

**VINEYARDS 1 & VINEYARDS 2
SOLAR PROJECT**

**TOWN OF
CROWN POINT**



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FEBRUARY, 2024
Revised March, 2024

**STORMWATER POLLUTION
PREVENTION PLAN
for
CONSTRUCTION ACTIVITIES
At**

**VINEYARDS 1 & VINEYARDS 2
SOLAR PROJECT**

TOWN OF CROWN POINT

Prepared for

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1 Washington Place
Troy, NY 12180

Prepared by
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February, 2024
Revised March, 2024

SECTION 1

Written Stormwater Pollution Prevention Plan

**STORMWATER POLLUTION
PREVENTION PLAN
for
CONSTRUCTION ACTIVITIES
at**

**VINEYARD 1 &
VINEYARD 2 SOLAR PROJECT
TOWN OF CROWN POINT, NY**

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February, 2024

**NOI Permittee: Sol Source Power
Vineyard 1 & Vineyard 2**

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Vineyard 1 & Vineyard 2 Solar Project

I. SCOPE

- A. **PURPOSE:** Sol Source Power 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 Sol Source Power 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. Soil disturbance of 5 acres or more is not permitted at any one time, if it is required written authorization from the MS4 is required.
- 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. Krueger Energy (USA), 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. Sol Source Power 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**

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**
 - NYSDEC Green Infrastructure Worksheets
 - FEMA Flood Mapping
 - USFW IPaC Determination
 - Natural Heritage Program Determination
 - USDA Web Soil Survey
 - SHPO Response Determination

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 Vineyard 1 & Vineyard 2 Solar Sites are geographically situated at Latitude N 43° 56' 01.1", Longitude W 73° 27' 52.3" in the Town of CROWN POINT, ESSEX COUNTY, NEW YORK. The site is located on the east and west sides of VINEYARD ROAD, south of the intersection with PEARL STREET. The project site is comprised of 68.44± acres of land. The overall disturbance area is 33.86± acres. The Vineyard 1 project is bounded on the north, south, and west by PRIVATE PROPERTY, and on the east by VINEYARD Road. The Vineyard 2 project is bound on the north, east, and south by PRIVATE PROPERTY, and on the west by VINEYARD ROAD. Access to the project will be from Vineyard Road. The entire parcel will remain privately owned and maintained. Approximately 0.52± acres of impervious surfaces, including travel surfaces and solar equipment pads will be constructed. Reclamation of disturbed areas will be conducted on an ongoing basis as construction progresses.

B. NOI PERMITTEE'S NAME AND ADDRESS

**SOL SOURCE POWER
1 WASHINGTON PLACE
TROY, NY, 12180**

C. PROJECT DESCRIPTION

The project will involve the installation of 10,000 kW solar modules installed on a ground mounted racking system (two 5,000 kW solar arrays). The modules will be wired in series strings and connected in parallel to the inverters, which convert the photovoltaic output power from DC to AC. The solar electric system will be interconnected with the existing site electrical system in accordance with the applicable electrical code and Public Utility requirements, and as approved by the Town of CROWN POINT. Also included, as a permanent element of the development is on-site stormwater management. The estimated time for completion of the construction project is approximately one (1) year. Soil disturbing activities will include:

The proposed project will consist of the following key components:

- Solar modules
- Power inverter enclosures
- Power transformers
- Underground electrical conduits
- Operations and Maintenance (O&M)
- Building supervisory control and data acquisition (SCADA) system
- Overhead interconnection electrical line
- Access and maintenance roads

D. RUNOFF COEFFICIENT, SOILS, AND RAINFALL INFORMATION

The predevelopment Curve Number (CN) for green areas was determined to be 49 (HSG A), and 79 (HSG C). Soils within the project area consist of moderately well-drained to excessively well-drained loamy sand that fall in the hydrologic soil groups A or C, as described by the Soil Conservation Service. The post development CN for disturbed green areas is 30 (HSG A) or 71 (HSG C) and the weighted CN for the post-development contributing area is 49. A CN of 98 was used for all post-development impervious surface areas.

The site is in Essex County, which receives an average of 40 inches of rainfall annually with the highest amounts of rainfall received in the months of July and August.

E. NAME OF RECEIVING WATERS

Drainage will follow pre-development patterns and flow to existing wetland areas and a stream onsite or to an existing roadside swale. The impervious areas on the site will include the equipment pads and gravel access roads, which will be treated with infiltration basins. The overflows from the infiltration basins will be directed to predevelopment drainage corridors.

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 that this may contain the northern long-eared bat and the Indiana Bat.

A letter has been directed to NYSDEC New York Natural Heritage Program (NYNHP) 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. Once a letter has been received, it will be included within the SWPPP. Clearing restrictions will be included on the site plans as required.

A review of the USFW IPAC Mapper has indicated the potential presence of the threatened Northern Long Eared Bat, the Indiana Bat, and the candidate species, the Monarch Butterfly. No tree clearing will be performed on the project site between November 1st and March 31st. A pollinator mix will be used within the array area which contains milkweed, which will provide habitat for the Monarch Butterfly. A copy of this consistency letter and USFW IPAC results are included within Section 6.

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 not located in an archeo sensitive area. SHPO provided a letter indicating that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State or National Registers of Historic Places will be impacted by this project. Their letter of no effect was received on 10/19/2023, it is included in Section 6 of the SWPPP, which indicates that this project is eligible for coverage under Part 1.F.8 of GP-0-20-001.

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 litter.
 - 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
- f) Straw Bale Dike
- Straw bale dikes have an estimated design life of three months.
 - Shall only be used where no other practice is feasible
- g) 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) Preconstruction kick-off meeting
- b) Installation of erosion and sediment control features (see erosion and sediment control plans for details); additional controls including, but not limited to sediment basins, additional compost filter socks, and/or erosion control blankets may be required.
- c) Installation of access roadway
- d) Installation of temporary laydown area
- e) Topsoil removal and stockpiling
- f) Stumping and Chipping
- g) Temporary Stabilization (mulch, straw, temporary seeding, or wood chips, as approved by owner)
- h) Electrical underground LV Installation
- i) Electrical underground MV Installation
- j) Drainage handhole installation
- k) Equipment pad and conduit layout
- l) Equipment pad installation
- m) Foundation installation/combiner box installation
- n) Rack and Module Installations
- o) String wire/switchgear installation, central string inverter, weather station
- p) Fence, gate, signage installation, etc.
- q) Wire modules and wire management
- r) Decompaction, regrading, and reloaming areas used for parking, laydown, etc. during construction
- s) Spreading topsoil
- t) Final seeding

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. The Water Quality Calculations for the proposed redevelopment are included within Section 6, along with the Stormwater Modelling Results.

Three (3) stormwater management areas will service the project site. One filter strip will be constructed to provide stormwater treatment and RRv reduction, and two infiltration basins will provide attenuation, quantity control, RRv reduction, and treatment for the proposed impervious gravel roads.

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:
 - o Land clearing activities shall be done only in areas where earthwork will be performed and shall progress as earthwork is needed
 - o Frequent watering of excavation and fill areas to minimize wind erosion during construction.
 - o Use of stabilization fabric for all slopes having a slope of 1V:3H or greater.
 - o Permanent seeding and planting of all unpaved areas using the hydromulching grass seeding technique.
 - b) Structural practices for this site include:
 - o Perimeter protection using silt fences
 - o Inlet protection and outlet protection using silt fences
 - o Storm sewer
 - o Stabilized construction exit points
 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:**
 - o Mulch
 - o Seed and mulch
 - o Geotextile
 - o Erosion control matting
 - o Rock or

- o 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:
 - o Protect slopes and stockpiles with anchored straw or mulch, rolled erosion control product or other durable covering.
 - o Sediment barrier must be installed around piles and at slope toes to prevent soil transport from the pile or slope.
 - o Stabilize exposed areas BEFORE snow covers them.
- d) All entrance/exit locations must be properly stabilized and maintained to accommodate snow management.
- e) Inspections:
 - o If soil disturbance is COMPLETELY suspended AND site is PROPERLY STABILIZED, qualified inspection frequency may be reduced with written notification to NYSDEC or MS4.
 - o Confirmation must be received from NYSDEC prior to reducing inspection frequency.
 - o Monthly inspections must be performed at a minimum.
 - o Sediment control measures should be checked after rain or snowmelt events.
 - o Regular inspections must resume by March 15th.

VI. LONG TERM OPERATION AND MAINTENANCE PROCEDURES

The proposed Vineyard 1 & Vineyard 2 Solar Projects 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. Filter Strips
 - a. Filter Strips 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; slope and general erosion control measures.
 - b. Re-grading and re-vegetation shall be performed as necessary and gravel within gravel diaphragm shall be replaced as necessary.
 - c. Filter strip shall be mowed a minimum of twice per year to discourage woody growth and control weeds.
 - d. Debris and litter shall be removed from filter strip during regular mowing operations or more frequently as necessary.
 - e. Accumulated sediment shall be removed from the filter strip when 10 percent of the filter strip capacity has been lost due to sedimentation or at a minimum of every 10 to 20 years.
2. 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".

3. Closed Drainage System
 - a. Catch basins and pipes shall be inspected annually and following major storm events to ensure the system operates in the manner originally intended.
 - b. Catch basin sumps should be cleaned at least once per year in addition to the annual sweeping and cleaning of the roadway surface.

4. Soil Restoration
 - a. 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 aeration and topsoil are needed in areas of topsoil stripping where grades are not altered. In areas of cut/fill and high traffic areas that are to remain pervious especially around the proposed houses 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.

5. Infiltration Basin
 - 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 (2) 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.

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

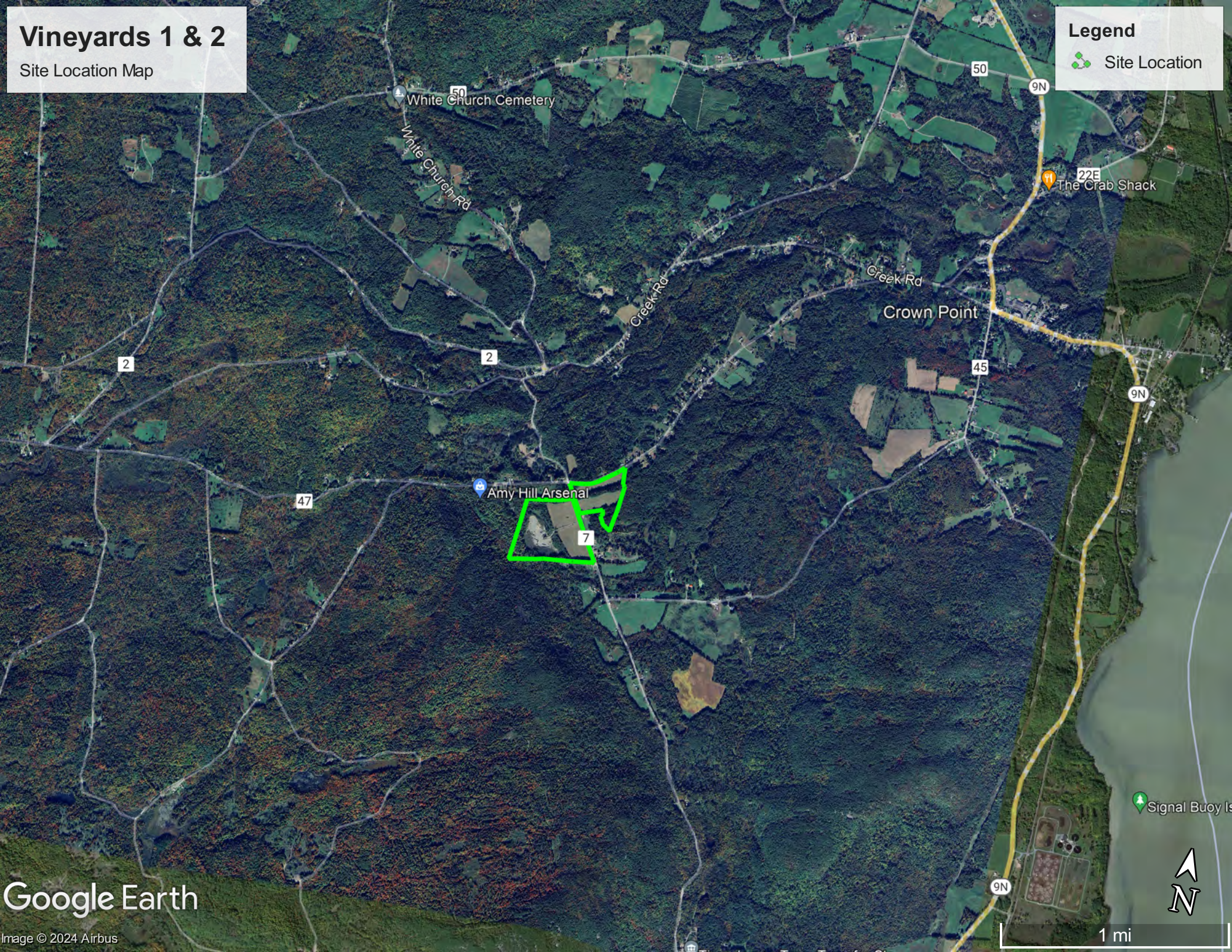
Site Map and General Location Map

Vineyards 1 & 2

Site Location Map

Legend

- 📍 Site Location



Google Earth

Image © 2024 Airbus

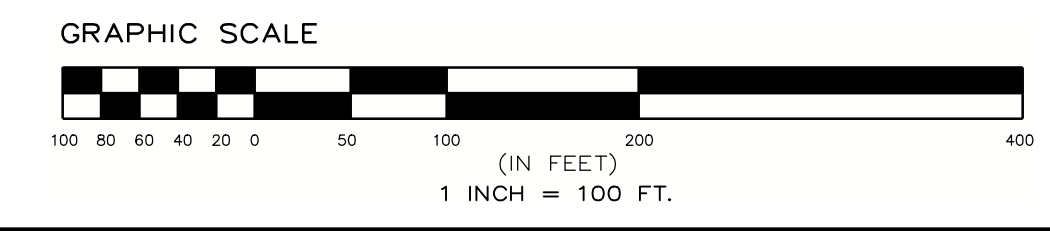
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SEDIMENT AND EROSION CONTROL LEGEND

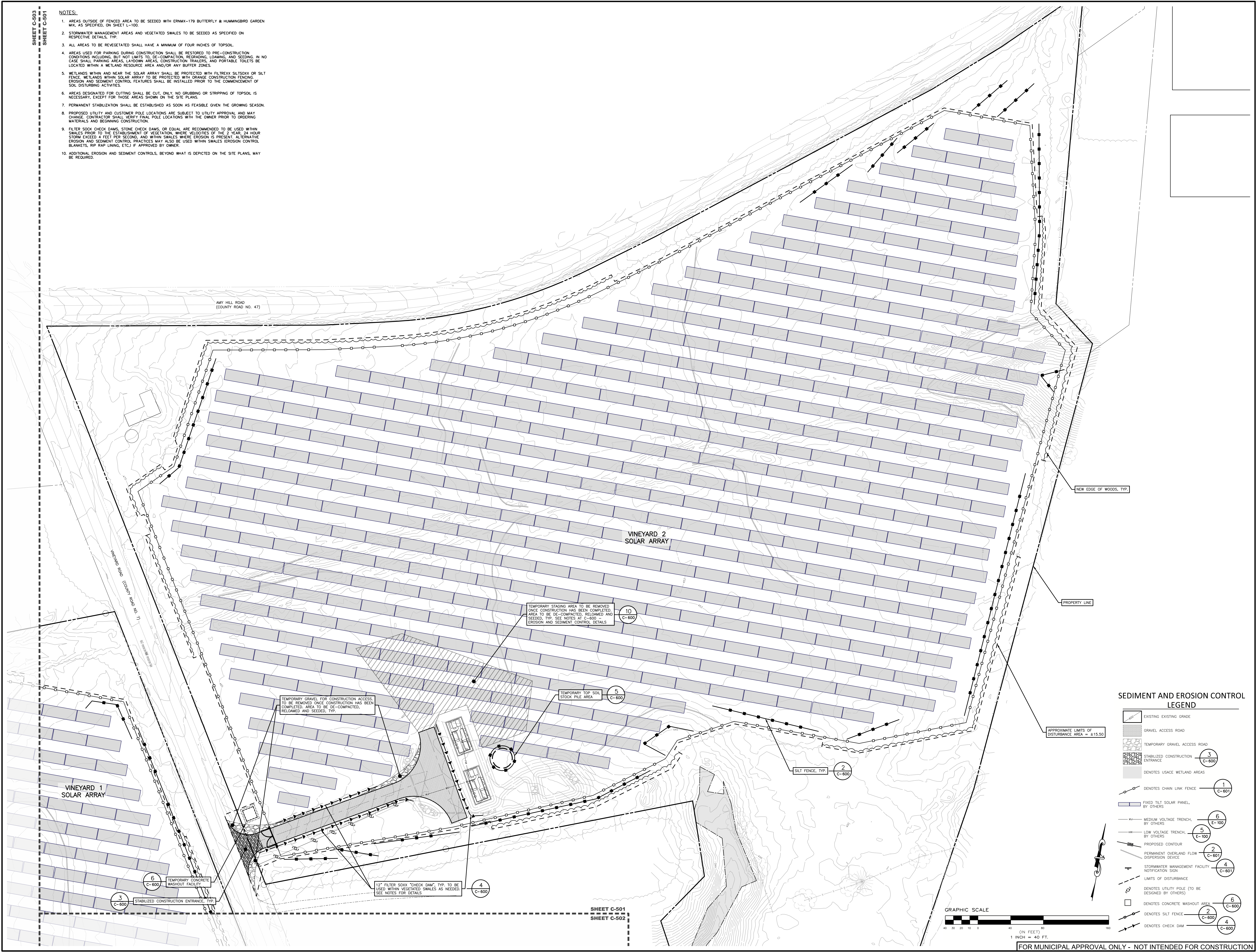
- EXISTING EXISTING GRADE
- GRAVEL ACCESS ROAD
- TEMPORARY GRAVEL ACCESS ROAD
- STABILIZED CONSTRUCTION ENTRANCE
- DENOTES USAGE WETLAND AREAS
- DENOTES CHAIN LINK FENCE
- FIXED TILT SOLAR PANEL, BY OTHERS
- MEDIUM VOLTAGE TRENCH, BY OTHERS
- LOW VOLTAGE TRENCH, BY OTHERS
- PROPOSED CONTOUR
- PERMANENT OVERLAND FLOW DISPERSION DEVICE
- STORMWATER MANAGEMENT FACILITY NOTIFICATION SIGN
- LIMITS OF DISTURBANCE
- DENOTES UTILITY POLE (TO BE DESIGNED BY OTHERS)
- DENOTES CONCRETE WASHOUT AREA
- DENOTES SILT FENCE
- DENOTES CHECK DAM



DRAWN BY	DATE
CHECKED BY	DATE
PROJECT NUMBER	14011

REVISION	DATE	BY

- NOTES:**
- AREAS OUTSIDE OF FENCED AREA TO BE SEEDED WITH ERNXX-179 BUTTERFLY & HUMMINGBIRD GARDEN MIX, AS SPECIFIED, ON SHEET L-100.
 - STORMWATER MANAGEMENT AREAS AND VEGETATED SWALES TO BE SEED AS SPECIFIED ON RESPECTIVE DETAILS, TYP.
 - ALL AREAS TO BE REVEGETATED SHALL HAVE A MINIMUM OF FOUR INCHES OF TOPSOIL.
 - AREAS USED FOR PARKING DURING CONSTRUCTION SHALL BE RESTORED TO PRE-CONSTRUCTION CONDITIONS INCLUDING, BUT NOT LIMITED TO, DE-COMPACTING, REGRADING, LOAMING, AND SEEDING IN NO CASE SHALL PARKING AREAS, LAYDOWN AREAS, CONSTRUCTION TRAILERS, AND PORTABLE TOILETS BE LOCATED WITHIN A WETLAND RESOURCE AREA AND/OR ANY BUFFER ZONES.
 - WETLANDS WITHIN AND NEAR THE SOLAR ARRAY SHALL BE PROTECTED WITH FILTERSOX SILTSCREENS OR SILT FENCE. WETLANDS WITHIN SOLAR ARRAY TO BE PROTECTED WITH ORANGE CONSTRUCTION FENCING. EROSION AND SEDIMENT CONTROL FEATURES SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF SOIL DISTURBING ACTIVITIES.
 - AREAS DESIGNATED FOR CUTTING SHALL BE CUT, ONLY NO GRUBBING OR STRIPPING OF TOPSOIL IS NECESSARY, EXCEPT FOR THOSE AREAS SHOWN ON THE SITE PLANS.
 - PERMANENT STABILIZATION SHALL BE ESTABLISHED AS SOON AS FEASIBLE GIVEN THE GROWING SEASON.
 - PROPOSED UTILITY AND CUSTOMER POLE LOCATIONS ARE SUBJECT TO UTILITY APPROVAL AND MAY CHANGE. CONTRACTOR SHALL VERIFY FINAL POLE LOCATIONS WITH THE OWNER PRIOR TO ORDERING MATERIALS AND BEGINNING CONSTRUCTION.
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 - ADDITIONAL EROSION AND SEDIMENT CONTROLS, BEYOND WHAT IS DEPICTED ON THE SITE PLANS, MAY BE REQUIRED.



MUNICIPAL APPROVAL SITE PLANS FOR
VINEYARDS 1 & VINEYARDS 2 SOLAR
SOL SOURCE POWER
757 VINEYARD ROAD
TOWN OF CROWN POINT
ESSEX COUNTY, NEW YORK

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PROJECT NUMBER:	

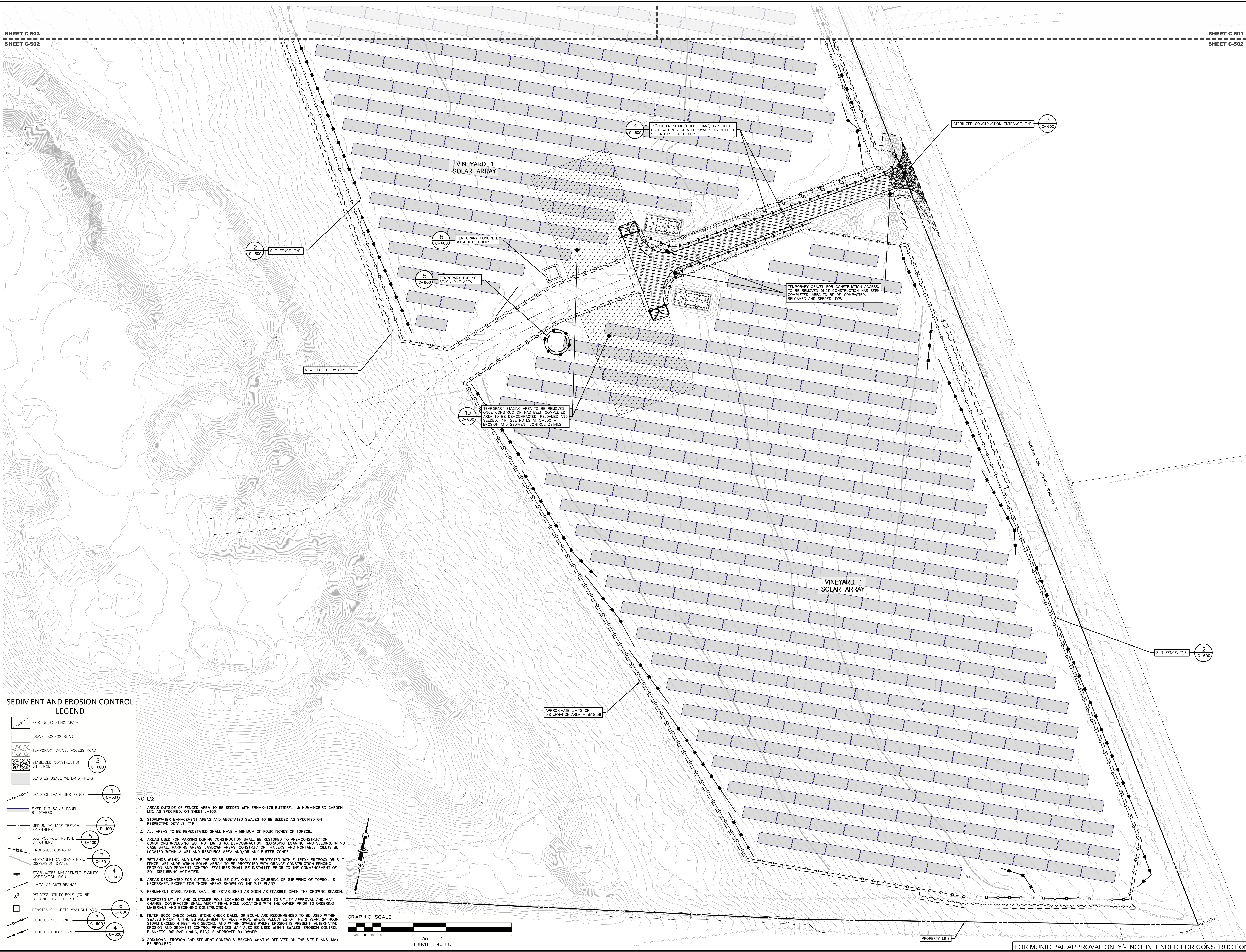
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SCALE:	1" = 40'
NOT FOR CONSTRUCTION	
SHEET TITLE:	EROSION AND SEDIMENT CONTROL PLAN

SHEET:	C-501
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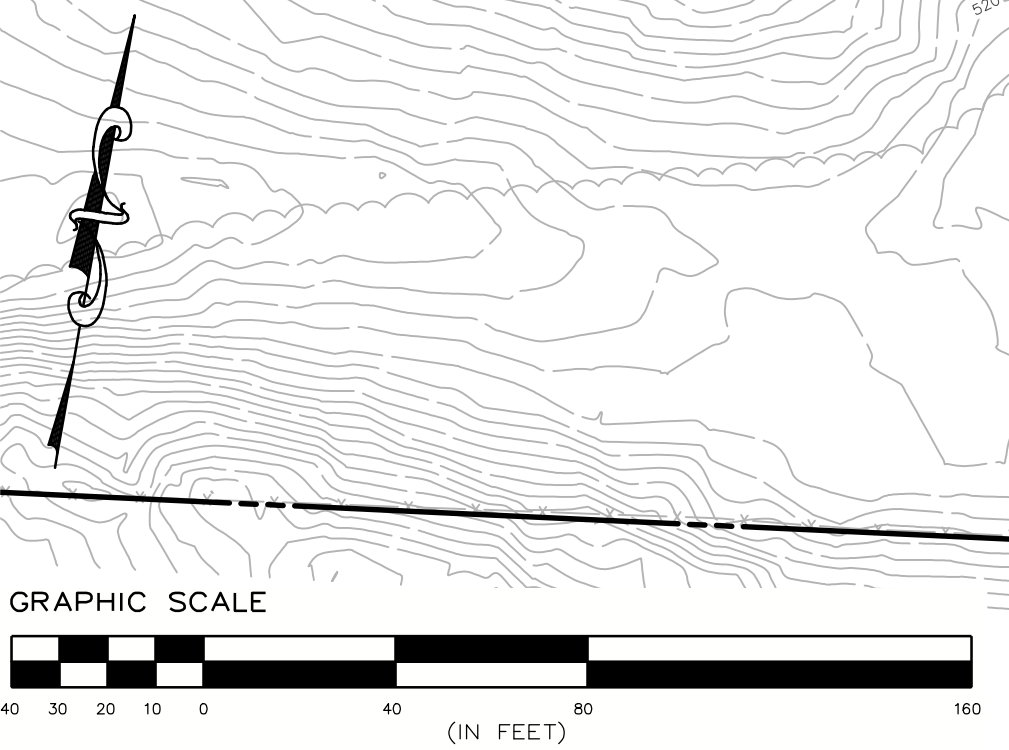


SEDIMENT AND EROSION CONTROL LEGEND

- EXISTING EXISTING GRADE
- GRAVEL ACCESS ROAD
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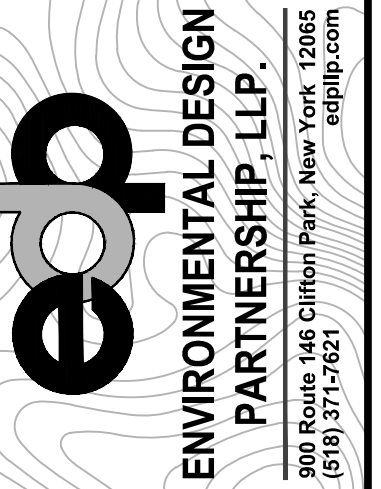
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6. AREAS DESIGNATED FOR CUTTING SHALL BE CUT, ONLY. NO GRUBBING OR STRIPPING OF TOPSOIL IS NECESSARY, EXCEPT FOR THOSE AREAS SHOWN ON THE SITE PLANS.
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SHEET C-501
SHEET C-503



TAX MAP No. 128-1-4-23.111
FEBRUARY 09, 2024

**MUNICIPAL APPROVAL SITE PLANS FOR
VINEYARDS 1 & VINEYARDS 2 SOLAR
SOL SOURCE POWER**

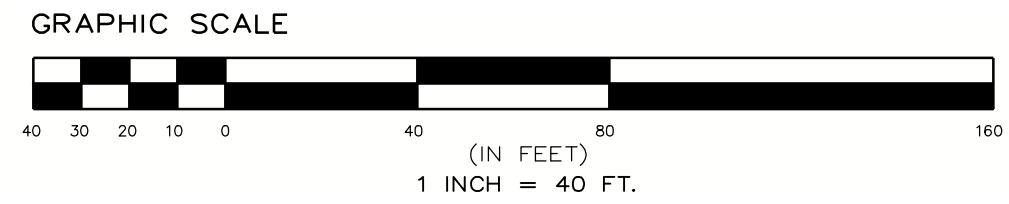
757 VINEYARD ROAD
TOWN OF CROWN POINT
ESSEX COUNTY, NEW YORK

DRAWN BY:	DK
CHECKED BY:	DK
FOR PROJECT NUMBER:	14011
<small>THE INFORMATION ON THESE PLANS IS THE PROPERTY OF EDPA AND SHOULD BE KEPT PRIVATE AND NOT REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF EDPA. ANY REPRODUCTION OR TRANSMISSION OF THIS INFORMATION WITHOUT THE WRITTEN PERMISSION OF EDPA IS STRICTLY PROHIBITED.</small>	
REVISION:	DATE BY



SEDIMENT AND EROSION CONTROL LEGEND

- EXISTING EXISTING GRADE
- GRAVEL ACCESS ROAD
- TEMPORARY GRAVEL ACCESS ROAD
- STABILIZED CONSTRUCTION ENTRANCE (3 C-600)
- DENOTES USACE WETLAND AREAS
- DENOTES CHAIN LINK FENCE (1 C-601)
- FIXED TILT SOLAR PANEL BY OTHERS
- MEDIUM VOLTAGE TRENCH BY OTHERS (6 E-100)
- LOW VOLTAGE TRENCH BY OTHERS (5 E-100)
- PROPOSED CONTOUR
- PERMANENT OVERLAND FLOW DISPERSION DEVICE (2 C-601)
- STORMWATER MANAGEMENT FACILITY NOTIFICATION SIGN (4 C-601)
- LIMITS OF DISTURBANCE
- DENOTES UTILITY POLE (TO BE DESIGNED BY OTHERS)
- DENOTES CONCRETE WASHOUT AREA (6 C-600)
- DENOTES SILT FENCE (2 C-600)
- DENOTES CHECK DAM (4 C-600)



SHEET C-503
SHEET C-502

FOR MUNICIPAL APPROVAL ONLY - NOT INTENDED FOR CONSTRUCTION

SCALE: 1" = 40'

NOT FOR CONSTRUCTION

SHEET TITLE: EROSION AND SEDIMENT CONTROL PLAN

SHEET: C-503

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 FILLSLOPES 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 THESE INSPECTIONS, MAINTENANCE AND REPAIR ACTIVITIES 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 USED ON-SITE 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) THE INSPECTION FORMS, DOCUMENTATION OF THIS PERSONNEL TRAINING WILL BE KEPT ON-SITE WITH THE SWPPP.
- K) REPORT TO THE NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION WITHIN 24 HOURS ANY NONCOMPLIANCE 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 FESQVE. 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., EXCESSOR 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 MUST 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 #7 STEEL U-SHAPED STAPLES, 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.

SITE LOCATIONS WITH AGRICULTURAL DISTRICTS THE NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS CONSTRUCTION REQUIREMENTS ALSO APPLY.

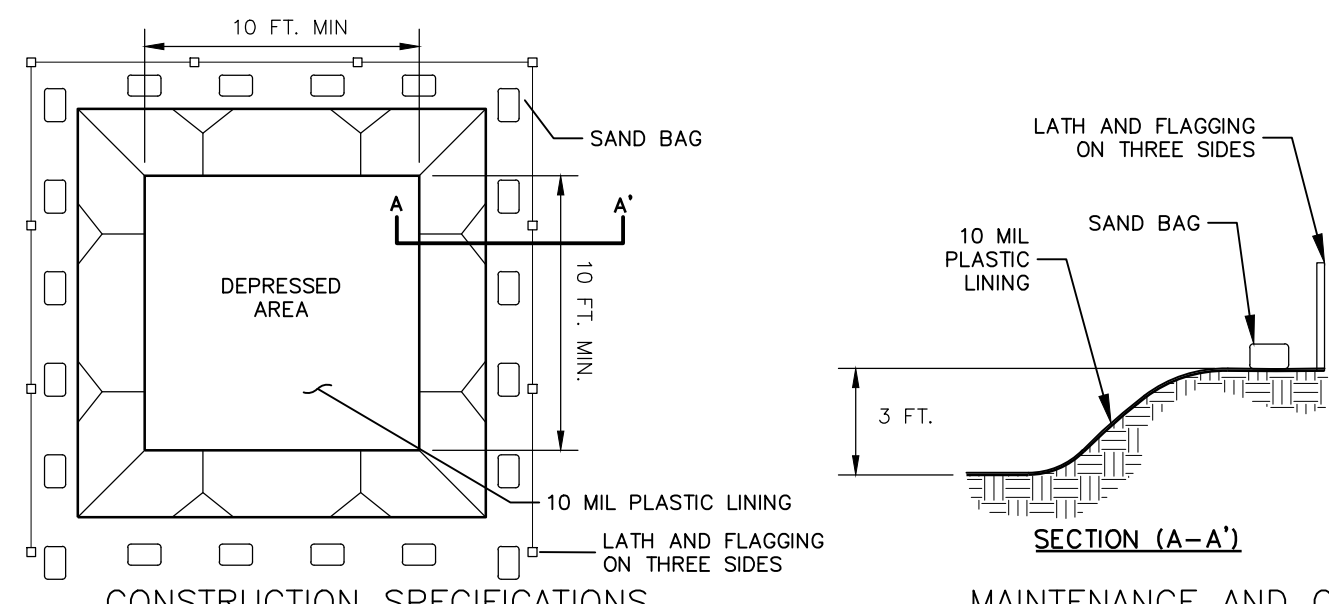
SEQUENCE OF CONSTRUCTION ACTIVITIES:

1. SITE TO BE MOBILIZED.
2. EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED IN CONJUNCTION WITH ANY BRUSH OR TREE CLEARING REQUIRED. NOTE: EROSION AND SEDIMENT CONTROL MEASURES TO BE INSTALLED IN ACCORDANCE WITH SHEETS C-300 TO C-303 ASSOCIATED DETAILS AS WELL AS NYS DEC CONSTRUCTION GENERAL PERMIT #GP-D-20-001. IN ANY INSTANCE THAT A CONFLICT BETWEEN THESE TWO GUIDELINES IS PRESENT, THE MORE CONSERVATIVE GUIDELINE TAKES PRECEDENT.
3. CLEARING AND GRUBBING OPERATIONS CREW SHALL CHIP AND MULCH DIRECTLY BEHIND OPERATION TO MAKE SURE NO AREAS ABOVE FIVE ACRES SHALL BE DISTURBED AT ANY TIME, NO MORE THAN FIVE ACRES SHALL BE DISTURBED AT ANY ONE TIME WITHOUT PRIOR APPROVAL FROM NYSDEC.
4. INSTALLATION OF ACCESS ROAD TO COMMENCE; NOTE: ANY AREAS OF DISTURBANCE SHALL BE STABILIZED WITH TEMPORARY SEEDING PER THE REQUIRED TIMELINES AS PER NYS DEC CONSTRUCTION GENERAL PERMIT #GP-D-20-001.
5. MY TRENCHES AND FOUNDATIONS INSTALLATION IN CONJUNCTION WITH THE PLACEMENT OF CONCRETE FOUNDATIONS FOR THE ELECTRICAL EQUIPMENT PADS TO COMMENCE.
6. WATERING OF THE EXCAVATION AND FILL AREAS SHALL BE DONE TO MINIMIZE WIND EROSION AS NEEDED THROUGHOUT CONSTRUCTION.
7. BACKING, TABLES, MODULES, INVERTERS AND ELECTRICAL EQUIPMENT INSTALLATION TO COMMENCE.
8. REMOVE LAYDOWN AREA, SPREAD GRAVEL ON ROADWAY, AND SEED AREAS.
9. FINAL SITE STABILIZATION TO COMMENCE.
10. ALL EROSION AND SEDIMENT CONTROL MEASURES TO BE REMOVED ONCE BOX VEGETATIVE COVER HAS BEEN ACHIEVED, REMOVE FILTER SOCKS, STABILIZED CONSTRUCTION ENTRANCES, AND OTHER TEMPORARY EROSION AND SEDIMENT CONTROLS. ANY RESULTING AREAS OF DISTURBANCE FROM SAND REMOVAL TO BE SEEDED PRIOR TO DEMOBILIZATION.
11. SITE TO BE DEMOBILIZED.

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-HECK UNTIL UNLIFTED 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.



CONSTRUCTION SPECIFICATIONS

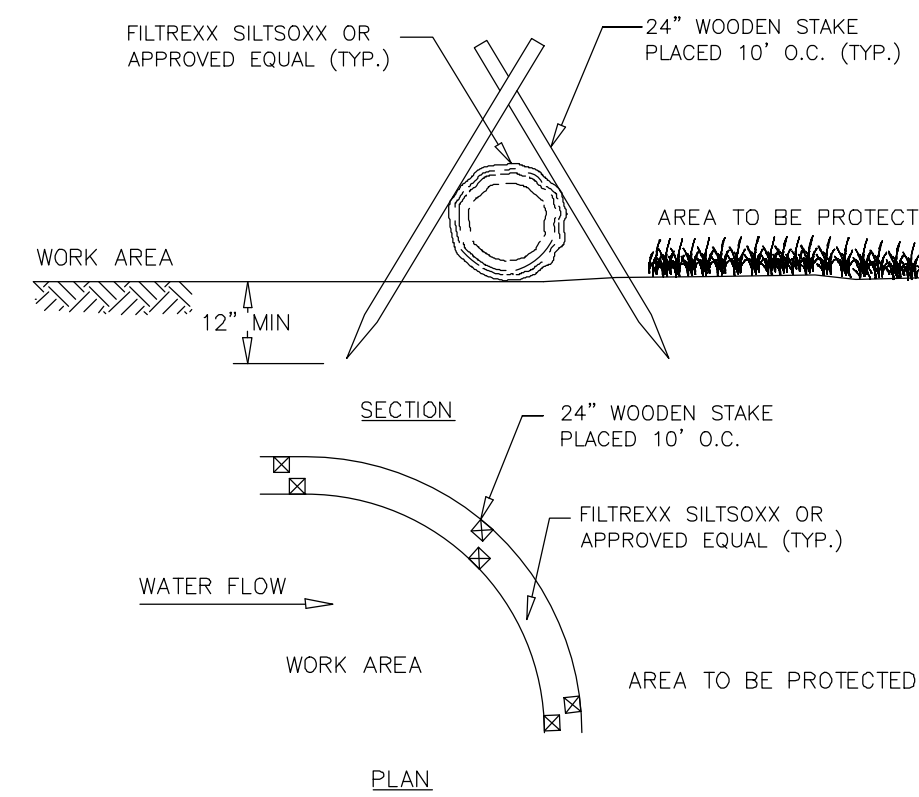
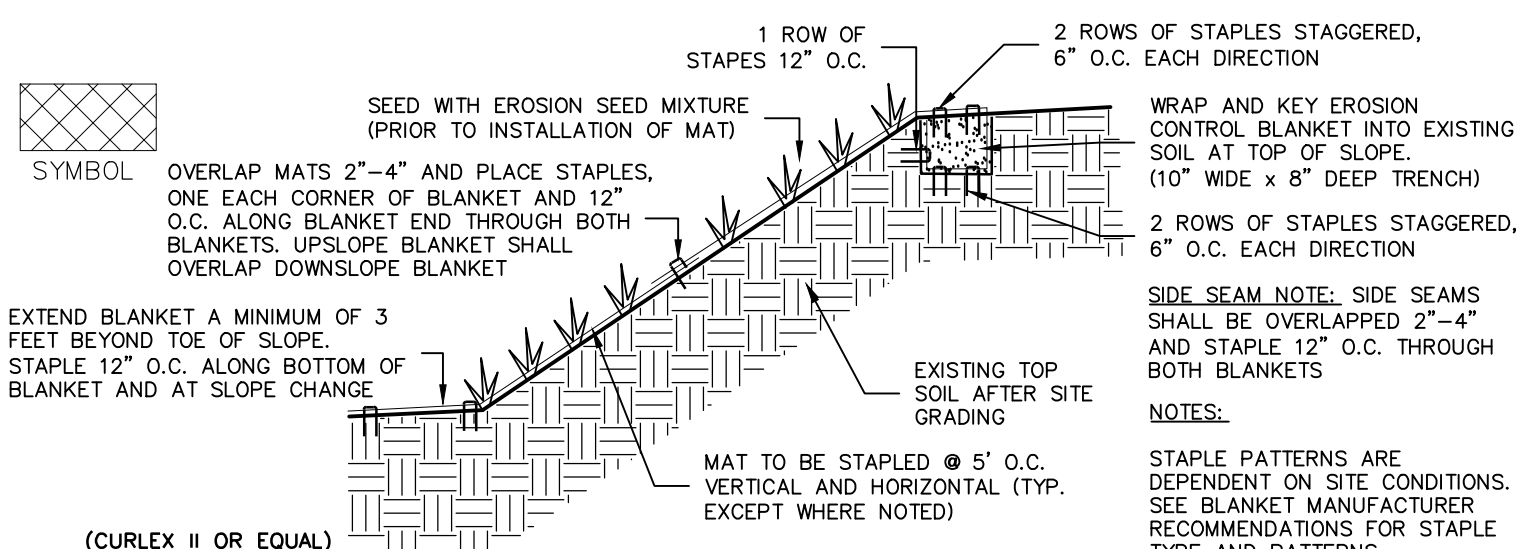
1. CONCRETE WASHOUT FACILITY SHALL BE LOCATED A MINIMUM OF FIFTY (50) FEET FROM SENSITIVE AREAS.
2. THE BASIN DIMENSIONS DEPICED ABOVE ARE REQUIRED MINIMUMS.
3. CONCRETE WASHOUT FACILITY SHALL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. (APPROXIMATELY 60 GALLONS OF WASTE AND WATER PER TRUCK)
4. PLASTIC LINING MATERIAL SHALL BE A MINIMUM 10 MIL POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.
5. WASHOUT FACILITY MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE MATERIAL 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 NECESSARY (RELINE THE STRUCTURE WITH NEW POLY SHEETING AFTER EACH CLEANING).

6 CONCRETE WASHOUT FACILITY

C-600 NOT TO SCALE



1. FILTER SOCK SHALL BE 12" DIAMETER MIN.
2. SOCKS TO BE FILLED WITH BIODEGRADABLE COMPOST MATERIAL.
3. WOODEN STAKES SHALL BE PLACED ON EITHER SIDE OF FILTER SOCK IN AN X-SHAPE PATTERN.

8 12 IN. FILTER SOCK

C-600 NOT TO SCALE

1 EROSION CONTROL NOTES

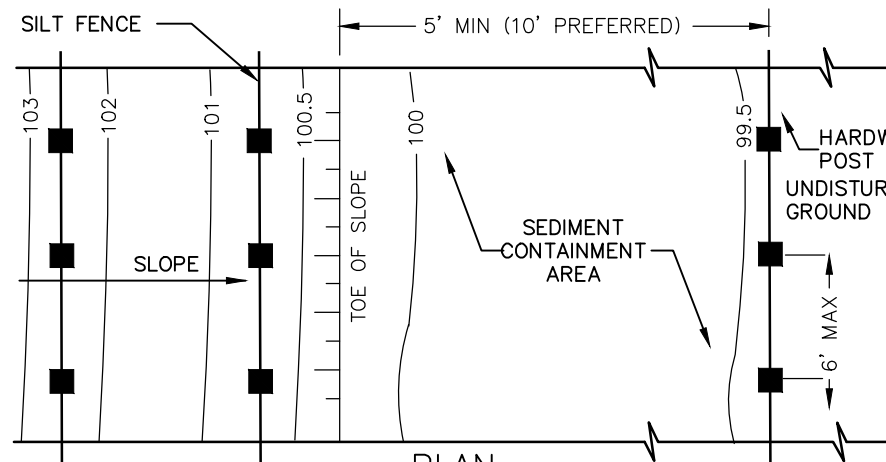
C-600 NOT TO SCALE

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" x 1.25" (MINIMUM) HARDWOOD, TYPICALLY FOR WIRE MESH BACK USE 2" x 2" NOM. HARDWOOD, OR STEEL 1" OR 1.125" (1 1/8" MIN) SILT FENCE SHALL BE WOVEN GEOTEXTILE FABRIC(GEOTEX 2130 OR EQUAL).
3. SILT FENCE ASSEMBLIES MAY BE 4 FT. OR 8 FT. POST SPACING AND 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 CONTRIBUTE RUNOFF TO A SILT FENCE PLACED ON A SLOPE ARE:

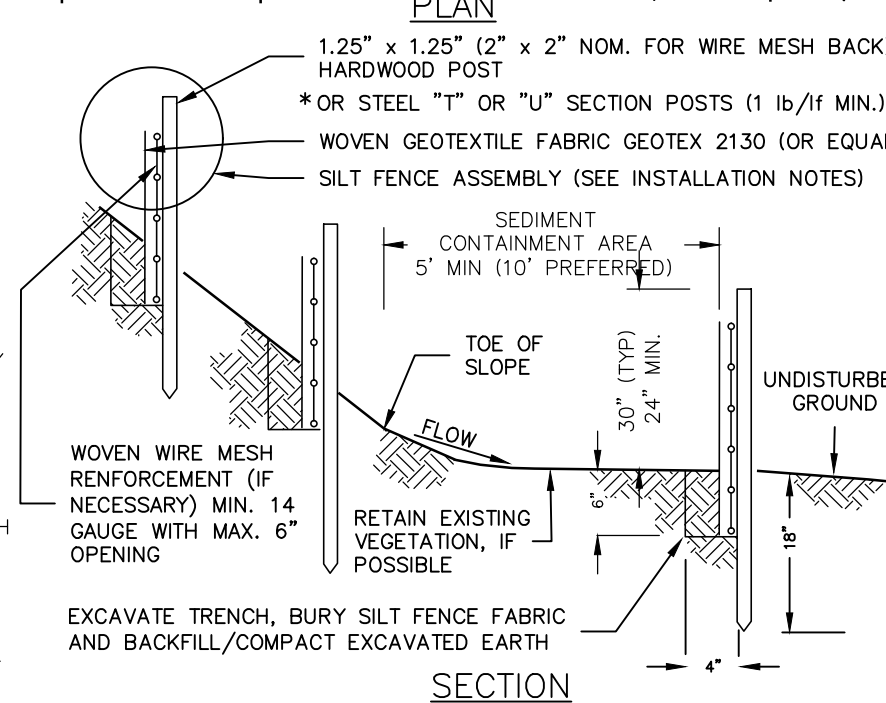
SLOPE STEEPNESS	MAXIMUM LENGTH (FT.)
2:1	75
3:1	50
4:1	30
5:1 OR FLATTER	100

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.



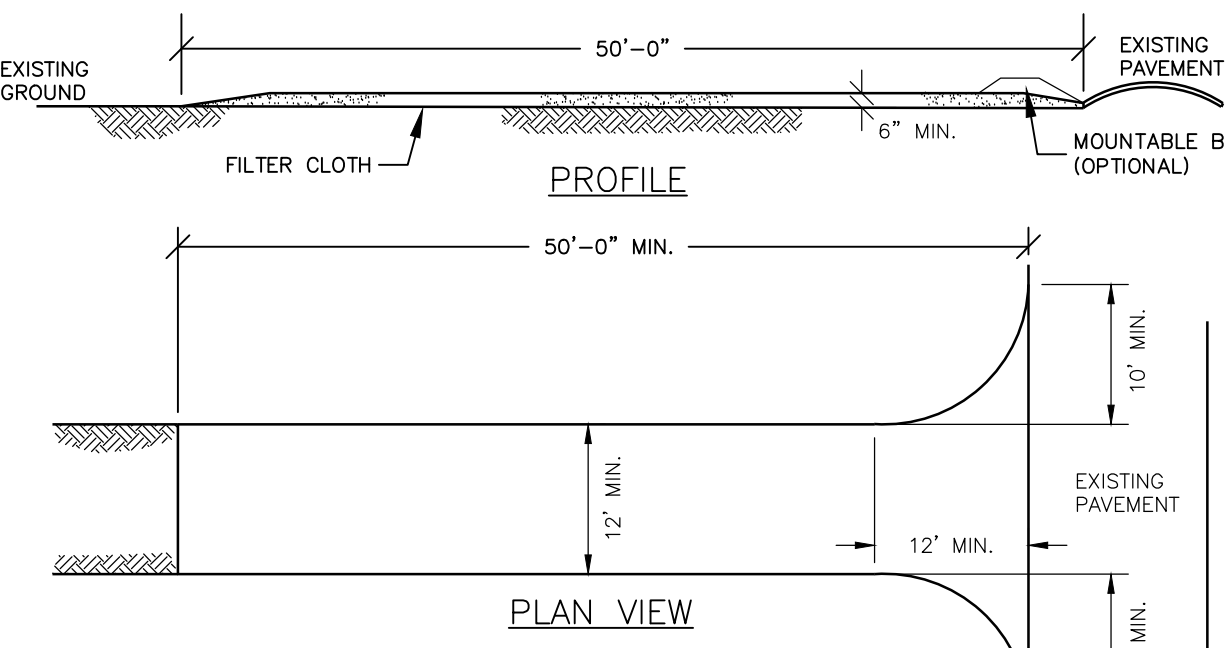
SILT FENCE INSTALLATION NOTES:

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 INTERLAPPED BY SIX INCHES, TOLED AND STAPLED.
4. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.



2 SILT FENCE

C-600 NOT TO SCALE



CONSTRUCTION SPECIFICATIONS

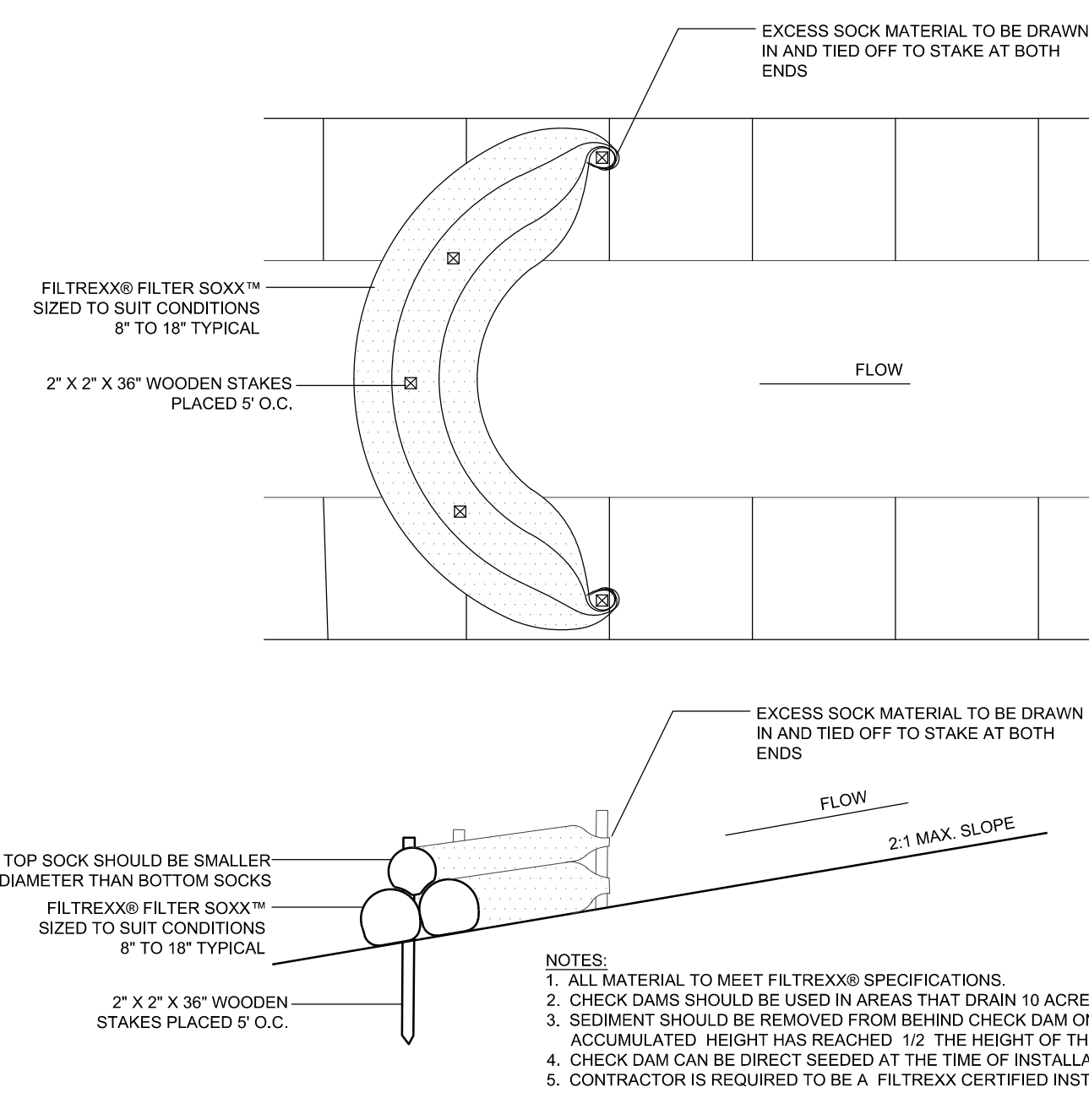
1. STONE SIZE - USE 2" CRUSHED STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS EFFECTIVE BUT NOT LESS THAN 50 FEET.
3. THICKNESS - NOT LESS THAN SIX(6) INCHES.
4. WIDTH - TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS; TWENTY-FOUR (24) FOOT BY SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH - WILL BE PLACED OVER ENTIRE AREA PRIOR TO PLACING STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE, IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. WASHING - WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE INTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATERCOURSE THROUGH USE OF SAND BAGS, GRAVEL BARRIERS OR OTHER APPROVED METHODS.
8. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DRIPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

3 STABILIZED CONSTRUCTION ENTRANCE

C-600 NOT TO SCALE

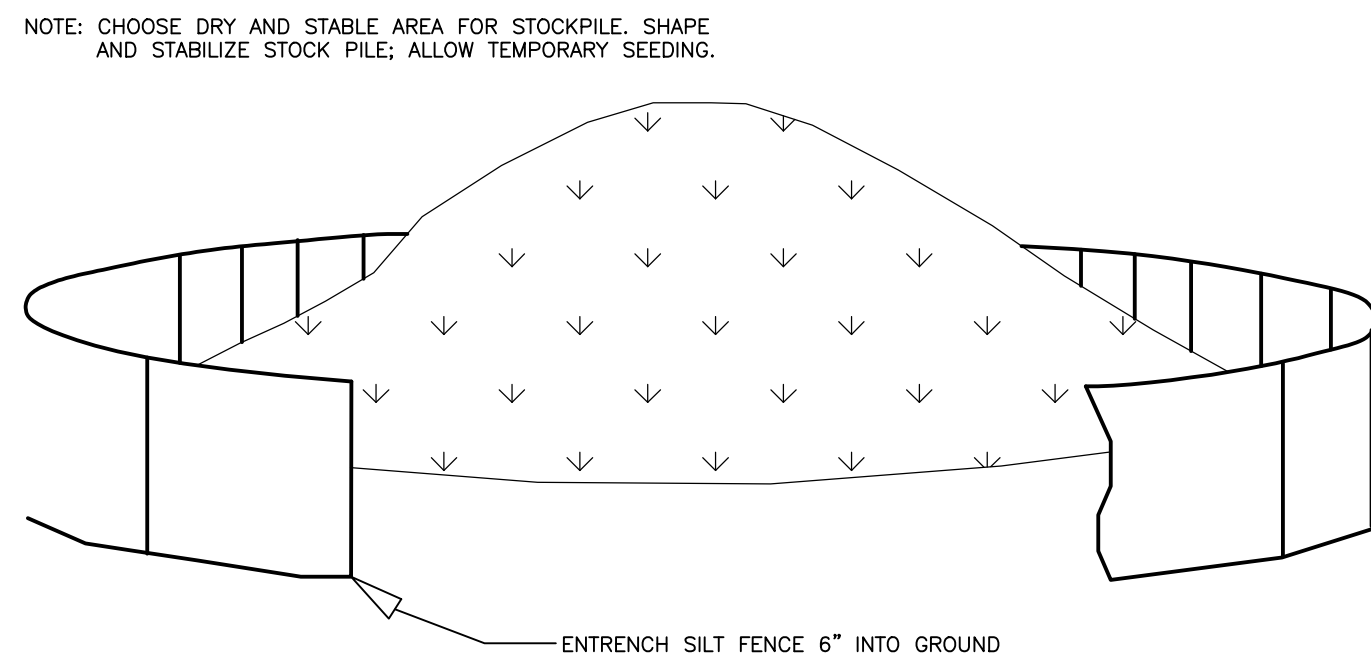
4 CHECK DAM

C-600 NOT TO SCALE



4 CHECK DAM

C-600 NOT TO SCALE



5 SOIL STOCKPILE AREA

C-600 NOT TO SCALE

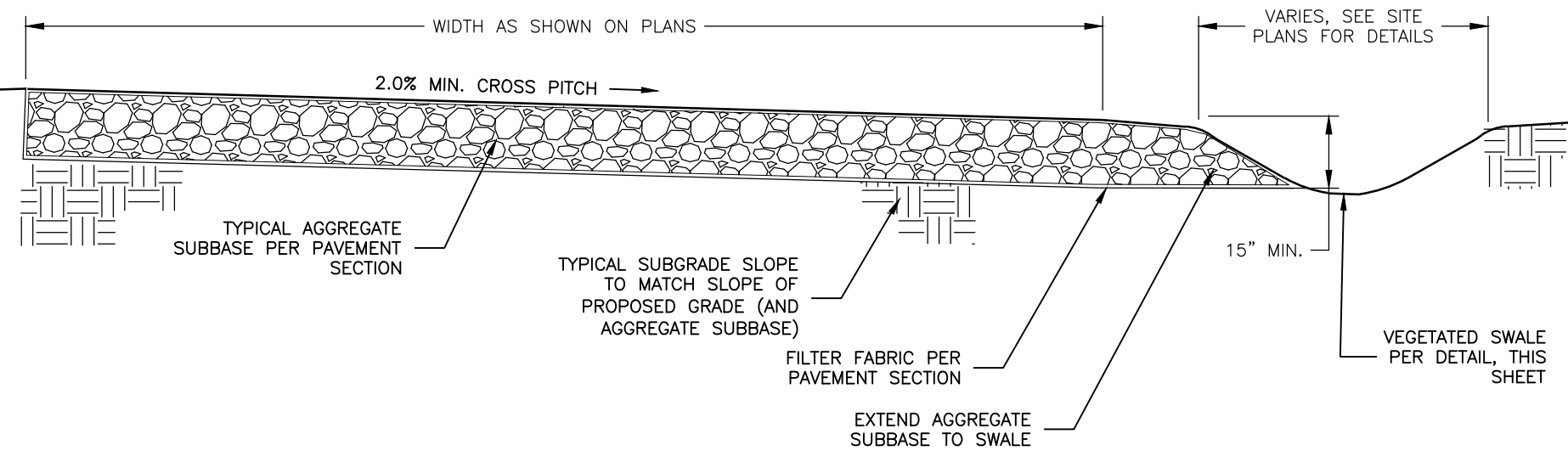
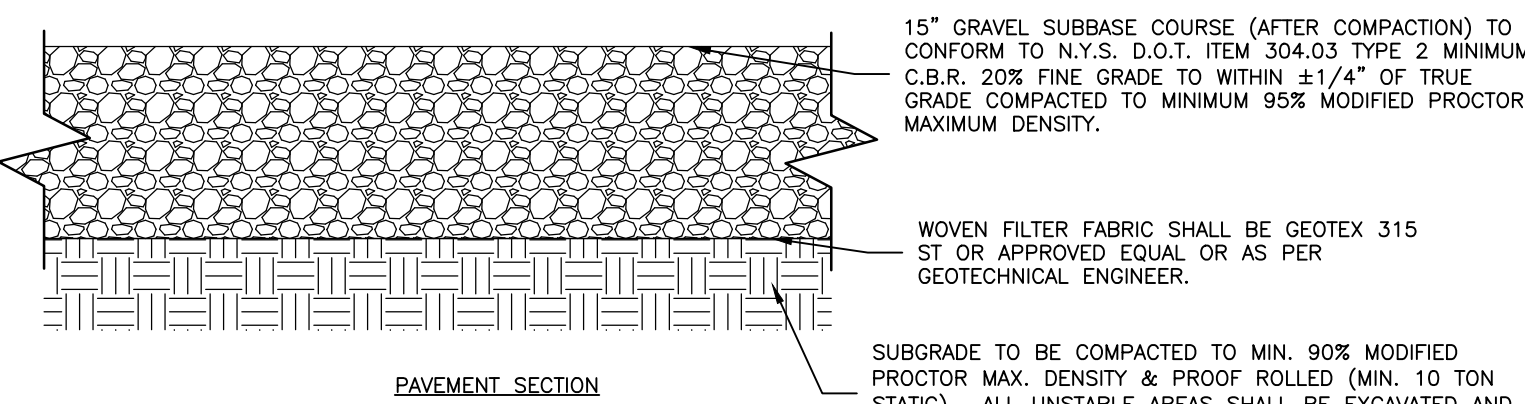
7 EROSION CONTROL BLANKET

C-600 NOT TO SCALE



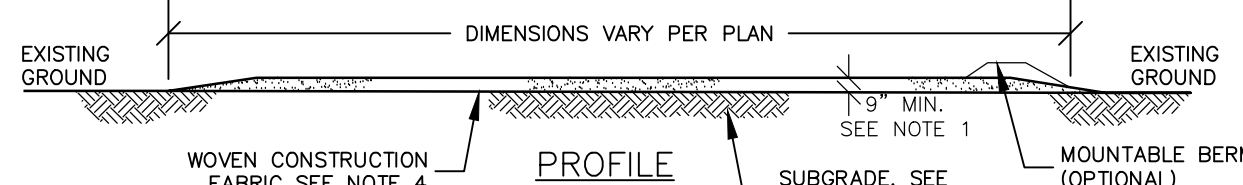
NOTES:

1. IF UNSTABLE SUBGRADE IS ENCOUNTERED DURING CONSTRUCTION ENGINEER MUST BE NOTIFIED IMMEDIATELY.
2. SUBGRADE MUST BE PROOF-ROLLED PRIOR TO PLACEMENT OF CRUSHED STONE.
3. THIS PRELIMINARY PAVEMENT DESIGN ASSUMES THAT EXISTING SUBGRADE CONDITIONS CONSIST OF CLEAN GRANULAR MATERIAL (SAND & GRAVEL) AND THAT THERE IS NO WATER TABLE INTERFERENCE. PRIOR TO CONSTRUCTION THE OWNER SHALL VERIFY THE EXISTING SUBGRADE CONDITIONS USING GEOTECHNICAL ENGINEERING CONSULTANT, TO DETERMINE THE FINAL PAVEMENT DESIGN.
4. SEE NOTE 6 ON THE PERVIOUS ACCESS ROAD DETAIL REGARDING PRECONSTRUCTION SPT TESTING REQUIREMENTS.



5 PERMANENT GRAVEL ACCESS ROAD DETAILS

C-600 NOT TO SCALE

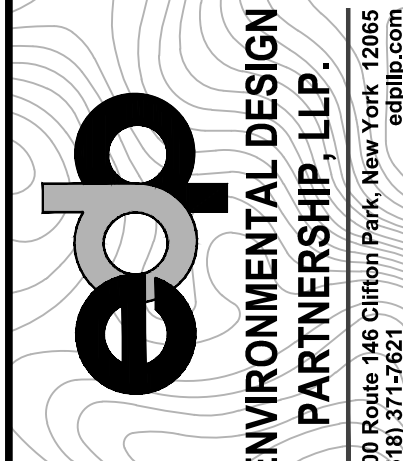


NOTES:

1. CONSTRUCTION STAGING AREA TO BE 8" GRAVEL COURSE, WELL GRADED, WELL COMPACTED, TO CONFORM TO NYS DOT ITEM NO. 304.05 TYPE MIN. COMPACTION 90% MODIFIED PROCTOR OR 8" CRUSHED STONE COURSE, WELL GRADED WELL COMPACTED, TO CONFORM TO NYS DOT ITEM NO. 304.03 TYPE 2 MIN. COMPACTION 85% MODIFIED PROCTOR.
2. SUBGRADE MUST BE PROOF-ROLLED PRIOR TO PLACEMENT OF CRUSHED STONE.
3. WELL COMPACTED SUBGRADE MIN. COMPACTION 90% MODIFIED PROCTOR.
4. WOVEN CONSTRUCTION FABRIC TO BE A.O.B.E. PROPEX GEOTEXT 315ST OR EQUAL.
5. TEMPORARY STAGING AREA TO BE INSTALLED WITHOUT DISTURBANCE TO EXISTING GROUND.

10 TEMPORARY STAGING AREA

C-600 NOT TO SCALE



ENVIRONMENTAL DESIGN PARTNERS, LLP.
 900 Route 446 Cortland Park, New York, 13825
 (518) 352-2272

MUNICIPAL APPROVAL SITE PLANS FOR VINEYARDS 1 & VINEYARDS 2 SOLAR SOL SOURCE POWER

757 VINEYARD ROAD
TOWN OF CROWN POINT
ESSEX COUNTY, NEW YORK

REVISION	DATE	BY

C-600

FOR MUNICIPAL APPROVAL ONLY - NOT INTENDED FOR CONSTRUCTION

C:\DWGFILES\Environmental Design Partners\SharePoint Site - Documenta\9 An\ESSEX\ORDIN PD\VT\Vineyard Road\757-Vineyards Solar\05-Map\Detail\01-Sheets\11-10-Vineyards.dwg Feb. 08. 2024 04:51:59PM

SECTION 3

Federal, State or Local Notice of Intent (NOI)

NYSDEC NOI Acknowledgement Letter

NOI for coverage under Stormwater General Permit for Construction Activity

version 1.37

(Submission #: HQ1-91PK-52C3M, version 1)

Details

Originally Started By Brandon Ferguson
Alternate Identifier Vineyards 1 & Vineyards 2
Submission ID HQ1-91PK-52C3M
Submission Reason New
Status Draft
Active Steps Form Submitted

Form Input

Owner/Operator Information

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
Sol Source Power

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

Owner/Operator Contact Person First Name
Steve

Owner/Operator Mailing Address
1 Washington Place

City
Troy

State
New York

Zip

12180

Phone

603-455-9483

Email

steve@solsourcepower.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**

Vineyards 1 & Vineyards 2

Street Address (Not P.O. Box)

757-780 Vineyard Road

Side of Street

East

City/Town/Village (THAT ISSUES BUILDING PERMIT)

Crown Point

State

NY

Zip

12928

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
ESSEX

Name of Nearest Cross Street
Pearl Street

Distance to Nearest Cross Street (Feet)
500

Project In Relation to Cross Street
South

Tax Map Numbers Section-Block-Parcel
128.14-23.111

Tax Map Numbers
128.14-23.111

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
43.932842,-73.46523499999999

Project Details

2. What is the nature of this project?
Redevelopment with increase in impervious area

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

Industrial

Post-Development Future Land Use

Other: Solar Energy Facility

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)

98.8

Total Area to be Disturbed (acres)

33.9

Existing Impervious Area to be Disturbed (acres)

0.3

Future Impervious Area Within Disturbed Area (acres)

0.5

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 (%)

35

B (%)

0

C (%)

66

D (%)

0

7. Is this a phased project?

Yes

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

06/03/2024

End Date

06/02/2025

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

Onsite Wetlands

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)

Other Waterbody Type Off Site Description

NONE PROVIDED

9b. If "wetland" was selected in 9A, how was the wetland identified?

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?

Town of Crown Point

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?

No

18. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?

No

19. Is this property owned by a state authority, state agency, federal government or local government?

No

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)

No

Required SWPPP Components

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

Yes

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

Yes

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

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

Yes

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

Professional Engineer (P.E.)

SWPPP Preparer

The Environmental Design Partnership

Contact Name (Last, First)

Alessandrini, , Stephanie

Mailing Address

900 Route 146

City

Clifton Park

State

NY

Zip

12065

Phone

5183838327

Email

salessandrini@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

Dust Control

Silt Fence

Stabilized Construction Entrance

Biotechnical

None

Vegetative Measures

Mulching

Seeding

Permanent Structural

Land Grading

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

Reduction of Clearing and Grading

Locating Development in Less Sensitive Areas

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

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

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

0.054

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)

0.052

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)

0.015

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)

0.002

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).

0.054

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)

0.0

CPv Provided (acre-feet)

0.0

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

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

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

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)

9.05

Post-Development (CFS)

7.22

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)

29.58

Post-Development (CFS)

24.68

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

Vineyards 1 & Vineyards 2

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.

NONE PROVIDED

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)

0.0

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)

0.0

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

0.02

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

0.02

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)

0.00

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)

0.00

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)

0.00

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)

0.00

Total Contributing Impervious Acres for Vegetated Swale (RR-5)

0.00

Total Contributing Impervious Acres for Rain Garden (RR-6)

0.00

Total Contributing Impervious Acres for Stormwater Planter (RR-7)

0.00

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)

0.00

Total Contributing Impervious Acres for Porous Pavement (RR-9)

0.00

Total Contributing Impervious Acres for Green Roof (RR-10)

0.00

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)

0.00

Total Contributing Impervious Acres for Infiltration Basin (I-2)

0.052

Total Contributing Impervious Acres for Dry Well (I-3)

0.00

Total Contributing Impervious Acres for Underground Infiltration System (I-4)

0.00

Total Contributing Impervious Acres for Bioretention (F-5)

0.00

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

0.00

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
0.00

Total Contributing Impervious Acres for Wet Pond (P-2)
0.00

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
0.00

Total Contributing Impervious Acres for Multiple Pond System (P-4)
0.00

Total Contributing Impervious Acres for Pocket Pond (P-5)
0.00

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
0.00

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
0.00

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
0.00

Total Contributing Impervious Acres for Organic Filter (F-4)
0.00

Total Contributing Impervious Acres for Shallow Wetland (W-1)
0.00

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
0.00

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
0.00

Total Contributing Impervious Acres for Pocket Wetland (W-4)
0.00

Total Contributing Impervious Acres for Wet Swale (O-2)
0.00

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

Total Contributing Impervious Area for Hydrodynamic
0.00

Total Contributing Impervious Area for Wet Vault
0.00

Total Contributing Impervious Area for Media Filter

0.00

"Other" Alternative SMP?

0.00

Total Contributing Impervious Area for "Other"

0.00

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

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

Manufacturer of Alternative SMP

NONE PROVIDED

Name of Alternative SMP

NONE PROVIDED

Other Permits

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

None

If SPDES Multi-Sector GP, then give permit ID

NONE PROVIDED

If Other, then identify

NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?

No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth

NONE PROVIDED

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

NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?

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

Status History

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Under Review	DAVID GASPER	

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Under Review	Daniel von Schilgen	

SECTION 4

Federal, State or Local NPDES General Permit



Department of
Environmental
Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP- 0-20-001

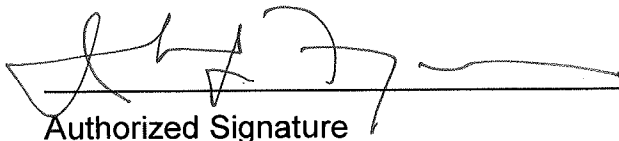
Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2020

Expiration Date: January 28, 2025

John J. Ferguson

Chief Permit Administrator



Authorized Signature

1-23-20

Date

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

PREFACE

Pursuant to Section 402 of the Clean Water Act (“CWA”), stormwater *discharges* from certain *construction activities* are unlawful unless they are authorized by a *National Pollutant Discharge Elimination System (“NPDES”)* permit or by a state permit program. New York administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7, 8 and Article 70.

An *owner or operator* of a *construction activity* that is eligible for coverage under this permit must obtain coverage prior to the *commencement of construction activity*. Activities that fit the definition of “*construction activity*”, as defined under 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), constitute construction of a *point source* and therefore, pursuant to ECL section 17-0505 and 17-0701, the *owner or operator* must have coverage under a SPDES permit prior to *commencing construction activity*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

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

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

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Part 1. PERMIT COVERAGE AND LIMITATIONS

A. Permit Application

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

1. *Construction activities* involving soil disturbances of one (1) or more acres; including disturbances of less than one acre that are part of a *larger common plan of development or sale* that will ultimately disturb one or more acres of land; excluding *routine maintenance activity* that is performed to maintain the original line and grade, hydraulic capacity or original purpose of a facility;
2. *Construction activities* involving soil disturbances of less than one (1) acre where the Department has determined that a *SPDES* permit is required for stormwater *discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of *pollutants* to *surface waters of the State*.
3. *Construction activities* located in the watershed(s) identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

B. Effluent Limitations Applicable to Discharges from Construction Activities

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

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement and maintain control measures to *minimize* the *discharge of pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part I.B.1.(a) – (f) of this permit and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in the *Stormwater Pollution Prevention Plan* (“SWPPP”) the reason(s) for the

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

- a. **Erosion and Sediment Controls.** Design, install and maintain effective erosion and sediment controls to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such controls must be designed, installed and maintained to:
- (i) *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharges*;
 - (ii) Control stormwater *discharges*, including both peak flowrates and total stormwater volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points;
 - (iii) *Minimize* the amount of soil exposed during *construction activity*;
 - (iv) *Minimize* the disturbance of *steep slopes*;
 - (v) *Minimize* sediment *discharges* from the site;
 - (vi) Provide and maintain *natural buffers* around surface waters, direct stormwater to vegetated areas and maximize stormwater infiltration to reduce *pollutant discharges*, unless *infeasible*;
 - (vii) *Minimize* soil compaction. Minimizing soil compaction is not required where the intended function of a specific area of the site dictates that it be compacted;
 - (viii) Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and
 - (ix) *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of pollutants that could be discharged from the site.
- b. **Soil Stabilization.** In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within fourteen (14) days from the date the current soil disturbance activity ceased. For construction sites that *directly discharge* to one of the 303(d) segments

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

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

- d. **Pollution Prevention Measures.** Design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge* of *pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be designed, installed, implemented and maintained to:
 - (i) *Minimize* the *discharge* of *pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. This applies to washing operations that use clean water only. Soaps, detergents and solvents cannot be used;

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

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

- e. **Prohibited Discharges.** The following *discharges* are prohibited:
 - (i) Wastewater from washout of concrete;

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

- (iii) Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance;
 - (iv) Soaps or solvents used in vehicle and equipment washing; and
 - (v) Toxic or hazardous substances from a spill or other release.
- f. Surface Outlets. When discharging from basins and impoundments, the outlets shall be designed, constructed and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-construction Stormwater Management Practice Requirements

1. The *owner or operator of a construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must select, design, install, and maintain the practices to meet the *performance criteria* in the New York State Stormwater Management Design Manual (“Design Manual”), dated January 2015, using sound engineering judgment. Where post-construction stormwater management practices (“SMPs”) are not designed in conformance with the *performance criteria* in the Design Manual, the *owner or operator* must include in the SWPPP the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.
2. The *owner or operator of a construction activity* that requires post-construction stormwater management practices pursuant to Part III.C. of this permit must design the practices to meet the applicable *sizing criteria* in Part I.C.2.a., b., c. or d. of this permit.

a. Sizing Criteria for New Development

- (i) Runoff Reduction Volume (“RRv”): Reduce the total Water Quality Volume (“WQv”) by application of RR techniques and standard SMPs with RRv capacity. The total WQv shall be calculated in accordance with the criteria in Section 4.2 of the Design Manual.
- (ii) Minimum RRv and Treatment of Remaining Total WQv: Construction activities that cannot meet the criteria in Part I.C.2.a.(i) of this permit due to site limitations shall direct runoff from all newly constructed impervious areas to a RR technique or standard SMP with RRv capacity unless infeasible. The specific site limitations that prevent the reduction of 100% of the WQv shall be documented in the SWPPP.

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

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

The remaining portion of the total WQv that cannot be reduced shall be treated by application of standard SMPs.

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

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

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

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

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

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

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

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

- (iii) Channel Protection Volume (Cpv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event; remaining after runoff reduction. The Cpv requirement does not apply when:
 - (1) Reduction of the entire Cpv is achieved by application of runoff reduction techniques or infiltration systems, or
 - (2) The site *discharges* directly to tidal waters, or fifth order or larger streams.
- (iv) *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
 - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
 - (2) A downstream analysis reveals that *overbank* control is not required.
- (v) Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
 - (1) the site *discharges* directly to tidal waters or fifth order or larger streams, or
 - (2) A downstream analysis reveals that *overbank* control is not required.

c. Sizing Criteria for Redevelopment Activity

- (i) Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* shall be addressed by one of the following options. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C of this permit) shall calculate the WQv in accordance with Section 10.3 of the Design Manual. All other *redevelopment activities* shall calculate the WQv in accordance with Section 4.2 of the Design Manual.
- (1) Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the Design Manual must be applied to all newly created pervious areas, or
 - (2) Capture and treat a minimum of 25% of the WQv from the disturbed, *impervious area* by the application of standard SMPs; or reduce 25% of the WQv from the disturbed, *impervious area* by the application of RR techniques or standard SMPs with RRv capacity., or
 - (3) Capture and treat a minimum of 75% of the WQv from the disturbed, *impervious area* as well as any additional runoff from tributary areas by application of the alternative practices discussed in Sections 9.3 and 9.4 of the Design Manual., or
 - (4) Application of a combination of 1, 2 and 3 above that provide a weighted average of at least two of the above methods. Application of this method shall be in accordance with the criteria in Section 9.2.1(B) (IV) of the Design Manual.

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

- (ii) Channel Protection Volume (Cpv): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.
- (iii) *Overbank* Flood Control Criteria (Qp): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site.
- (iv) Extreme Flood Control Criteria (Qf): Not required if there are no changes to hydrology that increase the *discharge* rate from the project site

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

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

D. Maintaining Water Quality

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

1. There shall be no increase in turbidity that will cause a substantial visible contrast to natural conditions;
2. There shall be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and
3. There shall be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

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

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

E. Eligibility Under This General Permit

1. This permit may authorize all *discharges* of stormwater from *construction activity to surface waters of the State* and *groundwaters* except for ineligible *discharges* identified under subparagraph F. of this Part.
2. Except for non-stormwater *discharges* explicitly listed in the next paragraph, this permit only authorizes stormwater *discharges*; including stormwater runoff, snowmelt runoff, and surface runoff and drainage, from *construction activities*.
3. Notwithstanding paragraphs E.1 and E.2 above, the following non-stormwater discharges are authorized by this permit: those listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: “Discharges from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned”; waters to which other components have not been added that are used to control dust in accordance with the SWPPP; and uncontaminated *discharges* from *construction site* de-watering operations. All non-stormwater discharges must be identified in the SWPPP. Under all circumstances, the *owner or operator* must still comply with *water quality standards* in Part I.D of this permit.
4. The *owner or operator* must maintain permit eligibility to *discharge* under this permit. Any *discharges* that are not compliant with the eligibility conditions of this permit are not authorized by the permit and the *owner or operator* must either apply for a separate permit to cover those ineligible *discharges* or take steps necessary to make the *discharge* eligible for coverage.

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

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

1. *Discharges after construction activities* have been completed and the site has undergone *final stabilization*;
2. *Discharges* that are mixed with sources of non-stormwater other than those expressly authorized under subsection E.3. of this Part and identified in the SWPPP required by this permit;
3. *Discharges* that are required to obtain an individual SPDES permit or another SPDES general permit pursuant to Part VII.K. of this permit;
4. *Construction activities or discharges from construction activities* that may adversely affect an *endangered or threatened species* unless the *owner or*

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

5. *Discharges* which either cause or contribute to a violation of *water quality standards* adopted pursuant to the *ECL* and its accompanying regulations;
6. *Construction activities* for residential, commercial and institutional projects:
 - a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and
 - b. Which are undertaken on land with no existing *impervious cover*; and
 - c. Which disturb one (1) or more acres of land designated on the current United States Department of Agriculture (“USDA”) Soil Survey as Soil Slope Phase “D”, (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase “E” or “F” (regardless of the map unit name), or a combination of the three designations.
7. *Construction activities* for linear transportation projects and linear utility projects:
 - a. Where the *discharges* from the *construction activities* are tributary to waters of the state classified as AA or AA-s; and
 - b. Which are undertaken on land with no existing *impervious cover*; and
 - c. Which disturb two (2) or more acres of land designated on the current USDA Soil Survey as Soil Slope Phase “D” (provided the map unit name is inclusive of slopes greater than 25%), or Soil Slope Phase “E” or “F” (regardless of the map unit name), or a combination of the three designations.

