensure that the system operates in the manner originally intended. Specific components of the system shall require additional attention as described below.

1. Open Channels
   a. Open channels shall be inspected annually and following major storm events to ensure the system operates in the manner originally intended.
   b. Removal of sediment build-up within the bottom of the channel or filter strip shall be required when 25% of the channel volume has been exceeded.
   c. Dry Swales shall be mowed to maintain a grass height of 4" to 6".

2. Wet Ponds
   a. Basins shall be inspected annually and following major storm events to ensure the system operates in the manner originally intended. The inspection should include, but not be limited to, the following components; all outlet orifices, embankment, emergency spillway, drain, accumulation of sediment, and general erosion control measures.

b. Re-grading and re-vegetation shall be performed as necessary and rip-rap shall be replaced as necessary.
c. Embankments shall be mowed a minimum of twice per year to discourage woody growth and control weeds.
d. Debris and litter shall be removed from basins during regular mowing operations or more frequently as necessary.
e. Accumulated sediment shall be removed from the wet pond area when 10 percent of the basin capacity has been lost due to sedimentation or at a minimum of every 10 to 20 years.

3. Riparian Buffer
   a. Vegetated Filter Strips shall be inspected annually and following major storm events to ensure the area is in the manner originally intended.
   b. Debris and litter shall be removed from the buffer and gravel diaphragm as necessary.
   c. Accumulated sand, grit and/or debris shall be removed from the buffer and gravel diaphragm if present.

STORMWATER POLLUTION PREVENTION PLAN
SUMMARY OF EROSION AND SEDIMENT CONTROL AND STABILIZATION MEASURES
MAINTENANCE/INSPECTION PROCEDURES

☐ All control measures will be inspected at least once every seven (7) days. Sites that have a waiver to disturb greater than five (5) acres require two (2) inspections every seven (7) days with at least two (2) days between inspections.

☐ All measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of report.

☐ Built-up sediment will be removed from silt fences when it has reached one-third the height of the fence.

☐ Silt fences will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.

☐ Sediment basins, if present, will be inspected for depth of sediment, and built-up sediment will be removed when it reaches 50% of the design capacity or at the end of the job.

☐ Diversion dikes, if present, will be inspected and any breaches promptly repaired.

☐ Temporary and permanent seeding and planting and other stabilization measures will be inspected for bare spots, washouts, and healthy growth.

☐ A maintenance inspection report will be made after each inspection. Copies of the report forms to be used are included in this SWPPP.

☐ The site job superintendent will select the individuals who will be responsible for inspections, maintenance and repair activities, and filling out the inspection and maintenance reports.

☐ Personnel selected for inspection and maintenance responsibilities will receive training from the site job superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.

☐ Disturbed areas and materials storage areas will be inspected for evidence of or potential for pollutants entering stormwater systems.

☐ Report to The Department of Environmental Conservation within 24 hours any noncompliance with the SWPPP that will endanger public health or the environment. Follow up with a written report within 5 days of the noncompliance event.

STORMWATER POLLUTION PREVENTION PLAN

CONSTRUCTION/IMPLEMENTATION CHECKLIST

1. Maintain Records (Project Manager) of Construction Activities, including:

   ☐ Dates when major grading activities occur

   ☐ Dates when construction activities temporarily cease on a portion of the site

   ☐ Dates when construction activities permanently cease on a portion of the site

   ☐ Dates when stabilization measures are initiated on the site

   ☐ Dates of rainfall and the amount of rainfall

   ☐ Dates and descriptions of the character and amount of any spills of hazardous materials

   ☐ Records of reports filed with regulatory agencies if reportable quantities of hazardous materials spilled

2. Prepare Inspection Reports (Qualified Inspector) summarizing:

   ☐ Name of inspector

   ☐ Qualifications of inspector

   ☐ Measures/areas inspected

   ☐ Observed conditions

   ☐ Changes necessary to the SWPPP

3. Report Releases of Reportable Quantities of Oil or Hazardous Materials (Project Manager, if they occur):

   ☐ Notify National Response Center (1-800-424-8802) immediately

   ☐ Notify permitting authority in writing within 14 days

   ☐ Modify the pollution prevention plan to include:

   - the date of release
   - circumstances leading to the release
   - steps taken to prevent reoccurrence of the release

4. Modify Pollution Prevention Plan (per Qualified Inspector) as necessary to:

   ☐ Comply with the minimum permit requirements when notified by The Department of Environmental Conservation that the plan does not comply

   ☐ Address a change in design, construction operation, or maintenance that has an effect on the potential for discharge of pollutants

   ☐ Prevent reoccurrence of reportable quantity releases of a hazardous material or oil

VII. SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC) PLAN

A. MATERIALS COVERED

The following materials or substances with known hazardous properties are expected to be present onsite during construction:

Concrete	Cleaning solvents
Detergents	Petroleum based products
Paints	Pesticides
Paint solvents	Acids
Fertilizers	Concrete additives
Soil stabilization additives	

B. MATERIAL MANAGEMENT PRACTICES

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.

1. Good Housekeeping

The following good housekeeping practices will be followed onsite during the construction project.

a) An effort will be made to store only enough product required to do the job.

b) All materials stored onsite will be stored in a neat, orderly manner and, if possible, under a roof or other enclosure.

c) Products will be kept in their original containers with the original manufacturer's label in legible condition.

d) Substances will not be mixed with one another unless recommended by the manufacturer.

e) Whenever possible, all of a product will be used up before disposing of the container.

f) Manufacturer's recommendations for proper use and disposal will be followed.

g) The job site superintendent will be responsible for daily inspections to ensure proper use and disposal of materials.

2. Hazardous Products

These practices will be used to reduce the risks associated with hazardous materials.

a) Products will be kept in original containers with the original labels in legible condition.

b) Original labels and material safety data sheets (MSDS's) will be procured and used for each material.

c) If surplus product must be disposed of, manufacturer's or local/state/federal recommended methods for proper disposal will be followed.

d) A spill control and containment kit (containing, for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.) will be provided at the storage site.

e) All of the product in a container will be used before the container is disposed of. All such containers will be triple-rinsed with water prior to disposal. The rinse water used in these containers will be disposed of in a manner in compliance with state and federal regulations and will not be allowed to mix with stormwater discharges.

3. Product Specific Practices

The following product specific practices will be followed on the job site.

a) Petroleum Products

All onsite vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which are clearly labeled. Any petroleum storage tanks used onsite will have a dike or berm containment structure constructed around it to contain any spills that may occur. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.

b) Fertilizers

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked in the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

c) Paints, Paint Solvents, and Cleaning Solvents

All containers will be tightly sealed and stored when not in use. Excess paint and solvents will not be discharged to the storm sewer system but will be properly disposed of according to manufacturer's instructions or state and federal regulations.

d) Concrete Trucks

Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water on the site, but only in either (1) specifically designated diked areas which have been prepared to prevent contact between the concrete and/or washout and stormwater which will be discharged from the site or (2) in locations where waste concrete can be poured into forms to make riprap or other useful concrete products.

The hardened residue from the concrete washout diked areas will be disposed of in the same manner as other non-hazardous construction waste materials or may be broken up and used on site as deemed appropriate by the CONTRACTOR. The job site superintendent will be responsible for seeing that these procedures are followed.

4. Spill Prevention Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup.

a) Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be trained regarding these procedures and the location of the information and cleanup supplies.

b) Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite in spill control and containment kit (containing, for example, absorbent such as kitty litter or sawdust, acid neutralizing powder, brooms, dust pans, mops, rags, gloves, goggles, plastic and metal trash containers, etc.).

c) All spills will be cleaned up immediately after discovery.

d) The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with the hazardous substances.

e) Spills of toxic or hazardous materials will be reported to the appropriate federal, state, and/or local government agency, regardless of the size of the spill. Spills of amounts that exceed Reportable Quantities of certain substances specifically mentioned in federal regulations (40 CFR 302 list and oil) will be immediately reported to the EPA National Response Center, telephone 1-800-424-8802. Reportable Quantities of some substances which may be used at the job site are as follows:

oil - appearance of a film or sheen on water

pesticides - usually 1 lb.

acids - 5000 lb.

solvents, flammable - 100 lb.

f) The SPCC plan will be adjusted to include measures to prevent this type of spill from recurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included. If the spill exceeds a Reportable Quantity, all federal regulations regarding reports of the incident will be complied with.

g) The job site superintendent will be the spill prevention and cleanup coordinator. He will designate the individuals who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of these personnel will be posted in the material storage area and in the office trailer onsite.

VIII. CONTROL OF ALLOWABLE NON-STORMWATER DISCHARGES

A. Certain types of discharges are allowable under the NYS Department of Environmental Conservation SPDES General Permit for Construction Activity, and it is the intent of this SWPPP to allow such discharges. These types of discharges will be allowed under the conditions that no pollutants will be allowed to come in contact with the water prior to or after its discharge. The control measures, which have been outlined previously in this SWPPP, will be strictly followed to ensure that no contamination of these non-stormwater discharges takes place. The following allowable non-stormwater discharges that may occur from the job site include:

a) Discharges from fire fighting activities

b) Fire hydrant flushings (see note below)

c) Waters used to wash vehicles or control dust in order to minimize offsite sediment tracking

d) Potable water sources such as waterline flushings (see note below), irrigation drainage from watering vegetation, routine exterior building washdown (without detergents present) (See Note below)

e) Pavement washwaters where spills or leaks of hazardous materials have not occurred or detergents have not been used

f) Springs and other uncontaminated groundwater, including dewatering ground water infiltration

g) Foundation or footing drains where no contamination with process materials such as solvents is present

NOTE: CONTRACTOR shall neutralize any super-chlorinated water from water distribution pipes before releasing it into the environment. Neutralization techniques are available from the Operator's Engineer.

IX. CERTIFICATION AND NOTIFICATION

A. The NYS Department of Environmental Conservation requires that certifications of knowledge of the contents of this SWPPP and agreement to follow the SWPPP be made by the NOI Permittee and the CONTRACTOR. The terms of the General Permit also require that each CONTRACTOR sign the SWPPP plan, (Form 3) thereby making them co-permittees and acknowledging their responsibility for certain operational aspects of the plan. These certifications should be signed before the CONTRACTOR begins activities and should be filed with the site's SWPPP at the jobsite. These certifications are provided within this document, see Table of Contents for location.

SECTION 2

Erosion and Sedimentation Control Plan

Site Map and General Location Map

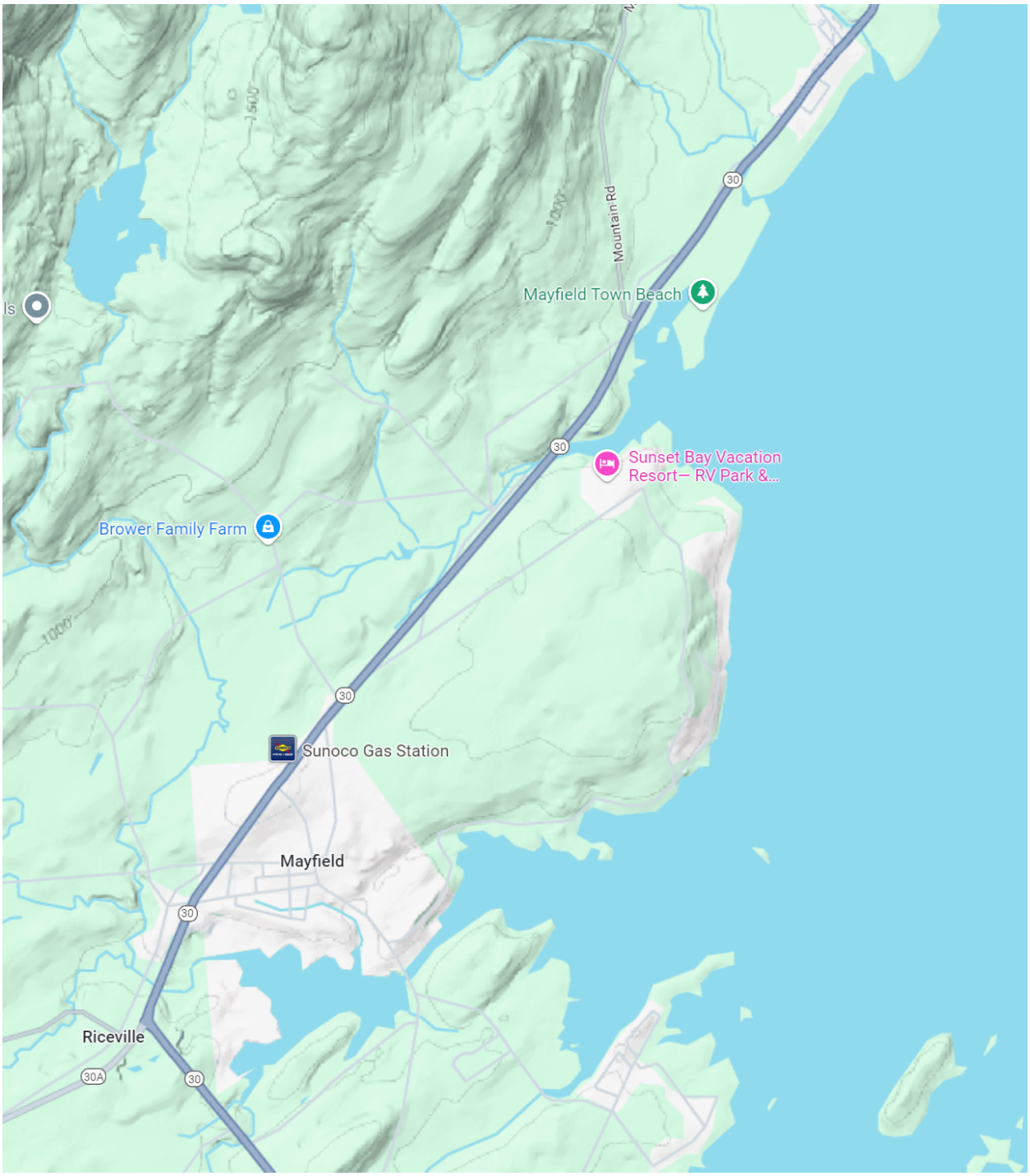
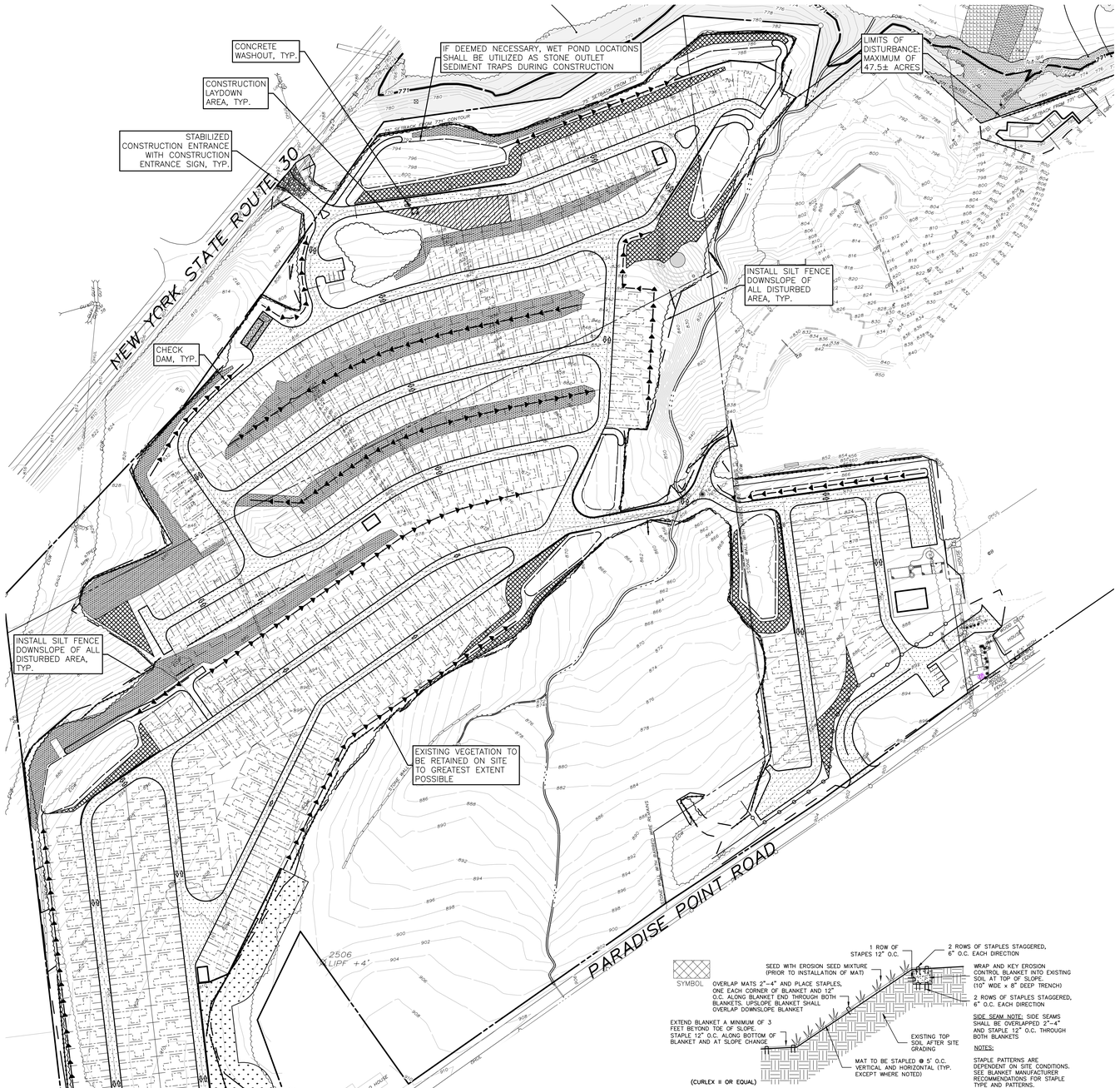


Figure 1: Site Location

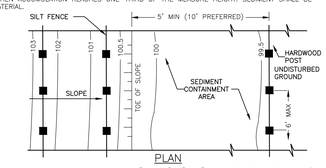


SILT FENCE GENERAL NOTES:

1. SILT FENCE SHALL BE PLACED A MINIMUM OF 5 FT. FROM TOE OF SLOPE, 10 FT. PREFERRED, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF SEDIMENT CONTAINMENT AREA.
2. POSTS MAY BE 1.25"x1.25" (MINIMUM) HARDWOOD, TYPICALLY, FOR WIRE MESH BACK USE 2"x2" NOM. HARDWOOD, OR STEEL "T" OR "U" POSTS (1lb per lf). SILT FENCE SHALL BE WOVEN GEOTEXTILE FABRIC(GEOTEX 2130 OR EQUAL).
3. SILT FENCE ASSEMBLIES MAY HAVE 4 FT. OR 6 FT. POST SPACING, AND MAY OR MAY NOT HAVE MESH REINFORCEMENT. SENSITIVE AREAS TO BE PROTECTED MAY NEED TO BE REINFORCED BY USING HEAVY WIRE FENCING FOR ADDED SUPPORT TO PREVENT COLLAPSE.
4. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6" BELOW GROUND. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSTREAM SIDE OF THE FABRIC.
5. MAXIMUM ALLOWABLE SLOPE LENGTHS CONTRIBUTING RUNOFF TO A SILT FENCE PLACED ON A SLOPE ARE:

SLOPE STEEPNESS	MAXIMUM LENGTH (ft.)
2:1	25
3:1	50
4:1	75
5:1 OR FLATTER	100

6. MAXIMUM DRAINAGE AREA FOR OVERLAND FLOW TO A SILT FENCE SHALL NOT EXCEED ¼ ACRE PER 100 FEET OF FENCE, WITH MAXIMUM PONDING DEPTH OF 1.5 FEET BEHIND THE FENCE, AND EROSION WOULD OCCUR IN THE FORM OF SHEET EROSION, AND THERE IS NO CONCENTRATION OF WATER FLOWING TO THE BARRIER.
7. MEASURES SHALL BE INSPECTED EVERY SEVEN (7) CALENDAR DAYS, AFTER EACH RAINFALL OF .5" OR MORE WITHIN A 12 HOUR PERIOD, OR DAILY DURING PROLONGED RAINFALL. MEASURES SHALL BE CLEANED AND REPAIRED AS REQUIRED.
8. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE–THIRD OF THE MEASURE HEIGHT. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.



SILT FENCE INSTALLATION NOTES:

1. GEOTEXTILE FABRIC AND WOVEN WIREMESH TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO WOVEN WIRE FENCE WITH TIES SPACES EVERY 24" AT TOP AND MID SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY SIX INCHES, FOLDED AND STAPLED.
4. MAINTENANCE SHALL BE PERFFORMED AS NEDDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

4/11 SILT FENCE
NOT TO SCALE

NOTES:
1. ALL RV UNITS MUST BE 5 YEARS OLD OR NEWER AT THE TIME OF ENTRANCE TO THE PARK.
2. BOAT SLIPS ARE ONLY AVAILABLE FOR MEMBERS WITH AN RV SITE IN SUNSET BAY. THERE SHALL BE NO DAY LAUNCHING OF BOATS PERMITTED
3. ALL SITE RENTALS SHALL BE SEASONAL WITH NO TRANSIENT RENTALS
4. THERE SHALL BE "VALET" TRASH COLLECTION WHERE THE PARK WILL COLLECT ALL TRASH FROM CAMPSITES.
5. ANY WORK PERFORMED WITHIN HUDSON RIVER BLACK RIVER DISTRICT REQUIRES A WORK PERMIT FROM HRBR.

EROSION PLAN LEGEND:

- DENOTES USACE WETLAND AREA
- STABILIZED CONSTRUCTION ENTRANCE
- RIP–RAP SLOPE PROTECTION
- EROSION CONTROL BLANKET
- TEMPORARY SILT FENCE
- LIMITS OF DISTURBANCE
- STONE CHECK DAM

EROSION AND SEDIMENT CONTROL AND STABILIZATION MEASURES, MAINTENANCE AND INSPECTION PRACTICES:

1. THE FOLLOWING IS A LIST OF EROSION AND SEDIMENT CONTROLS TO BE USED ON THIS SITE DURING CONSTRUCTION:

A) STABILIZATION PRACTICES FOR THIS SITE INCLUDE:
- LAND CLEARING ACTIVITIES SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND SHALL PROGRESS AS EARTHWORK IS NEEDED
- FREQUENT WATERING OF EXCAVATION AND FILL AREAS TO MINIMIZE WIND EROSION DURING CONSTRUCTION.
- USE OF STABILIZATION FABRIC FOR ALL SLOPES HAVING A SLOPE OF 1V:2H OR GREATER AND FILL SLOPES 1V:3H OR GREATER.
- PERMANENT SEEDING AND PLANTING OF ALL UNPAVED AREAS USING THE HYDROMULCHING GRASS SEEDING TECHNIQUE.

B) STRUCTURAL PRACTICES FOR THIS SITE INCLUDE:
- PERIMETER PROTECTION USING SILT FENCES
- INLET PROTECTION AND OUTLET PROTECTION USING SILT FENCES
- STORM SEWER, CURBS AND GUTTERS
- STABILIZED CONSTRUCTION EXIT POINTS
- STORMWATER DETENTION PONDS (WHICH MAY ALSO SERVE AS A TEMPORARY SEDIMENT BASIN)

2. THE FOLLOWING INSPECTION AND MAINTENANCE PRACTICES WILL BE USED TO MAINTAIN EROSION AND SEDIMENT CONTROLS AND STABILIZATION MEASURES:
A) ALL CONTROL MEASURES WILL BE INSPECTED AT LEAST WEEKLY.
B) ALL MEASURES WILL BE MAINTAINED IN GOOD WORKING ORDER; IF REPAIRS ARE FOUND TO BE NECESSARY, THEY WILL BE INITIATED WITHIN 24 HOURS OF REPORT.
C) BUILT UP SEDIMENT WILL BE REMOVED FROM SILT FENCES / STRAW BARRIERS WHEN IT HAS REACHED ONE–THIRD THE HEIGHT OF THE FENCE.
D) SILT FENCES / STRAW BARRIERS WILL BE INSPECTED FOR DEPTH OF SEDIMENT, TEARS, ETC., TO SEE IF THE FABRIC IS SECURELY ATTACHED TO THE FENCE POSTS, AND TO SEE THAT THE FENCE POSTS ARE SECURELY IN THE GROUND.
E) THE SEDIMENT BASIN, IF PRESENT, WILL BE INSPECTED FOR DEPTH OF SEDIMENT, AND BUILT UP SEDIMENT WILL BE REMOVED WHEN IT REACHES 50 PERCENT OF THE DESIGN CAPACITY.
F) TEMPORARY AND PERMANENT SEEDING AND ALL OTHER STABILIZATION MEASURES WILL BE INSPECTED FOR BARE SPOTS, WASHOUTS, AND HEALTHY GROWTH.
G) A MAINTENANCE INSPECTION REPORT WILL BE MADE AFTER EACH INSPECTION. COPIES OF THE REPORT FORMS TO BE COMPLETED BY THE INSPECTOR ARE INCLUDED IN THIS SWPPP.
H) THE JOB SITE SUPERINTENDENT WILL BE RESPONSIBLE FOR SELECTING AND TRAINING THE INDIVIDUALS WHO WILL BE RESPONSIBLE FOR THESE INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES, AND FILLING OUT INSPECTION AND MAINTENANCE REPORTS.
I) PERSONNEL SELECTED FOR THE INSPECTION AND MAINTENANCE RESPONSIBILITIES WILL RECEIVE APPROPRIATE INSTRUCTION FROM THE JOB SITE SUPERINTENDENT. THEY WILL BE TRAINED IN ALL THE INSPECTION AND MAINTENANCE PRACTICES NECESSARY FOR KEEPING THE EROSION AND SEDIMENT CONTROLS THAT ARE USED ONSITE IN GOOD WORKING ORDER. THEY WILL ALSO BE TRAINED IN THE COMPLETION OF, INITIATION OF ACTIONS REQUIRED BY, AND THE FILING OF THE INSPECTION FORMS. DOCUMENTATION OF THIS PERSONNEL TRAINING WILL BE KEPT ON SITE WITH THE SWPPP.
J) DISTURBED AREAS AND MATERIALS STORAGE AREAS WILL BE INSPECTED FOR EVIDENCE OF OR POTENTIAL FOR POLLUTANTS ENTERING STORMWATER SYSTEMS.
K) REPORT TO THE NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION WITHIN 24 HOURS ANY NONCOMPLIANCE WITH THE SWPPP THAT WILL ENDANGER PUBLIC HEALTH OR THE ENVIRONMENT. FOLLOW UP WITH A WRITTEN REPORT WITHIN 5 DAYS OF THE NONCOMPLIANCE EVENT.

ADDITIONAL EROSION CONTROL AND GRADING NOTES:

1. **MINIMAL EROSION CONTROL DEVICES ARE ILLUSTRATED ON SITE PLAN IN A SCHEMATIC MANNER BASED ON NY STATE GUIDELINES FOR EROSION AND SEDIMENT CONTROL. IT WILL BE NECESSARY TO ADJUST THE ACTUAL LOCATION AND QUANTITY OF EROSION CONTROL DEVICES DEPENDING UPON FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING THESE MEASURES AS REQUIRED TO PROTECT THE SITE.**
2. SLOPES SHALL TYPICALLY BE GRADED AT A MAXIMUM OF 3:1 (3 HORIZ. 1 VERT.) WITHIN ALL CUT OR FILL AREAS, UNLESS OTHERWISE DESIGNATED ON PLANS.
3. SEED SHALL BE A COMMERCIALLY AVAILABLE MIXTURE OF PERENNIAL RYE AND UTILITY GRADE FESCUE. PERCENTAGE OF PERENNIAL RYE SHALL NOT EXCEED 50%.
4. SEEDED AREAS SHALL BE FULLY COVERED WITH A LEAN STRAW OR MULCH MATERIAL. IF ORDERED BY THE ENGINEER OR MUNICIPALITY, A BIODEGRADABLE NETTING (E.G., EXCELSIOR BLANKET, COIR GEOTEXTILE) SHALL BE ANCHORED OVER SEEDED AREAS WHICH DEMONSTRATE "RILLING" OR OTHER EROSION PROCESSES.
5. TOPSOIL AND SEED SHALL BE REAPPLIED TO ANY AREAS WHICH FAIL TO ESTABLISH AS A RESULT OF INITIAL APPLICATION.
6. SILT FENCE BARRIERS SHALL BE PLACED WITHIN ALL AREAS OF EXPOSED SLOPES TO CONTROL SOIL EROSION DURING AND AFTER CONSTRUCTION.
7. ALL STORM OUTFALLS SHALL RECEIVE RIP RAP IMMEDIATELY UPON INSTALLATION (AS PER PLAN).
8. EROSION CONTROL (ERO–MAT) OR APPROVED EQUAL, SHALL BE INSTALLED ON ALL 2:1 SLOPES: AN ORGANIC FIBER PROTECTIVE MAT, HALF INCH LAYER OF CHOPPED STRAW, KNITTED INTO A RUGGED MAT WITH A THIN NETTING OF PHOTODEGRADABLE POLYPROPYLENE. SECURE MAT TO SLOPE WITH 6" STEEL U–SHAPED STABLES, 2 STAPLES PER SQUARE YARD, OR AS PER MANUFACTURER'S INSTRUCTIONS.
9. STREAM REACHES ON–SITE AND DOWNSTREAM OF CONSTRUCTION SHALL NOT HAVE SUBSTANTIAL VISIBLE CONTRAST RELATIVE TO COLOR, TASTE, ODOR, TURBIDITY AND SEDIMENT DEPOSITION FROM THE REACHES UPSTREAM OF THE CONSTRUCTION ACTIVITY.
10. VEHICULAR ACCESS POINTS SHALL BE MONITORED AND INSPECTED AT THE SAME FREQUENCY AS EROSION CONTROL FEATURES TO INSURE THAT DEPOSITS OF SAND, SILT OR OTHER MATERIAL IS NOT BEING DEPOSITED ON PUBLIC ROADWAYS. IN THE EVENT ANY SIGNIFICANT DEPOSITS OCCUR THEY SHALL BE CLEANED UP IMMEDIATELY.
11. KEEP ALL CONSTRUCTION EQUIPMENT, TOPSOIL STOCKPILES AND ANY TEMPORARY/PERMANENT GRAVEL AREAS OFF FUTURE SEPTIC AREAS.

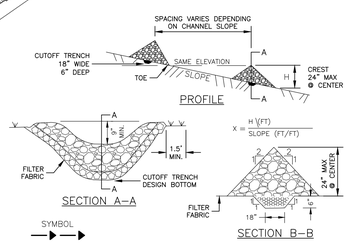
SEQUENCE OF CONSTRUCTION ACTIVITIES:

1. CONSTRUCT TEMPORARY CONSTRUCTION EXITS AT LOCATION SHOWN.
2. INSTALL PERMETER SILT FENCES AND TEMPORARY SEDIMENT BASIN IN THE LOCATIONS SHOWN AND OTHER LOCATIONS AS NECESSARY TO STABILIZE THE SITE.
3. BEGIN CLEARING AND GRUBBING OPERATIONS. CLEARING AND GRUBBING SHALL BE DONE ONLY IN AREAS WHERE EARTHWORK WILL BE PERFORMED AND ONLY IN AREAS WHERE BUILDING IS PLANNED TO COMMENCE WITHIN 14 DAYS AFTER CLEARING AND GRUBBING.
4. FREQUENT WATERING OF THE EXCAVATION AND FILL AREAS SHALL BE DONE TO MINIMIZE WIND EROSION.
5. COMMENCE SITE GRADING AND CONSTRUCTION.
6. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 14 DAYS SHALL BE TEMPORARILY SEEDED AND MATTED.
7. INSTALL PROTECTIVE SILT FENCES / BARRIERS AT THE LOCATIONS OF ALL GRATE INLETS, CURB INLETS, AND AT THE ENDS OF ALL EXPOSED STORM SEWER PIPES.
8. FINALIZE PAVEMENT SUBGRADE PREPARATION.
9. CONSTRUCT ALL CURB AND GUTTER, GUTTER INLETS, AREA INLETS, AND STORM SEWER MANHOLES, AS SHOWN ON THE PLANS. INLET PROTECTION BARRIERS MAY BE REMOVED TEMPORARILY FOR THIS CONSTRUCTION. PLACE REQUIRED RIPRAP AT LOCATIONS SHOWN ON THE PLANS.
10. REMOVE DROP INLET PROTECTION AROUND INLETS AND MANHOLES NO MORE THAN 48 HOURS PRIOR TO PLACING STABILIZED BASE COURSE.
11. INSTALL BASE MATERIAL AS REQUIRED FOR PAVEMENT.
12. CARRY OUT FINAL GRADING AND SEEDING AND PLANTING
13. REMOVE SILT FENCING / STRAW BARRIERS ONLY AFTER ALL PAVING IS COMPLETE AND EXPOSED SURFACES ARE STABILIZED.
14. REMOVE TEMPORARY CONSTRUCTION EXITS ONLY PRIOR TO PAVEMENT CONSTRUCTION IN THESE AREAS (THESE AREAS ARE TO BE PAVED LAST).

SOIL RESTORATION:

AS PER CHAPTER 5 OF THE NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL, SOIL RESTORATION IS REQUIRED ON THIS SITE IN ALL NON–IMPERVIOUS AREAS ONCE FINAL SUBGRADE ELEVATION IS ACHIEVED. IN AREAS OF CUT OR FILL THE SOILS SHALL BE AERATED AND 6 INCHES OF TOPSOIL SHALL BE APPLIED. IN AREAS OF HEAVY CONSTRUCTION TRAFFIC (ESPECIALLY IN AREAS 5 TO 25 FEET FROM BUILDING, BUT NOT WITHIN 5 FEET OF FOUNDATION WALLS) THE FOLLOWING RESTORATION MUST BE APPLIED:

1. APPLY 3 INCHES OF COMPOST OVER SUBSOIL.
2. TILL COMPOST INTO SUBSOIL TO A DEPTH OF AT LEAST 12 INCHES USING A CAT–MOUNTED RIPPER, TRACTOR–MOUNTED DISC, OR TILLER, MIXING, AND CIRCULATING AIR AND COMPOST INTO SOIL.
3. ROCK–PICK UNTIL UPLIFTED STONE/ROCK MATERIALS OF 4 INCHES AND LARGER SIZE ARE CLEANED OFF THE SITE.
4. APPLY TOPSOIL TO A DEPTH OF 6 INCHES
5. VEGETATE AS REQUIRED BY APPROVED PLAN.

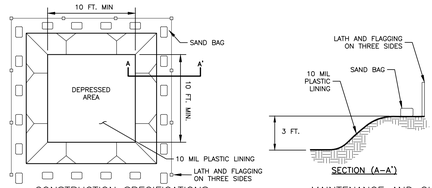


2/11 CHECK DAM
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. STONE WILL BE PLACED ON A FILTER FABRIC FOUNDATION TO THE LINES, GRADES AND LOCATIONS SHOWN IN THE PLAN.
2. SET SPACING OF CHECK DAMS TO ASSUME THAT THE ELEVATIONS OF THE CREST OF THE DOWNSTREAM DAM IS AT THE SAME ELEVATION OF THE TOW OF THE UPSTREAM DAM.
3. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND THE DITCH BANKS TO PREVENT CUTTING AROUND THE DAM.
4. PROTECT THE CHANNEL DOWNSTREAM OF THE LOWEST CHECK DAM FROM SCOUR AND EROSION WITH STONE OR LONER AS APPROPRIATE.
5. ENSURE THAT CHANNEL APPURTENANCES SUCH AS CULVERT ENTRANCES BELOW CHECK DAMS ARE NOT SUBJECT TO DAMAGE OR BLOCKAGE FROM DISPLACED STONE.
6. MAXIMUM DRAINAGE AREA 2 ACRES.

2/11 EROSION CONTROL BLANKET
NOT TO SCALE



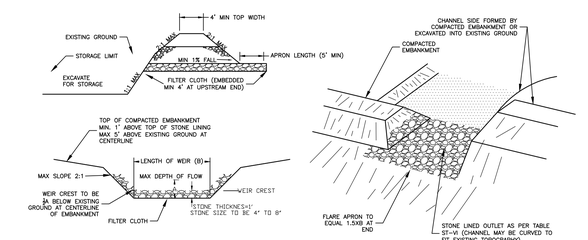
3/11 CONCRETE WASHOUT FACILITY
NOT TO SCALE

CONSTRUCTION SPECIFICATIONS

1. CONCRETE WASHOUT FACILITY SHALL BE LOCATED A MINIMUM OF FIFTY FEET (50') FROM SENSITIVE AREAS.
2. THE BASIN DIMENSIONS DEPICTED ABOVE ARE REQUIRED MINIMUMS. CONCRETE WASHOUT FACILITY SHALL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE ENERATED BY WASHOUT OPERATIONS. (APPROXIMATELY 60 GALLONS OF WASTE AND WATER PER TRUCK).
3. PLASTIC LINING MATERIAL SHALL BE A MINIMUM 10 MIN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
4. WASHOUT FACILITY MUST BE CLEANED, OR NEW FACILITES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL.

MAINTENANCE AND CLEANING

1. DO NOT DISCHARGE LIQUID OR SLURRY TO WATERWAYS, STORM DRAINS OR DIRECTLY ONTO GROUND
2. DO NOT USE SANITARY SEWER WITHOUT LOCAL APPROVAL.
3. PLACE A SECURE NON COLLAPSING, NON–WATER COLLECTING COVER OVER THE FACILITY PRIOR TO PREDICTED WET WEATHER TO PREVENT ACCUMULATION AND OVERFLOW.
4. REMOVE AND DISPOSE OF HARDEN CONCRETE AND RETURN THE STRUCTURE TO A FUNCTIONAL STATE.
5. INSPECT THE WASHOUT FACILITY FOR SIGNS OF WEAKENING OR DAMAGE AND REPAIR AS NESSESARY(RELINE THE STRUCTURE WITH NEW POLY SHEETING AFTER EACH CLEANING).



CONSTRUCTION SPECIFICATIONS

1. THE AREA UNDER EMBANKMENT SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED
2. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER–SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED. MAXIMUM HEIGHT OF EMBANKMENT SHALL BE 5 FEET, MEASURED AT CENTERLINE OF EMBANKMENT.
3. ALL FILL SLOPES SHALL BE 2:1 OR FLATTER, CUT SLOPES 1:1 OR FLATTER
4. EXCAVATION OF THE TOP OF ANY DIKE DIRECTING WATER INTO TRAP MUST EQUAL OR EXCEED THE HEIGHT OF THE EMBANKMENT
5. STORAGE AREA PROVIDED SHALL BE FIGURED BY SUBTRACTING THE VOLUME AVAILABLE BEHIND THE OUTLET CHANNEL UP TO AN ELEVATION OF ONE (1) FOOT BELOW THE LEVEL WEIR CREST
6. FILTER CLOTH SHALL BE PLACED OVER THE BOTTOM AND SIDES OF THE OUTLET CHANNEL PRIOR TO TO PLACEMENT IN STONE. SECTIONS OF FABRIC MUST OVERLAP AT LEAST 1 FOOT WITH SECTION NEAREST THE ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNELS.
7. STONE USED UN THE OUTLET CHANNEL SHALL BE 4 TO 8 INCH RIP–RAP. TO PROVIDE A FILTERING EFFECT, A LAYER OF FILTER CLOTH SHALL BE EMBEDDED 1–FOOT WITH SECTION NEAREST ENTRANCE PLACED ON TOP. FABRIC SHALL BE EMBEDDED AT LEAST 6 INCHES INTO EXISTING GROUND AT ENTRANCE OUTLET CHANNEL.
8. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO ½ THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND IN SUCH AN MANNER IT WILL NOT ERODE.
9. THE STRUCTURE SHALL BE REPAIRED AFTER EACH RAIN AND AS NEEDED
10. CONSTRUCTION OPERATIONS SHALL BE CARRIED OUT IN SUCH A MANNER EROSION AND WATER POLLUTION ARE MINIMIZED
11. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN DRAINAGE AREA HAS BEEN PROPERLY STABILIZED
12. DRAINAGE FOR THIS AREA IS LIMITED TO 15 ACRES OR LESS

DESIGN CALCULATIONS (SMA 1/SMA2)

CONTRIBUTING AREA = 8.7/5.5 ACRES
MIN SIZE = 3,600 CF/ACRE
MIN SIZE = **31,320 CF/19,800 CF**

CONTRIBUTING AREA (ACRES)	DEPTH OF CHANNEL (A) (FT)	LENGTH OF WEIR (B) (FT)
1	1.5	4.0
2	1.5	5.0
3	1.5	6.0
4	1.5	10.0
5	1.5	12.0
6	1.5	14.0
7	1.5	16.0
8	2.0	10.0
9	2.0	10.0
10	2.0	12.0

6/11 STONE OUTLET SEDIMENT TRAP
NOT TO SCALE

FOR MUNICIPAL APPROVAL ONLY - NOT INTENDED FOR CONSTRUCTION

ENVIRONMENTAL DESIGN PARTNERSHIP, LLP.
300 Route 146 Clifton Park, New York 12065
(518) 371-0421 edpllp.com

TAX MAP No: 88.-4-18, 88.-4-37.12, 88.00-4-20
OCTOBER 2, 2024

SITE PLANS FOR SUNSET BAY RESORT EXPANSION

SUNSET BAY RV PARK INC.

PARADISE POINT ROAD
TOWN OF MAYFIELD
FULTON COUNTY, NEW YORK

DRAWN BY	EMM
CHECKED BY	TJM
EDP PROJECT NUMBER	14197

REVISION	DATE	BY
REVISIONS PER REGULATORY AGENCY COMMENTS	02/12/25	EMM

SCALE: 1" = 100'

NOT FOR CONSTRUCTION

SHEET TITLE: EROSION AND SEDIMENT CONTROL PLAN

SHEET: 11 of 27

C:\WORKFILES\Environmental Design Partnership\Shared Files - Documents\0 A-Z\ALTON\MAYFIELD\Paradise Point Road\353 SUNSET BAY\05-dwg\Detailed\SHEETS\09_FORS-SUNSET.dwg Feb 12, 2025 11:05:52AM

SECTION 3

Federal, State or Local Notice of Intent (NOI)

NYSDEC NOI Acknowledgement Letter - Pending

NOI for coverage under Stormwater General Permit for Construction Activity

version 1.44

(Submission #: HQ7-2VQQ-HQRT8, version 1)

Details

Originally Started By	Brandon Ferguson
Alternate Identifier	Sunset Bay RV Park Extension
Submission ID	HQ7-2VQQ-HQRT8
Submission Reason	New
Status	Draft

Form Input

Owner/Operator Information

The previous version of the Construction General Permit (CGP), GP-0-20-001, expired on January 28, 2025, and therefore this GP-0-20-001 eNOI form cannot be used to obtain CGP coverage.
Instead, the GP-0-25-001 eNOI form must be used to obtain coverage under the currently effective CGP, GP-0-25-001, which is effective as of January 29, 2025, with an expiration date of January 28, 2030. In nForm, the name of the GP-0-25-001 eNOI that must be used is: Construction General Permit (CGP) Electronic Notice of Intent (eNOI) GP-0-25-001
Please see the CGP Webpage for further information: https://dec.ny.gov/environmental-protection/water/water-quality/stormwater/construction-activity-permit

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
Sunset Bay RV Park Inc.

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

Owner/Operator Contact Person First Name
Becker

Owner/Operator Mailing Address
61 Elmwood Ave #138

City
Gloversville

State
NY

Zip
12078

Phone
5183325960

Email
cvh76@live.com

Federal Tax ID
NONE PROVIDED

> 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
Sunset Bay RV Park Extension

Street Address (Not P.O. Box)
Paradise Point Rd

Side of Street
North

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

State
NY

Zip
12117

DEC Region
5

> 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
FULTON

Name of Nearest Cross Street
NYS Route 30

Distance to Nearest Cross Street (Feet)
0

Project In Relation to Cross Street
East

Tax Map Numbers Section-Block-Parcel
88.-4-18, 88.-4-20

Tax Map Numbers
88.-4-37.12

> 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
43.12679680591084,-74.24474400399914

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
Forest

Post-Development Future Land Use
Commercial

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)
57.1

Total Area to be Disturbed (acres)
47.5

Existing Impervious Area to be Disturbed (acres)
0.0

Future Impervious Area Within Disturbed Area (acres)
13.9

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

---

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

A (%)
0

B (%)
0

C (%)
65

D (%)
35

7. Is this a phased project?
Yes

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

Start Date
10/01/2025

End Date
10/01/2026

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Wetlands/The Great Sacandaga Lake

> 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?
Wetland/Federal Jurisdiction On Site (Answer 9b)
Lake Off Site

Other Waterbody Type Off Site Description
NONE PROVIDED

9b. If "wetland" was selected in 9A, how was the wetland identified?
Regulatory Map
Delineated by Consultant

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?
No

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?
NYSDOT

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 2015 or 2024 NYS Stormwater Management Design Manual?
Yes

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

SWPPP Preparer
Environmental Design Partnership, LLP

Contact Name (Last, First)
Mitchell Travis

Mailing Address
900 NYS Route 146

City
Clifton Park

State
NY

Zip
12065

Phone
5183717621

Email
tmitchell@edpllp.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
Check Dams
Construction Road Stabilization
Sediment Traps
Silt Fence
Stabilized Construction Entrance

Biotechnical
None

Vegetative Measures
Grassed Waterway
Seeding
Topsoiling

Permanent Structural
Land Grading
Riprap Slope Protection
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.
Preservation of Undisturbed Area

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.
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)
1.312

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)
0.47

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)
0.318

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)
0.842

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).
1.312

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)
2.98

CPv Provided (acre-feet)
4.42

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)
57.96

Post-Development (CFS)
37.65

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
141.29

Post-Development (CFS)
96.82

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
Sunset Bay RV Park Inc.

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.
Due to existing poor soils and steep slopes green infrastructure practices were unable to reduce 100% of the 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)
2.04

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
0.54

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)
4.88

Total Contributing Impervious Acres for Dry Swale (O-1)
1.03

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
6.73

Total Contributing Impervious Acres for Wet Pond (P-2)
NONE PROVIDED

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
0

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?
No

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?
NONE PROVIDED

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: _____

eNOI Submission Number: _____

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

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

Dutch Meadows Residential Community

Owner/Operator Information

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

RBC Glenville Development, 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.

First name | MI | Last Name

Signature | Date

SECTION 4

Federal, State or Local NPDES General Permit

SECTION 5

Certifications, Forms, Reports, and Daily Logs

STORMWATER POLLUTION PREVENTION PLAN
NOI PERMITTEE'S CERTIFICATION

FORM 1

Construction Site
SUNSET BAY RESORT EXPANSION
TOWN OF MAYFIELD, Fulton County, New York

STORMWATER POLLUTION PREVENTION PLAN DATED April 2025

NOI PERMITTEE'S CERTIFICATION:

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

NOI Permittee's
Designated Project Manager: _____

Signed: _____

Printed Name: _____

Position: _____

Date: _____

STORMWATER POLLUTION PREVENTION PLAN
CONTRACTOR'S CERTIFICATION LOG

FORM 2

Construction Site
SUNSET BAY PARK EXPNASION
<u>TOWN OF MAYFIELD, Fulton County, New York</u>

Company Name	
Address	
Contact Name	
Telephone Number	
Cell Phone/Pager	
Scope of Services	
Certification Date	

Company Name	
Address	
Contact Name	
Telephone Number	
Cell Phone/Pager	
Scope of Services	
Certification Date	

Company Name	
Address	
Contact Name	
Telephone Number	
Cell Phone/Pager	
Scope of Services	
Certification Date	

Designated Project Manager____________________

STORMWATER POLLUTION PREVENTION PLAN
CONTRACTOR'S/SUBCONTRACTOR'S CERTIFICATION
FORM 3

This form to be completed for each contractor listed on Form 2. Reproduce as needed

Construction Site

SUNSET BAY PARK EXPANSION

TOWN OF MAYFIELD, Fulton County, New York

CONSTRUCTION POLLUTION PREVENTION PROGRAM

DATED April 2025

CONTRACTOR'S CERTIFICATION:

"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."

The Contractor/Subcontractor further understands that the SWPPP and associated Erosion and Sediment Control Plans represent the **MINIMUM** erosion and sediment control measures that will be required to protect the site during construction. Additional erosion and sediment control measures will be necessary during construction. It will be the responsibility of Contractor/Subcontractor to implement all additional erosion and sediment control measures necessary to protect the site during construction.

CONTRACTOR:	**SUB**CONTRACTOR:
Name (Print): _____	Name (Print): _____
Signature: _____	Signature: _____
Date: _____	Date: _____
Title: _____	Title: _____
Company Name: _____	Company Name: _____
Address: _____	Address: _____
_____	_____
Phone: _____	Phone: _____

Elements of SWPPP Contractor/Subcontractor responsible for: _____

Name of Trained Contractor Responsible for SWPPP Implementation: _____

Title of Trained Contractor Responsible for SWPPP Implementation: _____

FORM 4
TOWN OF MAYFIELD – SUNSET BAY RESORT EXPANSION
SWPPP # _____
This form to be completed by Contractor's designated inspector at least weekly. Reproduce as needed.

