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July 30, 2020

VIA ELECTRONIC MAIL
AND FEDERAL EXPRESS

Melanie.bachman@ct.gov
Siting.council@ct.gov

Ms. Melanie A. Bachman, Esq., Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

Re: Petition 1396 – Compliance with Condition No. 2 of Declaratory Ruling.

Dear Attorney Bachman:

This office represents CP East Hampton Solar I, LLC and CP East Hampton Solar II, LLC. Please accept this correspondence as compliance with Condition No. 2 of the Declaratory Ruling issued by the Connecticut Siting Council ("Council") on May 26, 2020. To that end, I have enclosed the following:

1. The General Permit registration authorized by the Department of Energy & Environmental Protection ("DEEP") for the solar photovoltaic electric generating facilities ("Project") approved by the Council in the above-captioned matter; and

2. The Stormwater Pollution Control Plan for the Project approved by DEEP.

Please do not hesitate to contact me with any questions.

Very truly yours,

Jesse A. Langer

Enclosure

Connecticut Department of

ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

Bureau of Materials Management and Compliance Assurance

Notice of Permit Authorization

July, 24 2020

Cela Sinay-Bernie
CP EAST HAMPTON SOLAR I, LLC
55 Greens Farms Rd
Westport, CT 06880-6149

Subject: General Permit Registration for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities
Application NO.: 202003717

Cela Sinay-Bernie:

The Department of Energy and Environmental Protection, Water Permitting and Enforcement Division of the Bureau of Materials Management and Compliance Assurance, has completed the review of the CP East Hampton Solar I & II (located at Skinner Street, East Hampton) registration for the **General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, effective 10/1/13 (general permit)** . The project is compliant with the requirements of the general permit and the discharge(s) associated with this project is (are) authorized to commence as of the date of this letter. Permit No. GSN003562 has been assigned to authorize the stormwater discharge(s) from this project.

Questions can be emailed to deep.stormwater@ct.gov.

STORMWATER POLLUTION CONTROL PLAN

SOLAR FACILITY INSTALLATION
CP EAST HAMPTON SOLAR I & II
SKINNER STREET
EAST HAPMTON, CONNECTICUT
MIDDLESEX COUNTY

Prepared for:
CP East Hampton Solar I, LLC
&
CP East Hampton Solar II, LLC

55 Greens Farm Road, Suite 200-78
Westport, CT 06880

Prepared by:
All-Points Technology Corporation, P.C.
3 Saddlebrook Drive
Killingworth, CT 06419

MARCH 2020

This Stormwater Pollution Control Plan (SWPCP) is prepared to comply with the requirements for the General Permit for the Discharge and Dewatering Wastewaters from Construction Activities. Also to be considered part of the SWPCP are the proposed construction plans, special provisions, and the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control

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WETLAND DELINEATION REPORT PROVIDED UPON REQUEST

Introduction

All-Points Technology Corporation, P.C. ("APT") prepared this Storm Water Pollution Control Plan ("SWPCP") on behalf of CP East Hampton Solar I, LLC and CP East Hampton Solar II, LLC ("Permittee") for the CP East Hampton Solar I & II Project ("Project") in the Town of East Hampton, Connecticut.

This SWPCP has been completed to support CP East Hampton Solar I, LLC and CP East Hampton Solar II, LLC's application for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("General Permit"), effective date: October 1, 2013, expiration date: September 30, 2020.

Additionally, this SWPCP, Site Plans, and Stormwater Report have been completed to comply with the draft General Permit including Appendix I Stormwater Management at Solar Construction Projects ("Appendix I"). The draft General Permit can be found at the following link for review:

https://www.ct.gov/deep/lib/deep/public_notice_attachments/general_permits/2019December27ConstructionGPwithModificationsClean-DraftPermit.pdf

During construction, the contractor(s) shall be responsible for implementing all elements of the erosion and sedimentation control measures as defined on the drawings, in this plan, and as directed. Erosion and sedimentation controls will be implemented and adjusted as needed throughout construction to minimize soil erosion. Construction activities will be phased to minimize areas of disturbance throughout construction.

Throughout the construction process, the Permittee or Permittee's agent shall periodically inspect all erosion and sedimentation control measures. A monitoring program will be established to observe the effectiveness of these measures and identify corrective actions, where necessary. After construction, the Permittee shall be responsible for maintaining these erosion and sedimentation control measures until the Project is complete. The Project will not be considered complete until all disturbed areas have been satisfactorily stabilized for at least three months, all erosion has been repaired, and all temporary erosion and sedimentation control measures have been removed as called for on the plans.

All contractors and subcontractors who will perform actions on-site that may reasonably be expected to cause or have the potential to cause pollution of waters of the State will be identified prior to construction and must sign the certification included in Appendix B. Any new contractors and subcontractors brought on to the project during construction must sign the certification as well. The certification will be available for inspection prior to and during construction.

The Permittee or Permittee's agent is responsible for keeping the Plan in compliance with the General permit at all times. Should the Plan fail to prevent pollution or fail to otherwise comply with the General Permit at any time the permittee or their agent shall amend the Plan. The plan shall also be amended if there is a change in contractors and/or subcontractors or a change in design, construction, operation or maintenance at the site.

Site Description and Proposed Work

The Site is a privately-owned and industrially zoned parcel located behind 46 Skinner Street (Route 196) in East Hampton, Connecticut, that consists of approximately 27.42± acres of undeveloped, wooded land. The property has an existing gravel drive off of Skinner Street and is partially cleared.

The Site's existing topography generally slopes downward from the center to the west, east and south. Slopes throughout the Project area range from approximately 0 to 15 percent. Elevations within the Site range from approximately 427 feet AMSL in the middle of the site side to approximately 405 feet AMSL on the western side, 395 feet AMSL on the south side, and 357 feet AMSL at the existing gravel drive at Skinner Street. Appendix A, *Site Location Map*, depicts the location of the Site and surrounding area.

The Project will be constructed in the center of the Site, west of the existing gravel drive; access to the site will be provided via the existing gravel drive. The Project includes the installation of 6,994 solar panels and associated fencing, access drive extension, utility and stormwater management features. Of the ±27.42 acres, ±14.27 acres will require clearing and ±11.09 acres of that cleared area will require grubbing for the Project.

The proposed solar panels will be installed on a post driven ground mounted racking system, with minimal changes to the existing grades. As a result, the post-development site conditions will mimic the pre-developed site conditions. Areas of clearing and grubbing and any existing ground cover that is disturbed during construction will be reseeded with a low growth seed mix. In order to account for the change in ground cover, time of concentration, and the reduction of hydrologic soil group, five (5) grass lined stormwater management basins are proposed along the extents of the proposed Project area.

Stormwater Management

The hydrologic analysis was performed using the HydroCAD stormwater modeling system computer program developed by HydroCAD Software Solutions, LLC.

Hydrographs for each watershed were developed using the SCS Synthetic Unit Hydrograph Method with a Type III rainfall distribution. Hydrographs were developed for the NOAA Atlas 14, Volume 10, Version 2 Precipitation 2-, 25-, 50-, and 100-year storm event with rainfall depths of 3.39, 6.33, 7.16, and 8.07 inches respectively.

The existing and proposed drainage areas used in the calculations are illustrated on the Existing and Proposed Drainage Area Plans (EDA-1 & PDA-1). These maps and the corresponding HydroCAD output are attached.

Utilizing Appendix I, Stormwater Management at Solar Array Construction Projects, provided by Connecticut Department of Energy & Environmental Projection ("CT DEEP"), this hydrologic analysis will reflect a reduction of the Hydrologic Soil Group ("HSG") present on-site by one (1) step (e.g. soils of HSG B shall be considered HSG C). This reduction, as indicated by CT DEEP, is intended to account for the compaction of soils that results from extensive machinery traffic

during construction of the array. The Water Quality Volume ("WQV") for the site will be calculated assuming that the solar panels, roadways, gravel surfaces, and transformer pads are effectively impervious cover. See Appendix C, Stormwater Management Report for supporting calculations.

Receiving Waters

Based upon a review of DEEP mapping, the majority of the Site is located in Major Drainage Basin 4 (Connecticut River), Sub Regional Drainage Basin 4709 (Pine Brook). The western portion of the Site (including the majority of the Project Area) is located in Local Drainage Basin 4709-05

Wetlands and Watercourses on Site

A total of three (3) forested wetlands, comprising approximately 1.66 acres, were identified on the Site during a field inspection and wetlands delineation completed on November 21, 2019 by APT Connecticut Registered Soil Scientist Matt Gustafson. A majority of the Site's wetland habitat is dominated by edge forest. However interior portions of Wetland 2 consist of segments of interior forested habitats while intermittent watercourses ("IWC") associated with Wetlands 2 and 3 contain some scrub/shrub and emergent vegetation classes. No wetlands or watercourses are present within the Project Area. The information presented below summarizes the results of the field survey. Additional information is provided in Appendix A, Wetland Inspection Report.

Wetland 1

This resource is located in the northwest corner of the Site and consists of two 'fingers' of a larger headwater seep wetland system that occurs along the Site's western property boundary and extends off site. Wetland 1 is located within narrow seep outbreaks that lack a defined bank or channel and drain to the west and away from the Site. The northern seep has been historically altered and consists of an artificially formed drainage swale that was constructed to provide drainage connectivity to the Airline Trail that abuttings the northern property boundary.

These wetland areas are entirely forested with sparse understory vegetation with dominant plant species that include Red Maple (Acer rubrum), Sphagnum moss (Sphagnum spp.), Greenbrier (Smilax rotundifolia), Highbush Blueberry (Vaccinium corymbosum), Spicebush (Lindera benzoin) Japanese Barberry (Berberis thunbergii - Connecticut Invasive Species Council invasive plant species), and Cinnamon Fern (Osmunda cinnamomea).

Wetland 2

Wetland 2 consists of a wetland seep system that is located within the northcentral portion of the Site. This wetland drains southeast to a low point where a drainage swale was constructed to convey drainage from this wetland along the south side of the existing access road and out to Skinner Street and into a closed drainage system.

The drainage swale/IWC feature (identified as "IWC 2") currently crosses the existing access road at two (2) locations via a hard-bottom crossing and provides conveyance from Wetland 2, draining from north to southeast/east. IWC 2 has a sandy/stone bottom and is approximately one (1) to three (3) feet wide. IWC 2 continues to drain east before turning north to converge with IWC 3 on the adjacent property to the east before finally terminating at a catch basin associated with the Skinner Street closed drainage system. While small pockets of inundation and evidence of

scour and detritus accumulation were present throughout IWC 2, no significant flows were noted at the time of inspection.

Wetland 2 consists of complexes of mature hardwood forest associated with the core wetland area while IWC 2 is dominated by emergent and scrub/shrub vegetation as a result of historic disturbances. Dominant plant species associated with Wetland 2 includes Green Bulrush (Scirpus atrovirens), Sphagnum moss (Sphagnum spp.), Sweet Pepperbush (Clethera alnifolia), Highbush Blueberry (Vaccinium corymbosum), White Oak (Quercus alba), Soft Rush (Juncus effuses), Steeplebush (Spiraea tomentosa), Red Maple (Acer rubrum), and Sphagnum moss (Sphagnum spp.).

Wetland 3

Wetland 3, located to the northeast of the Site, consists of a forested hillside seep system that generally drains south along the eastern Site boundary. The majority of this resource is not located on the Site. Wetland 3 is a very stony hillside seep system with seasonal saturation and shallow seasonal flooding (<2 inches based on water staining observed on tree trunks). The majority of Wetland 3 consists of shallow hummock/hollow topography with diffuse flows until the southern terminus of the wetland system where, due to topography, it pinches down to a narrow IWC feature ("IWC 3").

IWC 3 consists of an approximately one (1) to two (2)-foot-wide channel with a sandy/stone bottom. This system eventually converges with the outfall from Wetland 2/IWC 2 on the adjacent property to the east and finally terminates at a catch basin that is part of the Skinner Street closed drainage system.

Dominant plant species associated with Wetland 3 includes Red Maple (Acer rubrum), Spicebush (Lindera benzoin), White Oak (Quercus alba), Highbush Blueberry (Vaccinium corymbosum), and Sweet Pepperbush (Clethera alnifolia).

Vernal Pools

During the wetland investigation, which was performed on November 21, 2019, Apt assessed all three (3) wetland resource areas for indications of vernal pool resources. Based on a lack of evidence of seasonally flooded areas observed on that date, it does not appear that any potential vernal pool breeding habitat exists on the Site.

Flood Zones

The Project area is mapped on FIRM PANEL #09007C 0134 G, dated August 28, 2008. Based upon the reviewed mapping, the Site is classified as Zone X, which is defined as areas of minimal flooding, typically above the 500-year flood level.

Construction Sequence

The following sequence of construction activities is projected based upon engineering judgement and best management practices. The Contractor shall not alter the construction sequence without prior written approval from the Engineer and CT DEEP. Any proposed changes to the construction sequence shall be submitted to the engineer in writing for review prior to the start of construction.

Pre-Construction

1. Contact the applicant, engineer, CT DEEP, and representatives to schedule a pre-construction meeting at least 5 days prior to the start of Construction. Physically flag the limits of clearing in the field as necessary to facilitate the pre-construction meeting.

2. Conduct a pre-construction meeting to discuss the proposed work and erosion and sedimentation control measures. The meeting should be attended by the applicant, the applicant representative(s), CT DEEP, the general contractor, designated sub-contractors and the person, or persons, responsible for the implementation, operation, monitoring and maintenance of the erosion and sedimentation measures. The construction procedures for the entire project shall be reviewed at this meeting.

3. Notify the applicant at least forty-eight (48) hours prior to commencement of any demolition, construction or regulated activity on this Project. Notify Call Before You Dig at 1-800-922-4455.

Phase 1

- Perform clearing of trees on site with no grubbing, stumps to remain. Clearing work shall be allowed during the winter months only if the ground is frozen.
- Clear and grub as required and shown on ec-1 and ec-2 to install the perimeter erosion sedimentation control measures and construction entrance.
- Install perimeter silt fence
- All wetland areas shall be protected prior to the start of major construction.
- Install gravel and compacted earth access roads.
- Install swales, TST-1, TST-2a, TST-2b, TST-3, and TST-4.
- Stockpile topsoil for reuse.
- Stabilize disturbed areas with loam and hydroseed with tackifier.
- Install tree protection if applicable.
- Notify Connecticut River Coastal Conservation District and Qualified Professional of completion phase for required site inspections in accordance with the General Permit.

Phase 2 (upon installation of temporary sediment traps)

- Perform remaining grubbing as necessary. Remove cut wood and stockpile for future use or remove off-site. Remove and dispose of demolition debris off-site in accordance with applicable laws.
- Stockpile topsoil.

- Perform any grading necessary for the shaping of the site east of the compacted earth access road.
- Loam and hydroseed (with temporary seed mix) with tackifier remaining disturbed areas.
- Notify Connecticut River Coastal Conservation District and Qualified Professional of completion phase for required site inspections in accordance with the General Permit.

Phase 3

- Install electrical conduit and concrete pads.
- Install racking posts for ground mounted solar panels
- Install ground mounted solar panels and complete electrical installation.
- Install perimeter chain link fence as shown on the plans.
- Notify Connecticut River Coastal Conservation District and Qualified Professional of completion phase for required site inspections in accordance with the General Permit.

Phase 4

- Hydroseed with tackifier all remaining disturbed areas.
- Hydroseed with tackifier the pollinator habitat.
- After substantial completion of the installation of the solar facility and the areas above TST's are deemed stabilized by the Qualified Inspector, complete remaining site work, including cleaning infiltration basins, removing baffles, and rebuilding overflow weirs with impervious core.
- Install/rebuild gravel access drives.
- Fine grade, rake, seed, and mulch all remaining disturbed areas.
- Notify Connecticut River Coastal Conservation District and Qualified Professional of completion phase for required site inspections in accordance with the General Permit.
- After the site is stabilized and with the approval of the permittee and qualified inspector, remove perimeter erosion and sedimentation controls.
- Issue notice of termination and perform project cleanup

Control Measures

The Contractor shall install and maintain staked silt fence around the site as perimeter control throughout the duration of construction. Construction entrances shall be installed at the locations where the contractor will be leaving disturbed areas of the site. Material stockpile area with appropriate controls shall be placed as needed throughout the limits of the site. Contractor shall install additional protection items including swales and stormwater basins/temporary sediment traps as shown on the plans.

Erosion and Sedimentation Controls General Notes

- All erosion and sediment control measures shall be constructed in accordance with the standards and specifications of the “2002 Connecticut Guidelines for Soil Erosion and Sediment Control” (CTDEEP Bulletin No. 34), and all amendments and addenda

thereto as published by the Connecticut Department of Energy and Environmental Protection.

- Land disturbance shall be kept to the minimum necessary for construction operations.

- Install all control measures as shown on the plans and elsewhere as necessary to prevent soil erosion and sediment transport to resource areas. Additional controls, not depicted on the plans, may be necessary. It is the responsibility of the construction contractor to assess the need for, and install additional controls that are warranted by site conditions.

- Inspect and maintain control measures throughout the construction period. Inspections shall be conducted after each rainstorm and during major storm events to determine if all control measures are adequately in place and effective.

- Sediment removed shall be properly disposed of in an appropriate upland area within the defined limits of disturbance

- Stockpile topsoil in level upland areas and contain using straw bales and/or silt fence around the perimeter.

- In accordance with the project specification, stabilization of open soil surfaces will be implemented within 7 days after grading or construction activities have temporarily or permanently ceased, unless weather prohibits seed germination.

- Where necessary, in accordance with the project specifications, suitable topsoil, seedbed preparation, and water shall be provided for effective establishment of vegetative cover.

- The construction contractor shall keep all paved roadways clean.

- Inspect and maintain temporary erosion and sedimentation controls until restoration has been determined to be effective as defined by conformance to the CTDEEP General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities.

- If construction activities are complete or have been temporarily halted for more than seven (7) days, stabilization activities will be implemented within three (3) days.

- Areas that remain disturbed but inactive for at least 30 days shall receive temporary seeding or soil protection within seven (7) days.

- Disturbed areas that do not establish a vegetative cover within 30 days of seeding shall have erosion control blankets installed. Prior to the erosion control blanket installation, the soil would be prepared with the application of lime, fertilizer, and seed.

- Areas that will be disturbed past the planting season will be covered with a long-term, non-vegetative stabilization method that will provide protection though the winter.

- Stabilization practices will be implemented as quickly as possible in accordance with the Guidelines.

- The contractor shall stabilize disturbed areas with temporary or permanent measures as quickly as possible after the land is disturbed.

Soil Stabilization and Protection

Temporary and permanent stabilization measures are proposed to provide protection against erosion both during and after construction. Land disturbance shall be kept to the minimum necessary for construction operations and existing vegetation shall be preserved to the maximum extent practicable.

The contractor shall maintain temporary erosion and sediment control measures until final stabilization has been achieved. Areas that will remain disturbed but inactive for at least 30 days shall receive temporary seeding or soil protection in accordance with the 2002 Guidelines. Areas that will remain disturbed beyond the seeding season shall receive long term non-vegetative stabilization and protection measures sufficient to protect disturbed areas through the winter. In all cases, stabilization and protection measures shall be implemented as soon as possible in accordance with the 2002 Guidelines.

The stabilization practices to be implemented during the construction of the proposed project are as follows:

Temporary Stabilization Practices

Temporary Vegetative Cover: Temporary vegetative cover shall be established on all exposed areas and areas that have not reached finish grade that will be inactive for more than seven days, or stockpiles not in use for 30 days, during the planting season of March 15 to July 1 and August 1 to October 15. This temporary vegetative cover shall consist of perennial rye grass. The rye grass shall be planted at a rate of 2 lbs./1,000 sq. ft. at a depth of ½ inch.

Temporary Soil Protection: Temporary soil protection shall only be used when a disturbed area will be inactive for a period of 30 or more consecutive days, but less than 5 months. If surfaces will not be reworked within 5 months Temporary Vegetative Cover shall be used. This temporary soil protection shall consist of mulches, tackifiers, and erosion control blankets which shall be biodegradable or photo-degradable within 2 years but without substantial degradation for 5

months. Additionally, they shall be capable of being applied evenly such that it provides 100% initial soil coverage, still adheres to the soil surface, and are free of contaminates and foreign material.

Silt Fence: Silt fence is constructed of a permeable geotextile fabric secured by wooden stakes driven into the ground. It is installed as a temporary barrier to prevent sediment from flowing into an unprotected and/or sensitive area from a disturbed site. Staked silt fence and hay bales or wood chip bags can be used separately or in conjunction as erosion control barriers. A silt fence should be installed downgradient of the work area and placed on contour or as directed by the engineer. Once the Project is complete and soils are stabilized, silt fence materials (i.e., geotextile fabric and wooden stakes) must be removed and properly disposed of off-site. It is important that this measure be installed on contour to reduce erosion along the system.

Construction Entrances: To prevent soil or sediment from being carried off-site by construction equipment, a construction entrance will be installed before construction traffic into and out of the Project area. The width of the anti-tracking pad shall not be less than the width of the ingress or egress. Adjacent roadways shall be swept daily to remove material that may be tracked onto pavement.

Permanent Stabilization Practices

All areas disturbed by construction and unpaved areas that are graded or disturbed by construction will receive topsoil and/or turf establishment. The Contractor may use other permanent stabilization practices approved by the Engineer and conforming to the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control.

Structural Measures

The existing slopes will be maintained to capture runoff from the Project site. The Project Area has been divided into areas of less than five (5) acres that will be controlled by temporary sediment traps.

Maintenance

All construction and related activities shall conform to the requirements of the plans or as directed by the Engineer. In general, all construction activities shall proceed in such a manner so as not to pollute any wetlands, watercourses, water body, and conduit carrying stormwater. The Contractor shall limit, in so far as possible, the surface area of earthen materials exposed by construction activity and immediately provide temporary and permanent stabilization practices to prevent soil erosion and contamination on the site. Water pollution control provisions and best management practices shall be administered during construction in accordance with the 2002 Guidelines and as directed by the Engineer.

The following Maintenance practices will be completed as part of this project:

Silt Fence: Inspect silt fence at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater. For dewatering operations, inspect frequently before, during, and after pumping operations. Remove the sediment deposits or install a secondary barrier upslope from the existing barrier when sediment deposits reach one half the height of the barrier.

Temporary Soil Protection: Inspect the temporary soil protection at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater for failures. If eroded or bare areas are found repair them immediately. When repetitive failures are observed at the same location, review conditions and limitations for use and determine if other measures are needed to reduce failure rate.

Temporary Sediment Trap (w/baffles): Inspect temporary sediment traps with baffles for failures at least once a week and within 24 hours of the end of a storm with a rainfall amount of 0.5 inch or greater. Remove sediment once it has accumulated to one half of minimum required volume of the wet storage, dewatering as needed. Restore trap to original dimensions. Repair/replace baffles when failure or deterioration is observed.

Construction Entrances: Maintain the entrance in a condition which will prevent tracking and washing sediment onto paved surfaces. Provide periodic top dressing with additional stone of additional length as conditions demand. Repair any measures used to trap sediment as needed. Remove all sediment spilled, dropped, washed or tracked onto paved surfaces. Adjacent roadways shall be left clean at the end of each day. If the construction is properly maintained and the action of a vehicle traveling over the stone pad is not sufficient to remove the majority of the sediment then either (1) increase the length of the construction entrance, (2) modify the construction access road surface, or (3) install washing racks and associated settling area or similar devices before the vehicle enters a paved surface.

Dewatering Wastewaters

The need for dewatering is not anticipated however, if encountered, dewatering wastewaters will be infiltrated into the ground unless otherwise directed by the Engineer. When dewatering is necessary, pumps used shall not be allowed to discharge directly into a wetland or watercourse.

Prior to any dewatering, the Contractor prepare a written proposal for specific methods and devices to be used including, but not limited to, the pumping of water into a temporary sedimentation basin, providing surge protection at the inlet or outlet of pumps, floating the intake of a pump, or any other method for minimizing and retaining the suspended solids. If the Contractor witnesses a pumping operation is causing turbidity problems, the Contractor shall halt said operation until a means of controlling the turbidity is corrected by the Contractor. No discharge of dewatering wastewater shall contain or cause a visible oil sheen, floating solids or foaming in the receiving water

Pumping settling basin, if required, will be sized by the contractor in accordance with the 2002 Guidelines and included as part of the dewatering plan.

Post-Construction Stormwater Management

Post-construction Guidelines

After the project is complete the developer will perform the following maintenance and restoration measures:

- Mowing and maintenance of the turf and vegetated areas will occur as needed.
- The stormwater basins will be inspected on a bi-annual basis. The basins will be cleaned and maintained on an as needed basis.

Other Controls

Waste Disposal

Construction site waste shall be properly managed and disposed of during the entire construction period. Additionally;

- A waste collection area will be designated. The selected area will minimize truck travel through the site and will not drain directly to the adjacent wetlands.
- Waste collection shall be scheduled regularly to prevent the containers from overfilling.
- Spills shall be cleaned up immediately.
- Defective containers that may cause leaks or spills will be identified through regular inspection. Any found to be defective will be repaired or replaced immediately.
- Any stockpiling of materials should be confined to the designated area as defined by the engineer.

Washout Areas

Washout of applicators, containers, vehicles and equipment for concrete shall be conducted in a designated washout area. No surface discharge of washout wastewaters from the area will be allowed. All concrete wash water will be directed into a container or pit such that no overflows can occur. Washout shall be conducted in an entirely self-contained system and will be clearly designed and flagged or signed where necessary. The washout area shall be located outside of any buffers and at least 50 feet from any stream, wetland or other sensitive water or natural resources as shown on the plans.

The designated area shall be designed and maintained such that no overflows can occur during rainfall or after snowmelt. Containers or pits shall be inspected at least once a week to ensure structural integrity, adequate holding capacity and will be repaired prior to future use if leaks are present. The contractor shall remove hardened concrete waste when it accumulates to a height of ½ of the container or pit or as necessary to avoid overflows. All concrete waste shall be disposed of in a manner consistent will all applicable laws, regulations and guidelines.

Anti-tracking Pads and Dust Control

Off –site vehicle tracking of sediments and the generation of dust shall be minimized. Temporary anti-tracking pads from the active work site to the existing pavement will be installed and maintained at the locations shown on the plans. The contractor shall:

- Maintain the entrance in a condition which will prevent tracking and washing of sediment onto paved surfaces.
- Provide periodic top dressing with additional stone or additional length as conditions demand.
- Repair any measures used to trap sediment as needed.
- Immediately remove all sediment spilled, dropped, washed or tracked onto paved surfaces.
- Ensure roads adjacent to a construction site are left clean at the end of each day.

If the construction entrance is being properly maintained and the action of a vehicle traveling over the stone pad is not sufficient to remove the majority of the sediment, then the contractor shall either:

- Increase the length of the construction entrance,
- Modify the construction access road surface, or

- Install washing racks and associated settling area or similar devices before the vehicle enters a paved surface.

For construction activities which cause airborne particulates, wet dust suppression shall be utilized. Construction site dust will be controlled by sprinkling the ground surface with water until it is moist on an as-needed basis. The volume of water sprayed shall be such that it suppresses dust yet also prevents the runoff of water.

Post-Construction

Upon completion of construction activities and stabilization of the site, the site shall be cleaned of construction sediment or debris and any remaining silt fence shall be removed prior to acceptance of the project. Sediment shall be properly disposed of in accordance with all applicable laws, regulations and guidelines.

Maintaining and Storing Vehicles and Equipment

The contractor shall take measures to prevent any contamination to wetlands and watercourses while maintaining and storing construction equipment on the site. All chemical and petroleum containers stored on site shall be provided with impermeable containment which will hold at least 110% of the volume of the largest container, or 10% of the total volume of all containers in the area, whichever is larger, without overflow from the containment area. All chemicals and their containers shall be stored under a roofed area except for those stored in containers of 100-gallon capacity or more, in which case double-walled tanks will suffice.

Inspections

Inspection Guidelines

All construction activities shall be inspected initially for Plan implementation and then weekly for Routine Inspections.

Plan Implementation inspections shall occur at least one and no more than three times during the first 90 days of construction to confirm compliance with the general permit. The plan implementation inspection(s) shall be completed by either a qualified soil erosion and sediment control professional or a qualified professional engineer would should be under contract and contacted within 30 days following commencement of the construction activities on site.

Routine inspections shall occur at least once every seven calendar days and within 24 hours of the end of a storm that generates a discharge. These inspections shall be conducted by a qualified inspector (provided by the permittee), as defined in the General Permit, and at a minimum will inspect, all areas disturbed by the construction activity that have not been stabilized, all erosion and sedimentation control measures, all structural control measures, soil stockpile areas, washout areas and locations where vehicles enter or exit the site shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and impacts to receiving waters.

For storms that end on a weekend, holiday or other time in which working hours will not commence within 24 hours, an inspection is required within 24 hours only for storms that equal or exceed 0.5 inches. For lesser storms, inspection shall occur immediately upon the start of subsequent normal working hours.

Where sites have been temporarily or finally stabilized, such inspection shall be conducted at least once every month for three months.

Qualified personnel provided by the Permittee shall conduct Inspections.

Items to be inspected: the following items shall be inspected as described below:

Item	Procedure
Silt Fence/Haybales	Inspected weekly and within 24 hours of rainfall to ensure that the fence line is intact with no breaks or tears. Repair/Replace when failure, or observed deterioration, is observed. Remove silt when it reaches ½ the height of the fence or bale.
Topsoil/Borrow Stockpiles	Inspect daily. Repair sediment barriers as necessary.
Temporary Soil Protection	Inspected weekly and within 24 hours of rainfall to ensure that the fence line is intact with no breaks or tears. Repair eroded/bare areas immediately. Reseed and mulch.
Temporary Sediment Trap	Inspected weekly and within 24 hours of rainfall to ensure that the fence line is intact with no breaks or tears. Repair eroded/bare areas immediately. Clean trap when sediment reaches half of the wet volume.
Construction Entrance	Inspect daily. Place additional stone, extend the length or remove and replace the stone. Clean paved surfaces of tracked sediment.

Corrective Actions

If at any time an inspection determines that the Site is out of compliance with the terms and conditions of this SWPCP and the General Permit, corrective actions shall be taken. Non-engineered corrective actions (as identified in the 2002 Guidelines and 2004 Connecticut Stormwater Quality Manual) shall be implemented on site within 24 hours and incorporated into a revised SWPCP within three calendar days of the date of inspection. Engineered corrective actions shall be implemented on site within seven days and incorporated into a revised SWPCP within ten calendar days of the date of inspection unless another schedule is specified.

Monitoring Requirements

A written report summarizing the scope of the inspection, the name(s) and qualifications of inspection personnel, the date and time of the inspection, major observations relative to the implementation of the Pollution Control Plan, and actions taken shall be completed within 24 hours of the inspection. This report shall be retained as part of the Stormwater Pollution Control Plan for at least five years after the date of the inspection.

Turbidity monitoring shall be conducted at the 2 locations depicted on the Plan utilizing a procedure consistent with 40 CFR Part 136 (http://www.epa.gov/region9/qa/pdfs/40cfr136_03.pdf) and may be taken manually or by an in-situ turbidity probe or other automatic sampling device equipped to take individual turbidity readings. The first sample shall be taken within the first hour of stormwater discharge from the

site and at least three grab samples shall be taken during a storm event and shall be representative of the flow and characteristics of the discharge. Sampling shall be conducted at least monthly when there is a discharge of stormwater from the site while construction activity is ongoing, until final stabilization of the drainage area associated with each outfall is achieved.

Samples shall be taken during normal working hours, which for this project shall be defined as Monday through Friday, 8 am to 6 pm. If a storm continues past working hours, sampling shall resume the following morning or the morning of the next working day following a weekend or Holiday, as long as the discharge continues. Sampling may be temporarily suspended when conditions exist that may reasonably pose a threat to the safety of the person taking the sample.

Within 30 days following the end of each month, the stormwater sampling results shall be submitted on the Stormwater Monitoring Report (SMR) and submit in accordance with Net DMR. If there is no stormwater discharge during a month, sampling is not required, however, SMR's indicating "no discharge" shall still be submitted as required.

Contractors

General

This section shall identify all Contractors and Subcontractors who will perform on site actions which may reasonably be expected to cause or have potential to cause pollution of the waters of the State.

Certification Statement

All contractors and subcontractors must sign the attached statement. All certification will be included in the Stormwater Pollution Control Plan.

Keeping Plans Current

The permittee shall amend the Plan whenever there is a change in contractors or subcontractors at the site, or a change in design, construction, operation, or maintenance at the site which has the potential for the discharge of pollutants to the waters of the state and which has not otherwise been addressed in the Plan or if the actions required by the Plan fail to prevent pollution.

Termination

Once the site has been stabilized and all final inspections have occurred, the registrant shall file a termination notice. Prior to filing for termination, all temporary erosion and sediment control measure shall be removed. A blank copy of the Notice of Termination Form is provided in Appendix F.

APPENDIX A
Site Location Map

C:\Users\Erin\Dropbox (APT GIS)\APT GIS Team Folder\Projects\CitrinePower\EastHampton_SkinnerSt\mxd\Citrine_EastHampton_Figure1_ProjectLocation.mxd

Legend

- Site
- Approximate Project Area

Figure 1
Project Location

Proposed Solar Facility
46 Skinner Street
East Hampton, CT

CITRINE

ALL-POINTS TECHNOLOGY CORPORATION

Map Notes:
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Maps, Middle Haddam and Moodus, CT (1984)
Map Scale: 1:24,000
Map Date: February 2020

2,000 1,000 0 2,000 Feet

APPENDIX B
Identification of Contractors and Certification Statements

CP EAST HAMPTON SOLAR I & II
EAST HAMPTON, CONNECTICUT

"I certify under penalty of law that I have read and understand the terms and conditions of the general permit for the discharge of stormwater associated with construction activity. I understand that as Contractor on the project, I am covered by this general permit, and must comply with the terms and conditions of this permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for this project."

GENERAL CONTRACTOR

Signed:_____ Date:_____

Title:_____

Firm:_____ Telephone:_____

Address:_____

_____

_____

SUBCONTRACTOR

Signed:_____ Date:_____

Title:_____

Firm:_____ Telephone:_____

Address:_____

_____

_____

Provide additional sheets if necessary

APPENDIX C
Stormwater Management Report

STORMWATER MANAGEMENT REPORT

PROPOSED

CP EAST HAMPTON SOLAR I & II

SOLAR PROJECTS

SKINNER STREET

(VOL. 437 PG. 989)

EAST HAMPTON, CONNECTICUT

MIDDLESEX COUNTY

Prepared for:

CP East Hampton Solar I, LLC
&
CP East Hampton Solar II, LLC

55 Greens Farms Road
Westport, CT 06880

Prepared by:

All-Points Technology Corporation, P.C.
567 Vauxhall Street Extension – Suite 311
Waterford, CT 06385

February, 2020

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Tables

Appendices

Introduction

At the request of CP East Hampton Solar I, LLC & CP East Hampton Solar II, LLC, All-Points Technology Corporation, P.C. ("APT") has undertaken the analysis of and design to address stormwater impacts resulting from the development of two (2) proposed solar-based electric generating facilities, one having an output of ±1.0 megawatt and the second having an output of ±0.975 megawatt in East Hampton, Connecticut (collectively, the "Project"). The Project, known as the CP East Hampton Solar I & II, involves the installation of solar panels and associated equipment at a property located behind 46 Skinner Street (Route 196)[1] in East Hampton, Connecticut ("Site").

The purpose of this report is to provide an analysis of the potential stormwater drainage impacts associated with the Project, as well as a description of the design to mitigate such potential stormwater drainage impacts. The design is intended to be in full compliance with the State and Town regulations while taking prevailing site conditions and practical factors into account.

Existing Site Conditions

The Site is a privately-owned and industrially zoned parcel located behind 46 Skinner Street (Route 196) in East Hampton, Connecticut, that consists of approximately 27.42± acres of undeveloped, wooded land. The property has an existing gravel drive off of Skinner Street and is partially cleared.

The Site's existing topography generally slopes downward from the center to the west, east and south. Slopes throughout the Project area range from approximately 0 to 15 percent. Elevations within the Site range from approximately 427 feet AMSL in the middle of the site side to approximately 405 feet AMSL on the western side, 395 feet AMSL on the south side, and 357 feet AMSL at the existing gravel drive at Skinner Street.

Developed Site Conditions

The Project will be constructed in the center of the Site, west of the existing gravel drive; access to the site will be provided via the existing gravel drive. The Project includes the installation of 6,994 solar panels and associated fencing, access drive extension, utility and stormwater management features. Of the ±27.42 acres, ±14.27 acres will require clearing and ±11.09 acres of that cleared area will require grubbing for the Project.

The proposed solar panels will be installed on a post driven ground mounted racking system, with minimal changes to the existing grades. As a result, the post-development site conditions will mimic the pre-developed site conditions. Areas of clearing and grubbing and any existing ground cover that is disturbed during construction will be reseeded with a low growth seed mix. In order to account for the change in ground cover, time of concentration, and the reduction of hydrologic soil group, five (5) grass lined stormwater management basins are proposed along the extents of the proposed Project area.

[1] Town of East Hampton Land Records – Vol. 437 PG. 989

Stormwater Management

Analysis Methodology

The hydrologic analysis was performed using the HydroCAD stormwater modeling system computer program developed by HydroCAD Software Solutions, LLC.

Hydrographs for each watershed were developed using the SCS Synthetic Unit Hydrograph Method with a Type III rainfall distribution. Hydrographs were developed for the NOAA Atlas 14, Volume 10, Version 2 Precipitation 2-, 25-, 50-, and 100-year storm event with rainfall depths of 3.39, 6.33, 7.16, and 8.07 inches respectively.

The existing and proposed drainage areas used in the calculations are illustrated on the Existing and Proposed Drainage Area Plans (EDA-1 & PDA-1). These maps and the corresponding HydroCAD output are attached.

Utilizing Appendix I, Stormwater Management at Solar Array Construction Projects, provided by Connecticut Department of Energy & Environmental Projection ("CT DEEP"), this hydrologic analysis will reflect a reduction of the Hydrologic Soil Group ("HSG") present on-site by one (1) step (e.g. soils of HSG B shall be considered HSG C). This reduction, as indicated by CT DEEP, is intended to account for the compaction of soils that results from extensive machinery traffic during construction of the array. The Water Quality Volume ("WQV") for the site will be calculated assuming that the solar panels, roadways, gravel surfaces, and transformer pads are effectively impervious cover. See Appendix F.

Existing Drainage Patterns

The proposed Project area drains from a high point in the middle of the site to the west, east & south. The majority of the site ultimately drains to Skinner Street (Route 196).

The Site was modeled at four (4) Analysis Points ("AP-1", "AP-2", "AP-3" and "AP-4"). AP-1 & AP-3 are along the western clearing limits, which drain onto the adjacent property. AP-2 drains to an existing wetland and ultimately an intermittent watercourse along the existing site access drive. AP-4 is the southern & eastern clearing limits, which ultimately drain to Skinner Street. Peak discharges have been computed at the points of study for the 2-, 25-, 50-, and 100-year storm events.

The intermittent watercourse currently crosses the existing access drive at two locations via hard bottom crossings and provides conveyance from AP-2. The watercourse is approximately 1 to 3 feet wide with a sandy/stone bottom and drains from north to southeast/east before finally terminating at a catch basin associated with the Skinner Street closed drainage system.

The project site soils identified by the United States Department of Agriculture (USDA) Natural Resources Conservation Service consist of Map Unit Symbol 61B, named "Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony"; 71C, named "Nipmuck-Brimfield-Rock outcrop complex, 3 to 15 percent slopes"; 308, named "Udorthents, smoothed"; and 71E, named "Nipmuck-Brimfield-Rock outcrop complex, 15 to 45 percent slopes". Map Unit Symbols 61B and 71C are classified in the "B" hydrologic soil group rating. Map Unit Symbol 308 is classified in the "C" hydrologic soil group rating. Map Unit Symbol 71E is classified in the "D" hydrologic soil group rating.

The pre-developed discharges at the Analysis Point are tabulated in Table 1-1.

Table 1-1

Analysis Point	**Pre-developed Peak Storm Runoff (Q), cubic feet per second (cfs)**			
	2-year	**25-year**	**50-year**	**100-year**
AP-1	0.80	4.89	6.33	7.99
AP-2	1.52	6.41	8.01	9.83
AP-3	0.40	3.11	4.10	5.27
AP-4	5.01	14.35	17.14	20.22

Proposed Drainage Patterns

The Project will require clearing and grubbing in the immediate area for the proposed solar installation, including the necessary utilities, access drive extension, and stormwater management features, resulting in approximately ±14.93 acres of disturbance. Overall, hydrologically, through the addition of catchment areas associated with the individual drainage areas of each proposed basin, the post-developed condition is designed to mimic the pre-developed condition.

To manage the increase in post-development runoff due to the change in cover type associated with converting woods to meadow and the reductions in one full HSG within the proposed limit of disturbance, five (5) grass-lined stormwater management basins are proposed along the edges of the project area. The basins manage the stormwater runoff through a combination of infiltration and a broad crested overflow weir. These basins also provide the necessary water quality treatment volume for the additional impervious area, as recommended by Appendix I. See Appendix C for post-construction stormwater calculations.

Infiltration rates for the four (4) western and northern grass-lined stormwater management basins are modeled with a maximum rate of 5.00 inches/hour as allowed under the 2004 Stormwater Quality Manual; the southeastern grass-lined infiltration basin is modeled with a rate of 0.80 inches/hour. The infiltration rates were determined from infiltration testing conducted by GeoInsight, Inc, on January 10, 2020. The results table and test pit results are included in Appendix E. Each basin is designed with a rip-rap overflow weir and level spreader.

Swales are proposed along the eastern and southern limits of disturbance to facilitate all the flow reaching the southeastern basin. The swales are designed to convey the 100-year storm event without overtopping. A biodegradable erosion control blanket will be installed within the swales to protect against erosion until turf has been established.

Since the proposed development mimics the existing conditions, the post-development condition was modeled using the same Analysis Point. Peak discharges have been computed at the point of study for the 2-year, 25-year, 50-year, and 100-year storm events. The post-development discharges at each point of study are tabulated in Table 1-2.

Table 1-2

Analysis Point	**Post-developed Peak Storm Runoff (Q), cubic feet per second (cfs)**			
	2-year	**25-year**	**50-year**	**100-year**
AP-1	0.01	1.34	3.94	6.91
AP-2	0.90	2.31	2.75	4.48
AP-3	0.03	1.22	1.78	3.30
AP-4	1.74	5.59	6.77	12.70

Driveway Pipe Crossings

The Project will require two driveway crossings of an existing intermittent water course. Each proposed crossing is a 24" RCP pipe which will be embedded 6" to provide a natural stream bottom. The pipes were designed to convey the 50-year storm event. The crossings were also checked to make sure they can convey the 100-year storm event without overtopping.

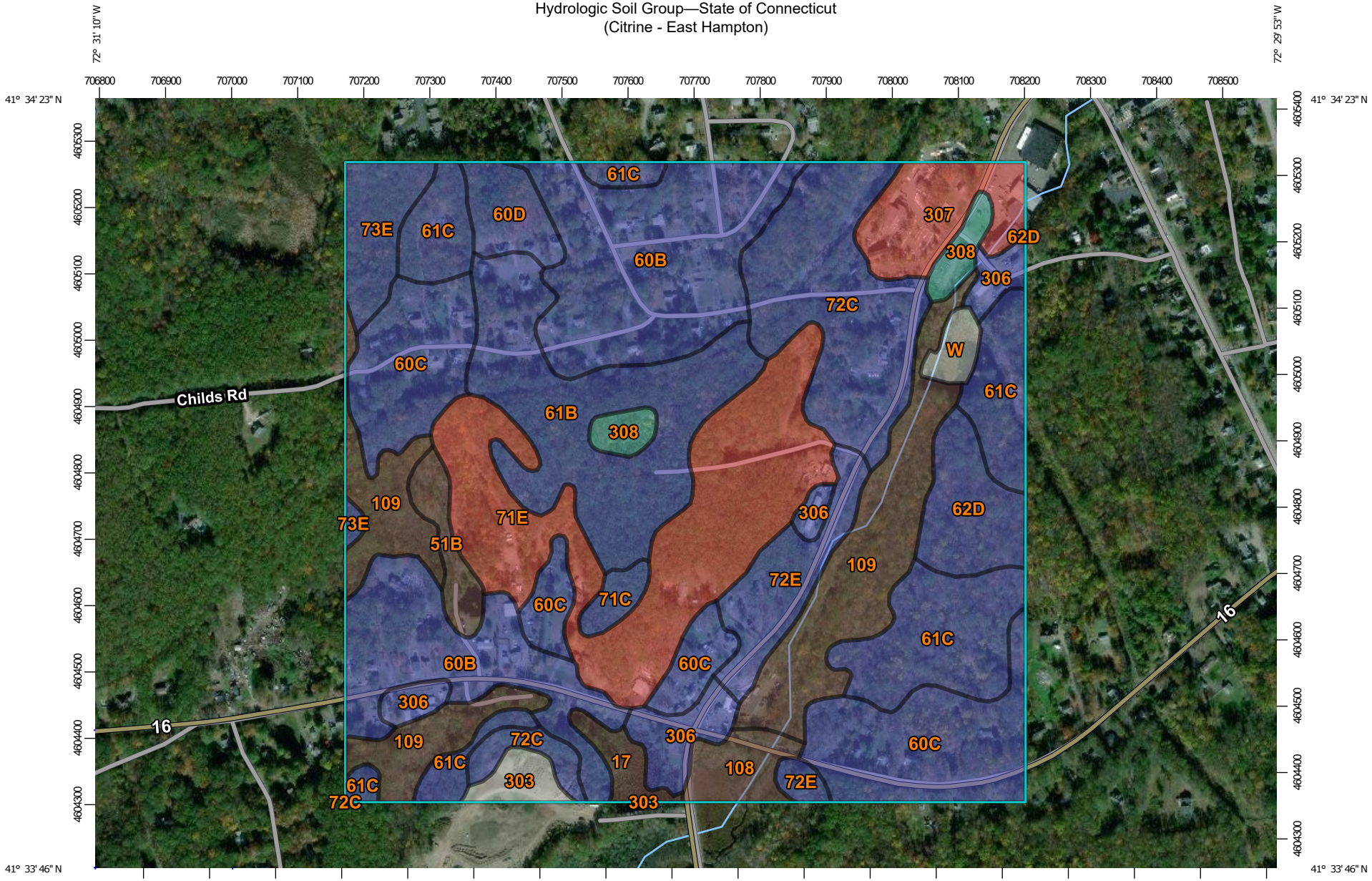
The new culverts will comply with the requirements of the New England District of the Corps General Permit 19 Stream, River & Brook Crossing and therefore shall be eligible as a Self-Verification Project. These requirements include: the tributary watershed to the culvert does not exceed 1 sq. mile; for a crossing constructed using a pipe culvert, the inverts are set such that not less than 25% of the pipe diameter or 12 inches, whichever is less, is set below the streambed elevation; their gradient no steeper than the streambed gradient upstream or downstream of the existing crossing structures; the culvert is backfilled with natural substrate material matching upstream and downstream streambed substrate; the structure, including inlet and outlet protection measures, does not otherwise impede the passage of fish and other aquatic organisms; and, the structure allows for continuous flow of the 50-year frequency storm flows.

Conclusion

The stormwater management for the proposed site has been designed such that the post-development peak discharges to the waters of the State of Connecticut for the 2-, 25-, 50-, and 100- year storm events are less than the pre-development peak discharges. As a result, the proposed solar array will not result in any adverse conditions to the surrounding areas and properties.

APPENDIX A: NRCS SOIL SURVEY

Hydrologic Soil Group—State of Connecticut
(Citrine - East Hampton)



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Lines

A
A/D
B
B/D
C
C/D
D
Not rated or not available

Soil Rating Points

A
A/D
B
B/D
C
C/D
D
Not rated or not available

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 1:12,000.

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

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
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: State of Connecticut
Survey Area Data: Version 19, Sep 13, 2019

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

Date(s) aerial images were photographed: Aug 27, 2016—Oct 30, 2017

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
17	Timakwa and Natchaug soils, 0 to 2 percent slopes	B/D	2.1	0.9%
51B	Sutton fine sandy loam, 0 to 8 percent slopes, very stony	B/D	3.1	1.2%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	37.8	15.3%
60C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes	B	28.3	11.5%
60D	Canton and Charlton soils, 15 to 25 percent slopes	B	4.1	1.7%
61B	Canton and Charlton fine sandy loams, 0 to 8 percent slopes, very stony	B	23.0	9.3%
61C	Canton and Charlton fine sandy loams, 8 to 15 percent slopes, very stony	B	23.3	9.5%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	B	6.9	2.8%
71C	Nipmuck-Brimfield-Rock outcrop complex, 3 to 15 percent slopes	B	1.6	0.7%
71E	Nipmuck-Brimfield-Rock outcrop complex, 15 to 45 percent slopes	D	30.3	12.3%
72C	Nipmuck-Brookfield complex, 3 to 15 percent slopes, very rocky	B	21.0	8.5%
72E	Nipmuck-Brookfield complex, 15 to 45 percent slopes, very rocky	B	8.1	3.3%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B	5.7	2.3%
108	Saco silt loam	B/D	3.8	1.5%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
109	Fluvaquents-Udifluvents complex, frequently flooded	B/D	25.3	10.3%
303	Pits, quarries		2.2	0.9%
306	Udorthents-Urban land complex	B	7.3	2.9%
307	Urban land	D	7.8	3.2%
308	Udorthents, smoothed	C	3.2	1.3%
W	Water		1.7	0.7%
Totals for Area of Interest			**246.5**	**100.0%**

Description

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

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

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

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

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

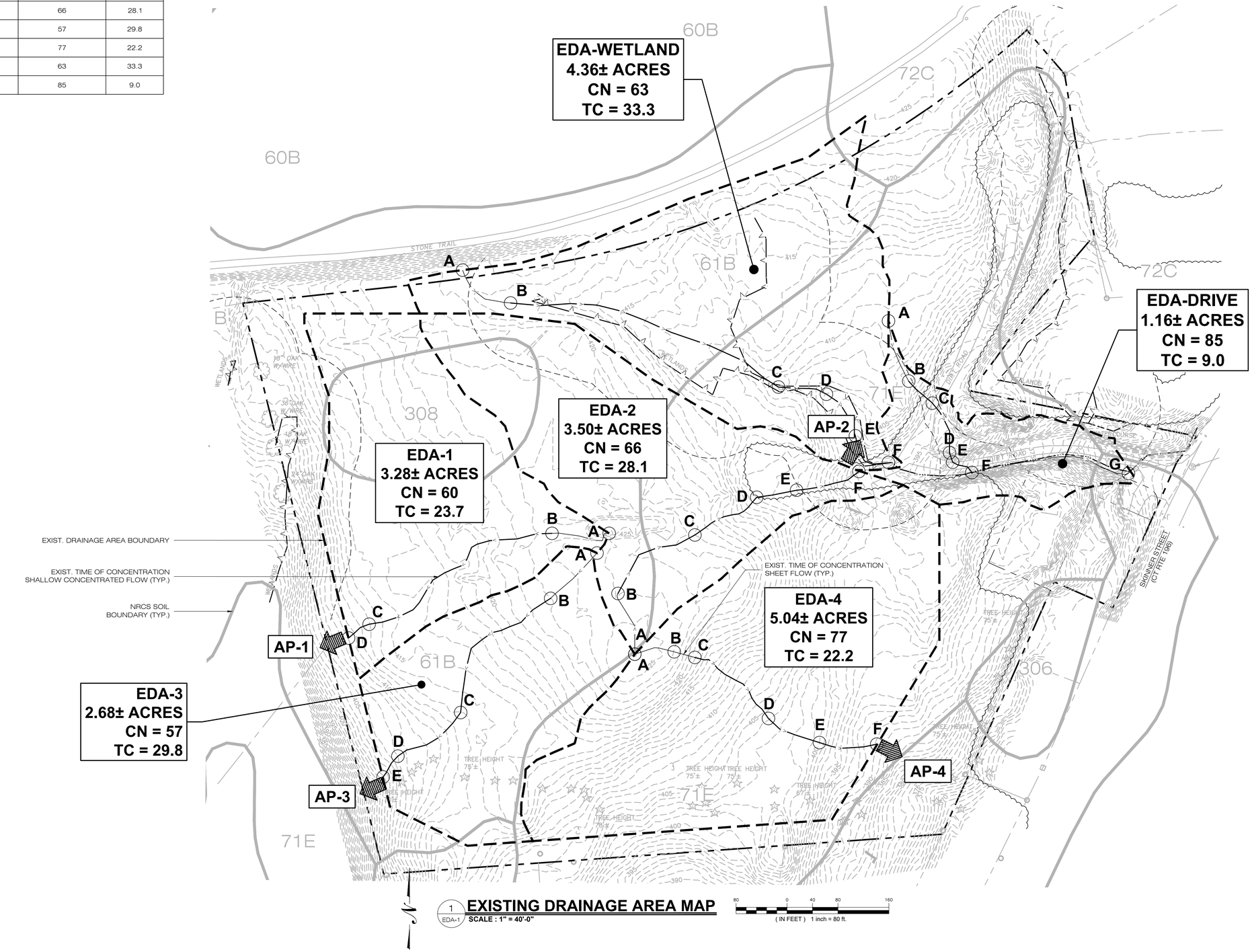
Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over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

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

APPENDIX B: EXISTING DRAINAGE AREA MAP (EDA-1) & HYDROLOGIC COMPUTATION (HYDROCAD)

EXISTING DRAINAGE AREAS

	TOTAL AREA (ACRES)	COMPOSITE CN	TC (MINS.)
EDA-1	3.28±	60	23.7
EDA-2	3.50±	66	28.1
EDA-3	2.68±	57	29.8
EDA-4	5.04±	77	22.2
EDA-WETLAND	4.36±	63	33.3
EDA-DRIVE	1.16±	85	9.0



1 EDA-1 **EXISTING DRAINAGE AREA MAP**
SCALE : 1" = 40'-0"

80 0 40 80 160
(IN FEET) 1 inch = 80 ft.

CITRINE
55 GREENS FARMS ROAD
WESTPORT, CT 06880
OFFICE: (203)-557-5554

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

CONCEPT

NO	DATE	REVISION
0	02/14/20	FOR REVIEW: BJP
1		
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: SKINNER STREET PROPERTIES LLC
ADDRESS: 9 SEQUONIA TRAIL EAST HAMPTON, CT 06424

EAST HAMPTON INDUSTRIAL PARK GROUND MOUNT

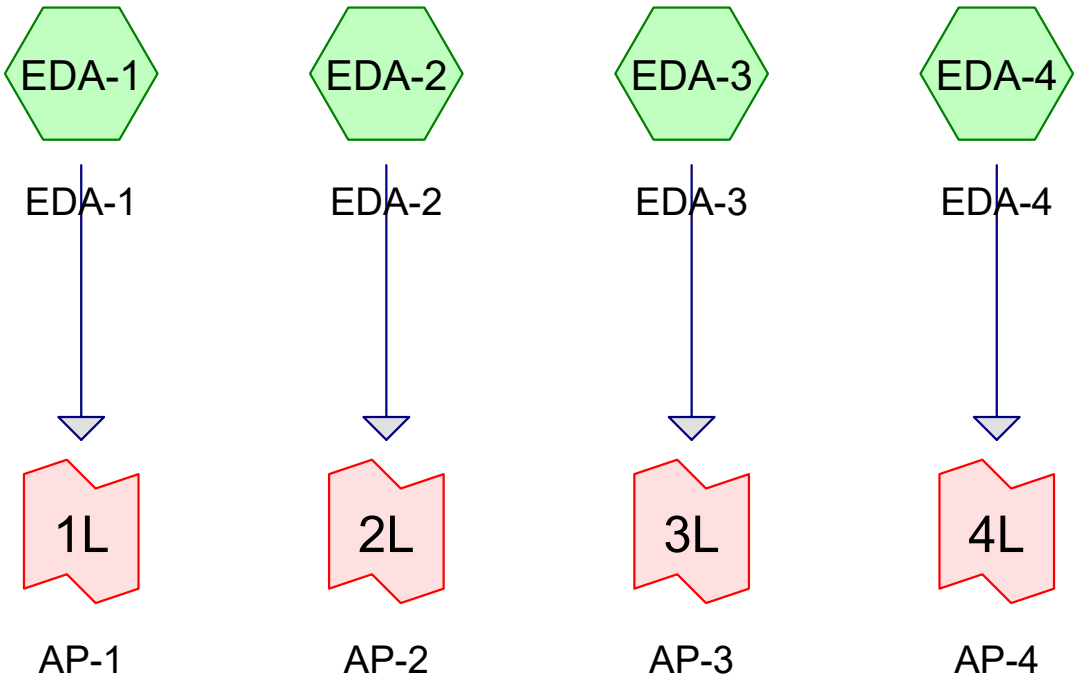
SITE ADDRESS: 46 SKINNER STREET EAST HAMPTON, CT 06424

APT FILING NUMBER: CT567110

DRAWN BY: CSH
DATE: 02/14/20
CHECKED BY: BJP

SHEET TITLE:
EXISTING DRAINAGE AREA MAP

SHEET NUMBER:
EDA-1



Subcat Reach Pond Link

Routing Diagram for CT567110_EastHampton-EX
Prepared by {enter your company name here}, Printed 2/14/2020

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.271	73	Brush, Good, HSG D (EDA-2)
6.346	55	Woods, Good, HSG B (EDA-1, EDA-2, EDA-3)
1.444	70	Woods, Good, HSG C (EDA-1, EDA-2)
6.499	77	Woods, Good, HSG D (EDA-2, EDA-3, EDA-4)
14.559	**67**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
6.346	HSG B	EDA-1, EDA-2, EDA-3
1.444	HSG C	EDA-1, EDA-2
6.769	HSG D	EDA-2, EDA-3, EDA-4
0.000	Other	
14.559		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	0.271	0.000	0.271	Brush, Good	EDA-2
0.000	6.346	1.444	6.499	0.000	14.288	Woods, Good	EDA-1, EDA-2, EDA-3, EDA-4
0.000	**6.346**	**1.444**	**6.769**	**0.000**	**14.559**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-1: EDA-1 Runoff Area=142,743 sf 0.00% Impervious Runoff Depth=0.48"
Flow Length=483' Tc=23.7 min CN=60 Runoff=0.80 cfs 0.132 af

Subcatchment EDA-2: EDA-2 Runoff Area=154,894 sf 0.00% Impervious Runoff Depth=0.74"
Flow Length=569' Tc=28.1 min CN=66 Runoff=1.52 cfs 0.220 af

Subcatchment EDA-3: EDA-3 Runoff Area=116,873 sf 0.00% Impervious Runoff Depth=0.38"
Flow Length=516' Tc=29.8 min CN=57 Runoff=0.40 cfs 0.084 af

Subcatchment EDA-4: EDA-4 Runoff Area=219,666 sf 0.00% Impervious Runoff Depth=1.35"
Flow Length=439' Tc=22.2 min CN=77 Runoff=5.01 cfs 0.567 af

Link 1L: AP-1 Inflow=0.80 cfs 0.132 af
Primary=0.80 cfs 0.132 af

Link 2L: AP-2 Inflow=1.52 cfs 0.220 af
Primary=1.52 cfs 0.220 af

Link 3L: AP-3 Inflow=0.40 cfs 0.084 af
Primary=0.40 cfs 0.084 af

Link 4L: AP-4 Inflow=5.01 cfs 0.567 af
Primary=5.01 cfs 0.567 af

Total Runoff Area = 14.559 ac Runoff Volume = 1.003 af Average Runoff Depth = 0.83"
100.00% Pervious = 14.559 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment EDA-1: EDA-1

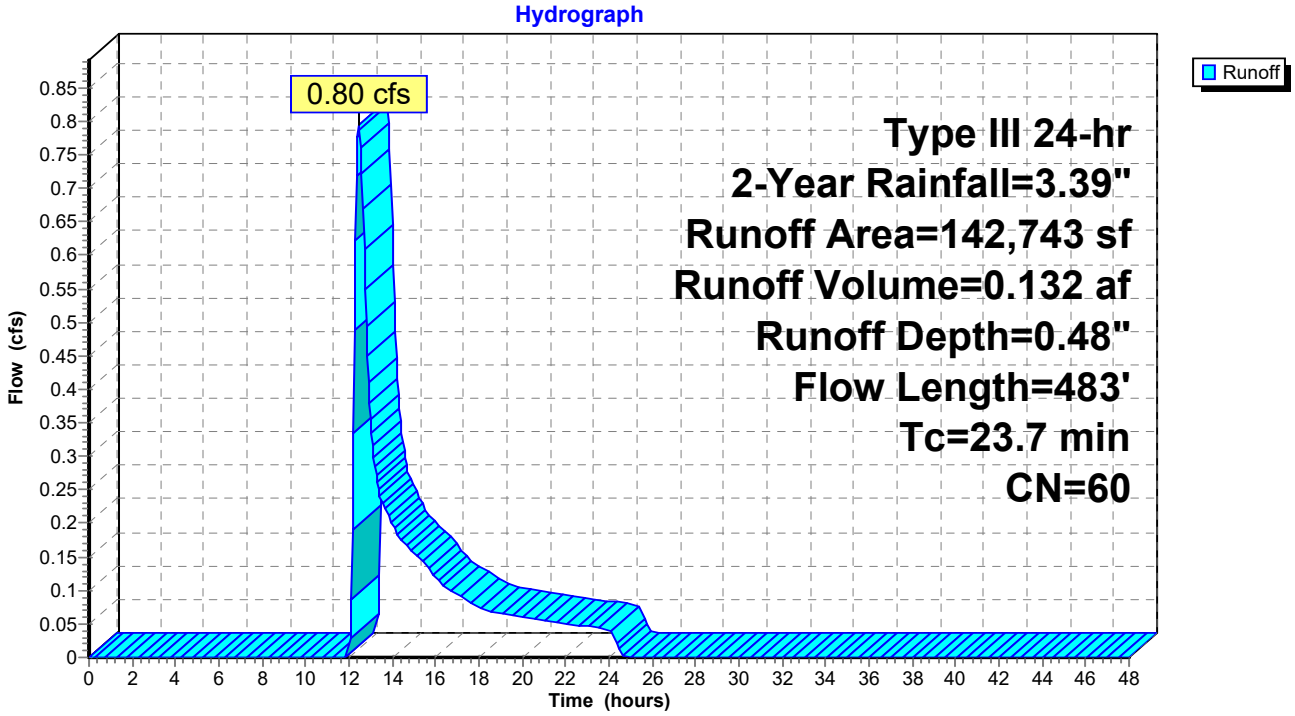
Runoff = 0.80 cfs @ 12.46 hrs, Volume= 0.132 af, Depth= 0.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
95,903	55	Woods, Good, HSG B
46,840	70	Woods, Good, HSG C
142,743	60	Weighted Average
142,743		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	100	0.0350	0.10		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
6.5	343	0.0306	0.87		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	40	0.0750	1.37		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
23.7	483	Total			

Subcatchment EDA-1: EDA-1



Summary for Subcatchment EDA-2: EDA-2

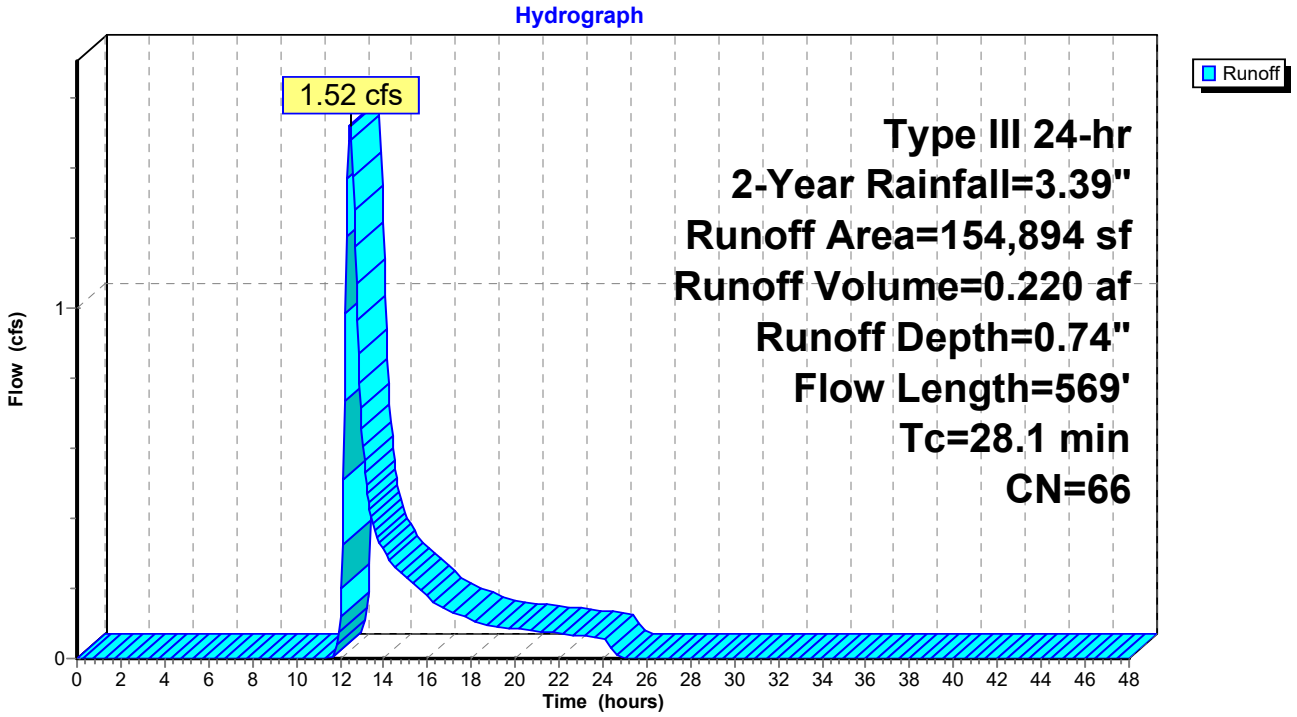
Runoff = 1.52 cfs @ 12.46 hrs, Volume= 0.220 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
72,319	55	Woods, Good, HSG B
16,039	70	Woods, Good, HSG C
54,741	77	Woods, Good, HSG D
11,795	73	Brush, Good, HSG D
154,894	66	Weighted Average
154,894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	100	0.0200	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
4.0	163	0.0184	0.68		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.3	117	0.0855	1.46		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	63	0.0300	1.21		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
1.0	126	0.0873	2.07		**Shallow Concentrated Flow, E-F** Short Grass Pasture Kv= 7.0 fps
28.1	569	Total			

Subcatchment EDA-2: EDA-2



Summary for Subcatchment EDA-3: EDA-3

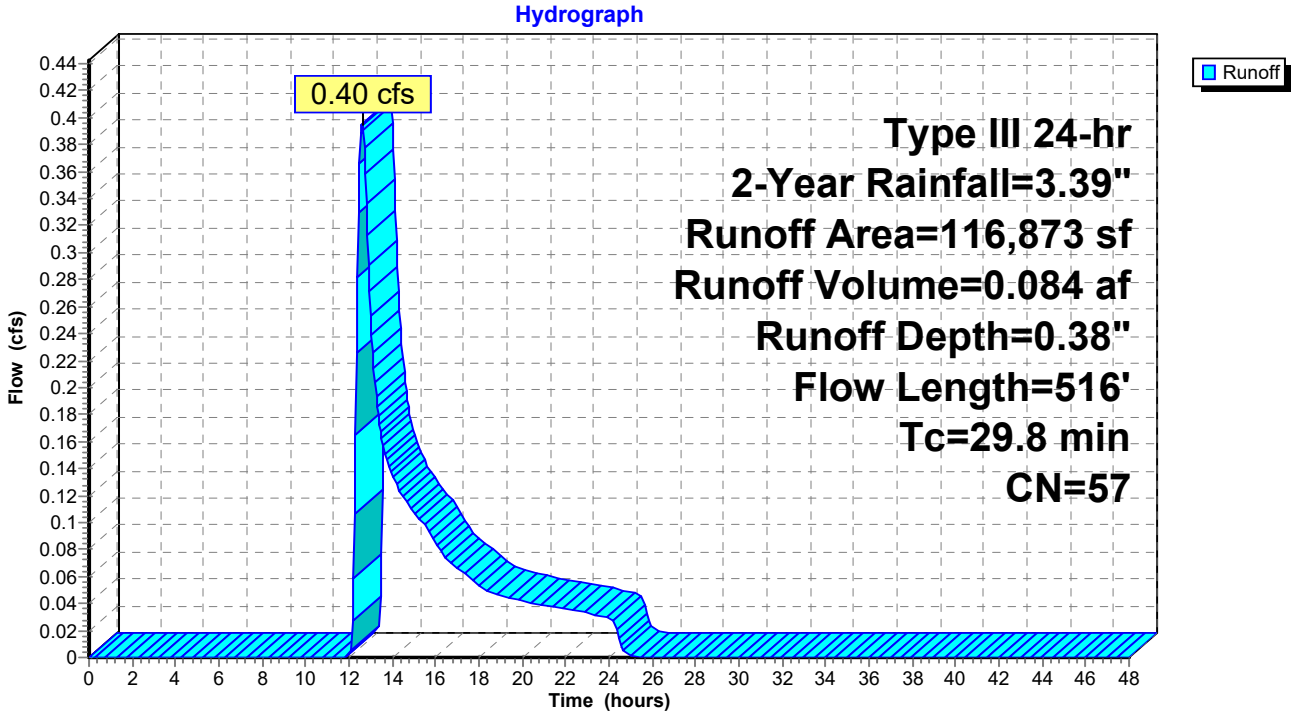
Runoff = 0.40 cfs @ 12.61 hrs, Volume= 0.084 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
108,205	55	Woods, Good, HSG B
8,668	77	Woods, Good, HSG D
116,873	57	Weighted Average
116,873		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.4	100	0.0150	0.07		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
4.1	252	0.0417	1.02		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	124	0.0480	1.10		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.4	40	0.1250	1.77		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
29.8	516	Total			

Subcatchment EDA-3: EDA-3



Summary for Subcatchment EDA-4: EDA-4

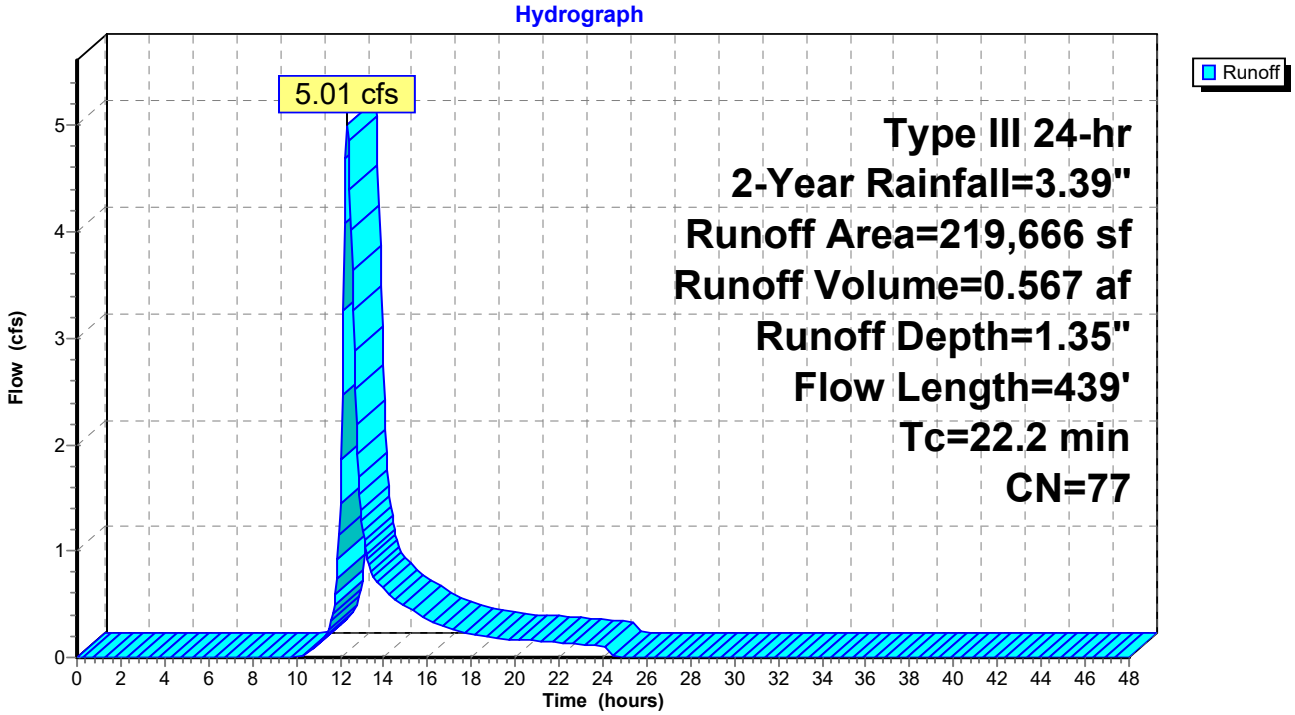
Runoff = 5.01 cfs @ 12.32 hrs, Volume= 0.567 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
219,666	77	Woods, Good, HSG D
219,666		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	67	0.0224	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
3.8	33	0.1515	0.14		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.39"
1.7	157	0.0955	1.55		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
1.3	90	0.0550	1.17		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
0.9	92	0.1087	1.65		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
22.2	439	Total			

Subcatchment EDA-4: EDA-4

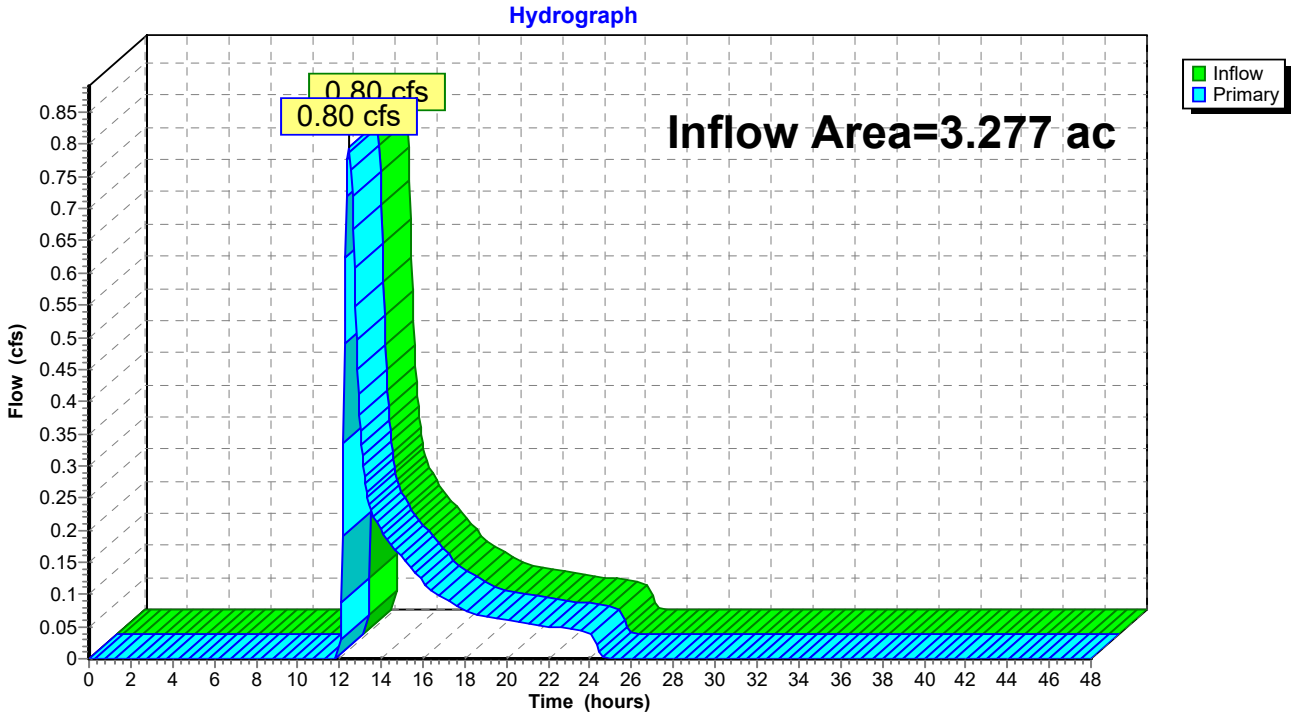


Summary for Link 1L: AP-1

Inflow Area = 3.277 ac, 0.00% Impervious, Inflow Depth = 0.48" for 2-Year event
Inflow = 0.80 cfs @ 12.46 hrs, Volume= 0.132 af
Primary = 0.80 cfs @ 12.46 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: AP-1

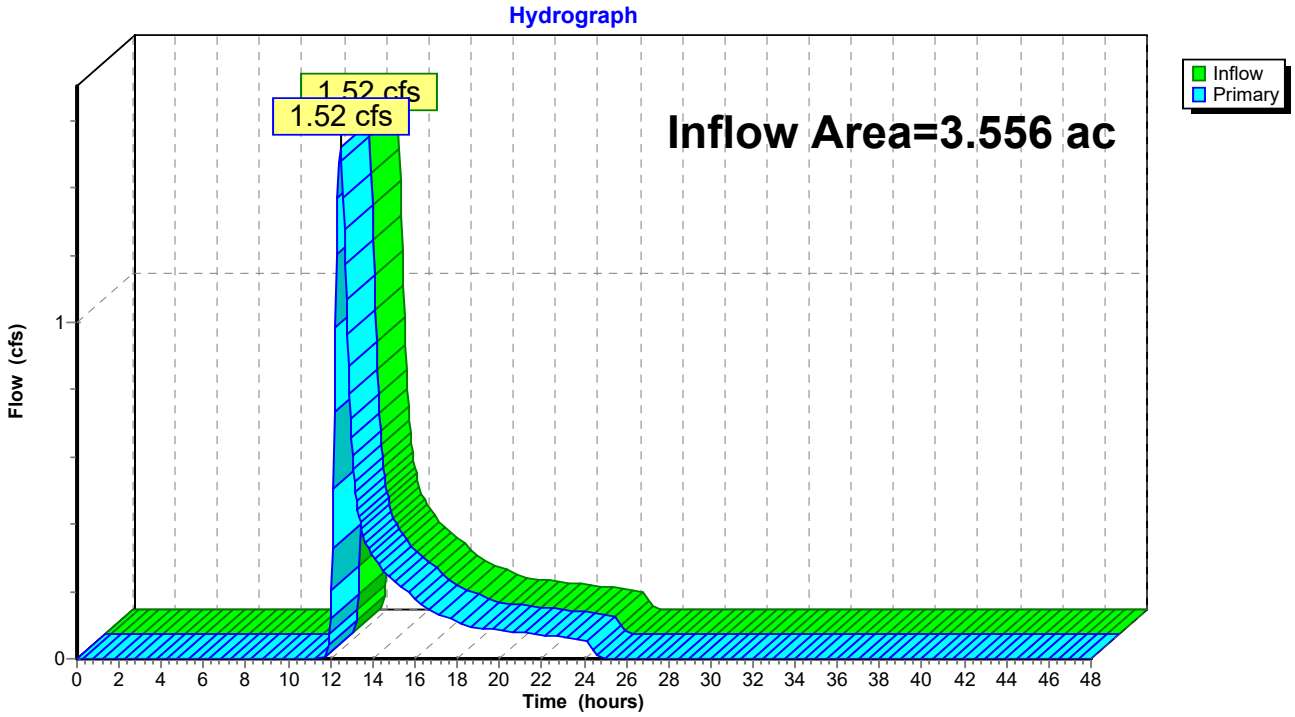


Summary for Link 2L: AP-2

Inflow Area = 3.556 ac, 0.00% Impervious, Inflow Depth = 0.74" for 2-Year event
Inflow = 1.52 cfs @ 12.46 hrs, Volume= 0.220 af
Primary = 1.52 cfs @ 12.46 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

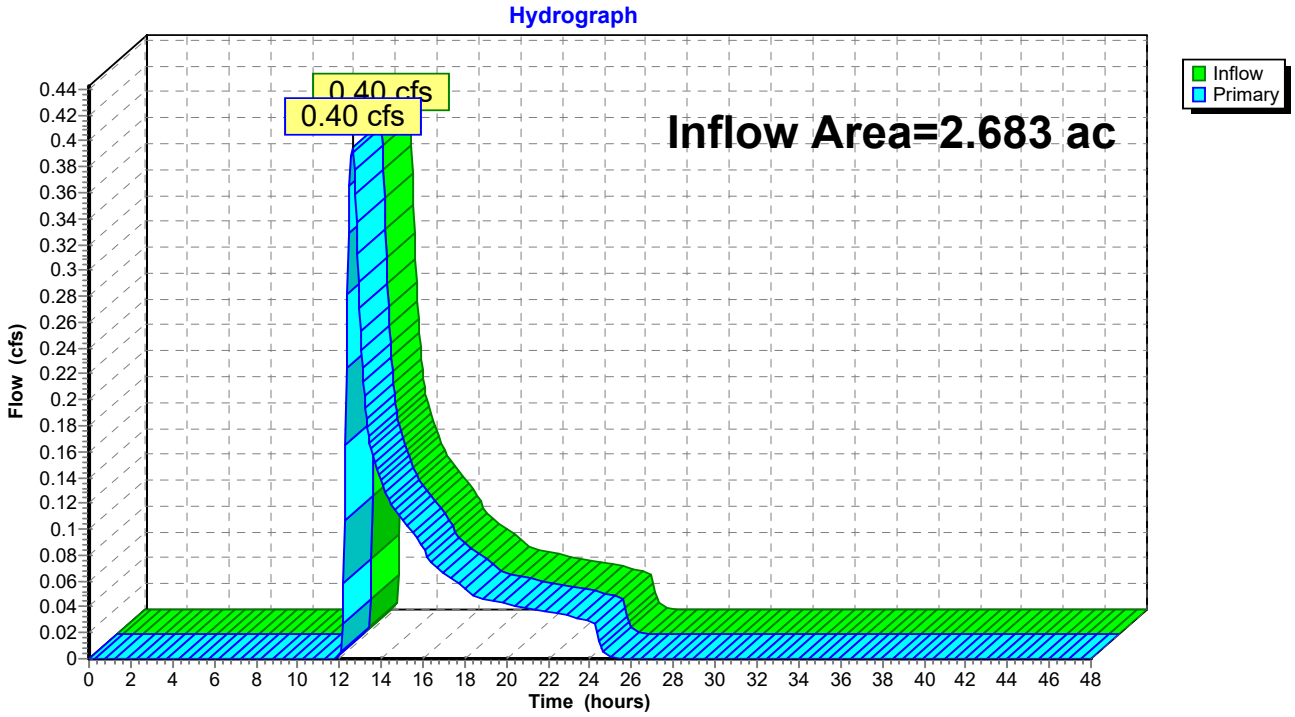


Summary for Link 3L: AP-3

Inflow Area = 2.683 ac, 0.00% Impervious, Inflow Depth = 0.38" for 2-Year event
Inflow = 0.40 cfs @ 12.61 hrs, Volume= 0.084 af
Primary = 0.40 cfs @ 12.61 hrs, Volume= 0.084 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 3L: AP-3