8. *Construction activities* that have the potential to affect an *historic property*, unless there is documentation that such impacts have been resolved. The following documentation necessary to demonstrate eligibility with this requirement shall be maintained on site in accordance with Part II.D.2 of this permit and made available to the Department in accordance with Part VII.F of this permit:
- a. Documentation that the *construction activity* is not within an archeologically sensitive area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building on the *construction site* within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the *construction site* within those parameters that NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant.
 - 1-5 acres of disturbance - 20 feet
 - 5-20 acres of disturbance - 50 feet
 - 20+ acres of disturbance - 100 feet, or
 - b. DEC consultation form sent to OPRHP, and copied to the NYS DEC Agency Historic Preservation Officer (APO), and
 - (i) the State Environmental Quality Review (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
 - (ii) documentation from OPRHP that the *construction activity* will result in No Impact; or
 - (iii) documentation from OPRHP providing a determination of No Adverse Impact; or
 - (iv) a Letter of Resolution signed by the owner/operator, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA); or
 - c. Documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:

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

d. Documentation that:

- (i) SHPA Section 14.09 has been completed by NYS DEC or another state agency.
9. *Discharges from construction activities* that are subject to an existing SPDES individual or general permit where a SPDES permit for *construction activity* has been terminated or denied; or where the *owner or operator* has failed to renew an expired individual permit.

Part II. PERMIT COVERAGE

A. How to Obtain Coverage

1. An *owner or operator* of a *construction activity* that is not subject to the requirements of a regulated, traditional land use control MS4 must first prepare a SWPPP in accordance with all applicable requirements of this permit and then submit a completed Notice of Intent (NOI) to the Department to be authorized to discharge under this permit.
2. An *owner or operator* of a *construction activity* that is subject to the requirements of a *regulated, traditional land use control MS4* must first prepare a SWPPP in accordance with all applicable requirements of this permit and then have the SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department. The *owner or operator* shall have the “MS4 SWPPP Acceptance” form signed in accordance with Part VII.H., and then submit that form along with a completed NOI to the Department.
3. The requirement for an *owner or operator* to have its SWPPP reviewed and accepted by the *regulated, traditional land use control MS4* prior to submitting the NOI to the Department does not apply to an *owner or operator* that is obtaining permit coverage in accordance with the requirements in Part II.F. (Change of Owner or Operator) or where the *owner or operator* of the *construction activity* is the *regulated, traditional land use control MS4* . This exemption does not apply to *construction activities* subject to the New York City Administrative Code.

B. Notice of Intent (NOI) Submittal

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

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

2. Beginning December 21, 2020 and in accordance with EPA's 2015 NPDES Electronic Reporting Rule (40 CFR Part 127), the *owner or operator* must submit the NOI electronically using the *Department's* online NOI.
3. The *owner or operator* shall have the SWPPP preparer sign the "SWPPP Preparer Certification" statement on the NOI prior to submitting the form to the Department.
4. As of the date the NOI is submitted to the Department, the *owner or operator* shall make the NOI and SWPPP available for review and copying in accordance with the requirements in Part VII.F. of this permit.

C. Permit Authorization

1. An *owner or operator* shall not *commence construction activity* until their authorization to *discharge* under this permit goes into effect.
2. Authorization to *discharge* under this permit will be effective when the *owner or operator* has satisfied all of the following criteria:
 - a. project review pursuant to the State Environmental Quality Review Act ("SEQRA") have been satisfied, when SEQRA is applicable. See the Department's website (<http://www.dec.ny.gov/>) for more information,
 - b. where required, all necessary Department permits subject to the *Uniform Procedures Act ("UPA")* (see 6 NYCRR Part 621), or the equivalent from another New York State agency, have been obtained, unless otherwise notified by the Department pursuant to 6 NYCRR 621.3(a)(4). *Owners or operators of construction activities* that are required to obtain *UPA* permits

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

- c. the final SWPPP has been prepared, and
 - d. a complete NOI has been submitted to the Department in accordance with the requirements of this permit.
3. An *owner or operator* that has satisfied the requirements of Part II.C.2 above will be authorized to *discharge* stormwater from their *construction activity* in accordance with the following schedule:
- a. For *construction activities* that are not subject to the requirements of a *regulated, traditional land use control MS4*:
 - (i) Five (5) business days from the date the Department receives a complete electronic version of the NOI (eNOI) for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.; or
 - (ii) Sixty (60) business days from the date the Department receives a complete NOI (electronic or paper version) for *construction activities* with a SWPPP that has not been prepared in conformance with the design criteria in technical standard referenced in Part III.B.1. or, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C., the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, or;
 - (iii) Ten (10) business days from the date the Department receives a complete paper version of the NOI for *construction activities* with a SWPPP that has been prepared in conformance with the design criteria in the technical standard referenced in Part III.B.1 and the *performance criteria* in the technical standard referenced in Parts III.B., 2 or 3, for *construction activities* that require post-construction stormwater management practices pursuant to Part III.C.

- b. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*:
 - (i) Five (5) business days from the date the Department receives both a complete electronic version of the NOI (eNOI) and signed “MS4 SWPPP Acceptance” form, or
 - (ii) Ten (10) business days from the date the Department receives both a complete paper version of the NOI and signed “MS4 SWPPP Acceptance” form.
4. Coverage under this permit authorizes stormwater *discharges* from only those areas of disturbance that are identified in the NOI. If an *owner or operator* wishes to have stormwater *discharges* from future or additional areas of disturbance authorized, they must submit a new NOI that addresses that phase of the development, unless otherwise notified by the Department. The *owner or operator* shall not *commence construction activity* on the future or additional areas until their authorization to *discharge* under this permit goes into effect in accordance with Part II.C. of this permit.

D. General Requirements For Owners or Operators With Permit Coverage

1. The *owner or operator* shall ensure that the provisions of the SWPPP are implemented from the *commencement of construction activity* until all areas of disturbance have achieved *final stabilization* and the Notice of Termination (“NOT”) has been submitted to the Department in accordance with Part V. of this permit. This includes any changes made to the SWPPP pursuant to Part III.A.4. of this permit.
2. The *owner or operator* shall maintain a copy of the General Permit (GP-0-20-001), NOI, *NOI Acknowledgment Letter*, SWPPP, MS4 SWPPP Acceptance form, inspection reports, responsible contractor’s or subcontractor’s certification statement (see Part III.A.6.), and all documentation necessary to demonstrate eligibility with this permit at the *construction site* until all disturbed areas have achieved *final stabilization* and the NOT has been submitted to the Department. The documents must be maintained in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection.
3. The *owner or operator of a construction activity* shall not disturb greater than five (5) acres of soil at any one time without prior written authorization from the Department or, in areas under the jurisdiction of a *regulated, traditional land*

- use control MS4, the regulated, traditional land use control MS4 (provided the regulated, traditional land use control MS4 is not the owner or operator of the construction activity). At a minimum, the owner or operator must comply with the following requirements in order to be authorized to disturb greater than five (5) acres of soil at any one time:*
- a. The *owner or operator* shall have a *qualified inspector* conduct **at least two** (2) site inspections in accordance with Part IV.C. of this permit every seven (7) calendar days, for as long as greater than five (5) acres of soil remain disturbed. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
 - b. In areas where soil disturbance activity has temporarily or permanently ceased, the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven (7) days from the date the current soil disturbance activity ceased. The soil stabilization measures selected shall be in conformance with the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016.
 - c. The *owner or operator* shall prepare a phasing plan that defines maximum disturbed area per phase and shows required cuts and fills.
 - d. The *owner or operator* shall install any additional site-specific practices needed to protect water quality.
 - e. The *owner or operator* shall include the requirements above in their SWPPP.
4. In accordance with statute, regulations, and the terms and conditions of this permit, the Department may suspend or revoke an *owner's or operator's* coverage under this permit at any time if the Department determines that the SWPPP does not meet the permit requirements or consistent with Part VII.K..
 5. Upon a finding of significant non-compliance with the practices described in the SWPPP or violation of this permit, the Department may order an immediate stop to all activity at the site until the non-compliance is remedied. The stop work order shall be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.
 6. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4*, the *owner or operator* shall notify the

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

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

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

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

F. Change of Owner or Operator

1. When property ownership changes or when there is a change in operational control over the construction plans and specifications, the original *owner or operator* must notify the new *owner or operator*, in writing, of the requirement to obtain permit coverage by submitting a NOI with the Department. For *construction activities* subject to the requirements of a *regulated, traditional land use control MS4*, the original *owner or operator* must also notify the MS4, in writing, of the change in ownership at least 30 calendar days prior to the change in ownership.
2. Once the new *owner or operator* obtains permit coverage, the original *owner or operator* shall then submit a completed NOT with the name and permit identification number of the new *owner or operator* to the Department at the address in Part II.B.1. of this permit. If the original *owner or operator* maintains ownership of a portion of the *construction activity* and will disturb soil, they must maintain their coverage under the permit.
3. Permit coverage for the new *owner or operator* will be effective as of the date the Department receives a complete NOI, provided the original *owner or*

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

Part III. STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

A. General SWPPP Requirements

1. A SWPPP shall be prepared and implemented by the *owner or operator* of each *construction activity* covered by this permit. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and practices that will be used to meet the effluent limitations in Part I.B. of this permit and where applicable, the post-construction stormwater management practice requirements in Part I.C. of this permit. The SWPPP shall be prepared prior to the submittal of the NOI. The NOI shall be submitted to the Department prior to the *commencement of construction activity*. A copy of the completed, final NOI shall be included in the SWPPP.
2. The SWPPP shall describe the erosion and sediment control practices and where required, post-construction stormwater management practices that will be used and/or constructed to reduce the *pollutants* in stormwater *discharges* and to assure compliance with the terms and conditions of this permit. In addition, the SWPPP shall identify potential sources of pollution which may reasonably be expected to affect the quality of stormwater *discharges*.
3. All SWPPPs that require the post-construction stormwater management practice component shall be prepared by a *qualified professional* that is knowledgeable in the principles and practices of stormwater management and treatment.
4. The *owner or operator* must keep the SWPPP current so that it at all times accurately documents the erosion and sediment controls practices that are being used or will be used during construction, and all post-construction stormwater management practices that will be constructed on the site. At a minimum, the *owner or operator* shall amend the SWPPP, including construction drawings:
 - a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;

- b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;
 - c. to address issues or deficiencies identified during an inspection by the *qualified inspector*, the Department or other regulatory authority; and
 - d. to document the final construction conditions.
5. The Department may notify the *owner or operator* at any time that the SWPPP does not meet one or more of the minimum requirements of this permit. The notification shall be in writing and identify the provisions of the SWPPP that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by the Department, the *owner or operator* shall make the required changes to the SWPPP and submit written notification to the Department that the changes have been made. If the *owner or operator* does not respond to the Department's comments in the specified time frame, the Department may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4. of this permit.
6. Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and subcontractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor*. The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.

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

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

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

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

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

B. Required SWPPP Contents

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

- b. A site map/construction drawing(s) for the project, including a general location map. At a minimum, the site map shall show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours ; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the stormwater *discharge(s)*;
- c. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG);
- d. A construction phasing plan and sequence of operations describing the intended order of *construction activities*, including clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity at the site that results in soil disturbance;
- e. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented;
- f. A temporary and permanent soil stabilization plan that meets the requirements of this general permit and the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016, for each stage of the project, including initial land clearing and grubbing to project completion and achievement of *final stabilization*;
- g. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice;
- h. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any temporary sediment basins and structural practices that will be used to divert flows from exposed soils;
- i. A maintenance inspection schedule for the contractor(s) identified in Part III.A.6. of this permit, to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection

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

- j. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the stormwater *discharges*;
 - k. A description and location of any stormwater *discharges* associated with industrial activity other than construction at the site, including, but not limited to, stormwater *discharges* from asphalt plants and concrete plants located on the *construction site*; and
 - l. Identification of any elements of the design that are not in conformance with the design criteria in the technical standard, New York State Standards and Specifications for Erosion and Sediment Control, dated November 2016. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.
2. Post-construction stormwater management practice component – The *owner or operator* of any construction project identified in Table 2 of Appendix B as needing post-construction stormwater management practices shall prepare a SWPPP that includes practices designed in conformance with the applicable *sizing criteria* in Part I.C.2.a., c. or d. of this permit and the *performance criteria* in the technical standard, New York State Stormwater Management Design Manual dated January 2015

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

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

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

- b. A site map/construction drawing(s) showing the specific location and size of each post-construction stormwater management practice;
- c. A Stormwater Modeling and Analysis Report that includes:
 - (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points;
 - (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and post-construction stormwater management practices;
 - (iii) Results of stormwater modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre and post-development runoff rates and volumes for the different storm events;
 - (iv) Summary table, with supporting calculations, which demonstrates that each post-construction stormwater management practice has been designed in conformance with the *sizing criteria* included in the Design Manual;
 - (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part I.C. of this permit; and
 - (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the Design Manual. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the Design Manual;
- d. Soil testing results and locations (test pits, borings);
- e. Infiltration test results, when required; and
- f. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each post-construction stormwater management practice. The plan shall identify the entity that will be responsible for the long term operation and maintenance of each practice.

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

C. Required SWPPP Components by Project Type

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

Part IV. INSPECTION AND MAINTENANCE REQUIREMENTS

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures) and all post-construction stormwater management practices identified in the SWPPP are inspected and maintained in accordance with Part IV.B. and C. of this permit.
2. The terms of this permit shall not be construed to prohibit the State of New York from exercising any authority pursuant to the ECL, common law or federal law, or prohibit New York State from taking any measures, whether civil or criminal, to prevent violations of the laws of the State of New York or protect the public health and safety and/or the environment.

B. Contractor Maintenance Inspection Requirements

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

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

2. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections. The *trained contractor* shall begin conducting the maintenance inspections in accordance with Part IV.B.1. of this permit as soon as soil disturbance activities resume.
3. For construction sites where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational.

C. Qualified Inspector Inspection Requirements

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

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

- licensed Professional Engineer,
 - Certified Professional in Erosion and Sediment Control (CPESC),
 - New York State Erosion and Sediment Control Certificate Program holder
 - Registered Landscape Architect, or
 - someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity].
1. A *qualified inspector* shall conduct site inspections for all *construction activities* identified in Tables 1 and 2 of Appendix B, with the exception of:
 - a. the construction of a single family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located

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

- b. the construction of a single family home that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix E;
 - c. construction on agricultural property that involves a soil disturbance of one (1) or more acres of land but less than five (5) acres; and
 - d. *construction activities* located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.
2. Unless otherwise notified by the Department, the *qualified inspector* shall conduct site inspections in accordance with the following timetable:
- a. For construction sites where soil disturbance activities are on-going, the *qualified inspector* shall conduct a site inspection at least once every seven (7) calendar days.
 - b. For construction sites where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part II.D.3 to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
 - c. For construction sites where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* shall conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to reducing the frequency of inspections.

- d. For construction sites where soil disturbance activities have been shut down with partial project completion, the *qualified inspector* can stop conducting inspections if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational. The *owner or operator* shall notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix F) or, in areas under the jurisdiction of a *regulated, traditional land use control MS4*, the *regulated, traditional land use control MS4* (provided the *regulated, traditional land use control MS4* is not the *owner or operator* of the *construction activity*) in writing prior to the shutdown. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* shall have the *qualified inspector* perform a final inspection and certify that all disturbed areas have achieved *final stabilization*, and all temporary, structural erosion and sediment control measures have been removed; and that all post-construction stormwater management practices have been constructed in conformance with the SWPPP by signing the “*Final Stabilization*” and “*Post-Construction Stormwater Management Practice*” certification statements on the NOT. The *owner or operator* shall then submit the completed NOT form to the address in Part II.B.1 of this permit.
 - e. For construction sites that directly *discharge* to one of the 303(d) segments listed in Appendix E or is located in one of the watersheds listed in Appendix C, the *qualified inspector* shall conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections shall be separated by a minimum of two (2) full calendar days.
3. At a minimum, the *qualified inspector* shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved *final stabilization*, all points of *discharge* to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site*, and all points of *discharge* from the *construction site*.
 4. The *qualified inspector* shall prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report shall include and/or address the following:

- a. Date and time of inspection;
- b. Name and title of person(s) performing inspection;
- c. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;
- d. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This shall include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;
- e. A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This shall include identification of any *discharges* of sediment to the surface waterbody;
- f. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;
- g. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
- h. Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;
- i. Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP and technical standards;
- j. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);
- k. Identification and status of all corrective actions that were required by previous inspection; and

- I. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.
5. Within one business day of the completion of an inspection, the *qualified inspector* shall notify the *owner or operator* and appropriate contractor or subcontractor identified in Part III.A.6. of this permit of any corrective actions that need to be taken. The contractor or subcontractor shall begin implementing the corrective actions within one business day of this notification and shall complete the corrective actions in a reasonable time frame.
6. All inspection reports shall be signed by the *qualified inspector*. Pursuant to Part II.D.2. of this permit, the inspection reports shall be maintained on site with the SWPPP.

Part V. TERMINATION OF PERMIT COVERAGE

A. Termination of Permit Coverage

1. An *owner or operator* that is eligible to terminate coverage under this permit must submit a completed NOT form to the address in Part II.B.1 of this permit. The NOT form shall be one which is associated with this permit, signed in accordance with Part VII.H of this permit.
2. An *owner or operator* may terminate coverage when one or more the following conditions have been met:
 - a. Total project completion - All *construction activity* identified in the SWPPP has been completed; and all areas of disturbance have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices have been constructed in conformance with the SWPPP and are operational;

- b. Planned shutdown with partial project completion - All soil disturbance activities have ceased; and all areas disturbed as of the project shutdown date have achieved *final stabilization*; and all temporary, structural erosion and sediment control measures have been removed; and all post-construction stormwater management practices required for the completed portion of the project have been constructed in conformance with the SWPPP and are operational;
 - c. A new *owner or operator* has obtained coverage under this permit in accordance with Part II.F. of this permit.
 - d. The *owner or operator* obtains coverage under an alternative SPDES general permit or an individual SPDES permit.
3. For *construction activities* meeting subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *qualified inspector* perform a final site inspection prior to submitting the NOT. The *qualified inspector* shall, by signing the “*Final Stabilization*” and “Post-Construction Stormwater Management Practice certification statements on the NOT, certify that all the requirements in Part V.A.2.a. or b. of this permit have been achieved.
4. For *construction activities* that are subject to the requirements of a *regulated, traditional land use control MS4* and meet subdivision 2a. or 2b. of this Part, the *owner or operator* shall have the *regulated, traditional land use control MS4* sign the “MS4 Acceptance” statement on the NOT in accordance with the requirements in Part VII.H. of this permit. The *regulated, traditional land use control MS4* official, by signing this statement, has determined that it is acceptable for the *owner or operator* to submit the NOT in accordance with the requirements of this Part. The *regulated, traditional land use control MS4* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector’s* final site inspection certification(s) required in Part V.A.3. of this permit.
5. For *construction activities* that require post-construction stormwater management practices and meet subdivision 2a. of this Part, the *owner or operator* must, prior to submitting the NOT, ensure one of the following:
 - a. the post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain such practice(s) have been deeded to the municipality in which the practice(s) is located,

- b. an executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s),
- c. for post-construction stormwater management practices that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record,
- d. for post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility; the *owner or operator* has policy and procedures in place that ensures operation and maintenance of the practices in accordance with the operation and maintenance plan.

Part VI. REPORTING AND RETENTION RECORDS

A. Record Retention

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

B. Addresses

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

Part VII. STANDARD PERMIT CONDITIONS

A. Duty to Comply

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

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

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

B. Continuation of the Expired General Permit

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

C. Enforcement

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

D. Need to Halt or Reduce Activity Not a Defense

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

E. Duty to Mitigate

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

F. Duty to Provide Information

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

G. Other Information

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

H. Signatory Requirements

1. All NOIs and NOTs shall be signed as follows:
 - a. For a corporation these forms shall be signed by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

- (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or
 - (ii) the manager of one or more manufacturing, production or operating facilities, provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
 - b. For a partnership or sole proprietorship these forms shall be signed by a general partner or the proprietor, respectively; or
 - c. For a municipality, State, Federal, or other public agency these forms shall be signed by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
 - (i) the chief executive officer of the agency, or
 - (ii) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).
2. The SWPPP and other information requested by the Department shall be signed by a person described in Part VII.H.1. of this permit or by a duly authorized representative of that person. A person is a duly authorized representative only if:
- a. The authorization is made in writing by a person described in Part VII.H.1. of this permit;
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a well or a well field,

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

- c. The written authorization shall include the name, title and signature of the authorized representative and be attached to the SWPPP.
3. All inspection reports shall be signed by the *qualified inspector* that performs the inspection.
4. The MS4 SWPPP Acceptance form shall be signed by the principal executive officer or ranking elected official from the *regulated, traditional land use control MS4*, or by a duly authorized representative of that person.

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

I. Property Rights

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

J. Severability

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

K. Requirement to Obtain Coverage Under an Alternative Permit

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

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

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

L. Proper Operation and Maintenance

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

M. Inspection and Entry

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

1. Enter upon the owner's or operator's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;
2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment), practices or operations regulated or required by this permit.
4. Sample or monitor at reasonable times, for purposes of assuring permit compliance or as otherwise authorized by the Act or ECL, any substances or parameters at any location.

N. Permit Actions

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

O. Definitions

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

P. Re-Opener Clause

1. If there is evidence indicating potential or realized impacts on water quality due to any stormwater discharge associated with construction activity covered by this permit, the owner or operator of such discharge may be required to obtain an individual permit or alternative general permit in accordance with Part VII.K. of this permit or the permit may be modified to include different limitations and/or requirements.
2. Any Department initiated permit modification, suspension or revocation will be conducted in accordance with 6 NYCRR Part 621, 6 NYCRR 750-1.18, and 6 NYCRR 750-1.20.

Q. Penalties for Falsification of Forms and Reports

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

R. Other Permits

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

APPENDIX A – Acronyms and Definitions

Acronyms

APO – Agency Preservation Officer

BMP – Best Management Practice

CPESC – Certified Professional in Erosion and Sediment Control

Cpv – Channel Protection Volume

CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)

DOW – Division of Water

EAF – Environmental Assessment Form

ECL - Environmental Conservation Law

EPA – U. S. Environmental Protection Agency

HSG – Hydrologic Soil Group

MS4 – Municipal Separate Storm Sewer System

NOI – Notice of Intent

NOT – Notice of Termination

NPDES – National Pollutant Discharge Elimination System

OPRHP – Office of Parks, Recreation and Historic Places

Qf – Extreme Flood

Qp – Overbank Flood

RRv – Runoff Reduction Volume

RWE – Regional Water Engineer

SEQR – State Environmental Quality Review

SEQRA - State Environmental Quality Review Act

SHPA – State Historic Preservation Act

SPDES – State Pollutant Discharge Elimination System

SWPPP – Stormwater Pollution Prevention Plan

TMDL – Total Maximum Daily Load

UPA – Uniform Procedures Act

USDA – United States Department of Agriculture

WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

New Development – means any land disturbance that does not meet the definition of Redevelopment Activity included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

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

Nonpoint Source - means any source of water pollution or pollutants which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

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

Owner or Operator - means the person, persons or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit conditions.

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

Point Source - means any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be discharged.

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

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

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

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

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

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

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

Regulated, Traditional Land Use Control MS4 - means a city, town or village with land use control authority that is authorized to discharge under New York State DEC's

SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

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

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

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

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

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

Steep Slope – means land area designated on the current United States Department of Agriculture (“USDA”) Soil Survey as Soil Slope Phase “D”, (provided the map unit name is inclusive of slopes greater than 25%) , or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Streambank – as used in this permit, means the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – means a project specific report, including construction drawings, that among other things: describes the construction activity(ies), identifies the potential sources of pollution at the *construction site*; describes and shows the stormwater controls that will be used to control the pollutants (i.e. erosion and sediment controls; for many projects, includes post-construction stormwater management controls); and identifies procedures the *owner or operator* will implement to comply with the terms and conditions of the permit. See Part III of the permit for a complete description of the information that must be included in the SWPPP.

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

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

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

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

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

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

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

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

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

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

APPENDIX B – Required SWPPP Components by Project Type

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

<p>The following construction activities that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:</p> <ul style="list-style-type: none">• Single family home <u>not</u> located in one of the watersheds listed in Appendix C or <u>not directly discharging</u> to one of the 303(d) segments listed in Appendix E• Single family residential subdivisions with 25% or less impervious cover at total site build-out and <u>not</u> located in one of the watersheds listed in Appendix C and <u>not</u> directly discharging to one of the 303(d) segments listed in Appendix E• Construction of a barn or other <i>agricultural building</i>, silo, stock yard or pen.
<p>The following construction activities that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:</p> <p>All construction activities located in the watersheds identified in Appendix D that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.</p>
<p>The following construction activities that involve soil disturbances of one (1) or more acres of land:</p> <ul style="list-style-type: none">• Installation of underground, linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains• Environmental enhancement projects, such as wetland mitigation projects, stormwater retrofits and stream restoration projects• Pond construction• Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an impervious cover• Cross-country ski trails and walking/hiking trails• Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that are not part of residential, commercial or institutional development;• Sidewalk, bike path or walking path projects, surfaced with an impervious cover, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path or walking path.• Slope stabilization projects• Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics

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

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

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

Table 2
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP THAT INCLUDES
POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES

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

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

Table 2 (Continued)

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

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

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

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

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

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

Figure 1 - New York City Watershed East of the Hudson

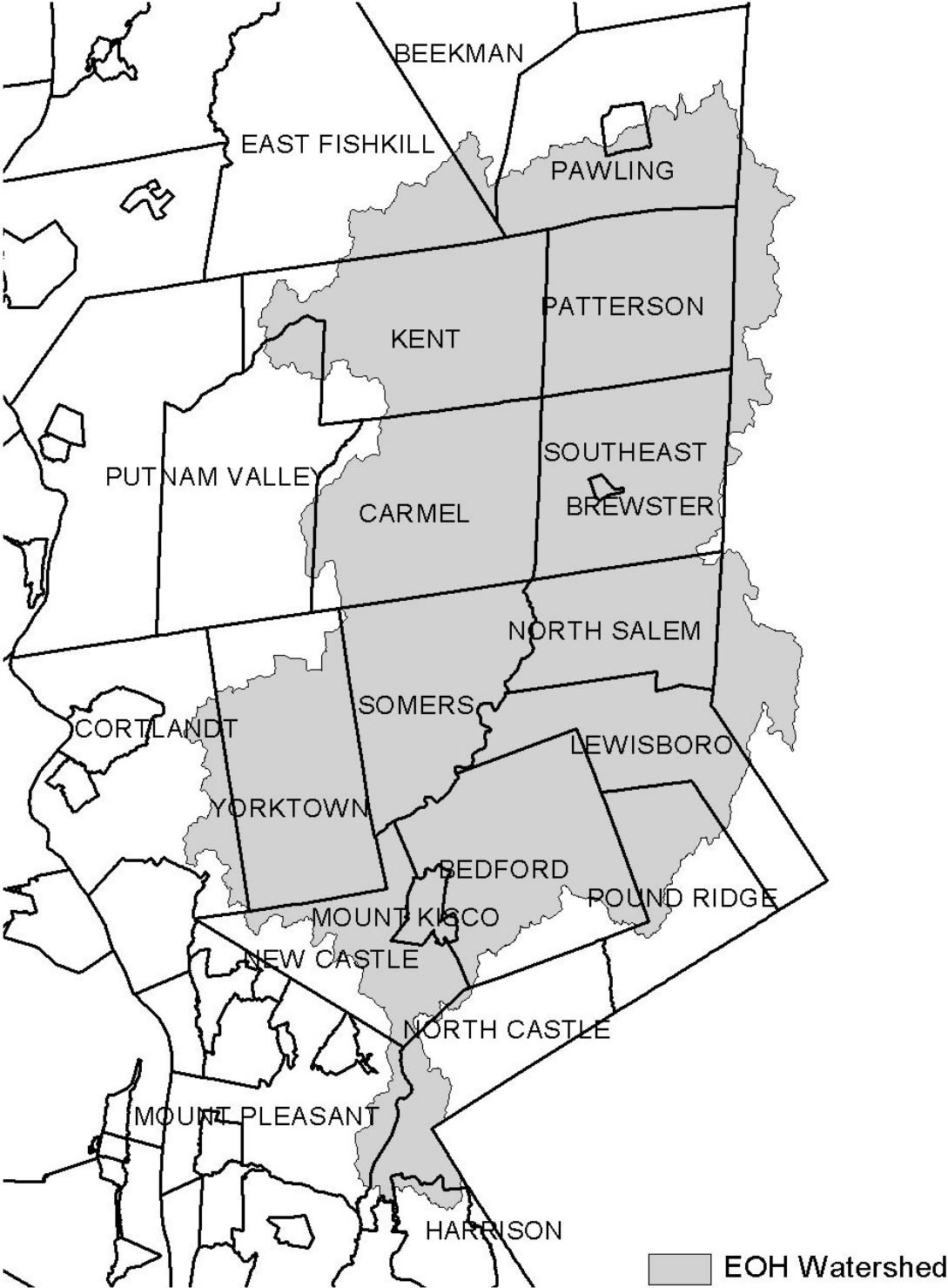


Figure 2 - Onondaga Lake Watershed



Figure 3 - Greenwood Lake Watershed



Figure 4 - Oscawana Lake Watershed

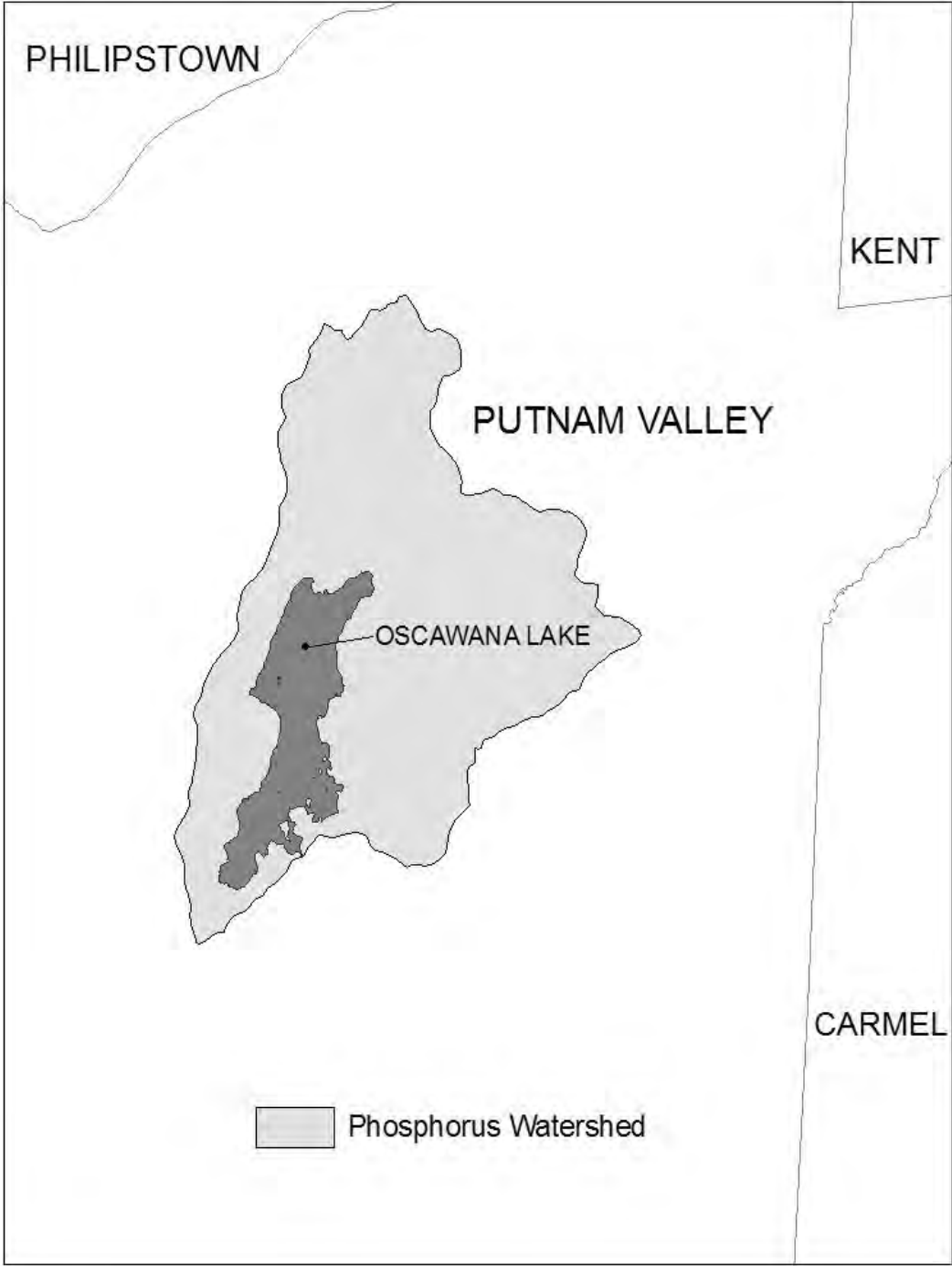
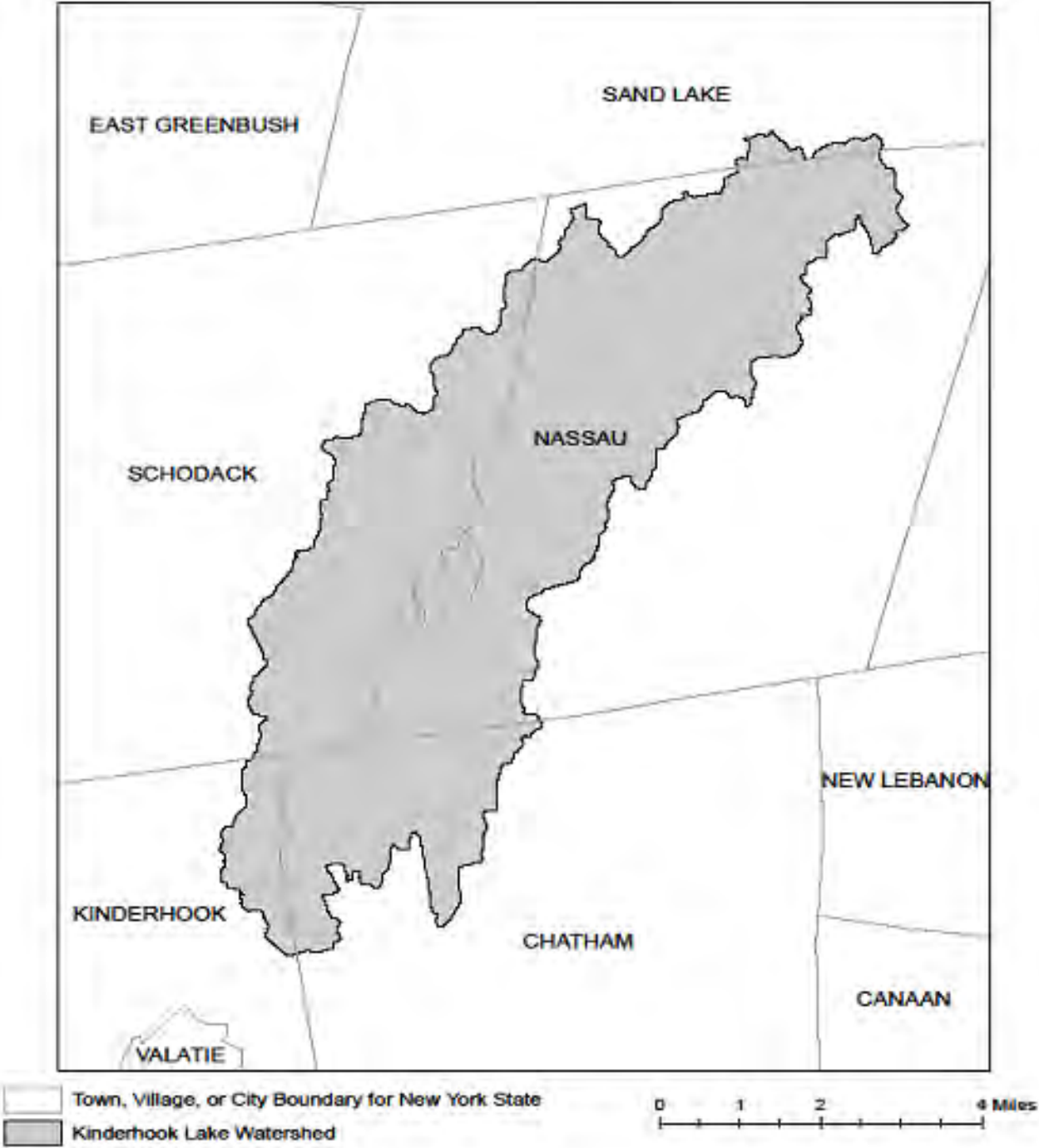


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Watersheds with Lower Disturbance Threshold

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

APPENDIX F – List of NYS DEC Regional Offices

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

SECTION 5

Certifications, Forms, Reports, and Daily Logs

STORMWATER POLLUTION PREVENTION PLAN
NOI PERMITTEE'S CERTIFICATION

FORM 1

Construction Site
Vineyard 1 & Vineyard 2 Solar Project
TOWN OF CROWN POINT, Essex County, New York

STORMWATER POLLUTION PREVENTION PLAN DATED February, 2024

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
Vineyard 1 & Vineyard 2 Solar Project
TOWN OF CROWN POINT, ESSEX County, New York**

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
Vineyard 1 & Vineyard 2
TOWN OF CROWN POINT, ESSEX County, New York
CONSTRUCTION POLLUTION PREVENTION PROGRAM
DATED February, 2024**

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:

SUBCONTRACTOR:

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
Sol Source Power – Vineyard 1 & Vineyard 2
SWPPP # _____

This form to be completed by Contractor's designated inspector at least weekly. Reproduce as needed.

SWPPP INSPECTION REPORTS

Page 1 of _____

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.

FORM 4
Sol Source Power – Vineyard 1 & Vineyard 2
SWPPP # _____

This form to be completed by Contractor's designated inspector at least weekly. Reproduce as needed.

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.

FORM 4
Sol Source Power – Vineyard 1 & Vineyard 2
SWPPP # _____

This form to be completed by Contractor's designated inspector at least weekly. Reproduce as needed.

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
Sol Source Power – Vineyard 1 & Vineyard 2
SWPPP # _____

This form to be completed by Contractor’s designated inspector at least weekly. Reproduce as needed.

SWPPP INSPECTION REPORT

Page 4 of _____
 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
Vineyard 1 & Vineyard 2
TOWN OF CROWN POINT, ESSEX County, New York**

CHANGES REQUIRED FOR STORMWATER POLLUTION PREVENTION PLAN

To:	Designated Project Manager	Date:
Address:		
Telephone:		
Facsimile:		
Sent Via:	<input type="checkbox"/> Facsimile	<input type="checkbox"/> E-mail <input type="checkbox"/> 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
Vineyard 1 & Vineyard 2**

TOWN OF CROWN POINT, ESSEX 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: _____

Designated Project Manager _____

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

**Construction Site
Vineyard 1 & Vineyard 2**

TOWN OF CROWN POINT, ESSEX 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
PROJECT RAINFALL LOG (to be completed by Contractor)

FORM 7

Month	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Day												
1												
2												
3												
4												
5												
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31												
PM Initials												

NOI Permittee: Sol Source Power
Vineyard 1 & Vineyard 2

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 after Contractor believes all work regulated by SWPPP is complete.

Construction Site
Vineyard 1 & Vineyard 2
TOWN OF CROWN POINT, ESSEX 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. NYSDEC Green Infrastructure Worksheets

2. FEMA Flood Mapping

3. USFW IPaC Determination

4. Natural Heritage Program Determination

5. NYSDEC Environmental Resource Mapper

6. USDA Web Soils Survey

7. SHPO Response Determination

Is this project subject to Chapter 10 of the NYS Design Manual (i.e. WQv is equal to post-development 1 year runoff volume)?.....

Design Point:		
P=	1.10	inch

Breakdown of Subcatchments						
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft ³)	Description
1	0.02	0.02	100%	0.95	72	Filter Strips
2	2.91	0.15	5%	0.10	1,114	Infiltration Basin (New Road)
3	1.71	0.23	13%	0.17	1,161	Infiltration Basin
4						
5						
6						
7						
8						
9						
10						
Subtotal (1-30)	4.65	0.40	9%	0.13	2,347	Subtotal 1
Total	4.65	0.40	9%	0.13	2,347	Initial WQv

Identify Runoff Reduction Techniques By Area			
Technique	Total Contributing Area	Contributing Impervious Area	Notes
	(Acre)	(Acre)	
Conservation of Natural Areas	0.00	0.00	minimum 10,000 sf
Riparian Buffers	0.00	0.00	maximum contributing length 75 feet to 150 feet
Filter Strips	0.02	0.02	
Tree Planting	0.00	0.00	Up to 100 sf directly connected impervious area may be subtracted per tree
Total	0.02	0.02	

Recalculate WQv after application of Area Reduction Techniques					
	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Runoff Coefficient Rv	WQv (ft ³)
"<<Initial WQv"	4.65	0.40	9%	0.13	2,347
Subtract Area	-0.02	-0.02			
WQv adjusted after Area Reductions	4.63	0.38	8%	0.12	2,275
Disconnection of Rooftops		0.00			
Adjusted WQv after Area Reduction and Rooftop Disconnect	4.63	0.38	8%	0.12	2,275

Runoff Reduction Volume and Treated volumes						
	Runoff Reduction Techniques/Standard SMPs		Total Contributing Area	Total Contributing Impervious Area	WQv Reduced (RRv)	WQv Treated
			(acres)	(acres)	cf	cf
Area/Volume Reduction	Conservation of Natural Areas	RR-1	0.00	0.00		
	Sheetflow to Riparian Buffers/Filter Strips	RR-2	0.02	0.02		
	Tree Planting/Tree Pit	RR-3	0.00	0.00		
	Disconnection of Rooftop Runoff	RR-4		0.00		
	Vegetated Swale	RR-5	0.00	0.00	0	
	Rain Garden	RR-6	0.00	0.00	0	
	Stormwater Planter	RR-7	0.00	0.00	0	
	Rain Barrel/Cistern	RR-8	0.00	0.00	0	
	Porous Pavement	RR-9	0.00	0.00	0	
	Green Roof (Intensive & Extensive)	RR-10	0.00	0.00	0	
Standard SMPs w/RRV Capacity	Infiltration Trench	I-1	0.00	0.00	0	0
	Infiltration Basin	I-2	4.63	0.38	2212	63
	Dry Well	I-3	0.00	0.00	0	0
	Underground Infiltration System	I-4				
	Bioretention & Infiltration Bioretention	F-5	0.00	0.00	0	0
	Dry swale	O-1	0.00	0.00	0	0
Standard SMPs	Micropool Extended Detention (P-1)	P-1				
	Wet Pond (P-2)	P-2				
	Wet Extended Detention (P-3)	P-3				
	Multiple Pond system (P-4)	P-4				
	Pocket Pond (p-5)	P-5				
	Surface Sand filter (F-1)	F-1				
	Underground Sand filter (F-2)	F-2				
	Perimeter Sand Filter (F-3)	F-3				
	Organic Filter (F-4)	F-4				
	Shallow Wetland (W-1)	W-1				
	Extended Detention Wetland (W-2)	W-2				
	Pond/Wetland System (W-3)	W-3				
	Pocket Wetland (W-4)	W-4				
	Wet Swale (O-2)	O-2				
Totals by Area Reduction		→	0.02	0.02	72	
Totals by Volume Reduction		→	0.00	0.00	0	
Totals by Standard SMP w/RRV		→	4.63	0.38	2212	63
Totals by Standard SMP		→	0.00	0.00		0

Totals (Area + Volume + all SMPs) →		4.65	0.40	2,284	63
	Impervious Cover √	okay			
	Total Area √	okay			

Minimum RRv

Enter the Soils Data for the site

Soil Group	Acres	S
A	30.00	55%
B		40%
C	20.00	30%
D		20%
Total Area	50	

Calculate the Minimum RRv

S =	0.45	
Impervious =	0.40	<i>acre</i>
Precipitation	1.1	<i>in</i>
Rv	0.95	
Minimum RRv	674	<i>ft3</i>
	0.02	<i>af</i>

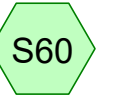
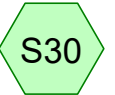
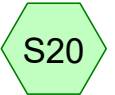
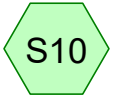
NOI QUESTIONS

#	NOI Question	Reported Value	
		cf	af
28	Total Water Quality Volume (WQv) Required	2347	0.054
30	Total RRV Provided	2284	0.052
31	Is RRV Provided \geq WQv Required?	No	
32	Minimum RRV	674	0.015
32a	Is RRV Provided \geq Minimum RRV Required?	Yes	
33a	Total WQv Treated	63	0.001
34	Sum of Volume Reduced & Treated	2347	0.054
34	Sum of Volume Reduced and Treated	2347	0.054
35	Is Sum RRV Provided and WQv Provided \geq WQv Required?	Yes	

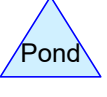
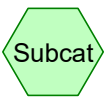
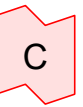
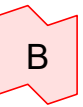
Apply Peak Flow Attenuation			
36	Channel Protection	C_{pv}	
37	Overbank	Q_p	
37	Extreme Flood Control	Q_f	
	Are Quantity Control requirements met?		

Filter Strip

Design Point:							
Enter Site Data For Drainage Area to be Treated by Practice							
Catchment Number	Total Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft ³)	Precipitation (in)	Description
1	0.02	0.02	1.00	0.95	72.07	1.10	Filter Strips
Design Elements							
Is another area based practice applied to this area?			No	Y/N			
Amended Soils & Dense Turf Cover?			Yes	Y/N			
Is area protected from compaction from heavy equipment during construction?			Yes	Y/N			
Small Area of Impervious Area & close to source?			Yes	Y/N			
Composte Amendments?			No	Y/N			
Boundary Spreader?			Yes	Y/N	Gravel Diaphragm at top		
Boundary Zone?			No	Y/N	25 feet of level grass		
Specify how sheet flow will be ensured.					level spreader shall be used for buffer slopes ranging from 3-15%		
Average contributing slope			3	%	3% maximum unless a level spreader is		
Slope of first 10 feet of Filter Strip			2	%	2% maximum		
Overall Slope			3	%	8% maximum		
Contributing Length of Pervious Areas (PC)				ft	150 ft maximum		
Contributing Length of Impervious areas (IC)			20	ft	75 ft maximum		
Maximum PC Contributing Length for combination of PC & IC			130	ft			
Soil Group (HSG)			A				
Filter Strip Width			60	ft	50 ft minimum for slopes 0-8% 75 ft minimum for slopes 8-12% 100 ft minimum for slopes 12-15% HSG C or D increase by 15-20%		
Are All Criteria for Filter Strips in Section 5.3.2 met?			Yes				
Area Reduction Adjustments							
Subtract		0.02	Acres from total Area				
Subtract		0.02	Acres from total Impervious Area				



Existing Culvert



Routing Diagram for 2024-01-11 Pre Development
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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NRCC 24-hr	A	Default	24.00	1	1.98	2
2	10-Year	NRCC 24-hr	A	Default	24.00	1	3.19	2
3	50-Year	NRCC 24-hr	A	Default	24.00	1	4.53	2
4	100-Year	NRCC 24-hr	A	Default	24.00	1	5.28	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.676	49	50-75% Grass cover, Fair, HSG A (S20)
7.417	79	50-75% Grass cover, Fair, HSG C (S20)
16.910	39	>75% Grass cover, Good, HSG A (S10, S30, S50, S60)
4.426	74	>75% Grass cover, Good, HSG C (S10, S30, S40, S50)
0.025	98	Existing foundation, HSG A (S50)
0.092	76	Gravel roads, HSG A (S20)
0.190	89	Gravel roads, HSG C (S20)
7.782	30	Woods, Good, HSG A (S10, S30, S50, S60)
5.127	70	Woods, Good, HSG C (S20, S30, S40, S50)
3.523	32	Woods/grass comb., Good, HSG A (S10)
2.501	72	Woods/grass comb., Good, HSG C (S10, S20)
49.669	52	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
30.008	HSG A	S10, S20, S30, S50, S60
0.000	HSG B	
19.661	HSG C	S10, S20, S30, S40, S50
0.000	HSG D	
0.000	Other	
49.669		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.676	0.000	7.417	0.000	0.000	9.093	50-75% Grass cover, Fair	S20
16.910	0.000	4.426	0.000	0.000	21.336	>75% Grass cover, Good	S10, S30, S40, S50, S60
0.025	0.000	0.000	0.000	0.000	0.025	Existing foundation	S50
0.092	0.000	0.190	0.000	0.000	0.282	Gravel roads	S20
7.782	0.000	5.127	0.000	0.000	12.909	Woods, Good	S10, S20, S30, S40, S50, S60
3.523	0.000	2.501	0.000	0.000	6.024	Woods/grass comb., Good	S10, S20
30.008	0.000	19.661	0.000	0.000	49.669	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	3R	459.30	458.40	46.0	0.0196	0.012	0.0	15.0	0.0	

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Vineyard 1 & 2
NRCC 24-hr A 1-Year Rainfall=1.98"
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Page 7

Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentS10: Runoff Area=16.287 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=1,856' Tc=90.5 min CN=39 Runoff=0.00 cfs 0.000 af

SubcatchmentS20: Runoff Area=12.445 ac 0.00% Impervious Runoff Depth=0.31"
Flow Length=934' Tc=46.3 min CN=73 Runoff=1.80 cfs 0.323 af

SubcatchmentS30: Runoff Area=7.508 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=1,338' Tc=64.6 min CN=55 Runoff=0.01 cfs 0.009 af

SubcatchmentS40: Runoff Area=2.156 ac 0.00% Impervious Runoff Depth=0.28"
Flow Length=387' Tc=28.6 min CN=72 Runoff=0.35 cfs 0.051 af

SubcatchmentS50: Runoff Area=9.228 ac 0.27% Impervious Runoff Depth=0.00"
Flow Length=1,310' Tc=44.6 min CN=41 Runoff=0.00 cfs 0.000 af

SubcatchmentS60: Runoff Area=2.045 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=669' Tc=51.1 min CN=37 Runoff=0.00 cfs 0.000 af

Reach 3R: Existing Culvert Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af
15.0" Round Pipe n=0.012 L=46.0' S=0.0196 '/' Capacity=9.79 cfs Outflow=0.00 cfs 0.000 af

Link A: Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link B: Inflow=1.80 cfs 0.323 af
Primary=1.80 cfs 0.323 af

Link C: Inflow=0.01 cfs 0.009 af
Primary=0.01 cfs 0.009 af

Link D: Inflow=0.35 cfs 0.051 af
Primary=0.35 cfs 0.051 af

Link E: Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link F: Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 49.669 ac Runoff Volume = 0.383 af Average Runoff Depth = 0.09"
99.95% Pervious = 49.644 ac 0.05% Impervious = 0.025 ac

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Vineyard 1 & 2
NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Subcatchment S10:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach 3R : Existing Culvert

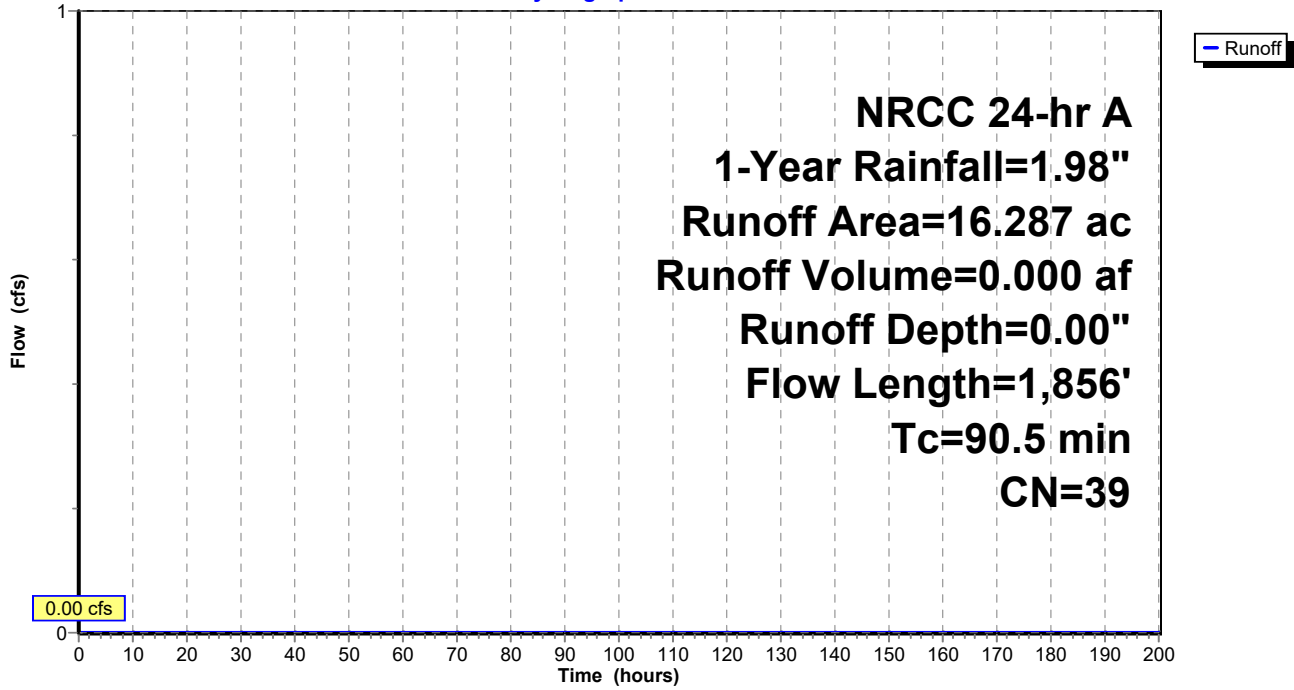
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
2.758	30	Woods, Good, HSG A
3.523	32	Woods/grass comb., Good, HSG A
8.647	39	>75% Grass cover, Good, HSG A
0.604	72	Woods/grass comb., Good, HSG C
0.755	74	>75% Grass cover, Good, HSG C
16.287	39	Weighted Average
16.287		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	100	0.0140	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
5.4	237	0.0215	0.73		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
11.2	476	0.0200	0.71		Shallow Concentrated Flow, Light wood Woodland Kv= 5.0 fps
23.7	1,043	0.0110	0.73		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
90.5	1,856	Total			

Subcatchment S10:

Hydrograph



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Summary for Subcatchment S20:

Runoff = 1.80 cfs @ 12.79 hrs, Volume= 0.323 af, Depth= 0.31"
Routed to Link B :

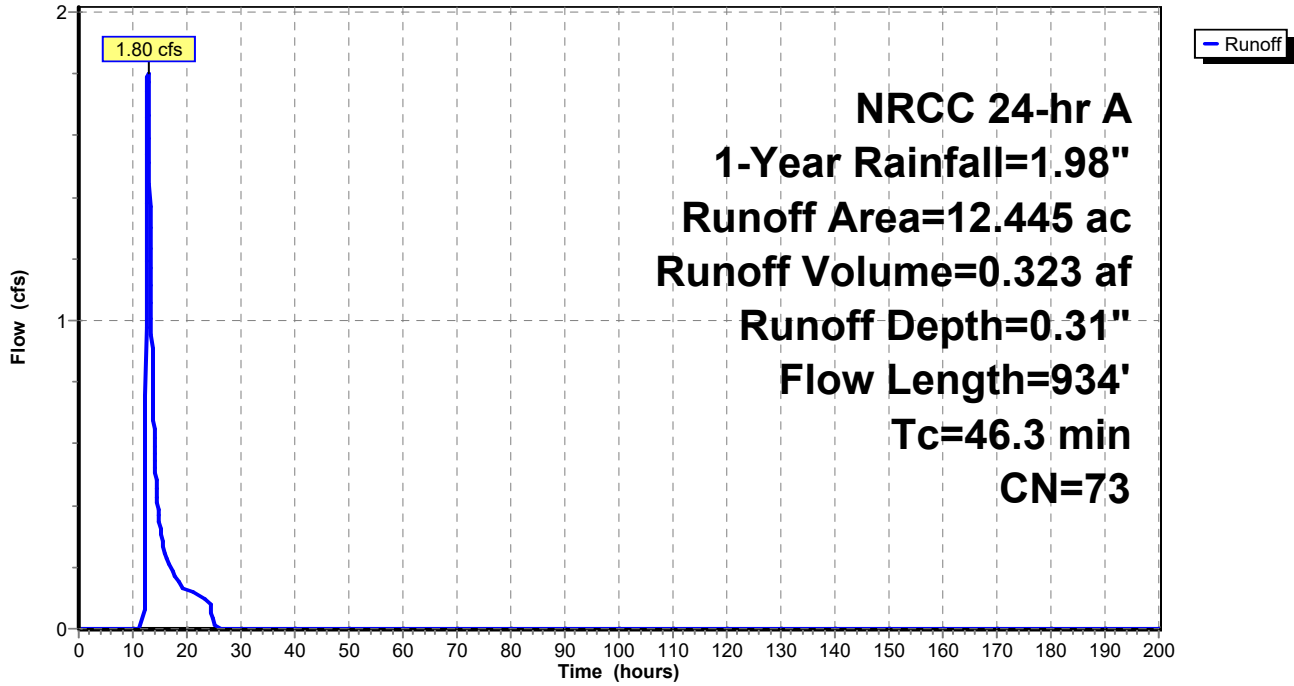
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
1.676	49	50-75% Grass cover, Fair, HSG A
1.173	70	Woods, Good, HSG C
1.897	72	Woods/grass comb., Good, HSG C
7.417	79	50-75% Grass cover, Fair, HSG C
0.190	89	Gravel roads, HSG C
0.092	76	Gravel roads, HSG A
12.445	73	Weighted Average
12.445		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	19	0.2600	0.20		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
32.2	81	0.0280	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
2.1	101	0.0250	0.79		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
10.4	733	0.0282	1.18		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
46.3	934	Total			

Subcatchment S20:

Hydrograph



2024-01-11 Pre Development

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Vineyard 1 & 2
NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Subcatchment S30:

Runoff = 0.01 cfs @ 17.73 hrs, Volume= 0.009 af, Depth= 0.01"
Routed to Link C :

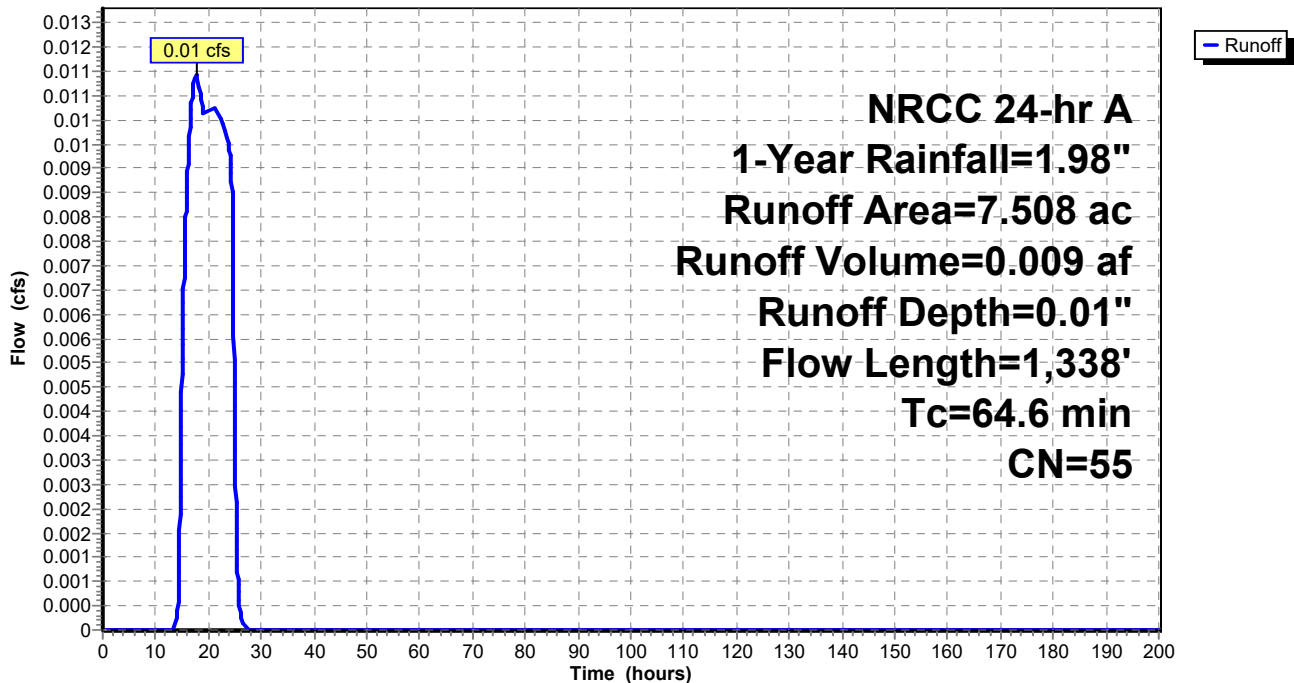
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
0.878	30	Woods, Good, HSG A
2.725	39	>75% Grass cover, Good, HSG A
2.540	70	Woods, Good, HSG C
1.365	74	>75% Grass cover, Good, HSG C
7.508	55	Weighted Average
7.508		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	100	0.0218	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
13.3	603	0.0117	0.76		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
9.2	635	0.0530	1.15		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
64.6	1,338	Total			

Subcatchment S30:

Hydrograph



2024-01-11 Pre Development

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Vineyard 1 & 2
NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Subcatchment S40:

Runoff = 0.35 cfs @ 12.52 hrs, Volume= 0.051 af, Depth= 0.28"
Routed to Link D :

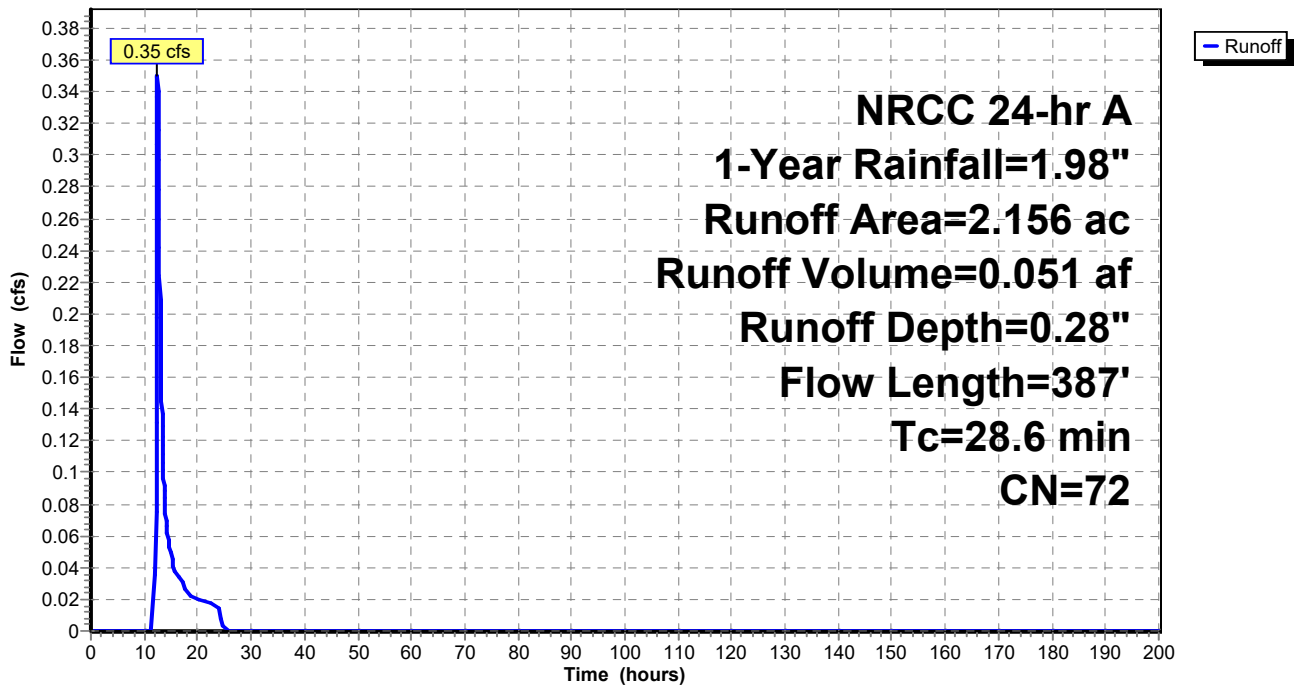
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
1.064	70	Woods, Good, HSG C
1.092	74	>75% Grass cover, Good, HSG C
2.156	72	Weighted Average
2.156		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0095	0.07		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
4.8	236	0.0139	0.83		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
1.4	51	0.0157	0.63		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
28.6	387	Total			

Subcatchment S40:

Hydrograph



2024-01-11 Pre Development

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Vineyard 1 & 2

NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Subcatchment S50:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link E :

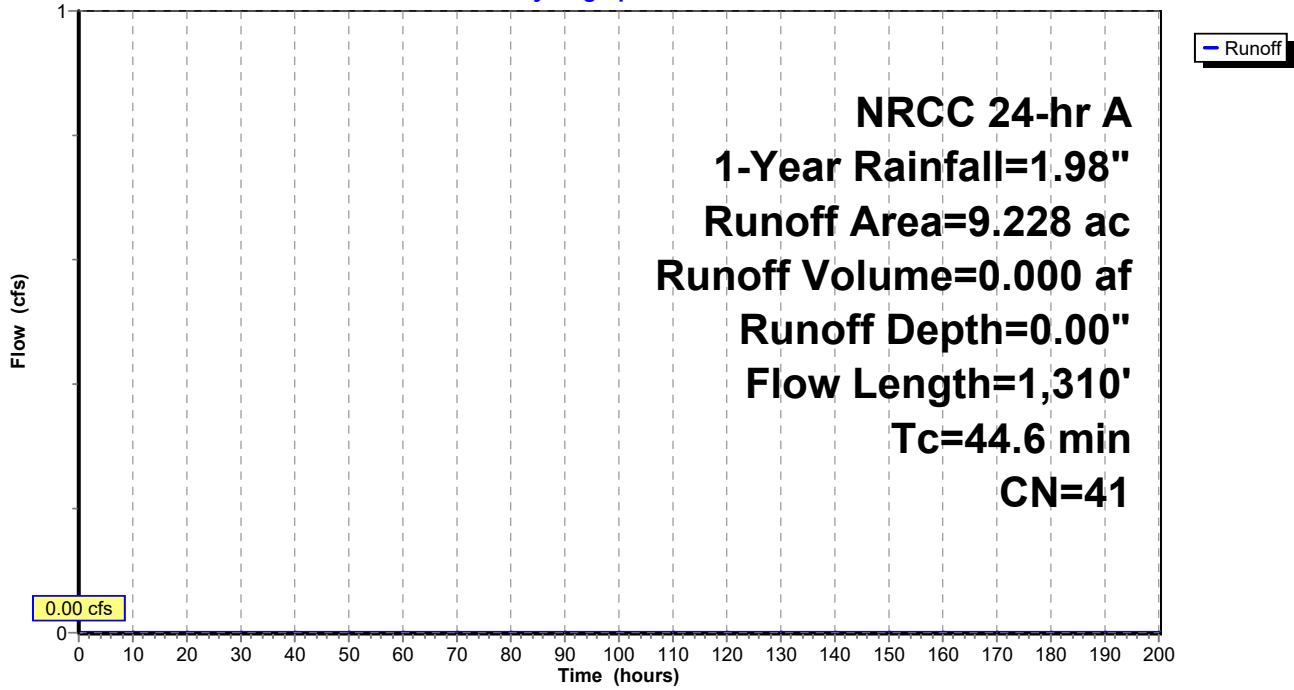
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
3.711	30	Woods, Good, HSG A
3.928	39	>75% Grass cover, Good, HSG A
0.350	70	Woods, Good, HSG C
1.214	74	>75% Grass cover, Good, HSG C
* 0.025	98	Existing foundation, HSG A
9.228	41	Weighted Average
9.203		99.73% Pervious Area
0.025		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	72	0.0495	0.13		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
16.2	28	0.0186	0.03		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
1.7	118	0.0518	1.14		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
14.3	870	0.0210	1.01		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
3.5	222	0.0447	1.06		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
44.6	1,310	Total			

Subcatchment S50:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Subcatchment S60:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link F :

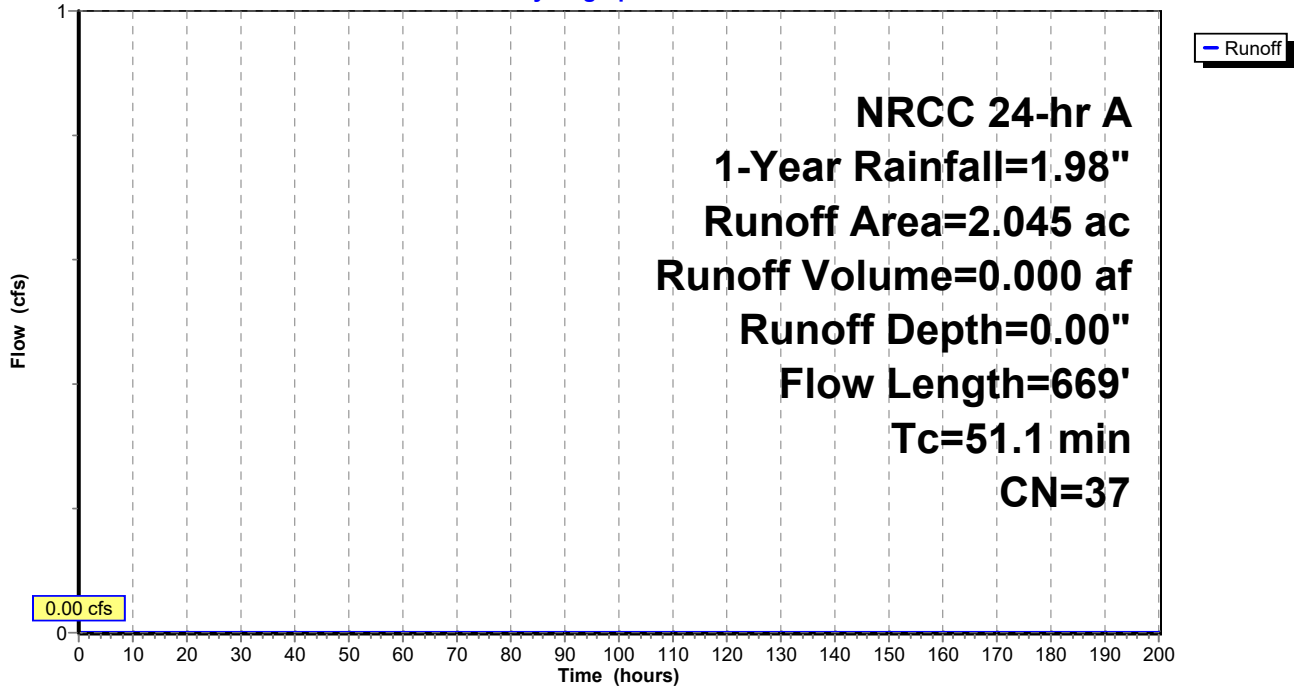
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
0.435	30	Woods, Good, HSG A
1.610	39	>75% Grass cover, Good, HSG A
2.045	37	Weighted Average
2.045		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.1	100	0.0231	0.04		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
0.8	35	0.0231	0.76		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
8.7	510	0.0197	0.98		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.5	24	0.0272	0.82		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
51.1	669	Total			

Subcatchment S60:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Reach 3R: Existing Culvert

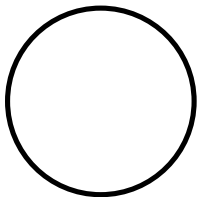
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 16.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

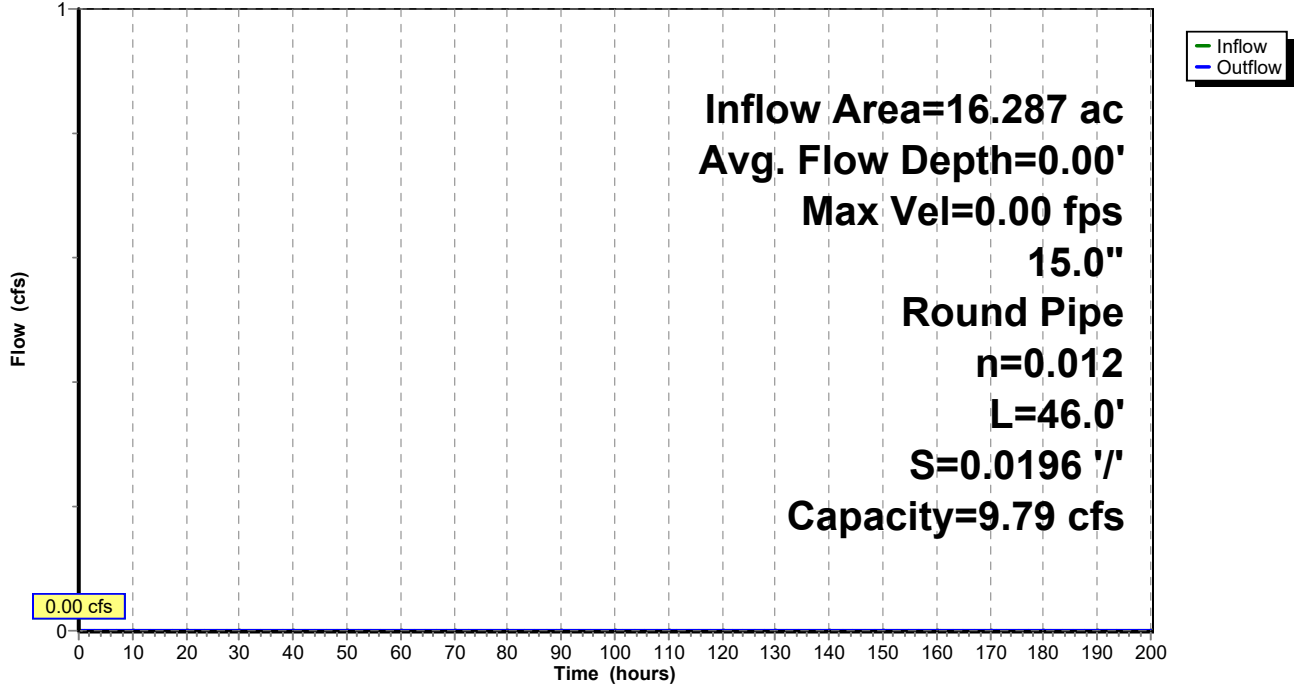
Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.79 cfs

15.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 46.0' Slope= 0.0196 '/'
Inlet Invert= 459.30', Outlet Invert= 458.40'



Reach 3R: Existing Culvert

Hydrograph



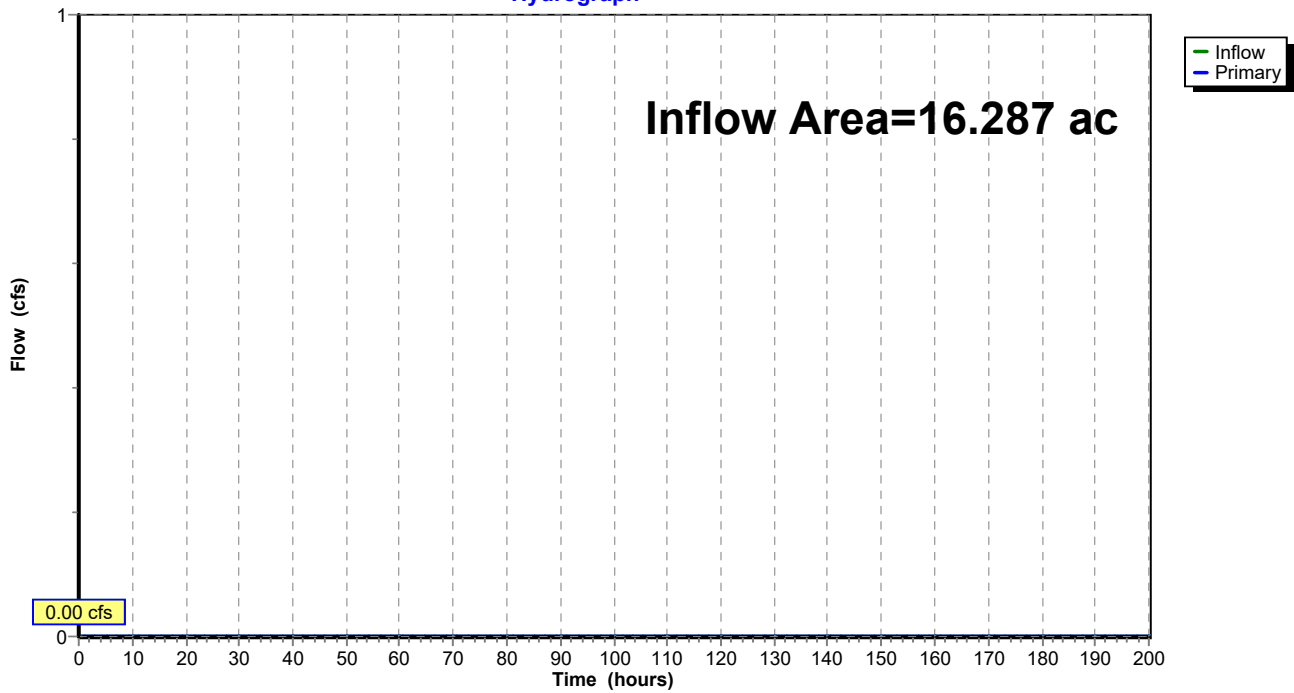
Summary for Link A:

Inflow Area = 16.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link A:

Hydrograph



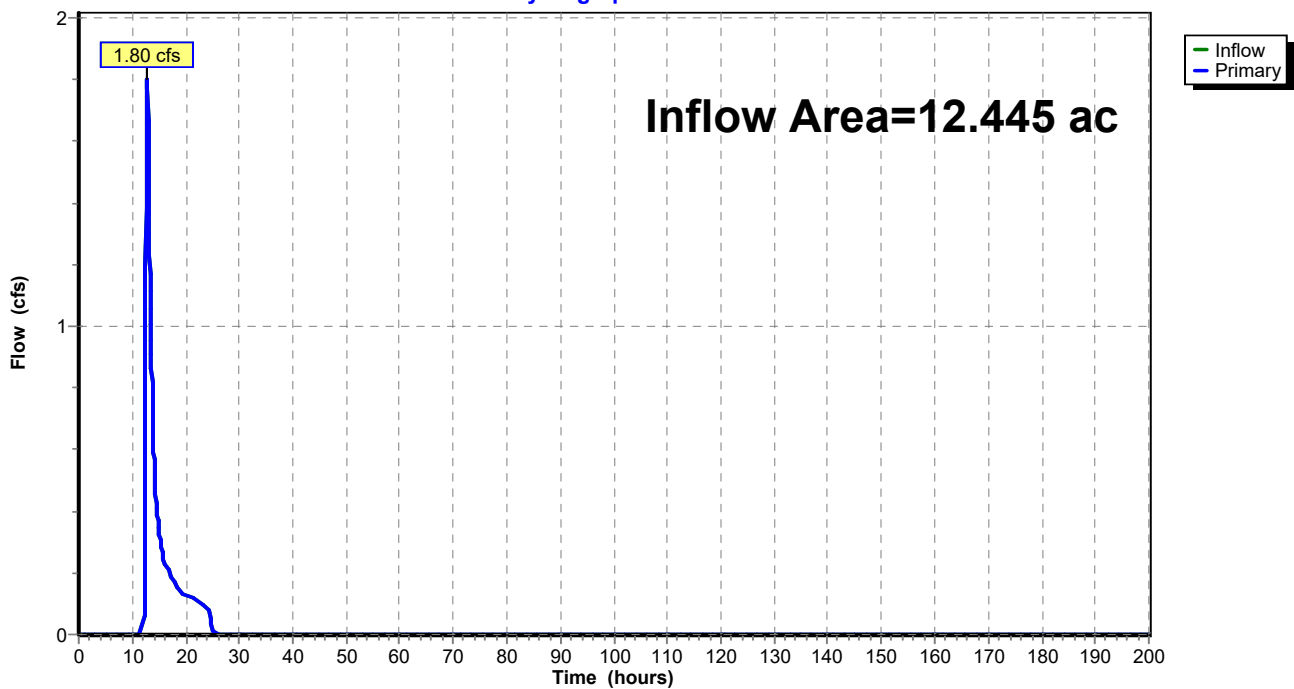
Summary for Link B:

Inflow Area = 12.445 ac, 0.00% Impervious, Inflow Depth = 0.31" for 1-Year event
Inflow = 1.80 cfs @ 12.79 hrs, Volume= 0.323 af
Primary = 1.80 cfs @ 12.79 hrs, Volume= 0.323 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link B:

Hydrograph



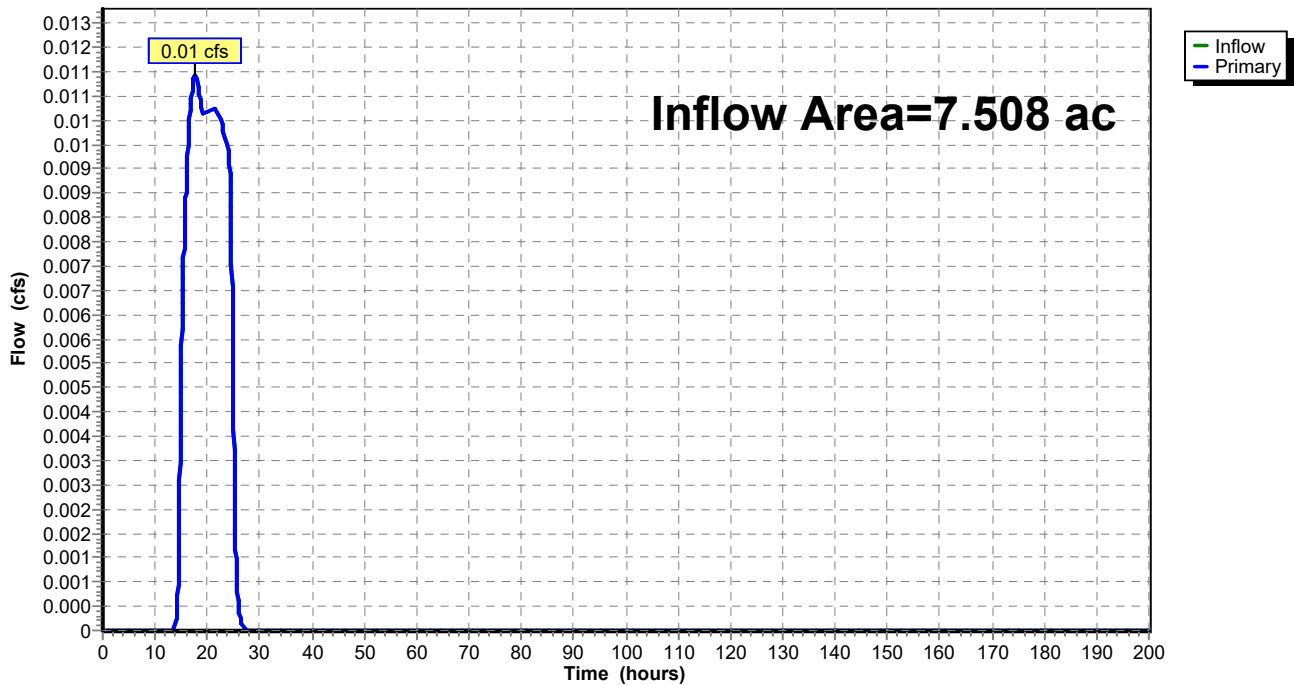
Summary for Link C:

Inflow Area = 7.508 ac, 0.00% Impervious, Inflow Depth = 0.01" for 1-Year event
Inflow = 0.01 cfs @ 17.73 hrs, Volume= 0.009 af
Primary = 0.01 cfs @ 17.73 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link C:

Hydrograph



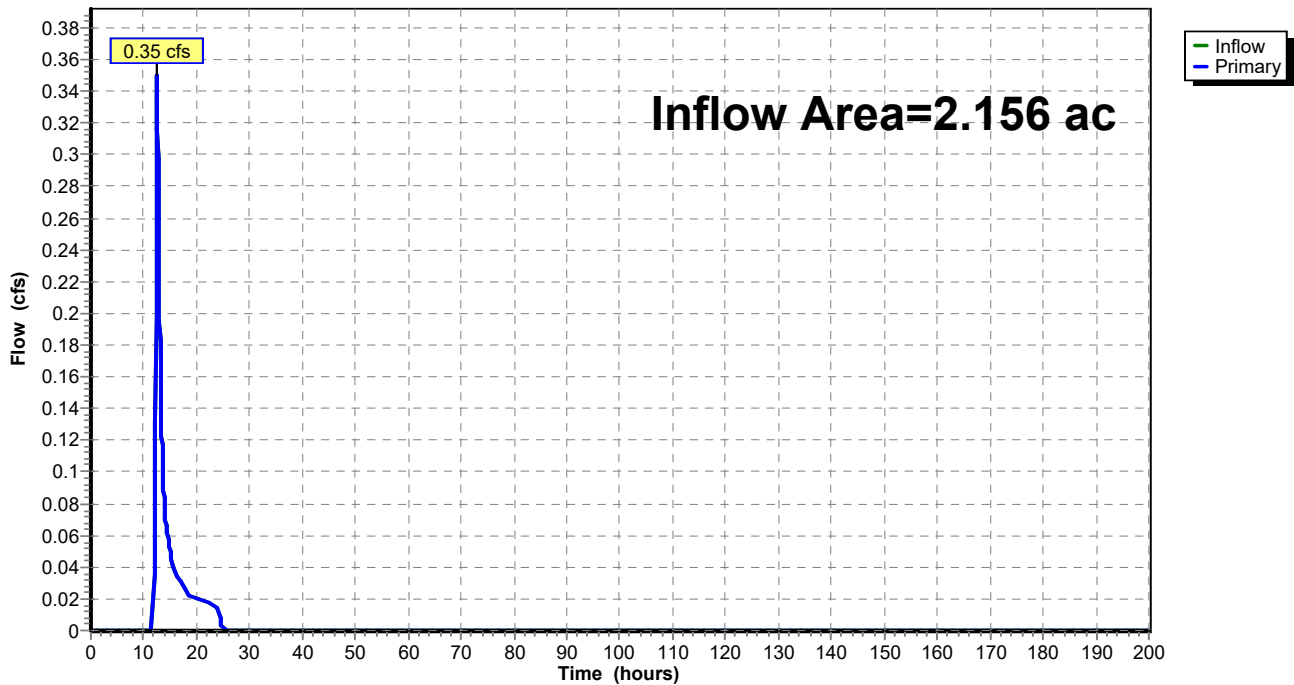
Summary for Link D:

Inflow Area = 2.156 ac, 0.00% Impervious, Inflow Depth = 0.28" for 1-Year event
Inflow = 0.35 cfs @ 12.52 hrs, Volume= 0.051 af
Primary = 0.35 cfs @ 12.52 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link D:

Hydrograph

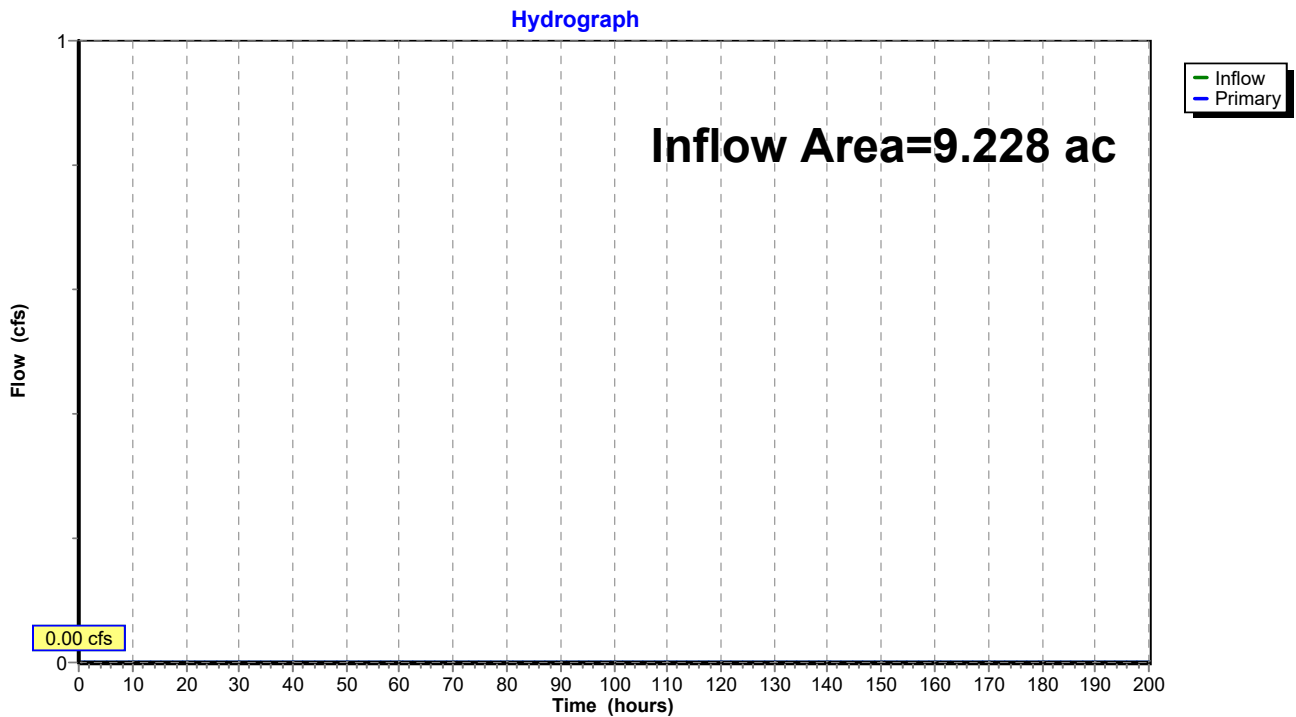


Summary for Link E:

Inflow Area = 9.228 ac, 0.27% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link E:

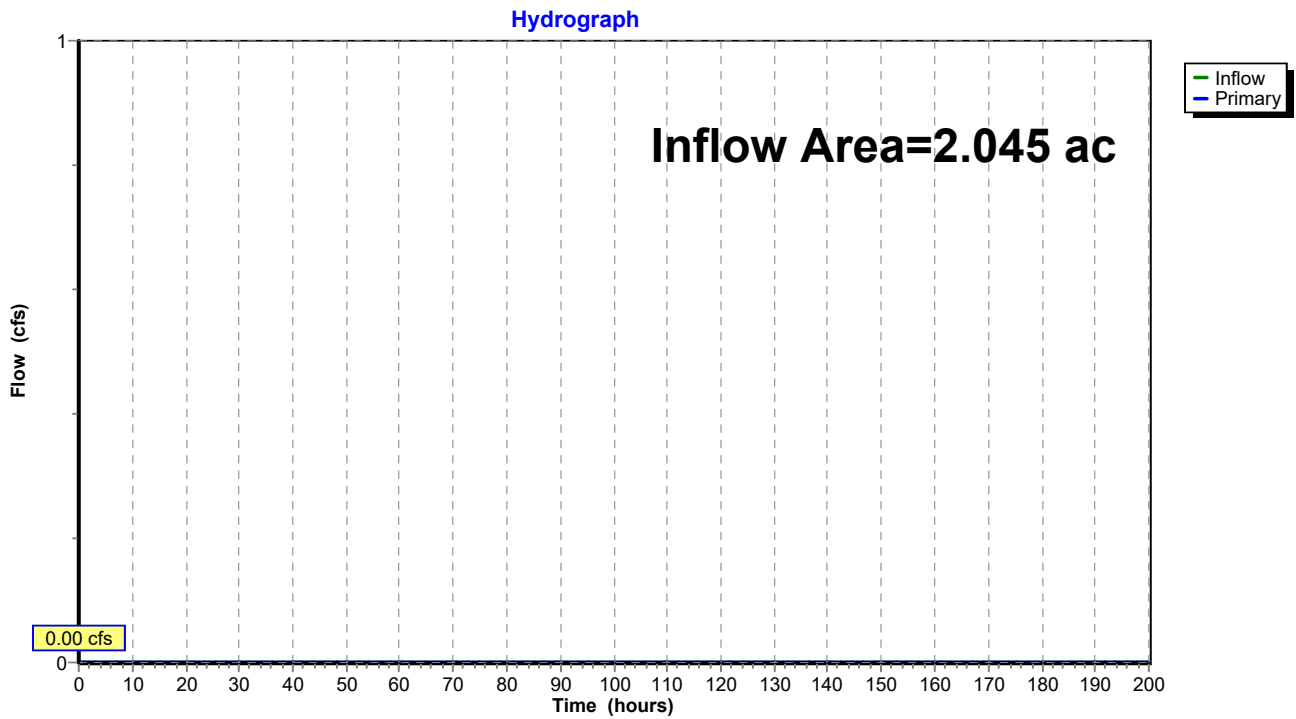


Summary for Link F:

Inflow Area = 2.045 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link F:



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Vineyard 1 & 2
NRCC 24-hr A 10-Year Rainfall=3.19"

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Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentS10: Runoff Area=16.287 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=1,856' Tc=90.5 min CN=39 Runoff=0.00 cfs 0.000 af

SubcatchmentS20: Runoff Area=12.445 ac 0.00% Impervious Runoff Depth=0.98"
Flow Length=934' Tc=46.3 min CN=73 Runoff=7.02 cfs 1.013 af

SubcatchmentS30: Runoff Area=7.508 ac 0.00% Impervious Runoff Depth=0.25"
Flow Length=1,338' Tc=64.6 min CN=55 Runoff=0.52 cfs 0.155 af

SubcatchmentS40: Runoff Area=2.156 ac 0.00% Impervious Runoff Depth=0.92"
Flow Length=387' Tc=28.6 min CN=72 Runoff=1.50 cfs 0.166 af

SubcatchmentS50: Runoff Area=9.228 ac 0.27% Impervious Runoff Depth=0.01"
Flow Length=1,310' Tc=44.6 min CN=41 Runoff=0.01 cfs 0.005 af

SubcatchmentS60: Runoff Area=2.045 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=669' Tc=51.1 min CN=37 Runoff=0.00 cfs 0.000 af

Reach 3R: Existing Culvert Avg. Flow Depth=0.01' Max Vel=0.82 fps Inflow=0.00 cfs 0.000 af
15.0" Round Pipe n=0.012 L=46.0' S=0.0196 '/' Capacity=9.79 cfs Outflow=0.00 cfs 0.000 af

Link A: Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link B: Inflow=7.02 cfs 1.013 af
Primary=7.02 cfs 1.013 af

Link C: Inflow=0.52 cfs 0.155 af
Primary=0.52 cfs 0.155 af

Link D: Inflow=1.50 cfs 0.166 af
Primary=1.50 cfs 0.166 af

Link E: Inflow=0.01 cfs 0.005 af
Primary=0.01 cfs 0.005 af

Link F: Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 49.669 ac Runoff Volume = 1.339 af Average Runoff Depth = 0.32"
99.95% Pervious = 49.644 ac 0.05% Impervious = 0.025 ac

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Vineyard 1 & 2
 NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Subcatchment S10:

Runoff = 0.00 cfs @ 24.63 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Reach 3R : Existing Culvert

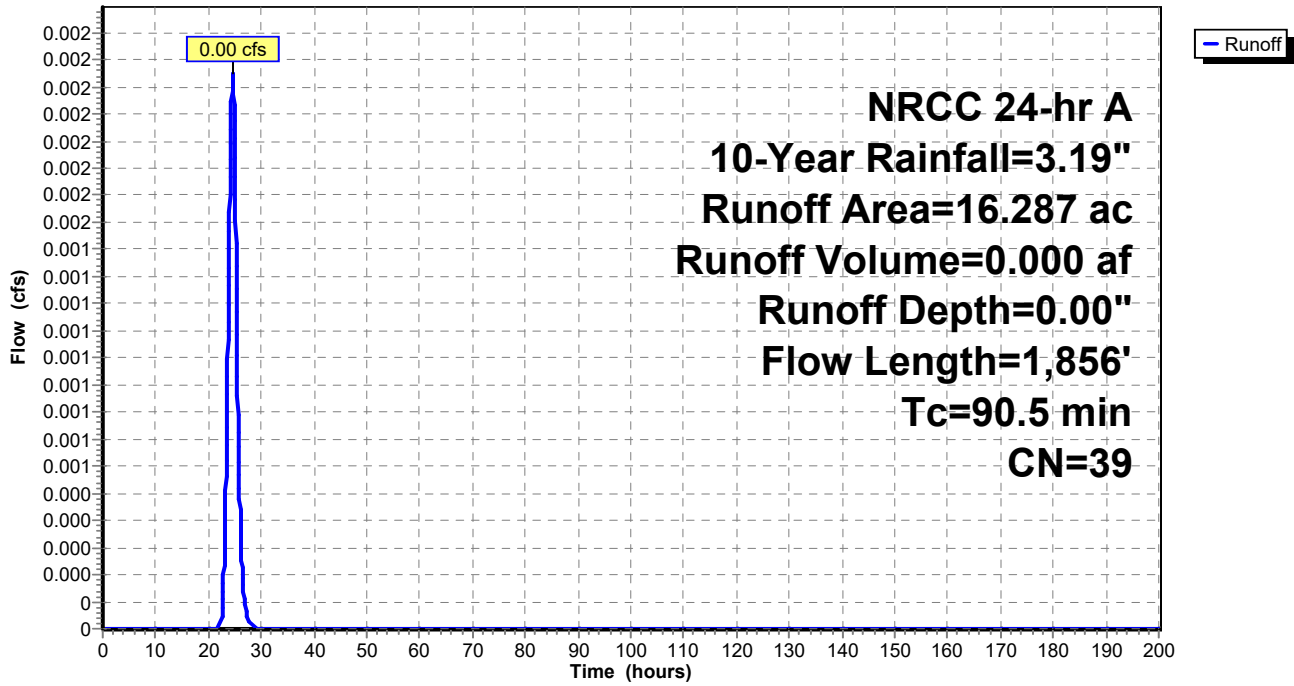
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
2.758	30	Woods, Good, HSG A
3.523	32	Woods/grass comb., Good, HSG A
8.647	39	>75% Grass cover, Good, HSG A
0.604	72	Woods/grass comb., Good, HSG C
0.755	74	>75% Grass cover, Good, HSG C
16.287	39	Weighted Average
16.287		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	100	0.0140	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
5.4	237	0.0215	0.73		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
11.2	476	0.0200	0.71		Shallow Concentrated Flow, Light wood Woodland Kv= 5.0 fps
23.7	1,043	0.0110	0.73		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
90.5	1,856	Total			

Subcatchment S10:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Subcatchment S20:

Runoff = 7.02 cfs @ 12.70 hrs, Volume= 1.013 af, Depth= 0.98"
 Routed to Link B :

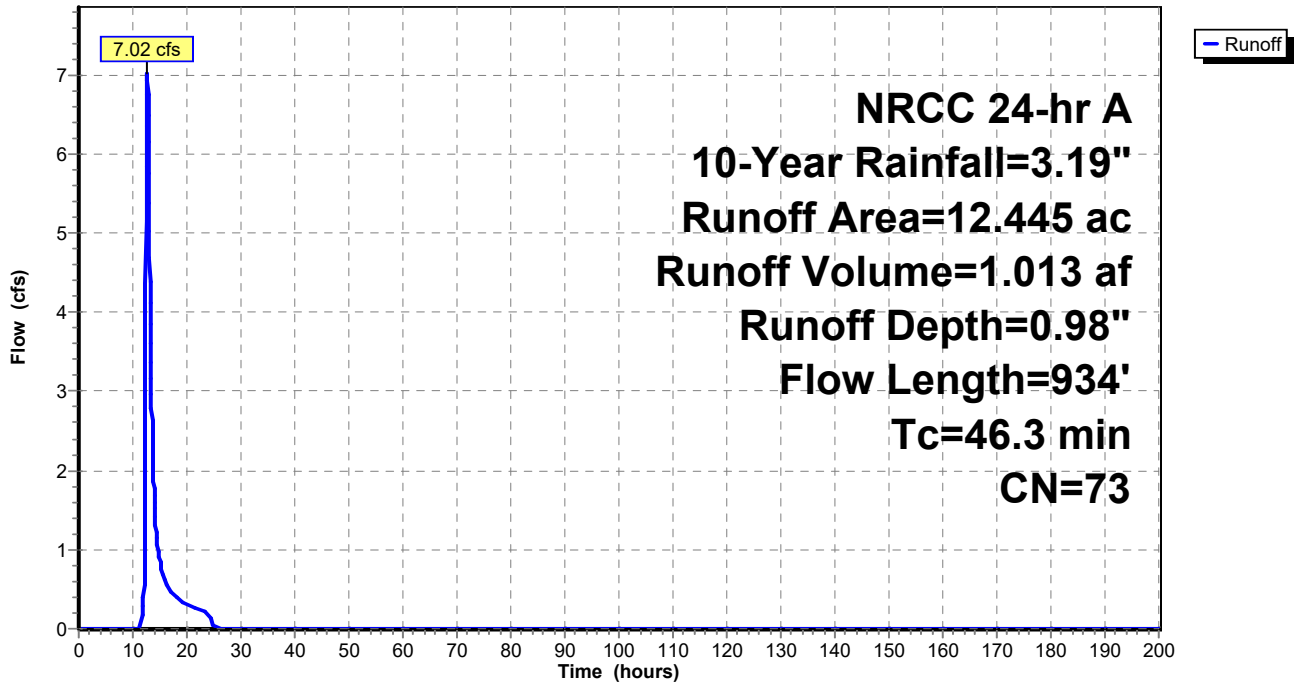
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
1.676	49	50-75% Grass cover, Fair, HSG A
1.173	70	Woods, Good, HSG C
1.897	72	Woods/grass comb., Good, HSG C
7.417	79	50-75% Grass cover, Fair, HSG C
0.190	89	Gravel roads, HSG C
0.092	76	Gravel roads, HSG A
12.445	73	Weighted Average
12.445		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	19	0.2600	0.20		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
32.2	81	0.0280	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
2.1	101	0.0250	0.79		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
10.4	733	0.0282	1.18		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
46.3	934	Total			

Subcatchment S20:

Hydrograph



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Summary for Subcatchment S30:

Runoff = 0.52 cfs @ 13.27 hrs, Volume= 0.155 af, Depth= 0.25"
 Routed to Link C :

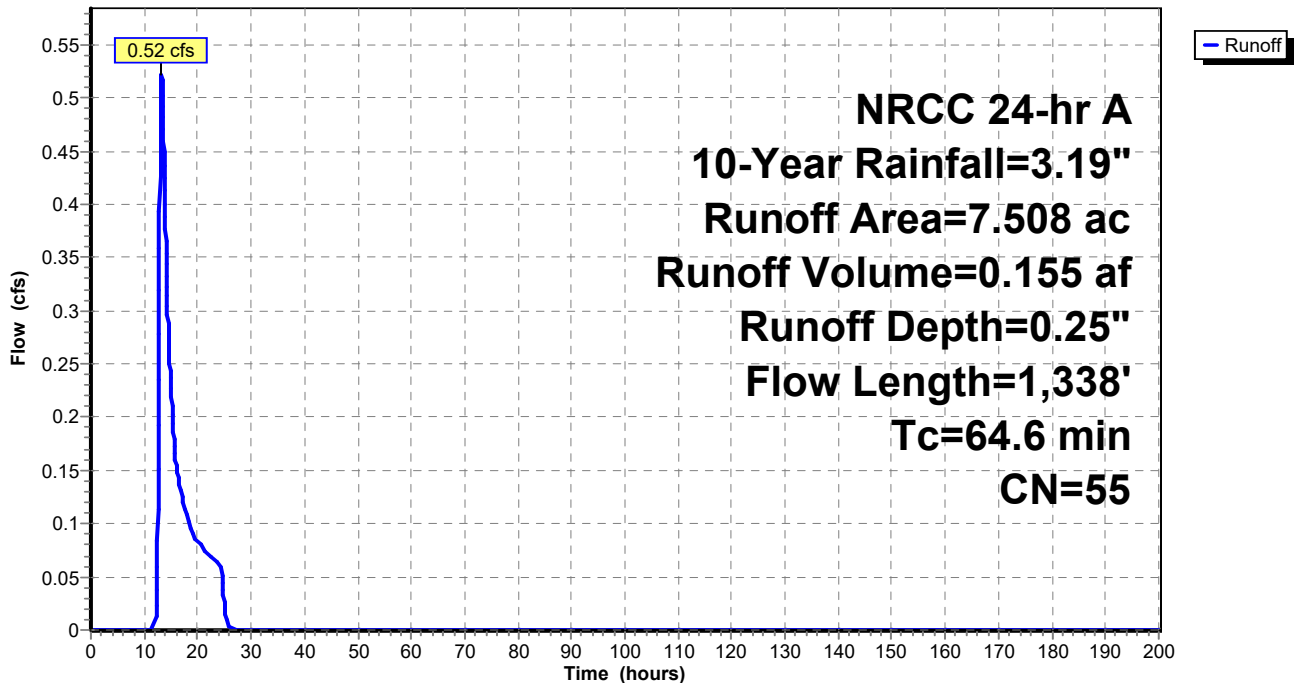
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
0.878	30	Woods, Good, HSG A
2.725	39	>75% Grass cover, Good, HSG A
2.540	70	Woods, Good, HSG C
1.365	74	>75% Grass cover, Good, HSG C
7.508	55	Weighted Average
7.508		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	100	0.0218	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
13.3	603	0.0117	0.76		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
9.2	635	0.0530	1.15		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
64.6	1,338	Total			

Subcatchment S30:

Hydrograph



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NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Subcatchment S40:

Runoff = 1.50 cfs @ 12.45 hrs, Volume= 0.166 af, Depth= 0.92"
 Routed to Link D :

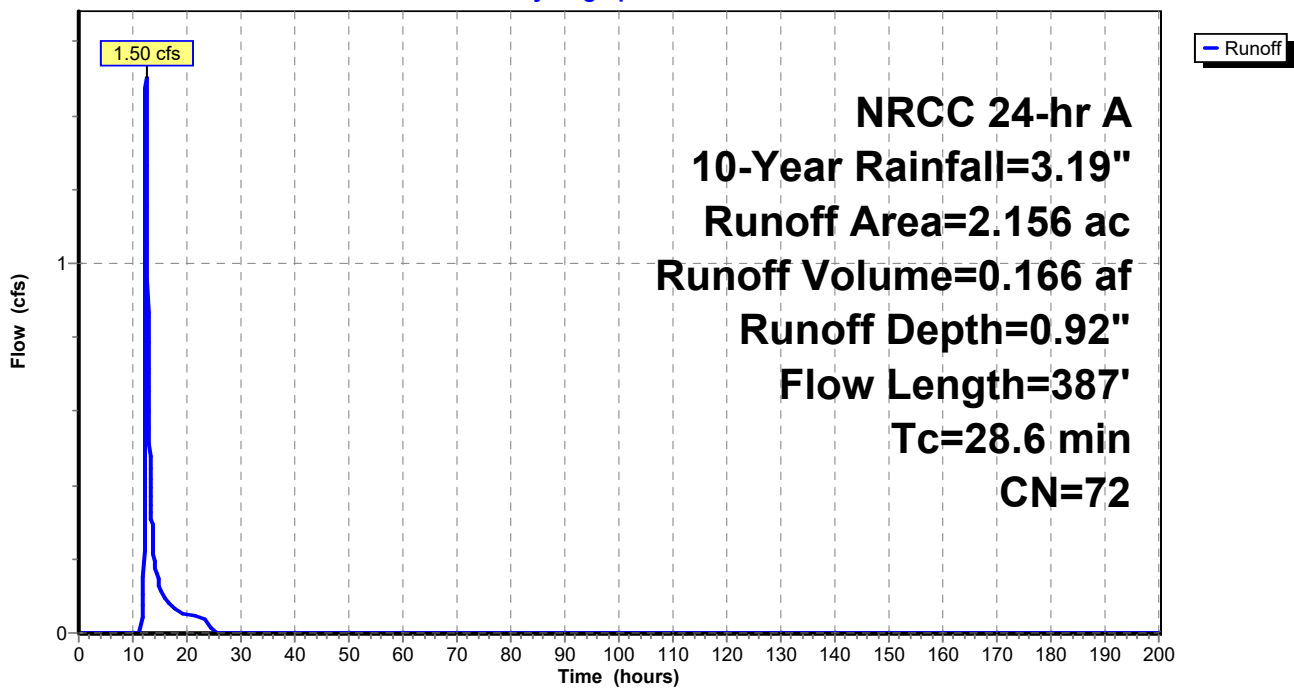
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
1.064	70	Woods, Good, HSG C
1.092	74	>75% Grass cover, Good, HSG C
2.156	72	Weighted Average
2.156		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0095	0.07		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
4.8	236	0.0139	0.83		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
1.4	51	0.0157	0.63		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
28.6	387	Total			

Subcatchment S40:

Hydrograph



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NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Subcatchment S50:

Runoff = 0.01 cfs @ 23.25 hrs, Volume= 0.005 af, Depth= 0.01"
 Routed to Link E :

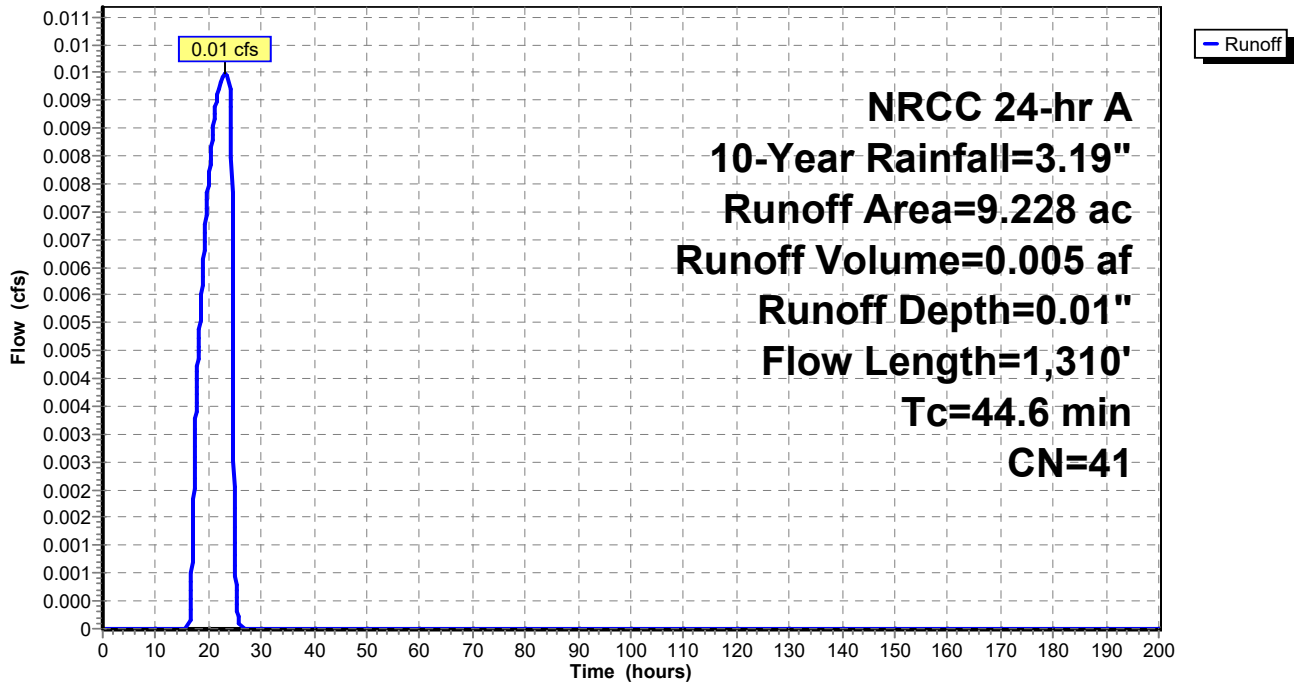
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
3.711	30	Woods, Good, HSG A
3.928	39	>75% Grass cover, Good, HSG A
0.350	70	Woods, Good, HSG C
1.214	74	>75% Grass cover, Good, HSG C
* 0.025	98	Existing foundation, HSG A
9.228	41	Weighted Average
9.203		99.73% Pervious Area
0.025		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	72	0.0495	0.13		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
16.2	28	0.0186	0.03		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
1.7	118	0.0518	1.14		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
14.3	870	0.0210	1.01		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
3.5	222	0.0447	1.06		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
44.6	1,310	Total			

Subcatchment S50:

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Subcatchment S60:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link F :

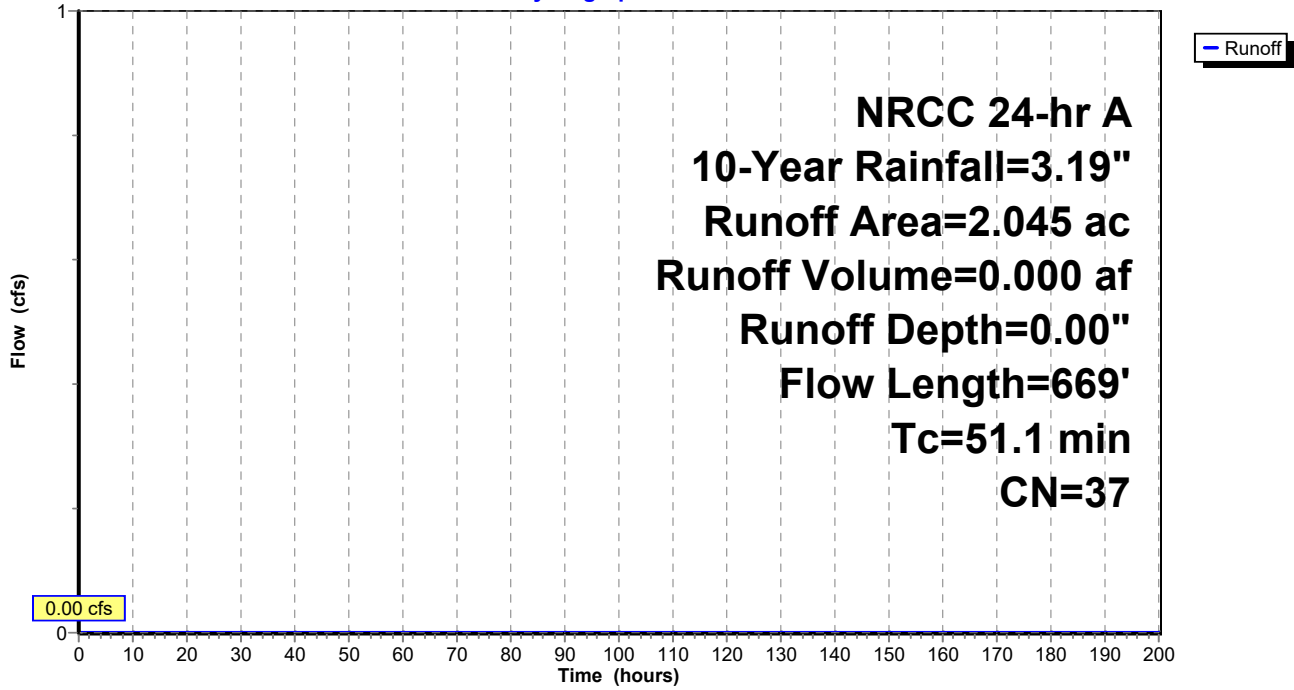
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
0.435	30	Woods, Good, HSG A
1.610	39	>75% Grass cover, Good, HSG A
2.045	37	Weighted Average
2.045		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.1	100	0.0231	0.04		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
0.8	35	0.0231	0.76		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
8.7	510	0.0197	0.98		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.5	24	0.0272	0.82		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
51.1	669	Total			

Subcatchment S60:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Reach 3R: Existing Culvert

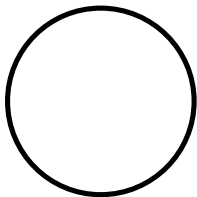
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 16.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 24.63 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.64 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.3 min
Routed to Link A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.82 fps, Min. Travel Time= 0.9 min
Avg. Velocity = 0.73 fps, Avg. Travel Time= 1.1 min

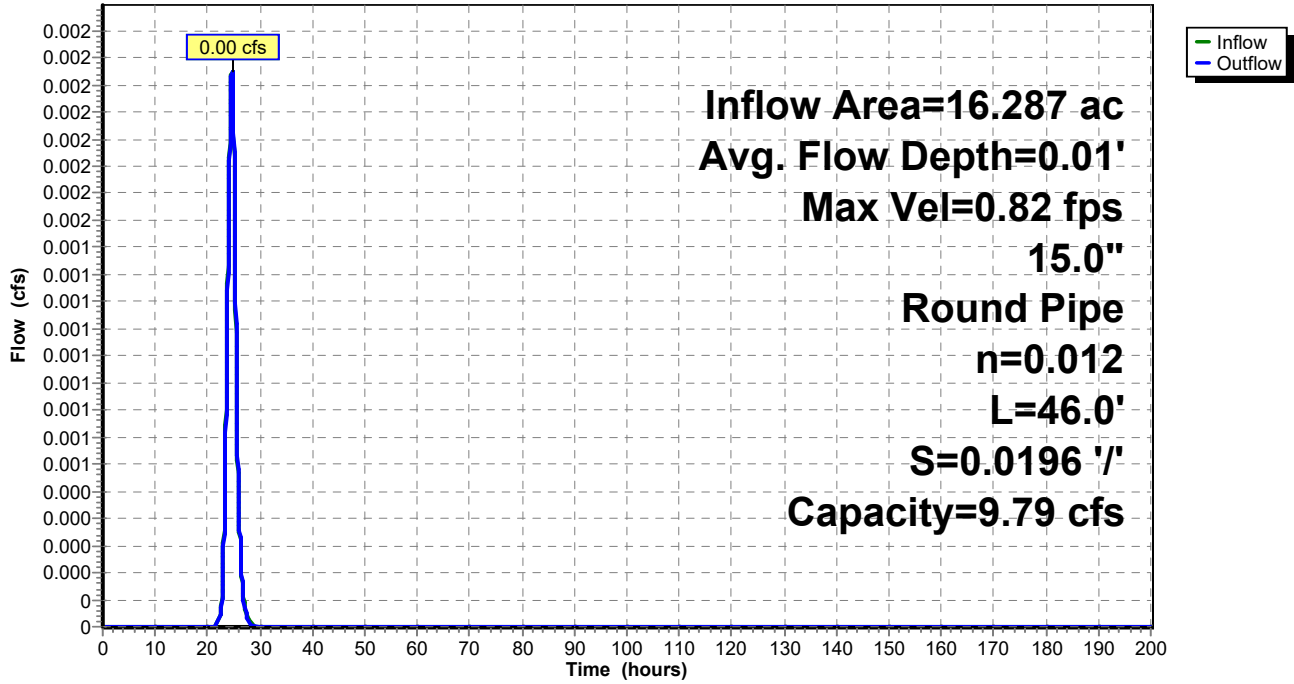
Peak Storage= 0 cf @ 24.64 hrs
Average Depth at Peak Storage= 0.01' , Surface Width= 0.26'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.79 cfs

15.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 46.0' Slope= 0.0196 '/'
Inlet Invert= 459.30', Outlet Invert= 458.40'



Reach 3R: Existing Culvert

Hydrograph



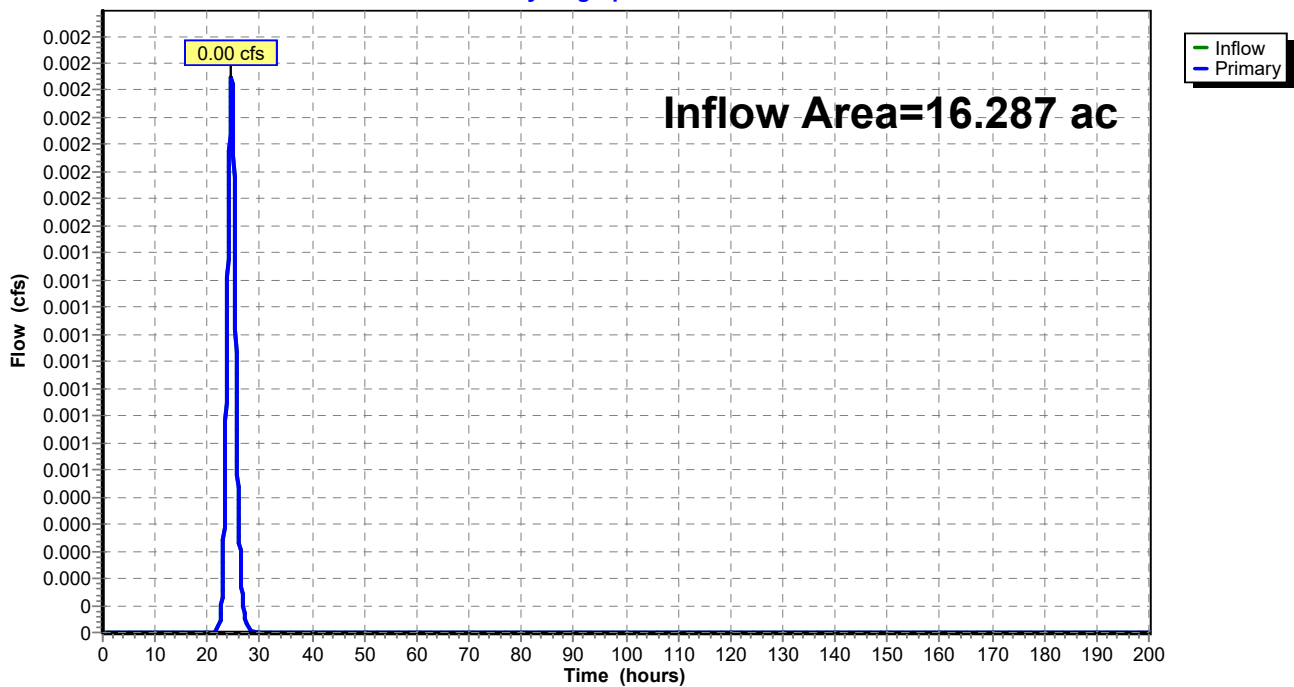
Summary for Link A:

Inflow Area = 16.287 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 24.64 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 24.64 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link A:

Hydrograph



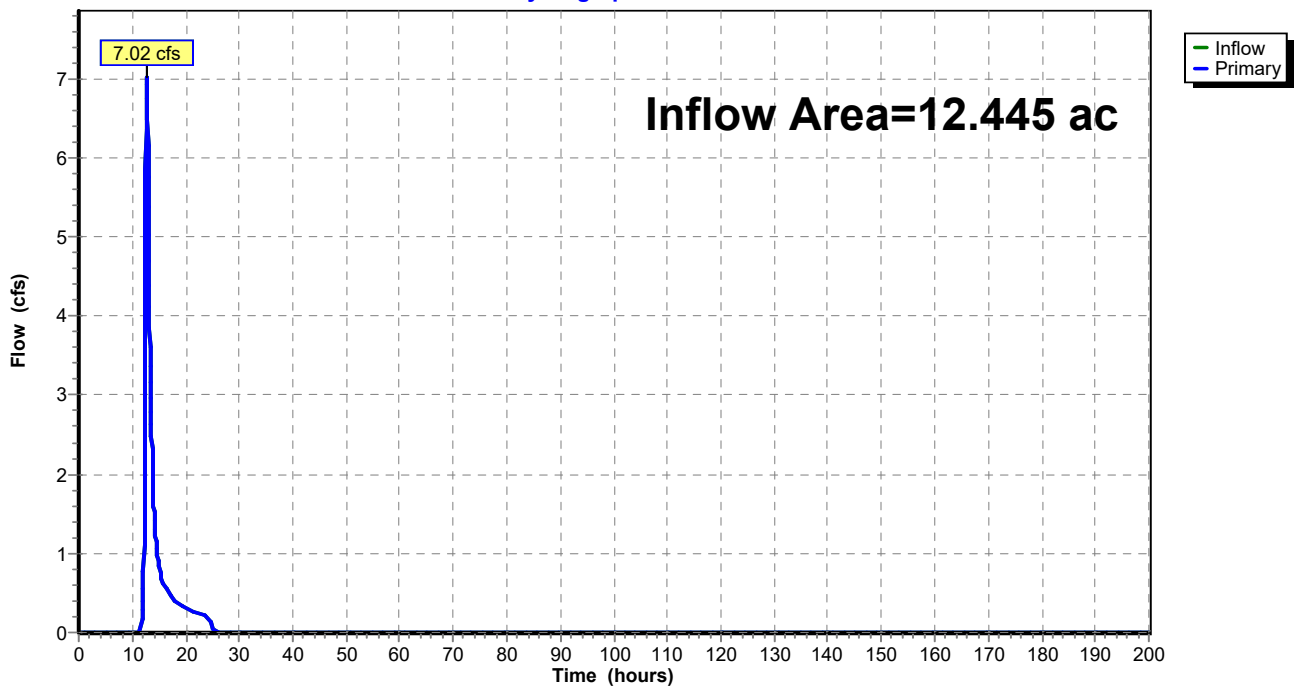
Summary for Link B:

Inflow Area = 12.445 ac, 0.00% Impervious, Inflow Depth = 0.98" for 10-Year event
Inflow = 7.02 cfs @ 12.70 hrs, Volume= 1.013 af
Primary = 7.02 cfs @ 12.70 hrs, Volume= 1.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link B:

Hydrograph



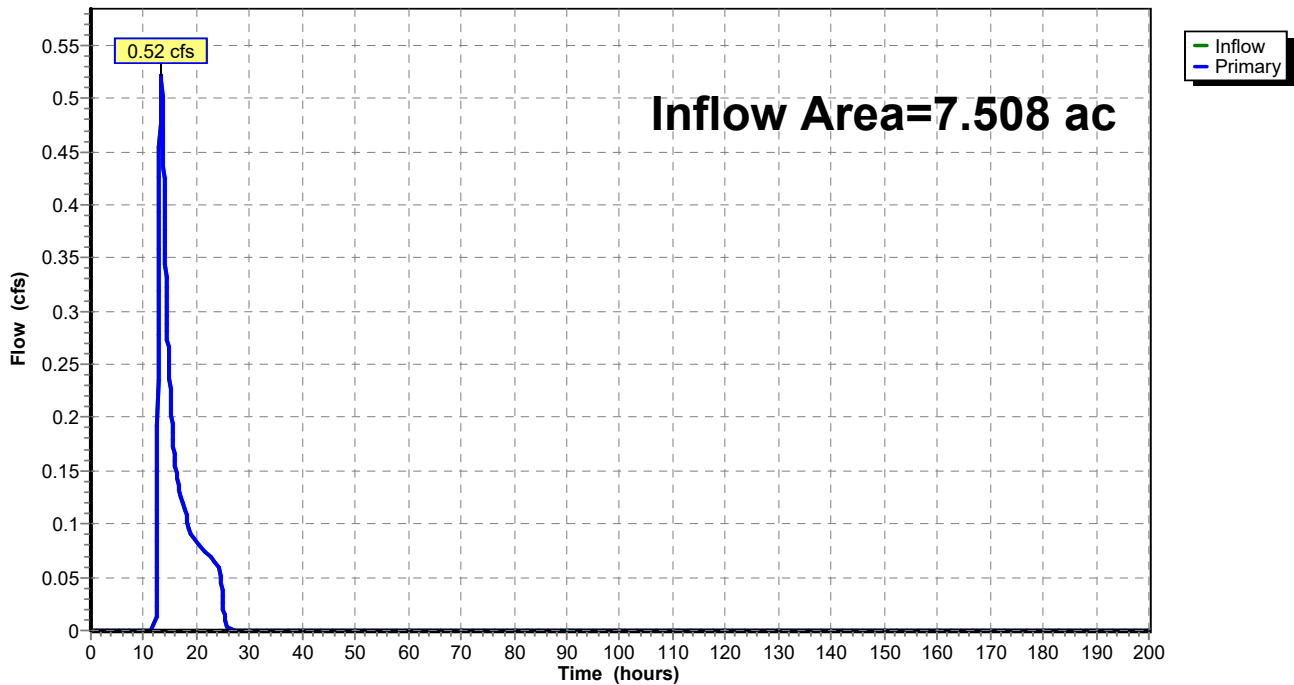
Summary for Link C:

Inflow Area = 7.508 ac, 0.00% Impervious, Inflow Depth = 0.25" for 10-Year event
Inflow = 0.52 cfs @ 13.27 hrs, Volume= 0.155 af
Primary = 0.52 cfs @ 13.27 hrs, Volume= 0.155 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link C:

Hydrograph



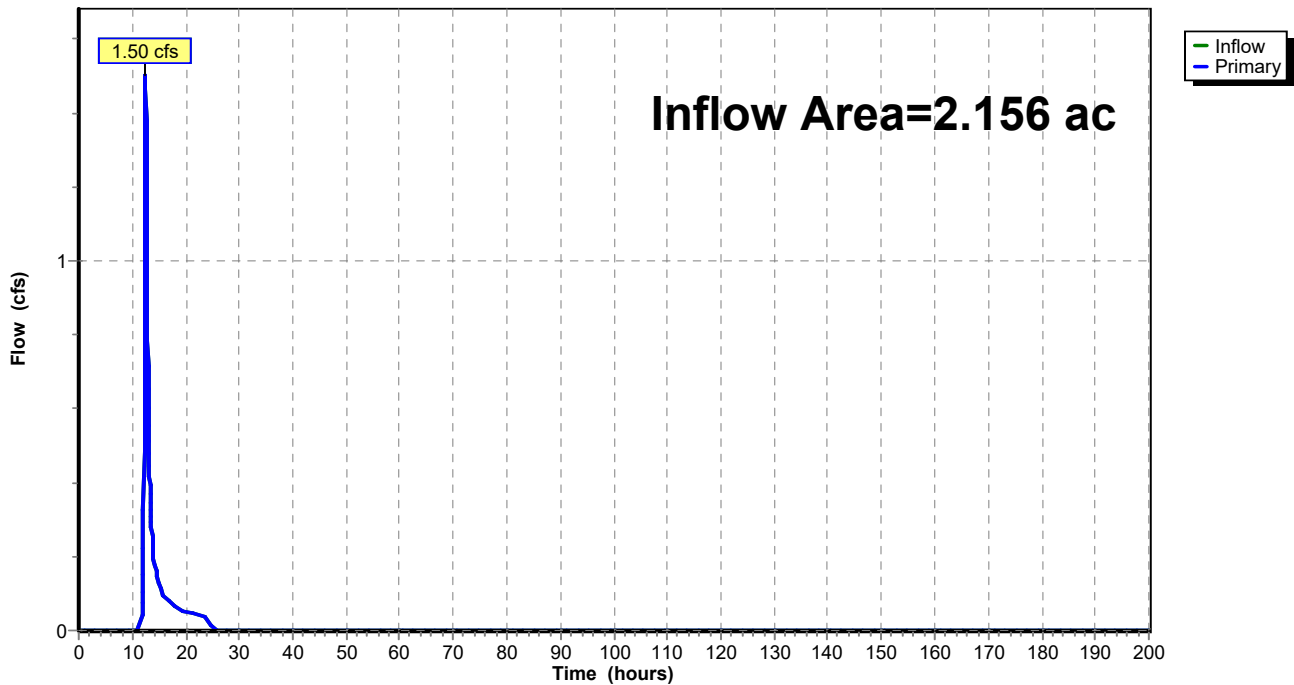
Summary for Link D:

Inflow Area = 2.156 ac, 0.00% Impervious, Inflow Depth = 0.92" for 10-Year event
Inflow = 1.50 cfs @ 12.45 hrs, Volume= 0.166 af
Primary = 1.50 cfs @ 12.45 hrs, Volume= 0.166 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link D:

Hydrograph



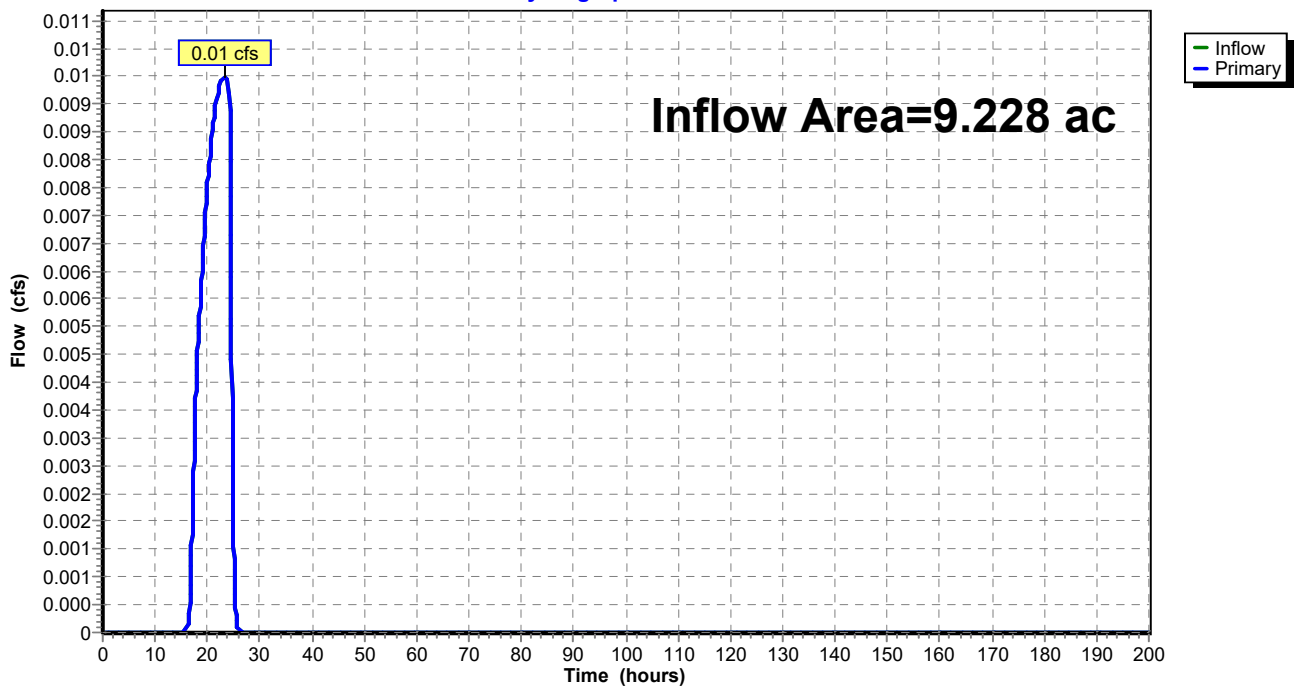
Summary for Link E:

Inflow Area = 9.228 ac, 0.27% Impervious, Inflow Depth = 0.01" for 10-Year event
Inflow = 0.01 cfs @ 23.25 hrs, Volume= 0.005 af
Primary = 0.01 cfs @ 23.25 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link E:

Hydrograph

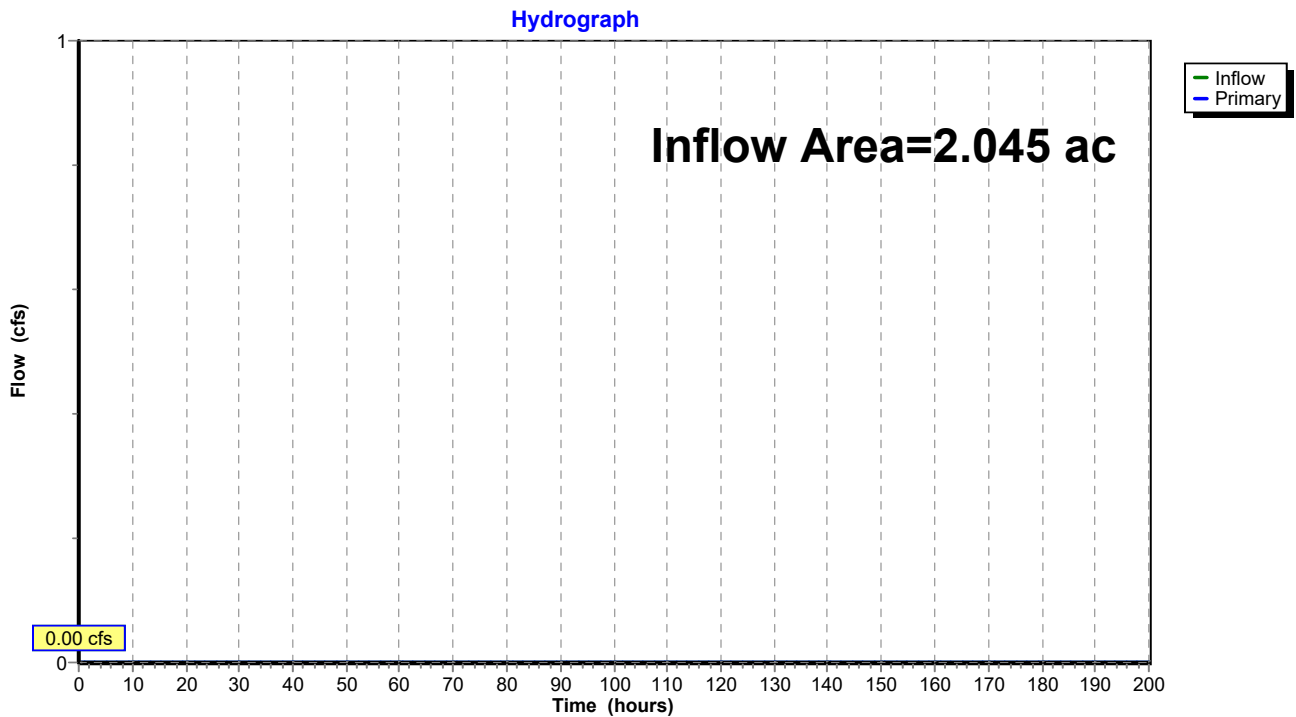


Summary for Link F:

Inflow Area = 2.045 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link F:



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Vineyard 1 & 2
NRCC 24-hr A 50-Year Rainfall=4.53"
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Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentS10: Runoff Area=16.287 ac 0.00% Impervious Runoff Depth=0.12"
Flow Length=1,856' Tc=90.5 min CN=39 Runoff=0.26 cfs 0.156 af

SubcatchmentS20: Runoff Area=12.445 ac 0.00% Impervious Runoff Depth=1.92"
Flow Length=934' Tc=46.3 min CN=73 Runoff=14.51 cfs 1.989 af

SubcatchmentS30: Runoff Area=7.508 ac 0.00% Impervious Runoff Depth=0.76"
Flow Length=1,338' Tc=64.6 min CN=55 Runoff=2.22 cfs 0.473 af

SubcatchmentS40: Runoff Area=2.156 ac 0.00% Impervious Runoff Depth=1.84"
Flow Length=387' Tc=28.6 min CN=72 Runoff=3.17 cfs 0.331 af

SubcatchmentS50: Runoff Area=9.228 ac 0.27% Impervious Runoff Depth=0.17"
Flow Length=1,310' Tc=44.6 min CN=41 Runoff=0.33 cfs 0.131 af

SubcatchmentS60: Runoff Area=2.045 ac 0.00% Impervious Runoff Depth=0.07"
Flow Length=669' Tc=51.1 min CN=37 Runoff=0.02 cfs 0.012 af

Reach 3R: Existing Culvert Avg. Flow Depth=0.14' Max Vel=3.45 fps Inflow=0.26 cfs 0.156 af
15.0" Round Pipe n=0.012 L=46.0' S=0.0196 '/' Capacity=9.79 cfs Outflow=0.26 cfs 0.156 af

Link A: Inflow=0.26 cfs 0.156 af
Primary=0.26 cfs 0.156 af

Link B: Inflow=14.51 cfs 1.989 af
Primary=14.51 cfs 1.989 af

Link C: Inflow=2.22 cfs 0.473 af
Primary=2.22 cfs 0.473 af

Link D: Inflow=3.17 cfs 0.331 af
Primary=3.17 cfs 0.331 af

Link E: Inflow=0.33 cfs 0.131 af
Primary=0.33 cfs 0.131 af

Link F: Inflow=0.02 cfs 0.012 af
Primary=0.02 cfs 0.012 af

Total Runoff Area = 49.669 ac Runoff Volume = 3.093 af Average Runoff Depth = 0.75"
99.95% Pervious = 49.644 ac 0.05% Impervious = 0.025 ac

2024-01-11 Pre Development

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Vineyard 1 & 2
NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S10:

Runoff = 0.26 cfs @ 14.60 hrs, Volume= 0.156 af, Depth= 0.12"
Routed to Reach 3R : Existing Culvert

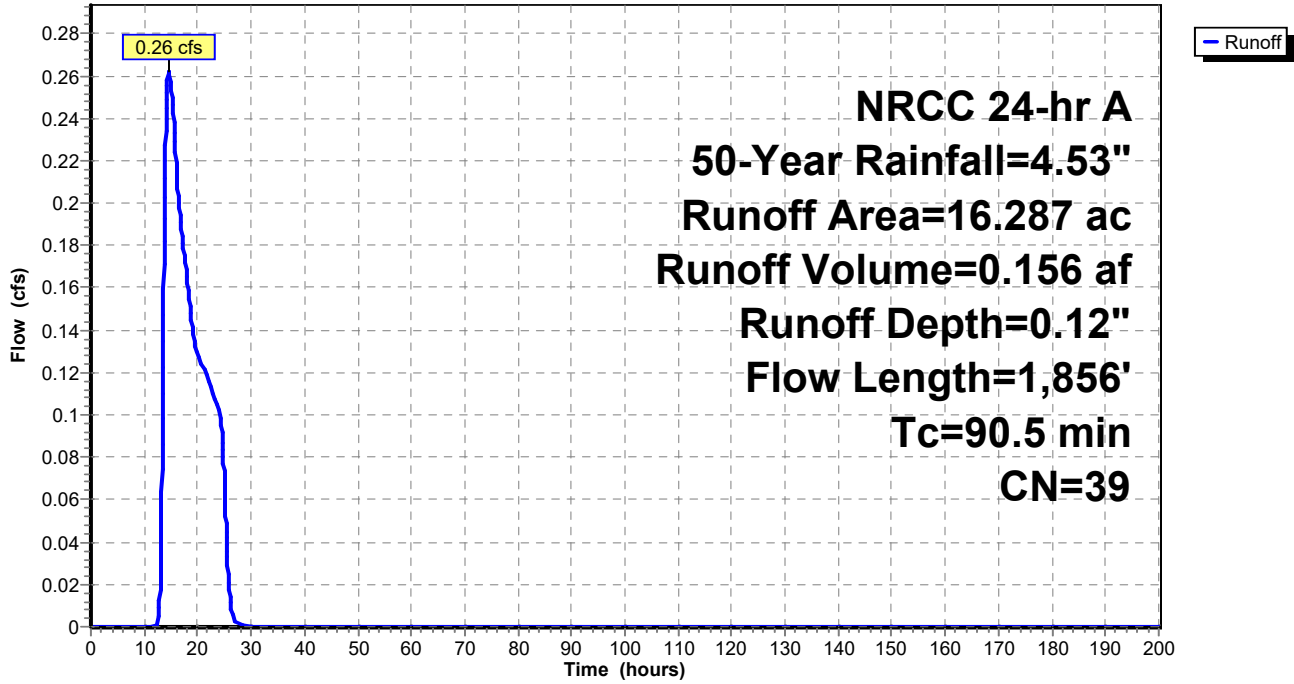
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
2.758	30	Woods, Good, HSG A
3.523	32	Woods/grass comb., Good, HSG A
8.647	39	>75% Grass cover, Good, HSG A
0.604	72	Woods/grass comb., Good, HSG C
0.755	74	>75% Grass cover, Good, HSG C
16.287	39	Weighted Average
16.287		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	100	0.0140	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
5.4	237	0.0215	0.73		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
11.2	476	0.0200	0.71		Shallow Concentrated Flow, Light wood Woodland Kv= 5.0 fps
23.7	1,043	0.0110	0.73		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
90.5	1,856	Total			

Subcatchment S10:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S20:

Runoff = 14.51 cfs @ 12.67 hrs, Volume= 1.989 af, Depth= 1.92"
 Routed to Link B :

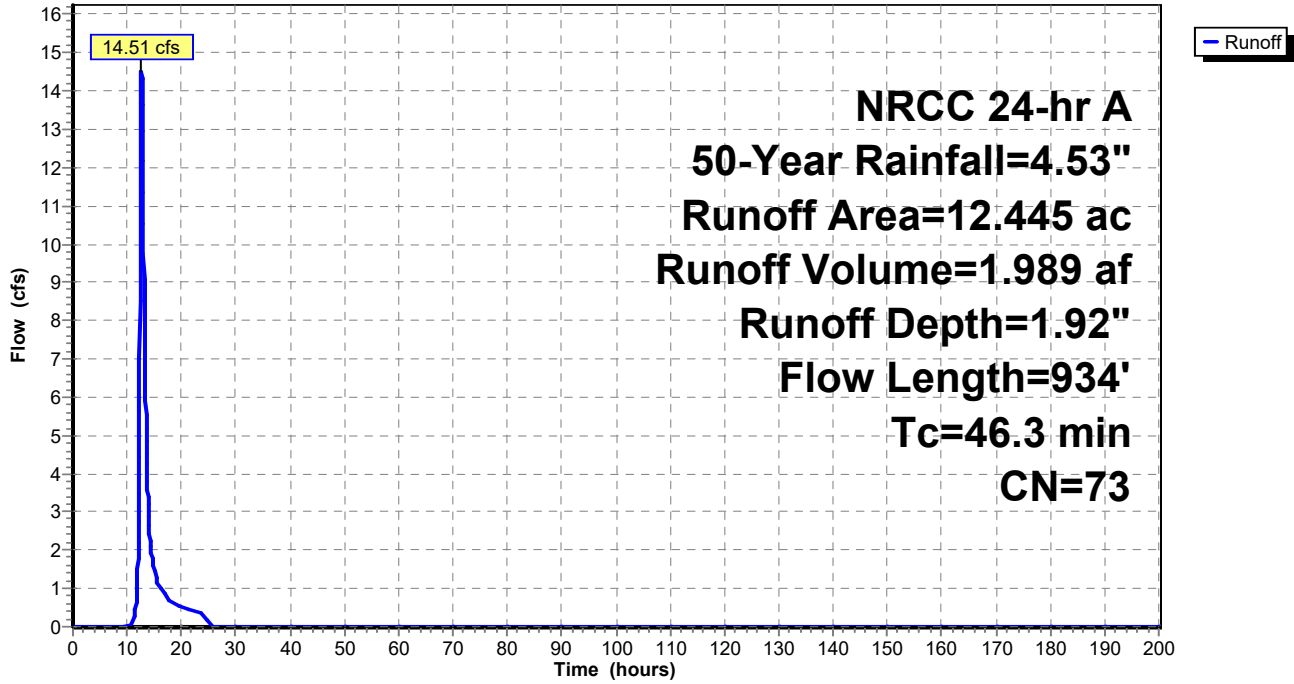
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
1.676	49	50-75% Grass cover, Fair, HSG A
1.173	70	Woods, Good, HSG C
1.897	72	Woods/grass comb., Good, HSG C
7.417	79	50-75% Grass cover, Fair, HSG C
0.190	89	Gravel roads, HSG C
0.092	76	Gravel roads, HSG A
12.445	73	Weighted Average
12.445		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	19	0.2600	0.20		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
32.2	81	0.0280	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
2.1	101	0.0250	0.79		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
10.4	733	0.0282	1.18		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
46.3	934	Total			

Subcatchment S20:

Hydrograph



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Summary for Subcatchment S30:

Runoff = 2.22 cfs @ 13.06 hrs, Volume= 0.473 af, Depth= 0.76"
Routed to Link C :

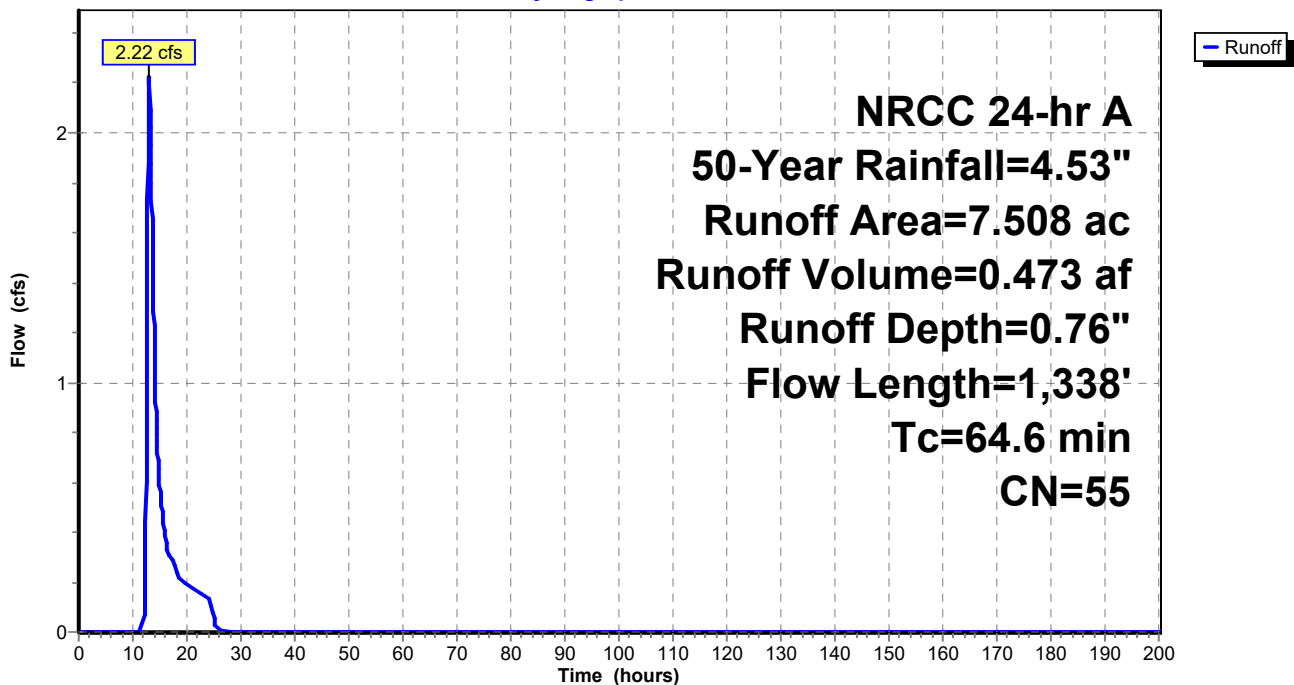
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
0.878	30	Woods, Good, HSG A
2.725	39	>75% Grass cover, Good, HSG A
2.540	70	Woods, Good, HSG C
1.365	74	>75% Grass cover, Good, HSG C
7.508	55	Weighted Average
7.508		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	100	0.0218	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
13.3	603	0.0117	0.76		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
9.2	635	0.0530	1.15		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
64.6	1,338	Total			

Subcatchment S30:

Hydrograph



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NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S40:

Runoff = 3.17 cfs @ 12.42 hrs, Volume= 0.331 af, Depth= 1.84"
 Routed to Link D :

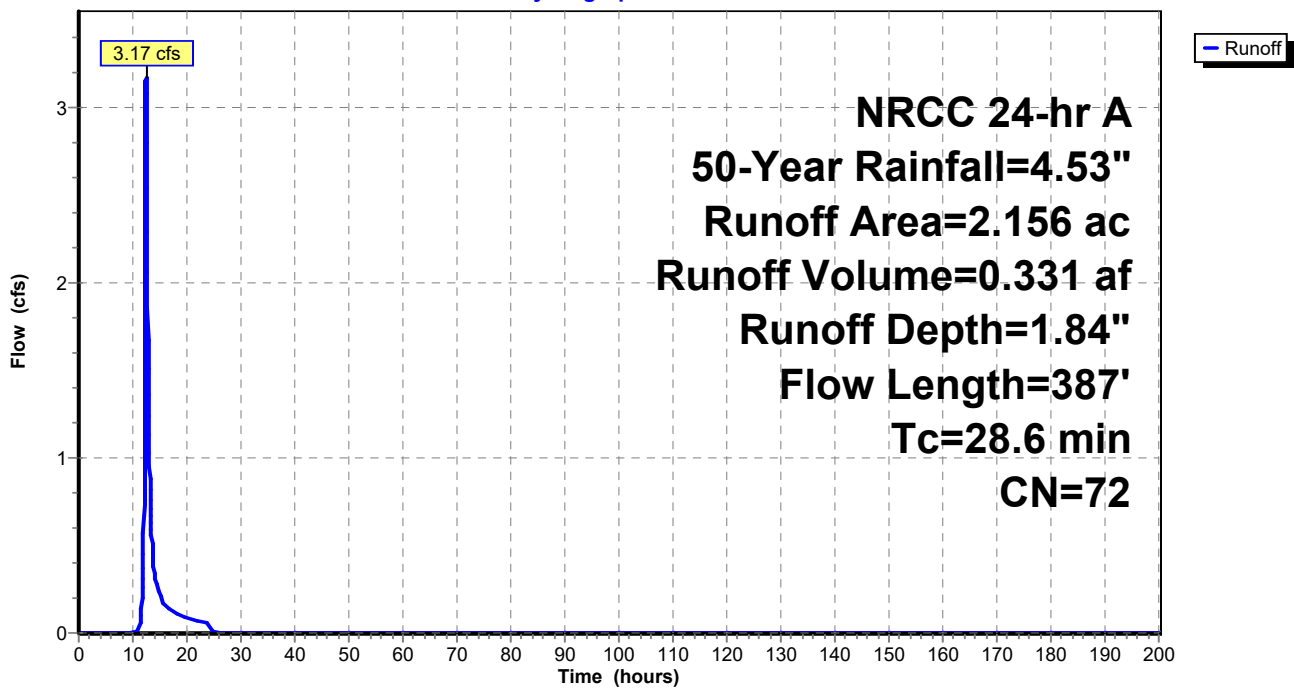
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
1.064	70	Woods, Good, HSG C
1.092	74	>75% Grass cover, Good, HSG C
2.156	72	Weighted Average
2.156		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0095	0.07		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
4.8	236	0.0139	0.83		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
1.4	51	0.0157	0.63		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
28.6	387	Total			

Subcatchment S40:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S50:

Runoff = 0.33 cfs @ 13.36 hrs, Volume= 0.131 af, Depth= 0.17"
 Routed to Link E :

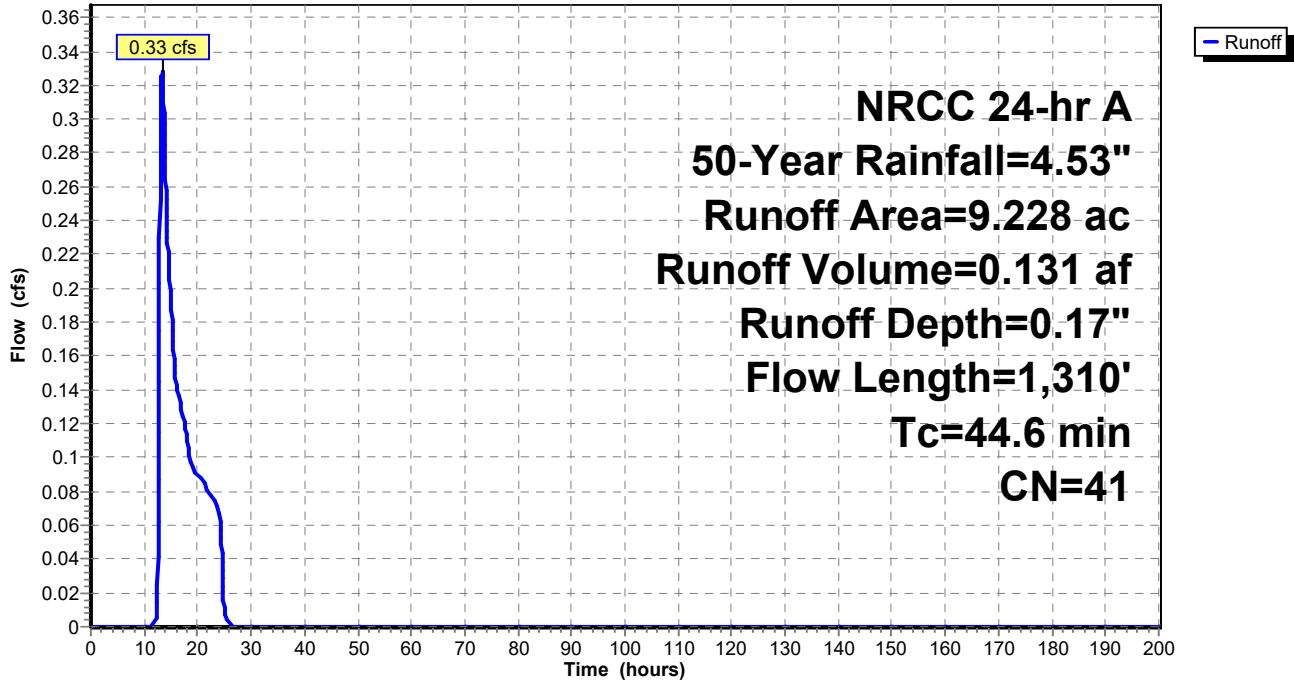
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
3.711	30	Woods, Good, HSG A
3.928	39	>75% Grass cover, Good, HSG A
0.350	70	Woods, Good, HSG C
1.214	74	>75% Grass cover, Good, HSG C
* 0.025	98	Existing foundation, HSG A
9.228	41	Weighted Average
9.203		99.73% Pervious Area
0.025		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	72	0.0495	0.13		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
16.2	28	0.0186	0.03		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
1.7	118	0.0518	1.14		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
14.3	870	0.0210	1.01		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
3.5	222	0.0447	1.06		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
44.6	1,310	Total			

Subcatchment S50:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S60:

Runoff = 0.02 cfs @ 14.89 hrs, Volume= 0.012 af, Depth= 0.07"
 Routed to Link F :

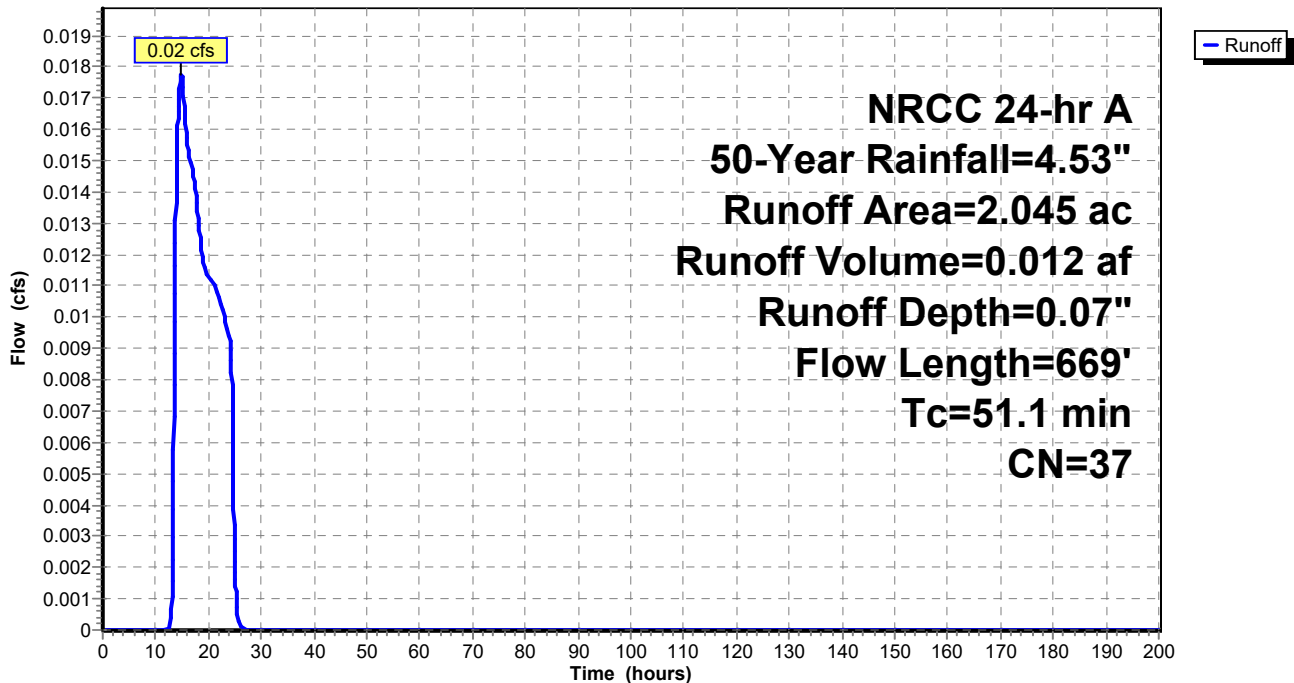
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
0.435	30	Woods, Good, HSG A
1.610	39	>75% Grass cover, Good, HSG A
2.045	37	Weighted Average
2.045		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.1	100	0.0231	0.04		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
0.8	35	0.0231	0.76		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
8.7	510	0.0197	0.98		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.5	24	0.0272	0.82		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
51.1	669	Total			

Subcatchment S60:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Reach 3R: Existing Culvert

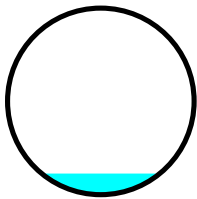
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 16.287 ac, 0.00% Impervious, Inflow Depth = 0.12" for 50-Year event
Inflow = 0.26 cfs @ 14.60 hrs, Volume= 0.156 af
Outflow = 0.26 cfs @ 14.61 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.2 min
Routed to Link A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.45 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.44 fps, Avg. Travel Time= 0.3 min

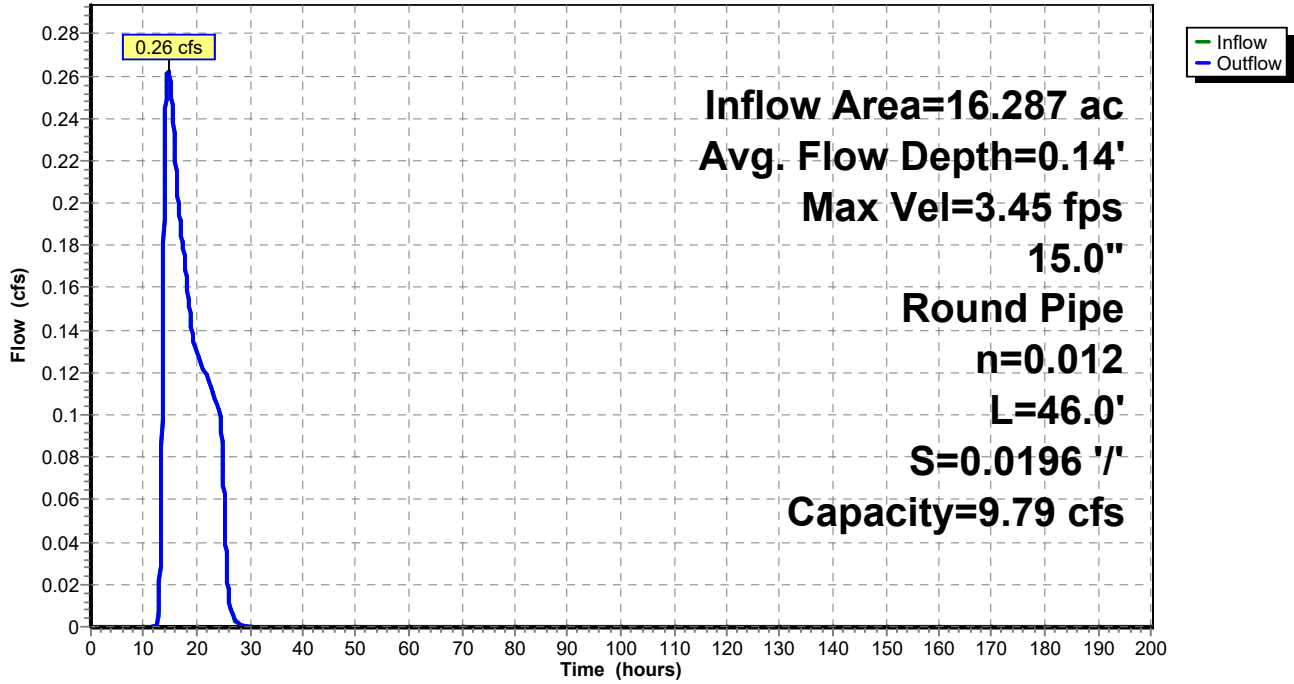
Peak Storage= 3 cf @ 14.61 hrs
Average Depth at Peak Storage= 0.14' , Surface Width= 0.79'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.79 cfs