SWPPP INSPECTION REPORTS

Date _____

Weather and Soil Conditions
Weather Conditions: _____
Soil Conditions: Dry [ ] Wet [ ] Saturated [ ] Snow Covered [ ] Frozen [ ]

Maintaining Water Quality

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

Housekeeping
1. General Site Conditions

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

2. Temporary Stream Crossing

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

Runoff Control Practices
1. Excavation Dewatering

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

2. Water Bar

Yes	No	NA	
[ ]	[ ]	[ ]	Installed per plan with vehicle crossings stabilized with gravel.
[ ]	[ ]	[ ]	Outlet located on undisturbed soil or lined with riprap.
[ ]	[ ]	[ ]	Bar height is 12-inch minimum from bottom of channel with minimum base width of 6-foot.

3. Interceptor Dikes and Swales

Yes	No	NA	
[ ]	[ ]	[ ]	Installed per plan with minimum side slopes 1V:3H or flatter.
[ ]	[ ]	[ ]	Stabilized by geotextile fabric, seed, or mulch with no erosion occurring.
[ ]	[ ]	[ ]	Sediment-laden runoff directed to sediment trapping structure.

SWPPP INSPECTION REPORT Page 2 of _____
Date _____

4. Stone Check Dam

Yes No NA

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

5. Rock Outlet Protection

Yes No NA

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

Soil Stabilization

1. Topsoil and Spoil Stockpiles

Yes No NA

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

2. Revegetation

Yes No NA

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

Sediment Control Practices

1. Stabilized Construction Entrance

Yes No NA

[ ] [ ] [ ] Stone is clean enough to effectively remove mud from vehicles.
[ ] [ ] [ ] Installed per standards and specifications?
[ ] [ ] [ ] Does all traffic use the stabilized entrance to enter and leave site?
[ ] [ ] [ ] Is adequate drainage provided to prevent ponding at entrance?

2. Silt Fence

Yes No NA

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

Sediment accumulation is _____% of design capacity.

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

Yes No NA

[ ] [ ] [ ] Installed concrete blocks lengthwise so open ends face outward, not upward.
[ ] [ ] [ ] Placed wire screen between No. 3 crushed stone and concrete blocks.
[ ] [ ] [ ] Drainage area is one acre or less.
[ ] [ ] [ ] Excavated area is 900 cubic feet.
[ ] [ ] [ ] Excavated side slopes should be 2:1.
[ ] [ ] [ ] 2" x 4" frame is constructed and structurally sound.
[ ] [ ] [ ] Posts three-foot maximum spacing between posts.
[ ] [ ] [ ] Fabric is embedded 1 to 1.5 feet below ground and secured to frame/posts with staples at maximum eight inch spacing.
[ ] [ ] [ ] Posts are stable, fabric is tight and without rips or frayed areas.

Sediment accumulation _____% of design capacity.

SWPPP INSPECTION REPORT Page 3 of _____
Date _____

4. Temporary Sediment Trap

Yes	No	NA	
[ ]	[ ]	[ ]	Outlet structure is constructed per the approved plan or drawing.
[ ]	[ ]	[ ]	Geotextile fabric has been placed beneath rock fill.

Sediment accumulation is _____% of design capacity.

5. Temporary Sediment Basin

Yes	No	NA	
[ ]	[ ]	[ ]	Basin and outlet structure constructed per the approved plan.
[ ]	[ ]	[ ]	Basin side slopes are stabilized with seed/mulch.
[ ]	[ ]	[ ]	Drainage structure flushed and basin surface restored upon removal of sediment basin facility.

Sediment accumulation is _____% of design capacity.

Dust Control Practices

1. Haul Road and Current Work Areas

Yes	No	NA	
[ ]	[ ]	[ ]	Are all traffic surface areas sufficiently treated to prevent fugitive dust?
[ ]	[ ]	[ ]	Are any areas of site's non-traffic and work area experiencing wind erosion?
[ ]	[ ]	[ ]	Are there any disturbed areas in need of temporary seed and mulch to protect surface from wind erosion?
[ ]	[ ]	[ ]	Is watering truck on-site?
[ ]	[ ]	[ ]	Is dust visible in air at any location of the site?

Note: Not all erosion and sediment control practices are included in this listing. Add additional pages to this list as required by site-specific design.
Construction inspection checklists for post-development stormwater management practices can be found in Appendix F of the New York Stormwater Management Design Manual.

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

_____

_____

_____

Description of areas that are disturbed at the time of the inspection and areas that have been stabilized (temporary and/or final) since the last inspection (see Page 5 for Sketch). _____

_____

_____

_____

FORM 4
TOWN OF MAYFIELD – SUNSET BAY RESORT EXPANSION
SWPPP # _____
This form to be completed by Contractor's designated inspector at least weekly. Reproduce as needed.

SWPPP INSPECTION REPORT

Date _____

ADDITIONAL COMMENTS*:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____ _____
Inspector (print name and title) Date and Time of Inspection

_____ _____
Qualified Professional (print name) Qualified Professional Signature

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

***Attach photographs of practices identified as needing corrective actions.**

NOTE: IN ACCORDANCE WITH PART IV.C.4 OF THE SPDES GENERAL PERMIT (GP-0-20-001), THE QUALIFIED INSPECTOR MUST NOTIFY THE OWNER OR OPERATOR AND APPROPRIATE CONTRACTOR OF ANY CORRECTIVE ACTIONS THAT NEED TO BE TAKEN. THE CONTRACTOR SHALL BEGIN IMPLEMENTING THE CORRECTIVE ACTIONS WITHIN ONE (1) BUSINESS DAY OF THIS NOTIFICATION AND SHALL COMPLETE THE CORRECTIVE ACTIONS IN A REASONABLE TIME FRAME.

STORMWATER POLLUTION PREVENTION PLAN
MODIFICATION REPORT
FORM 5

This form to be used only when Contractor's designated inspector believes changes to the SWPPP and/or Erosion and Sediment control plans is warranted. For example, additional erosion control measures needed or removal of specific control measures can be done without adverse impact. This form must be approved by Designated Project Manager prior to implementation.

Construction Site
SUNSET BAY RESORT EXPANSION
TOWN OF MAYFIELD, Fulton County, New York

CHANGES REQUIRED FOR STORMWATER POLLUTION PREVENTION PLAN

To:	**Designated Project Manager**	**Date:**	
Address:			
Telephone:			
Facsimile:			
Sent Via:	☐ **Facsimile**	☐ **E-mail**	☐ **US Mail**

INSPECTOR: _____ DATE: _____
(Print)

_____
(Signature)

QUALIFICATIONS OF INSPECTOR: _____

CHANGES REQUIRED TO THE STORMWATER POLLUTION PREVENTION PLAN: _____

_____

_____

REASONS FOR CHANGES: _____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

APPROVED BY DESIGNATED PROJECT MANAGER _____ DATE: _____

STORMWATER POLLUTION PREVENTION PLAN
RECORD OF STABILIZATION AND CONSTRUCTION ACTIVITIES
FORM 6

Construction Site

SUNSET BAY RESORT EXPANSION

TOWN OF MAYFIELD, Fulton County, New York

A record of dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be maintained until final site stabilization is achieved and the Notice of Termination is filed. *Reproduce copies of this form as needed.*

MAJOR GRADING, CONSTRUCTION, OR STABILIZATION ACTIVITIES

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Description of Activity: _____

Begin Date:_____ Site Contractor: _____

Location: _____

End Date: _____

Designated Project Manager_____

STORMWATER POLLUTION PREVENTION PLAN
RECORD OF TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES
FORM 6A

Construction Site

SUNSET BAY RESORT EXPANSION

TOWN OF MAYFIELD, Fulton County, New York

A record of the timing of temporary erosion and sediment control practices to be implemented, including the timing of initial placement and the duration that each practice should remain in place. The record may reflect the actual date of planned installation or the specific construction activity with which it will be associated. The timing of removal may reflect an actual date or the length of time over which the practice will be implemented.

TEMPORARY EROSION AND SEDIMENT CONTROL PRACTICES

Description of Practice: ______________________________

Date/Timing of Initial Placement:__________ Site Contractor: ______________________

Location: ______________________________

Projected Date/Timing of Removal: ______________________________

Description of Practice: ______________________________

Date/Timing of Initial Placement:__________ Site Contractor: ______________________

Location: ______________________________

Projected Date/Timing of Removal: ______________________________

Description of Practice: ______________________________

Date/Timing of Initial Placement:__________ Site Contractor: ______________________

Location: ______________________________

Projected Date/Timing of Removal: ______________________________

Description of Practice: ______________________________

Date/Timing of Initial Placement:__________ Site Contractor: ______________________

Location: ______________________________

Projected Date/Timing of Removal: ______________________________

Description of Practice: ______________________________

Date/Timing of Initial Placement:__________ Site Contractor: ______________________

Location: ______________________________

Projected Date/Timing of Removal: ______________________________

Designated Project Manager______________________

YEAR 20___ **STORMWATER POLLUTION PREVENTION PLAN** **FORM 7**

PROJECT RAINFALL LOG (to be completed by Contractor)

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Day												
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												
29												
30												
31												
PM Initials												

STORMWATER POLLUTION PREVENTION PLAN

FINAL STABILIZATION CERTIFICATION /NOTICE OF TERMINATION CHECKLIST

FORM 8

This form is to be completed by Contractor and submitted to Designated Project Manager for approval only afterContractor believes all work regulated by SWPPP is complete.

Construction Site
SUNSET BAY RESORT EXPANSION
TOWN OF MAYFIELD, Fulton County, New York

1. ☐ **All soil disturbing activities are complete.**

2. ☐ **Temporary Erosion and Sediment Control Measures have been removed or will be removed at the appropriate time.**

3. ☐ **All areas of the Construction Site not otherwise covered by a permanent pavement or structure have been stabilized with a uniform perennial vegetative cover with a density of 85% or equivalent measures have been employed.**

CONTRACTOR'S CERTIFICATION:

"I certify under penalty of law that all storm water discharges associated with industrial activity from the identified project that are authorized by NPDES general permit have been eliminated and that all disturbed areas and soils at the construction site have achieved Final Stabilization and all temporary erosion and sediment control measures have been removed or will be removed at the appropriate time."

Company Name _____

Name (Print) _____

Signature _____

Date _____

APPROVED BY DESIGNATED PROJECT MANAGER_____ DATE: _____

SECTION 6

Supplemental Information

1. **Stormwater Management Narrative – Appendices and Figures Available Upon Request**

2. **NYSDEC Environmental Resource Mapper**

3. **Endangered or Threatened Species Information**

4. **SHPO Correspondence**

5. **Soil Report**

ENVIRONMENTAL DESIGN
PARTNERSHIP, LLP.
Shaping the physical environment

900 New York 146 Clifton Park, NY 12065
(P) 518.371.7621 (F) 518.371.9540 edpllp.com

STORMWATER MANAGEMENT NARRATIVE

PROPOSED

SUNSET BAY RV PARK EXTENSION

TOWN OF MAYFIELD, NY

Prepared by:
Environmental Design Partnership
Clifton Park, NY 12065

October 2024

Revised: April 2025

1.0 INTRODUCTION

Sunset Bay RV Park Inc. is proposing an extension of their existing RV park on an existing ±57.09-acre parcel of land located south of the existing park and enclosed by NYS Route 30, Paradise Point Rd and private land to the southwest in the Town of Mayfield, New York. The proposed development will consist of 357 RV Sites, restrooms, and recreation areas. The proposed development will result in soil disturbances up to ±40.8 acres and the addition of approximately ±13.9 acres of impervious surface

A stormwater management system will be designed to provide reduction in the stormwater runoff rates and volumes in accordance with the NYSDEC Stormwater Management Design Manual. The proposed stormwater management system will include a vegetated filter strip, 5 bioretention areas and 2 extended detention ponds with a total storage volume on the order of 3.92-acre feet.

This narrative presents a review of the design concepts and parameters of the stormwater management system for the proposed development. The purpose of the stormwater management narrative is to assure that changes in the surface runoff characteristics, as a result of the proposed construction, will not adversely impact adjacent or downstream properties. On-site stormwater management will be implemented in accordance with the NYSDEC Stormwater Management Design Manual.

2.0 EXISTING SITE CONDITIONS

The existing site consists of mostly wooded areas with some open field areas. The topography of the site in the area of the proposed development ranges from 1% to 33% (in existing mine area) with the site draining to either existing offsite wetland areas or to the Great Sacandaga Lake.

2.1 Soil and Groundwater Conditions

The USDA Natural Resources Conservation Service Soil Survey identifies the four primary soil groups within the area of the proposed development to be Galway Loam, Georgia Silt Loam, Farmington Loam, and Angola Silt Loam.

The Galway Loam series generally consists of shallow but generally well drained soils. The Soil Survey identifies this soil series as Hydrologic Soil Group (HSG) “C”.

The Georgia Silt Loam series generally consist of moderately deep and well drained soils. The Soil Survey identifies this soil series as Hydrologic Soil Group (HSG) “D”.

The Farmington Loam series generally consist of shallow and well drained soils. The Soil Survey identifies this soil series as Hydrologic Soil Group (HSG) “D”.

The Angola Silt Loam series generally consist of shallow and generally poor draining soils. The Soil Survey identifies this soil series as Hydrologic Soil Group (HSG) “D”.

Soil test pits are scheduled to be conducted once the location of the stormwater management areas are finalized.

3.0 PREDEVELOPMENT STORMWATER ANALYSIS

The existing conditions, in the area to be disturbed as a result of the proposed construction, were analyzed using Applied Microcomputer Systems' "Hydrocad" computer modeling program. The HydroCAD stormwater modeling program employs the United States Department of Agriculture's Soil Conservation Service (SCS) Technical Release 20 (TR-20) method for stormwater analysis. Using this modeling technique, the site is divided into "subcatchments" that represent specific areas contributing stormwater runoff to an existing, or proposed drainage feature. The subcatchments typically flow through "reaches" (i.e., swales, channels, or pipes) that convey the stormwater to storm basins or discharge areas.

A HydroCAD model was used to establish the predevelopment runoff characteristics of the site with the results included as Appendix B. The existing site was modeled as 3 subcatchments (Figure 2) and the total predevelopment stormwater discharge was evaluated for several design storms.

Table 1 presents a summary of the predevelopment stormwater peak discharge for the 1 year, 10 year, and 100 year design storm events. As will be discussed in subsequent sections, the post development stormwater discharge rate has been limited to the predevelopment discharge rate for the 1-year, 10-year, and 100-year storm events.

Table 1: Predevelopment Stormwater Peak Discharge Rate

Storm Event	Analysis Point A	Analysis Point B	Analysis Point C	Total (cfs)
1-Year (2.22")	1.48	8.62	7.67	17.77
10-Year (3.54")	4.28	28.95	24.73	57.96
100-Year (5.70")	9.80	71.45	60.04	141.29

The existing site consists of grassed fields and wooded areas with soils on site categorized as Hydrologic Soil Group (HSG) "C" or "D". The predevelopment Curve Number (CN) was established 71 or 78 for field areas, 73 or 79 for the wooded areas, 90 or 92 for existing RV lots and 98 for impervious areas including existing gravel roads and water surfaces.

4.0 STORMWATER MANAGEMENT PLANNING AND PRACTICE SELECTION

The site layout and stormwater design for this project was completed while taking into consideration the potential impacts on the site hydrology. Various measures were taken to help

ensure that the post-development hydrology of the site will closely resemble the predevelopment hydrology of the site.

The owner can choose to selectively clear the campsites in order to maximize the number of trees that can remain on the site between the camping areas where the proposed development is on existing grades.

Soil restoration has been called for throughout the site in accordance with Chapter 5 of the NYS Stormwater Management Design Manual. The soils on the site are classified as HSG D, therefore full soil restoration is required in areas of cut or fill. In high traffic areas that are to remain pervious, especially around the proposed building and equipment storage areas, the soils shall be fully restored by tilling compost into the sub-soils prior to applying topsoil and vegetating. By applying these methods to the soils on the site the original properties and porosity of the soils will be recovered, which will allow for an improvement in the soil infiltration as well as lawn and landscaping sustainability.

Stormwater management on the site is designed to be filtration and attenuation. A vegetated filter strip and a dry swale are considered runoff reduction techniques by the NYSDEC Stormwater Management Design Manual and bioretention areas are considered a standard SMP with RRv Capacity. By using a filter strip and bioretention areas that are located relatively close to the source of runoff, the post-development hydrology will more closely match the predevelopment hydrology.

5.0 POST REDEVELOPMENT STORMWATER ANALYSIS

Site improvements to the property will consist of installation of gravel roadway and gravel pads for the RV sites as well as the construction of the accessory buildings. Stormwater management practices have been designed to provide attenuation and filtration of stormwater runoff from the proposed impervious surfaces on the site. The proposed stormwater management system shall consist of one (1) filter strip/riparian buffer, one (1) dry swale, five (5) bioretention areas and two (2) extended detention ponds. Other stormwater treatment options were considered but were ultimately not utilized as explained in the following table:

Table 2: Non-Feasible Green Infrastructure Practices

Green Infrastructure Practice	Reason use is not feasible
Conservation of Natural Areas	Existing natural areas on site will be conserved to the greatest extent possible, however the added reduction is minimal. Areas outside of the limits of disturbance have not been included in stormwater treatment calculations unless the proposed hydrology permits.
Porous Pavement	Porous Pavement is not economically feasible on this site.
Tree Planting/Tree box	Trees will be saved on the site as possible to conserve the natural areas. Trees will also be planted to maintain a buffer from the roadway and viewshed to the proposed site, though the resulting runoff reduction value for adding additional trees is minimal.

Disconnection of Rooftop Runoff	Due to the location of all proposed permanent buildings on the site the disconnection of rooftop runoff is not feasible.
Vegetated Swales	The general slope of the site is greater than the maximum slope allowable for vegetated swales to account for water treatment. For areas where the slope does not exceed the maximum vegetated swales have been utilized to account for pretreatment for other proposed practices.
Stream Daylighting	An improved stream crossing is proposed but will not affect water treatment for this site.
Rain Gardens	Rain gardens are not economically feasible for this site. Bioretention areas have been proposed for larger subcatchments.
Stormwater Planters	The proposed practices were deemed more economically feasible and effective as opposed to stormwater planters. Additionally, they require less maintenance.
Rain Barrels/Cisterns	Rain Barrels/Cisterns would require the ability to use the water between storm events which is not feasible for this project type.
Green Roof	Green roofs are not economically feasible for this site and would have minimal impact for overall runoff reduction as the majority of impervious area is comprised of gravel roads.
Infiltration Trench	Due to the poor existing infiltrating soils on site infiltration devices are not feasible.
Infiltration Basin	Due to the poor existing infiltrating soils on site infiltration devices are not feasible.
Dry Well	Due to the poor existing infiltrating soils on site infiltration devices are not feasible.
Underground Infiltration System	Due to the poor existing infiltrating soils on site infiltration devices are not feasible.
Infiltration Bioretention	Due to the poor existing infiltrating soils on site infiltration devices are not feasible.
Bioslope	Existing steep slopes on the site exceed the maximum slope for this practice. Where slopes are gradual a filter strip/riparian buffer was utilized due to the proximity to existing wetlands and to mimic the existing hydrology.

5.1 Sheet Flow to Riparian Buffer/Vegetated Filter Strip

Stormwater Management Area #8 has been designed to filter and treat runoff from the proposed roadways as well as from the contributing upstream RV sites and buildings. Runoff will sheet flow over the proposed practice facilitated by a 24” x 24” gravel diaphragm. Stormwater runoff will be filtered through the buffer area before entering the existing wetlands mimicking the existing hydrology in the area.

5.2 Bioretention Areas

Stormwater Management Areas #1, 4, 5, 6 and 7 have been designed to attenuate and treat runoff from the proposed roadways as well as from the contributing upstream RV sites and buildings. Runoff will sheet flows and be collected in shallow grassed swales and conveyed to the bioretention areas.

The NYSDEC stormwater Management Design Manual allows for bioretention areas to be used for potions of commercial development with less than 5 acres of contributing area. Stormwater modeling indicates that the basins will be able to attenuate and treat the runoff from water quality design storm events while bypassing the large storm events including the 100-year design storm event. The following Table provides a summary of the bioretention areas.

Table 2: Bioretention Area Summary

SMA I.D.	Contributing Area (acres)		Storage Volume (cf)		
	Area	Imp Area	Forebay	Basin	Total
1	1.90	0.66	0*	7,595	7,595
4	2.93	1.31	2,500	16,615	19,115
5	4.26	1.04	0*	13,350	13,350
6	1.71	1.04	2,010	7,025	9,035
7	2.87	0.99	1,550	19,445	20,995

**SMA#1 and #5 do not have forebays. The contributing WQv will be pretreated via vegetated swales*

5.3 Extended Detention Ponds

Stormwater Management Areas #2 and 3 have been designed to attenuate and treat runoff from the proposed roadways as well as from the contributing upstream RV sites and buildings. Runoff will sheet flows and be collected in shallow grassed swales and conveyed to the wet ponds.

Stormwater modeling indicates that the basins will be able to attenuate and treat the runoff from storm events up to and including the 100-year design storm event without reaching the emergency overflow elevations. The following Table provides a summary of the wet ponds.

Table 3: Pond Summary

SMA I.D.	Contributing Area (acres)		Storage Volume (cf)		
	Area	Imp Area	Forebay	Basin	Total
2	11.38	4.08	3,500	59,850	63,350
3	7.10	2.65	2,290	40,880	43,170

5.4 Dry Swale

Stormwater Management Area #9 has been designed to filter and treat runoff from the proposed roadways as well as from the contributing upstream RV sites and buildings. Runoff will sheet

flow to the proposed practice pretreated through a gravel diaphragm. Stormwater runoff will be filtered through the filter media before entering an underdrain and outlets toward an existing wetland to maintain existing hydrology.

5.5 NYSDEC Stormwater Regulations

The proposed site is required to meet the standards of the NYSDEC Stormwater Management Design Manual (Design Manual). The Design Manual states that the proposed stormwater design must meet the criteria in the following sections for water quality, runoff reduction and water quantity.

5.5.1 Water Quality Volume (WQv)

In general, small storm events and the initial runoff from larger storm events are an environmental concern as this stormwater runoff typically contains roadway pollutants and thermal energy stored by the asphalt. In accordance with the NYS Stormwater Management Design Manual, this initial runoff is designated as the Water Quality Volume (WQ_v) and special attention is given to this volume of runoff to meet water quality objectives.

The NYS Stormwater Management Design Manual identifies several standard practices, such as the micropool extended detention basins that is acceptable for water quality treatment. These acceptable Stormwater Management Practices (SMPs) can capture and treat the full water quality volume (WQ_v), are capable of 80% TSS removal and 40% TP removal, have acceptable longevity in the field, and have pretreatment mechanism.

The water quality storage volume, WQ_v, is calculated as follows:

$$WQ_v = \frac{P \cdot R_v \cdot A}{12}$$

where: WQ_v = water quality volume (acre-feet)
P = 90% rainfall event number
R_v = 0.05+0.009(I), where I is percent impervious cover
A = site area (acres), impervious area used with I = 100%

Table 4: Required Water Quality Volume

SMA I.D.	P	R_v	A (acres)	Required WQ_v (cf)	Provided WQv (cf)
1	1.15	0.36	1.90	2,876	2,876
2		0.37	11.38	17,704	17,737
3		0.39	7.10	11,438	12,194
4		0.39	2.93	4,369	4,369
5		0.43	4.26	7,577	7,577
6		0.31	1.71	2,235	2,235

7		0.32	3.19	4,197	4,197
8		0.29	2.04	2,455	2,455
9		0.48	1.03	4,316	4,316

5.5.2 Runoff Reduction Volume (RRv)

The NYS Stormwater Design Manual specifies that the runoff shall be reduced by 100% of the site WQv using green infrastructure techniques and standard SMPs with RRv capacity. However, due to the poor soil conditions and steep slopes, the runoff cannot be reduced by 100%. The proposed stormwater design shall reduce the runoff by at least the minimum runoff reduction volume (RRv) of 13,580 cf. The proposed project area is on the order of 40.8 acres with a total proposed impervious area on the order of 13.9 acres (34%). This results in a total WQv of 57,168 cf. Runoff reduction will be provided via stormwater management practices with runoff reduction capacity. A summary of the calculations for the Runoff Reduction Volume and Water Quality Volume is attached in Appendix A.

The project proposes to filtrate a portion of the site WQv in the proposed bioretention areas as summarized the in the following table. Bioretention Areas are recognized by NYSDEC as standard stormwater management practices with RRV capacity.

Table 5: Runoff Reduction Summary

Runoff Reduction Technique	RRv (cf)	RRv (acre-feet)
Bioretention Areas	17,163	0.394
Filter Strip	2,455	0.056
Dry Swale	863	0.020
Total Site Reduction	**20,481**	**0.470**
Minimum RRv	**13,580**	**0.312**
% WQV	**36%**	**36%**

5.5.3 Channel Protection Volume (CPv)

In accordance with the NYS Stormwater Management Design Manual, stream channel protection, designed to protect stream channels from erosion, is accomplished by providing 24-hour extended detention of the one-year, 24-hour storm event. The Cp_v requirement is typically satisfied by providing additional storage above the water quality (WQ_v) volume.

The one-year storm event was analyzed using the HydroCAD stormwater modeling program (TR-20) under the post development drainage conditions shown on Figure 3. Using a one-year, 24-hour design storm of 2.22 inches the required Cp_v was calculated as presented in Appendix D showing all stormwater devices releasing the one-year storm over a 24 hours period.

5.5.4 Overbank Flood Control (Qp)

Overbank Flood Control Criteria has been established to limit the frequency and magnitude of out-of-bank flooding generated through changes in runoff characteristics as a result of increased impervious surface area. In accordance with the NYS Stormwater Management Design Manual, providing sufficient storage volume to attenuate the post development 10-year, 24-hour peak discharge rate to the equivalent pre-development discharge rate controls overbank flooding.

The 10-year design storm event was analyzed using the HydroCAD stormwater modeling program (TR-20) under the post-development drainage conditions shown on Table 5. Using a 10-year, 24-hour design storm of 3.54 inches, the micropool extended detention basins were designed with sufficient storage volume to limit the post-development 10-year, 24-hour peak discharge rate to the pre-development discharge rate. The following table presents the pre- and post-development discharge rates for the offsite discharge. As indicated, the post-development discharge rate is less than the pre-development rate as required.

Table 6: Overbank Flow Runoff Summary

Design Point	Predevelopment Runoff Rate (cfs)	Post-Development Runoff Rate (cfs)
A	4.28	0.24
B	28.95	13.79
C	24.73	24.07
Total	57.96	38.10

5.5.5 Extreme Flood Control (100-year)

In accordance with the NYS Stormwater Management Design Manual, the stormwater management system must attenuate the post development 100-year, 24-hour peak discharge rate to the predevelopment rate while providing safe passage of this storm event. The 100-year storm event was analyzed using the HydroCAD stormwater modeling program (TR-20) under the post-development drainage conditions shown in Table 6. Using a 100-year, 24-hour design storm of 5.70 inches, the micropool extended basins were designed with sufficient storage volume to limit the post-development 100-year, 24-hour peak discharge rate to the predevelopment discharge rate. The following table presents the pre and post-development discharge rates for the offsite discharge. As indicated, the post-development discharge rate is less than the predevelopment rate as required.

Table 7: Extreme Flow Runoff Summary

Design Point	Predevelopment Runoff Rate (cfs)	Post-Development Runoff Rate (cfs)
A	9.80	0.53

B	71.45	42.53
C	60.04	54.04
Total	141.29	97.10

6.0 SUMMARY

Development of the proposed property will change the stormwater drainage characteristics of the site; impervious area will be added, and the site will be re-graded to support the proposed improvements. Changes to the stormwater drainage characteristics of the site have been evaluated in accordance with the NYSDEC Stormwater Management Design Manual. The proposed stormwater management system will comply with the recommendations in these standards related to runoff volume and flow rate reduction.

Through the implementation of acceptable stormwater management practices, recommended by the NYS Stormwater Management Design Manual, the proposed project will not adversely affect adjacent or downstream properties.

Prepared by:

Benjamin Willson

Reviewed by:

Travis Mitchell, P.E.

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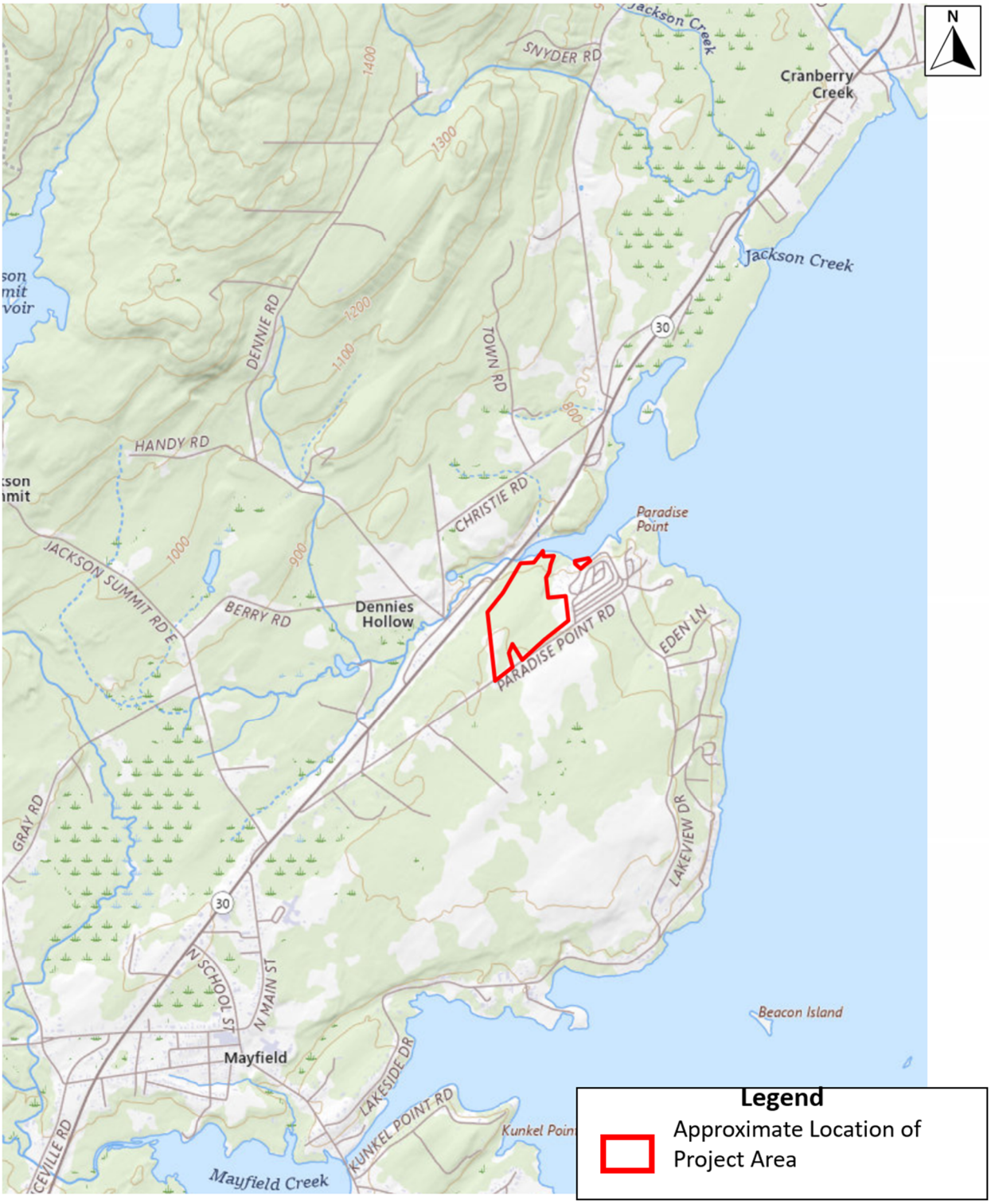

Figure 1: Site Location

Appendix A

USDA Soil Survey

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Fulton County, New York

September 11, 2024

Preface

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

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

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

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

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

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

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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Contents

How Soil Surveys Are Made

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

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

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

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

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

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

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

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

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

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

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

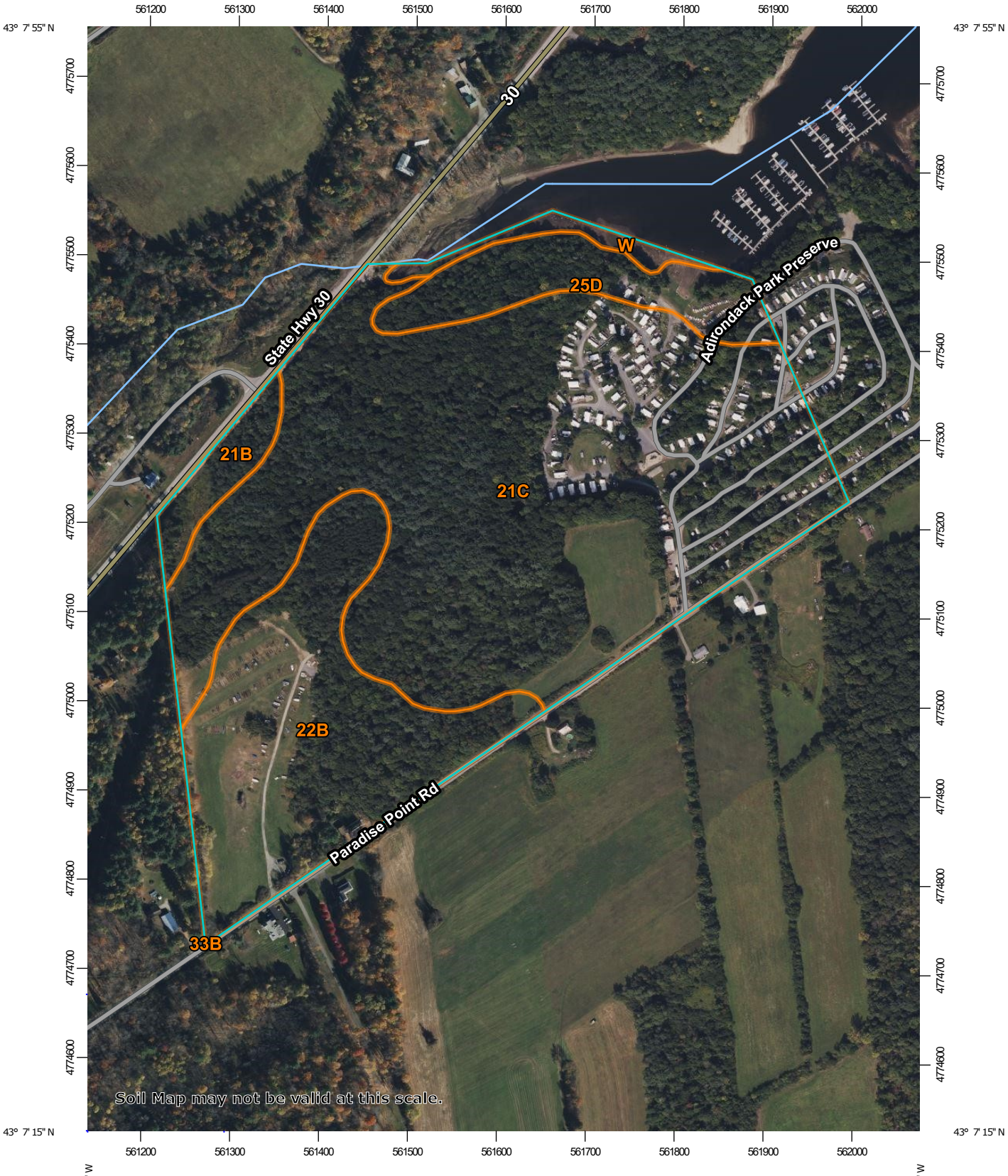
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

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

Custom Soil Resource Report
Soil Map



Map Scale: 1:6,030 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Fulton County, New York
Survey Area Data: Version 23, Sep 5, 2023

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

Date(s) aerial images were photographed: Sep 9, 2022—Oct 22, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
21B	Galway loam, 3 to 8 percent slopes	2.6	2.9%
21C	Galway loam, 8 to 15 percent slopes	57.6	64.1%
22B	Georgia silt loam, 3 to 8 percent slopes	21.3	23.7%
25D	Farmington loam, 3 to 25 percent slopes, very rocky	6.9	7.7%
33B	Angola silt loam, 0 to 8 percent slopes	0.0	0.0%
W	Water	1.5	1.6%
Totals for Area of Interest		**89.8**	**100.0%**

Map Unit Descriptions

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

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

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

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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

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

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

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

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

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

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

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

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

Fulton County, New York

21B—Galway loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9sbf
Elevation: 590 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Galway and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Galway

Setting

Landform: Till plains, ridges, benches
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 7 inches: loam
Bw1 - 7 to 16 inches: loam
Bw2 - 16 to 27 inches: fine sandy loam
2R - 27 to 37 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F144AY036NY - Semi-Rich Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Charlton
Percent of map unit: 8 percent
Hydric soil rating: No

Farmington
Percent of map unit: 6 percent
Hydric soil rating: No

Angola
Percent of map unit: 5 percent
Hydric soil rating: No

Lansing
Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed
Percent of map unit: 3 percent
Hydric soil rating: No

21C—Galway loam, 8 to 15 percent slopes

Map Unit Setting
National map unit symbol: 9sbg
Elevation: 590 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Farmland of statewide importance

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

Description of Galway

Setting
Landform: Ridges, benches
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile
Ap - 0 to 7 inches: loam
Bw1 - 7 to 16 inches: loam
Bw2 - 16 to 27 inches: fine sandy loam

2R - 27 to 37 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F144AY036NY - Semi-Rich Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Farmington

Percent of map unit: 6 percent
Hydric soil rating: No

Charlton

Percent of map unit: 5 percent
Hydric soil rating: No

Chatfield

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

Angola

Percent of map unit: 4 percent
Hydric soil rating: No

22B—Georgia silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9sbj
Elevation: 590 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 120 to 160 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Georgia and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Georgia

Setting

Landform: Till plains, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
BA - 8 to 12 inches: silt loam
Bw1 - 12 to 18 inches: loam
Bw2 - 18 to 24 inches: loam
BC - 24 to 32 inches: loam
C1 - 32 to 42 inches: loam
Cd2 - 42 to 60 inches: fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 40 to 60 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F144AY038NY - Semi-Rich Moist Till Uplands
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 7 percent
Hydric soil rating: No

Lansing

Percent of map unit: 5 percent
Hydric soil rating: No

Appleton
Percent of map unit: 5 percent
Hydric soil rating: No

Woodbridge
Percent of map unit: 5 percent
Hydric soil rating: No

Galway
Percent of map unit: 3 percent
Hydric soil rating: No

25D—Farmington loam, 3 to 25 percent slopes, very rocky

Map Unit Setting
National map unit symbol: 1hcx7
Elevation: 590 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition
Farmington, very rocky, and similar soils: 70 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Farmington, Very Rocky

Setting
Landform: Ridges, benches
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope, riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Shallow loamy till

Typical profile
Ap - 0 to 7 inches: loam
Bw - 7 to 13 inches: gravelly loam
2R - 13 to 23 inches: unweathered bedrock

Properties and qualities
Slope: 3 to 25 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F101XY011NY - Shallow Till Upland
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 10 percent
Hydric soil rating: No

Galway

Percent of map unit: 8 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: Unranked

Georgia

Percent of map unit: 5 percent
Hydric soil rating: No

Angola

Percent of map unit: 2 percent
Hydric soil rating: No

33B—Angola silt loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1hd11
Elevation: 590 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Angola and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Angola

Setting

Landform: Till plains, ridges, benches
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Moderately deep till

Typical profile

Ap - 0 to 10 inches: silt loam
Eg - 10 to 14 inches: silty clay loam
Bt - 14 to 24 inches: silty clay loam
BCg - 24 to 29 inches: silty clay loam
2C - 29 to 32 inches: gravelly loam
2R - 32 to 42 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 6 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Minor Components

Galway

Percent of map unit: 7 percent
Hydric soil rating: No

Ilion

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Darien

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed, moderately deep

Percent of map unit: 5 percent
Hydric soil rating: Yes

Rhinebeck

Percent of map unit: 3 percent
Landform: Depressions
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: 1tnsx
Elevation: 590 to 2,820 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 37 to 48 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

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

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Appendix B

RRv Calculations

Step 2 - Calculate Water Quality Volume

Is this project subject to Section 4.3 of the NYS Design Manual for Enhanced Phosphorus Removal?	No
What is the nature of this construction project?	New Construction

Design Point:		
P=	1.15	inches

Enter 90% Rainfall Event as P

Calculate Required WQv

Drainage Area Number	Contributing Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (cf)	SMP Description
1	1.90	0.66	35	0.36	2,876	Filtration Bioretention
2	11.38	4.08	36	0.37	17,704	Micropool Extended Detention Pond
3	7.10	2.65	37	0.39	11,438	Micropool Extended Detention Pond
4	2.93	1.00	34	0.36	4,369	Filtration Bioretention
5	4.26	1.78	42	0.43	7,577	Filtration Bioretention
6	1.71	0.50	29	0.31	2,235	Filtration Bioretention
7	3.19	0.94	29	0.32	4,197	Filtration Bioretention
8	2.04	0.54	26	0.29	2,455	Sheetflow to Riparian Buffer
9	2.14	1.03	48	0.48	4,316	Dry Swale
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						
23						
24						
25						
26						
27						
28						
29						
30						
Total	36.65	13.18	36	0.37	**57168**	**Required WQv**

Minimum RRv

Enter the Soils Data for the site		
Soil Group	Acres	S
A		55%
B		40%
C	47.58	30%
D	**25.65**	20%
Total Area	73.222	
Calculate the Minimum RRv		
S =	**0.26**	
Impervious =	13.18	*acre*
Precipitation	1.15	*in*
Rv	0.95	
Minimum RRv	**13,850**	***ft3***
	0.32	af

Steps 3 and 5 - Apply RR Techniques and Standard SMPs

Runoff Reduction Volume and Treated Volumes						
	Runoff Reduction Techiques/Standard SMPs		**Total Contributing Area**	**Total Contributing Impervious Area**	**WQv Reduced (RRv)**	**WQv Treated**
			(acres)	**(acres)**	**(cf)**	**(cf)**
RR Techniques	Conservation of Natural Areas	RR-1	0.00		0	
	Sheet Flow to Riparian Buffer/Filter Strip	RR-2	2.04	0.54	2,455	
	Tree Planting/Tree Pit/Tree Trench	RR-3	0.00	0.00	0	
	Disconnection of Rooftop Runoff	RR-4		0.00	0	
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rainwater Harvesting Systems	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Extensive & Intensive)	RR-10	0.00	0.00	0	
	Stream Daylighting	RR-11				
Standard SMPs w/ RRv Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	0.00	0.00	0	0
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4	0.00	0.00	0	0
	Infiltration Bioretention	F-4	0.00	0.00	0	0
	Filtration Bioretention	F-5	13.99	4.88	17,163	4,091
	Bioslope	F-6	0.00	0.00	0	0
	Dry swale	O-1	2.14	1.03	863	3,453
Standard SMPs	Micropool Extended Detention	P-1	18.48	6.73		29,142
	Wet Pond	P-2	0.00	0.00		0
	Wet Extended Detention	P-3	0.00	0.00		0
	Multiple Pond System	P-4	0.00	0.00		0
	Shallow Wetland	W-1	0.00	0.00		0
	Extended Detention Shallow Wetland	W-2	0.00	0.00		0
	Pond/Wetland System	W-3	0.00	0.00		0
	Pocket Wetland	W-4	0.00	0.00		0
	Gravel Wetland	W-5	0.00	0.00		0
	Surface Sand Filter	F-1	0.00	0.00		0
	Underground Sand Filter	F-2	0.00	0.00		0
	Perimeter Sand Filter	F-3	0.00	0.00		0
	Wet Swale	O-2	0.00	0.00		0
Alt. SMPs	Flow Based Alternative Practice	-	0.00	0.00		0
	Volume Based Alternative Practice	-				
	Totals by RR Technique	→	2.04	0.54	2,455	
	Totals by Standard SMP w/RRV	→	16.13	5.91	18,026	7,544
	Totals by Standard SMP	→	18.48	6.73		29,142
	Totals by Alternative SMP	→	0.00	0.00		0
	Totals (RR Techniques + all SMPs)	→	36.65	13.18	20,481	36,686

Sheet Flow to Riparian Buffer (RR-2)

Design Point:	

Enter Site Data For Drainage Area to be Reduced							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
8	2.04	0.54	26	0.29	2,455	1.15	Sheetflow to Riparian Buffer

Design Criteria		
Is the riparian buffer delineated and permanently protected through establishment of a legal conservation easement?	Yes	
Is the contributing area a designated hotspot?	No	
Is a pretreatment pea gravel diaphragm proposed along the upgradient edge of the buffer?	Yes	
Is runoff entering the buffer as overland sheet flow or a flow spreader proposed upgradient of the buffer?	Yes	
Enter the total length of contributing flow path (ft)	150	
Enter the length of contributing flow path from impervious surfaces (ft)	75	
Enter the slope of contributing flow path (%)	2	
Minimum buffer length based on contriuting flow path slope (ft)	35	
Enter the slope for the first 10 ft of the buffer (%)	2	

Sizing Criteria				
		Value	Units	Notes
Enter Travel Time through Buffer	T	6	min	
Enter 2-yr 24-hr Rainfall Depth	P	2.54	inch	
Enter Overall Buffer Slope	S	0.02	ft/ft	
Enter Manning's Coefficient for Buffer	n	0.40		
Calculated Minimum Length of Buffer	L	18	ft	
Minimum Length of Buffer	L	35	ft	
Is the buffer within HSG C or D soils?		Yes		
Required Length of Buffer	L	40	ft	
Enter Provided Length of Buffer	L	60	ft	

Calculate Runoff Reduction		
RRv Provided	**2,455**	**cf**

Stormwater Ponds

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
2	11.38	4.08	36	0.37	17,704	1.15	Micropool Extended Detention Pond

Select pond type	Micropool Extended Detention	
Design Criteria		
Is the pond located within jurisdictional waters?	No	
Enter the natural slope of the pond area (%)	15	
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D).	0	
Has an impermeable liner been provided?	Yes	
Is the pond located within a sole source aquifer?	No	
Is the pond located within a designated hotspot?	No	
Enter depth to seasonal high water table (ft)	2	
Enter depth to sound bedrock (ft)	8	
Is the contributing area less than the minimum contributing area?	No	
Will the pond discharge to trout waters?	No	
Has a controlled outlet been provided?	Yes	
Has an emergency spillway been provided?	Yes	
Has pretreatment been provided per Section 6.1.3?	Yes	
Enter freeboard depth (ft)	1	
Enter side slopes above permanent pool (X:1)	3	
Enter aquatic bench slope (%)	15	
Enter aquatic bench slope to pond floor (X:1)	3	
Enter min. aquatic bench width provided (ft)	15	
Enter aquatic bench average width provided (ft)	15	
Enter aquatic bench depth (inches)	18	
Enter maintenance access slope (%)	5	
Enter maintenance access width (ft)	12	
Enter permanent pool depth (ft)	6	
Minimum permanent pool depth per Water Balance Calculation (ft)	6.00	

Sizing Criteria			
	Value	Units	Notes
Required Water Quality Volume	17704	cf	
Pretreatment WQv Provided	3500	cf	
Permanent Pool WQv Provided	17737	cf	
Extended Detention WQv Provided	0	cf	

Determine the Water Quality Volume Treated		
Water Quality Volume Treated	**17,704**	**cf**

Stormwater Ponds

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
3	7.10	2.65	37	0.39	11,438	0.00	Micropool Extended Detention Pond

Select pond type	Micropool Extended Detention	
Design Criteria		
Is the pond located within jurisdictional waters?	No	
Enter the natural slope of the pond area (%)	15	
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D).	0	
Has an impermeable liner been provided?	Yes	
Is the pond located within a sole source aquifer?	No	
Is the pond located within a designated hotspot?	No	
Enter depth to seasonal high water table (ft)	2	
Enter depth to sound bedrock (ft)	8	
Is the contributing area less than the minimum contributing area?	Yes	Water Balance Calculation required
Will the pond discharge to trout waters?	No	
Has a controlled outlet been provided?	Yes	
Has an emergency spillway been provided?	Yes	
Has pretreatment been provided per Section 6.1.3?	Yes	
Enter freeboard depth (ft)	1	
Enter side slopes above permanent pool (X:1)	3	
Enter aquatic bench slope (%)	15	
Enter aquatic bench slope to pond floor (X:1)	3	
Enter min. aquatic bench width provided (ft)	15	
Enter aquatic bench average width provided (ft)	15	
Enter aquatic bench depth (inches)	18	
Enter maintenance access slope (%)	5	
Enter maintenance access width (ft)	12	
Enter permanent pool depth (ft)	6	
Minimum permanent pool depth per Water Balance Calculation (ft)	5.26	

Sizing Criteria			
	Value	Units	Notes
Required Water Quality Volume	11438	cf	
Pretreatment WQv Provided	2290	cf	
Permanent Pool WQv Provided	11438	cf	
Extended Detention WQv Provided	0	cf	

Determine the Water Quality Volume Treated		
Water Quality Volume Treated	**11,438**	**cf**

Stormwater Ponds

Micropool Extended Detention

Total Area	18.48	acres
	11.38	acres
	7.1	acres
		acres
		acres
		acres
Total Impervious	6.73	acres
	4.08	acres
	2.65	acres
		acres
		acres
		acres
Total WQv Provided	29,142	cf
	17704	cf
	11438	cf
		cf
		cf
		cf

Wet Pond

Total Area	0.00	acres
	0	acres
	0	acres
	0	acres
	0	acres
	0	acres
Total Impervious	0.00	acres
	0	acres
	0	acres
	0	acres
	0	acres
	0	acres
Total WQv Provided	0	cf
	0	cf
	0	cf
	0	cf
	0	cf
	0	cf

Wet Extended Detention

Total Area	0.00	acres
	0	acres
	0	acres
	0	acres
	0	acres
	0	acres
Total Impervious	0.00	acres
	0	acres
	0	acres
	0	acres
	0	acres
	0	acres
Total WQv Provided	0	cf
	0	cf
	0	cf
	0	cf
	0	cf
	0	cf

Multiple Pond System

Total Area	0.00	acres
	0	acres
	0	acres
	0	acres
	0	acres
	0	acres
Total Impervious	0.00	acres
	0	acres
	0	acres
	0	acres
	0	acres
	0	acres
Total WQv Provided	0	cf
	0	cf
	0	cf
	0	cf
	0	cf
	0	cf

Filtration Bioretention (F-5)

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
1	1.90	0.66	35	0.36	2,876	1.15	Filtration Bioretention

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0	Underdrains required
Is the contributing area to the practice a stormwater hotspot?	No	
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft)	2	
Enter depth to bedrock (ft)	8	
Is pretreatment provided, in conformance with Section 6.4.3.1	Yes	
Enter average height of ponding (ft)	0.5	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	10	
Enter slope of maintenance access (%)	2	
Enter width of maintenance access (ft)	12	

Sizing Criteria				
		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	1198	sf	
Enter Provided Filter Area	Af	2070	sf	
Recalculated Water Quality Volume (based on provided filter area)	WQv calc	4968	cf	

Calculate Runoff Reduction			
RRv Provided	**1,987**	***cf***	
WQv Treated	889	cf	This is the portion of the WQv that is not reduced in the practice.