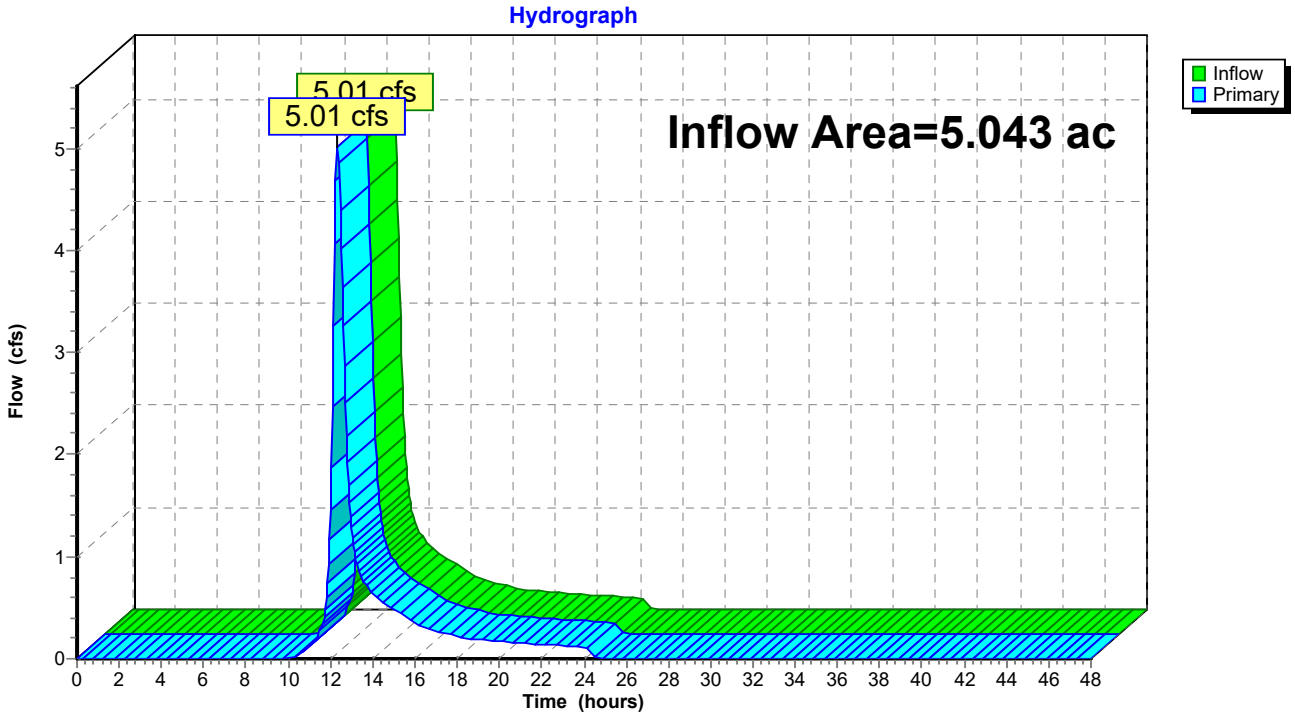


Summary for Link 4L: AP-4

Inflow Area = 5.043 ac, 0.00% Impervious, Inflow Depth = 1.35" for 2-Year event
Inflow = 5.01 cfs @ 12.32 hrs, Volume= 0.567 af
Primary = 5.01 cfs @ 12.32 hrs, Volume= 0.567 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 4L: AP-4



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-1: EDA-1 Runoff Area=142,743 sf 0.00% Impervious Runoff Depth=2.14"
Flow Length=483' Tc=23.7 min CN=60 Runoff=4.89 cfs 0.585 af

Subcatchment EDA-2: EDA-2 Runoff Area=154,894 sf 0.00% Impervious Runoff Depth=2.69"
Flow Length=569' Tc=28.1 min CN=66 Runoff=6.41 cfs 0.796 af

Subcatchment EDA-3: EDA-3 Runoff Area=116,873 sf 0.00% Impervious Runoff Depth=1.88"
Flow Length=516' Tc=29.8 min CN=57 Runoff=3.11 cfs 0.420 af

Subcatchment EDA-4: EDA-4 Runoff Area=219,666 sf 0.00% Impervious Runoff Depth=3.77"
Flow Length=439' Tc=22.2 min CN=77 Runoff=14.35 cfs 1.584 af

Link 1L: AP-1 Inflow=4.89 cfs 0.585 af
Primary=4.89 cfs 0.585 af

Link 2L: AP-2 Inflow=6.41 cfs 0.796 af
Primary=6.41 cfs 0.796 af

Link 3L: AP-3 Inflow=3.11 cfs 0.420 af
Primary=3.11 cfs 0.420 af

Link 4L: AP-4 Inflow=14.35 cfs 1.584 af
Primary=14.35 cfs 1.584 af

Total Runoff Area = 14.559 ac Runoff Volume = 3.385 af Average Runoff Depth = 2.79"
100.00% Pervious = 14.559 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment EDA-1: EDA-1

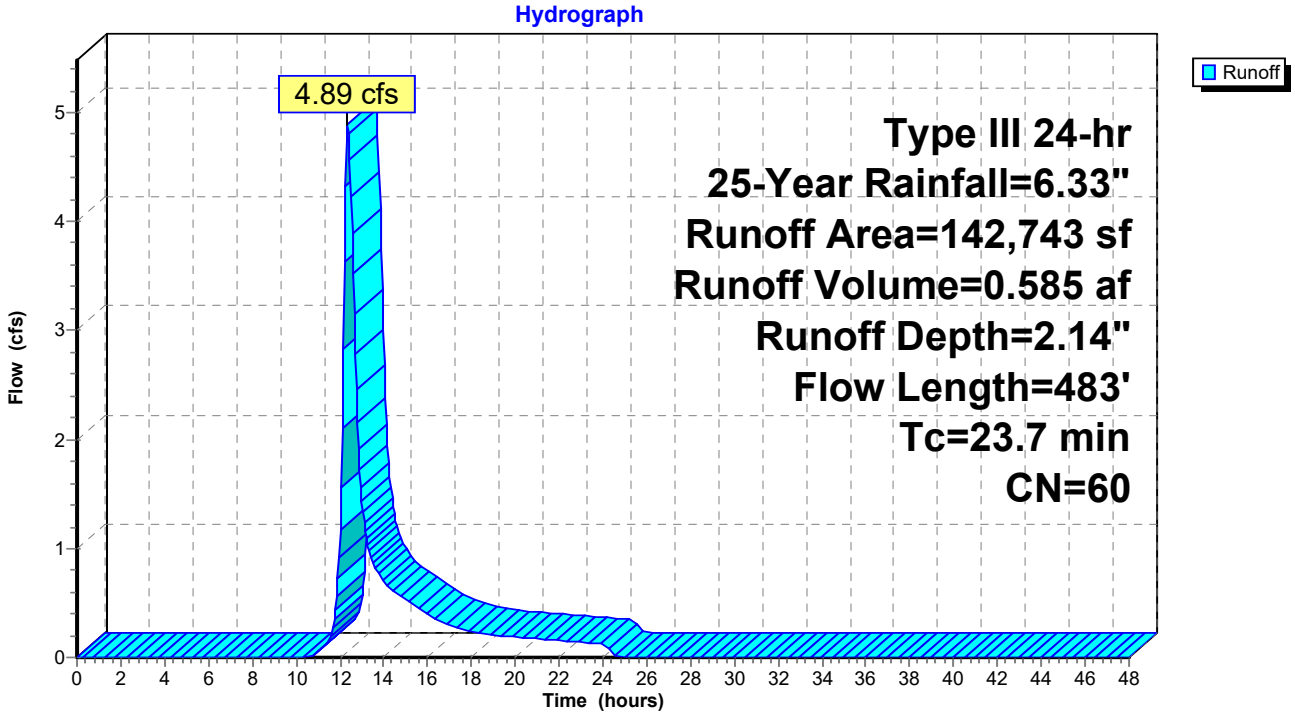
Runoff = 4.89 cfs @ 12.36 hrs, Volume= 0.585 af, Depth= 2.14"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
95,903	55	Woods, Good, HSG B
46,840	70	Woods, Good, HSG C
142,743	60	Weighted Average
142,743		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	100	0.0350	0.10		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
6.5	343	0.0306	0.87		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	40	0.0750	1.37		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
23.7	483	Total			

Subcatchment EDA-1: EDA-1



Summary for Subcatchment EDA-2: EDA-2

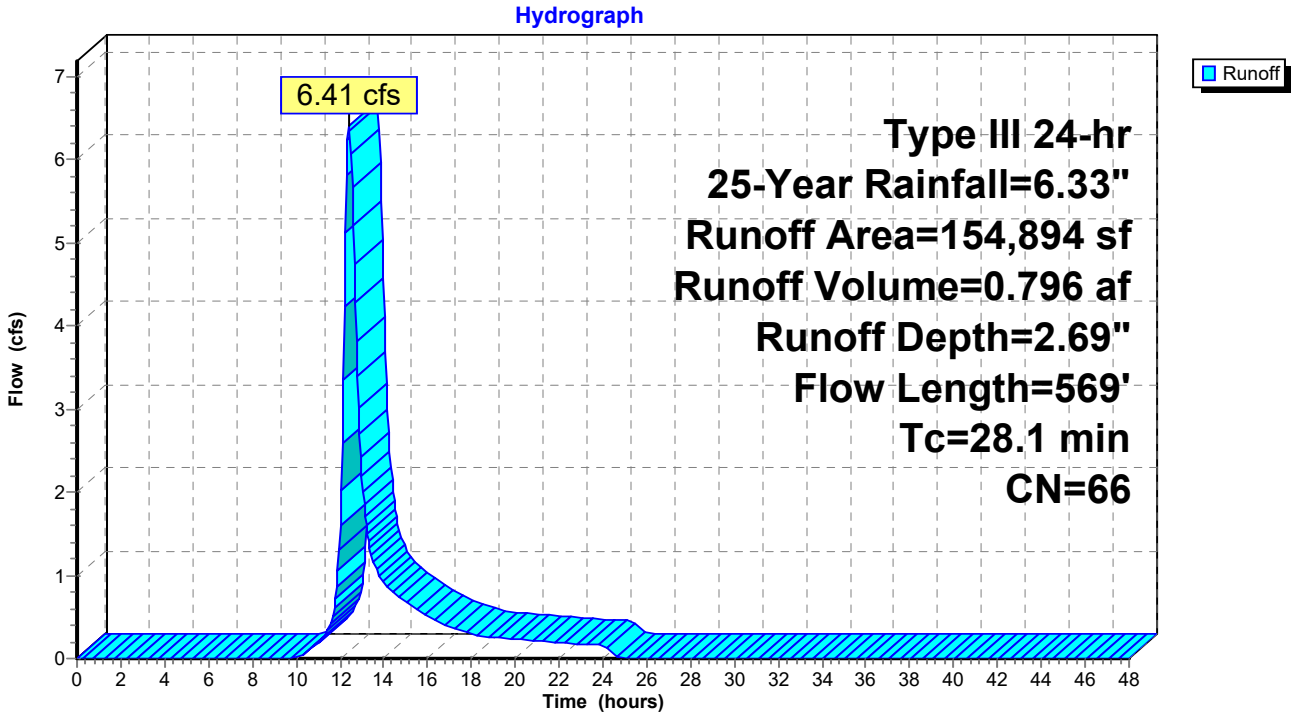
Runoff = 6.41 cfs @ 12.41 hrs, Volume= 0.796 af, Depth= 2.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
72,319	55	Woods, Good, HSG B
16,039	70	Woods, Good, HSG C
54,741	77	Woods, Good, HSG D
11,795	73	Brush, Good, HSG D
154,894	66	Weighted Average
154,894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	100	0.0200	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
4.0	163	0.0184	0.68		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.3	117	0.0855	1.46		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	63	0.0300	1.21		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
1.0	126	0.0873	2.07		**Shallow Concentrated Flow, E-F** Short Grass Pasture Kv= 7.0 fps
28.1	569	Total			

Subcatchment EDA-2: EDA-2



Summary for Subcatchment EDA-3: EDA-3

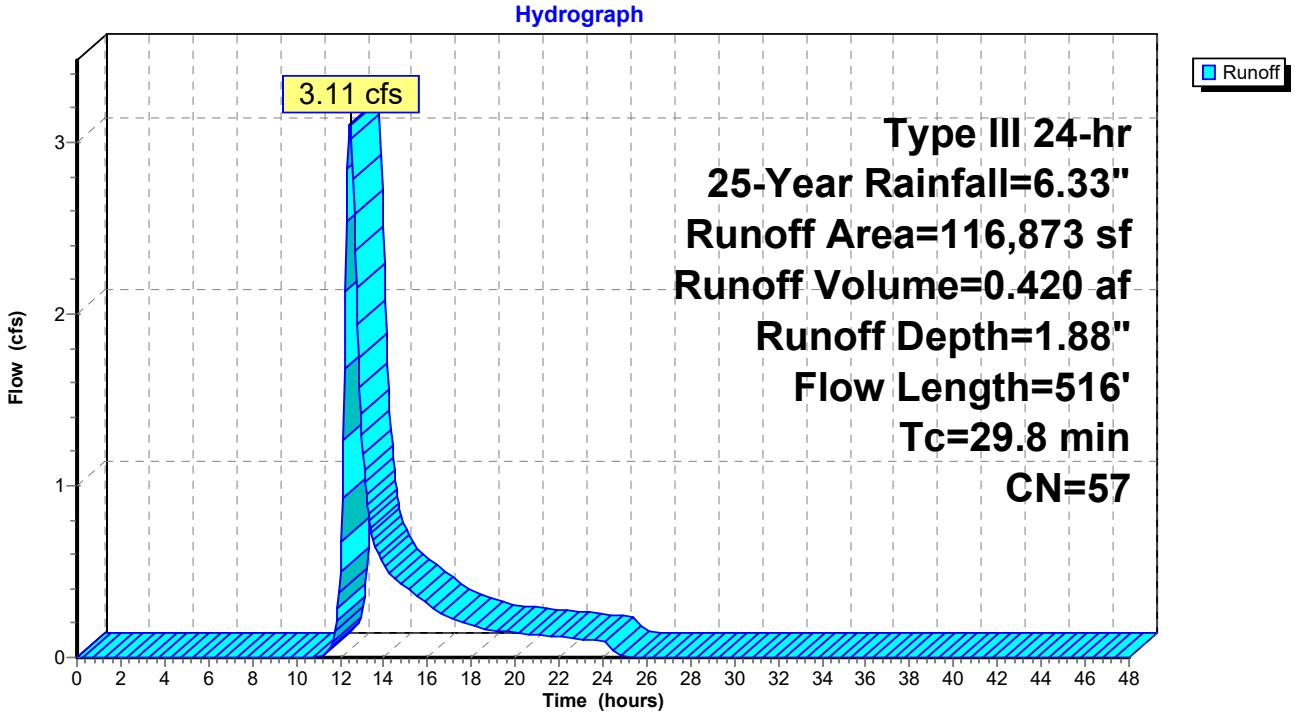
Runoff = 3.11 cfs @ 12.46 hrs, Volume= 0.420 af, Depth= 1.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
108,205	55	Woods, Good, HSG B
8,668	77	Woods, Good, HSG D
116,873	57	Weighted Average
116,873		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.4	100	0.0150	0.07		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
4.1	252	0.0417	1.02		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	124	0.0480	1.10		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.4	40	0.1250	1.77		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
29.8	516	Total			

Subcatchment EDA-3: EDA-3



Summary for Subcatchment EDA-4: EDA-4

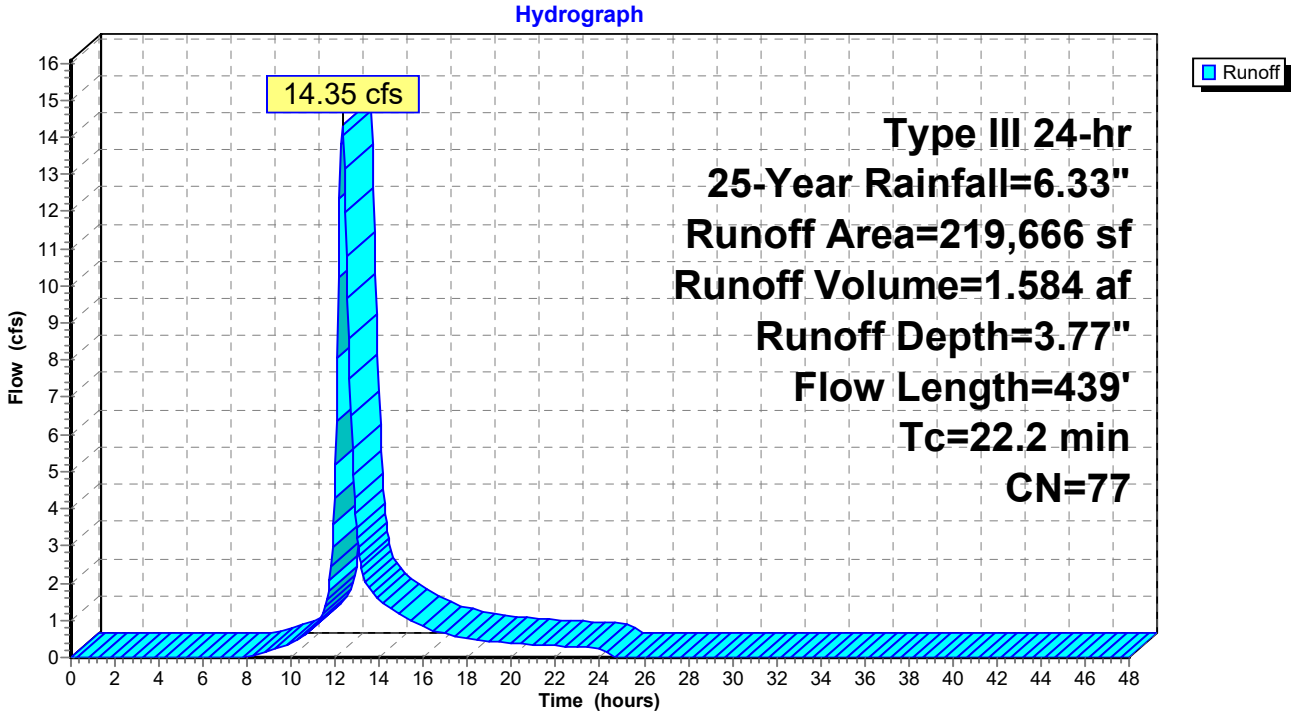
Runoff = 14.35 cfs @ 12.31 hrs, Volume= 1.584 af, Depth= 3.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
219,666	77	Woods, Good, HSG D
219,666		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	67	0.0224	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
3.8	33	0.1515	0.14		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.39"
1.7	157	0.0955	1.55		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
1.3	90	0.0550	1.17		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
0.9	92	0.1087	1.65		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
22.2	439	Total			

Subcatchment EDA-4: EDA-4

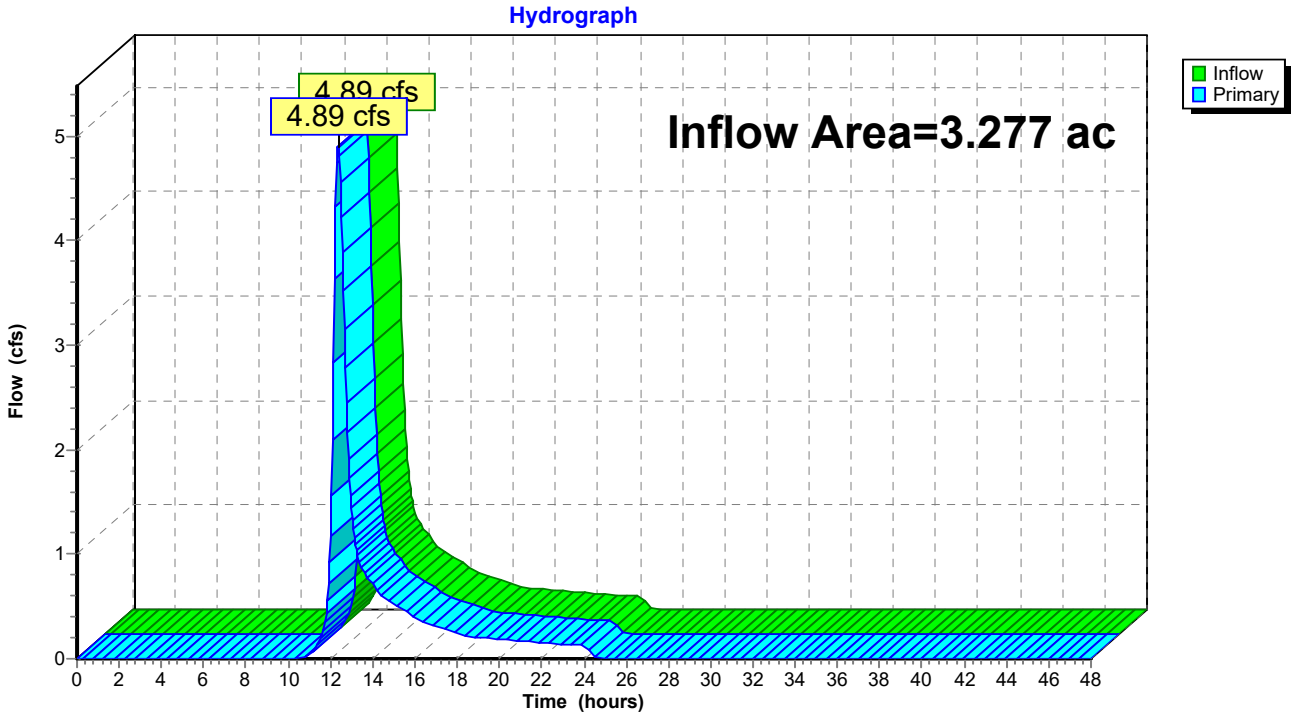


Summary for Link 1L: AP-1

Inflow Area = 3.277 ac, 0.00% Impervious, Inflow Depth = 2.14" for 25-Year event
Inflow = 4.89 cfs @ 12.36 hrs, Volume= 0.585 af
Primary = 4.89 cfs @ 12.36 hrs, Volume= 0.585 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: AP-1

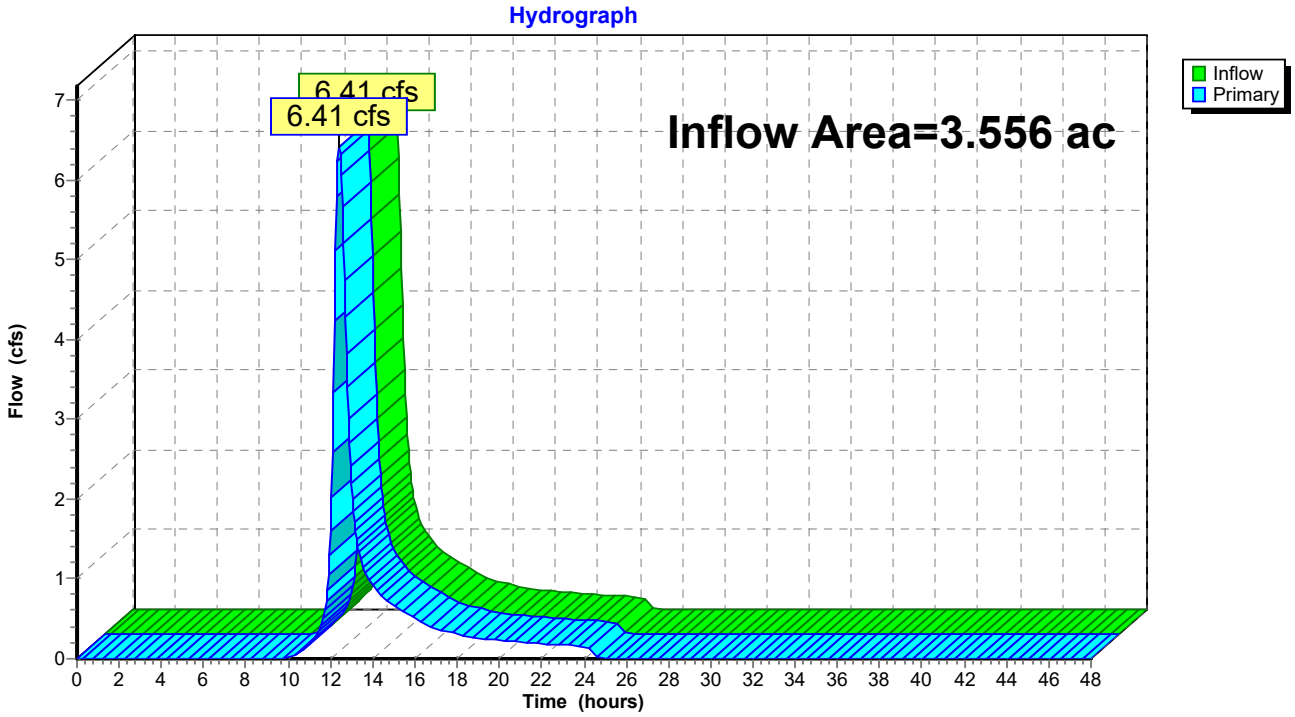


Summary for Link 2L: AP-2

Inflow Area = 3.556 ac, 0.00% Impervious, Inflow Depth = 2.69" for 25-Year event
Inflow = 6.41 cfs @ 12.41 hrs, Volume= 0.796 af
Primary = 6.41 cfs @ 12.41 hrs, Volume= 0.796 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

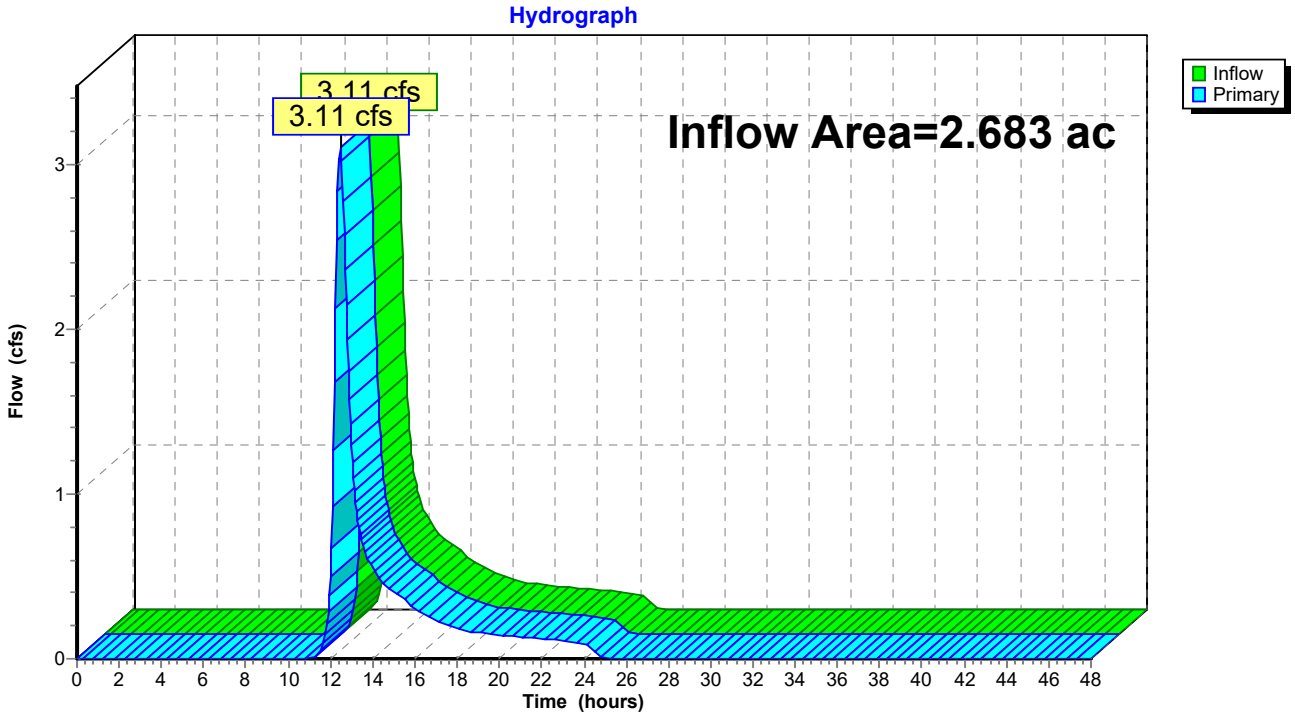


Summary for Link 3L: AP-3

Inflow Area = 2.683 ac, 0.00% Impervious, Inflow Depth = 1.88" for 25-Year event
Inflow = 3.11 cfs @ 12.46 hrs, Volume= 0.420 af
Primary = 3.11 cfs @ 12.46 hrs, Volume= 0.420 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 3L: AP-3

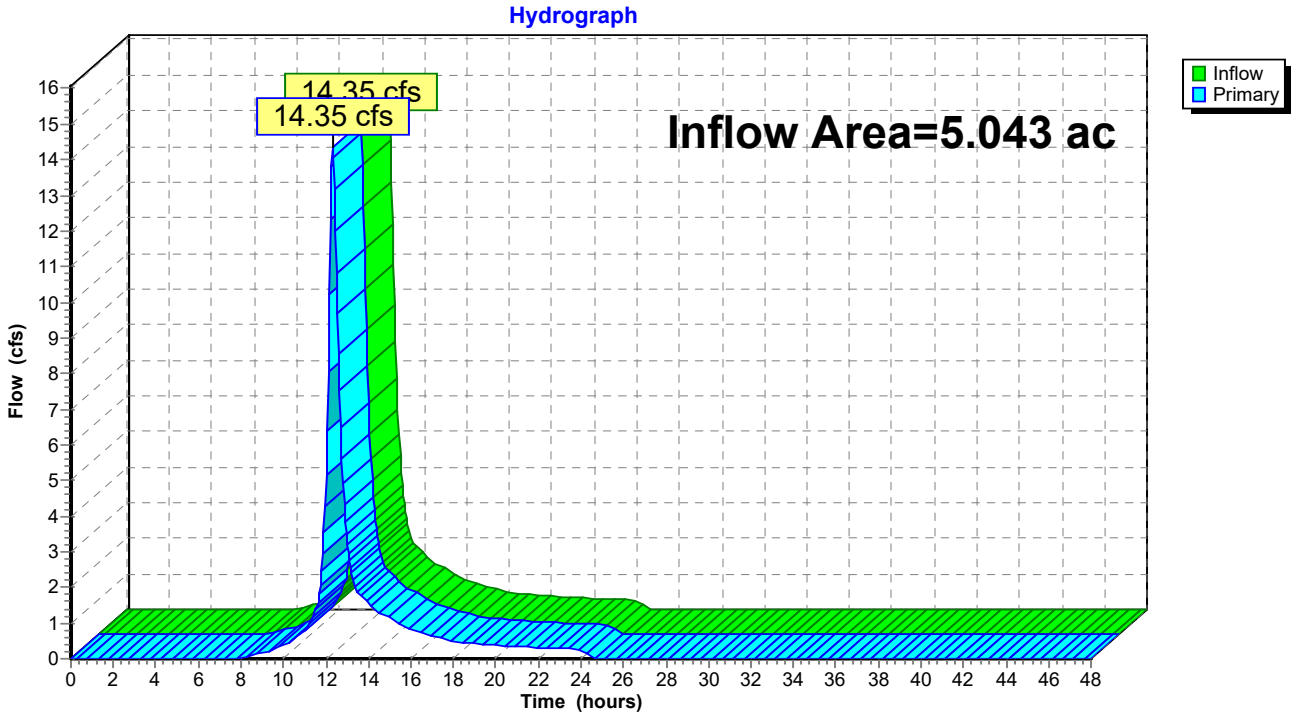


Summary for Link 4L: AP-4

Inflow Area = 5.043 ac, 0.00% Impervious, Inflow Depth = 3.77" for 25-Year event
Inflow = 14.35 cfs @ 12.31 hrs, Volume= 1.584 af
Primary = 14.35 cfs @ 12.31 hrs, Volume= 1.584 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 4L: AP-4



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-1: EDA-1 Runoff Area=142,743 sf 0.00% Impervious Runoff Depth=2.72"
Flow Length=483' Tc=23.7 min CN=60 Runoff=6.33 cfs 0.742 af

Subcatchment EDA-2: EDA-2 Runoff Area=154,894 sf 0.00% Impervious Runoff Depth=3.33"
Flow Length=569' Tc=28.1 min CN=66 Runoff=8.01 cfs 0.987 af

Subcatchment EDA-3: EDA-3 Runoff Area=116,873 sf 0.00% Impervious Runoff Depth=2.42"
Flow Length=516' Tc=29.8 min CN=57 Runoff=4.10 cfs 0.541 af

Subcatchment EDA-4: EDA-4 Runoff Area=219,666 sf 0.00% Impervious Runoff Depth=4.51"
Flow Length=439' Tc=22.2 min CN=77 Runoff=17.14 cfs 1.895 af

Link 1L: AP-1 Inflow=6.33 cfs 0.742 af
Primary=6.33 cfs 0.742 af

Link 2L: AP-2 Inflow=8.01 cfs 0.987 af
Primary=8.01 cfs 0.987 af

Link 3L: AP-3 Inflow=4.10 cfs 0.541 af
Primary=4.10 cfs 0.541 af

Link 4L: AP-4 Inflow=17.14 cfs 1.895 af
Primary=17.14 cfs 1.895 af

Total Runoff Area = 14.559 ac Runoff Volume = 4.165 af Average Runoff Depth = 3.43"
100.00% Pervious = 14.559 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment EDA-1: EDA-1

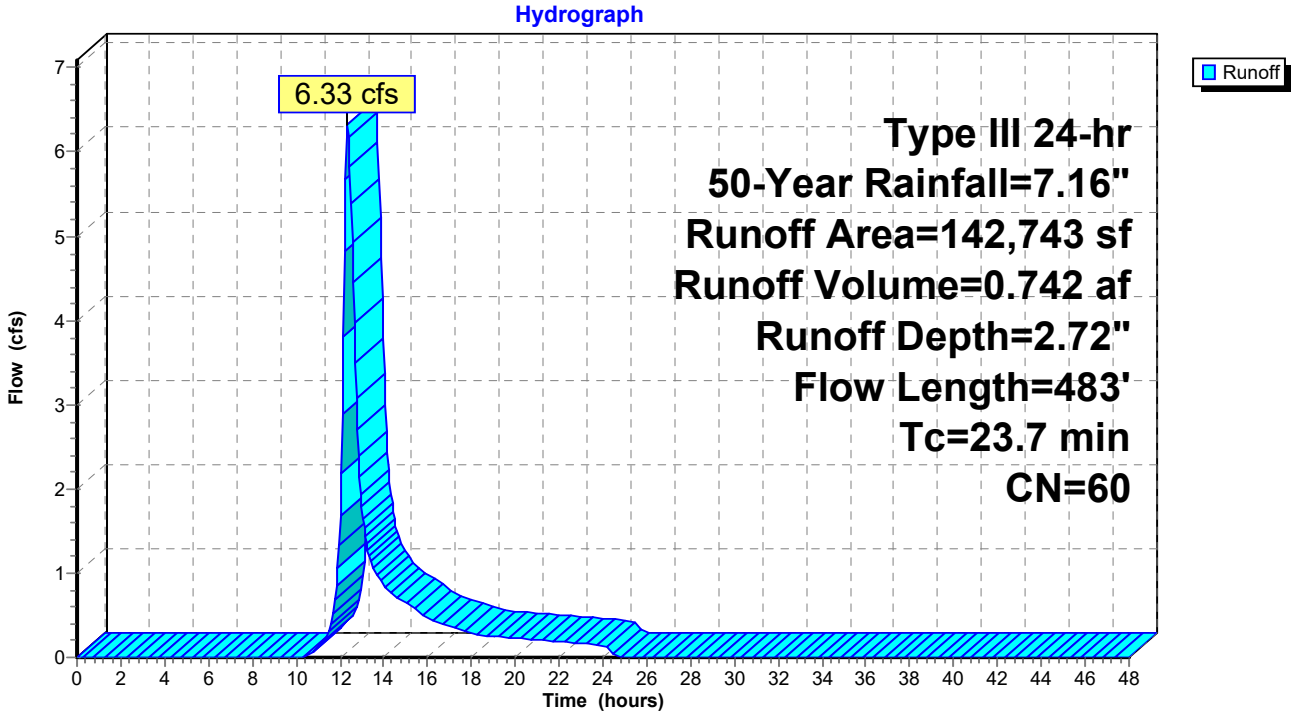
Runoff = 6.33 cfs @ 12.35 hrs, Volume= 0.742 af, Depth= 2.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
95,903	55	Woods, Good, HSG B
46,840	70	Woods, Good, HSG C
142,743	60	Weighted Average
142,743		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	100	0.0350	0.10		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
6.5	343	0.0306	0.87		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	40	0.0750	1.37		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
23.7	483	Total			

Subcatchment EDA-1: EDA-1



Summary for Subcatchment EDA-2: EDA-2

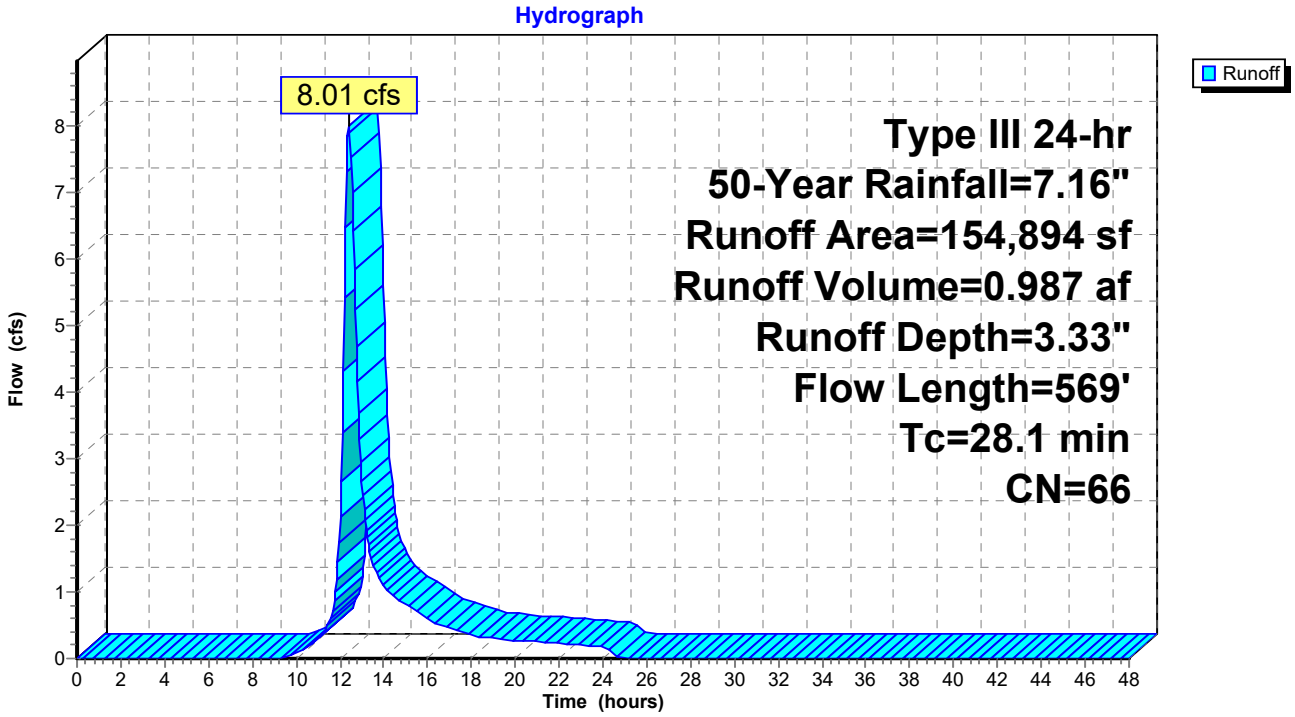
Runoff = 8.01 cfs @ 12.40 hrs, Volume= 0.987 af, Depth= 3.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
72,319	55	Woods, Good, HSG B
16,039	70	Woods, Good, HSG C
54,741	77	Woods, Good, HSG D
11,795	73	Brush, Good, HSG D
154,894	66	Weighted Average
154,894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	100	0.0200	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
4.0	163	0.0184	0.68		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.3	117	0.0855	1.46		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	63	0.0300	1.21		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
1.0	126	0.0873	2.07		**Shallow Concentrated Flow, E-F** Short Grass Pasture Kv= 7.0 fps
28.1	569	Total			

Subcatchment EDA-2: EDA-2



Summary for Subcatchment EDA-3: EDA-3

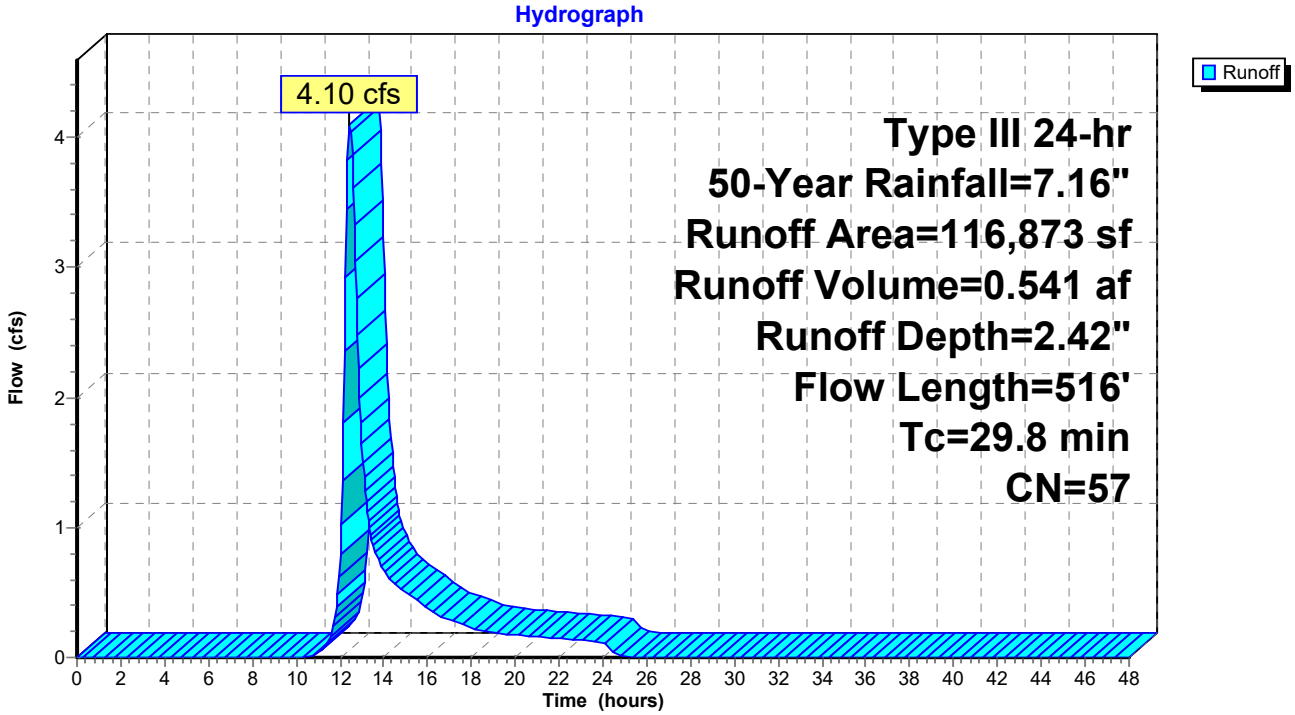
Runoff = 4.10 cfs @ 12.45 hrs, Volume= 0.541 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
108,205	55	Woods, Good, HSG B
8,668	77	Woods, Good, HSG D
116,873	57	Weighted Average
116,873		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.4	100	0.0150	0.07		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
4.1	252	0.0417	1.02		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	124	0.0480	1.10		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.4	40	0.1250	1.77		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
29.8	516	Total			

Subcatchment EDA-3: EDA-3



Summary for Subcatchment EDA-4: EDA-4

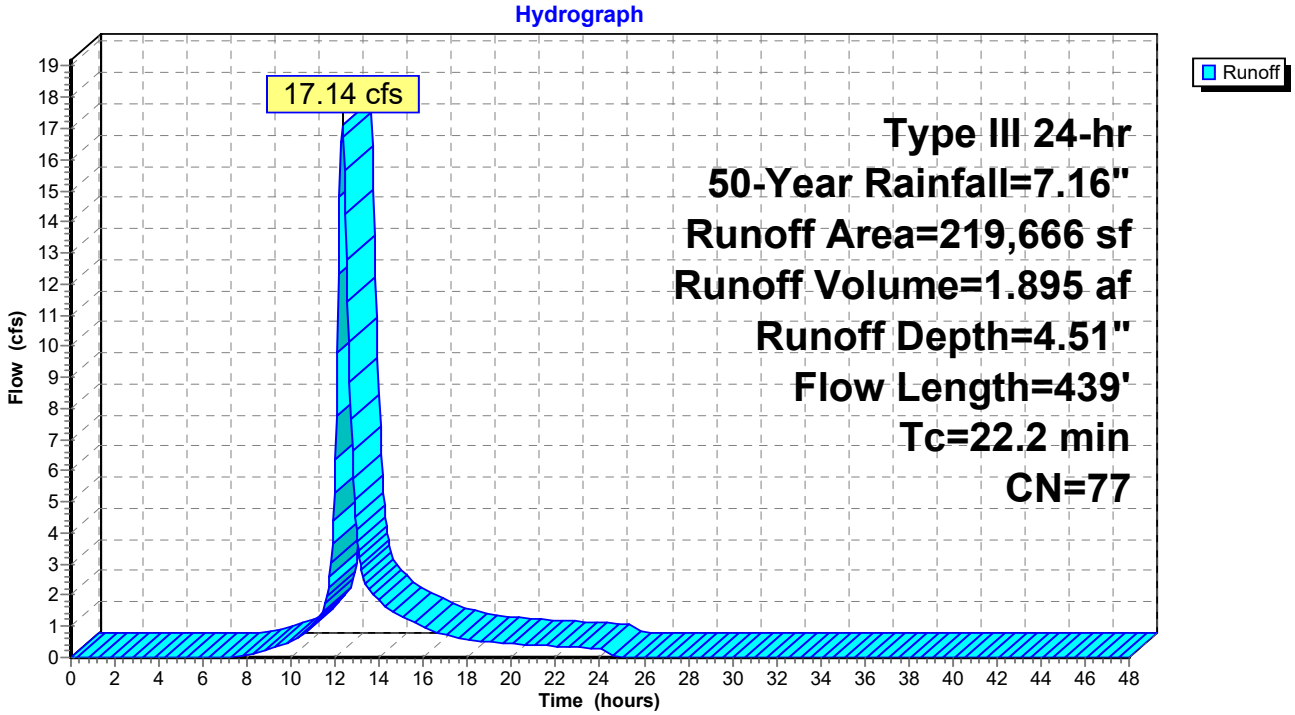
Runoff = 17.14 cfs @ 12.30 hrs, Volume= 1.895 af, Depth= 4.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
219,666	77	Woods, Good, HSG D
219,666		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	67	0.0224	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
3.8	33	0.1515	0.14		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.39"
1.7	157	0.0955	1.55		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
1.3	90	0.0550	1.17		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
0.9	92	0.1087	1.65		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
22.2	439	Total			

Subcatchment EDA-4: EDA-4

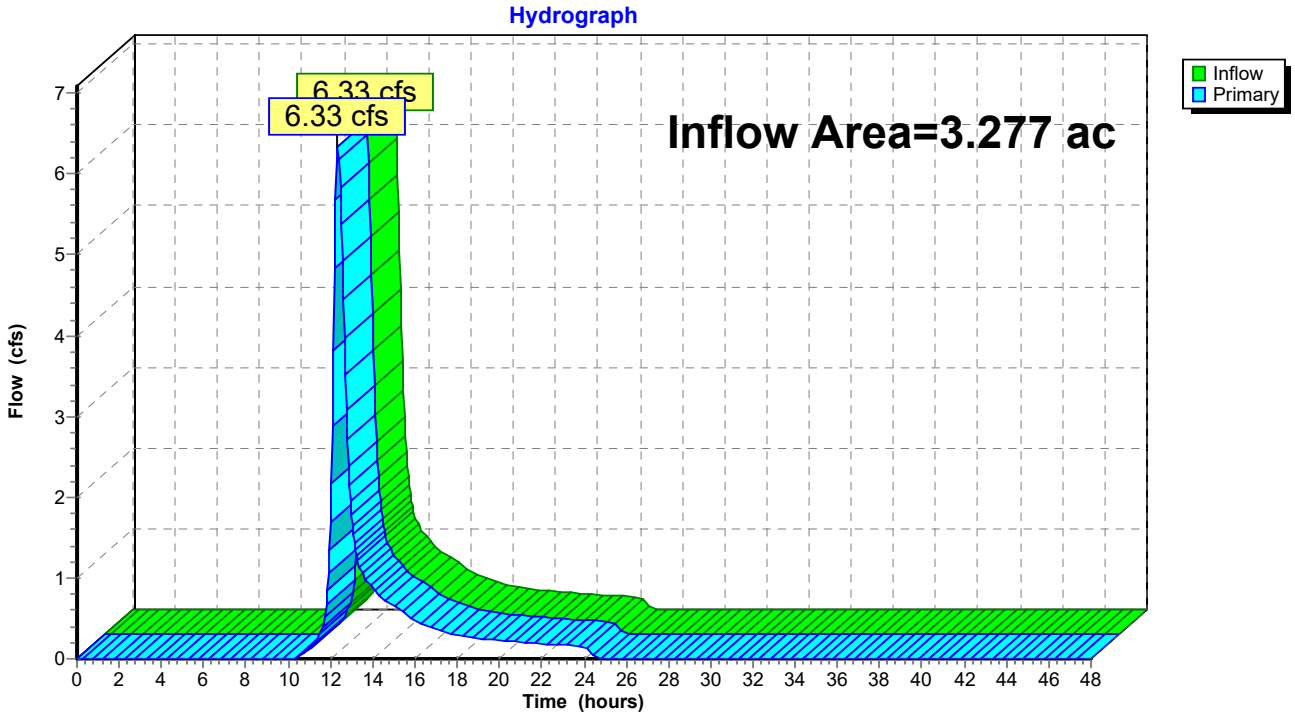


Summary for Link 1L: AP-1

Inflow Area = 3.277 ac, 0.00% Impervious, Inflow Depth = 2.72" for 50-Year event
Inflow = 6.33 cfs @ 12.35 hrs, Volume= 0.742 af
Primary = 6.33 cfs @ 12.35 hrs, Volume= 0.742 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: AP-1

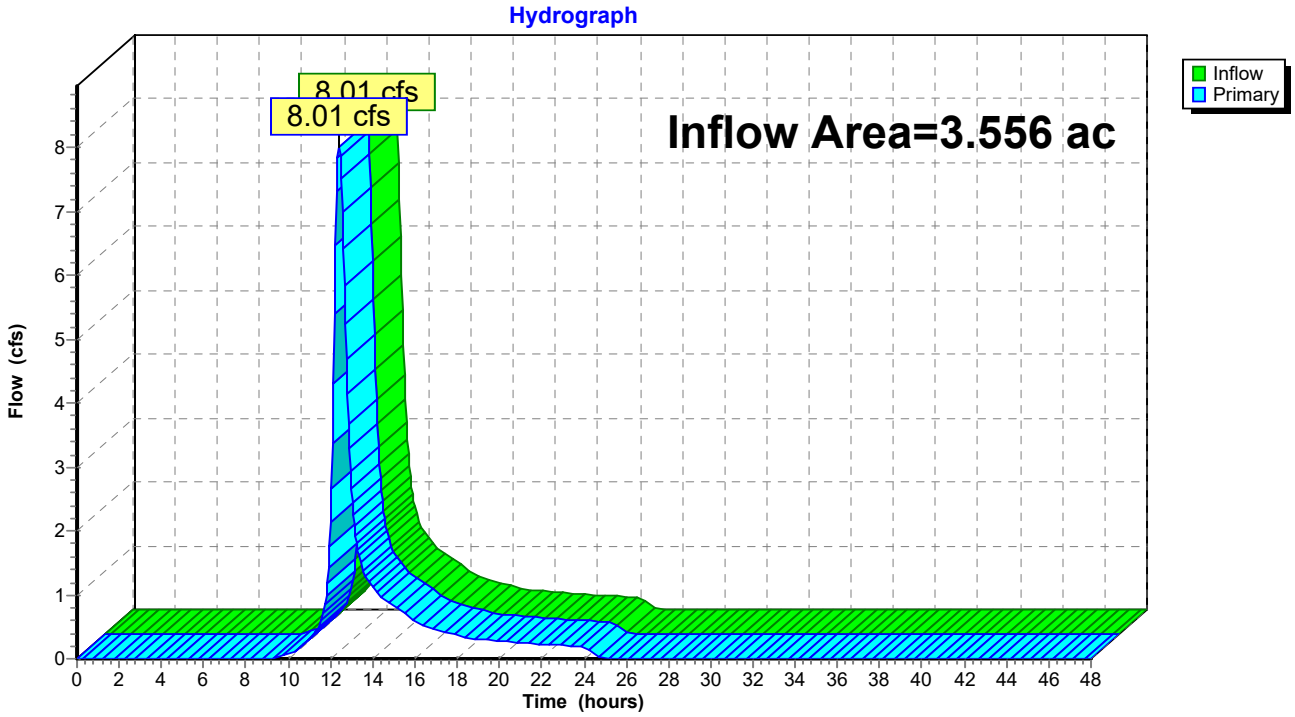


Summary for Link 2L: AP-2

Inflow Area = 3.556 ac, 0.00% Impervious, Inflow Depth = 3.33" for 50-Year event
Inflow = 8.01 cfs @ 12.40 hrs, Volume= 0.987 af
Primary = 8.01 cfs @ 12.40 hrs, Volume= 0.987 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

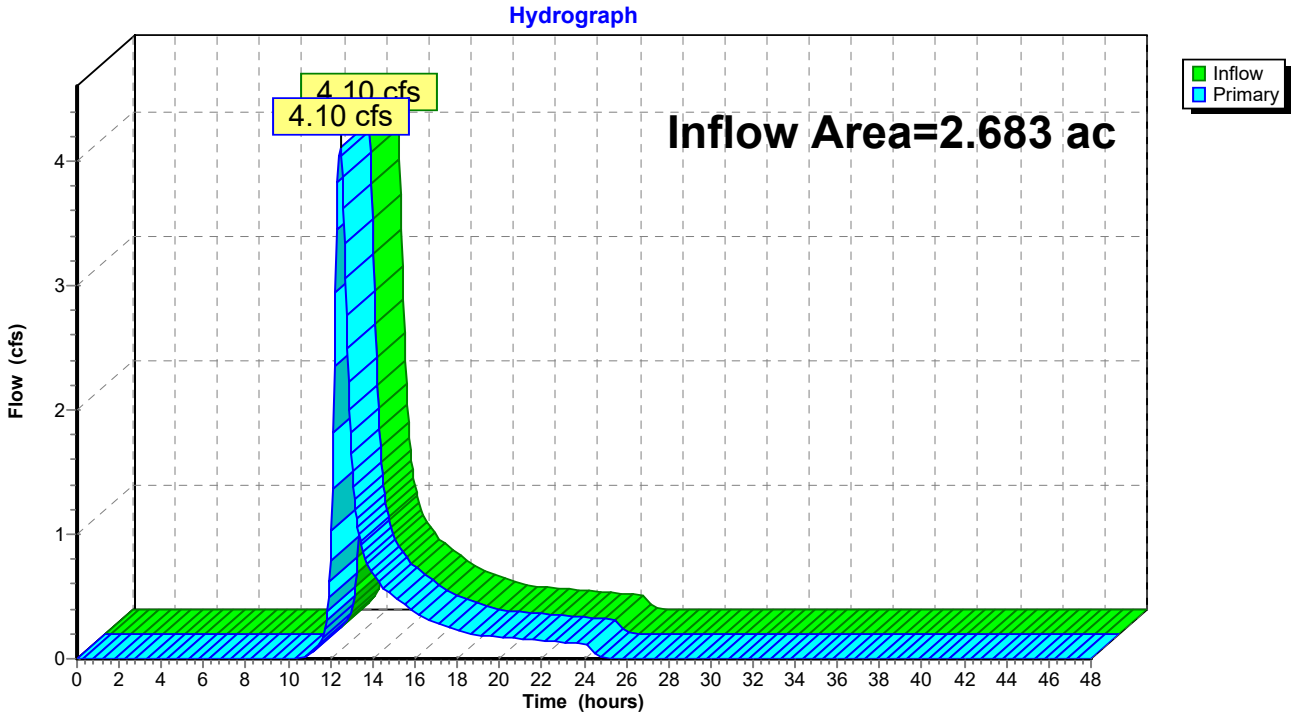


Summary for Link 3L: AP-3

Inflow Area = 2.683 ac, 0.00% Impervious, Inflow Depth = 2.42" for 50-Year event
Inflow = 4.10 cfs @ 12.45 hrs, Volume= 0.541 af
Primary = 4.10 cfs @ 12.45 hrs, Volume= 0.541 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 3L: AP-3

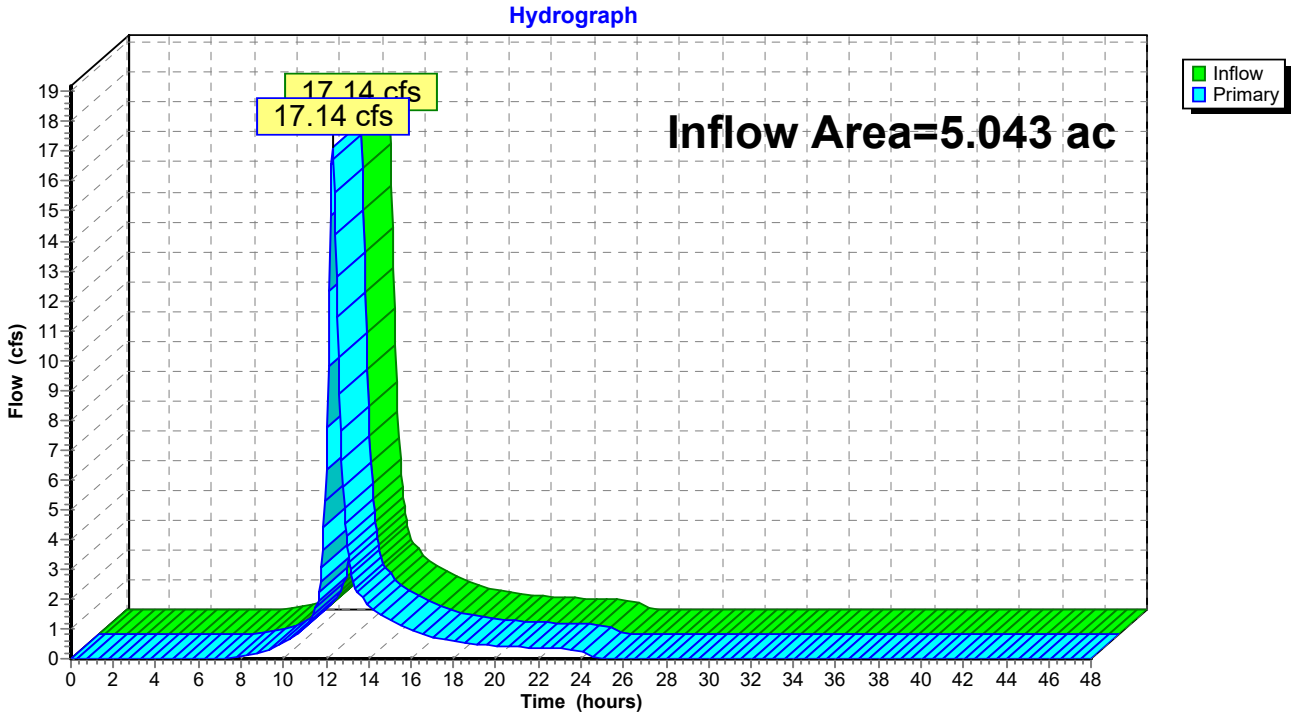


Summary for Link 4L: AP-4

Inflow Area = 5.043 ac, 0.00% Impervious, Inflow Depth = 4.51" for 50-Year event
Inflow = 17.14 cfs @ 12.30 hrs, Volume= 1.895 af
Primary = 17.14 cfs @ 12.30 hrs, Volume= 1.895 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 4L: AP-4



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA-1: EDA-1 Runoff Area=142,743 sf 0.00% Impervious Runoff Depth=3.39"
Flow Length=483' Tc=23.7 min CN=60 Runoff=7.99 cfs 0.925 af

Subcatchment EDA-2: EDA-2 Runoff Area=154,894 sf 0.00% Impervious Runoff Depth=4.07"
Flow Length=569' Tc=28.1 min CN=66 Runoff=9.83 cfs 1.205 af

Subcatchment EDA-3: EDA-3 Runoff Area=116,873 sf 0.00% Impervious Runoff Depth=3.05"
Flow Length=516' Tc=29.8 min CN=57 Runoff=5.27 cfs 0.682 af

Subcatchment EDA-4: EDA-4 Runoff Area=219,666 sf 0.00% Impervious Runoff Depth=5.34"
Flow Length=439' Tc=22.2 min CN=77 Runoff=20.22 cfs 2.243 af

Link 1L: AP-1 Inflow=7.99 cfs 0.925 af
Primary=7.99 cfs 0.925 af

Link 2L: AP-2 Inflow=9.83 cfs 1.205 af
Primary=9.83 cfs 1.205 af

Link 3L: AP-3 Inflow=5.27 cfs 0.682 af
Primary=5.27 cfs 0.682 af

Link 4L: AP-4 Inflow=20.22 cfs 2.243 af
Primary=20.22 cfs 2.243 af

Total Runoff Area = 14.559 ac Runoff Volume = 5.055 af Average Runoff Depth = 4.17"
100.00% Pervious = 14.559 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment EDA-1: EDA-1

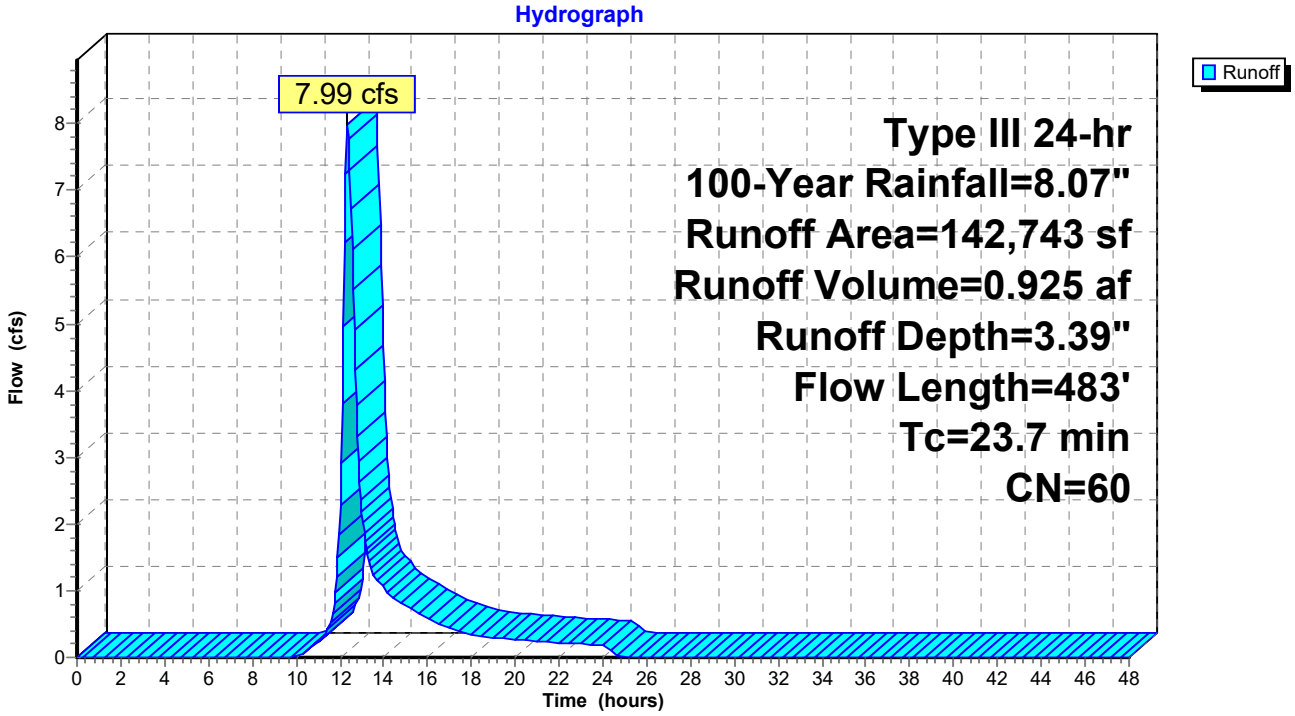
Runoff = 7.99 cfs @ 12.34 hrs, Volume= 0.925 af, Depth= 3.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
95,903	55	Woods, Good, HSG B
46,840	70	Woods, Good, HSG C
142,743	60	Weighted Average
142,743		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	100	0.0350	0.10		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
6.5	343	0.0306	0.87		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.5	40	0.0750	1.37		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
23.7	483	Total			

Subcatchment EDA-1: EDA-1



Summary for Subcatchment EDA-2: EDA-2

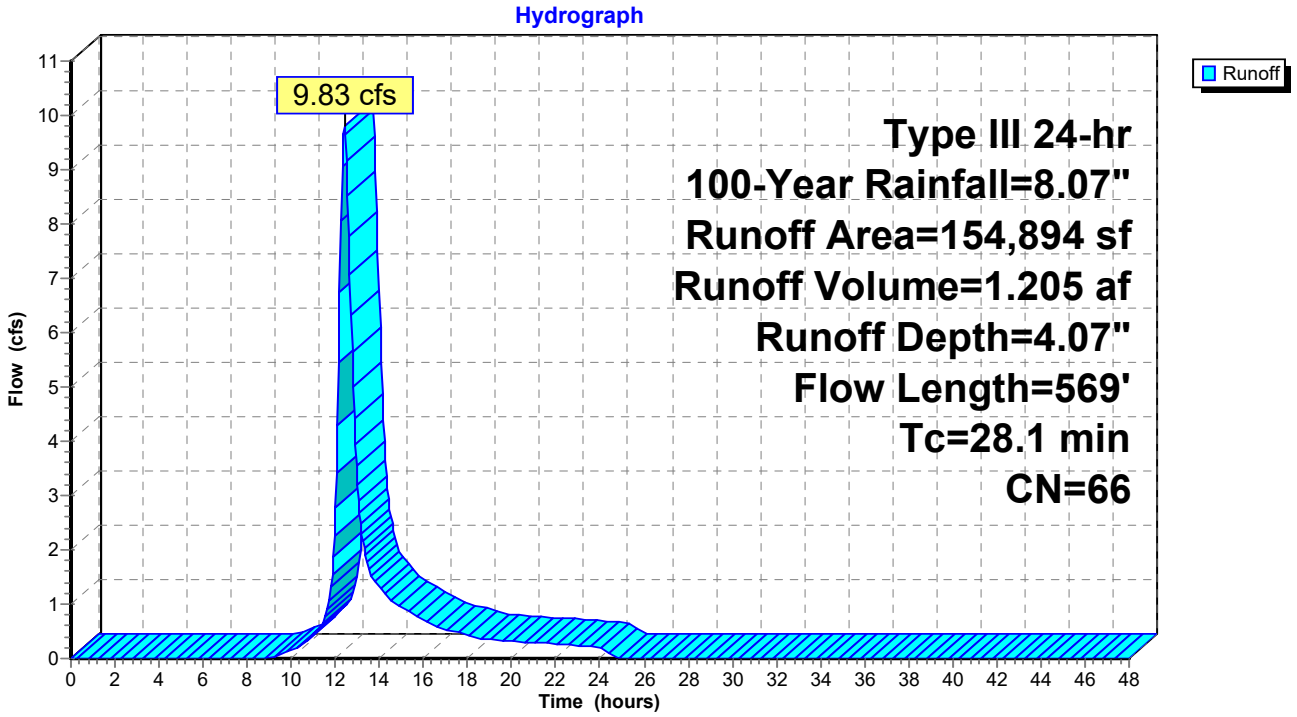
Runoff = 9.83 cfs @ 12.40 hrs, Volume= 1.205 af, Depth= 4.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
72,319	55	Woods, Good, HSG B
16,039	70	Woods, Good, HSG C
54,741	77	Woods, Good, HSG D
11,795	73	Brush, Good, HSG D
154,894	66	Weighted Average
154,894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.9	100	0.0200	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
4.0	163	0.0184	0.68		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.3	117	0.0855	1.46		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.9	63	0.0300	1.21		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
1.0	126	0.0873	2.07		**Shallow Concentrated Flow, E-F** Short Grass Pasture Kv= 7.0 fps
28.1	569	Total			

Subcatchment EDA-2: EDA-2



Summary for Subcatchment EDA-3: EDA-3

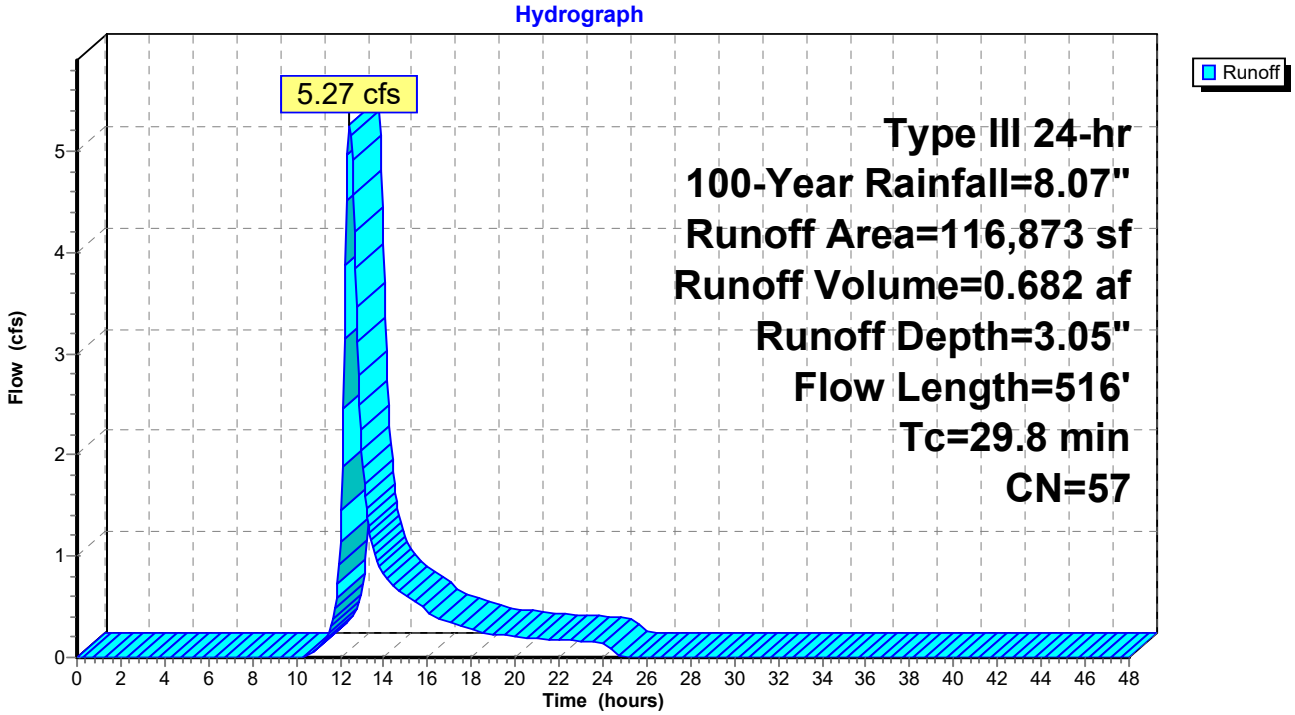
Runoff = 5.27 cfs @ 12.44 hrs, Volume= 0.682 af, Depth= 3.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
108,205	55	Woods, Good, HSG B
8,668	77	Woods, Good, HSG D
116,873	57	Weighted Average
116,873		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.4	100	0.0150	0.07		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
4.1	252	0.0417	1.02		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.9	124	0.0480	1.10		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
0.4	40	0.1250	1.77		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
29.8	516	Total			

Subcatchment EDA-3: EDA-3



Summary for Subcatchment EDA-4: EDA-4

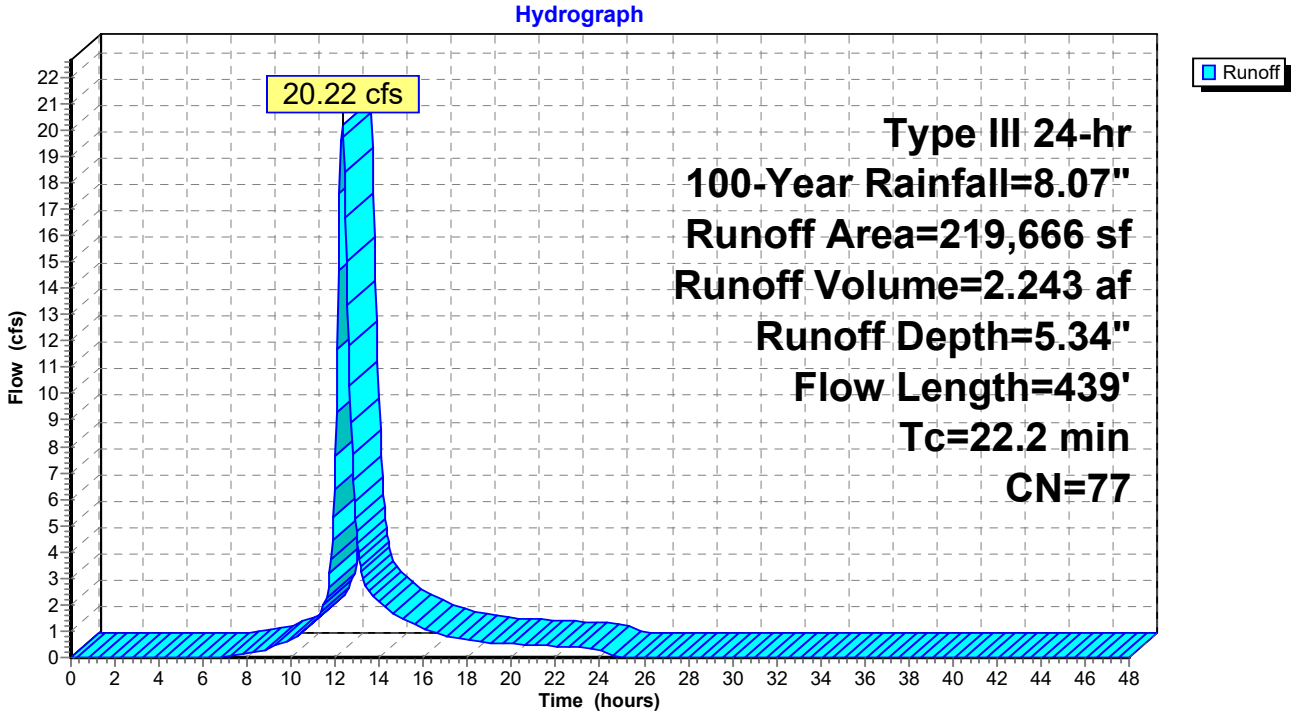
Runoff = 20.22 cfs @ 12.30 hrs, Volume= 2.243 af, Depth= 5.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
219,666	77	Woods, Good, HSG D
219,666		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.5	67	0.0224	0.08		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
3.8	33	0.1515	0.14		**Sheet Flow, B-C** Woods: Light underbrush n= 0.400 P2= 3.39"
1.7	157	0.0955	1.55		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
1.3	90	0.0550	1.17		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
0.9	92	0.1087	1.65		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
22.2	439	Total			

Subcatchment EDA-4: EDA-4

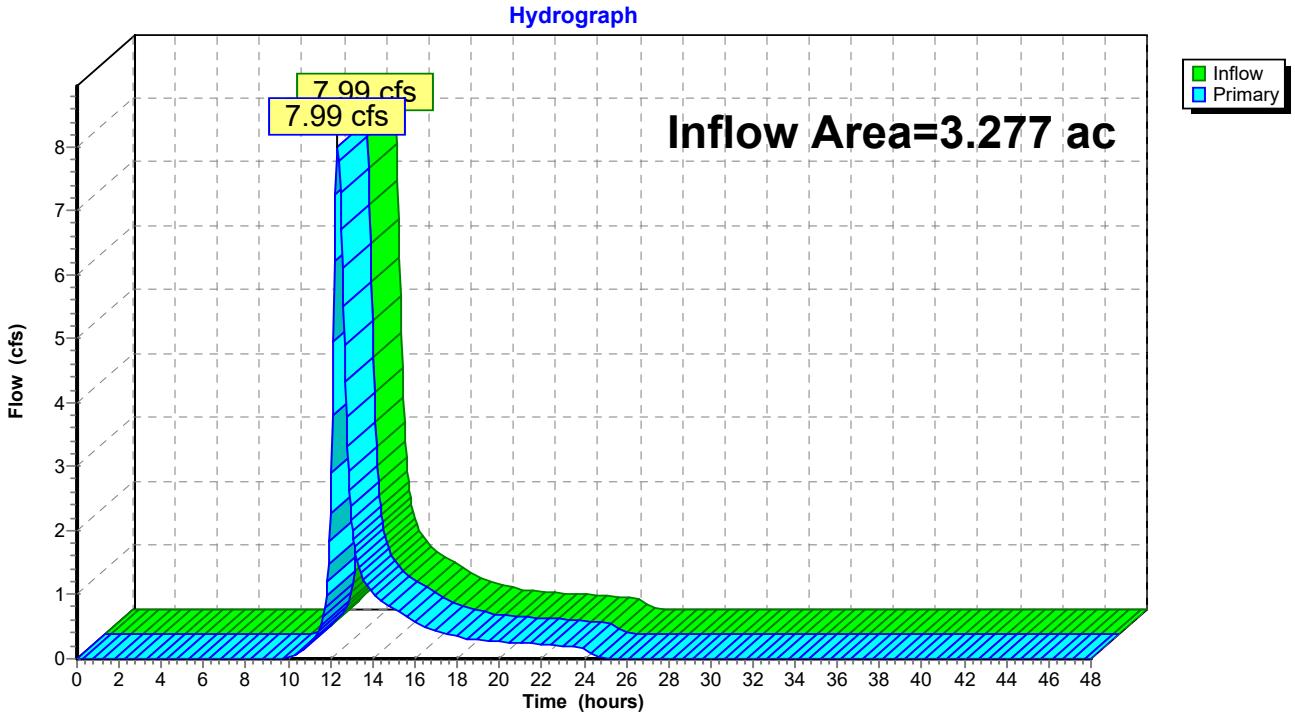


Summary for Link 1L: AP-1

Inflow Area = 3.277 ac, 0.00% Impervious, Inflow Depth = 3.39" for 100-Year event
Inflow = 7.99 cfs @ 12.34 hrs, Volume= 0.925 af
Primary = 7.99 cfs @ 12.34 hrs, Volume= 0.925 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: AP-1