15.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 46.0' Slope= 0.0196 '/'
Inlet Invert= 459.30', Outlet Invert= 458.40'



Reach 3R: Existing Culvert

Hydrograph



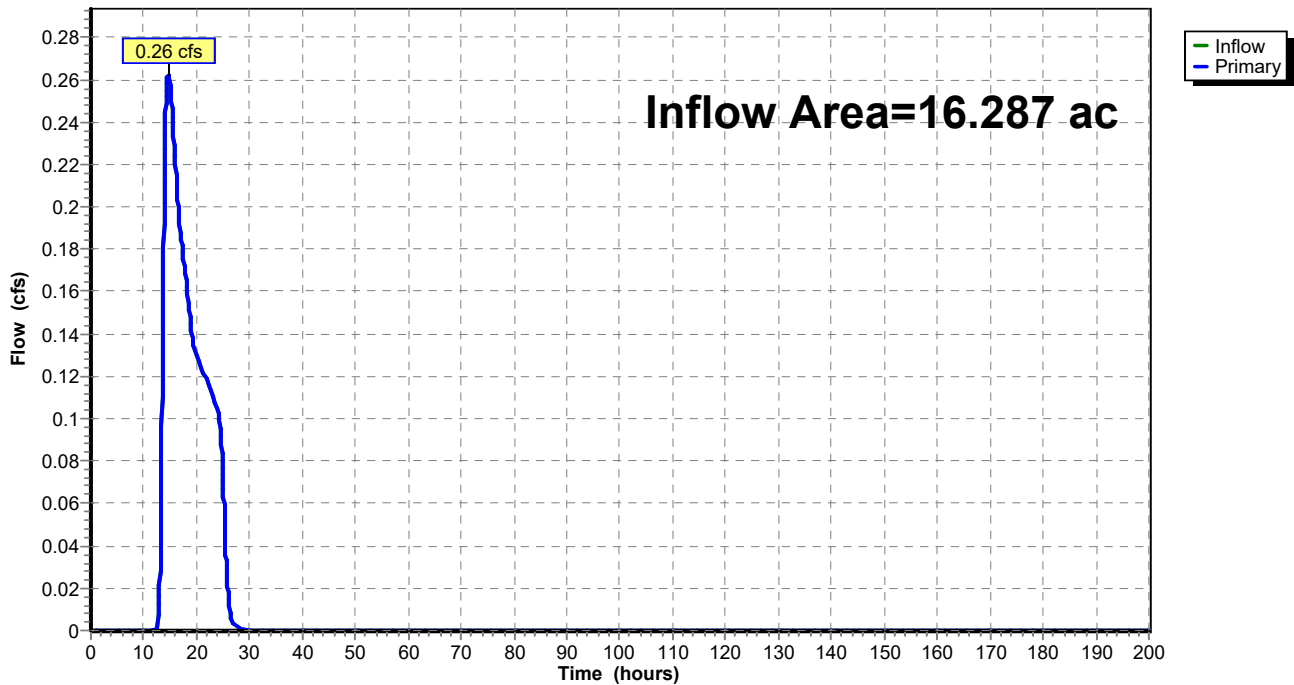
Summary for Link A:

Inflow Area = 16.287 ac, 0.00% Impervious, Inflow Depth = 0.12" for 50-Year event
Inflow = 0.26 cfs @ 14.61 hrs, Volume= 0.156 af
Primary = 0.26 cfs @ 14.61 hrs, Volume= 0.156 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link A:

Hydrograph



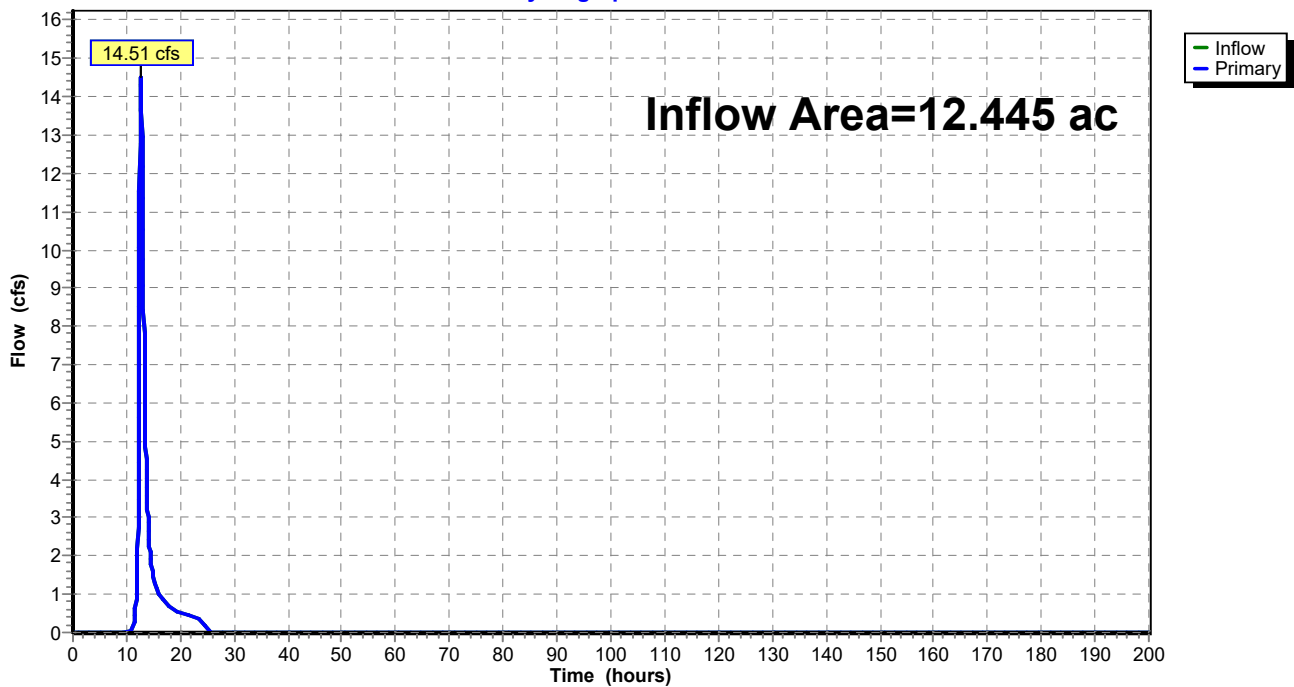
Summary for Link B:

Inflow Area = 12.445 ac, 0.00% Impervious, Inflow Depth = 1.92" for 50-Year event
Inflow = 14.51 cfs @ 12.67 hrs, Volume= 1.989 af
Primary = 14.51 cfs @ 12.67 hrs, Volume= 1.989 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link B:

Hydrograph



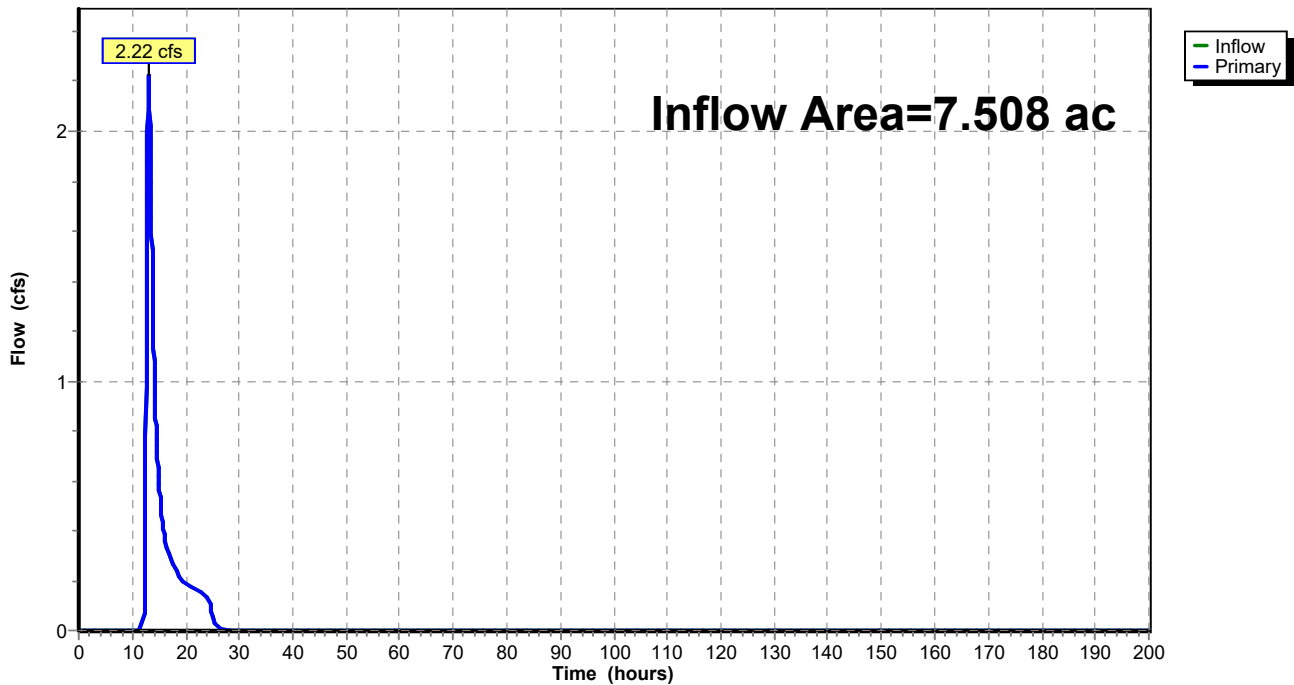
Summary for Link C:

Inflow Area = 7.508 ac, 0.00% Impervious, Inflow Depth = 0.76" for 50-Year event
Inflow = 2.22 cfs @ 13.06 hrs, Volume= 0.473 af
Primary = 2.22 cfs @ 13.06 hrs, Volume= 0.473 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link C:

Hydrograph



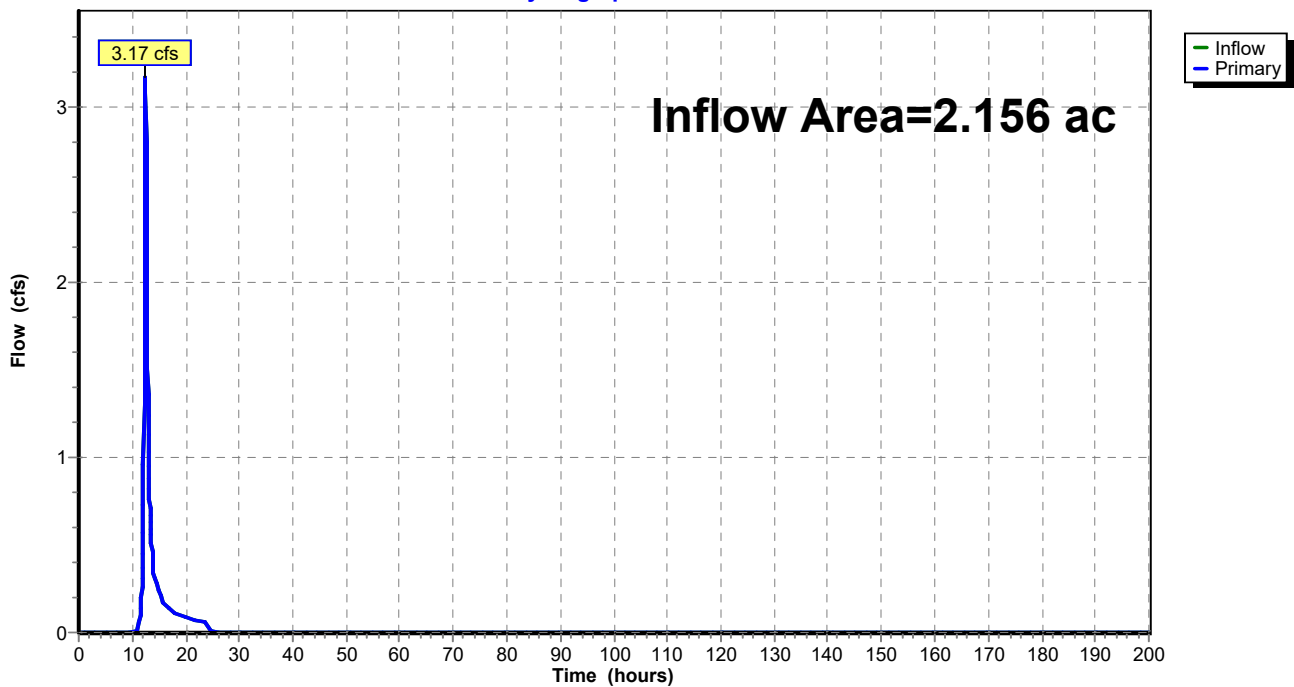
Summary for Link D:

Inflow Area = 2.156 ac, 0.00% Impervious, Inflow Depth = 1.84" for 50-Year event
Inflow = 3.17 cfs @ 12.42 hrs, Volume= 0.331 af
Primary = 3.17 cfs @ 12.42 hrs, Volume= 0.331 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link D:

Hydrograph



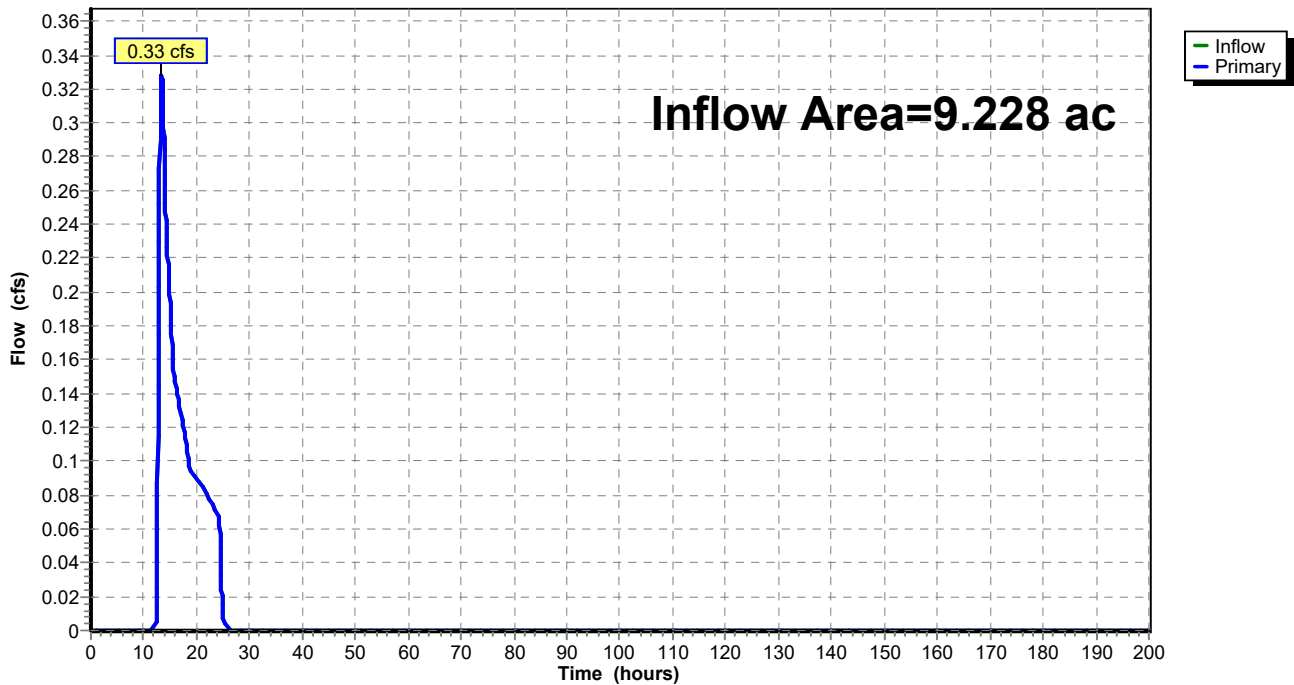
Summary for Link E:

Inflow Area = 9.228 ac, 0.27% Impervious, Inflow Depth = 0.17" for 50-Year event
Inflow = 0.33 cfs @ 13.36 hrs, Volume= 0.131 af
Primary = 0.33 cfs @ 13.36 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link E:

Hydrograph



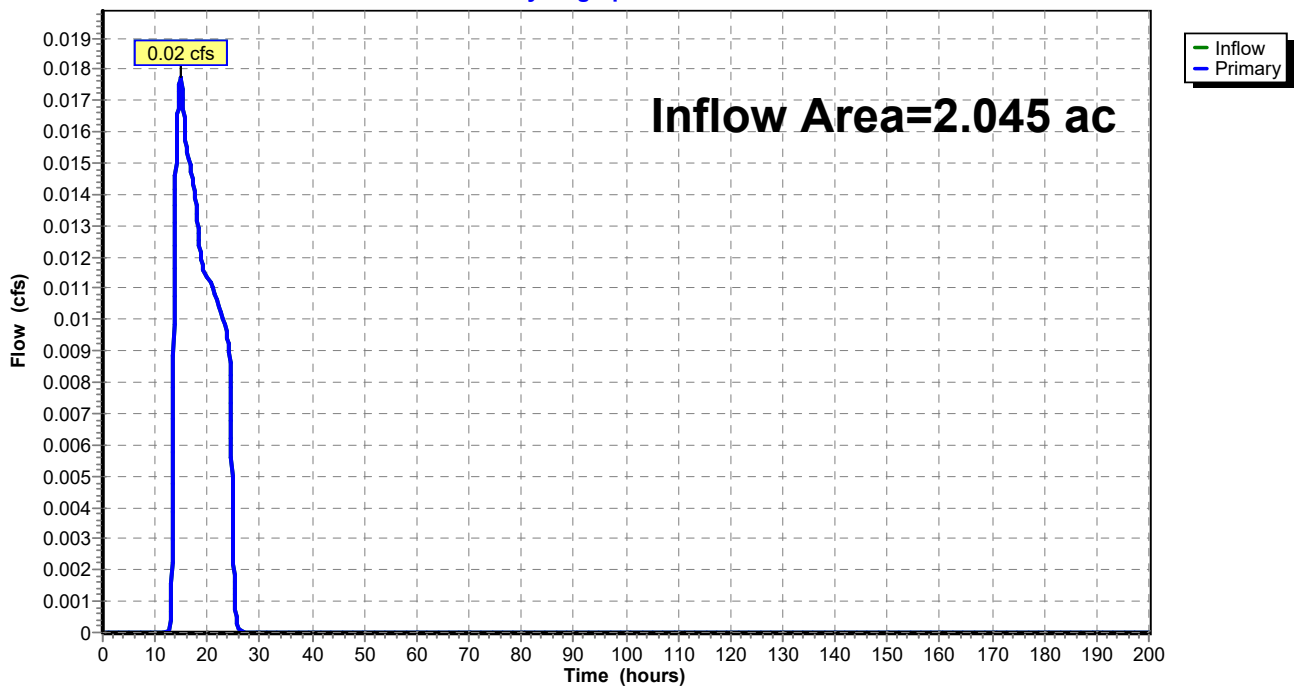
Summary for Link F:

Inflow Area = 2.045 ac, 0.00% Impervious, Inflow Depth = 0.07" for 50-Year event
Inflow = 0.02 cfs @ 14.89 hrs, Volume= 0.012 af
Primary = 0.02 cfs @ 14.89 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link F:

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 100-Year Rainfall=5.28"

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Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentS10: Runoff Area=16.287 ac 0.00% Impervious Runoff Depth=0.26"
Flow Length=1,856' Tc=90.5 min CN=39 Runoff=0.82 cfs 0.353 af

SubcatchmentS20: Runoff Area=12.445 ac 0.00% Impervious Runoff Depth=2.50"
Flow Length=934' Tc=46.3 min CN=73 Runoff=19.12 cfs 2.595 af

SubcatchmentS30: Runoff Area=7.508 ac 0.00% Impervious Runoff Depth=1.12"
Flow Length=1,338' Tc=64.6 min CN=55 Runoff=3.60 cfs 0.702 af

SubcatchmentS40: Runoff Area=2.156 ac 0.00% Impervious Runoff Depth=2.42"
Flow Length=387' Tc=28.6 min CN=72 Runoff=4.21 cfs 0.434 af

SubcatchmentS50: Runoff Area=9.228 ac 0.27% Impervious Runoff Depth=0.34"
Flow Length=1,310' Tc=44.6 min CN=41 Runoff=0.92 cfs 0.264 af

SubcatchmentS60: Runoff Area=2.045 ac 0.00% Impervious Runoff Depth=0.19"
Flow Length=669' Tc=51.1 min CN=37 Runoff=0.07 cfs 0.032 af

Reach 3R: Existing Culvert Avg. Flow Depth=0.24' Max Vel=4.84 fps Inflow=0.82 cfs 0.353 af
15.0" Round Pipe n=0.012 L=46.0' S=0.0196 '/' Capacity=9.79 cfs Outflow=0.82 cfs 0.353 af

Link A: Inflow=0.82 cfs 0.353 af
Primary=0.82 cfs 0.353 af

Link B: Inflow=19.12 cfs 2.595 af
Primary=19.12 cfs 2.595 af

Link C: Inflow=3.60 cfs 0.702 af
Primary=3.60 cfs 0.702 af

Link D: Inflow=4.21 cfs 0.434 af
Primary=4.21 cfs 0.434 af

Link E: Inflow=0.92 cfs 0.264 af
Primary=0.92 cfs 0.264 af

Link F: Inflow=0.07 cfs 0.032 af
Primary=0.07 cfs 0.032 af

Total Runoff Area = 49.669 ac Runoff Volume = 4.380 af Average Runoff Depth = 1.06"
99.95% Pervious = 49.644 ac 0.05% Impervious = 0.025 ac

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Vineyard 1 & 2
NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S10:

Runoff = 0.82 cfs @ 13.95 hrs, Volume= 0.353 af, Depth= 0.26"
Routed to Reach 3R : Existing Culvert

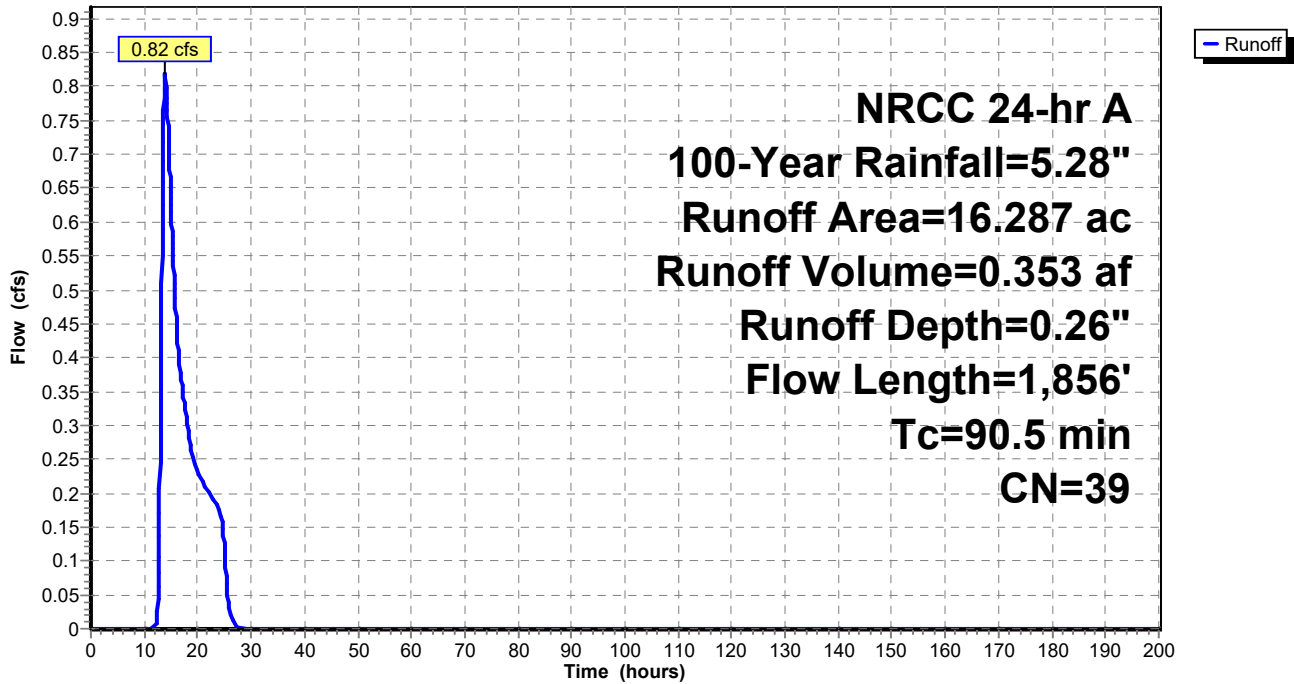
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
2.758	30	Woods, Good, HSG A
3.523	32	Woods/grass comb., Good, HSG A
8.647	39	>75% Grass cover, Good, HSG A
0.604	72	Woods/grass comb., Good, HSG C
0.755	74	>75% Grass cover, Good, HSG C
16.287	39	Weighted Average
16.287		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	100	0.0140	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
5.4	237	0.0215	0.73		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
11.2	476	0.0200	0.71		Shallow Concentrated Flow, Light wood Woodland Kv= 5.0 fps
23.7	1,043	0.0110	0.73		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
90.5	1,856	Total			

Subcatchment S10:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S20:

Runoff = 19.12 cfs @ 12.66 hrs, Volume= 2.595 af, Depth= 2.50"
Routed to Link B :

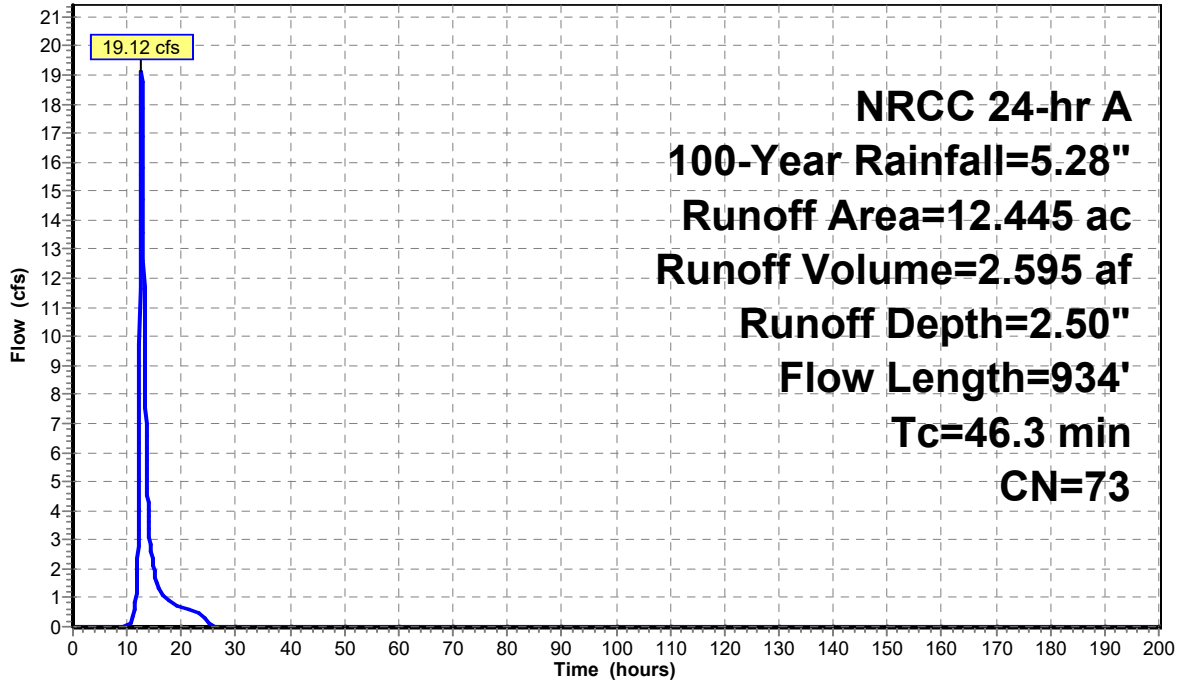
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
1.676	49	50-75% Grass cover, Fair, HSG A
1.173	70	Woods, Good, HSG C
1.897	72	Woods/grass comb., Good, HSG C
7.417	79	50-75% Grass cover, Fair, HSG C
0.190	89	Gravel roads, HSG C
0.092	76	Gravel roads, HSG A
12.445	73	Weighted Average
12.445		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.6	19	0.2600	0.20		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
32.2	81	0.0280	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
2.1	101	0.0250	0.79		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
10.4	733	0.0282	1.18		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
46.3	934	Total			

Subcatchment S20:

Hydrograph



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Summary for Subcatchment S30:

Runoff = 3.60 cfs @ 13.02 hrs, Volume= 0.702 af, Depth= 1.12"
 Routed to Link C :

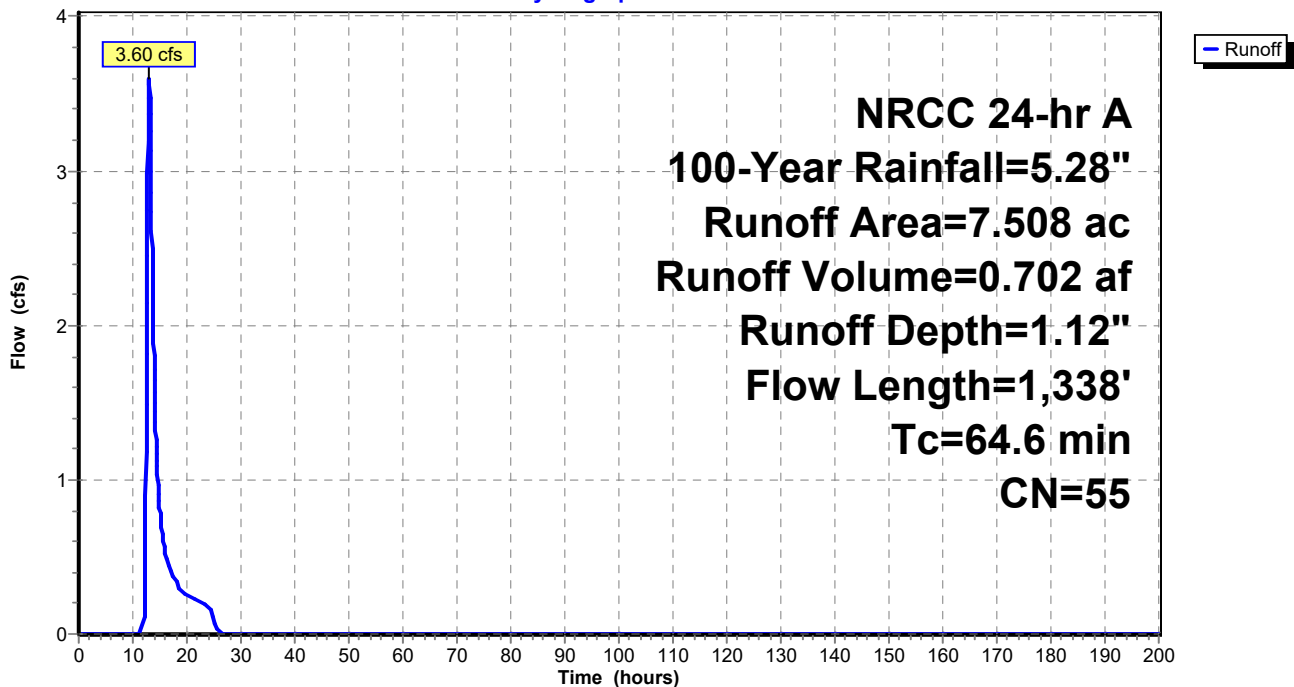
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
0.878	30	Woods, Good, HSG A
2.725	39	>75% Grass cover, Good, HSG A
2.540	70	Woods, Good, HSG C
1.365	74	>75% Grass cover, Good, HSG C
7.508	55	Weighted Average
7.508		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
42.1	100	0.0218	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
13.3	603	0.0117	0.76		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
9.2	635	0.0530	1.15		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
64.6	1,338	Total			

Subcatchment S30:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S40:

Runoff = 4.21 cfs @ 12.42 hrs, Volume= 0.434 af, Depth= 2.42"
 Routed to Link D :

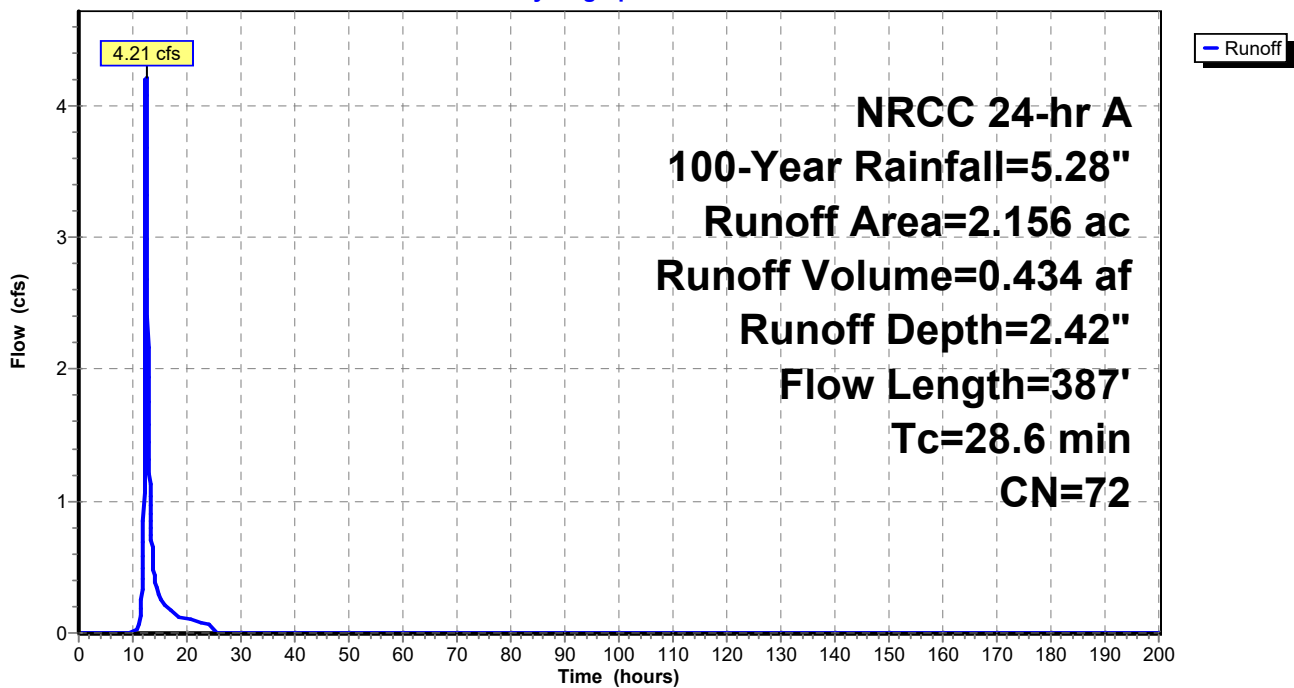
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
1.064	70	Woods, Good, HSG C
1.092	74	>75% Grass cover, Good, HSG C
2.156	72	Weighted Average
2.156		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0095	0.07		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
4.8	236	0.0139	0.83		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
1.4	51	0.0157	0.63		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
28.6	387	Total			

Subcatchment S40:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S50:

Runoff = 0.92 cfs @ 13.00 hrs, Volume= 0.264 af, Depth= 0.34"
 Routed to Link E :

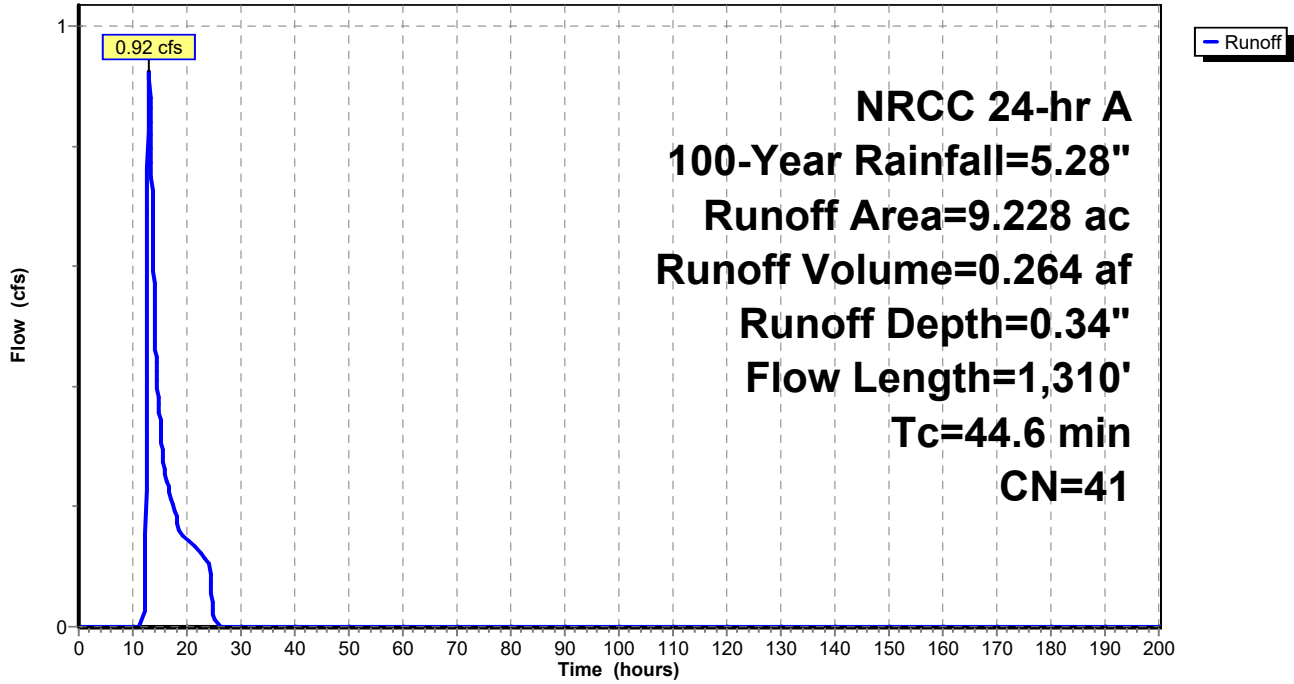
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
3.711	30	Woods, Good, HSG A
3.928	39	>75% Grass cover, Good, HSG A
0.350	70	Woods, Good, HSG C
1.214	74	>75% Grass cover, Good, HSG C
* 0.025	98	Existing foundation, HSG A
9.228	41	Weighted Average
9.203		99.73% Pervious Area
0.025		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	72	0.0495	0.13		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
16.2	28	0.0186	0.03		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
1.7	118	0.0518	1.14		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
14.3	870	0.0210	1.01		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
3.5	222	0.0447	1.06		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
44.6	1,310	Total			

Subcatchment S50:

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S60:

Runoff = 0.07 cfs @ 13.54 hrs, Volume= 0.032 af, Depth= 0.19"
Routed to Link F :

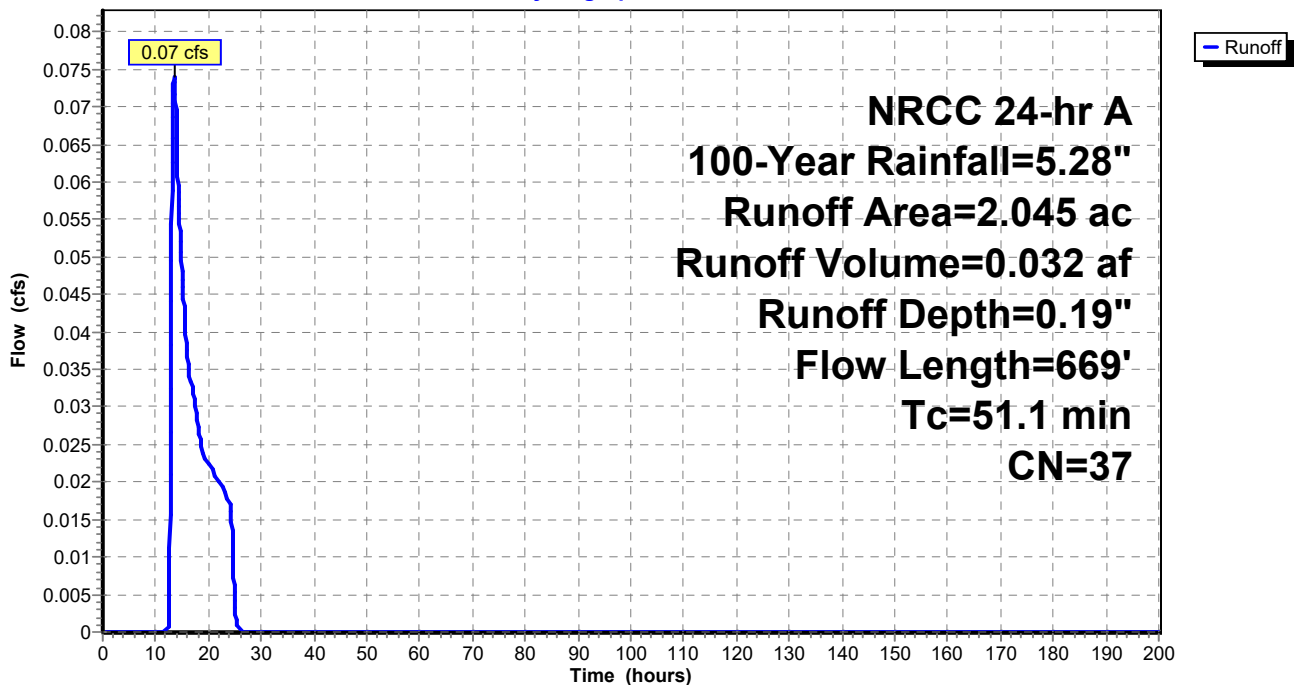
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
0.435	30	Woods, Good, HSG A
1.610	39	>75% Grass cover, Good, HSG A
2.045	37	Weighted Average
2.045		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.1	100	0.0231	0.04		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
0.8	35	0.0231	0.76		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
8.7	510	0.0197	0.98		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.5	24	0.0272	0.82		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
51.1	669	Total			

Subcatchment S60:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Reach 3R: Existing Culvert

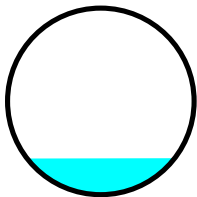
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 16.287 ac, 0.00% Impervious, Inflow Depth = 0.26" for 100-Year event
Inflow = 0.82 cfs @ 13.95 hrs, Volume= 0.353 af
Outflow = 0.82 cfs @ 13.96 hrs, Volume= 0.353 af, Atten= 0%, Lag= 0.1 min
Routed to Link A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.84 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 3.03 fps, Avg. Travel Time= 0.3 min

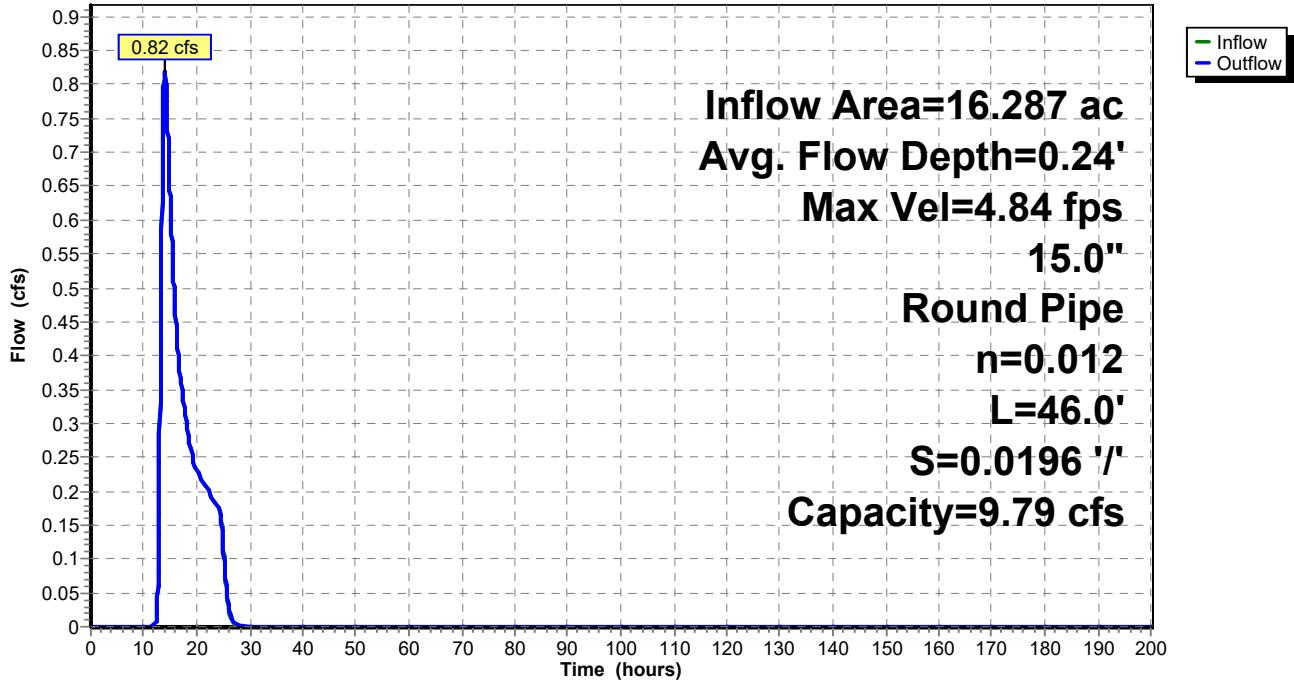
Peak Storage= 8 cf @ 13.96 hrs
Average Depth at Peak Storage= 0.24' , Surface Width= 0.99'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.79 cfs

15.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 46.0' Slope= 0.0196 '/'
Inlet Invert= 459.30', Outlet Invert= 458.40'



Reach 3R: Existing Culvert

Hydrograph



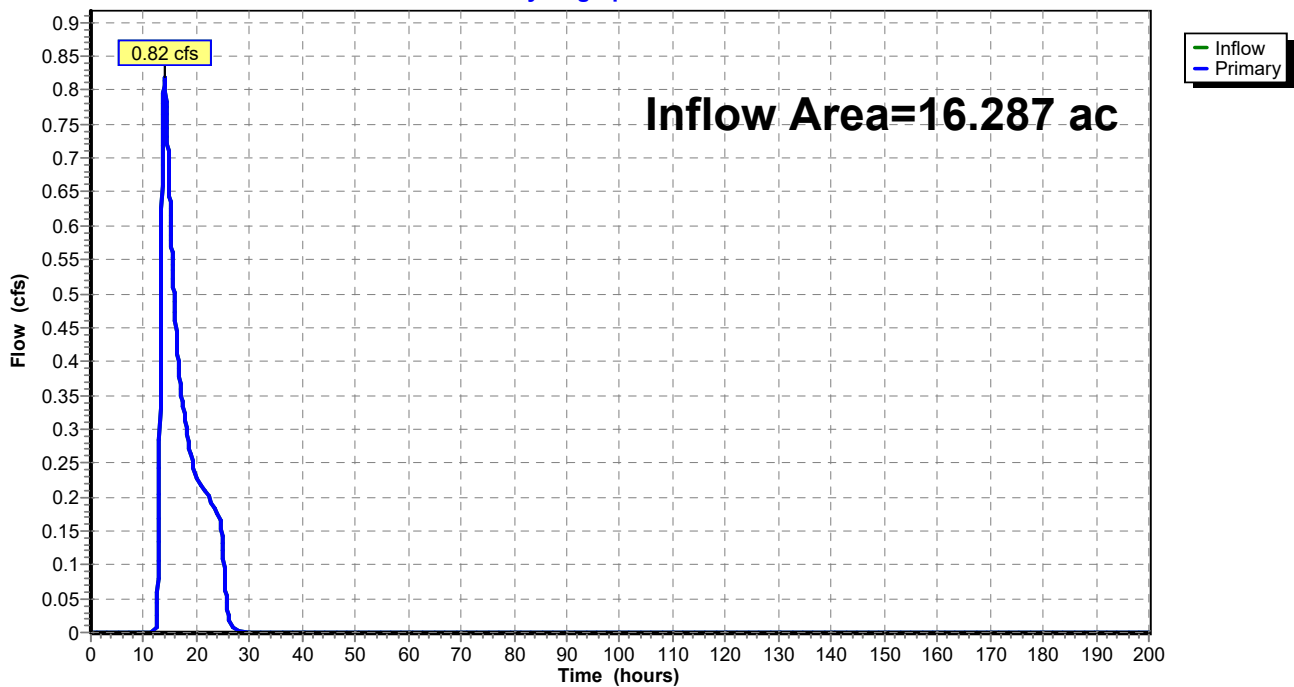
Summary for Link A:

Inflow Area = 16.287 ac, 0.00% Impervious, Inflow Depth = 0.26" for 100-Year event
Inflow = 0.82 cfs @ 13.96 hrs, Volume= 0.353 af
Primary = 0.82 cfs @ 13.96 hrs, Volume= 0.353 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link A:

Hydrograph



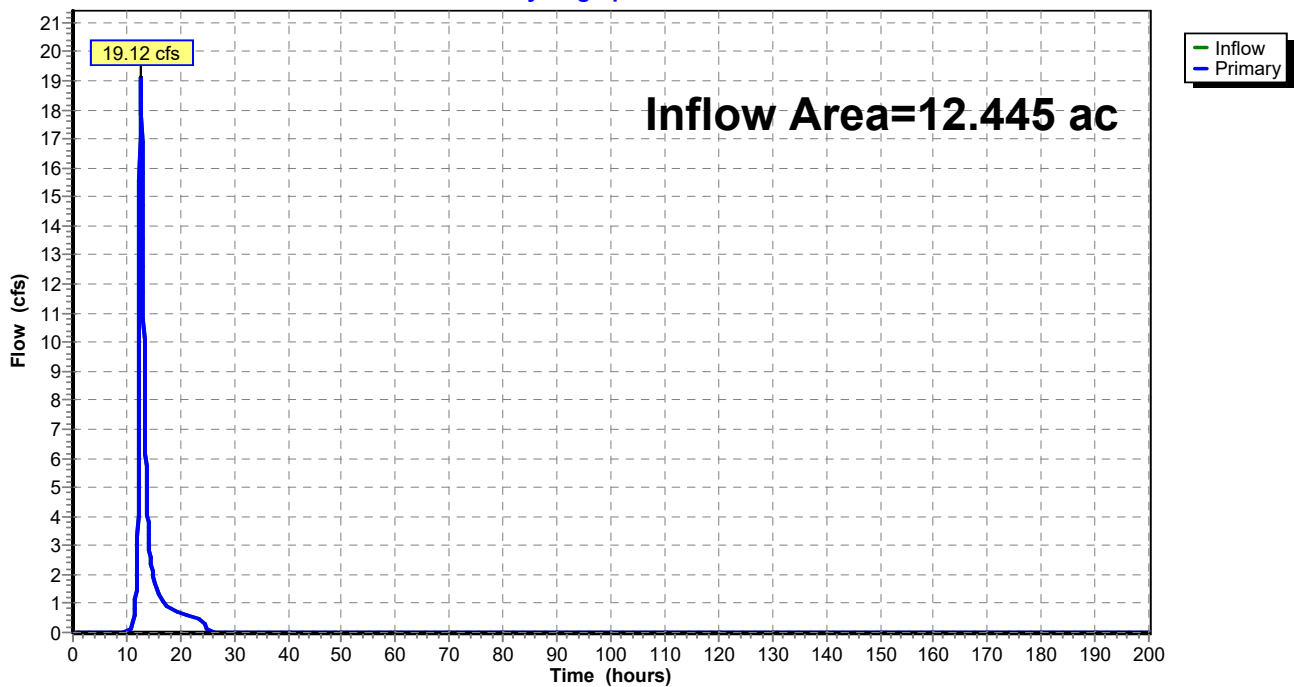
Summary for Link B:

Inflow Area = 12.445 ac, 0.00% Impervious, Inflow Depth = 2.50" for 100-Year event
Inflow = 19.12 cfs @ 12.66 hrs, Volume= 2.595 af
Primary = 19.12 cfs @ 12.66 hrs, Volume= 2.595 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link B:

Hydrograph



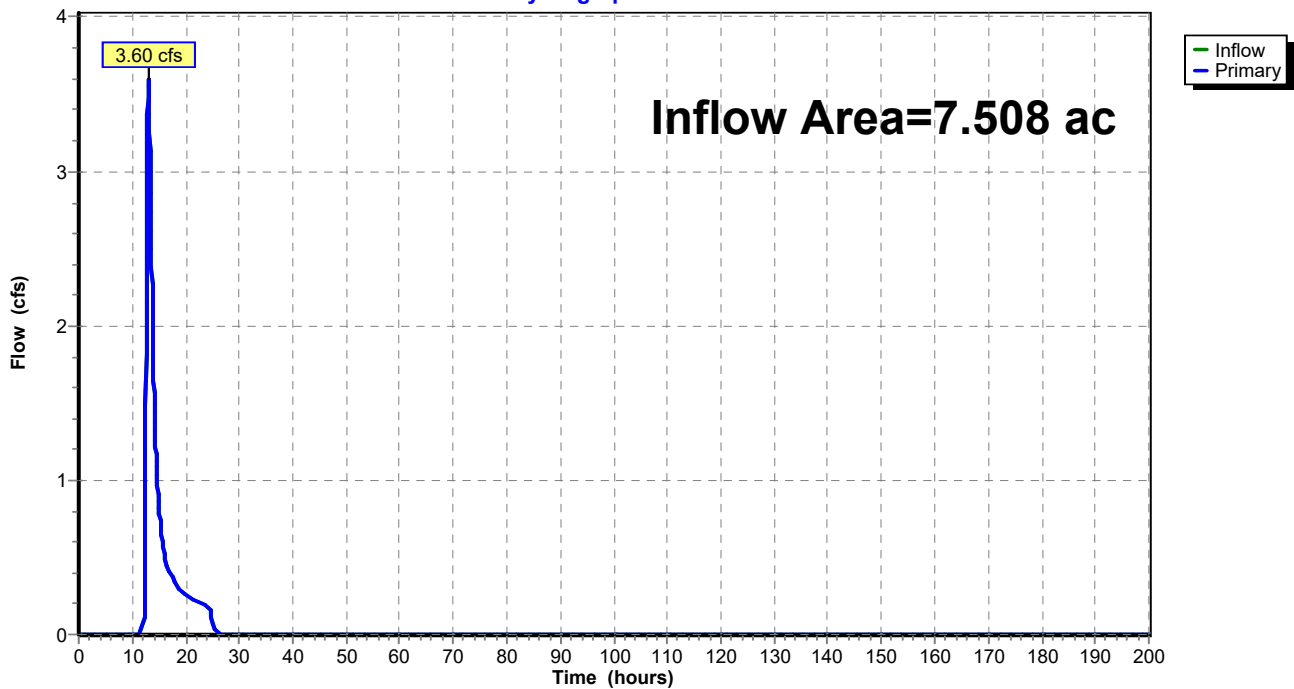
Summary for Link C:

Inflow Area = 7.508 ac, 0.00% Impervious, Inflow Depth = 1.12" for 100-Year event
Inflow = 3.60 cfs @ 13.02 hrs, Volume= 0.702 af
Primary = 3.60 cfs @ 13.02 hrs, Volume= 0.702 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link C:

Hydrograph



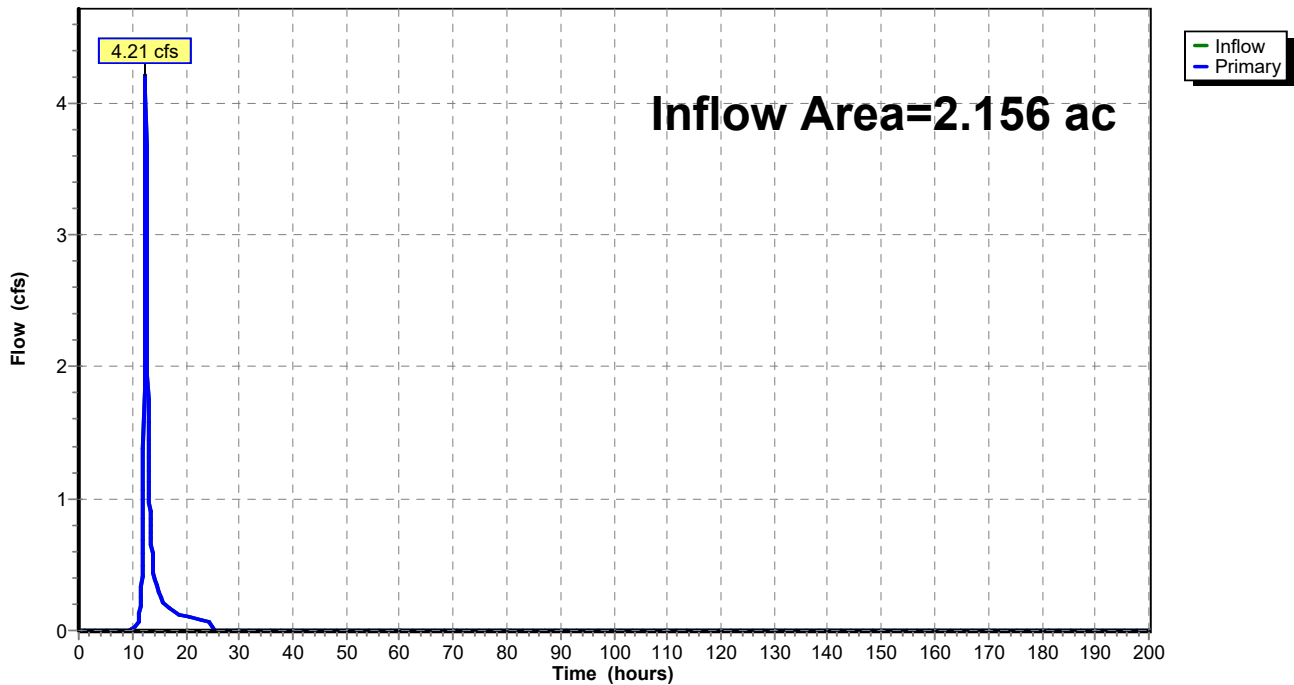
Summary for Link D:

Inflow Area = 2.156 ac, 0.00% Impervious, Inflow Depth = 2.42" for 100-Year event
Inflow = 4.21 cfs @ 12.42 hrs, Volume= 0.434 af
Primary = 4.21 cfs @ 12.42 hrs, Volume= 0.434 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link D:

Hydrograph



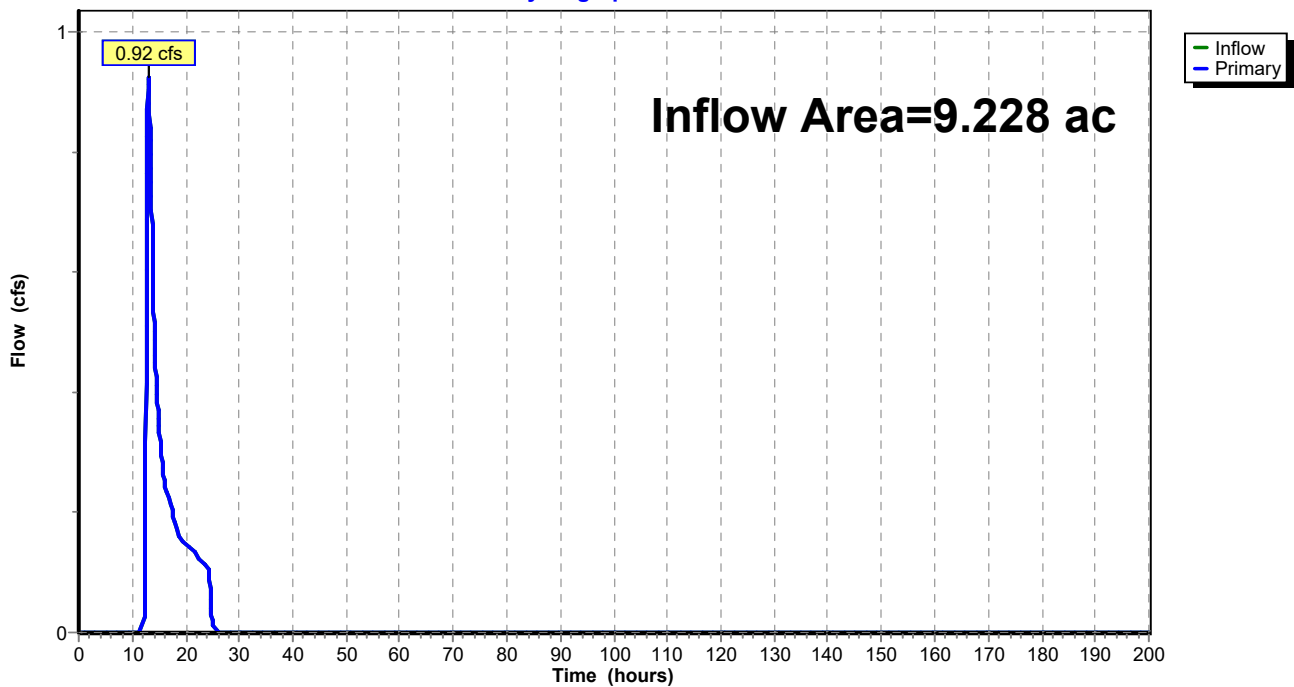
Summary for Link E:

Inflow Area = 9.228 ac, 0.27% Impervious, Inflow Depth = 0.34" for 100-Year event
Inflow = 0.92 cfs @ 13.00 hrs, Volume= 0.264 af
Primary = 0.92 cfs @ 13.00 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link E:

Hydrograph



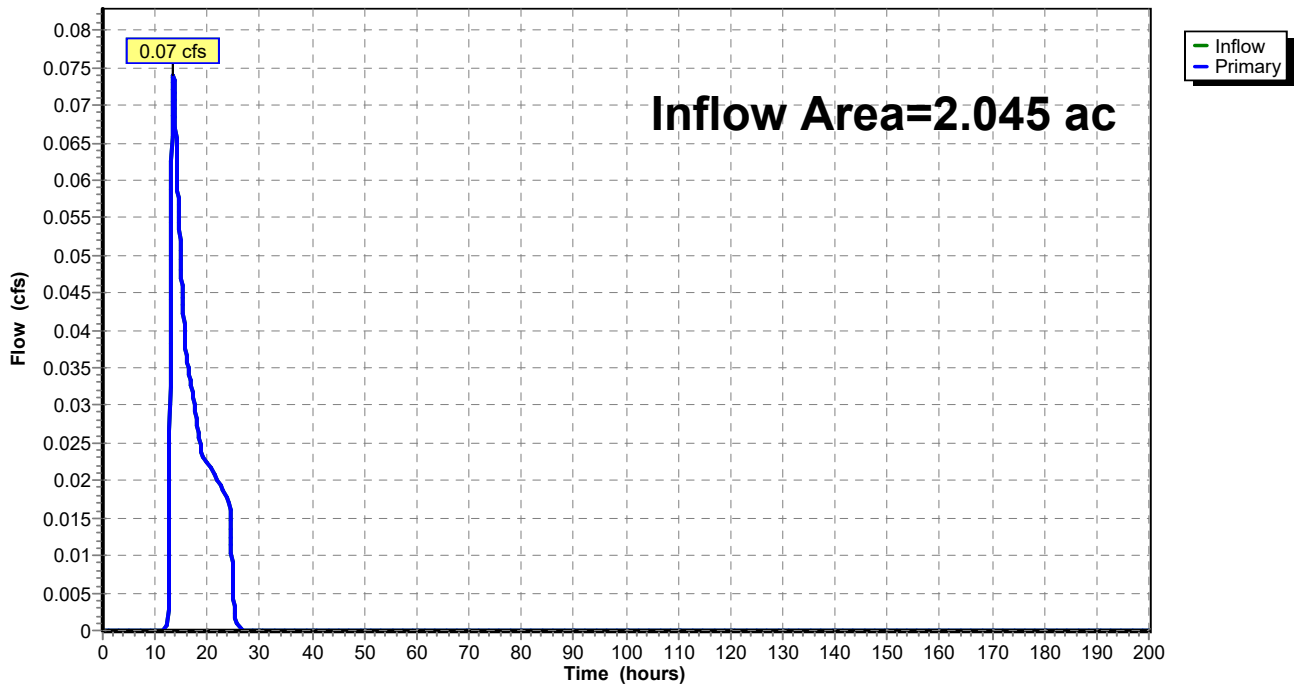
Summary for Link F:

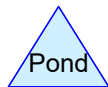
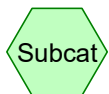
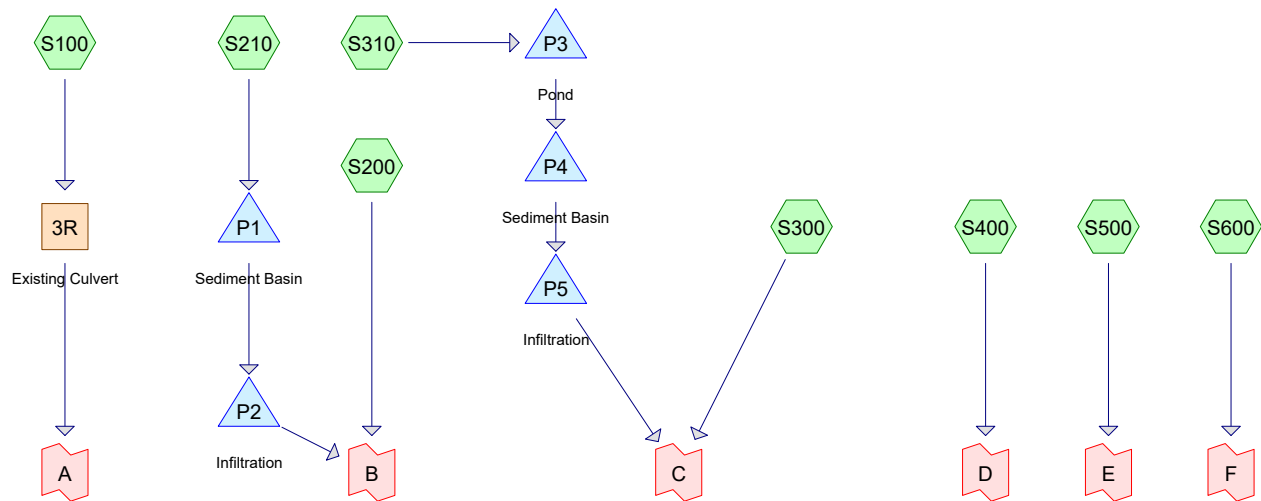
Inflow Area = 2.045 ac, 0.00% Impervious, Inflow Depth = 0.19" for 100-Year event
Inflow = 0.07 cfs @ 13.54 hrs, Volume= 0.032 af
Primary = 0.07 cfs @ 13.54 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link F:

Hydrograph





Routing Diagram for 2024-01-11 Post Development
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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-Year	NRCC 24-hr	A	Default	24.00	1	1.98	2
2	10-Year	NRCC 24-hr	A	Default	24.00	1	3.19	2
3	50-Year	NRCC 24-hr	A	Default	24.00	1	4.53	2
4	100-Year	NRCC 24-hr	A	Default	24.00	1	5.28	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.524	39	>75% Grass cover, Good, HSG A (S100, S210, S300, S310, S600)
1.692	74	>75% Grass cover, Good, HSG C (S100, S200, S210, S300)
0.038	98	Equipment Pad (S310)
0.019	98	Equipment Pad (S210)
0.025	98	Existing foundation, HSG A (S500)
0.372	76	Gravel roads, HSG A (S210, S310)
1.074	89	Gravel roads, HSG C (S210)
20.885	30	Meadow, non-grazed, HSG A (S100, S200, S210, S300, S310, S500, S600)
13.342	71	Meadow, non-grazed, HSG C (S200, S210, S300, S310, S400, S500)
3.915	30	Woods, Good, HSG A (S100, S300, S310, S500, S600)
4.443	70	Woods, Good, HSG C (S200, S300, S310, S400, S500)
3.242	32	Woods/grass comb., Good, HSG A (S100)
2.690	72	Woods/grass comb., Good, HSG C (S100, S200, S210)
53.261	49	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
29.963	HSG A	S100, S200, S210, S300, S310, S500, S600
0.000	HSG B	
23.241	HSG C	S100, S200, S210, S300, S310, S400, S500
0.000	HSG D	
0.057	Other	S210, S310
53.261		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
1.524	0.000	1.692	0.000	0.000	3.216	>75% Grass cover, Good	S100, S200, S210, S300, S310, S600
0.000	0.000	0.000	0.000	0.038	0.038	Equipment Pad	S310
0.000	0.000	0.000	0.000	0.019	0.019	Equipment Pad	S210
0.025	0.000	0.000	0.000	0.000	0.025	Existing foundation	S500
0.372	0.000	1.074	0.000	0.000	1.446	Gravel roads	S210, S310
20.885	0.000	13.342	0.000	0.000	34.227	Meadow, non-grazed	S100, S200, S210, S300, S310, S400, S500, S600
3.915	0.000	4.443	0.000	0.000	8.358	Woods, Good	S100, S200, S300, S310, S400, S500, S600
3.242	0.000	2.690	0.000	0.000	5.932	Woods/grass comb., Good	S100, S200, S210
29.963	0.000	23.241	0.000	0.057	53.261	TOTAL AREA	

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Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Width (inches)	Diam/Height (inches)	Inside-Fill (inches)	Node Name
1	3R	459.30	458.40	46.0	0.0196	0.012	0.0	15.0	0.0	
2	P3	456.00	455.00	58.5	0.0171	0.012	0.0	6.0	0.0	

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Vineyard 1 & 2
NRCC 24-hr A 1-Year Rainfall=1.98"

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Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentS100:	Runoff Area=15.979 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,856' Tc=90.5 min CN=34 Runoff=0.00 cfs 0.000 af
SubcatchmentS200:	Runoff Area=13.335 ac 0.00% Impervious Runoff Depth=0.17" Flow Length=934' Tc=51.1 min CN=67 Runoff=0.73 cfs 0.186 af
SubcatchmentS210:	Runoff Area=2.914 ac 0.65% Impervious Runoff Depth=0.40" Flow Length=659' Tc=14.2 min CN=76 Runoff=1.14 cfs 0.098 af
SubcatchmentS300:	Runoff Area=5.877 ac 0.00% Impervious Runoff Depth=0.02" Flow Length=1,338' Tc=80.0 min CN=56 Runoff=0.01 cfs 0.010 af
SubcatchmentS310:	Runoff Area=1.712 ac 2.22% Impervious Runoff Depth=0.00" Flow Length=220' Tc=14.9 min CN=40 Runoff=0.00 cfs 0.000 af
SubcatchmentS400:	Runoff Area=2.156 ac 0.00% Impervious Runoff Depth=0.26" Flow Length=388' Tc=28.3 min CN=71 Runoff=0.30 cfs 0.046 af
SubcatchmentS500:	Runoff Area=9.227 ac 0.27% Impervious Runoff Depth=0.00" Flow Length=1,329' Tc=44.8 min CN=37 Runoff=0.00 cfs 0.000 af
SubcatchmentS600:	Runoff Area=2.061 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=668' Tc=51.0 min CN=32 Runoff=0.00 cfs 0.000 af
Reach 3R: Existing Culvert	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af 15.0" Round Pipe n=0.012 L=46.0' S=0.0196 '/' Capacity=9.79 cfs Outflow=0.00 cfs 0.000 af
Pond P1: Sediment Basin	Peak Elev=463.57' Storage=1,242 cf Inflow=1.14 cfs 0.098 af Outflow=0.71 cfs 0.071 af
Pond P2: Infiltration	Peak Elev=462.23' Storage=1,299 cf Inflow=0.71 cfs 0.071 af Discarded=0.06 cfs 0.071 af Primary=0.00 cfs 0.000 af Outflow=0.06 cfs 0.071 af
Pond P3: Pond	Peak Elev=456.00' Storage=0 cf Inflow=0.00 cfs 0.000 af 6.0" Round Culvert n=0.012 L=58.5' S=0.0171 '/' Outflow=0.00 cfs 0.000 af
Pond P4: Sediment Basin	Peak Elev=454.00' Storage=0 cf Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond P5: Infiltration	Peak Elev=453.00' Storage=0 cf Inflow=0.00 cfs 0.000 af Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Link A:	Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af
Link B:	Inflow=0.73 cfs 0.186 af Primary=0.73 cfs 0.186 af

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Vineyard 1 & 2

NRCC 24-hr A 1-Year Rainfall=1.98"

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Link C:

Inflow=0.01 cfs 0.010 af
Primary=0.01 cfs 0.010 af

Link D:

Inflow=0.30 cfs 0.046 af
Primary=0.30 cfs 0.046 af

Link E:

Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link F:

Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 53.261 ac Runoff Volume = 0.340 af Average Runoff Depth = 0.08"
99.85% Pervious = 53.179 ac 0.15% Impervious = 0.082 ac

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Summary for Subcatchment S100:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach 3R : Existing Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
2.433	30	Woods, Good, HSG A
3.242	32	Woods/grass comb., Good, HSG A
0.746	39	>75% Grass cover, Good, HSG A
8.371	30	Meadow, non-grazed, HSG A
0.799	72	Woods/grass comb., Good, HSG C
0.388	74	>75% Grass cover, Good, HSG C
15.979	34	Weighted Average
15.979		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	100	0.0140	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
5.4	237	0.0215	0.73		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
11.2	476	0.0200	0.71		Shallow Concentrated Flow, Light wood Woodland Kv= 5.0 fps
23.7	1,043	0.0110	0.73		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
90.5	1,856	Total			

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Vineyard 1 & 2

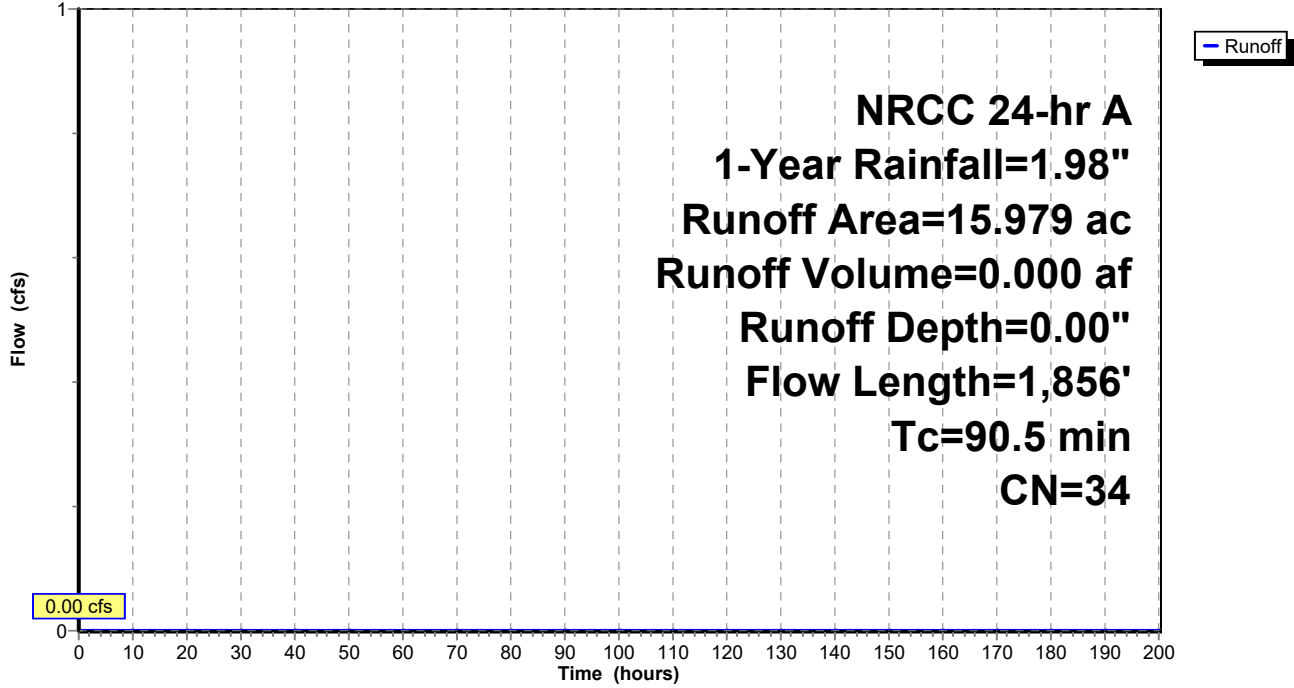
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Subcatchment S100:

Hydrograph



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Summary for Subcatchment S200:

Runoff = 0.73 cfs @ 13.01 hrs, Volume= 0.186 af, Depth= 0.17"
Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
1.446	30	Meadow, non-grazed, HSG A
7.786	71	Meadow, non-grazed, HSG C
1.056	70	Woods, Good, HSG C
1.872	72	Woods/grass comb., Good, HSG C
1.175	74	>75% Grass cover, Good, HSG C
13.335	67	Weighted Average
13.335		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	19	0.2000	0.18		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
36.8	81	0.0200	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
2.1	101	0.0250	0.79		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
10.4	733	0.0282	1.18		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
51.1	934	Total			

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Vineyard 1 & 2

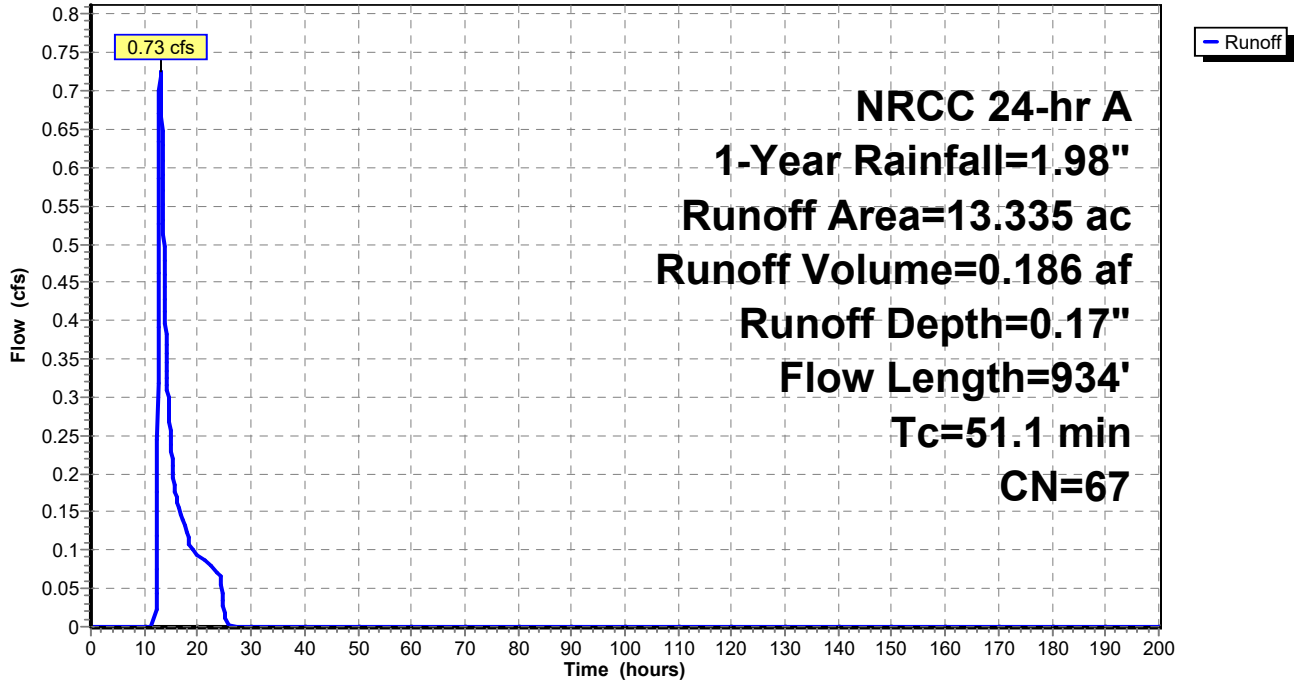
NRCC 24-hr A 1-Year Rainfall=1.98"

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Subcatchment S200:

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Subcatchment S210:

Runoff = 1.14 cfs @ 12.26 hrs, Volume= 0.098 af, Depth= 0.40"
Routed to Pond P1 : Sediment Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
0.117	30	Meadow, non-grazed, HSG A
1.359	71	Meadow, non-grazed, HSG C
0.019	72	Woods/grass comb., Good, HSG C
0.085	74	>75% Grass cover, Good, HSG C
0.059	39	>75% Grass cover, Good, HSG A
1.074	89	Gravel roads, HSG C
0.182	76	Gravel roads, HSG A
* 0.019	98	Equipment Pad
2.914	76	Weighted Average
2.895		99.35% Pervious Area
0.019		0.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0900	0.18		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
4.1	306	0.0310	1.23		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
0.1	11	0.0200	2.87		Shallow Concentrated Flow, Grass Paved Kv= 20.3 fps
0.9	242	0.0940	4.60		Shallow Concentrated Flow, Swale Grassed Waterway Kv= 15.0 fps
14.2	659	Total			