Filtration Bioretention (F-5)

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
4	2.93	1.00	34	0.36	4,369	1.15	Filtration Bioretention

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0	Underdrains required
Is the contributing area to the practice a stormwater hotspot?	No	
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft)	2	
Enter depth to bedrock (ft)	8	
Is pretreatment provided, in conformance with Section 6.4.3.1	Yes	
Enter average height of ponding (ft)	0.5	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	10	
Enter slope of maintenance access (%)	2	
Enter width of maintenance access (ft)	12	

Sizing Criteria				
		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	1820	sf	
Enter Provided Filter Area	Af	4555	sf	
Recalculated Water Quality Volume (based on provided filter area)	WQv calc	10932	cf	

Calculate Runoff Reduction			
RRv Provided	**4,369**	***cf***	
WQv Treated	0	cf	This is the portion of the WQv that is not reduced in the practice.

Filtration Bioretention (F-5)

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
5	4.26	1.78	42	0.43	7,577	1.15	Filtration Bioretention

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0	Underdrains required
Is the contributing area to the practice a stormwater hotspot?	No	
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft)	2	
Enter depth to bedrock (ft)	8	
Is pretreatment provided, in conformance with Section 6.4.3.1	Yes	
Enter average height of ponding (ft)	0.5	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	10	
Enter slope of maintenance access (%)	2	
Enter width of maintenance access (ft)	12	

Sizing Criteria				
		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	3157	sf	
Enter Provided Filter Area	Af	4600	sf	
Recalculated Water Quality Volume (based on provided filter area)	WQv calc	11040	cf	

Calculate Runoff Reduction			
RRv Provided	**4,416**	***cf***	
WQv Treated	3161	cf	This is the portion of the WQv that is not reduced in the practice.

Filtration Bioretention (F-5)

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
6	1.71	0.50	29	0.31	2,235	1.15	Filtration Bioretention

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0	Underdrains required
Is the contributing area to the practice a stormwater hotspot?	No	
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft)	2	
Enter depth to bedrock (ft)	8	
Is pretreatment provided, in conformance with Section 6.4.3.1	Yes	
Enter average height of ponding (ft)	0.5	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	10	
Enter slope of maintenance access (%)	2	
Enter width of maintenance access (ft)	12	

Sizing Criteria				
		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	931	sf	
Enter Provided Filter Area	Af	2285	sf	
Recalculated Water Quality Volume (based on provided filter area)	WQv calc	5484	cf	

Calculate Runoff Reduction			
RRv Provided	**2,194**	***cf***	
WQv Treated	41	cf	This is the portion of the WQv that is not reduced in the practice.

Filtration Bioretention (F-5)

Design Point:	

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
7	3.19	0.94	29	0.32	4,197	1.15	Filtration Bioretention

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	0	Underdrains required
Is the contributing area to the practice a stormwater hotspot?	No	
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft)	2	
Enter depth to bedrock (ft)	8	
Is pretreatment provided, in conformance with Section 6.4.3.1	Yes	
Enter average height of ponding (ft)	0.5	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	10	
Enter slope of maintenance access (%)	2	
Enter width of maintenance access (ft)	12	

Sizing Criteria				
		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	1749	sf	
Enter Provided Filter Area	Af	4375	sf	
Recalculated Water Quality Volume (based on provided filter area)	WQv calc	10500	cf	

Calculate Runoff Reduction			
RRv Provided	**4,197**	***cf***	
WQv Treated	0	cf	This is the portion of the WQv that is not reduced in the practice.

Appendix C

Predevelopment
Stormwater Modeling Calculations

MAP KEY	
	SUBCATCHMENT BOUNDARY
S10	SUBCATCHMENT I.D.
4P	STORMWATER DEVICE
DP	DESIGN POINT
	TC PATH

GRAPHIC SCALE

100 80 60 40 20 0 50 100 200 400

(IN FEET)

1 INCH = 100 FT.

SITE PLAN LEGEND:

- DENOTES USACE WETLAND AREA
- DENOTES RV SETBACK LINE
- DENOTES RV/CAMPING LOT LINE
- DENOTES GRAVEL PAVEMENT
- DENOTES R.O.W. FENCING
- DENOTES BUFFER PLANTINGS

FOR MUNICIPAL APPROVAL ONLY - NOT INTENDED FOR CONSTRUCTION

ENVIRONMENTAL DESIGN PARTNERSHIP, LLP.
300 Route 146 Clifton Park, New York 12065
(518) 371-1421
edpllp.com

TAX MAP No: 88.-4-18, 88.-4-37.12, 88.00-4-20
OCTOBER 2, 2024

SITE PLANS FOR
SUNSET BAY RESORT EXPANSION
SUNSET BAY RV PARK INC.

PARADISE POINT ROAD
TOWN OF MAYFIELD
FULTON COUNTY, NEW YORK

DRAWN BY	EMM
CHECKED BY	TJM
EDP PROJECT NUMBER	14197

REVISION	DATE	BY

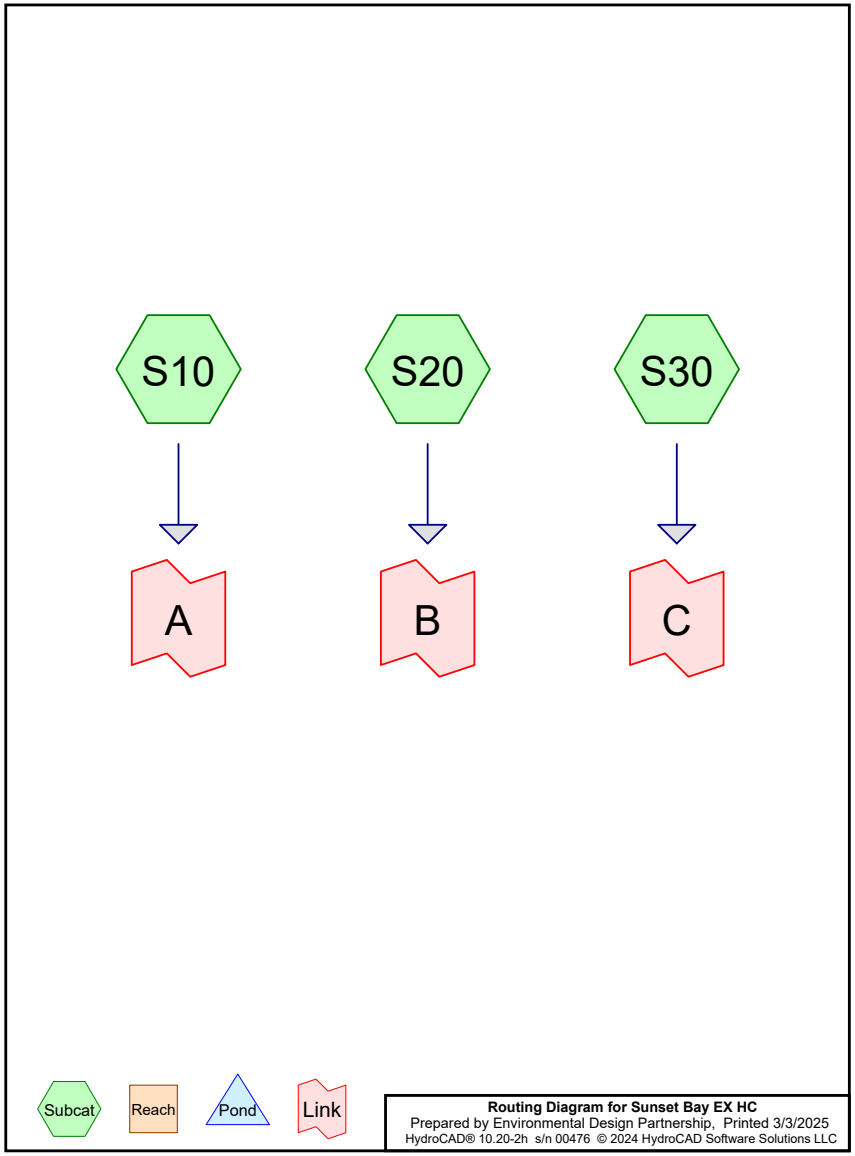
SCALE: 1" = 100'

NOT FOR CONSTRUCTION

SHEET TITLE: EXISTING DRAINAGE

SHEET: 1 OF 2

C:\WORKFILES\Environmental Design Partnership\SharePoint Site - Documents\0 A-Z\FILES\MAYFIELD\Paradise Point Road\353 SUNSET BAY\05-dwg\Detailed\FIGURES\Sunset Bay Stormwater.dwg Oct 02, 2024 09:19:15AM



Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	NY-Sunset Bay 24-hr S1	1-yr	Default	24.00	1	2.22	2
2	10-yr	NY-Sunset Bay 24-hr S1	10-yr	Default	24.00	1	3.54	2
3	50-yr	NY-Sunset Bay 24-hr S1	50-yr	Default	24.00	1	4.94	2
4	100-yr	NY-Sunset Bay 24-hr S1	100-yr	Default	24.00	1	5.70	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.452	90	1/8 acre lots, 65% imp, HSG C (S30)
0.171	92	1/8 acre lots, 65% imp, HSG D (S30)
5.615	71	Meadow, non-grazed, HSG C (S20, S30)
8.797	78	Meadow, non-grazed, HSG D (S10, S20, S30)
1.682	98	Paved parking, HSG C (S10, S30)
0.332	98	Paved parking, HSG D (S20, S30)
1.155	98	Water Surface, HSG D (S20)
36.826	73	Woods, Fair, HSG C (S20, S30)
15.192	79	Woods, Fair, HSG D (S10, S20, S30)
73.222	**77**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
47.575	HSG C	S10, S20, S30
25.647	HSG D	S10, S20, S30
0.000	Other	
73.222		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	3.452	0.171	0.000	3.623	1/8 acre lots, 65% imp	S30
0.000	0.000	5.615	8.797	0.000	14.412	Meadow, non-grazed	S10, S20, S30
0.000	0.000	1.682	0.332	0.000	2.014	Paved parking	S10, S20, S30
0.000	0.000	0.000	1.155	0.000	1.155	Water Surface	S20
0.000	0.000	36.826	15.192	0.000	52.018	Woods, Fair	S10, S20, S30
0.000	**0.000**	**47.575**	**25.647**	**0.000**	**73.222**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS10: Runoff Area=3.133 ac 5.04% Impervious Runoff Depth>0.57"
Flow Length=395' Tc=17.5 min CN=79 Runoff=1.48 cfs 0.148 af

SubcatchmentS20: Runoff Area=34.531 ac 3.85% Impervious Runoff Depth>0.45"
Flow Length=2,850' Tc=34.6 min CN=76 Runoff=8.62 cfs 1.284 af

SubcatchmentS30: Runoff Area=35.558 ac 11.35% Impervious Runoff Depth>0.48"
Flow Length=2,685' Tc=54.4 min CN=77 Runoff=7.67 cfs 1.408 af

Link A: Inflow=1.48 cfs 0.148 af
Primary=1.48 cfs 0.148 af

Link B: Inflow=8.62 cfs 1.284 af
Primary=8.62 cfs 1.284 af

Link C: Inflow=7.67 cfs 1.408 af
Primary=7.67 cfs 1.408 af

Total Runoff Area = 73.222 ac Runoff Volume = 2.839 af Average Runoff Depth = 0.47"
92.46% Pervious = 67.698 ac 7.54% Impervious = 5.524 ac

Summary for Subcatchment S10:

Runoff = 1.48 cfs @ 12.21 hrs, Volume= 0.148 af, Depth> 0.57"
Routed to Link A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
1.796	78	Meadow, non-grazed, HSG D
0.158	98	Paved parking, HSG C
1.179	79	Woods, Fair, HSG D
3.133	79	Weighted Average
2.975		94.96% Pervious Area
0.158		5.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	100	0.0400	0.14		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
5.4	295	0.0170	0.91		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
17.5	395	Total			

Summary for Subcatchment S20:

Runoff = 8.62 cfs @ 12.49 hrs, Volume= 1.284 af, Depth> 0.45"
Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
4.946	78	Meadow, non-grazed, HSG D
0.174	98	Paved parking, HSG D
2.038	71	Meadow, non-grazed, HSG C
1.155	98	Water Surface, HSG D
19.162	73	Woods, Fair, HSG C
7.056	79	Woods, Fair, HSG D
34.531	76	Weighted Average
33.202		96.15% Pervious Area
1.329		3.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	100	0.0450	0.14		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
12.6	1,090	0.0825	1.44		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
9.8	1,610	0.0333	2.74		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
34.6	2,850	Total			

Summary for Subcatchment S30:

Runoff = 7.67 cfs @ 12.77 hrs, Volume= 1.408 af, Depth> 0.48"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.158	98	Paved parking, HSG D
1.524	98	Paved parking, HSG C
2.055	78	Meadow, non-grazed, HSG D
3.577	71	Meadow, non-grazed, HSG C
0.171	92	1/8 acre lots, 65% imp, HSG D
3.452	90	1/8 acre lots, 65% imp, HSG C
6.957	79	Woods, Fair, HSG D
17.664	73	Woods, Fair, HSG C
35.558	77	Weighted Average
31.521		88.65% Pervious Area
4.037		11.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0200	0.10		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
1.1	85	0.0350	1.31		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
37.3	2,500	0.0500	1.12		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
54.4	2,685	Total			

Summary for Link A:

Inflow Area = 3.133 ac, 5.04% Impervious, Inflow Depth > 0.57" for 1-yr event
Inflow = 1.48 cfs @ 12.21 hrs, Volume= 0.148 af
Primary = 1.48 cfs @ 12.21 hrs, Volume= 0.148 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link B:

Inflow Area = 34.531 ac, 3.85% Impervious, Inflow Depth > 0.45" for 1-yr event
Inflow = 8.62 cfs @ 12.49 hrs, Volume= 1.284 af
Primary = 8.62 cfs @ 12.49 hrs, Volume= 1.284 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link C:

Inflow Area = 35.558 ac, 11.35% Impervious, Inflow Depth > 0.48" for 1-yr event
Inflow = 7.67 cfs @ 12.77 hrs, Volume= 1.408 af
Primary = 7.67 cfs @ 12.77 hrs, Volume= 1.408 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS10: Runoff Area=3.133 ac 5.04% Impervious Runoff Depth>1.44"
Flow Length=395' Tc=17.5 min CN=79 Runoff=4.28 cfs 0.376 af

SubcatchmentS20: Runoff Area=34.531 ac 3.85% Impervious Runoff Depth>1.24"
Flow Length=2,850' Tc=34.6 min CN=76 Runoff=28.95 cfs 3.562 af

SubcatchmentS30: Runoff Area=35.558 ac 11.35% Impervious Runoff Depth>1.29"
Flow Length=2,685' Tc=54.4 min CN=77 Runoff=24.73 cfs 3.813 af

Link A: Inflow=4.28 cfs 0.376 af
Primary=4.28 cfs 0.376 af

Link B: Inflow=28.95 cfs 3.562 af
Primary=28.95 cfs 3.562 af

Link C: Inflow=24.73 cfs 3.813 af
Primary=24.73 cfs 3.813 af

Total Runoff Area = 73.222 ac Runoff Volume = 7.751 af Average Runoff Depth = 1.27"
92.46% Pervious = 67.698 ac 7.54% Impervious = 5.524 ac

Summary for Subcatchment S10:

Runoff = 4.28 cfs @ 12.21 hrs, Volume= 0.376 af, Depth> 1.44"
Routed to Link A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
1.796	78	Meadow, non-grazed, HSG D
0.158	98	Paved parking, HSG C
1.179	79	Woods, Fair, HSG D
3.133	79	Weighted Average
2.975		94.96% Pervious Area
0.158		5.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	100	0.0400	0.14		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
5.4	295	0.0170	0.91		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
17.5	395	Total			

Summary for Subcatchment S20:

Runoff = 28.95 cfs @ 12.46 hrs, Volume= 3.562 af, Depth> 1.24"
Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
4.946	78	Meadow, non-grazed, HSG D
0.174	98	Paved parking, HSG D
2.038	71	Meadow, non-grazed, HSG C
1.155	98	Water Surface, HSG D
19.162	73	Woods, Fair, HSG C
7.056	79	Woods, Fair, HSG D
34.531	76	Weighted Average
33.202		96.15% Pervious Area
1.329		3.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	100	0.0450	0.14		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
12.6	1,090	0.0825	1.44		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
9.8	1,610	0.0333	2.74		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
34.6	2,850	Total			

Summary for Subcatchment S30:

Runoff = 24.73 cfs @ 12.75 hrs, Volume= 3.813 af, Depth> 1.29"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.158	98	Paved parking, HSG D
1.524	98	Paved parking, HSG C
2.055	78	Meadow, non-grazed, HSG D
3.577	71	Meadow, non-grazed, HSG C
0.171	92	1/8 acre lots, 65% imp, HSG D
3.452	90	1/8 acre lots, 65% imp, HSG C
6.957	79	Woods, Fair, HSG D
17.664	73	Woods, Fair, HSG C
35.558	77	Weighted Average
31.521		88.65% Pervious Area
4.037		11.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0200	0.10		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
1.1	85	0.0350	1.31		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
37.3	2,500	0.0500	1.12		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
54.4	2,685	Total			

Summary for Link A:

Inflow Area = 3.133 ac, 5.04% Impervious, Inflow Depth > 1.44" for 10-yr event
Inflow = 4.28 cfs @ 12.21 hrs, Volume= 0.376 af
Primary = 4.28 cfs @ 12.21 hrs, Volume= 0.376 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link B:

Inflow Area = 34.531 ac, 3.85% Impervious, Inflow Depth > 1.24" for 10-yr event
Inflow = 28.95 cfs @ 12.46 hrs, Volume= 3.562 af
Primary = 28.95 cfs @ 12.46 hrs, Volume= 3.562 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link C:

Inflow Area = 35.558 ac, 11.35% Impervious, Inflow Depth > 1.29" for 10-yr event
Inflow = 24.73 cfs @ 12.75 hrs, Volume= 3.813 af
Primary = 24.73 cfs @ 12.75 hrs, Volume= 3.813 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS10: Runoff Area=3.133 ac 5.04% Impervious Runoff Depth>2.53"
Flow Length=395' Tc=17.5 min CN=79 Runoff=7.74 cfs 0.659 af

SubcatchmentS20: Runoff Area=34.531 ac 3.85% Impervious Runoff Depth>2.26"
Flow Length=2,850' Tc=34.6 min CN=76 Runoff=55.44 cfs 6.490 af

SubcatchmentS30: Runoff Area=35.558 ac 11.35% Impervious Runoff Depth>2.32"
Flow Length=2,685' Tc=54.4 min CN=77 Runoff=46.81 cfs 6.871 af

Link A: Inflow=7.74 cfs 0.659 af
Primary=7.74 cfs 0.659 af

Link B: Inflow=55.44 cfs 6.490 af
Primary=55.44 cfs 6.490 af

Link C: Inflow=46.81 cfs 6.871 af
Primary=46.81 cfs 6.871 af

Total Runoff Area = 73.222 ac Runoff Volume = 14.021 af Average Runoff Depth = 2.30"
92.46% Pervious = 67.698 ac 7.54% Impervious = 5.524 ac

Summary for Subcatchment S10:

Runoff = 7.74 cfs @ 12.20 hrs, Volume= 0.659 af, Depth> 2.53"
Routed to Link A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
1.796	78	Meadow, non-grazed, HSG D
0.158	98	Paved parking, HSG C
1.179	79	Woods, Fair, HSG D
3.133	79	Weighted Average
2.975		94.96% Pervious Area
0.158		5.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	100	0.0400	0.14		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
5.4	295	0.0170	0.91		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
17.5	395	Total			

Summary for Subcatchment S20:

Runoff = 55.44 cfs @ 12.45 hrs, Volume= 6.490 af, Depth> 2.26"
Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
4.946	78	Meadow, non-grazed, HSG D
0.174	98	Paved parking, HSG D
2.038	71	Meadow, non-grazed, HSG C
1.155	98	Water Surface, HSG D
19.162	73	Woods, Fair, HSG C
7.056	79	Woods, Fair, HSG D
34.531	76	Weighted Average
33.202		96.15% Pervious Area
1.329		3.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	100	0.0450	0.14		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
12.6	1,090	0.0825	1.44		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
9.8	1,610	0.0333	2.74		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
34.6	2,850	Total			

Summary for Subcatchment S30:

Runoff = 46.81 cfs @ 12.73 hrs, Volume= 6.871 af, Depth> 2.32"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.158	98	Paved parking, HSG D
1.524	98	Paved parking, HSG C
2.055	78	Meadow, non-grazed, HSG D
3.577	71	Meadow, non-grazed, HSG C
0.171	92	1/8 acre lots, 65% imp, HSG D
3.452	90	1/8 acre lots, 65% imp, HSG C
6.957	79	Woods, Fair, HSG D
17.664	73	Woods, Fair, HSG C
35.558	77	Weighted Average
31.521		88.65% Pervious Area
4.037		11.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0200	0.10		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
1.1	85	0.0350	1.31		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
37.3	2,500	0.0500	1.12		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
54.4	2,685	Total			

Summary for Link A:

Inflow Area = 3.133 ac, 5.04% Impervious, Inflow Depth > 2.53" for 50-yr event
Inflow = 7.74 cfs @ 12.20 hrs, Volume= 0.659 af
Primary = 7.74 cfs @ 12.20 hrs, Volume= 0.659 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link B:

Inflow Area = 34.531 ac, 3.85% Impervious, Inflow Depth > 2.26" for 50-yr event
Inflow = 55.44 cfs @ 12.45 hrs, Volume= 6.490 af
Primary = 55.44 cfs @ 12.45 hrs, Volume= 6.490 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link C:

Inflow Area = 35.558 ac, 11.35% Impervious, Inflow Depth > 2.32" for 50-yr event
Inflow = 46.81 cfs @ 12.73 hrs, Volume= 6.871 af
Primary = 46.81 cfs @ 12.73 hrs, Volume= 6.871 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS10: Runoff Area=3.133 ac 5.04% Impervious Runoff Depth>3.15"
Flow Length=395' Tc=17.5 min CN=79 Runoff=9.80 cfs 0.823 af

SubcatchmentS20: Runoff Area=34.531 ac 3.85% Impervious Runoff Depth>2.85"
Flow Length=2,850' Tc=34.6 min CN=76 Runoff=71.45 cfs 8.213 af

SubcatchmentS30: Runoff Area=35.558 ac 11.35% Impervious Runoff Depth>2.92"
Flow Length=2,685' Tc=54.4 min CN=77 Runoff=60.04 cfs 8.663 af

Link A: Inflow=9.80 cfs 0.823 af
Primary=9.80 cfs 0.823 af

Link B: Inflow=71.45 cfs 8.213 af
Primary=71.45 cfs 8.213 af

Link C: Inflow=60.04 cfs 8.663 af
Primary=60.04 cfs 8.663 af

Total Runoff Area = 73.222 ac Runoff Volume = 17.699 af Average Runoff Depth = 2.90"
92.46% Pervious = 67.698 ac 7.54% Impervious = 5.524 ac

Summary for Subcatchment S10:

Runoff = 9.80 cfs @ 12.20 hrs, Volume= 0.823 af, Depth> 3.15"
Routed to Link A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
1.796	78	Meadow, non-grazed, HSG D
0.158	98	Paved parking, HSG C
1.179	79	Woods, Fair, HSG D
3.133	79	Weighted Average
2.975		94.96% Pervious Area
0.158		5.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	100	0.0400	0.14		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
5.4	295	0.0170	0.91		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
17.5	395	Total			

Summary for Subcatchment S20:

Runoff = 71.45 cfs @ 12.45 hrs, Volume= 8.213 af, Depth> 2.85"
Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
4.946	78	Meadow, non-grazed, HSG D
0.174	98	Paved parking, HSG D
2.038	71	Meadow, non-grazed, HSG C
1.155	98	Water Surface, HSG D
19.162	73	Woods, Fair, HSG C
7.056	79	Woods, Fair, HSG D
34.531	76	Weighted Average
33.202		96.15% Pervious Area
1.329		3.85% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.6	100	0.0450	0.14		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
0.6	50	0.0400	1.40		**Shallow Concentrated Flow, SCF** Short Grass Pasture Kv= 7.0 fps
12.6	1,090	0.0825	1.44		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
9.8	1,610	0.0333	2.74		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
34.6	2,850	Total			

Summary for Subcatchment S30:

Runoff = 60.04 cfs @ 12.73 hrs, Volume= 8.663 af, Depth> 2.92"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.158	98	Paved parking, HSG D
1.524	98	Paved parking, HSG C
2.055	78	Meadow, non-grazed, HSG D
3.577	71	Meadow, non-grazed, HSG C
0.171	92	1/8 acre lots, 65% imp, HSG D
3.452	90	1/8 acre lots, 65% imp, HSG C
6.957	79	Woods, Fair, HSG D
17.664	73	Woods, Fair, HSG C
35.558	77	Weighted Average
31.521		88.65% Pervious Area
4.037		11.35% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0200	0.10		**Sheet Flow, SF** Grass: Dense n= 0.240 P2= 2.54"
1.1	85	0.0350	1.31		**Shallow Concentrated Flow, SCF - GRASS** Short Grass Pasture Kv= 7.0 fps
37.3	2,500	0.0500	1.12		**Shallow Concentrated Flow, SCF - WOODS** Woodland Kv= 5.0 fps
54.4	2,685	Total			

Summary for Link A:

Inflow Area = 3.133 ac, 5.04% Impervious, Inflow Depth > 3.15" for 100-yr event
Inflow = 9.80 cfs @ 12.20 hrs, Volume= 0.823 af
Primary = 9.80 cfs @ 12.20 hrs, Volume= 0.823 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link B:

Inflow Area = 34.531 ac, 3.85% Impervious, Inflow Depth > 2.85" for 100-yr event
Inflow = 71.45 cfs @ 12.45 hrs, Volume= 8.213 af
Primary = 71.45 cfs @ 12.45 hrs, Volume= 8.213 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Summary for Link C:

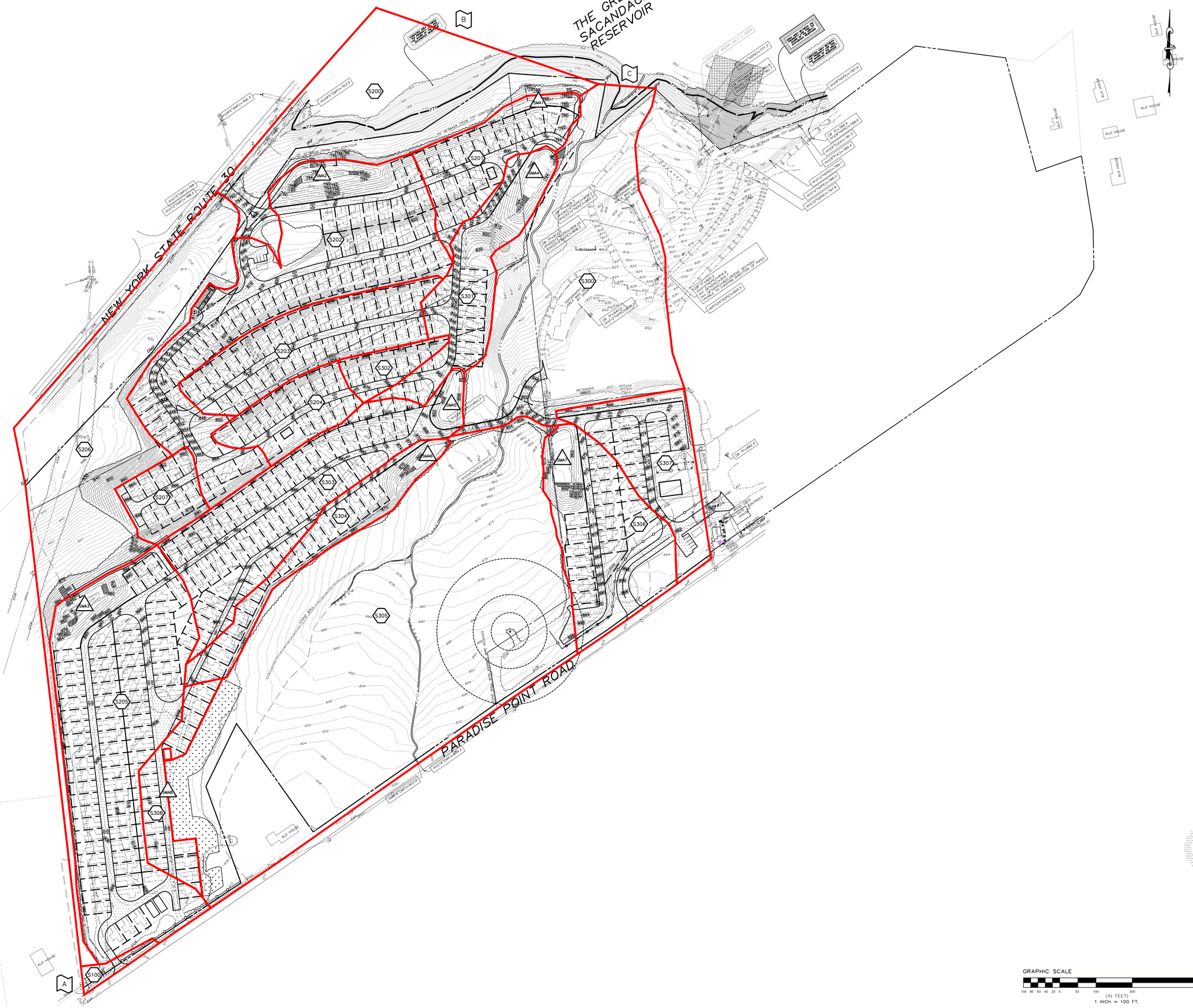
Inflow Area = 35.558 ac, 11.35% Impervious, Inflow Depth > 2.92" for 100-yr event
Inflow = 60.04 cfs @ 12.73 hrs, Volume= 8.663 af
Primary = 60.04 cfs @ 12.73 hrs, Volume= 8.663 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Appendix D

Post-development Stormwater Modeling Calculations

MAP KEY	
	SUBCATCHMENT BOUNDARY
S10	SUBCATCHMENT I.D.
SMA1	STORMWATER DEVICE
DP	DESIGN POINT
	TC PATH



GRAPHIC SCALE

100 80 60 40 20 0 50 100 200 400
(IN FEET)
1 INCH = 100 FT.

FOR MUNICIPAL APPROVAL ONLY - NOT INTENDED FOR CONSTRUCTION

ENVIRONMENTAL DESIGN PARTNERSHIP, LLP.
300 Route 146 Clifton Park, New York 12065
(518) 371-7421
edpllp.com

TAX MAP No: 88.-4-18,
88.-4-37.12, 88.00-4-20
OCTOBER 2, 2024

SITE PLANS FOR
SUNSET BAY RESORT EXPANSION
SUNSET BAY RV PARK INC.

PARADISE POINT ROAD
TOWN OF MAYFIELD
FULTON COUNTY, NEW YORK

DRAWN BY	SMA
CHECKED BY	TJM
EDP PROJECT NUMBER	14197

REVISION	DATE	BY
RESPONSE PER REGULATORY AGENCY COMMENTS	02/12/25	SMA

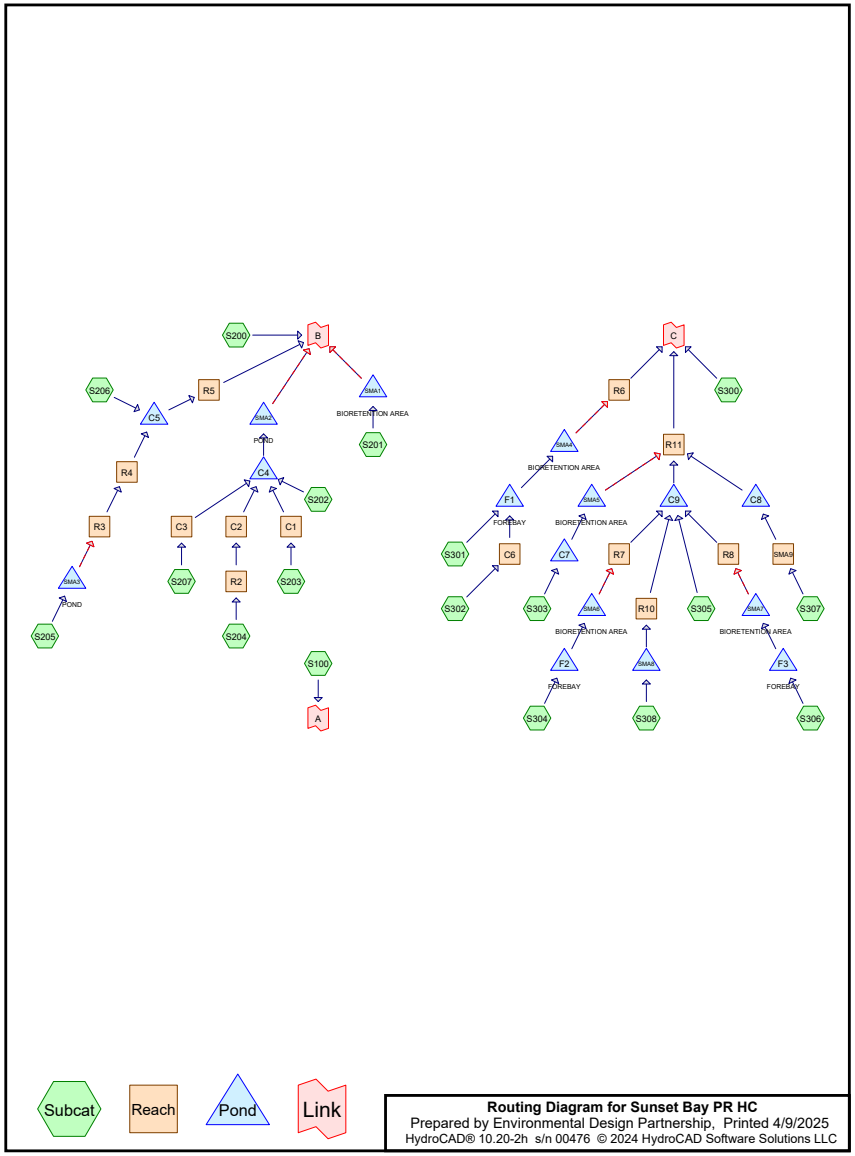
SCALE:
1" = 100'

NOT FOR CONSTRUCTION

SHEET TITLE:
PROPOSED DRAINAGE

SHEET:
2 OF 2

C:\WORKFILES\Environmental Design Partnership\Shorefront Site - Documents\0 A-Z\ATLTON\MAYFIELD\Paradise Point Road\353 SUNSET BAY\05-dwg\Detailed\FIGURES\Sunset Bay Stormwater.dwg Feb 12, 2025 11:49:15AM



Routing Diagram for Sunset Bay PR HC
Prepared by Environmental Design Partnership, Printed 4/9/2025
HydroCAD® 10.20-2h s/n 00476 © 2024 HydroCAD Software Solutions LLC

Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	NY-Sunset Bay 24-hr S1	1-yr	Default	24.00	1	2.22	2
2	10-yr	NY-Sunset Bay 24-hr S1	10-yr	Default	24.00	1	3.54	2
3	50-yr	NY-Sunset Bay 24-hr S1	50-yr	Default	24.00	1	4.94	2
4	100-yr	NY-Sunset Bay 24-hr S1	100-yr	Default	24.00	1	5.70	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
3.452	90	1/8 acre lots, 65% imp, HSG C (S300)
0.171	92	1/8 acre lots, 65% imp, HSG D (S300)
19.753	71	Meadow, non-grazed, HSG C (S200, S201, S202, S203, S204, S205, S206, S207, S300, S301, S302, S303, S304, S305, S306, S307)
9.471	78	Meadow, non-grazed, HSG D (S100, S200, S201, S202, S204, S205, S206, S207, S303, S304, S305, S308)
13.906	98	Paved parking, HSG D (S100, S200, S201, S202, S203, S204, S205, S206, S207, S300, S301, S302, S303, S304, S306, S307, S308)
1.155	98	Water Surface, HSG D (S200)
15.221	73	Woods, Fair, HSG C (S200, S202, S206, S300, S305, S306, S307)
10.093	79	Woods, Fair, HSG D (S100, S200, S205, S206, S300, S305)
73.222	**80**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
38.426	HSG C	S200, S201, S202, S203, S204, S205, S206, S207, S300, S301, S302, S303, S304, S305, S306, S307
34.796	HSG D	S100, S200, S201, S202, S203, S204, S205, S206, S207, S300, S301, S302, S303, S304, S305, S306, S307, S308
0.000	Other	
73.222		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	3.452	0.171	0.000	3.623	1/8 acre lots, 65% imp	S300
0.000	0.000	19.753	9.471	0.000	29.224	Meadow, non-grazed	S100, S200, S201, S202, S203, S204, S205, S206, S207, S300, S301, S302, S303, S304, S305, S306, S307, S308
0.000	0.000	0.000	13.906	0.000	13.906	Paved parking	S100, S200, S201, S202, S203, S204, S205, S206, S207, S300, S301, S302, S303, S304, S306, S307, S308
0.000	0.000	0.000	1.155	0.000	1.155	Water Surface	S200
0.000	0.000	15.221	10.093	0.000	25.314	Woods, Fair	S100, S200, S202, S205, S206, S300, S305, S306, S307

Ground Covers (selected nodes) (continued)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	**0.000**	**38.426**	**34.796**	**0.000**	**73.222**	**TOTAL AREA**	

Pipe Listing (selected nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)
1	C1	814.00	812.00	120.0	0.0167	0.020	0.0	18.0	0.0
2	C2	813.00	812.00	128.0	0.0078	0.020	0.0	18.0	0.0
3	C3	860.00	846.00	125.0	0.1120	0.020	0.0	12.0	0.0
4	C6	850.00	848.00	111.0	0.0180	0.020	0.0	12.0	0.0
5	C4	800.00	794.00	185.0	0.0324	0.020	0.0	24.0	0.0
6	C5	788.50	786.00	97.0	0.0258	0.020	0.0	24.0	0.0
7	C7	862.00	860.00	58.0	0.0345	0.020	0.0	18.0	0.0
8	C8	852.00	850.00	58.0	0.0345	0.020	0.0	15.0	0.0
9	C9	851.60	849.60	60.0	0.0333	0.025	35.0	24.0	4.8
10	SMA1	782.17	781.40	42.0	0.0183	0.020	0.0	6.0	0.0
11	SMA2	786.50	786.00	36.0	0.0139	0.020	0.0	18.0	0.0
12	SMA3	875.85	875.00	50.0	0.0170	0.020	0.0	15.0	0.0
13	SMA4	790.17	789.00	72.0	0.0162	0.020	0.0	6.0	0.0
14	SMA5	854.17	854.00	130.0	0.0013	0.020	0.0	6.0	0.0
15	SMA5	853.25	852.00	100.0	0.0125	0.020	0.0	15.0	0.0
16	SMA6	860.17	859.00	110.0	0.0106	0.020	0.0	6.0	0.0
17	SMA7	858.17	857.00	78.0	0.0150	0.020	0.0	6.0	0.0

Time span=5.00-72.00 hrs, dt=0.50 hrs, 135 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS100: Runoff Area=0.206 ac 10.68% Impervious Runoff Depth=0.75"
Tc=6.0 min CN=81 Runoff=0.09 cfs 0.013 af

SubcatchmentS200: Runoff Area=5.428 ac 27.01% Impervious Runoff Depth=0.80"
Tc=0.0 min CN=82 Runoff=2.58 cfs 0.361 af

SubcatchmentS201: Runoff Area=1.896 ac 34.60% Impervious Runoff Depth=0.85"
Flow Length=480' Tc=7.3 min CN=83 Runoff=0.90 cfs 0.134 af

SubcatchmentS202: Runoff Area=6.407 ac 33.71% Impervious Runoff Depth=0.75"
Tc=6.0 min CN=81 Runoff=2.65 cfs 0.400 af

SubcatchmentS203: Runoff Area=2.693 ac 39.77% Impervious Runoff Depth=0.80"
Flow Length=665' Tc=8.9 min CN=82 Runoff=1.14 cfs 0.179 af

SubcatchmentS204: Runoff Area=1.304 ac 37.19% Impervious Runoff Depth=0.90"
Tc=6.0 min CN=84 Runoff=0.68 cfs 0.098 af

SubcatchmentS205: Runoff Area=7.104 ac 37.32% Impervious Runoff Depth=0.96"
Flow Length=1,030' Tc=37.4 min CN=85 Runoff=3.24 cfs 0.568 af

SubcatchmentS206: Runoff Area=6.628 ac 3.41% Impervious Runoff Depth=0.42"
Tc=0.0 min CN=73 Runoff=1.35 cfs 0.234 af

SubcatchmentS207: Runoff Area=0.919 ac 35.58% Impervious Runoff Depth=0.75"
Tc=6.0 min CN=81 Runoff=0.38 cfs 0.057 af

SubcatchmentS300: Runoff Area=7.987 ac 32.24% Impervious Runoff Depth=0.75"
Flow Length=2,685' Tc=58.8 min CN=81 Runoff=2.11 cfs 0.498 af

SubcatchmentS301: Runoff Area=2.341 ac 33.83% Impervious Runoff Depth=0.70"
Flow Length=805' Tc=6.0 min CN=80 Runoff=0.89 cfs 0.137 af

SubcatchmentS302: Runoff Area=0.588 ac 35.03% Impervious Runoff Depth=0.70"
Tc=6.0 min CN=80 Runoff=0.22 cfs 0.034 af

SubcatchmentS303: Runoff Area=4.260 ac 41.83% Impervious Runoff Depth=0.96"
Flow Length=810' Tc=6.7 min CN=85 Runoff=2.35 cfs 0.341 af

SubcatchmentS304: Runoff Area=1.708 ac 29.27% Impervious Runoff Depth=0.70"
Flow Length=850' Tc=6.7 min CN=80 Runoff=0.64 cfs 0.100 af

SubcatchmentS305: Runoff Area=17.346 ac 0.00% Impervious Runoff Depth=0.53"
Flow Length=1,615' Tc=45.4 min CN=76 Runoff=3.38 cfs 0.768 af

SubcatchmentS306: Runoff Area=3.185 ac 29.36% Impervious Runoff Depth=0.66"
Flow Length=420' Tc=9.3 min CN=79 Runoff=1.03 cfs 0.174 af

SubcatchmentS307: Runoff Area=2.137 ac 48.01% Impervious Runoff Depth=0.90"
Flow Length=585' Tc=9.8 min CN=84 Runoff=1.03 cfs 0.161 af

SubcatchmentS308: Runoff Area=1.085 ac 49.40% Impervious Runoff Depth=1.15"
Tc=6.0 min CN=88 Runoff=0.74 cfs 0.104 af

Reach C1: Avg. Flow Depth=0.37' Max Vel=3.42 fps Inflow=1.14 cfs 0.179 af
18.0" Round Pipe n=0.020 L=120.0' S=0.0167 '/' Capacity=8.81 cfs Outflow=1.12 cfs 0.180 af

Reach C2: Avg. Flow Depth=0.33' Max Vel=2.18 fps Inflow=0.61 cfs 0.099 af
18.0" Round Pipe n=0.020 L=128.0' S=0.0078 '/' Capacity=6.03 cfs Outflow=0.59 cfs 0.100 af

Reach C3: Avg. Flow Depth=0.15' Max Vel=5.07 fps Inflow=0.38 cfs 0.057 af
12.0" Round Pipe n=0.020 L=125.0' S=0.1120 '/' Capacity=7.75 cfs Outflow=0.37 cfs 0.057 af

Reach C6: Avg. Flow Depth=0.18' Max Vel=2.27 fps Inflow=0.22 cfs 0.034 af
12.0" Round Pipe n=0.020 L=111.0' S=0.0180 '/' Capacity=3.11 cfs Outflow=0.21 cfs 0.034 af

Reach R10: Avg. Flow Depth=0.14' Max Vel=1.81 fps Inflow=0.89 cfs 0.091 af
n=0.040 L=1,325.0' S=0.0426 '/' Capacity=130.06 cfs Outflow=0.49 cfs 0.091 af

Reach R11: Avg. Flow Depth=0.40' Max Vel=4.46 fps Inflow=5.95 cfs 1.617 af
n=0.040 L=1,065.0' S=0.0808 '/' Capacity=179.14 cfs Outflow=5.49 cfs 1.617 af

Reach R2: Avg. Flow Depth=0.10' Max Vel=2.73 fps Inflow=0.68 cfs 0.098 af
n=0.030 L=480.0' S=0.0750 '/' Capacity=230.19 cfs Outflow=0.61 cfs 0.099 af

Reach R3: Avg. Flow Depth=0.02' Max Vel=0.58 fps Inflow=0.28 cfs 0.566 af
n=0.080 L=400.0' S=0.1550 '/' Capacity=357.35 cfs Outflow=0.28 cfs 0.566 af

Reach R4: Avg. Flow Depth=0.08' Max Vel=1.49 fps Inflow=0.28 cfs 0.566 af
n=0.030 L=930.0' S=0.0285 '/' Capacity=141.89 cfs Outflow=0.28 cfs 0.566 af

Reach R5: Avg. Flow Depth=0.16' Max Vel=3.44 fps Inflow=1.36 cfs 0.796 af
n=0.030 L=280.0' S=0.0786 '/' Capacity=235.61 cfs Outflow=1.24 cfs 0.796 af

Reach R6: Avg. Flow Depth=0.10' Max Vel=2.22 fps Inflow=0.50 cfs 0.171 af
n=0.040 L=325.0' S=0.0954 '/' Capacity=194.70 cfs Outflow=0.47 cfs 0.171 af

Reach R7: Avg. Flow Depth=0.03' Max Vel=1.35 fps Inflow=0.39 cfs 0.100 af
n=0.030 L=150.0' S=0.0893 '/' Capacity=225.46 cfs Outflow=0.38 cfs 0.101 af

Reach R8: Avg. Flow Depth=0.09' Max Vel=2.41 fps Inflow=0.47 cfs 0.174 af
n=0.030 L=155.0' S=0.0735 '/' Capacity=227.95 cfs Outflow=0.46 cfs 0.174 af

Reach SMA9: Avg. Flow Depth=0.21' Max Vel=0.72 fps Inflow=1.03 cfs 0.161 af
n=0.100 L=350.0' S=0.0229 '/' Capacity=57.25 cfs Outflow=0.81 cfs 0.161 af

Pond C4: Peak Elev=800.94' Storage=21 cf Inflow=4.73 cfs 0.737 af
24.0" Round Culvert n=0.020 L=185.0' S=0.0324 '/' Outflow=4.73 cfs 0.734 af

Pond C5: Peak Elev=788.99' Storage=10 cf Inflow=1.37 cfs 0.799 af
24.0" Round Culvert n=0.020 L=97.0' S=0.0258 '/' Outflow=1.36 cfs 0.796 af

Pond C7: Peak Elev=862.71' Storage=31 cf Inflow=2.35 cfs 0.341 af
18.0" Round Culvert n=0.020 L=58.0' S=0.0345 '/' Outflow=2.34 cfs 0.338 af

Pond C8: Peak Elev=852.42' Storage=5 cf Inflow=0.81 cfs 0.161 af
15.0" Round Culvert n=0.020 L=58.0' S=0.0345 '/' Outflow=0.81 cfs 0.161 af

Pond C9: Peak Elev=852.65' Storage=21 cf Inflow=4.68 cfs 1.134 af
35.0" x 24.0", R=17.9"/55.1" Pipe Arch Culvert w/ 4.8" inside fill n=0.025 L=60.0' S=0.0333 '/' Outflow=4.67 cfs 1.118 af

Pond F1: FOREBAY Peak Elev=794.62' Storage=2,058 cf Inflow=1.10 cfs 0.171 af
Outflow=1.01 cfs 0.171 af