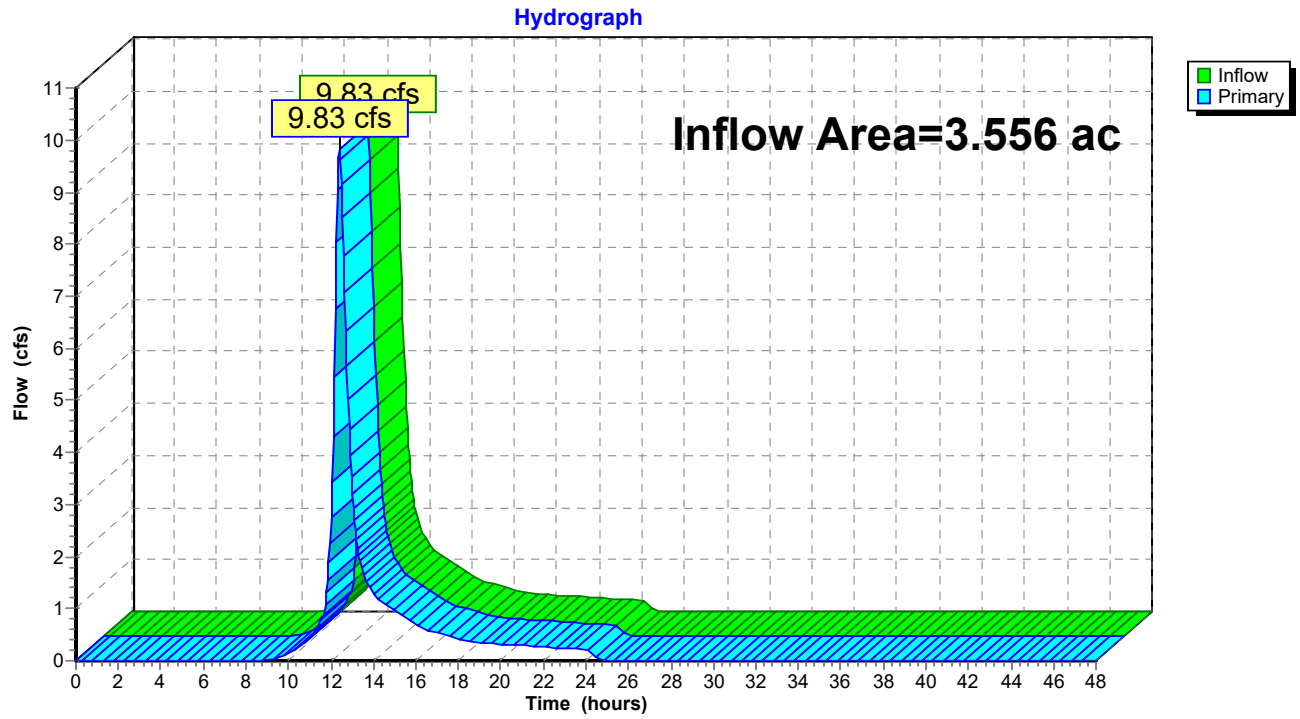


Summary for Link 2L: AP-2

Inflow Area = 3.556 ac, 0.00% Impervious, Inflow Depth = 4.07" for 100-Year event
Inflow = 9.83 cfs @ 12.40 hrs, Volume= 1.205 af
Primary = 9.83 cfs @ 12.40 hrs, Volume= 1.205 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

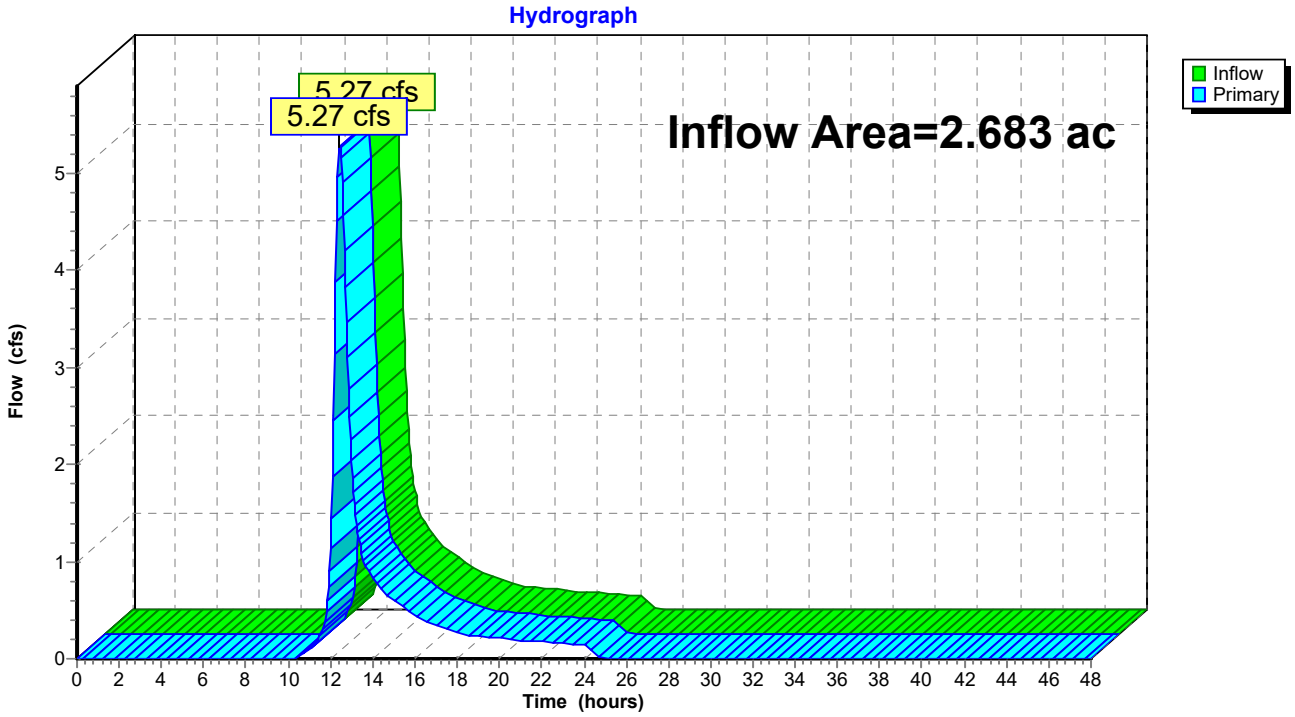


Summary for Link 3L: AP-3

Inflow Area = 2.683 ac, 0.00% Impervious, Inflow Depth = 3.05" for 100-Year event
Inflow = 5.27 cfs @ 12.44 hrs, Volume= 0.682 af
Primary = 5.27 cfs @ 12.44 hrs, Volume= 0.682 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 3L: AP-3

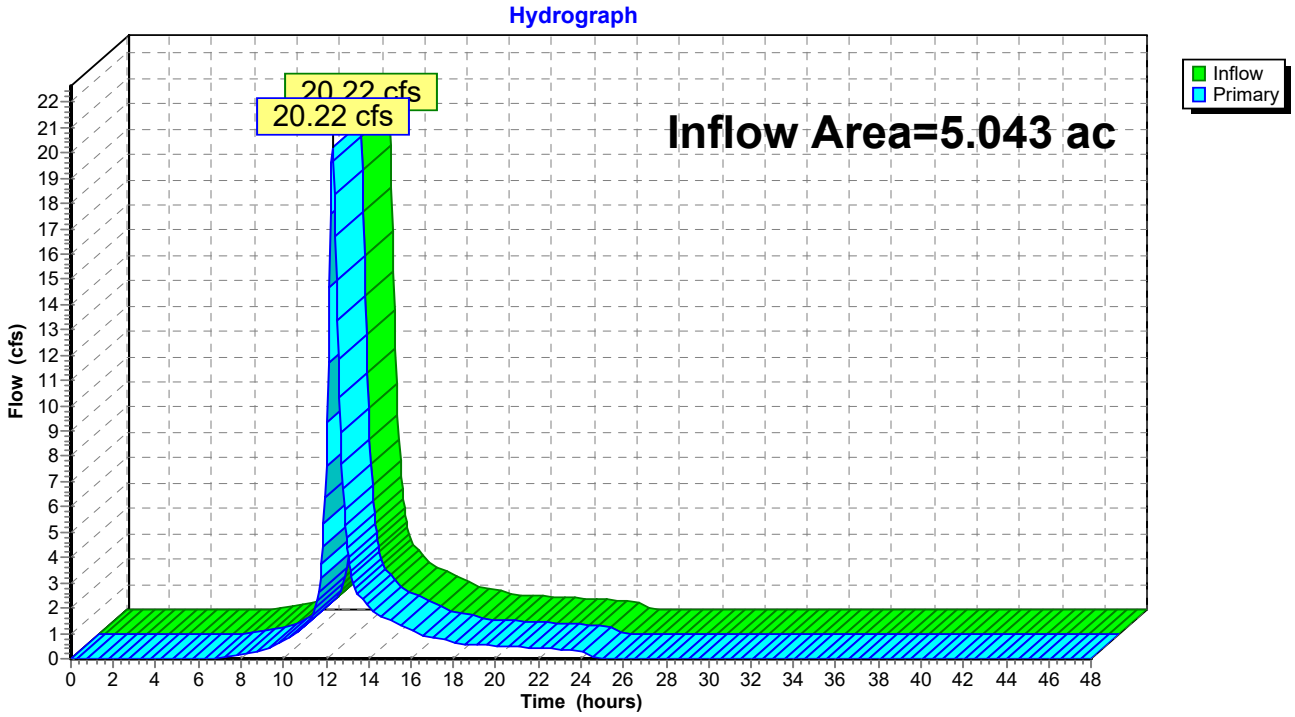


Summary for Link 4L: AP-4

Inflow Area = 5.043 ac, 0.00% Impervious, Inflow Depth = 5.34" for 100-Year event
Inflow = 20.22 cfs @ 12.30 hrs, Volume= 2.243 af
Primary = 20.22 cfs @ 12.30 hrs, Volume= 2.243 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

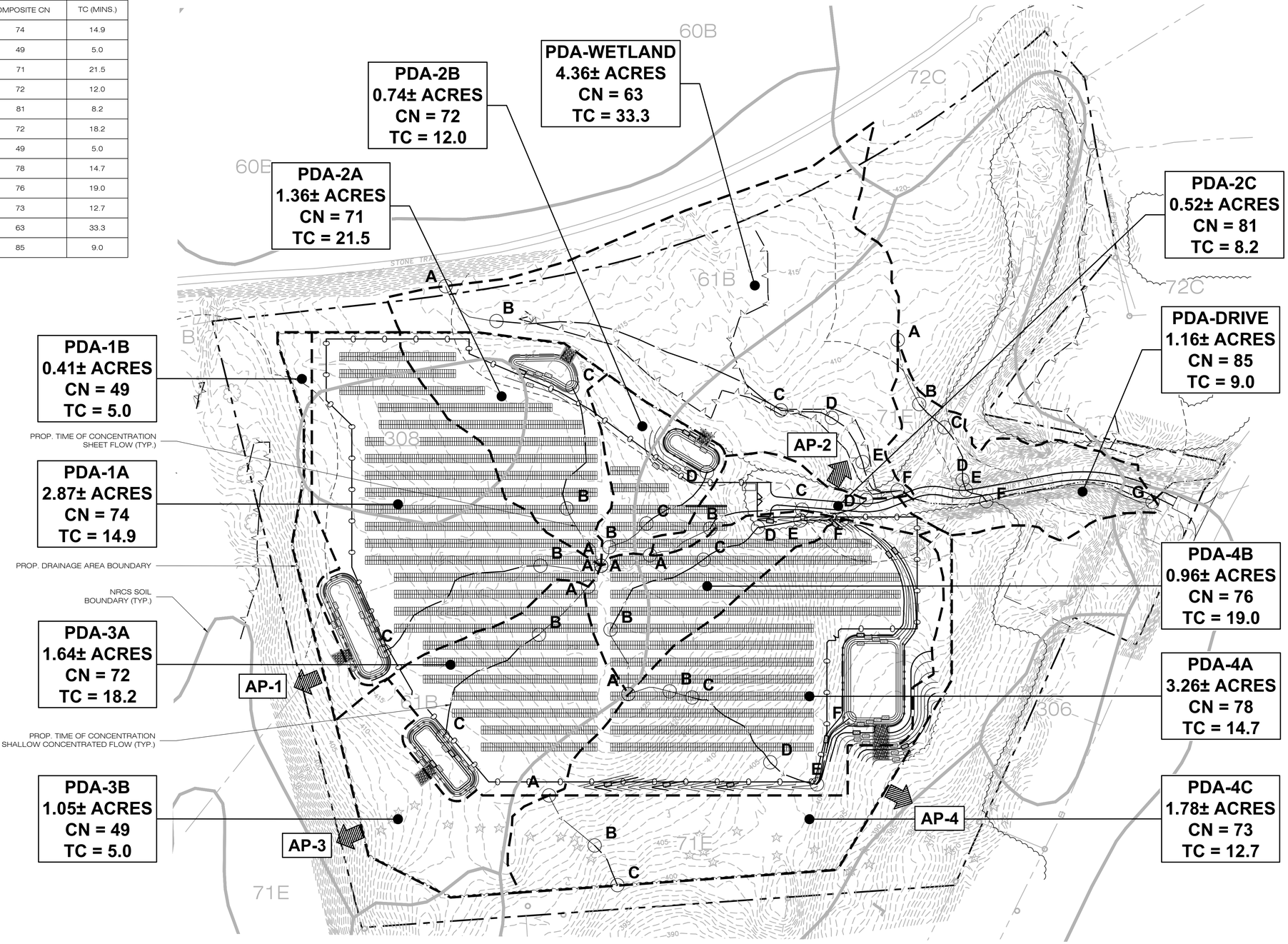
Link 4L: AP-4



APPENDIX C: PROPOSED DRAINAGE AREA MAP (PDA-1) & HYDROLOGIC COMPUTATION (HYDROCAD)

PROPOSED DRAINAGE AREAS

	TOTAL AREA (ACRES)	COMPOSITE CN	TC (MINS.)
PDA-1A	2.87±	74	14.9
PDA-1B	0.41±	49	5.0
PDA-2A	1.36±	71	21.5
PDA-2B	0.74±	72	12.0
PDA-2C	0.52±	81	8.2
PDA-3A	1.64±	72	18.2
PDA-3B	1.05±	49	5.0
PDA-4A	3.26±	78	14.7
PDA-4B	0.96±	76	19.0
PDA-4C	1.78±	73	12.7
PDA-WETLAND	4.36±	63	33.3
PDA-DRIVE	1.16±	85	9.0



1 PDA-1 **PROPOSED DRAINAGE AREA MAP**
SCALE : 1" = 80'-0"

80 0 40 80 160
(IN FEET) 1 inch = 80 ft.

CITRINE
55 GREENS FARMS ROAD
WESTPORT, CT 06880
OFFICE: (203)-557-5554

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

CONCEPT

NO	DATE	REVISION
0	02/14/20	FOR REVIEW: BJP
1		
2		
3		
4		
5		
6		

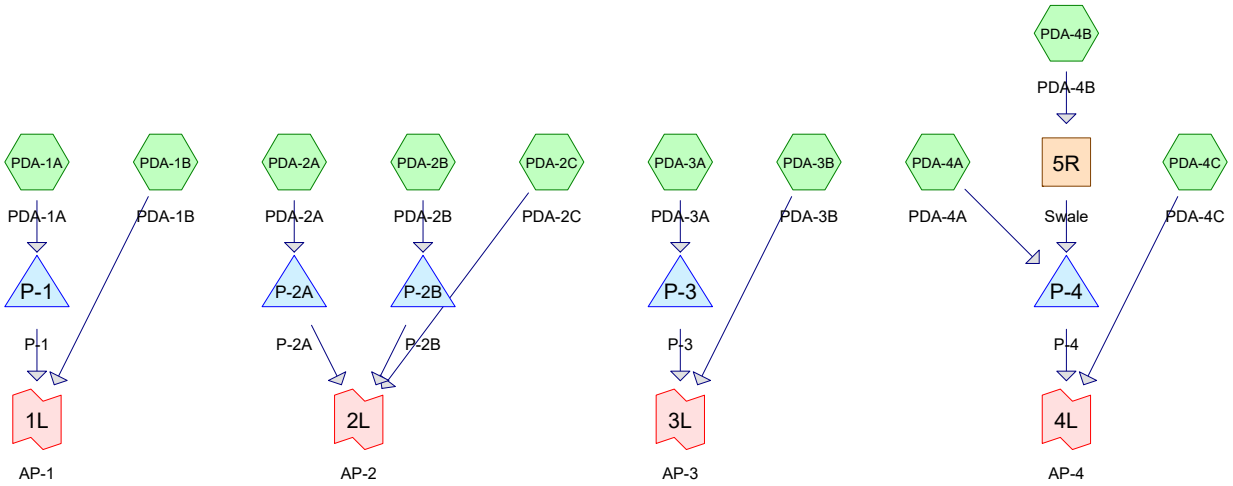
DESIGN PROFESSIONAL OF RECORD
PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: SKINNER STREET PROPERTIES LLC
ADDRESS: 9 SEQUONIA TRAIL EAST HAMPTON, CT 06424

EAST HAMPTON INDUSTRIAL PARK GROUND MOUNT
SITE ADDRESS: 46 SKINNER STREET EAST HAMPTON, CT 06424
APT FILING NUMBER: CT567110
DRAWN BY: CSH
DATE: 02/14/20 CHECKED BY: BJP

SHEET TITLE:
PROPOSED DRAINAGE AREA MAP

SHEET NUMBER:
PDA-1



Subcat Reach Pond Link

Routing Diagram for CT567110_EastHampton-PR
Prepared by {enter your company name here}, Printed 2/14/2020

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.558	48	Brush, Good, HSG B (PDA-1B, PDA-2A, PDA-2B, PDA-3B)
0.033	65	Brush, Good, HSG C (PDA-1B)
1.949	73	Brush, Good, HSG D (PDA-2B, PDA-3B, PDA-4A, PDA-4C)
0.081	96	Gravel surface, HSG D (PDA-2C, PDA-4B)
4.788	71	Meadow, non-grazed, HSG C (PDA-1A, PDA-2A, PDA-2B, PDA-3A, PDA-4B)
6.114	78	Meadow, non-grazed, HSG D (PDA-1A, PDA-2A, PDA-2B, PDA-2C, PDA-3A, PDA-4A, PDA-4B)
0.045	77	Woods, Good, HSG D (PDA-2C)
14.567	**72**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
1.558	HSG B	PDA-1B, PDA-2A, PDA-2B, PDA-3B
4.821	HSG C	PDA-1A, PDA-1B, PDA-2A, PDA-2B, PDA-3A, PDA-4B
8.189	HSG D	PDA-1A, PDA-2A, PDA-2B, PDA-2C, PDA-3A, PDA-3B, PDA-4A, PDA-4B, PDA-4C
0.000	Other	
14.567		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.558	0.033	1.949	0.000	3.540	Brush, Good	PDA-1B, PDA-2A, PDA-2B, PDA-3B, PDA-4A, PDA-4C
0.000	0.000	0.000	0.081	0.000	0.081	Gravel surface	PDA-2C, PDA-4B
0.000	0.000	4.788	6.114	0.000	10.901	Meadow, non-grazed	PDA-1A, PDA-2A, PDA-2B, PDA-2C, PDA-3A, PDA-4A, PDA-4B
0.000	0.000	0.000	0.045	0.000	0.045	Woods, Good	PDA-2C
0.000	**1.558**	**4.821**	**8.189**	**0.000**	**14.567**	**TOTAL AREA**	

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-1A: PDA-1A Runoff Area=124,842 sf 0.00% Impervious Runoff Depth=1.16"
Flow Length=381' Tc=14.9 min CN=74 Runoff=2.81 cfs 0.278 af

Subcatchment PDA-1B: PDA-1B Runoff Area=17,880 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=49 Runoff=0.01 cfs 0.005 af

Subcatchment PDA-2A: PDA-2A Runoff Area=59,006 sf 0.00% Impervious Runoff Depth=0.99"
Flow Length=275' Tc=21.5 min CN=71 Runoff=0.95 cfs 0.112 af

Subcatchment PDA-2B: PDA-2B Runoff Area=32,304 sf 0.00% Impervious Runoff Depth=1.05"
Flow Length=219' Tc=12.0 min CN=72 Runoff=0.69 cfs 0.065 af

Subcatchment PDA-2C: PDA-2C Runoff Area=22,584 sf 0.00% Impervious Runoff Depth=1.62"
Flow Length=346' Tc=8.2 min CN=81 Runoff=0.90 cfs 0.070 af

Subcatchment PDA-3A: PDA-3A Runoff Area=71,342 sf 0.00% Impervious Runoff Depth=1.05"
Flow Length=322' Tc=18.2 min CN=72 Runoff=1.31 cfs 0.143 af

Subcatchment PDA-3B: PDA-3B Runoff Area=45,532 sf 0.00% Impervious Runoff Depth=0.15"
Tc=5.0 min CN=49 Runoff=0.03 cfs 0.013 af

Subcatchment PDA-4A: PDA-4A Runoff Area=141,773 sf 0.00% Impervious Runoff Depth=1.41"
Flow Length=432' Tc=14.7 min CN=78 Runoff=4.02 cfs 0.384 af

Subcatchment PDA-4B: PDA-4B Runoff Area=41,704 sf 0.00% Impervious Runoff Depth=1.29"
Flow Length=487' Tc=19.0 min CN=76 Runoff=0.96 cfs 0.103 af

Subcatchment PDA-4C: PDA-4C Runoff Area=77,592 sf 0.00% Impervious Runoff Depth=1.11"
Flow Length=168' Tc=12.7 min CN=73 Runoff=1.74 cfs 0.164 af

Reach 5R: Swale Avg. Flow Depth=0.21' Max Vel=2.80 fps Inflow=0.96 cfs 0.103 af
n=0.025 L=280.0' S=0.0286 '/' Capacity=26.85 cfs Outflow=0.94 cfs 0.103 af

Pond P-1: P-1 Peak Elev=411.81' Storage=3,660 cf Inflow=2.81 cfs 0.278 af
Discarded=0.57 cfs 0.278 af Primary=0.00 cfs 0.000 af Outflow=0.57 cfs 0.278 af

Pond P-2A: P-2A Peak Elev=417.86' Storage=1,443 cf Inflow=0.95 cfs 0.112 af
Discarded=0.22 cfs 0.112 af Primary=0.00 cfs 0.000 af Outflow=0.22 cfs 0.112 af

Pond P-2B: P-2B Peak Elev=412.48' Storage=696 cf Inflow=0.69 cfs 0.065 af
Discarded=0.18 cfs 0.065 af Primary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.065 af

Pond P-3: P-3 Peak Elev=409.61' Storage=1,664 cf Inflow=1.31 cfs 0.143 af
Discarded=0.34 cfs 0.143 af Primary=0.00 cfs 0.000 af Outflow=0.34 cfs 0.143 af

Pond P-4: P-4 Peak Elev=397.73' Storage=14,233 cf Inflow=4.77 cfs 0.486 af
Discarded=0.17 cfs 0.478 af Primary=0.00 cfs 0.000 af Outflow=0.17 cfs 0.478 af

Link 1L: AP-1 Inflow=0.01 cfs 0.005 af
Primary=0.01 cfs 0.005 af

Link 2L: AP-2 Inflow=0.90 cfs 0.070 af
Primary=0.90 cfs 0.070 af

Link 3L: AP-3 Inflow=0.03 cfs 0.013 af
Primary=0.03 cfs 0.013 af

Link 4L: AP-4 Inflow=1.74 cfs 0.164 af
Primary=1.74 cfs 0.164 af

Total Runoff Area = 14.567 ac Runoff Volume = 1.337 af Average Runoff Depth = 1.10"
100.00% Pervious = 14.567 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment PDA-1A: PDA-1A

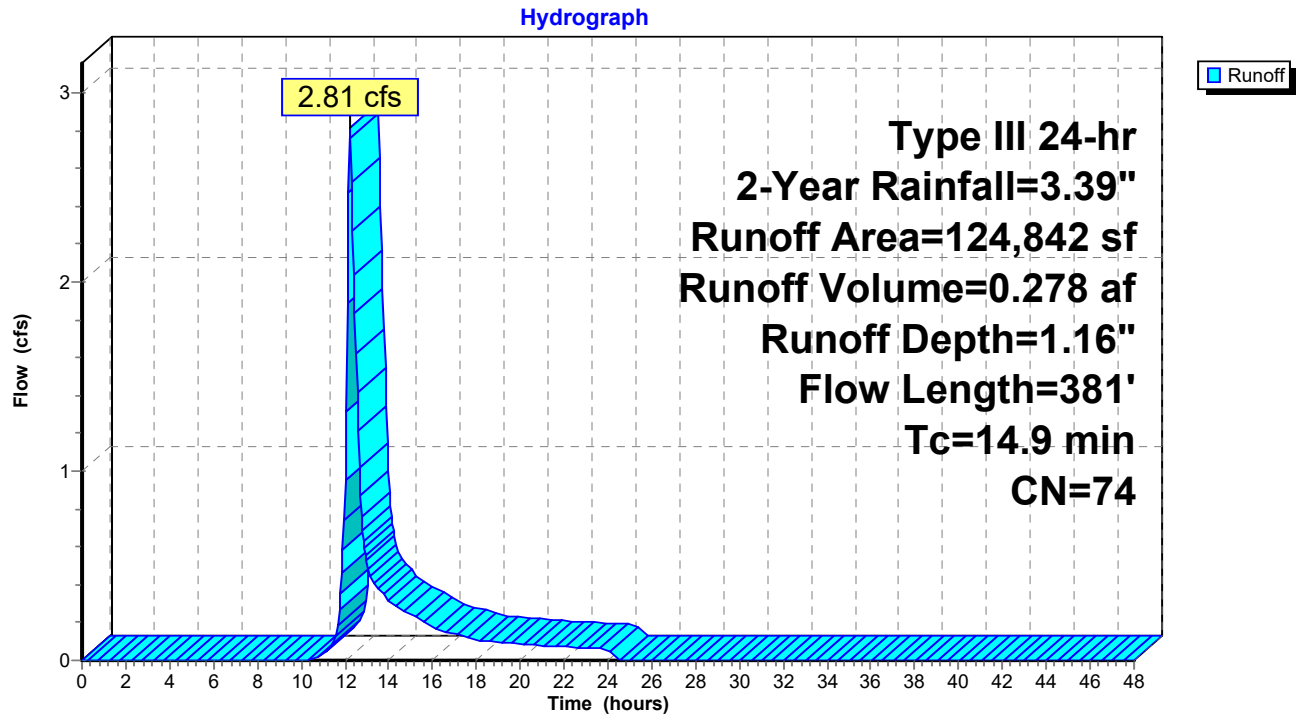
Runoff = 2.81 cfs @ 12.22 hrs, Volume= 0.278 af, Depth= 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
79,434	71	Meadow, non-grazed, HSG C
45,408	78	Meadow, non-grazed, HSG D
124,842	74	Weighted Average
124,842		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0350	0.15		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
3.8	281	0.0306	1.22		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
14.9	381	Total			

Subcatchment PDA-1A: PDA-1A



Summary for Subcatchment PDA-1B: PDA-1B

[49] Hint: Tc<2dt may require smaller dt

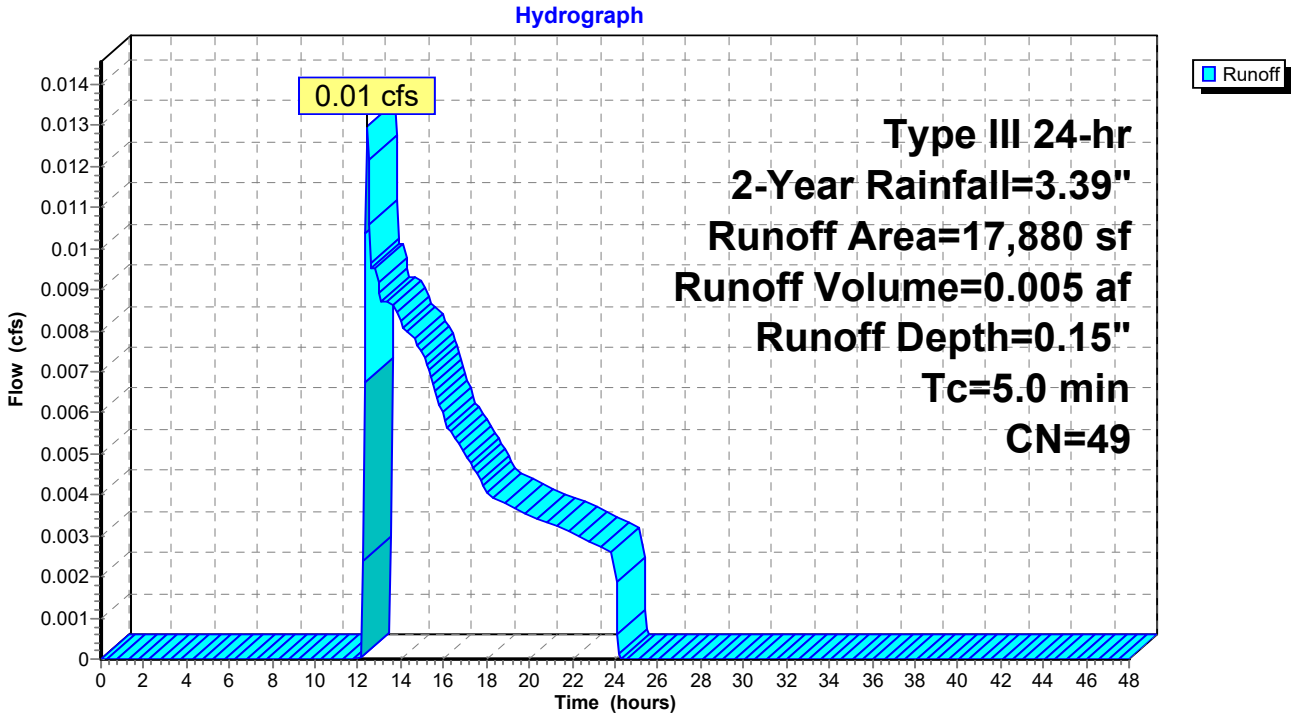
Runoff = 0.01 cfs @ 12.44 hrs, Volume= 0.005 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
16,448	48	Brush, Good, HSG B
1,432	65	Brush, Good, HSG C
17,880	49	Weighted Average
17,880		100.00% Pervious Area

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

Subcatchment PDA-1B: PDA-1B



Summary for Subcatchment PDA-2A: PDA-2A

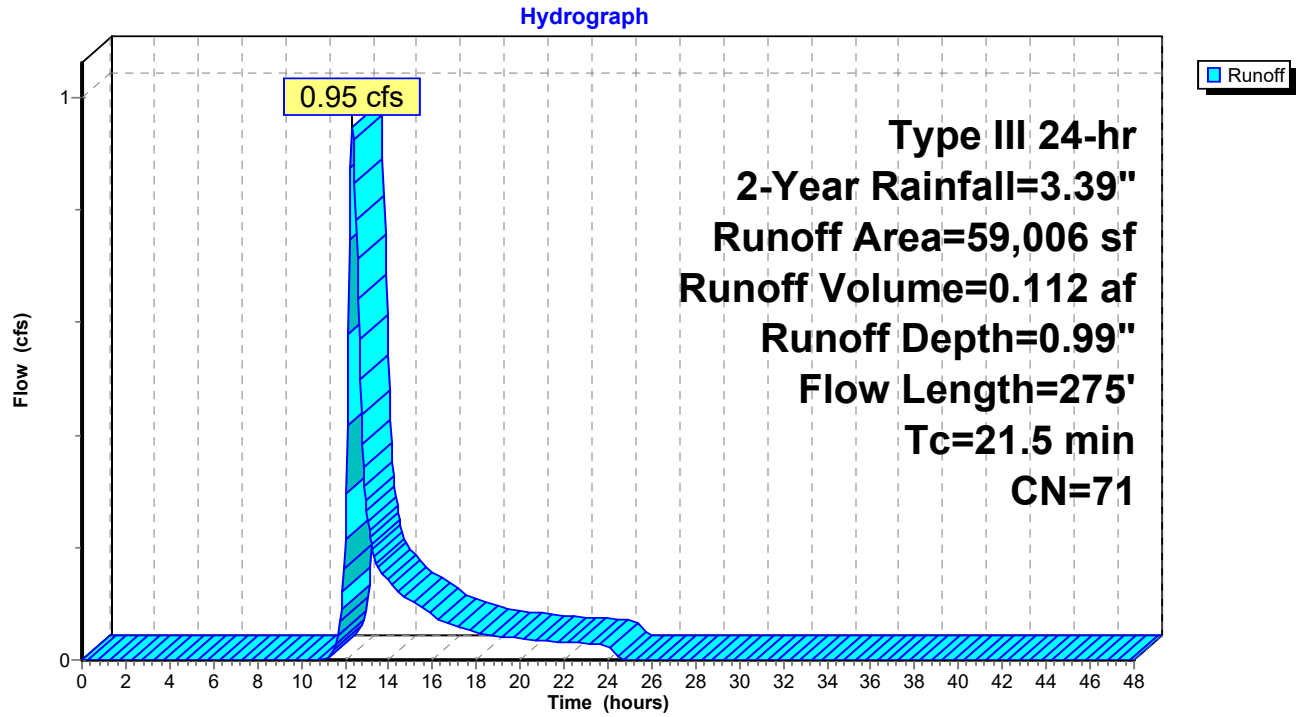
Runoff = 0.95 cfs @ 12.33 hrs, Volume= 0.112 af, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
39,007	71	Meadow, non-grazed, HSG C
16,039	78	Meadow, non-grazed, HSG D
3,960	48	Brush, Good, HSG B
59,006	71	Weighted Average
59,006		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
16.0	70	0.0069	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
2.9	175	0.0211	1.02		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
21.5	275	Total			

Subcatchment PDA-2A: PDA-2A



Summary for Subcatchment PDA-2B: PDA-2B

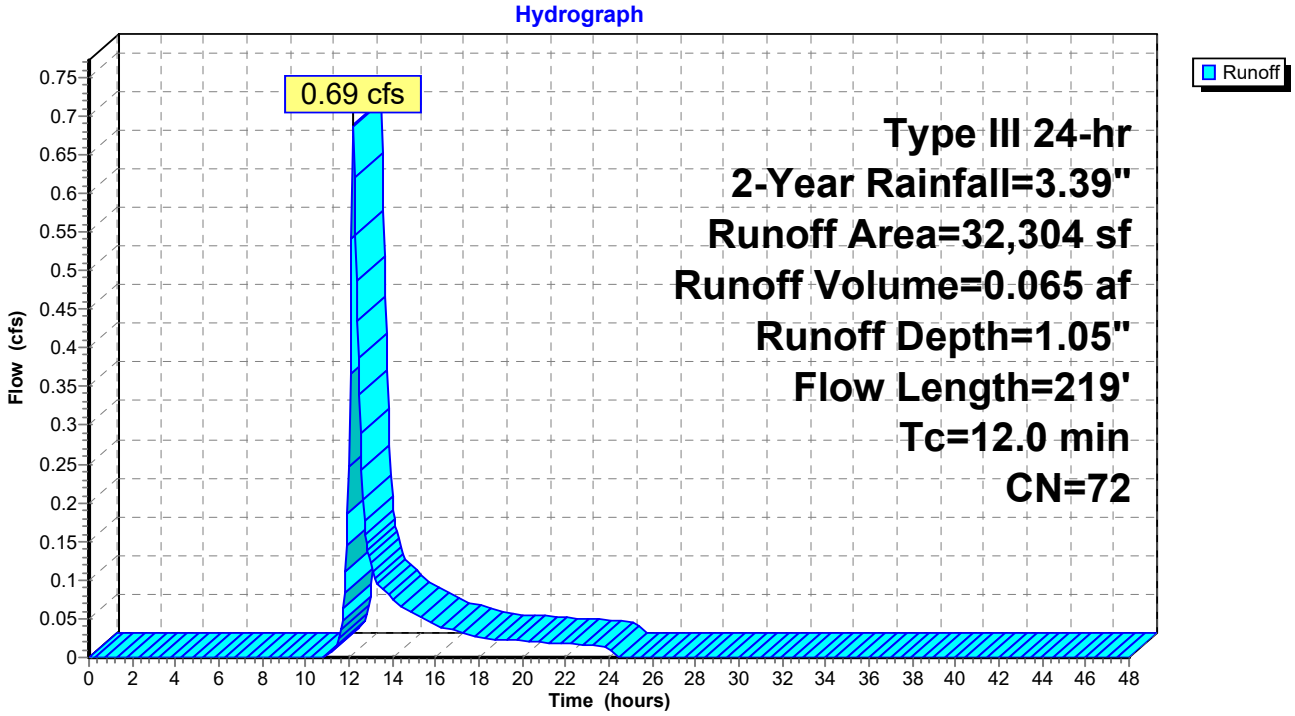
Runoff = 0.69 cfs @ 12.18 hrs, Volume= 0.065 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
12,043	71	Meadow, non-grazed, HSG C
16,171	78	Meadow, non-grazed, HSG D
4,020	48	Brush, Good, HSG B
70	73	Brush, Good, HSG D
32,304	72	Weighted Average
32,304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
8.3	70	0.0357	0.14		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.1	119	0.0630	1.76		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
12.0	219	Total			

Subcatchment PDA-2B: PDA-2B



Summary for Subcatchment PDA-2C: PDA-2C

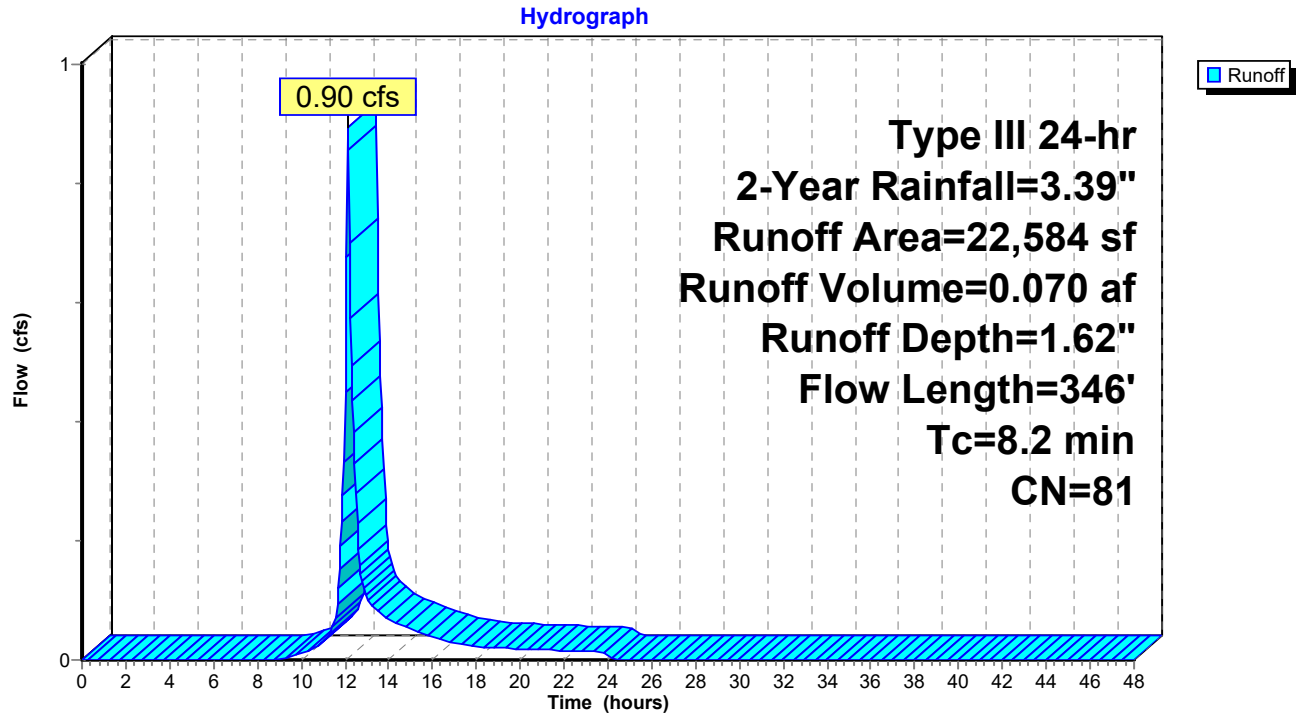
Runoff = 0.90 cfs @ 12.12 hrs, Volume= 0.070 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
1,977	77	Woods, Good, HSG D
3,486	96	Gravel surface, HSG D
17,121	78	Meadow, non-grazed, HSG D
22,584	81	Weighted Average
22,584		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
1.3	146	0.0684	1.83		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0854	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
8.2	346	Total			

Subcatchment PDA-2C: PDA-2C



Summary for Subcatchment PDA-3A: PDA-3A

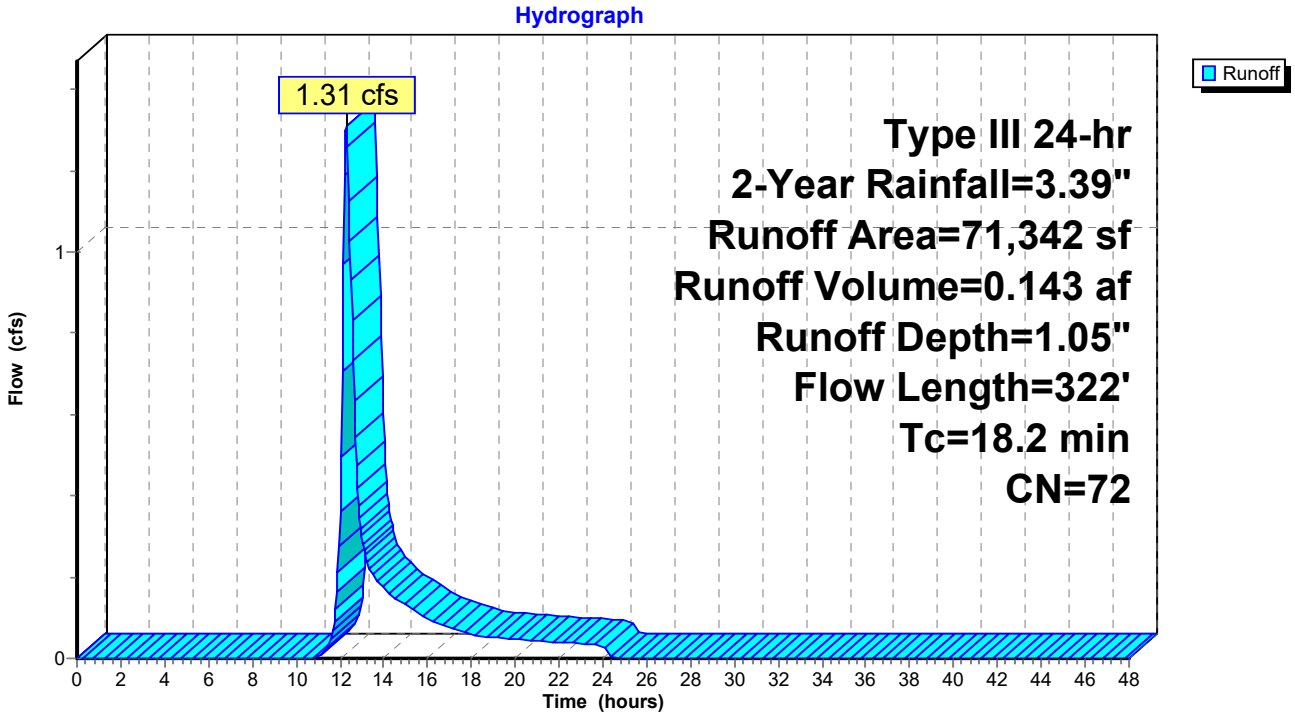
Runoff = 1.31 cfs @ 12.27 hrs, Volume= 0.143 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
64,777	71	Meadow, non-grazed, HSG C
6,565	78	Meadow, non-grazed, HSG D
71,342	72	Weighted Average
71,342		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0150	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.6	222	0.0417	1.43		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
18.2	322	Total			

Subcatchment PDA-3A: PDA-3A



Summary for Subcatchment PDA-3B: PDA-3B

[49] Hint: Tc<2dt may require smaller dt

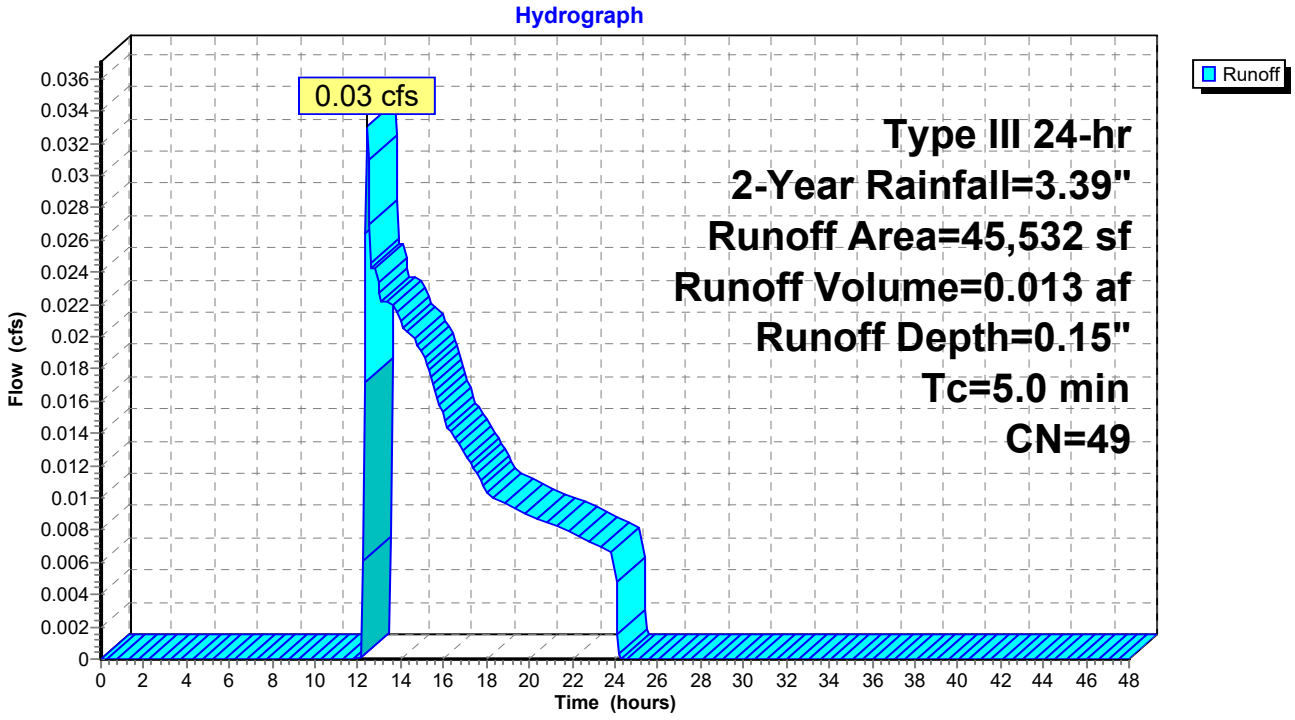
Runoff = 0.03 cfs @ 12.44 hrs, Volume= 0.013 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
43,429	48	Brush, Good, HSG B
2,103	73	Brush, Good, HSG D
45,532	49	Weighted Average
45,532		100.00% Pervious Area

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

Subcatchment PDA-3B: PDA-3B



Summary for Subcatchment PDA-4A: PDA-4A

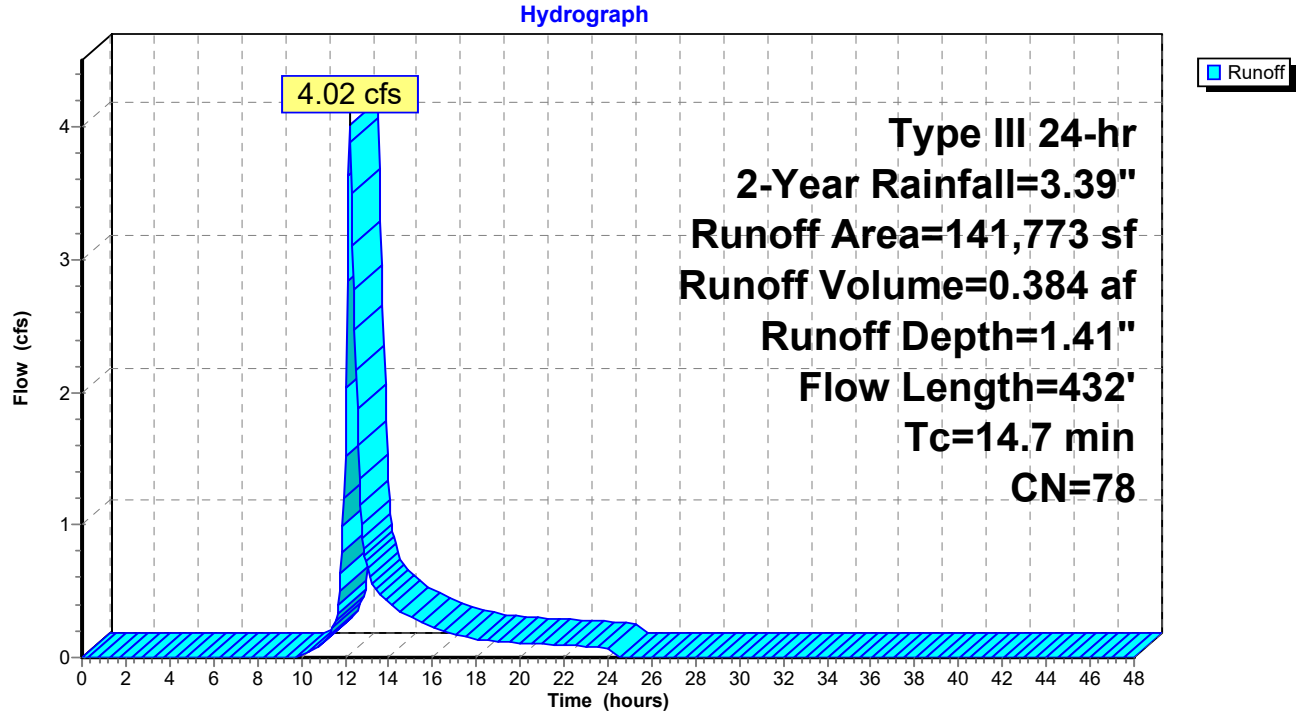
Runoff = 4.02 cfs @ 12.21 hrs, Volume= 0.384 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
136,646	78	Meadow, non-grazed, HSG D
5,127	73	Brush, Good, HSG D
141,773	78	Weighted Average
141,773		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	67	0.0224	0.12		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.5	33	0.1515	0.22		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.2	157	0.0955	2.16		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
1.0	82	0.0366	1.34		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.4	93	0.0550	3.52		**Shallow Concentrated Flow, E-F** Grassed Waterway Kv= 15.0 fps
14.7	432	Total			

Subcatchment PDA-4A: PDA-4A



Summary for Subcatchment PDA-4B: PDA-4B

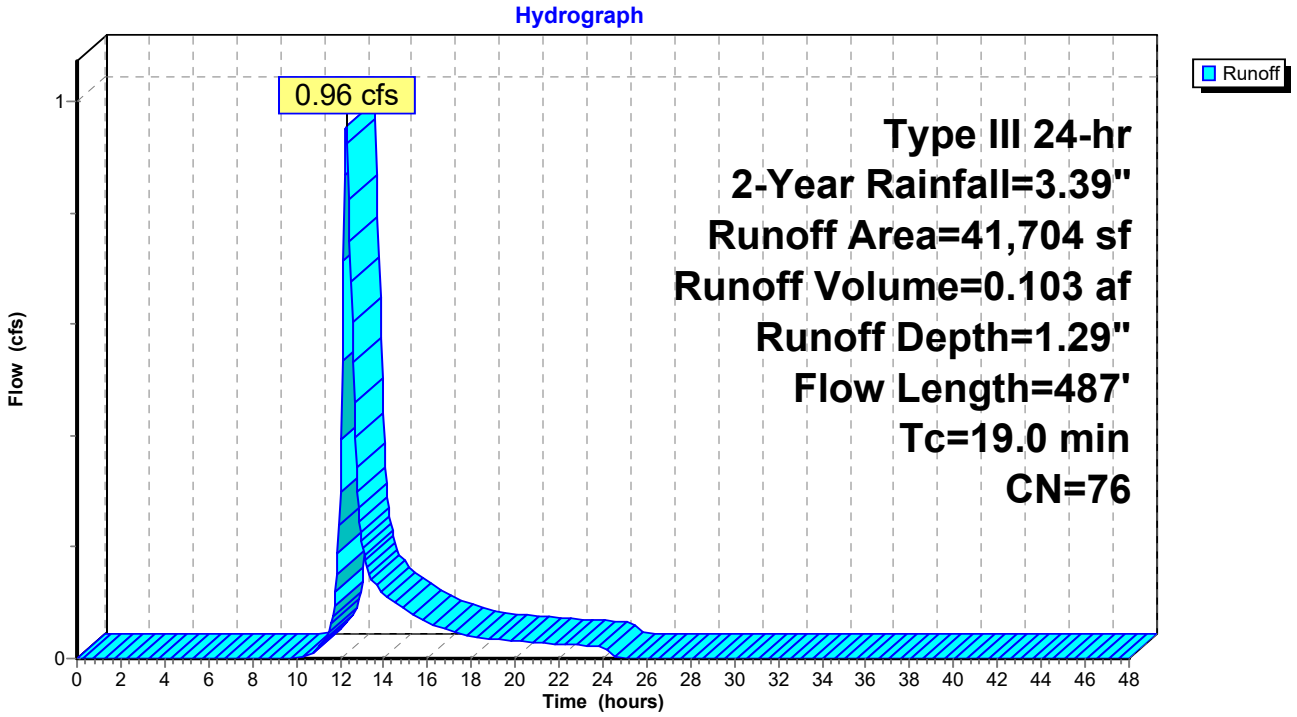
Runoff = 0.96 cfs @ 12.28 hrs, Volume= 0.103 af, Depth= 1.29"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
13,291	71	Meadow, non-grazed, HSG C
28,356	78	Meadow, non-grazed, HSG D
57	96	Gravel surface, HSG D
41,704	76	Weighted Average
41,704		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0200	0.12		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.9	163	0.0184	0.95		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	117	0.0855	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
0.8	63	0.0317	1.25		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.4	44	0.0682	1.83		**Shallow Concentrated Flow, E-F** Short Grass Pasture Kv= 7.0 fps
19.0	487	Total			

Subcatchment PDA-4B: PDA-4B



Summary for Subcatchment PDA-4C: PDA-4C

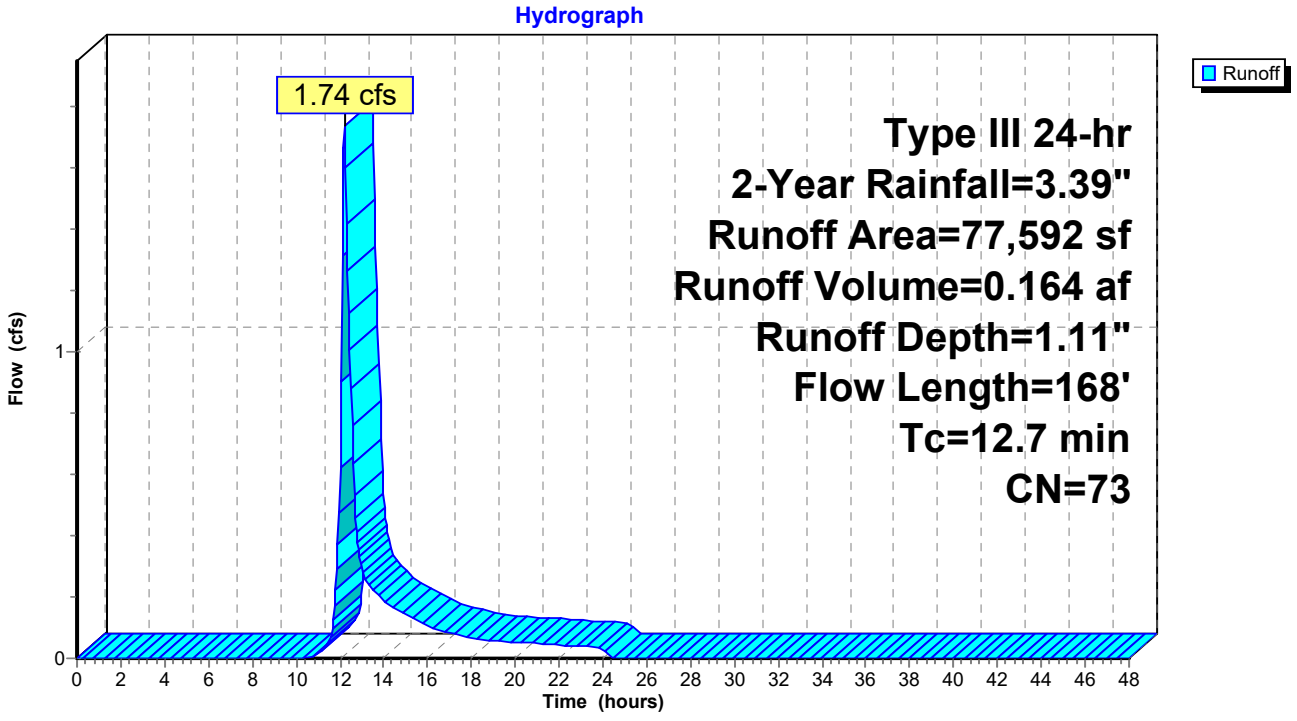
Runoff = 1.74 cfs @ 12.19 hrs, Volume= 0.164 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
77,592	73	Brush, Good, HSG D
77,592		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0800	0.14		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
0.7	68	0.1029	1.60		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
12.7	168	Total			

Subcatchment PDA-4C: PDA-4C



Summary for Reach 5R: Swale

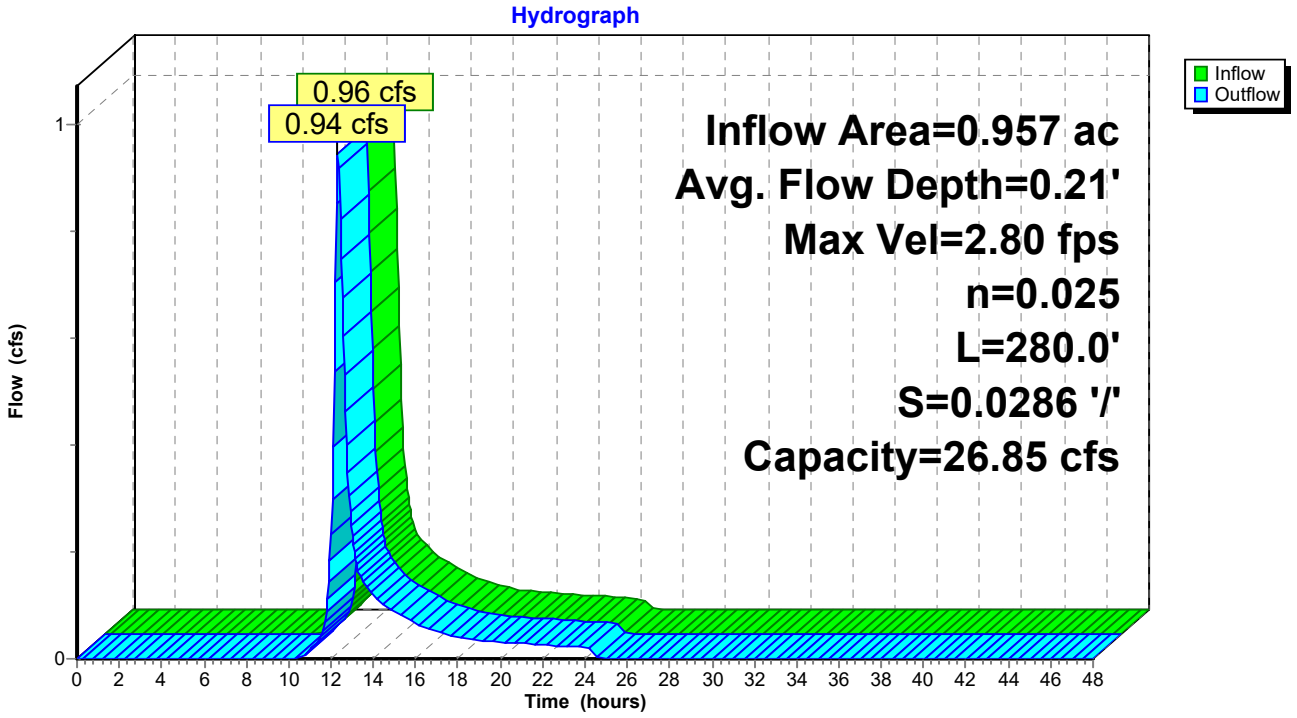
Inflow Area = 0.957 ac, 0.00% Impervious, Inflow Depth = 1.29" for 2-Year event
Inflow = 0.96 cfs @ 12.28 hrs, Volume= 0.103 af
Outflow = 0.94 cfs @ 12.33 hrs, Volume= 0.103 af, Atten= 1%, Lag= 3.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.80 fps, Min. Travel Time= 1.7 min
Avg. Velocity = 1.09 fps, Avg. Travel Time= 4.3 min

Peak Storage= 96 cf @ 12.30 hrs
Average Depth at Peak Storage= 0.21'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 26.85 cfs

1.00' x 1.00' deep channel, n= 0.025
Side Slope Z-value= 3.0 '/' Top Width= 7.00'
Length= 280.0' Slope= 0.0286 '/'
Inlet Invert= 408.00', Outlet Invert= 400.00'

Reach 5R: Swale



Summary for Pond P-1: P-1

Inflow Area = 2.866 ac, 0.00% Impervious, Inflow Depth = 1.16" for 2-Year event
Inflow = 2.81 cfs @ 12.22 hrs, Volume= 0.278 af
Outflow = 0.57 cfs @ 12.93 hrs, Volume= 0.278 af, Atten= 80%, Lag= 42.4 min
Discarded = 0.57 cfs @ 12.93 hrs, Volume= 0.278 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 411.81' @ 12.93 hrs Surf.Area= 4,921 sf Storage= 3,660 cf

Plug-Flow detention time= 52.7 min calculated for 0.278 af (100% of inflow)
Center-of-Mass det. time= 52.7 min (919.4 - 866.8)

Volume	Invert	Avail.Storage	Storage Description
#1	411.00'	16,968 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

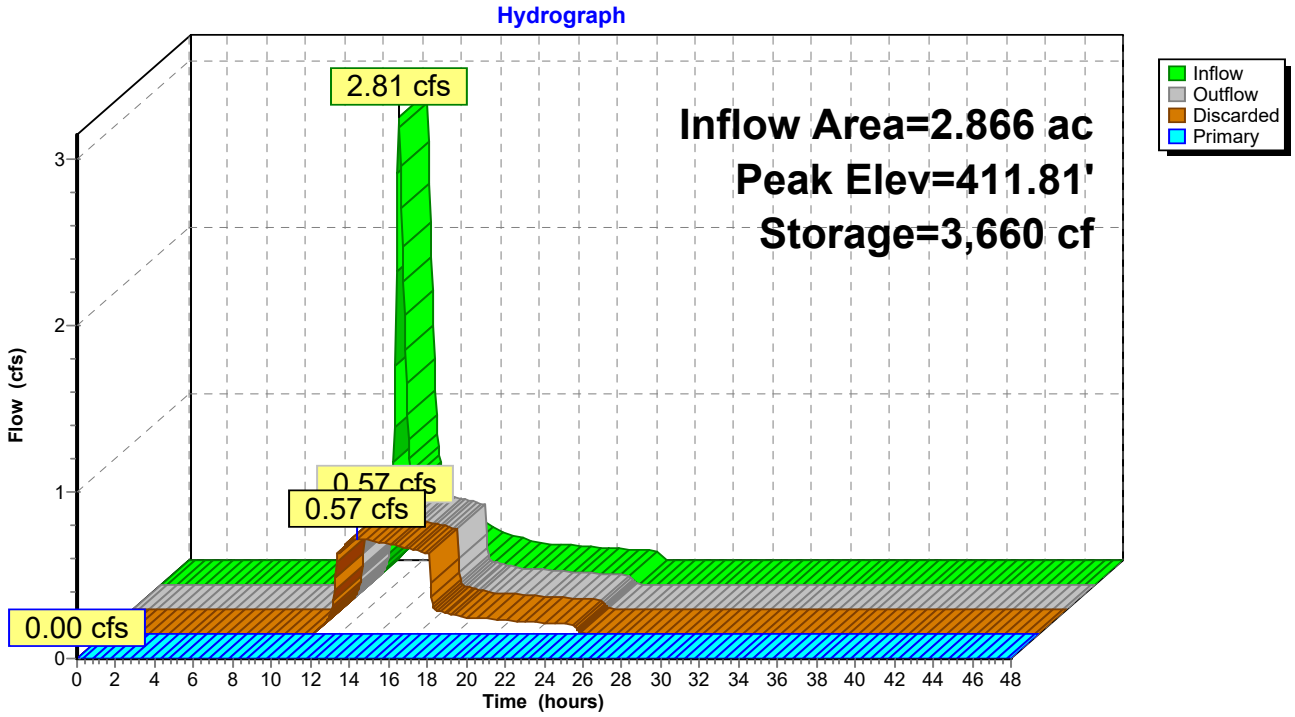
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
411.00	4,114	0	0
412.00	5,110	4,612	4,612
413.00	6,164	5,637	10,249
414.00	7,274	6,719	16,968

Device	Routing	Invert	Outlet Devices
#1	Discarded	411.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	413.50'	**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

Discarded OutFlow Max=0.57 cfs @ 12.93 hrs HW=411.81' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.57 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=411.00' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P-1: P-1


Hydrograph
Inflow
Outflow
Discarded
Primary
2.81 cfs
0.57 cfs
0.57 cfs
0.00 cfs
Inflow Area=2.866 ac
Peak Elev=411.81'
Storage=3,660 cf
Flow (cfs)
Time (hours)
0
1
2
3
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond P-2A: P-2A

Inflow Area = 1.355 ac, 0.00% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 0.95 cfs @ 12.33 hrs, Volume= 0.112 af
Outflow = 0.22 cfs @ 13.12 hrs, Volume= 0.112 af, Atten= 76%, Lag= 47.6 min
Discarded = 0.22 cfs @ 13.12 hrs, Volume= 0.112 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 417.86' @ 13.12 hrs Surf.Area= 1,935 sf Storage= 1,443 cf

Plug-Flow detention time= 56.3 min calculated for 0.112 af (100% of inflow)
Center-of-Mass det. time= 56.3 min (938.8 - 882.5)

Volume	Invert	Avail.Storage	Storage Description
#1	417.00'	7,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

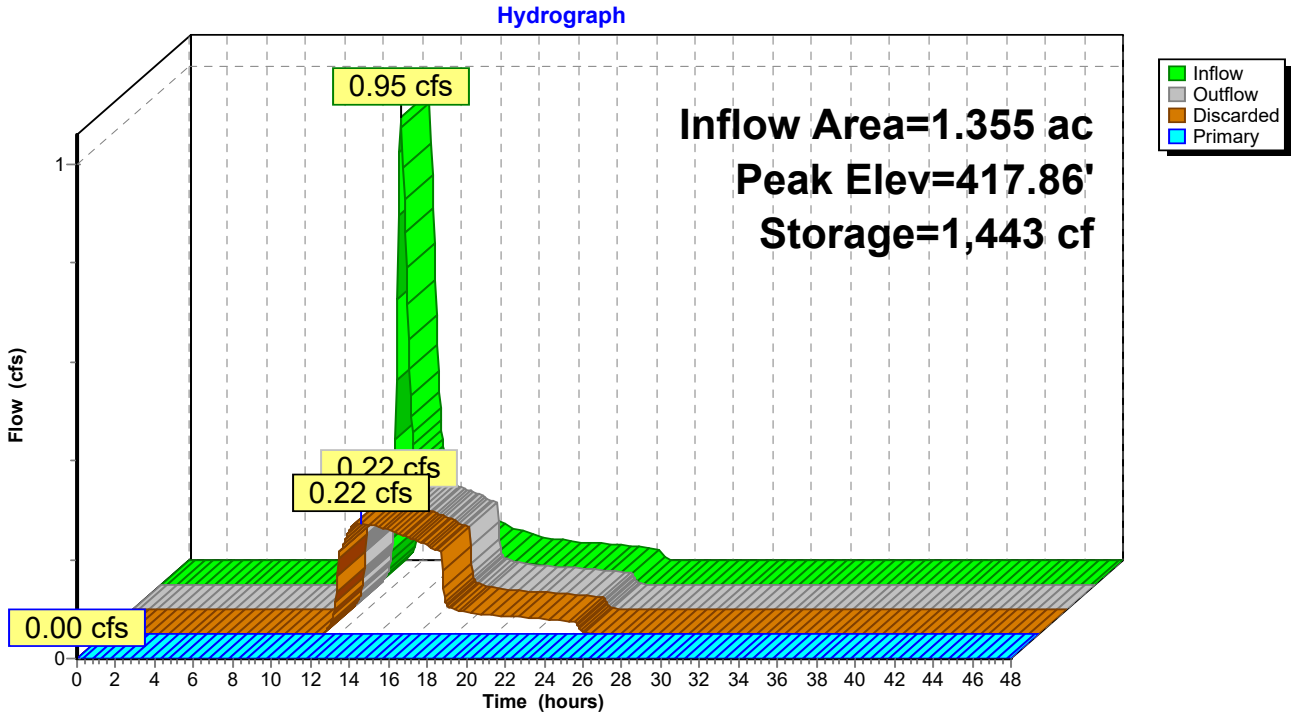
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
417.00	1,405	0	0
418.00	2,018	1,712	1,712
419.00	2,688	2,353	4,065
420.00	3,415	3,052	7,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	417.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	419.50'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.22 cfs @ 13.12 hrs HW=417.86' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=417.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P-2A: P-2A


Hydrograph
Inflow
Outflow
Discarded
Primary
0.95 cfs
0.22 cfs
0.22 cfs
0.00 cfs
Inflow Area=1.355 ac
Peak Elev=417.86'
Storage=1,443 cf
Flow (cfs)
Time (hours)
0
1
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond P-2B: P-2B

Inflow Area = 0.742 ac, 0.00% Impervious, Inflow Depth = 1.05" for 2-Year event
Inflow = 0.69 cfs @ 12.18 hrs, Volume= 0.065 af
Outflow = 0.18 cfs @ 12.69 hrs, Volume= 0.065 af, Atten= 73%, Lag= 30.4 min
Discarded = 0.18 cfs @ 12.69 hrs, Volume= 0.065 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 412.48' @ 12.69 hrs Surf.Area= 1,580 sf Storage= 696 cf

Plug-Flow detention time= 27.1 min calculated for 0.065 af (100% of inflow)
Center-of-Mass det. time= 27.1 min (897.5 - 870.5)

Volume	Invert	Avail.Storage	Storage Description
#1	412.00'	6,481 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

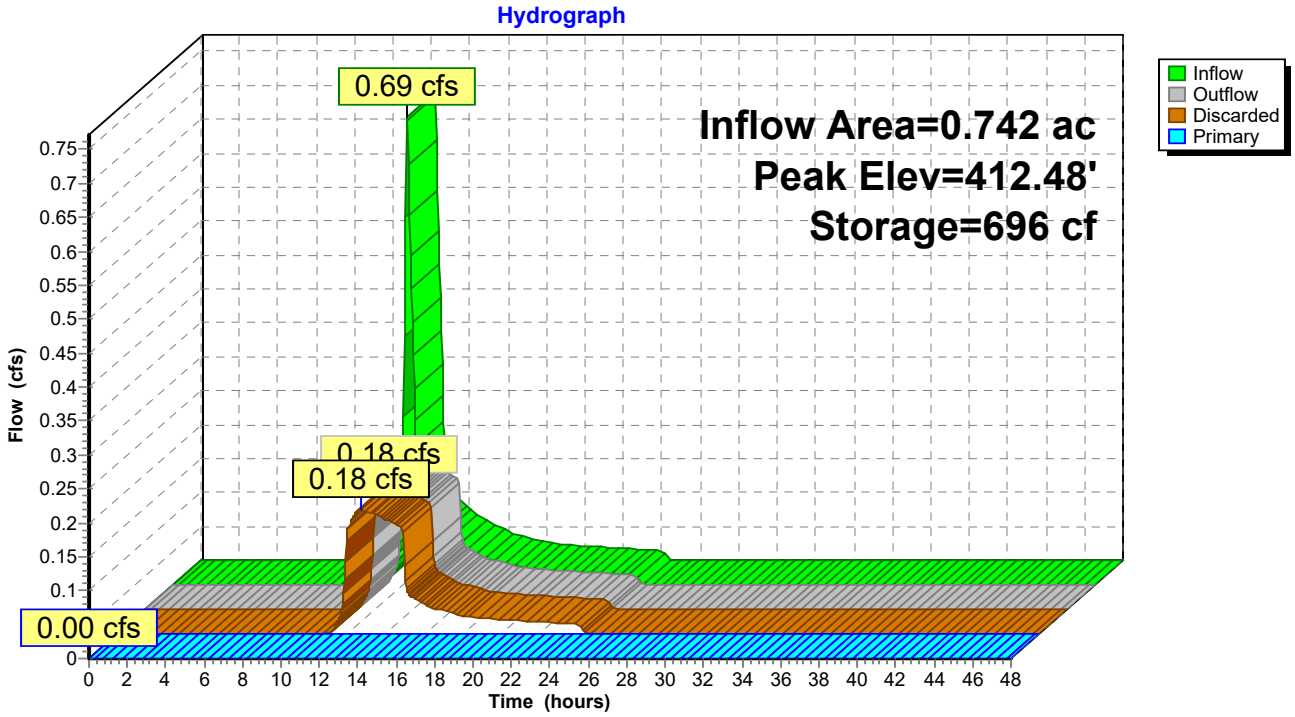
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
412.00	1,330	0	0
413.00	1,852	1,591	1,591
414.00	2,431	2,142	3,733
415.00	3,065	2,748	6,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	412.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	414.50'	**10.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.18 cfs @ 12.69 hrs HW=412.48' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.18 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=412.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P-2B: P-2B


Hydrograph
Inflow
Outflow
Discarded
Primary
0.69 cfs
0.18 cfs
0.18 cfs
0.00 cfs
Inflow Area=0.742 ac
Peak Elev=412.48'
Storage=696 cf
Flow (cfs)
Time (hours)
0 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7 0.75
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond P-3: P-3

Inflow Area = 1.638 ac, 0.00% Impervious, Inflow Depth = 1.05" for 2-Year event
Inflow = 1.31 cfs @ 12.27 hrs, Volume= 0.143 af
Outflow = 0.34 cfs @ 12.91 hrs, Volume= 0.143 af, Atten= 74%, Lag= 38.3 min
Discarded = 0.34 cfs @ 12.91 hrs, Volume= 0.143 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 409.61' @ 12.91 hrs Surf.Area= 2,941 sf Storage= 1,664 cf

Plug-Flow detention time= 37.5 min calculated for 0.143 af (100% of inflow)
Center-of-Mass det. time= 37.5 min (913.7 - 876.2)

Volume	Invert	Avail.Storage	Storage Description
#1	409.00'	10,964 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

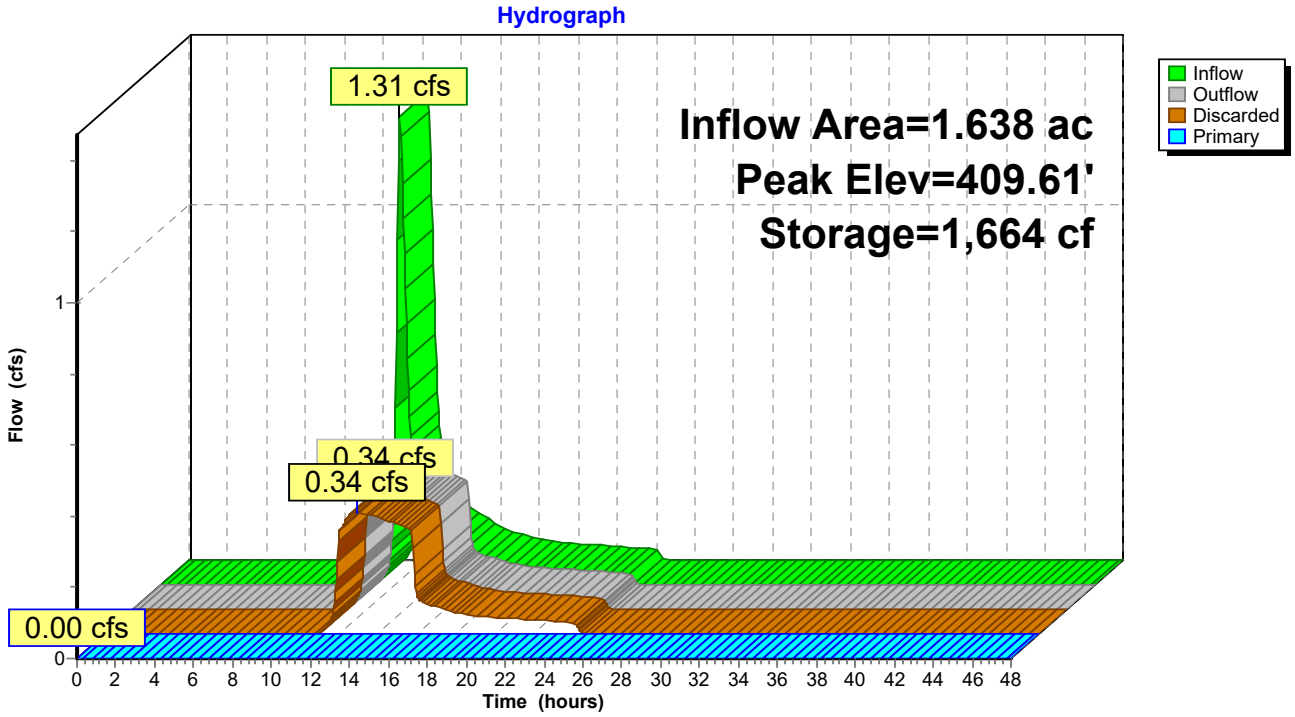
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
409.00	2,479	0	0
410.00	3,231	2,855	2,855
411.00	4,040	3,636	6,491
412.00	4,906	4,473	10,964

Device	Routing	Invert	Outlet Devices
#1	Discarded	409.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	411.50'	**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

Discarded OutFlow Max=0.34 cfs @ 12.91 hrs HW=409.61' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.34 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=409.00' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P-3: P-3


Hydrograph
1.31 cfs
0.34 cfs
0.34 cfs
0.00 cfs
Inflow Area=1.638 ac
Peak Elev=409.61'
Storage=1,664 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
1
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Pond P-4: P-4

Inflow Area = 4.212 ac, 0.00% Impervious, Inflow Depth = 1.39" for 2-Year event
Inflow = 4.77 cfs @ 12.23 hrs, Volume= 0.486 af
Outflow = 0.17 cfs @ 18.21 hrs, Volume= 0.478 af, Atten= 96%, Lag= 358.6 min
Discarded = 0.17 cfs @ 18.21 hrs, Volume= 0.478 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 397.73' @ 18.21 hrs Surf.Area= 9,138 sf Storage= 14,233 cf

Plug-Flow detention time= 889.2 min calculated for 0.477 af (98% of inflow)
Center-of-Mass det. time= 879.7 min (1,737.0 - 857.3)

Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	37,885 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

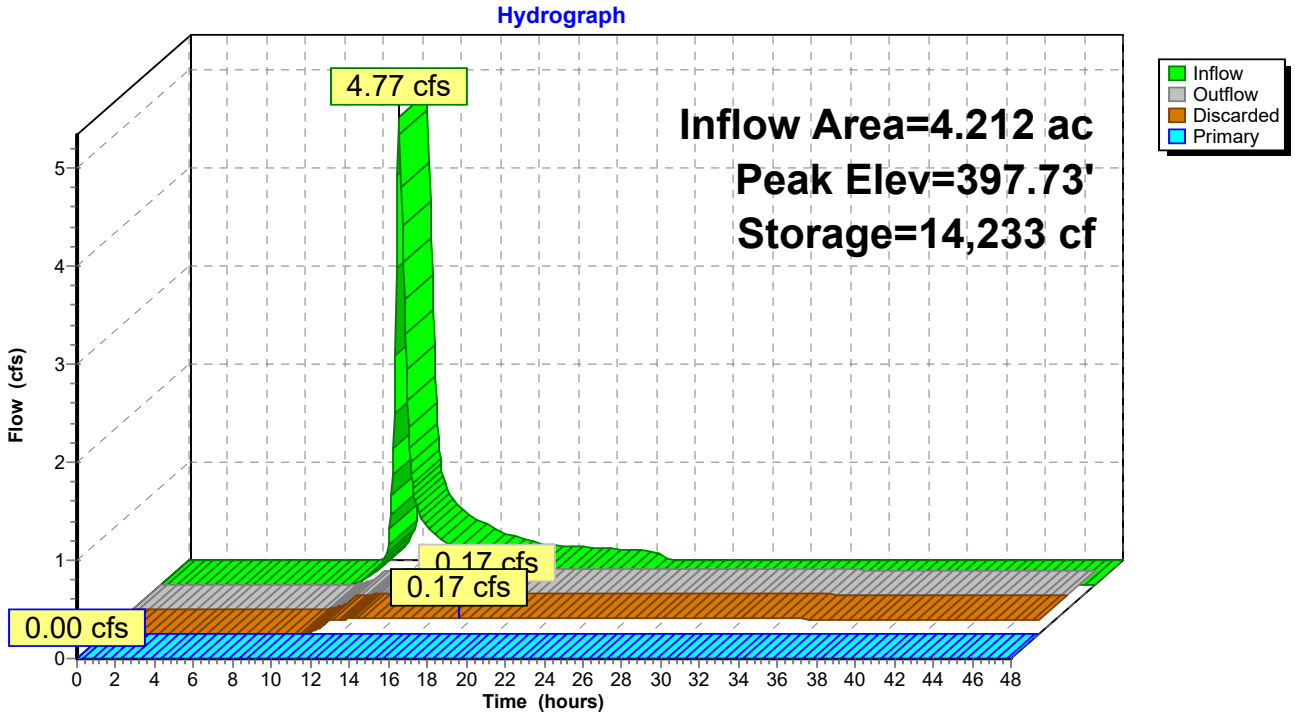
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	7,294	0	0
397.00	8,333	7,814	7,814
398.00	9,429	8,881	16,695
399.00	10,581	10,005	26,700
400.00	11,790	11,186	37,885