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Vineyard 1 & 2

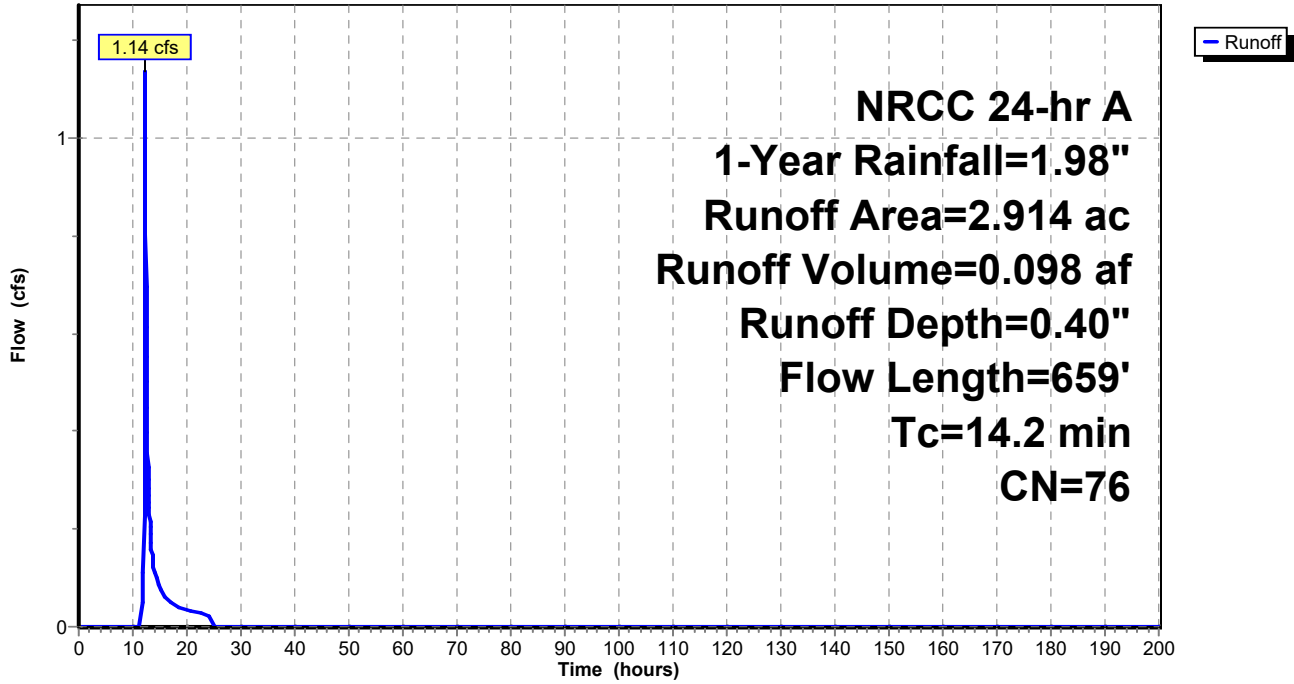
NRCC 24-hr A 1-Year Rainfall=1.98"

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Subcatchment S210:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Subcatchment S300:

Runoff = 0.01 cfs @ 17.33 hrs, Volume= 0.010 af, Depth= 0.02"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
0.019	30	Woods, Good, HSG A
1.966	30	Meadow, non-grazed, HSG A
1.282	71	Meadow, non-grazed, HSG C
2.490	70	Woods, Good, HSG C
0.076	39	>75% Grass cover, Good, HSG A
0.044	74	>75% Grass cover, Good, HSG C
5.877	56	Weighted Average
5.877		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
57.4	100	0.0100	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
13.4	603	0.0115	0.75		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
9.2	635	0.0530	1.15		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
80.0	1,338	Total			

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Vineyard 1 & 2

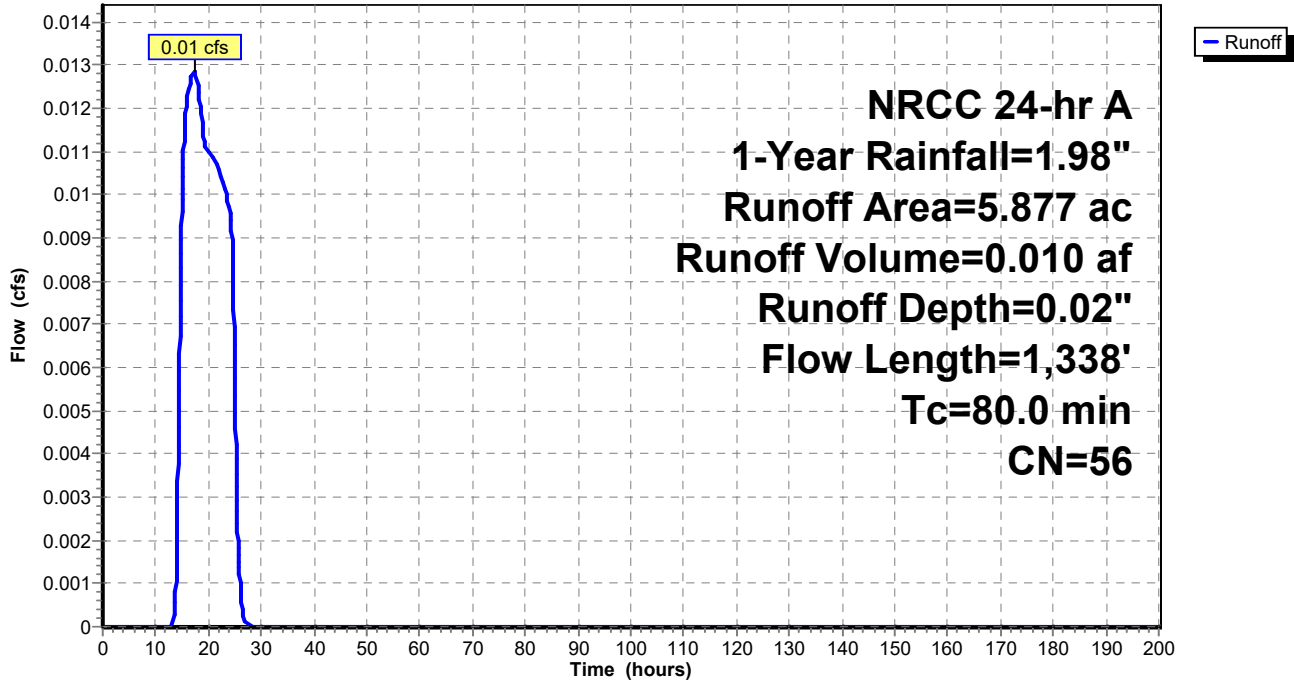
NRCC 24-hr A 1-Year Rainfall=1.98"

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Subcatchment S300:

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Subcatchment S310:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Pond P3 : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
1.059	30	Meadow, non-grazed, HSG A
0.069	71	Meadow, non-grazed, HSG C
0.095	30	Woods, Good, HSG A
0.024	70	Woods, Good, HSG C
0.237	39	>75% Grass cover, Good, HSG A
0.190	76	Gravel roads, HSG A
* 0.038	98	Equipment Pad
1.712	40	Weighted Average
1.674		97.78% Pervious Area
0.038		2.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0354	0.13		Sheet Flow, Swale
					Grass: Dense n= 0.240 P2= 2.36"
1.7	120	0.0275	1.16		Shallow Concentrated Flow, Swale
					Short Grass Pasture Kv= 7.0 fps
14.9	220	Total			

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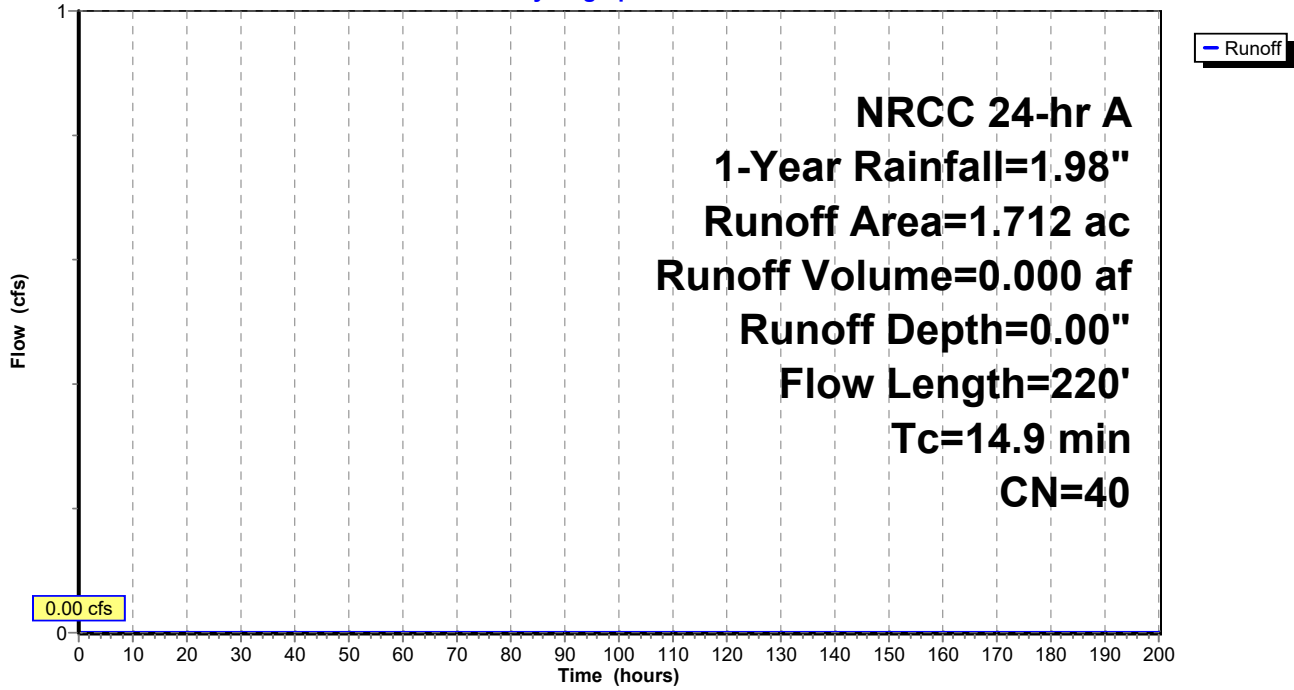
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Subcatchment S310:

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Subcatchment S400:

Runoff = 0.30 cfs @ 12.53 hrs, Volume= 0.046 af, Depth= 0.26"
Routed to Link D :

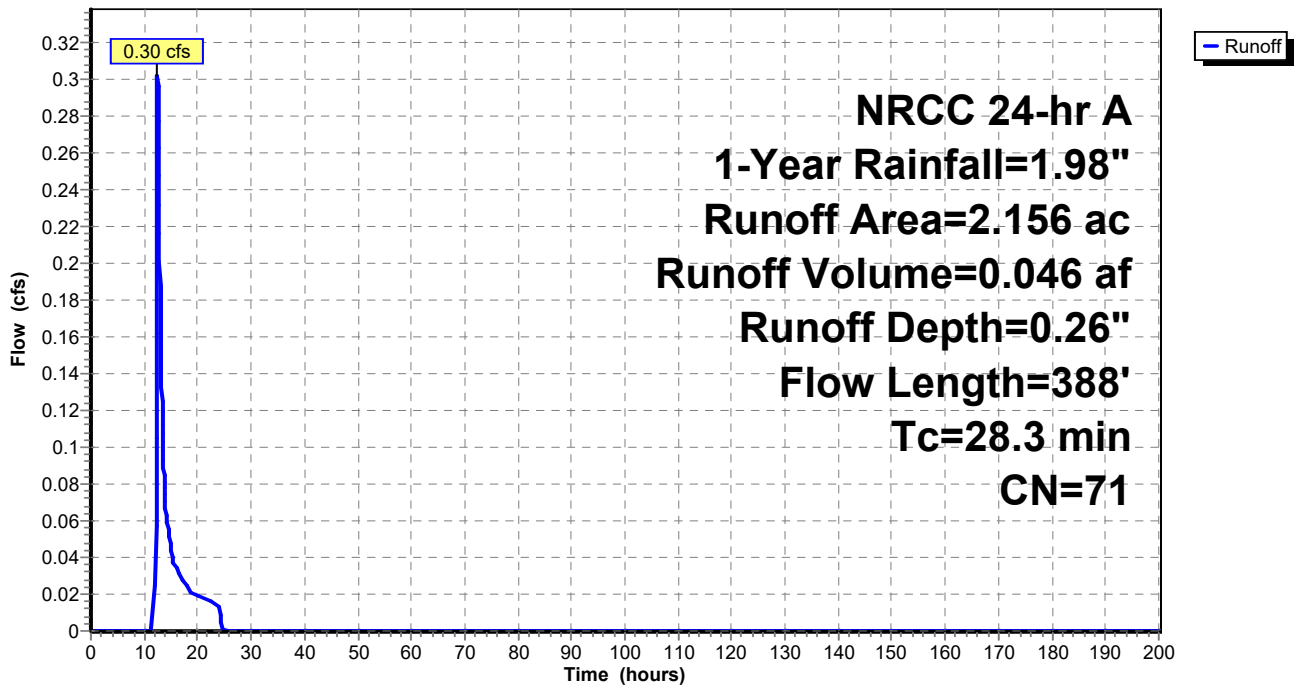
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
1.306	71	Meadow, non-grazed, HSG C
0.850	70	Woods, Good, HSG C
2.156	71	Weighted Average
2.156		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0095	0.07		Sheet Flow, Grass SF Grass: Dense n= 0.240 P2= 2.36"
5.3	264	0.0139	0.83		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.6	24	0.0157	0.63		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
28.3	388	Total			

Subcatchment S400:

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Subcatchment S500:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link E :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
0.921	30	Woods, Good, HSG A
6.718	30	Meadow, non-grazed, HSG A
1.540	71	Meadow, non-grazed, HSG C
0.023	70	Woods, Good, HSG C
* 0.025	98	Existing foundation, HSG A
9.227	37	Weighted Average
9.202		99.73% Pervious Area
0.025		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	72	0.0495	0.13		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
16.2	28	0.0186	0.03		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
1.0	97	0.0518	1.59		Shallow Concentrated Flow, Woods - SCF Short Grass Pasture Kv= 7.0 fps
18.4	1,111	0.0206	1.00		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.3	21	0.0576	1.20		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
44.8	1,329	Total			

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Vineyard 1 & 2

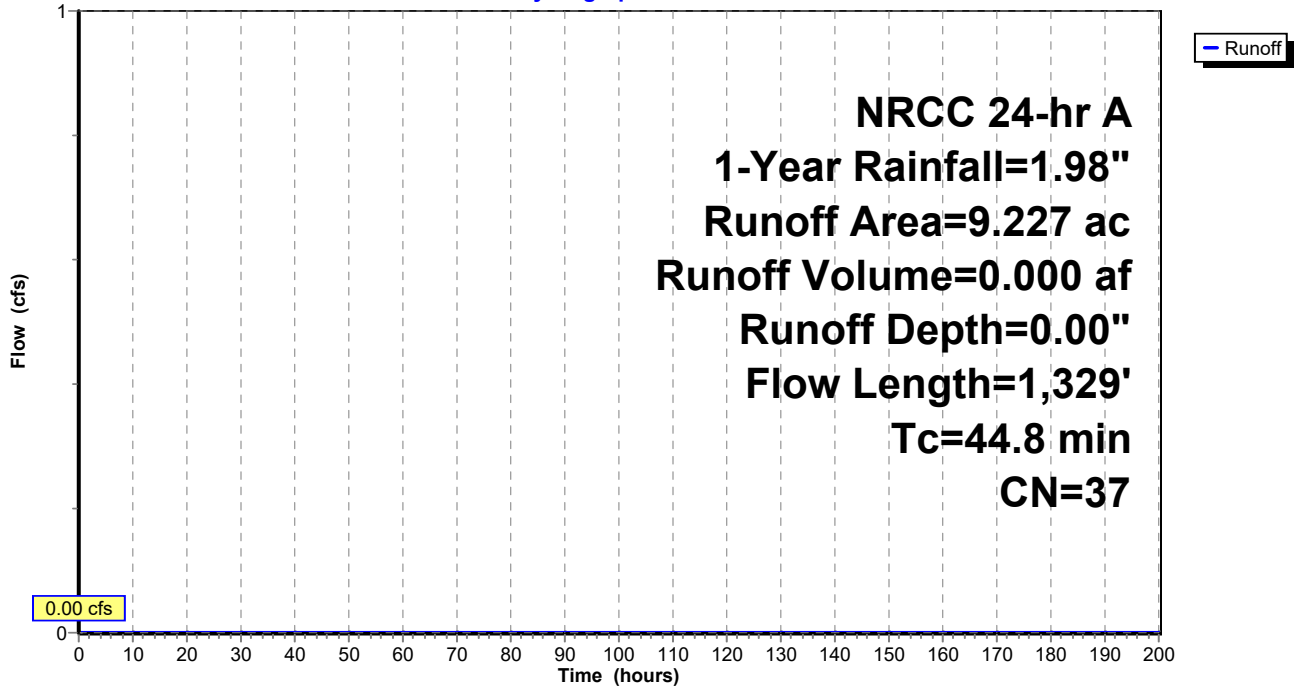
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Subcatchment S500:

Hydrograph



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NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Subcatchment S600:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link F :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 1-Year Rainfall=1.98"

Area (ac)	CN	Description
0.447	30	Woods, Good, HSG A
1.208	30	Meadow, non-grazed, HSG A
0.406	39	>75% Grass cover, Good, HSG A
2.061	32	Weighted Average
2.061		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.1	100	0.0231	0.04		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
0.7	34	0.0231	0.76		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
8.7	510	0.0197	0.98		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.5	24	0.0272	0.82		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
51.0	668	Total			

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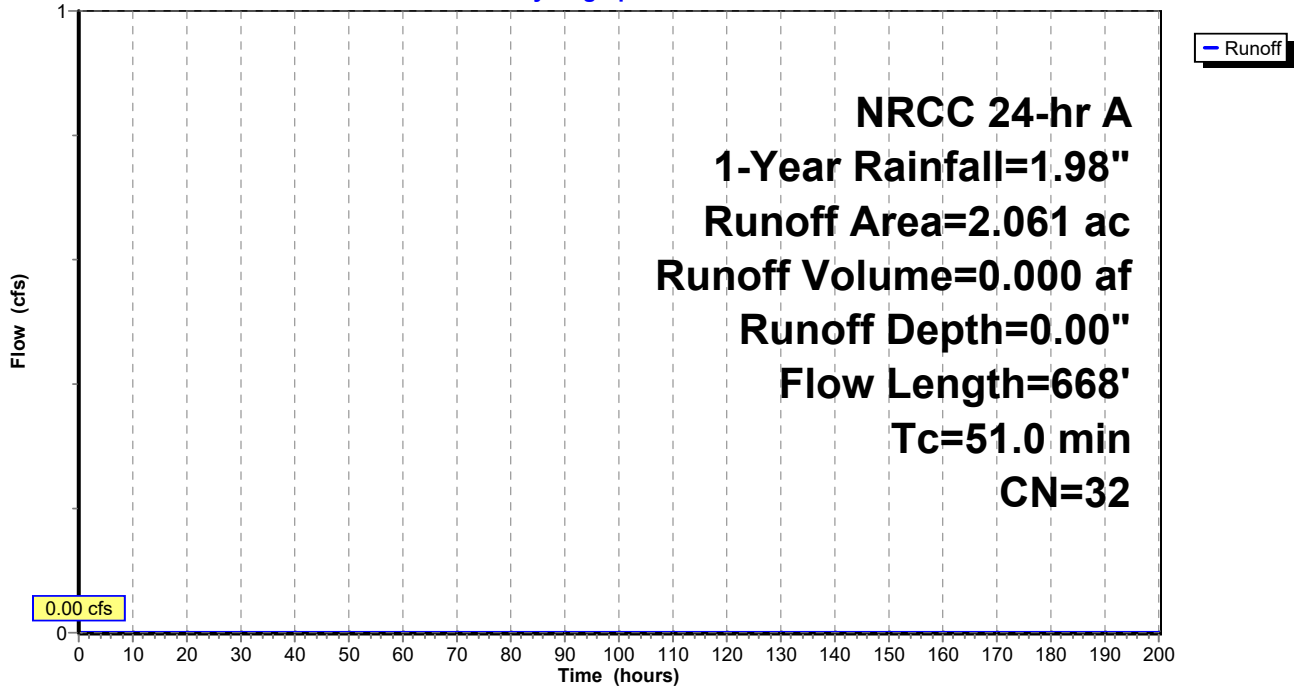
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Subcatchment S600:

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Vineyard 1 & 2

NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Reach 3R: Existing Culvert

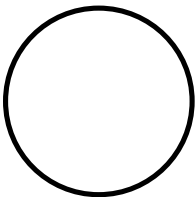
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 15.979 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.79 cfs

15.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 46.0' Slope= 0.0196 '/'
Inlet Invert= 459.30', Outlet Invert= 458.40'



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Vineyard 1 & 2

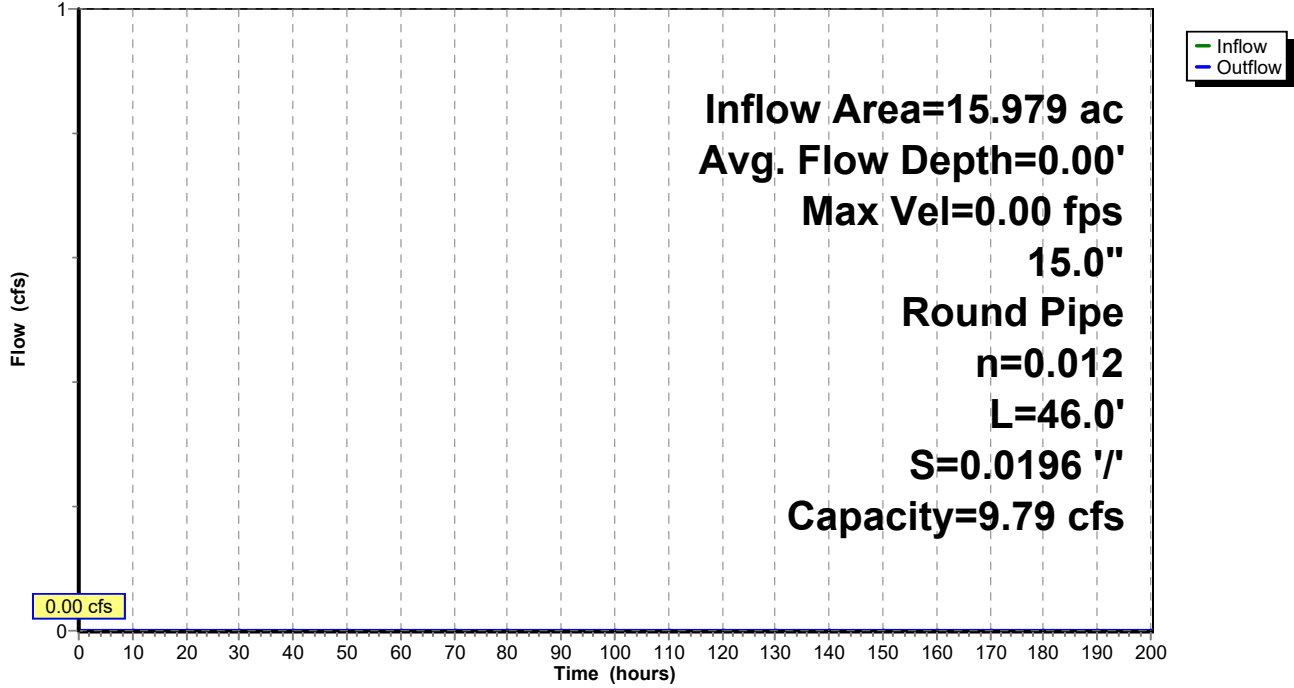
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Reach 3R: Existing Culvert

Hydrograph



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NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Pond P1: Sediment Basin

Inflow Area = 2.914 ac, 0.65% Impervious, Inflow Depth = 0.40" for 1-Year event
 Inflow = 1.14 cfs @ 12.26 hrs, Volume= 0.098 af
 Outflow = 0.71 cfs @ 12.51 hrs, Volume= 0.071 af, Atten= 38%, Lag= 15.3 min
 Primary = 0.71 cfs @ 12.51 hrs, Volume= 0.071 af
 Routed to Pond P2 : Infiltration

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 463.57' @ 12.51 hrs Surf.Area= 920 sf Storage= 1,242 cf

Plug-Flow detention time= 159.9 min calculated for 0.071 af (72% of inflow)
 Center-of-Mass det. time= 57.7 min (936.4 - 878.7)

Volume	Invert	Avail.Storage	Storage Description			
#1	461.00'	1,673 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)	
461.00	150	54.9	0	0	150	
462.00	376	85.0	254	254	492	
463.00	692	112.3	526	781	932	
464.00	1,110	151.3	893	1,673	1,761	

Device	Routing	Invert	Outlet Devices												
#1	Primary	463.50'	15.0' long x 5.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65												
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88												

Primary OutFlow Max=0.66 cfs @ 12.51 hrs HW=463.57' TW=461.15' (Dynamic Tailwater)

↑1=**Broad-Crested Rectangular Weir**(Weir Controls 0.66 cfs @ 0.62 fps)

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Vineyard 1 & 2

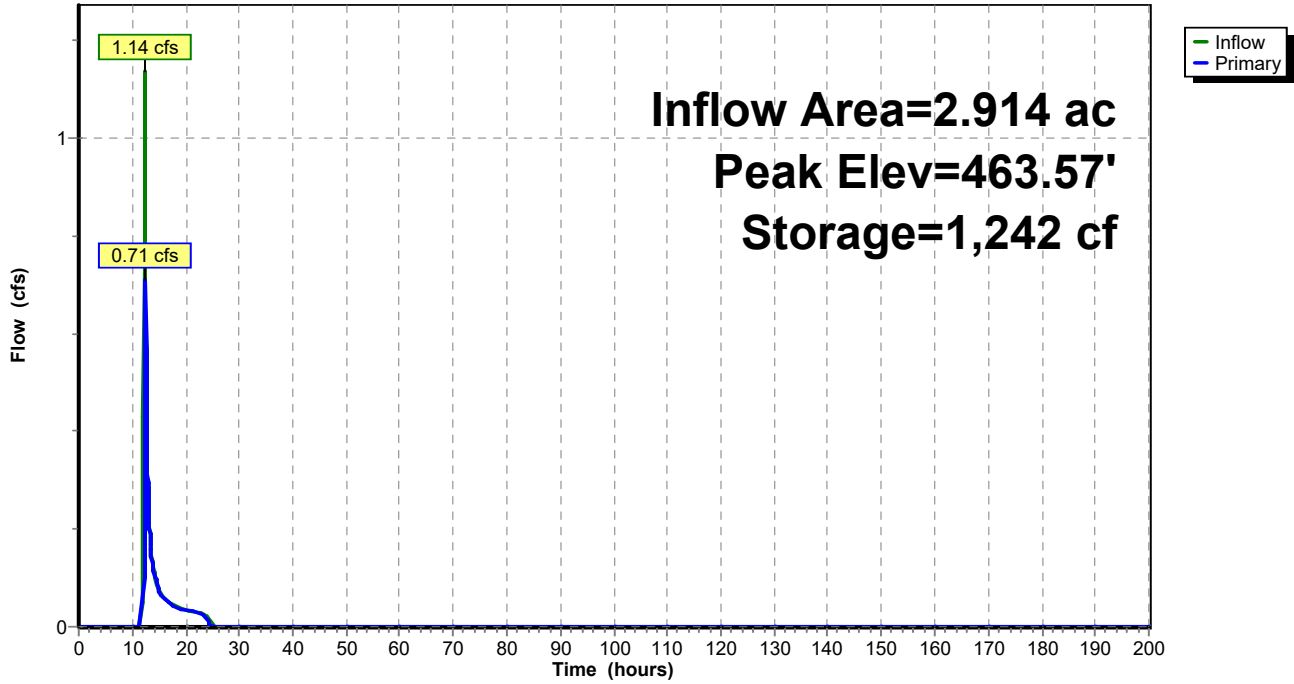
NRCC 24-hr A 1-Year Rainfall=1.98"

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Pond P1: Sediment Basin

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 1-Year Rainfall=1.98"

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Summary for Pond P2: Infiltration

Inflow Area = 2.914 ac, 0.65% Impervious, Inflow Depth = 0.29" for 1-Year event
 Inflow = 0.71 cfs @ 12.51 hrs, Volume= 0.071 af
 Outflow = 0.06 cfs @ 15.93 hrs, Volume= 0.071 af, Atten= 91%, Lag= 205.1 min
 Discarded = 0.06 cfs @ 15.93 hrs, Volume= 0.071 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link B :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 462.23' @ 15.93 hrs Surf.Area= 1,303 sf Storage= 1,299 cf

Plug-Flow detention time= 267.7 min calculated for 0.071 af (100% of inflow)
 Center-of-Mass det. time= 268.1 min (1,204.5 - 936.4)

Volume	Invert	Avail.Storage	Storage Description			
#1	461.00'	4,363 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)	
461.00	833	116.4	0	0	833	
462.00	1,211	135.3	1,016	1,016	1,232	
463.00	1,645	154.1	1,422	2,439	1,688	
464.00	2,218	180.5	1,924	4,363	2,411	

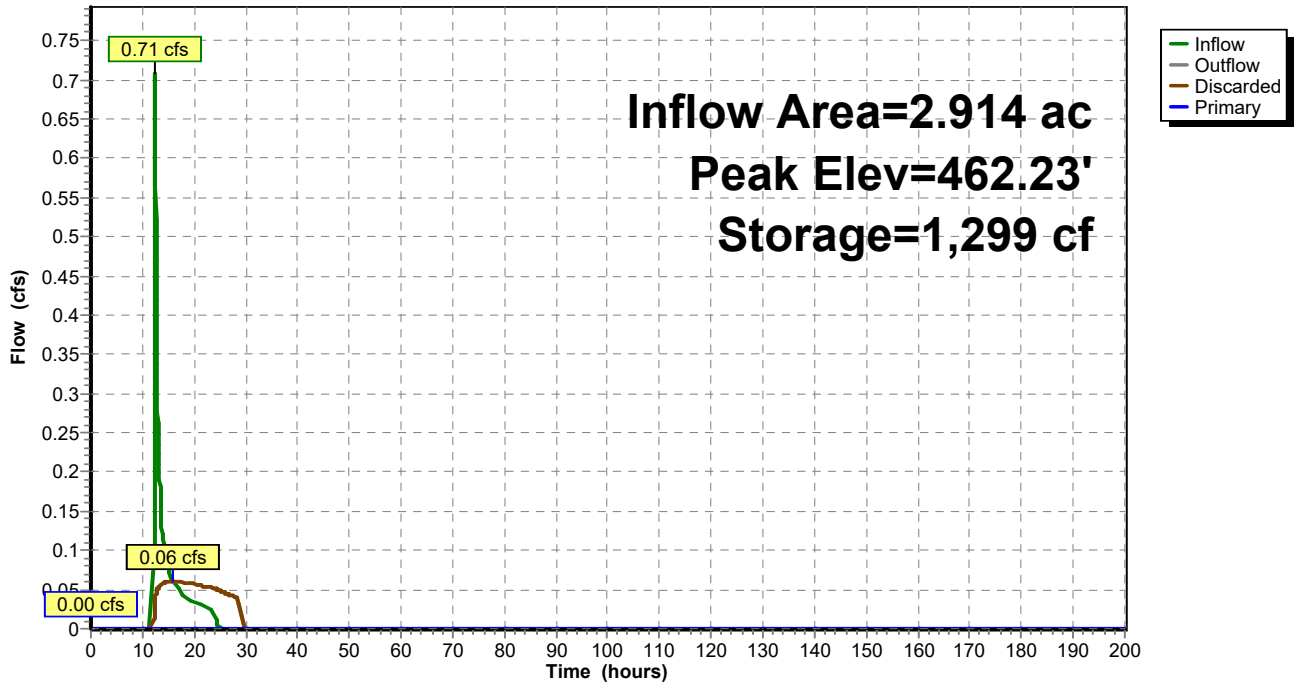
Device	Routing	Invert	Outlet Devices												
#1	Primary	463.25'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65												
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88												
#2	Discarded	461.00'	2.000 in/hr Exfiltration over Surface area												

Discarded OutFlow Max=0.06 cfs @ 15.93 hrs HW=462.23' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.06 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=461.00' TW=0.00' (Dynamic Tailwater)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond P2: Infiltration

Hydrograph



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Vineyard 1 & 2

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Summary for Pond P3: Pond

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.00" for 1-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond P4 : Sediment Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 456.00' @ 0.00 hrs Surf.Area= 180 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description			
#1	456.00'	285 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)	
456.00	180	60.1	0	0	180	
457.00	404	85.0	285	285	477	

Device	Routing	Invert	Outlet Devices
#1	Primary	456.00'	6.0" Round Culvert L= 58.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 456.00' / 455.00' S= 0.0171 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=456.00' TW=454.00' (Dynamic Tailwater)
 ↑1=Culvert (Controls 0.00 cfs)

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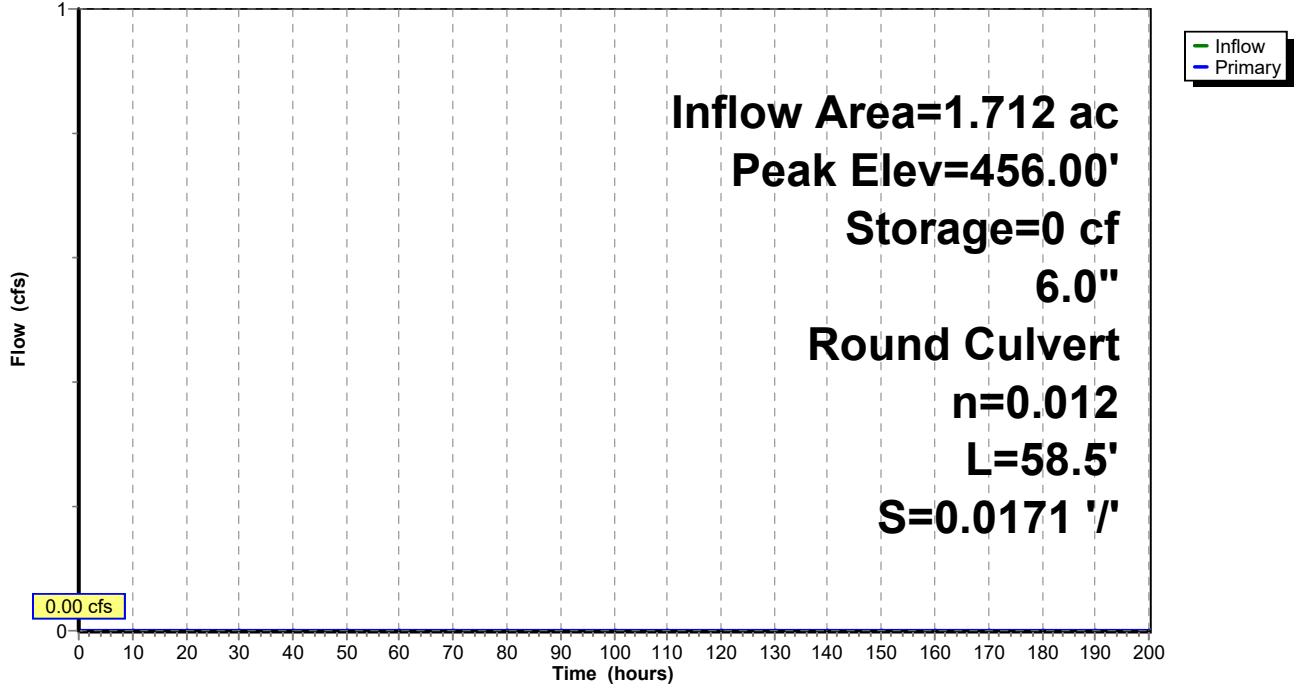
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Pond P3: Pond

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Summary for Pond P4: Sediment Basin

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.00" for 1-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond P5 : Infiltration

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 454.00' @ 0.00 hrs Surf.Area= 635 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description			
#1	454.00'	2,313 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)	
454.00	635	106.1	0	0	635	
455.00	1,092	169.8	853	853	2,040	
456.00	1,862	267.5	1,460	2,313	5,447	

Device	Routing	Invert	Outlet Devices													
#1	Primary	455.00'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir													
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00													
			2.50 3.00 3.50 4.00 4.50 5.00 5.50													
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65													
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88													

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=454.00' TW=453.00' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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Vineyard 1 & 2

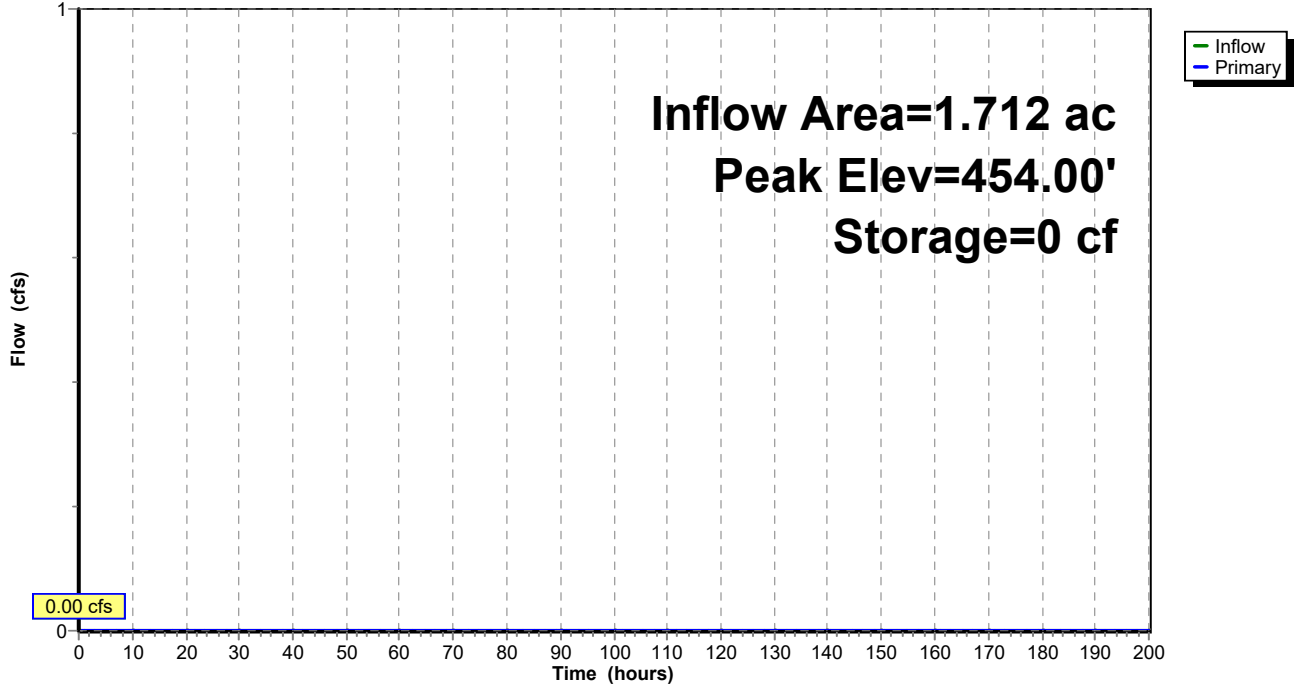
NRCC 24-hr A 1-Year Rainfall=1.98"

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Pond P4: Sediment Basin

Hydrograph



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Summary for Pond P5: Infiltration

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.00" for 1-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link C :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 453.00' @ 0.00 hrs Surf.Area= 611 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description			
#1	453.00'	3,513 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)	
453.00	611	97.4	0	0	611	
454.00	953	122.5	776	776	1,064	
455.00	1,349	141.4	1,145	1,921	1,482	
456.00	1,848	163.7	1,592	3,513	2,045	

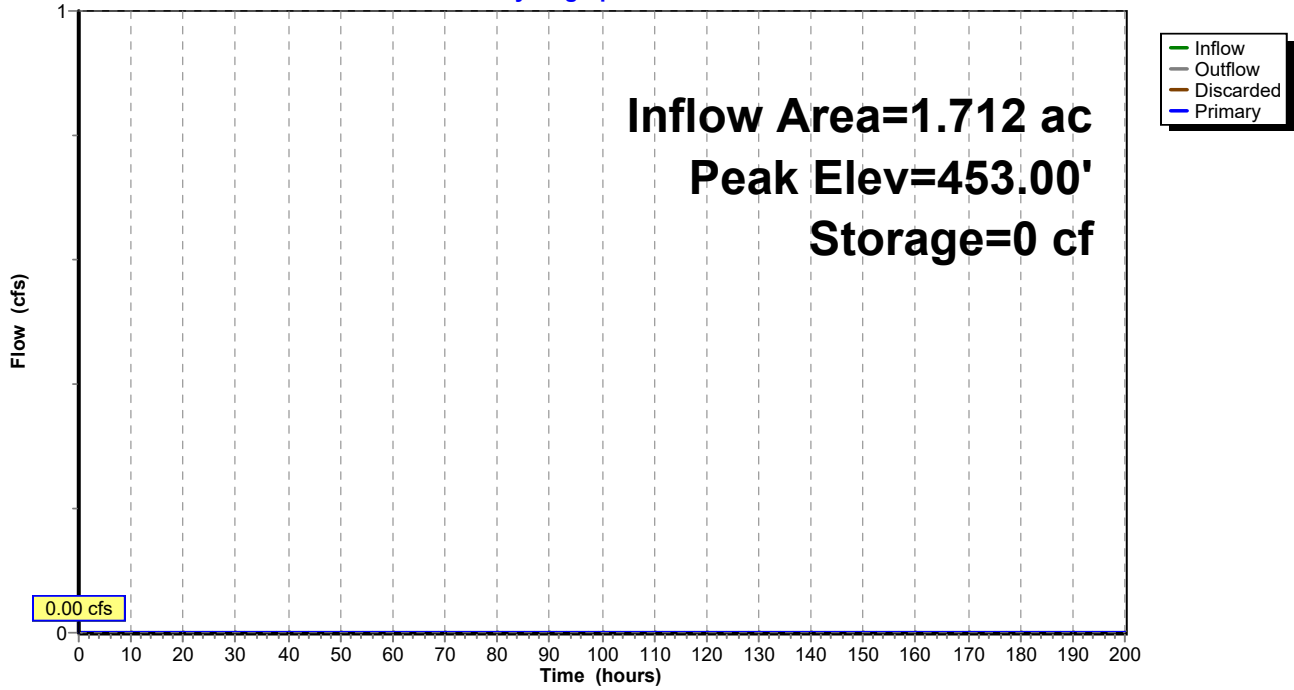
Device	Routing	Invert	Outlet Devices																		
#1	Primary	455.00'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir																		
			Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	
			Coef. (English)	2.34	2.50	2.70	2.68	2.68	2.66	2.65	2.65	2.65	2.65	2.65	2.65	2.66	2.68	2.70	2.74	2.79	2.88
#2	Discarded	453.00'	2.000 in/hr Exfiltration over Surface area																		

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=453.00' (Free Discharge)
 ↑2=Exfiltration (Passes 0.00 cfs of 0.03 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=453.00' TW=0.00' (Dynamic Tailwater)
 ↑1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P5: Infiltration

Hydrograph



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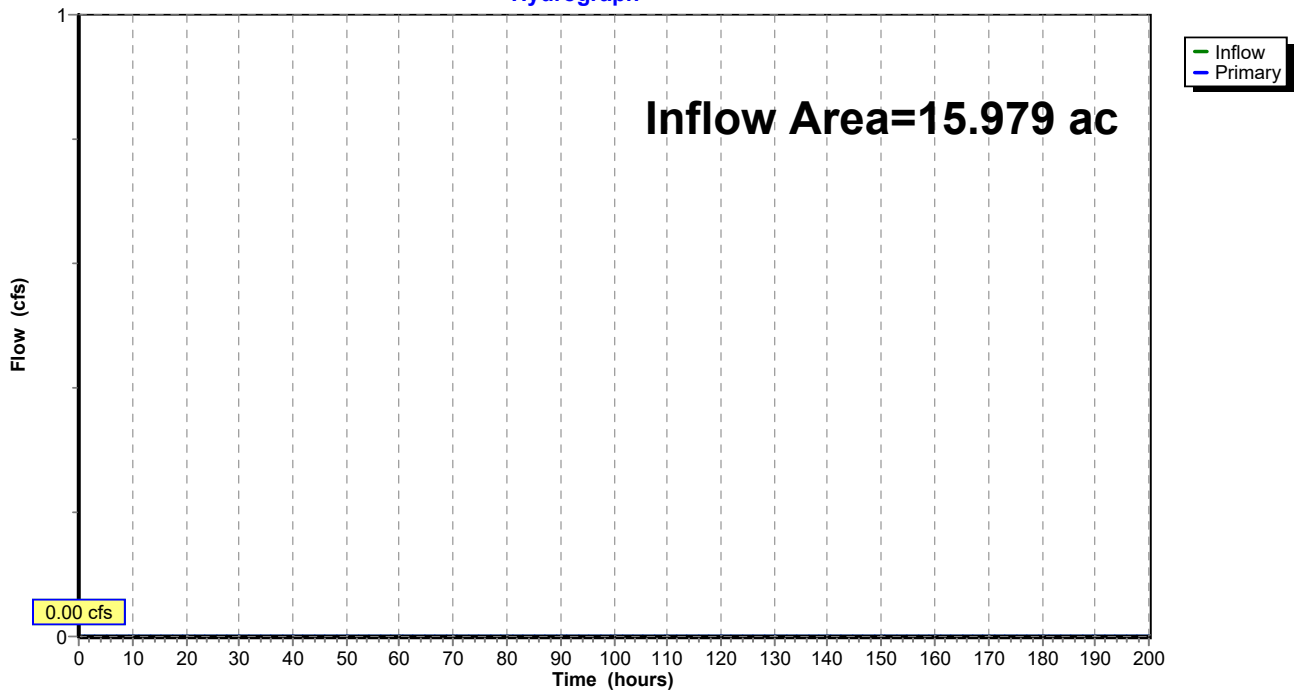
Summary for Link A:

Inflow Area = 15.979 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link A:

Hydrograph



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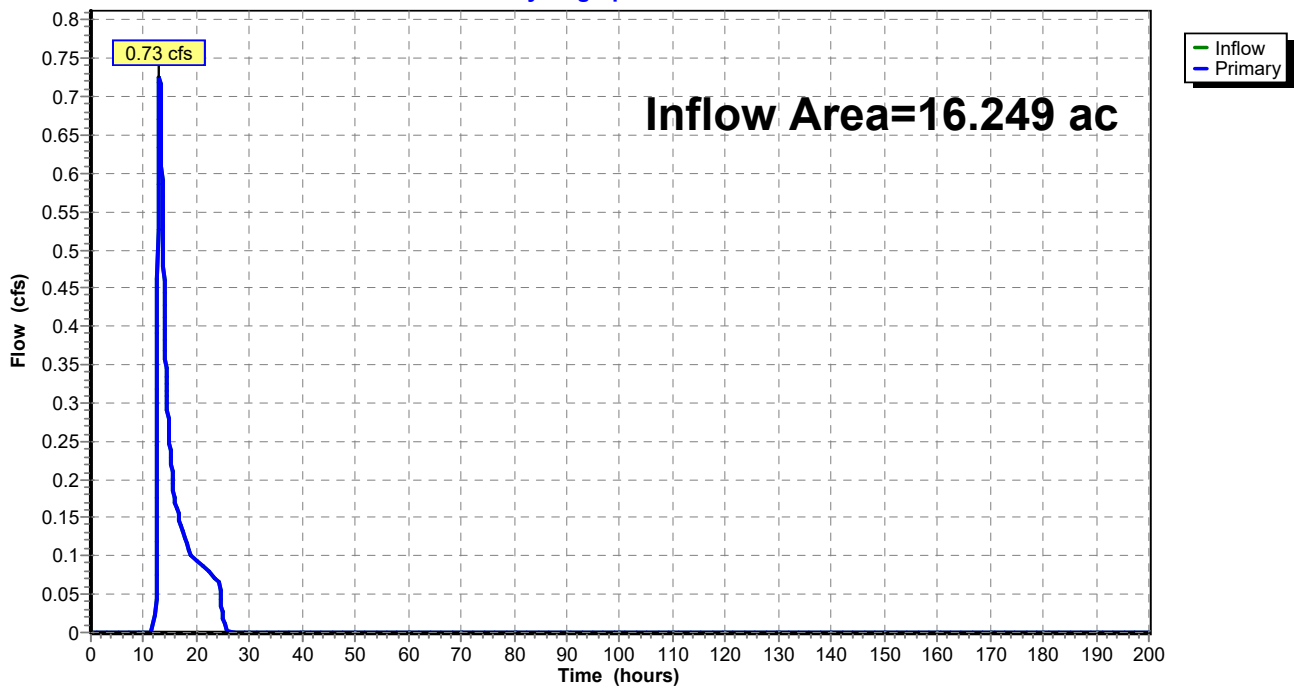
Summary for Link B:

Inflow Area = 16.249 ac, 0.12% Impervious, Inflow Depth = 0.14" for 1-Year event
Inflow = 0.73 cfs @ 13.01 hrs, Volume= 0.186 af
Primary = 0.73 cfs @ 13.01 hrs, Volume= 0.186 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link B:

Hydrograph



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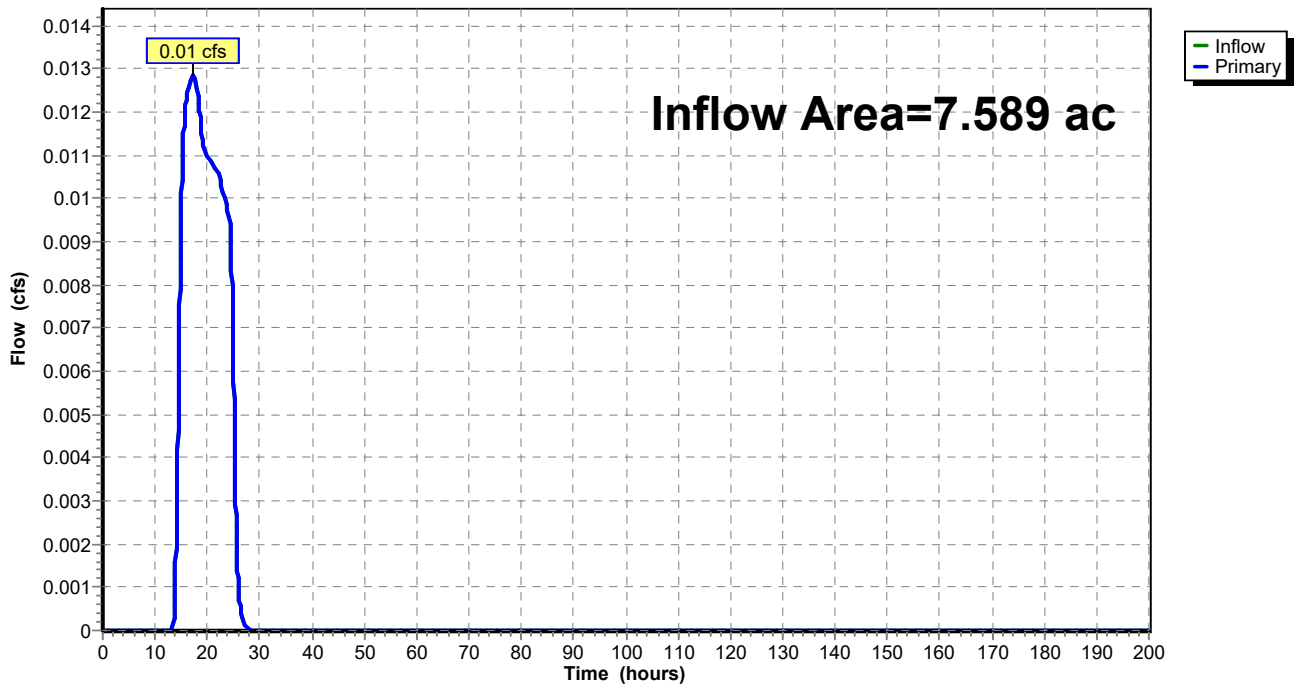
Summary for Link C:

Inflow Area = 7.589 ac, 0.50% Impervious, Inflow Depth = 0.02" for 1-Year event
Inflow = 0.01 cfs @ 17.33 hrs, Volume= 0.010 af
Primary = 0.01 cfs @ 17.33 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link C:

Hydrograph



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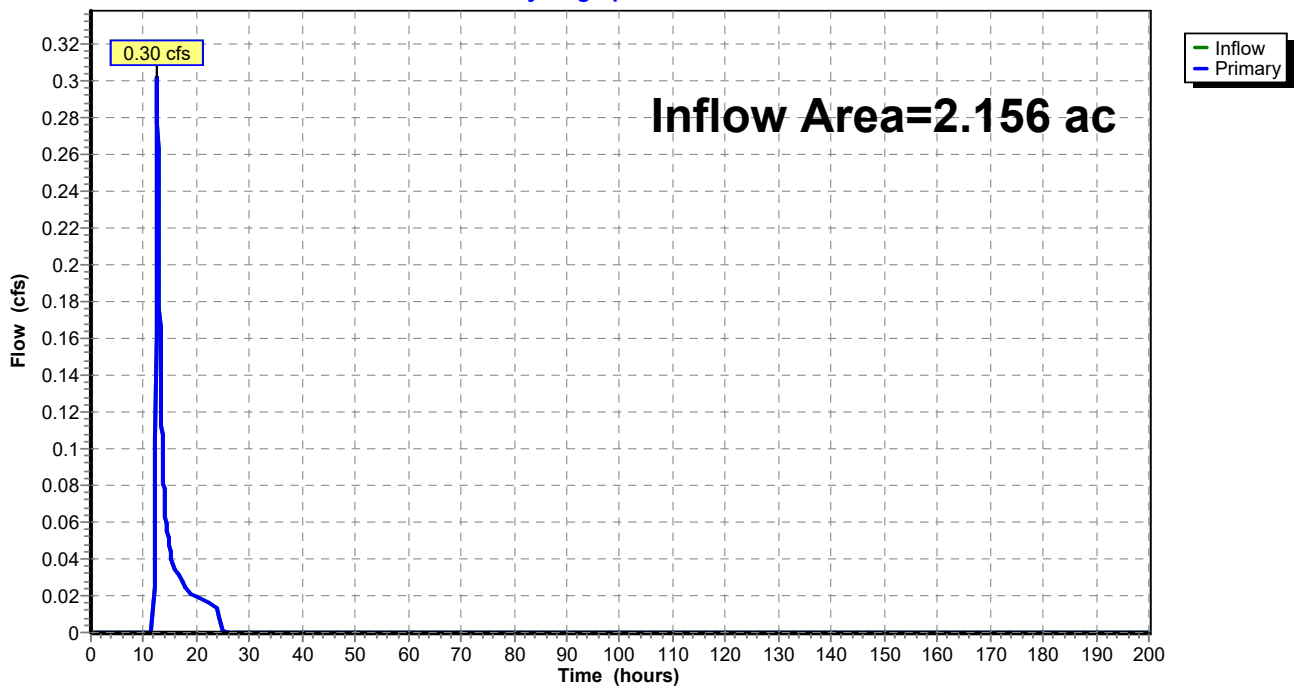
Summary for Link D:

Inflow Area = 2.156 ac, 0.00% Impervious, Inflow Depth = 0.26" for 1-Year event
Inflow = 0.30 cfs @ 12.53 hrs, Volume= 0.046 af
Primary = 0.30 cfs @ 12.53 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link D:

Hydrograph



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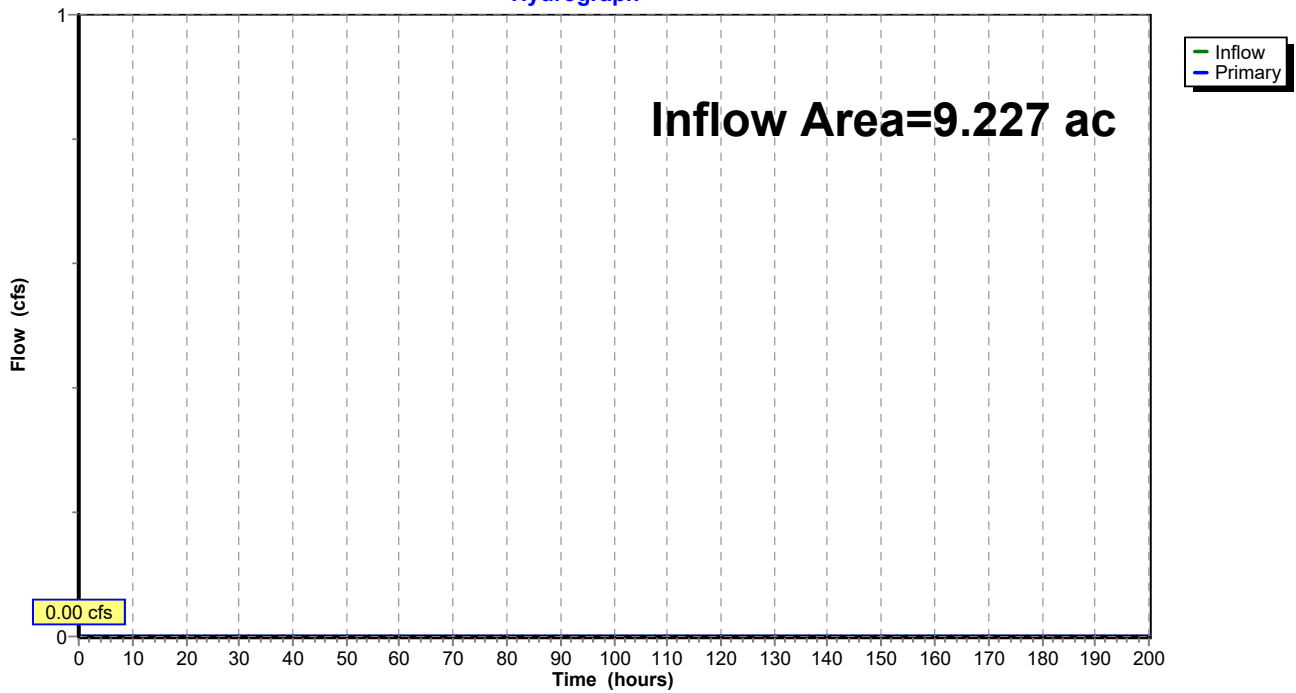
Summary for Link E:

Inflow Area = 9.227 ac, 0.27% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link E:

Hydrograph



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NRCC 24-hr A 1-Year Rainfall=1.98"

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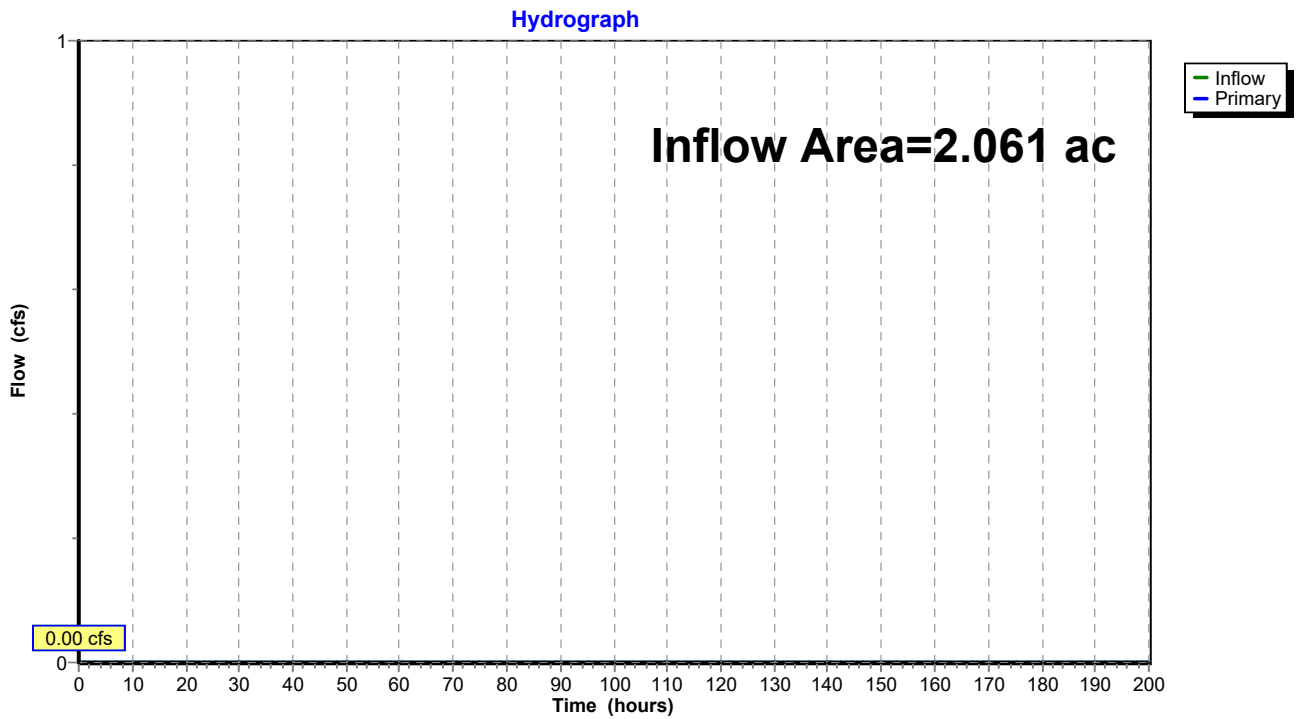
Page 41

Summary for Link F:

Inflow Area = 2.061 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link F:



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Vineyard 1 & 2

NRCC 24-hr A 10-Year Rainfall=3.19"

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Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentS100:	Runoff Area=15.979 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=1,856' Tc=90.5 min CN=34 Runoff=0.00 cfs 0.000 af
SubcatchmentS200:	Runoff Area=13.335 ac 0.00% Impervious Runoff Depth=0.68" Flow Length=934' Tc=51.1 min CN=67 Runoff=4.49 cfs 0.758 af
SubcatchmentS210:	Runoff Area=2.914 ac 0.65% Impervious Runoff Depth=1.15" Flow Length=659' Tc=14.2 min CN=76 Runoff=3.70 cfs 0.278 af
SubcatchmentS300:	Runoff Area=5.877 ac 0.00% Impervious Runoff Depth=0.28" Flow Length=1,338' Tc=80.0 min CN=56 Runoff=0.43 cfs 0.135 af
SubcatchmentS310:	Runoff Area=1.712 ac 2.22% Impervious Runoff Depth=0.00" Flow Length=220' Tc=14.9 min CN=40 Runoff=0.00 cfs 0.000 af
SubcatchmentS400:	Runoff Area=2.156 ac 0.00% Impervious Runoff Depth=0.87" Flow Length=388' Tc=28.3 min CN=71 Runoff=1.40 cfs 0.157 af
SubcatchmentS500:	Runoff Area=9.227 ac 0.27% Impervious Runoff Depth=0.00" Flow Length=1,329' Tc=44.8 min CN=37 Runoff=0.00 cfs 0.000 af
SubcatchmentS600:	Runoff Area=2.061 ac 0.00% Impervious Runoff Depth=0.00" Flow Length=668' Tc=51.0 min CN=32 Runoff=0.00 cfs 0.000 af
Reach 3R: Existing Culvert	Avg. Flow Depth=0.00' Max Vel=0.00 fps Inflow=0.00 cfs 0.000 af 15.0" Round Pipe n=0.012 L=46.0' S=0.0196 '/' Capacity=9.79 cfs Outflow=0.00 cfs 0.000 af
Pond P1: Sediment Basin	Peak Elev=463.72' Storage=1,384 cf Inflow=3.70 cfs 0.278 af Outflow=3.75 cfs 0.251 af
Pond P2: Infiltration	Peak Elev=463.43' Storage=3,201 cf Inflow=3.75 cfs 0.251 af Discarded=0.09 cfs 0.142 af Primary=1.83 cfs 0.109 af Outflow=1.91 cfs 0.251 af
Pond P3: Pond	Peak Elev=456.02' Storage=4 cf Inflow=0.00 cfs 0.000 af 6.0" Round Culvert n=0.012 L=58.5' S=0.0171 '/' Outflow=0.00 cfs 0.000 af
Pond P4: Sediment Basin	Peak Elev=454.02' Storage=15 cf Inflow=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Pond P5: Infiltration	Peak Elev=453.00' Storage=0 cf Inflow=0.00 cfs 0.000 af Discarded=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af Outflow=0.00 cfs 0.000 af
Link A:	Inflow=0.00 cfs 0.000 af Primary=0.00 cfs 0.000 af
Link B:	Inflow=5.39 cfs 0.867 af Primary=5.39 cfs 0.867 af

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NRCC 24-hr A 10-Year Rainfall=3.19"

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Link C:

Inflow=0.43 cfs 0.135 af
Primary=0.43 cfs 0.135 af

Link D:

Inflow=1.40 cfs 0.157 af
Primary=1.40 cfs 0.157 af

Link E:

Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Link F:

Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 53.261 ac Runoff Volume = 1.328 af Average Runoff Depth = 0.30"
99.85% Pervious = 53.179 ac 0.15% Impervious = 0.082 ac

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Summary for Subcatchment S100:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Reach 3R : Existing Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
2.433	30	Woods, Good, HSG A
3.242	32	Woods/grass comb., Good, HSG A
0.746	39	>75% Grass cover, Good, HSG A
8.371	30	Meadow, non-grazed, HSG A
0.799	72	Woods/grass comb., Good, HSG C
0.388	74	>75% Grass cover, Good, HSG C
15.979	34	Weighted Average
15.979		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	100	0.0140	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
5.4	237	0.0215	0.73		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
11.2	476	0.0200	0.71		Shallow Concentrated Flow, Light wood Woodland Kv= 5.0 fps
23.7	1,043	0.0110	0.73		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
90.5	1,856	Total			

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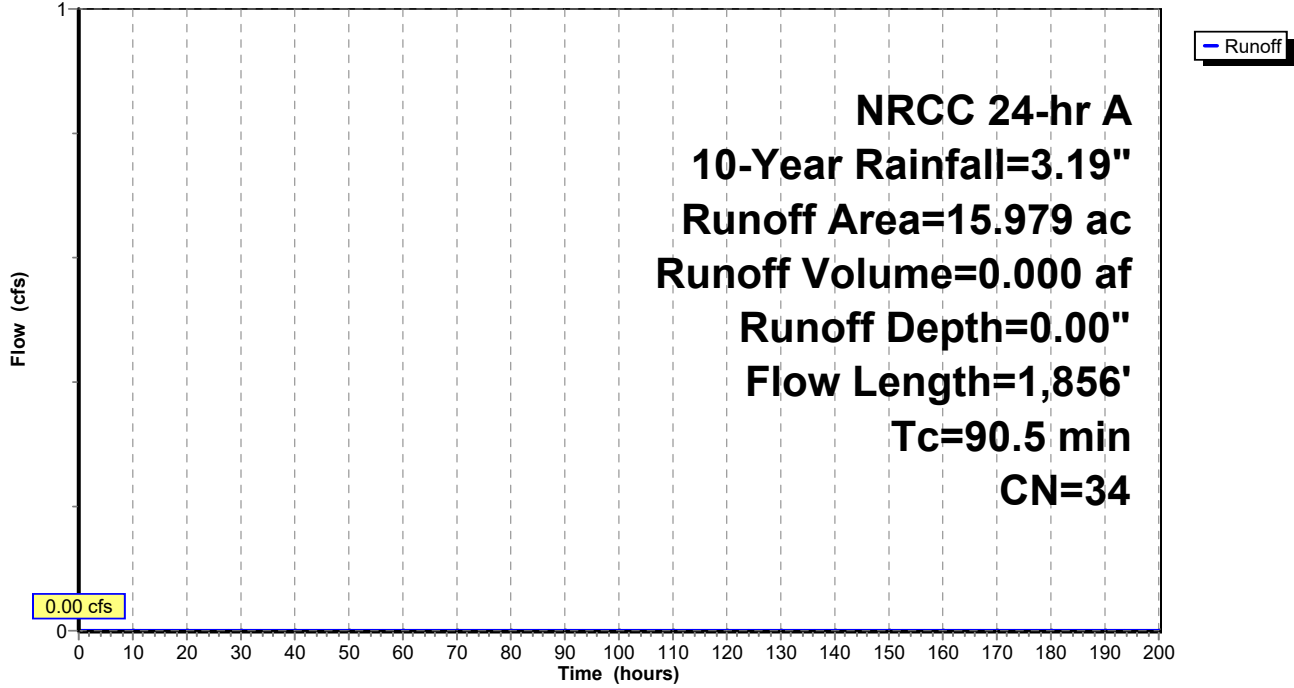
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Subcatchment S100:

Hydrograph



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Summary for Subcatchment S200:

Runoff = 4.49 cfs @ 12.82 hrs, Volume= 0.758 af, Depth= 0.68"
 Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
1.446	30	Meadow, non-grazed, HSG A
7.786	71	Meadow, non-grazed, HSG C
1.056	70	Woods, Good, HSG C
1.872	72	Woods/grass comb., Good, HSG C
1.175	74	>75% Grass cover, Good, HSG C
13.335	67	Weighted Average
13.335		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	19	0.2000	0.18		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
36.8	81	0.0200	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
2.1	101	0.0250	0.79		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
10.4	733	0.0282	1.18		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
51.1	934	Total			

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Vineyard 1 & 2

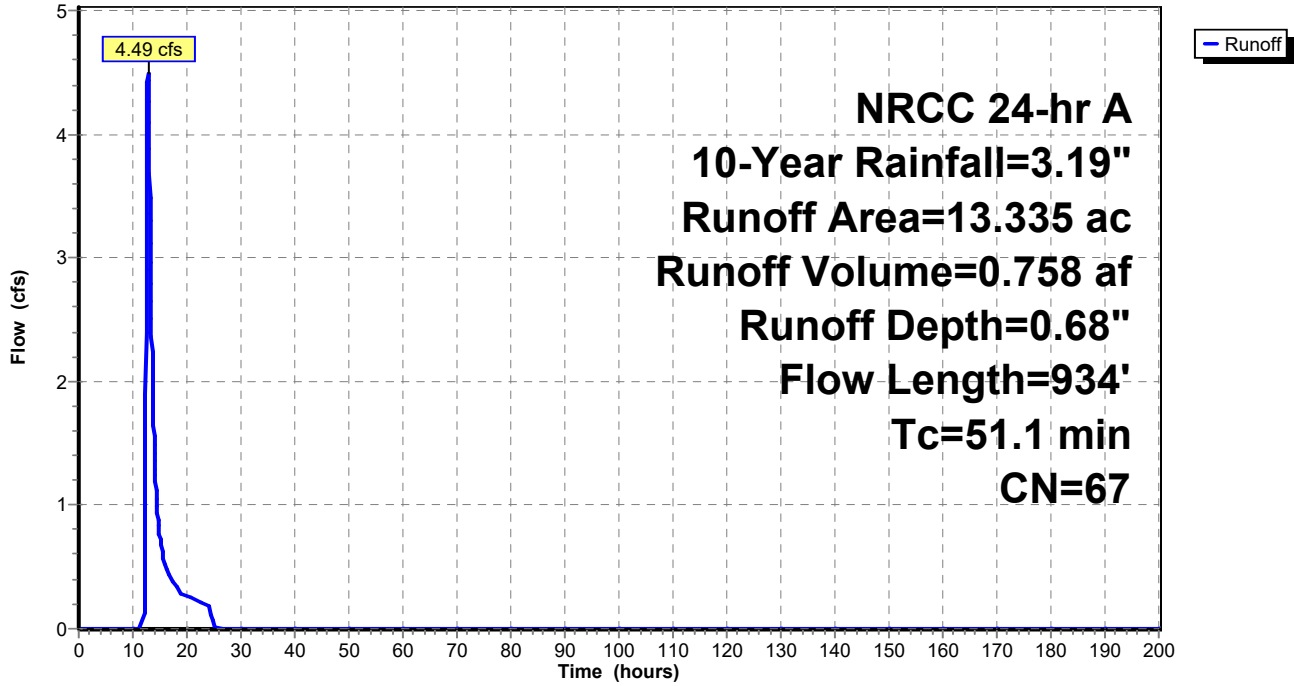
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Subcatchment S200:

Hydrograph



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NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Subcatchment S210:

Runoff = 3.70 cfs @ 12.24 hrs, Volume= 0.278 af, Depth= 1.15"
Routed to Pond P1 : Sediment Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
0.117	30	Meadow, non-grazed, HSG A
1.359	71	Meadow, non-grazed, HSG C
0.019	72	Woods/grass comb., Good, HSG C
0.085	74	>75% Grass cover, Good, HSG C
0.059	39	>75% Grass cover, Good, HSG A
1.074	89	Gravel roads, HSG C
0.182	76	Gravel roads, HSG A
* 0.019	98	Equipment Pad
2.914	76	Weighted Average
2.895		99.35% Pervious Area
0.019		0.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0900	0.18		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
4.1	306	0.0310	1.23		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
0.1	11	0.0200	2.87		Shallow Concentrated Flow, Grass Paved Kv= 20.3 fps
0.9	242	0.0940	4.60		Shallow Concentrated Flow, Swale Grassed Waterway Kv= 15.0 fps
14.2	659	Total			

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Vineyard 1 & 2

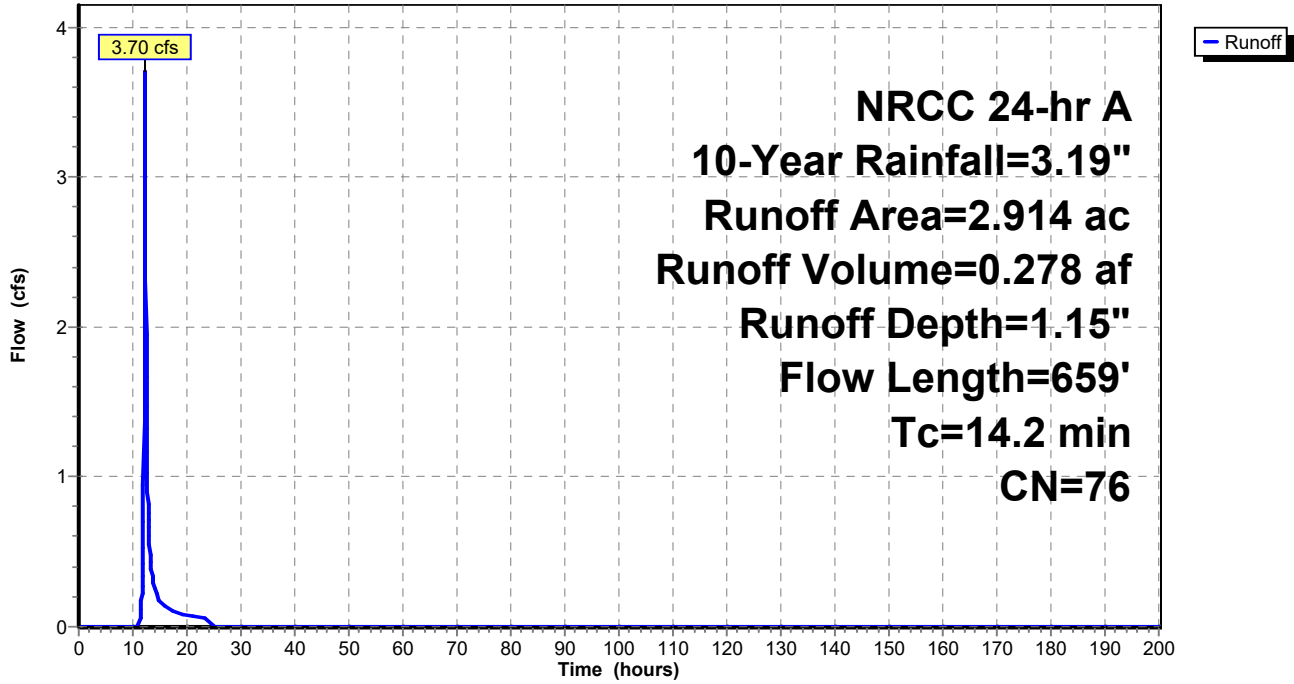
NRCC 24-hr A 10-Year Rainfall=3.19"

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Subcatchment S210:

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Subcatchment S300:

Runoff = 0.43 cfs @ 13.49 hrs, Volume= 0.135 af, Depth= 0.28"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
0.019	30	Woods, Good, HSG A
1.966	30	Meadow, non-grazed, HSG A
1.282	71	Meadow, non-grazed, HSG C
2.490	70	Woods, Good, HSG C
0.076	39	>75% Grass cover, Good, HSG A
0.044	74	>75% Grass cover, Good, HSG C
5.877	56	Weighted Average
5.877		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
57.4	100	0.0100	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
13.4	603	0.0115	0.75		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
9.2	635	0.0530	1.15		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
80.0	1,338	Total			

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Vineyard 1 & 2

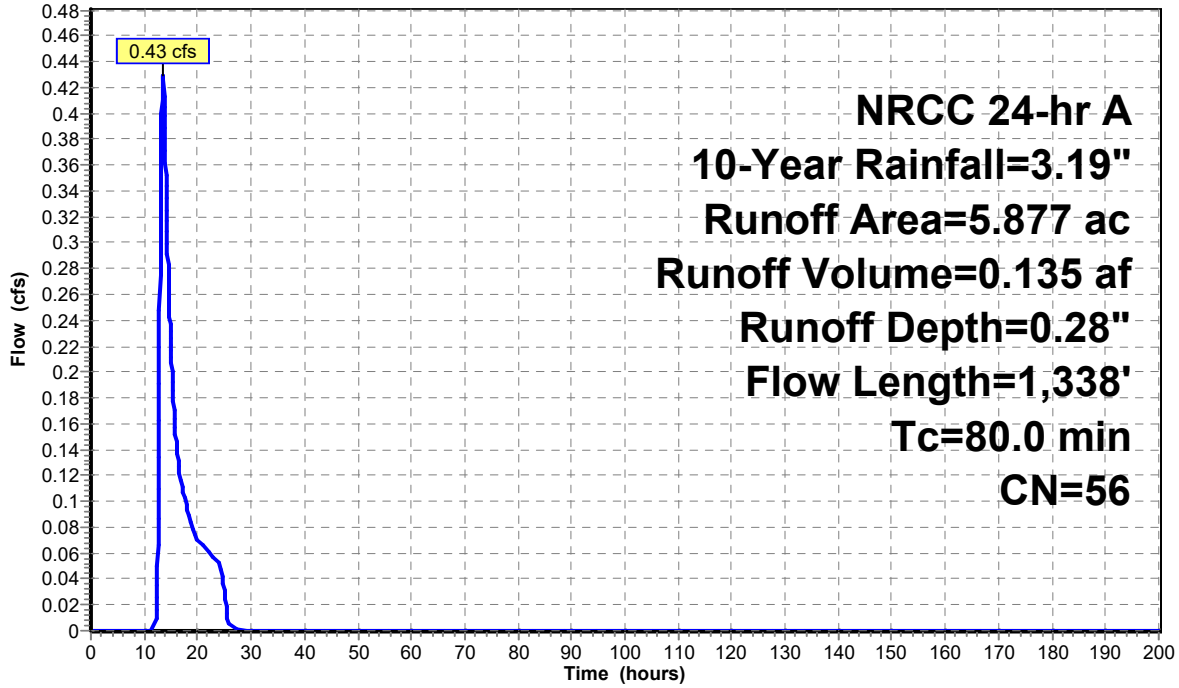
NRCC 24-hr A 10-Year Rainfall=3.19"

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Subcatchment S300:

Hydrograph



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Vineyard 1 & 2
 NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Subcatchment S310:

Runoff = 0.00 cfs @ 24.05 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Pond P3 : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
1.059	30	Meadow, non-grazed, HSG A
0.069	71	Meadow, non-grazed, HSG C
0.095	30	Woods, Good, HSG A
0.024	70	Woods, Good, HSG C
0.237	39	>75% Grass cover, Good, HSG A
0.190	76	Gravel roads, HSG A
* 0.038	98	Equipment Pad
1.712	40	Weighted Average
1.674		97.78% Pervious Area
0.038		2.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0354	0.13		Sheet Flow, Swale
					Grass: Dense n= 0.240 P2= 2.36"
1.7	120	0.0275	1.16		Shallow Concentrated Flow, Swale
					Short Grass Pasture Kv= 7.0 fps
14.9	220	Total			

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Vineyard 1 & 2
 NRCC 24-hr A 10-Year Rainfall=3.19"
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Summary for Subcatchment S400:

Runoff = 1.40 cfs @ 12.45 hrs, Volume= 0.157 af, Depth= 0.87"
 Routed to Link D :