Pond F2: FOREBAY Peak Elev=864.55' Storage=1,545 cf Inflow=0.64 cfs 0.100 af
Outflow=0.63 cfs 0.100 af

Pond F3: FOREBAY Peak Elev=862.57' Storage=3,749 cf Inflow=1.03 cfs 0.174 af
Outflow=0.95 cfs 0.174 af

Pond SMA1: BIORETENTIONAREA Peak Elev=783.09' Storage=736 cf Inflow=0.90 cfs 0.134 af
Primary=0.57 cfs 0.134 af Secondary=0.00 cfs 0.000 af Outflow=0.57 cfs 0.134 af

Pond SMA2: POND Peak Elev=791.76' Storage=37,405 cf Inflow=4.73 cfs 0.734 af
Primary=0.30 cfs 0.727 af Secondary=0.00 cfs 0.000 af Outflow=0.30 cfs 0.727 af

Pond SMA3: POND Peak Elev=881.53' Storage=26,462 cf Inflow=3.24 cfs 0.568 af
Primary=0.28 cfs 0.566 af Secondary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.566 af

Pond SMA4: BIORETENTIONAREA Peak Elev=790.95' Storage=1,821 cf Inflow=1.01 cfs 0.171 af
Primary=0.50 cfs 0.171 af Secondary=0.00 cfs 0.000 af Outflow=0.50 cfs 0.171 af

Pond SMA5: BIORETENTIONAREA Peak Elev=857.70' Storage=5,363 cf Inflow=2.34 cfs 0.338 af
Primary=0.55 cfs 0.338 af Secondary=0.00 cfs 0.000 af Outflow=0.55 cfs 0.338 af

Pond SMA6: BIORETENTIONAREA Peak Elev=860.88' Storage=645 cf Inflow=0.63 cfs 0.100 af
Primary=0.39 cfs 0.100 af Secondary=0.00 cfs 0.000 af Outflow=0.39 cfs 0.100 af

Pond SMA7: BIORETENTIONAREA Peak Elev=858.82' Storage=1,866 cf Inflow=0.95 cfs 0.174 af
Primary=0.47 cfs 0.174 af Secondary=0.00 cfs 0.000 af Outflow=0.47 cfs 0.174 af

Pond SMA8: Peak Elev=908.00' Storage=1,083 cf Inflow=0.74 cfs 0.104 af
Outflow=0.89 cfs 0.091 af

Link A: Inflow=0.09 cfs 0.013 af
Primary=0.09 cfs 0.013 af

Link B: Inflow=4.52 cfs 2.018 af
Primary=4.52 cfs 2.018 af

Link C: Inflow=8.06 cfs 2.286 af
Primary=8.06 cfs 2.286 af

Total Runoff Area = 73.222 ac Runoff Volume = 4.360 af Average Runoff Depth = 0.71"
76.21% Pervious = 55.806 ac 23.79% Impervious = 17.416 ac

Summary for Subcatchment S100:

Runoff = 0.09 cfs @ 12.06 hrs, Volume= 0.013 af, Depth= 0.75"
Routed to Link A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.059	78	Meadow, non-grazed, HSG D
0.022	98	Paved parking, HSG D
0.125	79	Woods, Fair, HSG D
0.206	81	Weighted Average
0.184		89.32% Pervious Area
0.022		10.68% Impervious Area

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

Summary for Subcatchment S200:

Runoff = 2.58 cfs @ 12.03 hrs, Volume= 0.361 af, Depth= 0.80"
Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
1.071	71	Meadow, non-grazed, HSG C
0.296	78	Meadow, non-grazed, HSG D
1.853	79	Woods, Fair, HSG D
0.742	73	Woods, Fair, HSG C
1.155	98	Water Surface, HSG D
0.311	98	Paved parking, HSG D
5.428	82	Weighted Average
3.962		72.99% Pervious Area
1.466		27.01% Impervious Area

Summary for Subcatchment S201:

Runoff = 0.90 cfs @ 12.07 hrs, Volume= 0.134 af, Depth= 0.85"
Routed to Pond SMA1 : BIORETENTION AREA

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.656	98	Paved parking, HSG D
0.535	71	Meadow, non-grazed, HSG C
0.705	78	Meadow, non-grazed, HSG D
1.896	83	Weighted Average
1.240		65.40% Pervious Area
0.656		34.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	65	0.0770	0.24		**Sheet Flow, sf** Grass: Short n= 0.150 P2= 2.54"
0.4	35	0.0400	1.31		**Sheet Flow, sf** Smooth surfaces n= 0.011 P2= 2.54"
1.7	190	0.0740	1.90		**Shallow Concentrated Flow, scf** Short Grass Pasture Kv= 7.0 fps
0.7	190	0.0740	4.38		**Shallow Concentrated Flow, scf** Unpaved Kv= 16.1 fps
7.3	480	Total			

Summary for Subcatchment S202:

Runoff = 2.65 cfs @ 12.06 hrs, Volume= 0.400 af, Depth= 0.75"
Routed to Pond C4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
2.160	98	Paved parking, HSG D
0.661	78	Meadow, non-grazed, HSG D
3.358	71	Meadow, non-grazed, HSG C
0.228	73	Woods, Fair, HSG C
6.407	81	Weighted Average
4.247		66.29% Pervious Area
2.160		33.71% Impervious Area

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

Summary for Subcatchment S203:

Runoff = 1.14 cfs @ 12.08 hrs, Volume= 0.179 af, Depth= 0.80"
Routed to Reach C1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
1.071	98	Paved parking, HSG D
1.622	71	Meadow, non-grazed, HSG C
2.693	82	Weighted Average
1.622		60.23% Pervious Area
1.071		39.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	100	0.0300	0.43		**Sheet Flow, SF** Fallow n= 0.050 P2= 2.54"
0.4	130	0.0930	4.91		**Shallow Concentrated Flow, SCF - LOTS** Unpaved Kv= 16.1 fps
4.6	435	0.0110	1.57		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
8.9	665	Total			

Summary for Subcatchment S204:

Runoff = 0.68 cfs @ 12.05 hrs, Volume= 0.098 af, Depth= 0.90"
Routed to Reach R2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.485	98	Paved parking, HSG D
0.360	71	Meadow, non-grazed, HSG C
0.459	78	Meadow, non-grazed, HSG D
1.304	84	Weighted Average
0.819		62.81% Pervious Area
0.485		37.19% Impervious Area

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

Summary for Subcatchment S205:

Runoff = 3.24 cfs @ 12.56 hrs, Volume= 0.568 af, Depth= 0.96"
Routed to Pond SMA3 : POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
2.651	98	Paved parking, HSG D
0.164	79	Woods, Fair, HSG D
0.594	71	Meadow, non-grazed, HSG C
3.695	78	Meadow, non-grazed, HSG D
7.104	85	Weighted Average
4.453		62.68% Pervious Area
2.651		37.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	50	0.0400	0.05		**Sheet Flow, SF - WOODS** Woods: Dense underbrush n= 0.800 P2= 2.54"
12.1	50	0.0100	0.07		**Sheet Flow, SF - GRASS** Grass: Dense n= 0.240 P2= 2.54"
1.4	140	0.0100	1.61		**Shallow Concentrated Flow, SCF - GRAVEL** Unpaved Kv= 16.1 fps
5.6	790	0.0250	2.37		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
37.4	1,030	Total			

Summary for Subcatchment S206:

Runoff = 1.35 cfs @ 12.08 hrs, Volume= 0.234 af, Depth= 0.42"
Routed to Pond C5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.028	78	Meadow, non-grazed, HSG D
2.405	71	Meadow, non-grazed, HSG C
3.680	73	Woods, Fair, HSG C
0.289	79	Woods, Fair, HSG D
0.226	98	Paved parking, HSG D
6.628	73	Weighted Average
6.402		96.59% Pervious Area
0.226		3.41% Impervious Area

Summary for Subcatchment S207:

Runoff = 0.38 cfs @ 12.06 hrs, Volume= 0.057 af, Depth= 0.75"
Routed to Reach C3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.327	98	Paved parking, HSG D
0.507	71	Meadow, non-grazed, HSG C
0.085	78	Meadow, non-grazed, HSG D
0.919	81	Weighted Average
0.592		64.42% Pervious Area
0.327		35.58% Impervious Area

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

Summary for Subcatchment S300:

Runoff = 2.11 cfs @ 12.92 hrs, Volume= 0.498 af, Depth= 0.75"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.220	98	Paved parking, HSG D
1.720	71	Meadow, non-grazed, HSG C
0.171	92	1/8 acre lots, 65% imp, HSG D
3.452	90	1/8 acre lots, 65% imp, HSG C
0.421	79	Woods, Fair, HSG D
2.003	73	Woods, Fair, HSG C
7.987	81	Weighted Average
5.412		67.76% Pervious Area
2.575		32.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.54"
1.1	85	0.0350	1.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
41.7	2,500	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
58.8	2,685	Total			

Summary for Subcatchment S301:

Runoff = 0.89 cfs @ 12.07 hrs, Volume= 0.137 af, Depth= 0.70"
Routed to Pond F1 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.792	98	Paved parking, HSG D
1.549	71	Meadow, non-grazed, HSG C
2.341	80	Weighted Average
1.549		66.17% Pervious Area
0.792		33.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	100	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 2.54"
1.7	450	0.0780	4.50		**Shallow Concentrated Flow, SCF - SWALE** Unpaved Kv= 16.1 fps
0.8	255	0.1300	5.41		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.0	805	Total			

Summary for Subcatchment S302:

Runoff = 0.22 cfs @ 12.07 hrs, Volume= 0.034 af, Depth= 0.70"
Routed to Reach C6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.382	71	Meadow, non-grazed, HSG C
0.206	98	Paved parking, HSG D
0.588	80	Weighted Average
0.382		64.97% Pervious Area
0.206		35.03% Impervious Area

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

Summary for Subcatchment S303:

Runoff = 2.35 cfs @ 12.05 hrs, Volume= 0.341 af, Depth= 0.96"
Routed to Pond C7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
1.782	98	Paved parking, HSG D
1.470	78	Meadow, non-grazed, HSG D
1.008	71	Meadow, non-grazed, HSG C
4.260	85	Weighted Average
2.478		58.17% Pervious Area
1.782		41.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	100	0.0450	0.50		**Sheet Flow, SF - LOTS** Fallow n= 0.050 P2= 2.54"
1.7	405	0.0600	3.94		**Shallow Concentrated Flow, SCF - LOTS** Unpaved Kv= 16.1 fps
1.7	305	0.0400	3.00		**Shallow Concentrated Flow, SCF - SWALE** Grassed Waterway Kv= 15.0 fps
6.7	810	Total			

Summary for Subcatchment S304:

Runoff = 0.64 cfs @ 12.07 hrs, Volume= 0.100 af, Depth= 0.70"
Routed to Pond F2 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.333	78	Meadow, non-grazed, HSG D
0.875	71	Meadow, non-grazed, HSG C
1.708	80	Weighted Average
1.208		70.73% Pervious Area
0.500		29.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.0600	0.57		**Sheet Flow,** Fallow n= 0.050 P2= 2.54"
3.8	750	0.0480	3.29		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.7	850	Total			

Summary for Subcatchment S305:

Runoff = 3.38 cfs @ 12.70 hrs, Volume= 0.768 af, Depth= 0.53"
Routed to Pond C9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.620	71	Meadow, non-grazed, HSG C
1.131	78	Meadow, non-grazed, HSG D
7.241	79	Woods, Fair, HSG D
8.354	73	Woods, Fair, HSG C
17.346	76	Weighted Average
17.346		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.54"
24.9	1,515	0.0410	1.01		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
45.4	1,615	Total			

Summary for Subcatchment S306:

Runoff = 1.03 cfs @ 12.11 hrs, Volume= 0.174 af, Depth= 0.66"
Routed to Pond F3 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.935	98	Paved parking, HSG D
0.132	73	Woods, Fair, HSG C
2.118	71	Meadow, non-grazed, HSG C
3.185	79	Weighted Average
2.250		70.64% Pervious Area
0.935		29.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0400	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.54"
1.0	320	0.1000	5.09		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.3	420	Total			

Summary for Subcatchment S307:

Runoff = 1.03 cfs @ 12.08 hrs, Volume= 0.161 af, Depth= 0.90"
Routed to Reach SMA9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
1.026	98	Paved parking, HSG D
1.029	71	Meadow, non-grazed, HSG C
0.082	73	Woods, Fair, HSG C
2.137	84	Weighted Average
1.111		51.99% Pervious Area
1.026		48.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0500	0.22		**Sheet Flow, SF - WOODS** Grass: Short n= 0.150 P2= 2.54"
2.2	485	0.0540	3.74		**Shallow Concentrated Flow, SCF - WOODS** Unpaved Kv= 16.1 fps
9.8	585	Total			

Summary for Subcatchment S308:

Runoff = 0.74 cfs @ 12.04 hrs, Volume= 0.104 af, Depth= 1.15"
Routed to Pond SMA8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 1-yr Rainfall=2.22"

Area (ac)	CN	Description
0.549	78	Meadow, non-grazed, HSG D
0.536	98	Paved parking, HSG D
1.085	88	Weighted Average
0.549		50.60% Pervious Area
0.536		49.40% Impervious Area

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

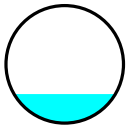
Summary for Reach C1:

Inflow Area = 2.693 ac, 39.77% Impervious, Inflow Depth = 0.80" for 1-yr event
Inflow = 1.14 cfs @ 12.08 hrs, Volume= 0.179 af
Outflow = 1.12 cfs @ 12.09 hrs, Volume= 0.180 af, Atten= 1%, Lag= 0.3 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 3.42 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.59 fps, Avg. Travel Time= 1.3 min

Peak Storage= 40 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.37' , Surface Width= 1.29'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.81 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 120.0' Slope= 0.0167 '/'
Inlet Invert= 814.00', Outlet Invert= 812.00'



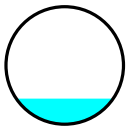
Summary for Reach C2:

Inflow Area = 1.304 ac, 37.19% Impervious, Inflow Depth = 0.91" for 1-yr event
Inflow = 0.61 cfs @ 12.09 hrs, Volume= 0.099 af
Outflow = 0.59 cfs @ 12.10 hrs, Volume= 0.100 af, Atten= 2%, Lag= 0.6 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 2.18 fps, Min. Travel Time= 1.0 min
Avg. Velocity = 0.99 fps, Avg. Travel Time= 2.2 min

Peak Storage= 36 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.33' , Surface Width= 1.24'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 6.03 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 128.0' Slope= 0.0078 '/'
Inlet Invert= 813.00', Outlet Invert= 812.00'



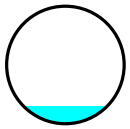
Summary for Reach C3:

Inflow Area = 0.919 ac, 35.58% Impervious, Inflow Depth = 0.75" for 1-yr event
Inflow = 0.38 cfs @ 12.06 hrs, Volume= 0.057 af
Outflow = 0.37 cfs @ 12.08 hrs, Volume= 0.057 af, Atten= 3%, Lag= 0.7 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 5.07 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 2.41 fps, Avg. Travel Time= 0.9 min

Peak Storage= 9 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.15' , Surface Width= 0.72'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 7.75 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 125.0' Slope= 0.1120 '/'
Inlet Invert= 860.00', Outlet Invert= 846.00'



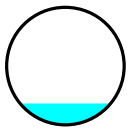
Summary for Reach C6:

Inflow Area = 0.588 ac, 35.03% Impervious, Inflow Depth = 0.70" for 1-yr event
Inflow = 0.22 cfs @ 12.07 hrs, Volume= 0.034 af
Outflow = 0.21 cfs @ 12.09 hrs, Volume= 0.034 af, Atten= 5%, Lag= 1.5 min
Routed to Pond F1 : FOREBAY

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 2.27 fps, Min. Travel Time= 0.8 min
Avg. Velocity = 1.11 fps, Avg. Travel Time= 1.7 min

Peak Storage= 11 cf @ 12.10 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 0.77'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.11 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 111.0' Slope= 0.0180 '/'
Inlet Invert= 850.00', Outlet Invert= 848.00'



Summary for Reach R10:

Inflow Area = 1.085 ac, 49.40% Impervious, Inflow Depth = 1.00" for 1-yr event
Inflow = 0.89 cfs @ 12.48 hrs, Volume= 0.091 af
Outflow = 0.49 cfs @ 12.89 hrs, Volume= 0.091 af, Atten= 45%, Lag= 24.8 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 1.81 fps, Min. Travel Time= 12.2 min
Avg. Velocity = 0.76 fps, Avg. Travel Time= 29.0 min

Peak Storage= 452 cf @ 12.64 hrs
Average Depth at Peak Storage= 0.14' , Surface Width= 2.85'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 130.06 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 1,325.0' Slope= 0.0426 '/'
Inlet Invert= 908.00', Outlet Invert= 851.60'

Summary for Reach R11:

Inflow Area = 29.721 ac, 16.08% Impervious, Inflow Depth = 0.65" for 1-yr event
Inflow = 5.95 cfs @ 12.68 hrs, Volume= 1.617 af
Outflow = 5.49 cfs @ 12.88 hrs, Volume= 1.617 af, Atten= 8%, Lag= 12.0 min
Routed to Link C :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 4.46 fps, Min. Travel Time= 4.0 min
Avg. Velocity = 1.21 fps, Avg. Travel Time= 14.7 min

Peak Storage= 1,338 cf @ 12.79 hrs
Average Depth at Peak Storage= 0.40' , Surface Width= 4.37'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 179.14 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 1,065.0' Slope= 0.0808 '/'
Inlet Invert= 850.00', Outlet Invert= 764.00'

Summary for Reach R2:

Inflow Area = 1.304 ac, 37.19% Impervious, Inflow Depth = 0.90" for 1-yr event
Inflow = 0.68 cfs @ 12.05 hrs, Volume= 0.098 af
Outflow = 0.61 cfs @ 12.09 hrs, Volume= 0.099 af, Atten= 10%, Lag= 2.0 min
Routed to Reach C2 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 2.73 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 1.18 fps, Avg. Travel Time= 6.8 min

Peak Storage= 116 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.10' , Surface Width= 2.63'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 230.19 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 480.0' Slope= 0.0750 '/'
Inlet Invert= 849.00', Outlet Invert= 813.00'

Summary for Reach R3:

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth > 0.96" for 1-yr event
Inflow = 0.28 cfs @ 17.62 hrs, Volume= 0.566 af
Outflow = 0.28 cfs @ 17.95 hrs, Volume= 0.566 af, Atten= 0%, Lag= 19.3 min
Routed to Reach R4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 0.58 fps, Min. Travel Time= 11.5 min
Avg. Velocity = 0.42 fps, Avg. Travel Time= 15.9 min

Peak Storage= 193 cf @ 17.73 hrs
Average Depth at Peak Storage= 0.02' , Surface Width= 22.28'
Bank-Full Depth= 1.00' Flow Area= 70.0 sf, Capacity= 357.35 cfs

20.00' x 1.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 50.0 '/' Top Width= 120.00'
Length= 400.0' Slope= 0.1550 '/'
Inlet Invert= 878.00', Outlet Invert= 816.00'

‡

Summary for Reach R4:

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth > 0.96" for 1-yr event
Inflow = 0.28 cfs @ 17.95 hrs, Volume= 0.566 af
Outflow = 0.28 cfs @ 18.23 hrs, Volume= 0.566 af, Atten= 0%, Lag= 17.1 min
Routed to Pond C5 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 1.49 fps, Min. Travel Time= 10.4 min
Avg. Velocity = 0.96 fps, Avg. Travel Time= 16.1 min

Peak Storage= 175 cf @ 18.06 hrs
Average Depth at Peak Storage= 0.08' , Surface Width= 2.50'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 141.89 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 930.0' Slope= 0.0285 '/'
Inlet Invert= 816.00', Outlet Invert= 789.50'

Summary for Reach R5:

Inflow Area = 13.732 ac, 20.95% Impervious, Inflow Depth > 0.70" for 1-yr event
Inflow = 1.36 cfs @ 12.09 hrs, Volume= 0.796 af
Outflow = 1.24 cfs @ 12.14 hrs, Volume= 0.796 af, Atten= 9%, Lag= 3.0 min
Routed to Link B :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 3.44 fps, Min. Travel Time= 1.4 min
Avg. Velocity = 1.51 fps, Avg. Travel Time= 3.1 min

Peak Storage= 106 cf @ 12.15 hrs
Average Depth at Peak Storage= 0.16' , Surface Width= 2.93'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 235.61 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 280.0' Slope= 0.0786 '/'
Inlet Invert= 786.00', Outlet Invert= 764.00'

Summary for Reach R6:

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 0.70" for 1-yr event
Inflow = 0.50 cfs @ 12.74 hrs, Volume= 0.171 af
Outflow = 0.47 cfs @ 12.76 hrs, Volume= 0.171 af, Atten= 6%, Lag= 1.1 min
Routed to Link C :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 2.22 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 1.02 fps, Avg. Travel Time= 5.3 min

Peak Storage= 74 cf @ 12.71 hrs
Average Depth at Peak Storage= 0.10' , Surface Width= 2.60'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 194.70 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 325.0' Slope= 0.0954 '/'
Inlet Invert= 795.00', Outlet Invert= 764.00'

Summary for Reach R7:

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 0.70" for 1-yr event
Inflow = 0.39 cfs @ 12.54 hrs, Volume= 0.100 af
Outflow = 0.38 cfs @ 12.57 hrs, Volume= 0.101 af, Atten= 1%, Lag= 2.1 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 1.35 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 0.73 fps, Avg. Travel Time= 3.4 min

Peak Storage= 43 cf @ 12.54 hrs
Average Depth at Peak Storage= 0.03' , Surface Width= 10.56'
Bank-Full Depth= 1.00' Flow Area= 20.0 sf, Capacity= 225.46 cfs

10.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 150.0' Slope= 0.0893 '/'
Inlet Invert= 865.00', Outlet Invert= 851.60'

‡

Summary for Reach R8:

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 0.66" for 1-yr event
Inflow = 0.47 cfs @ 12.82 hrs, Volume= 0.174 af
Outflow = 0.46 cfs @ 12.88 hrs, Volume= 0.174 af, Atten= 1%, Lag= 3.5 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 2.41 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.14 fps, Avg. Travel Time= 2.3 min

Peak Storage= 30 cf @ 12.83 hrs
Average Depth at Peak Storage= 0.09' , Surface Width= 2.51'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 227.95 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 155.0' Slope= 0.0735 '/'
Inlet Invert= 863.00', Outlet Invert= 851.60'

Summary for Reach SMA9:

Inflow Area = 2.137 ac, 48.01% Impervious, Inflow Depth = 0.90" for 1-yr event
Inflow = 1.03 cfs @ 12.08 hrs, Volume= 0.161 af
Outflow = 0.81 cfs @ 12.43 hrs, Volume= 0.161 af, Atten= 22%, Lag= 20.6 min
Routed to Pond C8 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 0.72 fps, Min. Travel Time= 8.1 min
Avg. Velocity = 0.29 fps, Avg. Travel Time= 20.3 min

Peak Storage= 418 cf @ 12.30 hrs
Average Depth at Peak Storage= 0.21' , Surface Width= 6.27'
Bank-Full Depth= 2.00' Flow Area= 22.0 sf, Capacity= 57.25 cfs

5.00' x 2.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 3.0 '/' Top Width= 17.00'
Length= 350.0' Slope= 0.0229 '/'
Inlet Invert= 870.25', Outlet Invert= 862.25'

‡

Summary for Pond C4:

Inflow Area = 11.323 ac, 35.71% Impervious, Inflow Depth = 0.78" for 1-yr event
Inflow = 4.73 cfs @ 12.07 hrs, Volume= 0.737 af
Outflow = 4.73 cfs @ 12.07 hrs, Volume= 0.734 af, Atten= 0%, Lag= 0.0 min
Primary = 4.73 cfs @ 12.07 hrs, Volume= 0.734 af
Routed to Pond SMA2 : POND

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 800.94' @ 12.10 hrs Surf.Area= 46 sf Storage= 21 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	1,224 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
800.00	5	5.0	0	0	5
802.00	140	50.0	114	114	209
804.00	430	85.0	544	658	609
805.00	715	105.0	566	1,224	926

Device	Routing	Invert	Outlet Devices
#1	Primary	800.00'	**24.0" Round Culvert** L= 185.0' Ke= 0.500 Inlet / Outlet Invert= 800.00' / 794.00' S= 0.0324 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 3.14 sf

Primary OutFlow Max=4.30 cfs @ 12.07 hrs HW=800.89' (Free Discharge)
↑**1=Culvert** (Inlet Controls 4.30 cfs @ 3.20 fps)

Summary for Pond C5:

Inflow Area = 13.732 ac, 20.95% Impervious, Inflow Depth > 0.70" for 1-yr event
Inflow = 1.37 cfs @ 12.09 hrs, Volume= 0.799 af
Outflow = 1.36 cfs @ 12.09 hrs, Volume= 0.796 af, Atten= 0%, Lag= 0.0 min
Primary = 1.36 cfs @ 12.09 hrs, Volume= 0.796 af
Routed to Reach R5 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 788.99' @ 12.12 hrs Surf.Area= 53 sf Storage= 10 cf

Plug-Flow detention time= 9.4 min calculated for 0.790 af (99% of inflow)
Center-of-Mass det. time= 0.4 min (1,423.6 - 1,423.1)

Volume	Invert	Avail.Storage	Storage Description
#1	788.50'	2,121 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
788.50	1	1.0	0	0	1
790.00	410	110.0	216	216	967
792.00	1,630	270.0	1,905	2,121	5,821

Device	Routing	Invert	Outlet Devices
#1	Primary	788.50'	**24.0" Round Culvert** L= 97.0' Ke= 0.500 Inlet / Outlet Invert= 788.50' / 786.00' S= 0.0258 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 3.14 sf

Primary OutFlow Max=1.21 cfs @ 12.09 hrs HW=788.95' (Free Discharge)
1=Culvert (Inlet Controls 1.21 cfs @ 2.29 fps)

Summary for Pond C7:

Inflow Area = 4.260 ac, 41.83% Impervious, Inflow Depth = 0.96" for 1-yr event
Inflow = 2.35 cfs @ 12.05 hrs, Volume= 0.341 af
Outflow = 2.34 cfs @ 12.05 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min
Primary = 2.34 cfs @ 12.05 hrs, Volume= 0.338 af
Routed to Pond SMA5 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 862.71' @ 12.07 hrs Surf.Area= 91 sf Storage= 31 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	862.00'	1,450 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
862.00	10	15.0	0	0	10
864.00	445	125.0	348	348	1,243
865.50	1,070	155.0	1,103	1,450	1,944

Device	Routing	Invert	Outlet Devices
#1	Primary	862.00'	**18.0" Round Culvert** L= 58.0' Ke= 0.500 Inlet / Outlet Invert= 862.00' / 860.00' S= 0.0345 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.77 sf

Primary OutFlow Max=2.17 cfs @ 12.05 hrs HW=862.68' (Free Discharge)
1=Culvert (Inlet Controls 2.17 cfs @ 2.80 fps)

Summary for Pond C8:

Inflow Area = 2.137 ac, 48.01% Impervious, Inflow Depth = 0.90" for 1-yr event
Inflow = 0.81 cfs @ 12.43 hrs, Volume= 0.161 af
Outflow = 0.81 cfs @ 12.43 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.1 min
Primary = 0.81 cfs @ 12.43 hrs, Volume= 0.161 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 852.42' @ 12.42 hrs Surf.Area= 18 sf Storage= 5 cf

Plug-Flow detention time= 0.1 min calculated for 0.160 af (99% of inflow)
Center-of-Mass det. time= 0.1 min (898.2 - 898.0)

Volume	Invert	Avail.Storage	Storage Description
#1	852.00'	114 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
852.00	5	5.0	0	0	5
854.00	140	40.0	114	114	138

Device	Routing	Invert	Outlet Devices
#1	Primary	852.00'	**15.0" Round Culvert** L= 58.0' Ke= 0.500 Inlet / Outlet Invert= 852.00' / 850.00' S= 0.0345 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.77 cfs @ 12.43 hrs HW=852.41' (Free Discharge)
1=Culvert (Inlet Controls 0.77 cfs @ 2.18 fps)

Summary for Pond C9:

Inflow Area = 23.324 ac, 8.45% Impervious, Inflow Depth = 0.58" for 1-yr event
Inflow = 4.68 cfs @ 12.72 hrs, Volume= 1.134 af
Outflow = 4.67 cfs @ 12.72 hrs, Volume= 1.118 af, Atten= 0%, Lag= 0.0 min
Primary = 4.67 cfs @ 12.72 hrs, Volume= 1.118 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 852.65' @ 12.72 hrs Surf.Area= 86 sf Storage= 21 cf

Plug-Flow detention time= 4.5 min calculated for 1.118 af (99% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	852.00'	5,020 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
852.00	1	1.0	0	0	1
854.00	710	145.0	492	492	1,680
856.00	2,530	320.0	3,054	3,545	8,173
856.50	3,390	350.0	1,475	5,020	9,781

Device	Routing	Invert	Outlet Devices
#1	Primary	852.00'	**35.0" W x 24.0" H, R=17.9"/55.1" Pipe Arch CMP_Arch_1/2 35x24 w/ 4.8" ins** L= 60.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 851.60' / 849.60' S= 0.0333 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.78 sf

Primary OutFlow Max=4.22 cfs @ 12.72 hrs HW=852.60' (Free Discharge)
1=CMP_Arch_1/2 35x24 (Inlet Controls 4.22 cfs @ 2.47 fps)

Summary for Pond F1: FOREBAY

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 0.70" for 1-yr event
Inflow = 1.10 cfs @ 12.07 hrs, Volume= 0.171 af
Outflow = 1.01 cfs @ 12.13 hrs, Volume= 0.171 af, Atten= 8%, Lag= 3.4 min
Primary = 1.01 cfs @ 12.13 hrs, Volume= 0.171 af
Routed to Pond SMA4 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 794.50' Surf.Area= 1,103 sf Storage= 1,917 cf
Peak Elev= 794.62' @ 12.15 hrs Surf.Area= 1,151 sf Storage= 2,058 cf (140 cf above start)

Plug-Flow detention time= 177.2 min calculated for 0.127 af (74% of inflow)
Center-of-Mass det. time= 3.1 min (895.6 - 892.5)

Volume	Invert	Avail.Storage	Storage Description
#1	790.00'	4,038 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
790.00	5	5.0	0	0	5
792.00	310	80.0	236	236	519
794.00	920	120.0	1,176	1,412	1,187
796.00	1,750	160.0	2,626	4,038	2,121

Device	Routing	Invert	Outlet Devices
#0	Primary	796.00'	**Automatic Storage Overflow** (Discharged without head)
#1	Primary	794.50'	**10.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.89 cfs @ 12.13 hrs HW=794.61' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.89 cfs @ 0.79 fps)

Summary for Pond F2: FOREBAY

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 0.70" for 1-yr event
Inflow = 0.64 cfs @ 12.07 hrs, Volume= 0.100 af
Outflow = 0.63 cfs @ 12.08 hrs, Volume= 0.100 af, Atten= 2%, Lag= 0.2 min
Primary = 0.63 cfs @ 12.08 hrs, Volume= 0.100 af
Routed to Pond SMA6 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Starting Elev= 864.50' Surf.Area= 1,015 sf Storage= 1,490 cf
Peak Elev= 864.55' @ 12.08 hrs Surf.Area= 1,036 sf Storage= 1,545 cf (55 cf above start)

Plug-Flow detention time= 224.7 min calculated for 0.065 af (65% of inflow)
Center-of-Mass det. time= 1.3 min (893.9 - 892.6)

Volume	Invert	Avail.Storage	Storage Description
#1	860.00'	3,490 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
860.00	1	1.0	0	0	1
862.00	165	90.0	119	119	652
864.00	830	125.0	910	1,029	1,288
866.00	1,680	165.0	2,461	3,490	2,256

Device	Routing	Invert	Outlet Devices
#1	Primary	864.50'	**20.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.52 cfs @ 12.08 hrs HW=864.55' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.52 cfs @ 0.53 fps)

Summary for Pond F3: FOREBAY

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 0.66" for 1-yr event
Inflow = 1.03 cfs @ 12.11 hrs, Volume= 0.174 af
Outflow = 0.95 cfs @ 12.18 hrs, Volume= 0.174 af, Atten= 7%, Lag= 4.2 min
Primary = 0.95 cfs @ 12.18 hrs, Volume= 0.174 af
Routed to Pond SMA7 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 862.50' Surf.Area= 1,666 sf Storage= 3,623 cf
Peak Elev= 862.57' @ 12.20 hrs Surf.Area= 1,694 sf Storage= 3,749 cf (126 cf above start)

Plug-Flow detention time= 315.0 min calculated for 0.091 af (52% of inflow)
Center-of-Mass det. time= 2.6 min (902.5 - 899.9)

Volume	Invert	Avail.Storage	Storage Description
#1	858.00'	6,553 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
858.00	150	55.0	0	0	150
860.00	655	105.0	746	746	806
862.00	1,490	155.0	2,089	2,834	1,873
864.00	2,255	185.0	3,719	6,553	2,753

Device	Routing	Invert	Outlet Devices
#1	Primary	862.50'	**20.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.82 cfs @ 12.18 hrs HW=862.57' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.82 cfs @ 0.61 fps)

Summary for Pond SMA1: BIORETENTION AREA

Inflow Area = 1.896 ac, 34.60% Impervious, Inflow Depth = 0.85" for 1-yr event
Inflow = 0.90 cfs @ 12.07 hrs, Volume= 0.134 af
Outflow = 0.57 cfs @ 12.37 hrs, Volume= 0.134 af, Atten= 37%, Lag= 18.3 min
Primary = 0.57 cfs @ 12.37 hrs, Volume= 0.134 af
Routed to Link B :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link B :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 783.09' @ 12.46 hrs Surf.Area= 4,140 sf Storage= 736 cf

Plug-Flow detention time= 26.0 min calculated for 0.133 af (99% of inflow)
Center-of-Mass det. time= 27.1 min (905.5 - 878.5)

Volume	Invert	Avail.Storage	Storage Description
#1	782.17'	687 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 1,718 cf Overall x 40.0% Voids
#2	783.00'	1,294 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 5,175 cf Overall x 25.0% Voids
#3	785.50'	12,294 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		14,275 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
782.17	2,070	400.0	0	0	2,070
783.00	2,070	400.0	1,718	1,718	2,402

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
783.00	2,070	400.0	0	0	2,070
785.50	2,070	400.0	5,175	5,175	3,070

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
785.50	2,070	400.0	0	0	2,070
786.00	2,680	410.0	1,184	1,184	2,746
788.00	5,265	450.0	7,801	8,985	5,615
788.50	8,070	485.0	3,309	12,294	8,230

Device	Routing	Invert	Outlet Devices
#1	Primary	782.17'	**6.0" Round Culvert** L= 42.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 782.17' / 781.40' S= 0.0183 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	787.00'	**8.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=0.54 cfs @ 12.37 hrs HW=783.01' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 0.54 cfs @ 2.77 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=782.17' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA2: POND

Inflow Area = 11.323 ac, 35.71% Impervious, Inflow Depth = 0.78" for 1-yr event
Inflow = 4.73 cfs @ 12.07 hrs, Volume= 0.734 af
Outflow = 0.30 cfs @ 19.90 hrs, Volume= 0.727 af, Atten= 94%, Lag= 469.5 min
Primary = 0.30 cfs @ 19.90 hrs, Volume= 0.727 af
Routed to Link B :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link B :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Starting Elev= 790.00' Surf.Area= 9,500 sf Storage= 17,737 cf
Peak Elev= 791.76' @ 19.90 hrs Surf.Area= 12,899 sf Storage= 37,405 cf (19,668 cf above start)

Plug-Flow detention time= 1,639.5 min calculated for 0.318 af (43% of inflow)
Center-of-Mass det. time= 845.7 min (1,731.2 - 885.4)

Volume	Invert	Avail.Storage	Storage Description
#1	784.00'	81,315 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
784.00	50	60.0	0	0	50
786.00	1,085	250.0	912	912	4,747
788.00	3,480	450.0	4,339	5,251	15,910
790.00	9,500	655.0	12,487	17,737	33,970
792.00	13,395	615.0	22,784	40,521	38,208
794.00	17,355	700.0	30,665	71,186	47,199
794.55	19,500	730.0	10,129	81,315	50,636

Device	Routing	Invert	Outlet Devices
#1	Primary	786.50'	**18.0" Round Culvert** L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 786.50' / 786.00' S= 0.0139 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.77 sf
#2	Device 1	790.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	791.80'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	793.55'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Device 1	792.15'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns** X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.30 cfs @ 19.90 hrs HW=791.76' (Free Discharge)
└**1=Culvert** (Passes 0.30 cfs of 16.74 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.30 cfs @ 6.16 fps)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=790.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA3: POND

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth = 0.96" for 1-yr event
Inflow = 3.24 cfs @ 12.56 hrs, Volume= 0.568 af
Outflow = 0.28 cfs @ 17.62 hrs, Volume= 0.566 af, Atten= 91%, Lag= 303.9 min
Primary = 0.28 cfs @ 17.62 hrs, Volume= 0.566 af
  Routed to Reach R3 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
  Routed to Reach R3 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 880.00' Surf.Area= 7,820 sf Storage= 12,194 cf
Peak Elev= 881.53' @ 17.62 hrs Surf.Area= 10,903 sf Storage= 26,462 cf (14,268 cf above start)

Plug-Flow detention time= 1,304.2 min calculated for 0.286 af (50% of inflow)
Center-of-Mass det. time= 686.1 min (1,583.1 - 897.0)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	60,184 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
874.00	2	10.0	0	0	2
876.00	500	185.0	356	356	2,725
878.00	2,150	340.0	2,458	2,814	9,221
880.00	7,820	590.0	9,380	12,194	27,747
882.00	11,950	665.0	19,625	31,818	35,341
884.00	16,540	725.0	28,366	60,184	42,122

Device	Routing	Invert	Outlet Devices
#1	Primary	875.85'	**15.0" Round Culvert** L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 875.85' / 875.00' S= 0.0170 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf
#2	Device 1	880.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	881.55'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	882.95'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#5	Device 1	882.30'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns** X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area) Limited to weir flow at low heads

Primary OutFlow Max=0.28 cfs @ 17.62 hrs HW=881.53' (Free Discharge)
└**1=Culvert** (Passes 0.28 cfs of 10.97 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.28 cfs @ 5.71 fps)
  ├**3=Orifice/Grate** (Controls 0.00 cfs)
  └**5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=880.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA4: BIORETENTION AREA

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 0.70" for 1-yr event
Inflow = 1.01 cfs @ 12.13 hrs, Volume= 0.171 af
Outflow = 0.50 cfs @ 12.74 hrs, Volume= 0.171 af, Atten= 50%, Lag= 36.6 min
Primary = 0.50 cfs @ 12.74 hrs, Volume= 0.171 af
Routed to Reach R6 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R6 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 790.95' @ 12.72 hrs Surf.Area= 5,850 sf Storage= 1,821 cf

Plug-Flow detention time= 83.8 min calculated for 0.171 af (100% of inflow)
Center-of-Mass det. time= 77.1 min (972.7 - 895.6)

Volume	Invert	Avail.Storage	Storage Description
#1	790.17'	1,942 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,856 cf Overall x 40.0% Voids
#2	791.00'	3,656 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 14,625 cf Overall x 25.0% Voids
#3	793.50'	22,718 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		28,316 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
790.17	5,850	330.0	0	0	5,850
791.00	5,850	330.0	4,856	4,856	6,124

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
791.00	5,850	330.0	0	0	5,850
793.50	5,850	330.0	14,625	14,625	6,675

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
793.50	5,850	330.0	0	0	5,850
794.00	6,355	340.0	3,050	3,050	6,409
796.00	8,520	380.0	14,822	17,873	8,811
796.50	10,910	415.0	4,845	22,718	11,034

Device	Routing	Invert	Outlet Devices
#1	Primary	790.17'	**6.0" Round Culvert** L= 72.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 790.17' / 789.00' S= 0.0162 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	795.00'	**8.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=0.48 cfs @ 12.74 hrs HW=790.90' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.48 cfs @ 2.42 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=790.17' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA5: BIORETENTION AREA

Inflow Area = 4.260 ac, 41.83% Impervious, Inflow Depth = 0.95" for 1-yr event
Inflow = 2.34 cfs @ 12.05 hrs, Volume= 0.338 af
Outflow = 0.55 cfs @ 13.07 hrs, Volume= 0.338 af, Atten= 76%, Lag= 61.0 min
Primary = 0.55 cfs @ 13.07 hrs, Volume= 0.338 af
Routed to Reach R11 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 857.70' @ 13.07 hrs Surf.Area= 13,997 sf Storage= 5,363 cf

Plug-Flow detention time= 141.2 min calculated for 0.338 af (100% of inflow)
Center-of-Mass det. time= 137.1 min (1,004.7 - 867.6)

Volume	Invert	Avail.Storage	Storage Description
#1	854.17'	1,527 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 3,818 cf Overall x 40.0% Voids
#2	855.00'	2,875 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 11,500 cf Overall x 25.0% Voids
#3	857.50'	18,591 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		22,993 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
854.17	4,600	320.0	0	0	4,600
855.00	4,600	320.0	3,818	3,818	4,866

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
855.00	4,600	320.0	0	0	4,600
857.50	4,600	320.0	11,500	11,500	5,400

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
857.50	4,600	320.0	0	0	4,600
858.00	5,090	330.0	2,421	2,421	5,142
860.00	7,190	370.0	12,220	14,641	7,478
860.50	8,630	395.0	3,950	18,591	9,012

Device	Routing	Invert	Outlet Devices
#1	Device 4	854.17'	**6.0" Round Culvert**
			L= 130.0' CMP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 854.17' / 854.00' S= 0.0013 '/' Cc= 0.900
			n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	859.00'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#3	Device 4	858.50'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns**
			X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area)
			Limited to weir flow at low heads
#4	Primary	853.25'	**15.0" Round Culvert**
			L= 100.0' CMP, square edge headwall, Ke= 0.500
			Inlet / Outlet Invert= 853.25' / 852.00' S= 0.0125 '/' Cc= 0.900
			n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf

Primary OutFlow Max=0.55 cfs @ 13.07 hrs HW=857.70' (Free Discharge)
└**4=Culvert** (Passes 0.55 cfs of 7.84 cfs potential flow)
  └**1=Culvert** (Barrel Controls 0.55 cfs @ 2.80 fps)
  └**3=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=854.17' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA6: BIORETENTION AREA

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 0.70" for 1-yr event
Inflow = 0.63 cfs @ 12.08 hrs, Volume= 0.100 af
Outflow = 0.39 cfs @ 12.54 hrs, Volume= 0.100 af, Atten= 38%, Lag= 27.5 min
Primary = 0.39 cfs @ 12.54 hrs, Volume= 0.100 af
Routed to Reach R7 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R7 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 860.88' @ 12.51 hrs Surf.Area= 2,285 sf Storage= 645 cf

Plug-Flow detention time= 47.3 min calculated for 0.100 af (100% of inflow)
Center-of-Mass det. time= 38.4 min (932.3 - 893.9)

Volume	Invert	Avail.Storage	Storage Description
#1	860.17'	759 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
			1,897 cf Overall x 40.0% Voids
#2	861.00'	1,428 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
			5,713 cf Overall x 25.0% Voids
#3	863.50'	10,318 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		12,505 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
860.17	2,285	240.0	0	0	2,285
861.00	2,285	240.0	1,897	1,897	2,484

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
861.00	2,285	240.0	0	0	2,285
863.50	2,285	240.0	5,713	5,713	2,885

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
863.50	2,285	240.0	0	0	2,285
864.00	2,650	250.0	1,233	1,233	2,694
866.00	4,205	285.0	6,795	8,028	4,277
866.50	4,965	295.0	2,290	10,318	4,761

Device	Routing	Invert	Outlet Devices
#1	Primary	860.17'	**6.0" Round Culvert**
			L= 110.0' CMP, projecting, no headwall, Ke= 0.900
			Inlet / Outlet Invert= 860.17' / 859.00' S= 0.0106 '/' Cc= 0.900
			n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	865.00'	**15.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65
			2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.39 cfs @ 12.54 hrs HW=860.86' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.39 cfs @ 1.97 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=860.17' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA7: BIORETENTION AREA

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 0.66" for 1-yr event
Inflow = 0.95 cfs @ 12.18 hrs, Volume= 0.174 af
Outflow = 0.47 cfs @ 12.82 hrs, Volume= 0.174 af, Atten= 51%, Lag= 38.8 min
Primary = 0.47 cfs @ 12.82 hrs, Volume= 0.174 af
Routed to Reach R8 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R8 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 858.82' @ 12.85 hrs Surf.Area= 7,220 sf Storage= 1,866 cf

Plug-Flow detention time= 89.4 min calculated for 0.173 af (99% of inflow)
Center-of-Mass det. time= 96.1 min (998.6 - 902.5)

Volume	Invert	Avail.Storage	Storage Description
#1	858.17'	2,397 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 5,993 cf Overall x 40.0% Voids
#2	859.00'	4,513 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 18,050 cf Overall x 25.0% Voids
#3	861.50'	26,547 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		33,456 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
858.17	7,220	370.0	0	0	7,220
859.00	7,220	370.0	5,993	5,993	7,527

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
859.00	7,220	370.0	0	0	7,220
861.50	7,220	370.0	18,050	18,050	8,145

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
861.50	7,220	370.0	0	0	7,220
862.00	7,780	380.0	3,749	3,749	7,846
864.00	9,950	415.0	17,686	21,435	10,198
864.50	10,500	425.0	5,112	26,547	10,899

Device	Routing	Invert	Outlet Devices
#1	Primary	858.17'	**6.0" Round Culvert** L= 78.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 858.17' / 857.00' S= 0.0150 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	863.00'	**20.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.46 cfs @ 12.82 hrs HW=858.80' (Free Discharge)
└**1=Culvert** (Inlet Controls 0.46 cfs @ 2.34 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=858.17' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA8:

Inflow Area = 1.085 ac, 49.40% Impervious, Inflow Depth = 1.15" for 1-yr event
Inflow = 0.74 cfs @ 12.04 hrs, Volume= 0.104 af
Outflow = 0.89 cfs @ 12.48 hrs, Volume= 0.091 af, Atten= 0%, Lag= 26.1 min
Primary = 0.89 cfs @ 12.48 hrs, Volume= 0.091 af
Routed to Reach R10 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Peak Elev= 908.00' @ 12.50 hrs Surf.Area= 1,350 sf Storage= 1,083 cf

Plug-Flow detention time= 108.0 min calculated for 0.091 af (87% of inflow)
Center-of-Mass det. time= 45.6 min (897.1 - 851.5)

Volume	Invert	Avail.Storage	Storage Description
#1	906.00'	1,620 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,050 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
906.00	1,350	1,360.0	0	0	1,350
909.00	1,350	1,360.0	4,050	4,050	5,430

Device	Routing	Invert	Outlet Devices
#1	Primary	908.00'	**675.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.58 cfs @ 12.48 hrs HW=908.00' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 0.58 cfs @ 0.18 fps)

Summary for Link A:

Inflow Area = 0.206 ac, 10.68% Impervious, Inflow Depth = 0.75" for 1-yr event
Inflow = 0.09 cfs @ 12.06 hrs, Volume= 0.013 af
Primary = 0.09 cfs @ 12.06 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Summary for Link B:

Inflow Area = 32.379 ac, 27.93% Impervious, Inflow Depth > 0.75" for 1-yr event
Inflow = 4.52 cfs @ 12.09 hrs, Volume= 2.018 af
Primary = 4.52 cfs @ 12.09 hrs, Volume= 2.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Summary for Link C:

Inflow Area = 40.637 ac, 20.55% Impervious, Inflow Depth = 0.68" for 1-yr event
Inflow = 8.06 cfs @ 12.89 hrs, Volume= 2.286 af
Primary = 8.06 cfs @ 12.89 hrs, Volume= 2.286 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Time span=5.00-72.00 hrs, dt=0.50 hrs, 135 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS100: Runoff Area=0.206 ac 10.68% Impervious Runoff Depth=1.74"
Tc=6.0 min CN=81 Runoff=0.24 cfs 0.030 af

SubcatchmentS200: Runoff Area=5.428 ac 27.01% Impervious Runoff Depth=1.82"
Tc=0.0 min CN=82 Runoff=6.84 cfs 0.821 af

SubcatchmentS201: Runoff Area=1.896 ac 34.60% Impervious Runoff Depth=1.89"
Flow Length=480' Tc=7.3 min CN=83 Runoff=2.34 cfs 0.299 af

SubcatchmentS202: Runoff Area=6.407 ac 33.71% Impervious Runoff Depth=1.74"
Tc=6.0 min CN=81 Runoff=7.36 cfs 0.930 af

SubcatchmentS203: Runoff Area=2.693 ac 39.77% Impervious Runoff Depth=1.82"
Flow Length=665' Tc=8.9 min CN=82 Runoff=3.08 cfs 0.407 af

SubcatchmentS204: Runoff Area=1.304 ac 37.19% Impervious Runoff Depth=1.97"
Tc=6.0 min CN=84 Runoff=1.71 cfs 0.214 af

SubcatchmentS205: Runoff Area=7.104 ac 37.32% Impervious Runoff Depth=2.05"
Flow Length=1,030' Tc=37.4 min CN=85 Runoff=7.96 cfs 1.214 af

SubcatchmentS206: Runoff Area=6.628 ac 3.41% Impervious Runoff Depth=1.21"
Tc=0.0 min CN=73 Runoff=5.32 cfs 0.666 af