Device	Routing	Invert	Outlet Devices
#1	Discarded	396.00'	**0.800 in/hr Exfiltration over Surface area**
#2	Primary	399.50'	**15.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.17 cfs @ 18.21 hrs HW=397.73' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.17 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=396.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P-4: P-4

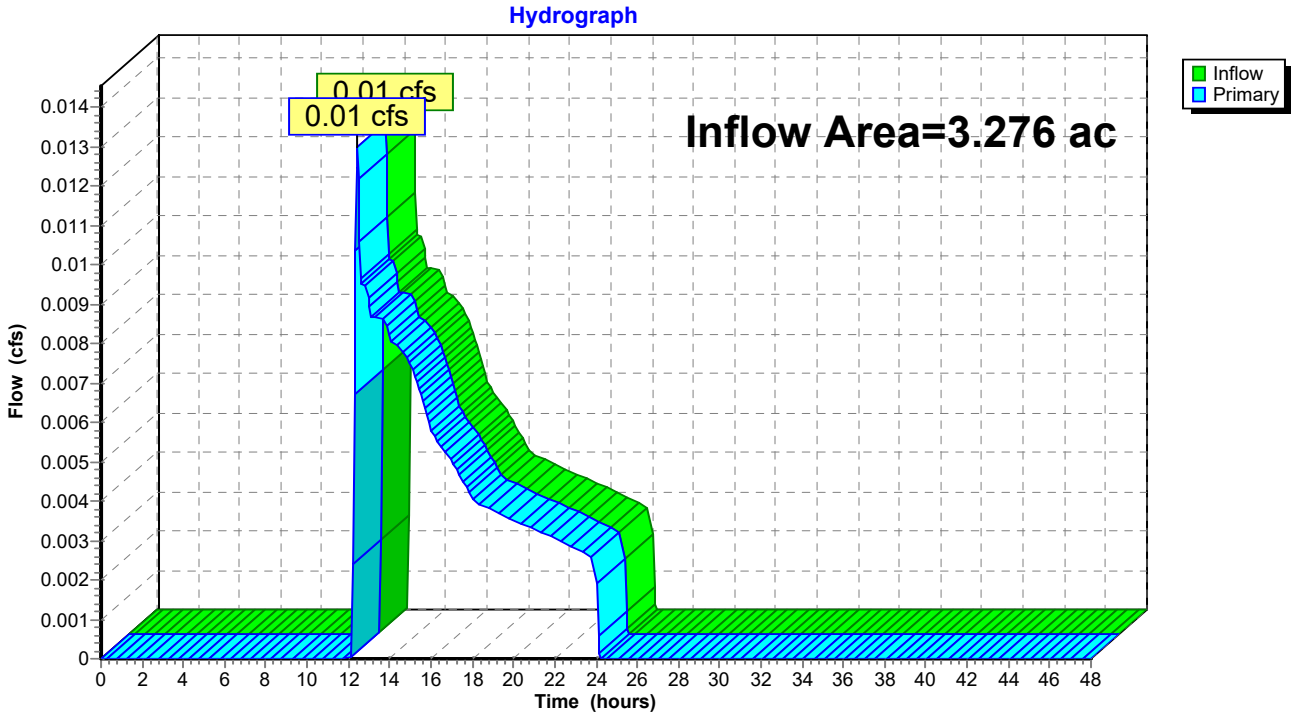

Hydrograph
Inflow
Outflow
Discarded
Primary
4.77 cfs
Inflow Area=4.212 ac
Peak Elev=397.73'
Storage=14,233 cf
0.17 cfs
0.17 cfs
0.00 cfs
Flow (cfs)
Time (hours)
0 1 2 3 4 5
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Link 1L: AP-1

Inflow Area = 3.276 ac, 0.00% Impervious, Inflow Depth = 0.02" for 2-Year event
Inflow = 0.01 cfs @ 12.44 hrs, Volume= 0.005 af
Primary = 0.01 cfs @ 12.44 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: AP-1

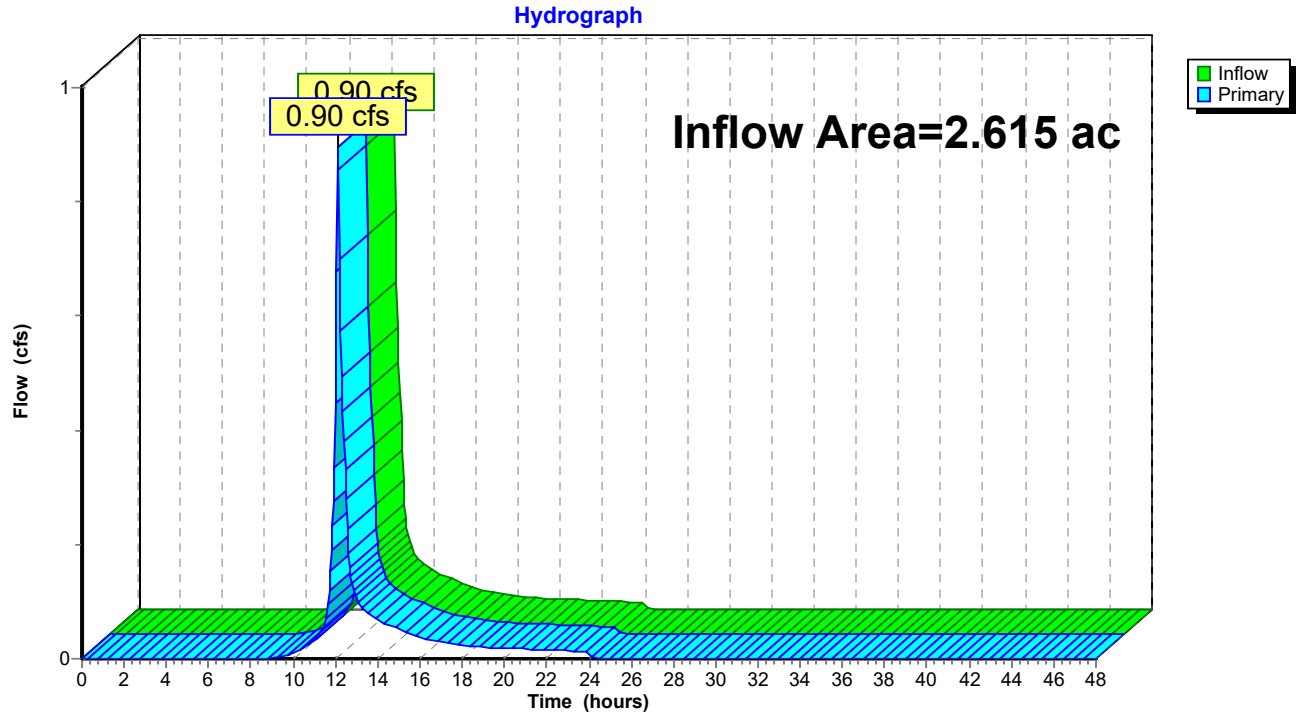


Summary for Link 2L: AP-2

Inflow Area = 2.615 ac, 0.00% Impervious, Inflow Depth = 0.32" for 2-Year event
Inflow = 0.90 cfs @ 12.12 hrs, Volume= 0.070 af
Primary = 0.90 cfs @ 12.12 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

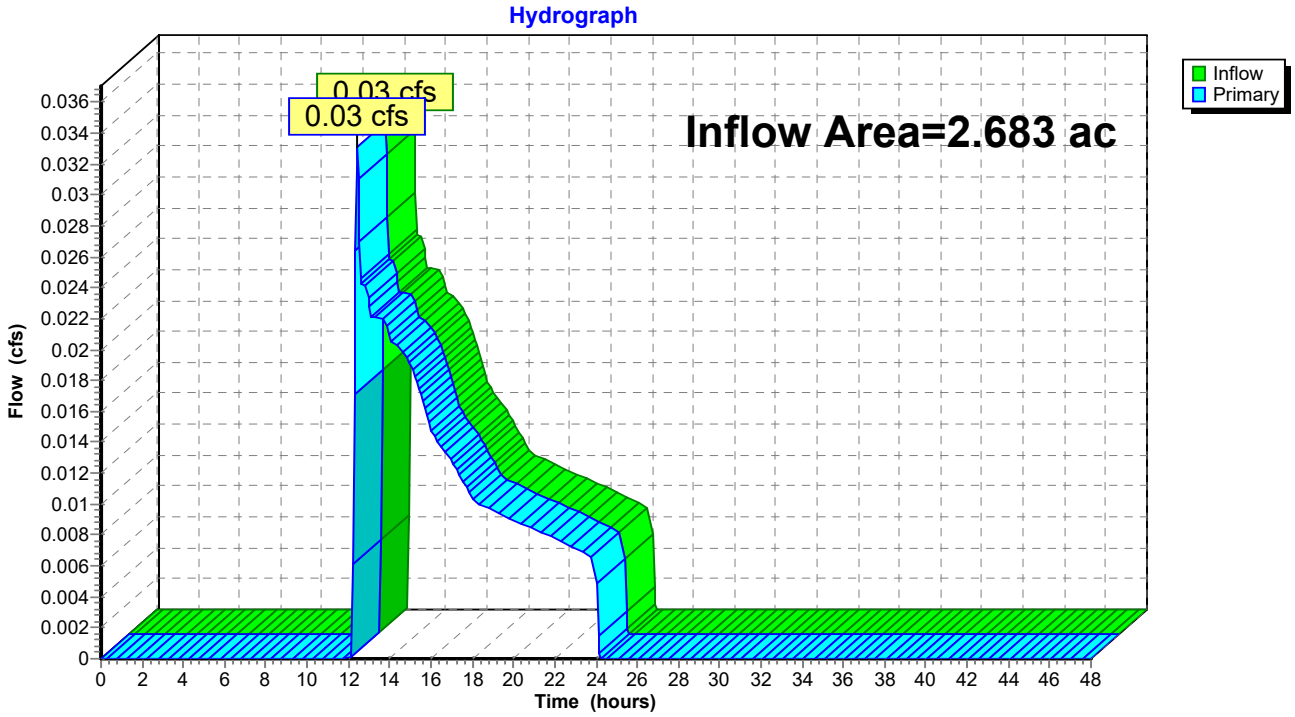


Summary for Link 3L: AP-3

Inflow Area = 2.683 ac, 0.00% Impervious, Inflow Depth = 0.06" for 2-Year event
Inflow = 0.03 cfs @ 12.44 hrs, Volume= 0.013 af
Primary = 0.03 cfs @ 12.44 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 3L: AP-3

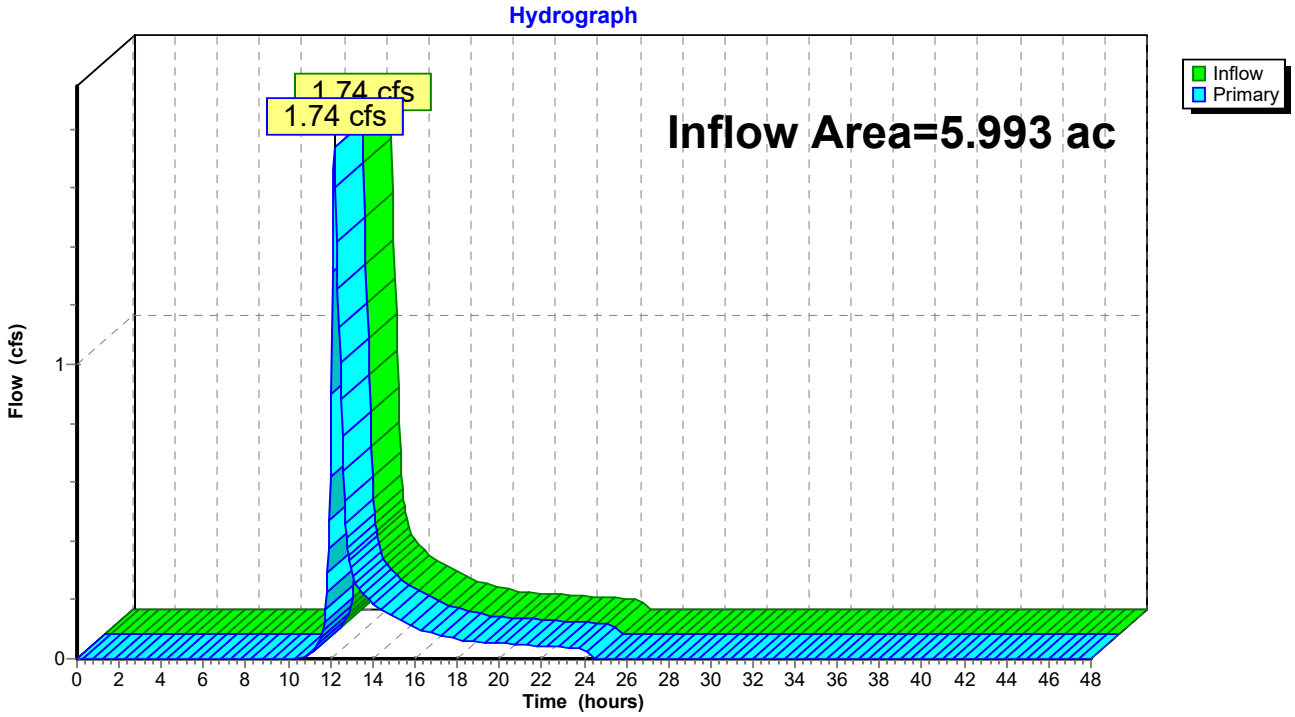


Summary for Link 4L: AP-4

Inflow Area = 5.993 ac, 0.00% Impervious, Inflow Depth = 0.33" for 2-Year event
Inflow = 1.74 cfs @ 12.19 hrs, Volume= 0.164 af
Primary = 1.74 cfs @ 12.19 hrs, Volume= 0.164 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 4L: AP-4



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-1A: PDA-1A Runoff Area=124,842 sf 0.00% Impervious Runoff Depth=3.46"
Flow Length=381' Tc=14.9 min CN=74 Runoff=8.79 cfs 0.827 af

Subcatchment PDA-1B: PDA-1B Runoff Area=17,880 sf 0.00% Impervious Runoff Depth=1.23"
Tc=5.0 min CN=49 Runoff=0.48 cfs 0.042 af

Subcatchment PDA-2A: PDA-2A Runoff Area=59,006 sf 0.00% Impervious Runoff Depth=3.17"
Flow Length=275' Tc=21.5 min CN=71 Runoff=3.27 cfs 0.357 af

Subcatchment PDA-2B: PDA-2B Runoff Area=32,304 sf 0.00% Impervious Runoff Depth=3.27"
Flow Length=219' Tc=12.0 min CN=72 Runoff=2.31 cfs 0.202 af

Subcatchment PDA-2C: PDA-2C Runoff Area=22,584 sf 0.00% Impervious Runoff Depth=4.19"
Flow Length=346' Tc=8.2 min CN=81 Runoff=2.31 cfs 0.181 af

Subcatchment PDA-3A: PDA-3A Runoff Area=71,342 sf 0.00% Impervious Runoff Depth=3.27"
Flow Length=322' Tc=18.2 min CN=72 Runoff=4.37 cfs 0.446 af

Subcatchment PDA-3B: PDA-3B Runoff Area=45,532 sf 0.00% Impervious Runoff Depth=1.23"
Tc=5.0 min CN=49 Runoff=1.22 cfs 0.107 af

Subcatchment PDA-4A: PDA-4A Runoff Area=141,773 sf 0.00% Impervious Runoff Depth=3.87"
Flow Length=432' Tc=14.7 min CN=78 Runoff=11.20 cfs 1.050 af

Subcatchment PDA-4B: PDA-4B Runoff Area=41,704 sf 0.00% Impervious Runoff Depth=3.67"
Flow Length=487' Tc=19.0 min CN=76 Runoff=2.83 cfs 0.293 af

Subcatchment PDA-4C: PDA-4C Runoff Area=77,592 sf 0.00% Impervious Runoff Depth=3.36"
Flow Length=168' Tc=12.7 min CN=73 Runoff=5.59 cfs 0.499 af

Reach 5R: Swale Avg. Flow Depth=0.36' Max Vel=3.75 fps Inflow=2.83 cfs 0.293 af
n=0.025 L=280.0' S=0.0286 '/' Capacity=26.85 cfs Outflow=2.79 cfs 0.293 af

Pond P-1: P-1 Peak Elev=413.64' Storage=14,433 cf Inflow=8.79 cfs 0.827 af
Discarded=0.80 cfs 0.759 af Primary=1.25 cfs 0.069 af Outflow=2.05 cfs 0.827 af

Pond P-2A: P-2A Peak Elev=419.61' Storage=5,825 cf Inflow=3.27 cfs 0.357 af
Discarded=0.36 cfs 0.320 af Primary=0.92 cfs 0.037 af Outflow=1.28 cfs 0.357 af

Pond P-2B: P-2B Peak Elev=413.92' Storage=3,533 cf Inflow=2.31 cfs 0.202 af
Discarded=0.28 cfs 0.202 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.202 af

Pond P-3: P-3 Peak Elev=411.44' Storage=8,348 cf Inflow=4.37 cfs 0.446 af
Discarded=0.51 cfs 0.446 af Primary=0.00 cfs 0.000 af Outflow=0.51 cfs 0.446 af

Pond P-4: P-4 Peak Elev=399.62' Storage=33,462 cf Inflow=13.63 cfs 1.343 af
Discarded=0.21 cfs 0.621 af Primary=1.52 cfs 0.356 af Outflow=1.73 cfs 0.977 af

Link 1L: AP-1 Inflow=1.34 cfs 0.111 af
Primary=1.34 cfs 0.111 af

Link 2L: AP-2 Inflow=2.31 cfs 0.218 af
Primary=2.31 cfs 0.218 af

Link 3L: AP-3 Inflow=1.22 cfs 0.107 af
Primary=1.22 cfs 0.107 af

Link 4L: AP-4 Inflow=5.59 cfs 0.856 af
Primary=5.59 cfs 0.856 af

Total Runoff Area = 14.567 ac Runoff Volume = 4.005 af Average Runoff Depth = 3.30"
100.00% Pervious = 14.567 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment PDA-1A: PDA-1A

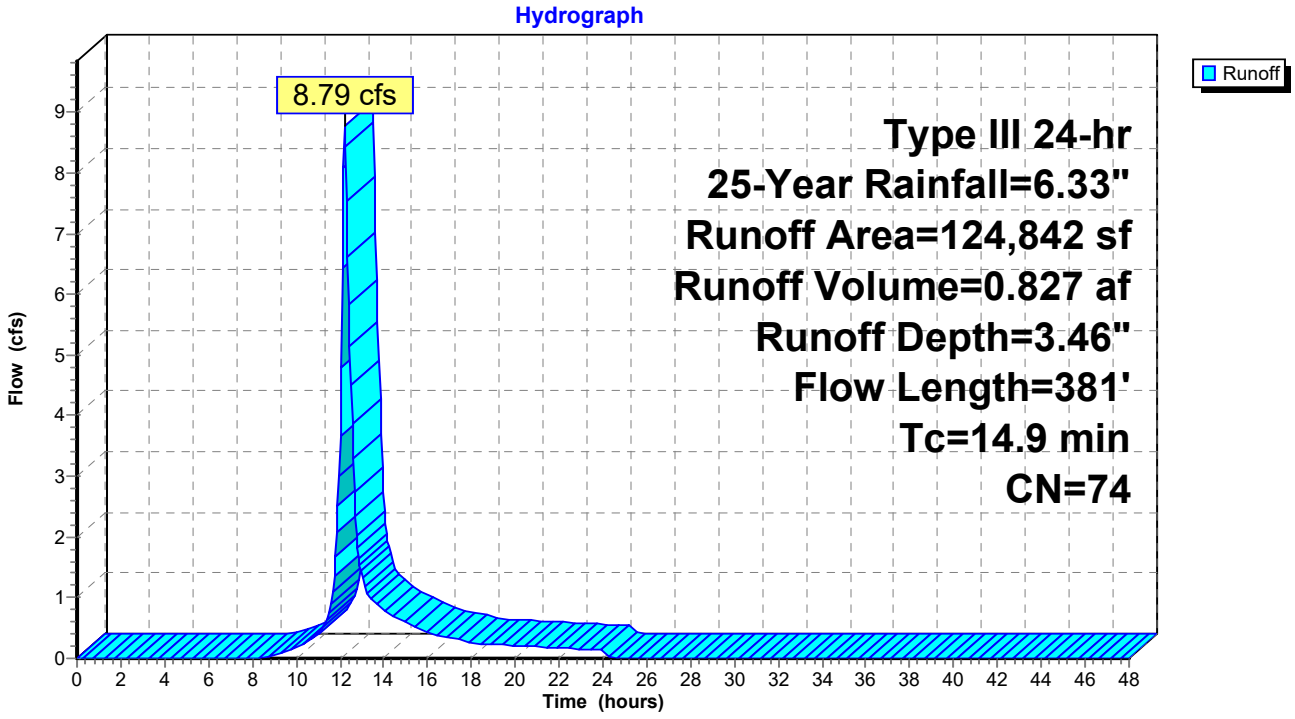
Runoff = 8.79 cfs @ 12.21 hrs, Volume= 0.827 af, Depth= 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
79,434	71	Meadow, non-grazed, HSG C
45,408	78	Meadow, non-grazed, HSG D
124,842	74	Weighted Average
124,842		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0350	0.15		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
3.8	281	0.0306	1.22		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
14.9	381	Total			

Subcatchment PDA-1A: PDA-1A



Summary for Subcatchment PDA-1B: PDA-1B

[49] Hint: Tc<2dt may require smaller dt

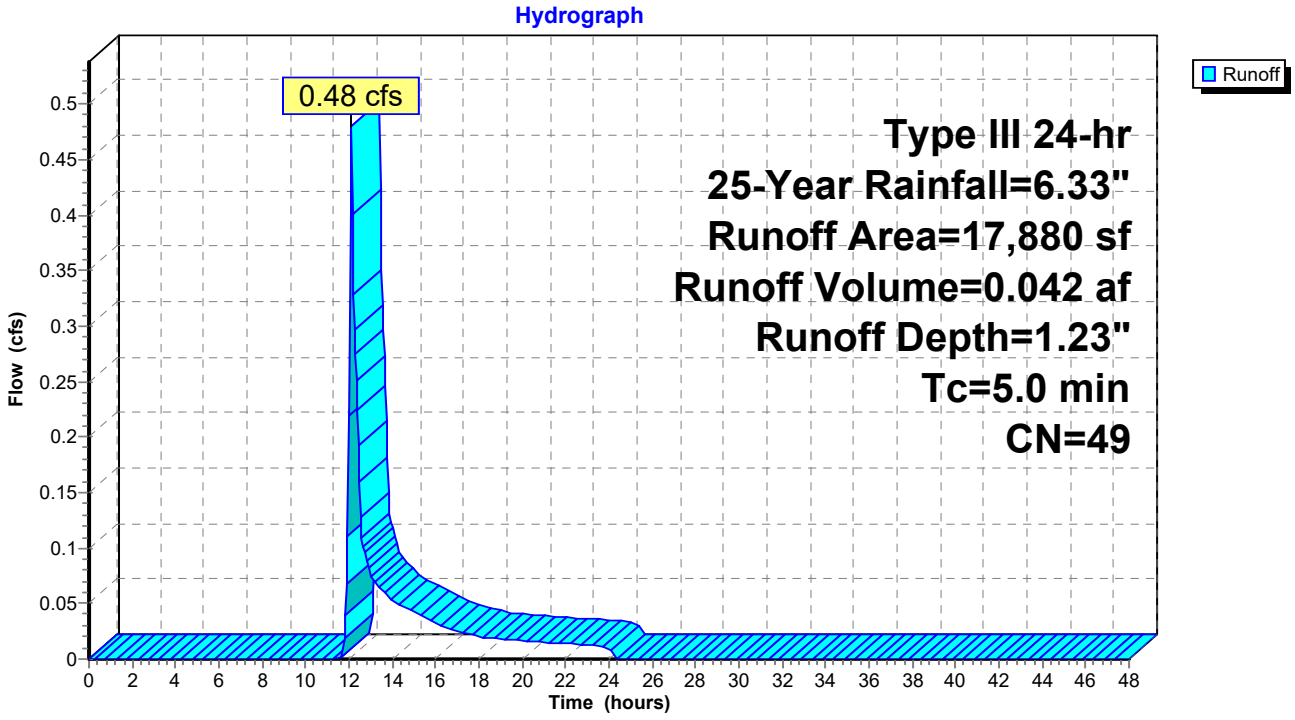
Runoff = 0.48 cfs @ 12.10 hrs, Volume= 0.042 af, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
16,448	48	Brush, Good, HSG B
1,432	65	Brush, Good, HSG C
17,880	49	Weighted Average
17,880		100.00% Pervious Area

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

Subcatchment PDA-1B: PDA-1B



Summary for Subcatchment PDA-2A: PDA-2A

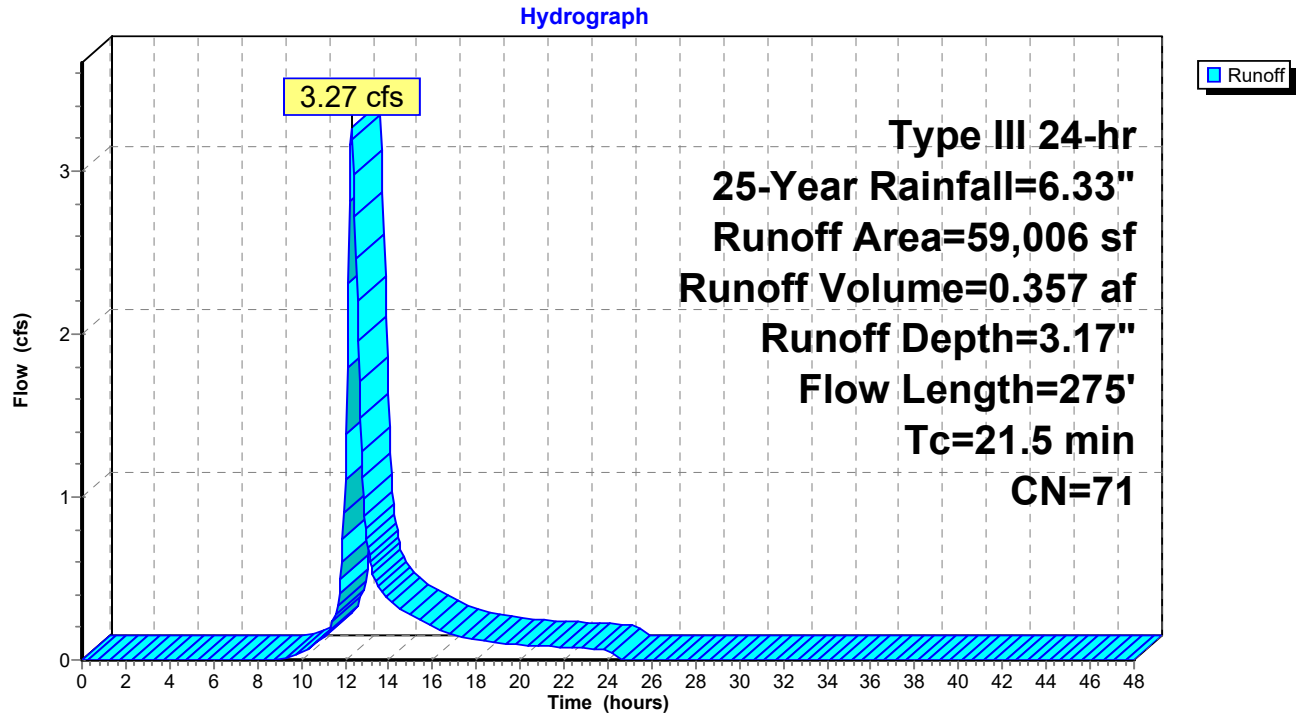
Runoff = 3.27 cfs @ 12.30 hrs, Volume= 0.357 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
39,007	71	Meadow, non-grazed, HSG C
16,039	78	Meadow, non-grazed, HSG D
3,960	48	Brush, Good, HSG B
59,006	71	Weighted Average
59,006		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
16.0	70	0.0069	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
2.9	175	0.0211	1.02		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
21.5	275	Total			

Subcatchment PDA-2A: PDA-2A



Summary for Subcatchment PDA-2B: PDA-2B

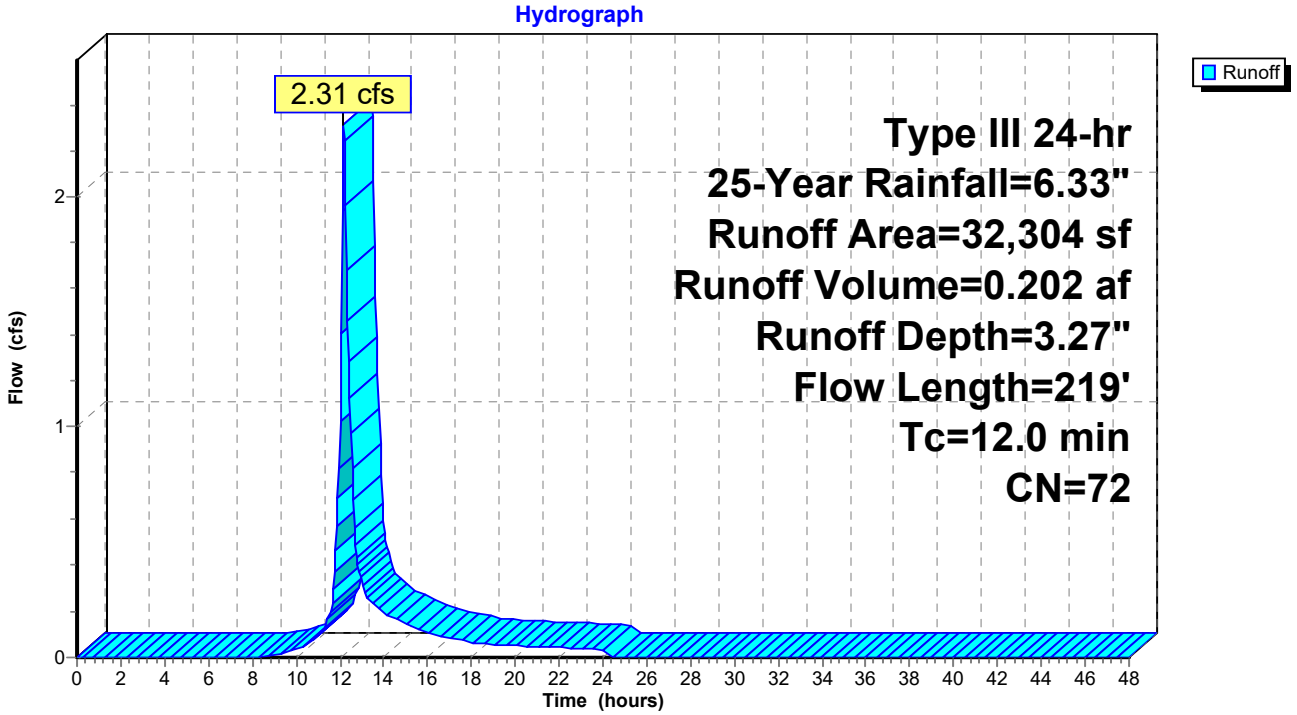
Runoff = 2.31 cfs @ 12.17 hrs, Volume= 0.202 af, Depth= 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
12,043	71	Meadow, non-grazed, HSG C
16,171	78	Meadow, non-grazed, HSG D
4,020	48	Brush, Good, HSG B
70	73	Brush, Good, HSG D
32,304	72	Weighted Average
32,304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
8.3	70	0.0357	0.14		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.1	119	0.0630	1.76		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
12.0	219	Total			

Subcatchment PDA-2B: PDA-2B



Summary for Subcatchment PDA-2C: PDA-2C

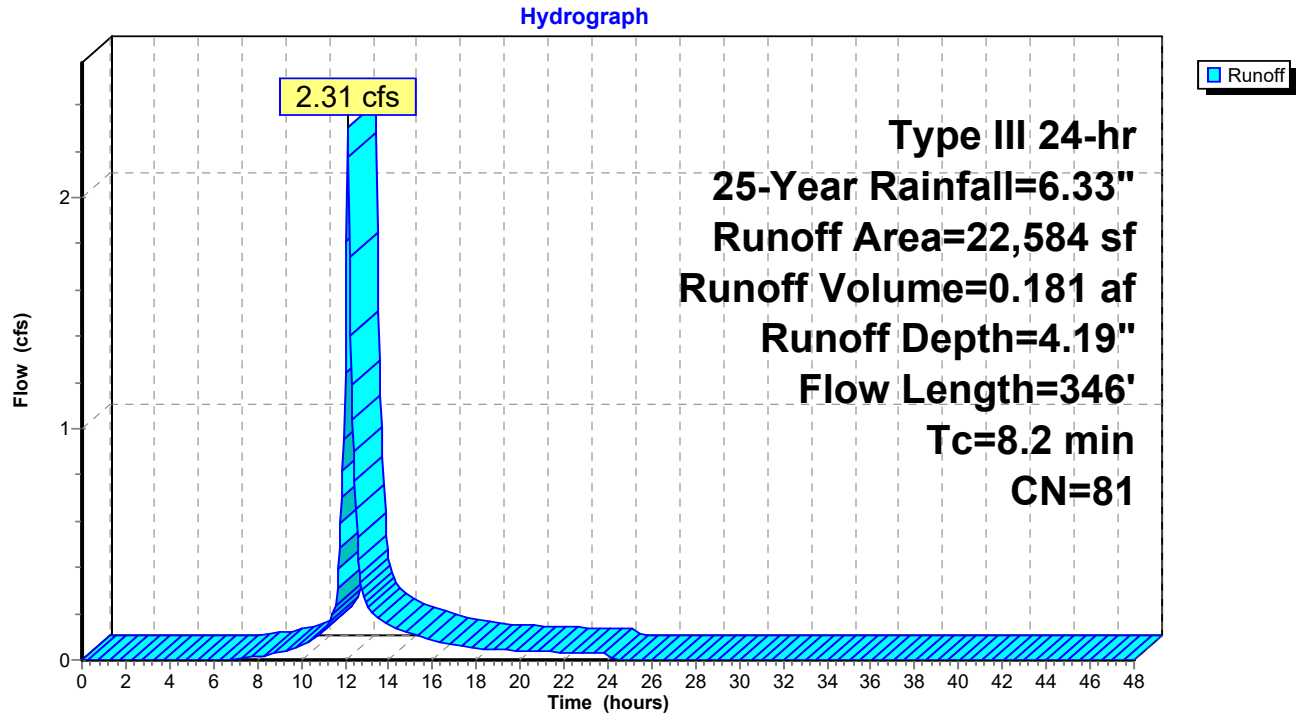
Runoff = 2.31 cfs @ 12.12 hrs, Volume= 0.181 af, Depth= 4.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
1,977	77	Woods, Good, HSG D
3,486	96	Gravel surface, HSG D
17,121	78	Meadow, non-grazed, HSG D
22,584	81	Weighted Average
22,584		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
1.3	146	0.0684	1.83		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0854	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
8.2	346	Total			

Subcatchment PDA-2C: PDA-2C



Summary for Subcatchment PDA-3A: PDA-3A

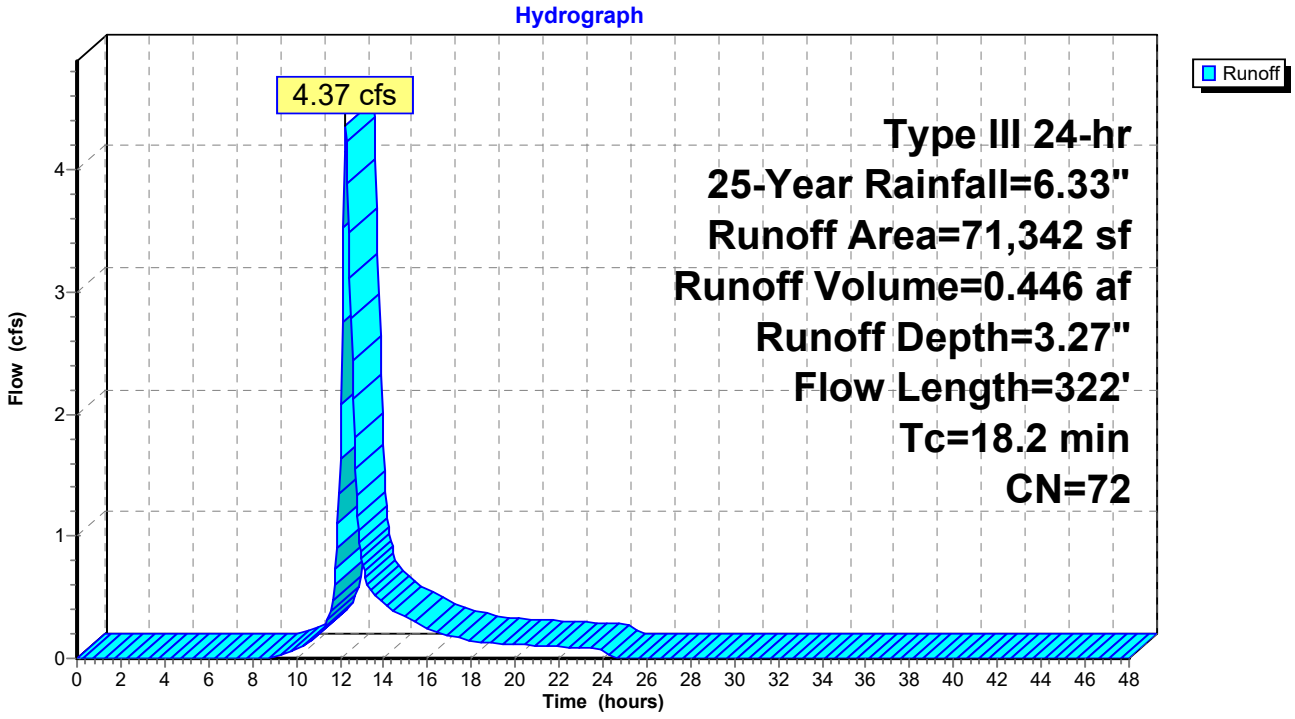
Runoff = 4.37 cfs @ 12.26 hrs, Volume= 0.446 af, Depth= 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
64,777	71	Meadow, non-grazed, HSG C
6,565	78	Meadow, non-grazed, HSG D
71,342	72	Weighted Average
71,342		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0150	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.6	222	0.0417	1.43		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
18.2	322	Total			

Subcatchment PDA-3A: PDA-3A



Summary for Subcatchment PDA-3B: PDA-3B

[49] Hint: Tc<2dt may require smaller dt

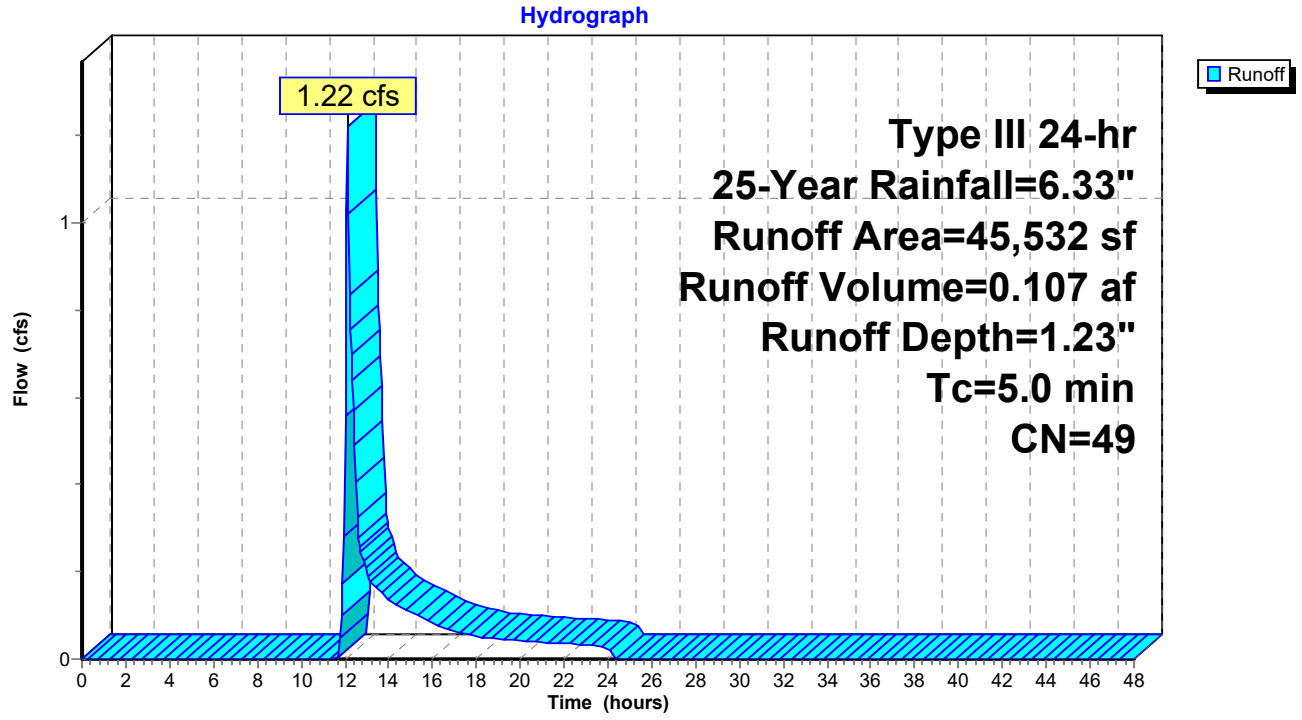
Runoff = 1.22 cfs @ 12.10 hrs, Volume= 0.107 af, Depth= 1.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
43,429	48	Brush, Good, HSG B
2,103	73	Brush, Good, HSG D
45,532	49	Weighted Average
45,532		100.00% Pervious Area

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

Subcatchment PDA-3B: PDA-3B



Summary for Subcatchment PDA-4A: PDA-4A

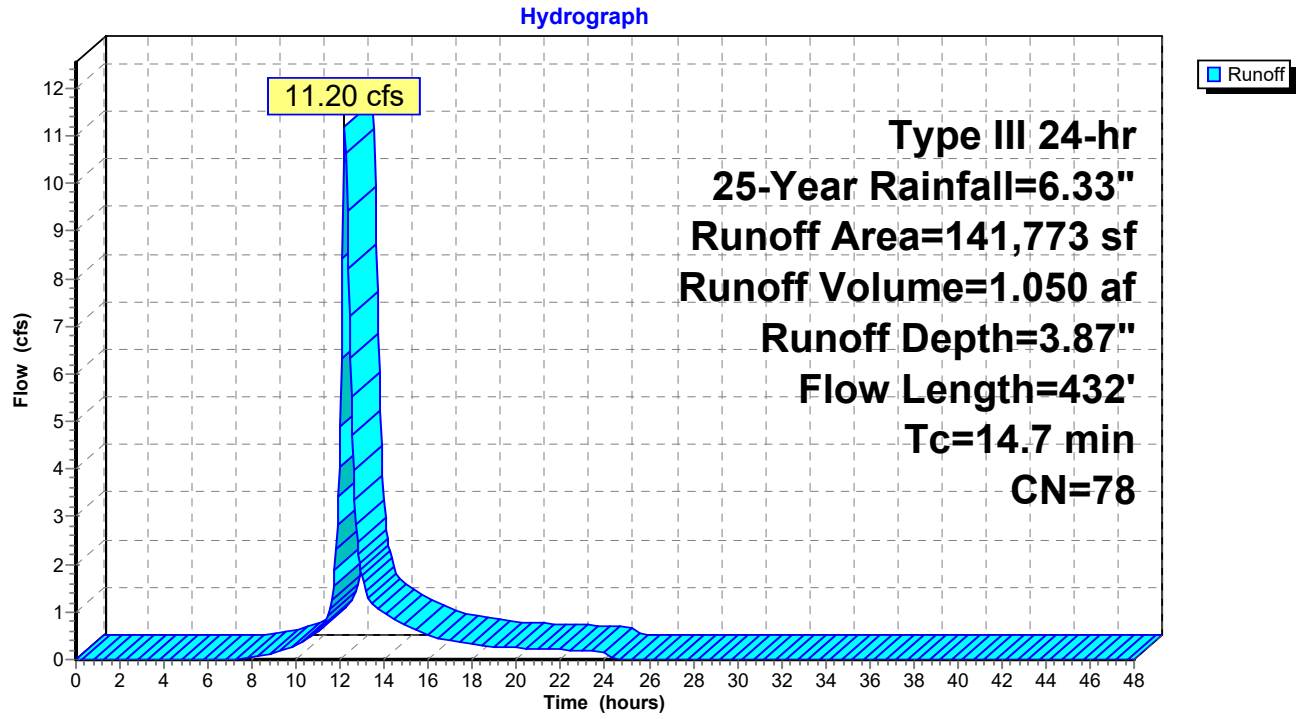
Runoff = 11.20 cfs @ 12.20 hrs, Volume= 1.050 af, Depth= 3.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
136,646	78	Meadow, non-grazed, HSG D
5,127	73	Brush, Good, HSG D
141,773	78	Weighted Average
141,773		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	67	0.0224	0.12		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.5	33	0.1515	0.22		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.2	157	0.0955	2.16		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
1.0	82	0.0366	1.34		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.4	93	0.0550	3.52		**Shallow Concentrated Flow, E-F** Grassed Waterway Kv= 15.0 fps
14.7	432	Total			

Subcatchment PDA-4A: PDA-4A



Summary for Subcatchment PDA-4B: PDA-4B

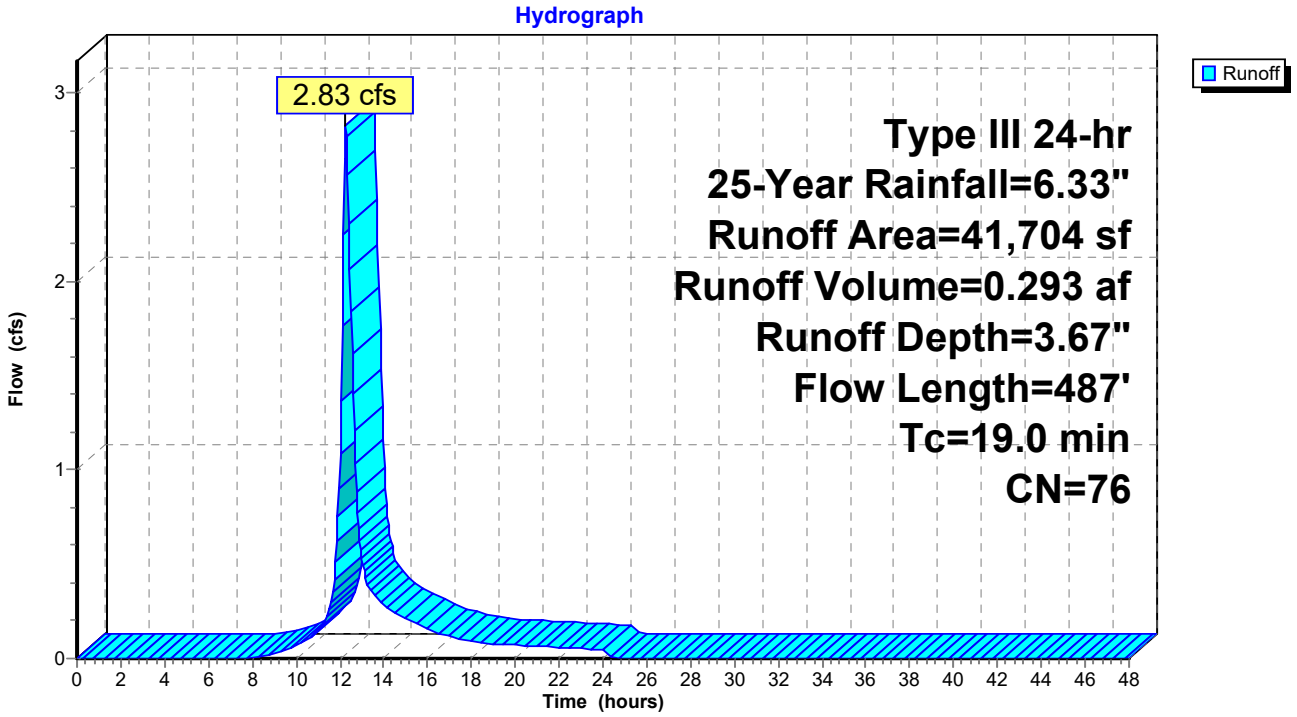
Runoff = 2.83 cfs @ 12.26 hrs, Volume= 0.293 af, Depth= 3.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
13,291	71	Meadow, non-grazed, HSG C
28,356	78	Meadow, non-grazed, HSG D
57	96	Gravel surface, HSG D
41,704	76	Weighted Average
41,704		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0200	0.12		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.9	163	0.0184	0.95		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	117	0.0855	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
0.8	63	0.0317	1.25		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.4	44	0.0682	1.83		**Shallow Concentrated Flow, E-F** Short Grass Pasture Kv= 7.0 fps
19.0	487	Total			

Subcatchment PDA-4B: PDA-4B



Summary for Subcatchment PDA-4C: PDA-4C

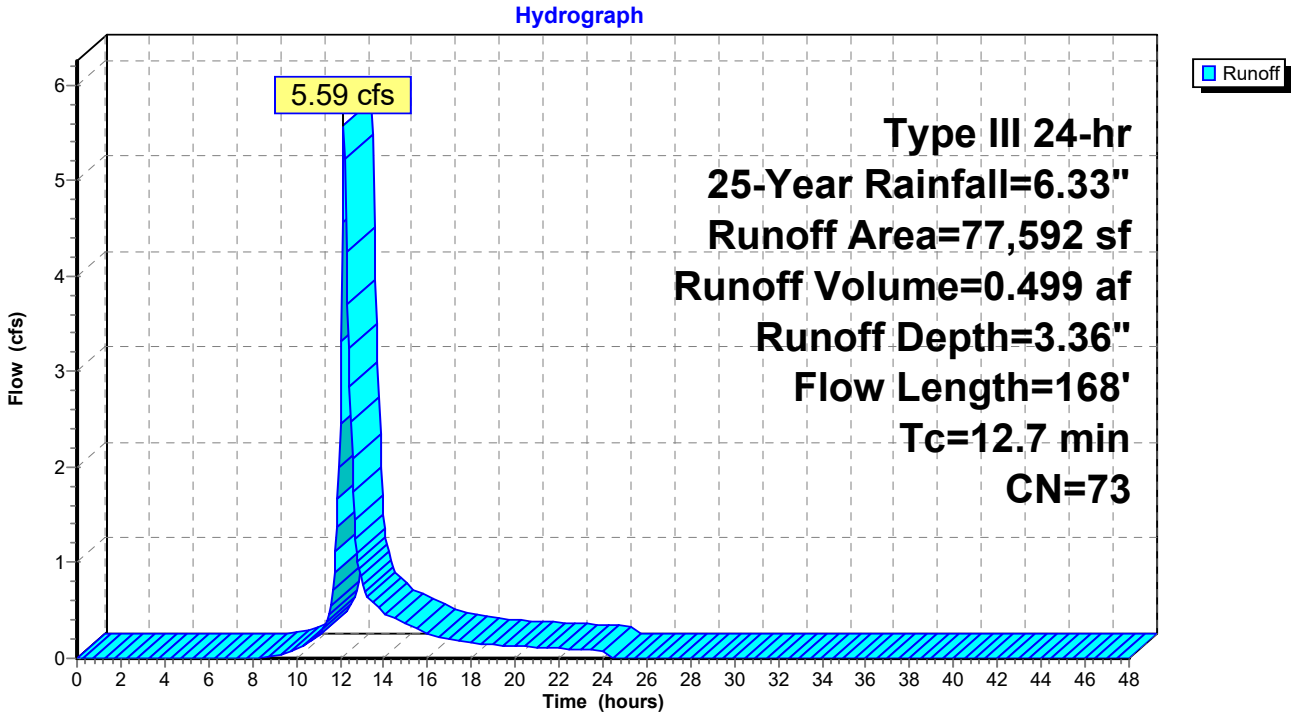
Runoff = 5.59 cfs @ 12.18 hrs, Volume= 0.499 af, Depth= 3.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
77,592	73	Brush, Good, HSG D
77,592		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0800	0.14		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
0.7	68	0.1029	1.60		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
12.7	168	Total			

Subcatchment PDA-4C: PDA-4C



Summary for Reach 5R: Swale

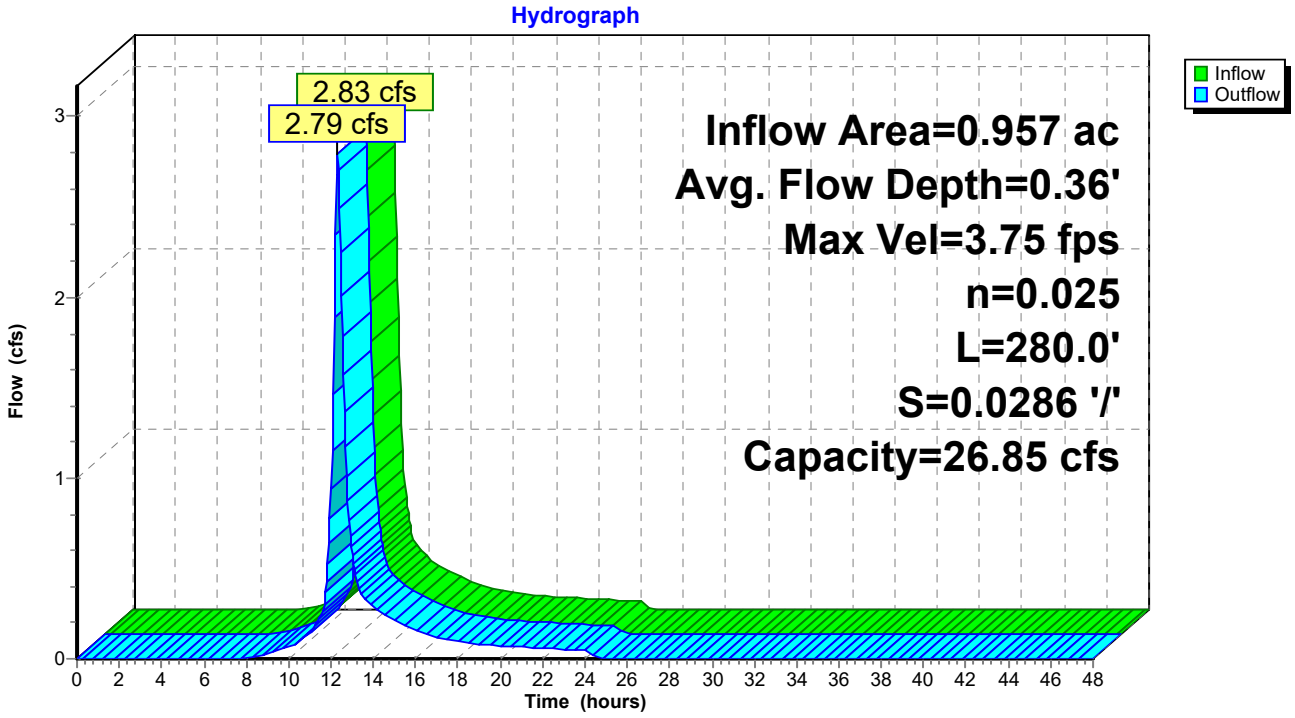
Inflow Area = 0.957 ac, 0.00% Impervious, Inflow Depth = 3.67" for 25-Year event
Inflow = 2.83 cfs @ 12.26 hrs, Volume= 0.293 af
Outflow = 2.79 cfs @ 12.30 hrs, Volume= 0.293 af, Atten= 1%, Lag= 2.4 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.75 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 1.41 fps, Avg. Travel Time= 3.3 min

Peak Storage= 210 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.36'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 26.85 cfs

1.00' x 1.00' deep channel, n= 0.025
Side Slope Z-value= 3.0 '/' Top Width= 7.00'
Length= 280.0' Slope= 0.0286 '/'
Inlet Invert= 408.00', Outlet Invert= 400.00'

Reach 5R: Swale



Summary for Pond P-1: P-1

Inflow Area = 2.866 ac, 0.00% Impervious, Inflow Depth = 3.46" for 25-Year event
Inflow = 8.79 cfs @ 12.21 hrs, Volume= 0.827 af
Outflow = 2.05 cfs @ 12.75 hrs, Volume= 0.827 af, Atten= 77%, Lag= 32.8 min
Discarded = 0.80 cfs @ 12.76 hrs, Volume= 0.759 af
Primary = 1.25 cfs @ 12.75 hrs, Volume= 0.069 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 413.64' @ 12.76 hrs Surf.Area= 6,876 sf Storage= 14,433 cf

Plug-Flow detention time= 172.4 min calculated for 0.827 af (100% of inflow)
Center-of-Mass det. time= 172.4 min (1,007.0 - 834.6)

Volume	Invert	Avail.Storage	Storage Description
#1	411.00'	16,968 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

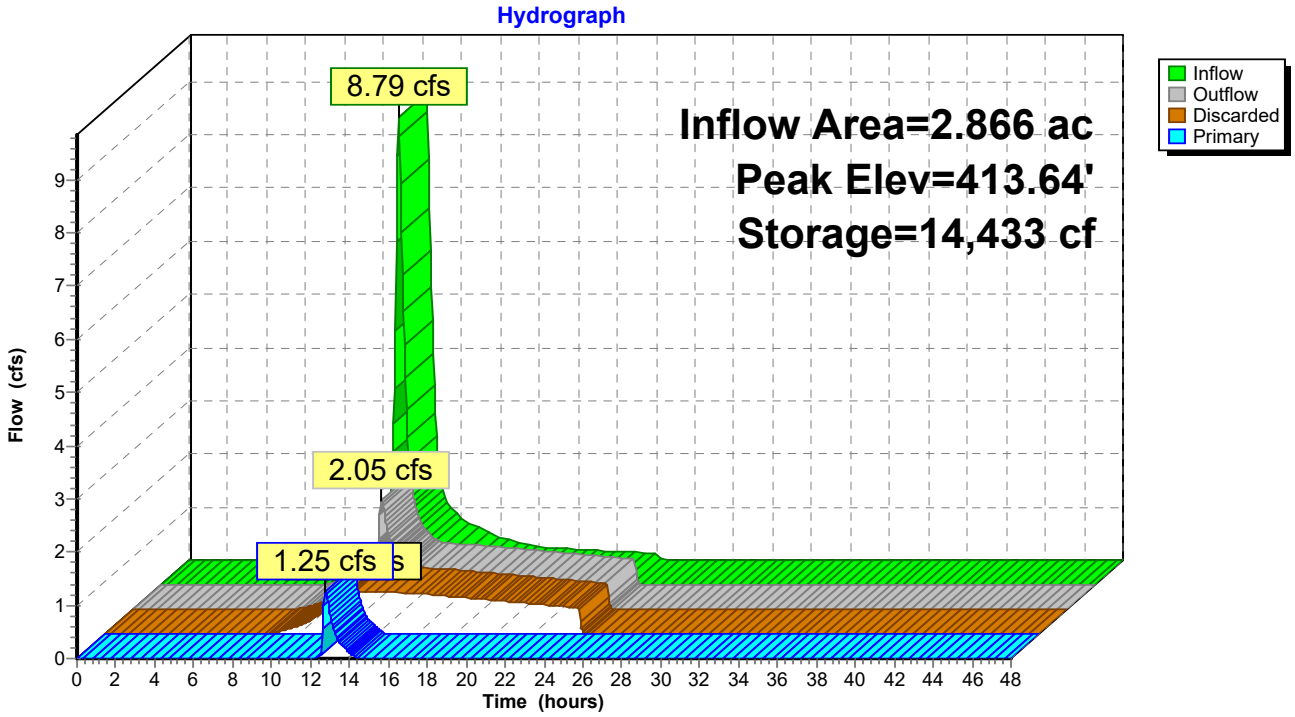
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
411.00	4,114	0	0
412.00	5,110	4,612	4,612
413.00	6,164	5,637	10,249
414.00	7,274	6,719	16,968

Device	Routing	Invert	Outlet Devices
#1	Discarded	411.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	413.50'	**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

Discarded OutFlow Max=0.80 cfs @ 12.76 hrs HW=413.64' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.80 cfs)

Primary OutFlow Max=1.24 cfs @ 12.75 hrs HW=413.64' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Weir Controls 1.24 cfs @ 0.88 fps)

Pond P-1: P-1


Hydrograph
8.79 cfs
2.05 cfs
1.25 cfs
Inflow Area=2.866 ac
Peak Elev=413.64'
Storage=14,433 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0 1 2 3 4 5 6 7 8 9
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond P-2A: P-2A

Inflow Area = 1.355 ac, 0.00% Impervious, Inflow Depth = 3.17" for 25-Year event
Inflow = 3.27 cfs @ 12.30 hrs, Volume= 0.357 af
Outflow = 1.28 cfs @ 12.76 hrs, Volume= 0.357 af, Atten= 61%, Lag= 27.5 min
Discarded = 0.36 cfs @ 12.76 hrs, Volume= 0.320 af
Primary = 0.92 cfs @ 12.76 hrs, Volume= 0.037 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 419.61' @ 12.76 hrs Surf.Area= 3,128 sf Storage= 5,825 cf

Plug-Flow detention time= 160.4 min calculated for 0.357 af (100% of inflow)
Center-of-Mass det. time= 160.3 min (1,008.0 - 847.7)

Volume	Invert	Avail.Storage	Storage Description
#1	417.00'	7,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

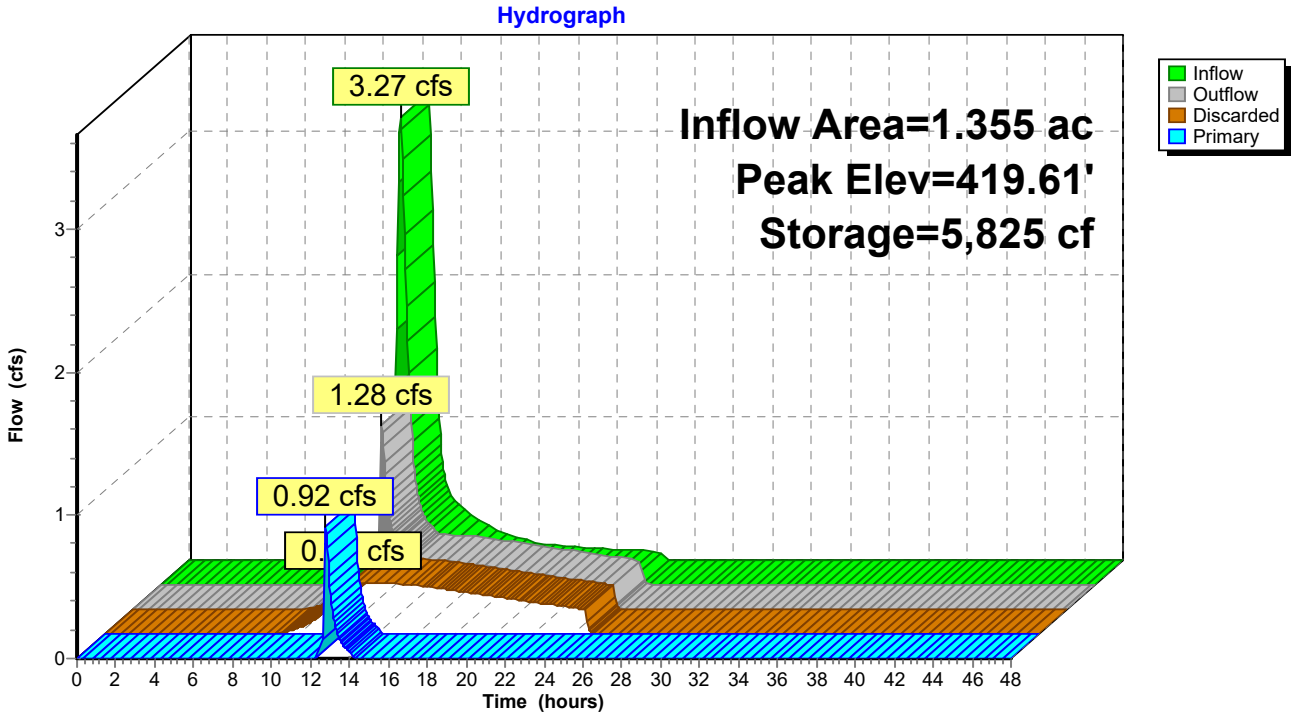
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
417.00	1,405	0	0
418.00	2,018	1,712	1,712
419.00	2,688	2,353	4,065
420.00	3,415	3,052	7,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	417.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	419.50'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.36 cfs @ 12.76 hrs HW=419.60' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.36 cfs)

Primary OutFlow Max=0.90 cfs @ 12.76 hrs HW=419.60' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 0.90 cfs @ 0.86 fps)

Pond P-2A: P-2A


Hydrograph
Inflow Area=1.355 ac
Peak Elev=419.61'
Storage=5,825 cf
3.27 cfs
1.28 cfs
0.92 cfs
0. cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
1
2
3
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Pond P-2B: P-2B

Inflow Area = 0.742 ac, 0.00% Impervious, Inflow Depth = 3.27" for 25-Year event
Inflow = 2.31 cfs @ 12.17 hrs, Volume= 0.202 af
Outflow = 0.28 cfs @ 13.16 hrs, Volume= 0.202 af, Atten= 88%, Lag= 59.1 min
Discarded = 0.28 cfs @ 13.16 hrs, Volume= 0.202 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 413.92' @ 13.16 hrs Surf.Area= 2,383 sf Storage= 3,533 cf

Plug-Flow detention time= 128.9 min calculated for 0.202 af (100% of inflow)
Center-of-Mass det. time= 128.9 min (965.5 - 836.6)

Volume	Invert	Avail.Storage	Storage Description
#1	412.00'	6,481 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

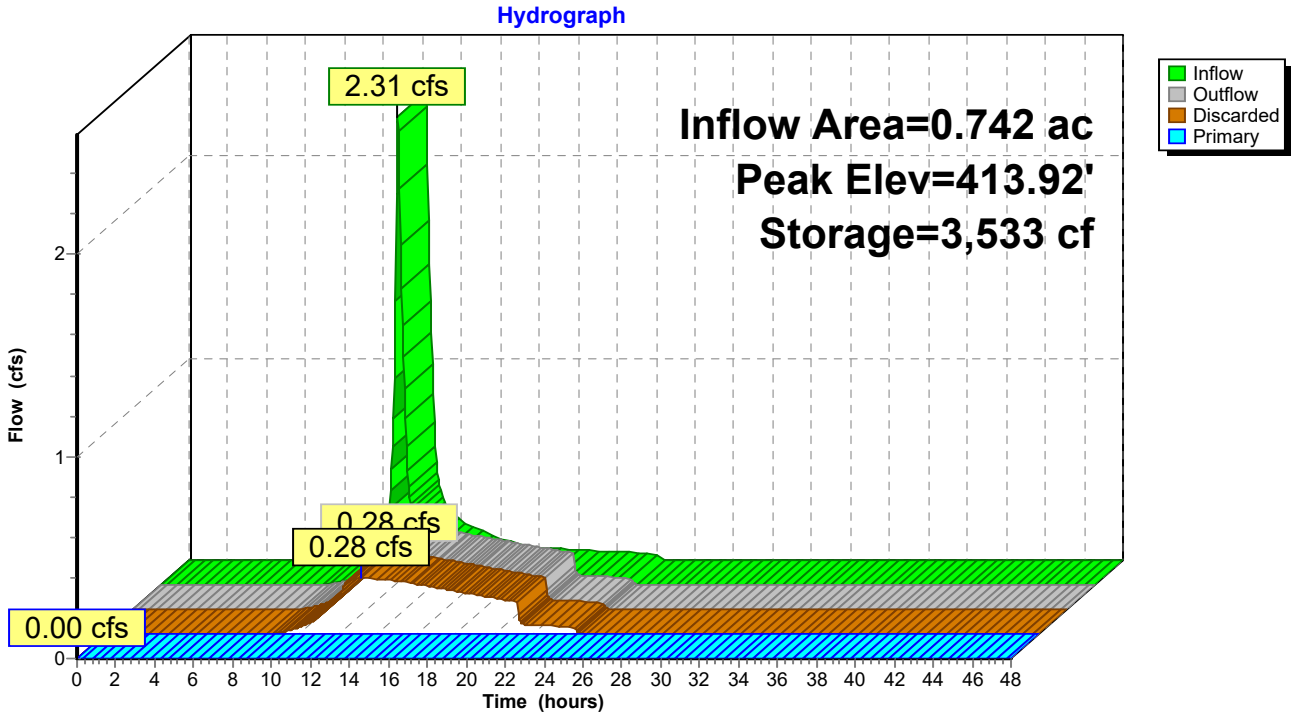
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
412.00	1,330	0	0
413.00	1,852	1,591	1,591
414.00	2,431	2,142	3,733
415.00	3,065	2,748	6,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	412.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	414.50'	**10.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.28 cfs @ 13.16 hrs HW=413.92' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=412.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P-2B: P-2B


Hydrograph
Inflow
Outflow
Discarded
Primary
2.31 cfs
0.28 cfs
0.28 cfs
0.00 cfs
Inflow Area=0.742 ac
Peak Elev=413.92'
Storage=3,533 cf
Flow (cfs)
0
1
2
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Pond P-3: P-3

Inflow Area = 1.638 ac, 0.00% Impervious, Inflow Depth = 3.27" for 25-Year event
Inflow = 4.37 cfs @ 12.26 hrs, Volume= 0.446 af
Outflow = 0.51 cfs @ 13.66 hrs, Volume= 0.446 af, Atten= 88%, Lag= 84.3 min
Discarded = 0.51 cfs @ 13.66 hrs, Volume= 0.446 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 411.44' @ 13.66 hrs Surf.Area= 4,420 sf Storage= 8,348 cf

Plug-Flow detention time= 172.9 min calculated for 0.446 af (100% of inflow)
Center-of-Mass det. time= 172.9 min (1,015.2 - 842.3)

Volume	Invert	Avail.Storage	Storage Description
#1	409.00'	10,964 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

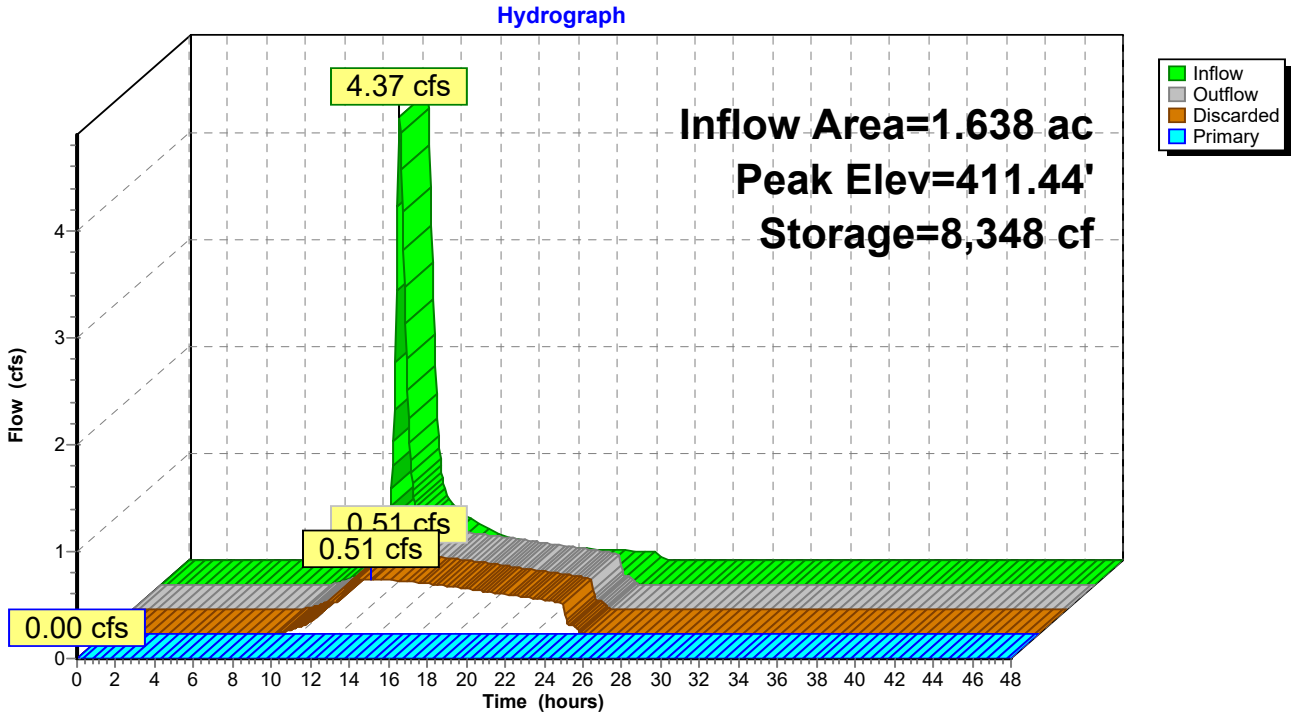
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
409.00	2,479	0	0
410.00	3,231	2,855	2,855
411.00	4,040	3,636	6,491
412.00	4,906	4,473	10,964

Device	Routing	Invert	Outlet Devices
#1	Discarded	409.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	411.50'	**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

Discarded OutFlow Max=0.51 cfs @ 13.66 hrs HW=411.44' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.51 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=409.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P-3: P-3


Hydrograph
4.37 cfs
0.51 cfs
0.51 cfs
0.00 cfs
Inflow Area=1.638 ac
Peak Elev=411.44'
Storage=8,348 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0 1 2 3 4
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond P-4: P-4

Inflow Area = 4.212 ac, 0.00% Impervious, Inflow Depth = 3.83" for 25-Year event
Inflow = 13.63 cfs @ 12.22 hrs, Volume= 1.343 af
Outflow = 1.73 cfs @ 13.25 hrs, Volume= 0.977 af, Atten= 87%, Lag= 61.7 min
Discarded = 0.21 cfs @ 13.25 hrs, Volume= 0.621 af
Primary = 1.52 cfs @ 13.25 hrs, Volume= 0.356 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 399.62' @ 13.25 hrs Surf.Area= 11,327 sf Storage= 33,462 cf

Plug-Flow detention time= 677.7 min calculated for 0.976 af (73% of inflow)
Center-of-Mass det. time= 588.1 min (1,415.7 - 827.6)

Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	37,885 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

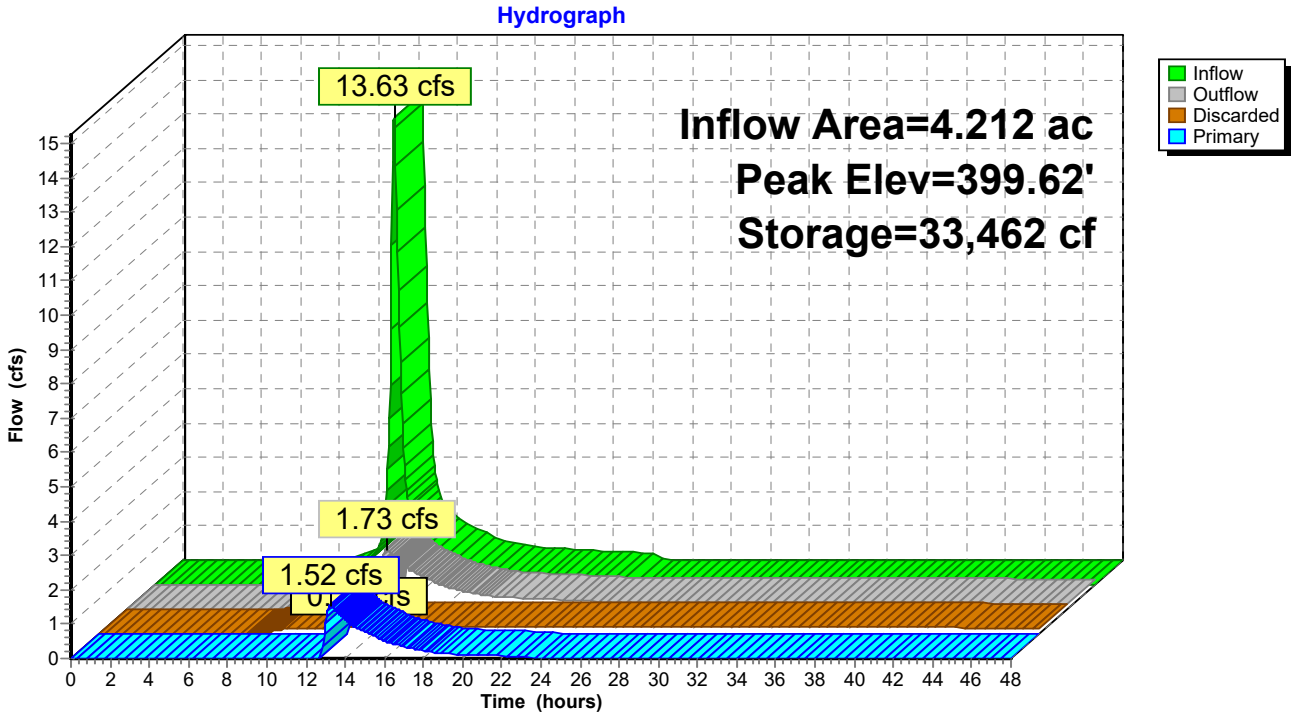
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	7,294	0	0
397.00	8,333	7,814	7,814
398.00	9,429	8,881	16,695
399.00	10,581	10,005	26,700
400.00	11,790	11,186	37,885

Device	Routing	Invert	Outlet Devices
#1	Discarded	396.00'	**0.800 in/hr Exfiltration over Surface area**
#2	Primary	399.50'	**15.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.21 cfs @ 13.25 hrs HW=399.62' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Primary OutFlow Max=1.50 cfs @ 13.25 hrs HW=399.62' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 1.50 cfs @ 0.85 fps)

Pond P-4: P-4

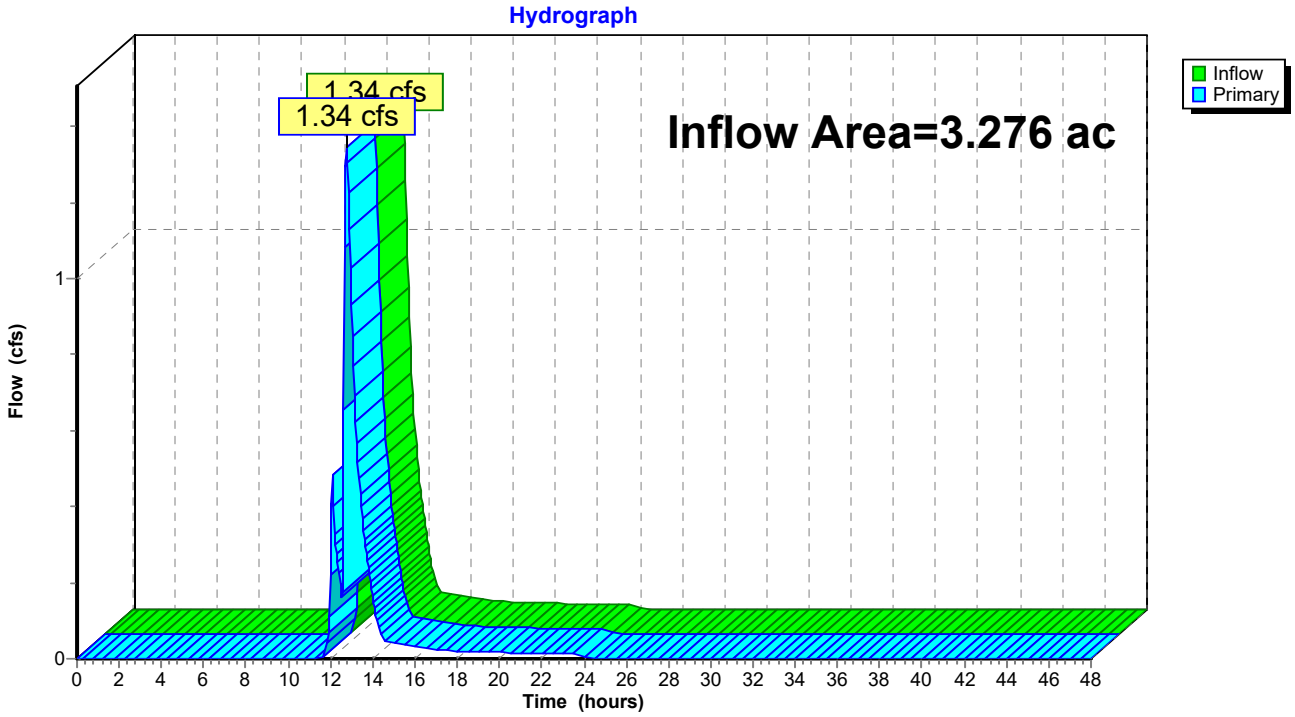

Hydrograph
13.63 cfs
1.73 cfs
1.52 cfs
Inflow Area=4.212 ac
Peak Elev=399.62'
Storage=33,462 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Link 1L: AP-1

Inflow Area = 3.276 ac, 0.00% Impervious, Inflow Depth = 0.41" for 25-Year event
Inflow = 1.34 cfs @ 12.75 hrs, Volume= 0.111 af
Primary = 1.34 cfs @ 12.75 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: AP-1