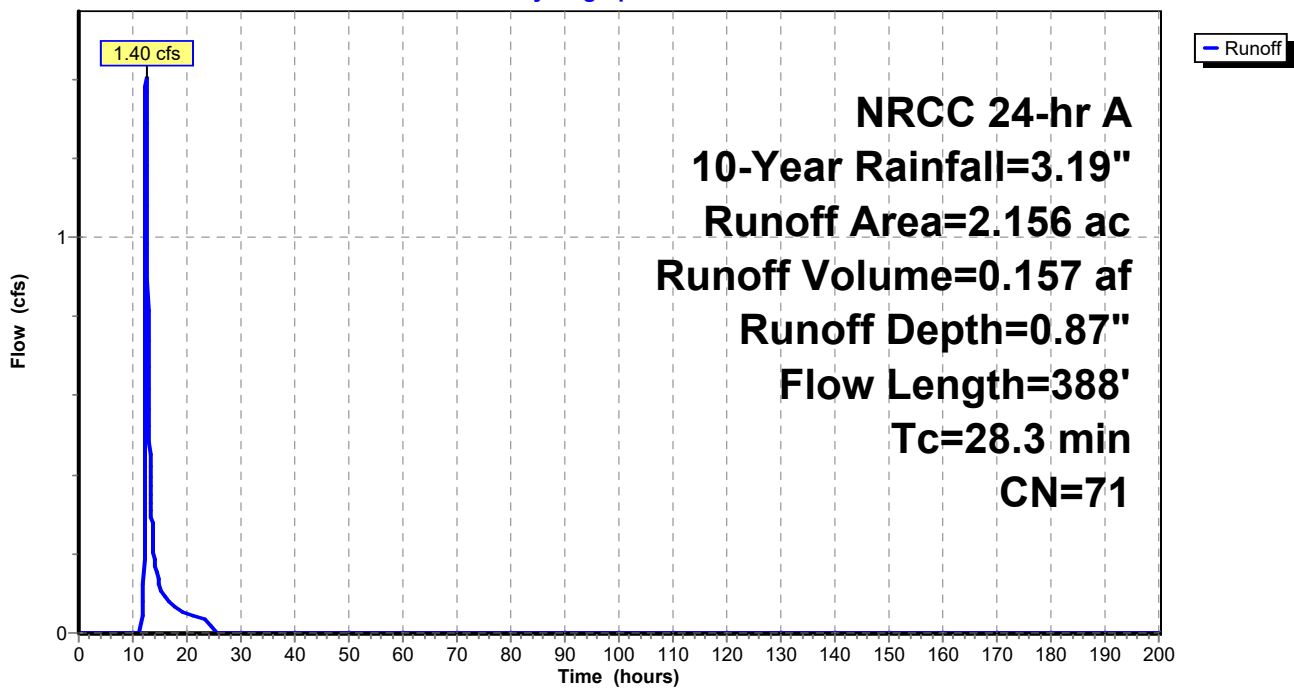
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
1.306	71	Meadow, non-grazed, HSG C
0.850	70	Woods, Good, HSG C
2.156	71	Weighted Average
2.156		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0095	0.07		Sheet Flow, Grass SF Grass: Dense n= 0.240 P2= 2.36"
5.3	264	0.0139	0.83		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.6	24	0.0157	0.63		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
28.3	388	Total			

Subcatchment S400:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Subcatchment S500:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
 Routed to Link E :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
0.921	30	Woods, Good, HSG A
6.718	30	Meadow, non-grazed, HSG A
1.540	71	Meadow, non-grazed, HSG C
0.023	70	Woods, Good, HSG C
* 0.025	98	Existing foundation, HSG A
9.227	37	Weighted Average
9.202		99.73% Pervious Area
0.025		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	72	0.0495	0.13		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
16.2	28	0.0186	0.03		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
1.0	97	0.0518	1.59		Shallow Concentrated Flow, Woods - SCF Short Grass Pasture Kv= 7.0 fps
18.4	1,111	0.0206	1.00		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.3	21	0.0576	1.20		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
44.8	1,329	Total			

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Vineyard 1 & 2

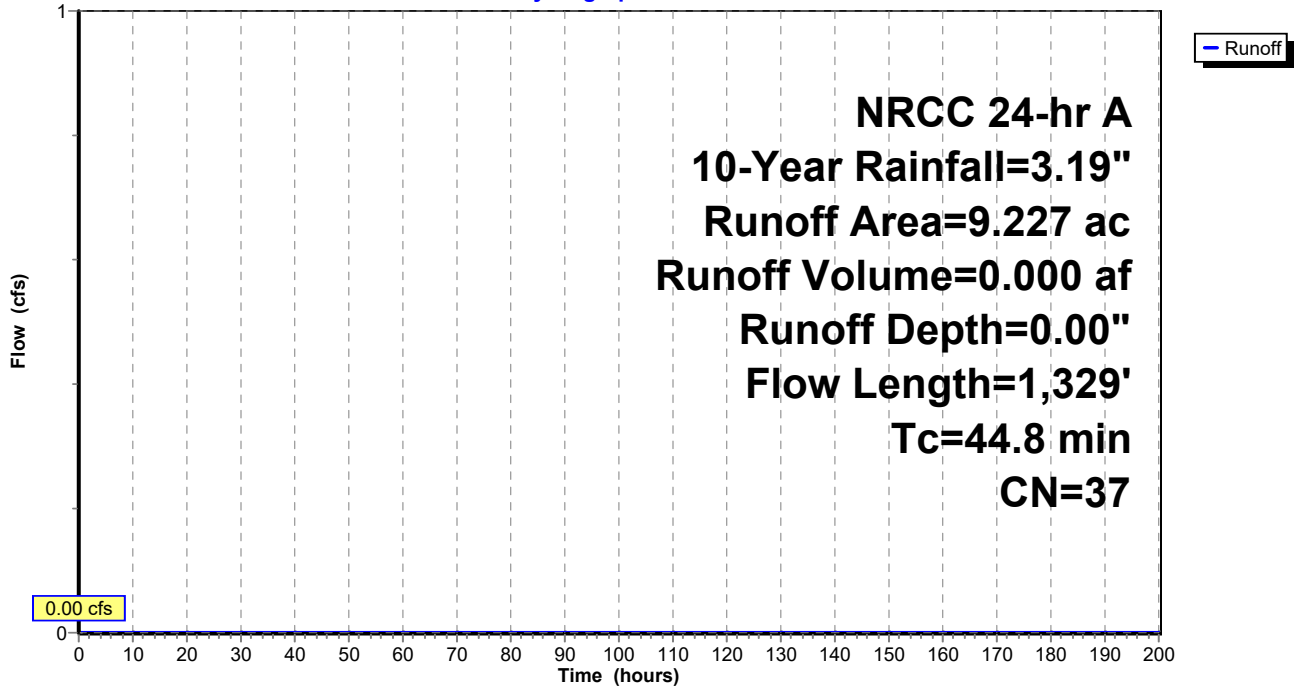
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Subcatchment S500:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Subcatchment S600:

[45] Hint: Runoff=Zero

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"
Routed to Link F :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 10-Year Rainfall=3.19"

Area (ac)	CN	Description
0.447	30	Woods, Good, HSG A
1.208	30	Meadow, non-grazed, HSG A
0.406	39	>75% Grass cover, Good, HSG A
2.061	32	Weighted Average
2.061		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.1	100	0.0231	0.04		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
0.7	34	0.0231	0.76		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
8.7	510	0.0197	0.98		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.5	24	0.0272	0.82		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
51.0	668	Total			

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Vineyard 1 & 2

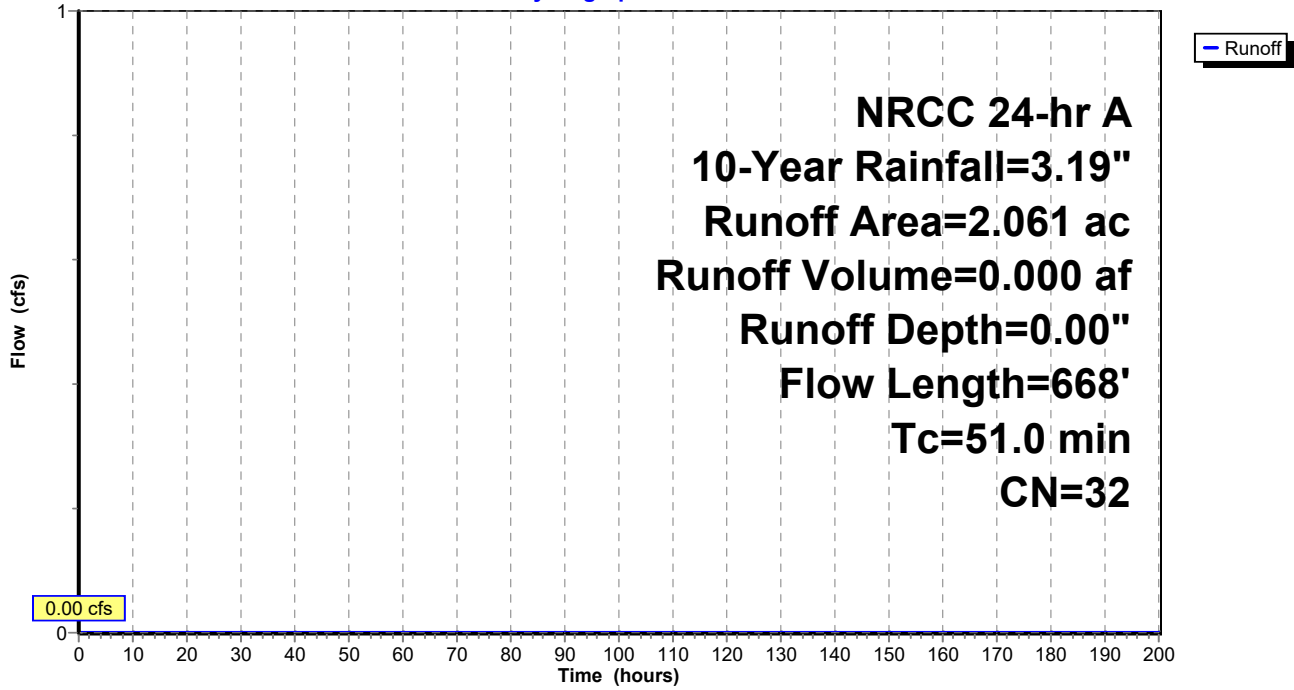
NRCC 24-hr A 10-Year Rainfall=3.19"

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Subcatchment S600:

Hydrograph



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NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Reach 3R: Existing Culvert

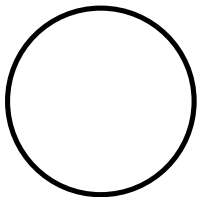
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 15.979 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Routed to Link A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Max. Velocity= 0.00 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 0.00 fps, Avg. Travel Time= 0.0 min

Peak Storage= 0 cf @ 0.00 hrs
Average Depth at Peak Storage= 0.00'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.79 cfs

15.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 46.0' Slope= 0.0196 '/'
Inlet Invert= 459.30', Outlet Invert= 458.40'



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Vineyard 1 & 2

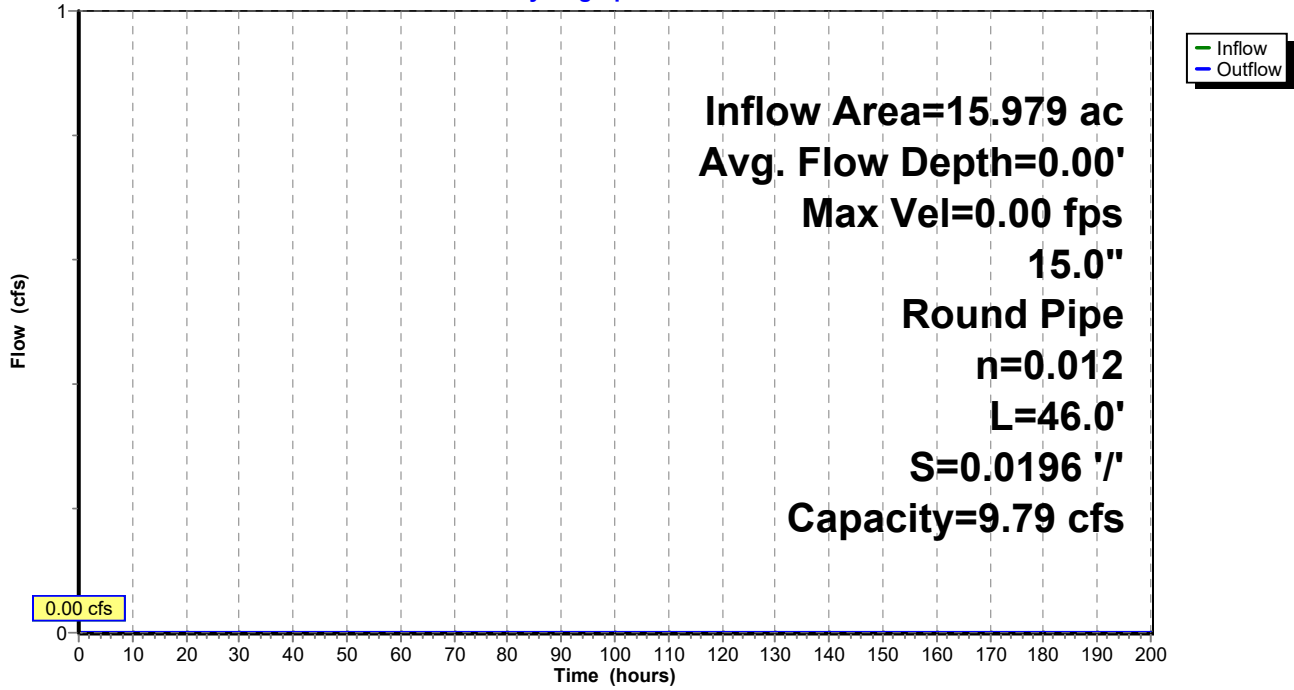
NRCC 24-hr A 10-Year Rainfall=3.19"

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Reach 3R: Existing Culvert

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Pond P1: Sediment Basin

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 2.914 ac, 0.65% Impervious, Inflow Depth = 1.15" for 10-Year event
 Inflow = 3.70 cfs @ 12.24 hrs, Volume= 0.278 af
 Outflow = 3.75 cfs @ 12.25 hrs, Volume= 0.251 af, Atten= 0%, Lag= 0.9 min
 Primary = 3.75 cfs @ 12.25 hrs, Volume= 0.251 af
 Routed to Pond P2 : Infiltration

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 463.72' @ 12.25 hrs Surf.Area= 985 sf Storage= 1,384 cf

Plug-Flow detention time= 64.0 min calculated for 0.251 af (90% of inflow)
 Center-of-Mass det. time= 16.2 min (864.5 - 848.2)

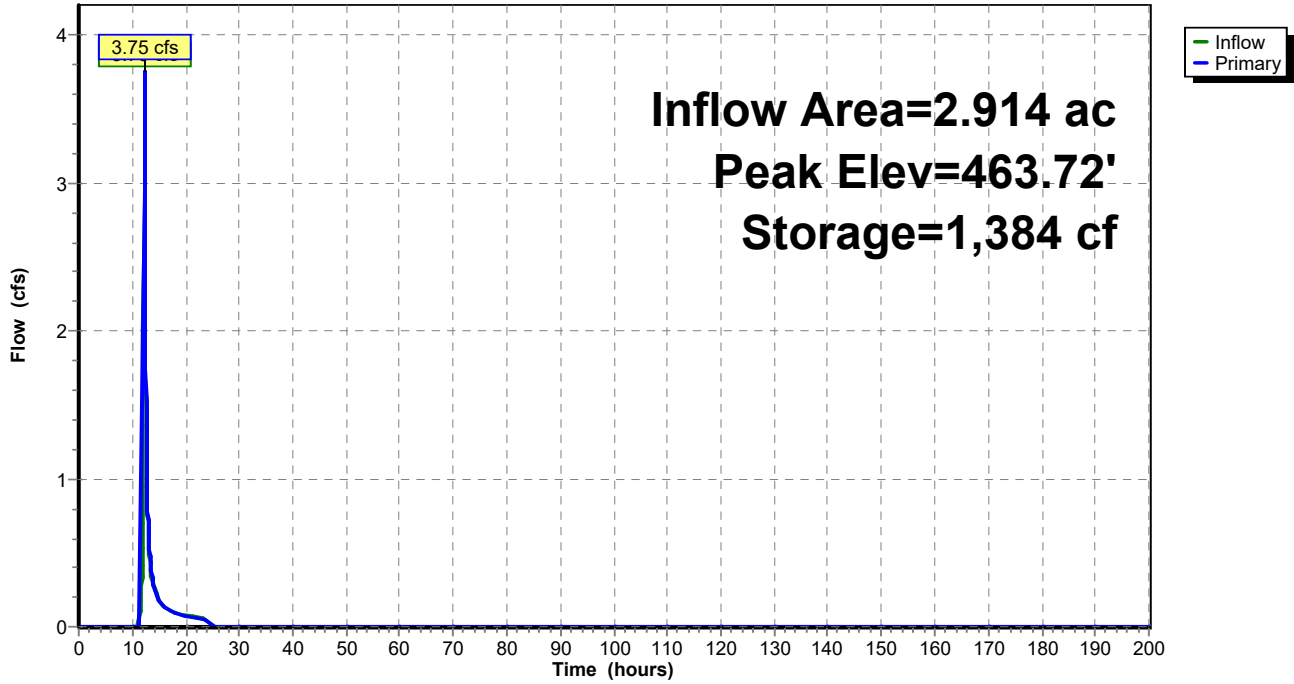
Volume	Invert	Avail.Storage	Storage Description			
#1	461.00'	1,673 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
461.00	150	54.9	0	0	150	
462.00	376	85.0	254	254	492	
463.00	692	112.3	526	781	932	
464.00	1,110	151.3	893	1,673	1,761	

Device	Routing	Invert	Outlet Devices												
#1	Primary	463.50'	15.0' long x 5.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65												
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88												

Primary OutFlow Max=3.73 cfs @ 12.25 hrs HW=463.72' TW=462.36' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 3.73 cfs @ 1.11 fps)

Pond P1: Sediment Basin

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Pond P2: Infiltration

Inflow Area = 2.914 ac, 0.65% Impervious, Inflow Depth = 1.03" for 10-Year event
 Inflow = 3.75 cfs @ 12.25 hrs, Volume= 0.251 af
 Outflow = 1.91 cfs @ 12.48 hrs, Volume= 0.251 af, Atten= 49%, Lag= 13.4 min
 Discarded = 0.09 cfs @ 12.48 hrs, Volume= 0.142 af
 Primary = 1.83 cfs @ 12.48 hrs, Volume= 0.109 af
 Routed to Link B :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 463.43' @ 12.48 hrs Surf.Area= 1,882 sf Storage= 3,201 cf

Plug-Flow detention time= 267.2 min calculated for 0.251 af (100% of inflow)
 Center-of-Mass det. time= 267.4 min (1,131.8 - 864.5)

Volume	Invert	Avail.Storage	Storage Description			
#1	461.00'	4,363 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)	
461.00	833	116.4	0	0	833	
462.00	1,211	135.3	1,016	1,016	1,232	
463.00	1,645	154.1	1,422	2,439	1,688	
464.00	2,218	180.5	1,924	4,363	2,411	

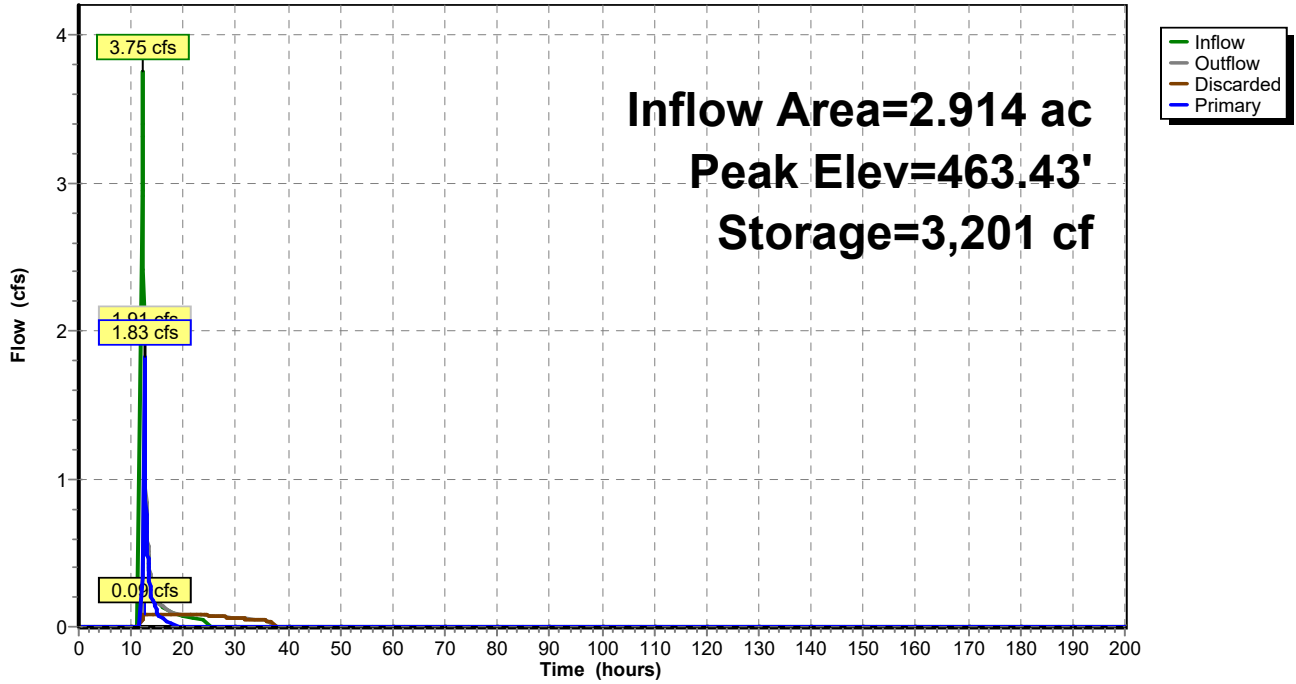
Device	Routing	Invert	Outlet Devices																		
#1	Primary	463.25'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir																		
			Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	
			Coef. (English)	2.34	2.50	2.70	2.68	2.68	2.66	2.66	2.65	2.65	2.65	2.65	2.65	2.66	2.68	2.70	2.74	2.79	2.88
#2	Discarded	461.00'	2.000 in/hr Exfiltration over Surface area																		

Discarded OutFlow Max=0.09 cfs @ 12.48 hrs HW=463.43' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=1.80 cfs @ 12.48 hrs HW=463.43' TW=0.00' (Dynamic Tailwater)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 1.80 cfs @ 1.00 fps)

Pond P2: Infiltration

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Pond P3: Pond

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 24.05 hrs, Volume= 0.000 af
Outflow = 0.00 cfs @ 24.10 hrs, Volume= 0.000 af, Atten= 6%, Lag= 3.1 min
Primary = 0.00 cfs @ 24.10 hrs, Volume= 0.000 af
Routed to Pond P4 : Sediment Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 456.02' @ 24.10 hrs Surf.Area= 184 sf Storage= 4 cf

Plug-Flow detention time= 118.9 min calculated for 0.000 af (100% of inflow)
Center-of-Mass det. time= 118.6 min (1,444.2 - 1,325.5)

Volume	Invert	Avail.Storage	Storage Description		
#1	456.00'	285 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)
456.00	180	60.1	0	0	180
457.00	404	85.0	285	285	477

Device	Routing	Invert	Outlet Devices
#1	Primary	456.00'	6.0" Round Culvert L= 58.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 456.00' / 455.00' S= 0.0171 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.00 cfs @ 24.10 hrs HW=456.02' TW=454.02' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.00 cfs @ 0.38 fps)

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Vineyard 1 & 2

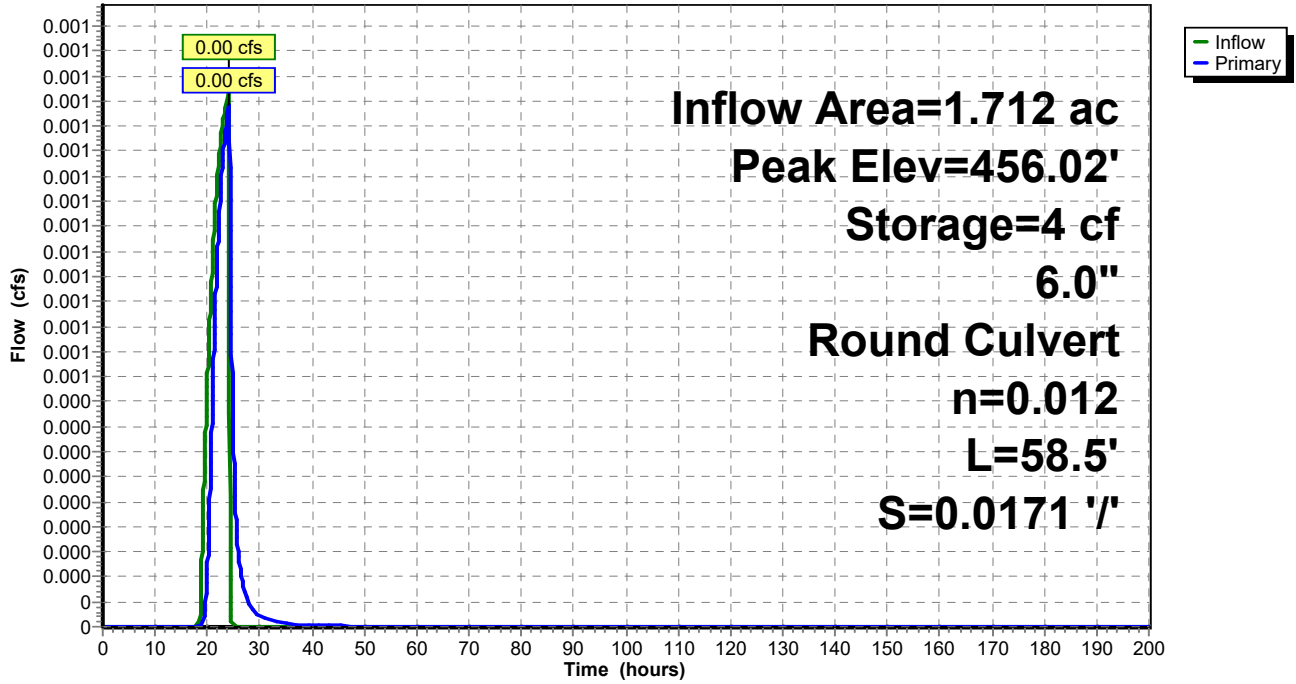
NRCC 24-hr A 10-Year Rainfall=3.19"

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Pond P3: Pond

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Pond P4: Sediment Basin

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.00" for 10-Year event
 Inflow = 0.00 cfs @ 24.10 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Pond P5 : Infiltration

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 454.02' @ 200.00 hrs Surf.Area= 644 sf Storage= 15 cf

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

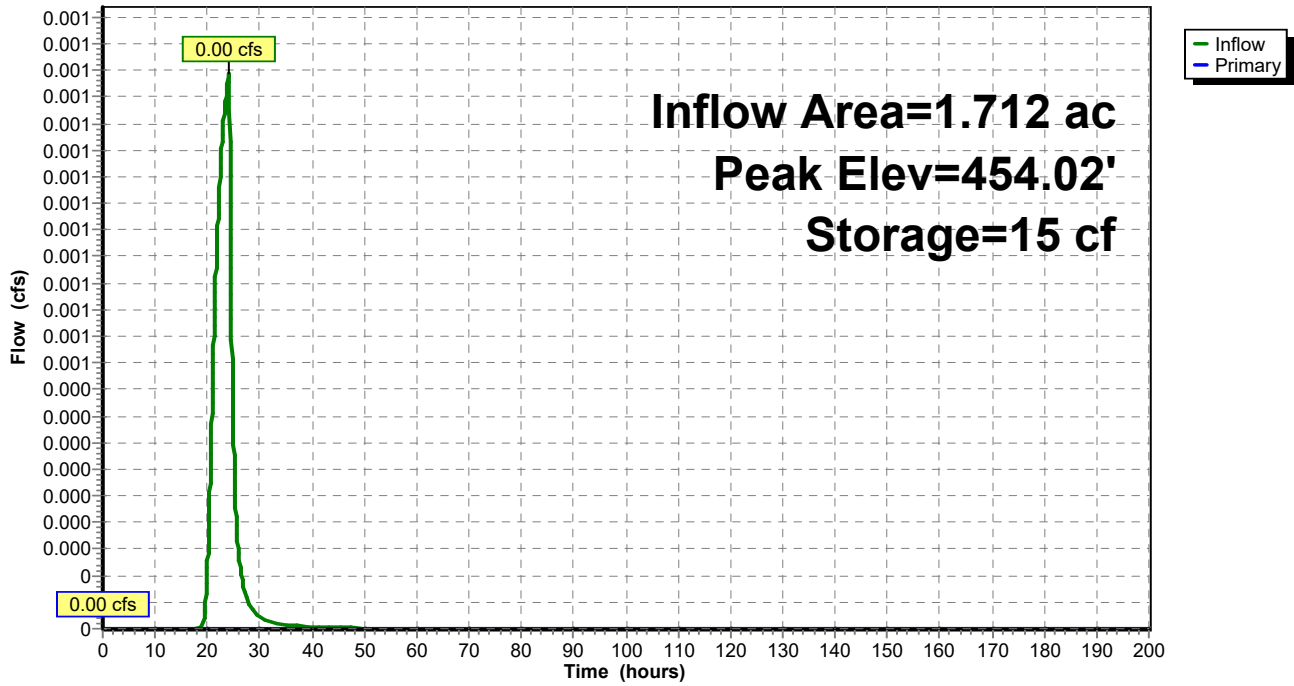
Volume	Invert	Avail.Storage	Storage Description			
#1	454.00'	2,313 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
454.00	635	106.1	0	0	635	
455.00	1,092	169.8	853	853	2,040	
456.00	1,862	267.5	1,460	2,313	5,447	

Device	Routing	Invert	Outlet Devices													
#1	Primary	455.00'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir													
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00													
			2.50 3.00 3.50 4.00 4.50 5.00 5.50													
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65													
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88													

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=454.00' TW=453.00' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond P4: Sediment Basin

Hydrograph



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NRCC 24-hr A 10-Year Rainfall=3.19"

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Summary for Pond P5: Infiltration

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.00" for 10-Year event
 Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link C :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 453.00' @ 0.00 hrs Surf.Area= 611 sf Storage= 0 cf

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

Volume	Invert	Avail.Storage	Storage Description			
#1	453.00'	3,513 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)	
453.00	611	97.4	0	0	611	
454.00	953	122.5	776	776	1,064	
455.00	1,349	141.4	1,145	1,921	1,482	
456.00	1,848	163.7	1,592	3,513	2,045	

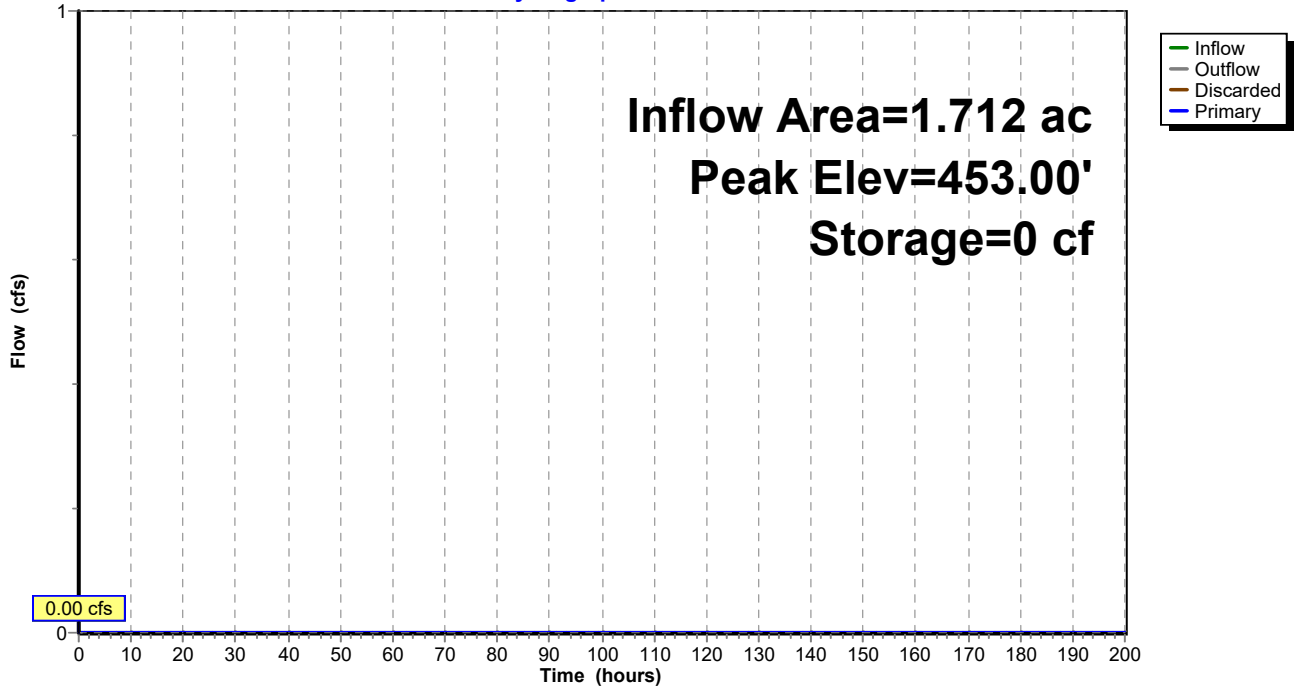
Device	Routing	Invert	Outlet Devices																		
#1	Primary	455.00'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir																		
			Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	
			Coef. (English)	2.34	2.50	2.70	2.68	2.68	2.66	2.65	2.65	2.65	2.65	2.65	2.65	2.66	2.68	2.70	2.74	2.79	2.88
#2	Discarded	453.00'	2.000 in/hr Exfiltration over Surface area																		

Discarded OutFlow Max=0.00 cfs @ 0.00 hrs HW=453.00' (Free Discharge)
 ↑2=Exfiltration (Passes 0.00 cfs of 0.03 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=453.00' TW=0.00' (Dynamic Tailwater)
 ↑1=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P5: Infiltration

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 10-Year Rainfall=3.19"

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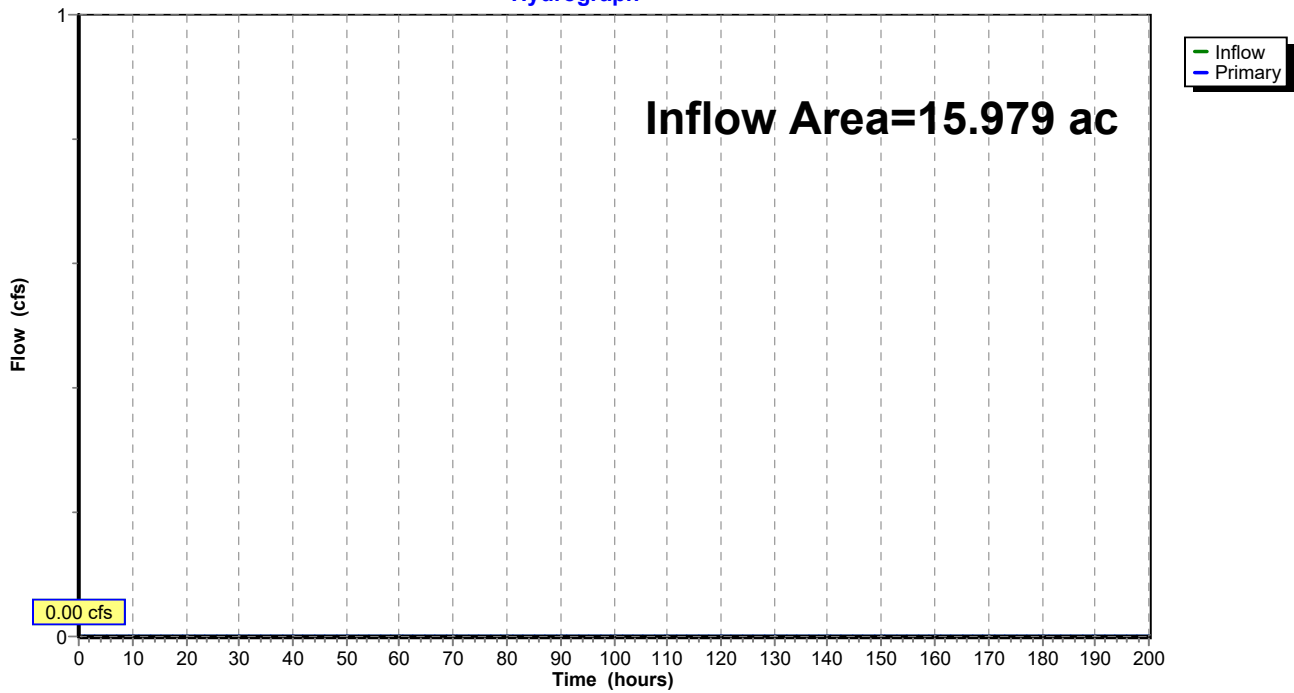
Summary for Link A:

Inflow Area = 15.979 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link A:

Hydrograph



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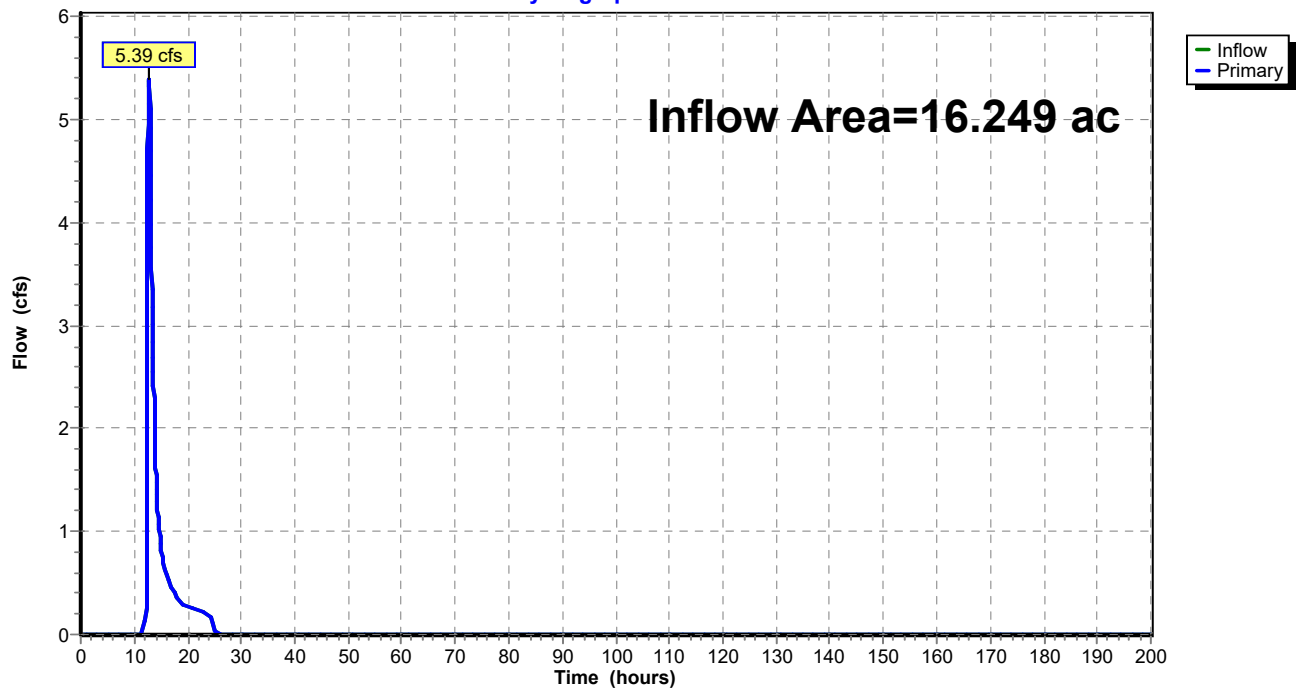
Summary for Link B:

Inflow Area = 16.249 ac, 0.12% Impervious, Inflow Depth = 0.64" for 10-Year event
Inflow = 5.39 cfs @ 12.73 hrs, Volume= 0.867 af
Primary = 5.39 cfs @ 12.73 hrs, Volume= 0.867 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link B:

Hydrograph



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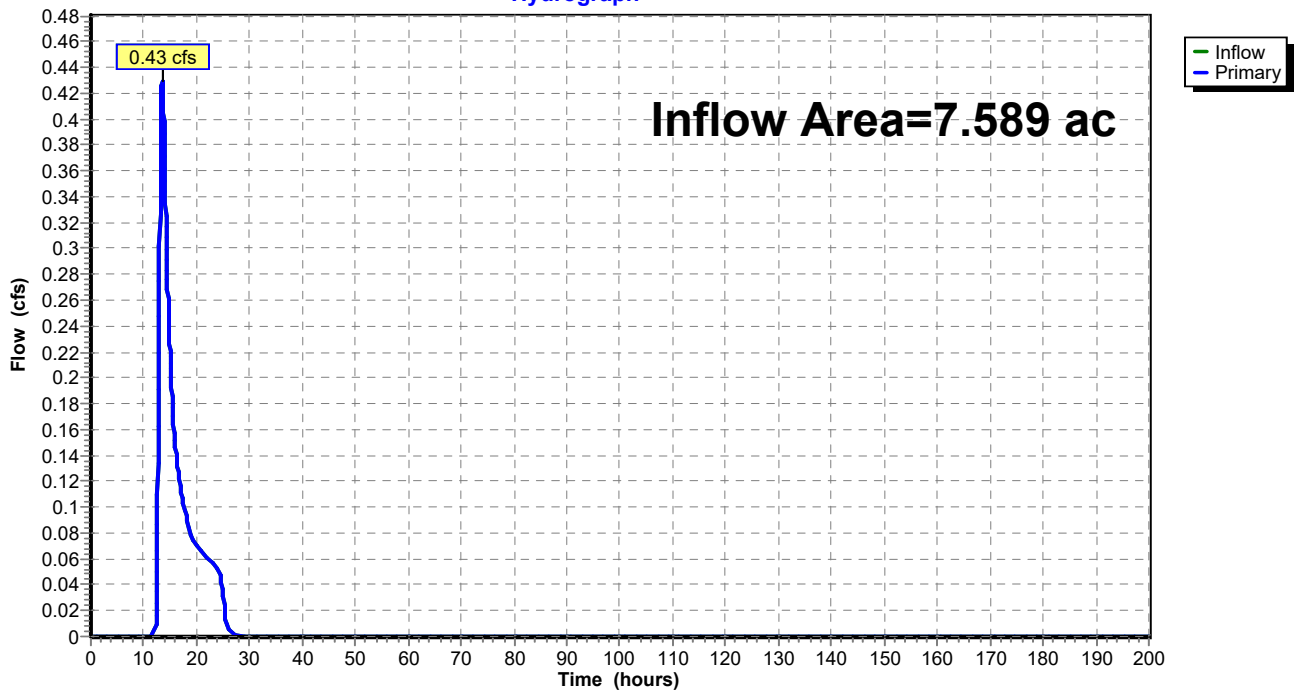
Summary for Link C:

Inflow Area = 7.589 ac, 0.50% Impervious, Inflow Depth = 0.21" for 10-Year event
Inflow = 0.43 cfs @ 13.49 hrs, Volume= 0.135 af
Primary = 0.43 cfs @ 13.49 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link C:

Hydrograph



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NRCC 24-hr A 10-Year Rainfall=3.19"

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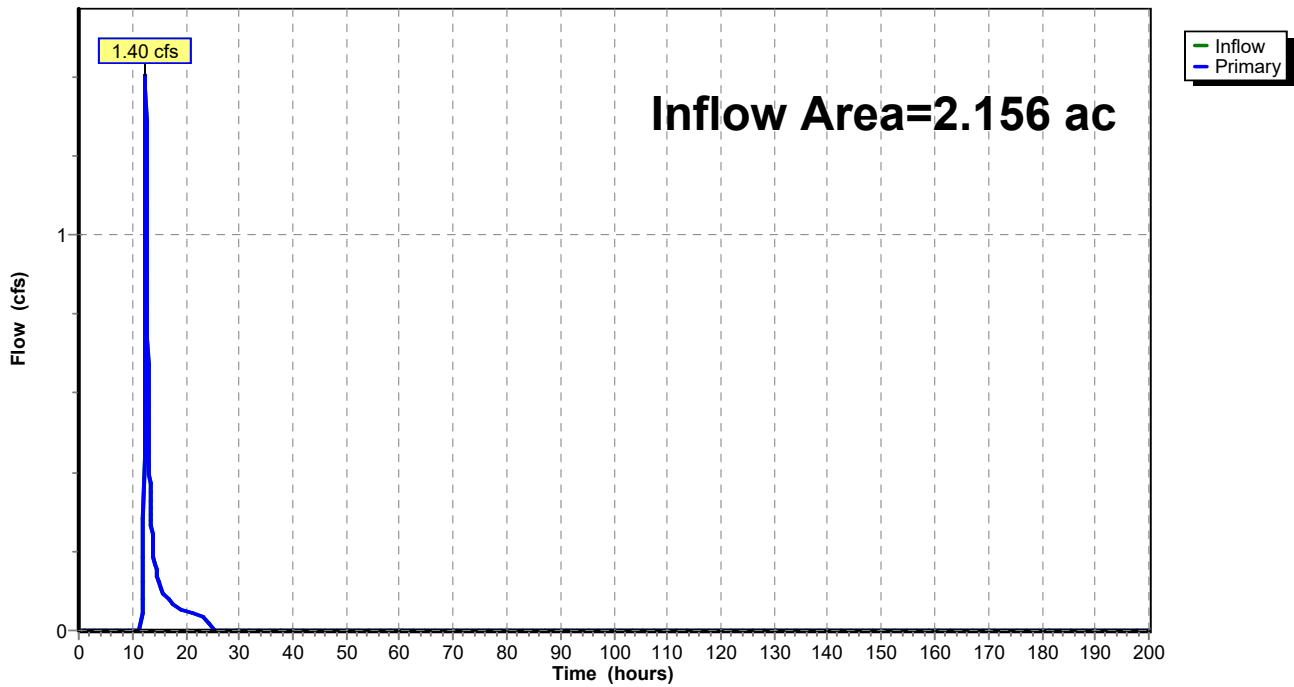
Summary for Link D:

Inflow Area = 2.156 ac, 0.00% Impervious, Inflow Depth = 0.87" for 10-Year event
Inflow = 1.40 cfs @ 12.45 hrs, Volume= 0.157 af
Primary = 1.40 cfs @ 12.45 hrs, Volume= 0.157 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link D:

Hydrograph



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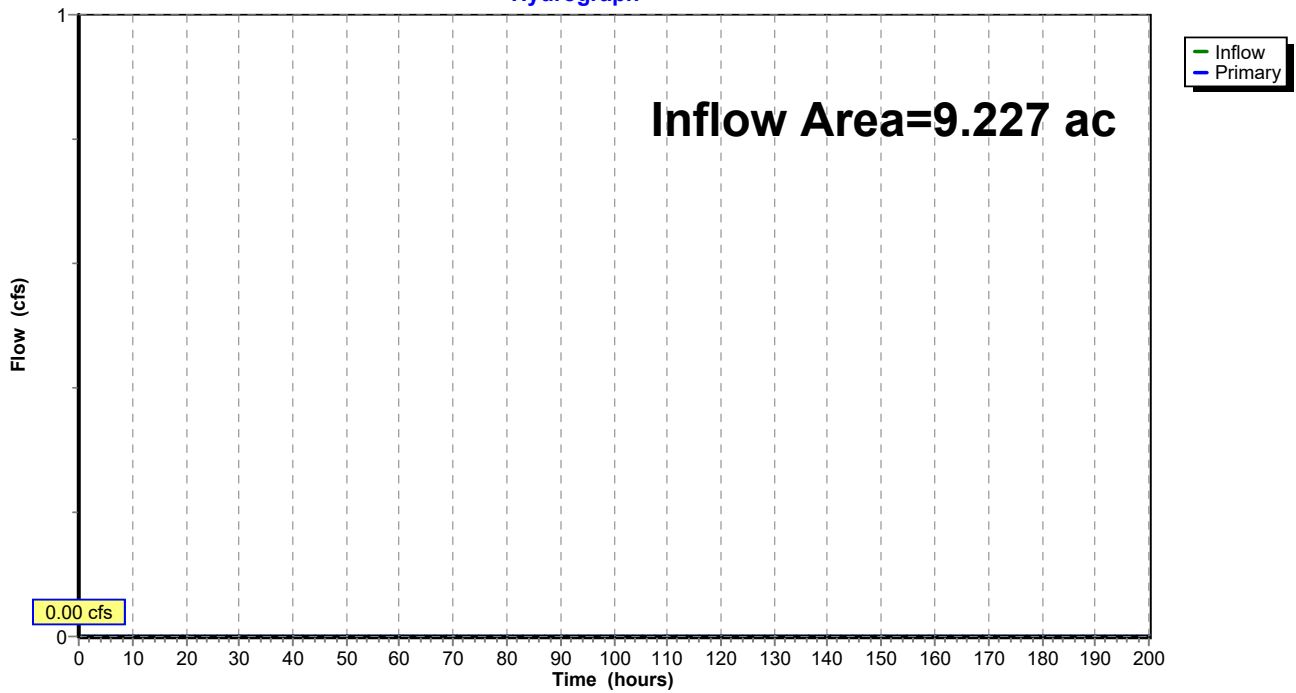
Summary for Link E:

Inflow Area = 9.227 ac, 0.27% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link E:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 10-Year Rainfall=3.19"

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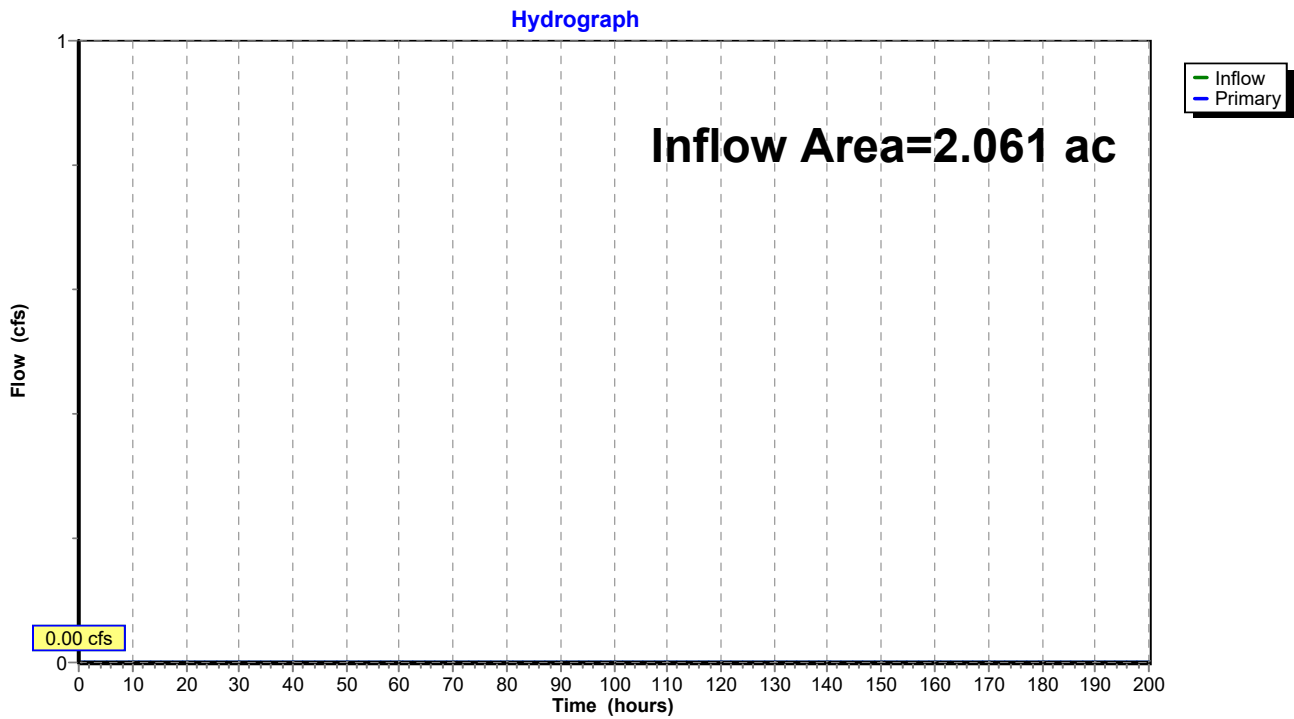
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Summary for Link F:

Inflow Area = 2.061 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link F:



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NRCC 24-hr A 50-Year Rainfall=4.53"

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Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentS100: Runoff Area=15.979 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=1,856' Tc=90.5 min CN=34 Runoff=0.04 cfs 0.028 af

SubcatchmentS200: Runoff Area=13.335 ac 0.00% Impervious Runoff Depth=1.48"
Flow Length=934' Tc=51.1 min CN=67 Runoff=10.92 cfs 1.649 af

SubcatchmentS210: Runoff Area=2.914 ac 0.65% Impervious Runoff Depth=2.15"
Flow Length=659' Tc=14.2 min CN=76 Runoff=7.12 cfs 0.523 af

SubcatchmentS300: Runoff Area=5.877 ac 0.00% Impervious Runoff Depth=0.81"
Flow Length=1,338' Tc=80.0 min CN=56 Runoff=1.66 cfs 0.396 af

SubcatchmentS310: Runoff Area=1.712 ac 2.22% Impervious Runoff Depth=0.14"
Flow Length=220' Tc=14.9 min CN=40 Runoff=0.05 cfs 0.020 af

SubcatchmentS400: Runoff Area=2.156 ac 0.00% Impervious Runoff Depth=1.77"
Flow Length=388' Tc=28.3 min CN=71 Runoff=3.05 cfs 0.318 af

SubcatchmentS500: Runoff Area=9.227 ac 0.27% Impervious Runoff Depth=0.07"
Flow Length=1,329' Tc=44.8 min CN=37 Runoff=0.08 cfs 0.054 af

SubcatchmentS600: Runoff Area=2.061 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=668' Tc=51.0 min CN=32 Runoff=0.00 cfs 0.001 af

Reach 3R: Existing Culvert Avg. Flow Depth=0.06' Max Vel=1.96 fps Inflow=0.04 cfs 0.028 af
15.0" Round Pipe n=0.012 L=46.0' S=0.0196 '/' Capacity=9.79 cfs Outflow=0.04 cfs 0.028 af

Pond P1: Sediment Basin Peak Elev=463.85' Storage=1,508 cf Inflow=7.12 cfs 0.523 af
Outflow=7.07 cfs 0.496 af

Pond P2: Infiltration Peak Elev=463.68' Storage=3,685 cf Inflow=7.07 cfs 0.496 af
Discarded=0.09 cfs 0.151 af Primary=7.12 cfs 0.345 af Outflow=7.21 cfs 0.496 af

Pond P3: Pond Peak Elev=456.15' Storage=29 cf Inflow=0.05 cfs 0.020 af
6.0" Round Culvert n=0.012 L=58.5' S=0.0171 '/' Outflow=0.05 cfs 0.020 af

Pond P4: Sediment Basin Peak Elev=455.01' Storage=859 cf Inflow=0.05 cfs 0.020 af
Outflow=0.01 cfs 0.001 af

Pond P5: Infiltration Peak Elev=453.00' Storage=0 cf Inflow=0.01 cfs 0.001 af
Discarded=0.01 cfs 0.001 af Primary=0.00 cfs 0.000 af Outflow=0.01 cfs 0.001 af

Link A: Inflow=0.04 cfs 0.028 af
Primary=0.04 cfs 0.028 af

Link B: Inflow=12.72 cfs 1.993 af
Primary=12.72 cfs 1.993 af

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NRCC 24-hr A 50-Year Rainfall=4.53"
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Link C:	Inflow=1.66 cfs 0.396 af Primary=1.66 cfs 0.396 af
Link D:	Inflow=3.05 cfs 0.318 af Primary=3.05 cfs 0.318 af
Link E:	Inflow=0.08 cfs 0.054 af Primary=0.08 cfs 0.054 af
Link F:	Inflow=0.00 cfs 0.001 af Primary=0.00 cfs 0.001 af

Total Runoff Area = 53.261 ac Runoff Volume = 2.988 af Average Runoff Depth = 0.67"
99.85% Pervious = 53.179 ac 0.15% Impervious = 0.082 ac

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NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S100:

Runoff = 0.04 cfs @ 22.42 hrs, Volume= 0.028 af, Depth= 0.02"
Routed to Reach 3R : Existing Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
2.433	30	Woods, Good, HSG A
3.242	32	Woods/grass comb., Good, HSG A
0.746	39	>75% Grass cover, Good, HSG A
8.371	30	Meadow, non-grazed, HSG A
0.799	72	Woods/grass comb., Good, HSG C
0.388	74	>75% Grass cover, Good, HSG C
15.979	34	Weighted Average
15.979		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	100	0.0140	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
5.4	237	0.0215	0.73		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
11.2	476	0.0200	0.71		Shallow Concentrated Flow, Light wood Woodland Kv= 5.0 fps
23.7	1,043	0.0110	0.73		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
90.5	1,856	Total			

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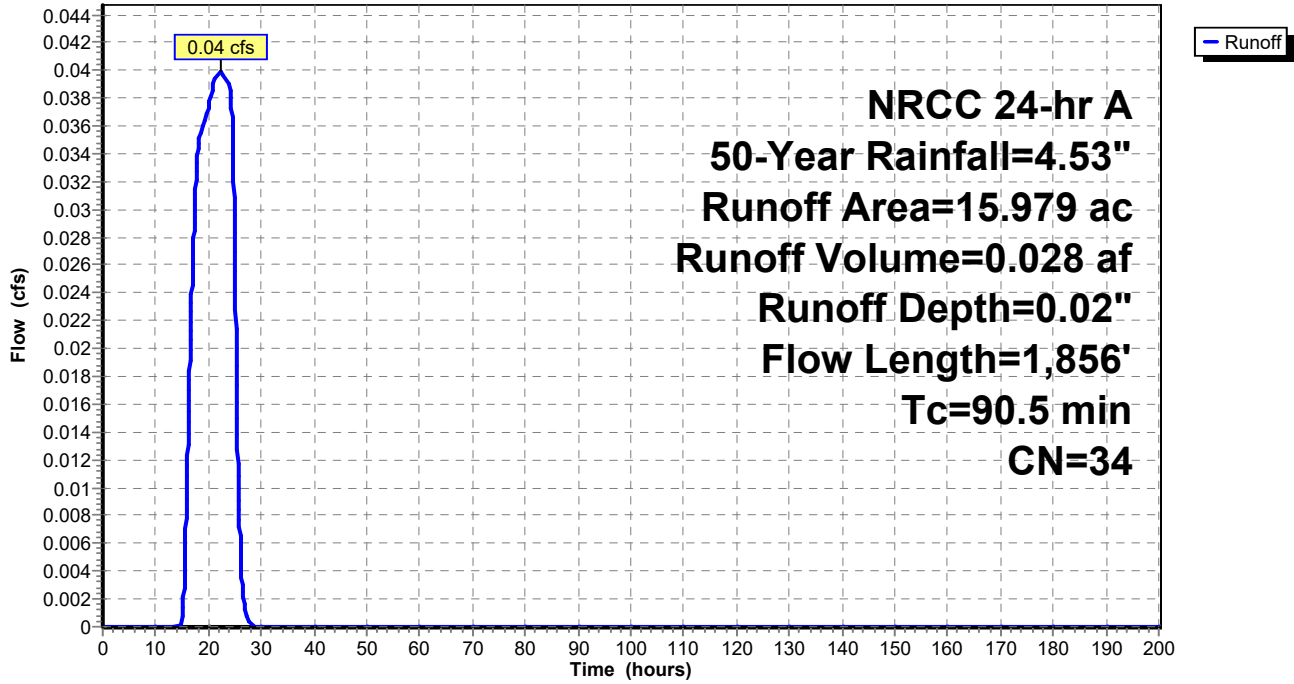
NRCC 24-hr A 50-Year Rainfall=4.53"

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Subcatchment S100:

Hydrograph



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NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S200:

Runoff = 10.92 cfs @ 12.76 hrs, Volume= 1.649 af, Depth= 1.48"
Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
1.446	30	Meadow, non-grazed, HSG A
7.786	71	Meadow, non-grazed, HSG C
1.056	70	Woods, Good, HSG C
1.872	72	Woods/grass comb., Good, HSG C
1.175	74	>75% Grass cover, Good, HSG C
13.335	67	Weighted Average
13.335		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	19	0.2000	0.18		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
36.8	81	0.0200	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
2.1	101	0.0250	0.79		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
10.4	733	0.0282	1.18		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
51.1	934	Total			

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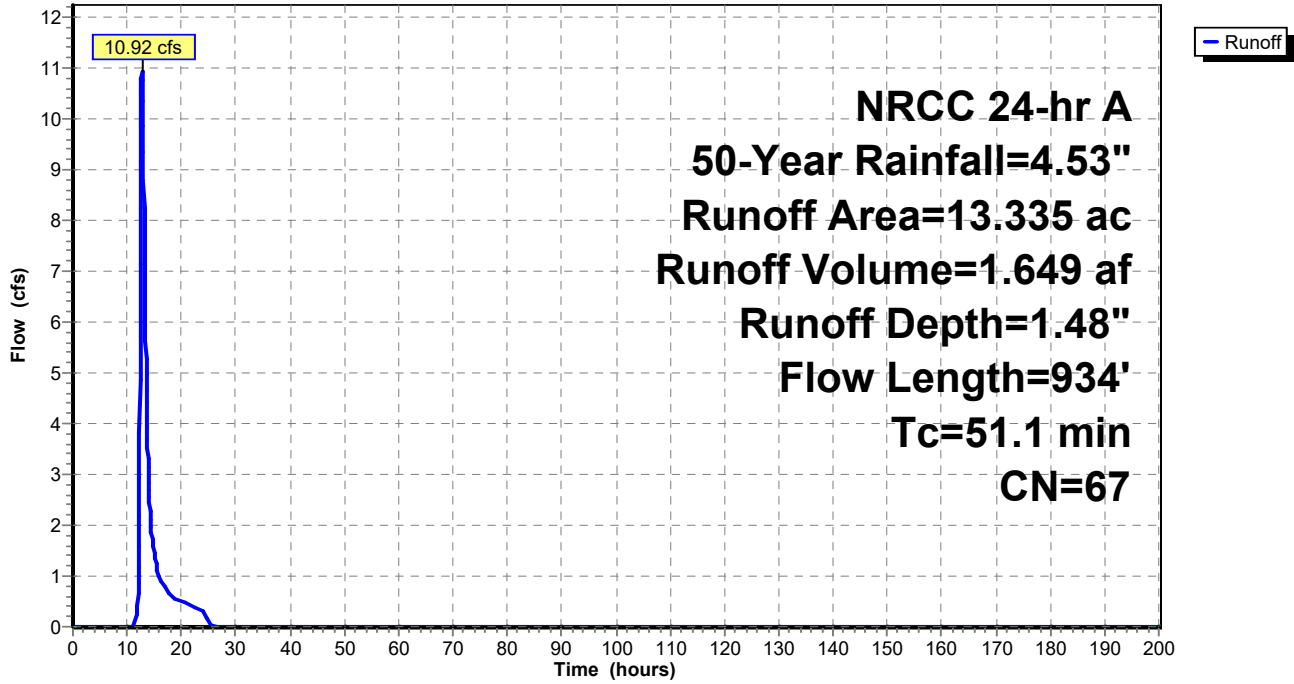
NRCC 24-hr A 50-Year Rainfall=4.53"

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Subcatchment S200:

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S210:

Runoff = 7.12 cfs @ 12.23 hrs, Volume= 0.523 af, Depth= 2.15"
Routed to Pond P1 : Sediment Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
0.117	30	Meadow, non-grazed, HSG A
1.359	71	Meadow, non-grazed, HSG C
0.019	72	Woods/grass comb., Good, HSG C
0.085	74	>75% Grass cover, Good, HSG C
0.059	39	>75% Grass cover, Good, HSG A
1.074	89	Gravel roads, HSG C
0.182	76	Gravel roads, HSG A
* 0.019	98	Equipment Pad
2.914	76	Weighted Average
2.895		99.35% Pervious Area
0.019		0.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0900	0.18		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
4.1	306	0.0310	1.23		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
0.1	11	0.0200	2.87		Shallow Concentrated Flow, Grass Paved Kv= 20.3 fps
0.9	242	0.0940	4.60		Shallow Concentrated Flow, Swale Grassed Waterway Kv= 15.0 fps
14.2	659	Total			

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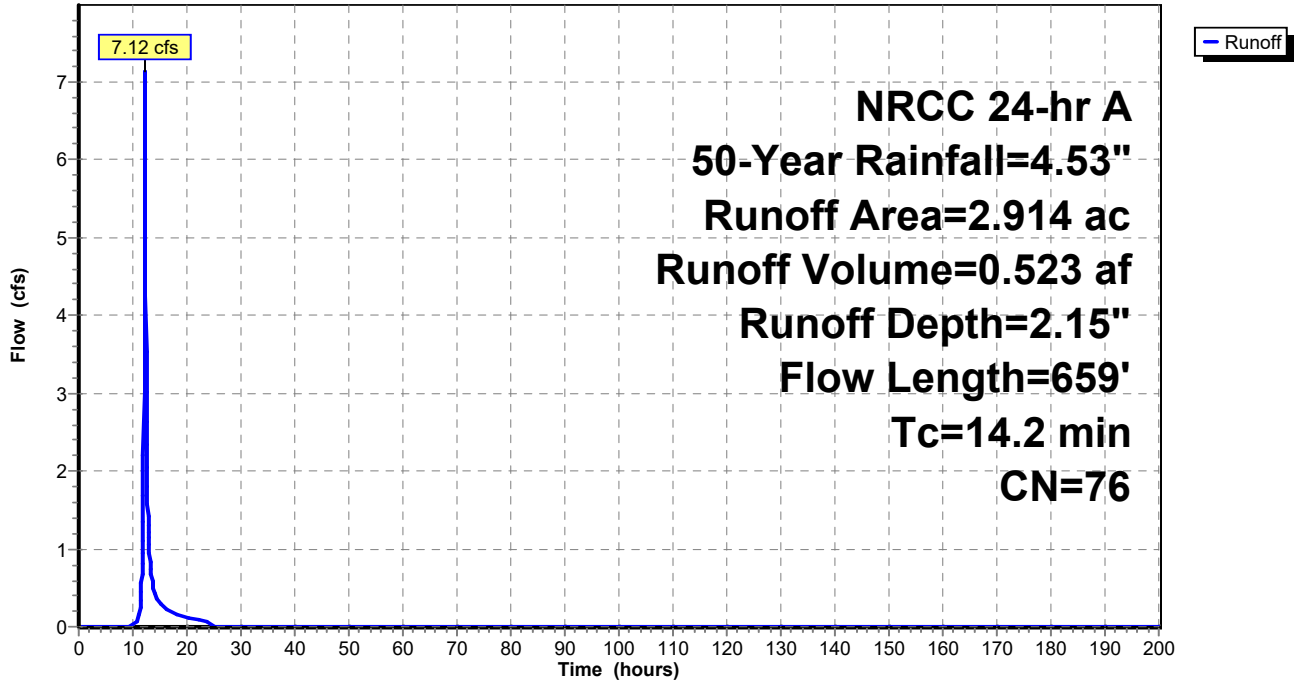
NRCC 24-hr A 50-Year Rainfall=4.53"

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Subcatchment S210:

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NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S300:

Runoff = 1.66 cfs @ 13.28 hrs, Volume= 0.396 af, Depth= 0.81"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
0.019	30	Woods, Good, HSG A
1.966	30	Meadow, non-grazed, HSG A
1.282	71	Meadow, non-grazed, HSG C
2.490	70	Woods, Good, HSG C
0.076	39	>75% Grass cover, Good, HSG A
0.044	74	>75% Grass cover, Good, HSG C
5.877	56	Weighted Average
5.877		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
57.4	100	0.0100	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
13.4	603	0.0115	0.75		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
9.2	635	0.0530	1.15		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
80.0	1,338	Total			

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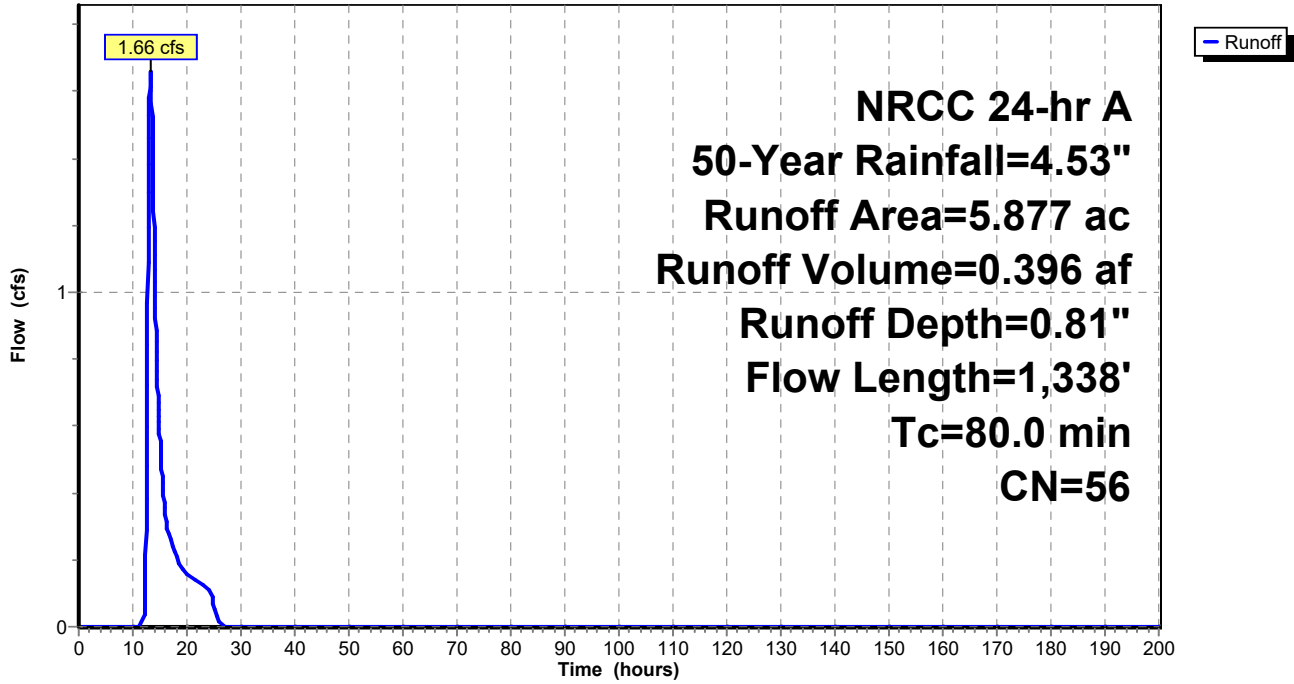
NRCC 24-hr A 50-Year Rainfall=4.53"

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Subcatchment S300:

Hydrograph



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NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S310:

Runoff = 0.05 cfs @ 12.98 hrs, Volume= 0.020 af, Depth= 0.14"
 Routed to Pond P3 : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
1.059	30	Meadow, non-grazed, HSG A
0.069	71	Meadow, non-grazed, HSG C
0.095	30	Woods, Good, HSG A
0.024	70	Woods, Good, HSG C
0.237	39	>75% Grass cover, Good, HSG A
0.190	76	Gravel roads, HSG A
* 0.038	98	Equipment Pad
1.712	40	Weighted Average
1.674		97.78% Pervious Area
0.038		2.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0354	0.13		Sheet Flow, Swale
					Grass: Dense n= 0.240 P2= 2.36"
1.7	120	0.0275	1.16		Shallow Concentrated Flow, Swale
					Short Grass Pasture Kv= 7.0 fps
14.9	220	Total			

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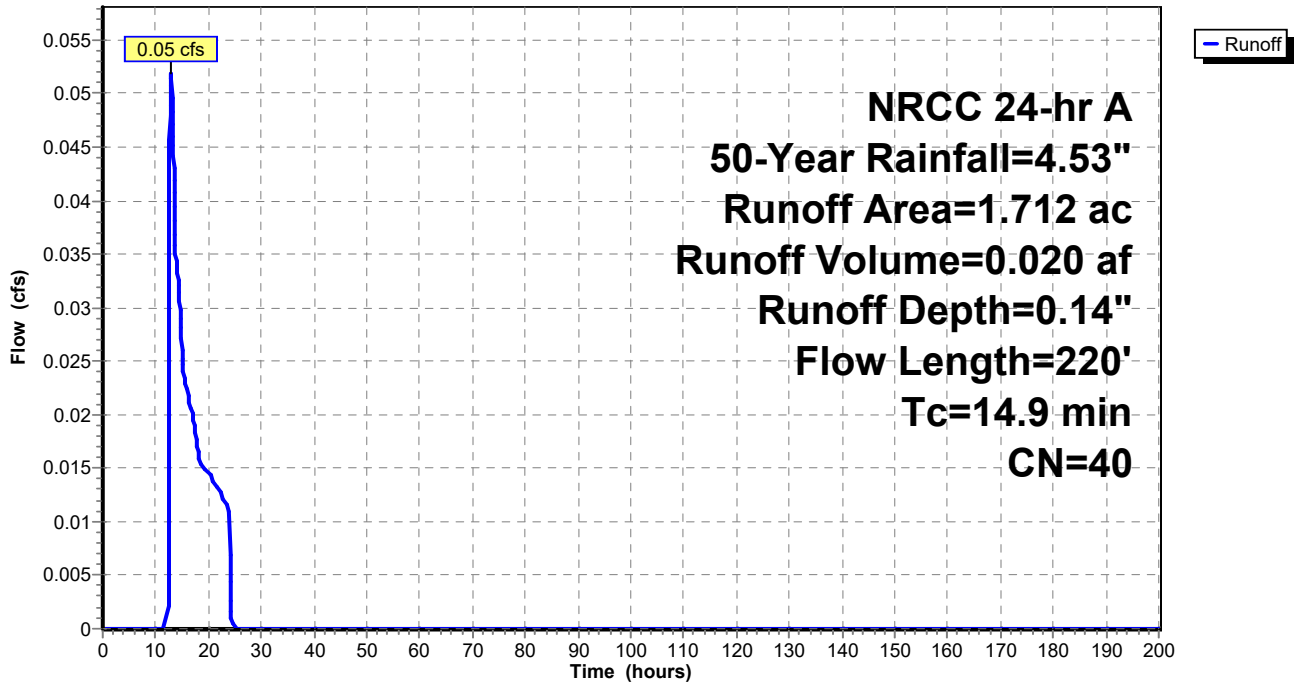
NRCC 24-hr A 50-Year Rainfall=4.53"

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Subcatchment S310:

Hydrograph



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NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S400:

Runoff = 3.05 cfs @ 12.42 hrs, Volume= 0.318 af, Depth= 1.77"
 Routed to Link D :

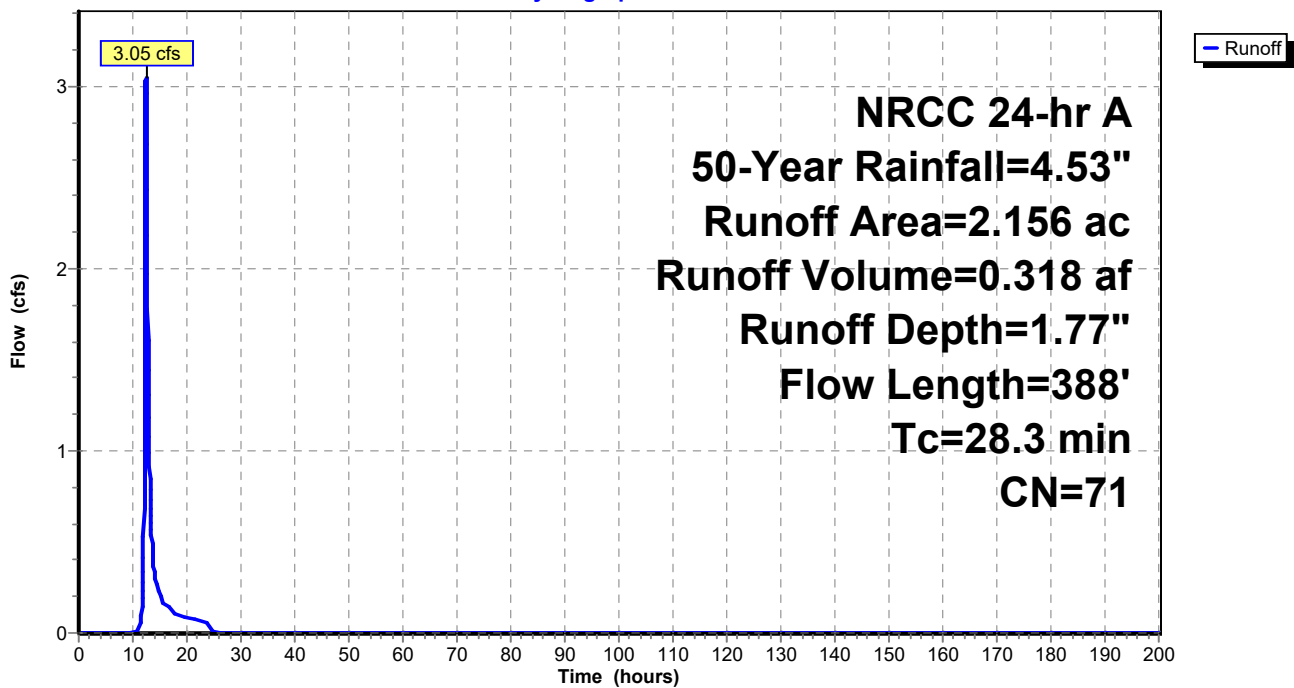
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
1.306	71	Meadow, non-grazed, HSG C
0.850	70	Woods, Good, HSG C
2.156	71	Weighted Average
2.156		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0095	0.07		Sheet Flow, Grass SF Grass: Dense n= 0.240 P2= 2.36"
5.3	264	0.0139	0.83		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.6	24	0.0157	0.63		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
28.3	388	Total			

Subcatchment S400:

Hydrograph



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NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S500:

Runoff = 0.08 cfs @ 14.79 hrs, Volume= 0.054 af, Depth= 0.07"
Routed to Link E :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
0.921	30	Woods, Good, HSG A
6.718	30	Meadow, non-grazed, HSG A
1.540	71	Meadow, non-grazed, HSG C
0.023	70	Woods, Good, HSG C
* 0.025	98	Existing foundation, HSG A
9.227	37	Weighted Average
9.202		99.73% Pervious Area
0.025		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	72	0.0495	0.13		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
16.2	28	0.0186	0.03		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
1.0	97	0.0518	1.59		Shallow Concentrated Flow, Woods - SCF Short Grass Pasture Kv= 7.0 fps
18.4	1,111	0.0206	1.00		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.3	21	0.0576	1.20		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
44.8	1,329	Total			

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Vineyard 1 & 2

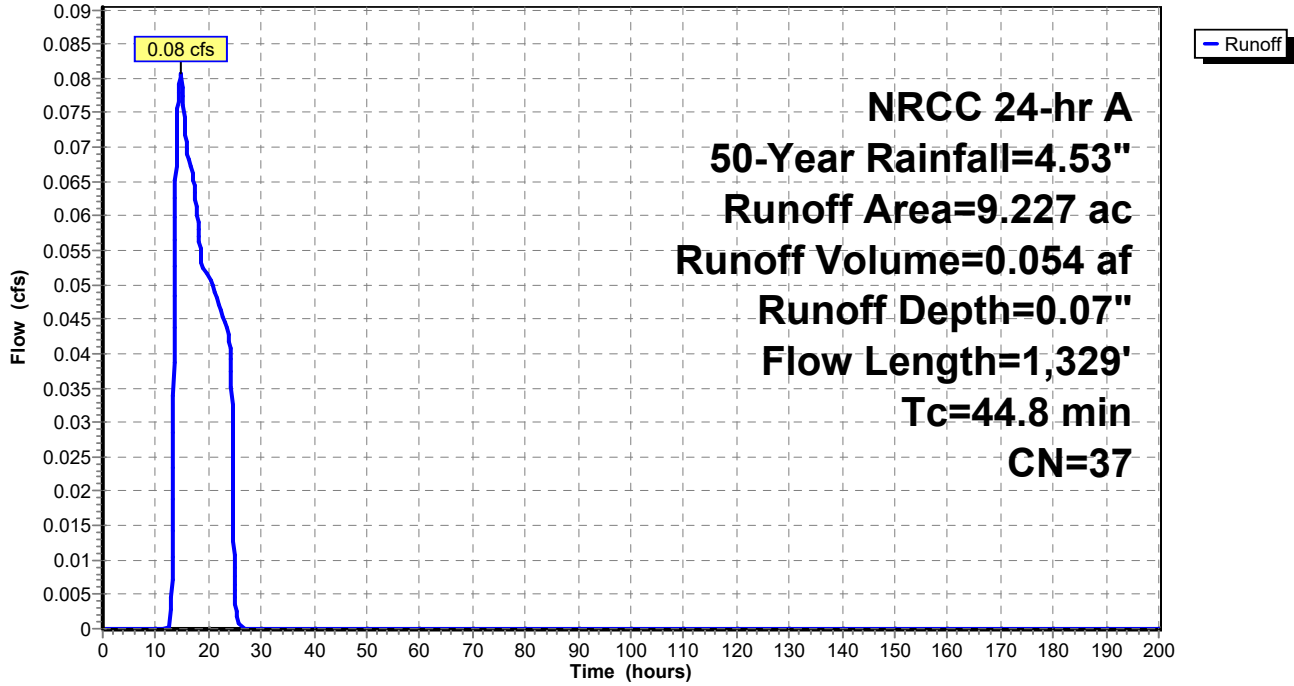
NRCC 24-hr A 50-Year Rainfall=4.53"

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Subcatchment S500:

Hydrograph



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NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Subcatchment S600:

Runoff = 0.00 cfs @ 24.13 hrs, Volume= 0.001 af, Depth= 0.00"
Routed to Link F :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 50-Year Rainfall=4.53"

Area (ac)	CN	Description
0.447	30	Woods, Good, HSG A
1.208	30	Meadow, non-grazed, HSG A
0.406	39	>75% Grass cover, Good, HSG A
2.061	32	Weighted Average
2.061		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.1	100	0.0231	0.04		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
0.7	34	0.0231	0.76		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
8.7	510	0.0197	0.98		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.5	24	0.0272	0.82		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
51.0	668	Total			