SubcatchmentS207: Runoff Area=0.919 ac 35.58% Impervious Runoff Depth=1.74"
Tc=6.0 min CN=81 Runoff=1.06 cfs 0.133 af

SubcatchmentS300: Runoff Area=7.987 ac 32.24% Impervious Runoff Depth=1.74"
Flow Length=2,685' Tc=58.8 min CN=81 Runoff=5.79 cfs 1.159 af

SubcatchmentS301: Runoff Area=2.341 ac 33.83% Impervious Runoff Depth=1.67"
Flow Length=805' Tc=6.0 min CN=80 Runoff=2.56 cfs 0.325 af

SubcatchmentS302: Runoff Area=0.588 ac 35.03% Impervious Runoff Depth=1.67"
Tc=6.0 min CN=80 Runoff=0.64 cfs 0.082 af

SubcatchmentS303: Runoff Area=4.260 ac 41.83% Impervious Runoff Depth=2.05"
Flow Length=810' Tc=6.7 min CN=85 Runoff=5.78 cfs 0.728 af

SubcatchmentS304: Runoff Area=1.708 ac 29.27% Impervious Runoff Depth=1.67"
Flow Length=850' Tc=6.7 min CN=80 Runoff=1.85 cfs 0.237 af

SubcatchmentS305: Runoff Area=17.346 ac 0.00% Impervious Runoff Depth=1.39"
Flow Length=1,615' Tc=45.4 min CN=76 Runoff=11.50 cfs 2.016 af

SubcatchmentS306: Runoff Area=3.185 ac 29.36% Impervious Runoff Depth=1.60"
Flow Length=420' Tc=9.3 min CN=79 Runoff=3.12 cfs 0.424 af

SubcatchmentS307: Runoff Area=2.137 ac 48.01% Impervious Runoff Depth=1.97"
Flow Length=585' Tc=9.8 min CN=84 Runoff=2.63 cfs 0.351 af

SubcatchmentS308: Runoff Area=1.085 ac 49.40% Impervious Runoff Depth>2.31"
Tc=6.0 min CN=88 Runoff=1.67 cfs 0.208 af

Reach C1: Avg. Flow Depth=0.62' Max Vel=4.53 fps Inflow=3.08 cfs 0.407 af
18.0" Round Pipe n=0.020 L=120.0' S=0.0167 '/' Capacity=8.81 cfs Outflow=3.05 cfs 0.411 af

Reach C2: Avg. Flow Depth=0.53' Max Vel=2.87 fps Inflow=1.59 cfs 0.216 af
18.0" Round Pipe n=0.020 L=128.0' S=0.0078 '/' Capacity=6.03 cfs Outflow=1.56 cfs 0.218 af

Reach C3: Avg. Flow Depth=0.25' Max Vel=6.86 fps Inflow=1.06 cfs 0.133 af
12.0" Round Pipe n=0.020 L=125.0' S=0.1120 '/' Capacity=7.75 cfs Outflow=1.04 cfs 0.133 af

Reach C6: Avg. Flow Depth=0.31' Max Vel=3.09 fps Inflow=0.64 cfs 0.082 af
12.0" Round Pipe n=0.020 L=111.0' S=0.0180 '/' Capacity=3.11 cfs Outflow=0.62 cfs 0.082 af

Reach R10: Avg. Flow Depth=0.23' Max Vel=2.28 fps Inflow=1.92 cfs 0.189 af
n=0.040 L=1,325.0' S=0.0426 '/' Capacity=130.06 cfs Outflow=1.19 cfs 0.189 af

Reach R11: Avg. Flow Depth=0.73' Max Vel=6.22 fps Inflow=19.53 cfs 3.839 af
n=0.040 L=1,065.0' S=0.0808 '/' Capacity=179.14 cfs Outflow=17.76 cfs 3.839 af

Reach R2: Avg. Flow Depth=0.18' Max Vel=3.73 fps Inflow=1.71 cfs 0.214 af
n=0.030 L=480.0' S=0.0750 '/' Capacity=230.19 cfs Outflow=1.59 cfs 0.216 af

Reach R3: Avg. Flow Depth=0.11' Max Vel=1.44 fps Inflow=3.81 cfs 1.212 af
n=0.080 L=400.0' S=0.1550 '/' Capacity=357.35 cfs Outflow=3.66 cfs 1.212 af

Reach R4: Avg. Flow Depth=0.36' Max Vel=3.39 fps Inflow=3.66 cfs 1.212 af
n=0.030 L=930.0' S=0.0285 '/' Capacity=141.89 cfs Outflow=3.54 cfs 1.212 af

Reach R5: Avg. Flow Depth=0.33' Max Vel=5.35 fps Inflow=5.41 cfs 1.851 af
n=0.030 L=280.0' S=0.0786 '/' Capacity=235.61 cfs Outflow=5.13 cfs 1.851 af

Reach R6: Avg. Flow Depth=0.13' Max Vel=2.64 fps Inflow=0.82 cfs 0.407 af
n=0.040 L=325.0' S=0.0954 '/' Capacity=194.70 cfs Outflow=0.82 cfs 0.407 af

Reach R7: Avg. Flow Depth=0.04' Max Vel=1.67 fps Inflow=0.70 cfs 0.241 af
n=0.030 L=150.0' S=0.0893 '/' Capacity=225.46 cfs Outflow=0.68 cfs 0.241 af

Reach R8: Avg. Flow Depth=0.12' Max Vel=2.88 fps Inflow=0.78 cfs 0.424 af
n=0.030 L=155.0' S=0.0735 '/' Capacity=227.95 cfs Outflow=0.78 cfs 0.424 af

Reach SMA9: Avg. Flow Depth=0.37' Max Vel=0.99 fps Inflow=2.63 cfs 0.351 af
n=0.100 L=350.0' S=0.0229 '/' Capacity=57.25 cfs Outflow=2.08 cfs 0.351 af

Pond C4: Peak Elev=801.74' Storage=81 cf Inflow=13.01 cfs 1.691 af
24.0" Round Culvert n=0.020 L=185.0' S=0.0324 '/' Outflow=12.97 cfs 1.651 af

Pond C5: Peak Elev=789.51' Storage=71 cf Inflow=5.44 cfs 1.878 af
24.0" Round Culvert n=0.020 L=97.0' S=0.0258 '/' Outflow=5.41 cfs 1.851 af

Pond C7: Peak Elev=863.22' Storage=102 cf Inflow=5.78 cfs 0.728 af
18.0" Round Culvert n=0.020 L=58.0' S=0.0345 '/' Outflow=5.73 cfs 0.706 af

Pond C8: Peak Elev=852.72' Storage=12 cf Inflow=2.08 cfs 0.351 af
15.0" Round Culvert n=0.020 L=58.0' S=0.0345 '/' Outflow=2.08 cfs 0.351 af

Pond C9: Peak Elev=853.38' Storage=169 cf Inflow=14.06 cfs 2.870 af
35.0" x 24.0", R=17.9"/55.1" Pipe Arch Culvert w/ 4.8" inside fill n=0.025 L=60.0' S=0.0333 '/' Outflow=13.95 cfs 2.782 af

Pond F1: FOREBAY Peak Elev=794.75' Storage=2,209 cf Inflow=3.18 cfs 0.407 af
Outflow=3.03 cfs 0.407 af

Pond F2: FOREBAY Peak Elev=864.62' Storage=1,610 cf Inflow=1.85 cfs 0.237 af
Outflow=1.86 cfs 0.241 af

Pond F3: FOREBAY Peak Elev=862.66' Storage=3,893 cf Inflow=3.12 cfs 0.424 af
Outflow=2.97 cfs 0.424 af

Pond SMA1: BIORETENTIONAREA Peak Elev=786.02' Storage=3,212 cf Inflow=2.34 cfs 0.299 af
Primary=1.05 cfs 0.299 af Secondary=0.00 cfs 0.000 af Outflow=1.05 cfs 0.299 af

Pond SMA2: POND Peak Elev=792.45' Storage=46,786 cf Inflow=12.97 cfs 1.651 af
Primary=7.36 cfs 1.643 af Secondary=0.00 cfs 0.000 af Outflow=7.36 cfs 1.643 af

Pond SMA3: POND Peak Elev=882.30' Storage=35,456 cf Inflow=7.96 cfs 1.214 af
Primary=3.81 cfs 1.212 af Secondary=0.00 cfs 0.000 af Outflow=3.81 cfs 1.212 af

Pond SMA4: BIORETENTIONAREA Peak Elev=793.66' Storage=6,560 cf Inflow=3.03 cfs 0.407 af
Primary=0.82 cfs 0.407 af Secondary=0.00 cfs 0.000 af Outflow=0.82 cfs 0.407 af

Pond SMA5: BIORETENTIONAREA Peak Elev=858.74' Storage=10,861 cf Inflow=5.73 cfs 0.706 af
Primary=3.81 cfs 0.706 af Secondary=0.00 cfs 0.000 af Outflow=3.81 cfs 0.706 af

Pond SMA6: BIORETENTIONAREA Peak Elev=863.95' Storage=3,289 cf Inflow=1.86 cfs 0.241 af
Primary=0.70 cfs 0.241 af Secondary=0.00 cfs 0.000 af Outflow=0.70 cfs 0.241 af

Pond SMA7: BIORETENTIONAREA Peak Elev=861.56' Storage=7,354 cf Inflow=2.97 cfs 0.424 af
Primary=0.78 cfs 0.424 af Secondary=0.00 cfs 0.000 af Outflow=0.78 cfs 0.424 af

Pond SMA8: Peak Elev=908.01' Storage=1,086 cf Inflow=1.67 cfs 0.208 af
Outflow=1.92 cfs 0.189 af

Link A: Inflow=0.24 cfs 0.030 af
Primary=0.24 cfs 0.030 af

Link B: Inflow=13.79 cfs 4.615 af
Primary=13.79 cfs 4.615 af

Link C: Inflow=24.07 cfs 5.405 af
Primary=24.07 cfs 5.405 af

Total Runoff Area = 73.222 ac Runoff Volume = 10.246 af Average Runoff Depth = 1.68"
76.21% Pervious = 55.806 ac 23.79% Impervious = 17.416 ac

Summary for Subcatchment S100:

Runoff = 0.24 cfs @ 12.05 hrs, Volume= 0.030 af, Depth= 1.74"
Routed to Link A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.059	78	Meadow, non-grazed, HSG D
0.022	98	Paved parking, HSG D
0.125	79	Woods, Fair, HSG D
0.206	81	Weighted Average
0.184		89.32% Pervious Area
0.022		10.68% Impervious Area

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

Summary for Subcatchment S200:

Runoff = 6.84 cfs @ 12.02 hrs, Volume= 0.821 af, Depth= 1.82"
Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
1.071	71	Meadow, non-grazed, HSG C
0.296	78	Meadow, non-grazed, HSG D
1.853	79	Woods, Fair, HSG D
0.742	73	Woods, Fair, HSG C
1.155	98	Water Surface, HSG D
0.311	98	Paved parking, HSG D
5.428	82	Weighted Average
3.962		72.99% Pervious Area
1.466		27.01% Impervious Area

Summary for Subcatchment S201:

Runoff = 2.34 cfs @ 12.06 hrs, Volume= 0.299 af, Depth= 1.89"
Routed to Pond SMA1 : BIORETENTION AREA

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.656	98	Paved parking, HSG D
0.535	71	Meadow, non-grazed, HSG C
0.705	78	Meadow, non-grazed, HSG D
1.896	83	Weighted Average
1.240		65.40% Pervious Area
0.656		34.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	65	0.0770	0.24		**Sheet Flow, sf** Grass: Short n= 0.150 P2= 2.54"
0.4	35	0.0400	1.31		**Sheet Flow, sf** Smooth surfaces n= 0.011 P2= 2.54"
1.7	190	0.0740	1.90		**Shallow Concentrated Flow, scf** Short Grass Pasture Kv= 7.0 fps
0.7	190	0.0740	4.38		**Shallow Concentrated Flow, scf** Unpaved Kv= 16.1 fps
7.3	480	Total			

Summary for Subcatchment S202:

Runoff = 7.36 cfs @ 12.05 hrs, Volume= 0.930 af, Depth= 1.74"
Routed to Pond C4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
2.160	98	Paved parking, HSG D
0.661	78	Meadow, non-grazed, HSG D
3.358	71	Meadow, non-grazed, HSG C
0.228	73	Woods, Fair, HSG C
6.407	81	Weighted Average
4.247		66.29% Pervious Area
2.160		33.71% Impervious Area

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

Summary for Subcatchment S203:

Runoff = 3.08 cfs @ 12.07 hrs, Volume= 0.407 af, Depth= 1.82"
Routed to Reach C1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
1.071	98	Paved parking, HSG D
1.622	71	Meadow, non-grazed, HSG C
2.693	82	Weighted Average
1.622		60.23% Pervious Area
1.071		39.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	100	0.0300	0.43		**Sheet Flow, SF** Fallow n= 0.050 P2= 2.54"
0.4	130	0.0930	4.91		**Shallow Concentrated Flow, SCF - LOTS** Unpaved Kv= 16.1 fps
4.6	435	0.0110	1.57		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
8.9	665	Total			

Summary for Subcatchment S204:

Runoff = 1.71 cfs @ 12.05 hrs, Volume= 0.214 af, Depth= 1.97"
Routed to Reach R2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.485	98	Paved parking, HSG D
0.360	71	Meadow, non-grazed, HSG C
0.459	78	Meadow, non-grazed, HSG D
1.304	84	Weighted Average
0.819		62.81% Pervious Area
0.485		37.19% Impervious Area

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

Summary for Subcatchment S205:

Runoff = 7.96 cfs @ 12.55 hrs, Volume= 1.214 af, Depth= 2.05"
Routed to Pond SMA3 : POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
2.651	98	Paved parking, HSG D
0.164	79	Woods, Fair, HSG D
0.594	71	Meadow, non-grazed, HSG C
3.695	78	Meadow, non-grazed, HSG D
7.104	85	Weighted Average
4.453		62.68% Pervious Area
2.651		37.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	50	0.0400	0.05		**Sheet Flow, SF - WOODS** Woods: Dense underbrush n= 0.800 P2= 2.54"
12.1	50	0.0100	0.07		**Sheet Flow, SF - GRASS** Grass: Dense n= 0.240 P2= 2.54"
1.4	140	0.0100	1.61		**Shallow Concentrated Flow, SCF - GRAVEL** Unpaved Kv= 16.1 fps
5.6	790	0.0250	2.37		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
37.4	1,030	Total			

Summary for Subcatchment S206:

Runoff = 5.32 cfs @ 12.04 hrs, Volume= 0.666 af, Depth= 1.21"
Routed to Pond C5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.028	78	Meadow, non-grazed, HSG D
2.405	71	Meadow, non-grazed, HSG C
3.680	73	Woods, Fair, HSG C
0.289	79	Woods, Fair, HSG D
0.226	98	Paved parking, HSG D
6.628	73	Weighted Average
6.402		96.59% Pervious Area
0.226		3.41% Impervious Area

Summary for Subcatchment S207:

Runoff = 1.06 cfs @ 12.05 hrs, Volume= 0.133 af, Depth= 1.74"
Routed to Reach C3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.327	98	Paved parking, HSG D
0.507	71	Meadow, non-grazed, HSG C
0.085	78	Meadow, non-grazed, HSG D
0.919	81	Weighted Average
0.592		64.42% Pervious Area
0.327		35.58% Impervious Area

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

Summary for Subcatchment S300:

Runoff = 5.79 cfs @ 12.88 hrs, Volume= 1.159 af, Depth= 1.74"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.220	98	Paved parking, HSG D
1.720	71	Meadow, non-grazed, HSG C
0.171	92	1/8 acre lots, 65% imp, HSG D
3.452	90	1/8 acre lots, 65% imp, HSG C
0.421	79	Woods, Fair, HSG D
2.003	73	Woods, Fair, HSG C
7.987	81	Weighted Average
5.412		67.76% Pervious Area
2.575		32.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.54"
1.1	85	0.0350	1.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
41.7	2,500	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
58.8	2,685	Total			

Summary for Subcatchment S301:

Runoff = 2.56 cfs @ 12.06 hrs, Volume= 0.325 af, Depth= 1.67"
Routed to Pond F1 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.792	98	Paved parking, HSG D
1.549	71	Meadow, non-grazed, HSG C
2.341	80	Weighted Average
1.549		66.17% Pervious Area
0.792		33.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	100	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 2.54"
1.7	450	0.0780	4.50		**Shallow Concentrated Flow, SCF - SWALE** Unpaved Kv= 16.1 fps
0.8	255	0.1300	5.41		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.0	805	Total			

Summary for Subcatchment S302:

Runoff = 0.64 cfs @ 12.06 hrs, Volume= 0.082 af, Depth= 1.67"
Routed to Reach C6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.382	71	Meadow, non-grazed, HSG C
0.206	98	Paved parking, HSG D
0.588	80	Weighted Average
0.382		64.97% Pervious Area
0.206		35.03% Impervious Area

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

Summary for Subcatchment S303:

Runoff = 5.78 cfs @ 12.05 hrs, Volume= 0.728 af, Depth= 2.05"
Routed to Pond C7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
1.782	98	Paved parking, HSG D
1.470	78	Meadow, non-grazed, HSG D
1.008	71	Meadow, non-grazed, HSG C
4.260	85	Weighted Average
2.478		58.17% Pervious Area
1.782		41.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	100	0.0450	0.50		**Sheet Flow, SF - LOTS** Fallow n= 0.050 P2= 2.54"
1.7	405	0.0600	3.94		**Shallow Concentrated Flow, SCF - LOTS** Unpaved Kv= 16.1 fps
1.7	305	0.0400	3.00		**Shallow Concentrated Flow, SCF - SWALE** Grassed Waterway Kv= 15.0 fps
6.7	810	Total			

Summary for Subcatchment S304:

Runoff = 1.85 cfs @ 12.06 hrs, Volume= 0.237 af, Depth= 1.67"
Routed to Pond F2 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.333	78	Meadow, non-grazed, HSG D
0.875	71	Meadow, non-grazed, HSG C
1.708	80	Weighted Average
1.208		70.73% Pervious Area
0.500		29.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.0600	0.57		**Sheet Flow,** Fallow n= 0.050 P2= 2.54"
3.8	750	0.0480	3.29		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.7	850	Total			

Summary for Subcatchment S305:

Runoff = 11.50 cfs @ 12.65 hrs, Volume= 2.016 af, Depth= 1.39"
Routed to Pond C9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.620	71	Meadow, non-grazed, HSG C
1.131	78	Meadow, non-grazed, HSG D
7.241	79	Woods, Fair, HSG D
8.354	73	Woods, Fair, HSG C
17.346	76	Weighted Average
17.346		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.54"
24.9	1,515	0.0410	1.01		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
45.4	1,615	Total			

Summary for Subcatchment S306:

Runoff = 3.12 cfs @ 12.09 hrs, Volume= 0.424 af, Depth= 1.60"
Routed to Pond F3 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.935	98	Paved parking, HSG D
0.132	73	Woods, Fair, HSG C
2.118	71	Meadow, non-grazed, HSG C
3.185	79	Weighted Average
2.250		70.64% Pervious Area
0.935		29.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0400	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.54"
1.0	320	0.1000	5.09		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.3	420	Total			

Summary for Subcatchment S307:

Runoff = 2.63 cfs @ 12.08 hrs, Volume= 0.351 af, Depth= 1.97"
Routed to Reach SMA9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
1.026	98	Paved parking, HSG D
1.029	71	Meadow, non-grazed, HSG C
0.082	73	Woods, Fair, HSG C
2.137	84	Weighted Average
1.111		51.99% Pervious Area
1.026		48.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0500	0.22		**Sheet Flow, SF - WOODS** Grass: Short n= 0.150 P2= 2.54"
2.2	485	0.0540	3.74		**Shallow Concentrated Flow, SCF - WOODS** Unpaved Kv= 16.1 fps
9.8	585	Total			

Summary for Subcatchment S308:

Runoff = 1.67 cfs @ 12.04 hrs, Volume= 0.208 af, Depth> 2.31"
Routed to Pond SMA8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 10-yr Rainfall=3.54"

Area (ac)	CN	Description
0.549	78	Meadow, non-grazed, HSG D
0.536	98	Paved parking, HSG D
1.085	88	Weighted Average
0.549		50.60% Pervious Area
0.536		49.40% Impervious Area

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

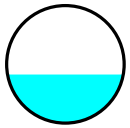
Summary for Reach C1:

Inflow Area = 2.693 ac, 39.77% Impervious, Inflow Depth = 1.82" for 10-yr event
Inflow = 3.08 cfs @ 12.07 hrs, Volume= 0.407 af
Outflow = 3.05 cfs @ 12.08 hrs, Volume= 0.411 af, Atten= 1%, Lag= 0.2 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 4.53 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.89 fps, Avg. Travel Time= 1.1 min

Peak Storage= 82 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.62' , Surface Width= 1.48'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.81 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 120.0' Slope= 0.0167 '/'
Inlet Invert= 814.00', Outlet Invert= 812.00'



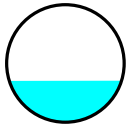
Summary for Reach C2:

Inflow Area = 1.304 ac, 37.19% Impervious, Inflow Depth = 1.99" for 10-yr event
Inflow = 1.59 cfs @ 12.07 hrs, Volume= 0.216 af
Outflow = 1.56 cfs @ 12.07 hrs, Volume= 0.218 af, Atten= 2%, Lag= 0.4 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 2.87 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.15 fps, Avg. Travel Time= 1.9 min

Peak Storage= 71 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.53' , Surface Width= 1.43'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 6.03 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 128.0' Slope= 0.0078 '/'
Inlet Invert= 813.00', Outlet Invert= 812.00'



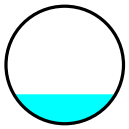
Summary for Reach C3:

Inflow Area = 0.919 ac, 35.58% Impervious, Inflow Depth = 1.74" for 10-yr event
Inflow = 1.06 cfs @ 12.05 hrs, Volume= 0.133 af
Outflow = 1.04 cfs @ 12.06 hrs, Volume= 0.133 af, Atten= 2%, Lag= 0.5 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 6.86 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 2.83 fps, Avg. Travel Time= 0.7 min

Peak Storage= 19 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.25' , Surface Width= 0.87'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 7.75 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 125.0' Slope= 0.1120 '/'
Inlet Invert= 860.00', Outlet Invert= 846.00'



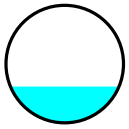
Summary for Reach C6:

Inflow Area = 0.588 ac, 35.03% Impervious, Inflow Depth = 1.67" for 10-yr event
Inflow = 0.64 cfs @ 12.06 hrs, Volume= 0.082 af
Outflow = 0.62 cfs @ 12.07 hrs, Volume= 0.082 af, Atten= 4%, Lag= 1.0 min
Routed to Pond F1 : FOREBAY

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 3.09 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.31 fps, Avg. Travel Time= 1.4 min

Peak Storage= 23 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.31' , Surface Width= 0.92'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.11 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 111.0' Slope= 0.0180 '/'
Inlet Invert= 850.00', Outlet Invert= 848.00'



Summary for Reach R10:

Inflow Area = 1.085 ac, 49.40% Impervious, Inflow Depth = 2.08" for 10-yr event
Inflow = 1.92 cfs @ 12.03 hrs, Volume= 0.189 af
Outflow = 1.19 cfs @ 12.43 hrs, Volume= 0.189 af, Atten= 38%, Lag= 23.9 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 2.28 fps, Min. Travel Time= 9.7 min
Avg. Velocity = 0.90 fps, Avg. Travel Time= 24.5 min

Peak Storage= 784 cf @ 12.23 hrs
Average Depth at Peak Storage= 0.23' , Surface Width= 3.36'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 130.06 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 1,325.0' Slope= 0.0426 '/'
Inlet Invert= 908.00', Outlet Invert= 851.60'

Summary for Reach R11:

Inflow Area = 29.721 ac, 16.08% Impervious, Inflow Depth = 1.55" for 10-yr event
Inflow = 19.53 cfs @ 12.57 hrs, Volume= 3.839 af
Outflow = 17.76 cfs @ 12.66 hrs, Volume= 3.839 af, Atten= 9%, Lag= 5.2 min
Routed to Link C :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 6.22 fps, Min. Travel Time= 2.9 min
Avg. Velocity = 1.38 fps, Avg. Travel Time= 12.9 min

Peak Storage= 3,203 cf @ 12.63 hrs
Average Depth at Peak Storage= 0.73' , Surface Width= 6.35'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 179.14 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 1,065.0' Slope= 0.0808 '/'
Inlet Invert= 850.00', Outlet Invert= 764.00'

Summary for Reach R2:

Inflow Area = 1.304 ac, 37.19% Impervious, Inflow Depth = 1.97" for 10-yr event
Inflow = 1.71 cfs @ 12.05 hrs, Volume= 0.214 af
Outflow = 1.59 cfs @ 12.07 hrs, Volume= 0.216 af, Atten= 7%, Lag= 1.3 min
Routed to Reach C2 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 3.73 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 1.39 fps, Avg. Travel Time= 5.8 min

Peak Storage= 217 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 3.07'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 230.19 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 480.0' Slope= 0.0750 '/'
Inlet Invert= 849.00', Outlet Invert= 813.00'

Summary for Reach R3:

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth > 2.05" for 10-yr event
Inflow = 3.81 cfs @ 13.23 hrs, Volume= 1.212 af
Outflow = 3.66 cfs @ 13.54 hrs, Volume= 1.212 af, Atten= 4%, Lag= 18.3 min
Routed to Reach R4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 1.44 fps, Min. Travel Time= 4.6 min
Avg. Velocity = 0.47 fps, Avg. Travel Time= 14.3 min

Peak Storage= 1,061 cf @ 13.47 hrs
Average Depth at Peak Storage= 0.11' , Surface Width= 30.50'
Bank-Full Depth= 1.00' Flow Area= 70.0 sf, Capacity= 357.35 cfs

20.00' x 1.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 50.0 '/' Top Width= 120.00'
Length= 400.0' Slope= 0.1550 '/'
Inlet Invert= 878.00', Outlet Invert= 816.00'

‡

Summary for Reach R4:

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth > 2.05" for 10-yr event
Inflow = 3.66 cfs @ 13.54 hrs, Volume= 1.212 af
Outflow = 3.54 cfs @ 13.65 hrs, Volume= 1.212 af, Atten= 3%, Lag= 6.6 min
Routed to Pond C5 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 3.39 fps, Min. Travel Time= 4.6 min
Avg. Velocity = 1.09 fps, Avg. Travel Time= 14.3 min

Peak Storage= 1,031 cf @ 13.59 hrs
Average Depth at Peak Storage= 0.36' , Surface Width= 4.16'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 141.89 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 930.0' Slope= 0.0285 '/'
Inlet Invert= 816.00', Outlet Invert= 789.50'

Summary for Reach R5:

Inflow Area = 13.732 ac, 20.95% Impervious, Inflow Depth > 1.62" for 10-yr event
Inflow = 5.41 cfs @ 12.05 hrs, Volume= 1.851 af
Outflow = 5.13 cfs @ 12.07 hrs, Volume= 1.851 af, Atten= 5%, Lag= 1.4 min
Routed to Link B :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 5.35 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.71 fps, Avg. Travel Time= 2.7 min

Peak Storage= 275 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.33' , Surface Width= 3.98'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 235.61 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 280.0' Slope= 0.0786 '/'
Inlet Invert= 786.00', Outlet Invert= 764.00'

Summary for Reach R6:

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 1.67" for 10-yr event
Inflow = 0.82 cfs @ 12.97 hrs, Volume= 0.407 af
Outflow = 0.82 cfs @ 13.32 hrs, Volume= 0.407 af, Atten= 0%, Lag= 20.6 min
Routed to Link C :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 2.64 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 1.17 fps, Avg. Travel Time= 4.6 min

Peak Storage= 101 cf @ 12.50 hrs
Average Depth at Peak Storage= 0.13' , Surface Width= 2.78'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 194.70 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 325.0' Slope= 0.0954 '/'
Inlet Invert= 795.00', Outlet Invert= 764.00'

Summary for Reach R7:

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 1.69" for 10-yr event
Inflow = 0.70 cfs @ 12.74 hrs, Volume= 0.241 af
Outflow = 0.68 cfs @ 12.82 hrs, Volume= 0.241 af, Atten= 3%, Lag= 5.1 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 1.67 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 0.82 fps, Avg. Travel Time= 3.0 min

Peak Storage= 62 cf @ 12.74 hrs
Average Depth at Peak Storage= 0.04' , Surface Width= 10.80'
Bank-Full Depth= 1.00' Flow Area= 20.0 sf, Capacity= 225.46 cfs

10.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 150.0' Slope= 0.0893 '/'
Inlet Invert= 865.00', Outlet Invert= 851.60'

‡

Summary for Reach R8:

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 1.60" for 10-yr event
Inflow = 0.78 cfs @ 13.14 hrs, Volume= 0.424 af
Outflow = 0.78 cfs @ 13.29 hrs, Volume= 0.424 af, Atten= 0%, Lag= 9.4 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 2.88 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.30 fps, Avg. Travel Time= 2.0 min

Peak Storage= 42 cf @ 13.29 hrs
Average Depth at Peak Storage= 0.12' , Surface Width= 2.69'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 227.95 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 155.0' Slope= 0.0735 '/'
Inlet Invert= 863.00', Outlet Invert= 851.60'

Summary for Reach SMA9:

Inflow Area = 2.137 ac, 48.01% Impervious, Inflow Depth = 1.97" for 10-yr event
Inflow = 2.63 cfs @ 12.08 hrs, Volume= 0.351 af
Outflow = 2.08 cfs @ 12.33 hrs, Volume= 0.351 af, Atten= 21%, Lag= 15.3 min
Routed to Pond C8 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 0.99 fps, Min. Travel Time= 5.9 min
Avg. Velocity = 0.34 fps, Avg. Travel Time= 17.0 min

Peak Storage= 793 cf @ 12.22 hrs
Average Depth at Peak Storage= 0.37' , Surface Width= 7.24'
Bank-Full Depth= 2.00' Flow Area= 22.0 sf, Capacity= 57.25 cfs

5.00' x 2.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 3.0 '/' Top Width= 17.00'
Length= 350.0' Slope= 0.0229 '/'
Inlet Invert= 870.25', Outlet Invert= 862.25'

‡

Summary for Pond C4:

Inflow Area = 11.323 ac, 35.71% Impervious, Inflow Depth = 1.79" for 10-yr event
Inflow = 13.01 cfs @ 12.06 hrs, Volume= 1.691 af
Outflow = 12.97 cfs @ 12.06 hrs, Volume= 1.651 af, Atten= 0%, Lag= 0.0 min
Primary = 12.97 cfs @ 12.06 hrs, Volume= 1.651 af
Routed to Pond SMA2 : POND

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 801.74' @ 12.07 hrs Surf.Area= 112 sf Storage= 81 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	1,224 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
800.00	5	5.0	0	0	5
802.00	140	50.0	114	114	209
804.00	430	85.0	544	658	609
805.00	715	105.0	566	1,224	926

Device	Routing	Invert	Outlet Devices
#1	Primary	800.00'	**24.0" Round Culvert** L= 185.0' Ke= 0.500 Inlet / Outlet Invert= 800.00' / 794.00' S= 0.0324 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 3.14 sf

Primary OutFlow Max=12.07 cfs @ 12.06 hrs HW=801.64' (Free Discharge)
└**1=Culvert** (Inlet Controls 12.07 cfs @ 4.37 fps)

Summary for Pond C5:

Inflow Area = 13.732 ac, 20.95% Impervious, Inflow Depth > 1.64" for 10-yr event
Inflow = 5.44 cfs @ 12.05 hrs, Volume= 1.878 af
Outflow = 5.41 cfs @ 12.05 hrs, Volume= 1.851 af, Atten= 1%, Lag= 0.0 min
Primary = 5.41 cfs @ 12.05 hrs, Volume= 1.851 af
Routed to Reach R5 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 789.51' @ 12.06 hrs Surf.Area= 195 sf Storage= 71 cf

Plug-Flow detention time= 30.4 min calculated for 1.851 af (99% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	788.50'	2,121 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
788.50	1	1.0	0	0	1
790.00	410	110.0	216	216	967
792.00	1,630	270.0	1,905	2,121	5,821

Device	Routing	Invert	Outlet Devices
#1	Primary	788.50'	**24.0" Round Culvert** L= 97.0' Ke= 0.500 Inlet / Outlet Invert= 788.50' / 786.00' S= 0.0258 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 3.14 sf

Primary OutFlow Max=5.03 cfs @ 12.05 hrs HW=789.47' (Free Discharge)
└**1=Culvert** (Inlet Controls 5.03 cfs @ 3.35 fps)

Summary for Pond C7:

Inflow Area = 4.260 ac, 41.83% Impervious, Inflow Depth = 2.05" for 10-yr event
Inflow = 5.78 cfs @ 12.05 hrs, Volume= 0.728 af
Outflow = 5.73 cfs @ 12.05 hrs, Volume= 0.706 af, Atten= 1%, Lag= 0.0 min
Primary = 5.73 cfs @ 12.05 hrs, Volume= 0.706 af
Routed to Pond SMA5 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 863.22' @ 12.06 hrs Surf.Area= 198 sf Storage= 102 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	862.00'	1,450 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
862.00	10	15.0	0	0	10
864.00	445	125.0	348	348	1,243
865.50	1,070	155.0	1,103	1,450	1,944

Device	Routing	Invert	Outlet Devices
#1	Primary	862.00'	**18.0" Round Culvert** L= 58.0' Ke= 0.500 Inlet / Outlet Invert= 862.00' / 860.00' S= 0.0345 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.77 sf

Primary OutFlow Max=5.39 cfs @ 12.05 hrs HW=863.16' (Free Discharge)
└**1=Culvert** (Inlet Controls 5.39 cfs @ 3.67 fps)

Summary for Pond C8:

Inflow Area = 2.137 ac, 48.01% Impervious, Inflow Depth = 1.97" for 10-yr event
Inflow = 2.08 cfs @ 12.33 hrs, Volume= 0.351 af
Outflow = 2.08 cfs @ 12.34 hrs, Volume= 0.351 af, Atten= 0%, Lag= 0.2 min
Primary = 2.08 cfs @ 12.34 hrs, Volume= 0.351 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 852.72' @ 12.33 hrs Surf.Area= 32 sf Storage= 12 cf

Plug-Flow detention time= 0.1 min calculated for 0.348 af (99% of inflow)
Center-of-Mass det. time= 0.1 min (852.9 - 852.8)

Volume	Invert	Avail.Storage	Storage Description
#1	852.00'	114 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
852.00	5	5.0	0	0	5
854.00	140	40.0	114	114	138

Device	Routing	Invert	Outlet Devices
#1	Primary	852.00'	**15.0" Round Culvert** L= 58.0' Ke= 0.500 Inlet / Outlet Invert= 852.00' / 850.00' S= 0.0345 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf

Primary OutFlow Max=1.91 cfs @ 12.34 hrs HW=852.68' (Free Discharge)
└**1=Culvert** (Inlet Controls 1.91 cfs @ 2.81 fps)

Summary for Pond C9:

Inflow Area = 23.324 ac, 8.45% Impervious, Inflow Depth = 1.48" for 10-yr event
Inflow = 14.06 cfs @ 12.63 hrs, Volume= 2.870 af
Outflow = 13.95 cfs @ 12.63 hrs, Volume= 2.782 af, Atten= 1%, Lag= 0.0 min
Primary = 13.95 cfs @ 12.63 hrs, Volume= 2.782 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 853.38' @ 12.64 hrs Surf.Area= 349 sf Storage= 169 cf

Plug-Flow detention time= 10.3 min calculated for 2.782 af (97% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	852.00'	5,020 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
852.00	1	1.0	0	0	1
854.00	710	145.0	492	492	1,680
856.00	2,530	320.0	3,054	3,545	8,173
856.50	3,390	350.0	1,475	5,020	9,781

Device	Routing	Invert	Outlet Devices
#1	Primary	852.00'	**35.0" W x 24.0" H, R=17.9"/55.1" Pipe Arch CMP_Arch_1/2 35x24 w/ 4.8" ins** L= 60.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 851.60' / 849.60' S= 0.0333 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.78 sf

Primary OutFlow Max=12.79 cfs @ 12.63 hrs HW=853.29' (Free Discharge)
└**1=CMP_Arch_1/2 35x24** (Inlet Controls 12.79 cfs @ 3.78 fps)

Summary for Pond F1: FOREBAY

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 1.67" for 10-yr event
Inflow = 3.18 cfs @ 12.06 hrs, Volume= 0.407 af
Outflow = 3.03 cfs @ 12.09 hrs, Volume= 0.407 af, Atten= 5%, Lag= 1.9 min
Primary = 3.03 cfs @ 12.09 hrs, Volume= 0.407 af
Routed to Pond SMA4 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 794.50' Surf.Area= 1,103 sf Storage= 1,917 cf
Peak Elev= 794.75' @ 12.11 hrs Surf.Area= 1,202 sf Storage= 2,209 cf (292 cf above start)

Plug-Flow detention time= 77.7 min calculated for 0.361 af (89% of inflow)
Center-of-Mass det. time= 2.6 min (850.0 - 847.4)

Volume	Invert	Avail.Storage	Storage Description
#1	790.00'	4,038 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
790.00	5	5.0	0	0	5
792.00	310	80.0	236	236	519
794.00	920	120.0	1,176	1,412	1,187
796.00	1,750	160.0	2,626	4,038	2,121

Device	Routing	Invert	Outlet Devices
#0	Primary	796.00'	**Automatic Storage Overflow** (Discharged without head)
#1	Primary	794.50'	**10.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=2.72 cfs @ 12.09 hrs HW=794.73' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 2.72 cfs @ 1.16 fps)

Summary for Pond F2: FOREBAY

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 1.67" for 10-yr event
Inflow = 1.85 cfs @ 12.06 hrs, Volume= 0.237 af
Outflow = 1.86 cfs @ 12.06 hrs, Volume= 0.241 af, Atten= 0%, Lag= 0.1 min
Primary = 1.86 cfs @ 12.06 hrs, Volume= 0.241 af
Routed to Pond SMA6 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Starting Elev= 864.50' Surf.Area= 1,015 sf Storage= 1,490 cf
Peak Elev= 864.62' @ 12.09 hrs Surf.Area= 1,060 sf Storage= 1,610 cf (120 cf above start)

Plug-Flow detention time= 91.4 min calculated for 0.207 af (87% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	860.00'	3,490 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
860.00	1	1.0	0	0	1
862.00	165	90.0	119	119	652
864.00	830	125.0	910	1,029	1,288
866.00	1,680	165.0	2,461	3,490	2,256

Device	Routing	Invert	Outlet Devices
#1	Primary	864.50'	**20.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=1.69 cfs @ 12.06 hrs HW=864.61' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 1.69 cfs @ 0.78 fps)

Summary for Pond F3: FOREBAY

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 1.60" for 10-yr event
Inflow = 3.12 cfs @ 12.09 hrs, Volume= 0.424 af
Outflow = 2.97 cfs @ 12.13 hrs, Volume= 0.424 af, Atten= 5%, Lag= 2.3 min
Primary = 2.97 cfs @ 12.13 hrs, Volume= 0.424 af
Routed to Pond SMA7 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 862.50' Surf.Area= 1,666 sf Storage= 3,623 cf
Peak Elev= 862.66' @ 12.15 hrs Surf.Area= 1,725 sf Storage= 3,893 cf (270 cf above start)

Plug-Flow detention time= 125.5 min calculated for 0.338 af (80% of inflow)
Center-of-Mass det. time= 2.2 min (855.5 - 853.2)

Volume	Invert	Avail.Storage	Storage Description
#1	858.00'	6,553 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
858.00	150	55.0	0	0	150
860.00	655	105.0	746	746	806
862.00	1,490	155.0	2,089	2,834	1,873
864.00	2,255	185.0	3,719	6,553	2,753

Device	Routing	Invert	Outlet Devices
#1	Primary	862.50'	**20.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=2.62 cfs @ 12.13 hrs HW=862.64' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 2.62 cfs @ 0.90 fps)

Summary for Pond SMA1: BIORETENTION AREA

Inflow Area = 1.896 ac, 34.60% Impervious, Inflow Depth = 1.89" for 10-yr event
Inflow = 2.34 cfs @ 12.06 hrs, Volume= 0.299 af
Outflow = 1.05 cfs @ 12.67 hrs, Volume= 0.299 af, Atten= 55%, Lag= 37.0 min
Primary = 1.05 cfs @ 12.67 hrs, Volume= 0.299 af
Routed to Link B :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link B :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 786.02' @ 12.67 hrs Surf.Area= 6,839 sf Storage= 3,212 cf

Plug-Flow detention time= 32.1 min calculated for 0.297 af (99% of inflow)
Center-of-Mass det. time= 32.8 min (870.6 - 837.8)

Volume	Invert	Avail.Storage	Storage Description
#1	782.17'	687 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 1,718 cf Overall x 40.0% Voids
#2	783.00'	1,294 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 5,175 cf Overall x 25.0% Voids
#3	785.50'	12,294 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		14,275 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
782.17	2,070	400.0	0	0	2,070
783.00	2,070	400.0	1,718	1,718	2,402

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
783.00	2,070	400.0	0	0	2,070
785.50	2,070	400.0	5,175	5,175	3,070

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
785.50	2,070	400.0	0	0	2,070
786.00	2,680	410.0	1,184	1,184	2,746
788.00	5,265	450.0	7,801	8,985	5,615
788.50	8,070	485.0	3,309	12,294	8,230

Device	Routing	Invert	Outlet Devices
#1	Primary	782.17'	**6.0" Round Culvert** L= 42.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 782.17' / 781.40' S= 0.0183 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	787.00'	**8.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=1.03 cfs @ 12.67 hrs HW=785.88' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.03 cfs @ 5.23 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=782.17' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA2: POND

Inflow Area = 11.323 ac, 35.71% Impervious, Inflow Depth = 1.75" for 10-yr event
Inflow = 12.97 cfs @ 12.06 hrs, Volume= 1.651 af
Outflow = 7.36 cfs @ 12.59 hrs, Volume= 1.643 af, Atten= 43%, Lag= 31.5 min
Primary = 7.36 cfs @ 12.59 hrs, Volume= 1.643 af
Routed to Link B :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link B :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Starting Elev= 790.00' Surf.Area= 9,500 sf Storage= 17,737 cf
Peak Elev= 792.45' @ 12.67 hrs Surf.Area= 14,248 sf Storage= 46,786 cf (29,049 cf above start)

Plug-Flow detention time= 709.1 min calculated for 1.236 af (75% of inflow)
Center-of-Mass det. time= 437.6 min (1,275.8 - 838.2)

Volume	Invert	Avail.Storage	Storage Description
#1	784.00'	81,315 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
784.00	50	60.0	0	0	50
786.00	1,085	250.0	912	912	4,747
788.00	3,480	450.0	4,339	5,251	15,910
790.00	9,500	655.0	12,487	17,737	33,970
792.00	13,395	615.0	22,784	40,521	38,208
794.00	17,355	700.0	30,665	71,186	47,199
794.55	19,500	730.0	10,129	81,315	50,636

Device	Routing	Invert	Outlet Devices
#1	Primary	786.50'	**18.0" Round Culvert** L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 786.50' / 786.00' S= 0.0139 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.77 sf
#2	Device 1	790.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	791.80'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	793.55'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Device 1	792.15'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns** X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area) Limited to weir flow at low heads

Primary OutFlow Max=6.69 cfs @ 12.59 hrs HW=792.37' (Free Discharge)
└**1=Culvert** (Passes 6.69 cfs of 17.90 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 0.35 cfs @ 7.22 fps)
├**3=Orifice/Grate** (Orifice Controls 2.86 cfs @ 3.65 fps)
└**5=Orifice/Grate** (Weir Controls 3.47 cfs @ 1.55 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=790.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA3: POND

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth = 2.05" for 10-yr event
Inflow = 7.96 cfs @ 12.55 hrs, Volume= 1.214 af
Outflow = 3.81 cfs @ 13.23 hrs, Volume= 1.212 af, Atten= 52%, Lag= 41.3 min
Primary = 3.81 cfs @ 13.23 hrs, Volume= 1.212 af
Routed to Reach R3 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R3 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 880.00' Surf.Area= 7,820 sf Storage= 12,194 cf
Peak Elev= 882.30' @ 13.22 hrs Surf.Area= 12,584 sf Storage= 35,456 cf (23,263 cf above start)

Plug-Flow detention time= 629.4 min calculated for 0.932 af (77% of inflow)
Center-of-Mass det. time= 392.9 min (1,251.9 - 859.1)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	60,184 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
874.00	2	10.0	0	0	2
876.00	500	185.0	356	356	2,725
878.00	2,150	340.0	2,458	2,814	9,221
880.00	7,820	590.0	9,380	12,194	27,747
882.00	11,950	665.0	19,625	31,818	35,341
884.00	16,540	725.0	28,366	60,184	42,122

Device	Routing	Invert	Outlet Devices
#1	Primary	875.85'	**15.0" Round Culvert** L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 875.85' / 875.00' S= 0.0170 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf
#2	Device 1	880.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	881.55'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	882.95'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#5	Device 1	882.30'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns** X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area) Limited to weir flow at low heads

Primary OutFlow Max=3.41 cfs @ 13.23 hrs HW=882.21' (Free Discharge)
└**1=Culvert** (Passes 3.41 cfs of 11.65 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 0.34 cfs @ 6.95 fps)
├**3=Orifice/Grate** (Orifice Controls 3.07 cfs @ 3.91 fps)
└**5=Orifice/Grate** (Controls 0.00 cfs)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=880.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA4: BIORETENTION AREA

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 1.67" for 10-yr event
Inflow = 3.03 cfs @ 12.09 hrs, Volume= 0.407 af
Outflow = 0.82 cfs @ 12.97 hrs, Volume= 0.407 af, Atten= 73%, Lag= 53.1 min
Primary = 0.82 cfs @ 12.97 hrs, Volume= 0.407 af
Routed to Reach R6 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R6 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 793.66' @ 12.97 hrs Surf.Area= 17,712 sf Storage= 6,560 cf

Plug-Flow detention time= 92.4 min calculated for 0.404 af (99% of inflow)
Center-of-Mass det. time= 95.5 min (945.5 - 850.0)

Volume	Invert	Avail.Storage	Storage Description
#1	790.17'	1,942 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,856 cf Overall x 40.0% Voids
#2	791.00'	3,656 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 14,625 cf Overall x 25.0% Voids
#3	793.50'	22,718 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		28,316 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
790.17	5,850	330.0	0	0	5,850
791.00	5,850	330.0	4,856	4,856	6,124

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
791.00	5,850	330.0	0	0	5,850
793.50	5,850	330.0	14,625	14,625	6,675

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
793.50	5,850	330.0	0	0	5,850
794.00	6,355	340.0	3,050	3,050	6,409
796.00	8,520	380.0	14,822	17,873	8,811
796.50	10,910	415.0	4,845	22,718	11,034

Device	Routing	Invert	Outlet Devices
#1	Primary	790.17'	**6.0" Round Culvert** L= 72.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 790.17' / 789.00' S= 0.0162 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	795.00'	**8.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=0.82 cfs @ 12.97 hrs HW=793.66' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.82 cfs @ 4.17 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=790.17' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA5: BIORETENTION AREA

Inflow Area = 4.260 ac, 41.83% Impervious, Inflow Depth = 1.99" for 10-yr event
Inflow = 5.73 cfs @ 12.05 hrs, Volume= 0.706 af
Outflow = 3.81 cfs @ 12.51 hrs, Volume= 0.706 af, Atten= 34%, Lag= 27.6 min
Primary = 3.81 cfs @ 12.51 hrs, Volume= 0.706 af
Routed to Reach R11 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 858.74' @ 12.64 hrs Surf.Area= 15,025 sf Storage= 10,861 cf

Plug-Flow detention time= 156.6 min calculated for 0.706 af (100% of inflow)
Center-of-Mass det. time= 151.0 min (977.6 - 826.6)

Volume	Invert	Avail.Storage	Storage Description
#1	854.17'	1,527 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 3,818 cf Overall x 40.0% Voids
#2	855.00'	2,875 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 11,500 cf Overall x 25.0% Voids
#3	857.50'	18,591 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		22,993 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
854.17	4,600	320.0	0	0	4,600
855.00	4,600	320.0	3,818	3,818	4,866

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
855.00	4,600	320.0	0	0	4,600
857.50	4,600	320.0	11,500	11,500	5,400

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
857.50	4,600	320.0	0	0	4,600
858.00	5,090	330.0	2,421	2,421	5,142
860.00	7,190	370.0	12,220	14,641	7,478
860.50	8,630	395.0	3,950	18,591	9,012

Device	Routing	Invert	Outlet Devices
#1	Device 4	854.17'	**6.0" Round Culvert** L= 130.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 854.17' / 854.00' S= 0.0013 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	859.00'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#3	Device 4	858.50'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns** X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area) Limited to weir flow at low heads
#4	Primary	853.25'	**15.0" Round Culvert** L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 853.25' / 852.00' S= 0.0125 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.73 cfs @ 12.51 hrs HW=858.71' (Free Discharge)
└**4=Culvert** (Passes 3.73 cfs of 8.68 cfs potential flow)
  └**1=Culvert** (Barrel Controls 0.63 cfs @ 3.21 fps)
  └**3=Orifice/Grate** (Weir Controls 3.10 cfs @ 1.49 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=854.17' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA6: BIORETENTION AREA