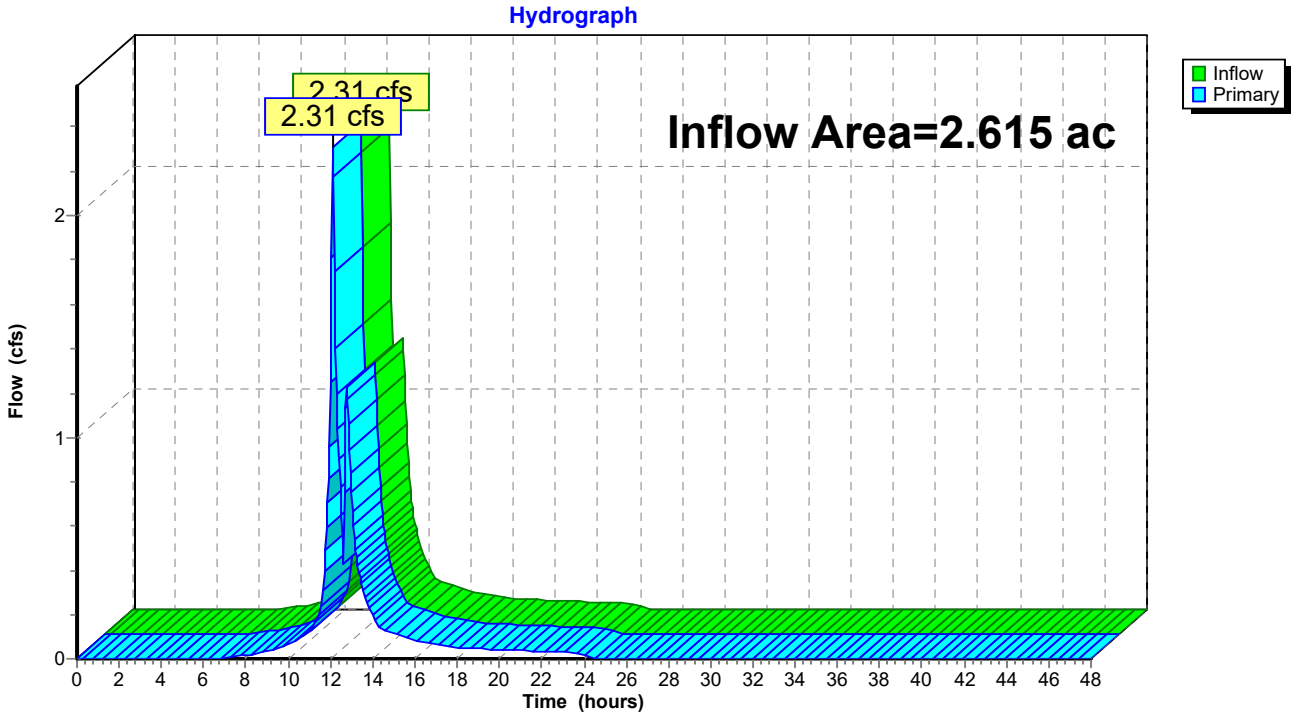


Summary for Link 2L: AP-2

Inflow Area = 2.615 ac, 0.00% Impervious, Inflow Depth = 1.00" for 25-Year event
Inflow = 2.31 cfs @ 12.12 hrs, Volume= 0.218 af
Primary = 2.31 cfs @ 12.12 hrs, Volume= 0.218 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

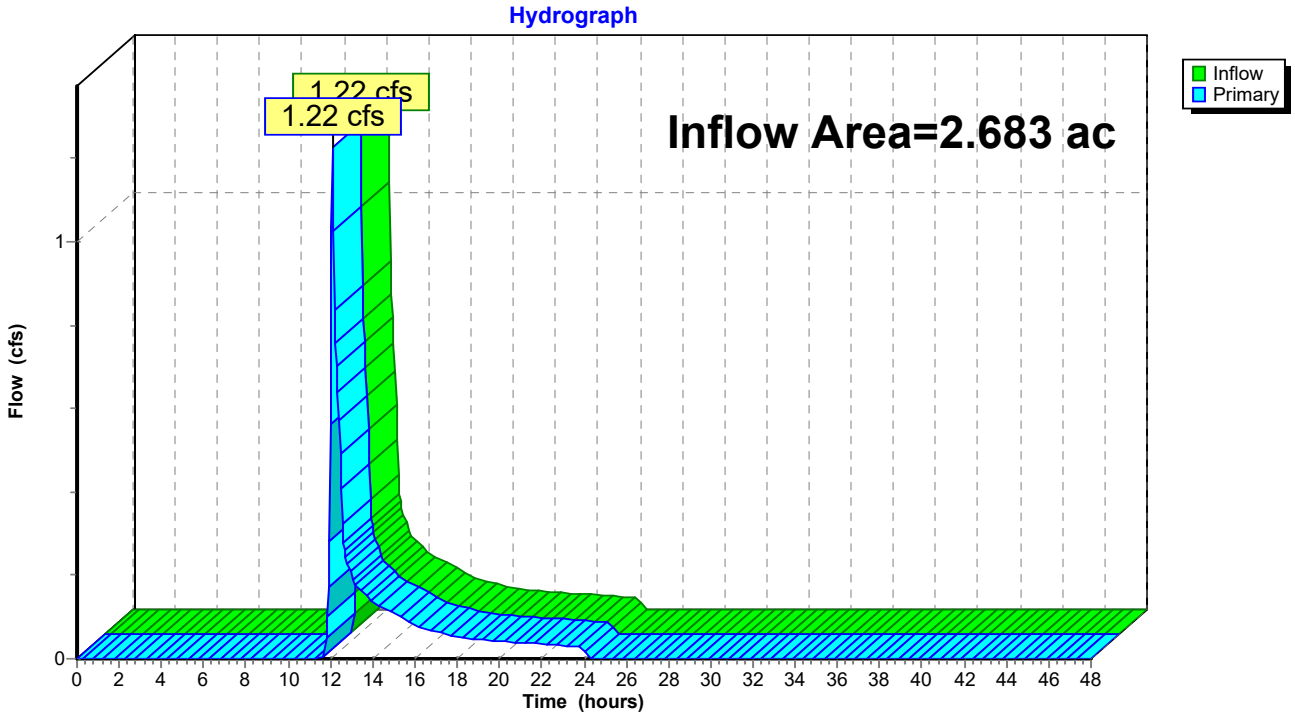


Summary for Link 3L: AP-3

Inflow Area = 2.683 ac, 0.00% Impervious, Inflow Depth = 0.48" for 25-Year event
Inflow = 1.22 cfs @ 12.10 hrs, Volume= 0.107 af
Primary = 1.22 cfs @ 12.10 hrs, Volume= 0.107 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 3L: AP-3

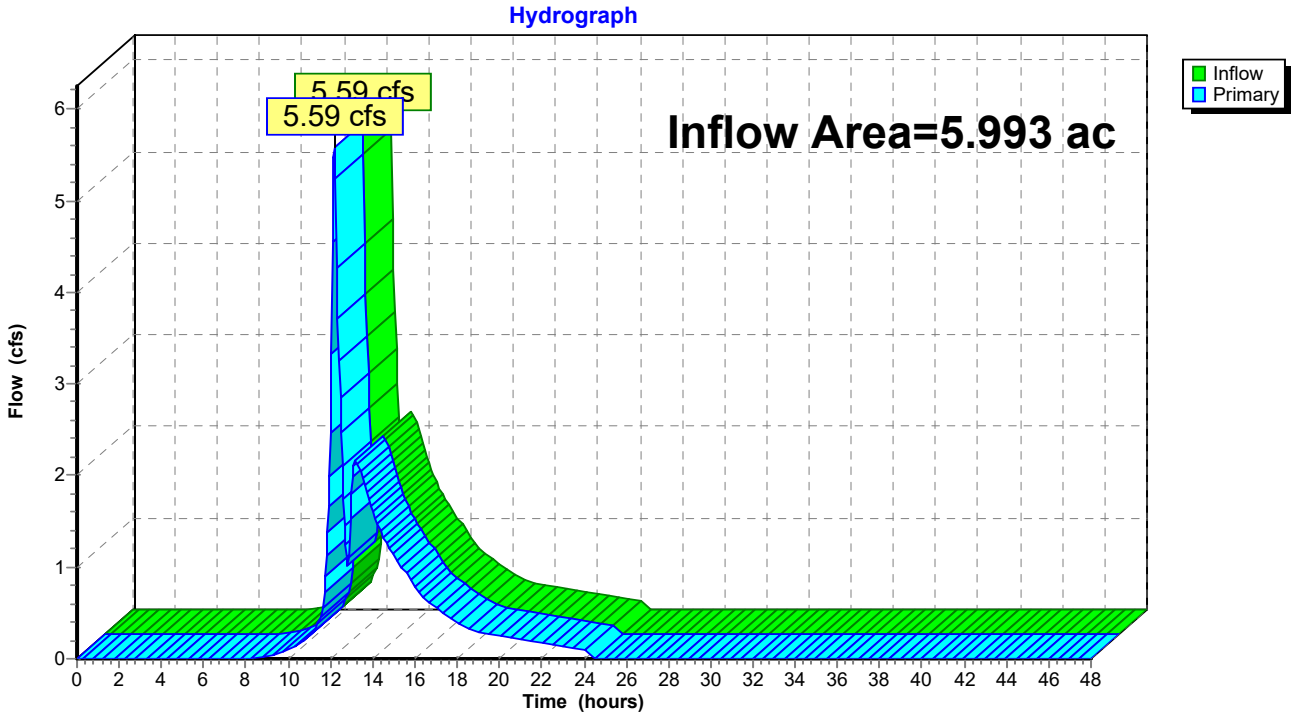


Summary for Link 4L: AP-4

Inflow Area = 5.993 ac, 0.00% Impervious, Inflow Depth = 1.71" for 25-Year event
Inflow = 5.59 cfs @ 12.18 hrs, Volume= 0.856 af
Primary = 5.59 cfs @ 12.18 hrs, Volume= 0.856 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 4L: AP-4



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-1A: PDA-1A Runoff Area=124,842 sf 0.00% Impervious Runoff Depth=4.18"
Flow Length=381' Tc=14.9 min CN=74 Runoff=10.62 cfs 0.999 af

Subcatchment PDA-1B: PDA-1B Runoff Area=17,880 sf 0.00% Impervious Runoff Depth=1.67"
Tc=5.0 min CN=49 Runoff=0.70 cfs 0.057 af

Subcatchment PDA-2A: PDA-2A Runoff Area=59,006 sf 0.00% Impervious Runoff Depth=3.86"
Flow Length=275' Tc=21.5 min CN=71 Runoff=4.00 cfs 0.436 af

Subcatchment PDA-2B: PDA-2B Runoff Area=32,304 sf 0.00% Impervious Runoff Depth=3.97"
Flow Length=219' Tc=12.0 min CN=72 Runoff=2.82 cfs 0.245 af

Subcatchment PDA-2C: PDA-2C Runoff Area=22,584 sf 0.00% Impervious Runoff Depth=4.95"
Flow Length=346' Tc=8.2 min CN=81 Runoff=2.72 cfs 0.214 af

Subcatchment PDA-3A: PDA-3A Runoff Area=71,342 sf 0.00% Impervious Runoff Depth=3.97"
Flow Length=322' Tc=18.2 min CN=72 Runoff=5.32 cfs 0.541 af

Subcatchment PDA-3B: PDA-3B Runoff Area=45,532 sf 0.00% Impervious Runoff Depth=1.67"
Tc=5.0 min CN=49 Runoff=1.78 cfs 0.145 af

Subcatchment PDA-4A: PDA-4A Runoff Area=141,773 sf 0.00% Impervious Runoff Depth=4.62"
Flow Length=432' Tc=14.7 min CN=78 Runoff=13.33 cfs 1.253 af

Subcatchment PDA-4B: PDA-4B Runoff Area=41,704 sf 0.00% Impervious Runoff Depth=4.40"
Flow Length=487' Tc=19.0 min CN=76 Runoff=3.39 cfs 0.351 af

Subcatchment PDA-4C: PDA-4C Runoff Area=77,592 sf 0.00% Impervious Runoff Depth=4.07"
Flow Length=168' Tc=12.7 min CN=73 Runoff=6.77 cfs 0.605 af

Reach 5R: Swale Avg. Flow Depth=0.39' Max Vel=3.93 fps Inflow=3.39 cfs 0.351 af
n=0.025 L=280.0' S=0.0286 '/' Capacity=26.85 cfs Outflow=3.35 cfs 0.351 af

Pond P-1: P-1 Peak Elev=413.79' Storage=15,467 cf Inflow=10.62 cfs 0.999 af
Discarded=0.81 cfs 0.818 af Primary=3.77 cfs 0.181 af Outflow=4.59 cfs 0.999 af

Pond P-2A: P-2A Peak Elev=419.69' Storage=6,077 cf Inflow=4.00 cfs 0.436 af
Discarded=0.37 cfs 0.347 af Primary=2.14 cfs 0.089 af Outflow=2.51 cfs 0.436 af

Pond P-2B: P-2B Peak Elev=414.31' Storage=4,512 cf Inflow=2.82 cfs 0.245 af
Discarded=0.30 cfs 0.245 af Primary=0.00 cfs 0.000 af Outflow=0.30 cfs 0.245 af

Pond P-3: P-3 Peak Elev=411.63' Storage=9,202 cf Inflow=5.32 cfs 0.541 af
Discarded=0.53 cfs 0.491 af Primary=1.09 cfs 0.050 af Outflow=1.62 cfs 0.541 af

Pond P-4: P-4 Peak Elev=399.75' Storage=34,970 cf Inflow=16.26 cfs 1.604 af
Discarded=0.21 cfs 0.628 af Primary=4.70 cfs 0.609 af Outflow=4.91 cfs 1.237 af

Link 1L: AP-1 Inflow=3.94 cfs 0.238 af
Primary=3.94 cfs 0.238 af

Link 2L: AP-2 Inflow=2.75 cfs 0.303 af
Primary=2.75 cfs 0.303 af

Link 3L: AP-3 Inflow=1.78 cfs 0.195 af
Primary=1.78 cfs 0.195 af

Link 4L: AP-4 Inflow=6.77 cfs 1.214 af
Primary=6.77 cfs 1.214 af

Total Runoff Area = 14.567 ac Runoff Volume = 4.846 af Average Runoff Depth = 3.99"
100.00% Pervious = 14.567 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment PDA-1A: PDA-1A

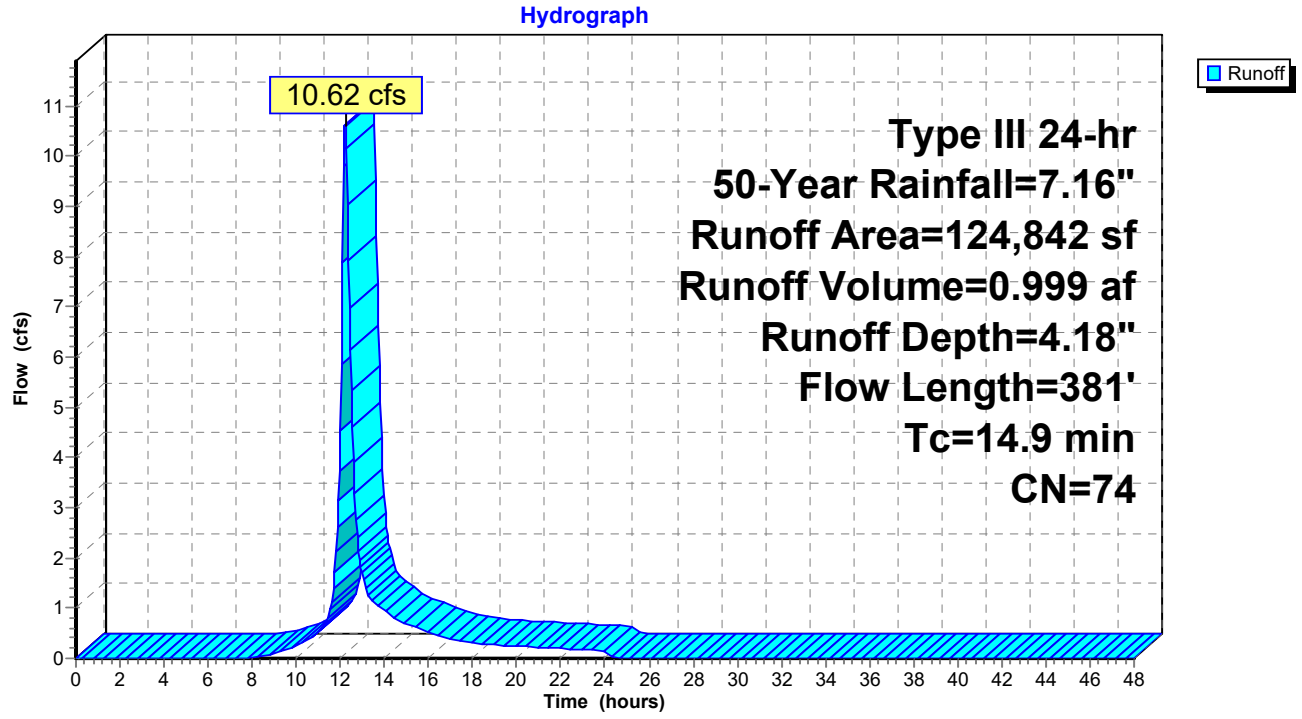
Runoff = 10.62 cfs @ 12.21 hrs, Volume= 0.999 af, Depth= 4.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
79,434	71	Meadow, non-grazed, HSG C
45,408	78	Meadow, non-grazed, HSG D
124,842	74	Weighted Average
124,842		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0350	0.15		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
3.8	281	0.0306	1.22		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
14.9	381	Total			

Subcatchment PDA-1A: PDA-1A



Summary for Subcatchment PDA-1B: PDA-1B

[49] Hint: Tc<2dt may require smaller dt

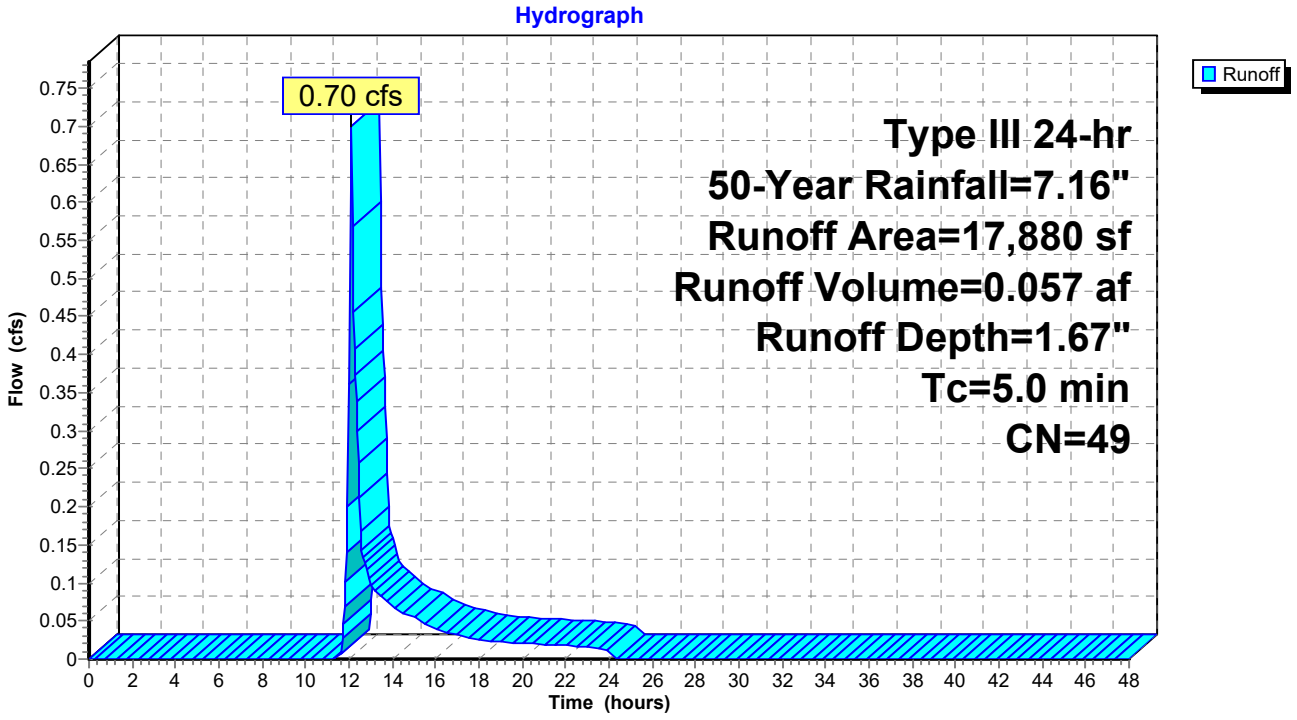
Runoff = 0.70 cfs @ 12.09 hrs, Volume= 0.057 af, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
16,448	48	Brush, Good, HSG B
1,432	65	Brush, Good, HSG C
17,880	49	Weighted Average
17,880		100.00% Pervious Area

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

Subcatchment PDA-1B: PDA-1B



Summary for Subcatchment PDA-2A: PDA-2A

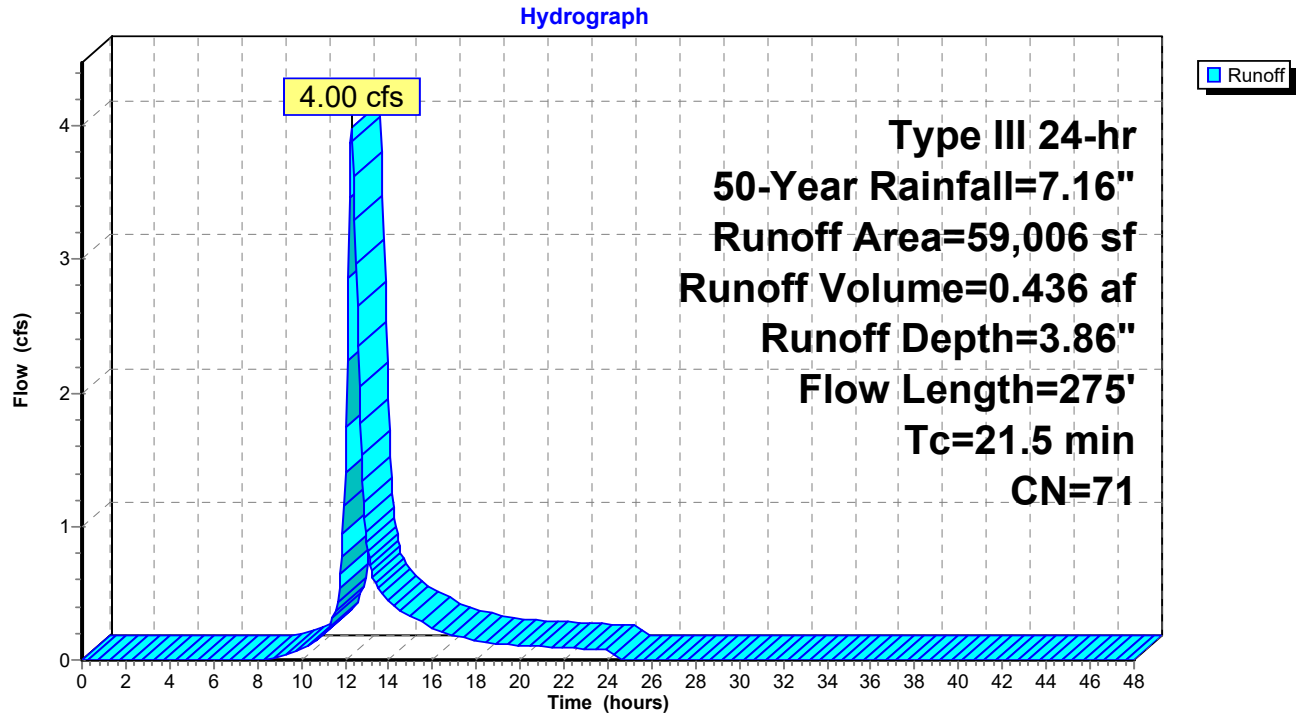
Runoff = 4.00 cfs @ 12.30 hrs, Volume= 0.436 af, Depth= 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
39,007	71	Meadow, non-grazed, HSG C
16,039	78	Meadow, non-grazed, HSG D
3,960	48	Brush, Good, HSG B
59,006	71	Weighted Average
59,006		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
16.0	70	0.0069	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
2.9	175	0.0211	1.02		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
21.5	275	Total			

Subcatchment PDA-2A: PDA-2A



Summary for Subcatchment PDA-2B: PDA-2B

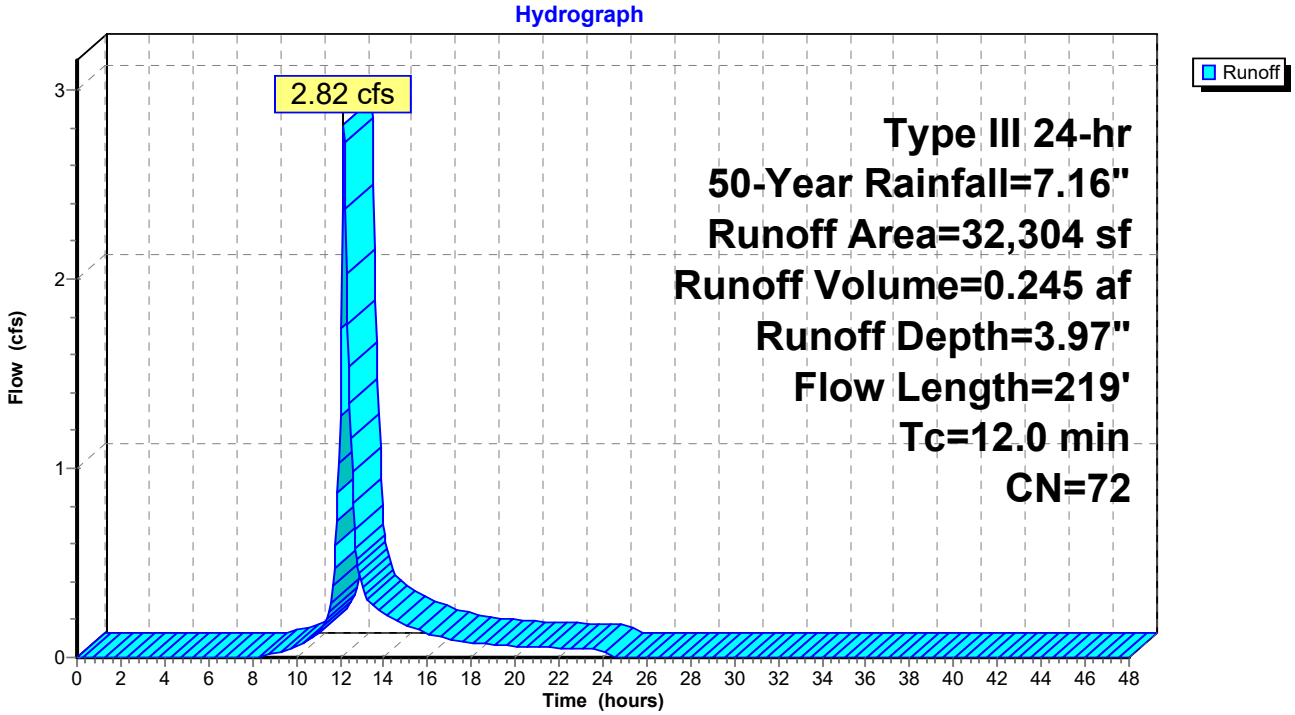
Runoff = 2.82 cfs @ 12.17 hrs, Volume= 0.245 af, Depth= 3.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
12,043	71	Meadow, non-grazed, HSG C
16,171	78	Meadow, non-grazed, HSG D
4,020	48	Brush, Good, HSG B
70	73	Brush, Good, HSG D
32,304	72	Weighted Average
32,304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
8.3	70	0.0357	0.14		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.1	119	0.0630	1.76		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
12.0	219	Total			

Subcatchment PDA-2B: PDA-2B



Summary for Subcatchment PDA-2C: PDA-2C

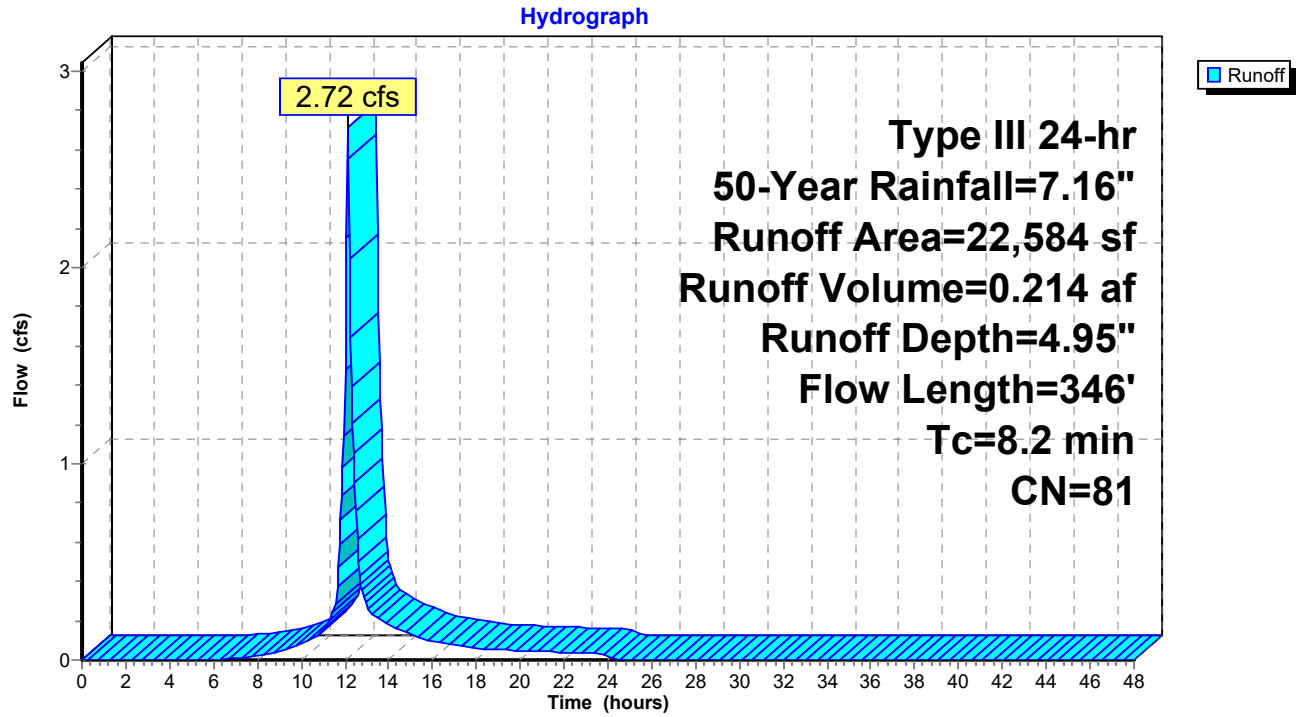
Runoff = 2.72 cfs @ 12.12 hrs, Volume= 0.214 af, Depth= 4.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
1,977	77	Woods, Good, HSG D
3,486	96	Gravel surface, HSG D
17,121	78	Meadow, non-grazed, HSG D
22,584	81	Weighted Average
22,584		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
1.3	146	0.0684	1.83		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0854	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
8.2	346	Total			

Subcatchment PDA-2C: PDA-2C



Summary for Subcatchment PDA-3A: PDA-3A

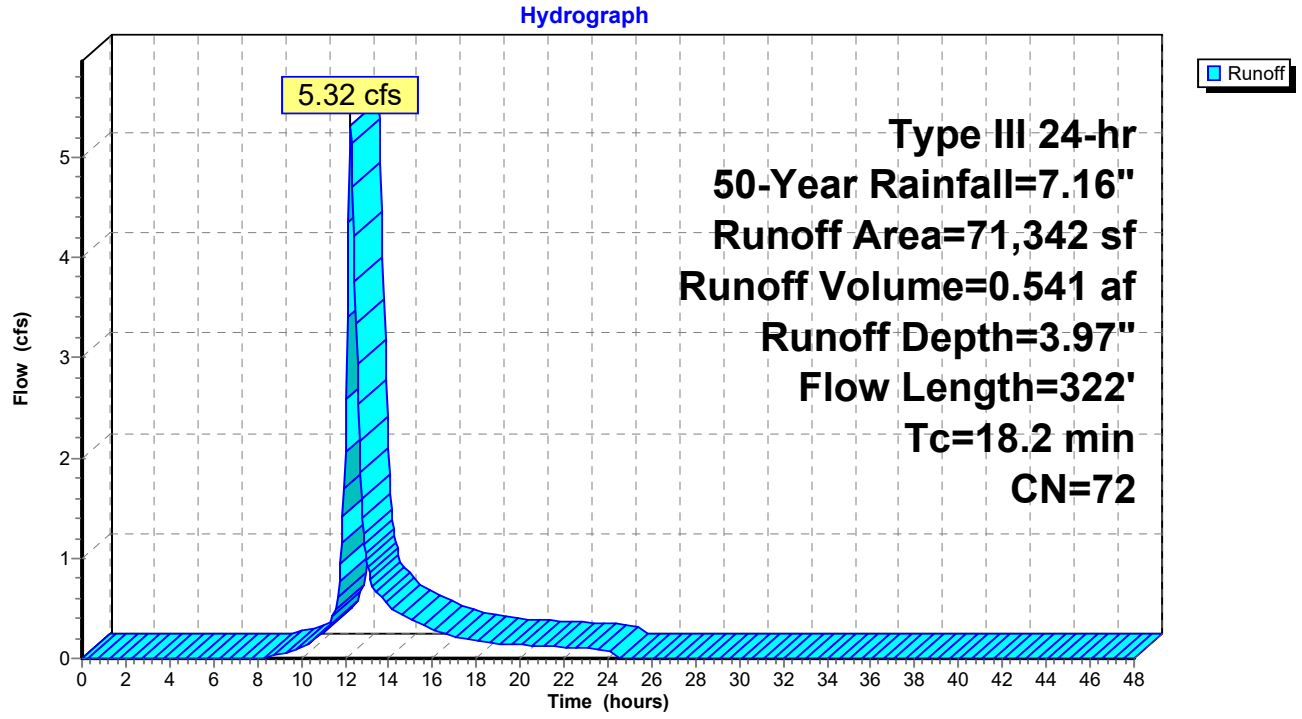
Runoff = 5.32 cfs @ 12.25 hrs, Volume= 0.541 af, Depth= 3.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
64,777	71	Meadow, non-grazed, HSG C
6,565	78	Meadow, non-grazed, HSG D
71,342	72	Weighted Average
71,342		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0150	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.6	222	0.0417	1.43		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
18.2	322	Total			

Subcatchment PDA-3A: PDA-3A



Summary for Subcatchment PDA-3B: PDA-3B

[49] Hint: Tc<2dt may require smaller dt

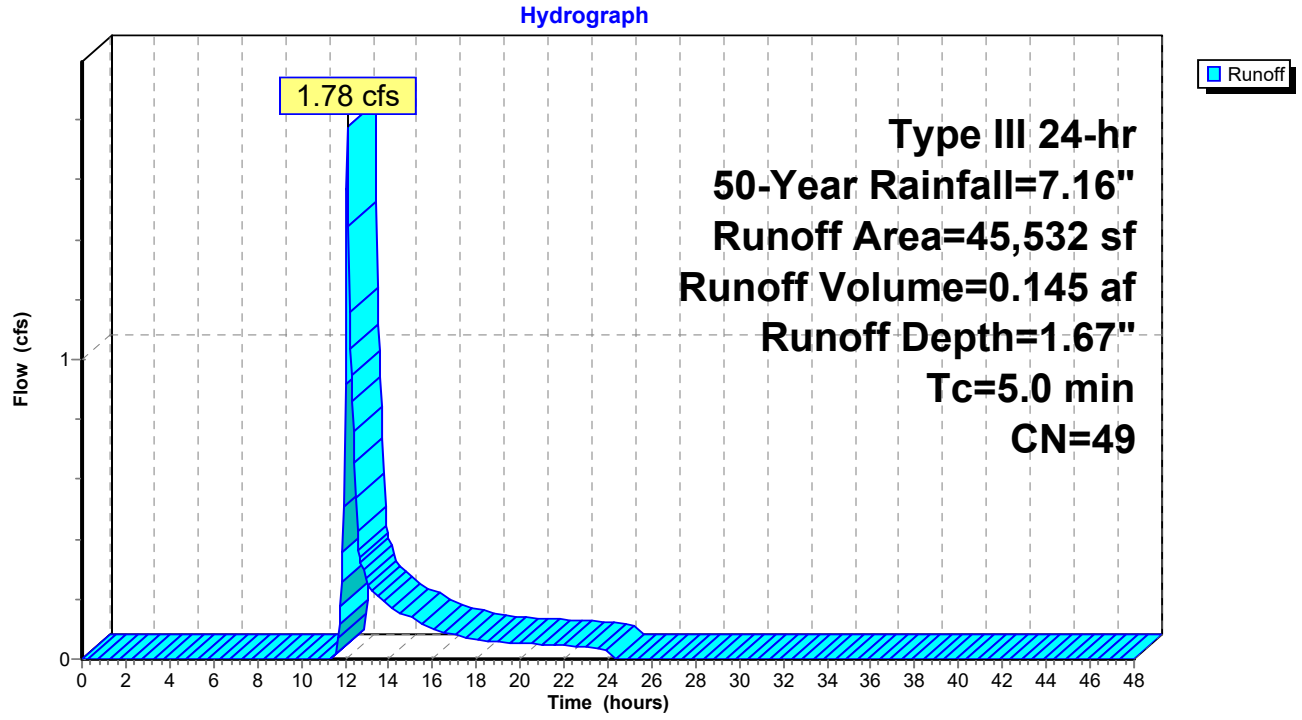
Runoff = 1.78 cfs @ 12.09 hrs, Volume= 0.145 af, Depth= 1.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
43,429	48	Brush, Good, HSG B
2,103	73	Brush, Good, HSG D
45,532	49	Weighted Average
45,532		100.00% Pervious Area

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

Subcatchment PDA-3B: PDA-3B



Summary for Subcatchment PDA-4A: PDA-4A

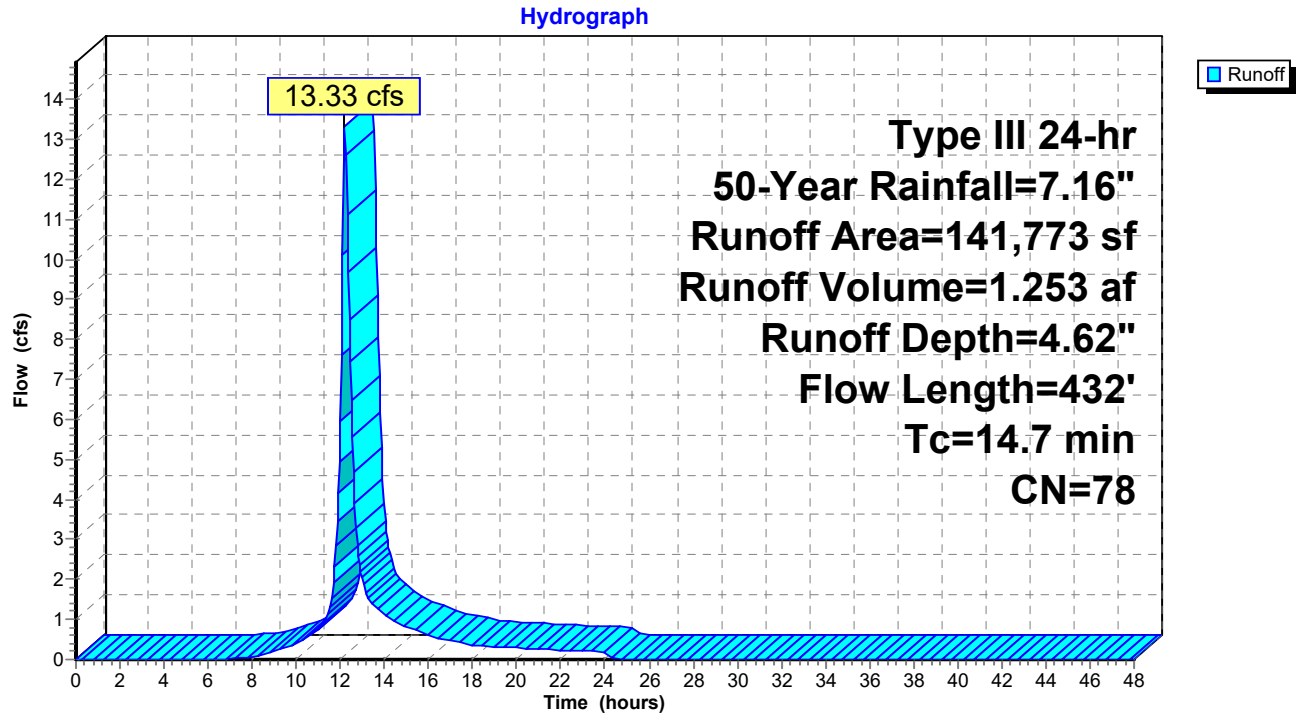
Runoff = 13.33 cfs @ 12.20 hrs, Volume= 1.253 af, Depth= 4.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
136,646	78	Meadow, non-grazed, HSG D
5,127	73	Brush, Good, HSG D
141,773	78	Weighted Average
141,773		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	67	0.0224	0.12		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.5	33	0.1515	0.22		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.2	157	0.0955	2.16		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
1.0	82	0.0366	1.34		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.4	93	0.0550	3.52		**Shallow Concentrated Flow, E-F** Grassed Waterway Kv= 15.0 fps
14.7	432	Total			

Subcatchment PDA-4A: PDA-4A



Summary for Subcatchment PDA-4B: PDA-4B

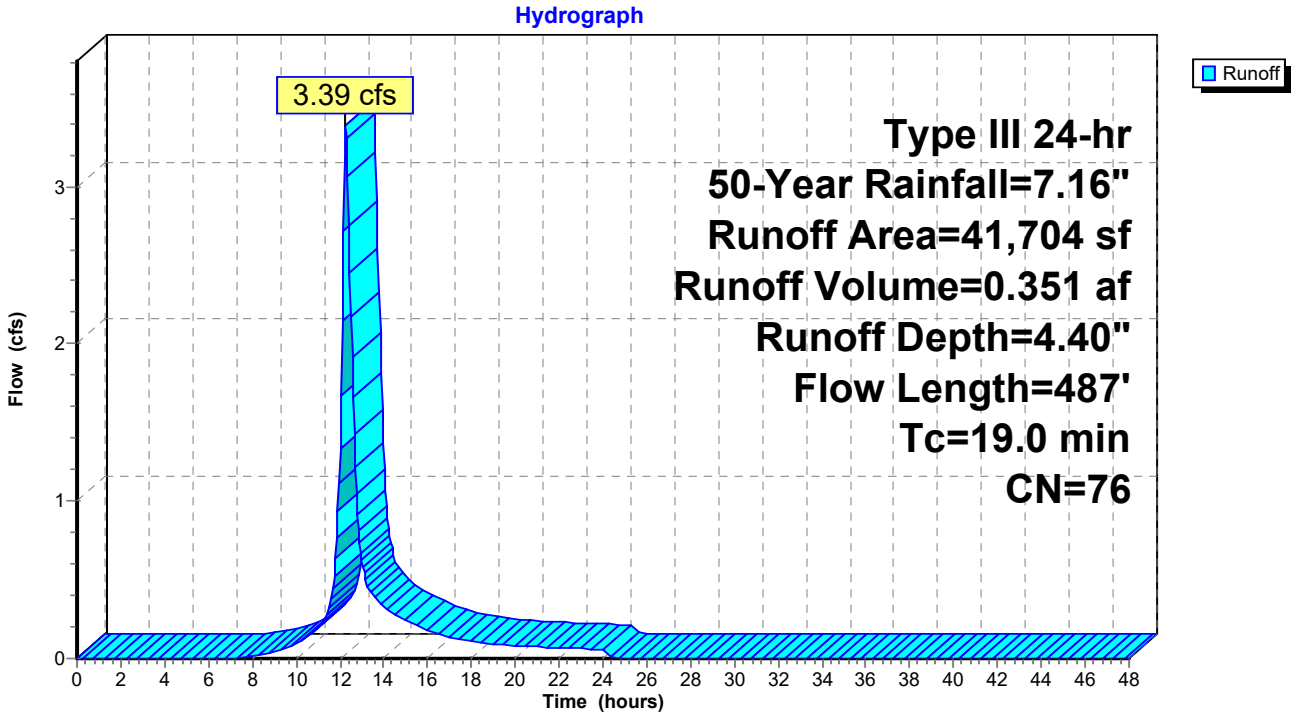
Runoff = 3.39 cfs @ 12.26 hrs, Volume= 0.351 af, Depth= 4.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
13,291	71	Meadow, non-grazed, HSG C
28,356	78	Meadow, non-grazed, HSG D
57	96	Gravel surface, HSG D
41,704	76	Weighted Average
41,704		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0200	0.12		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.9	163	0.0184	0.95		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	117	0.0855	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
0.8	63	0.0317	1.25		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.4	44	0.0682	1.83		**Shallow Concentrated Flow, E-F** Short Grass Pasture Kv= 7.0 fps
19.0	487	Total			

Subcatchment PDA-4B: PDA-4B



Summary for Subcatchment PDA-4C: PDA-4C

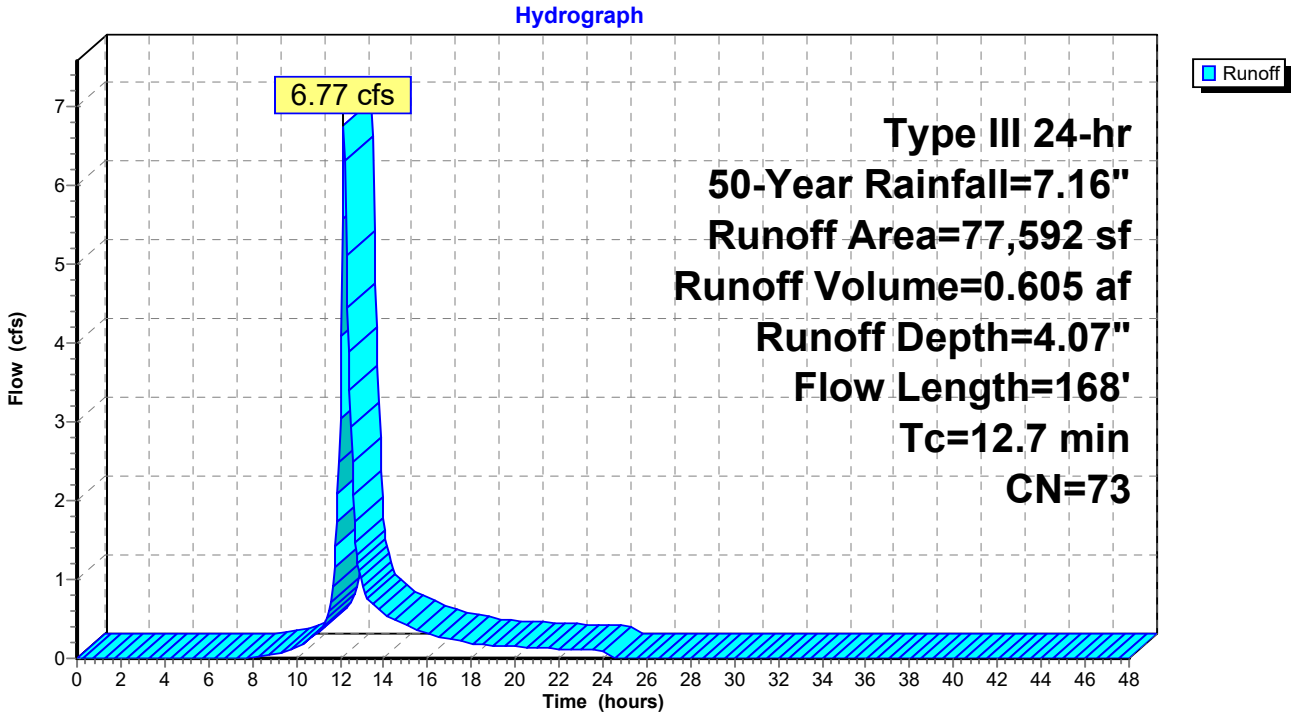
Runoff = 6.77 cfs @ 12.18 hrs, Volume= 0.605 af, Depth= 4.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
77,592	73	Brush, Good, HSG D
77,592		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0800	0.14		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
0.7	68	0.1029	1.60		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
12.7	168	Total			

Subcatchment PDA-4C: PDA-4C



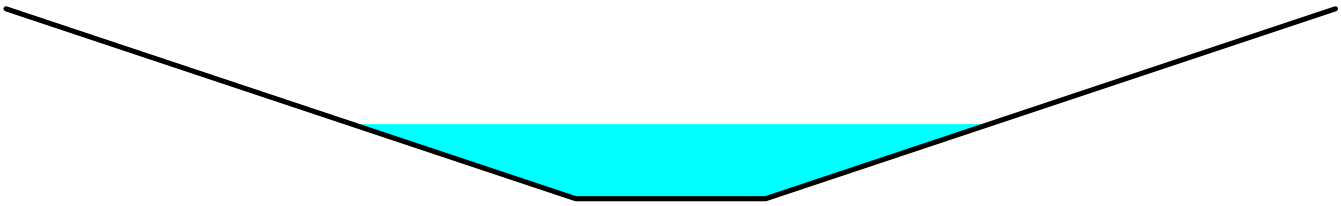
Summary for Reach 5R: Swale

Inflow Area = 0.957 ac, 0.00% Impervious, Inflow Depth = 4.40" for 50-Year event
Inflow = 3.39 cfs @ 12.26 hrs, Volume= 0.351 af
Outflow = 3.35 cfs @ 12.30 hrs, Volume= 0.351 af, Atten= 1%, Lag= 2.3 min

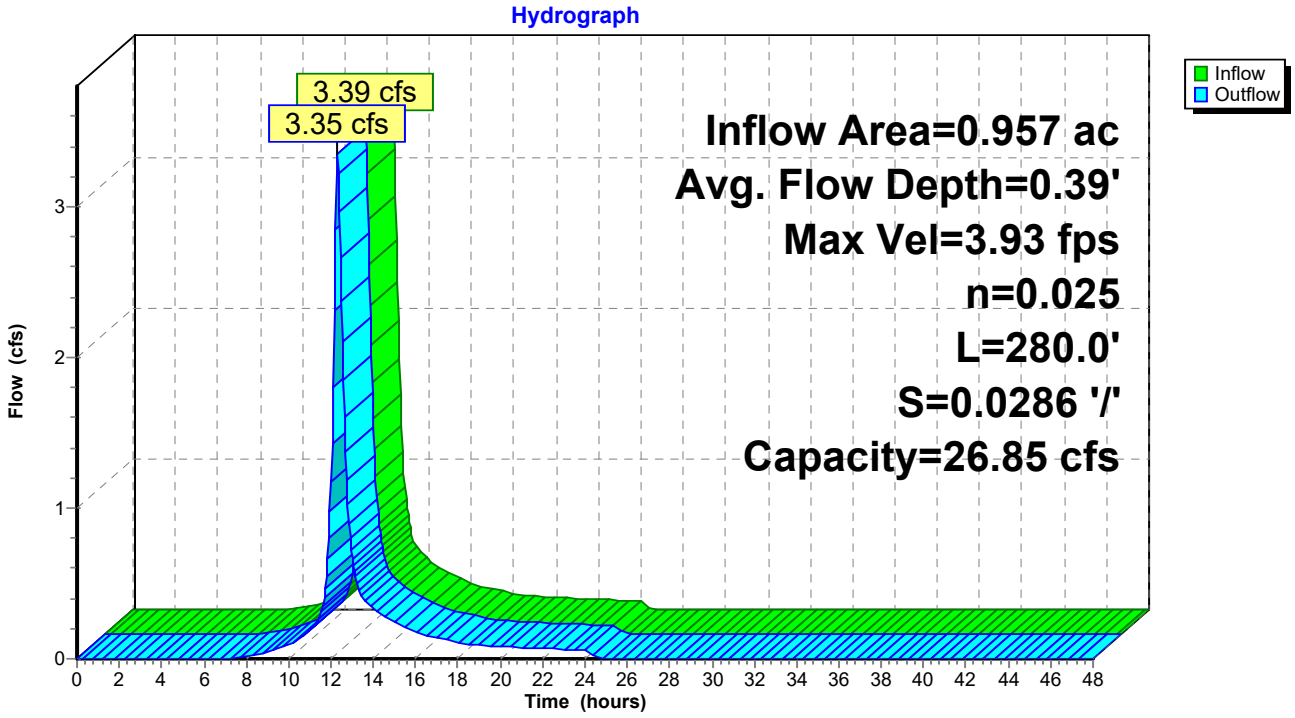
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.93 fps, Min. Travel Time= 1.2 min
Avg. Velocity = 1.47 fps, Avg. Travel Time= 3.2 min

Peak Storage= 240 cf @ 12.28 hrs
Average Depth at Peak Storage= 0.39'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 26.85 cfs

1.00' x 1.00' deep channel, n= 0.025
Side Slope Z-value= 3.0 '/' Top Width= 7.00'
Length= 280.0' Slope= 0.0286 '/'
Inlet Invert= 408.00', Outlet Invert= 400.00'



Reach 5R: Swale



Summary for Pond P-1: P-1

Inflow Area = 2.866 ac, 0.00% Impervious, Inflow Depth = 4.18" for 50-Year event
Inflow = 10.62 cfs @ 12.21 hrs, Volume= 0.999 af
Outflow = 4.59 cfs @ 12.56 hrs, Volume= 0.999 af, Atten= 57%, Lag= 21.1 min
Discarded = 0.81 cfs @ 12.56 hrs, Volume= 0.818 af
Primary = 3.77 cfs @ 12.56 hrs, Volume= 0.181 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 413.79' @ 12.56 hrs Surf.Area= 7,041 sf Storage= 15,467 cf

Plug-Flow detention time= 157.6 min calculated for 0.999 af (100% of inflow)
Center-of-Mass det. time= 157.6 min (986.8 - 829.2)

Volume	Invert	Avail.Storage	Storage Description
#1	411.00'	16,968 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

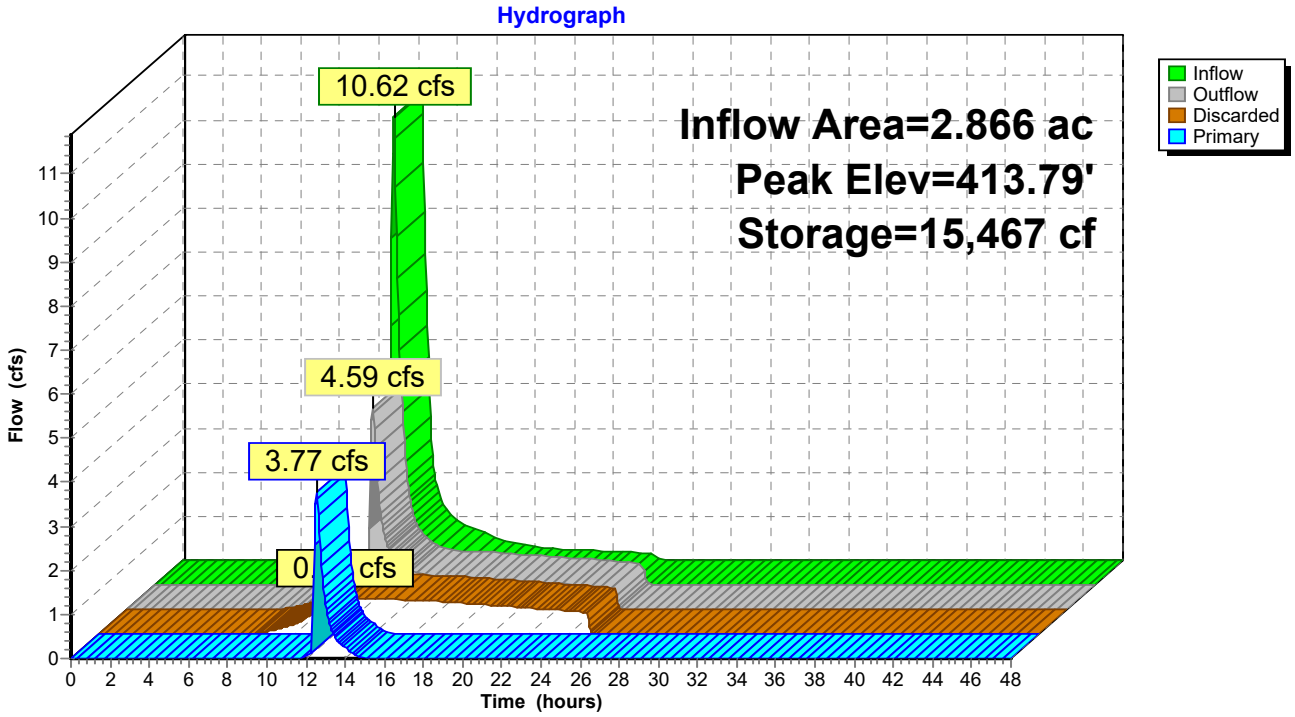
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
411.00	4,114	0	0
412.00	5,110	4,612	4,612
413.00	6,164	5,637	10,249
414.00	7,274	6,719	16,968

Device	Routing	Invert	Outlet Devices
#1	Discarded	411.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	413.50'	**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

Discarded OutFlow Max=0.81 cfs @ 12.56 hrs HW=413.79' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.81 cfs)

Primary OutFlow Max=3.74 cfs @ 12.56 hrs HW=413.79' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 3.74 cfs @ 1.30 fps)

Pond P-1: P-1


Hydrograph
10.62 cfs
4.59 cfs
3.77 cfs
0 cfs
Inflow Area=2.866 ac
Peak Elev=413.79'
Storage=15,467 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond P-2A: P-2A

Inflow Area = 1.355 ac, 0.00% Impervious, Inflow Depth = 3.86" for 50-Year event
Inflow = 4.00 cfs @ 12.30 hrs, Volume= 0.436 af
Outflow = 2.51 cfs @ 12.58 hrs, Volume= 0.436 af, Atten= 37%, Lag= 16.7 min
Discarded = 0.37 cfs @ 12.58 hrs, Volume= 0.347 af
Primary = 2.14 cfs @ 12.58 hrs, Volume= 0.089 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 419.69' @ 12.58 hrs Surf.Area= 3,186 sf Storage= 6,077 cf

Plug-Flow detention time= 145.8 min calculated for 0.435 af (100% of inflow)
Center-of-Mass det. time= 145.7 min (987.7 - 842.0)

Volume	Invert	Avail.Storage	Storage Description
#1	417.00'	7,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

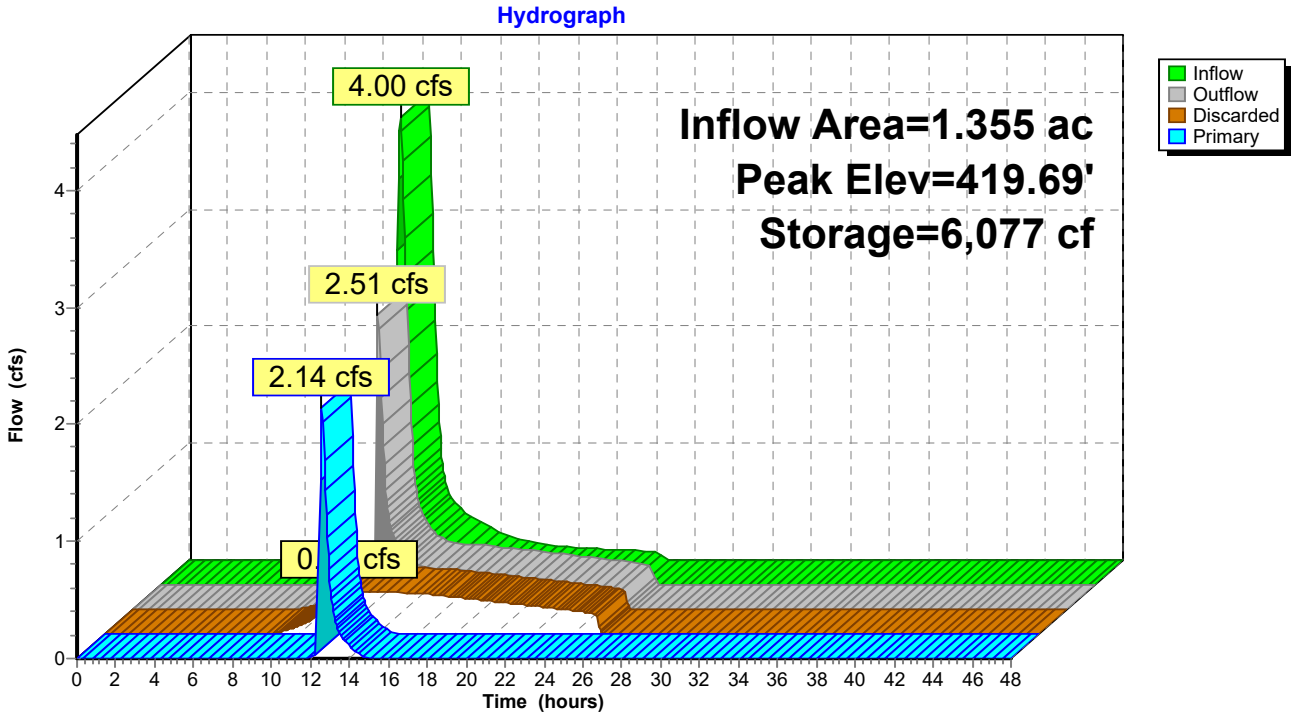
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
417.00	1,405	0	0
418.00	2,018	1,712	1,712
419.00	2,688	2,353	4,065
420.00	3,415	3,052	7,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	417.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	419.50'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.37 cfs @ 12.58 hrs HW=419.68' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.37 cfs)

Primary OutFlow Max=2.11 cfs @ 12.58 hrs HW=419.68' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 2.11 cfs @ 1.15 fps)

Pond P-2A: P-2A


Hydrograph
Inflow
Outflow
Discarded
Primary
4.00 cfs
2.51 cfs
2.14 cfs
0 cfs
Inflow Area=1.355 ac
Peak Elev=419.69'
Storage=6,077 cf
Flow (cfs)
Time (hours)
0 1 2 3 4
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond P-2B: P-2B

Inflow Area = 0.742 ac, 0.00% Impervious, Inflow Depth = 3.97" for 50-Year event
Inflow = 2.82 cfs @ 12.17 hrs, Volume= 0.245 af
Outflow = 0.30 cfs @ 13.27 hrs, Volume= 0.245 af, Atten= 89%, Lag= 66.3 min
Discarded = 0.30 cfs @ 13.27 hrs, Volume= 0.245 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 414.31' @ 13.27 hrs Surf.Area= 2,626 sf Storage= 4,512 cf

Plug-Flow detention time= 155.3 min calculated for 0.245 af (100% of inflow)
Center-of-Mass det. time= 155.2 min (986.2 - 831.0)

Volume	Invert	Avail.Storage	Storage Description
#1	412.00'	6,481 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

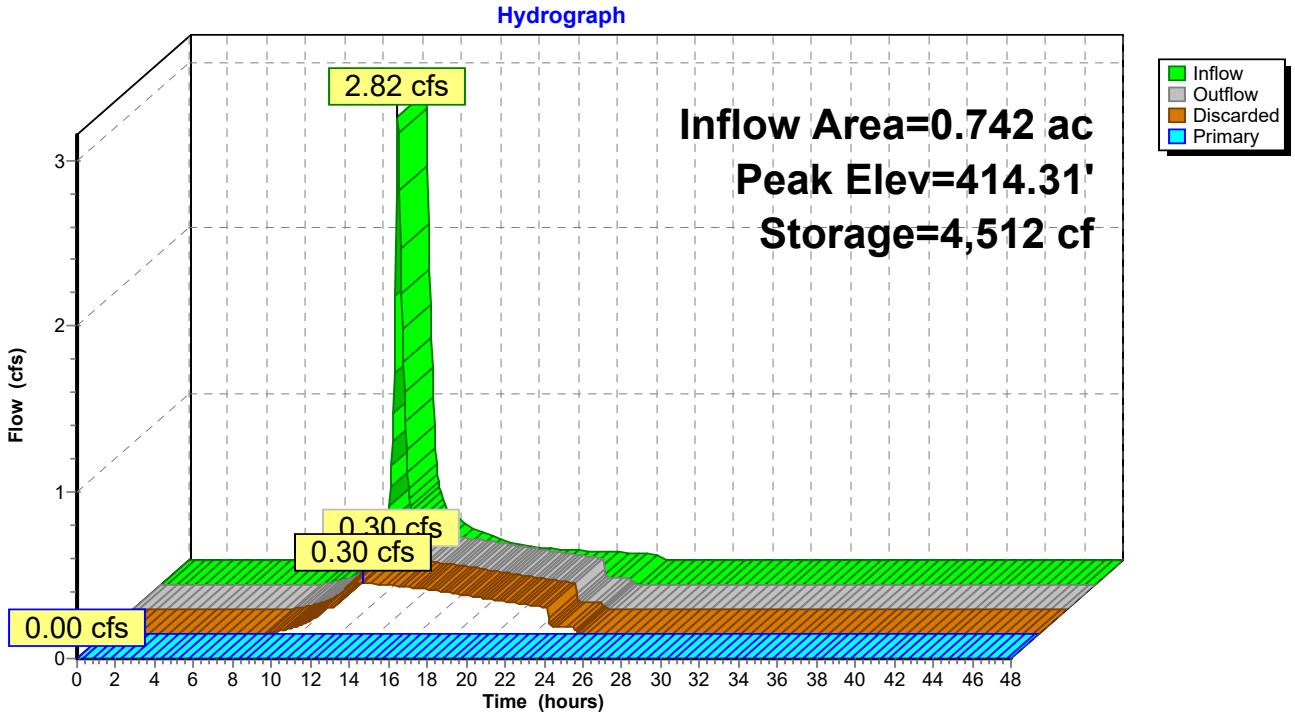
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
412.00	1,330	0	0
413.00	1,852	1,591	1,591
414.00	2,431	2,142	3,733
415.00	3,065	2,748	6,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	412.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	414.50'	**10.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.30 cfs @ 13.27 hrs HW=414.31' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.30 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=412.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P-2B: P-2B


Hydrograph
Inflow
Outflow
Discarded
Primary
2.82 cfs
0.30 cfs
0.30 cfs
0.00 cfs
Inflow Area=0.742 ac
Peak Elev=414.31'
Storage=4,512 cf
Flow (cfs)
Time (hours)
0
1
2
3
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond P-3: P-3

Inflow Area = 1.638 ac, 0.00% Impervious, Inflow Depth = 3.97" for 50-Year event
Inflow = 5.32 cfs @ 12.25 hrs, Volume= 0.541 af
Outflow = 1.62 cfs @ 12.75 hrs, Volume= 0.541 af, Atten= 70%, Lag= 29.9 min
Discarded = 0.53 cfs @ 12.75 hrs, Volume= 0.491 af
Primary = 1.09 cfs @ 12.75 hrs, Volume= 0.050 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 411.63' @ 12.75 hrs Surf.Area= 4,585 sf Storage= 9,202 cf

Plug-Flow detention time= 165.9 min calculated for 0.541 af (100% of inflow)
Center-of-Mass det. time= 165.9 min (1,002.6 - 836.7)

Volume	Invert	Avail.Storage	Storage Description
#1	409.00'	10,964 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

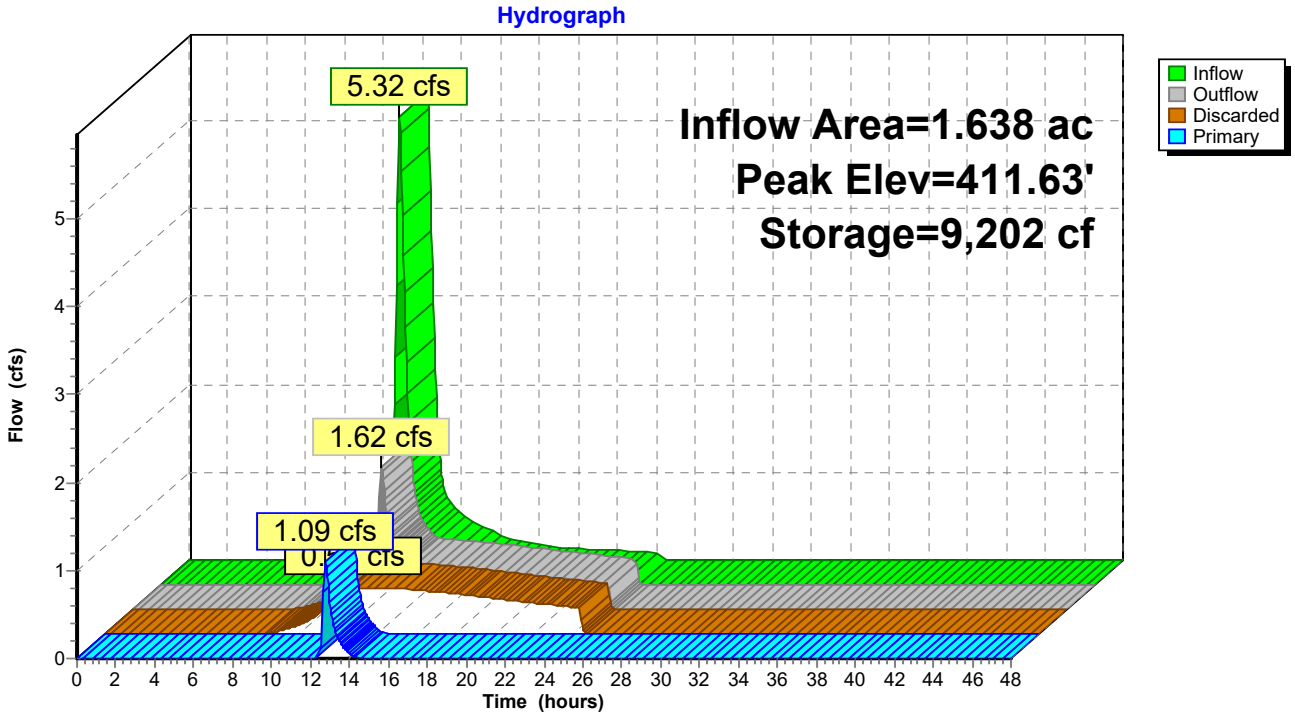
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
409.00	2,479	0	0
410.00	3,231	2,855	2,855
411.00	4,040	3,636	6,491
412.00	4,906	4,473	10,964

Device	Routing	Invert	Outlet Devices
#1	Discarded	409.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	411.50'	**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

Discarded OutFlow Max=0.53 cfs @ 12.75 hrs HW=411.63' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.53 cfs)

Primary OutFlow Max=1.08 cfs @ 12.75 hrs HW=411.63' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Weir Controls 1.08 cfs @ 0.84 fps)

Pond P-3: P-3


Hydrograph
5.32 cfs
1.62 cfs
1.09 cfs
Inflow Area=1.638 ac
Peak Elev=411.63'
Storage=9,202 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
1
2
3
4
5
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Pond P-4: P-4

Inflow Area = 4.212 ac, 0.00% Impervious, Inflow Depth = 4.57" for 50-Year event
Inflow = 16.26 cfs @ 12.22 hrs, Volume= 1.604 af
Outflow = 4.91 cfs @ 12.69 hrs, Volume= 1.237 af, Atten= 70%, Lag= 28.6 min
Discarded = 0.21 cfs @ 12.69 hrs, Volume= 0.628 af
Primary = 4.70 cfs @ 12.69 hrs, Volume= 0.609 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 399.75' @ 12.69 hrs Surf.Area= 11,487 sf Storage= 34,970 cf

Plug-Flow detention time= 553.9 min calculated for 1.237 af (77% of inflow)
Center-of-Mass det. time= 471.2 min (1,293.8 - 822.5)

Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	37,885 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

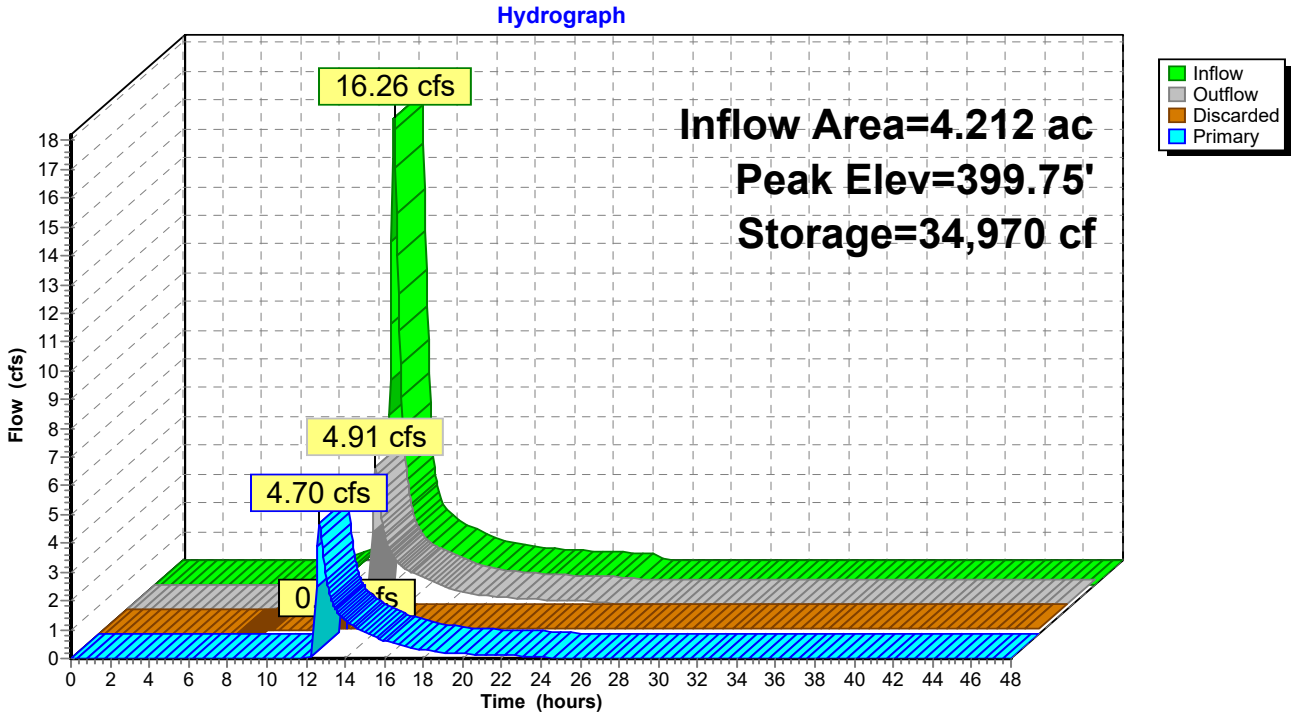
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	7,294	0	0
397.00	8,333	7,814	7,814
398.00	9,429	8,881	16,695
399.00	10,581	10,005	26,700
400.00	11,790	11,186	37,885

Device	Routing	Invert	Outlet Devices
#1	Discarded	396.00'	**0.800 in/hr Exfiltration over Surface area**
#2	Primary	399.50'	**15.0' long x 10.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.21 cfs @ 12.69 hrs HW=399.75' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.21 cfs)

Primary OutFlow Max=4.67 cfs @ 12.69 hrs HW=399.75' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 4.67 cfs @ 1.25 fps)

Pond P-4: P-4

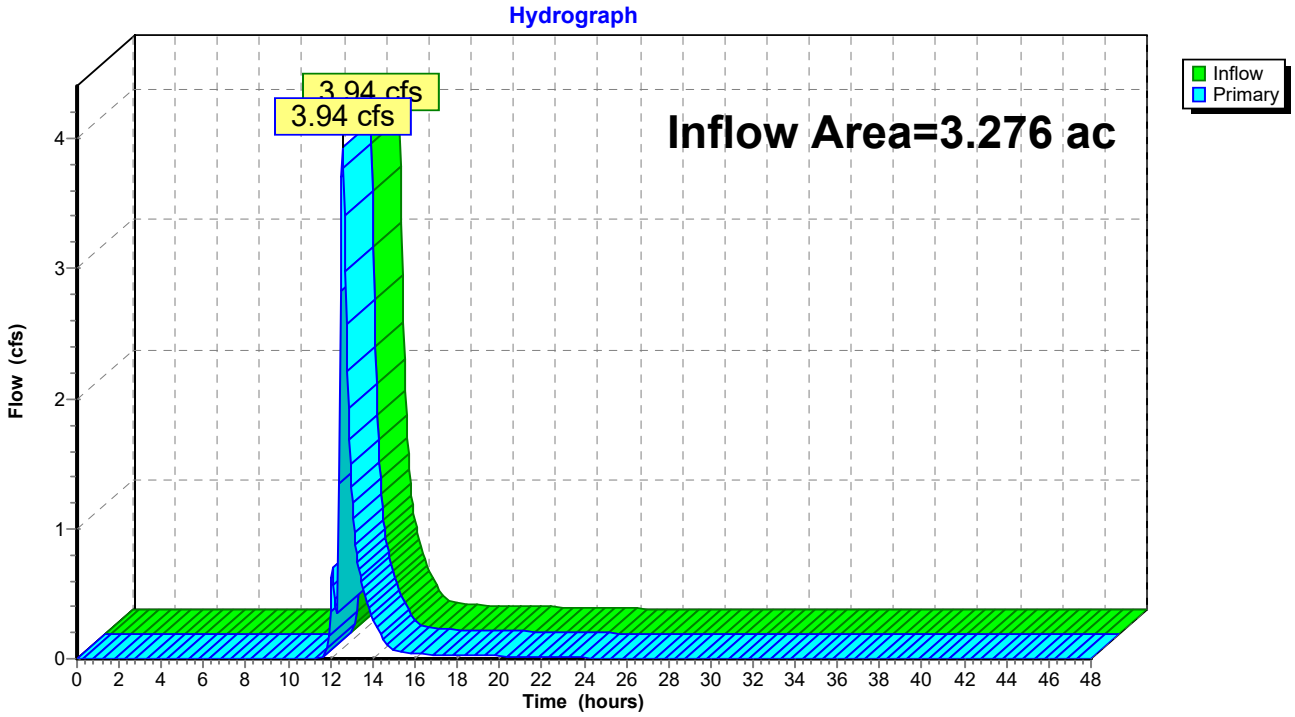

Hydrograph
16.26 cfs
4.91 cfs
4.70 cfs
Inflow Area=4.212 ac
Peak Elev=399.75'
Storage=34,970 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Link 1L: AP-1

Inflow Area = 3.276 ac, 0.00% Impervious, Inflow Depth = 0.87" for 50-Year event
Inflow = 3.94 cfs @ 12.55 hrs, Volume= 0.238 af
Primary = 3.94 cfs @ 12.55 hrs, Volume= 0.238 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: AP-1

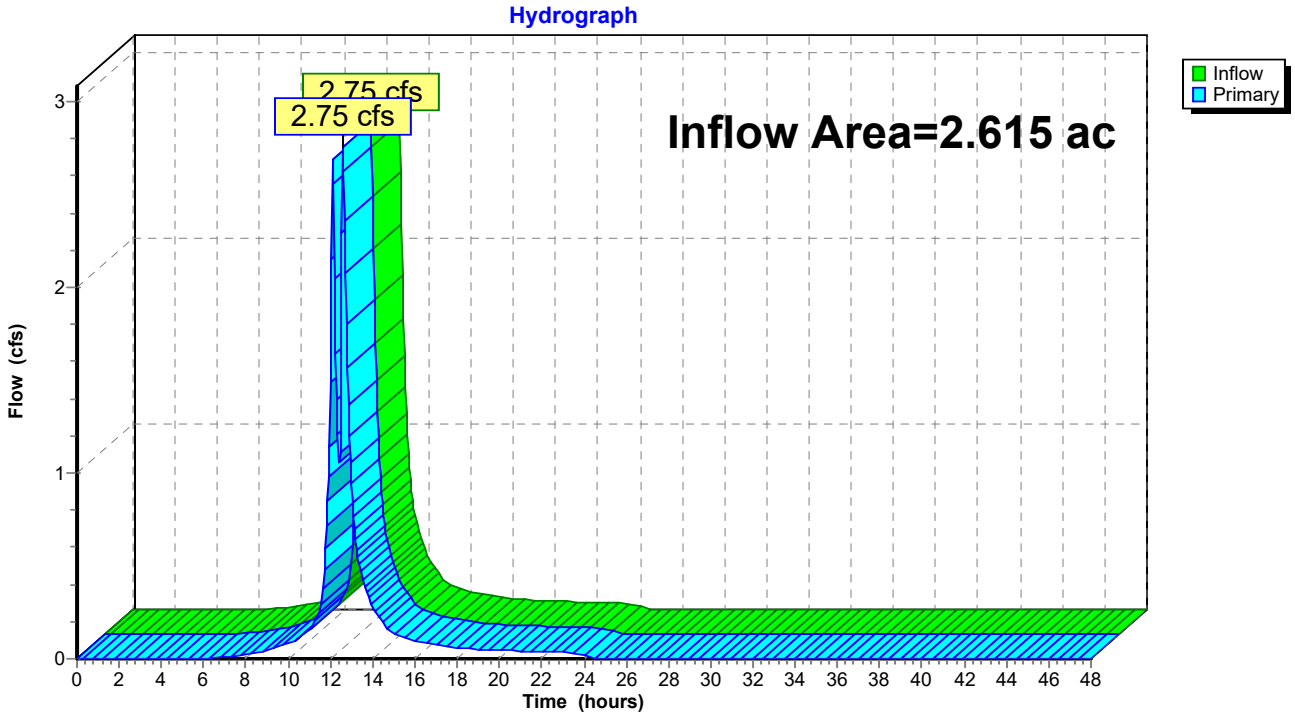


Summary for Link 2L: AP-2

Inflow Area = 2.615 ac, 0.00% Impervious, Inflow Depth = 1.39" for 50-Year event
Inflow = 2.75 cfs @ 12.57 hrs, Volume= 0.303 af
Primary = 2.75 cfs @ 12.57 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