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Vineyard 1 & 2

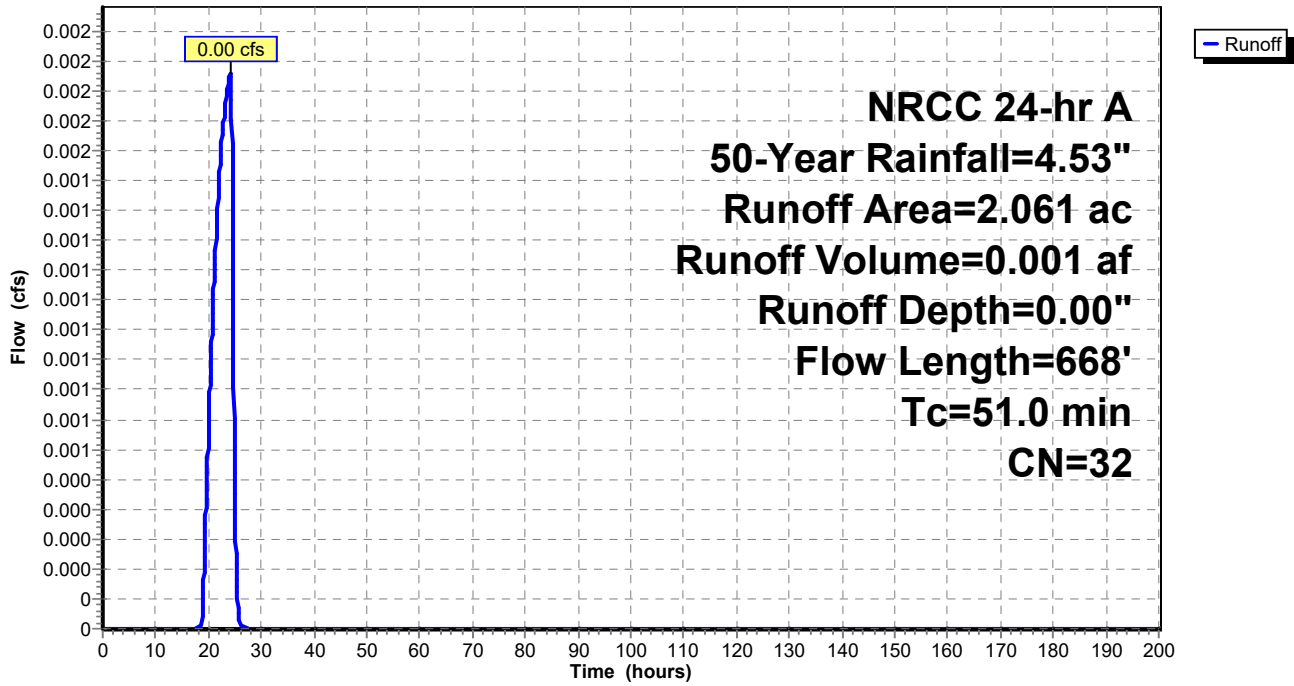
NRCC 24-hr A 50-Year Rainfall=4.53"

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Subcatchment S600:

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NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Reach 3R: Existing Culvert

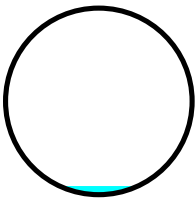
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 15.979 ac, 0.00% Impervious, Inflow Depth = 0.02" for 50-Year event
Inflow = 0.04 cfs @ 22.42 hrs, Volume= 0.028 af
Outflow = 0.04 cfs @ 22.24 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min
Routed to Link A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Max. Velocity= 1.96 fps, Min. Travel Time= 0.4 min
Avg. Velocity = 1.56 fps, Avg. Travel Time= 0.5 min

Peak Storage= 1 cf @ 22.24 hrs
Average Depth at Peak Storage= 0.06' , Surface Width= 0.52'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.79 cfs

15.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 46.0' Slope= 0.0196 '/'
Inlet Invert= 459.30', Outlet Invert= 458.40'



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Vineyard 1 & 2

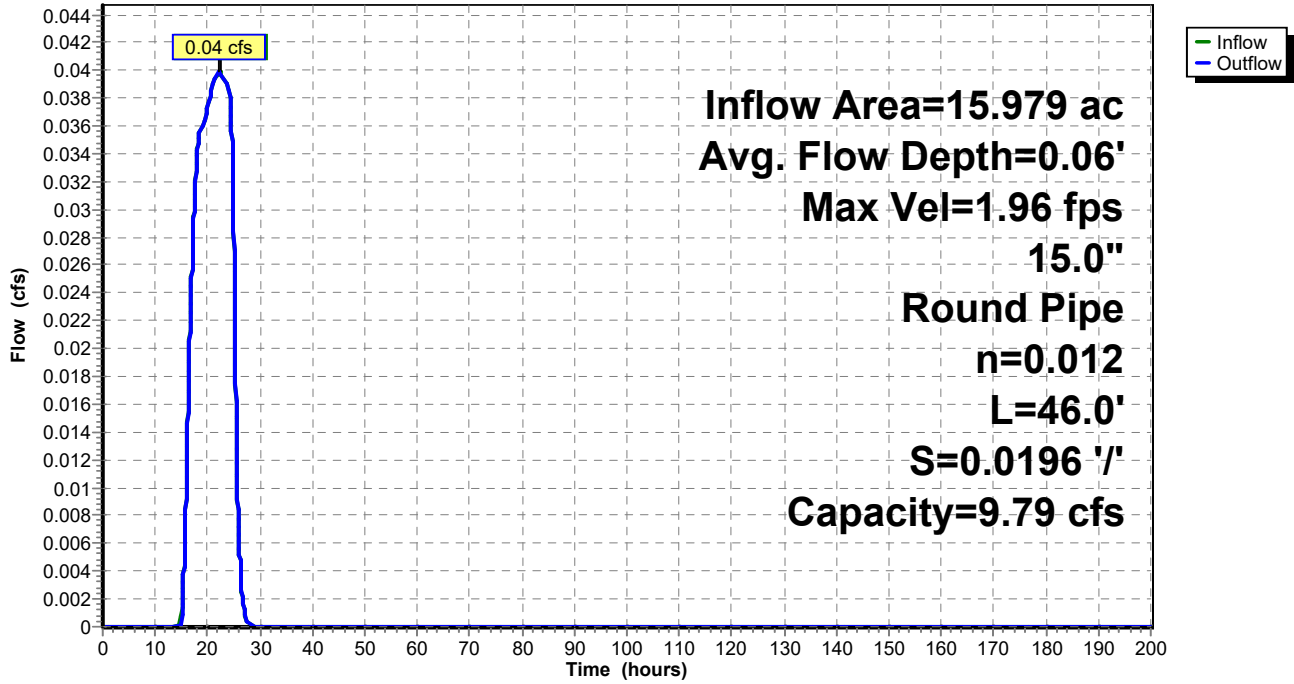
NRCC 24-hr A 50-Year Rainfall=4.53"

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Reach 3R: Existing Culvert

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Pond P1: Sediment Basin

Inflow Area = 2.914 ac, 0.65% Impervious, Inflow Depth = 2.15" for 50-Year event
 Inflow = 7.12 cfs @ 12.23 hrs, Volume= 0.523 af
 Outflow = 7.07 cfs @ 12.24 hrs, Volume= 0.496 af, Atten= 1%, Lag= 0.4 min
 Primary = 7.07 cfs @ 12.24 hrs, Volume= 0.496 af
 Routed to Pond P2 : Infiltration

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 463.85' @ 12.28 hrs Surf.Area= 1,039 sf Storage= 1,508 cf

Plug-Flow detention time= 37.8 min calculated for 0.496 af (95% of inflow)
 Center-of-Mass det. time= 9.7 min (842.0 - 832.3)

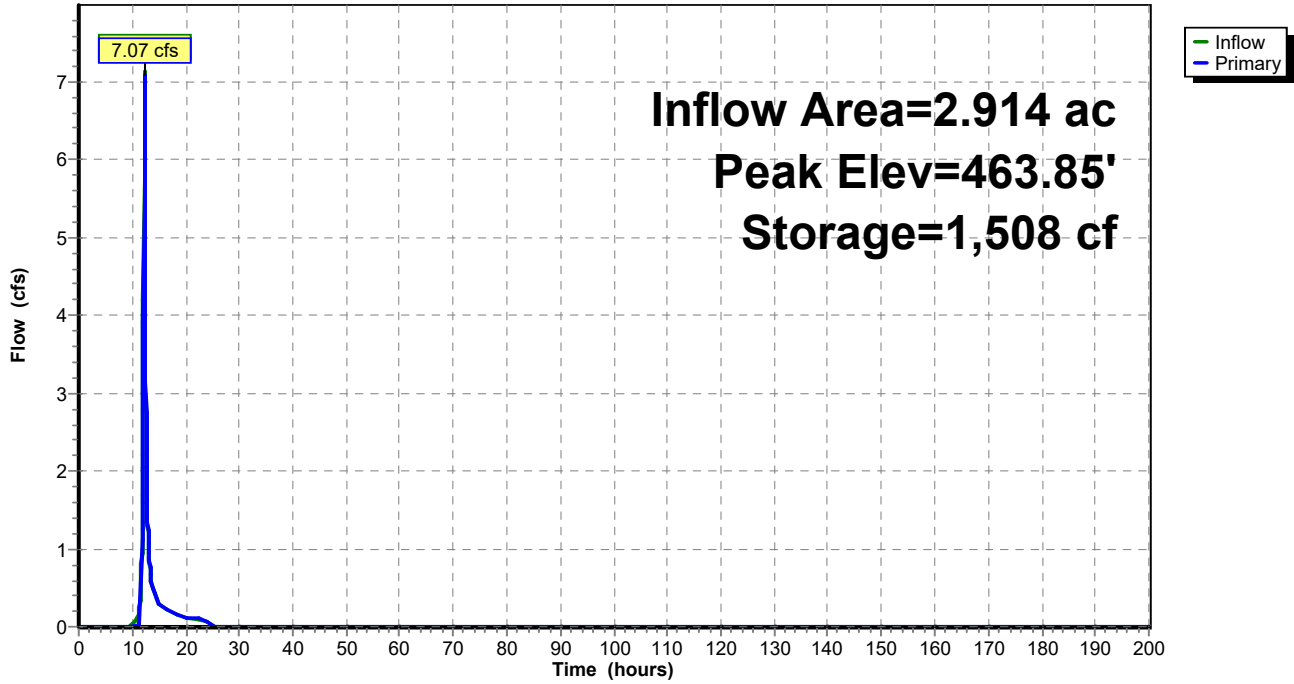
Volume	Invert	Avail.Storage	Storage Description			
#1	461.00'	1,673 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
461.00	150	54.9	0	0	150	
462.00	376	85.0	254	254	492	
463.00	692	112.3	526	781	932	
464.00	1,110	151.3	893	1,673	1,761	

Device	Routing	Invert	Outlet Devices												
#1	Primary	463.50'	15.0' long x 5.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65												
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88												

Primary OutFlow Max=6.31 cfs @ 12.24 hrs HW=463.84' TW=463.65' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 6.31 cfs @ 1.25 fps)

Pond P1: Sediment Basin

Hydrograph



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Vineyard 1 & 2
 NRCC 24-hr A 50-Year Rainfall=4.53"
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Summary for Pond P2: Infiltration

[90] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 2.914 ac, 0.65% Impervious, Inflow Depth = 2.04" for 50-Year event
 Inflow = 7.07 cfs @ 12.24 hrs, Volume= 0.496 af
 Outflow = 7.21 cfs @ 12.27 hrs, Volume= 0.496 af, Atten= 0%, Lag= 1.8 min
 Discarded = 0.09 cfs @ 12.27 hrs, Volume= 0.151 af
 Primary = 7.12 cfs @ 12.27 hrs, Volume= 0.345 af
 Routed to Link B :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 463.68' @ 12.27 hrs Surf.Area= 2,026 sf Storage= 3,685 cf

Plug-Flow detention time= 147.4 min calculated for 0.496 af (100% of inflow)
 Center-of-Mass det. time= 147.6 min (989.6 - 842.0)

Volume	Invert	Avail.Storage	Storage Description			
#1	461.00'	4,363 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)	
461.00	833	116.4	0	0	833	
462.00	1,211	135.3	1,016	1,016	1,232	
463.00	1,645	154.1	1,422	2,439	1,688	
464.00	2,218	180.5	1,924	4,363	2,411	

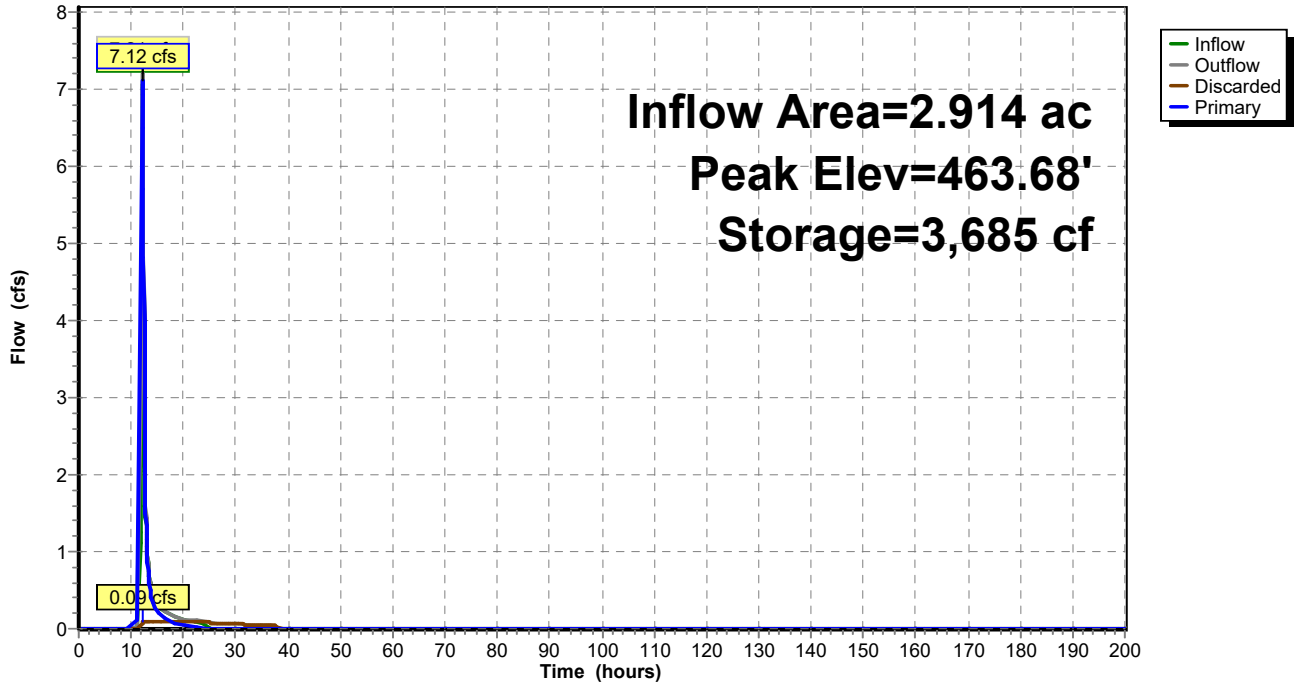
Device	Routing	Invert	Outlet Devices												
#1	Primary	463.25'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65												
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88												
#2	Discarded	461.00'	2.000 in/hr Exfiltration over Surface area												

Discarded OutFlow Max=0.09 cfs @ 12.27 hrs HW=463.67' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.09 cfs)

Primary OutFlow Max=6.79 cfs @ 12.27 hrs HW=463.67' TW=0.00' (Dynamic Tailwater)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 6.79 cfs @ 1.63 fps)

Pond P2: Infiltration

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Pond P3: Pond

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.14" for 50-Year event
Inflow = 0.05 cfs @ 12.98 hrs, Volume= 0.020 af
Outflow = 0.05 cfs @ 13.08 hrs, Volume= 0.020 af, Atten= 1%, Lag= 6.0 min
Primary = 0.05 cfs @ 13.08 hrs, Volume= 0.020 af
Routed to Pond P4 : Sediment Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Peak Elev= 456.15' @ 13.08 hrs Surf.Area= 208 sf Storage= 29 cf

Plug-Flow detention time= 14.5 min calculated for 0.020 af (100% of inflow)
Center-of-Mass det. time= 15.1 min (1,026.7 - 1,011.6)

Volume	Invert	Avail.Storage	Storage Description		
#1	456.00'	285 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)
456.00	180	60.1	0	0	180
457.00	404	85.0	285	285	477

Device	Routing	Invert	Outlet Devices
#1	Primary	456.00'	6.0" Round Culvert L= 58.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 456.00' / 455.00' S= 0.0171 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.05 cfs @ 13.08 hrs HW=456.15' TW=454.11' (Dynamic Tailwater)
↑**1=Culvert** (Inlet Controls 0.05 cfs @ 1.04 fps)

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Vineyard 1 & 2

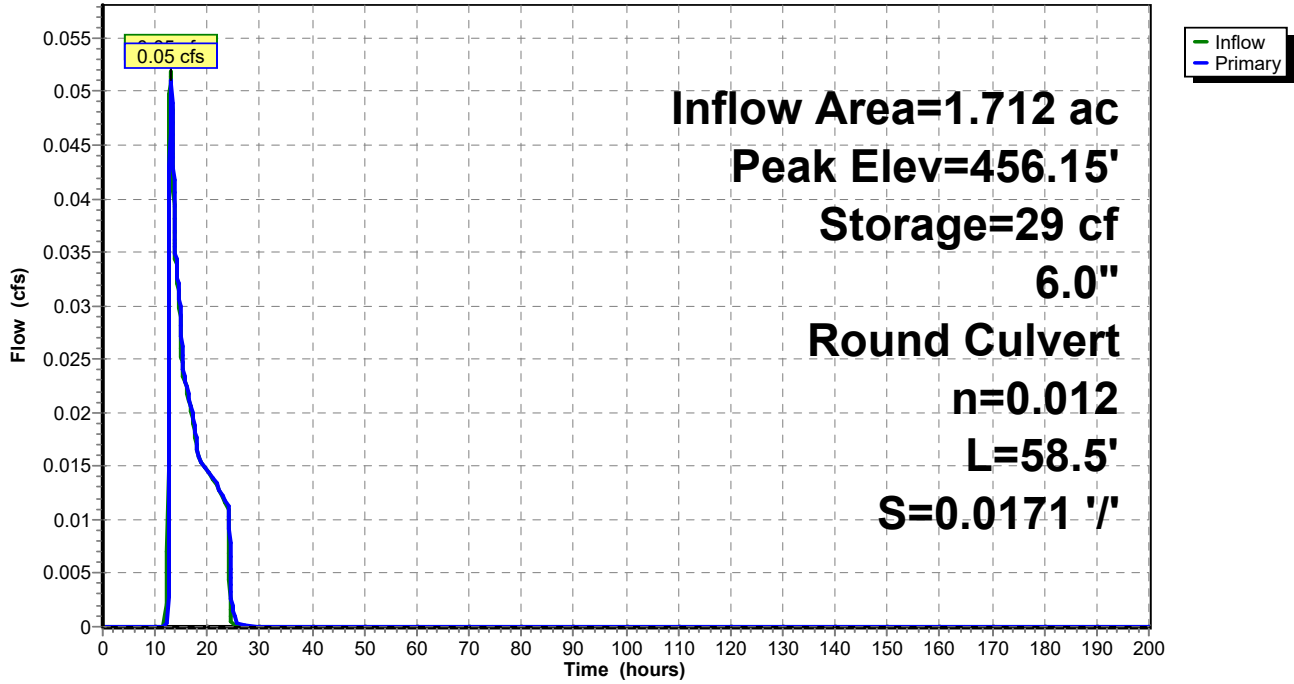
NRCC 24-hr A 50-Year Rainfall=4.53"

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Pond P3: Pond

Hydrograph



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NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Pond P4: Sediment Basin

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.14" for 50-Year event
 Inflow = 0.05 cfs @ 13.08 hrs, Volume= 0.020 af
 Outflow = 0.01 cfs @ 24.23 hrs, Volume= 0.001 af, Atten= 81%, Lag= 669.2 min
 Primary = 0.01 cfs @ 24.23 hrs, Volume= 0.001 af
 Routed to Pond P5 : Infiltration

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 455.01' @ 24.23 hrs Surf.Area= 1,096 sf Storage= 859 cf

Plug-Flow detention time= 751.5 min calculated for 0.001 af (3% of inflow)
 Center-of-Mass det. time= 486.8 min (1,513.5 - 1,026.7)

Volume	Invert	Avail.Storage	Storage Description			
#1	454.00'	2,313 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)	
454.00	635	106.1	0	0	635	
455.00	1,092	169.8	853	853	2,040	
456.00	1,862	267.5	1,460	2,313	5,447	

Device	Routing	Invert	Outlet Devices												
#1	Primary	455.00'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65												
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88												

Primary OutFlow Max=0.01 cfs @ 24.23 hrs HW=455.01' TW=453.00' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 0.01 cfs @ 0.17 fps)

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Vineyard 1 & 2

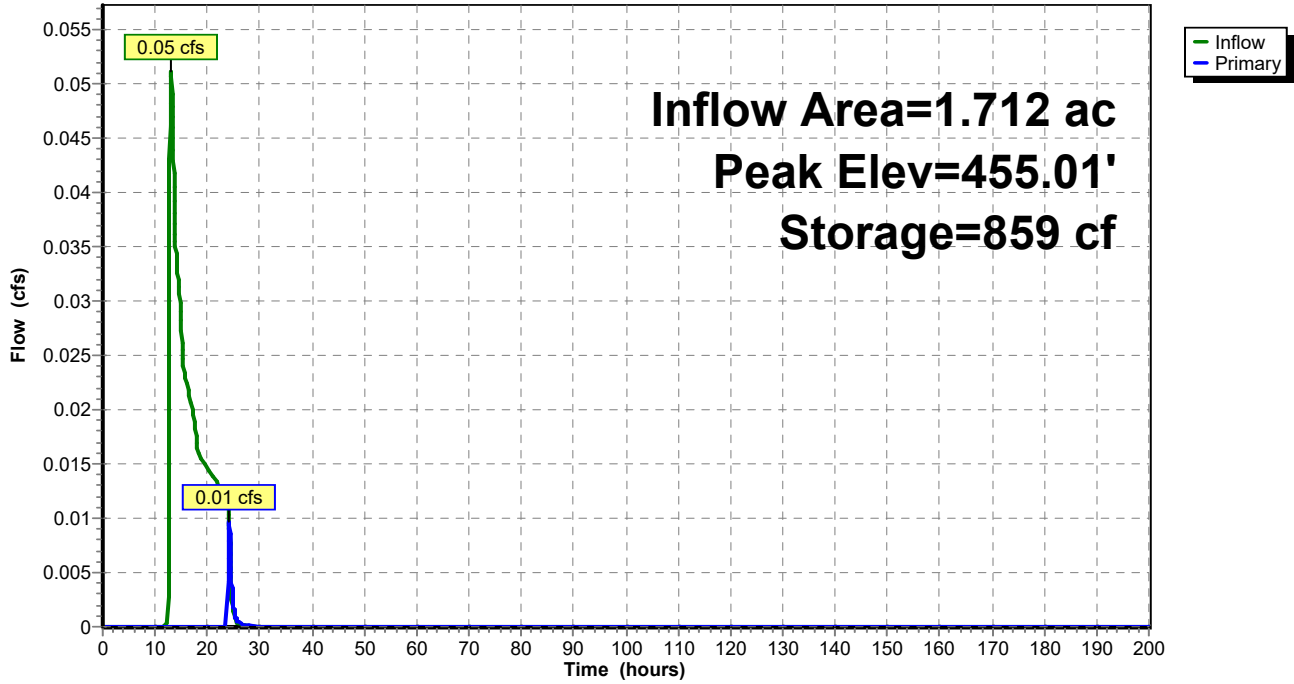
NRCC 24-hr A 50-Year Rainfall=4.53"

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Pond P4: Sediment Basin

Hydrograph



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NRCC 24-hr A 50-Year Rainfall=4.53"

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Summary for Pond P5: Infiltration

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.00" for 50-Year event
 Inflow = 0.01 cfs @ 24.23 hrs, Volume= 0.001 af
 Outflow = 0.01 cfs @ 24.23 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min
 Discarded = 0.01 cfs @ 24.23 hrs, Volume= 0.001 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link C :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 453.00' @ 0.00 hrs Surf.Area= 611 sf Storage= 0 cf

Plug-Flow detention time= 0.0 min calculated for 0.001 af (100% of inflow)
 Center-of-Mass det. time= (not calculated: outflow precedes inflow)

Volume	Invert	Avail.Storage	Storage Description			
#1	453.00'	3,513 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)	
453.00	611	97.4	0	0	611	
454.00	953	122.5	776	776	1,064	
455.00	1,349	141.4	1,145	1,921	1,482	
456.00	1,848	163.7	1,592	3,513	2,045	

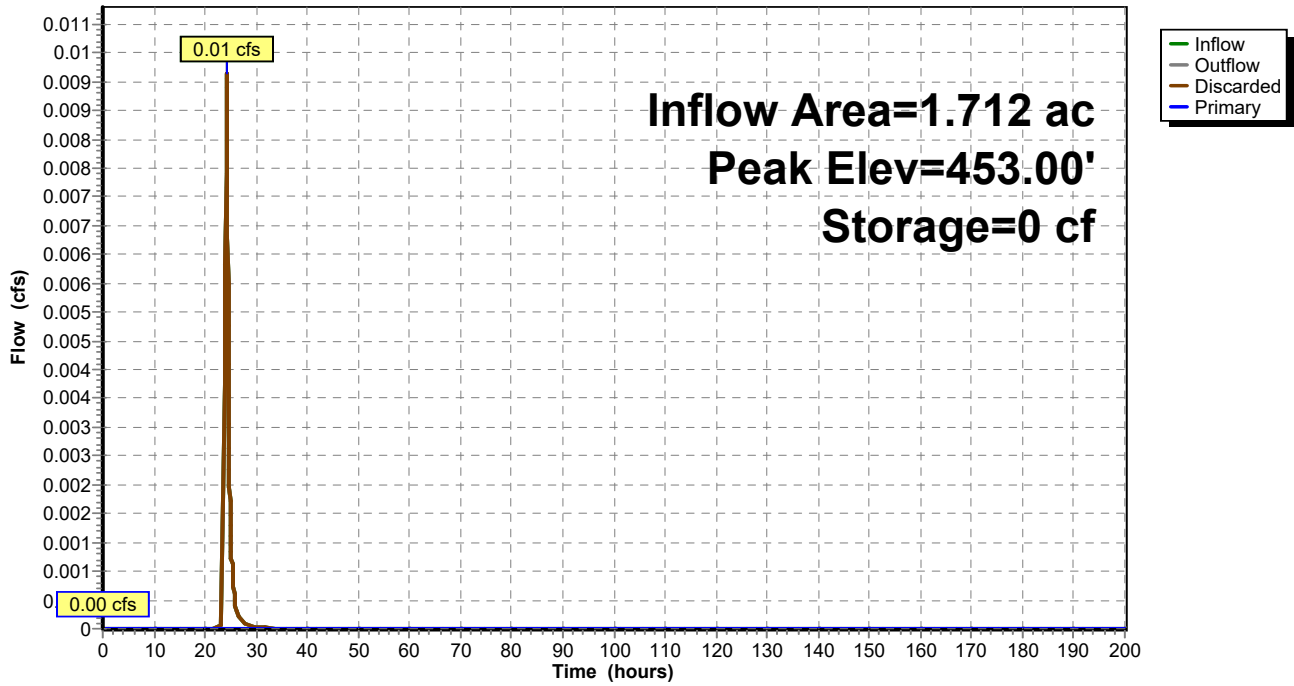
Device	Routing	Invert	Outlet Devices																		
#1	Primary	455.00'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir																		
			Head (feet)	0.20	0.40	0.60	0.80	1.00	1.20	1.40	1.60	1.80	2.00	2.50	3.00	3.50	4.00	4.50	5.00	5.50	
			Coef. (English)	2.34	2.50	2.70	2.68	2.68	2.66	2.66	2.65	2.65	2.65	2.65	2.65	2.66	2.68	2.70	2.74	2.79	2.88
#2	Discarded	453.00'	2.000 in/hr Exfiltration over Surface area																		

Discarded OutFlow Max=0.00 cfs @ 24.23 hrs HW=453.00' (Free Discharge)
 ↑**2=Exfiltration** (Passes 0.00 cfs of 0.03 cfs potential flow)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=453.00' TW=0.00' (Dynamic Tailwater)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

Pond P5: Infiltration

Hydrograph



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NRCC 24-hr A 50-Year Rainfall=4.53"

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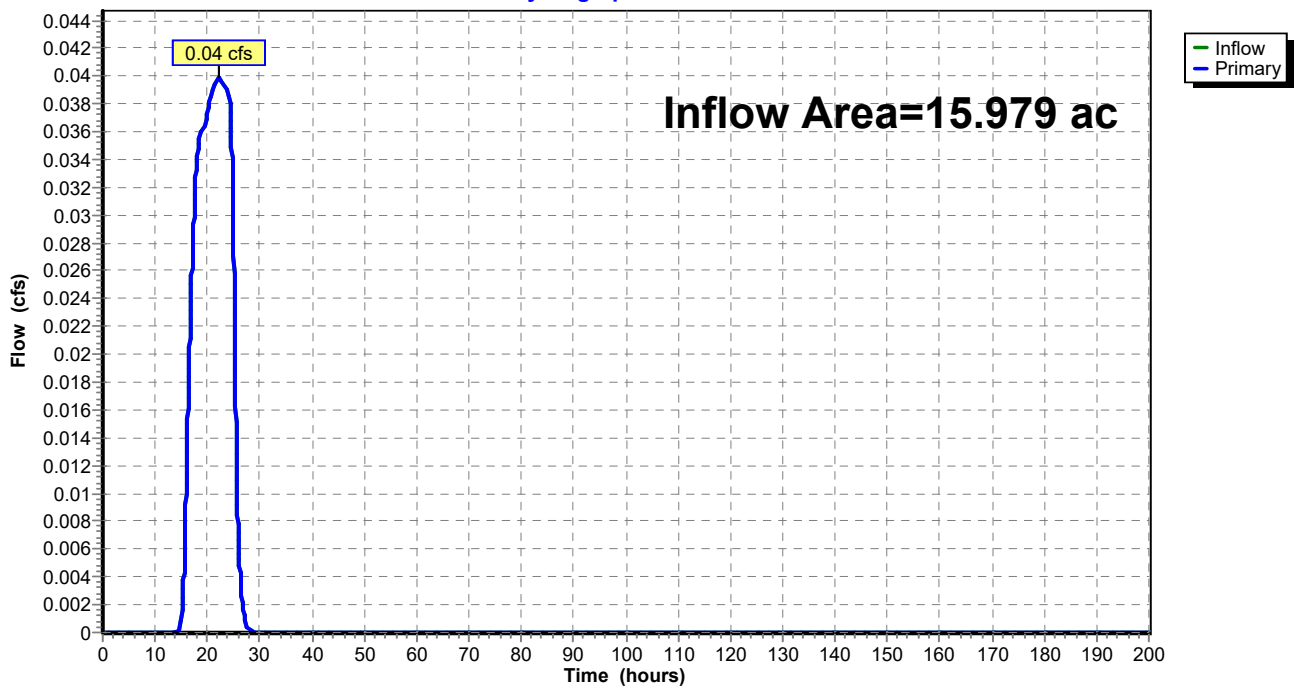
Summary for Link A:

Inflow Area = 15.979 ac, 0.00% Impervious, Inflow Depth = 0.02" for 50-Year event
Inflow = 0.04 cfs @ 22.24 hrs, Volume= 0.028 af
Primary = 0.04 cfs @ 22.24 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link A:

Hydrograph



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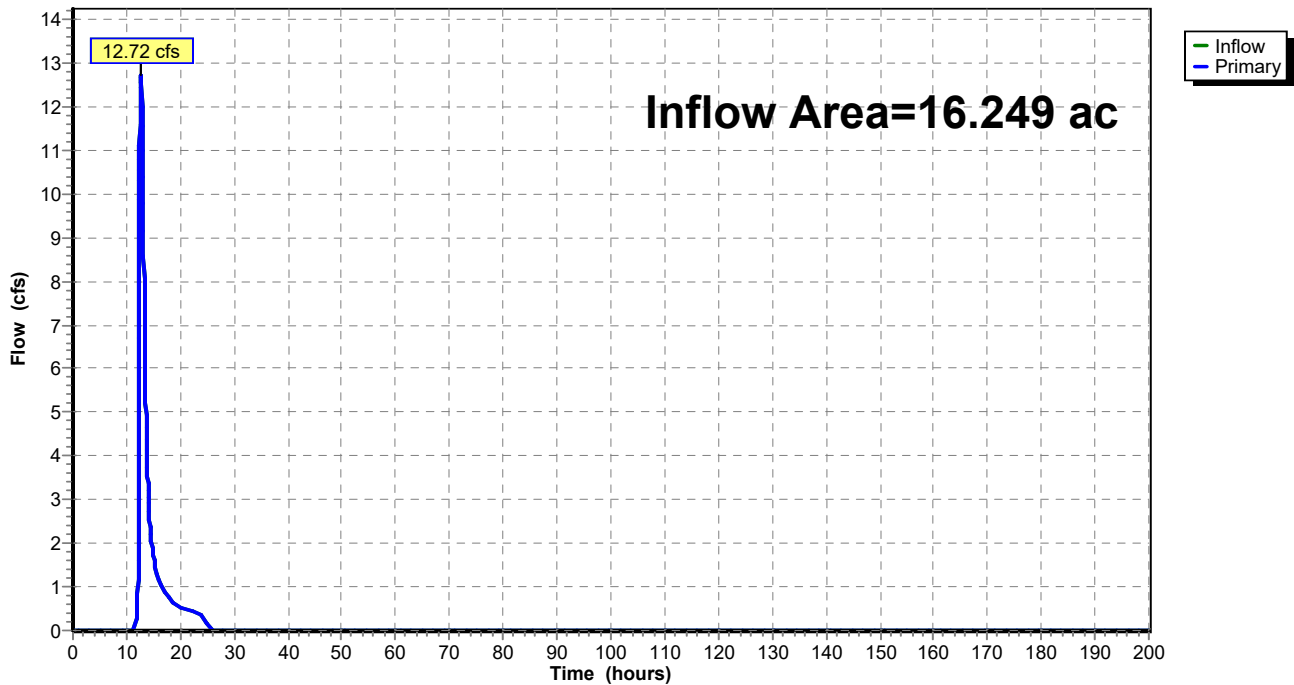
Summary for Link B:

Inflow Area = 16.249 ac, 0.12% Impervious, Inflow Depth = 1.47" for 50-Year event
Inflow = 12.72 cfs @ 12.69 hrs, Volume= 1.993 af
Primary = 12.72 cfs @ 12.69 hrs, Volume= 1.993 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link B:

Hydrograph



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NRCC 24-hr A 50-Year Rainfall=4.53"

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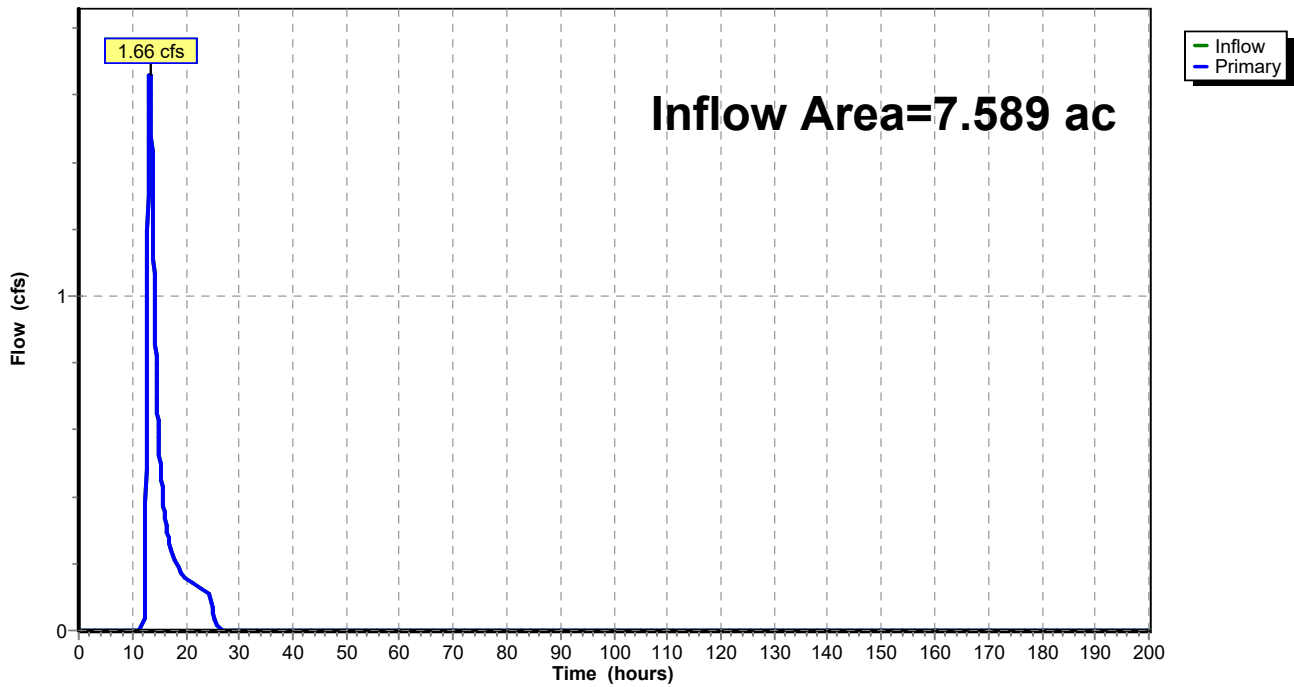
Summary for Link C:

Inflow Area = 7.589 ac, 0.50% Impervious, Inflow Depth = 0.63" for 50-Year event
Inflow = 1.66 cfs @ 13.28 hrs, Volume= 0.396 af
Primary = 1.66 cfs @ 13.28 hrs, Volume= 0.396 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link C:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 50-Year Rainfall=4.53"

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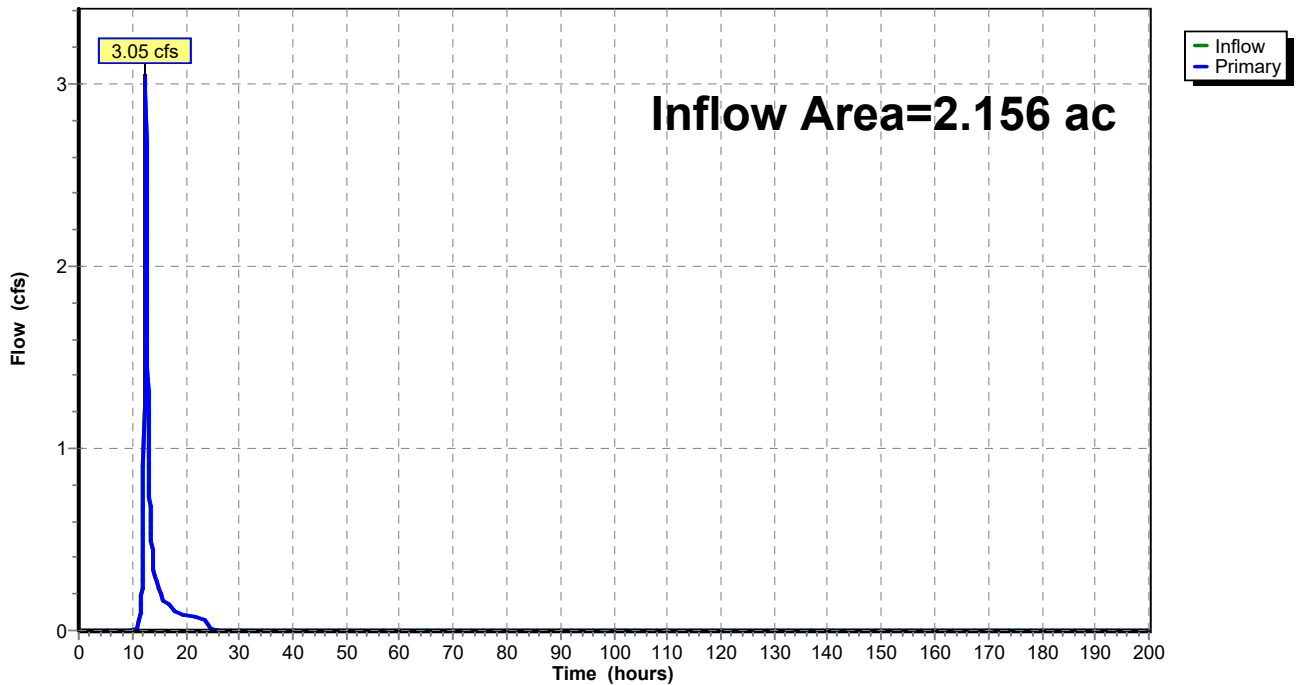
Summary for Link D:

Inflow Area = 2.156 ac, 0.00% Impervious, Inflow Depth = 1.77" for 50-Year event
Inflow = 3.05 cfs @ 12.42 hrs, Volume= 0.318 af
Primary = 3.05 cfs @ 12.42 hrs, Volume= 0.318 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link D:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 50-Year Rainfall=4.53"

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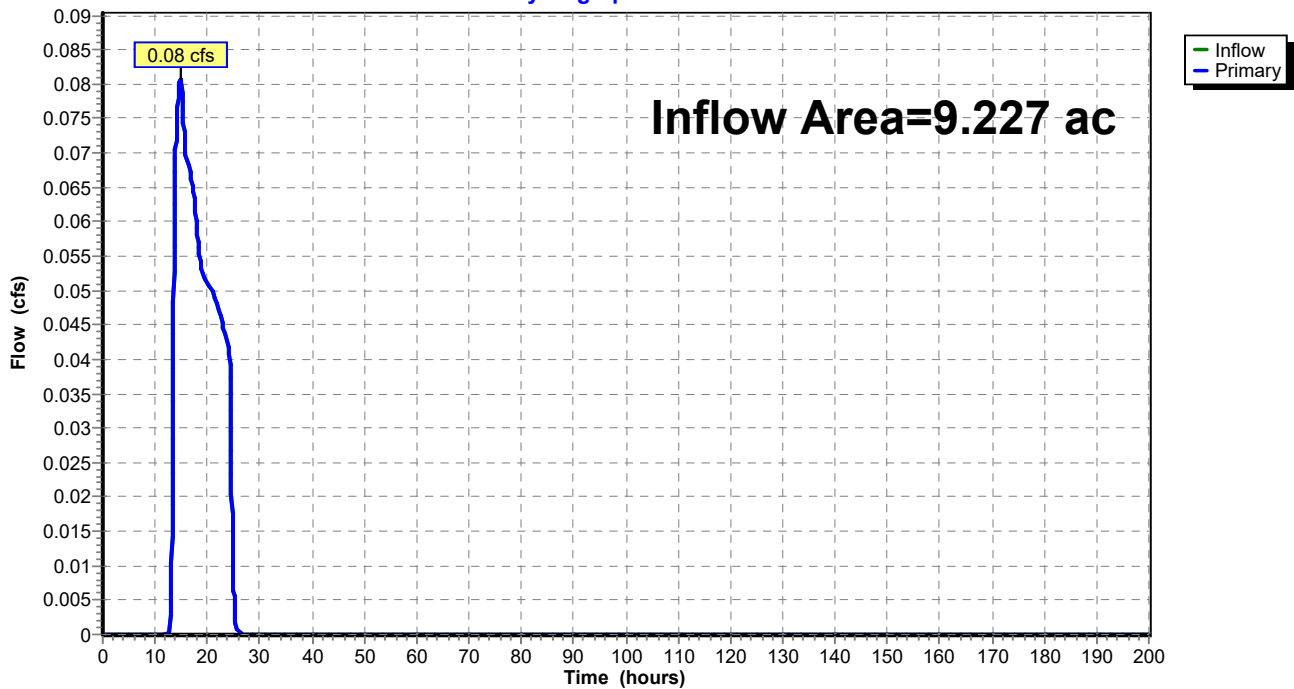
Summary for Link E:

Inflow Area = 9.227 ac, 0.27% Impervious, Inflow Depth = 0.07" for 50-Year event
Inflow = 0.08 cfs @ 14.79 hrs, Volume= 0.054 af
Primary = 0.08 cfs @ 14.79 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link E:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 50-Year Rainfall=4.53"

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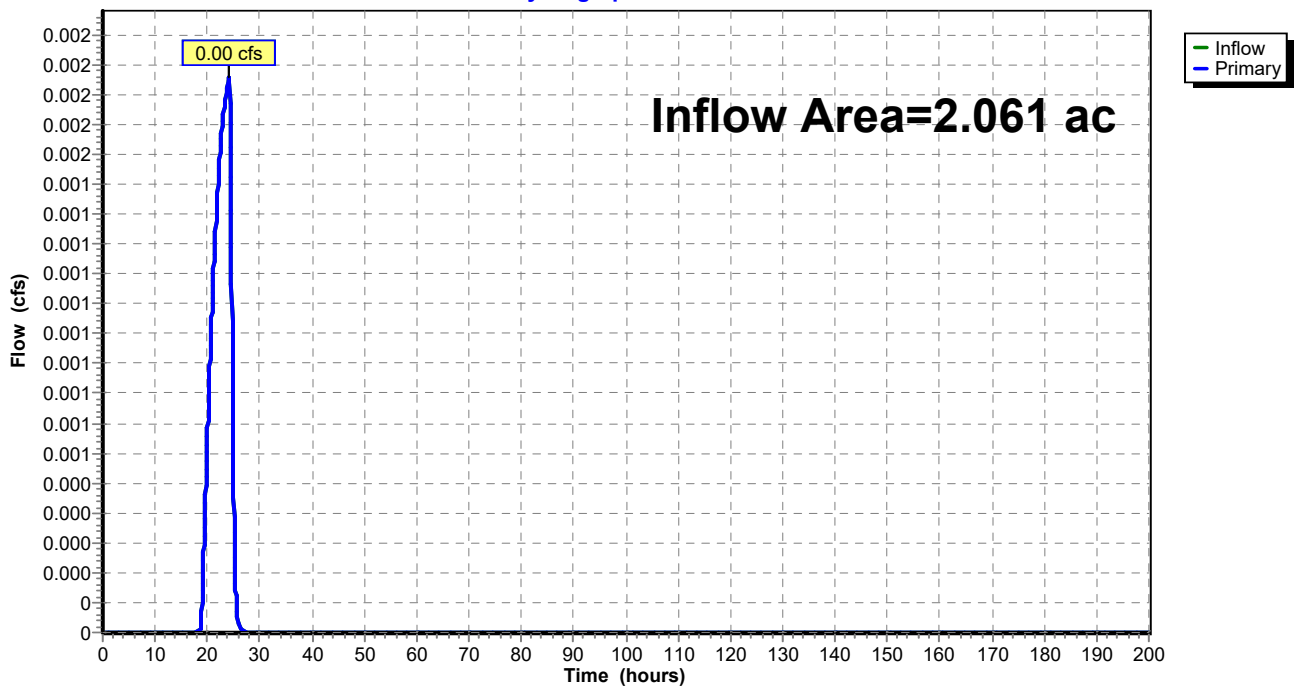
Summary for Link F:

Inflow Area = 2.061 ac, 0.00% Impervious, Inflow Depth = 0.00" for 50-Year event
Inflow = 0.00 cfs @ 24.13 hrs, Volume= 0.001 af
Primary = 0.00 cfs @ 24.13 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link F:

Hydrograph



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Vineyard 1 & 2
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Time span=0.00-200.00 hrs, dt=0.05 hrs, 4001 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentS100:	Runoff Area=15.979 ac 0.00% Impervious Runoff Depth=0.09" Flow Length=1,856' Tc=90.5 min CN=34 Runoff=0.18 cfs 0.125 af
SubcatchmentS200:	Runoff Area=13.335 ac 0.00% Impervious Runoff Depth=2.00" Flow Length=934' Tc=51.1 min CN=67 Runoff=15.08 cfs 2.223 af
SubcatchmentS210:	Runoff Area=2.914 ac 0.65% Impervious Runoff Depth=2.77" Flow Length=659' Tc=14.2 min CN=76 Runoff=9.17 cfs 0.672 af
SubcatchmentS300:	Runoff Area=5.877 ac 0.00% Impervious Runoff Depth=1.19" Flow Length=1,338' Tc=80.0 min CN=56 Runoff=2.63 cfs 0.582 af
SubcatchmentS310:	Runoff Area=1.712 ac 2.22% Impervious Runoff Depth=0.30" Flow Length=220' Tc=14.9 min CN=40 Runoff=0.18 cfs 0.043 af
SubcatchmentS400:	Runoff Area=2.156 ac 0.00% Impervious Runoff Depth=2.33" Flow Length=388' Tc=28.3 min CN=71 Runoff=4.07 cfs 0.419 af
SubcatchmentS500:	Runoff Area=9.227 ac 0.27% Impervious Runoff Depth=0.19" Flow Length=1,329' Tc=44.8 min CN=37 Runoff=0.34 cfs 0.143 af
SubcatchmentS600:	Runoff Area=2.061 ac 0.00% Impervious Runoff Depth=0.05" Flow Length=668' Tc=51.0 min CN=32 Runoff=0.01 cfs 0.008 af
Reach 3R: Existing Culvert	Avg. Flow Depth=0.12' Max Vel=3.10 fps Inflow=0.18 cfs 0.125 af 15.0" Round Pipe n=0.012 L=46.0' S=0.0196 '/' Capacity=9.79 cfs Outflow=0.18 cfs 0.125 af
Pond P1: Sediment Basin	Peak Elev=463.93' Storage=1,596 cf Inflow=9.17 cfs 0.672 af Outflow=9.09 cfs 0.645 af
Pond P2: Infiltration	Peak Elev=463.74' Storage=3,807 cf Inflow=9.09 cfs 0.645 af Discarded=0.10 cfs 0.153 af Primary=8.88 cfs 0.492 af Outflow=8.97 cfs 0.645 af
Pond P3: Pond	Peak Elev=456.30' Storage=62 cf Inflow=0.18 cfs 0.043 af 6.0" Round Culvert n=0.012 L=58.5' S=0.0171 '/' Outflow=0.18 cfs 0.043 af
Pond P4: Sediment Basin	Peak Elev=455.02' Storage=872 cf Inflow=0.18 cfs 0.043 af Outflow=0.05 cfs 0.023 af
Pond P5: Infiltration	Peak Elev=453.17' Storage=111 cf Inflow=0.05 cfs 0.023 af Discarded=0.03 cfs 0.023 af Primary=0.00 cfs 0.000 af Outflow=0.03 cfs 0.023 af
Link A:	Inflow=0.18 cfs 0.125 af Primary=0.18 cfs 0.125 af
Link B:	Inflow=17.45 cfs 2.715 af Primary=17.45 cfs 2.715 af

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Link C:

Inflow=2.63 cfs 0.582 af
Primary=2.63 cfs 0.582 af

Link D:

Inflow=4.07 cfs 0.419 af
Primary=4.07 cfs 0.419 af

Link E:

Inflow=0.34 cfs 0.143 af
Primary=0.34 cfs 0.143 af

Link F:

Inflow=0.01 cfs 0.008 af
Primary=0.01 cfs 0.008 af

Total Runoff Area = 53.261 ac Runoff Volume = 4.215 af Average Runoff Depth = 0.95"
99.85% Pervious = 53.179 ac 0.15% Impervious = 0.082 ac

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NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S100:

Runoff = 0.18 cfs @ 15.36 hrs, Volume= 0.125 af, Depth= 0.09"
Routed to Reach 3R : Existing Culvert

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
2.433	30	Woods, Good, HSG A
3.242	32	Woods/grass comb., Good, HSG A
0.746	39	>75% Grass cover, Good, HSG A
8.371	30	Meadow, non-grazed, HSG A
0.799	72	Woods/grass comb., Good, HSG C
0.388	74	>75% Grass cover, Good, HSG C
15.979	34	Weighted Average
15.979		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
50.2	100	0.0140	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
5.4	237	0.0215	0.73		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
11.2	476	0.0200	0.71		Shallow Concentrated Flow, Light wood Woodland Kv= 5.0 fps
23.7	1,043	0.0110	0.73		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
90.5	1,856	Total			

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Vineyard 1 & 2

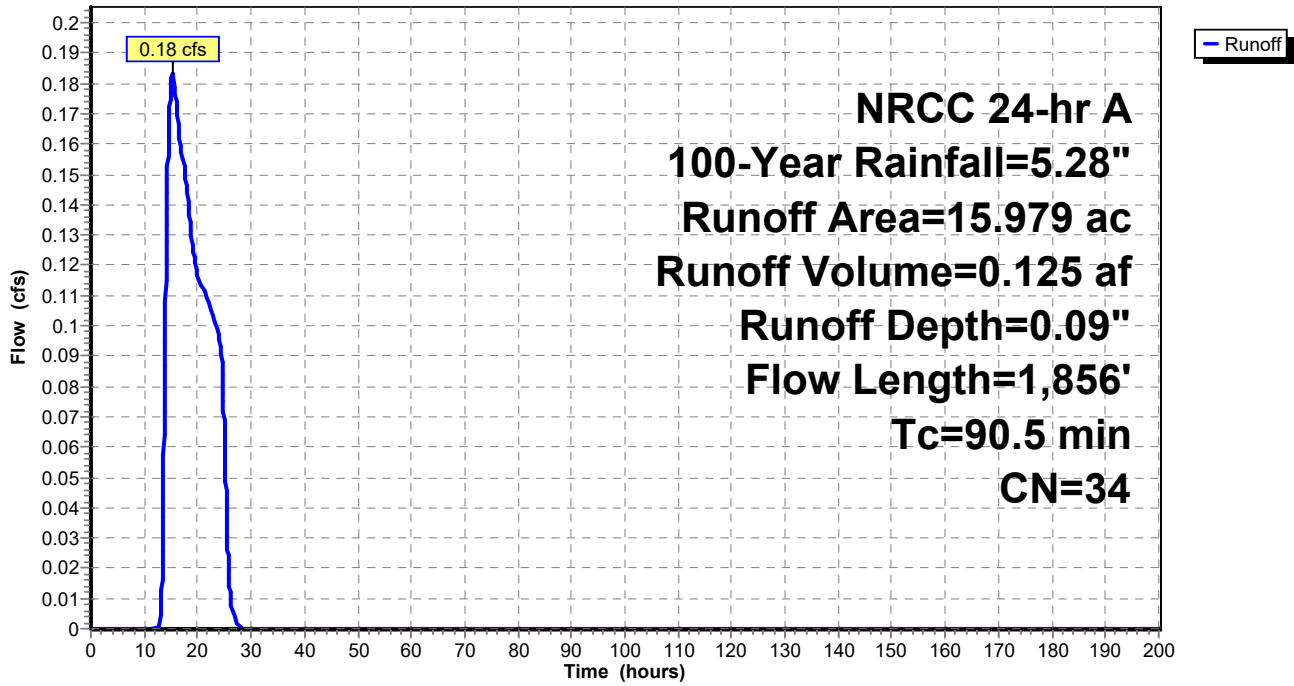
NRCC 24-hr A 100-Year Rainfall=5.28"

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Subcatchment S100:

Hydrograph



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NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S200:

Runoff = 15.08 cfs @ 12.75 hrs, Volume= 2.223 af, Depth= 2.00"
Routed to Link B :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
1.446	30	Meadow, non-grazed, HSG A
7.786	71	Meadow, non-grazed, HSG C
1.056	70	Woods, Good, HSG C
1.872	72	Woods/grass comb., Good, HSG C
1.175	74	>75% Grass cover, Good, HSG C
13.335	67	Weighted Average
13.335		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
1.8	19	0.2000	0.18		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
36.8	81	0.0200	0.04		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
2.1	101	0.0250	0.79		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
10.4	733	0.0282	1.18		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
51.1	934	Total			

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Vineyard 1 & 2

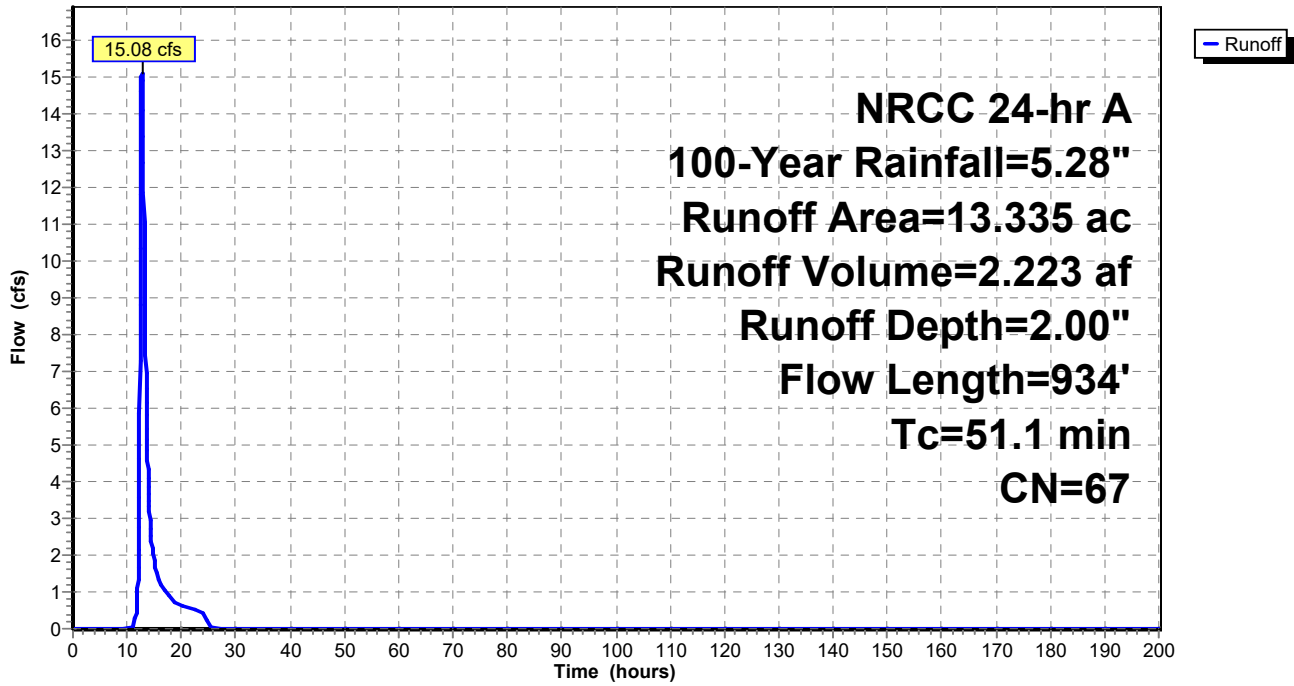
NRCC 24-hr A 100-Year Rainfall=5.28"

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Subcatchment S200:

Hydrograph



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Vineyard 1 & 2
 NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S210:

Runoff = 9.17 cfs @ 12.23 hrs, Volume= 0.672 af, Depth= 2.77"
 Routed to Pond P1 : Sediment Basin

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
0.117	30	Meadow, non-grazed, HSG A
1.359	71	Meadow, non-grazed, HSG C
0.019	72	Woods/grass comb., Good, HSG C
0.085	74	>75% Grass cover, Good, HSG C
0.059	39	>75% Grass cover, Good, HSG A
1.074	89	Gravel roads, HSG C
0.182	76	Gravel roads, HSG A
* 0.019	98	Equipment Pad
2.914	76	Weighted Average
2.895		99.35% Pervious Area
0.019		0.65% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1	100	0.0900	0.18		Sheet Flow, Grass Grass: Dense n= 0.240 P2= 2.36"
4.1	306	0.0310	1.23		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
0.1	11	0.0200	2.87		Shallow Concentrated Flow, Grass Paved Kv= 20.3 fps
0.9	242	0.0940	4.60		Shallow Concentrated Flow, Swale Grassed Waterway Kv= 15.0 fps
14.2	659	Total			

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Vineyard 1 & 2

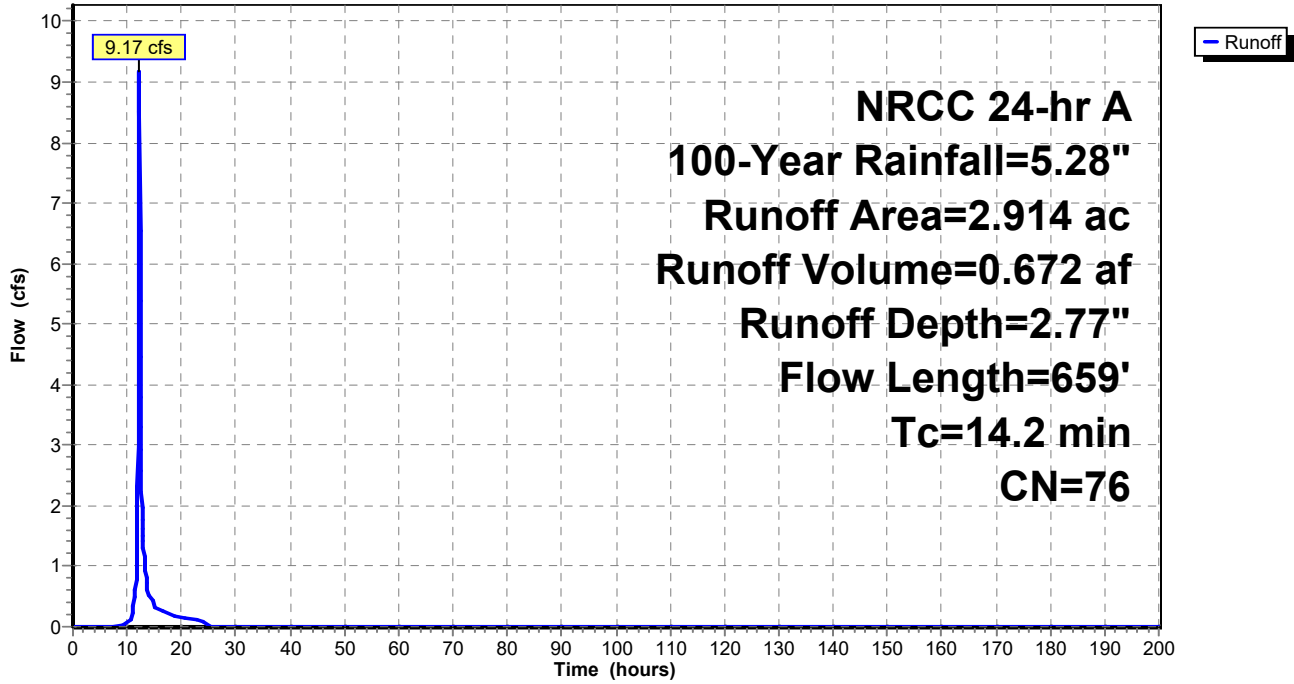
NRCC 24-hr A 100-Year Rainfall=5.28"

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Subcatchment S210:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S300:

Runoff = 2.63 cfs @ 13.24 hrs, Volume= 0.582 af, Depth= 1.19"
Routed to Link C :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
0.019	30	Woods, Good, HSG A
1.966	30	Meadow, non-grazed, HSG A
1.282	71	Meadow, non-grazed, HSG C
2.490	70	Woods, Good, HSG C
0.076	39	>75% Grass cover, Good, HSG A
0.044	74	>75% Grass cover, Good, HSG C
5.877	56	Weighted Average
5.877		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
57.4	100	0.0100	0.03		Sheet Flow, Woods Woods: Dense underbrush n= 0.800 P2= 2.36"
13.4	603	0.0115	0.75		Shallow Concentrated Flow, Grass Short Grass Pasture Kv= 7.0 fps
9.2	635	0.0530	1.15		Shallow Concentrated Flow, Woods Woodland Kv= 5.0 fps
80.0	1,338	Total			

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Vineyard 1 & 2

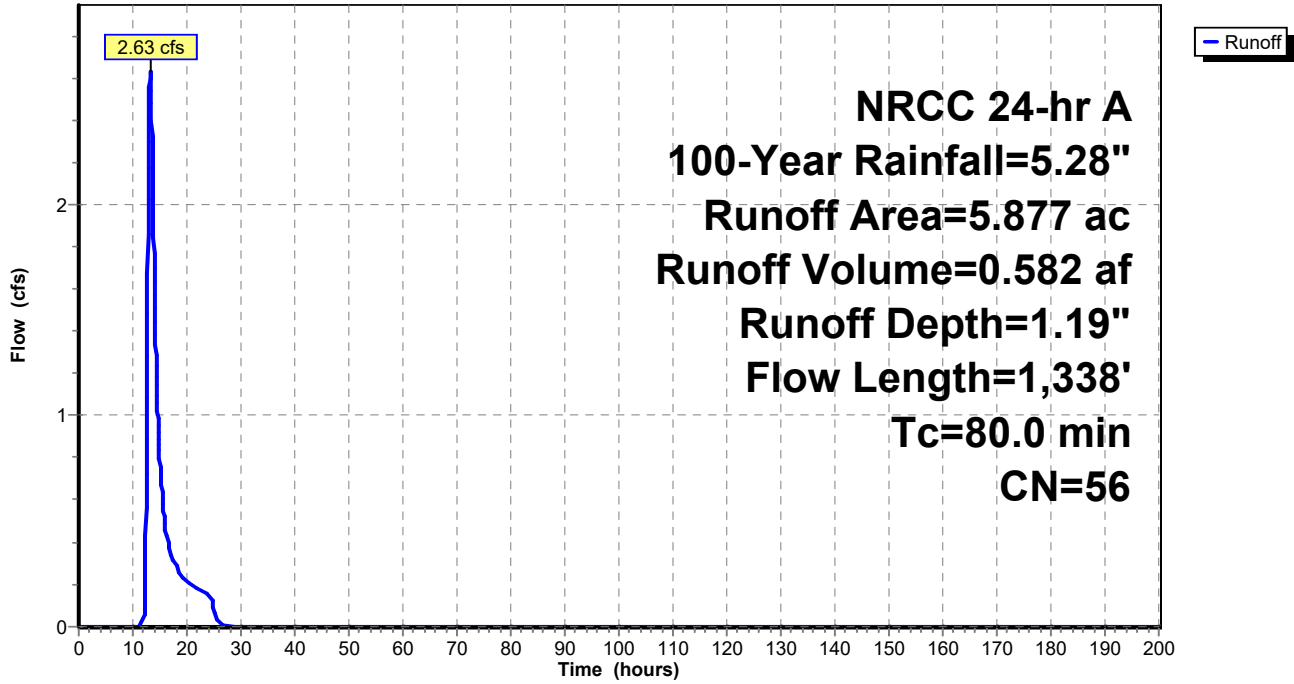
NRCC 24-hr A 100-Year Rainfall=5.28"

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Subcatchment S300:

Hydrograph



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NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S310:

Runoff = 0.18 cfs @ 12.58 hrs, Volume= 0.043 af, Depth= 0.30"
Routed to Pond P3 : Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
1.059	30	Meadow, non-grazed, HSG A
0.069	71	Meadow, non-grazed, HSG C
0.095	30	Woods, Good, HSG A
0.024	70	Woods, Good, HSG C
0.237	39	>75% Grass cover, Good, HSG A
0.190	76	Gravel roads, HSG A
* 0.038	98	Equipment Pad
1.712	40	Weighted Average
1.674		97.78% Pervious Area
0.038		2.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.2	100	0.0354	0.13		Sheet Flow, Swale
					Grass: Dense n= 0.240 P2= 2.36"
1.7	120	0.0275	1.16		Shallow Concentrated Flow, Swale
					Short Grass Pasture Kv= 7.0 fps
14.9	220	Total			

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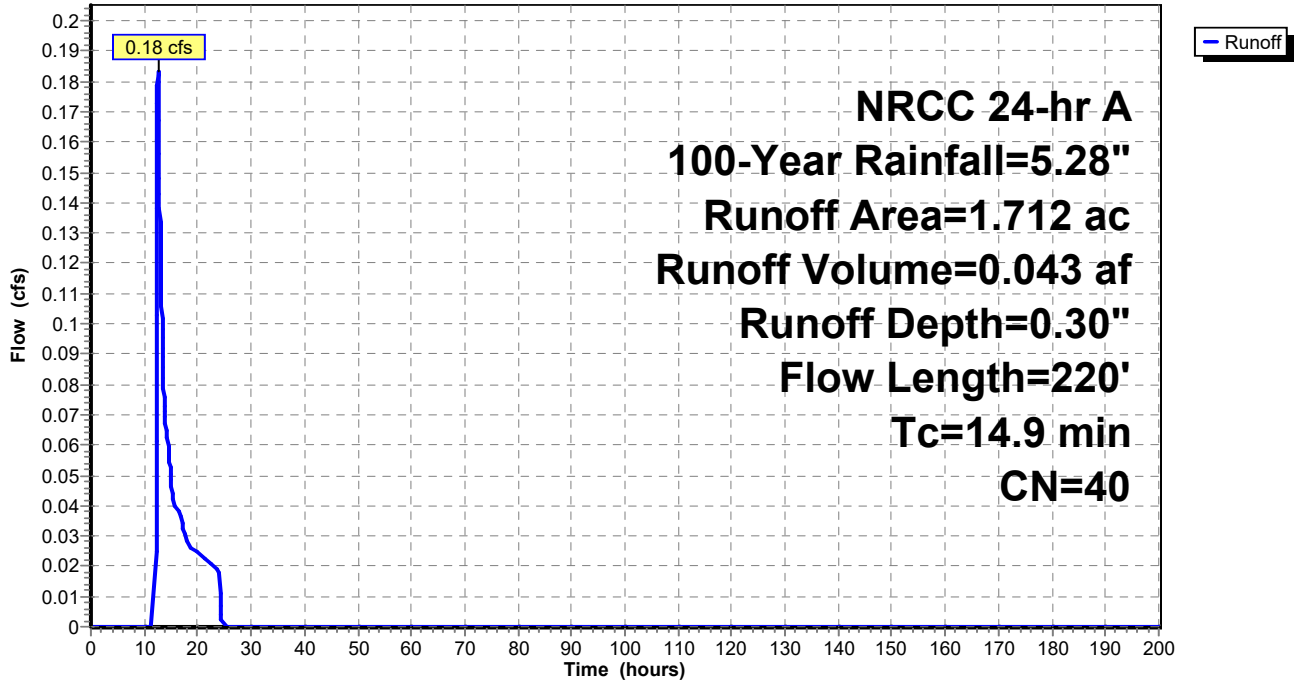
NRCC 24-hr A 100-Year Rainfall=5.28"

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Subcatchment S310:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S400:

Runoff = 4.07 cfs @ 12.42 hrs, Volume= 0.419 af, Depth= 2.33"
 Routed to Link D :

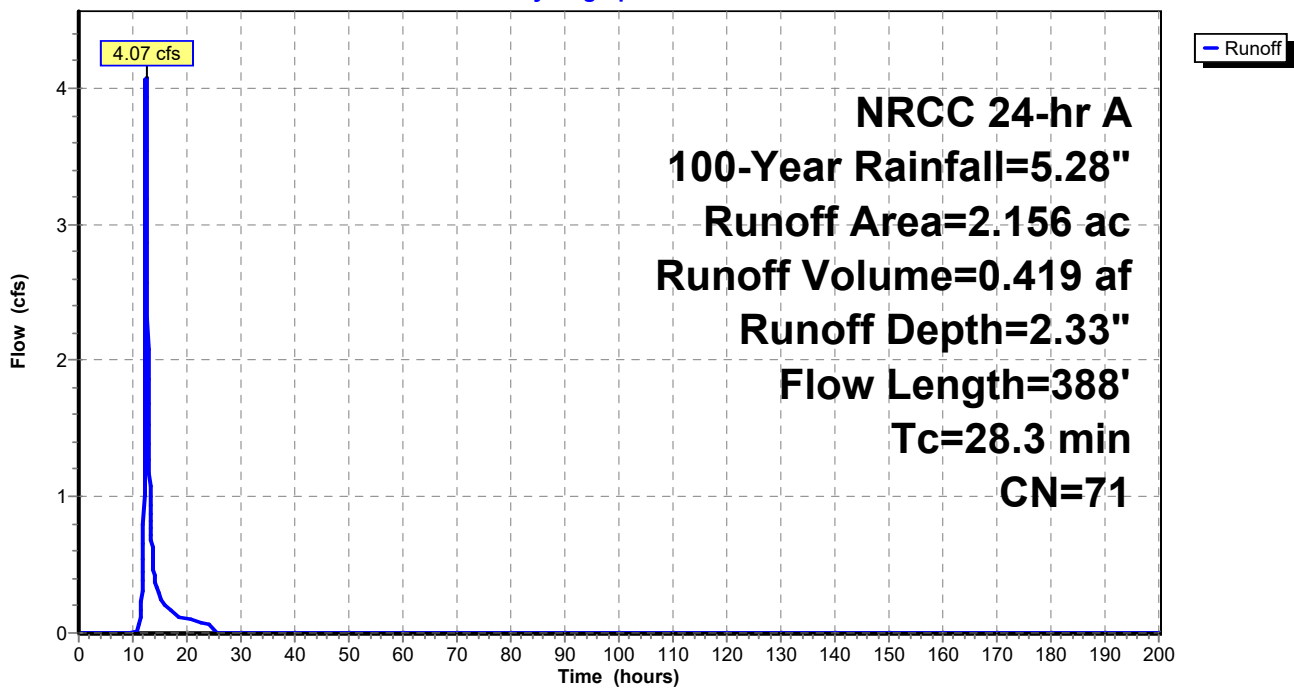
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
1.306	71	Meadow, non-grazed, HSG C
0.850	70	Woods, Good, HSG C
2.156	71	Weighted Average
2.156		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.4	100	0.0095	0.07		Sheet Flow, Grass SF Grass: Dense n= 0.240 P2= 2.36"
5.3	264	0.0139	0.83		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.6	24	0.0157	0.63		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
28.3	388	Total			

Subcatchment S400:

Hydrograph



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NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S500:

Runoff = 0.34 cfs @ 13.41 hrs, Volume= 0.143 af, Depth= 0.19"
Routed to Link E :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
0.921	30	Woods, Good, HSG A
6.718	30	Meadow, non-grazed, HSG A
1.540	71	Meadow, non-grazed, HSG C
0.023	70	Woods, Good, HSG C
* 0.025	98	Existing foundation, HSG A
9.227	37	Weighted Average
9.202		99.73% Pervious Area
0.025		0.27% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.9	72	0.0495	0.13		Sheet Flow, Grass - SF Grass: Dense n= 0.240 P2= 2.36"
16.2	28	0.0186	0.03		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
1.0	97	0.0518	1.59		Shallow Concentrated Flow, Woods - SCF Short Grass Pasture Kv= 7.0 fps
18.4	1,111	0.0206	1.00		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.3	21	0.0576	1.20		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
44.8	1,329	Total			

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Vineyard 1 & 2

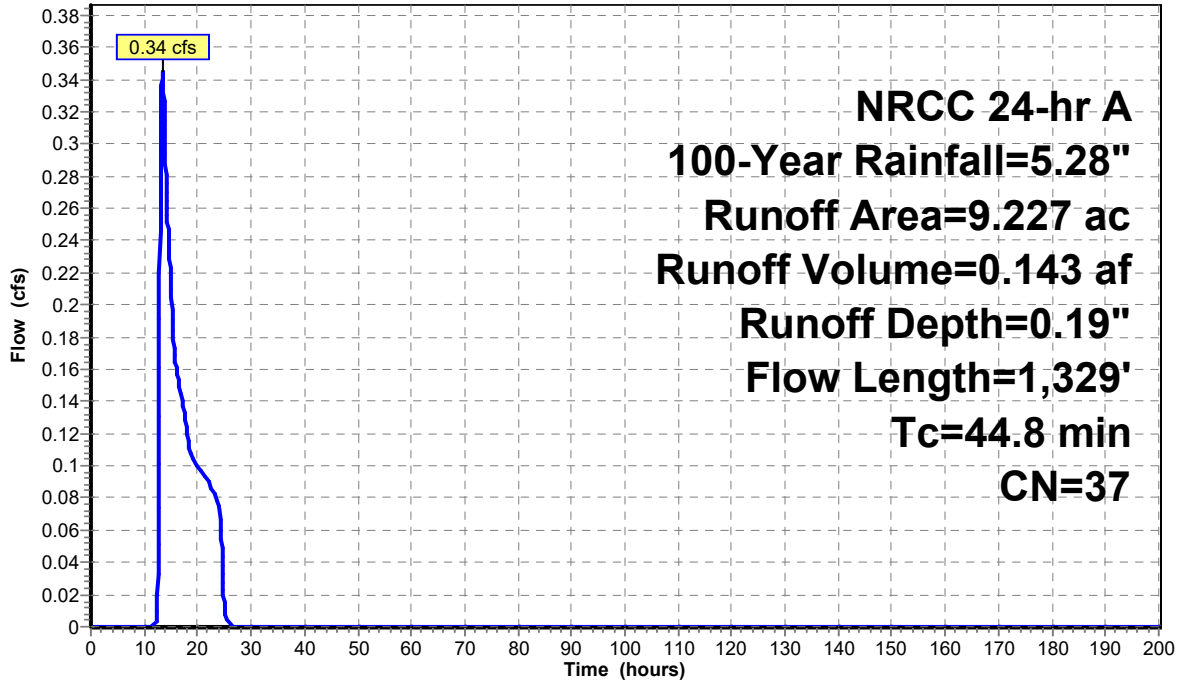
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Subcatchment S500:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Subcatchment S600:

Runoff = 0.01 cfs @ 17.05 hrs, Volume= 0.008 af, Depth= 0.05"
Routed to Link F :

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
NRCC 24-hr A 100-Year Rainfall=5.28"

Area (ac)	CN	Description
0.447	30	Woods, Good, HSG A
1.208	30	Meadow, non-grazed, HSG A
0.406	39	>75% Grass cover, Good, HSG A
2.061	32	Weighted Average
2.061		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
41.1	100	0.0231	0.04		Sheet Flow, Woods - SF Woods: Dense underbrush n= 0.800 P2= 2.36"
0.7	34	0.0231	0.76		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
8.7	510	0.0197	0.98		Shallow Concentrated Flow, Grass - SCF Short Grass Pasture Kv= 7.0 fps
0.5	24	0.0272	0.82		Shallow Concentrated Flow, Woods - SCF Woodland Kv= 5.0 fps
51.0	668	Total			

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Vineyard 1 & 2

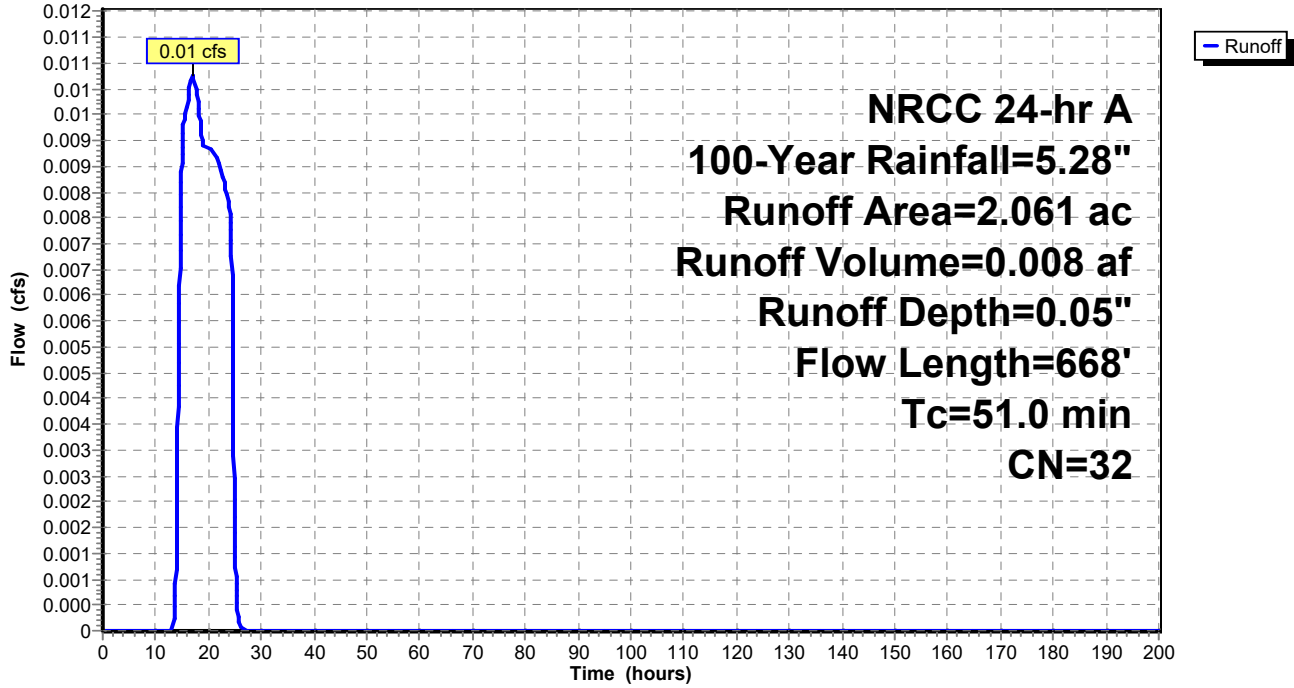
NRCC 24-hr A 100-Year Rainfall=5.28"

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Subcatchment S600:

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Summary for Reach 3R: Existing Culvert

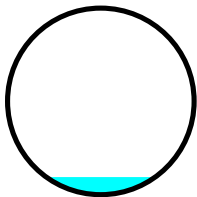
[52] Hint: Inlet/Outlet conditions not evaluated