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 1.69" for 10-yr event
Inflow = 1.86 cfs @ 12.06 hrs, Volume= 0.241 af
Outflow = 0.70 cfs @ 12.74 hrs, Volume= 0.241 af, Atten= 62%, Lag= 40.5 min
Primary = 0.70 cfs @ 12.74 hrs, Volume= 0.241 af
Routed to Reach R7 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R7 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 863.95' @ 12.74 hrs Surf.Area= 7,183 sf Storage= 3,289 cf

Plug-Flow detention time= 46.8 min calculated for 0.239 af (99% of inflow)
Center-of-Mass det. time= 48.0 min (895.4 - 847.4)

Volume	Invert	Avail.Storage	Storage Description
#1	860.17'	759 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 1,897 cf Overall x 40.0% Voids
#2	861.00'	1,428 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 5,713 cf Overall x 25.0% Voids
#3	863.50'	10,318 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		12,505 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
860.17	2,285	240.0	0	0	2,285
861.00	2,285	240.0	1,897	1,897	2,484

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
861.00	2,285	240.0	0	0	2,285
863.50	2,285	240.0	5,713	5,713	2,885

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
863.50	2,285	240.0	0	0	2,285
864.00	2,650	250.0	1,233	1,233	2,694
866.00	4,205	285.0	6,795	8,028	4,277
866.50	4,965	295.0	2,290	10,318	4,761

Device	Routing	Invert	Outlet Devices
#1	Primary	860.17'	**6.0" Round Culvert** L= 110.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 860.17' / 859.00' S= 0.0106 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	865.00'	**15.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.69 cfs @ 12.74 hrs HW=863.77' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.69 cfs @ 3.49 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=860.17' (Free Discharge)
└**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond SMA7: BIORETENTION AREA

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 1.60" for 10-yr event
Inflow = 2.97 cfs @ 12.13 hrs, Volume= 0.424 af
Outflow = 0.78 cfs @ 13.14 hrs, Volume= 0.424 af, Atten= 74%, Lag= 60.6 min
Primary = 0.78 cfs @ 13.14 hrs, Volume= 0.424 af
Routed to Reach R8 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R8 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 861.56' @ 13.13 hrs Surf.Area= 21,728 sf Storage= 7,354 cf

Plug-Flow detention time= 122.7 min calculated for 0.424 af (100% of inflow)
Center-of-Mass det. time= 116.2 min (971.6 - 855.5)

Volume	Invert	Avail.Storage	Storage Description
#1	858.17'	2,397 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 5,993 cf Overall x 40.0% Voids
#2	859.00'	4,513 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 18,050 cf Overall x 25.0% Voids
#3	861.50'	26,547 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		33,456 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
858.17	7,220	370.0	0	0	7,220
859.00	7,220	370.0	5,993	5,993	7,527

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
859.00	7,220	370.0	0	0	7,220
861.50	7,220	370.0	18,050	18,050	8,145

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
861.50	7,220	370.0	0	0	7,220
862.00	7,780	380.0	3,749	3,749	7,846
864.00	9,950	415.0	17,686	21,435	10,198
864.50	10,500	425.0	5,112	26,547	10,899

Device	Routing	Invert	Outlet Devices
#1	Primary	858.17'	**6.0" Round Culvert** L= 78.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 858.17' / 857.00' S= 0.0150 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	863.00'	**20.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.78 cfs @ 13.14 hrs HW=861.51' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.78 cfs @ 3.96 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=858.17' (Free Discharge)
└**2=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Summary for Pond SMA8:

Inflow Area = 1.085 ac, 49.40% Impervious, Inflow Depth > 2.31" for 10-yr event
Inflow = 1.67 cfs @ 12.04 hrs, Volume= 0.208 af
Outflow = 1.92 cfs @ 12.03 hrs, Volume= 0.189 af, Atten= 0%, Lag= 0.0 min
Primary = 1.92 cfs @ 12.03 hrs, Volume= 0.189 af
Routed to Reach R10 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Peak Elev= 908.01' @ 12.00 hrs Surf.Area= 1,350 sf Storage= 1,086 cf

Plug-Flow detention time= 79.2 min calculated for 0.187 af (90% of inflow)
Center-of-Mass det. time= 32.5 min (850.1 - 817.6)

Volume	Invert	Avail.Storage	Storage Description
#1	906.00'	1,620 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,050 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
906.00	1,350	1,360.0	0	0	1,350
909.00	1,350	1,360.0	4,050	4,050	5,430

Device	Routing	Invert	Outlet Devices
#1	Primary	908.00'	**675.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=1.76 cfs @ 12.03 hrs HW=908.01' (Free Discharge)
↳**1=Broad-Crested Rectangular Weir** (Weir Controls 1.76 cfs @ 0.27 fps)

Summary for Link A:

Inflow Area = 0.206 ac, 10.68% Impervious, Inflow Depth = 1.74" for 10-yr event
Inflow = 0.24 cfs @ 12.05 hrs, Volume= 0.030 af
Primary = 0.24 cfs @ 12.05 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Summary for Link B:

Inflow Area = 32.379 ac, 27.93% Impervious, Inflow Depth > 1.71" for 10-yr event
Inflow = 13.79 cfs @ 12.26 hrs, Volume= 4.615 af
Primary = 13.79 cfs @ 12.26 hrs, Volume= 4.615 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Summary for Link C:

Inflow Area = 40.637 ac, 20.55% Impervious, Inflow Depth = 1.60" for 10-yr event
Inflow = 24.07 cfs @ 12.70 hrs, Volume= 5.405 af
Primary = 24.07 cfs @ 12.70 hrs, Volume= 5.405 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Time span=5.00-72.00 hrs, dt=0.50 hrs, 135 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS100: Runoff Area=0.206 ac 10.68% Impervious Runoff Depth=2.93"
Tc=6.0 min CN=81 Runoff=0.42 cfs 0.050 af

SubcatchmentS200: Runoff Area=5.428 ac 27.01% Impervious Runoff Depth=3.03"
Tc=0.0 min CN=82 Runoff=11.92 cfs 1.369 af

SubcatchmentS201: Runoff Area=1.896 ac 34.60% Impervious Runoff Depth=3.12"
Flow Length=480' Tc=7.3 min CN=83 Runoff=4.06 cfs 0.493 af

SubcatchmentS202: Runoff Area=6.407 ac 33.71% Impervious Runoff Depth=2.93"
Tc=6.0 min CN=81 Runoff=13.13 cfs 1.566 af

SubcatchmentS203: Runoff Area=2.693 ac 39.77% Impervious Runoff Depth=3.03"
Flow Length=665' Tc=8.9 min CN=82 Runoff=5.44 cfs 0.679 af

SubcatchmentS204: Runoff Area=1.304 ac 37.19% Impervious Runoff Depth>3.22"
Tc=6.0 min CN=84 Runoff=2.93 cfs 0.349 af

SubcatchmentS205: Runoff Area=7.104 ac 37.32% Impervious Runoff Depth>3.31"
Flow Length=1,030' Tc=37.4 min CN=85 Runoff=13.42 cfs 1.961 af

SubcatchmentS206: Runoff Area=6.628 ac 3.41% Impervious Runoff Depth=2.23"
Tc=0.0 min CN=73 Runoff=10.69 cfs 1.234 af

SubcatchmentS207: Runoff Area=0.919 ac 35.58% Impervious Runoff Depth=2.93"
Tc=6.0 min CN=81 Runoff=1.88 cfs 0.225 af

SubcatchmentS300: Runoff Area=7.987 ac 32.24% Impervious Runoff Depth=2.93"
Flow Length=2,685' Tc=58.8 min CN=81 Runoff=10.31 cfs 1.952 af

SubcatchmentS301: Runoff Area=2.341 ac 33.83% Impervious Runoff Depth=2.84"
Flow Length=805' Tc=6.0 min CN=80 Runoff=4.64 cfs 0.554 af

SubcatchmentS302: Runoff Area=0.588 ac 35.03% Impervious Runoff Depth=2.84"
Tc=6.0 min CN=80 Runoff=1.17 cfs 0.139 af

SubcatchmentS303: Runoff Area=4.260 ac 41.83% Impervious Runoff Depth>3.31"
Flow Length=810' Tc=6.7 min CN=85 Runoff=9.77 cfs 1.176 af

SubcatchmentS304: Runoff Area=1.708 ac 29.27% Impervious Runoff Depth=2.84"
Flow Length=850' Tc=6.7 min CN=80 Runoff=3.35 cfs 0.404 af

SubcatchmentS305: Runoff Area=17.346 ac 0.00% Impervious Runoff Depth=2.49"
Flow Length=1,615' Tc=45.4 min CN=76 Runoff=22.22 cfs 3.594 af

SubcatchmentS306: Runoff Area=3.185 ac 29.36% Impervious Runoff Depth=2.75"
Flow Length=420' Tc=9.3 min CN=79 Runoff=5.77 cfs 0.730 af

SubcatchmentS307: Runoff Area=2.137 ac 48.01% Impervious Runoff Depth>3.22"
Flow Length=585' Tc=9.8 min CN=84 Runoff=4.52 cfs 0.573 af

SubcatchmentS308: Runoff Area=1.085 ac 49.40% Impervious Runoff Depth>3.61"
Tc=6.0 min CN=88 Runoff=2.72 cfs 0.327 af

Reach C1: Avg. Flow Depth=0.86' Max Vel=5.24 fps Inflow=5.44 cfs 0.679 af
18.0" Round Pipe n=0.020 L=120.0' S=0.0167 '/' Capacity=8.81 cfs Outflow=5.40 cfs 0.684 af

Reach C2: Avg. Flow Depth=0.72' Max Vel=3.33 fps Inflow=2.76 cfs 0.352 af
18.0" Round Pipe n=0.020 L=128.0' S=0.0078 '/' Capacity=6.03 cfs Outflow=2.72 cfs 0.355 af

Reach C3: Avg. Flow Depth=0.34' Max Vel=8.10 fps Inflow=1.88 cfs 0.225 af
12.0" Round Pipe n=0.020 L=125.0' S=0.1120 '/' Capacity=7.75 cfs Outflow=1.85 cfs 0.225 af

Reach C6: Avg. Flow Depth=0.42' Max Vel=3.65 fps Inflow=1.17 cfs 0.139 af
12.0" Round Pipe n=0.020 L=111.0' S=0.0180 '/' Capacity=3.11 cfs Outflow=1.13 cfs 0.139 af

Reach R10: Avg. Flow Depth=0.29' Max Vel=2.69 fps Inflow=2.81 cfs 0.303 af
n=0.040 L=1,325.0' S=0.0426 '/' Capacity=130.06 cfs Outflow=1.97 cfs 0.303 af

Reach R11: Avg. Flow Depth=0.96' Max Vel=7.31 fps Inflow=35.01 cfs 6.324 af
n=0.040 L=1,065.0' S=0.0808 '/' Capacity=179.14 cfs Outflow=32.68 cfs 6.324 af

Reach R2: Avg. Flow Depth=0.24' Max Vel=4.41 fps Inflow=2.93 cfs 0.349 af
n=0.030 L=480.0' S=0.0750 '/' Capacity=230.19 cfs Outflow=2.76 cfs 0.352 af

Reach R3: Avg. Flow Depth=0.18' Max Vel=1.93 fps Inflow=10.39 cfs 1.958 af
n=0.080 L=400.0' S=0.1550 '/' Capacity=357.35 cfs Outflow=9.35 cfs 1.958 af

Reach R4: Avg. Flow Depth=0.57' Max Vel=4.27 fps Inflow=9.35 cfs 1.958 af
n=0.030 L=930.0' S=0.0285 '/' Capacity=141.89 cfs Outflow=8.37 cfs 1.958 af

Reach R5: Avg. Flow Depth=0.48' Max Vel=6.53 fps Inflow=10.84 cfs 3.120 af
n=0.030 L=280.0' S=0.0786 '/' Capacity=235.61 cfs Outflow=10.43 cfs 3.120 af

Reach R6: Avg. Flow Depth=0.14' Max Vel=2.75 fps Inflow=0.92 cfs 0.694 af
n=0.040 L=325.0' S=0.0954 '/' Capacity=194.70 cfs Outflow=0.92 cfs 0.694 af

Reach R7: Avg. Flow Depth=0.05' Max Vel=1.88 fps Inflow=0.93 cfs 0.408 af
n=0.030 L=150.0' S=0.0893 '/' Capacity=225.46 cfs Outflow=0.92 cfs 0.409 af

Reach R8: Avg. Flow Depth=0.12' Max Vel=3.00 fps Inflow=0.87 cfs 0.730 af
n=0.030 L=155.0' S=0.0735 '/' Capacity=227.95 cfs Outflow=0.88 cfs 0.730 af

Reach SMA9: Avg. Flow Depth=0.51' Max Vel=1.19 fps Inflow=4.52 cfs 0.573 af
n=0.100 L=350.0' S=0.0229 '/' Capacity=57.25 cfs Outflow=3.59 cfs 0.573 af

Pond C4: Peak Elev=803.21' Storage=372 cf Inflow=23.09 cfs 2.829 af
24.0" Round Culvert n=0.020 L=185.0' S=0.0324 '/' Outflow=22.58 cfs 2.371 af

Pond C5: Peak Elev=790.03' Storage=230 cf Inflow=10.98 cfs 3.192 af
24.0" Round Culvert n=0.020 L=97.0' S=0.0258 '/' Outflow=10.84 cfs 3.120 af

Pond C7: Peak Elev=863.97' Storage=333 cf Inflow=9.77 cfs 1.176 af
18.0" Round Culvert n=0.020 L=58.0' S=0.0345 '/' Outflow=9.40 cfs 1.017 af

Pond C8: Peak Elev=853.01' Storage=24 cf Inflow=3.59 cfs 0.573 af
15.0" Round Culvert n=0.020 L=58.0' S=0.0345 '/' Outflow=3.60 cfs 0.573 af

Pond C9: Peak Elev=854.50' Storage=929 cf Inflow=25.64 cfs 5.036 af
35.0" x 24.0", R=17.9"/55.1" Pipe Arch Culvert w/ 4.8" inside fill n=0.025 L=60.0' S=0.0333 '/' Outflow=24.61 cfs 4.735 af

Pond F1: FOREBAY Peak Elev=794.87' Storage=2,352 cf Inflow=5.77 cfs 0.693 af
Outflow=5.53 cfs 0.694 af

Pond F2: FOREBAY Peak Elev=864.67' Storage=1,669 cf Inflow=3.35 cfs 0.404 af
Outflow=3.36 cfs 0.408 af

Pond F3: FOREBAY Peak Elev=862.74' Storage=4,034 cf Inflow=5.77 cfs 0.730 af
Outflow=5.56 cfs 0.730 af

Pond SMA1: BIORETENTIONAREA Peak Elev=787.15' Storage=7,013 cf Inflow=4.06 cfs 0.493 af
Primary=1.18 cfs 0.483 af Secondary=0.16 cfs 0.010 af Outflow=1.34 cfs 0.493 af

Pond SMA2: POND Peak Elev=793.14' Storage=57,057 cf Inflow=22.58 cfs 2.371 af
Primary=13.50 cfs 2.363 af Secondary=0.00 cfs 0.000 af Outflow=13.50 cfs 2.363 af

Pond SMA3: POND Peak Elev=882.75' Storage=41,451 cf Inflow=13.42 cfs 1.961 af
Primary=10.39 cfs 1.958 af Secondary=0.00 cfs 0.000 af Outflow=10.39 cfs 1.958 af

Pond SMA4: BIORETENTIONAREA Peak Elev=794.78' Storage=13,905 cf Inflow=5.53 cfs 0.694 af
Primary=0.92 cfs 0.694 af Secondary=0.00 cfs 0.000 af Outflow=0.92 cfs 0.694 af

Pond SMA5: BIORETENTIONAREA Peak Elev=859.06' Storage=12,790 cf Inflow=9.40 cfs 1.017 af
Primary=7.22 cfs 1.000 af Secondary=0.40 cfs 0.016 af Outflow=7.62 cfs 1.017 af

Pond SMA6: BIORETENTIONAREA Peak Elev=865.02' Storage=6,511 cf Inflow=3.36 cfs 0.408 af
Primary=0.78 cfs 0.402 af Secondary=0.15 cfs 0.006 af Outflow=0.93 cfs 0.408 af

Pond SMA7: BIORETENTIONAREA Peak Elev=862.55' Storage=15,075 cf Inflow=5.56 cfs 0.730 af
Primary=0.87 cfs 0.730 af Secondary=0.00 cfs 0.000 af Outflow=0.87 cfs 0.730 af

Pond SMA8: Peak Elev=908.01' Storage=1,087 cf Inflow=2.72 cfs 0.327 af
Outflow=2.81 cfs 0.303 af

Link A: Inflow=0.42 cfs 0.050 af
Primary=0.42 cfs 0.050 af

Link B: Inflow=31.71 cfs 7.344 af
Primary=31.71 cfs 7.344 af

Link C: Inflow=43.24 cfs 8.970 af
Primary=43.24 cfs 8.970 af

Total Runoff Area = 73.222 ac Runoff Volume = 17.373 af Average Runoff Depth = 2.85"
76.21% Pervious = 55.806 ac 23.79% Impervious = 17.416 ac

Summary for Subcatchment S100:

Runoff = 0.42 cfs @ 12.05 hrs, Volume= 0.050 af, Depth= 2.93"
Routed to Link A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.059	78	Meadow, non-grazed, HSG D
0.022	98	Paved parking, HSG D
0.125	79	Woods, Fair, HSG D
0.206	81	Weighted Average
0.184		89.32% Pervious Area
0.022		10.68% Impervious Area

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

Summary for Subcatchment S200:

Runoff = 11.92 cfs @ 12.02 hrs, Volume= 1.369 af, Depth= 3.03"
Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
1.071	71	Meadow, non-grazed, HSG C
0.296	78	Meadow, non-grazed, HSG D
1.853	79	Woods, Fair, HSG D
0.742	73	Woods, Fair, HSG C
1.155	98	Water Surface, HSG D
0.311	98	Paved parking, HSG D
5.428	82	Weighted Average
3.962		72.99% Pervious Area
1.466		27.01% Impervious Area

Summary for Subcatchment S201:

Runoff = 4.06 cfs @ 12.05 hrs, Volume= 0.493 af, Depth= 3.12"
Routed to Pond SMA1 : BIORETENTION AREA

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.656	98	Paved parking, HSG D
0.535	71	Meadow, non-grazed, HSG C
0.705	78	Meadow, non-grazed, HSG D
1.896	83	Weighted Average
1.240		65.40% Pervious Area
0.656		34.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	65	0.0770	0.24		**Sheet Flow, sf** Grass: Short n= 0.150 P2= 2.54"
0.4	35	0.0400	1.31		**Sheet Flow, sf** Smooth surfaces n= 0.011 P2= 2.54"
1.7	190	0.0740	1.90		**Shallow Concentrated Flow, scf** Short Grass Pasture Kv= 7.0 fps
0.7	190	0.0740	4.38		**Shallow Concentrated Flow, scf** Unpaved Kv= 16.1 fps
7.3	480	Total			

Summary for Subcatchment S202:

Runoff = 13.13 cfs @ 12.05 hrs, Volume= 1.566 af, Depth= 2.93"
Routed to Pond C4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
2.160	98	Paved parking, HSG D
0.661	78	Meadow, non-grazed, HSG D
3.358	71	Meadow, non-grazed, HSG C
0.228	73	Woods, Fair, HSG C
6.407	81	Weighted Average
4.247		66.29% Pervious Area
2.160		33.71% Impervious Area

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

Summary for Subcatchment S203:

Runoff = 5.44 cfs @ 12.07 hrs, Volume= 0.679 af, Depth= 3.03"
Routed to Reach C1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
1.071	98	Paved parking, HSG D
1.622	71	Meadow, non-grazed, HSG C
2.693	82	Weighted Average
1.622		60.23% Pervious Area
1.071		39.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	100	0.0300	0.43		**Sheet Flow, SF** Fallow n= 0.050 P2= 2.54"
0.4	130	0.0930	4.91		**Shallow Concentrated Flow, SCF - LOTS** Unpaved Kv= 16.1 fps
4.6	435	0.0110	1.57		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
8.9	665	Total			

Summary for Subcatchment S204:

Runoff = 2.93 cfs @ 12.04 hrs, Volume= 0.349 af, Depth> 3.22"
Routed to Reach R2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.485	98	Paved parking, HSG D
0.360	71	Meadow, non-grazed, HSG C
0.459	78	Meadow, non-grazed, HSG D
1.304	84	Weighted Average
0.819		62.81% Pervious Area
0.485		37.19% Impervious Area

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

Summary for Subcatchment S205:

Runoff = 13.42 cfs @ 12.54 hrs, Volume= 1.961 af, Depth> 3.31"
Routed to Pond SMA3 : POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
2.651	98	Paved parking, HSG D
0.164	79	Woods, Fair, HSG D
0.594	71	Meadow, non-grazed, HSG C
3.695	78	Meadow, non-grazed, HSG D
7.104	85	Weighted Average
4.453		62.68% Pervious Area
2.651		37.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	50	0.0400	0.05		**Sheet Flow, SF - WOODS** Woods: Dense underbrush n= 0.800 P2= 2.54"
12.1	50	0.0100	0.07		**Sheet Flow, SF - GRASS** Grass: Dense n= 0.240 P2= 2.54"
1.4	140	0.0100	1.61		**Shallow Concentrated Flow, SCF - GRAVEL** Unpaved Kv= 16.1 fps
5.6	790	0.0250	2.37		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
37.4	1,030	Total			

Summary for Subcatchment S206:

Runoff = 10.69 cfs @ 12.03 hrs, Volume= 1.234 af, Depth= 2.23"
Routed to Pond C5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.028	78	Meadow, non-grazed, HSG D
2.405	71	Meadow, non-grazed, HSG C
3.680	73	Woods, Fair, HSG C
0.289	79	Woods, Fair, HSG D
0.226	98	Paved parking, HSG D
6.628	73	Weighted Average
6.402		96.59% Pervious Area
0.226		3.41% Impervious Area

Summary for Subcatchment S207:

Runoff = 1.88 cfs @ 12.05 hrs, Volume= 0.225 af, Depth= 2.93"
Routed to Reach C3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.327	98	Paved parking, HSG D
0.507	71	Meadow, non-grazed, HSG C
0.085	78	Meadow, non-grazed, HSG D
0.919	81	Weighted Average
0.592		64.42% Pervious Area
0.327		35.58% Impervious Area

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

Summary for Subcatchment S300:

Runoff = 10.31 cfs @ 12.85 hrs, Volume= 1.952 af, Depth= 2.93"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.220	98	Paved parking, HSG D
1.720	71	Meadow, non-grazed, HSG C
0.171	92	1/8 acre lots, 65% imp, HSG D
3.452	90	1/8 acre lots, 65% imp, HSG C
0.421	79	Woods, Fair, HSG D
2.003	73	Woods, Fair, HSG C
7.987	81	Weighted Average
5.412		67.76% Pervious Area
2.575		32.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.54"
1.1	85	0.0350	1.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
41.7	2,500	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
58.8	2,685	Total			

Summary for Subcatchment S301:

Runoff = 4.64 cfs @ 12.05 hrs, Volume= 0.554 af, Depth= 2.84"
Routed to Pond F1 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.792	98	Paved parking, HSG D
1.549	71	Meadow, non-grazed, HSG C
2.341	80	Weighted Average
1.549		66.17% Pervious Area
0.792		33.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	100	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 2.54"
1.7	450	0.0780	4.50		**Shallow Concentrated Flow, SCF - SWALE** Unpaved Kv= 16.1 fps
0.8	255	0.1300	5.41		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.0	805	Total			

Summary for Subcatchment S302:

Runoff = 1.17 cfs @ 12.05 hrs, Volume= 0.139 af, Depth= 2.84"
Routed to Reach C6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.382	71	Meadow, non-grazed, HSG C
0.206	98	Paved parking, HSG D
0.588	80	Weighted Average
0.382		64.97% Pervious Area
0.206		35.03% Impervious Area

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

Summary for Subcatchment S303:

Runoff = 9.77 cfs @ 12.05 hrs, Volume= 1.176 af, Depth> 3.31"
Routed to Pond C7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
1.782	98	Paved parking, HSG D
1.470	78	Meadow, non-grazed, HSG D
1.008	71	Meadow, non-grazed, HSG C
4.260	85	Weighted Average
2.478		58.17% Pervious Area
1.782		41.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	100	0.0450	0.50		**Sheet Flow, SF - LOTS** Fallow n= 0.050 P2= 2.54"
1.7	405	0.0600	3.94		**Shallow Concentrated Flow, SCF - LOTS** Unpaved Kv= 16.1 fps
1.7	305	0.0400	3.00		**Shallow Concentrated Flow, SCF - SWALE** Grassed Waterway Kv= 15.0 fps
6.7	810	Total			

Summary for Subcatchment S304:

Runoff = 3.35 cfs @ 12.05 hrs, Volume= 0.404 af, Depth= 2.84"
Routed to Pond F2 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.333	78	Meadow, non-grazed, HSG D
0.875	71	Meadow, non-grazed, HSG C
1.708	80	Weighted Average
1.208		70.73% Pervious Area
0.500		29.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.0600	0.57		**Sheet Flow,** Fallow n= 0.050 P2= 2.54"
3.8	750	0.0480	3.29		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.7	850	Total			

Summary for Subcatchment S305:

Runoff = 22.22 cfs @ 12.63 hrs, Volume= 3.594 af, Depth= 2.49"
Routed to Pond C9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.620	71	Meadow, non-grazed, HSG C
1.131	78	Meadow, non-grazed, HSG D
7.241	79	Woods, Fair, HSG D
8.354	73	Woods, Fair, HSG C
17.346	76	Weighted Average
17.346		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.54"
24.9	1,515	0.0410	1.01		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
45.4	1,615	Total			

Summary for Subcatchment S306:

Runoff = 5.77 cfs @ 12.08 hrs, Volume= 0.730 af, Depth= 2.75"
Routed to Pond F3 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.935	98	Paved parking, HSG D
0.132	73	Woods, Fair, HSG C
2.118	71	Meadow, non-grazed, HSG C
3.185	79	Weighted Average
2.250		70.64% Pervious Area
0.935		29.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0400	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.54"
1.0	320	0.1000	5.09		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.3	420	Total			

Summary for Subcatchment S307:

Runoff = 4.52 cfs @ 12.07 hrs, Volume= 0.573 af, Depth> 3.22"
Routed to Reach SMA9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
1.026	98	Paved parking, HSG D
1.029	71	Meadow, non-grazed, HSG C
0.082	73	Woods, Fair, HSG C
2.137	84	Weighted Average
1.111		51.99% Pervious Area
1.026		48.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0500	0.22		**Sheet Flow, SF - WOODS** Grass: Short n= 0.150 P2= 2.54"
2.2	485	0.0540	3.74		**Shallow Concentrated Flow, SCF - WOODS** Unpaved Kv= 16.1 fps
9.8	585	Total			

Summary for Subcatchment S308:

Runoff = 2.72 cfs @ 12.04 hrs, Volume= 0.327 af, Depth> 3.61"
Routed to Pond SMA8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 50-yr Rainfall=4.94"

Area (ac)	CN	Description
0.549	78	Meadow, non-grazed, HSG D
0.536	98	Paved parking, HSG D
1.085	88	Weighted Average
0.549		50.60% Pervious Area
0.536		49.40% Impervious Area

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

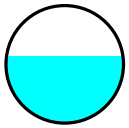
Summary for Reach C1:

Inflow Area = 2.693 ac, 39.77% Impervious, Inflow Depth = 3.03" for 50-yr event
Inflow = 5.44 cfs @ 12.07 hrs, Volume= 0.679 af
Outflow = 5.40 cfs @ 12.07 hrs, Volume= 0.684 af, Atten= 1%, Lag= 0.2 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 5.24 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 2.08 fps, Avg. Travel Time= 1.0 min

Peak Storage= 125 cf @ 12.08 hrs
Average Depth at Peak Storage= 0.86' , Surface Width= 1.48'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.81 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 120.0' Slope= 0.0167 '/'
Inlet Invert= 814.00', Outlet Invert= 812.00'



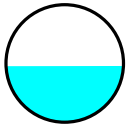
Summary for Reach C2:

Inflow Area = 1.304 ac, 37.19% Impervious, Inflow Depth > 3.24" for 50-yr event
Inflow = 2.76 cfs @ 12.06 hrs, Volume= 0.352 af
Outflow = 2.72 cfs @ 12.07 hrs, Volume= 0.355 af, Atten= 2%, Lag= 0.3 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 3.33 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.29 fps, Avg. Travel Time= 1.7 min

Peak Storage= 106 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.72' , Surface Width= 1.50'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 6.03 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 128.0' Slope= 0.0078 '/'
Inlet Invert= 813.00', Outlet Invert= 812.00'



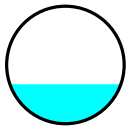
Summary for Reach C3:

Inflow Area = 0.919 ac, 35.58% Impervious, Inflow Depth = 2.93" for 50-yr event
Inflow = 1.88 cfs @ 12.05 hrs, Volume= 0.225 af
Outflow = 1.85 cfs @ 12.05 hrs, Volume= 0.225 af, Atten= 2%, Lag= 0.4 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 8.10 fps, Min. Travel Time= 0.3 min
Avg. Velocity = 3.20 fps, Avg. Travel Time= 0.7 min

Peak Storage= 29 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.34' , Surface Width= 0.94'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 7.75 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 125.0' Slope= 0.1120 '/'
Inlet Invert= 860.00', Outlet Invert= 846.00'



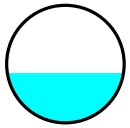
Summary for Reach C6:

Inflow Area = 0.588 ac, 35.03% Impervious, Inflow Depth = 2.84" for 50-yr event
Inflow = 1.17 cfs @ 12.05 hrs, Volume= 0.139 af
Outflow = 1.13 cfs @ 12.06 hrs, Volume= 0.139 af, Atten= 3%, Lag= 0.8 min
Routed to Pond F1 : FOREBAY

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 3.65 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.45 fps, Avg. Travel Time= 1.3 min

Peak Storage= 35 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.42' , Surface Width= 0.99'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.11 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 111.0' Slope= 0.0180 '/'
Inlet Invert= 850.00', Outlet Invert= 848.00'



Summary for Reach R10:

Inflow Area = 1.085 ac, 49.40% Impervious, Inflow Depth = 3.36" for 50-yr event
Inflow = 2.81 cfs @ 12.03 hrs, Volume= 0.303 af
Outflow = 1.97 cfs @ 12.35 hrs, Volume= 0.303 af, Atten= 30%, Lag= 18.7 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 2.69 fps, Min. Travel Time= 8.2 min
Avg. Velocity = 1.02 fps, Avg. Travel Time= 21.6 min

Peak Storage= 1,082 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.29' , Surface Width= 3.73'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 130.06 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 1,325.0' Slope= 0.0426 '/'
Inlet Invert= 908.00', Outlet Invert= 851.60'

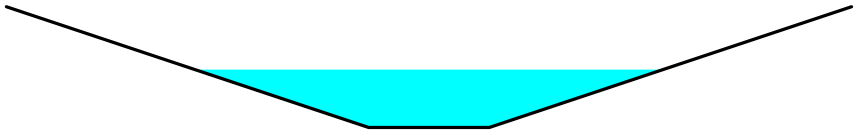
Summary for Reach R11:

Inflow Area = 29.721 ac, 16.08% Impervious, Inflow Depth = 2.55" for 50-yr event
Inflow = 35.01 cfs @ 12.54 hrs, Volume= 6.324 af
Outflow = 32.68 cfs @ 12.60 hrs, Volume= 6.324 af, Atten= 7%, Lag= 3.7 min
Routed to Link C :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 7.31 fps, Min. Travel Time= 2.4 min
Avg. Velocity = 1.50 fps, Avg. Travel Time= 11.8 min

Peak Storage= 4,968 cf @ 12.58 hrs
Average Depth at Peak Storage= 0.96' , Surface Width= 7.76'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 179.14 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 1,065.0' Slope= 0.0808 '/'
Inlet Invert= 850.00', Outlet Invert= 764.00'



Summary for Reach R2:

Inflow Area = 1.304 ac, 37.19% Impervious, Inflow Depth > 3.22" for 50-yr event
Inflow = 2.93 cfs @ 12.04 hrs, Volume= 0.349 af
Outflow = 2.76 cfs @ 12.06 hrs, Volume= 0.352 af, Atten= 6%, Lag= 1.0 min
Routed to Reach C2 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 4.41 fps, Min. Travel Time= 1.8 min
Avg. Velocity = 1.56 fps, Avg. Travel Time= 5.1 min

Peak Storage= 315 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.24' , Surface Width= 3.45'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 230.19 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 480.0' Slope= 0.0750 '/'
Inlet Invert= 849.00', Outlet Invert= 813.00'

Summary for Reach R3:

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth > 3.31" for 50-yr event
Inflow = 10.39 cfs @ 13.02 hrs, Volume= 1.958 af
Outflow = 9.35 cfs @ 13.10 hrs, Volume= 1.958 af, Atten= 10%, Lag= 4.9 min
Routed to Reach R4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 1.93 fps, Min. Travel Time= 3.4 min
Avg. Velocity = 0.50 fps, Avg. Travel Time= 13.5 min

Peak Storage= 2,076 cf @ 13.07 hrs
Average Depth at Peak Storage= 0.18' , Surface Width= 37.96'
Bank-Full Depth= 1.00' Flow Area= 70.0 sf, Capacity= 357.35 cfs

20.00' x 1.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 50.0 '/' Top Width= 120.00'
Length= 400.0' Slope= 0.1550 '/'
Inlet Invert= 878.00', Outlet Invert= 816.00'

‡

Summary for Reach R4:

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth > 3.31" for 50-yr event
Inflow = 9.35 cfs @ 13.10 hrs, Volume= 1.958 af
Outflow = 8.37 cfs @ 13.23 hrs, Volume= 1.958 af, Atten= 10%, Lag= 7.7 min
Routed to Pond C5 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 4.27 fps, Min. Travel Time= 3.6 min
Avg. Velocity = 1.16 fps, Avg. Travel Time= 13.4 min

Peak Storage= 1,938 cf @ 13.18 hrs
Average Depth at Peak Storage= 0.57' , Surface Width= 5.42'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 141.89 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 930.0' Slope= 0.0285 '/'
Inlet Invert= 816.00', Outlet Invert= 789.50'

Summary for Reach R5:

Inflow Area = 13.732 ac, 20.95% Impervious, Inflow Depth > 2.73" for 50-yr event
Inflow = 10.84 cfs @ 12.07 hrs, Volume= 3.120 af
Outflow = 10.43 cfs @ 12.09 hrs, Volume= 3.120 af, Atten= 4%, Lag= 1.2 min
Routed to Link B :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 6.53 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.83 fps, Avg. Travel Time= 2.5 min

Peak Storage= 456 cf @ 12.09 hrs
Average Depth at Peak Storage= 0.48' , Surface Width= 4.87'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 235.61 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 280.0' Slope= 0.0786 '/'
Inlet Invert= 786.00', Outlet Invert= 764.00'

Summary for Reach R6:

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 2.84" for 50-yr event
Inflow = 0.92 cfs @ 13.17 hrs, Volume= 0.694 af
Outflow = 0.92 cfs @ 13.45 hrs, Volume= 0.694 af, Atten= 0%, Lag= 16.7 min
Routed to Link C :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 2.75 fps, Min. Travel Time= 2.0 min
Avg. Velocity = 1.31 fps, Avg. Travel Time= 4.1 min

Peak Storage= 110 cf @ 13.44 hrs
Average Depth at Peak Storage= 0.14' , Surface Width= 2.84'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 194.70 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 325.0' Slope= 0.0954 '/'
Inlet Invert= 795.00', Outlet Invert= 764.00'

Summary for Reach R7:

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 2.87" for 50-yr event
Inflow = 0.93 cfs @ 12.99 hrs, Volume= 0.408 af
Outflow = 0.92 cfs @ 13.01 hrs, Volume= 0.409 af, Atten= 1%, Lag= 0.6 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 1.88 fps, Min. Travel Time= 1.3 min
Avg. Velocity = 0.93 fps, Avg. Travel Time= 2.7 min

Peak Storage= 74 cf @ 13.00 hrs
Average Depth at Peak Storage= 0.05' , Surface Width= 10.94'
Bank-Full Depth= 1.00' Flow Area= 20.0 sf, Capacity= 225.46 cfs

10.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 150.0' Slope= 0.0893 '/'
Inlet Invert= 865.00', Outlet Invert= 851.60'

‡

Summary for Reach R8:

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 2.75" for 50-yr event
Inflow = 0.87 cfs @ 13.00 hrs, Volume= 0.730 af
Outflow = 0.88 cfs @ 13.46 hrs, Volume= 0.730 af, Atten= 0%, Lag= 27.8 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 3.00 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 1.45 fps, Avg. Travel Time= 1.8 min

Peak Storage= 45 cf @ 13.46 hrs
Average Depth at Peak Storage= 0.12' , Surface Width= 2.74'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 227.95 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 155.0' Slope= 0.0735 '/'
Inlet Invert= 863.00', Outlet Invert= 851.60'

Summary for Reach SMA9:

Inflow Area = 2.137 ac, 48.01% Impervious, Inflow Depth > 3.22" for 50-yr event
Inflow = 4.52 cfs @ 12.07 hrs, Volume= 0.573 af
Outflow = 3.59 cfs @ 12.27 hrs, Volume= 0.573 af, Atten= 20%, Lag= 12.0 min
Routed to Pond C8 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 1.19 fps, Min. Travel Time= 4.9 min
Avg. Velocity = 0.39 fps, Avg. Travel Time= 15.0 min

Peak Storage= 1,158 cf @ 12.19 hrs
Average Depth at Peak Storage= 0.51' , Surface Width= 8.07'
Bank-Full Depth= 2.00' Flow Area= 22.0 sf, Capacity= 57.25 cfs

5.00' x 2.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 3.0 '/' Top Width= 17.00'
Length= 350.0' Slope= 0.0229 '/'
Inlet Invert= 870.25', Outlet Invert= 862.25'

‡

Summary for Pond C4:

Inflow Area = 11.323 ac, 35.71% Impervious, Inflow Depth = 3.00" for 50-yr event
Inflow = 23.09 cfs @ 12.06 hrs, Volume= 2.829 af
Outflow = 22.58 cfs @ 12.05 hrs, Volume= 2.371 af, Atten= 2%, Lag= 0.0 min
Primary = 22.58 cfs @ 12.05 hrs, Volume= 2.371 af
Routed to Pond SMA2 : POND

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 803.21' @ 12.04 hrs Surf.Area= 296 sf Storage= 372 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	1,224 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
800.00	5	5.0	0	0	5
802.00	140	50.0	114	114	209
804.00	430	85.0	544	658	609
805.00	715	105.0	566	1,224	926

Device	Routing	Invert	Outlet Devices
#1	Primary	800.00'	**24.0" Round Culvert** L= 185.0' Ke= 0.500 Inlet / Outlet Invert= 800.00' / 794.00' S= 0.0324 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 3.14 sf

Primary OutFlow Max=21.50 cfs @ 12.05 hrs HW=803.02' (Free Discharge)
↑**1=Culvert** (Inlet Controls 21.50 cfs @ 6.84 fps)

Summary for Pond C5:

Inflow Area = 13.732 ac, 20.95% Impervious, Inflow Depth > 2.79" for 50-yr event
Inflow = 10.98 cfs @ 12.07 hrs, Volume= 3.192 af
Outflow = 10.84 cfs @ 12.07 hrs, Volume= 3.120 af, Atten= 1%, Lag= 0.0 min
Primary = 10.84 cfs @ 12.07 hrs, Volume= 3.120 af
Routed to Reach R5 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 790.03' @ 12.08 hrs Surf.Area= 424 sf Storage= 230 cf

Plug-Flow detention time= 40.7 min calculated for 3.120 af (98% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	788.50'	2,121 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
788.50	1	1.0	0	0	1
790.00	410	110.0	216	216	967
792.00	1,630	270.0	1,905	2,121	5,821

Device	Routing	Invert	Outlet Devices
#1	Primary	788.50'	**24.0" Round Culvert** L= 97.0' Ke= 0.500 Inlet / Outlet Invert= 788.50' / 786.00' S= 0.0258 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 3.14 sf

Primary OutFlow Max=10.03 cfs @ 12.07 hrs HW=789.95' (Free Discharge)
1=Culvert (Inlet Controls 10.03 cfs @ 4.10 fps)

Summary for Pond C7:

Inflow Area = 4.260 ac, 41.83% Impervious, Inflow Depth > 3.31" for 50-yr event
Inflow = 9.77 cfs @ 12.05 hrs, Volume= 1.176 af
Outflow = 9.40 cfs @ 12.04 hrs, Volume= 1.017 af, Atten= 4%, Lag= 0.0 min
Primary = 9.40 cfs @ 12.04 hrs, Volume= 1.017 af
Routed to Pond SMA5 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 863.97' @ 12.03 hrs Surf.Area= 432 sf Storage= 333 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	862.00'	1,450 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
862.00	10	15.0	0	0	10
864.00	445	125.0	348	348	1,243
865.50	1,070	155.0	1,103	1,450	1,944

Device	Routing	Invert	Outlet Devices
#1	Primary	862.00'	**18.0" Round Culvert** L= 58.0' Ke= 0.500 Inlet / Outlet Invert= 862.00' / 860.00' S= 0.0345 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.77 sf

Primary OutFlow Max=9.05 cfs @ 12.04 hrs HW=863.88' (Free Discharge)
1=Culvert (Inlet Controls 9.05 cfs @ 5.12 fps)

Summary for Pond C8:

Inflow Area = 2.137 ac, 48.01% Impervious, Inflow Depth > 3.22" for 50-yr event
Inflow = 3.59 cfs @ 12.27 hrs, Volume= 0.573 af
Outflow = 3.60 cfs @ 12.28 hrs, Volume= 0.573 af, Atten= 0%, Lag= 0.4 min
Primary = 3.60 cfs @ 12.28 hrs, Volume= 0.573 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 853.01' @ 12.28 hrs Surf.Area= 50 sf Storage= 24 cf

Plug-Flow detention time= 0.1 min calculated for 0.568 af (99% of inflow)
Center-of-Mass det. time= 0.1 min (830.7 - 830.6)

Volume	Invert	Avail.Storage	Storage Description
#1	852.00'	114 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
852.00	5	5.0	0	0	5
854.00	140	40.0	114	114	138

Device	Routing	Invert	Outlet Devices
#1	Primary	852.00'	**15.0" Round Culvert** L= 58.0' Ke= 0.500 Inlet / Outlet Invert= 852.00' / 850.00' S= 0.0345 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf

Primary OutFlow Max=3.30 cfs @ 12.28 hrs HW=852.95' (Free Discharge)
1=Culvert (Inlet Controls 3.30 cfs @ 3.31 fps)

Summary for Pond C9:

Inflow Area = 23.324 ac, 8.45% Impervious, Inflow Depth = 2.59" for 50-yr event
Inflow = 25.64 cfs @ 12.62 hrs, Volume= 5.036 af
Outflow = 24.61 cfs @ 12.62 hrs, Volume= 4.735 af, Atten= 4%, Lag= 0.4 min
Primary = 24.61 cfs @ 12.62 hrs, Volume= 4.735 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 854.50' @ 12.60 hrs Surf.Area= 1,058 sf Storage= 929 cf

Plug-Flow detention time= 21.0 min calculated for 4.700 af (93% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	852.00'	5,020 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
852.00	1	1.0	0	0	1
854.00	710	145.0	492	492	1,680
856.00	2,530	320.0	3,054	3,545	8,173
856.50	3,390	350.0	1,475	5,020	9,781

Device	Routing	Invert	Outlet Devices
#1	Primary	852.00'	**35.0" W x 24.0" H, R=17.9"/55.1" Pipe Arch CMP_Arch_1/2 35x24 w/ 4.8" ins** L= 60.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 851.60' / 849.60' S= 0.0333 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.78 sf

Primary OutFlow Max=22.82 cfs @ 12.62 hrs HW=854.30' (Free Discharge)
└**1=CMP_Arch_1/2 35x24** (Inlet Controls 22.82 cfs @ 6.04 fps)

Summary for Pond F1: FOREBAY

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 2.84" for 50-yr event
Inflow = 5.77 cfs @ 12.05 hrs, Volume= 0.693 af
Outflow = 5.53 cfs @ 12.08 hrs, Volume= 0.694 af, Atten= 4%, Lag= 1.5 min
Primary = 5.53 cfs @ 12.08 hrs, Volume= 0.694 af
Routed to Pond SMA4 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 794.50' Surf.Area= 1,103 sf Storage= 1,917 cf
Peak Elev= 794.87' @ 12.09 hrs Surf.Area= 1,249 sf Storage= 2,352 cf (435 cf above start)

Plug-Flow detention time= 50.6 min calculated for 0.645 af (93% of inflow)
Center-of-Mass det. time= 2.3 min (827.9 - 825.6)

Volume	Invert	Avail.Storage	Storage Description
#1	790.00'	4,038 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
790.00	5	5.0	0	0	5
792.00	310	80.0	236	236	519
794.00	920	120.0	1,176	1,412	1,187
796.00	1,750	160.0	2,626	4,038	2,121

Device	Routing	Invert	Outlet Devices
#0	Primary	796.00'	**Automatic Storage Overflow** (Discharged without head)
#1	Primary	794.50'	**10.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=5.04 cfs @ 12.08 hrs HW=794.85' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 5.04 cfs @ 1.46 fps)

Summary for Pond F2: FOREBAY

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 2.84" for 50-yr event
Inflow = 3.35 cfs @ 12.05 hrs, Volume= 0.404 af
Outflow = 3.36 cfs @ 12.06 hrs, Volume= 0.408 af, Atten= 0%, Lag= 0.1 min
Primary = 3.36 cfs @ 12.06 hrs, Volume= 0.408 af
Routed to Pond SMA6 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Starting Elev= 864.50' Surf.Area= 1,015 sf Storage= 1,490 cf
Peak Elev= 864.67' @ 12.07 hrs Surf.Area= 1,082 sf Storage= 1,669 cf (180 cf above start)

Plug-Flow detention time= 58.9 min calculated for 0.374 af (93% of inflow)
Center-of-Mass det. time= 0.4 min (826.3 - 825.9)

Volume	Invert	Avail.Storage	Storage Description
#1	860.00'	3,490 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
860.00	1	1.0	0	0	1
862.00	165	90.0	119	119	652
864.00	830	125.0	910	1,029	1,288
866.00	1,680	165.0	2,461	3,490	2,256

Device	Routing	Invert	Outlet Devices
#1	Primary	864.50'	**20.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=3.08 cfs @ 12.06 hrs HW=864.66' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 3.08 cfs @ 0.95 fps)

Summary for Pond F3: FOREBAY

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 2.75" for 50-yr event
Inflow = 5.77 cfs @ 12.08 hrs, Volume= 0.730 af
Outflow = 5.56 cfs @ 12.11 hrs, Volume= 0.730 af, Atten= 4%, Lag= 1.6 min
Primary = 5.56 cfs @ 12.11 hrs, Volume= 0.730 af
Routed to Pond SMA7 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 862.50' Surf.Area= 1,666 sf Storage= 3,623 cf
Peak Elev= 862.74' @ 12.13 hrs Surf.Area= 1,755 sf Storage= 4,034 cf (411 cf above start)

Plug-Flow detention time= 79.3 min calculated for 0.642 af (88% of inflow)
Center-of-Mass det. time= 2.0 min (833.0 - 831.0)

Volume	Invert	Avail.Storage	Storage Description
#1	858.00'	6,553 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
858.00	150	55.0	0	0	150
860.00	655	105.0	746	746	806
862.00	1,490	155.0	2,089	2,834	1,873
864.00	2,255	185.0	3,719	6,553	2,753

Device	Routing	Invert	Outlet Devices
#1	Primary	862.50'	**20.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=4.97 cfs @ 12.11 hrs HW=862.72' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 4.97 cfs @ 1.12 fps)

Summary for Pond SMA1: BIORETENTION AREA

Inflow Area = 1.896 ac, 34.60% Impervious, Inflow Depth = 3.12" for 50-yr event
Inflow = 4.06 cfs @ 12.05 hrs, Volume= 0.493 af
Outflow = 1.34 cfs @ 12.63 hrs, Volume= 0.493 af, Atten= 67%, Lag= 34.8 min
Primary = 1.18 cfs @ 12.74 hrs, Volume= 0.483 af
Routed to Link B :
Secondary = 0.16 cfs @ 12.58 hrs, Volume= 0.010 af
Routed to Link B :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 787.15' @ 12.74 hrs Surf.Area= 8,201 sf Storage= 7,013 cf

Plug-Flow detention time= 50.0 min calculated for 0.489 af (99% of inflow)
Center-of-Mass det. time= 50.4 min (868.1 - 817.8)

Volume	Invert	Avail.Storage	Storage Description
#1	782.17'	687 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 1,718 cf Overall x 40.0% Voids
#2	783.00'	1,294 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 5,175 cf Overall x 25.0% Voids
#3	785.50'	12,294 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		14,275 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
782.17	2,070	400.0	0	0	2,070
783.00	2,070	400.0	1,718	1,718	2,402

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
783.00	2,070	400.0	0	0	2,070
785.50	2,070	400.0	5,175	5,175	3,070