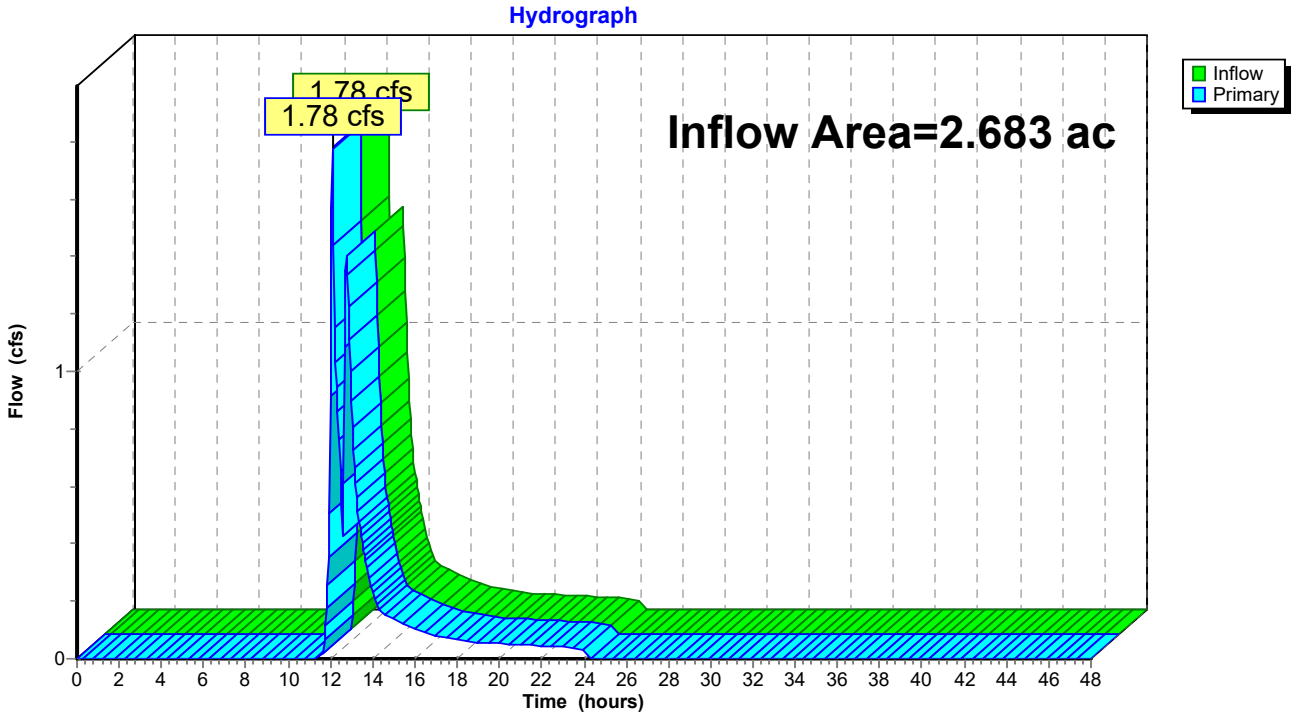


Summary for Link 3L: AP-3

Inflow Area = 2.683 ac, 0.00% Impervious, Inflow Depth = 0.87" for 50-Year event
Inflow = 1.78 cfs @ 12.09 hrs, Volume= 0.195 af
Primary = 1.78 cfs @ 12.09 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 3L: AP-3

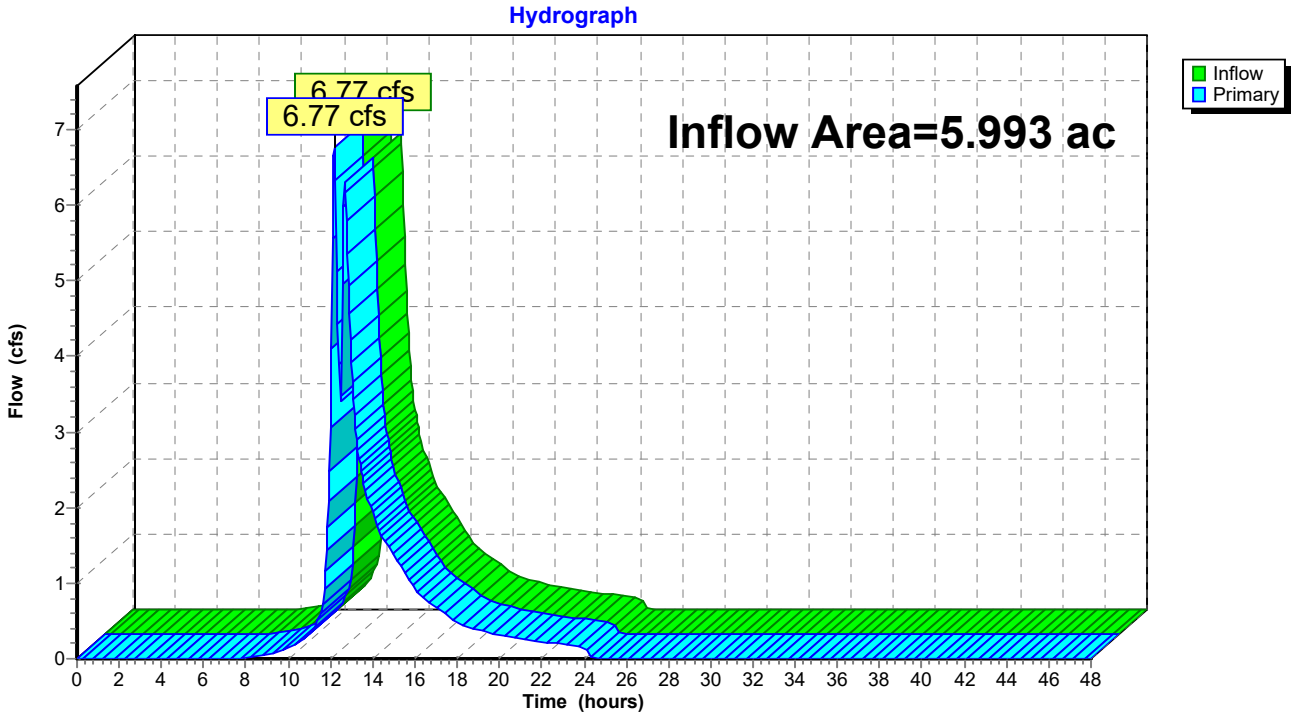


Summary for Link 4L: AP-4

Inflow Area = 5.993 ac, 0.00% Impervious, Inflow Depth = 2.43" for 50-Year event
Inflow = 6.77 cfs @ 12.18 hrs, Volume= 1.214 af
Primary = 6.77 cfs @ 12.18 hrs, Volume= 1.214 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 4L: AP-4



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA-1A: PDA-1A Runoff Area=124,842 sf 0.00% Impervious Runoff Depth=4.99"
Flow Length=381' Tc=14.9 min CN=74 Runoff=12.64 cfs 1.191 af

Subcatchment PDA-1B: PDA-1B Runoff Area=17,880 sf 0.00% Impervious Runoff Depth=2.19"
Tc=5.0 min CN=49 Runoff=0.96 cfs 0.075 af

Subcatchment PDA-2A: PDA-2A Runoff Area=59,006 sf 0.00% Impervious Runoff Depth=4.64"
Flow Length=275' Tc=21.5 min CN=71 Runoff=4.81 cfs 0.524 af

Subcatchment PDA-2B: PDA-2B Runoff Area=32,304 sf 0.00% Impervious Runoff Depth=4.76"
Flow Length=219' Tc=12.0 min CN=72 Runoff=3.38 cfs 0.294 af

Subcatchment PDA-2C: PDA-2C Runoff Area=22,584 sf 0.00% Impervious Runoff Depth=5.81"
Flow Length=346' Tc=8.2 min CN=81 Runoff=3.17 cfs 0.251 af

Subcatchment PDA-3A: PDA-3A Runoff Area=71,342 sf 0.00% Impervious Runoff Depth=4.76"
Flow Length=322' Tc=18.2 min CN=72 Runoff=6.38 cfs 0.649 af

Subcatchment PDA-3B: PDA-3B Runoff Area=45,532 sf 0.00% Impervious Runoff Depth=2.19"
Tc=5.0 min CN=49 Runoff=2.46 cfs 0.191 af

Subcatchment PDA-4A: PDA-4A Runoff Area=141,773 sf 0.00% Impervious Runoff Depth=5.46"
Flow Length=432' Tc=14.7 min CN=78 Runoff=15.67 cfs 1.480 af

Subcatchment PDA-4B: PDA-4B Runoff Area=41,704 sf 0.00% Impervious Runoff Depth=5.22"
Flow Length=487' Tc=19.0 min CN=76 Runoff=4.01 cfs 0.417 af

Subcatchment PDA-4C: PDA-4C Runoff Area=77,592 sf 0.00% Impervious Runoff Depth=4.87"
Flow Length=168' Tc=12.7 min CN=73 Runoff=8.09 cfs 0.723 af

Reach 5R: Swale Avg. Flow Depth=0.43' Max Vel=4.11 fps Inflow=4.01 cfs 0.417 af
n=0.025 L=280.0' S=0.0286 '/' Capacity=26.85 cfs Outflow=3.96 cfs 0.417 af

Pond P-1: P-1 Peak Elev=413.91' Storage=16,312 cf Inflow=12.64 cfs 1.191 af
Discarded=0.83 cfs 0.875 af Primary=6.57 cfs 0.316 af Outflow=7.40 cfs 1.191 af

Pond P-2A: P-2A Peak Elev=419.76' Storage=6,308 cf Inflow=4.81 cfs 0.524 af
Discarded=0.37 cfs 0.372 af Primary=3.50 cfs 0.152 af Outflow=3.87 cfs 0.524 af

Pond P-2B: P-2B Peak Elev=414.56' Storage=5,202 cf Inflow=3.38 cfs 0.294 af
Discarded=0.32 cfs 0.279 af Primary=0.43 cfs 0.015 af Outflow=0.76 cfs 0.294 af

Pond P-3: P-3 Peak Elev=411.74' Storage=9,715 cf Inflow=6.38 cfs 0.649 af
Discarded=0.54 cfs 0.529 af Primary=2.78 cfs 0.120 af Outflow=3.32 cfs 0.649 af

Pond P-4: P-4 Peak Elev=399.89' Storage=36,600 cf Inflow=19.17 cfs 1.896 af
Discarded=0.22 cfs 0.635 af Primary=9.37 cfs 0.893 af Outflow=9.58 cfs 1.528 af

Link 1L: AP-1 Inflow=6.91 cfs 0.391 af
Primary=6.91 cfs 0.391 af

Link 2L: AP-2 Inflow=4.48 cfs 0.418 af
Primary=4.48 cfs 0.418 af

Link 3L: AP-3 Inflow=3.30 cfs 0.311 af
Primary=3.30 cfs 0.311 af

Link 4L: AP-4 Inflow=12.72 cfs 1.616 af
Primary=12.72 cfs 1.616 af

Total Runoff Area = 14.567 ac Runoff Volume = 5.794 af Average Runoff Depth = 4.77"
100.00% Pervious = 14.567 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment PDA-1A: PDA-1A

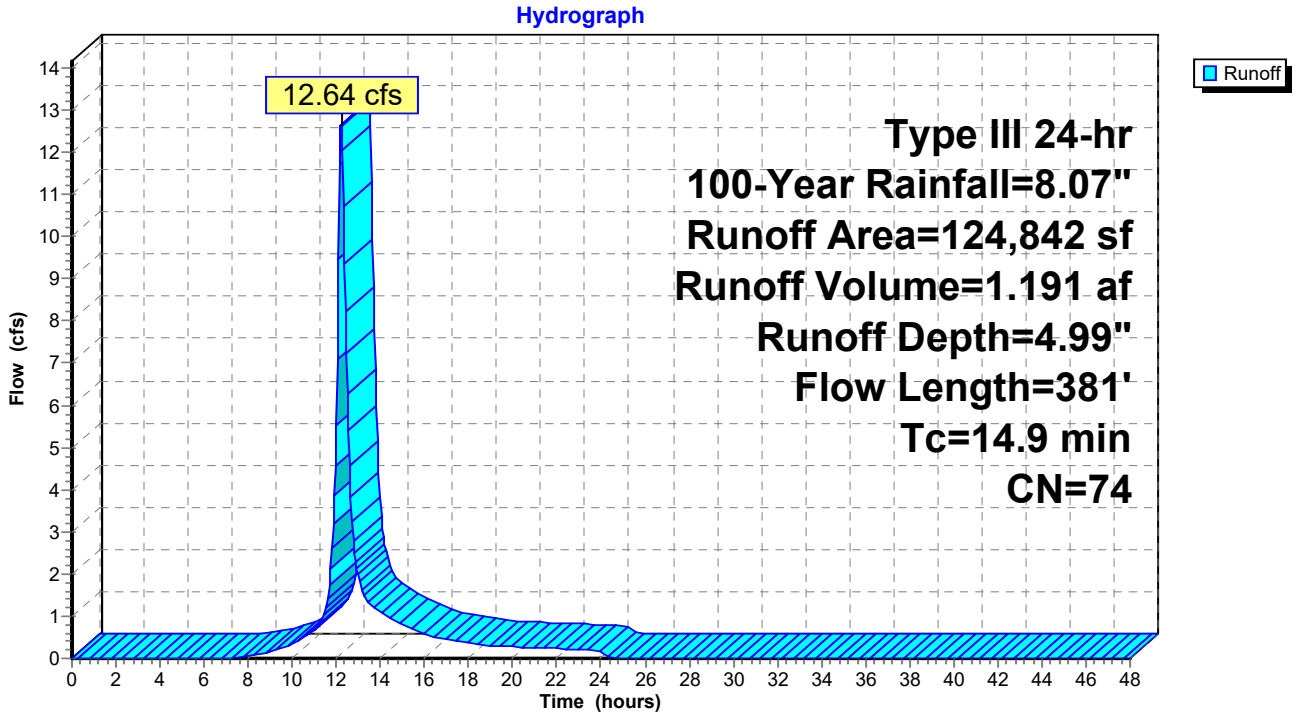
Runoff = 12.64 cfs @ 12.21 hrs, Volume= 1.191 af, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
79,434	71	Meadow, non-grazed, HSG C
45,408	78	Meadow, non-grazed, HSG D
124,842	74	Weighted Average
124,842		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	100	0.0350	0.15		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
3.8	281	0.0306	1.22		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
14.9	381	Total			

Subcatchment PDA-1A: PDA-1A



Summary for Subcatchment PDA-1B: PDA-1B

[49] Hint: Tc<2dt may require smaller dt

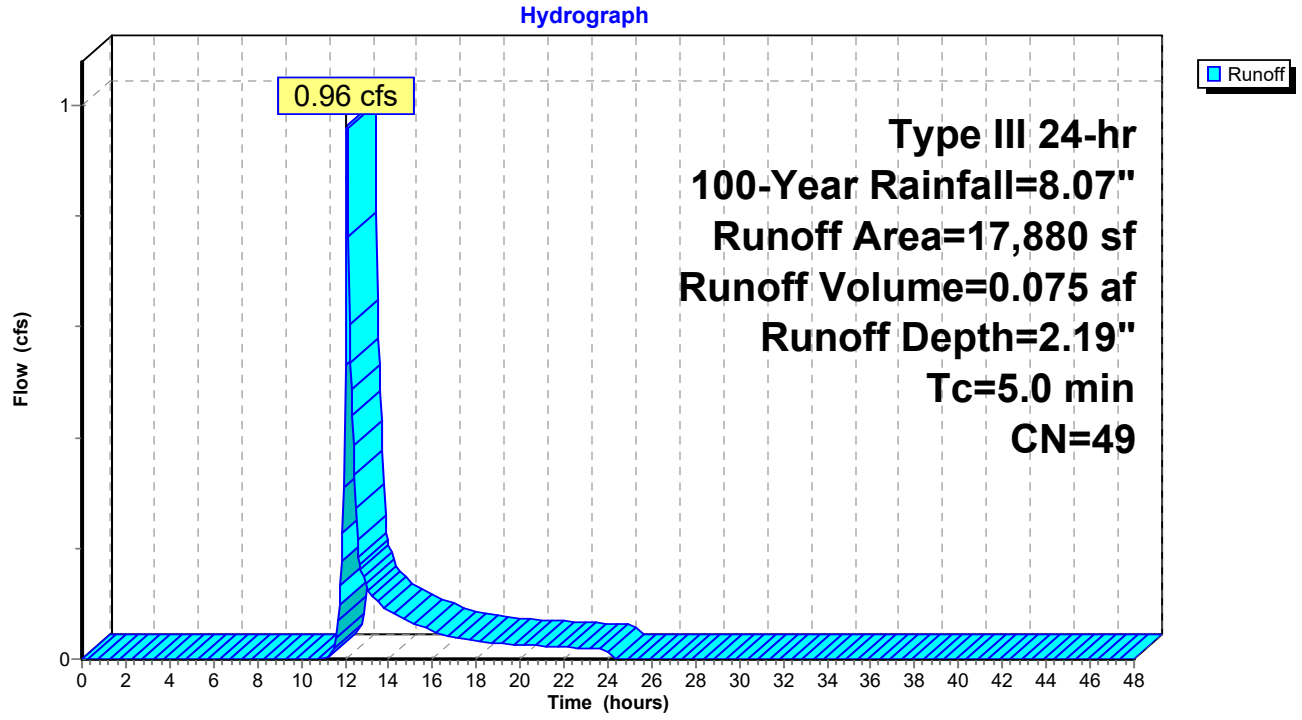
Runoff = 0.96 cfs @ 12.09 hrs, Volume= 0.075 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
16,448	48	Brush, Good, HSG B
1,432	65	Brush, Good, HSG C
17,880	49	Weighted Average
17,880		100.00% Pervious Area

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

Subcatchment PDA-1B: PDA-1B



Summary for Subcatchment PDA-2A: PDA-2A

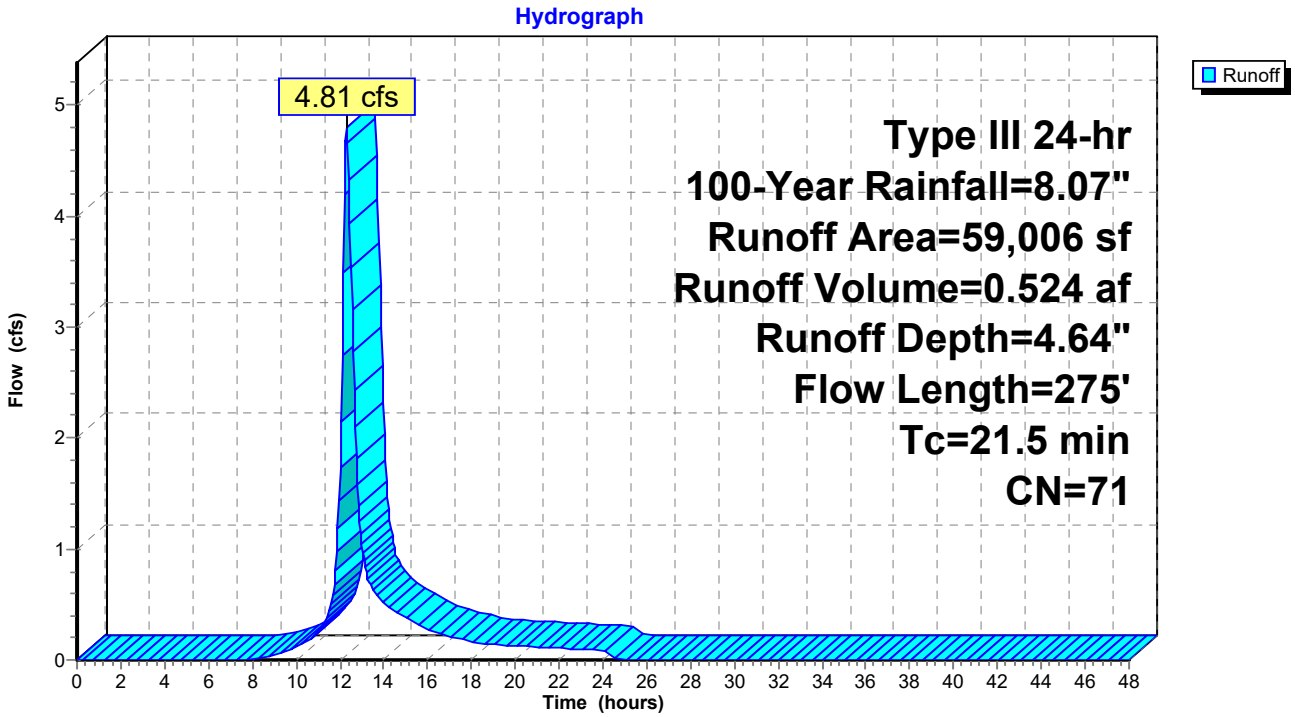
Runoff = 4.81 cfs @ 12.30 hrs, Volume= 0.524 af, Depth= 4.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
39,007	71	Meadow, non-grazed, HSG C
16,039	78	Meadow, non-grazed, HSG D
3,960	48	Brush, Good, HSG B
59,006	71	Weighted Average
59,006		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
16.0	70	0.0069	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
2.9	175	0.0211	1.02		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
21.5	275	Total			

Subcatchment PDA-2A: PDA-2A



Summary for Subcatchment PDA-2B: PDA-2B

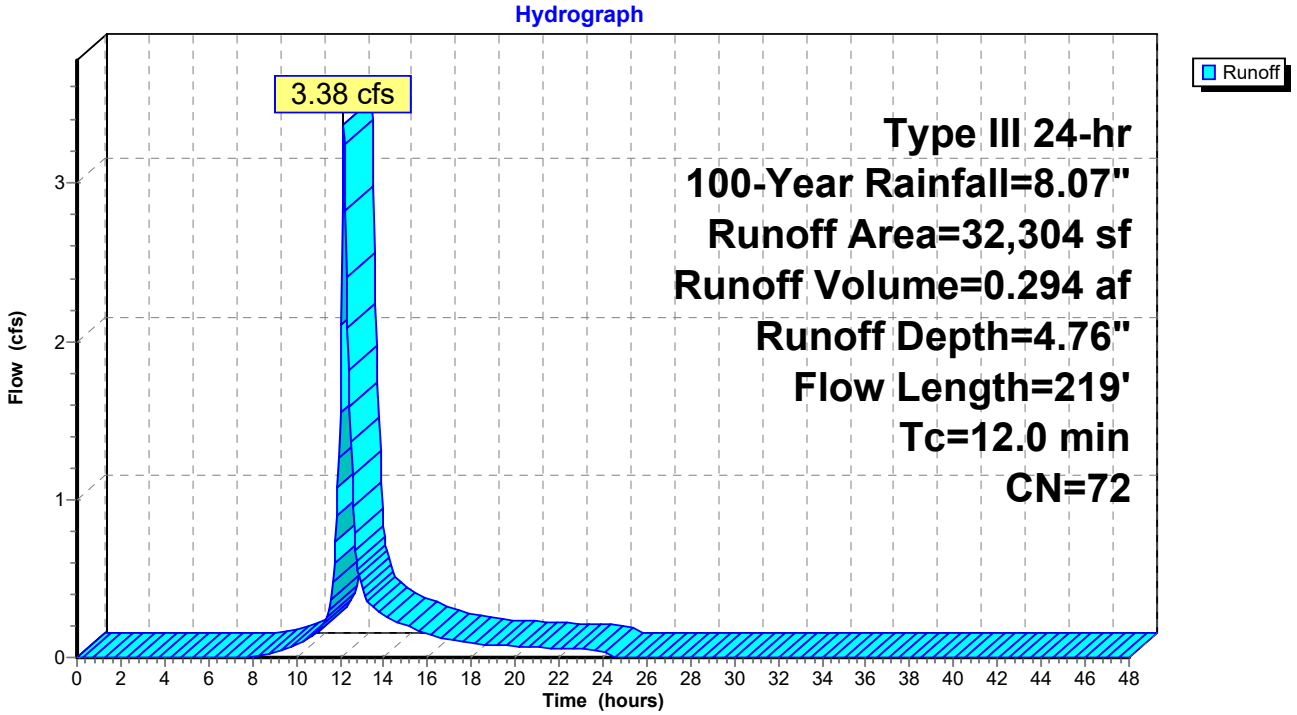
Runoff = 3.38 cfs @ 12.17 hrs, Volume= 0.294 af, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
12,043	71	Meadow, non-grazed, HSG C
16,171	78	Meadow, non-grazed, HSG D
4,020	48	Brush, Good, HSG B
70	73	Brush, Good, HSG D
32,304	72	Weighted Average
32,304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
8.3	70	0.0357	0.14		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.1	119	0.0630	1.76		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
12.0	219	Total			

Subcatchment PDA-2B: PDA-2B



Summary for Subcatchment PDA-2C: PDA-2C

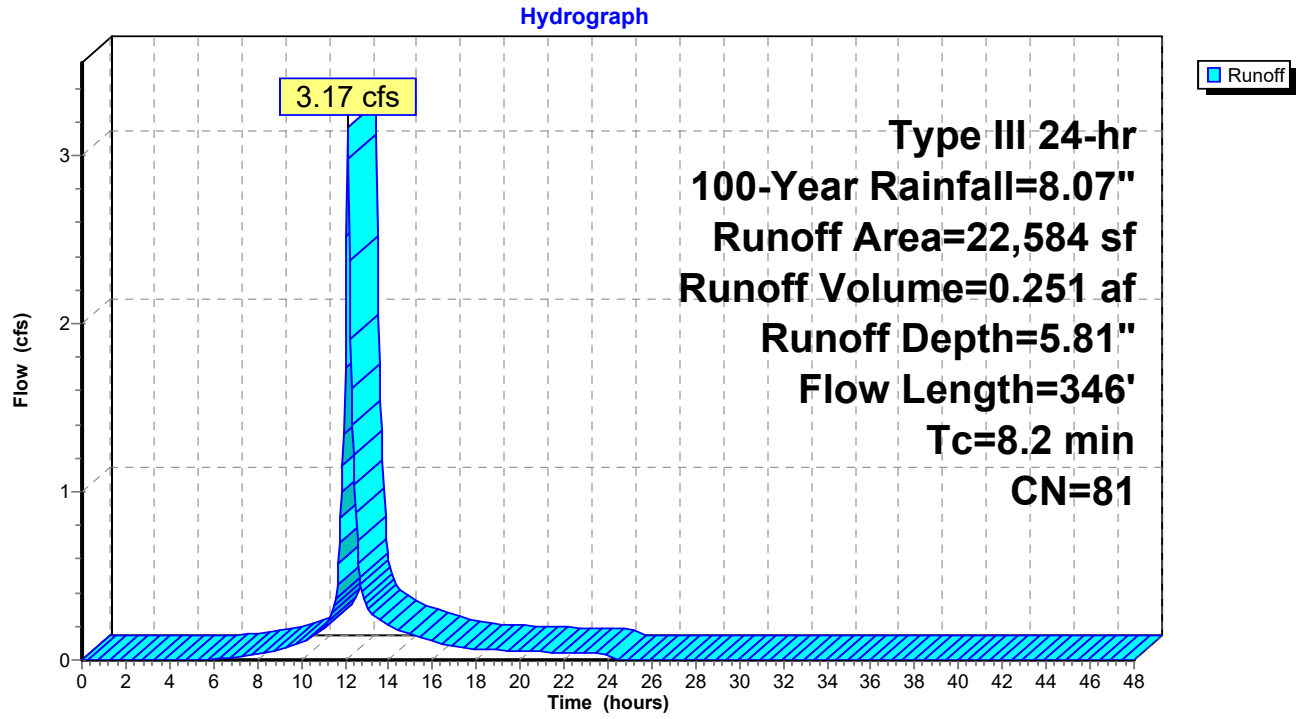
Runoff = 3.17 cfs @ 12.11 hrs, Volume= 0.251 af, Depth= 5.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
1,977	77	Woods, Good, HSG D
3,486	96	Gravel surface, HSG D
17,121	78	Meadow, non-grazed, HSG D
22,584	81	Weighted Average
22,584		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
1.3	146	0.0684	1.83		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0854	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
8.2	346	Total			

Subcatchment PDA-2C: PDA-2C



Summary for Subcatchment PDA-3A: PDA-3A

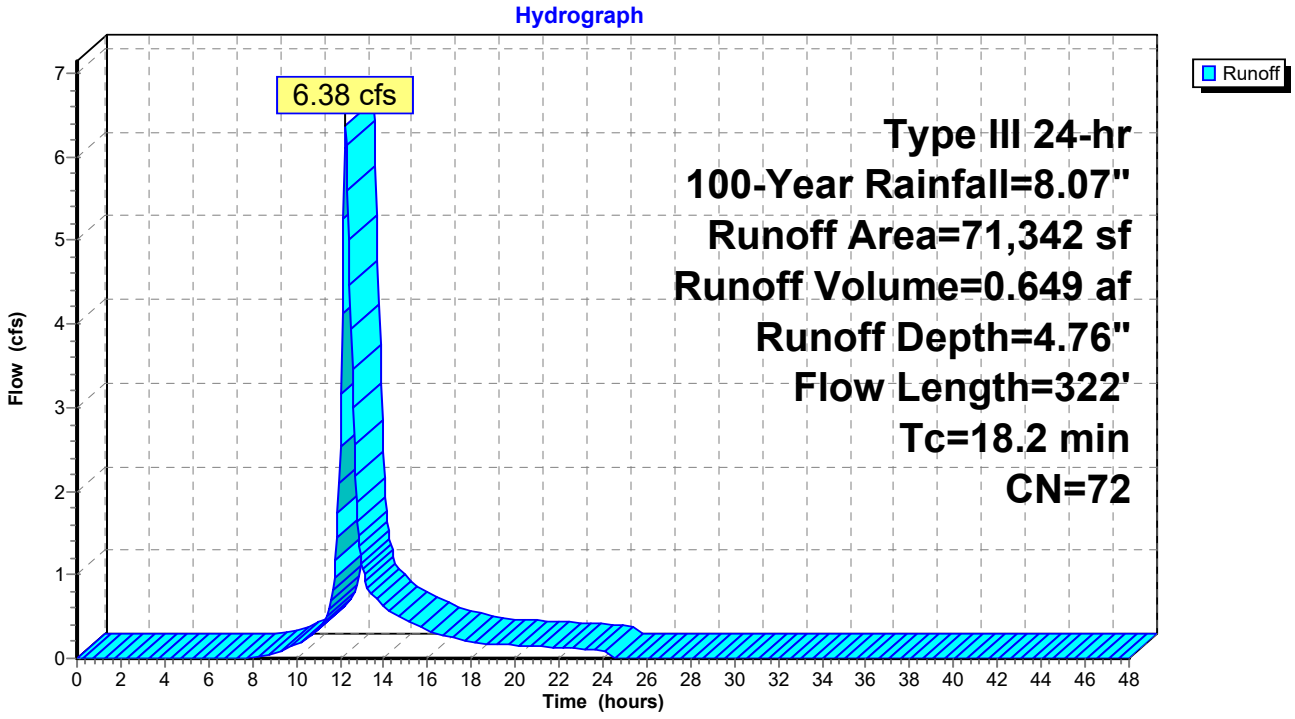
Runoff = 6.38 cfs @ 12.25 hrs, Volume= 0.649 af, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
64,777	71	Meadow, non-grazed, HSG C
6,565	78	Meadow, non-grazed, HSG D
71,342	72	Weighted Average
71,342		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	100	0.0150	0.11		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.6	222	0.0417	1.43		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
18.2	322	Total			

Subcatchment PDA-3A: PDA-3A



Summary for Subcatchment PDA-3B: PDA-3B

[49] Hint: Tc<2dt may require smaller dt

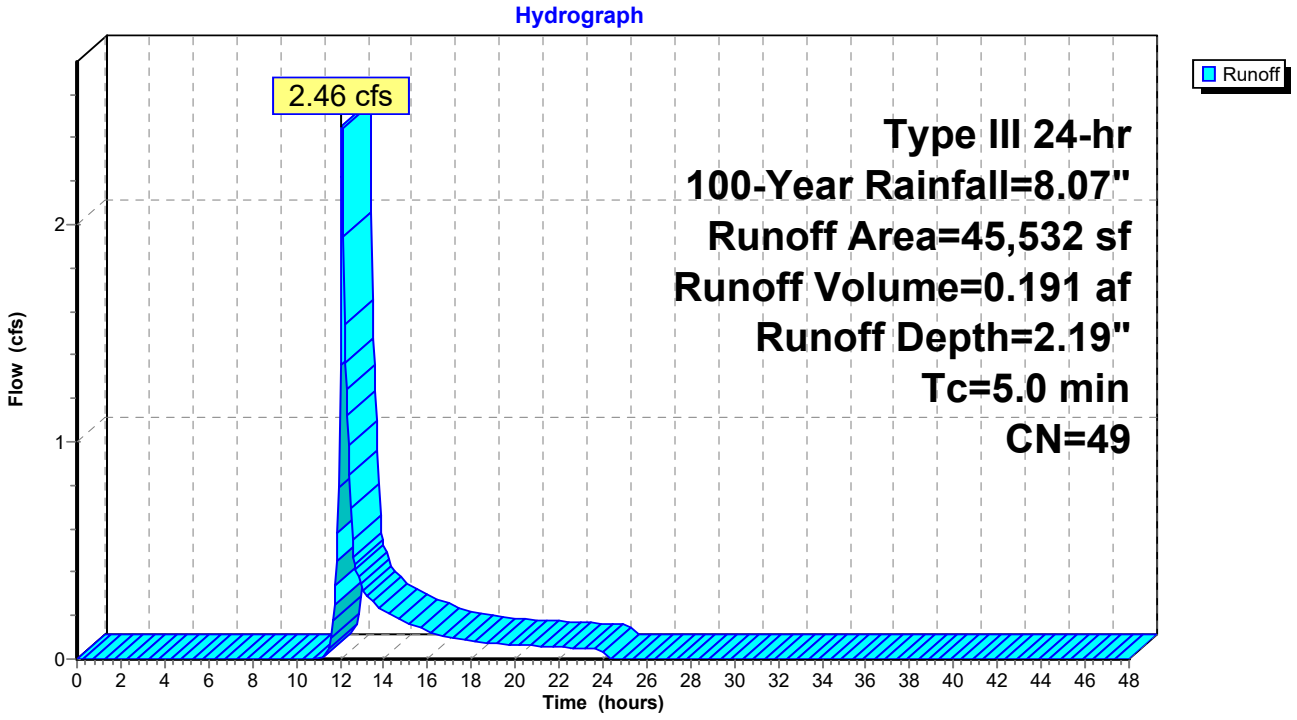
Runoff = 2.46 cfs @ 12.09 hrs, Volume= 0.191 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
43,429	48	Brush, Good, HSG B
2,103	73	Brush, Good, HSG D
45,532	49	Weighted Average
45,532		100.00% Pervious Area

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

Subcatchment PDA-3B: PDA-3B



Summary for Subcatchment PDA-4A: PDA-4A

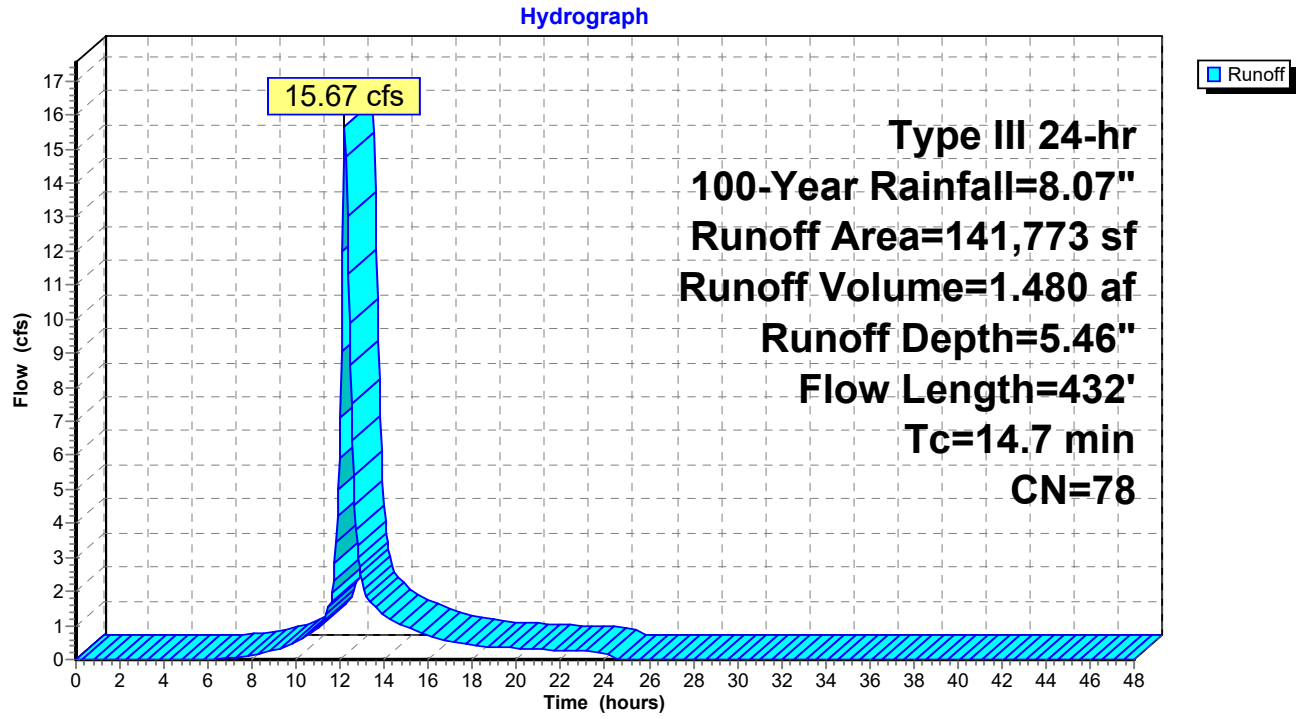
Runoff = 15.67 cfs @ 12.20 hrs, Volume= 1.480 af, Depth= 5.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
136,646	78	Meadow, non-grazed, HSG D
5,127	73	Brush, Good, HSG D
141,773	78	Weighted Average
141,773		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	67	0.0224	0.12		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.5	33	0.1515	0.22		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.2	157	0.0955	2.16		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
1.0	82	0.0366	1.34		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.4	93	0.0550	3.52		**Shallow Concentrated Flow, E-F** Grassed Waterway Kv= 15.0 fps
14.7	432	Total			

Subcatchment PDA-4A: PDA-4A



Summary for Subcatchment PDA-4B: PDA-4B

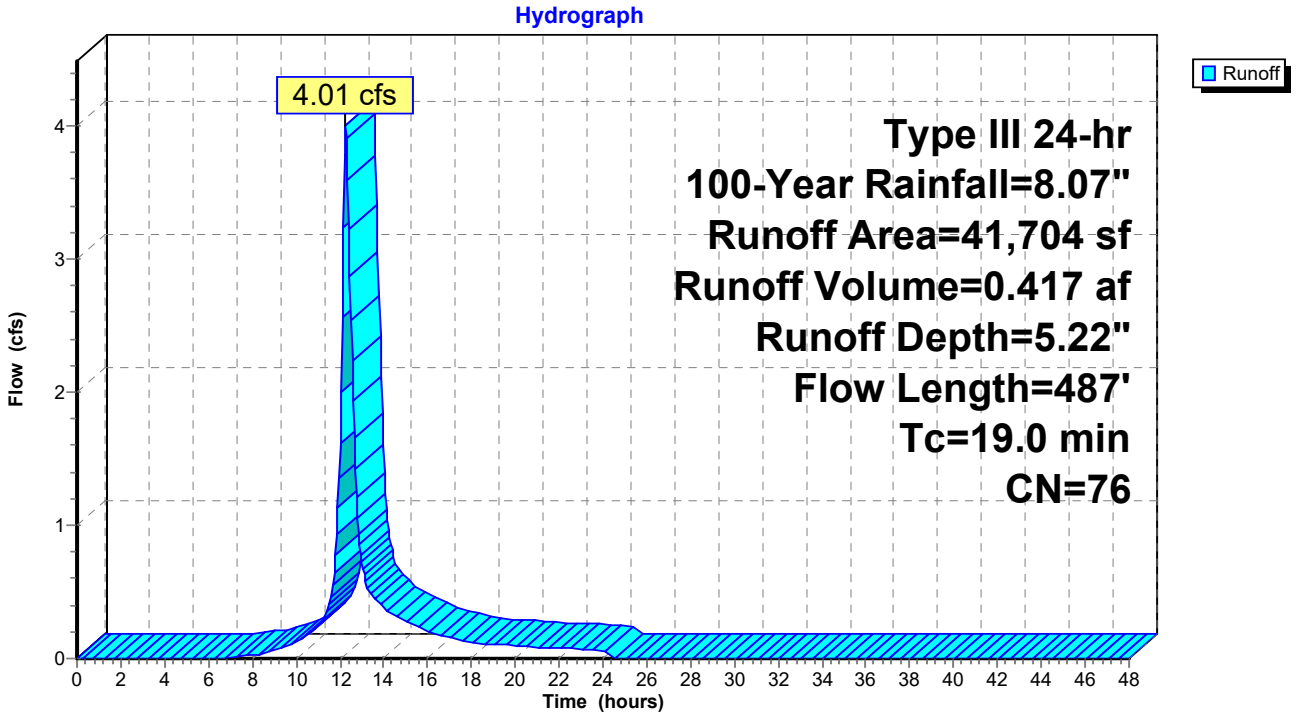
Runoff = 4.01 cfs @ 12.26 hrs, Volume= 0.417 af, Depth= 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
13,291	71	Meadow, non-grazed, HSG C
28,356	78	Meadow, non-grazed, HSG D
57	96	Gravel surface, HSG D
41,704	76	Weighted Average
41,704		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.9	100	0.0200	0.12		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
2.9	163	0.0184	0.95		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
1.0	117	0.0855	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
0.8	63	0.0317	1.25		**Shallow Concentrated Flow, D-E** Short Grass Pasture Kv= 7.0 fps
0.4	44	0.0682	1.83		**Shallow Concentrated Flow, E-F** Short Grass Pasture Kv= 7.0 fps
19.0	487	Total			

Subcatchment PDA-4B: PDA-4B



Summary for Subcatchment PDA-4C: PDA-4C

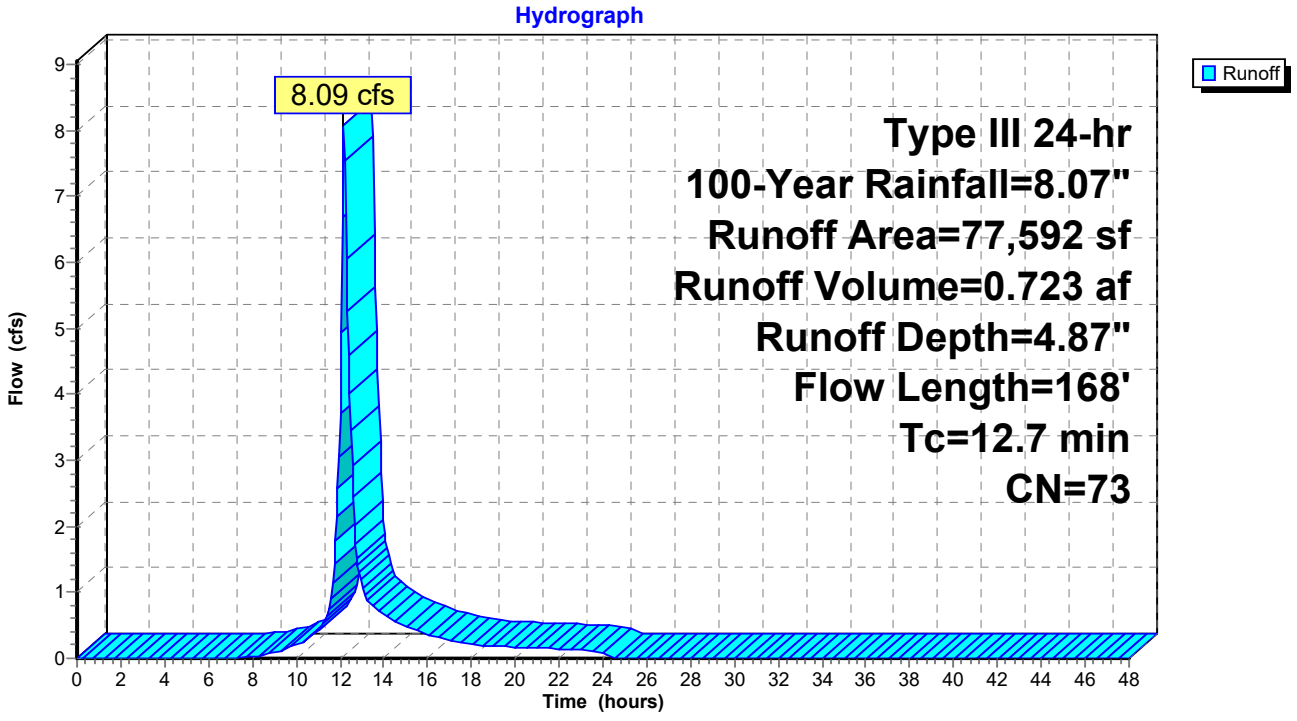
Runoff = 8.09 cfs @ 12.18 hrs, Volume= 0.723 af, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
77,592	73	Brush, Good, HSG D
77,592		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	100	0.0800	0.14		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
0.7	68	0.1029	1.60		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
12.7	168	Total			

Subcatchment PDA-4C: PDA-4C



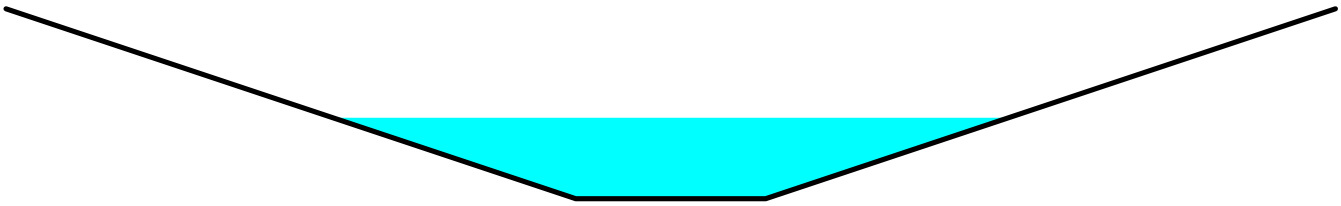
Summary for Reach 5R: Swale

Inflow Area = 0.957 ac, 0.00% Impervious, Inflow Depth = 5.22" for 100-Year event
Inflow = 4.01 cfs @ 12.26 hrs, Volume= 0.417 af
Outflow = 3.96 cfs @ 12.30 hrs, Volume= 0.417 af, Atten= 1%, Lag= 2.2 min

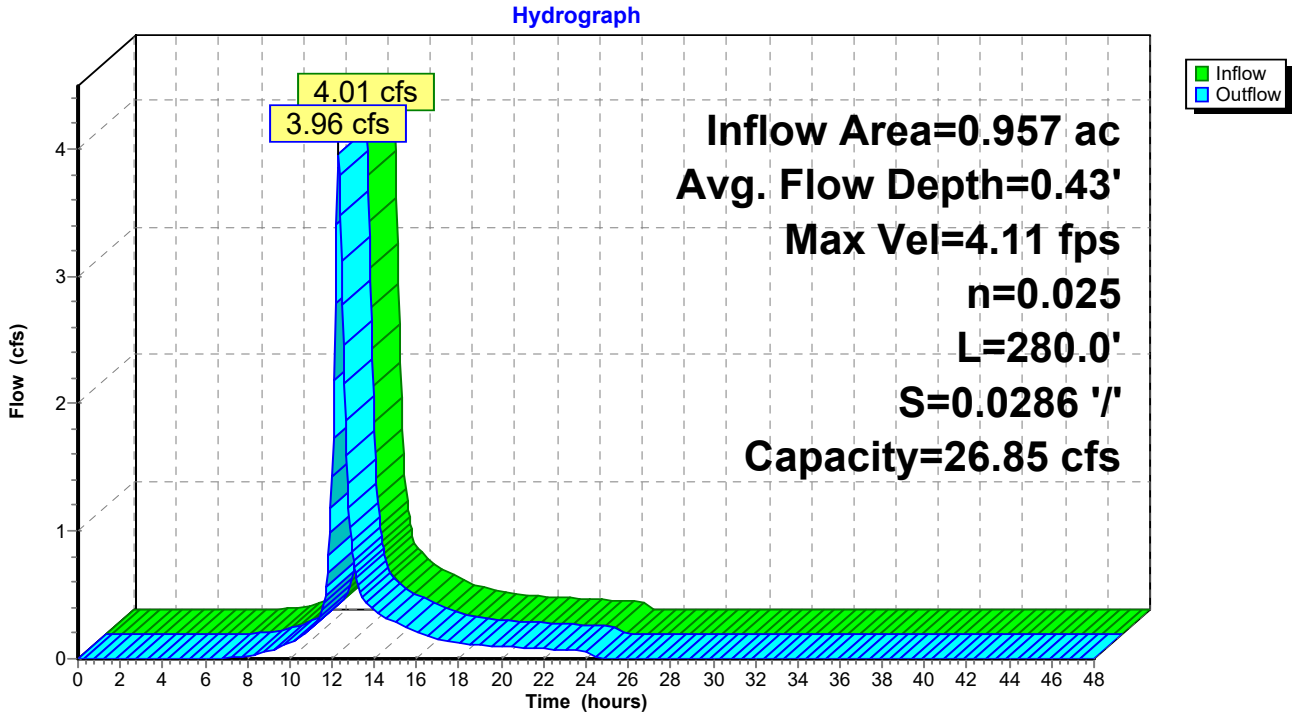
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.11 fps, Min. Travel Time= 1.1 min
Avg. Velocity = 1.54 fps, Avg. Travel Time= 3.0 min

Peak Storage= 272 cf @ 12.27 hrs
Average Depth at Peak Storage= 0.43'
Bank-Full Depth= 1.00' Flow Area= 4.0 sf, Capacity= 26.85 cfs

1.00' x 1.00' deep channel, n= 0.025
Side Slope Z-value= 3.0 '/' Top Width= 7.00'
Length= 280.0' Slope= 0.0286 '/'
Inlet Invert= 408.00', Outlet Invert= 400.00'



Reach 5R: Swale



Summary for Pond P-1: P-1

Inflow Area = 2.866 ac, 0.00% Impervious, Inflow Depth = 4.99" for 100-Year event
Inflow = 12.64 cfs @ 12.21 hrs, Volume= 1.191 af
Outflow = 7.40 cfs @ 12.45 hrs, Volume= 1.191 af, Atten= 41%, Lag= 14.6 min
Discarded = 0.83 cfs @ 12.45 hrs, Volume= 0.875 af
Primary = 6.57 cfs @ 12.45 hrs, Volume= 0.316 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 413.91' @ 12.45 hrs Surf.Area= 7,173 sf Storage= 16,312 cf

Plug-Flow detention time= 144.2 min calculated for 1.191 af (100% of inflow)
Center-of-Mass det. time= 144.2 min (968.3 - 824.2)

Volume	Invert	Avail.Storage	Storage Description
#1	411.00'	16,968 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

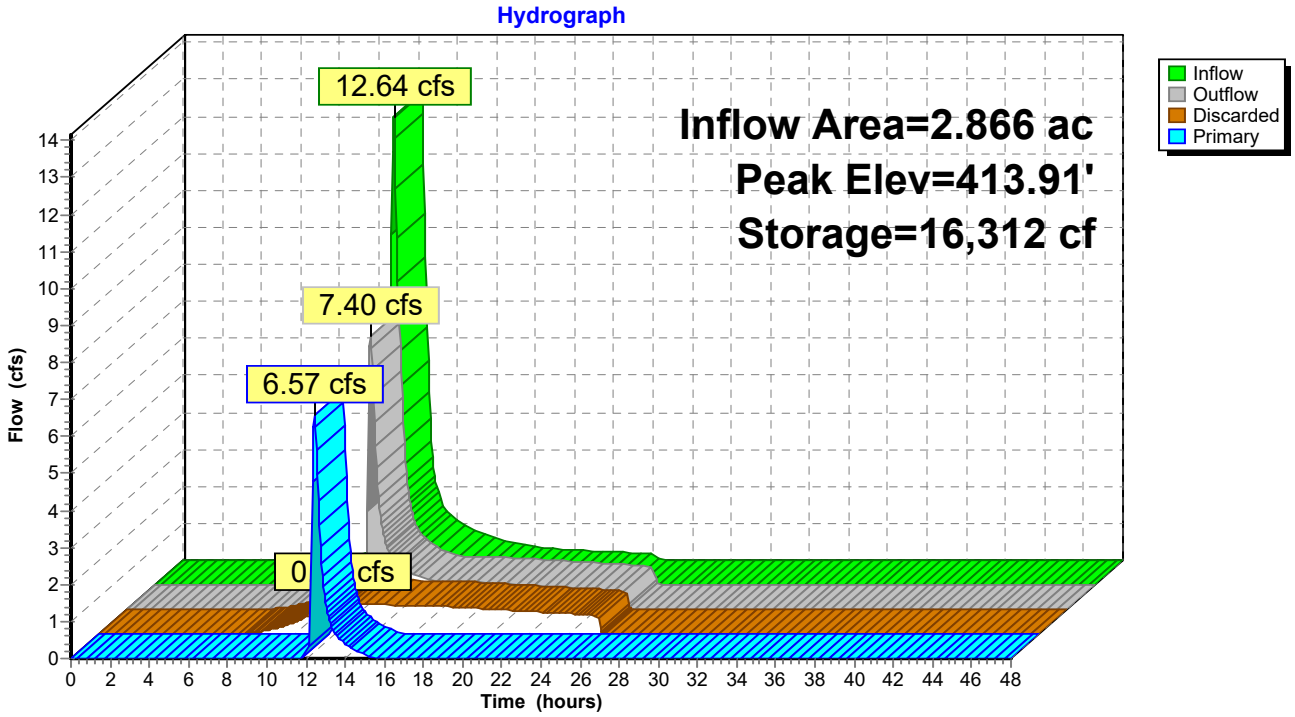
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
411.00	4,114	0	0
412.00	5,110	4,612	4,612
413.00	6,164	5,637	10,249
414.00	7,274	6,719	16,968

Device	Routing	Invert	Outlet Devices
#1	Discarded	411.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	413.50'	**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

Discarded OutFlow Max=0.83 cfs @ 12.45 hrs HW=413.91' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.83 cfs)

Primary OutFlow Max=6.56 cfs @ 12.45 hrs HW=413.91' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 6.56 cfs @ 1.60 fps)

Pond P-1: P-1


Hydrograph
12.64 cfs
7.40 cfs
6.57 cfs
0 cfs
Inflow Area=2.866 ac
Peak Elev=413.91'
Storage=16,312 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond P-2A: P-2A

Inflow Area = 1.355 ac, 0.00% Impervious, Inflow Depth = 4.64" for 100-Year event
Inflow = 4.81 cfs @ 12.30 hrs, Volume= 0.524 af
Outflow = 3.87 cfs @ 12.47 hrs, Volume= 0.524 af, Atten= 19%, Lag= 10.4 min
Discarded = 0.37 cfs @ 12.47 hrs, Volume= 0.372 af
Primary = 3.50 cfs @ 12.47 hrs, Volume= 0.152 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 419.76' @ 12.47 hrs Surf.Area= 3,238 sf Storage= 6,308 cf

Plug-Flow detention time= 132.6 min calculated for 0.523 af (100% of inflow)
Center-of-Mass det. time= 132.5 min (969.2 - 836.7)

Volume	Invert	Avail.Storage	Storage Description
#1	417.00'	7,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

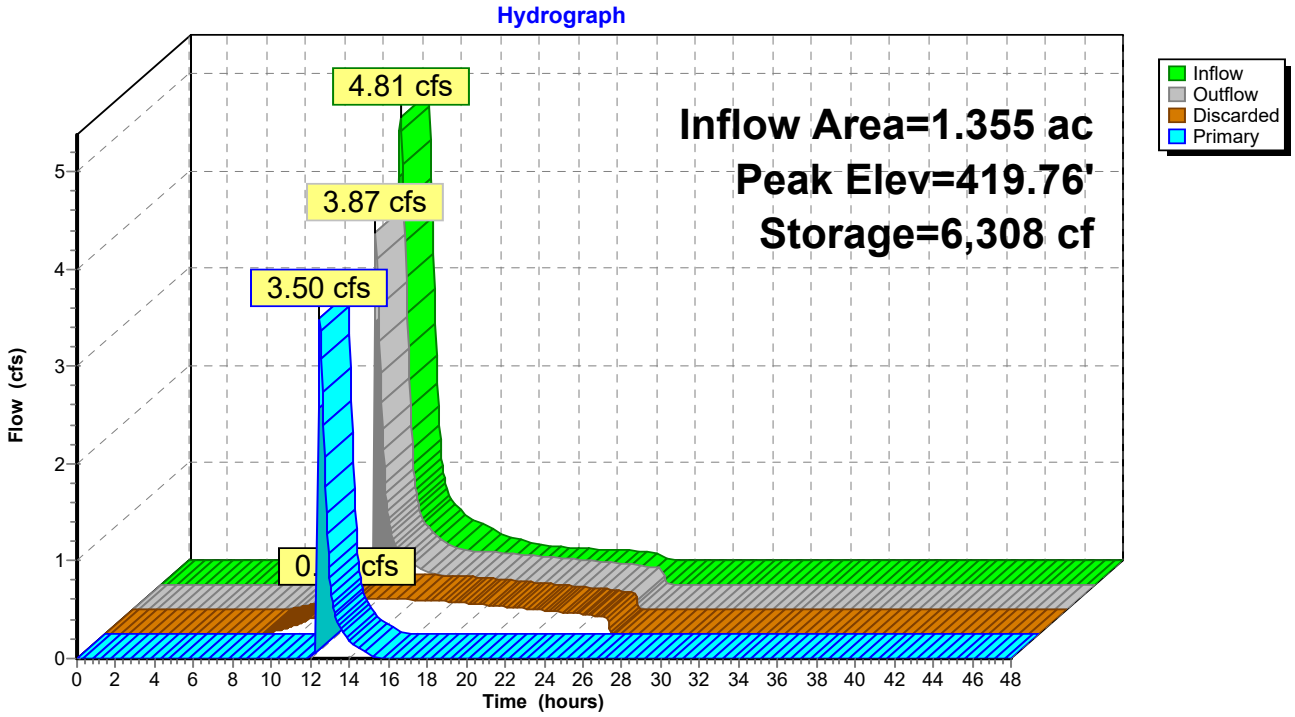
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
417.00	1,405	0	0
418.00	2,018	1,712	1,712
419.00	2,688	2,353	4,065
420.00	3,415	3,052	7,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	417.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	419.50'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.37 cfs @ 12.47 hrs HW=419.75' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.37 cfs)

Primary OutFlow Max=3.39 cfs @ 12.47 hrs HW=419.75' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 3.39 cfs @ 1.35 fps)

Pond P-2A: P-2A


Hydrograph
4.81 cfs
3.87 cfs
3.50 cfs
Inflow Area=1.355 ac
Peak Elev=419.76'
Storage=6,308 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond P-2B: P-2B

Inflow Area = 0.742 ac, 0.00% Impervious, Inflow Depth = 4.76" for 100-Year event
Inflow = 3.38 cfs @ 12.17 hrs, Volume= 0.294 af
Outflow = 0.76 cfs @ 12.67 hrs, Volume= 0.294 af, Atten= 78%, Lag= 30.4 min
Discarded = 0.32 cfs @ 12.67 hrs, Volume= 0.279 af
Primary = 0.43 cfs @ 12.67 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 414.56' @ 12.67 hrs Surf.Area= 2,788 sf Storage= 5,202 cf

Plug-Flow detention time= 162.0 min calculated for 0.294 af (100% of inflow)
Center-of-Mass det. time= 161.8 min (987.6 - 825.8)

Volume	Invert	Avail.Storage	Storage Description
#1	412.00'	6,481 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

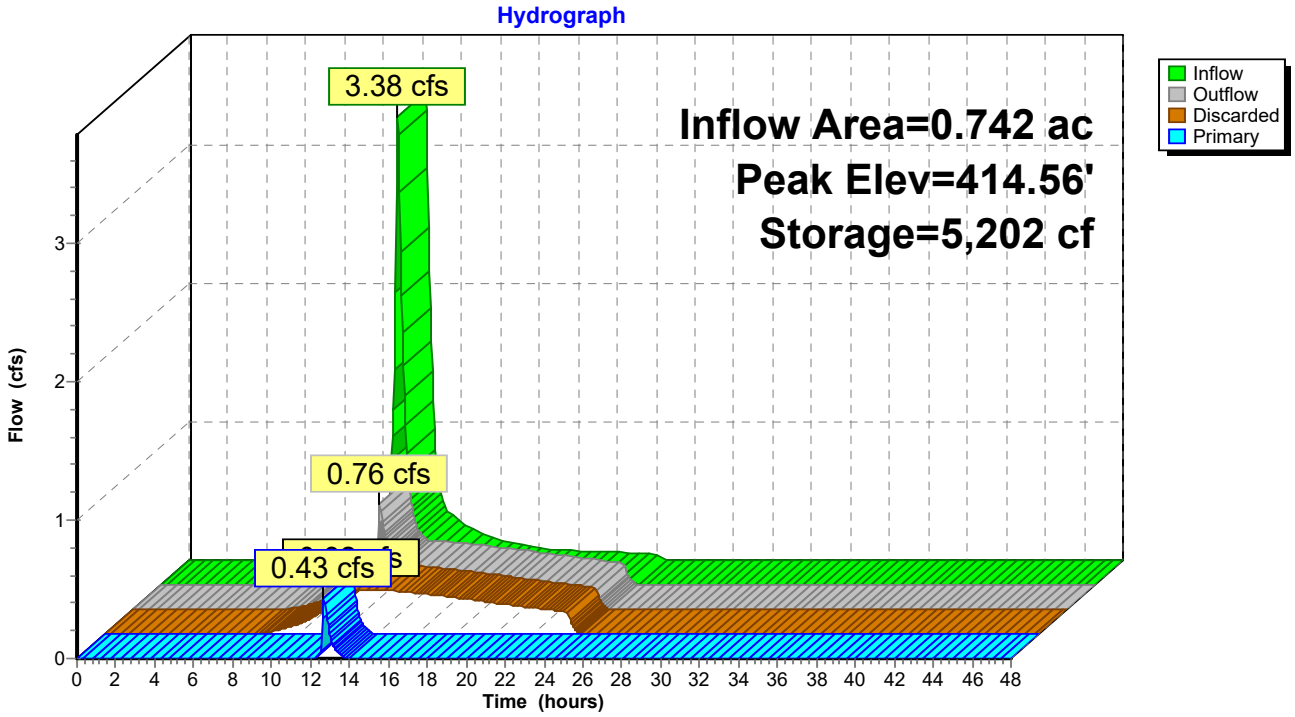
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
412.00	1,330	0	0
413.00	1,852	1,591	1,591
414.00	2,431	2,142	3,733
415.00	3,065	2,748	6,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	412.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	414.50'	**10.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.32 cfs @ 12.67 hrs HW=414.56' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.32 cfs)

Primary OutFlow Max=0.41 cfs @ 12.67 hrs HW=414.56' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 0.41 cfs @ 0.66 fps)

Pond P-2B: P-2B


Hydrograph
Inflow
Outflow
Discarded
Primary
3.38 cfs
0.76 cfs
0.43 cfs
Inflow Area=0.742 ac
Peak Elev=414.56'
Storage=5,202 cf
Flow (cfs)
0
1
2
3
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Pond P-3: P-3

Inflow Area = 1.638 ac, 0.00% Impervious, Inflow Depth = 4.76" for 100-Year event
Inflow = 6.38 cfs @ 12.25 hrs, Volume= 0.649 af
Outflow = 3.32 cfs @ 12.57 hrs, Volume= 0.649 af, Atten= 48%, Lag= 19.2 min
Discarded = 0.54 cfs @ 12.57 hrs, Volume= 0.529 af
Primary = 2.78 cfs @ 12.57 hrs, Volume= 0.120 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 411.74' @ 12.57 hrs Surf.Area= 4,680 sf Storage= 9,715 cf

Plug-Flow detention time= 152.2 min calculated for 0.649 af (100% of inflow)
Center-of-Mass det. time= 152.2 min (983.7 - 831.5)

Volume	Invert	Avail.Storage	Storage Description
#1	409.00'	10,964 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

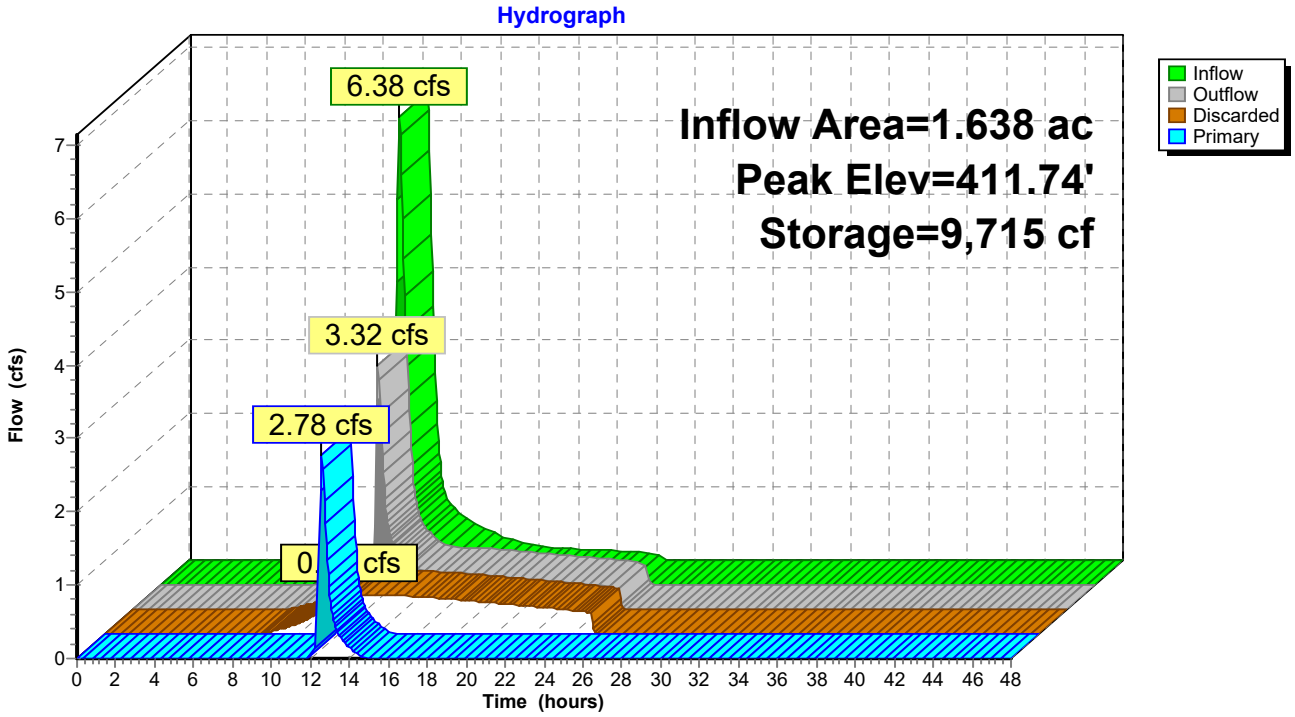
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
409.00	2,479	0	0
410.00	3,231	2,855	2,855
411.00	4,040	3,636	6,491
412.00	4,906	4,473	10,964

Device	Routing	Invert	Outlet Devices
#1	Discarded	409.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	411.50'	**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

Discarded OutFlow Max=0.54 cfs @ 12.57 hrs HW=411.74' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.54 cfs)

Primary OutFlow Max=2.72 cfs @ 12.57 hrs HW=411.74' (Free Discharge)
↑**2=Broad-Crested Rectangular Weir** (Weir Controls 2.72 cfs @ 1.15 fps)

Pond P-3: P-3


Hydrograph
6.38 cfs
3.32 cfs
2.78 cfs
0 cfs
Inflow Area=1.638 ac
Peak Elev=411.74'
Storage=9,715 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)
0 1 2 3 4 5 6 7
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond P-4: P-4

Inflow Area = 4.212 ac, 0.00% Impervious, Inflow Depth = 5.40" for 100-Year event
Inflow = 19.17 cfs @ 12.21 hrs, Volume= 1.896 af
Outflow = 9.58 cfs @ 12.53 hrs, Volume= 1.528 af, Atten= 50%, Lag= 18.9 min
Discarded = 0.22 cfs @ 12.53 hrs, Volume= 0.635 af
Primary = 9.37 cfs @ 12.53 hrs, Volume= 0.893 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 399.89' @ 12.53 hrs Surf.Area= 11,657 sf Storage= 36,600 cf

Plug-Flow detention time= 461.8 min calculated for 1.528 af (81% of inflow)
Center-of-Mass det. time= 386.7 min (1,204.5 - 817.8)

Volume	Invert	Avail.Storage	Storage Description
#1	396.00'	37,885 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

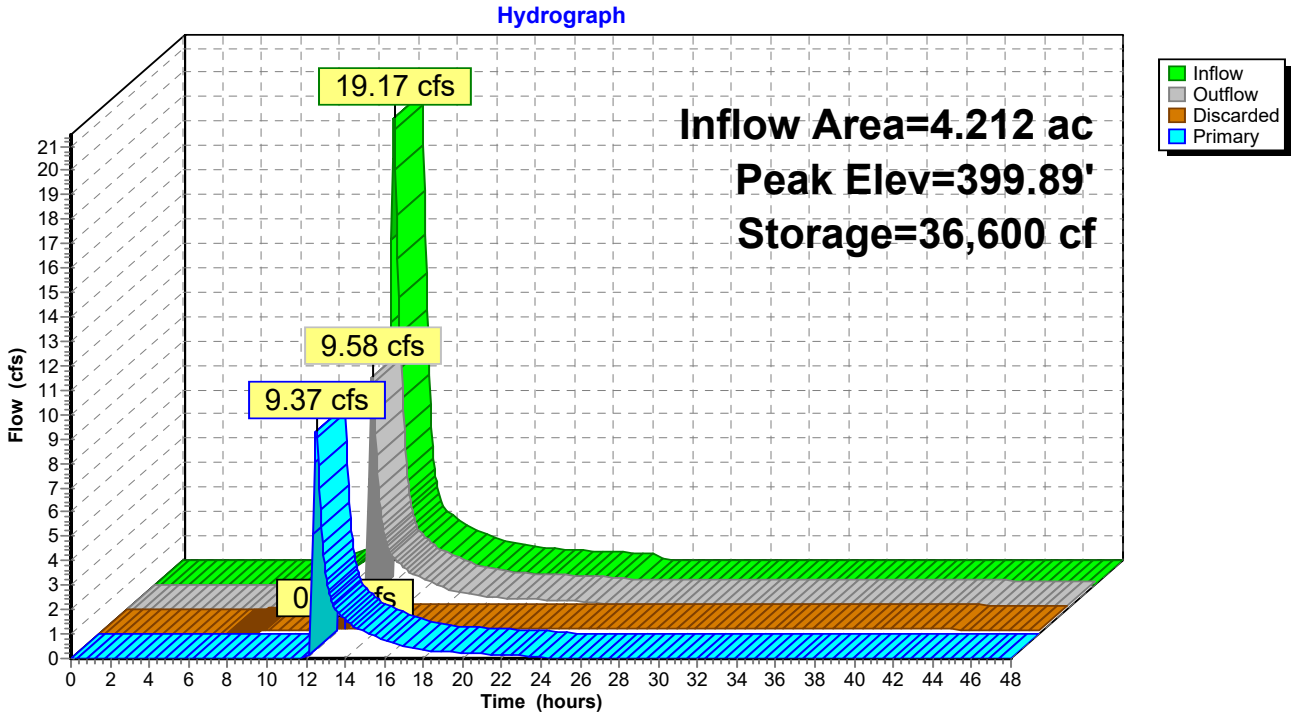
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
396.00	7,294	0	0
397.00	8,333	7,814	7,814
398.00	9,429	8,881	16,695
399.00	10,581	10,005	26,700
400.00	11,790	11,186	37,885

Device	Routing	Invert	Outlet Devices
#1	Discarded	396.00'	**0.800 in/hr Exfiltration over Surface area**
#2	Primary	399.50'	**15.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Discarded OutFlow Max=0.22 cfs @ 12.53 hrs HW=399.89' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=9.28 cfs @ 12.53 hrs HW=399.89' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 9.28 cfs @ 1.59 fps)

Pond P-4: P-4

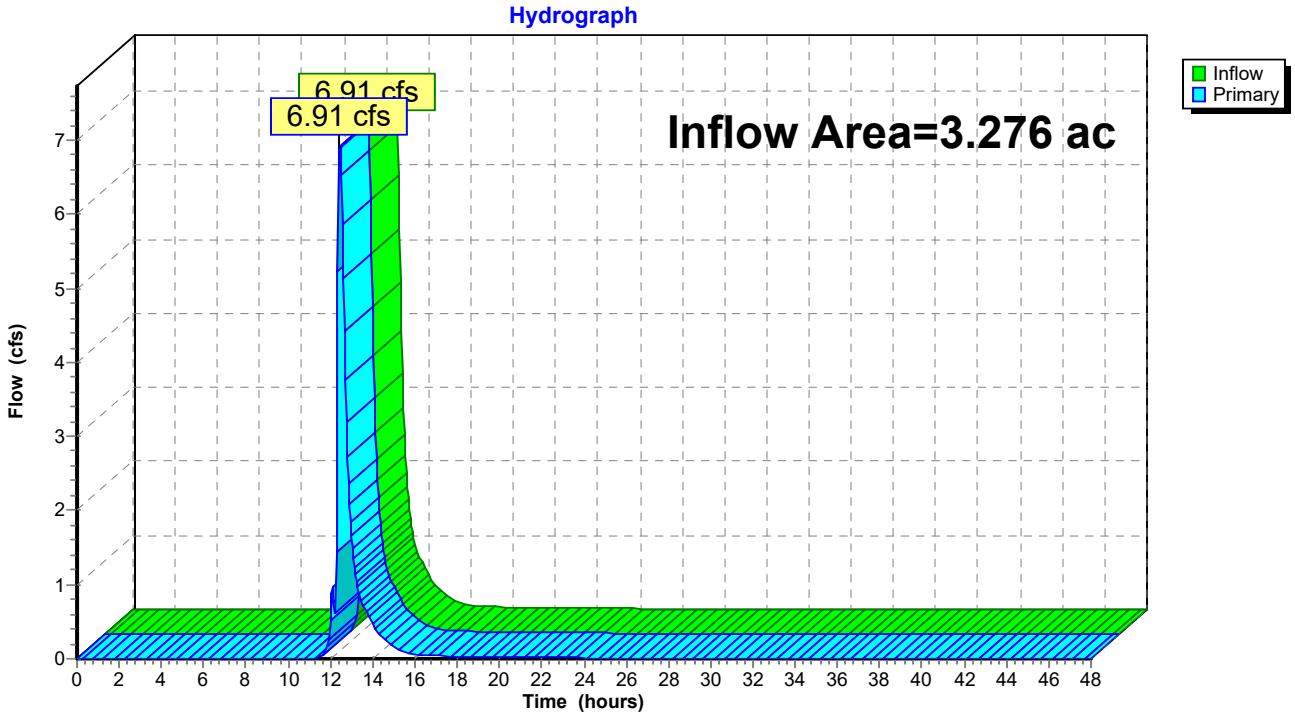

Hydrograph
19.17 cfs
9.58 cfs
9.37 cfs
Inflow Area=4.212 ac
Peak Elev=399.89'
Storage=36,600 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Link 1L: AP-1

Inflow Area = 3.276 ac, 0.00% Impervious, Inflow Depth = 1.43" for 100-Year event
Inflow = 6.91 cfs @ 12.44 hrs, Volume= 0.391 af
Primary = 6.91 cfs @ 12.44 hrs, Volume= 0.391 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 1L: AP-1

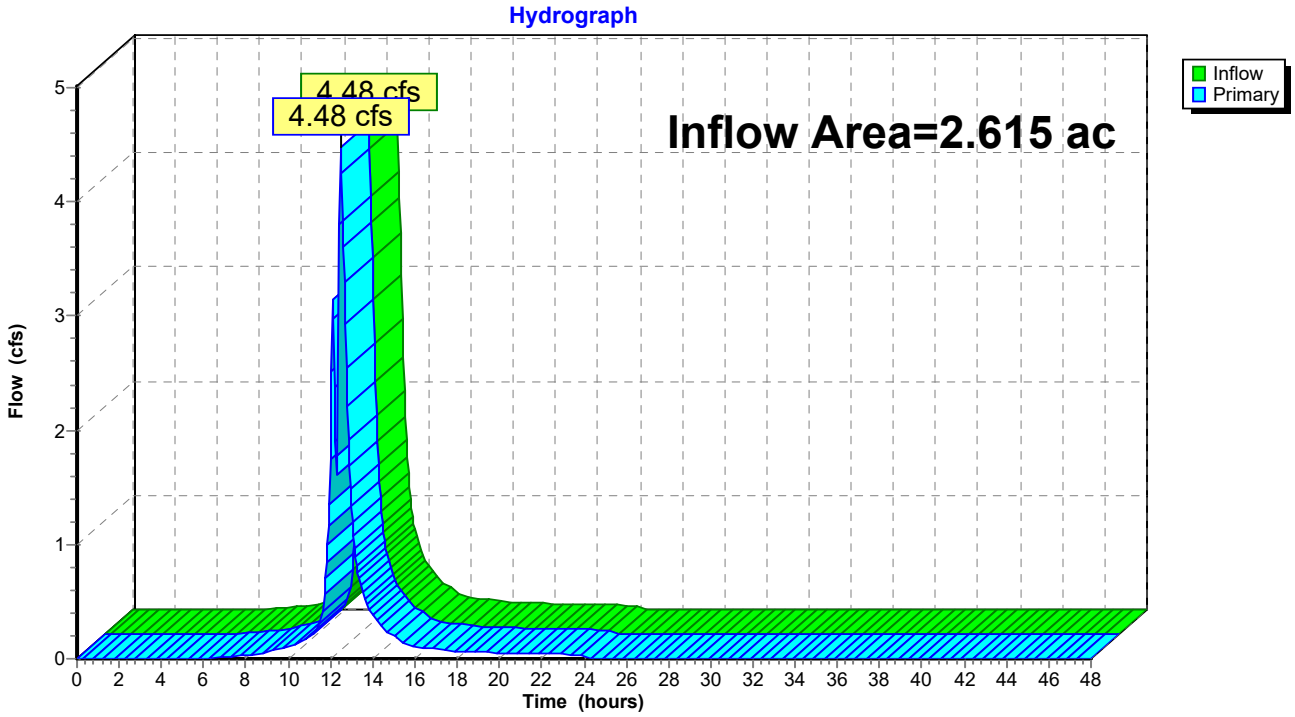


Summary for Link 2L: AP-2

Inflow Area = 2.615 ac, 0.00% Impervious, Inflow Depth = 1.92" for 100-Year event
Inflow = 4.48 cfs @ 12.46 hrs, Volume= 0.418 af
Primary = 4.48 cfs @ 12.46 hrs, Volume= 0.418 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

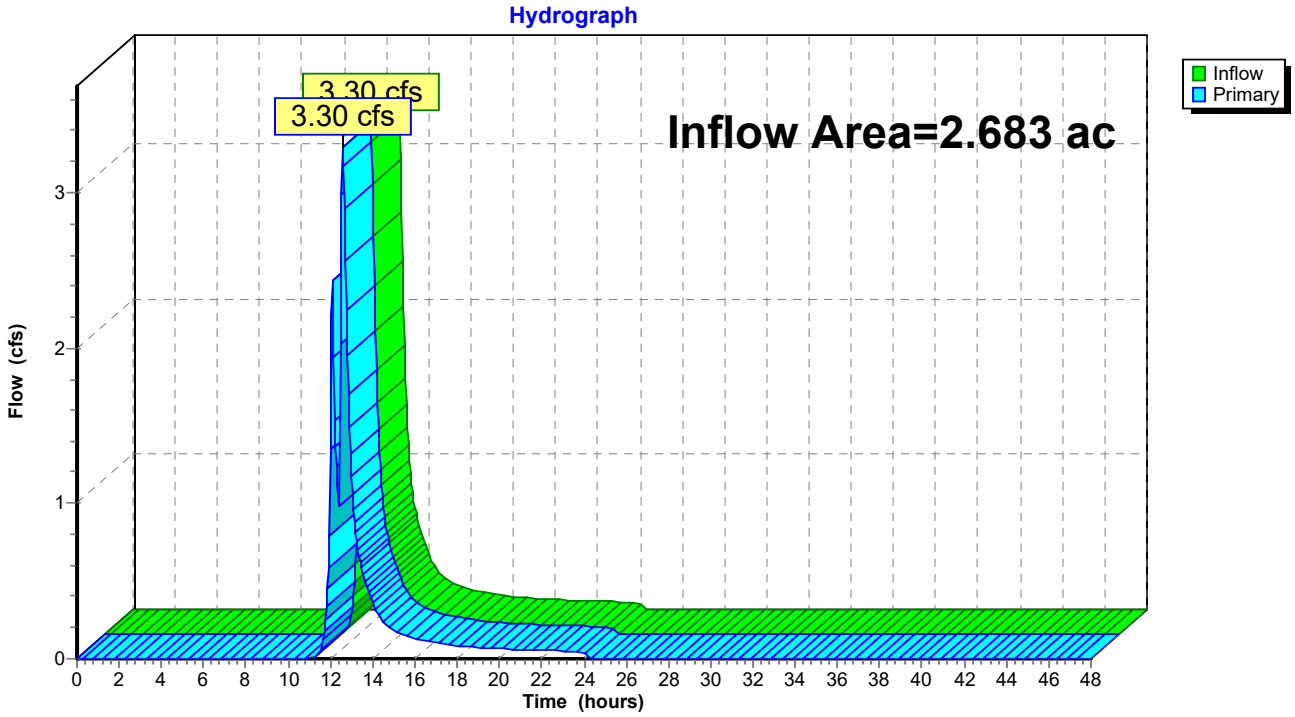


Summary for Link 3L: AP-3

Inflow Area = 2.683 ac, 0.00% Impervious, Inflow Depth = 1.39" for 100-Year event
Inflow = 3.30 cfs @ 12.56 hrs, Volume= 0.311 af
Primary = 3.30 cfs @ 12.56 hrs, Volume= 0.311 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 3L: AP-3