Inflow Area = 15.979 ac, 0.00% Impervious, Inflow Depth = 0.09" for 100-Year event
Inflow = 0.18 cfs @ 15.36 hrs, Volume= 0.125 af
Outflow = 0.18 cfs @ 15.36 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.1 min
Routed to Link A :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.10 fps, Min. Travel Time= 0.2 min
Avg. Velocity = 2.30 fps, Avg. Travel Time= 0.3 min

Peak Storage= 3 cf @ 15.36 hrs
Average Depth at Peak Storage= 0.12' , Surface Width= 0.73'
Bank-Full Depth= 1.25' Flow Area= 1.2 sf, Capacity= 9.79 cfs

15.0" Round Pipe
n= 0.012 Corrugated PP, smooth interior
Length= 46.0' Slope= 0.0196 '/'
Inlet Invert= 459.30', Outlet Invert= 458.40'



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Vineyard 1 & 2

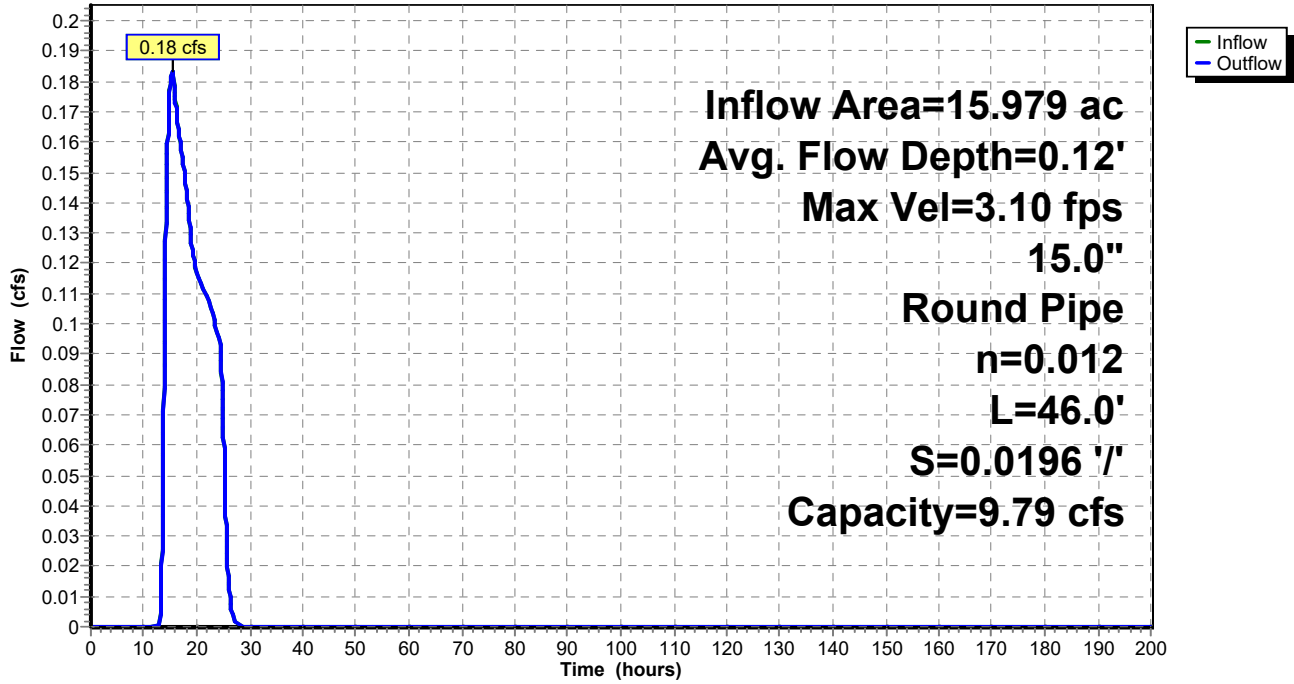
NRCC 24-hr A 100-Year Rainfall=5.28"

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Reach 3R: Existing Culvert

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Pond P1: Sediment Basin

Inflow Area = 2.914 ac, 0.65% Impervious, Inflow Depth = 2.77" for 100-Year event
 Inflow = 9.17 cfs @ 12.23 hrs, Volume= 0.672 af
 Outflow = 9.09 cfs @ 12.24 hrs, Volume= 0.645 af, Atten= 1%, Lag= 0.8 min
 Primary = 9.09 cfs @ 12.24 hrs, Volume= 0.645 af
 Routed to Pond P2 : Infiltration

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 463.93' @ 12.26 hrs Surf.Area= 1,077 sf Storage= 1,596 cf

Plug-Flow detention time= 31.0 min calculated for 0.645 af (96% of inflow)
 Center-of-Mass det. time= 8.4 min (834.6 - 826.2)

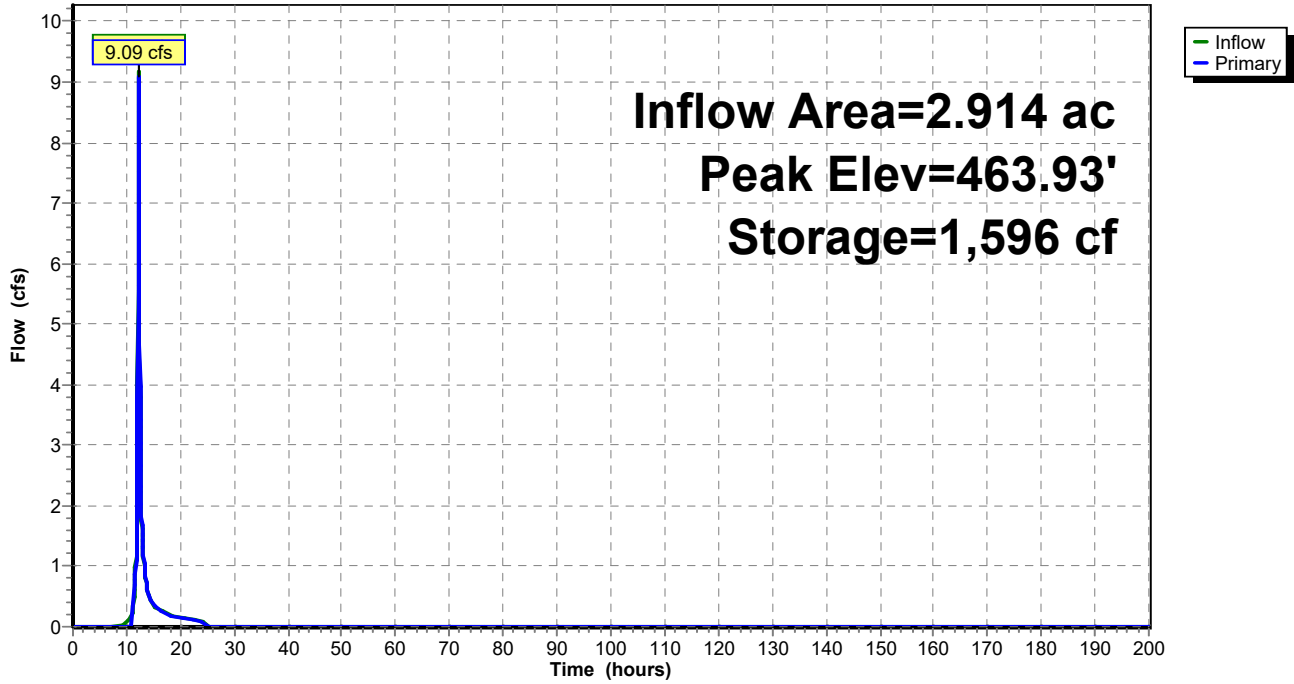
Volume	Invert	Avail.Storage	Storage Description			
#1	461.00'	1,673 cf	Custom Stage Data (Irregular) Listed below (Recalc)			
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)	
461.00	150	54.9	0	0	150	
462.00	376	85.0	254	254	492	
463.00	692	112.3	526	781	932	
464.00	1,110	151.3	893	1,673	1,761	

Device	Routing	Invert	Outlet Devices													
#1	Primary	463.50'	15.0' long x 5.0' breadth Broad-Crested Rectangular Weir													
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00													
			2.50 3.00 3.50 4.00 4.50 5.00 5.50													
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65													
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88													

Primary OutFlow Max=8.50 cfs @ 12.24 hrs HW=463.92' TW=463.73' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 8.50 cfs @ 1.34 fps)

Pond P1: Sediment Basin

Hydrograph



2024-01-11 Post Development

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Vineyard 1 & 2
NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Pond P2: Infiltration

Inflow Area = 2.914 ac, 0.65% Impervious, Inflow Depth = 2.66" for 100-Year event
 Inflow = 9.09 cfs @ 12.24 hrs, Volume= 0.645 af
 Outflow = 8.97 cfs @ 12.26 hrs, Volume= 0.645 af, Atten= 1%, Lag= 1.1 min
 Discarded = 0.10 cfs @ 12.26 hrs, Volume= 0.153 af
 Primary = 8.88 cfs @ 12.26 hrs, Volume= 0.492 af
 Routed to Link B :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 463.74' @ 12.26 hrs Surf.Area= 2,061 sf Storage= 3,807 cf

Plug-Flow detention time= 115.1 min calculated for 0.645 af (100% of inflow)
 Center-of-Mass det. time= 115.3 min (949.9 - 834.6)

Volume	Invert	Avail.Storage	Storage Description			
#1	461.00'	4,363 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)	
461.00	833	116.4	0	0	833	
462.00	1,211	135.3	1,016	1,016	1,232	
463.00	1,645	154.1	1,422	2,439	1,688	
464.00	2,218	180.5	1,924	4,363	2,411	

Device	Routing	Invert	Outlet Devices												
#1	Primary	463.25'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65												
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88												
#2	Discarded	461.00'	2.000 in/hr Exfiltration over Surface area												

Discarded OutFlow Max=0.10 cfs @ 12.26 hrs HW=463.74' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=8.78 cfs @ 12.26 hrs HW=463.74' TW=0.00' (Dynamic Tailwater)
 ↑**1=Broad-Crested Rectangular Weir**(Weir Controls 8.78 cfs @ 1.80 fps)

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Vineyard 1 & 2

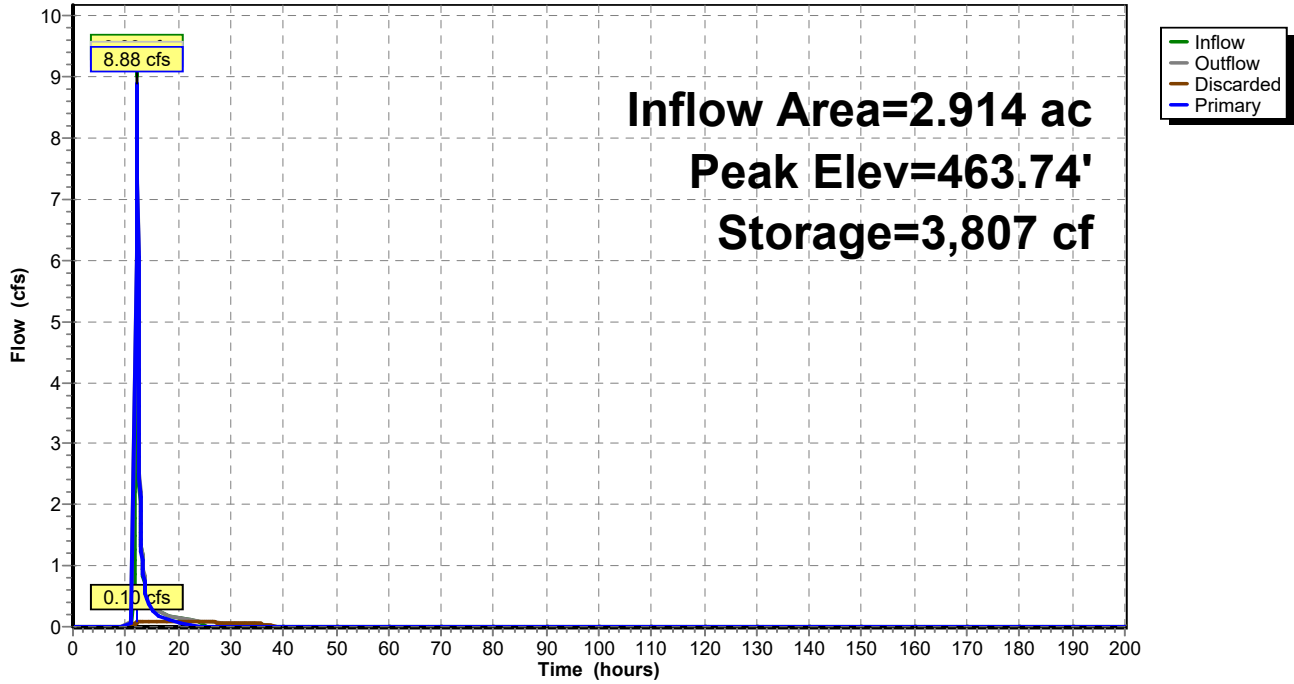
NRCC 24-hr A 100-Year Rainfall=5.28"

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Pond P2: Infiltration

Hydrograph



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Summary for Pond P3: Pond

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.30" for 100-Year event
 Inflow = 0.18 cfs @ 12.58 hrs, Volume= 0.043 af
 Outflow = 0.18 cfs @ 12.64 hrs, Volume= 0.043 af, Atten= 2%, Lag= 3.6 min
 Primary = 0.18 cfs @ 12.64 hrs, Volume= 0.043 af
 Routed to Pond P4 : Sediment Basin

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 456.30' @ 12.64 hrs Surf.Area= 237 sf Storage= 62 cf

Plug-Flow detention time= 11.3 min calculated for 0.043 af (100% of inflow)
 Center-of-Mass det. time= 10.3 min (972.6 - 962.2)

Volume	Invert	Avail.Storage	Storage Description			
#1	456.00'	285 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)	
456.00	180	60.1	0	0	180	
457.00	404	85.0	285	285	477	

Device	Routing	Invert	Outlet Devices
#1	Primary	456.00'	6.0" Round Culvert L= 58.5' CMP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 456.00' / 455.00' S= 0.0171 '/' Cc= 0.900 n= 0.012 Corrugated PP, smooth interior, Flow Area= 0.20 sf

Primary OutFlow Max=0.18 cfs @ 12.64 hrs HW=456.30' TW=454.24' (Dynamic Tailwater)
 ↑**1=Culvert** (Inlet Controls 0.18 cfs @ 1.47 fps)

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Vineyard 1 & 2

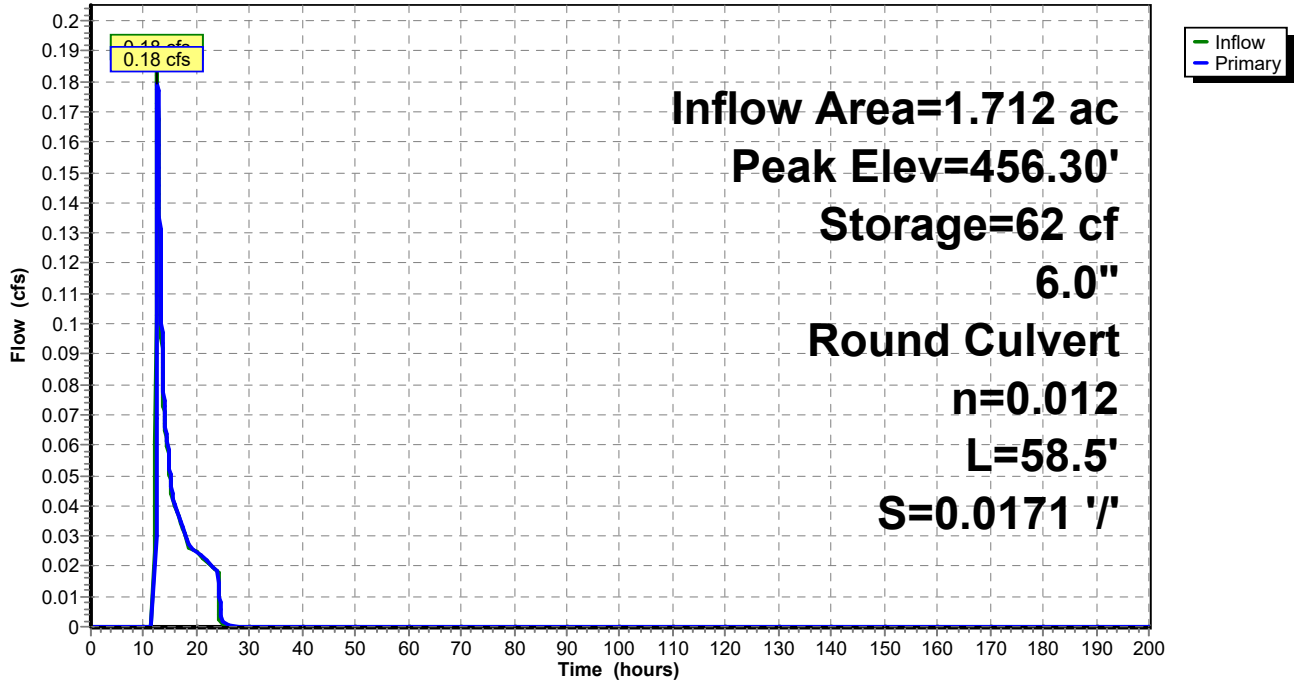
NRCC 24-hr A 100-Year Rainfall=5.28"

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Pond P3: Pond

Hydrograph



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Vineyard 1 & 2
NRCC 24-hr A 100-Year Rainfall=5.28"

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Summary for Pond P4: Sediment Basin

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.30" for 100-Year event
 Inflow = 0.18 cfs @ 12.64 hrs, Volume= 0.043 af
 Outflow = 0.05 cfs @ 14.90 hrs, Volume= 0.023 af, Atten= 70%, Lag= 135.9 min
 Primary = 0.05 cfs @ 14.90 hrs, Volume= 0.023 af
 Routed to Pond P5 : Infiltration

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 455.02' @ 14.90 hrs Surf.Area= 1,104 sf Storage= 872 cf

Plug-Flow detention time= 318.1 min calculated for 0.023 af (54% of inflow)
 Center-of-Mass det. time= 156.7 min (1,129.3 - 972.6)

Volume	Invert	Avail.Storage	Storage Description			
#1	454.00'	2,313 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)	
454.00	635	106.1	0	0	635	
455.00	1,092	169.8	853	853	2,040	
456.00	1,862	267.5	1,460	2,313	5,447	

Device	Routing	Invert	Outlet Devices												
#1	Primary	455.00'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65												
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88												

Primary OutFlow Max=0.05 cfs @ 14.90 hrs HW=455.02' TW=453.02' (Dynamic Tailwater)
 ↑1=**Broad-Crested Rectangular Weir**(Weir Controls 0.05 cfs @ 0.31 fps)

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Vineyard 1 & 2

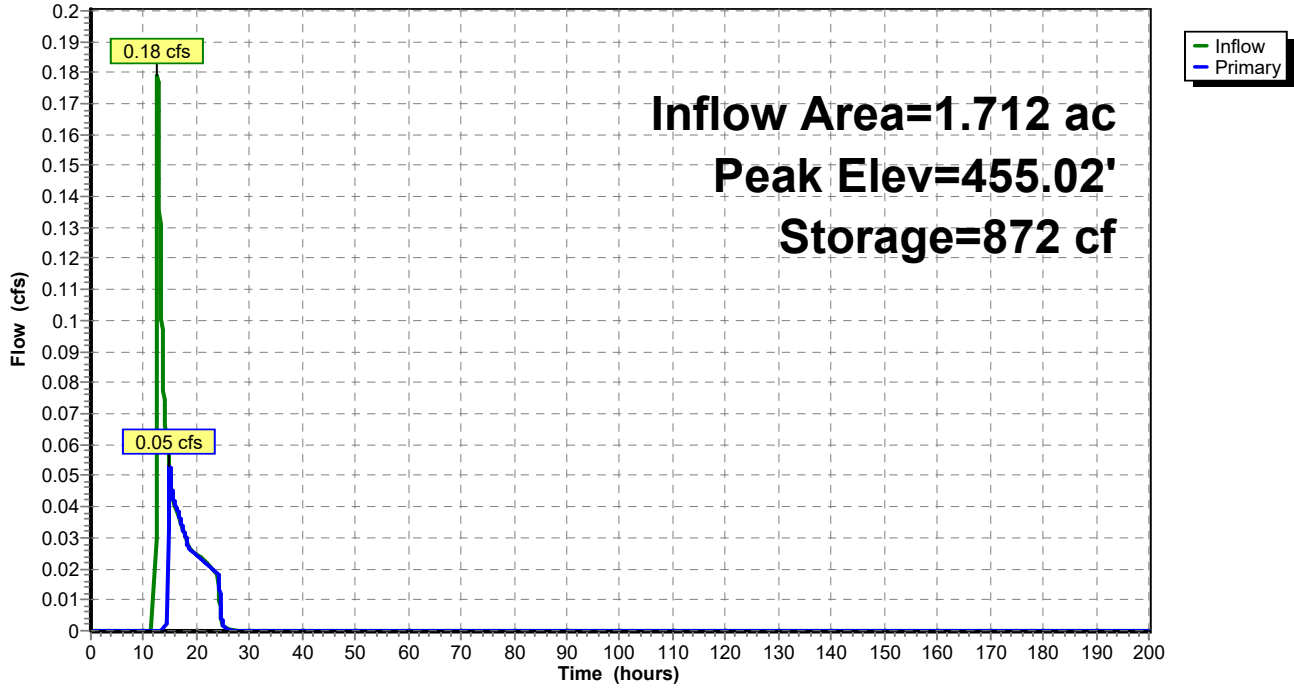
NRCC 24-hr A 100-Year Rainfall=5.28"

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Pond P4: Sediment Basin

Hydrograph



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Vineyard 1 & 2
 NRCC 24-hr A 100-Year Rainfall=5.28"
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Summary for Pond P5: Infiltration

[87] Warning: Oscillations may require smaller dt or Finer Routing (severity=50)

Inflow Area = 1.712 ac, 2.22% Impervious, Inflow Depth = 0.16" for 100-Year event
 Inflow = 0.05 cfs @ 14.90 hrs, Volume= 0.023 af
 Outflow = 0.03 cfs @ 17.81 hrs, Volume= 0.023 af, Atten= 42%, Lag= 174.7 min
 Discarded = 0.03 cfs @ 17.81 hrs, Volume= 0.023 af
 Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
 Routed to Link C :

Routing by Dyn-Stor-Ind method, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs
 Peak Elev= 453.17' @ 17.81 hrs Surf.Area= 665 sf Storage= 111 cf

Plug-Flow detention time= (not calculated: outflow precedes inflow)
 Center-of-Mass det. time= 35.1 min (1,164.4 - 1,129.3)

Volume	Invert	Avail.Storage	Storage Description			
#1	453.00'	3,513 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)	
453.00	611	97.4	0	0	611	
454.00	953	122.5	776	776	1,064	
455.00	1,349	141.4	1,145	1,921	1,482	
456.00	1,848	163.7	1,592	3,513	2,045	

Device	Routing	Invert	Outlet Devices												
#1	Primary	455.00'	10.0' long x 5.0' breadth Broad-Crested Rectangular Weir												
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00												
			2.50 3.00 3.50 4.00 4.50 5.00 5.50												
			Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65												
			2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88												
#2	Discarded	453.00'	2.000 in/hr Exfiltration over Surface area												

Discarded OutFlow Max=0.03 cfs @ 17.81 hrs HW=453.17' (Free Discharge)
 ↑**2=Exfiltration** (Exfiltration Controls 0.03 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=453.00' TW=0.00' (Dynamic Tailwater)
 ↑**1=Broad-Crested Rectangular Weir**(Controls 0.00 cfs)

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Vineyard 1 & 2

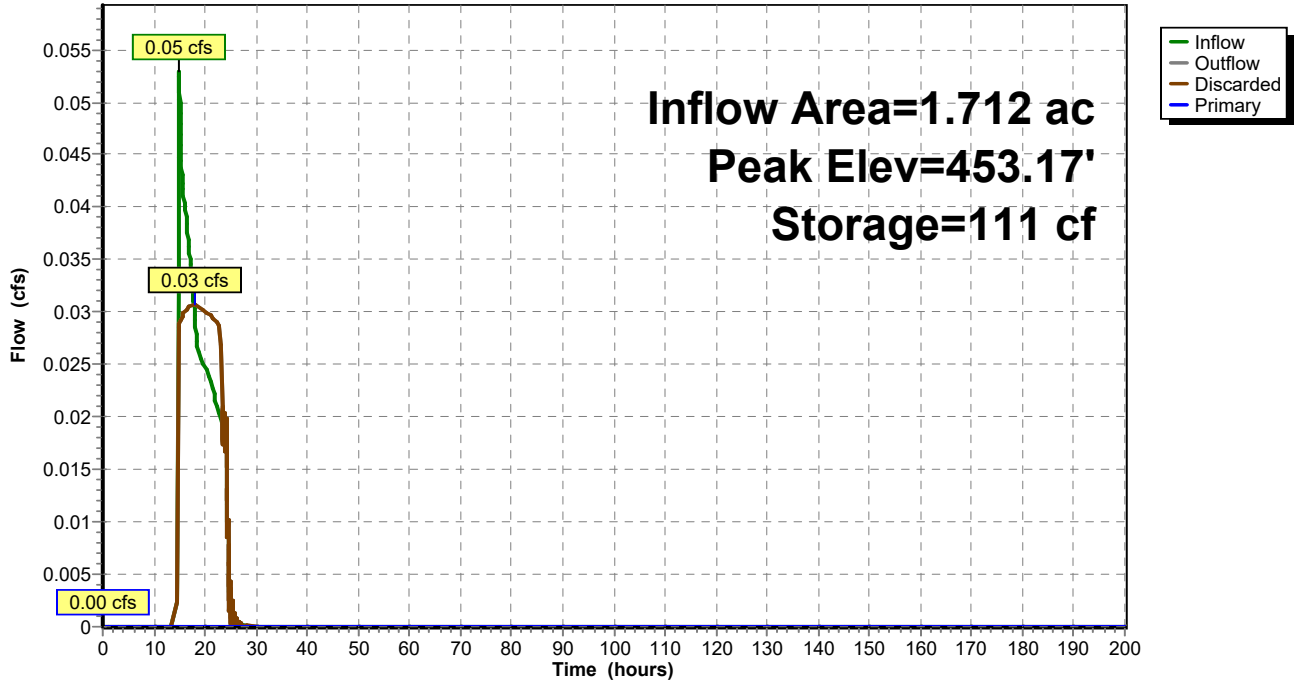
NRCC 24-hr A 100-Year Rainfall=5.28"

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Pond P5: Infiltration

Hydrograph



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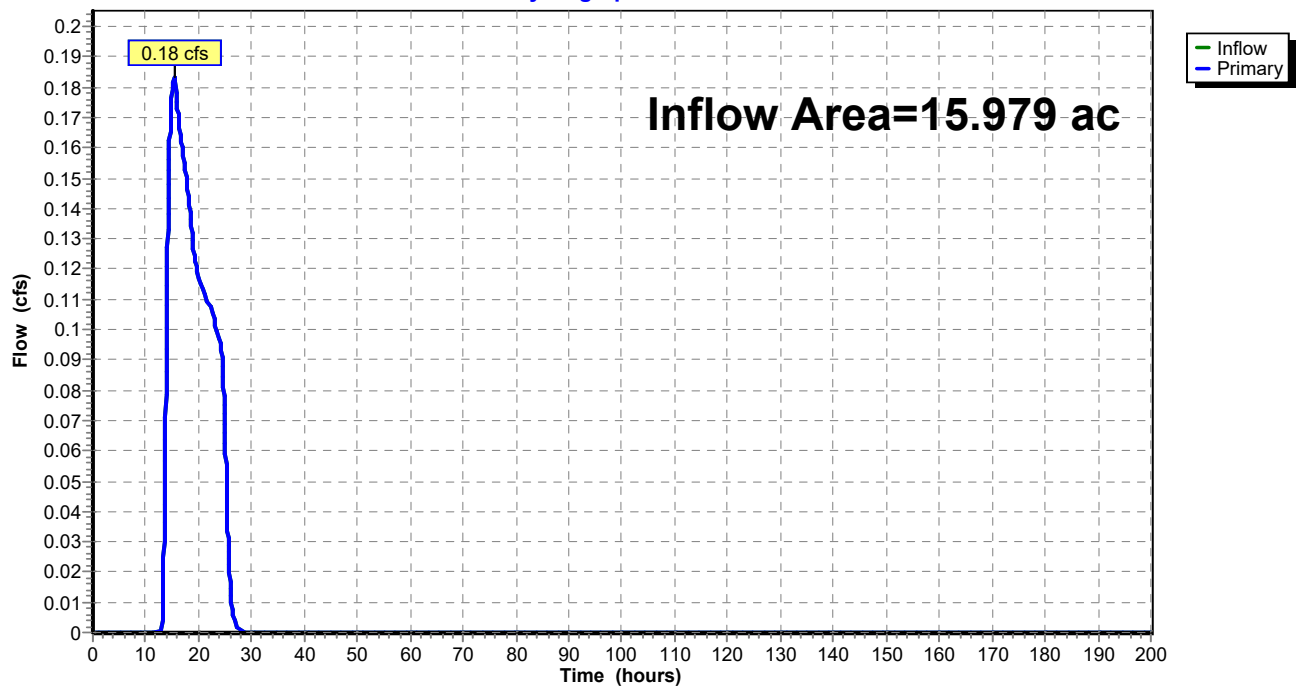
Summary for Link A:

Inflow Area = 15.979 ac, 0.00% Impervious, Inflow Depth = 0.09" for 100-Year event
Inflow = 0.18 cfs @ 15.36 hrs, Volume= 0.125 af
Primary = 0.18 cfs @ 15.36 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link A:

Hydrograph



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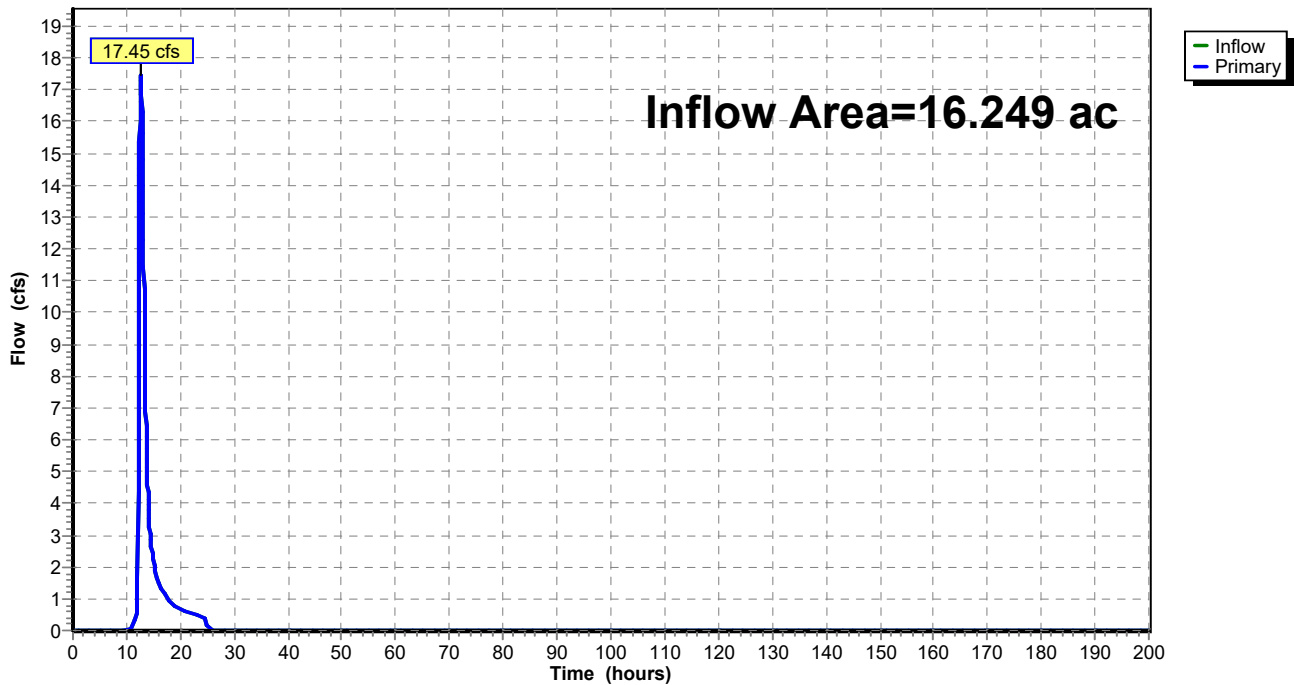
Summary for Link B:

Inflow Area = 16.249 ac, 0.12% Impervious, Inflow Depth = 2.01" for 100-Year event
Inflow = 17.45 cfs @ 12.67 hrs, Volume= 2.715 af
Primary = 17.45 cfs @ 12.67 hrs, Volume= 2.715 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link B:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 100-Year Rainfall=5.28"

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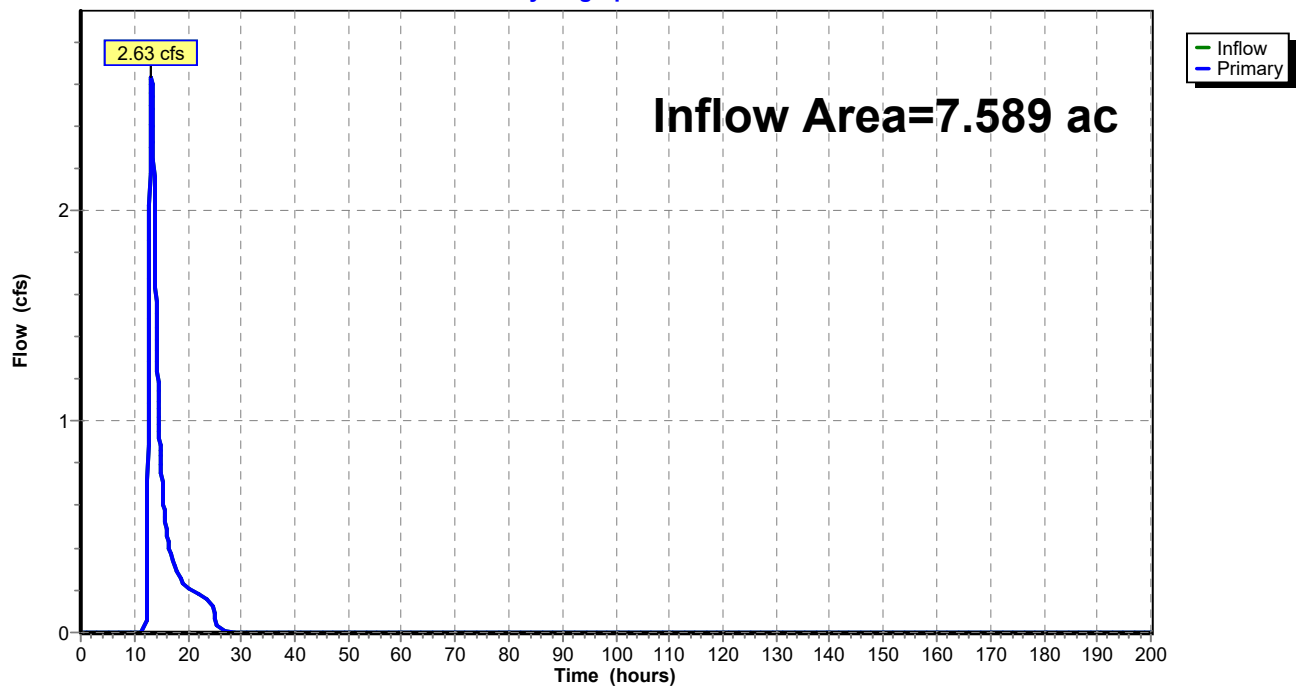
Summary for Link C:

Inflow Area = 7.589 ac, 0.50% Impervious, Inflow Depth = 0.92" for 100-Year event
Inflow = 2.63 cfs @ 13.24 hrs, Volume= 0.582 af
Primary = 2.63 cfs @ 13.24 hrs, Volume= 0.582 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link C:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 100-Year Rainfall=5.28"

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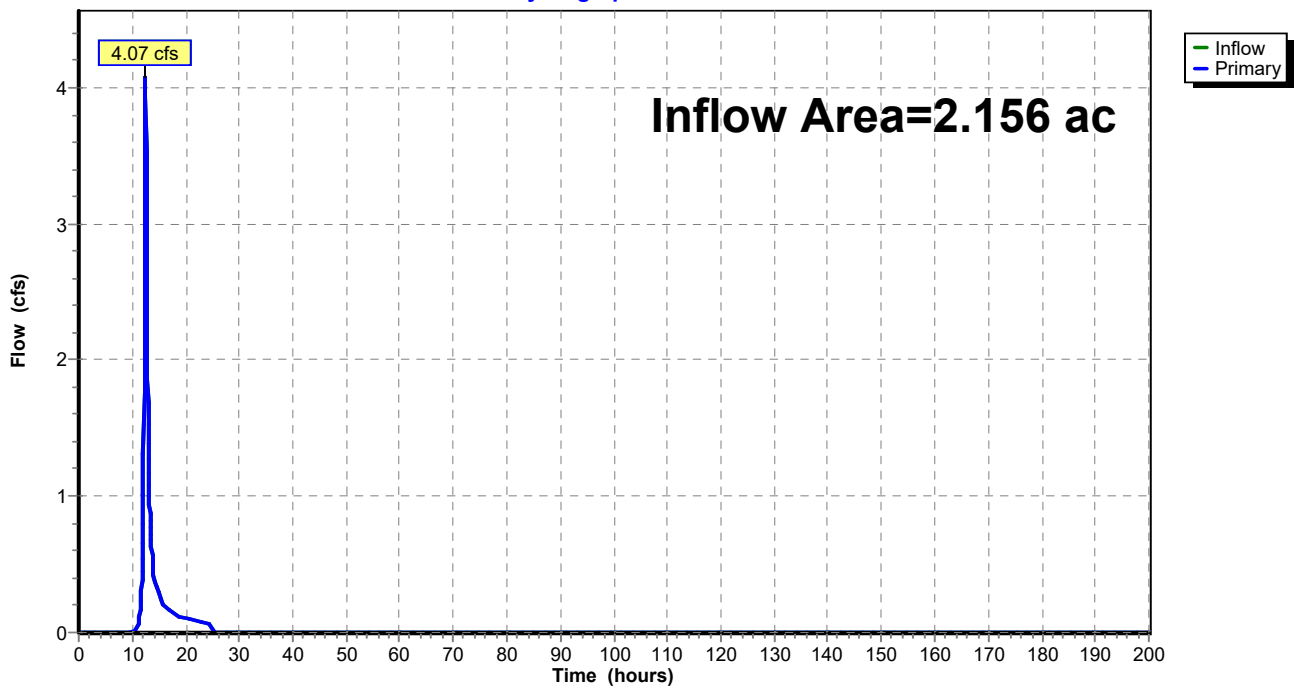
Summary for Link D:

Inflow Area = 2.156 ac, 0.00% Impervious, Inflow Depth = 2.33" for 100-Year event
Inflow = 4.07 cfs @ 12.42 hrs, Volume= 0.419 af
Primary = 4.07 cfs @ 12.42 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link D:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 100-Year Rainfall=5.28"

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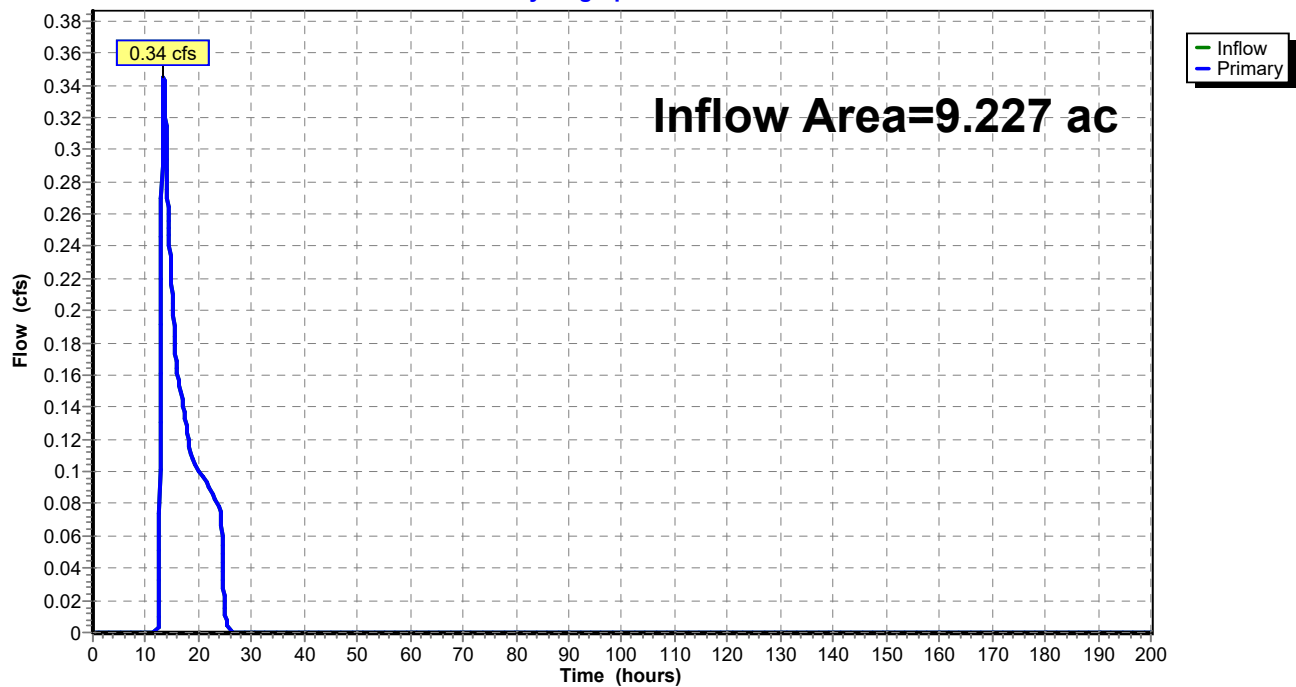
Summary for Link E:

Inflow Area = 9.227 ac, 0.27% Impervious, Inflow Depth = 0.19" for 100-Year event
Inflow = 0.34 cfs @ 13.41 hrs, Volume= 0.143 af
Primary = 0.34 cfs @ 13.41 hrs, Volume= 0.143 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link E:

Hydrograph



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Vineyard 1 & 2

NRCC 24-hr A 100-Year Rainfall=5.28"

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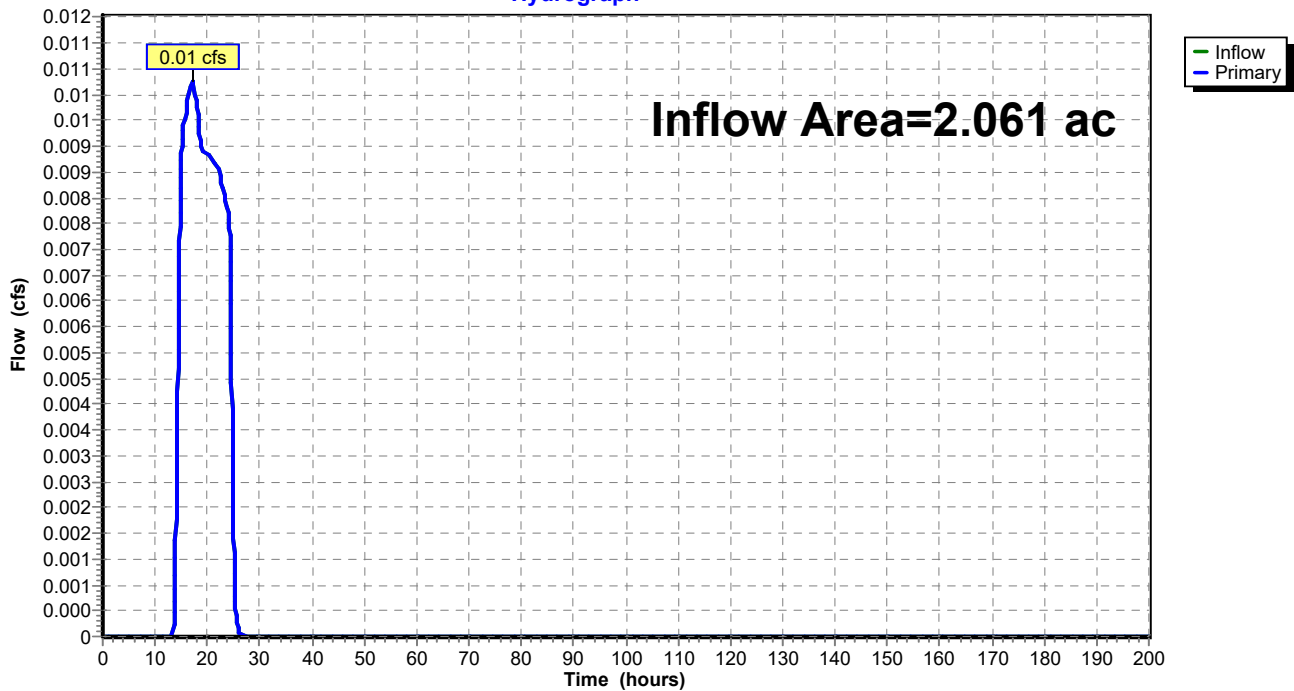
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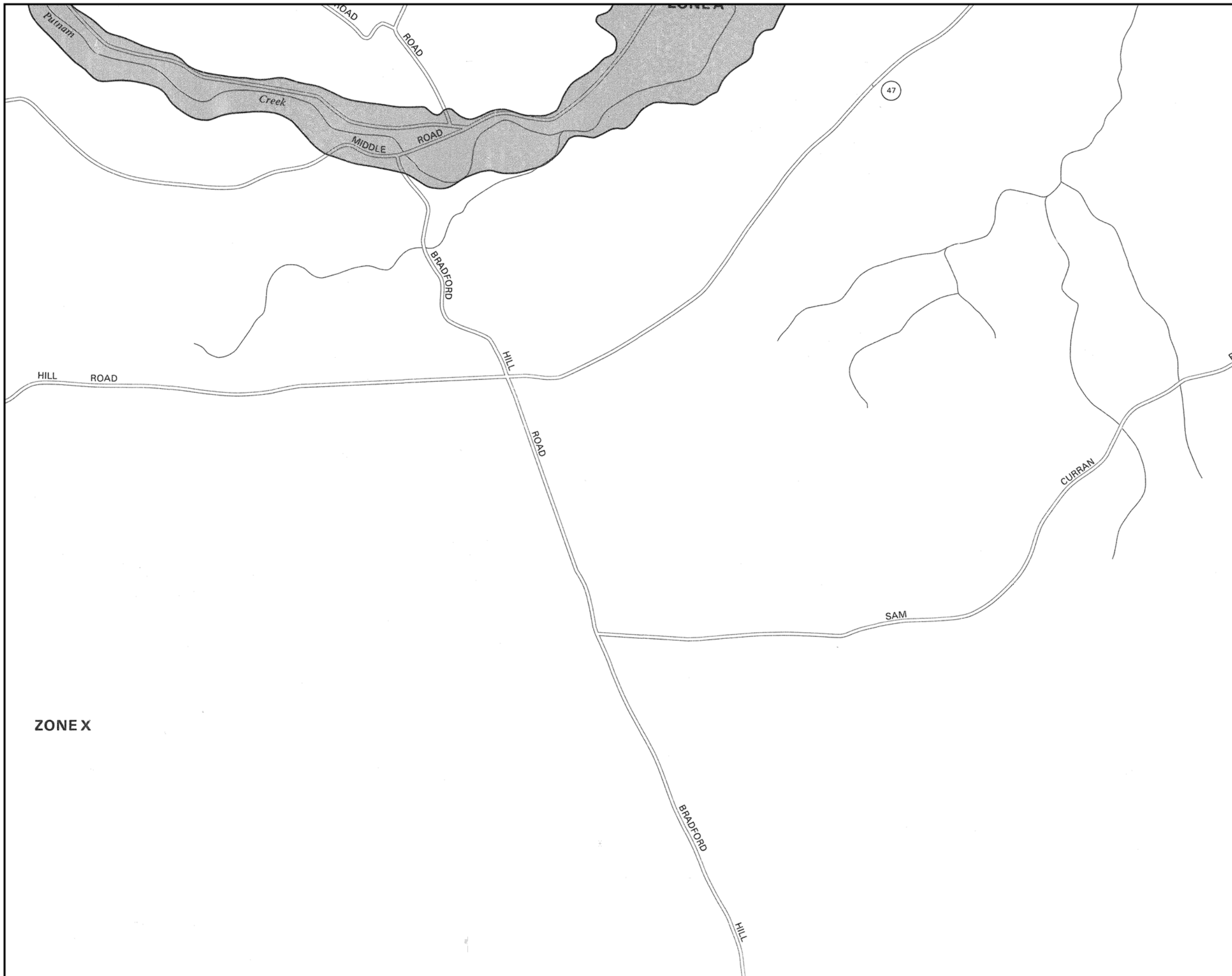
Inflow Area = 2.061 ac, 0.00% Impervious, Inflow Depth = 0.05" for 100-Year event
Inflow = 0.01 cfs @ 17.05 hrs, Volume= 0.008 af
Primary = 0.01 cfs @ 17.05 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-200.00 hrs, dt= 0.05 hrs

Link F:

Hydrograph

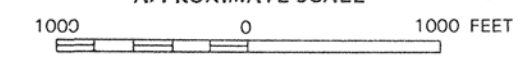




Sheet of the National Flood Insurance Program at (800) 38-6620.



APPROXIMATE SCALE

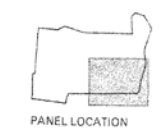


NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

TOWN OF
CROWN POINT,
NEW YORK
ESSEX COUNTY

PANEL 20 OF 20
(SEE MAP INDEX FOR PANELS NOT PRINTED)



PANEL LOCATION

COMMUNITY-PANEL NUMBER
361148 0020 B

EFFECTIVE DATE:
JULY 16, 1987



Federal Emergency Management Agency

ZONE X

This is an official FIRMette showing a portion of the above-referenced flood map created from the MSC FIRMette Web tool. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For additional information about how to make sure the map is current, please see the Flood Hazard Mapping Updates Overview Fact Sheet available on the FEMA Flood Map Service Center home page at <https://msc.fema.gov>.



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:
Project Code: 2023-0131327
Project Name: Vineyard Solar 1

September 20, 2023

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 the IPaC system 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 <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

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: 2023-0131327

Project Name: Vineyard Solar 1

Project Type: Power Gen - Solar

Project Description: The project site is located on the western side of Vineyard Road, Berlin, Crown Point, NY 12928. In the current design, the solar power project will consist of a ground mounted facility containing 12,518 solar panels and totaling 15MW [DC] (10MW [AC]) of power mounted on a system of steel posts and racks. The project will have a total ground disturbance of 27 acres across the 98.85 acre parcel and will be secured with a 7-foot high chain link fence with access to the site from a 20 ft wide driveway to be built extending from Vineyard Road.

Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.9318516,-73.46574844266996,14z>



Counties: Essex 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 Fisheries¹, 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.

-
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
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> 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: Sol Source Power

Name: Ian O'Connor

Address: 1 Washington Place

City: Troy

State: NY

Zip: 12180

Email: ian@solsourcepower.com

Phone: 6107176707

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

November 9, 2023

Ian O'Connor
Sol Source Power
1 Washington Place
Troy, NY 12180

Re: Vineyard Solar 1, LLC
County: Essex Town/City: Crown Point

Dear Ian O'Connor:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

Enclosed is a report of rare or state-listed animals and plants, and significant natural communities that our database indicates occur in the vicinity of the project site.

For most sites, comprehensive field surveys have not been conducted; the enclosed report only includes records from our database. We cannot provide a definitive statement as to 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 sources may be required to fully assess impacts on biological resources.

The presence of the plants and animals identified in the enclosed report may result in this project requiring additional review or permit conditions. For further guidance, and 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,



Heidi Krahlting
Environmental Review Specialist
New York Natural Heritage Program



The following state-listed animals have been documented in the vicinity of the project site.

The following list includes animals that are listed by NYS as Endangered, Threatened, or Special Concern; and/or that are federally listed.

For information about any permit considerations for your project, please contact the Permits staff at the NYSDEC Region 5 Office at dep.r5@dec.ny.gov, (518) 623-1286.

The following species has been documented within 1 mile (maternity colony) and within 2 miles (nonbreeding) of the project site. Individual animals may travel 2.5 miles from documented locations.

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>FEDERAL LISTING</i>
Mammals			
Indiana Bat	<i>Myotis sodalis</i>	Endangered	Endangered
<i>Maternity colony</i>			11380
<i>Nonbreeding -- foraging area</i>			13827

The following species has been documented within 2 miles of the project site. Individual animals may travel 5 miles from documented locations.

<i>COMMON NAME</i>	<i>SCIENTIFIC NAME</i>	<i>NY STATE LISTING</i>	<i>FEDERAL LISTING</i>
Mammals			
Northern Long-eared Bat	<i>Myotis septentrionalis</i>	Endangered	Endangered
<i>Hibernaculum</i>			14143

This report only includes records from the NY Natural Heritage database.

Information about many of the listed animals in New York, including habitat, biology, identification, conservation, and management, are available online in Natural Heritage’s Conservation Guides at www.guides.nynhp.org, and from NYSDEC at www.dec.ny.gov/animals/7494.html.



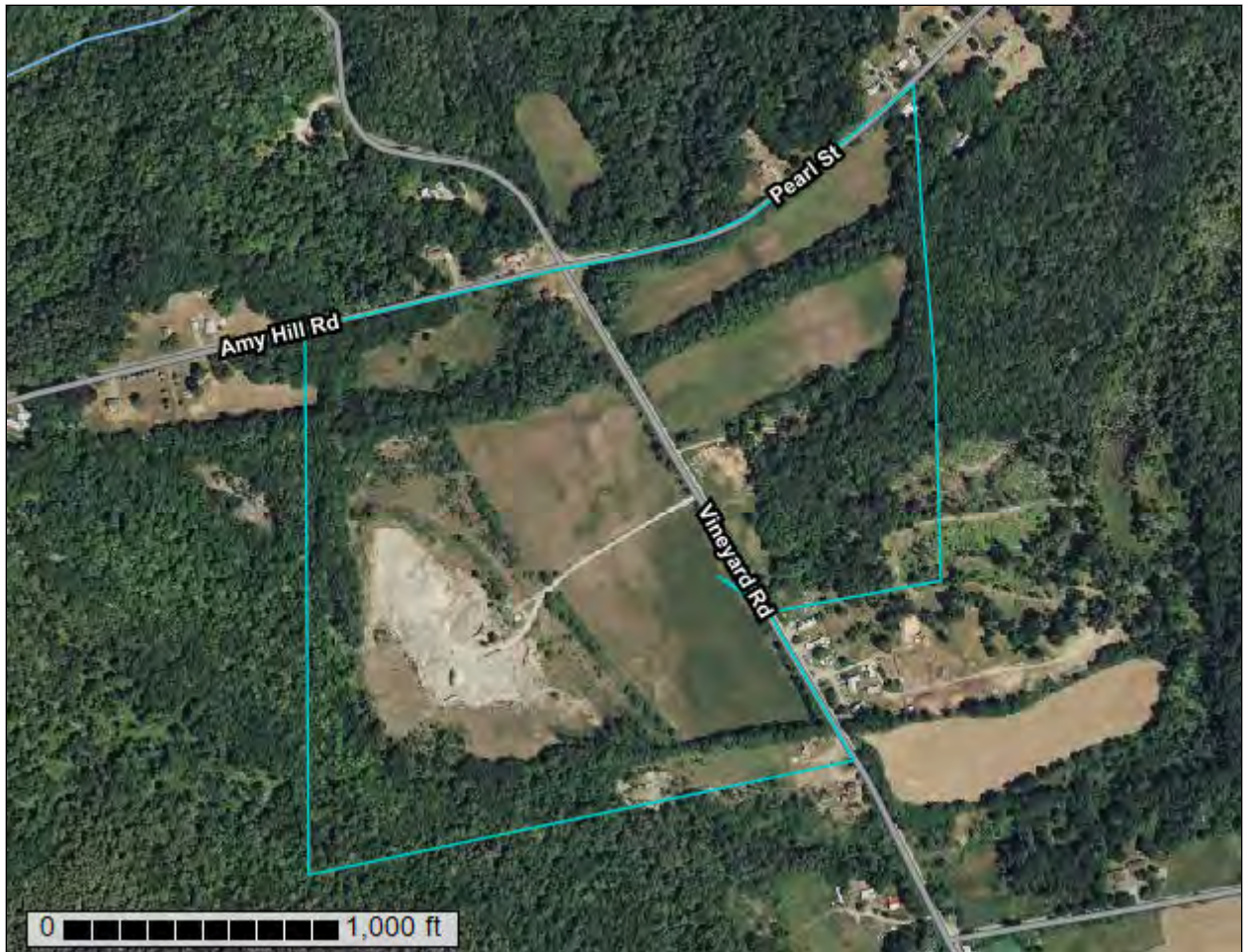
United States
Department of
Agriculture

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 **Essex County, New York**



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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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

Custom Soil Resource Report

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

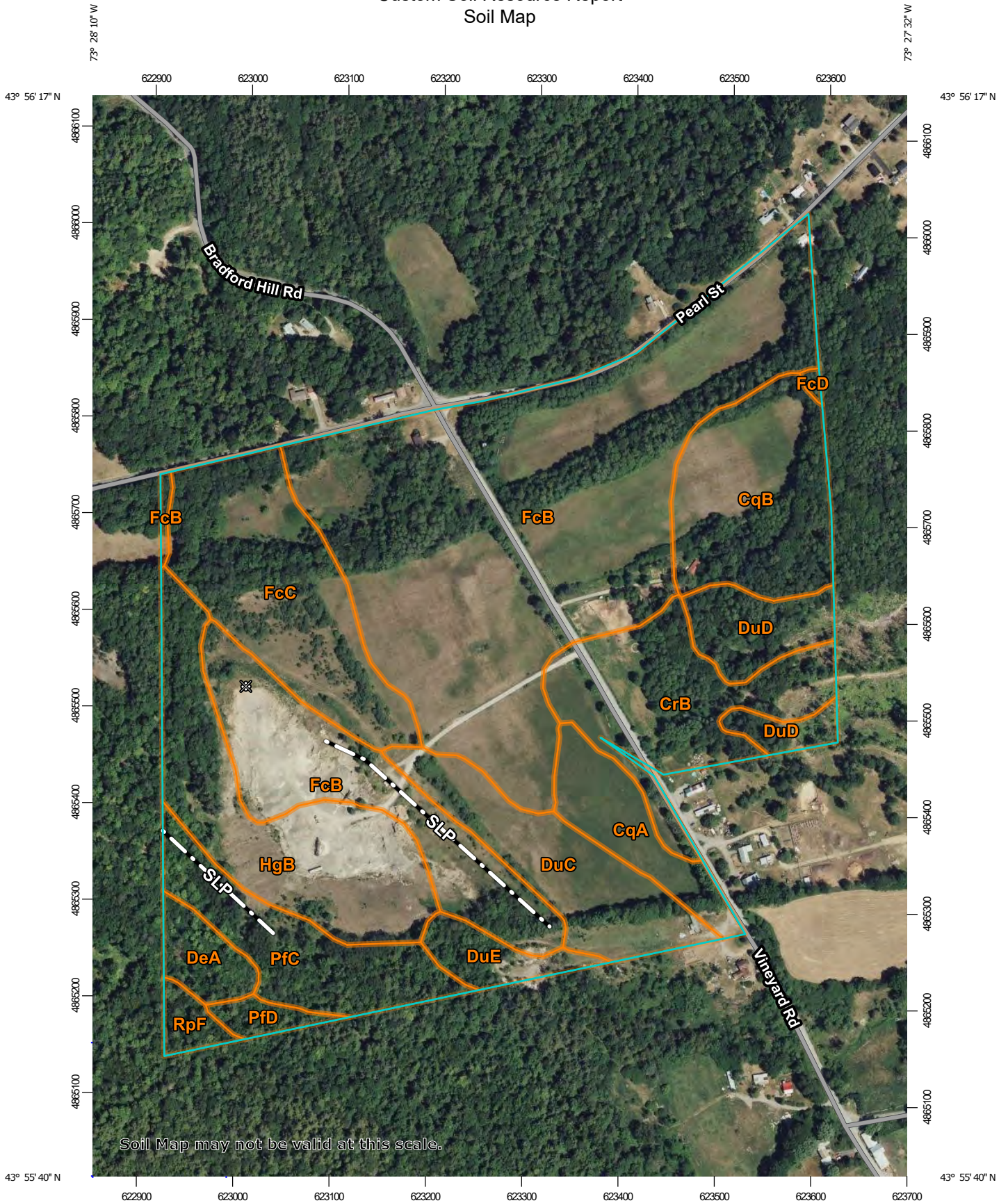
Custom Soil Resource Report

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



Soil Map may not be valid at this scale.

Map Scale: 1:5,450 if printed on A portrait (8.5" x 11") sheet.

0 50 100 200 300 Meters

0 250 500 1000 1500 Feet

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: Essex 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: Apr 1, 2020—Oct 1, 2020

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
CqA	Claverack loamy fine sand, 0 to 3 percent slopes	3.4	3.4%
CqB	Claverack loamy fine sand, 3 to 8 percent slopes	7.9	7.7%
CrB	Collamer silt loam, 2 to 8 percent slopes	8.1	7.9%
DeA	Deerfield loamy sand, 0 to 3 percent slopes	1.7	1.7%
DuC	Dunkirk silt loam, 8 to 15 percent slopes	6.1	6.0%
DuD	Dunkirk silt loam, 15 to 25 percent slopes	3.7	3.6%
DuE	Dunkirk silt loam, 25 to 45 percent slopes	1.7	1.7%
FcB	Factoryville-Colonie complex, 3 to 8 percent slopes	42.2	41.4%
FcC	Factoryville-Colonie complex, 8 to 15 percent slopes	9.8	9.6%
FcD	Factoryville-Colonie complex, 15 to 25 percent slopes	0.1	0.1%
HgB	Howard gravelly loam, 2 to 8 percent slopes	9.8	9.6%
PfC	Pittsfield loam, 8 to 15 percent slopes	5.6	5.5%
PfD	Pittsfield loam, 15 to 25 percent slopes	0.8	0.8%
RpF	Rock outcrop-Knob Lock-Lyman complex, 35 to 60 percent slopes, very bouldery	0.9	0.9%
Totals for Area of Interest		101.8	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

Custom Soil Resource Report

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

Custom Soil Resource Report

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.

Essex County, New York

CqA—Claverack loamy fine sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: bm98
Elevation: 100 to 510 feet
Mean annual precipitation: 26 to 36 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 130 to 150 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Claverack and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Claverack

Setting

Landform: Lake plains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy glaciolacustrine deposits derived from igneous and sedimentary rock over clayey glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 12 inches: loamy fine sand
Bw1 - 12 to 16 inches: fine sand
Bw2 - 16 to 22 inches: fine sand
BC - 22 to 26 inches: fine sand
2C - 26 to 72 inches: clay

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification
Drainage class: Moderately well drained
Runoff class: Low
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 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: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C/D
Ecological site: F142XB018VT - Moist Lake Plain

Custom Soil Resource Report

Hydric soil rating: No

Minor Components

Cosad

Percent of map unit: 5 percent

Hydric soil rating: No

Elmridge

Percent of map unit: 4 percent

Hydric soil rating: No

Deerfield

Percent of map unit: 2 percent

Hydric soil rating: No

Unnamed

Percent of map unit: 2 percent

Hydric soil rating: No

Windsor

Percent of map unit: 1 percent

Hydric soil rating: No

Vergennes

Percent of map unit: 1 percent

Hydric soil rating: No

CqB—Claverack loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: bm99

Elevation: 100 to 510 feet

Mean annual precipitation: 26 to 36 inches

Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 130 to 150 days

Farmland classification: All areas are prime farmland

Map Unit Composition

Claverack and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Claverack

Setting

Landform: Lake plains

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Custom Soil Resource Report

Parent material: Sandy glaciolacustrine deposits derived from igneous and sedimentary rock over clayey glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 12 inches: loamy fine sand

Bw1 - 12 to 16 inches: fine sand

Bw2 - 16 to 22 inches: fine sand

BC - 22 to 26 inches: fine sand

2C - 26 to 72 inches: clay

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: 20 to 40 inches to strongly contrasting textural stratification

Drainage class: Moderately well drained

Runoff class: Medium

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 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: Very low (about 1.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D

Ecological site: F142XB018VT - Moist Lake Plain

Hydric soil rating: No

Minor Components

Deerfield

Percent of map unit: 3 percent

Hydric soil rating: No

Cosad

Percent of map unit: 3 percent

Hydric soil rating: No

Elmridge

Percent of map unit: 3 percent

Hydric soil rating: No

Windsor

Percent of map unit: 2 percent

Hydric soil rating: No

Unnamed

Percent of map unit: 2 percent

Hydric soil rating: No

Vergennes

Percent of map unit: 2 percent

Hydric soil rating: No

CrB—Collamer silt loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: bm9b
Elevation: 100 to 510 feet
Mean annual precipitation: 26 to 36 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 130 to 150 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Collamer and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Collamer

Setting

Landform: Lake plains
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Silty glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 11 inches: silt loam
B/E - 11 to 16 inches: silty clay loam
Bt - 16 to 25 inches: silty clay loam
C1 - 25 to 35 inches: silt loam
C2 - 35 to 72 inches: silt loam

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 to 1.98 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: High (about 11.9 inches)

Interpretive groups

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

Custom Soil Resource Report

Ecological site: F101XY009NY - Moist Lake Plain
Hydric soil rating: No

Minor Components

Dunkirk

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

Niagara

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

Unnamed

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

Hartland

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

Cayuga

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

Factoryville

Percent of map unit: 1 percent
Hydric soil rating: No

DeA—Deerfield loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: bm9w
Elevation: 100 to 510 feet
Mean annual precipitation: 26 to 36 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 130 to 150 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread
Down-slope shape: Concave
Across-slope shape: Linear

Custom Soil Resource Report

Parent material: Sandy glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 10 inches: loamy sand
Bw1 - 10 to 15 inches: sand
Bw2 - 15 to 30 inches: sand
C - 30 to 72 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: About 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: A/D
Ecological site: F142XB003VT - Moist Outwash
Hydric soil rating: No

Minor Components

Stafford

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

Windsor

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

Claverack

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

Factoryville

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

Cosad

Percent of map unit: 1 percent
Hydric soil rating: No

DuC—Dunkirk silt loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: bmgz

Elevation: 100 to 510 feet

Mean annual precipitation: 26 to 36 inches

Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 130 to 150 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Dunkirk and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dunkirk

Setting

Landform: Lake plains

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Tread, riser

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Silty glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 6 inches: silt loam

E - 6 to 10 inches: silt loam

E/B - 10 to 15 inches: silt loam

B/E - 15 to 21 inches: silt loam

Bt1 - 21 to 29 inches: silty clay loam

Bt2 - 29 to 35 inches: silt loam

BC - 35 to 42 inches: silt loam

C - 42 to 72 inches: silty clay loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 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: 15 percent

Available water supply, 0 to 60 inches: High (about 11.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: C
Ecological site: F101XY008NY - Well Drained Lake Plain
Hydric soil rating: No

Minor Components

Collamer

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

Hartland

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

Cayuga

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

Niagara

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

Factoryville

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

Elmridge

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

Unnamed

Percent of map unit: 1 percent
Hydric soil rating: No

DuD—Dunkirk silt loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: bmgj
Elevation: 100 to 510 feet
Mean annual precipitation: 26 to 36 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 130 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Dunkirk and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dunkirk

Setting

Landform: Lake plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Silty glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 6 inches: silt loam
E - 6 to 10 inches: silt loam
E/B - 10 to 15 inches: silt loam
B/E - 15 to 21 inches: silt loam
Bt1 - 21 to 29 inches: silty clay loam
Bt2 - 29 to 35 inches: silt loam
BC - 35 to 42 inches: silt loam
C - 42 to 72 inches: silty clay loam

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.06 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: 15 percent
Available water supply, 0 to 60 inches: High (about 11.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: C
Ecological site: F101XY008NY - Well Drained Lake Plain
Hydric soil rating: No

Minor Components

Hartland

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

Vergennes

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

Factoryville

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

Collamer

Percent of map unit: 2 percent

Custom Soil Resource Report

Hydric soil rating: No

Unnamed

Percent of map unit: 2 percent

Hydric soil rating: No

DuE—Dunkirk silt loam, 25 to 45 percent slopes

Map Unit Setting

National map unit symbol: bmgx

Elevation: 100 to 510 feet

Mean annual precipitation: 26 to 36 inches

Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 130 to 150 days

Farmland classification: Not prime farmland

Map Unit Composition

Dunkirk and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dunkirk

Setting

Landform: Lake plains

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Riser

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Silty glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 6 inches: silt loam

E - 6 to 10 inches: silt loam

E/B - 10 to 15 inches: silt loam

B/E - 15 to 21 inches: silt loam

Bt1 - 21 to 29 inches: silty clay loam

Bt2 - 29 to 35 inches: silt loam

BC - 35 to 42 inches: silt loam

C - 42 to 72 inches: silty clay loam

Properties and qualities

Slope: 25 to 45 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high
(0.06 to 1.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Custom Soil Resource Report

Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Available water supply, 0 to 60 inches: High (about 11.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Ecological site: F101XY008NY - Well Drained Lake Plain
Hydric soil rating: No

Minor Components

Hartland

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

Factoryville

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

Vergennes

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

Unnamed

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

Collamer

Percent of map unit: 1 percent
Hydric soil rating: No

FcB—Factoryville-Colonie complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 119hk
Elevation: 100 to 510 feet
Mean annual precipitation: 26 to 36 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 130 to 150 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Factoryville and similar soils: 45 percent
Colonie, calcareous substratum, and similar soils: 30 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Factoryville

Setting

Landform: Deltas

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 11 inches: loamy fine sand

Bw1 - 11 to 19 inches: loamy fine sand

Bw2 - 19 to 29 inches: loamy fine sand

Bw3 - 29 to 33 inches: loamy fine sand

C1 - 33 to 65 inches: fine sand

C2 - 65 to 72 inches: fine sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: About 24 to 39 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: A

Ecological site: F142XB002VT - Dry Outwash

Hydric soil rating: No

Description of Colonie, Calcareous Substratum

Setting

Landform: Deltas

Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Tread

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 9 inches: loamy fine sand

E1 - 9 to 14 inches: loamy fine sand

E2 - 14 to 25 inches: fine sand

E and Bt1 - 25 to 37 inches: fine sand

E and Bt2 - 37 to 49 inches: fine sand

2C1 - 49 to 56 inches: fine sand

Custom Soil Resource Report

2C2 - 56 to 61 inches: fine sand

2C3 - 61 to 72 inches: fine sand

Properties and qualities

Slope: 3 to 8 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat excessively drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 20 percent

Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s

Hydrologic Soil Group: A

Ecological site: F142XB002VT - Dry Outwash

Hydric soil rating: No

Minor Components

Deerfield

Percent of map unit: 8 percent

Hydric soil rating: No

Hartland

Percent of map unit: 5 percent

Hydric soil rating: No

Dunkirk

Percent of map unit: 5 percent

Hydric soil rating: No

Howard

Percent of map unit: 3 percent

Hydric soil rating: No

Unnamed

Percent of map unit: 2 percent

Hydric soil rating: No

Elmridge

Percent of map unit: 2 percent

Hydric soil rating: No

FcC—Factoryville-Colonie complex, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 119h1

Elevation: 100 to 510 feet

Mean annual precipitation: 26 to 36 inches

Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 130 to 150 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Factoryville and similar soils: 45 percent

Colonie, calcareous substratum, and similar soils: 30 percent

Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Factoryville

Setting

Landform: Deltas

Landform position (two-dimensional): Backslope, shoulder

Landform position (three-dimensional): Tread, riser

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 11 inches: loamy fine sand

Bw1 - 11 to 19 inches: loamy fine sand

Bw2 - 19 to 29 inches: loamy fine sand

Bw3 - 29 to 33 inches: loamy fine sand

C1 - 33 to 65 inches: fine sand

C2 - 65 to 72 inches: fine sand

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: About 24 to 39 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F142XB002VT - Dry Outwash
Hydric soil rating: No

Description of Colonie, Calcareous Substratum

Setting

Landform: Deltas
Landform position (two-dimensional): Backslope, shoulder
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Sandy glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 9 inches: loamy fine sand
E1 - 9 to 14 inches: loamy fine sand
E2 - 14 to 25 inches: fine sand
E and Bt1 - 25 to 37 inches: fine sand
E and Bt2 - 37 to 49 inches: fine sand
2C1 - 49 to 56 inches: fine sand
2C2 - 56 to 61 inches: fine sand
2C3 - 61 to 72 inches: fine sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Ecological site: F142XB002VT - Dry Outwash
Hydric soil rating: No

Minor Components

Dunkirk

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

Unnamed

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

Deerfield

Percent of map unit: 5 percent

Custom Soil Resource Report

Hydric soil rating: No

Hartland

Percent of map unit: 5 percent

Hydric soil rating: No

Howard

Percent of map unit: 5 percent

Hydric soil rating: No

FcD—Factoryville-Colonie complex, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 119hm

Elevation: 100 to 510 feet

Mean annual precipitation: 26 to 36 inches

Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 130 to 150 days

Farmland classification: Not prime farmland

Map Unit Composition

Factoryville and similar soils: 45 percent

Colonie, calcareous substratum, and similar soils: 30 percent

Minor components: 25 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Factoryville

Setting

Landform: Deltas

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Riser

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 11 inches: loamy fine sand

Bw1 - 11 to 19 inches: loamy fine sand

Bw2 - 19 to 29 inches: loamy fine sand

Bw3 - 29 to 33 inches: loamy fine sand

C1 - 33 to 65 inches: fine sand

C2 - 65 to 72 inches: fine sand

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)

Depth to water table: About 24 to 39 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 3.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6e

Hydrologic Soil Group: A

Ecological site: F142XB002VT - Dry Outwash

Hydric soil rating: No

Description of Colonie, Calcareous Substratum

Setting

Landform: Deltas

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Riser

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Sandy glaciolacustrine deposits derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 9 inches: loamy fine sand

E1 - 9 to 14 inches: loamy fine sand

E2 - 14 to 25 inches: fine sand

E and Bt1 - 25 to 37 inches: fine sand

E and Bt2 - 37 to 49 inches: fine sand

2C1 - 49 to 56 inches: fine sand

2C2 - 56 to 61 inches: fine sand

2C3 - 61 to 72 inches: fine sand

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Excessively drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 20 percent

Available water supply, 0 to 60 inches: Low (about 3.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4s

Hydrologic Soil Group: A

Ecological site: F142XA022NY - Rich Dry Outwash Frigid

Hydric soil rating: No

Minor Components

Dunkirk

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

Hartland

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

Unnamed

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

Howard

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

Deerfield

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

HgB—Howard gravelly loam, 2 to 8 percent slopes

Map Unit Setting

National map unit symbol: 119hv
Elevation: 100 to 510 feet
Mean annual precipitation: 26 to 36 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 130 to 150 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Howard and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Howard

Setting

Landform: Kame terraces, outwash terraces
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Gravelly outwash derived from limestone

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 4 inches: very gravelly loam

Custom Soil Resource Report

E - 4 to 11 inches: gravelly loam
B/E - 11 to 15 inches: very gravelly loam
Bt - 15 to 22 inches: very gravelly loam
2C1 - 22 to 35 inches: extremely gravelly loamy sand
2C2 - 35 to 72 inches: extremely gravelly loamy sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Available water supply, 0 to 60 inches: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Ecological site: F142XB002VT - Dry Outwash
Hydric soil rating: No

Minor Components

Colonie

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

Factoryville

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

Pittsfield

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

Nellis

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

Deerfield

Percent of map unit: 1 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent
Hydric soil rating: No

PfC—Pittsfield loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: bq87

Elevation: 100 to 510 feet

Mean annual precipitation: 26 to 36 inches

Mean annual air temperature: 45 to 48 degrees F

Frost-free period: 130 to 150 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Pittsfield and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pittsfield

Setting

Landform: Till plains, hills

Landform position (two-dimensional): Shoulder, backslope

Landform position (three-dimensional): Side slope, crest

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy ablation till derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 8 inches: loam

EB - 8 to 10 inches: fine sandy loam

Bw1 - 10 to 20 inches: gravelly fine sandy loam

Bw2 - 20 to 24 inches: loam

Bw3 - 24 to 30 inches: gravelly loam

BC - 30 to 45 inches: gravelly fine sandy loam

C1 - 45 to 59 inches: gravelly fine sandy loam

C2 - 59 to 72 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Custom Soil Resource Report

Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: F142XB012VT - Rich Till Upland
Hydric soil rating: No

Minor Components

Georgia

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

Charlton

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

Unnamed

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

Massena

Percent of map unit: 1 percent
Hydric soil rating: No

Chatfield

Percent of map unit: 1 percent
Hydric soil rating: No

Nellis

Percent of map unit: 1 percent
Hydric soil rating: No

PfD—Pittsfield loam, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: bq88
Elevation: 100 to 510 feet
Mean annual precipitation: 26 to 36 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 130 to 150 days
Farmland classification: Not prime farmland

Map Unit Composition

Pittsfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pittsfield

Setting

Landform: Hills, till plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope

Custom Soil Resource Report

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy ablation till derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 8 inches: loam

EB - 8 to 10 inches: fine sandy loam

Bw1 - 10 to 20 inches: gravelly fine sandy loam

Bw2 - 20 to 24 inches: loam

Bw3 - 24 to 30 inches: gravelly loam

BC - 30 to 45 inches: gravelly fine sandy loam

C1 - 45 to 59 inches: gravelly fine sandy loam

C2 - 59 to 72 inches: gravelly fine sandy loam

Properties and qualities

Slope: 15 to 25 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.20 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Available water supply, 0 to 60 inches: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4e

Hydrologic Soil Group: B

Ecological site: F142XB012VT - Rich Till Upland

Hydric soil rating: No

Minor Components

Charlton

Percent of map unit: 6 percent

Hydric soil rating: No

Unnamed

Percent of map unit: 4 percent

Hydric soil rating: No

Chatfield

Percent of map unit: 3 percent

Hydric soil rating: No

Nellis

Percent of map unit: 1 percent

Hydric soil rating: No

Georgia

Percent of map unit: 1 percent

Hydric soil rating: No

RpF—Rock outcrop-Knob Lock-Lyman complex, 35 to 60 percent slopes, very bouldery

Map Unit Setting

National map unit symbol: 2xj2r
Elevation: 520 to 2,300 feet
Mean annual precipitation: 31 to 95 inches
Mean annual air temperature: 27 to 48 degrees F
Frost-free period: 100 to 130 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock outcrop: 40 percent
Knob lock, very rocky, very bouldery, and similar soils: 30 percent
Lyman, very rocky, very bouldery, and similar soils: 20 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Properties and qualities

Depth to restrictive feature: 0 inches to lithic bedrock

Description of Knob Lock, Very Rocky, Very Bouldery

Setting

Landform: Hillsides or mountainsides
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Lower third of mountainflank, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Non-saturated organic material over till derived from gneiss

Typical profile

Oe - 0 to 3 inches: moderately decomposed plant material
Oa - 3 to 7 inches: highly decomposed plant material
Bs - 7 to 9 inches: very fine sandy loam
R - 9 to 79 inches: bedrock

Properties and qualities

Slope: 35 to 60 percent
Surface area covered with cobbles, stones or boulders: 2.4 percent
Depth to restrictive feature: 4 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 very high
(0.00 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Custom Soil Resource Report

Available water supply, 0 to 60 inches: Very low (about 2.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: D

Ecological site: F142XA003NY - Acidic Peaty Depression

Hydric soil rating: No

Description of Lyman, Very Rocky, Very Bouldery

Setting

Landform: Hillsides or mountainsides

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Lower third of mountainflank, side slope

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Loamy till derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material

Oa - 1 to 5 inches: highly decomposed plant material

E - 5 to 6 inches: fine sandy loam

Bhs - 6 to 11 inches: fine sandy loam

Bs - 11 to 19 inches: fine sandy loam

R - 19 to 79 inches: bedrock

Properties and qualities

Slope: 35 to 60 percent

Surface area covered with cobbles, stones or boulders: 2.4 percent

Depth to restrictive feature: 12 to 26 inches to lithic bedrock

Drainage class: Somewhat excessively drained

Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Very low to very high
(0.00 to 14.17 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Available water supply, 0 to 60 inches: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: D

Ecological site: F142XA015NY - Shallow Acidic Till Upland Frigid

Hydric soil rating: No

Minor Components

Tunbridge, very rocky, very bouldery

Percent of map unit: 5 percent

Landform: Hillsides or mountainsides

Landform position (two-dimensional): Backslope

Landform position (three-dimensional): Lower third of mountainflank, side slope

Down-slope shape: Convex

Across-slope shape: Convex

Hydric soil rating: No

Custom Soil Resource Report

Monadnock, very rocky, very bouldery

Percent of map unit: 3 percent
Landform: Hillsides or mountainsides
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Becket, very rocky, very bouldery

Percent of map unit: 2 percent
Landform: Hillsides or mountainsides
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainbase, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

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Custom Soil Resource Report

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**New York State
Parks, Recreation and
Historic Preservation**

KATHY HOCHUL
Governor

ERIK KULLESEID
Commissioner

October 19, 2023

Lindsey McEntire
CDO
Sol Source Power
1 Washington Place
Troy, NY 12180

Re: DEC
Vineyard Solar/7.5 MW/ 15 Acres
780 Vineyard Rd, Crown Point, NY 12928
23PR08273

Dear Lindsey McEntire:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law). These comments are those of the OPRHP and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8) and its implementing regulations (6 NYCRR Part 617).

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above.

Sincerely,

R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

rev: L. Krupa

SECTION 7
Completed Inspection Reports