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
785.50	2,070	400.0	0	0	2,070
786.00	2,680	410.0	1,184	1,184	2,746
788.00	5,265	450.0	7,801	8,985	5,615
788.50	8,070	485.0	3,309	12,294	8,230

Device	Routing	Invert	Outlet Devices
#1	Primary	782.17'	**6.0" Round Culvert** L= 42.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 782.17' / 781.40' S= 0.0183 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	787.00'	**8.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=1.17 cfs @ 12.74 hrs HW=787.03' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.17 cfs @ 5.94 fps)

Secondary OutFlow Max=0.13 cfs @ 12.58 hrs HW=787.03' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.13 cfs @ 0.47 fps)

Summary for Pond SMA2: POND

Inflow Area = 11.323 ac, 35.71% Impervious, Inflow Depth = 2.51" for 50-yr event
Inflow = 22.58 cfs @ 12.05 hrs, Volume= 2.371 af
Outflow = 13.50 cfs @ 12.56 hrs, Volume= 2.363 af, Atten= 40%, Lag= 30.4 min
Primary = 13.50 cfs @ 12.56 hrs, Volume= 2.363 af
Routed to Link B :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link B :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Starting Elev= 790.00' Surf.Area= 9,500 sf Storage= 17,737 cf
Peak Elev= 793.14' @ 12.54 hrs Surf.Area= 15,593 sf Storage= 57,057 cf (39,320 cf above start)

Plug-Flow detention time= 446.1 min calculated for 1.956 af (83% of inflow)
Center-of-Mass det. time= 308.6 min (1,090.0 - 781.4)

Volume	Invert	Avail.Storage	Storage Description
#1	784.00'	81,315 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
784.00	50	60.0	0	0	50
786.00	1,085	250.0	912	912	4,747
788.00	3,480	450.0	4,339	5,251	15,910
790.00	9,500	655.0	12,487	17,737	33,970
792.00	13,395	615.0	22,784	40,521	38,208
794.00	17,355	700.0	30,665	71,186	47,199
794.55	19,500	730.0	10,129	81,315	50,636

Device	Routing	Invert	Outlet Devices
#1	Primary	786.50'	**18.0" Round Culvert** L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 786.50' / 786.00' S= 0.0139 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.77 sf
#2	Device 1	790.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	791.80'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	793.55'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Device 1	792.15'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns** X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area) Limited to weir flow at low heads

Primary OutFlow Max=13.03 cfs @ 12.56 hrs HW=793.07' (Free Discharge)
└**1=Culvert** (Passes 13.03 cfs of 19.15 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.41 cfs @ 8.27 fps)
  ├**3=Orifice/Grate** (Orifice Controls 4.27 cfs @ 5.43 fps)
  └**5=Orifice/Grate** (Orifice Controls 8.36 cfs @ 4.63 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=790.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA3: POND

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth > 3.31" for 50-yr event
Inflow = 13.42 cfs @ 12.54 hrs, Volume= 1.961 af
Outflow = 10.39 cfs @ 13.02 hrs, Volume= 1.958 af, Atten= 23%, Lag= 28.9 min
Primary = 10.39 cfs @ 13.02 hrs, Volume= 1.958 af
Routed to Reach R3 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R3 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 880.00' Surf.Area= 7,820 sf Storage= 12,194 cf
Peak Elev= 882.75' @ 13.02 hrs Surf.Area= 13,595 sf Storage= 41,451 cf (29,257 cf above start)

Plug-Flow detention time= 393.2 min calculated for 1.678 af (86% of inflow)
Center-of-Mass det. time= 264.2 min (1,104.3 - 840.1)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	60,184 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
874.00	2	10.0	0	0	2
876.00	500	185.0	356	356	2,725
878.00	2,150	340.0	2,458	2,814	9,221
880.00	7,820	590.0	9,380	12,194	27,747
882.00	11,950	665.0	19,625	31,818	35,341
884.00	16,540	725.0	28,366	60,184	42,122

Device	Routing	Invert	Outlet Devices
#1	Primary	875.85'	**15.0" Round Culvert** L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 875.85' / 875.00' S= 0.0170 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf
#2	Device 1	880.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	881.55'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	882.95'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#5	Device 1	882.30'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns** X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area) Limited to weir flow at low heads

Primary OutFlow Max=10.27 cfs @ 13.02 hrs HW=882.74' (Free Discharge)
└**1=Culvert** (Passes 10.27 cfs of 12.16 cfs potential flow)
  ├**2=Orifice/Grate** (Orifice Controls 0.38 cfs @ 7.79 fps)
  ├**3=Orifice/Grate** (Orifice Controls 4.13 cfs @ 5.25 fps)
  └**5=Orifice/Grate** (Orifice Controls 5.77 cfs @ 3.19 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=880.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA4: BIORETENTION AREA

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 2.84" for 50-yr event
Inflow = 5.53 cfs @ 12.08 hrs, Volume= 0.694 af
Outflow = 0.92 cfs @ 13.17 hrs, Volume= 0.694 af, Atten= 83%, Lag= 65.6 min
Primary = 0.92 cfs @ 13.17 hrs, Volume= 0.694 af
Routed to Reach R6 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R6 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 794.78' @ 13.17 hrs Surf.Area= 18,860 sf Storage= 13,905 cf

Plug-Flow detention time= 161.1 min calculated for 0.694 af (100% of inflow)
Center-of-Mass det. time= 153.2 min (981.1 - 827.9)

Volume	Invert	Avail.Storage	Storage Description
#1	790.17'	1,942 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,856 cf Overall x 40.0% Voids
#2	791.00'	3,656 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 14,625 cf Overall x 25.0% Voids
#3	793.50'	22,718 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		28,316 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
790.17	5,850	330.0	0	0	5,850
791.00	5,850	330.0	4,856	4,856	6,124

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
791.00	5,850	330.0	0	0	5,850
793.50	5,850	330.0	14,625	14,625	6,675

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
793.50	5,850	330.0	0	0	5,850
794.00	6,355	340.0	3,050	3,050	6,409
796.00	8,520	380.0	14,822	17,873	8,811
796.50	10,910	415.0	4,845	22,718	11,034

Device	Routing	Invert	Outlet Devices
#1	Primary	790.17'	**6.0" Round Culvert** L= 72.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 790.17' / 789.00' S= 0.0162 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	795.00'	**8.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=0.92 cfs @ 13.17 hrs HW=794.75' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.92 cfs @ 4.69 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=790.17' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA5: BIORETENTION AREA

Inflow Area = 4.260 ac, 41.83% Impervious, Inflow Depth > 2.86" for 50-yr event
Inflow = 9.40 cfs @ 12.04 hrs, Volume= 1.017 af
Outflow = 7.62 cfs @ 12.45 hrs, Volume= 1.017 af, Atten= 19%, Lag= 24.4 min
Primary = 7.22 cfs @ 12.44 hrs, Volume= 1.000 af
Routed to Reach R11 :
Secondary = 0.40 cfs @ 12.50 hrs, Volume= 0.016 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 859.06' @ 12.46 hrs Surf.Area= 15,360 sf Storage= 12,790 cf

Plug-Flow detention time= 109.0 min calculated for 1.009 af (99% of inflow)
Center-of-Mass det. time= 113.3 min (904.5 - 791.2)

Volume	Invert	Avail.Storage	Storage Description
#1	854.17'	1,527 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 3,818 cf Overall x 40.0% Voids
#2	855.00'	2,875 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 11,500 cf Overall x 25.0% Voids
#3	857.50'	18,591 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		22,993 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
854.17	4,600	320.0	0	0	4,600
855.00	4,600	320.0	3,818	3,818	4,866

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
855.00	4,600	320.0	0	0	4,600
857.50	4,600	320.0	11,500	11,500	5,400

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
857.50	4,600	320.0	0	0	4,600
858.00	5,090	330.0	2,421	2,421	5,142
860.00	7,190	370.0	12,220	14,641	7,478
860.50	8,630	395.0	3,950	18,591	9,012

Device	Routing	Invert	Outlet Devices
#1	Device 4	854.17'	**6.0" Round Culvert** L= 130.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 854.17' / 854.00' S= 0.0013 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	859.00'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#3	Device 4	858.50'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns** X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area) Limited to weir flow at low heads
#4	Primary	853.25'	**15.0" Round Culvert** L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 853.25' / 852.00' S= 0.0125 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf

Primary OutFlow Max=6.89 cfs @ 12.44 hrs HW=859.02' (Free Discharge)
└**4=Culvert** (Passes 6.89 cfs of 8.93 cfs potential flow)
  └**1=Culvert** (Barrel Controls 0.65 cfs @ 3.33 fps)
  └**3=Orifice/Grate** (Orifice Controls 6.24 cfs @ 3.46 fps)

Secondary OutFlow Max=0.37 cfs @ 12.50 hrs HW=859.06' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.37 cfs @ 0.62 fps)

Summary for Pond SMA6: BIORETENTION AREA

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 2.87" for 50-yr event
Inflow = 3.36 cfs @ 12.06 hrs, Volume= 0.408 af
Outflow = 0.93 cfs @ 12.99 hrs, Volume= 0.408 af, Atten= 72%, Lag= 56.3 min
Primary = 0.78 cfs @ 12.92 hrs, Volume= 0.402 af
Routed to Reach R7 :
Secondary = 0.15 cfs @ 13.00 hrs, Volume= 0.006 af
Routed to Reach R7 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 865.02' @ 12.92 hrs Surf.Area= 7,972 sf Storage= 6,511 cf

Plug-Flow detention time= 85.7 min calculated for 0.408 af (100% of inflow)
Center-of-Mass det. time= 76.2 min (902.5 - 826.3)

Volume	Invert	Avail.Storage	Storage Description
#1	860.17'	759 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 1,897 cf Overall x 40.0% Voids
#2	861.00'	1,428 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 5,713 cf Overall x 25.0% Voids
#3	863.50'	10,318 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		12,505 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
860.17	2,285	240.0	0	0	2,285
861.00	2,285	240.0	1,897	1,897	2,484

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
861.00	2,285	240.0	0	0	2,285
863.50	2,285	240.0	5,713	5,713	2,885

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
863.50	2,285	240.0	0	0	2,285
864.00	2,650	250.0	1,233	1,233	2,694
866.00	4,205	285.0	6,795	8,028	4,277
866.50	4,965	295.0	2,290	10,318	4,761

Device	Routing	Invert	Outlet Devices
#1	Primary	860.17'	**6.0" Round Culvert** L= 110.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 860.17' / 859.00' S= 0.0106 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	865.00'	**15.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.78 cfs @ 12.92 hrs HW=865.00' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.78 cfs @ 3.97 fps)

Secondary OutFlow Max=0.11 cfs @ 13.00 hrs HW=865.02' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.11 cfs @ 0.34 fps)

Summary for Pond SMA7: BIORETENTION AREA

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 2.75" for 50-yr event
Inflow = 5.56 cfs @ 12.11 hrs, Volume= 0.730 af
Outflow = 0.87 cfs @ 13.00 hrs, Volume= 0.730 af, Atten= 84%, Lag= 53.6 min
Primary = 0.87 cfs @ 13.00 hrs, Volume= 0.730 af
Routed to Reach R8 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R8 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 862.55' @ 13.00 hrs Surf.Area= 22,788 sf Storage= 15,075 cf

Plug-Flow detention time= 182.3 min calculated for 0.725 af (99% of inflow)
Center-of-Mass det. time= 185.2 min (1,018.2 - 833.0)

Volume	Invert	Avail.Storage	Storage Description
#1	858.17'	2,397 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 5,993 cf Overall x 40.0% Voids
#2	859.00'	4,513 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 18,050 cf Overall x 25.0% Voids
#3	861.50'	26,547 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		33,456 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
858.17	7,220	370.0	0	0	7,220
859.00	7,220	370.0	5,993	5,993	7,527

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
859.00	7,220	370.0	0	0	7,220
861.50	7,220	370.0	18,050	18,050	8,145

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
861.50	7,220	370.0	0	0	7,220
862.00	7,780	380.0	3,749	3,749	7,846
864.00	9,950	415.0	17,686	21,435	10,198
864.50	10,500	425.0	5,112	26,547	10,899

Device	Routing	Invert	Outlet Devices
#1	Primary	858.17'	**6.0" Round Culvert** L= 78.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 858.17' / 857.00' S= 0.0150 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	863.00'	**20.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.87 cfs @ 13.00 hrs HW=862.55' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.87 cfs @ 4.44 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=858.17' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA8:

Inflow Area = 1.085 ac, 49.40% Impervious, Inflow Depth > 3.61" for 50-yr event
Inflow = 2.72 cfs @ 12.04 hrs, Volume= 0.327 af
Outflow = 2.81 cfs @ 12.03 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min
Primary = 2.81 cfs @ 12.03 hrs, Volume= 0.303 af
Routed to Reach R10 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Peak Elev= 908.01' @ 12.05 hrs Surf.Area= 1,350 sf Storage= 1,087 cf

Plug-Flow detention time= 64.0 min calculated for 0.303 af (93% of inflow)
Center-of-Mass det. time= 24.8 min (825.3 - 800.4)

Volume	Invert	Avail.Storage	Storage Description
#1	906.00'	1,620 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,050 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
906.00	1,350	1,360.0	0	0	1,350
909.00	1,350	1,360.0	4,050	4,050	5,430

Device	Routing	Invert	Outlet Devices
#1	Primary	908.00'	**675.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=2.35 cfs @ 12.03 hrs HW=908.01' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 2.35 cfs @ 0.29 fps)

Summary for Link A:

Inflow Area = 0.206 ac, 10.68% Impervious, Inflow Depth = 2.93" for 50-yr event
Inflow = 0.42 cfs @ 12.05 hrs, Volume= 0.050 af
Primary = 0.42 cfs @ 12.05 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Summary for Link B:

Inflow Area = 32.379 ac, 27.93% Impervious, Inflow Depth > 2.72" for 50-yr event
Inflow = 31.71 cfs @ 12.16 hrs, Volume= 7.344 af
Primary = 31.71 cfs @ 12.16 hrs, Volume= 7.344 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Summary for Link C:

Inflow Area = 40.637 ac, 20.55% Impervious, Inflow Depth = 2.65" for 50-yr event
Inflow = 43.24 cfs @ 12.65 hrs, Volume= 8.970 af
Primary = 43.24 cfs @ 12.65 hrs, Volume= 8.970 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Time span=5.00-72.00 hrs, dt=0.50 hrs, 135 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentS100: Runoff Area=0.206 ac 10.68% Impervious Runoff Depth=3.61"
Tc=6.0 min CN=81 Runoff=0.53 cfs 0.062 af

SubcatchmentS200: Runoff Area=5.428 ac 27.01% Impervious Runoff Depth>3.71"
Tc=0.0 min CN=82 Runoff=14.89 cfs 1.679 af

SubcatchmentS201: Runoff Area=1.896 ac 34.60% Impervious Runoff Depth>3.81"
Flow Length=480' Tc=7.3 min CN=83 Runoff=5.07 cfs 0.603 af

SubcatchmentS202: Runoff Area=6.407 ac 33.71% Impervious Runoff Depth=3.61"
Tc=6.0 min CN=81 Runoff=16.53 cfs 1.928 af

SubcatchmentS203: Runoff Area=2.693 ac 39.77% Impervious Runoff Depth>3.71"
Flow Length=665' Tc=8.9 min CN=82 Runoff=6.83 cfs 0.833 af

SubcatchmentS204: Runoff Area=1.304 ac 37.19% Impervious Runoff Depth>3.92"
Tc=6.0 min CN=84 Runoff=3.64 cfs 0.426 af

SubcatchmentS205: Runoff Area=7.104 ac 37.32% Impervious Runoff Depth>4.02"
Flow Length=1,030' Tc=37.4 min CN=85 Runoff=16.57 cfs 2.380 af

SubcatchmentS206: Runoff Area=6.628 ac 3.41% Impervious Runoff Depth=2.84"
Tc=0.0 min CN=73 Runoff=13.98 cfs 1.569 af

SubcatchmentS207: Runoff Area=0.919 ac 35.58% Impervious Runoff Depth=3.61"
Tc=6.0 min CN=81 Runoff=2.37 cfs 0.277 af

SubcatchmentS300: Runoff Area=7.987 ac 32.24% Impervious Runoff Depth=3.61"
Flow Length=2,685' Tc=58.8 min CN=81 Runoff=12.94 cfs 2.404 af

SubcatchmentS301: Runoff Area=2.341 ac 33.83% Impervious Runoff Depth=3.51"
Flow Length=805' Tc=6.0 min CN=80 Runoff=5.87 cfs 0.685 af

SubcatchmentS302: Runoff Area=0.588 ac 35.03% Impervious Runoff Depth=3.51"
Tc=6.0 min CN=80 Runoff=1.47 cfs 0.172 af

SubcatchmentS303: Runoff Area=4.260 ac 41.83% Impervious Runoff Depth>4.02"
Flow Length=810' Tc=6.7 min CN=85 Runoff=12.08 cfs 1.427 af

SubcatchmentS304: Runoff Area=1.708 ac 29.27% Impervious Runoff Depth=3.51"
Flow Length=850' Tc=6.7 min CN=80 Runoff=4.24 cfs 0.500 af

SubcatchmentS305: Runoff Area=17.346 ac 0.00% Impervious Runoff Depth=3.12"
Flow Length=1,615' Tc=45.4 min CN=76 Runoff=28.70 cfs 4.514 af

SubcatchmentS306: Runoff Area=3.185 ac 29.36% Impervious Runoff Depth=3.41"
Flow Length=420' Tc=9.3 min CN=79 Runoff=7.35 cfs 0.906 af

SubcatchmentS307: Runoff Area=2.137 ac 48.01% Impervious Runoff Depth>3.92"
Flow Length=585' Tc=9.8 min CN=84 Runoff=5.62 cfs 0.697 af

SubcatchmentS308: Runoff Area=1.085 ac 49.40% Impervious Runoff Depth>4.34"
Tc=6.0 min CN=88 Runoff=3.31 cfs 0.392 af

Reach C1: Avg. Flow Depth=1.00' Max Vel=5.50 fps Inflow=6.83 cfs 0.833 af
18.0" Round Pipe n=0.020 L=120.0' S=0.0167 '/' Capacity=8.81 cfs Outflow=6.78 cfs 0.838 af

Reach C2: Avg. Flow Depth=0.82' Max Vel=3.52 fps Inflow=3.45 cfs 0.429 af
18.0" Round Pipe n=0.020 L=128.0' S=0.0078 '/' Capacity=6.03 cfs Outflow=3.40 cfs 0.432 af

Reach C3: Avg. Flow Depth=0.38' Max Vel=8.64 fps Inflow=2.37 cfs 0.277 af
12.0" Round Pipe n=0.020 L=125.0' S=0.1120 '/' Capacity=7.75 cfs Outflow=2.34 cfs 0.277 af

Reach C6: Avg. Flow Depth=0.48' Max Vel=3.88 fps Inflow=1.47 cfs 0.172 af
12.0" Round Pipe n=0.020 L=111.0' S=0.0180 '/' Capacity=3.11 cfs Outflow=1.43 cfs 0.172 af

Reach R10: Avg. Flow Depth=0.32' Max Vel=2.86 fps Inflow=3.23 cfs 0.369 af
n=0.040 L=1,325.0' S=0.0426 '/' Capacity=130.06 cfs Outflow=2.41 cfs 0.369 af

Reach R11: Avg. Flow Depth=1.05' Max Vel=7.70 fps Inflow=42.21 cfs 8.324 af
n=0.040 L=1,065.0' S=0.0808 '/' Capacity=179.14 cfs Outflow=40.35 cfs 8.324 af

Reach R2: Avg. Flow Depth=0.27' Max Vel=4.72 fps Inflow=3.64 cfs 0.426 af
n=0.030 L=480.0' S=0.0750 '/' Capacity=230.19 cfs Outflow=3.45 cfs 0.429 af

Reach R3: Avg. Flow Depth=0.20' Max Vel=2.06 fps Inflow=11.69 cfs 2.377 af
n=0.080 L=400.0' S=0.1550 '/' Capacity=357.35 cfs Outflow=11.74 cfs 2.377 af

Reach R4: Avg. Flow Depth=0.65' Max Vel=4.66 fps Inflow=11.74 cfs 2.377 af
n=0.030 L=930.0' S=0.0285 '/' Capacity=141.89 cfs Outflow=11.21 cfs 2.377 af

Reach R5: Avg. Flow Depth=0.55' Max Vel=7.02 fps Inflow=14.21 cfs 3.853 af
n=0.030 L=280.0' S=0.0786 '/' Capacity=235.61 cfs Outflow=13.78 cfs 3.853 af

Reach R6: Avg. Flow Depth=0.23' Max Vel=3.66 fps Inflow=2.36 cfs 0.857 af
n=0.040 L=325.0' S=0.0954 '/' Capacity=194.70 cfs Outflow=2.21 cfs 0.857 af

Reach R7: Avg. Flow Depth=0.08' Max Vel=2.68 fps Inflow=2.40 cfs 0.503 af
n=0.030 L=150.0' S=0.0893 '/' Capacity=225.46 cfs Outflow=2.34 cfs 0.506 af

Reach R8: Avg. Flow Depth=0.16' Max Vel=3.52 fps Inflow=1.45 cfs 0.906 af
n=0.030 L=155.0' S=0.0735 '/' Capacity=227.95 cfs Outflow=1.42 cfs 0.906 af

Reach SMA9: Avg. Flow Depth=0.58' Max Vel=1.28 fps Inflow=5.62 cfs 0.697 af
n=0.100 L=350.0' S=0.0229 '/' Capacity=57.25 cfs Outflow=4.53 cfs 0.697 af

Pond C4: Peak Elev=804.35' Storage=824 cf Inflow=29.03 cfs 3.475 af
24.0" Round Culvert n=0.020 L=185.0' S=0.0324 '/' Outflow=27.75 cfs 2.535 af

Pond C5: Peak Elev=790.37' Storage=395 cf Inflow=14.50 cfs 3.946 af
24.0" Round Culvert n=0.020 L=97.0' S=0.0258 '/' Outflow=14.21 cfs 3.853 af

Pond C7: Peak Elev=864.50' Storage=612 cf Inflow=12.08 cfs 1.427 af
18.0" Round Culvert n=0.020 L=58.0' S=0.0345 '/' Outflow=11.27 cfs 1.190 af

Pond C8: Peak Elev=853.18' Storage=33 cf Inflow=4.53 cfs 0.697 af
15.0" Round Culvert n=0.020 L=58.0' S=0.0345 '/' Outflow=4.48 cfs 0.697 af

Pond C9: Peak Elev=855.81' Storage=3,080 cf Inflow=34.07 cfs 6.295 af
35.0" x 24.0", R=17.9"/55.1" Pipe Arch Culvert w/ 4.8" inside fill n=0.025 L=60.0' S=0.0333 '/' Outflow=30.93 cfs 6.436 af

Pond F1: FOREBAY Peak Elev=794.93' Storage=2,426 cf Inflow=7.30 cfs 0.857 af
Outflow=7.04 cfs 0.857 af

Pond F2: FOREBAY Peak Elev=864.70' Storage=1,700 cf Inflow=4.24 cfs 0.500 af
Outflow=4.25 cfs 0.503 af

Pond F3: FOREBAY Peak Elev=862.78' Storage=4,104 cf Inflow=7.35 cfs 0.906 af
Outflow=7.10 cfs 0.906 af

Pond SMA1: BIORETENTIONAREA Peak Elev=787.24' Storage=7,369 cf Inflow=5.07 cfs 0.603 af
Primary=1.19 cfs 0.517 af Secondary=2.08 cfs 0.086 af Outflow=3.26 cfs 0.603 af

Pond SMA2: POND Peak Elev=793.54' Storage=63,370 cf Inflow=27.75 cfs 2.535 af
Primary=15.66 cfs 2.530 af Secondary=0.00 cfs 0.000 af Outflow=15.66 cfs 2.530 af

Pond SMA3: POND Peak Elev=882.92' Storage=43,719 cf Inflow=16.57 cfs 2.380 af
Primary=11.69 cfs 2.377 af Secondary=0.00 cfs 0.000 af Outflow=11.69 cfs 2.377 af

Pond SMA4: BIORETENTIONAREA Peak Elev=795.17' Storage=16,774 cf Inflow=7.04 cfs 0.857 af
Primary=0.96 cfs 0.792 af Secondary=1.40 cfs 0.065 af Outflow=2.36 cfs 0.857 af

Pond SMA5: BIORETENTIONAREA Peak Elev=859.12' Storage=13,161 cf Inflow=11.27 cfs 1.190 af
Primary=7.78 cfs 1.151 af Secondary=0.94 cfs 0.039 af Outflow=8.66 cfs 1.190 af

Pond SMA6: BIORETENTIONAREA Peak Elev=865.19' Storage=7,079 cf Inflow=4.25 cfs 0.503 af
Primary=0.79 cfs 0.437 af Secondary=1.61 cfs 0.066 af Outflow=2.40 cfs 0.503 af

Pond SMA7: BIORETENTIONAREA Peak Elev=863.07' Storage=19,620 cf Inflow=7.10 cfs 0.906 af
Primary=0.92 cfs 0.882 af Secondary=0.54 cfs 0.024 af Outflow=1.45 cfs 0.906 af

Pond SMA8: Peak Elev=908.01' Storage=1,087 cf Inflow=3.31 cfs 0.392 af
Outflow=3.23 cfs 0.369 af

Link A: Inflow=0.53 cfs 0.062 af
Primary=0.53 cfs 0.062 af

Link B: Inflow=42.53 cfs 8.664 af
Primary=42.53 cfs 8.664 af

Link C: Inflow=54.04 cfs 11.585 af
Primary=54.04 cfs 11.585 af

Total Runoff Area = 73.222 ac Runoff Volume = 21.454 af Average Runoff Depth = 3.52"
76.21% Pervious = 55.806 ac 23.79% Impervious = 17.416 ac

Summary for Subcatchment S100:

Runoff = 0.53 cfs @ 12.05 hrs, Volume= 0.062 af, Depth= 3.61"
Routed to Link A :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.059	78	Meadow, non-grazed, HSG D
0.022	98	Paved parking, HSG D
0.125	79	Woods, Fair, HSG D
0.206	81	Weighted Average
0.184		89.32% Pervious Area
0.022		10.68% Impervious Area

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

Summary for Subcatchment S200:

Runoff = 14.89 cfs @ 12.01 hrs, Volume= 1.679 af, Depth> 3.71"
Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
1.071	71	Meadow, non-grazed, HSG C
0.296	78	Meadow, non-grazed, HSG D
1.853	79	Woods, Fair, HSG D
0.742	73	Woods, Fair, HSG C
1.155	98	Water Surface, HSG D
0.311	98	Paved parking, HSG D
5.428	82	Weighted Average
3.962		72.99% Pervious Area
1.466		27.01% Impervious Area

Summary for Subcatchment S201:

Runoff = 5.07 cfs @ 12.05 hrs, Volume= 0.603 af, Depth> 3.81"
Routed to Pond SMA1 : BIORETENTION AREA

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.656	98	Paved parking, HSG D
0.535	71	Meadow, non-grazed, HSG C
0.705	78	Meadow, non-grazed, HSG D
1.896	83	Weighted Average
1.240		65.40% Pervious Area
0.656		34.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.5	65	0.0770	0.24		**Sheet Flow, sf** Grass: Short n= 0.150 P2= 2.54"
0.4	35	0.0400	1.31		**Sheet Flow, sf** Smooth surfaces n= 0.011 P2= 2.54"
1.7	190	0.0740	1.90		**Shallow Concentrated Flow, scf** Short Grass Pasture Kv= 7.0 fps
0.7	190	0.0740	4.38		**Shallow Concentrated Flow, scf** Unpaved Kv= 16.1 fps
7.3	480	Total			

Summary for Subcatchment S202:

Runoff = 16.53 cfs @ 12.05 hrs, Volume= 1.928 af, Depth= 3.61"
Routed to Pond C4 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
2.160	98	Paved parking, HSG D
0.661	78	Meadow, non-grazed, HSG D
3.358	71	Meadow, non-grazed, HSG C
0.228	73	Woods, Fair, HSG C
6.407	81	Weighted Average
4.247		66.29% Pervious Area
2.160		33.71% Impervious Area

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

Summary for Subcatchment S203:

Runoff = 6.83 cfs @ 12.07 hrs, Volume= 0.833 af, Depth> 3.71"
Routed to Reach C1 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
1.071	98	Paved parking, HSG D
1.622	71	Meadow, non-grazed, HSG C
2.693	82	Weighted Average
1.622		60.23% Pervious Area
1.071		39.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.9	100	0.0300	0.43		**Sheet Flow, SF** Fallow n= 0.050 P2= 2.54"
0.4	130	0.0930	4.91		**Shallow Concentrated Flow, SCF - LOTS** Unpaved Kv= 16.1 fps
4.6	435	0.0110	1.57		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
8.9	665	Total			

Summary for Subcatchment S204:

Runoff = 3.64 cfs @ 12.04 hrs, Volume= 0.426 af, Depth> 3.92"
Routed to Reach R2 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.485	98	Paved parking, HSG D
0.360	71	Meadow, non-grazed, HSG C
0.459	78	Meadow, non-grazed, HSG D
1.304	84	Weighted Average
0.819		62.81% Pervious Area
0.485		37.19% Impervious Area

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

Summary for Subcatchment S205:

Runoff = 16.57 cfs @ 12.54 hrs, Volume= 2.380 af, Depth> 4.02"
Routed to Pond SMA3 : POND

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
2.651	98	Paved parking, HSG D
0.164	79	Woods, Fair, HSG D
0.594	71	Meadow, non-grazed, HSG C
3.695	78	Meadow, non-grazed, HSG D
7.104	85	Weighted Average
4.453		62.68% Pervious Area
2.651		37.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.3	50	0.0400	0.05		**Sheet Flow, SF - WOODS** Woods: Dense underbrush n= 0.800 P2= 2.54"
12.1	50	0.0100	0.07		**Sheet Flow, SF - GRASS** Grass: Dense n= 0.240 P2= 2.54"
1.4	140	0.0100	1.61		**Shallow Concentrated Flow, SCF - GRAVEL** Unpaved Kv= 16.1 fps
5.6	790	0.0250	2.37		**Shallow Concentrated Flow, SCF - CHANNEL** Grassed Waterway Kv= 15.0 fps
37.4	1,030	Total			

Summary for Subcatchment S206:

Runoff = 13.98 cfs @ 12.03 hrs, Volume= 1.569 af, Depth= 2.84"
Routed to Pond C5 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.028	78	Meadow, non-grazed, HSG D
2.405	71	Meadow, non-grazed, HSG C
3.680	73	Woods, Fair, HSG C
0.289	79	Woods, Fair, HSG D
0.226	98	Paved parking, HSG D
6.628	73	Weighted Average
6.402		96.59% Pervious Area
0.226		3.41% Impervious Area

Summary for Subcatchment S207:

Runoff = 2.37 cfs @ 12.05 hrs, Volume= 0.277 af, Depth= 3.61"
Routed to Reach C3 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.327	98	Paved parking, HSG D
0.507	71	Meadow, non-grazed, HSG C
0.085	78	Meadow, non-grazed, HSG D
0.919	81	Weighted Average
0.592		64.42% Pervious Area
0.327		35.58% Impervious Area

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

Summary for Subcatchment S300:

Runoff = 12.94 cfs @ 12.85 hrs, Volume= 2.404 af, Depth= 3.61"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.220	98	Paved parking, HSG D
1.720	71	Meadow, non-grazed, HSG C
0.171	92	1/8 acre lots, 65% imp, HSG D
3.452	90	1/8 acre lots, 65% imp, HSG C
0.421	79	Woods, Fair, HSG D
2.003	73	Woods, Fair, HSG C
7.987	81	Weighted Average
5.412		67.76% Pervious Area
2.575		32.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	100	0.0200	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.54"
1.1	85	0.0350	1.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
41.7	2,500	0.0400	1.00		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
58.8	2,685	Total			

Summary for Subcatchment S301:

Runoff = 5.87 cfs @ 12.05 hrs, Volume= 0.685 af, Depth= 3.51"
Routed to Pond F1 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.792	98	Paved parking, HSG D
1.549	71	Meadow, non-grazed, HSG C
2.341	80	Weighted Average
1.549		66.17% Pervious Area
0.792		33.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	100	0.0400	0.48		**Sheet Flow,** Fallow n= 0.050 P2= 2.54"
1.7	450	0.0780	4.50		**Shallow Concentrated Flow, SCF - SWALE** Unpaved Kv= 16.1 fps
0.8	255	0.1300	5.41		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.0	805	Total			

Summary for Subcatchment S302:

Runoff = 1.47 cfs @ 12.05 hrs, Volume= 0.172 af, Depth= 3.51"
Routed to Reach C6 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.382	71	Meadow, non-grazed, HSG C
0.206	98	Paved parking, HSG D
0.588	80	Weighted Average
0.382		64.97% Pervious Area
0.206		35.03% Impervious Area

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

Summary for Subcatchment S303:

Runoff = 12.08 cfs @ 12.04 hrs, Volume= 1.427 af, Depth> 4.02"
Routed to Pond C7 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
1.782	98	Paved parking, HSG D
1.470	78	Meadow, non-grazed, HSG D
1.008	71	Meadow, non-grazed, HSG C
4.260	85	Weighted Average
2.478		58.17% Pervious Area
1.782		41.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.3	100	0.0450	0.50		**Sheet Flow, SF - LOTS** Fallow n= 0.050 P2= 2.54"
1.7	405	0.0600	3.94		**Shallow Concentrated Flow, SCF - LOTS** Unpaved Kv= 16.1 fps
1.7	305	0.0400	3.00		**Shallow Concentrated Flow, SCF - SWALE** Grassed Waterway Kv= 15.0 fps
6.7	810	Total			

Summary for Subcatchment S304:

Runoff = 4.24 cfs @ 12.05 hrs, Volume= 0.500 af, Depth= 3.51"
Routed to Pond F2 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.500	98	Paved parking, HSG D
0.333	78	Meadow, non-grazed, HSG D
0.875	71	Meadow, non-grazed, HSG C
1.708	80	Weighted Average
1.208		70.73% Pervious Area
0.500		29.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.0600	0.57		**Sheet Flow,** Fallow n= 0.050 P2= 2.54"
3.8	750	0.0480	3.29		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.7	850	Total			

Summary for Subcatchment S305:

Runoff = 28.70 cfs @ 12.62 hrs, Volume= 4.514 af, Depth= 3.12"
Routed to Pond C9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.620	71	Meadow, non-grazed, HSG C
1.131	78	Meadow, non-grazed, HSG D
7.241	79	Woods, Fair, HSG D
8.354	73	Woods, Fair, HSG C
17.346	76	Weighted Average
17.346		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.5	100	0.0300	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.54"
24.9	1,515	0.0410	1.01		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
45.4	1,615	Total			

Summary for Subcatchment S306:

Runoff = 7.35 cfs @ 12.08 hrs, Volume= 0.906 af, Depth= 3.41"
Routed to Pond F3 : FOREBAY

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.935	98	Paved parking, HSG D
0.132	73	Woods, Fair, HSG C
2.118	71	Meadow, non-grazed, HSG C
3.185	79	Weighted Average
2.250		70.64% Pervious Area
0.935		29.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	100	0.0400	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.54"
1.0	320	0.1000	5.09		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
9.3	420	Total			

Summary for Subcatchment S307:

Runoff = 5.62 cfs @ 12.07 hrs, Volume= 0.697 af, Depth> 3.92"
Routed to Reach SMA9 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
1.026	98	Paved parking, HSG D
1.029	71	Meadow, non-grazed, HSG C
0.082	73	Woods, Fair, HSG C
2.137	84	Weighted Average
1.111		51.99% Pervious Area
1.026		48.01% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.6	100	0.0500	0.22		**Sheet Flow, SF - WOODS** Grass: Short n= 0.150 P2= 2.54"
2.2	485	0.0540	3.74		**Shallow Concentrated Flow, SCF - WOODS** Unpaved Kv= 16.1 fps
9.8	585	Total			

Summary for Subcatchment S308:

Runoff = 3.31 cfs @ 12.04 hrs, Volume= 0.392 af, Depth> 4.34"
Routed to Pond SMA8 :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
NY-Sunset Bay 24-hr S1 100-yr Rainfall=5.70"

Area (ac)	CN	Description
0.549	78	Meadow, non-grazed, HSG D
0.536	98	Paved parking, HSG D
1.085	88	Weighted Average
0.549		50.60% Pervious Area
0.536		49.40% Impervious Area

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

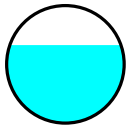
Summary for Reach C1:

Inflow Area = 2.693 ac, 39.77% Impervious, Inflow Depth > 3.71" for 100-yr event
Inflow = 6.83 cfs @ 12.07 hrs, Volume= 0.833 af
Outflow = 6.78 cfs @ 12.07 hrs, Volume= 0.838 af, Atten= 1%, Lag= 0.2 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 5.50 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 2.17 fps, Avg. Travel Time= 0.9 min

Peak Storage= 149 cf @ 12.07 hrs
Average Depth at Peak Storage= 1.00' , Surface Width= 1.42'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 8.81 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 120.0' Slope= 0.0167 '/'
Inlet Invert= 814.00', Outlet Invert= 812.00'



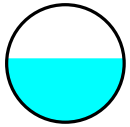
Summary for Reach C2:

Inflow Area = 1.304 ac, 37.19% Impervious, Inflow Depth > 3.95" for 100-yr event
Inflow = 3.45 cfs @ 12.06 hrs, Volume= 0.429 af
Outflow = 3.40 cfs @ 12.06 hrs, Volume= 0.432 af, Atten= 1%, Lag= 0.3 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 3.52 fps, Min. Travel Time= 0.6 min
Avg. Velocity = 1.35 fps, Avg. Travel Time= 1.6 min

Peak Storage= 125 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.82' , Surface Width= 1.49'
Bank-Full Depth= 1.50' Flow Area= 1.8 sf, Capacity= 6.03 cfs

18.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 128.0' Slope= 0.0078 '/'
Inlet Invert= 813.00', Outlet Invert= 812.00'



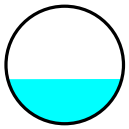
Summary for Reach C3:

Inflow Area = 0.919 ac, 35.58% Impervious, Inflow Depth = 3.61" for 100-yr event
Inflow = 2.37 cfs @ 12.05 hrs, Volume= 0.277 af
Outflow = 2.34 cfs @ 12.05 hrs, Volume= 0.277 af, Atten= 1%, Lag= 0.4 min
Routed to Pond C4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 8.64 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.35 fps, Avg. Travel Time= 0.6 min

Peak Storage= 34 cf @ 12.06 hrs
Average Depth at Peak Storage= 0.38' , Surface Width= 0.97'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 7.75 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 125.0' Slope= 0.1120 '/'
Inlet Invert= 860.00', Outlet Invert= 846.00'



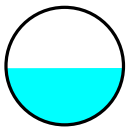
Summary for Reach C6:

Inflow Area = 0.588 ac, 35.03% Impervious, Inflow Depth = 3.51" for 100-yr event
Inflow = 1.47 cfs @ 12.05 hrs, Volume= 0.172 af
Outflow = 1.43 cfs @ 12.06 hrs, Volume= 0.172 af, Atten= 3%, Lag= 0.7 min
Routed to Pond F1 : FOREBAY

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 3.88 fps, Min. Travel Time= 0.5 min
Avg. Velocity = 1.52 fps, Avg. Travel Time= 1.2 min

Peak Storage= 42 cf @ 12.07 hrs
Average Depth at Peak Storage= 0.48' , Surface Width= 1.00'
Bank-Full Depth= 1.00' Flow Area= 0.8 sf, Capacity= 3.11 cfs

12.0" Round Pipe
n= 0.020 Corrugated PE, corrugated interior
Length= 111.0' Slope= 0.0180 '/'
Inlet Invert= 850.00', Outlet Invert= 848.00'



Summary for Reach R10:

Inflow Area = 1.085 ac, 49.40% Impervious, Inflow Depth = 4.08" for 100-yr event
Inflow = 3.23 cfs @ 12.04 hrs, Volume= 0.369 af
Outflow = 2.41 cfs @ 12.32 hrs, Volume= 0.369 af, Atten= 25%, Lag= 17.0 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 2.86 fps, Min. Travel Time= 7.7 min
Avg. Velocity = 1.05 fps, Avg. Travel Time= 21.0 min

Peak Storage= 1,254 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.32' , Surface Width= 3.94'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 130.06 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 1,325.0' Slope= 0.0426 '/'
Inlet Invert= 908.00', Outlet Invert= 851.60'

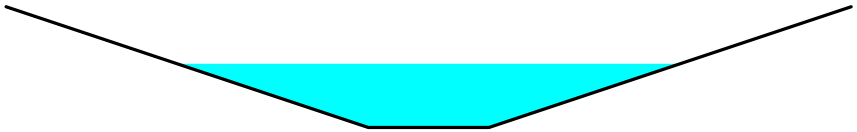
Summary for Reach R11:

Inflow Area = 29.721 ac, 16.08% Impervious, Inflow Depth > 3.36" for 100-yr event
Inflow = 42.21 cfs @ 12.56 hrs, Volume= 8.324 af
Outflow = 40.35 cfs @ 12.62 hrs, Volume= 8.324 af, Atten= 4%, Lag= 3.6 min
Routed to Link C :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 7.70 fps, Min. Travel Time= 2.3 min
Avg. Velocity = 1.62 fps, Avg. Travel Time= 11.0 min

Peak Storage= 5,774 cf @ 12.60 hrs
Average Depth at Peak Storage= 1.05' , Surface Width= 8.32'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 179.14 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 1,065.0' Slope= 0.0808 '/'
Inlet Invert= 850.00', Outlet Invert= 764.00'



Summary for Reach R2:

Inflow Area = 1.304 ac, 37.19% Impervious, Inflow Depth > 3.92" for 100-yr event
Inflow = 3.64 cfs @ 12.04 hrs, Volume= 0.426 af
Outflow = 3.45 cfs @ 12.06 hrs, Volume= 0.429 af, Atten= 5%, Lag= 0.9 min
Routed to Reach C2 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 4.72 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 1.63 fps, Avg. Travel Time= 4.9 min

Peak Storage= 367 cf @ 12.05 hrs
Average Depth at Peak Storage= 0.27' , Surface Width= 3.63'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 230.19 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 480.0' Slope= 0.0750 '/'
Inlet Invert= 849.00', Outlet Invert= 813.00'

Summary for Reach R3:

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth > 4.02" for 100-yr event
Inflow = 11.69 cfs @ 12.95 hrs, Volume= 2.377 af
Outflow = 11.74 cfs @ 13.04 hrs, Volume= 2.377 af, Atten= 0%, Lag= 5.2 min
Routed to Reach R4 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 2.06 fps, Min. Travel Time= 3.2 min
Avg. Velocity = 0.51 fps, Avg. Travel Time= 13.2 min

Peak Storage= 2,388 cf @ 13.01 hrs
Average Depth at Peak Storage= 0.20' , Surface Width= 39.93'
Bank-Full Depth= 1.00' Flow Area= 70.0 sf, Capacity= 357.35 cfs

20.00' x 1.00' deep channel, n= 0.080 Earth, long dense weeds
Side Slope Z-value= 50.0 '/' Top Width= 120.00'
Length= 400.0' Slope= 0.1550 '/'
Inlet Invert= 878.00', Outlet Invert= 816.00'

‡

Summary for Reach R4:

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth > 4.02" for 100-yr event
Inflow = 11.74 cfs @ 13.04 hrs, Volume= 2.377 af
Outflow = 11.21 cfs @ 13.12 hrs, Volume= 2.377 af, Atten= 5%, Lag= 4.8 min
Routed to Pond C5 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 4.66 fps, Min. Travel Time= 3.3 min
Avg. Velocity = 1.19 fps, Avg. Travel Time= 13.1 min

Peak Storage= 2,363 cf @ 13.09 hrs
Average Depth at Peak Storage= 0.65' , Surface Width= 5.88'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 141.89 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 930.0' Slope= 0.0285 '/'
Inlet Invert= 816.00', Outlet Invert= 789.50'

Summary for Reach R5:

Inflow Area = 13.732 ac, 20.95% Impervious, Inflow Depth > 3.37" for 100-yr event
Inflow = 14.21 cfs @ 12.10 hrs, Volume= 3.853 af
Outflow = 13.78 cfs @ 12.12 hrs, Volume= 3.853 af, Atten= 3%, Lag= 1.3 min
Routed to Link B :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 7.02 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.89 fps, Avg. Travel Time= 2.5 min

Peak Storage= 558 cf @ 12.13 hrs
Average Depth at Peak Storage= 0.55' , Surface Width= 5.31'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 235.61 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 280.0' Slope= 0.0786 '/'
Inlet Invert= 786.00', Outlet Invert= 764.00'

Summary for Reach R6:

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 3.51" for 100-yr event
Inflow = 2.36 cfs @ 12.98 hrs, Volume= 0.857 af
Outflow = 2.21 cfs @ 13.01 hrs, Volume= 0.857 af, Atten= 6%, Lag= 1.5 min
Routed to Link C :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 3.66 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 1.37 fps, Avg. Travel Time= 4.0 min

Peak Storage= 202 cf @ 13.00 hrs
Average Depth at Peak Storage= 0.23' , Surface Width= 3.38'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 194.70 cfs

2.00' x 2.00' deep channel, n= 0.040 Earth, dense weeds
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 325.0' Slope= 0.0954 '/'
Inlet Invert= 795.00', Outlet Invert= 764.00'

Summary for Reach R7:

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 3.54" for 100-yr event
Inflow = 2.40 cfs @ 12.50 hrs, Volume= 0.503 af
Outflow = 2.34 cfs @ 12.51 hrs, Volume= 0.506 af, Atten= 2%, Lag= 0.4 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Max. Velocity= 2.68 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 0.96 fps, Avg. Travel Time= 2.6 min

Peak Storage= 134 cf @ 12.51 hrs
Average Depth at Peak Storage= 0.08' , Surface Width= 11.65'
Bank-Full Depth= 1.00' Flow Area= 20.0 sf, Capacity= 225.46 cfs

10.00' x 1.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 10.0 '/' Top Width= 30.00'
Length= 150.0' Slope= 0.0893 '/'
Inlet Invert= 865.00', Outlet Invert= 851.60'

‡

Summary for Reach R8:

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 3.41" for 100-yr event
Inflow = 1.45 cfs @ 13.02 hrs, Volume= 0.906 af
Outflow = 1.42 cfs @ 13.03 hrs, Volume= 0.906 af, Atten= 2%, Lag= 0.9 min
Routed to Pond C9 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 3.52 fps, Min. Travel Time= 0.7 min
Avg. Velocity = 1.51 fps, Avg. Travel Time= 1.7 min

Peak Storage= 63 cf @ 13.03 hrs
Average Depth at Peak Storage= 0.16' , Surface Width= 2.98'
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 227.95 cfs

2.00' x 2.00' deep channel, n= 0.030 Earth, grassed & winding
Side Slope Z-value= 3.0 '/' Top Width= 14.00'
Length= 155.0' Slope= 0.0735 '/'
Inlet Invert= 863.00', Outlet Invert= 851.60'

Summary for Reach SMA9:

Inflow Area = 2.137 ac, 48.01% Impervious, Inflow Depth > 3.92" for 100-yr event
Inflow = 5.62 cfs @ 12.07 hrs, Volume= 0.697 af
Outflow = 4.53 cfs @ 12.25 hrs, Volume= 0.697 af, Atten= 19%, Lag= 10.6 min
Routed to Pond C8 :

Routing by Stor-Ind+Trans method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Max. Velocity= 1.28 fps, Min. Travel Time= 4.5 min
Avg. Velocity = 0.41 fps, Avg. Travel Time= 14.3 min

Peak Storage= 1,351 cf @ 12.18 hrs
Average Depth at Peak Storage= 0.58' , Surface Width= 8.48'
Bank-Full Depth= 2.00' Flow Area= 22.0 sf, Capacity= 57.25 cfs

5.00' x 2.00' deep channel, n= 0.100 Earth, dense brush, high stage
Side Slope Z-value= 3.0 '/' Top Width= 17.00'
Length= 350.0' Slope= 0.0229 '/'
Inlet Invert= 870.25', Outlet Invert= 862.25'

‡

Summary for Pond C4:

Inflow Area = 11.323 ac, 35.71% Impervious, Inflow Depth > 3.68" for 100-yr event
Inflow = 29.03 cfs @ 12.05 hrs, Volume= 3.475 af
Outflow = 27.75 cfs @ 12.05 hrs, Volume= 2.535 af, Atten= 4%, Lag= 0.0 min
Primary = 27.75 cfs @ 12.05 hrs, Volume= 2.535 af
Routed to Pond SMA2 : POND

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 804.35' @ 12.03 hrs Surf.Area= 522 sf Storage= 824 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	800.00'	1,224 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
800.00	5	5.0	0	0	5
802.00	140	50.0	114	114	209
804.00	430	85.0	544	658	609
805.00	715	105.0	566	1,224	926

Device	Routing	Invert	Outlet Devices
#1	Primary	800.00'	**24.0" Round Culvert** L= 185.0' Ke= 0.500 Inlet / Outlet Invert= 800.00' / 794.00' S= 0.0324 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 3.14 sf

Primary OutFlow Max=26.61 cfs @ 12.05 hrs HW=804.09' (Free Discharge)
└**1=Culvert** (Inlet Controls 26.61 cfs @ 8.47 fps)

Summary for Pond C5:

Inflow Area = 13.732 ac, 20.95% Impervious, Inflow Depth > 3.45" for 100-yr event
Inflow = 14.50 cfs @ 12.10 hrs, Volume= 3.946 af
Outflow = 14.21 cfs @ 12.10 hrs, Volume= 3.853 af, Atten= 2%, Lag= 0.0 min
Primary = 14.21 cfs @ 12.10 hrs, Volume= 3.853 af
Routed to Reach R5 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 790.37' @ 12.10 hrs Surf.Area= 573 sf Storage= 395 cf

Plug-Flow detention time= 41.9 min calculated for 3.853 af (98% of inflow)
Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	788.50'	2,121 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
788.50	1	1.0	0	0	1
790.00	410	110.0	216	216	967
792.00	1,630	270.0	1,905	2,121	5,821

Device	Routing	Invert	Outlet Devices
#1	Primary	788.50'	**24.0" Round Culvert** L= 97.0' Ke= 0.500 Inlet / Outlet Invert= 788.50' / 786.00' S= 0.0258 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 3.14 sf

Primary OutFlow Max=13.04 cfs @ 12.10 hrs HW=790.24' (Free Discharge)
└**1=Culvert** (Inlet Controls 13.04 cfs @ 4.49 fps)

Summary for Pond C7:

Inflow Area = 4.260 ac, 41.83% Impervious, Inflow Depth > 4.02" for 100-yr event
Inflow = 12.08 cfs @ 12.04 hrs, Volume= 1.427 af
Outflow = 11.27 cfs @ 12.04 hrs, Volume= 1.190 af, Atten= 7%, Lag= 0.0 min
Primary = 11.27 cfs @ 12.04 hrs, Volume= 1.190 af
Routed to Pond SMA5 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 864.50' @ 12.03 hrs Surf.Area= 622 sf Storage= 612 cf

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

Volume	Invert	Avail.Storage	Storage Description
#1	862.00'	1,450 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
862.00	10	15.0	0	0	10
864.00	445	125.0	348	348	1,243
865.50	1,070	155.0	1,103	1,450	1,944

Device	Routing	Invert	Outlet Devices
#1	Primary	862.00'	**18.0" Round Culvert** L= 58.0' Ke= 0.500 Inlet / Outlet Invert= 862.00' / 860.00' S= 0.0345 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.77 sf

Primary OutFlow Max=10.87 cfs @ 12.04 hrs HW=864.38' (Free Discharge)
└**1=Culvert** (Inlet Controls 10.87 cfs @ 6.15 fps)

Summary for Pond C8:

Inflow Area = 2.137 ac, 48.01% Impervious, Inflow Depth > 3.92" for 100-yr event
Inflow = 4.53 cfs @ 12.25 hrs, Volume= 0.697 af
Outflow = 4.48 cfs @ 12.26 hrs, Volume= 0.697 af, Atten= 1%, Lag= 0.5 min
Primary = 4.48 cfs @ 12.26 hrs, Volume= 0.697 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 853.18' @ 12.26 hrs Surf.Area= 62 sf Storage= 33 cf

Plug-Flow detention time= 0.1 min calculated for 0.692 af (99% of inflow)
Center-of-Mass det. time= 0.1 min (822.4 - 822.3)

Volume	Invert	Avail.Storage	Storage Description
#1	852.00'	114 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
852.00	5	5.0	0	0	5
854.00	140	40.0	114	114	138

Device	Routing	Invert	Outlet Devices
#1	Primary	852.00'	**15.0" Round Culvert** L= 58.0' Ke= 0.500 Inlet / Outlet Invert= 852.00' / 850.00' S= 0.0345 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf

Primary OutFlow Max=4.11 cfs @ 12.26 hrs HW=853.11' (Free Discharge)
└**1=Culvert** (Inlet Controls 4.11 cfs @ 3.58 fps)

Summary for Pond C9:

Inflow Area = 23.324 ac, 8.45% Impervious, Inflow Depth = 3.24" for 100-yr event
Inflow = 34.07 cfs @ 12.60 hrs, Volume= 6.295 af
Outflow = 30.93 cfs @ 12.69 hrs, Volume= 6.436 af, Atten= 9%, Lag= 5.1 min
Primary = 30.93 cfs @ 12.69 hrs, Volume= 6.436 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Peak Elev= 855.81' @ 12.65 hrs Surf.Area= 2,306 sf Storage= 3,080 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 9.8 min (900.3 - 890.5)

Volume	Invert	Avail.Storage	Storage Description
#1	852.00'	5,020 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
852.00	1	1.0	0	0	1
854.00	710	145.0	492	492	1,680
856.00	2,530	320.0	3,054	3,545	8,173
856.50	3,390	350.0	1,475	5,020	9,781

Device	Routing	Invert	Outlet Devices
#1	Primary	852.00'	**35.0" W x 24.0" H, R=17.9"/55.1" Pipe Arch CMP_Arch_1/2 35x24 w/ 4.8" ins** L= 60.0' CMP, end-section conforming to fill, Ke= 0.500 Inlet / Outlet Invert= 851.60' / 849.60' S= 0.0333 '/' Cc= 0.900 n= 0.025 Corrugated metal, Flow Area= 3.78 sf

Primary OutFlow Max=28.50 cfs @ 12.69 hrs HW=855.42' (Free Discharge)
└**1=CMP_Arch_1/2 35x24** (Barrel Controls 28.50 cfs @ 7.55 fps)

Summary for Pond F1: FOREBAY

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 3.51" for 100-yr event
Inflow = 7.30 cfs @ 12.05 hrs, Volume= 0.857 af
Outflow = 7.04 cfs @ 12.07 hrs, Volume= 0.857 af, Atten= 4%, Lag= 1.3 min
Primary = 7.04 cfs @ 12.07 hrs, Volume= 0.857 af
Routed to Pond SMA4 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 794.50' Surf.Area= 1,103 sf Storage= 1,917 cf
Peak Elev= 794.93' @ 12.09 hrs Surf.Area= 1,273 sf Storage= 2,426 cf (509 cf above start)

Plug-Flow detention time= 44.4 min calculated for 0.813 af (95% of inflow)
Center-of-Mass det. time= 2.2 min (819.6 - 817.4)

Volume	Invert	Avail.Storage	Storage Description
#1	790.00'	4,038 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
790.00	5	5.0	0	0	5
792.00	310	80.0	236	236	519
794.00	920	120.0	1,176	1,412	1,187
796.00	1,750	160.0	2,626	4,038	2,121

Device	Routing	Invert	Outlet Devices
#0	Primary	796.00'	**Automatic Storage Overflow** (Discharged without head)
#1	Primary	794.50'	**10.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=6.43 cfs @ 12.07 hrs HW=794.90' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 6.43 cfs @ 1.60 fps)

Summary for Pond F2: FOREBAY

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 3.51" for 100-yr event
Inflow = 4.24 cfs @ 12.05 hrs, Volume= 0.500 af
Outflow = 4.25 cfs @ 12.05 hrs, Volume= 0.503 af, Atten= 0%, Lag= 0.1 min
Primary = 4.25 cfs @ 12.05 hrs, Volume= 0.503 af
Routed to Pond SMA6 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs / 2
Starting Elev= 864.50' Surf.Area= 1,015 sf Storage= 1,490 cf
Peak Elev= 864.70' @ 12.07 hrs Surf.Area= 1,094 sf Storage= 1,700 cf (210 cf above start)

Plug-Flow detention time= 49.2 min calculated for 0.466 af (93% of inflow)
Center-of-Mass det. time= 0.5 min (818.3 - 817.7)

Volume	Invert	Avail.Storage	Storage Description
#1	860.00'	3,490 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
860.00	1	1.0	0	0	1
862.00	165	90.0	119	119	652
864.00	830	125.0	910	1,029	1,288
866.00	1,680	165.0	2,461	3,490	2,256

Device	Routing	Invert	Outlet Devices
#1	Primary	864.50'	**20.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=3.90 cfs @ 12.05 hrs HW=864.69' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 3.90 cfs @ 1.03 fps)

Summary for Pond F3: FOREBAY

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 3.41" for 100-yr event
Inflow = 7.35 cfs @ 12.08 hrs, Volume= 0.906 af
Outflow = 7.10 cfs @ 12.10 hrs, Volume= 0.906 af, Atten= 3%, Lag= 1.5 min
Primary = 7.10 cfs @ 12.10 hrs, Volume= 0.906 af
Routed to Pond SMA7 : BIORETENTION AREA

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 862.50' Surf.Area= 1,666 sf Storage= 3,623 cf
Peak Elev= 862.78' @ 12.12 hrs Surf.Area= 1,770 sf Storage= 4,104 cf (481 cf above start)

Plug-Flow detention time= 68.8 min calculated for 0.823 af (91% of inflow)
Center-of-Mass det. time= 1.9 min (824.5 - 822.6)

Volume	Invert	Avail.Storage	Storage Description
#1	858.00'	6,553 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
858.00	150	55.0	0	0	150
860.00	655	105.0	746	746	806
862.00	1,490	155.0	2,089	2,834	1,873
864.00	2,255	185.0	3,719	6,553	2,753

Device	Routing	Invert	Outlet Devices
#1	Primary	862.50'	**20.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=6.35 cfs @ 12.10 hrs HW=862.76' (Free Discharge)
└**1=Broad-Crested Rectangular Weir** (Weir Controls 6.35 cfs @ 1.23 fps)

Summary for Pond SMA1: BIORETENTION AREA

Inflow Area = 1.896 ac, 34.60% Impervious, Inflow Depth > 3.81" for 100-yr event
Inflow = 5.07 cfs @ 12.05 hrs, Volume= 0.603 af
Outflow = 3.26 cfs @ 12.50 hrs, Volume= 0.603 af, Atten= 36%, Lag= 27.1 min
Primary = 1.19 cfs @ 12.60 hrs, Volume= 0.517 af
Routed to Link B :
Secondary = 2.08 cfs @ 12.50 hrs, Volume= 0.086 af
Routed to Link B :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 787.24' @ 12.60 hrs Surf.Area= 8,316 sf Storage= 7,369 cf

Plug-Flow detention time= 43.4 min calculated for 0.598 af (99% of inflow)
Center-of-Mass det. time= 43.8 min (853.9 - 810.2)

Volume	Invert	Avail.Storage	Storage Description
#1	782.17'	687 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 1,718 cf Overall x 40.0% Voids
#2	783.00'	1,294 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 5,175 cf Overall x 25.0% Voids
#3	785.50'	12,294 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		14,275 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
782.17	2,070	400.0	0	0	2,070
783.00	2,070	400.0	1,718	1,718	2,402

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
783.00	2,070	400.0	0	0	2,070
785.50	2,070	400.0	5,175	5,175	3,070

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
785.50	2,070	400.0	0	0	2,070
786.00	2,680	410.0	1,184	1,184	2,746
788.00	5,265	450.0	7,801	8,985	5,615
788.50	8,070	485.0	3,309	12,294	8,230

Device	Routing	Invert	Outlet Devices
#1	Primary	782.17'	**6.0" Round Culvert** L= 42.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 782.17' / 781.40' S= 0.0183 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	787.00'	**8.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=1.18 cfs @ 12.60 hrs HW=787.15' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.18 cfs @ 6.01 fps)

Secondary OutFlow Max=2.06 cfs @ 12.50 hrs HW=787.22' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 2.06 cfs @ 1.19 fps)

Summary for Pond SMA2: POND

Inflow Area = 11.323 ac, 35.71% Impervious, Inflow Depth > 2.69" for 100-yr event
Inflow = 27.75 cfs @ 12.05 hrs, Volume= 2.535 af
Outflow = 15.66 cfs @ 12.51 hrs, Volume= 2.530 af, Atten= 44%, Lag= 28.1 min
Primary = 15.66 cfs @ 12.51 hrs, Volume= 2.530 af
Routed to Link B :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link B :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Starting Elev= 790.00' Surf.Area= 9,500 sf Storage= 17,737 cf
Peak Elev= 793.54' @ 12.51 hrs Surf.Area= 16,392 sf Storage= 63,370 cf (45,632 cf above start)

Plug-Flow detention time= 325.2 min calculated for 2.122 af (84% of inflow)
Center-of-Mass det. time= 244.3 min (980.2 - 735.9)

Volume	Invert	Avail.Storage	Storage Description
#1	784.00'	81,315 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
784.00	50	60.0	0	0	50
786.00	1,085	250.0	912	912	4,747
788.00	3,480	450.0	4,339	5,251	15,910
790.00	9,500	655.0	12,487	17,737	33,970
792.00	13,395	615.0	22,784	40,521	38,208
794.00	17,355	700.0	30,665	71,186	47,199
794.55	19,500	730.0	10,129	81,315	50,636

Device	Routing	Invert	Outlet Devices
#1	Primary	786.50'	**18.0" Round Culvert** L= 36.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 786.50' / 786.00' S= 0.0139 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.77 sf
#2	Device 1	790.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	791.80'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	793.55'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#5	Device 1	792.15'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns** X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area) Limited to weir flow at low heads

Primary OutFlow Max=15.55 cfs @ 12.51 hrs HW=793.52' (Free Discharge)
└**1=Culvert** (Passes 15.55 cfs of 19.89 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 0.44 cfs @ 8.87 fps)
├**3=Orifice/Grate** (Orifice Controls 4.96 cfs @ 6.31 fps)
└**5=Orifice/Grate** (Orifice Controls 10.16 cfs @ 5.63 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=790.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA3: POND

Inflow Area = 7.104 ac, 37.32% Impervious, Inflow Depth > 4.02" for 100-yr event
Inflow = 16.57 cfs @ 12.54 hrs, Volume= 2.380 af
Outflow = 11.69 cfs @ 12.95 hrs, Volume= 2.377 af, Atten= 29%, Lag= 25.1 min
Primary = 11.69 cfs @ 12.95 hrs, Volume= 2.377 af
Routed to Reach R3 :
Secondary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Reach R3 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Starting Elev= 880.00' Surf.Area= 7,820 sf Storage= 12,194 cf
Peak Elev= 882.92' @ 12.98 hrs Surf.Area= 13,967 sf Storage= 43,719 cf (31,525 cf above start)

Plug-Flow detention time= 311.4 min calculated for 2.082 af (87% of inflow)
Center-of-Mass det. time= 224.8 min (1,057.8 - 832.9)

Volume	Invert	Avail.Storage	Storage Description
#1	874.00'	60,184 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
874.00	2	10.0	0	0	2
876.00	500	185.0	356	356	2,725
878.00	2,150	340.0	2,458	2,814	9,221
880.00	7,820	590.0	9,380	12,194	27,747
882.00	11,950	665.0	19,625	31,818	35,341
884.00	16,540	725.0	28,366	60,184	42,122

Device	Routing	Invert	Outlet Devices
#1	Primary	875.85'	**15.0" Round Culvert** L= 50.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 875.85' / 875.00' S= 0.0170 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf
#2	Device 1	880.00'	**3.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	881.55'	**12.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Secondary	882.95'	**10.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#5	Device 1	882.30'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns** X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area) Limited to weir flow at low heads

Primary OutFlow Max=11.42 cfs @ 12.95 hrs HW=882.89' (Free Discharge)
└**1=Culvert** (Passes 11.42 cfs of 12.29 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 0.39 cfs @ 8.00 fps)
├**3=Orifice/Grate** (Orifice Controls 4.37 cfs @ 5.57 fps)
└**5=Orifice/Grate** (Orifice Controls 6.66 cfs @ 3.69 fps)

Secondary OutFlow Max=0.00 cfs @ 5.00 hrs HW=880.00' (Free Discharge)
└**4=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond SMA4: BIORETENTION AREA

Inflow Area = 2.929 ac, 34.07% Impervious, Inflow Depth = 3.51" for 100-yr event
Inflow = 7.04 cfs @ 12.07 hrs, Volume= 0.857 af
Outflow = 2.36 cfs @ 12.98 hrs, Volume= 0.857 af, Atten= 67%, Lag= 54.7 min
Primary = 0.96 cfs @ 12.95 hrs, Volume= 0.792 af
Routed to Reach R6 :
Secondary = 1.40 cfs @ 12.98 hrs, Volume= 0.065 af
Routed to Reach R6 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 795.17' @ 12.95 hrs Surf.Area= 19,280 sf Storage= 16,774 cf

Plug-Flow detention time= 168.3 min calculated for 0.857 af (100% of inflow)
Center-of-Mass det. time= 160.2 min (979.8 - 819.6)

Volume	Invert	Avail.Storage	Storage Description
#1	790.17'	1,942 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,856 cf Overall x 40.0% Voids
#2	791.00'	3,656 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 14,625 cf Overall x 25.0% Voids
#3	793.50'	22,718 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		28,316 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
790.17	5,850	330.0	0	0	5,850
791.00	5,850	330.0	4,856	4,856	6,124

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
791.00	5,850	330.0	0	0	5,850
793.50	5,850	330.0	14,625	14,625	6,675

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
793.50	5,850	330.0	0	0	5,850
794.00	6,355	340.0	3,050	3,050	6,409
796.00	8,520	380.0	14,822	17,873	8,811
796.50	10,910	415.0	4,845	22,718	11,034

Device	Routing	Invert	Outlet Devices
#1	Primary	790.17'	**6.0" Round Culvert** L= 72.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 790.17' / 789.00' S= 0.0162 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	795.00'	**8.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64

Primary OutFlow Max=0.96 cfs @ 12.95 hrs HW=795.15' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.96 cfs @ 4.87 fps)

Secondary OutFlow Max=1.34 cfs @ 12.98 hrs HW=795.16' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 1.34 cfs @ 1.03 fps)

Summary for Pond SMA5: BIORETENTION AREA

Inflow Area = 4.260 ac, 41.83% Impervious, Inflow Depth > 3.35" for 100-yr event
Inflow = 11.27 cfs @ 12.04 hrs, Volume= 1.190 af
Outflow = 8.66 cfs @ 12.38 hrs, Volume= 1.190 af, Atten= 23%, Lag= 20.8 min
Primary = 7.78 cfs @ 12.36 hrs, Volume= 1.151 af
Routed to Reach R11 :
Secondary = 0.94 cfs @ 12.50 hrs, Volume= 0.039 af
Routed to Reach R11 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 859.12' @ 12.41 hrs Surf.Area= 15,424 sf Storage= 13,161 cf

Plug-Flow detention time= 107.7 min calculated for 1.190 af (100% of inflow)
Center-of-Mass det. time= 100.6 min (880.1 - 779.5)

Volume	Invert	Avail.Storage	Storage Description
#1	854.17'	1,527 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 3,818 cf Overall x 40.0% Voids
#2	855.00'	2,875 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 11,500 cf Overall x 25.0% Voids
#3	857.50'	18,591 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		22,993 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
854.17	4,600	320.0	0	0	4,600
855.00	4,600	320.0	3,818	3,818	4,866

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
855.00	4,600	320.0	0	0	4,600
857.50	4,600	320.0	11,500	11,500	5,400

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
857.50	4,600	320.0	0	0	4,600
858.00	5,090	330.0	2,421	2,421	5,142
860.00	7,190	370.0	12,220	14,641	7,478
860.50	8,630	395.0	3,950	18,591	9,012

Device	Routing	Invert	Outlet Devices
#1	Device 4	854.17'	**6.0" Round Culvert** L= 130.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 854.17' / 854.00' S= 0.0013 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	859.00'	**10.0' long x 12.0' 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) 2.57 2.62 2.70 2.67 2.66 2.67 2.66 2.64
#3	Device 4	858.50'	**1.0" x 4.0" Horiz. Orifice/Grate X 13.00 columns** X 5 rows C= 0.600 in 30.0" x 30.0" Grate (29% open area) Limited to weir flow at low heads
#4	Primary	853.25'	**15.0" Round Culvert** L= 100.0' CMP, square edge headwall, Ke= 0.500 Inlet / Outlet Invert= 853.25' / 852.00' S= 0.0125 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 1.23 sf

Primary OutFlow Max=7.00 cfs @ 12.36 hrs HW=859.03' (Free Discharge)
└**4=Culvert** (Passes 7.00 cfs of 8.94 cfs potential flow)
  └**1=Culvert** (Barrel Controls 0.65 cfs @ 3.34 fps)
  └**3=Orifice/Grate** (Orifice Controls 6.35 cfs @ 3.52 fps)

Secondary OutFlow Max=0.94 cfs @ 12.50 hrs HW=859.11' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.94 cfs @ 0.85 fps)

Summary for Pond SMA6: BIORETENTION AREA

Inflow Area = 1.708 ac, 29.27% Impervious, Inflow Depth = 3.54" for 100-yr event
Inflow = 4.25 cfs @ 12.05 hrs, Volume= 0.503 af
Outflow = 2.40 cfs @ 12.50 hrs, Volume= 0.503 af, Atten= 44%, Lag= 27.0 min
Primary = 0.79 cfs @ 12.50 hrs, Volume= 0.437 af
Routed to Reach R7 :
Secondary = 1.61 cfs @ 12.50 hrs, Volume= 0.066 af
Routed to Reach R7 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 865.19' @ 12.68 hrs Surf.Area= 8,101 sf Storage= 7,079 cf

Plug-Flow detention time= 68.1 min calculated for 0.500 af (99% of inflow)
Center-of-Mass det. time= 68.6 min (886.9 - 818.3)

Volume	Invert	Avail.Storage	Storage Description
#1	860.17'	759 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 1,897 cf Overall x 40.0% Voids
#2	861.00'	1,428 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 5,713 cf Overall x 25.0% Voids
#3	863.50'	10,318 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		12,505 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
860.17	2,285	240.0	0	0	2,285
861.00	2,285	240.0	1,897	1,897	2,484

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
861.00	2,285	240.0	0	0	2,285
863.50	2,285	240.0	5,713	5,713	2,885

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
863.50	2,285	240.0	0	0	2,285
864.00	2,650	250.0	1,233	1,233	2,694
866.00	4,205	285.0	6,795	8,028	4,277
866.50	4,965	295.0	2,290	10,318	4,761

Device	Routing	Invert	Outlet Devices
#1	Primary	860.17'	**6.0" Round Culvert** L= 110.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 860.17' / 859.00' S= 0.0106 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	865.00'	**15.0' long x 6.0' 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) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83

Primary OutFlow Max=0.79 cfs @ 12.50 hrs HW=865.13' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.79 cfs @ 4.01 fps)

Secondary OutFlow Max=1.58 cfs @ 12.50 hrs HW=865.13' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 1.58 cfs @ 0.84 fps)

Summary for Pond SMA7: BIORETENTION AREA

Inflow Area = 3.185 ac, 29.36% Impervious, Inflow Depth = 3.41" for 100-yr event
Inflow = 7.10 cfs @ 12.10 hrs, Volume= 0.906 af
Outflow = 1.45 cfs @ 13.02 hrs, Volume= 0.906 af, Atten= 79%, Lag= 55.0 min
Primary = 0.92 cfs @ 13.19 hrs, Volume= 0.882 af
Routed to Reach R8 :
Secondary = 0.54 cfs @ 13.01 hrs, Volume= 0.024 af
Routed to Reach R8 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs
Peak Elev= 863.07' @ 13.19 hrs Surf.Area= 23,353 sf Storage= 19,620 cf

Plug-Flow detention time= 225.4 min calculated for 0.906 af (100% of inflow)
Center-of-Mass det. time= 218.0 min (1,042.5 - 824.5)

Volume	Invert	Avail.Storage	Storage Description
#1	858.17'	2,397 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 5,993 cf Overall x 40.0% Voids
#2	859.00'	4,513 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 18,050 cf Overall x 25.0% Voids
#3	861.50'	26,547 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)
		33,456 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
858.17	7,220	370.0	0	0	7,220
859.00	7,220	370.0	5,993	5,993	7,527

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
859.00	7,220	370.0	0	0	7,220
861.50	7,220	370.0	18,050	18,050	8,145

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
861.50	7,220	370.0	0	0	7,220
862.00	7,780	380.0	3,749	3,749	7,846
864.00	9,950	415.0	17,686	21,435	10,198
864.50	10,500	425.0	5,112	26,547	10,899

Device	Routing	Invert	Outlet Devices
#1	Primary	858.17'	**6.0" Round Culvert** L= 78.0' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 858.17' / 857.00' S= 0.0150 '/' Cc= 0.900 n= 0.020 Corrugated PE, corrugated interior, Flow Area= 0.20 sf
#2	Secondary	863.00'	**20.0' long x 3.0' 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 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32

Primary OutFlow Max=0.91 cfs @ 13.19 hrs HW=863.03' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.91 cfs @ 4.65 fps)

Secondary OutFlow Max=0.51 cfs @ 13.01 hrs HW=863.05' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.51 cfs @ 0.53 fps)

Summary for Pond SMA8:

Inflow Area = 1.085 ac, 49.40% Impervious, Inflow Depth > 4.34" for 100-yr event
Inflow = 3.31 cfs @ 12.04 hrs, Volume= 0.392 af
Outflow = 3.23 cfs @ 12.04 hrs, Volume= 0.369 af, Atten= 3%, Lag= 0.2 min
Primary = 3.23 cfs @ 12.04 hrs, Volume= 0.369 af
Routed to Reach R10 :

Routing by Stor-Ind method, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Peak Elev= 908.01' @ 12.06 hrs Surf.Area= 1,350 sf Storage= 1,087 cf

Plug-Flow detention time= 56.1 min calculated for 0.368 af (94% of inflow)
Center-of-Mass det. time= 22.2 min (816.3 - 794.1)

Volume	Invert	Avail.Storage	Storage Description
#1	906.00'	1,620 cf	**Custom Stage Data (Irregular)** Listed below (Recalc) 4,050 cf Overall x 40.0% Voids

Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
906.00	1,350	1,360.0	0	0	1,350
909.00	1,350	1,360.0	4,050	4,050	5,430

Device	Routing	Invert	Outlet Devices
#1	Primary	908.00'	**675.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=2.66 cfs @ 12.04 hrs HW=908.01' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 2.66 cfs @ 0.31 fps)

Summary for Link A:

Inflow Area = 0.206 ac, 10.68% Impervious, Inflow Depth = 3.61" for 100-yr event
Inflow = 0.53 cfs @ 12.05 hrs, Volume= 0.062 af
Primary = 0.53 cfs @ 12.05 hrs, Volume= 0.062 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Summary for Link B:

Inflow Area = 32.379 ac, 27.93% Impervious, Inflow Depth > 3.21" for 100-yr event
Inflow = 42.53 cfs @ 12.16 hrs, Volume= 8.664 af
Primary = 42.53 cfs @ 12.16 hrs, Volume= 8.664 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

Summary for Link C:

Inflow Area = 40.637 ac, 20.55% Impervious, Inflow Depth = 3.42" for 100-yr event
Inflow = 54.04 cfs @ 12.68 hrs, Volume= 11.585 af
Primary = 54.04 cfs @ 12.68 hrs, Volume= 11.585 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-72.00 hrs, dt= 0.50 hrs

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
Phone: (518) 402-8935 | Fax: (518) 402-8925
www.dec.ny.gov

09/03/2024

The attached report from the Environmental Resource Mapper includes information from the New York Natural Heritage Program database with respect to the location indicated on the map below. This letter, together with the attached report from the Environmental Resource Mapper, is equivalent to, and carries the same validity, as a letter from the New York Natural Heritage Program, including for projects where a Natural Heritage letter is required.

If your location of interest does not fall within an area covered by the Rare Plants and Rare Animals layer or in the Significant Natural Communities layer, then New York Natural Heritage has no records to report in the vicinity of your project site. Submitting a project screening request to NY Natural Heritage is not necessary.

If the attached report lists that your location of interest is in the vicinity of state-listed animals, including state-listed bats, please consult the **EAF Mapper** to obtain a list of the species involved. (You do not have to be filling out an Environmental Assessment Form in order to use the EAF Mapper). Then consult the appropriate **NYSDEC Regional Office** for information on any project requirements or permit conditions.

If the attached report lists unlisted animals, rare plants, or significant natural communities, and if you would like more information on these, please submit a project screening request to **New York Natural Heritage**. For more information, please see the DEC webpage **Request Natural Heritage Information for Project Screening**.

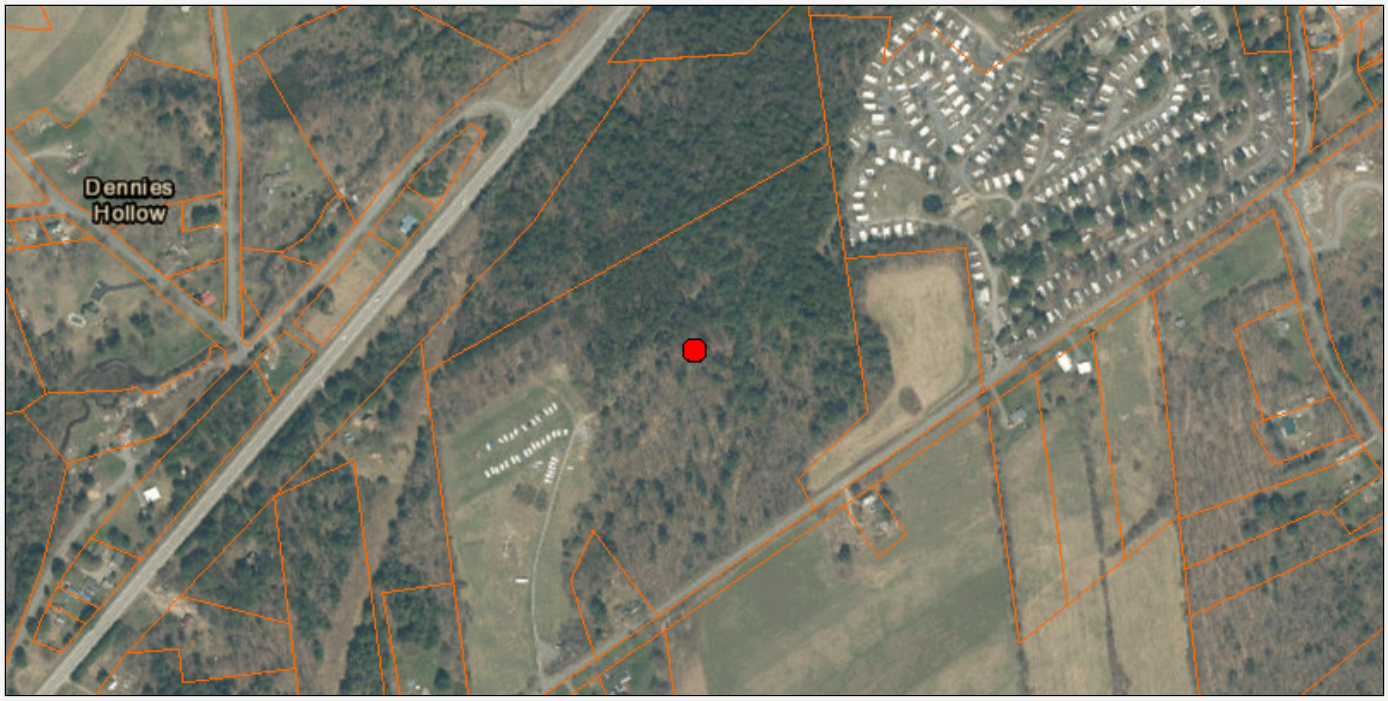
The absence of data does not necessarily mean that rare or state-listed species, significant natural communities, or other significant habitats do not exist on or adjacent to the proposed site. Rather, NYNHP files currently do not contain information that indicates their presence. For most sites, comprehensive field surveys have not been conducted. NYNHP cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other resources may be required to fully assess impacts on biological resources from a proposed project.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities, and other significant habitats maintained in the NYNHP database.

New York Natural Heritage Program

https://www.nynhp.org/.

Environmental Resource Mapper



The coordinates of the point you clicked on are:

UTM 18	**Easting:**	561498.2913683963	**Northing:**	4775121.4343214445
Longitude/Latitude	**Longitude:**	-74.24394940047887	**Latitude:**	43.126342002603245

The approximate address of the point you clicked on is:
12117, Mayfield, New York

County: Fulton
Town: Mayfield
USGS Quad: NORTHVILLE

If your project or action is within or near an area with a rare animal, a permit may be required if the species is listed as endangered or threatened and the department determines the action may be harmful to the species or its habitat.

If your project or action is within or near an area with rare plants and/or significant natural communities, the environmental impacts may need to be addressed.

The presence of a unique geological feature or landform near a project, unto itself, does not trigger a requirement for a NYS DEC permit. Readers are advised, however, that there is the chance that a unique feature may also show in another data layer (ie. a wetland) and thus be subject to permit jurisdiction.

Please refer to the "Need a Permit?" tab for permit information or other authorizations regarding these natural resources.

Disclaimer: If you are considering a project or action in, or near, a wetland or a stream, a NYS DEC permit may be required. The Environmental Resources Mapper does not show all natural resources which are regulated by NYS DEC, and for which permits from NYS DEC are required. For example, Regulated Tidal Wetlands, and Wild, Scenic, and Recreational Rivers, are currently not included on the maps.

Print Preview

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Natural Heritage Program
625 Broadway, Fifth Floor, Albany, NY 12233-4757
P: (518) 402-8935 | F: (518) 402-8925
www.dec.ny.gov

March 20, 2020

Thomas Ward
North Country Ecological Services, Inc.
25 W. Fulton Street
Gloversville, NY 12078

Re: Sunset Bay Vacation Resort, 353 Paradise Point Road
County: Fulton Town/City: Mayfield

Dear Mr. Ward:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

We have no records of rare or state-listed animals or plants, or significant natural communities at the project site or in its immediate vicinity.

The absence of data does not necessarily mean that rare or state-listed species, significant natural communities, or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information that indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other resources may be required to fully assess impacts on biological resources.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities, and other significant habitats maintained in the Natural Heritage database. Your project may require additional review or permits; for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 5 Office, Division of Environmental Permits, at dep.r5@dec.ny.gov.

Sincerely,

Andrea Chaloux

Andrea Chaloux
Environmental Review Specialist
New York Natural Heritage Program

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To: 09/03/2024 17:17:52 UTC
Project code: 2024-0138673
Project Name: Sunset Bay RV Resort Expansion

Federal Action Agency (if applicable):

Subject: Record of project representative's no effect determination for 'Sunset Bay RV Resort Expansion'

Dear Bailey Godson:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on September 03, 2024, for 'Sunset Bay RV Resort Expansion' (here forward, Project). This project has been assigned Project Code 2024-0138673 and all future correspondence should clearly reference this number. **Please carefully review this letter.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (Dkey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis, your project has reached the determination of "No Effect" on the northern long-eared bat. To make a no effect determination, the full scope of the proposed project implementation (action) should not have any effects (either positive or negative), to a federally listed species or designated critical habitat. Effects of the action are all consequences to listed species or critical habitat that are caused by the proposed

action, including the consequences of other activities that are caused by the proposed action. A consequence is caused by the proposed action if it would not occur but for the proposed action and it is reasonably certain to occur. Effects of the action may occur later in time and may include consequences occurring outside the immediate area involved in the action. (See § 402.17).

Under Section 7 of the ESA, if a federal action agency makes a no effect determination, no consultation with the Service is required (ESA §7). If a proposed Federal action may affect a listed species or designated critical habitat, formal consultation is required except when the Service concurs, in writing, that a proposed action "is not likely to adversely affect" listed species or designated critical habitat [50 CFR §402.02, 50 CFR§402.13].

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may affect the animal species listed above and, if so, how they may be affected.

Next Steps

Based upon your IPaC submission, your project has reached the determination of “No Effect” on the northern long-eared bat. If there are no updates on listed species, no further consultation/ coordination for this project is required with respect to the northern long-eared bat. However, the Service recommends that project proponents re-evaluate the Project in IPaC if: 1) the scope, timing, duration, or location of the Project changes (includes any project changes or amendments); 2) new information reveals the Project may impact (positively or negatively) federally listed species or designated critical habitat; or 3) a new species is listed, or critical habitat designated. If any of the above conditions occurs, additional coordination with the Service should take place to ensure compliance with the Act.

If you have any questions regarding this letter or need further assistance, please contact the New York Ecological Services Field Office and reference Project Code 2024-0138673 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

Sunset Bay RV Resort Expansion

2. Description

The following description was provided for the project 'Sunset Bay RV Resort Expansion':

> The project entails the addition of 387± unit RV resort adjacent to the existing Sunset Bay RV Resort off of Paradise Point Road in the Town of Mayfield, Fulton County, NY. Possible amenities include bath houses with restrooms and shower facilities, common areas, and laundry facilities. The proposed expansion will share some utilities and amenities with the existing Sunset Bay RV Resort.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.12617075,-74.24389648915728,14z

DETERMINATION KEY RESULT

Based on the information you provided, you have determined that the Proposed Action will have no effect on the Endangered northern long-eared bat (Myotis septentrionalis). Therefore, no consultation with the U.S. Fish and Wildlife Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat. 884, as amended 16 U.S.C. 1531 *et seq.*) is required for those species.

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The proposed action does not intersect an area where the northern long-eared bat is likely to occur, based on the information available to U.S. Fish and Wildlife Service as of the most recent update of this key. If you have data that indicates that northern long-eared bats are likely to be present in the action area, answer "NO" and continue through the key.

   Do you want to make a no effect determination?

   Yes

PROJECT QUESTIONNAIRE

IPAC USER CONTACT INFORMATION

Agency: Environmental Design Partnership, LLP (EDP)
Name: Bailey Godson
Address: 900 Route 146
City: Clifton Park
State: NY
Zip: 12065
Email bgodson@edpllp.com
Phone: 8458200480

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To: 09/03/2024 17:16:14 UTC
Project Code: 2024-0138673
Project Name: Sunset Bay RV Resort Expansion

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service (fws.gov).

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

PROJECT SUMMARY

Project Code: 2024-0138673
Project Name: Sunset Bay RV Resort Expansion
Project Type: Commercial Development
Project Description: The project entails the addition of 387± unit RV resort adjacent to the existing Sunset Bay RV Resort off of Paradise Point Road in the Town of Mayfield, Fulton County, NY. Possible amenities include bath houses with restrooms and shower facilities, common areas, and laundry facilities. The proposed expansion will share some utilities and amenities with the existing Sunset Bay RV Resort.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@43.12617075,-74.24389648915728,14z

Counties: Fulton County, New York

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Environmental Design Partnership, LLP (EDP)
Name: Bailey Godson
Address: 900 Route 146
City: Clifton Park
State: NY
Zip: 12065
Email bgodson@edpllp.com
Phone: 8458200480

New York State
Parks, Recreation and
Historic Preservation

KATHY HOCHUL
Governor

RANDY SIMONS
Commissioner *Pro Tempore*

ARCHAEOLOGY COMMENTS

Phase IA Archaeological Survey Recommendation
Project: Sunset Bay RV Resort Expansion
PR#: 24PR07966
Date: September 26, 2024

There were/are environmental factors and resources within or adjacent to your project area that Indigenous peoples of the past would have found desirable, and there is a possible Map Documented Structure (MDS) within this project's Area of Potential Effects (APE). Therefore, the State Historic Preservation Office/Office of Parks, Recreation and Historic Preservation (SHPO/OPRHP) recommends that a Phase IA Literature Search and Sensitivity Assessment survey is warranted. A Phase IA archaeological survey is designed to identify previously recorded archaeological sites and other cultural resources within or near the project area, to assess the archaeological sensitivity of the project area, to document previous ground disturbance, and to make recommendations regarding the potential need for Phase IB subsurface archaeological testing.

Our office does not conduct archaeological surveys. A 36 CFR 61 qualified archaeologist should be retained to conduct the Phase IA archaeological survey.

If you have any questions concerning archaeology, please contact Dr. Josalyn Ferguson at Josalyn.Ferguson@parks.ny.gov.

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

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

Custom Soil Resource Report for Fulton County, New York

September 11, 2024

Preface

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

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

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

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

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

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

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

How Soil Surveys Are Made

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

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

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

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

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

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

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

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

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

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

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

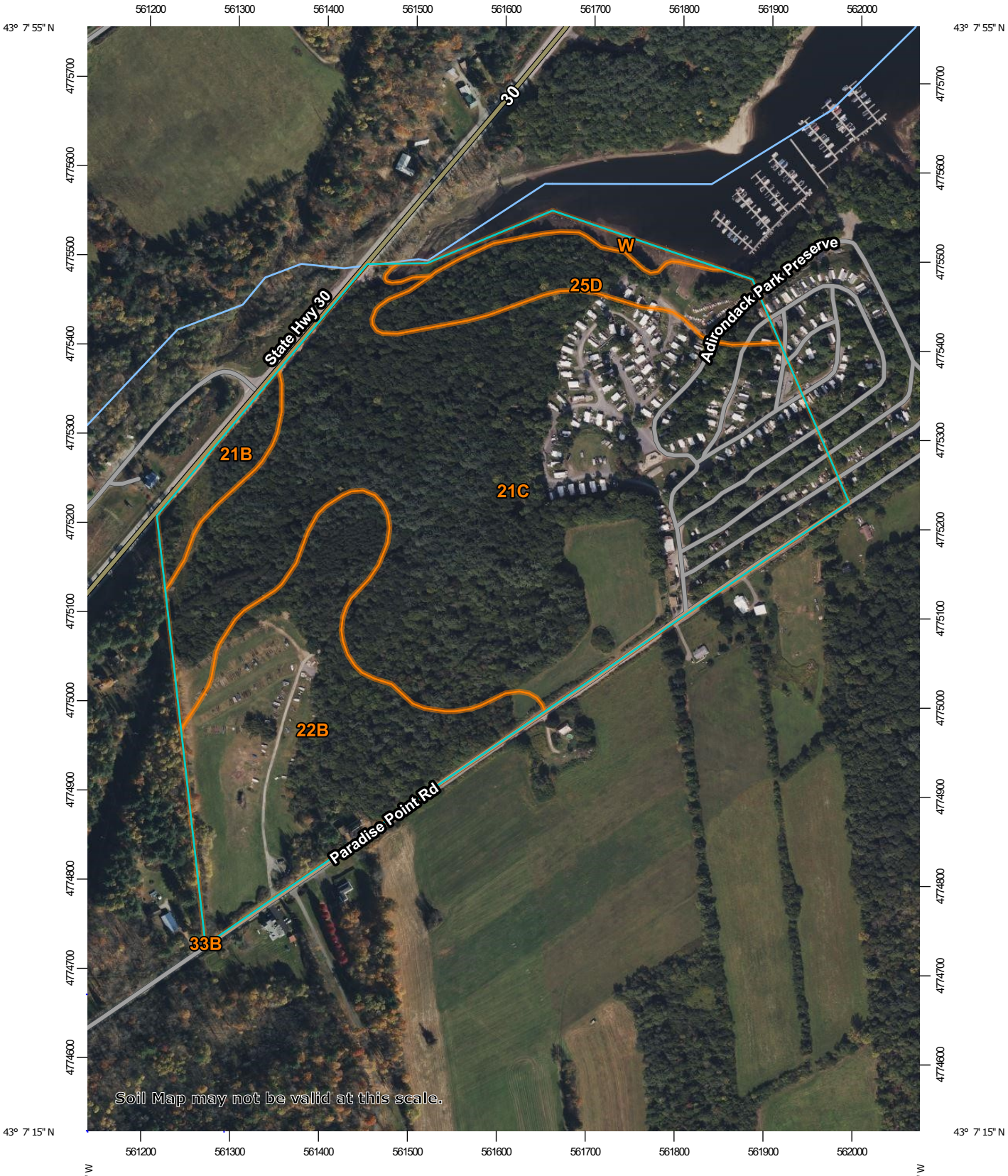
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

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

Custom Soil Resource Report
Soil Map



Map Scale: 1:6,030 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 50 100 200 300

Feet: 0 250 500 1000 1500

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

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

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

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

Water Features
- Streams and Canals

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

Background
- Aerial Photography

MAP INFORMATION

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

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Fulton County, New York
Survey Area Data: Version 23, Sep 5, 2023

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

Date(s) aerial images were photographed: Sep 9, 2022—Oct 22, 2022

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
21B	Galway loam, 3 to 8 percent slopes	2.6	2.9%
21C	Galway loam, 8 to 15 percent slopes	57.6	64.1%
22B	Georgia silt loam, 3 to 8 percent slopes	21.3	23.7%
25D	Farmington loam, 3 to 25 percent slopes, very rocky	6.9	7.7%
33B	Angola silt loam, 0 to 8 percent slopes	0.0	0.0%
W	Water	1.5	1.6%
Totals for Area of Interest		**89.8**	**100.0%**

Map Unit Descriptions

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

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

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

was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

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

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

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

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

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

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

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

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

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

Fulton County, New York

21B—Galway loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9sbf
Elevation: 590 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Galway and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Galway

Setting

Landform: Till plains, ridges, benches
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 7 inches: loam
Bw1 - 7 to 16 inches: loam
Bw2 - 16 to 27 inches: fine sandy loam
2R - 27 to 37 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: C
Ecological site: F144AY036NY - Semi-Rich Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Charlton
Percent of map unit: 8 percent
Hydric soil rating: No

Farmington
Percent of map unit: 6 percent
Hydric soil rating: No

Angola
Percent of map unit: 5 percent
Hydric soil rating: No

Lansing
Percent of map unit: 3 percent
Hydric soil rating: No

Unnamed
Percent of map unit: 3 percent
Hydric soil rating: No

21C—Galway loam, 8 to 15 percent slopes

Map Unit Setting
National map unit symbol: 9sbg
Elevation: 590 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Farmland of statewide importance

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

Description of Galway

Setting
Landform: Ridges, benches
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy till

Typical profile
Ap - 0 to 7 inches: loam
Bw1 - 7 to 16 inches: loam
Bw2 - 16 to 27 inches: fine sandy loam

2R - 27 to 37 inches: unweathered bedrock

Properties and qualities

Slope: 8 to 15 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Low (about 4.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F144AY036NY - Semi-Rich Well Drained Till Uplands
Hydric soil rating: No

Minor Components

Farmington

Percent of map unit: 6 percent
Hydric soil rating: No

Charlton

Percent of map unit: 5 percent
Hydric soil rating: No

Chatfield

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent
Hydric soil rating: No

Angola

Percent of map unit: 4 percent
Hydric soil rating: No

22B—Georgia silt loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9sbj
Elevation: 590 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 120 to 160 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Georgia and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Georgia

Setting

Landform: Till plains, hills
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Loamy till

Typical profile

Ap - 0 to 8 inches: silt loam
BA - 8 to 12 inches: silt loam
Bw1 - 12 to 18 inches: loam
Bw2 - 18 to 24 inches: loam
BC - 24 to 32 inches: loam
C1 - 32 to 42 inches: loam
Cd2 - 42 to 60 inches: fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 40 to 60 inches to densic material
Drainage class: Moderately well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 5.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Ecological site: F144AY038NY - Semi-Rich Moist Till Uplands
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 7 percent
Hydric soil rating: No

Lansing

Percent of map unit: 5 percent
Hydric soil rating: No

Appleton
Percent of map unit: 5 percent
Hydric soil rating: No

Woodbridge
Percent of map unit: 5 percent
Hydric soil rating: No

Galway
Percent of map unit: 3 percent
Hydric soil rating: No

25D—Farmington loam, 3 to 25 percent slopes, very rocky

Map Unit Setting
National map unit symbol: 1hcx7
Elevation: 590 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition
Farmington, very rocky, and similar soils: 70 percent
Minor components: 30 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Farmington, Very Rocky

Setting
Landform: Ridges, benches
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope, riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Shallow loamy till

Typical profile
Ap - 0 to 7 inches: loam
Bw - 7 to 13 inches: gravelly loam
2R - 13 to 23 inches: unweathered bedrock

Properties and qualities
Slope: 3 to 25 percent
Surface area covered with cobbles, stones or boulders: 0.0 percent
Depth to restrictive feature: 10 to 20 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to high (0.00 to 1.98 in/hr)
Depth to water table: More than 80 inches

Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water supply, 0 to 60 inches: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Ecological site: F101XY011NY - Shallow Till Upland
Hydric soil rating: No

Minor Components

Unnamed

Percent of map unit: 10 percent
Hydric soil rating: No

Galway

Percent of map unit: 8 percent
Hydric soil rating: No

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: Unranked

Georgia

Percent of map unit: 5 percent
Hydric soil rating: No

Angola

Percent of map unit: 2 percent
Hydric soil rating: No

33B—Angola silt loam, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1hd11
Elevation: 590 to 1,000 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 120 to 160 days
Farmland classification: Prime farmland if drained

Map Unit Composition

Angola and similar soils: 75 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Angola

Setting

Landform: Till plains, ridges, benches
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Moderately deep till

Typical profile

Ap - 0 to 10 inches: silt loam
Eg - 10 to 14 inches: silty clay loam
Bt - 14 to 24 inches: silty clay loam
BCg - 24 to 29 inches: silty clay loam
2C - 29 to 32 inches: gravelly loam
2R - 32 to 42 inches: bedrock

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Somewhat poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: About 6 to 32 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: D
Ecological site: F101XY013NY - Moist Till
Hydric soil rating: No

Minor Components

Galway

Percent of map unit: 7 percent
Hydric soil rating: No

Ilion

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Darien

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed, moderately deep

Percent of map unit: 5 percent
Hydric soil rating: Yes

Rhinebeck

Percent of map unit: 3 percent
Landform: Depressions
Hydric soil rating: No

W—Water

Map Unit Setting

National map unit symbol: 1tnsx
Elevation: 590 to 2,820 feet
Mean annual precipitation: 35 to 50 inches
Mean annual air temperature: 37 to 48 degrees F
Frost-free period: 90 to 160 days
Farmland classification: Not prime farmland

Map Unit Composition

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

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SECTION 7

Completed Inspection Reports