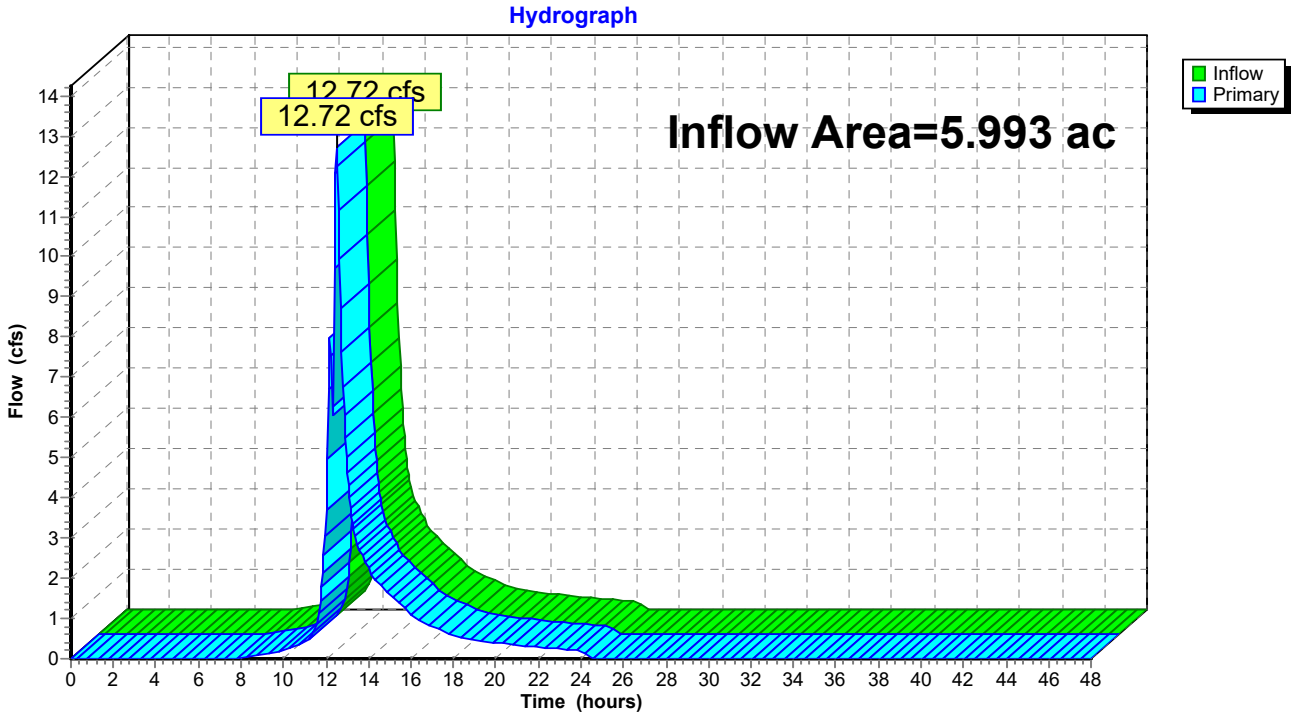


Summary for Link 4L: AP-4

Inflow Area = 5.993 ac, 0.00% Impervious, Inflow Depth = 3.24" for 100-Year event
Inflow = 12.72 cfs @ 12.50 hrs, Volume= 1.616 af
Primary = 12.72 cfs @ 12.50 hrs, Volume= 1.616 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 4L: AP-4



APPENDIX D: NOAA ATLAS 14 PRECIPITATION FREQUENCY TABLE

NOAA Atlas 14, Volume 10, Version 3
Location name: Town of East Hampton, Connecticut, USA*
Latitude: 41.5682°, Longitude: -72.5084°
Elevation: 421.08 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.334** (0.259-0.419)	**0.405** (0.314-0.508)	**0.521** (0.403-0.656)	**0.617** (0.474-0.780)	**0.750** (0.559-0.990)	**0.850** (0.621-1.15)	**0.955** (0.677-1.33)	**1.07** (0.721-1.53)	**1.24** (0.804-1.83)	**1.38** (0.872-2.07)
10-min	**0.473** (0.367-0.593)	**0.574** (0.445-0.720)	**0.739** (0.572-0.930)	**0.875** (0.672-1.11)	**1.06** (0.791-1.40)	**1.20** (0.879-1.62)	**1.35** (0.959-1.89)	**1.52** (1.02-2.16)	**1.76** (1.14-2.59)	**1.95** (1.24-2.93)
15-min	**0.557** (0.432-0.698)	**0.675** (0.524-0.847)	**0.868** (0.670-1.09)	**1.03** (0.791-1.30)	**1.25** (0.931-1.65)	**1.42** (1.03-1.91)	**1.59** (1.13-2.22)	**1.79** (1.20-2.54)	**2.07** (1.34-3.04)	**2.30** (1.45-3.44)
30-min	**0.761** (0.591-0.954)	**0.922** (0.715-1.16)	**1.19** (0.917-1.49)	**1.41** (1.08-1.78)	**1.71** (1.27-2.25)	**1.93** (1.41-2.60)	**2.17** (1.54-3.03)	**2.44** (1.64-3.47)	**2.82** (1.83-4.15)	**3.13** (1.98-4.70)
60-min	**0.965** (0.749-1.21)	**1.17** (0.907-1.47)	**1.50** (1.16-1.89)	**1.78** (1.37-2.26)	**2.16** (1.61-2.85)	**2.45** (1.79-3.30)	**2.75** (1.95-3.84)	**3.09** (2.08-4.40)	**3.57** (2.31-5.26)	**3.97** (2.51-5.95)
2-hr	**1.28** (1.00-1.59)	**1.54** (1.20-1.91)	**1.96** (1.52-2.44)	**2.31** (1.79-2.90)	**2.79** (2.09-3.66)	**3.15** (2.32-4.21)	**3.53** (2.53-4.90)	**3.97** (2.68-5.61)	**4.62** (3.01-6.75)	**5.17** (3.28-7.69)
3-hr	**1.49** (1.17-1.85)	**1.79** (1.41-2.22)	**2.27** (1.78-2.83)	**2.67** (2.08-3.34)	**3.22** (2.43-4.21)	**3.63** (2.69-4.85)	**4.07** (2.93-5.65)	**4.59** (3.11-6.46)	**5.36** (3.49-7.79)	**6.01** (3.82-8.90)
6-hr	**1.91** (1.52-2.35)	**2.29** (1.81-2.82)	**2.90** (2.29-3.59)	**3.41** (2.68-4.24)	**4.12** (3.13-5.35)	**4.64** (3.46-6.16)	**5.20** (3.77-7.17)	**5.87** (4.00-8.19)	**6.88** (4.50-9.91)	**7.73** (4.93-11.3)
12-hr	**2.37** (1.90-2.90)	**2.85** (2.28-3.49)	**3.64** (2.90-4.47)	**4.30** (3.40-5.30)	**5.20** (3.99-6.70)	**5.87** (4.41-7.73)	**6.59** (4.81-9.01)	**7.45** (5.09-10.3)	**8.74** (5.73-12.5)	**9.84** (6.30-14.3)
24-hr	**2.78** (2.25-3.38)	**3.39** (2.74-4.12)	**4.38** (3.52-5.33)	**5.20** (4.15-6.36)	**6.33** (4.89-8.11)	**7.16** (5.43-9.38)	**8.07** (5.94-11.0)	**9.17** (6.30-12.6)	**10.9** (7.15-15.4)	**12.3** (7.90-17.7)
2-day	**3.12** (2.55-3.76)	**3.86** (3.14-4.65)	**5.05** (4.10-6.11)	**6.04** (4.87-7.35)	**7.41** (5.78-9.45)	**8.41** (6.43-11.0)	**9.52** (7.09-12.9)	**10.9** (7.51-14.9)	**13.1** (8.65-18.4)	**15.0** (9.66-21.4)
3-day	**3.39** (2.78-4.07)	**4.19** (3.43-5.03)	**5.50** (4.49-6.63)	**6.59** (5.34-7.98)	**8.09** (6.34-10.3)	**9.18** (7.06-11.9)	**10.4** (7.78-14.1)	**11.9** (8.24-16.2)	**14.4** (9.50-20.1)	**16.5** (10.6-23.5)
4-day	**3.64** (2.99-4.35)	**4.49** (3.69-5.37)	**5.88** (4.81-7.06)	**7.04** (5.72-8.49)	**8.63** (6.79-10.9)	**9.79** (7.54-12.7)	**11.1** (8.31-15.0)	**12.7** (8.80-17.2)	**15.3** (10.1-21.3)	**17.6** (11.3-24.9)
7-day	**4.32** (3.58-5.14)	**5.27** (4.37-6.28)	**6.83** (5.63-8.15)	**8.12** (6.65-9.74)	**9.90** (7.83-12.4)	**11.2** (8.67-14.4)	**12.6** (9.50-16.9)	**14.4** (10.0-19.4)	**17.2** (11.5-23.8)	**19.7** (12.8-27.7)
10-day	**5.01** (4.18-5.94)	**6.02** (5.01-7.14)	**7.67** (6.35-9.12)	**9.04** (7.44-10.8)	**10.9** (8.66-13.6)	**12.3** (9.55-15.7)	**13.8** (10.4-18.3)	**15.7** (10.9-20.9)	**18.5** (12.3-25.5)	**21.0** (13.6-29.4)
20-day	**7.19** (6.05-8.46)	**8.28** (6.95-9.74)	**10.1** (8.40-11.9)	**11.5** (9.57-13.7)	**13.6** (10.8-16.7)	**15.1** (11.7-18.9)	**16.7** (12.5-21.6)	**18.5** (13.0-24.4)	**21.1** (14.1-28.7)	**23.2** (15.1-32.2)
30-day	**9.04** (7.64-10.6)	**10.2** (8.58-11.9)	**12.0** (10.1-14.1)	**13.5** (11.3-16.0)	**15.6** (12.5-19.1)	**17.2** (13.4-21.4)	**18.9** (14.1-24.1)	**20.6** (14.5-27.0)	**22.9** (15.4-31.0)	**24.8** (16.1-34.2)
45-day	**11.3** (9.64-13.2)	**12.5** (10.6-14.6)	**14.4** (12.2-16.9)	**16.0** (13.4-18.8)	**18.2** (14.6-22.0)	**19.9** (15.5-24.5)	**21.6** (16.1-27.2)	**23.2** (16.4-30.2)	**25.3** (17.0-34.0)	**26.8** (17.5-36.7)
60-day	**13.3** (11.3-15.4)	**14.5** (12.3-16.8)	**16.5** (14.0-19.2)	**18.1** (15.2-21.2)	**20.4** (16.4-24.5)	**22.1** (17.3-27.1)	**23.8** (17.8-29.8)	**25.4** (18.0-33.0)	**27.3** (18.5-36.5)	**28.6** (18.7-39.0)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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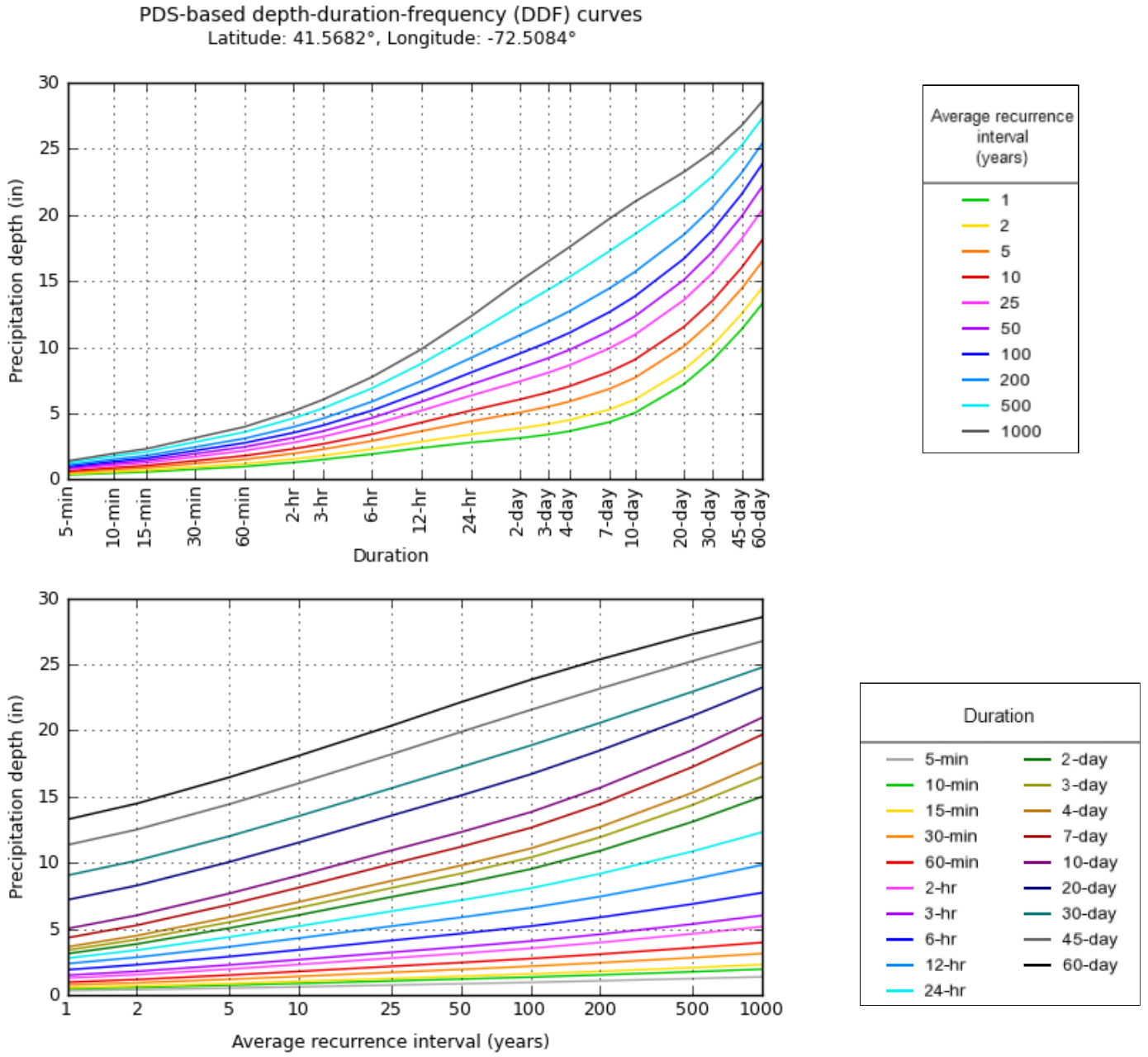
PF graphical



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Tue Jan 7 12:57:25 2020

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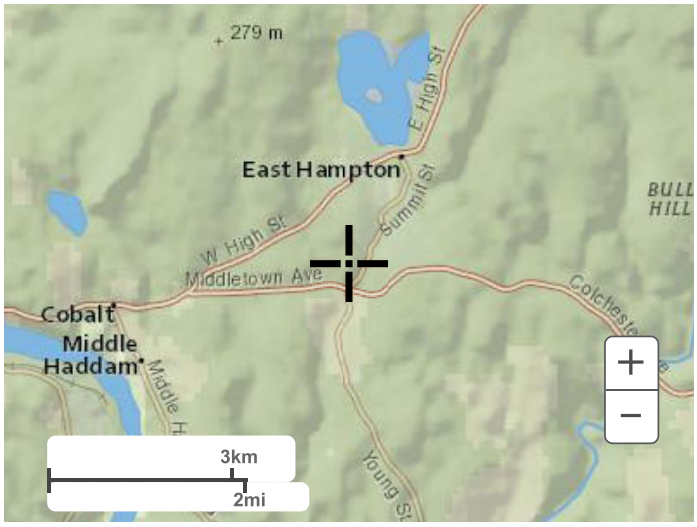
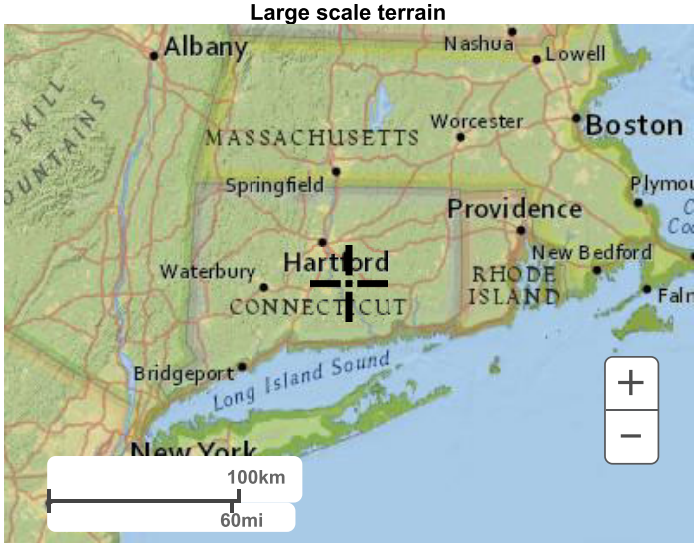
Maps & aerials

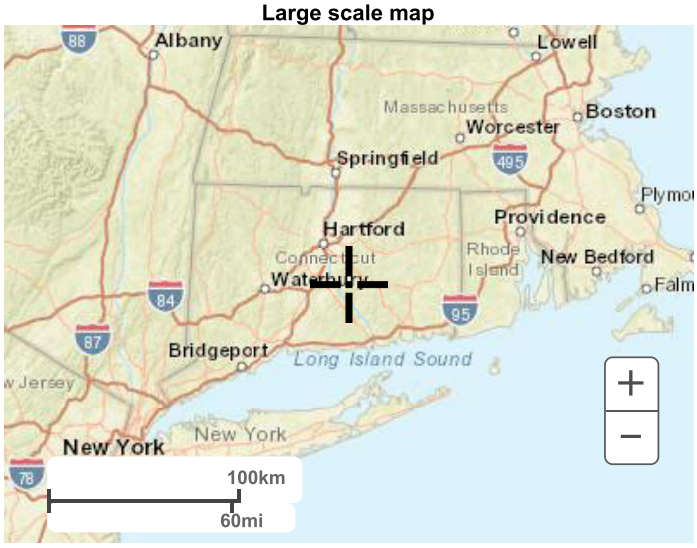
Small scale terrain



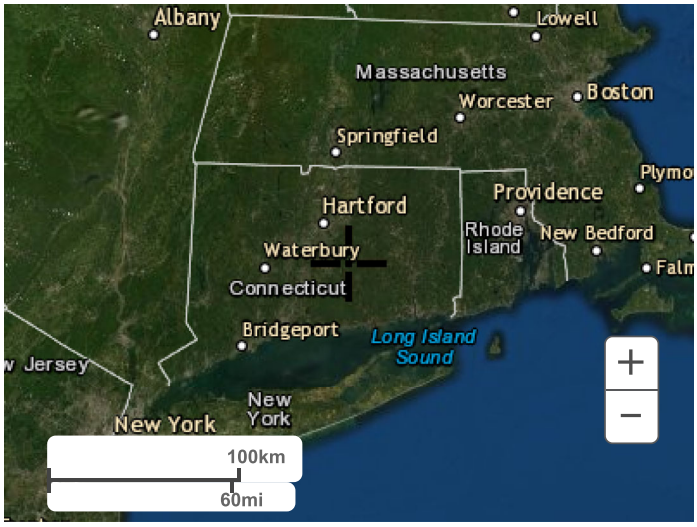
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

APPENDIX E: TEST PIT LOCATION SKETCH

GeoInsight®
Environmental Strategy & Engineering
Practical in Nature

February 6, 2020 GeoInsight Project 9611-000

Cela Sinay-Bernie
Citrine Power LLC
55 Greens Farms Road, Suite 200-78
Westport, Connecticut 06880

Re: In-Situ Infiltration Testing
East Hampton Industrial Park Ground Mount
46 Skinner Street
East Hampton, Connecticut

Ms. Sinay-Bernie:

GeoInsight, Inc. (GeoInsight) prepared this letter for Citrine Power LLC (Citrine) to present the results of *in-situ* hydraulic conductivity testing performed at the above-referenced property. On January 10, 2020, GeoInsight was on-site to perform field testing activities. The test pit locations where testing was performed are shown on the attached Figure 1.

GeoInsight performed *in-situ* hydraulic conductivity testing at three locations (SMB-1 through SMB-3). The testing was performed using the Guelph Permeameter, which is a borehole constant-head test method to evaluate the *in-situ* saturated hydraulic conductivity of the soil. The results of GeoInsight's testing are summarized as follows:

Test Location	Soil Classification	Test Depth (inches below ground surface)	Saturated Hydraulic Conductivity
SMB-1	Sand (SW)	54	6.8 inches per hour
SMB-2	Silty Sand (SM)	26	0.3 inches per hour
SMB-3	Silty Sand (SM)	48	0.8 inches per hour
Notes: Soil classification based upon the United Soil Classification System (ASTM D2488)			

GeoInsight, Inc.
186 Granite Street, 3rd Floor Suite A
Manchester, NH 03101-2643
Tel (603) 314-0820
Fax (603) 314-0821
www.geoinsight.com

GeoInsight, Inc.
One Monarch Drive, Suite 201
Littleton, MA 01460-1440
Tel (978) 679-1600
Fax (978) 679-1601

GeoInsight, Inc.
200 Court Street, 2nd Floor
Middletown, CT 06457-3341
Tel (860) 894-1022
Fax (860) 894-1023

GeoInsight, Inc.
4 Market Place Drive, 2nd Floor
York, ME 03909
Tel (207) 606-1043

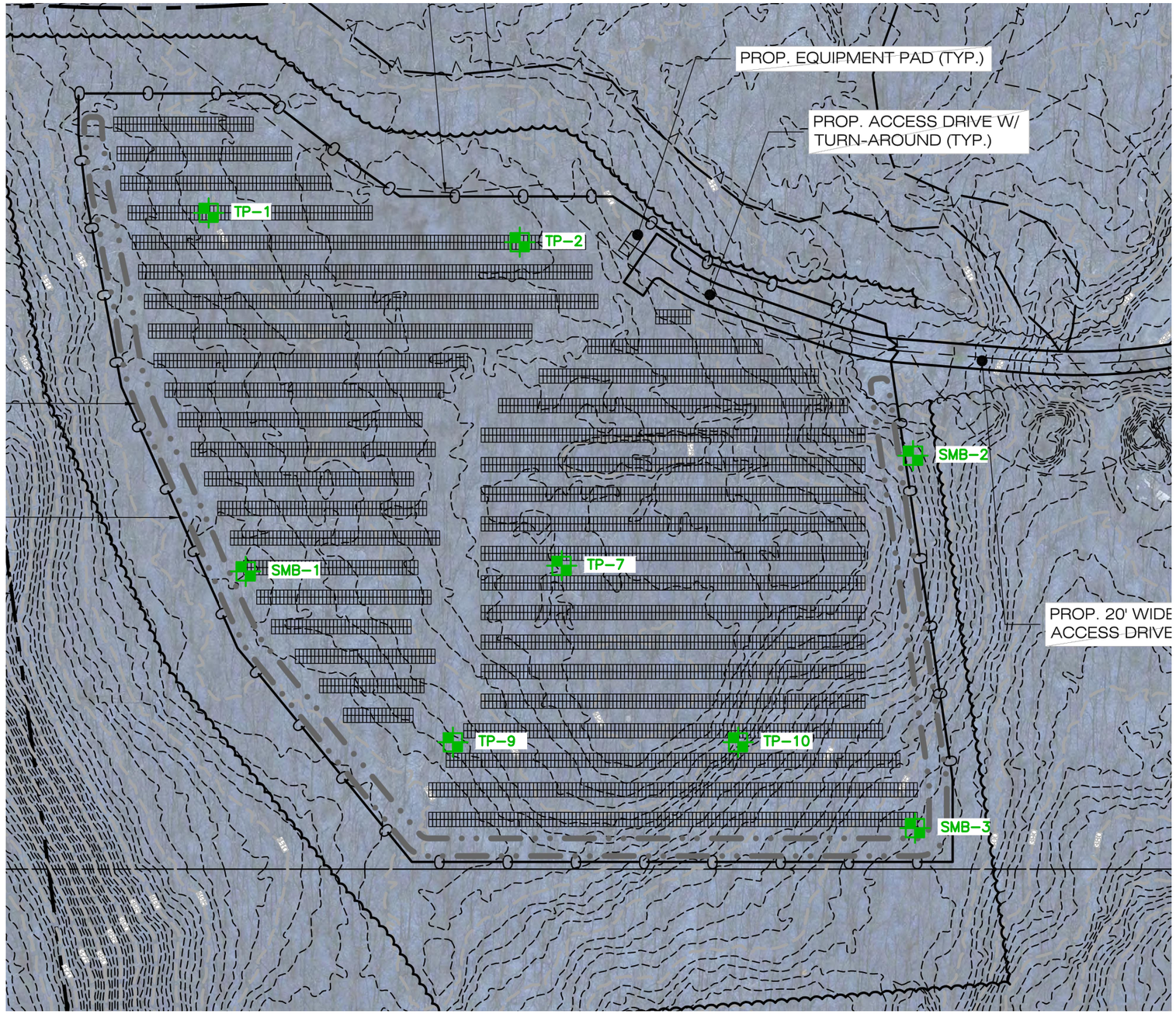
GeoInsight appreciates the opportunity to be of service to Citrine on this project. If you have questions about this letter or any other matter, please contact us at (860) 894-1022.

Sincerely,
GEOINSIGHT, INC.

Brian T. Nereson, P.E.
Senior Geotechnical Engineer

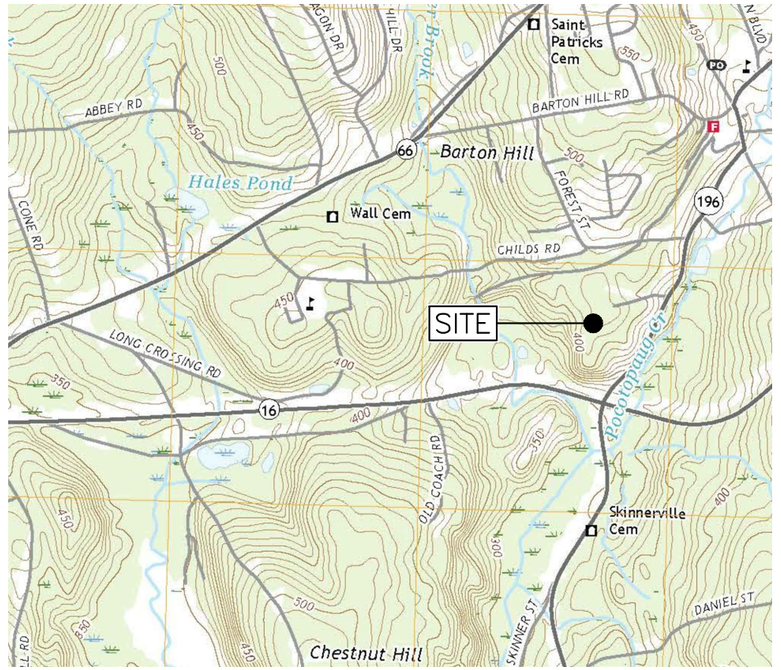
Jeffrey W. King, P.G., L.E.P.
Senior Hydrogeologist/Regional Manager

Attachment: Figure 1



SUBSURFACE EXPLORATION LOCATION PLAN
1"=100'

0 100 200
APPROX. SCALE IN FEET



SITE LOCUS
1"=2000'

LEGEND
TP-10 APPROXIMATE TEST PIT LOCATION AND DESIGNATION

N

CLIENT: CITRINE POWER, LLC			
PROJECT: EAST HAMPTON INDUSTRIAL PARK GROUND MOUT			
TITLE: SUBSURFACE EXPLORATION LOCATION PLAN			
DESIGNED: BTN	DRAWN: BTN	CHECKED: MCP	APPROVED: MCP
SCALE: AS SHOWN	DATE: 2-6-20	FILE NO.: 9611D001	PROJECT NO.: 9611
			FIGURE NO.: 1

GeoInsight
Practical in Nature

PLOT DATE: 2-6-20
FILE: T:\9611 - Citrine Power, 46 Skinner St., East Hampton, CT - Geotech. Analysis\Figures and Plans\9611D001.dwg

APPENDIX F: WATER QUALITY VOLUME CALCULATIONS

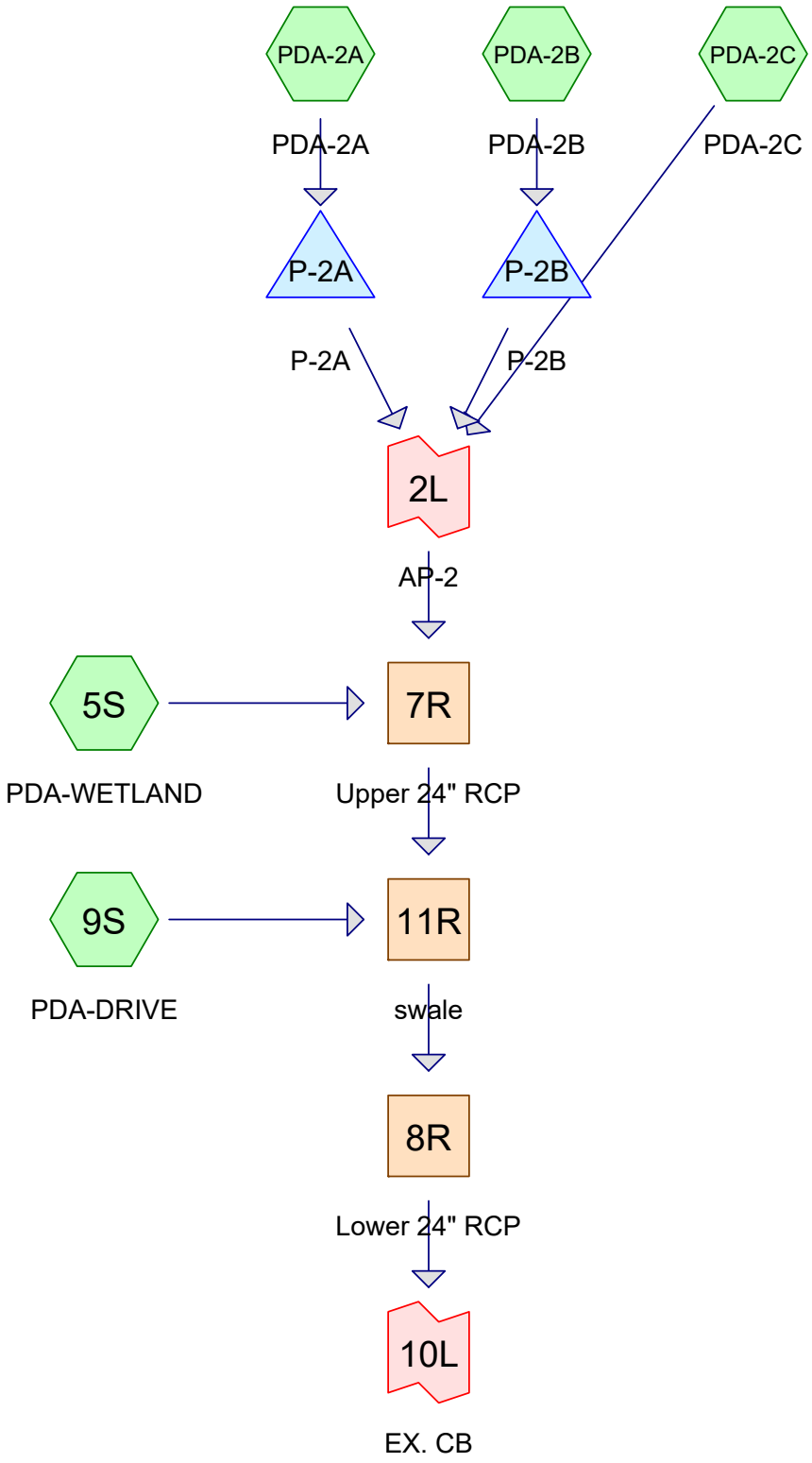
WATER QUALITY VOLUME CALCULATIONS
FOR
EAST HAMPTON INDUSTRIAL PARK GROUND MOUNT
46 SKINNER STREET, EAST HAMPTON, CT

$$WQV = \frac{(1")(R)(A)}{12}$$

where: WQV = water quality volume (ac-ft)
R = volumetric runoff coefficient = 0.05+0.009(I)
I = percent impervious cover
A = site area in acres

AREA (LOD)	=	14.27	AC
PERVIOUS AREA	=	11.07	AC
IMPERVIOUS AREA	=	3.20	AC
A	=	14.27	AC
I	=	22%	
R	=	0.25	
WQV	=	0.30	AC-FT
WQV	=	13,044.41	CF
WQV	=	483.13	CYD
PROVIDED VOLUMES		STORAGE	UNIT
INFILTRATION BASIN 1	=	498.88	CYD
INFILTRATION BASIN 2A	=	203.68	CYD
INFILTRATION BASIN 2B	=	186.17	CYD
INFILTRATION BASIN 3	=	319.19	CYD
INFILTRATION BASIN 4	=	1,190.41	CYD
TOTAL WQV REQUIRED	=	483.13	CYD
TOTAL WQV PROVIDED	=	2,398.33	CYD

APPENDIX G: DRIVEWAY PIPE CROSSINGS



Subcat Reach Pond Link

Routing Diagram for CT567110_EastHampton-PR-PIPE SIZING
Prepared by {enter your company name here}, Printed 2/14/2020

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.183	48	Brush, Good, HSG B (PDA-2A, PDA-2B)
0.002	73	Brush, Good, HSG D (PDA-2B)
0.063	82	Dirt roads, HSG B (9S)
0.687	89	Dirt roads, HSG D (5S, 9S)
0.010	96	Gravel surface, HSG B (9S)
0.238	96	Gravel surface, HSG D (9S, PDA-2C)
1.172	71	Meadow, non-grazed, HSG C (PDA-2A, PDA-2B)
1.195	78	Meadow, non-grazed, HSG D (9S, PDA-2A, PDA-2B, PDA-2C)
2.749	55	Woods, Good, HSG B (5S)
1.844	77	Woods, Good, HSG D (5S, 9S, PDA-2C)
8.141	**70**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
3.004	HSG B	5S, 9S, PDA-2A, PDA-2B
1.172	HSG C	PDA-2A, PDA-2B
3.966	HSG D	5S, 9S, PDA-2A, PDA-2B, PDA-2C
0.000	Other	
8.141		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.183	0.000	0.002	0.000	0.185	Brush, Good	PDA-2A, PDA-2B
0.000	0.063	0.000	0.687	0.000	0.750	Dirt roads	5S, 9S
0.000	0.010	0.000	0.238	0.000	0.247	Gravel surface	9S, PDA-2C
0.000	0.000	1.172	1.195	0.000	2.367	Meadow, non-grazed	9S, PDA-2A, PDA-2B, PDA-2C
0.000	2.749	0.000	1.844	0.000	4.593	Woods, Good	5S, 9S, PDA-2C
0.000	**3.004**	**1.172**	**3.966**	**0.000**	**8.141**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	7R	395.50	395.00	20.0	0.0250	0.011	24.0	0.0	6.0
2	8R	359.00	358.50	25.0	0.0200	0.011	24.0	0.0	6.0

Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 5S: PDA-WETLAND Runoff Area=190,126 sf 0.00% Impervious Runoff Depth=0.61"
Flow Length=802' Tc=33.3 min CN=63 Runoff=1.31 cfs 0.221 af

Subcatchment 9S: PDA-DRIVE Runoff Area=50,618 sf 0.00% Impervious Runoff Depth=2.00"
Flow Length=546' Tc=9.0 min CN=86 Runoff=2.41 cfs 0.194 af

Subcatchment PDA-2A: PDA-2A Runoff Area=59,006 sf 0.00% Impervious Runoff Depth=0.99"
Flow Length=275' Tc=21.5 min CN=71 Runoff=0.95 cfs 0.112 af

Subcatchment PDA-2B: PDA-2B Runoff Area=32,304 sf 0.00% Impervious Runoff Depth=1.05"
Flow Length=219' Tc=12.0 min CN=72 Runoff=0.69 cfs 0.065 af

Subcatchment PDA-2C: PDA-2C Runoff Area=22,584 sf 0.00% Impervious Runoff Depth=1.62"
Flow Length=346' Tc=8.2 min CN=81 Runoff=0.90 cfs 0.070 af

Reach 7R: Upper 24" RCP Avg. Flow Depth=0.15' Max Vel=5.59 fps Inflow=1.54 cfs 0.291 af
24.0" Round Pipe w/ 6.0" inside fill n=0.011 L=20.0' S=0.0250 '/' Capacity=30.61 cfs Outflow=1.54 cfs 0.291 af

Reach 8R: Lower 24" RCP Avg. Flow Depth=0.26' Max Vel=6.81 fps Inflow=3.34 cfs 0.484 af
24.0" Round Pipe w/ 6.0" inside fill n=0.011 L=25.0' S=0.0200 '/' Capacity=27.37 cfs Outflow=3.33 cfs 0.484 af

Reach 11R: swale Avg. Flow Depth=0.48' Max Vel=2.91 fps Inflow=3.46 cfs 0.484 af
n=0.069 L=367.0' S=0.0954 '/' Capacity=46.76 cfs Outflow=3.34 cfs 0.484 af

Pond P-2A: P-2A Peak Elev=417.86' Storage=1,443 cf Inflow=0.95 cfs 0.112 af
Discarded=0.22 cfs 0.112 af Primary=0.00 cfs 0.000 af Outflow=0.22 cfs 0.112 af

Pond P-2B: P-2B Peak Elev=412.48' Storage=696 cf Inflow=0.69 cfs 0.065 af
Discarded=0.18 cfs 0.065 af Primary=0.00 cfs 0.000 af Outflow=0.18 cfs 0.065 af

Link 2L: AP-2 Inflow=0.90 cfs 0.070 af
Primary=0.90 cfs 0.070 af

Link 10L: EX. CB Inflow=3.33 cfs 0.484 af
Primary=3.33 cfs 0.484 af

Total Runoff Area = 8.141 ac Runoff Volume = 0.662 af Average Runoff Depth = 0.98"
100.00% Pervious = 8.141 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 5S: PDA-WETLAND

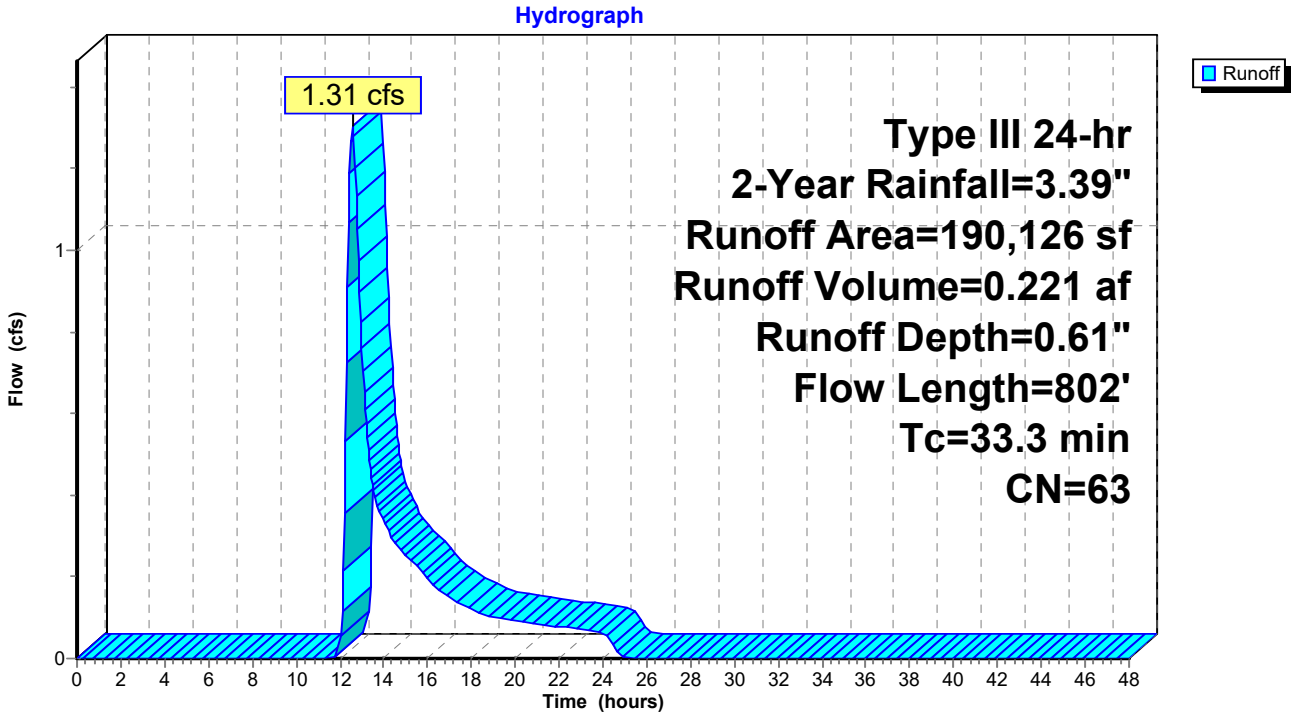
Runoff = 1.31 cfs @ 12.57 hrs, Volume= 0.221 af, Depth= 0.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
119,727	55	Woods, Good, HSG B
67,409	77	Woods, Good, HSG D
2,990	89	Dirt roads, HSG D
190,126	63	Weighted Average
190,126		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	100	0.0250	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
10.6	452	0.0203	0.71		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.1	77	0.0519	1.14		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
1.4	82	0.0366	0.96		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
1.1	91	0.0769	1.39		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
33.3	802	Total			

Subcatchment 5S: PDA-WETLAND



Summary for Subcatchment 9S: PDA-DRIVE

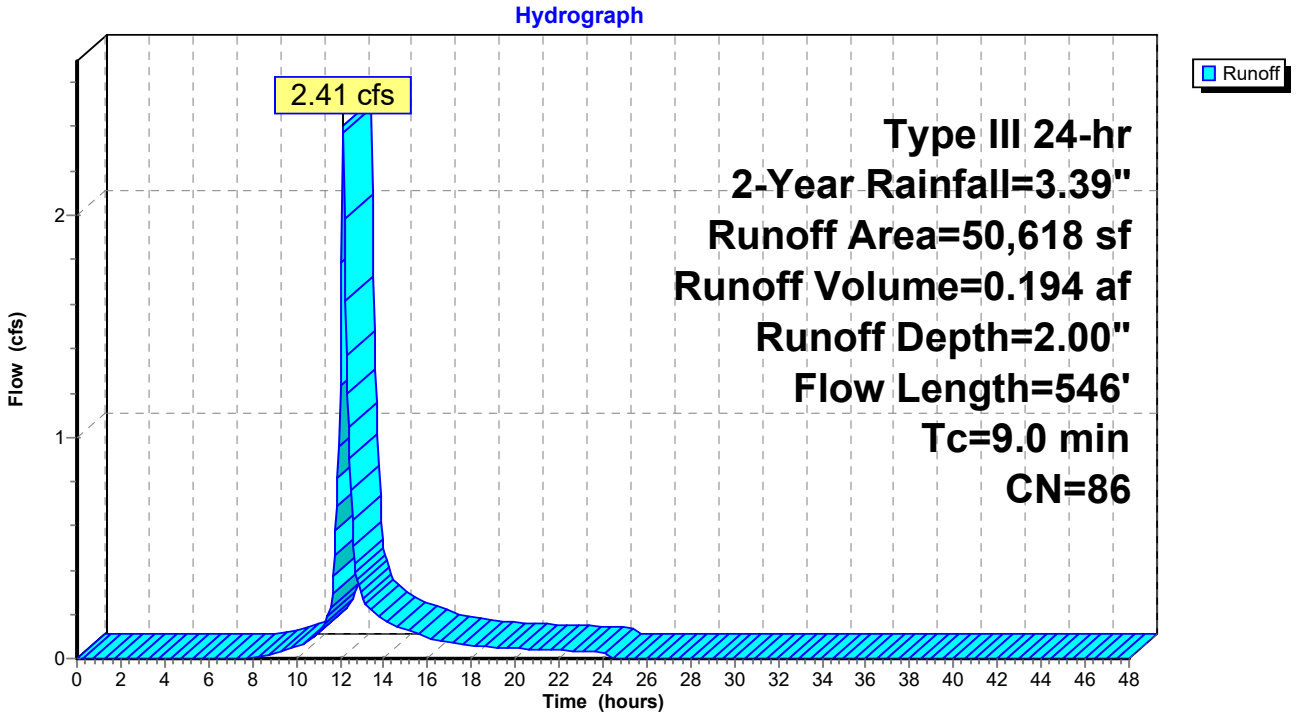
Runoff = 2.41 cfs @ 12.13 hrs, Volume= 0.194 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
10,945	77	Woods, Good, HSG D
6,876	96	Gravel surface, HSG D
2,714	78	Meadow, non-grazed, HSG D
26,943	89	Dirt roads, HSG D
2,723	82	Dirt roads, HSG B
417	96	Gravel surface, HSG B
50,618	86	Weighted Average
50,618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
0.4	50	0.1700	2.06		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.8	87	0.0690	1.84		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
0.0	15	0.4000	10.18		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
0.1	36	0.1700	6.64		**Shallow Concentrated Flow, E-F** Unpaved Kv= 16.1 fps
0.5	258	0.0954	9.49	77.85	**Channel Flow, F-G** Area= 8.2 sf Perim= 10.5' r= 0.78' n= 0.041 Riprap, 2-inch
9.0	546	Total			

Subcatchment 9S: PDA-DRIVE



Summary for Subcatchment PDA-2A: PDA-2A

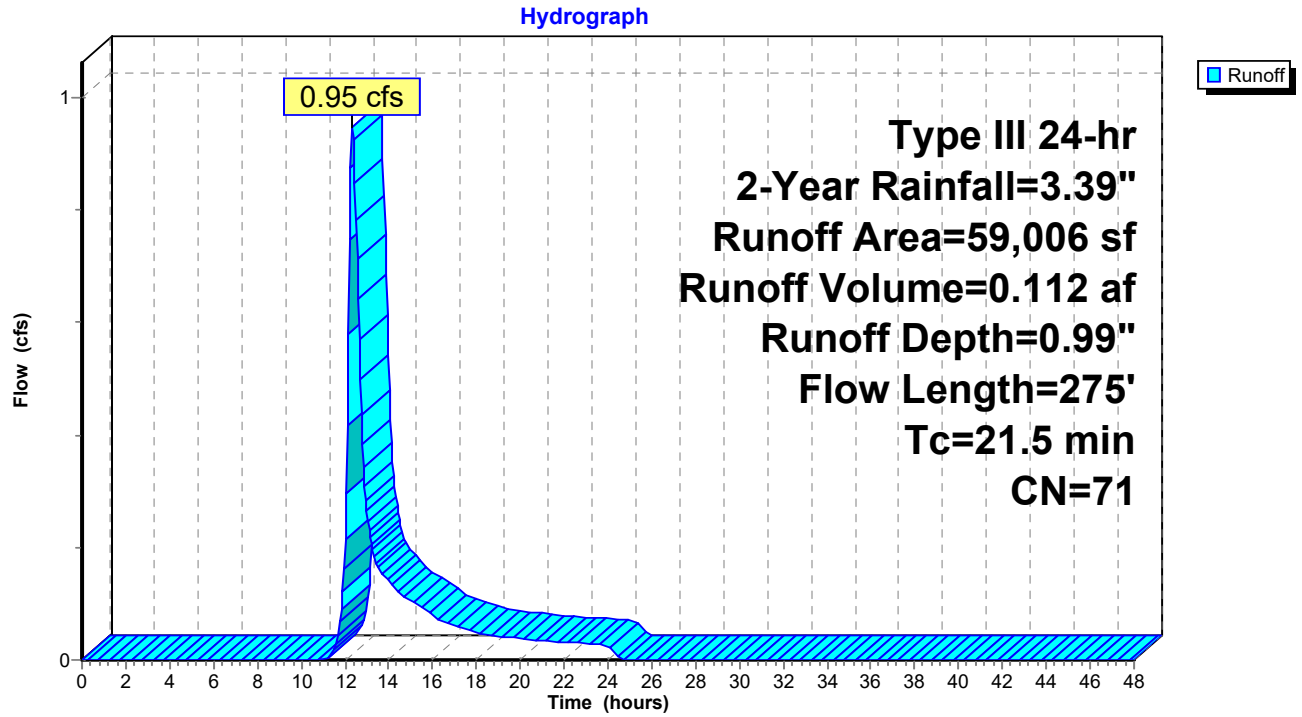
Runoff = 0.95 cfs @ 12.33 hrs, Volume= 0.112 af, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
39,007	71	Meadow, non-grazed, HSG C
16,039	78	Meadow, non-grazed, HSG D
3,960	48	Brush, Good, HSG B
59,006	71	Weighted Average
59,006		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
16.0	70	0.0069	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
2.9	175	0.0211	1.02		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
21.5	275	Total			

Subcatchment PDA-2A: PDA-2A



Summary for Subcatchment PDA-2B: PDA-2B

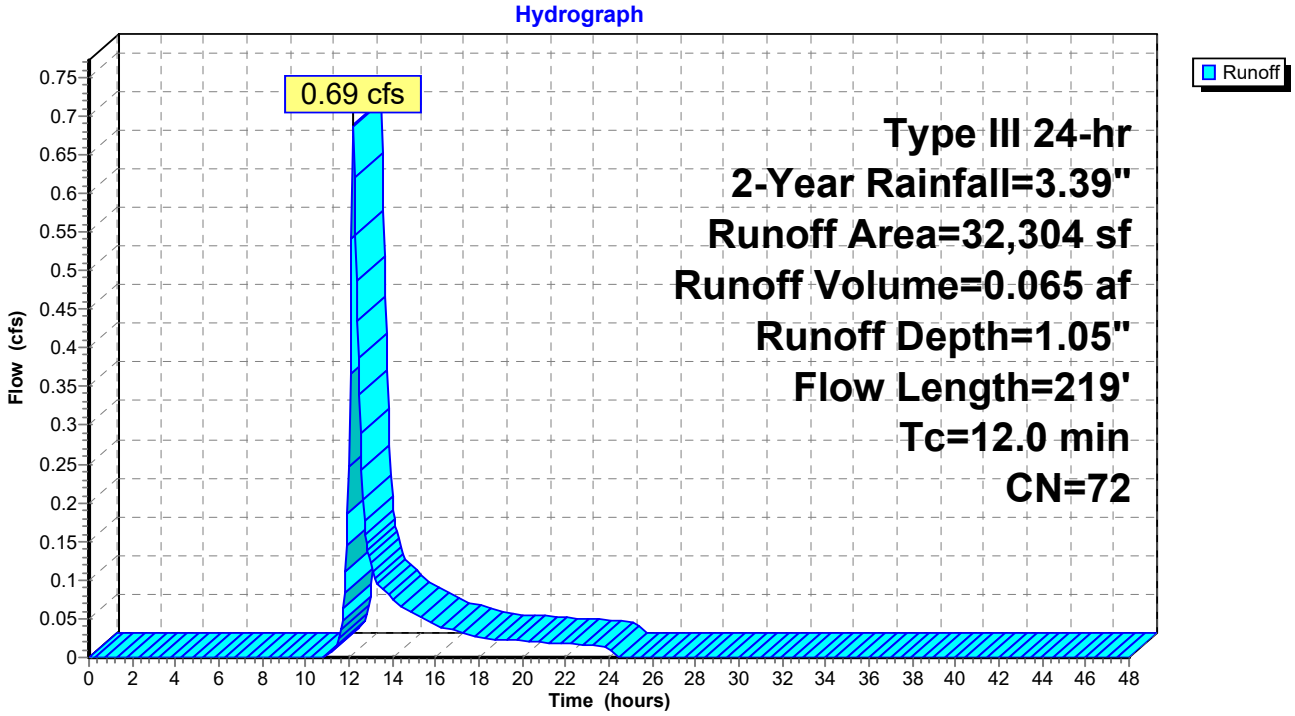
Runoff = 0.69 cfs @ 12.18 hrs, Volume= 0.065 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
12,043	71	Meadow, non-grazed, HSG C
16,171	78	Meadow, non-grazed, HSG D
4,020	48	Brush, Good, HSG B
70	73	Brush, Good, HSG D
32,304	72	Weighted Average
32,304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
8.3	70	0.0357	0.14		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.1	119	0.0630	1.76		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
12.0	219	Total			

Subcatchment PDA-2B: PDA-2B



Summary for Subcatchment PDA-2C: PDA-2C

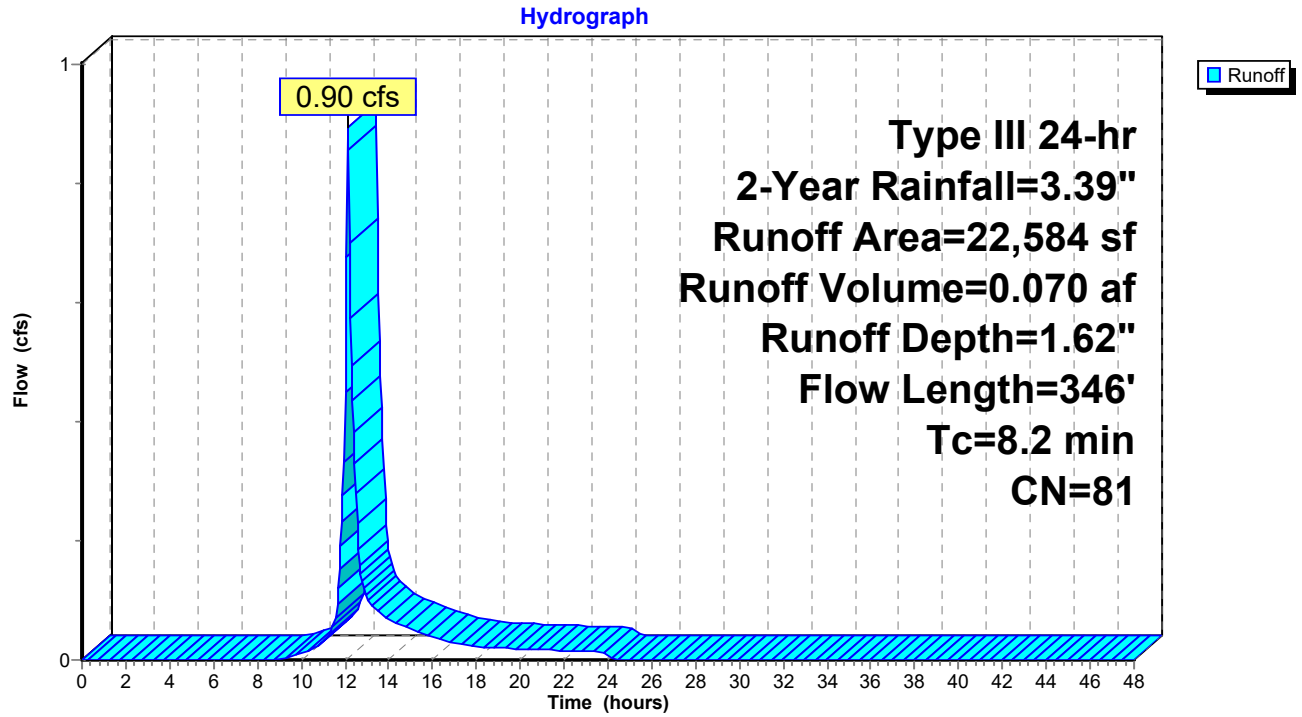
Runoff = 0.90 cfs @ 12.12 hrs, Volume= 0.070 af, Depth= 1.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.39"

Area (sf)	CN	Description
1,977	77	Woods, Good, HSG D
3,486	96	Gravel surface, HSG D
17,121	78	Meadow, non-grazed, HSG D
22,584	81	Weighted Average
22,584		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
1.3	146	0.0684	1.83		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0854	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
8.2	346	Total			

Subcatchment PDA-2C: PDA-2C



Summary for Reach 7R: Upper 24" RCP

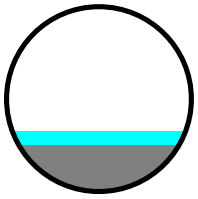
[52] Hint: Inlet/Outlet conditions not evaluated

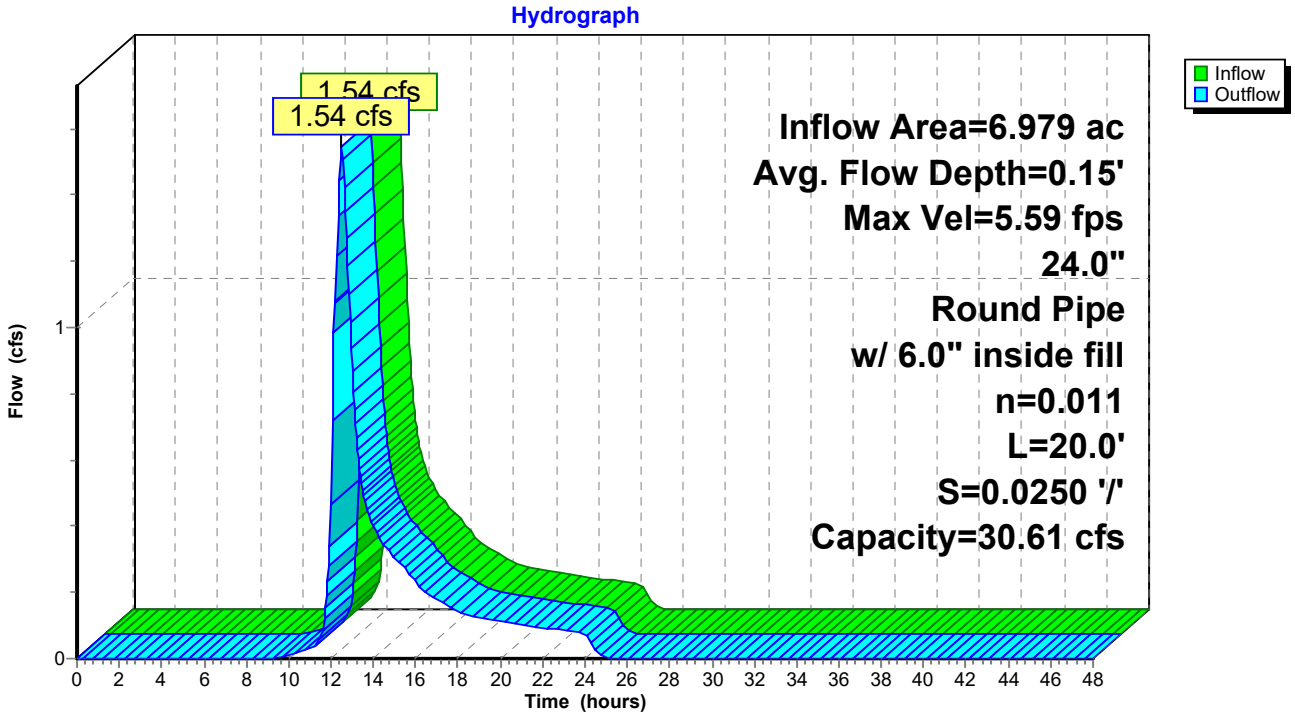
Inflow Area = 6.979 ac, 0.00% Impervious, Inflow Depth = 0.50" for 2-Year event
Inflow = 1.54 cfs @ 12.51 hrs, Volume= 0.291 af
Outflow = 1.54 cfs @ 12.51 hrs, Volume= 0.291 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 5.59 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.41 fps, Avg. Travel Time= 0.1 min

Peak Storage= 6 cf @ 12.51 hrs
Average Depth at Peak Storage= 0.65' above invert (0.15' above fill)
Bank-Full Depth= 2.00' above invert (1.50' above fill) Flow Area= 2.5 sf, Capacity= 30.61 cfs

24.0" Round Pipe w/ 6.0" inside fill
n= 0.011 Concrete pipe, straight & clean
Length= 20.0' Slope= 0.0250 '/'
Inlet Invert= 395.50', Outlet Invert= 395.00'





Summary for Reach 8R: Lower 24" RCP

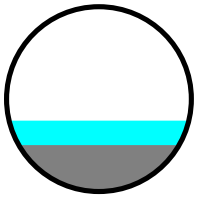
[52] Hint: Inlet/Outlet conditions not evaluated

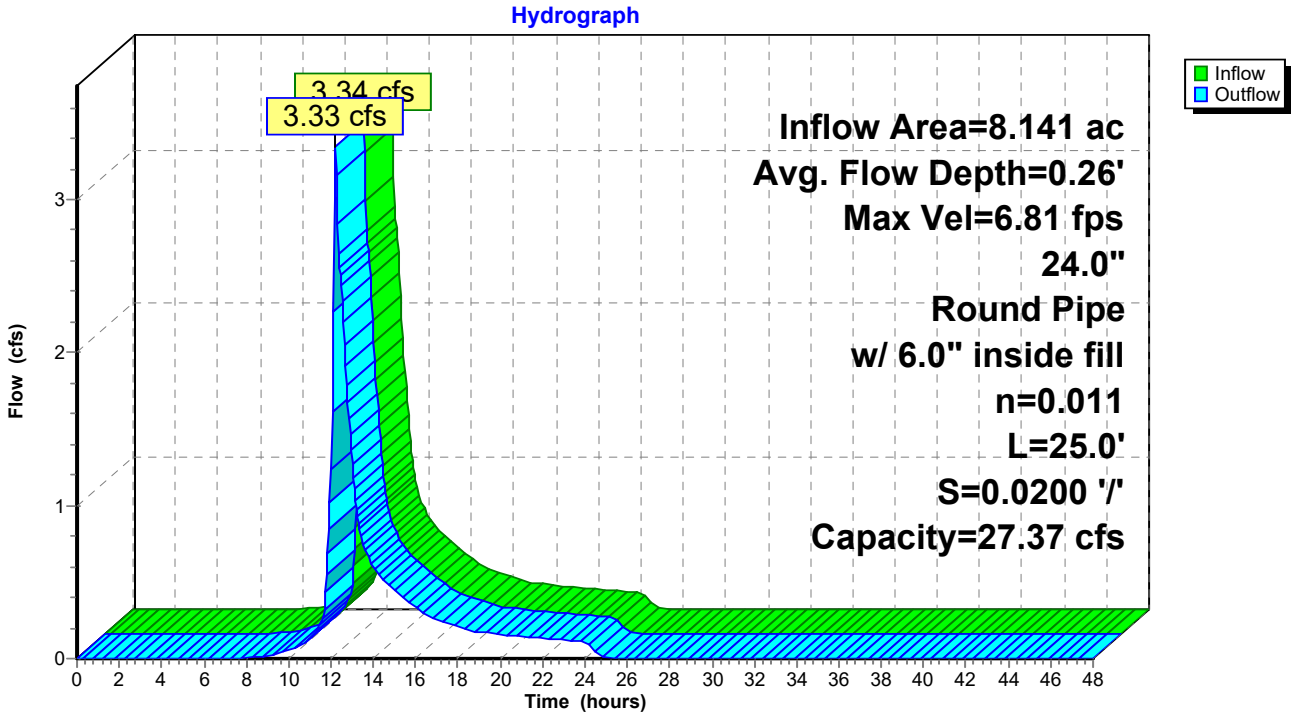
Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 0.71" for 2-Year event
Inflow = 3.34 cfs @ 12.21 hrs, Volume= 0.484 af
Outflow = 3.33 cfs @ 12.21 hrs, Volume= 0.484 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 6.81 fps, Min. Travel Time= 0.1 min
Avg. Velocity = 2.48 fps, Avg. Travel Time= 0.2 min

Peak Storage= 12 cf @ 12.21 hrs
Average Depth at Peak Storage= 0.76' above invert (0.26' above fill)
Bank-Full Depth= 2.00' above invert (1.50' above fill) Flow Area= 2.5 sf, Capacity= 27.37 cfs

24.0" Round Pipe w/ 6.0" inside fill
n= 0.011 Concrete pipe, straight & clean
Length= 25.0' Slope= 0.0200 '/'
Inlet Invert= 359.00', Outlet Invert= 358.50'





Summary for Reach 11R: swale

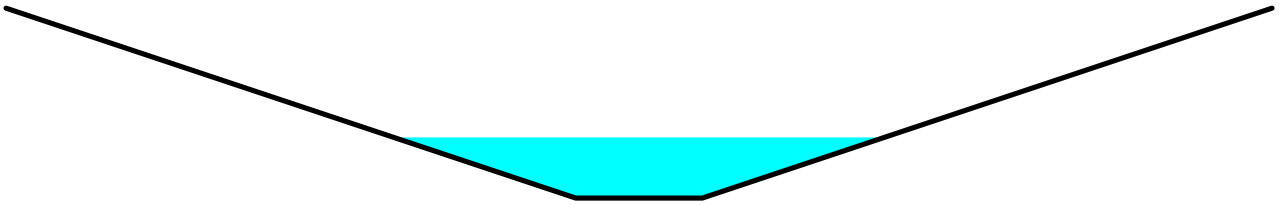
[61] Hint: Exceeded Reach 7R outlet invert by 0.48' @ 12.15 hrs

Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 0.71" for 2-Year event
Inflow = 3.46 cfs @ 12.14 hrs, Volume= 0.484 af
Outflow = 3.34 cfs @ 12.21 hrs, Volume= 0.484 af, Atten= 4%, Lag= 4.2 min

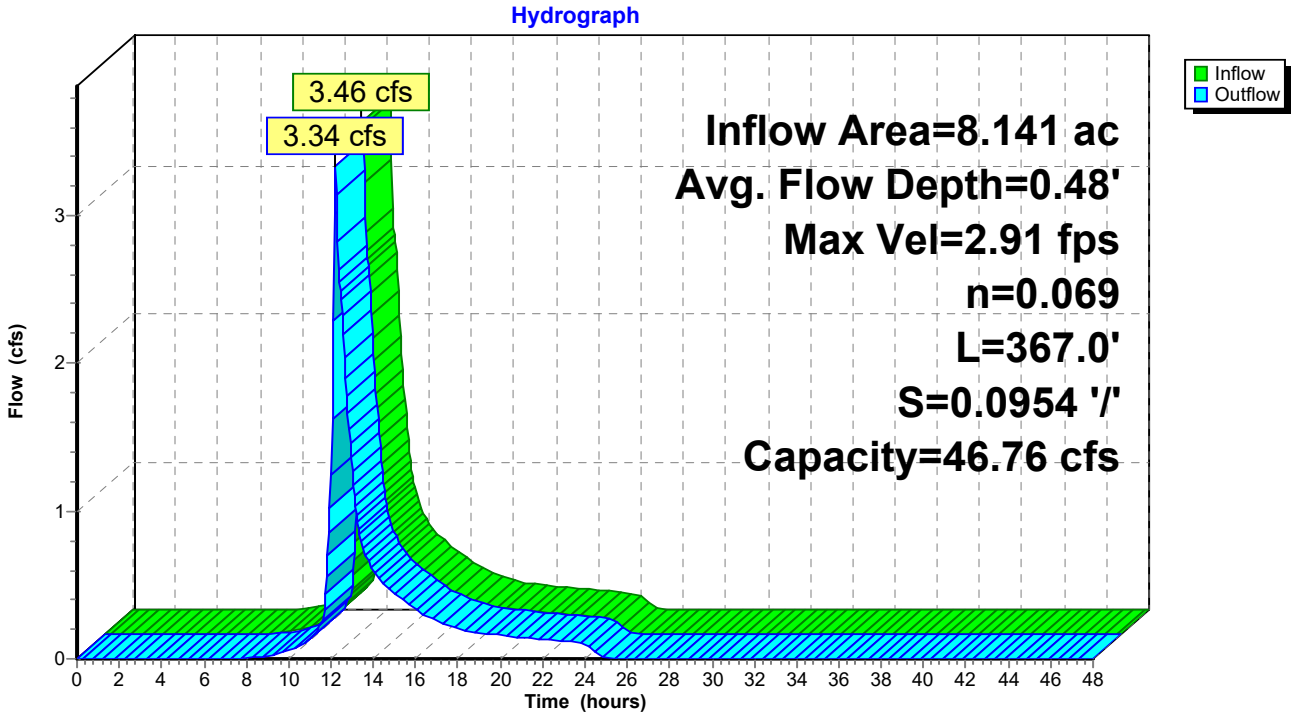
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 2.91 fps, Min. Travel Time= 2.1 min
Avg. Velocity = 1.22 fps, Avg. Travel Time= 5.0 min

Peak Storage= 429 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.48'
Bank-Full Depth= 1.50' Flow Area= 8.3 sf, Capacity= 46.76 cfs

1.00' x 1.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 3.0 '/' Top Width= 10.00'
Length= 367.0' Slope= 0.0954 '/'
Inlet Invert= 395.00', Outlet Invert= 360.00'



Reach 11R: swale



Summary for Pond P-2A: P-2A

Inflow Area = 1.355 ac, 0.00% Impervious, Inflow Depth = 0.99" for 2-Year event
Inflow = 0.95 cfs @ 12.33 hrs, Volume= 0.112 af
Outflow = 0.22 cfs @ 13.12 hrs, Volume= 0.112 af, Atten= 76%, Lag= 47.6 min
Discarded = 0.22 cfs @ 13.12 hrs, Volume= 0.112 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 417.86' @ 13.12 hrs Surf.Area= 1,935 sf Storage= 1,443 cf

Plug-Flow detention time= 56.3 min calculated for 0.112 af (100% of inflow)
Center-of-Mass det. time= 56.3 min (938.8 - 882.5)

Volume	Invert	Avail.Storage	Storage Description
#1	417.00'	7,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

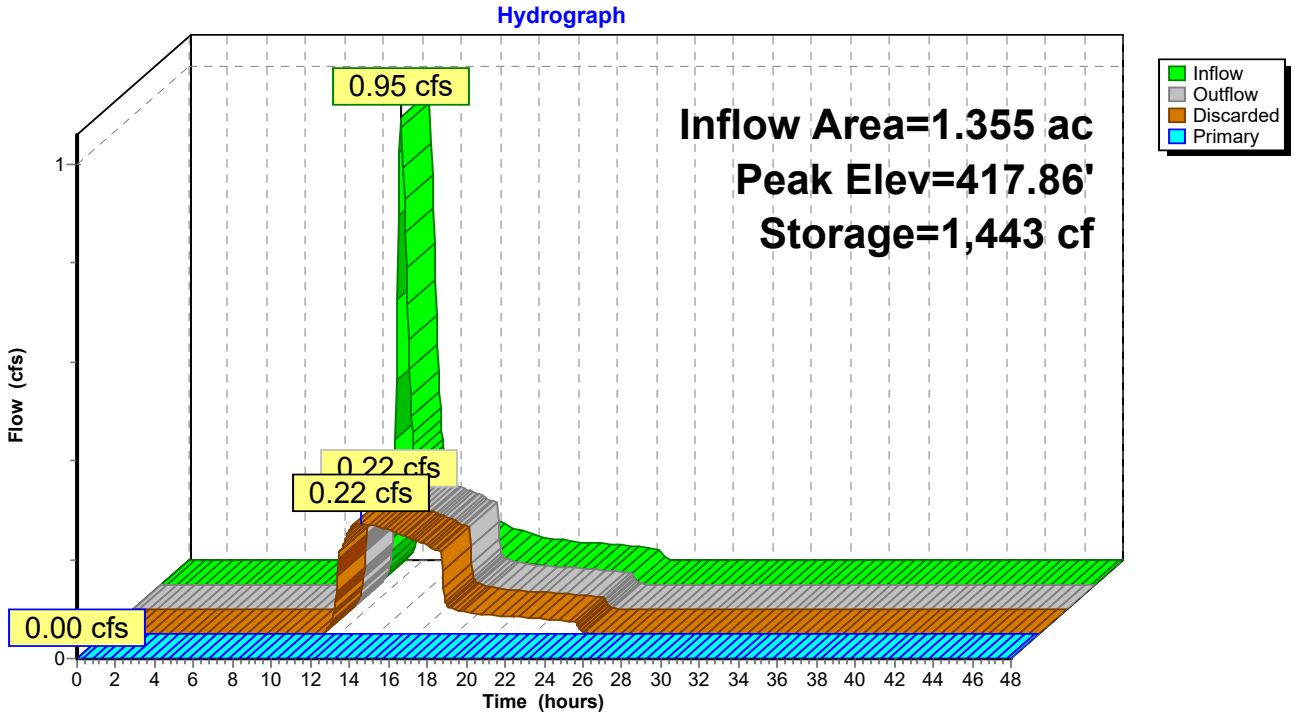
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
417.00	1,405	0	0
418.00	2,018	1,712	1,712
419.00	2,688	2,353	4,065
420.00	3,415	3,052	7,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	417.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	419.50'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.22 cfs @ 13.12 hrs HW=417.86' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.22 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=417.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P-2A: P-2A


Hydrograph
Inflow
Outflow
Discarded
Primary
0.95 cfs
Inflow Area=1.355 ac
Peak Elev=417.86'
Storage=1,443 cf
0.22 cfs
0.22 cfs
0.00 cfs
Flow (cfs)
1
0
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Pond P-2B: P-2B

Inflow Area = 0.742 ac, 0.00% Impervious, Inflow Depth = 1.05" for 2-Year event
Inflow = 0.69 cfs @ 12.18 hrs, Volume= 0.065 af
Outflow = 0.18 cfs @ 12.69 hrs, Volume= 0.065 af, Atten= 73%, Lag= 30.4 min
Discarded = 0.18 cfs @ 12.69 hrs, Volume= 0.065 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 412.48' @ 12.69 hrs Surf.Area= 1,580 sf Storage= 696 cf

Plug-Flow detention time= 27.1 min calculated for 0.065 af (100% of inflow)
Center-of-Mass det. time= 27.1 min (897.5 - 870.5)

Volume	Invert	Avail.Storage	Storage Description
#1	412.00'	6,481 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

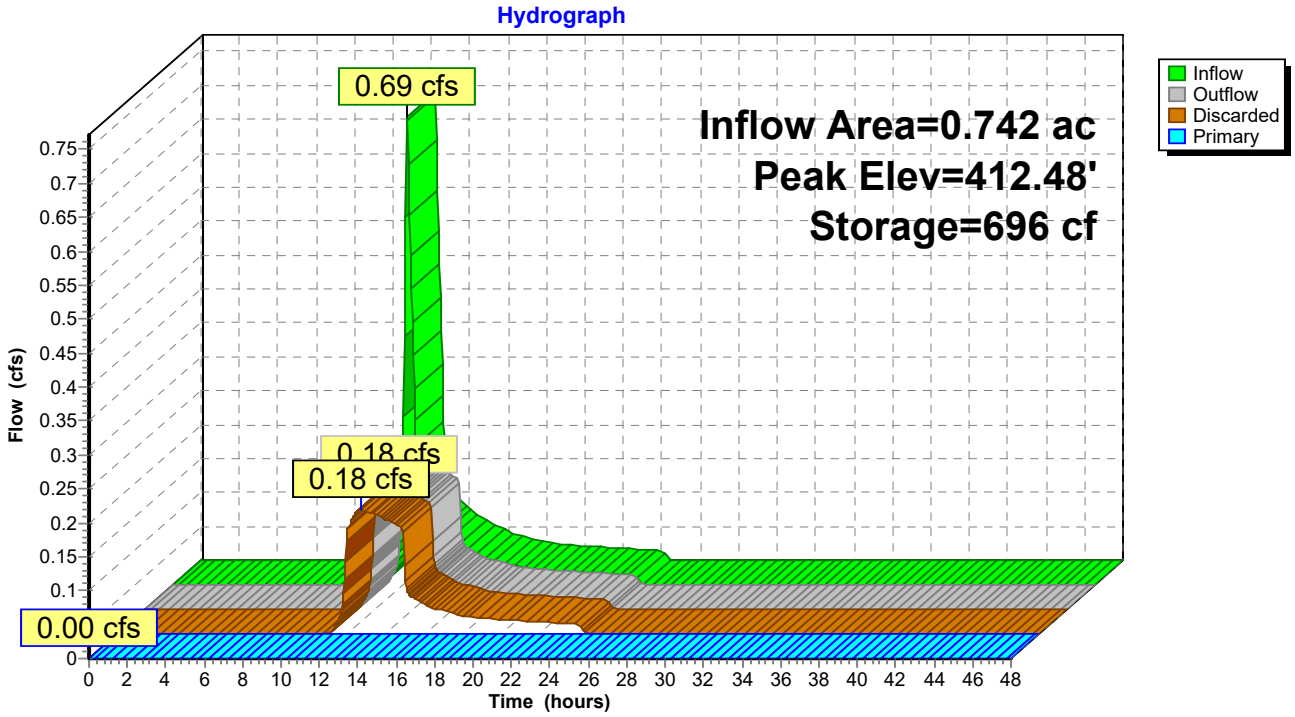
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
412.00	1,330	0	0
413.00	1,852	1,591	1,591
414.00	2,431	2,142	3,733
415.00	3,065	2,748	6,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	412.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	414.50'	**10.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.18 cfs @ 12.69 hrs HW=412.48' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.18 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=412.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P-2B: P-2B

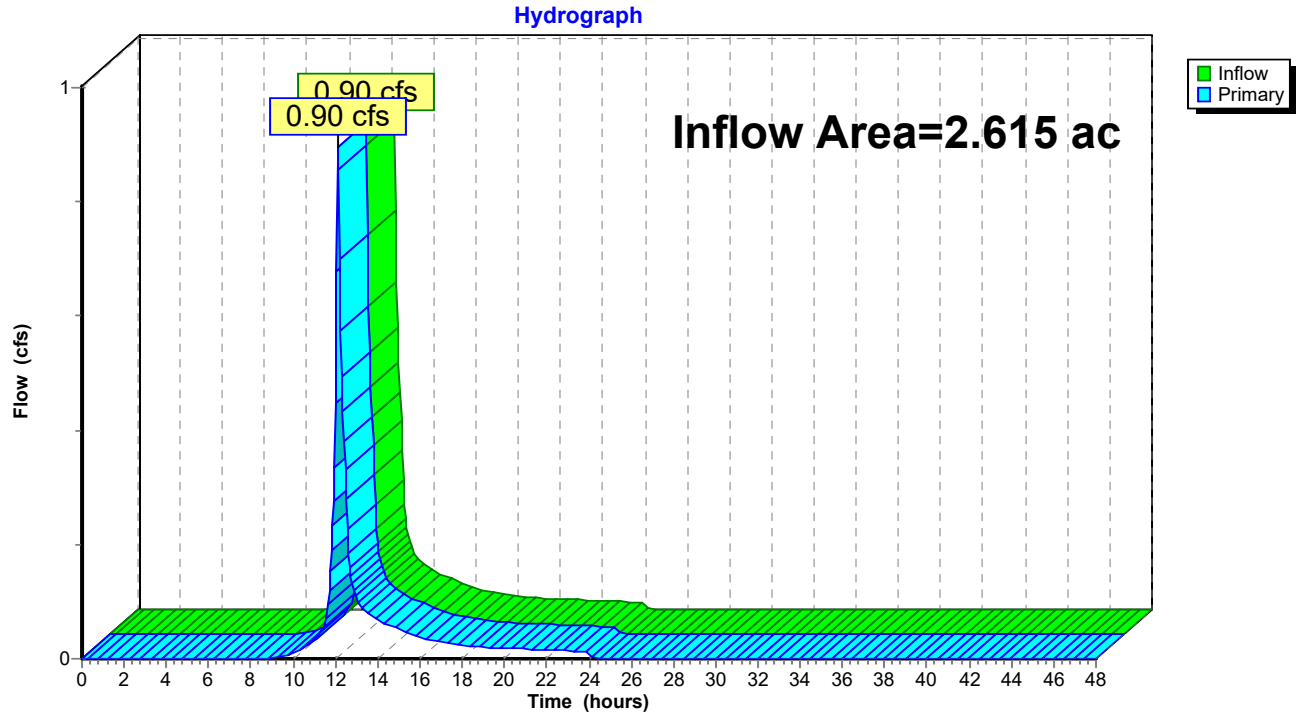

Hydrograph
Inflow
Outflow
Discarded
Primary
0.69 cfs
0.18 cfs
0.18 cfs
0.00 cfs
Inflow Area=0.742 ac
Peak Elev=412.48'
Storage=696 cf
Flow (cfs)
Time (hours)
0 0.1 0.15 0.2 0.25 0.3 0.35 0.4 0.45 0.5 0.55 0.6 0.65 0.7 0.75
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Link 2L: AP-2

Inflow Area = 2.615 ac, 0.00% Impervious, Inflow Depth = 0.32" for 2-Year event
Inflow = 0.90 cfs @ 12.12 hrs, Volume= 0.070 af
Primary = 0.90 cfs @ 12.12 hrs, Volume= 0.070 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

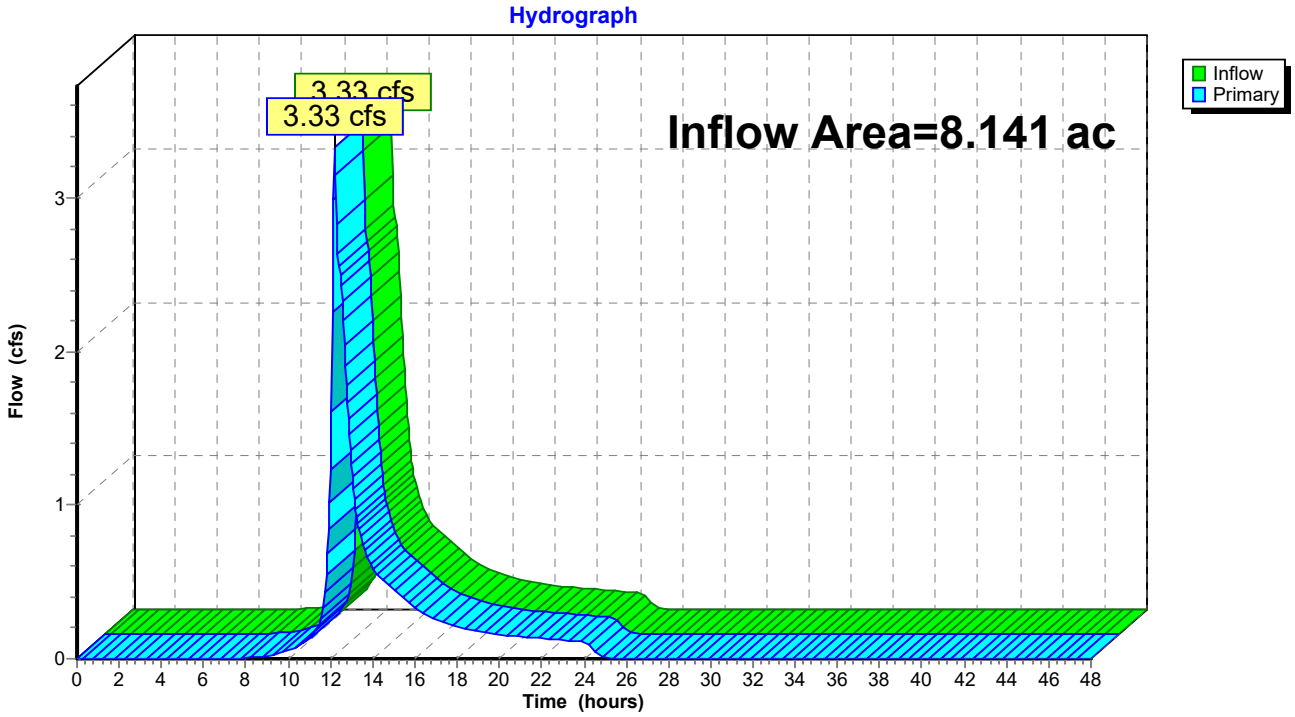


Summary for Link 10L: EX. CB

Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 0.71" for 2-Year event
Inflow = 3.33 cfs @ 12.21 hrs, Volume= 0.484 af
Primary = 3.33 cfs @ 12.21 hrs, Volume= 0.484 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 10L: EX. CB



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 5S: PDA-WETLAND Runoff Area=190,126 sf 0.00% Impervious Runoff Depth=2.41"
Flow Length=802' Tc=33.3 min CN=63 Runoff=6.44 cfs 0.877 af

Subcatchment 9S: PDA-DRIVE Runoff Area=50,618 sf 0.00% Impervious Runoff Depth=4.72"
Flow Length=546' Tc=9.0 min CN=86 Runoff=5.58 cfs 0.457 af

Subcatchment PDA-2A: PDA-2A Runoff Area=59,006 sf 0.00% Impervious Runoff Depth=3.17"
Flow Length=275' Tc=21.5 min CN=71 Runoff=3.27 cfs 0.357 af

Subcatchment PDA-2B: PDA-2B Runoff Area=32,304 sf 0.00% Impervious Runoff Depth=3.27"
Flow Length=219' Tc=12.0 min CN=72 Runoff=2.31 cfs 0.202 af

Subcatchment PDA-2C: PDA-2C Runoff Area=22,584 sf 0.00% Impervious Runoff Depth=4.19"
Flow Length=346' Tc=8.2 min CN=81 Runoff=2.31 cfs 0.181 af

Reach 7R: Upper 24" RCP Avg. Flow Depth=0.40' Max Vel=9.44 fps Inflow=7.16 cfs 1.094 af
24.0" Round Pipe w/ 6.0" inside fill n=0.011 L=20.0' S=0.0250 '/' Capacity=30.61 cfs Outflow=7.16 cfs 1.094 af

Reach 8R: Lower 24" RCP Avg. Flow Depth=0.54' Max Vel=9.70 fps Inflow=10.02 cfs 1.552 af
24.0" Round Pipe w/ 6.0" inside fill n=0.011 L=25.0' S=0.0200 '/' Capacity=27.37 cfs Outflow=10.01 cfs 1.552 af

Reach 11R: swale Avg. Flow Depth=0.79' Max Vel=3.85 fps Inflow=10.24 cfs 1.552 af
n=0.069 L=367.0' S=0.0954 '/' Capacity=46.76 cfs Outflow=10.02 cfs 1.552 af

Pond P-2A: P-2A Peak Elev=419.61' Storage=5,825 cf Inflow=3.27 cfs 0.357 af
Discarded=0.36 cfs 0.320 af Primary=0.92 cfs 0.037 af Outflow=1.28 cfs 0.357 af

Pond P-2B: P-2B Peak Elev=413.92' Storage=3,533 cf Inflow=2.31 cfs 0.202 af
Discarded=0.28 cfs 0.202 af Primary=0.00 cfs 0.000 af Outflow=0.28 cfs 0.202 af

Link 2L: AP-2 Inflow=2.31 cfs 0.218 af
Primary=2.31 cfs 0.218 af

Link 10L: EX. CB Inflow=10.01 cfs 1.552 af
Primary=10.01 cfs 1.552 af

Total Runoff Area = 8.141 ac Runoff Volume = 2.074 af Average Runoff Depth = 3.06"
100.00% Pervious = 8.141 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 5S: PDA-WETLAND

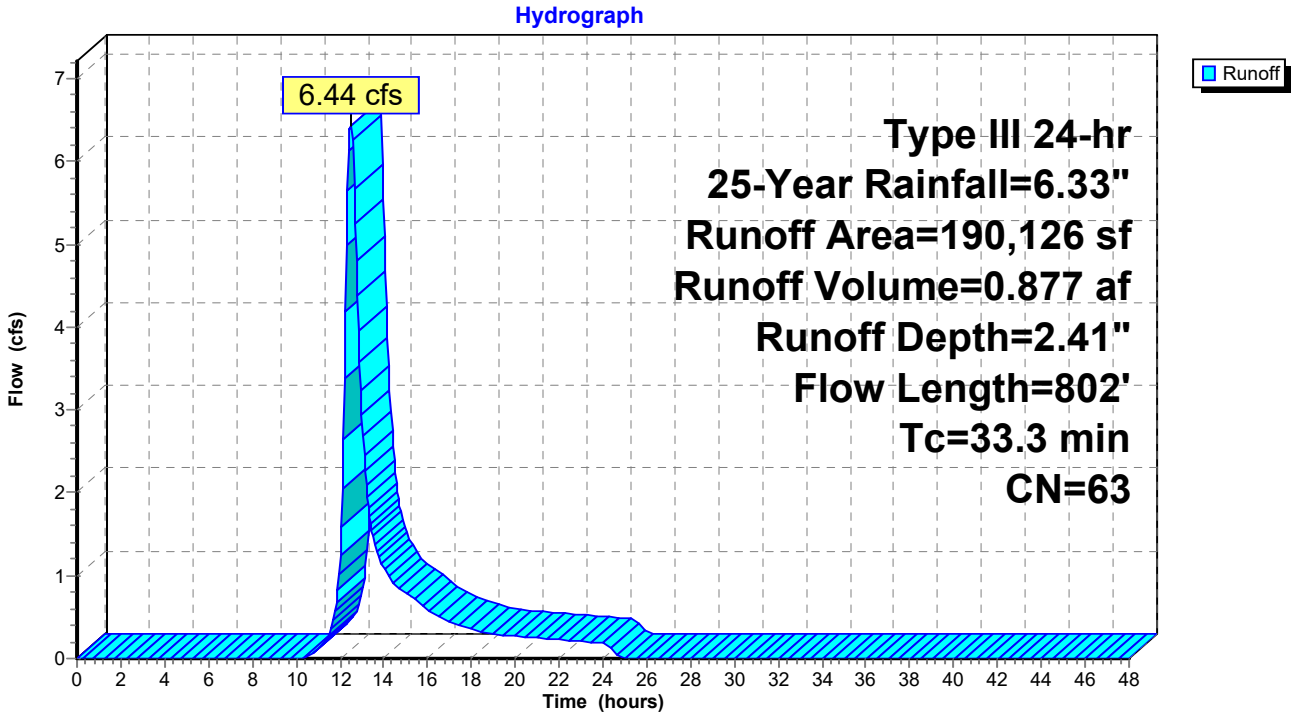
Runoff = 6.44 cfs @ 12.49 hrs, Volume= 0.877 af, Depth= 2.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
119,727	55	Woods, Good, HSG B
67,409	77	Woods, Good, HSG D
2,990	89	Dirt roads, HSG D
190,126	63	Weighted Average
190,126		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	100	0.0250	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
10.6	452	0.0203	0.71		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.1	77	0.0519	1.14		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
1.4	82	0.0366	0.96		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
1.1	91	0.0769	1.39		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
33.3	802	Total			

Subcatchment 5S: PDA-WETLAND



Summary for Subcatchment 9S: PDA-DRIVE

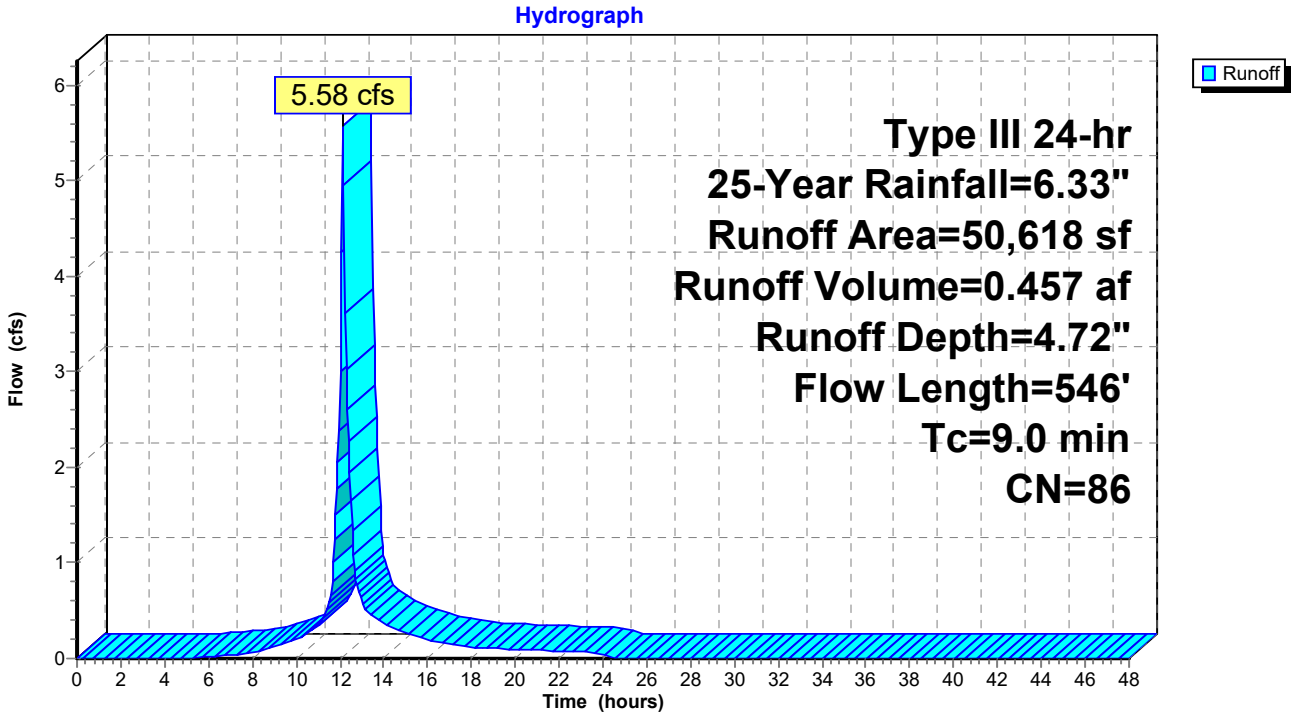
Runoff = 5.58 cfs @ 12.12 hrs, Volume= 0.457 af, Depth= 4.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
10,945	77	Woods, Good, HSG D
6,876	96	Gravel surface, HSG D
2,714	78	Meadow, non-grazed, HSG D
26,943	89	Dirt roads, HSG D
2,723	82	Dirt roads, HSG B
417	96	Gravel surface, HSG B
50,618	86	Weighted Average
50,618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
0.4	50	0.1700	2.06		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.8	87	0.0690	1.84		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
0.0	15	0.4000	10.18		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
0.1	36	0.1700	6.64		**Shallow Concentrated Flow, E-F** Unpaved Kv= 16.1 fps
0.5	258	0.0954	9.49	77.85	**Channel Flow, F-G** Area= 8.2 sf Perim= 10.5' r= 0.78' n= 0.041 Riprap, 2-inch
9.0	546	Total			

Subcatchment 9S: PDA-DRIVE



Summary for Subcatchment PDA-2A: PDA-2A

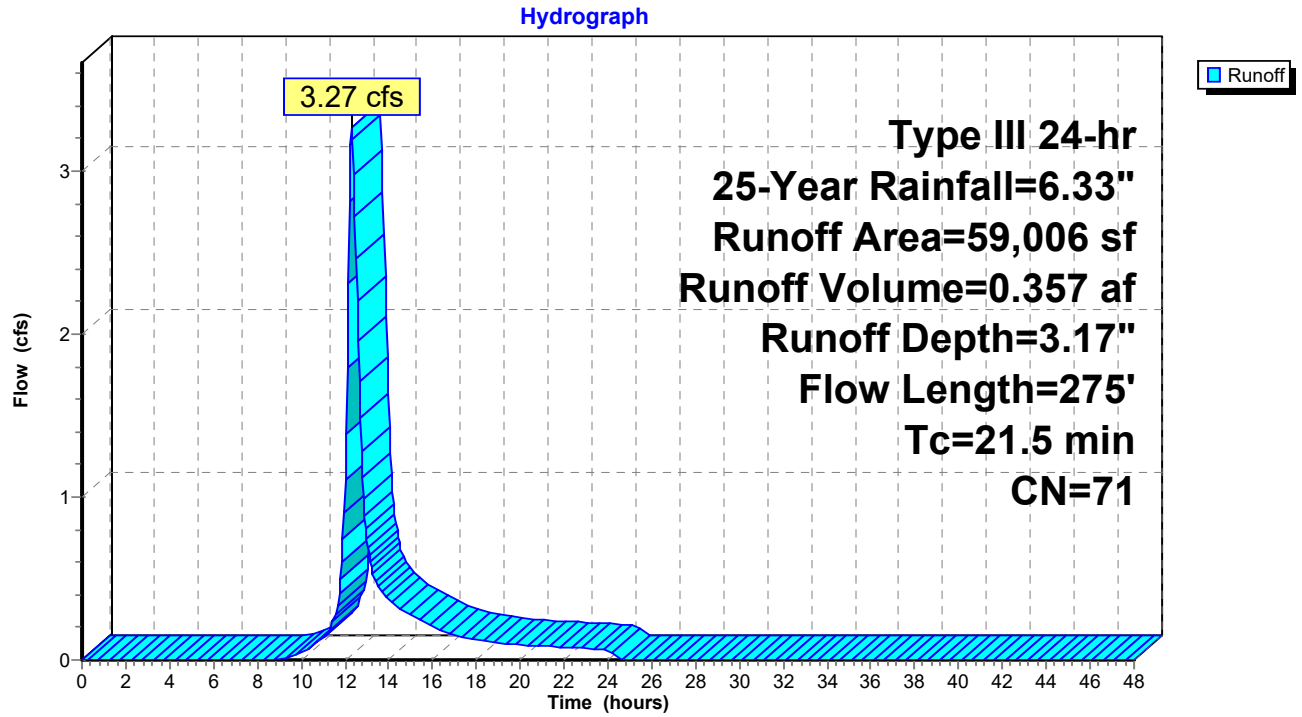
Runoff = 3.27 cfs @ 12.30 hrs, Volume= 0.357 af, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
39,007	71	Meadow, non-grazed, HSG C
16,039	78	Meadow, non-grazed, HSG D
3,960	48	Brush, Good, HSG B
59,006	71	Weighted Average
59,006		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
16.0	70	0.0069	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
2.9	175	0.0211	1.02		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
21.5	275	Total			

Subcatchment PDA-2A: PDA-2A



Summary for Subcatchment PDA-2B: PDA-2B

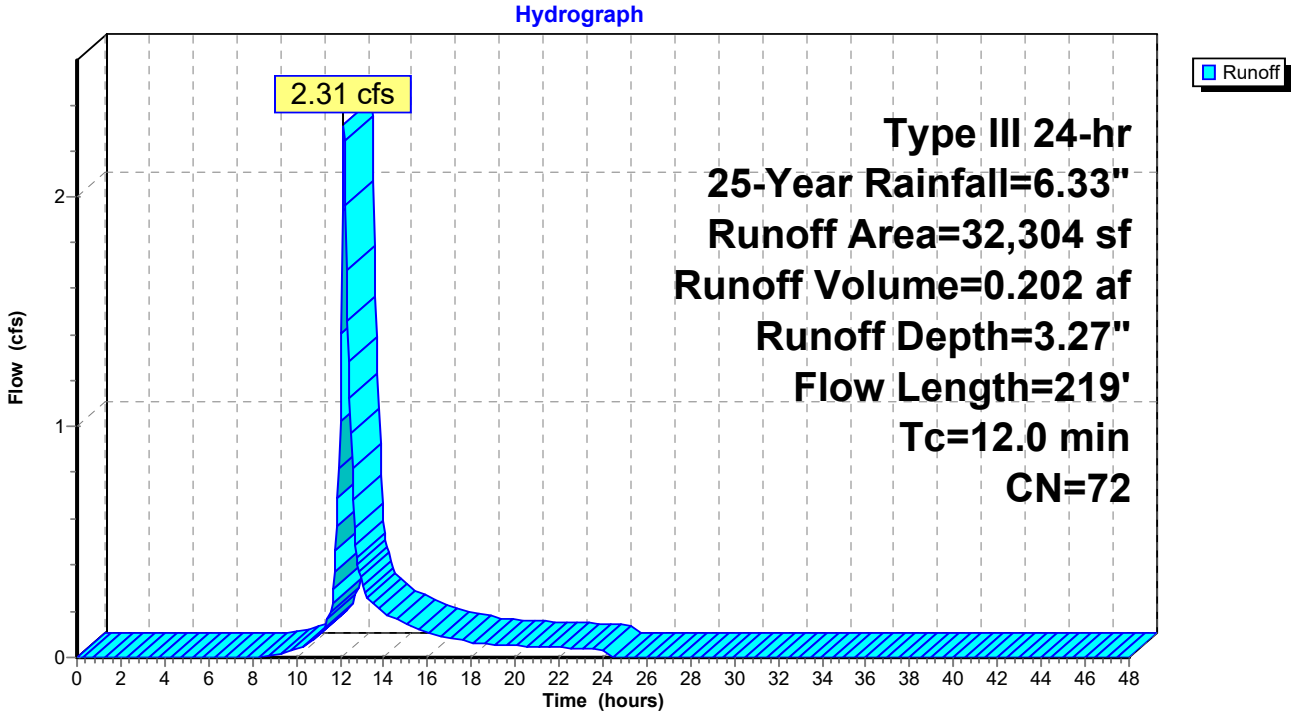
Runoff = 2.31 cfs @ 12.17 hrs, Volume= 0.202 af, Depth= 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
12,043	71	Meadow, non-grazed, HSG C
16,171	78	Meadow, non-grazed, HSG D
4,020	48	Brush, Good, HSG B
70	73	Brush, Good, HSG D
32,304	72	Weighted Average
32,304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
8.3	70	0.0357	0.14		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.1	119	0.0630	1.76		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
12.0	219	Total			

Subcatchment PDA-2B: PDA-2B



Summary for Subcatchment PDA-2C: PDA-2C

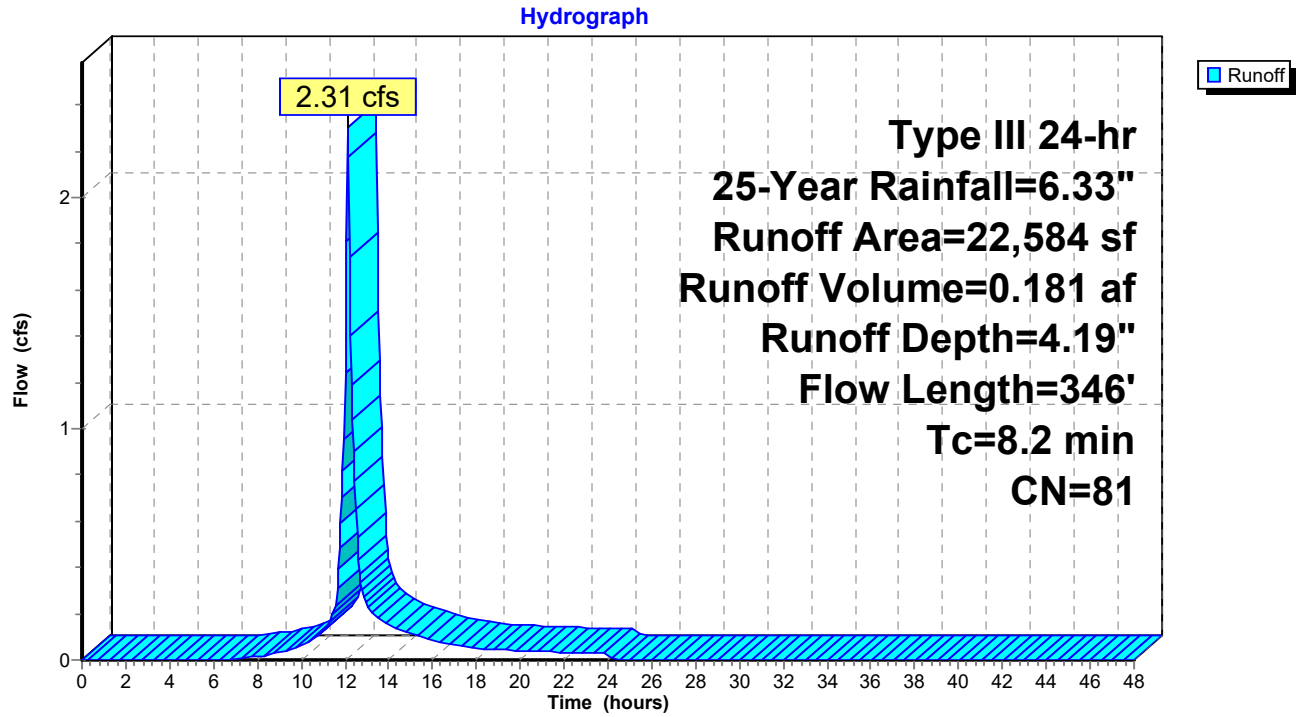
Runoff = 2.31 cfs @ 12.12 hrs, Volume= 0.181 af, Depth= 4.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=6.33"

Area (sf)	CN	Description
1,977	77	Woods, Good, HSG D
3,486	96	Gravel surface, HSG D
17,121	78	Meadow, non-grazed, HSG D
22,584	81	Weighted Average
22,584		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
1.3	146	0.0684	1.83		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0854	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
8.2	346	Total			

Subcatchment PDA-2C: PDA-2C



Summary for Reach 7R: Upper 24" RCP

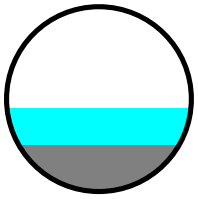
[52] Hint: Inlet/Outlet conditions not evaluated

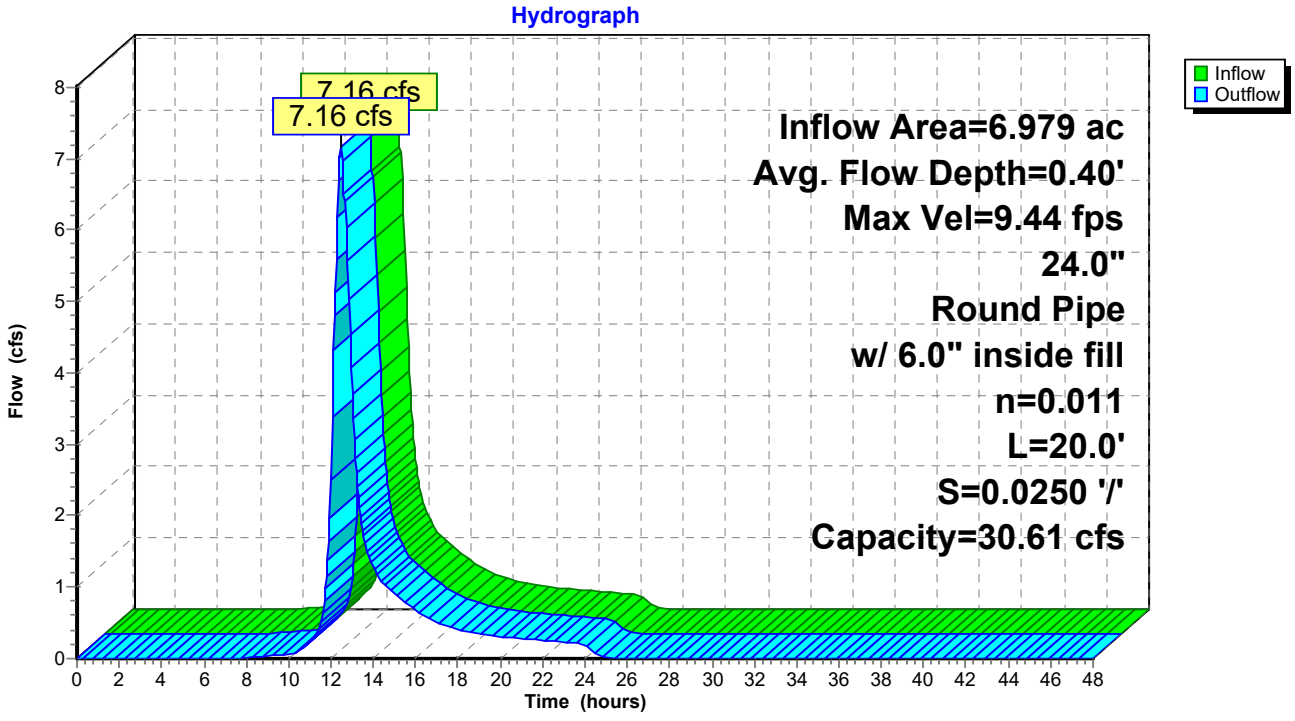
Inflow Area = 6.979 ac, 0.00% Impervious, Inflow Depth = 1.88" for 25-Year event
Inflow = 7.16 cfs @ 12.46 hrs, Volume= 1.094 af
Outflow = 7.16 cfs @ 12.46 hrs, Volume= 1.094 af, Atten= 0%, Lag= 0.1 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 9.44 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.31 fps, Avg. Travel Time= 0.1 min

Peak Storage= 15 cf @ 12.46 hrs
Average Depth at Peak Storage= 0.90' above invert (0.40' above fill)
Bank-Full Depth= 2.00' above invert (1.50' above fill) Flow Area= 2.5 sf, Capacity= 30.61 cfs

24.0" Round Pipe w/ 6.0" inside fill
n= 0.011 Concrete pipe, straight & clean
Length= 20.0' Slope= 0.0250 '/'
Inlet Invert= 395.50', Outlet Invert= 395.00'





Summary for Reach 8R: Lower 24" RCP

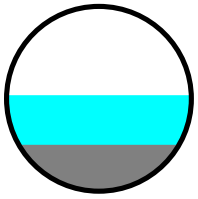
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 11R outlet invert by 0.04' @ 12.20 hrs

Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 2.29" for 25-Year event
Inflow = 10.02 cfs @ 12.20 hrs, Volume= 1.552 af
Outflow = 10.01 cfs @ 12.21 hrs, Volume= 1.552 af, Atten= 0%, Lag= 0.1 min

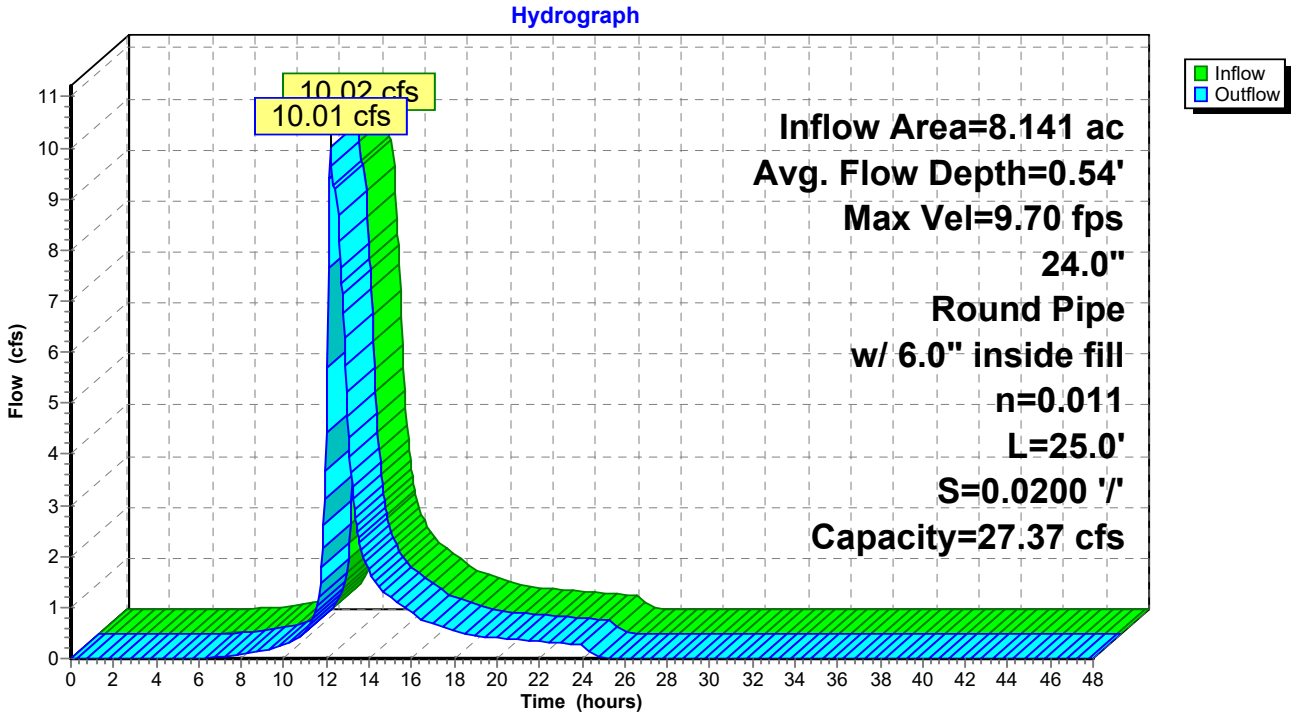
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 9.70 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.32 fps, Avg. Travel Time= 0.1 min

Peak Storage= 26 cf @ 12.21 hrs
Average Depth at Peak Storage= 1.04' above invert (0.54' above fill)
Bank-Full Depth= 2.00' above invert (1.50' above fill) Flow Area= 2.5 sf, Capacity= 27.37 cfs

24.0" Round Pipe w/ 6.0" inside fill
n= 0.011 Concrete pipe, straight & clean
Length= 25.0' Slope= 0.0200 '/'
Inlet Invert= 359.00', Outlet Invert= 358.50'



Reach 8R: Lower 24" RCP



Summary for Reach 11R: swale

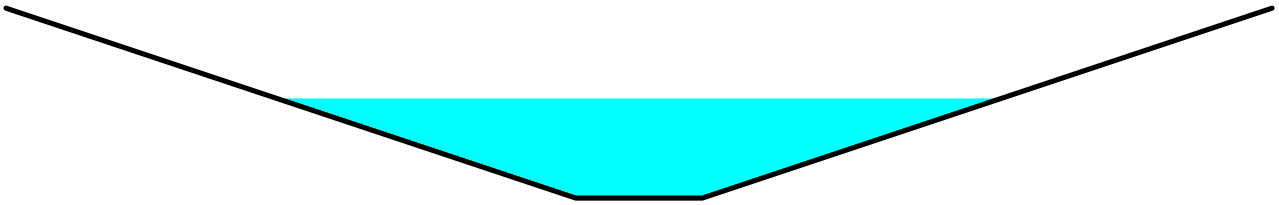
[61] Hint: Exceeded Reach 7R outlet invert by 0.78' @ 12.15 hrs

Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 2.29" for 25-Year event
Inflow = 10.24 cfs @ 12.15 hrs, Volume= 1.552 af
Outflow = 10.02 cfs @ 12.20 hrs, Volume= 1.552 af, Atten= 2%, Lag= 3.5 min

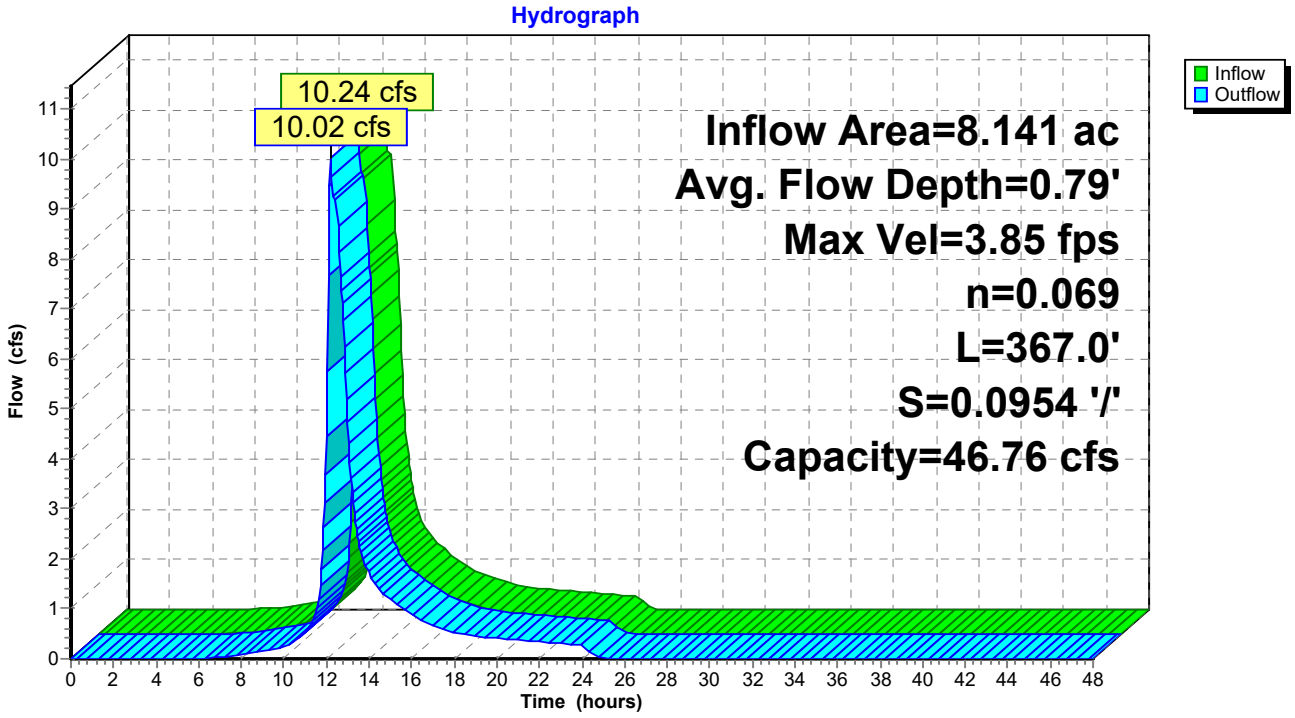
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 3.85 fps, Min. Travel Time= 1.6 min
Avg. Velocity = 1.55 fps, Avg. Travel Time= 3.9 min

Peak Storage= 970 cf @ 12.17 hrs
Average Depth at Peak Storage= 0.79'
Bank-Full Depth= 1.50' Flow Area= 8.3 sf, Capacity= 46.76 cfs

1.00' x 1.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 3.0 '/' Top Width= 10.00'
Length= 367.0' Slope= 0.0954 '/'
Inlet Invert= 395.00', Outlet Invert= 360.00'



Reach 11R: swale



Summary for Pond P-2A: P-2A

Inflow Area = 1.355 ac, 0.00% Impervious, Inflow Depth = 3.17" for 25-Year event
Inflow = 3.27 cfs @ 12.30 hrs, Volume= 0.357 af
Outflow = 1.28 cfs @ 12.76 hrs, Volume= 0.357 af, Atten= 61%, Lag= 27.5 min
Discarded = 0.36 cfs @ 12.76 hrs, Volume= 0.320 af
Primary = 0.92 cfs @ 12.76 hrs, Volume= 0.037 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 419.61' @ 12.76 hrs Surf.Area= 3,128 sf Storage= 5,825 cf

Plug-Flow detention time= 160.4 min calculated for 0.357 af (100% of inflow)
Center-of-Mass det. time= 160.3 min (1,008.0 - 847.7)

Volume	Invert	Avail.Storage	Storage Description
#1	417.00'	7,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

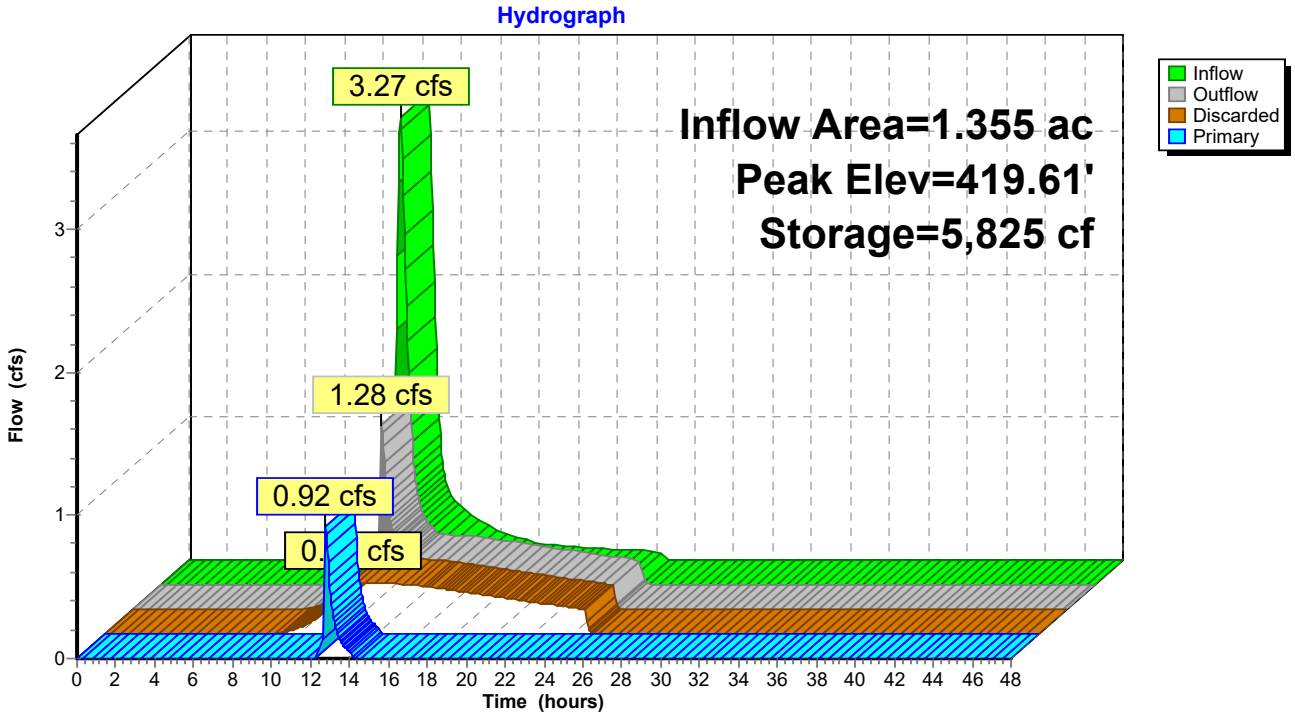
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
417.00	1,405	0	0
418.00	2,018	1,712	1,712
419.00	2,688	2,353	4,065
420.00	3,415	3,052	7,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	417.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	419.50'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.36 cfs @ 12.76 hrs HW=419.60' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.36 cfs)

Primary OutFlow Max=0.90 cfs @ 12.76 hrs HW=419.60' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 0.90 cfs @ 0.86 fps)

Pond P-2A: P-2A


Hydrograph
3.27 cfs
1.28 cfs
0.92 cfs
0. cfs
Inflow Area=1.355 ac
Peak Elev=419.61'
Storage=5,825 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
1
2
3
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Pond P-2B: P-2B

Inflow Area = 0.742 ac, 0.00% Impervious, Inflow Depth = 3.27" for 25-Year event
Inflow = 2.31 cfs @ 12.17 hrs, Volume= 0.202 af
Outflow = 0.28 cfs @ 13.16 hrs, Volume= 0.202 af, Atten= 88%, Lag= 59.1 min
Discarded = 0.28 cfs @ 13.16 hrs, Volume= 0.202 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 413.92' @ 13.16 hrs Surf.Area= 2,383 sf Storage= 3,533 cf

Plug-Flow detention time= 128.9 min calculated for 0.202 af (100% of inflow)
Center-of-Mass det. time= 128.9 min (965.5 - 836.6)

Volume	Invert	Avail.Storage	Storage Description
#1	412.00'	6,481 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

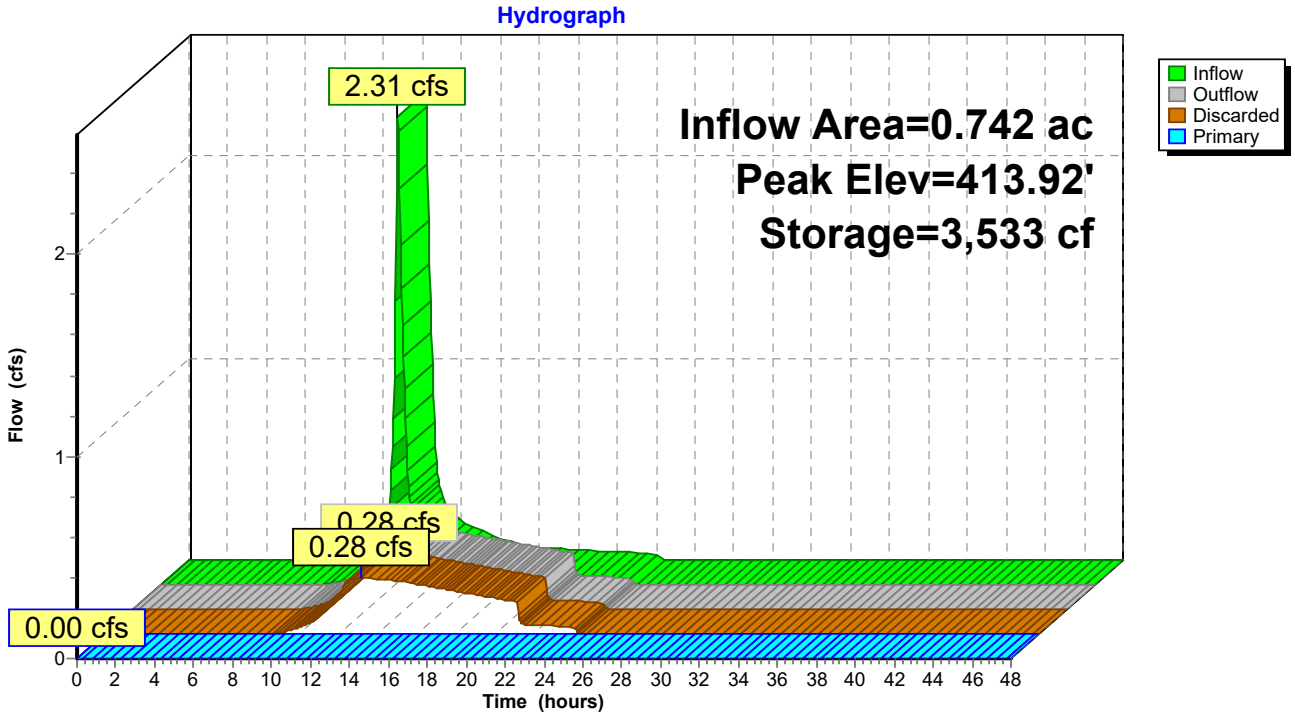
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
412.00	1,330	0	0
413.00	1,852	1,591	1,591
414.00	2,431	2,142	3,733
415.00	3,065	2,748	6,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	412.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	414.50'	**10.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.28 cfs @ 13.16 hrs HW=413.92' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.28 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=412.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P-2B: P-2B

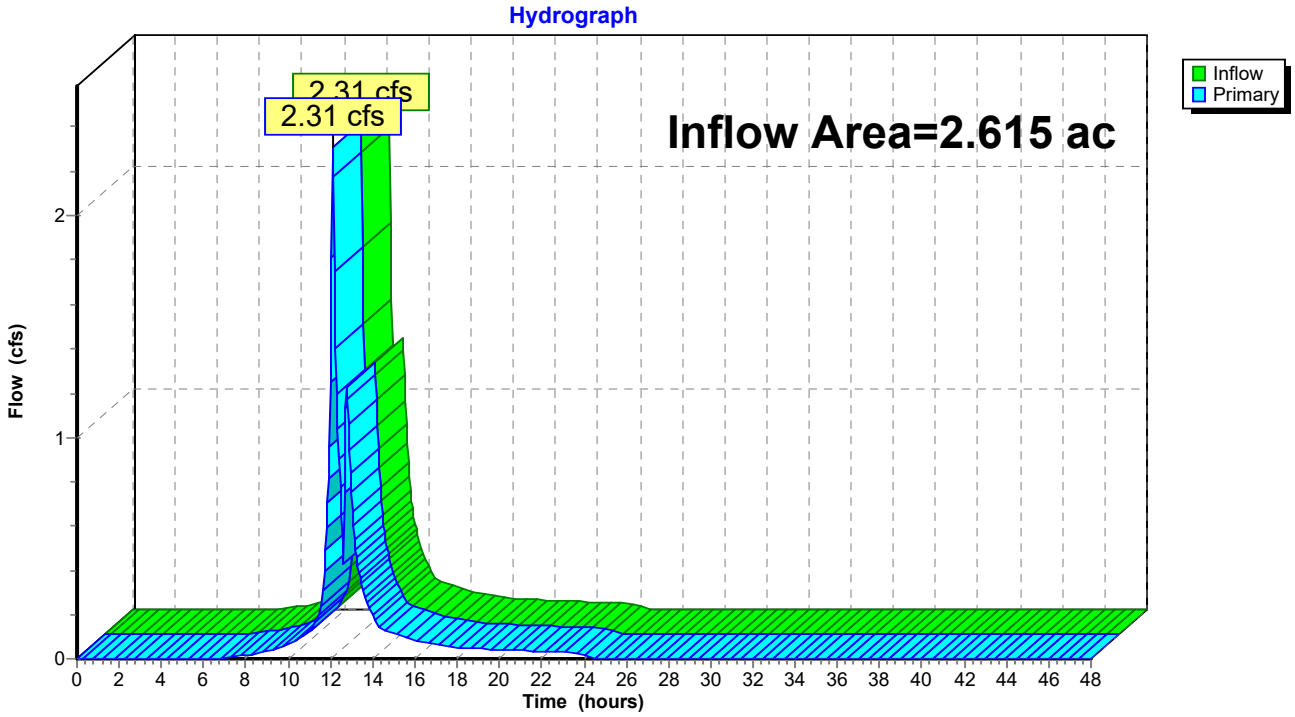

Hydrograph
Inflow
Outflow
Discarded
Primary
2.31 cfs
0.28 cfs
0.28 cfs
0.00 cfs
Inflow Area=0.742 ac
Peak Elev=413.92'
Storage=3,533 cf
Flow (cfs)
0
1
2
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Link 2L: AP-2

Inflow Area = 2.615 ac, 0.00% Impervious, Inflow Depth = 1.00" for 25-Year event
Inflow = 2.31 cfs @ 12.12 hrs, Volume= 0.218 af
Primary = 2.31 cfs @ 12.12 hrs, Volume= 0.218 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

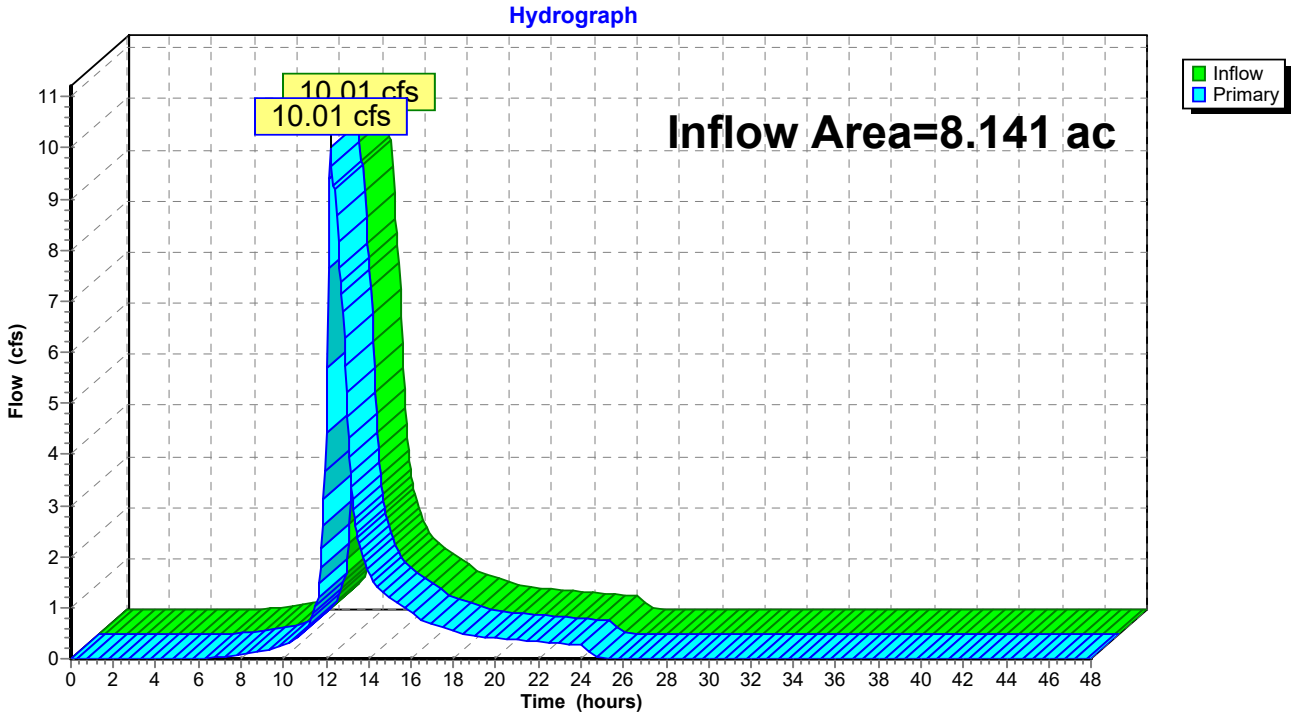


Summary for Link 10L: EX. CB

Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 2.29" for 25-Year event
Inflow = 10.01 cfs @ 12.21 hrs, Volume= 1.552 af
Primary = 10.01 cfs @ 12.21 hrs, Volume= 1.552 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 10L: EX. CB



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 5S: PDA-WETLAND Runoff Area=190,126 sf 0.00% Impervious Runoff Depth=3.02"
Flow Length=802' Tc=33.3 min CN=63 Runoff=8.18 cfs 1.099 af

Subcatchment 9S: PDA-DRIVE Runoff Area=50,618 sf 0.00% Impervious Runoff Depth=5.52"
Flow Length=546' Tc=9.0 min CN=86 Runoff=6.48 cfs 0.535 af

Subcatchment PDA-2A: PDA-2A Runoff Area=59,006 sf 0.00% Impervious Runoff Depth=3.86"
Flow Length=275' Tc=21.5 min CN=71 Runoff=4.00 cfs 0.436 af

Subcatchment PDA-2B: PDA-2B Runoff Area=32,304 sf 0.00% Impervious Runoff Depth=3.97"
Flow Length=219' Tc=12.0 min CN=72 Runoff=2.82 cfs 0.245 af

Subcatchment PDA-2C: PDA-2C Runoff Area=22,584 sf 0.00% Impervious Runoff Depth=4.95"
Flow Length=346' Tc=8.2 min CN=81 Runoff=2.72 cfs 0.214 af

Reach 7R: Upper 24" RCP Avg. Flow Depth=0.52' Max Vel=10.70 fps Inflow=10.72 cfs 1.402 af
24.0" Round Pipe w/ 6.0" inside fill n=0.011 L=20.0' S=0.0250 '/' Capacity=30.61 cfs Outflow=10.72 cfs 1.402 af

Reach 8R: Lower 24" RCP Avg. Flow Depth=0.61' Max Vel=10.26 fps Inflow=12.18 cfs 1.936 af
24.0" Round Pipe w/ 6.0" inside fill n=0.011 L=25.0' S=0.0200 '/' Capacity=27.37 cfs Outflow=12.17 cfs 1.936 af

Reach 11R: swale Avg. Flow Depth=0.85' Max Vel=4.05 fps Inflow=12.37 cfs 1.936 af
n=0.069 L=367.0' S=0.0954 '/' Capacity=46.76 cfs Outflow=12.18 cfs 1.936 af

Pond P-2A: P-2A Peak Elev=419.69' Storage=6,077 cf Inflow=4.00 cfs 0.436 af
Discarded=0.37 cfs 0.347 af Primary=2.14 cfs 0.089 af Outflow=2.51 cfs 0.436 af

Pond P-2B: P-2B Peak Elev=414.31' Storage=4,512 cf Inflow=2.82 cfs 0.245 af
Discarded=0.30 cfs 0.245 af Primary=0.00 cfs 0.000 af Outflow=0.30 cfs 0.245 af

Link 2L: AP-2 Inflow=2.75 cfs 0.303 af
Primary=2.75 cfs 0.303 af

Link 10L: EX. CB Inflow=12.17 cfs 1.936 af
Primary=12.17 cfs 1.936 af

Total Runoff Area = 8.141 ac Runoff Volume = 2.528 af Average Runoff Depth = 3.73"
100.00% Pervious = 8.141 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 5S: PDA-WETLAND

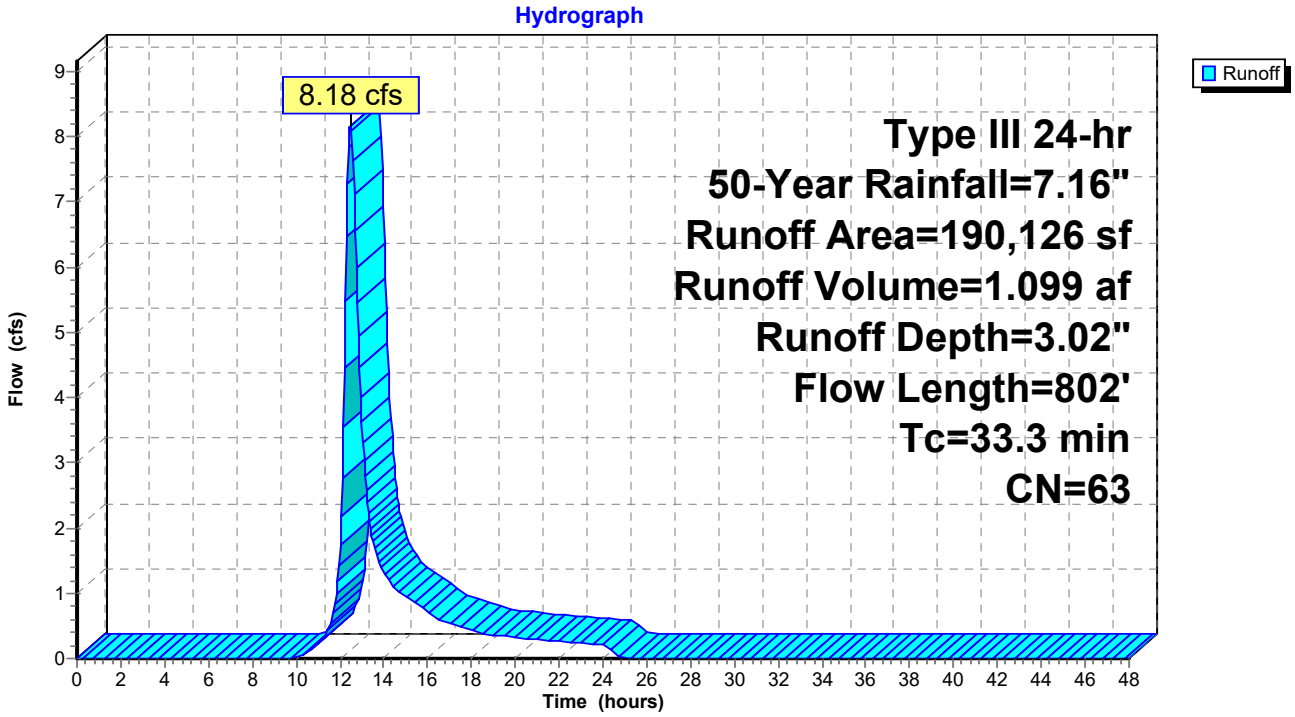
Runoff = 8.18 cfs @ 12.48 hrs, Volume= 1.099 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
119,727	55	Woods, Good, HSG B
67,409	77	Woods, Good, HSG D
2,990	89	Dirt roads, HSG D
190,126	63	Weighted Average
190,126		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	100	0.0250	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
10.6	452	0.0203	0.71		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.1	77	0.0519	1.14		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
1.4	82	0.0366	0.96		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
1.1	91	0.0769	1.39		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
33.3	802	Total			

Subcatchment 5S: PDA-WETLAND



Summary for Subcatchment 9S: PDA-DRIVE

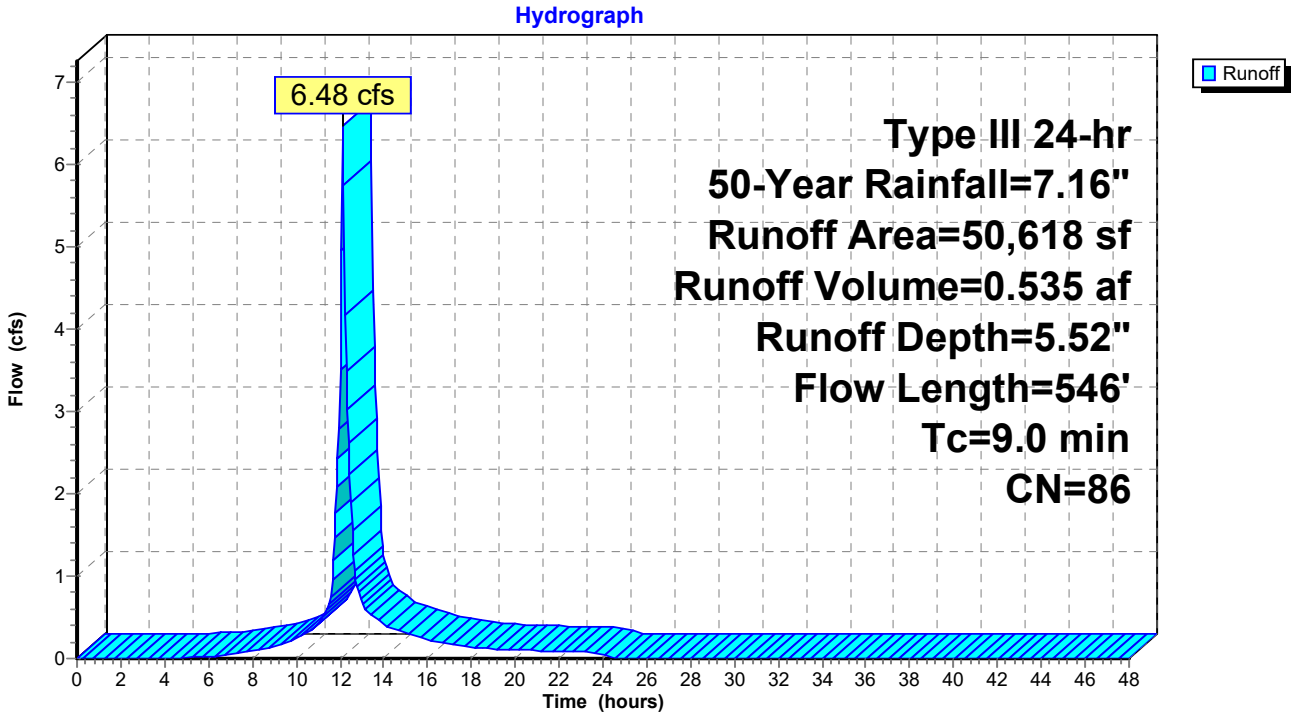
Runoff = 6.48 cfs @ 12.12 hrs, Volume= 0.535 af, Depth= 5.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
10,945	77	Woods, Good, HSG D
6,876	96	Gravel surface, HSG D
2,714	78	Meadow, non-grazed, HSG D
26,943	89	Dirt roads, HSG D
2,723	82	Dirt roads, HSG B
417	96	Gravel surface, HSG B
50,618	86	Weighted Average
50,618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
0.4	50	0.1700	2.06		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.8	87	0.0690	1.84		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
0.0	15	0.4000	10.18		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
0.1	36	0.1700	6.64		**Shallow Concentrated Flow, E-F** Unpaved Kv= 16.1 fps
0.5	258	0.0954	9.49	77.85	**Channel Flow, F-G** Area= 8.2 sf Perim= 10.5' r= 0.78' n= 0.041 Riprap, 2-inch
9.0	546	Total			

Subcatchment 9S: PDA-DRIVE



Summary for Subcatchment PDA-2A: PDA-2A

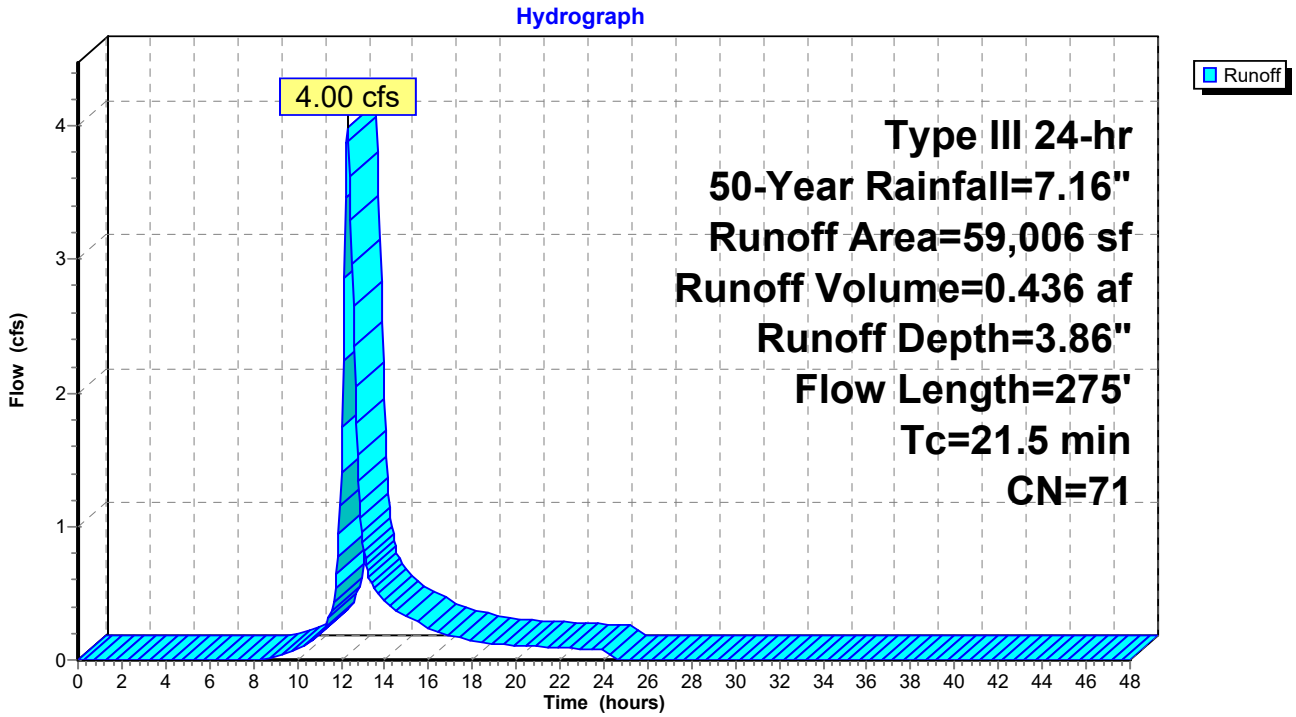
Runoff = 4.00 cfs @ 12.30 hrs, Volume= 0.436 af, Depth= 3.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
39,007	71	Meadow, non-grazed, HSG C
16,039	78	Meadow, non-grazed, HSG D
3,960	48	Brush, Good, HSG B
59,006	71	Weighted Average
59,006		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
16.0	70	0.0069	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
2.9	175	0.0211	1.02		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
21.5	275	Total			

Subcatchment PDA-2A: PDA-2A



Summary for Subcatchment PDA-2B: PDA-2B

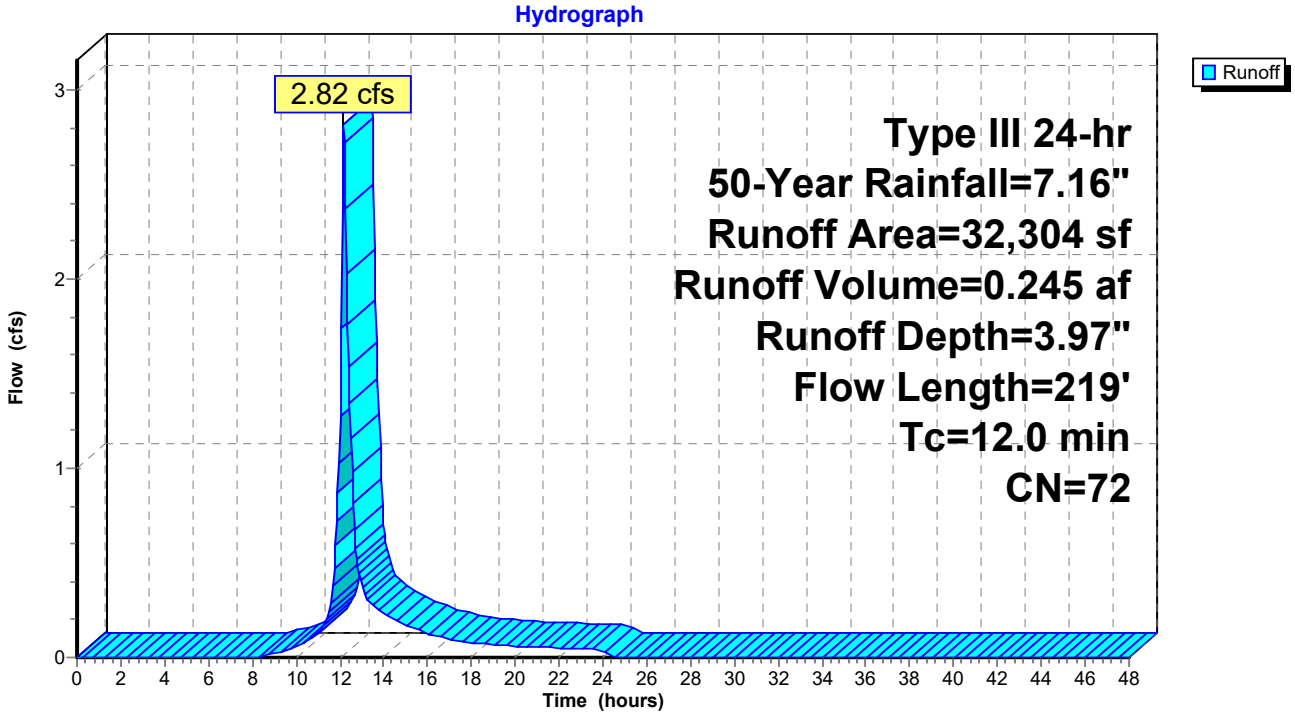
Runoff = 2.82 cfs @ 12.17 hrs, Volume= 0.245 af, Depth= 3.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
12,043	71	Meadow, non-grazed, HSG C
16,171	78	Meadow, non-grazed, HSG D
4,020	48	Brush, Good, HSG B
70	73	Brush, Good, HSG D
32,304	72	Weighted Average
32,304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
8.3	70	0.0357	0.14		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.1	119	0.0630	1.76		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
12.0	219	Total			

Subcatchment PDA-2B: PDA-2B



Summary for Subcatchment PDA-2C: PDA-2C

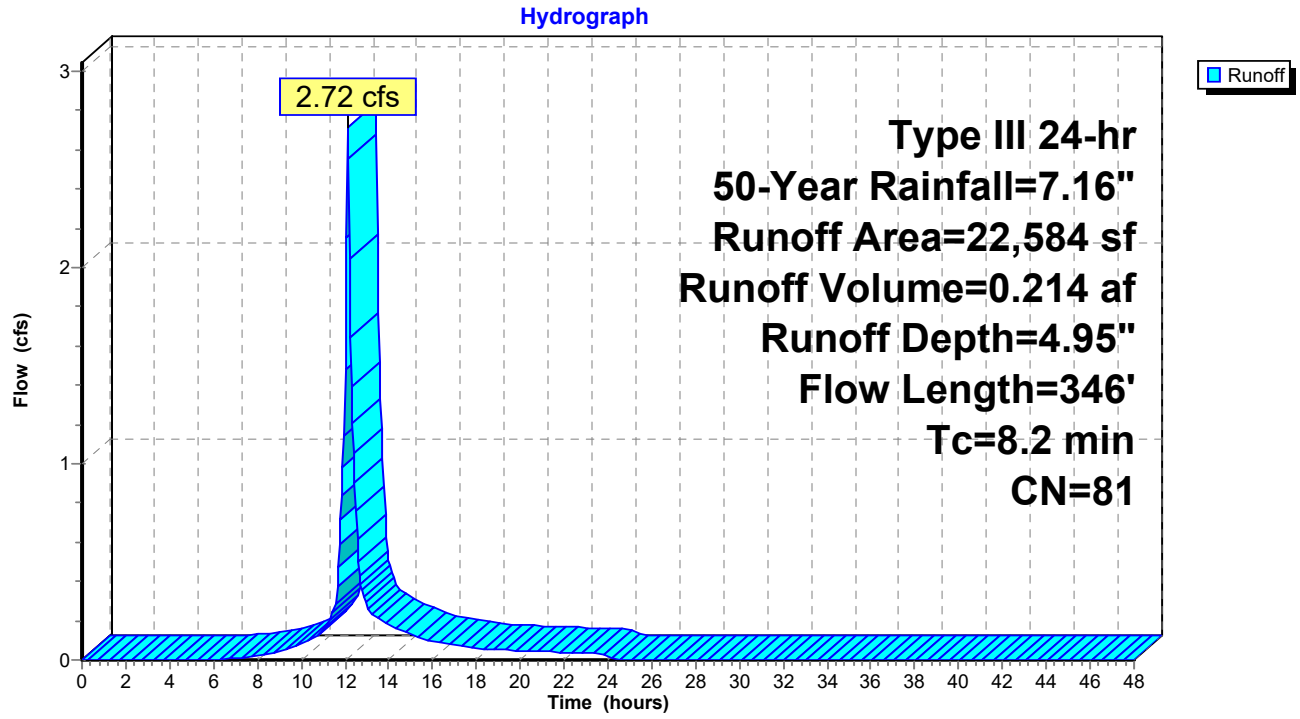
Runoff = 2.72 cfs @ 12.12 hrs, Volume= 0.214 af, Depth= 4.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-Year Rainfall=7.16"

Area (sf)	CN	Description
1,977	77	Woods, Good, HSG D
3,486	96	Gravel surface, HSG D
17,121	78	Meadow, non-grazed, HSG D
22,584	81	Weighted Average
22,584		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
1.3	146	0.0684	1.83		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0854	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
8.2	346	Total			

Subcatchment PDA-2C: PDA-2C



Summary for Reach 7R: Upper 24" RCP

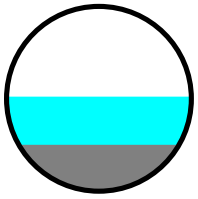
[52] Hint: Inlet/Outlet conditions not evaluated
[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 6.979 ac, 0.00% Impervious, Inflow Depth = 2.41" for 50-Year event
Inflow = 10.72 cfs @ 12.54 hrs, Volume= 1.402 af
Outflow = 10.72 cfs @ 12.54 hrs, Volume= 1.402 af, Atten= 0%, Lag= 0.1 min

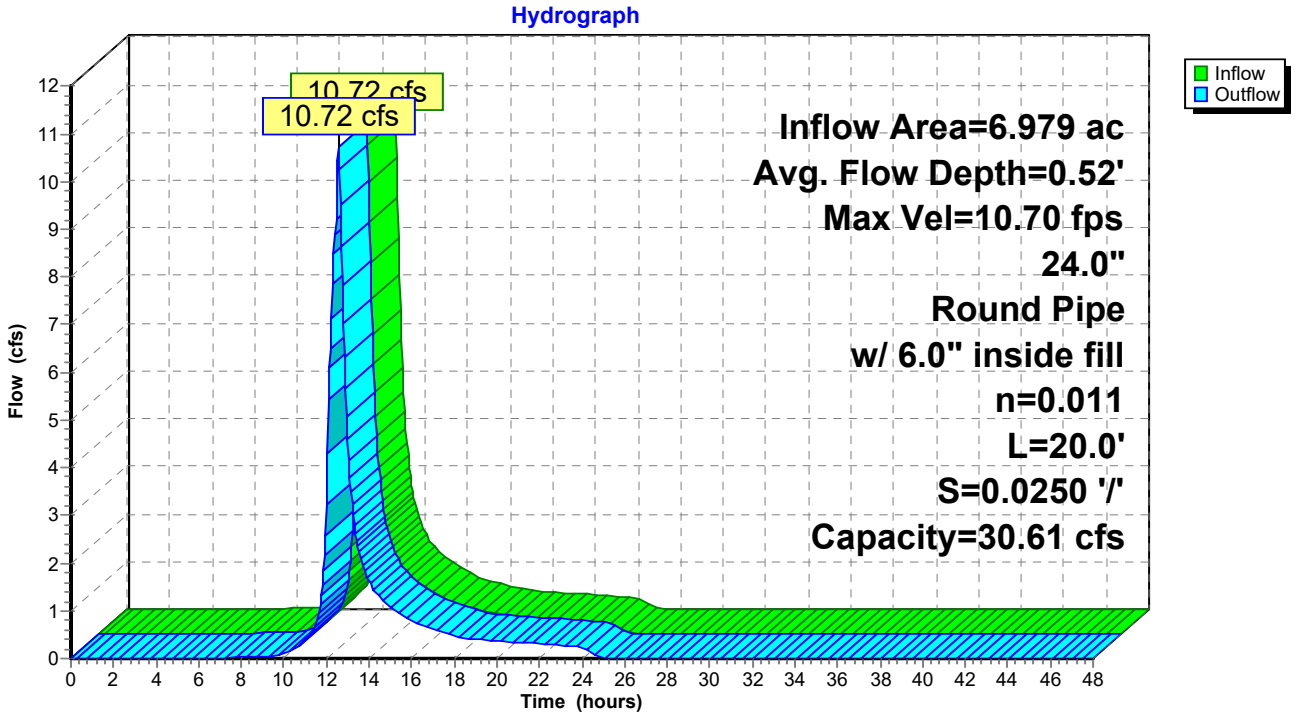
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 10.70 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.51 fps, Avg. Travel Time= 0.1 min

Peak Storage= 20 cf @ 12.54 hrs
Average Depth at Peak Storage= 1.02' above invert (0.52' above fill)
Bank-Full Depth= 2.00' above invert (1.50' above fill) Flow Area= 2.5 sf, Capacity= 30.61 cfs

24.0" Round Pipe w/ 6.0" inside fill
n= 0.011 Concrete pipe, straight & clean
Length= 20.0' Slope= 0.0250 '/'
Inlet Invert= 395.50', Outlet Invert= 395.00'



Reach 7R: Upper 24" RCP



Summary for Reach 8R: Lower 24" RCP

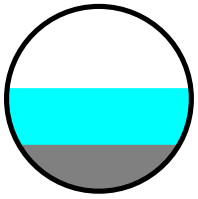
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 11R outlet invert by 0.11' @ 12.55 hrs

Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 2.85" for 50-Year event
Inflow = 12.18 cfs @ 12.57 hrs, Volume= 1.936 af
Outflow = 12.17 cfs @ 12.57 hrs, Volume= 1.936 af, Atten= 0%, Lag= 0.1 min

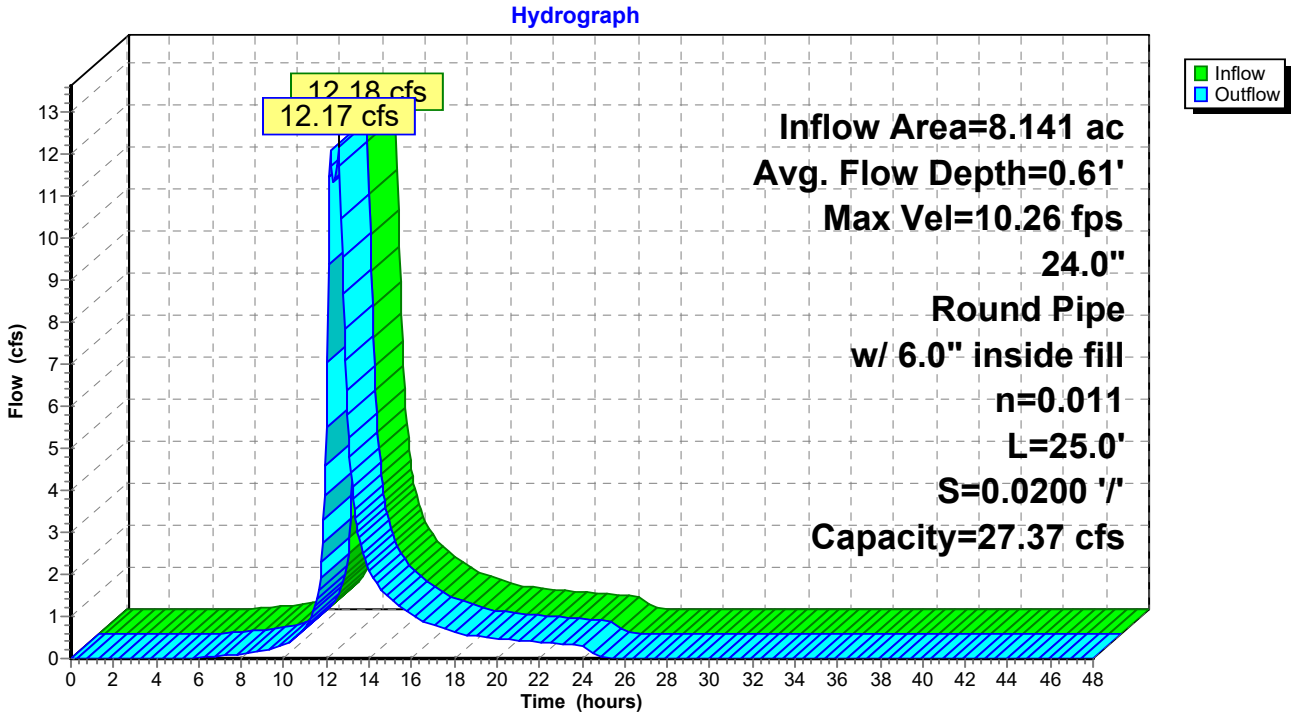
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 10.26 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.51 fps, Avg. Travel Time= 0.1 min

Peak Storage= 30 cf @ 12.57 hrs
Average Depth at Peak Storage= 1.11' above invert (0.61' above fill)
Bank-Full Depth= 2.00' above invert (1.50' above fill) Flow Area= 2.5 sf, Capacity= 27.37 cfs

24.0" Round Pipe w/ 6.0" inside fill
n= 0.011 Concrete pipe, straight & clean
Length= 25.0' Slope= 0.0200 '/'
Inlet Invert= 359.00', Outlet Invert= 358.50'



Reach 8R: Lower 24" RCP



Summary for Reach 11R: swale

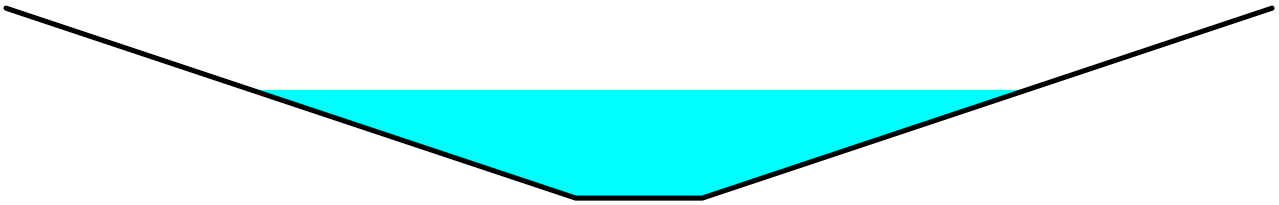
[61] Hint: Exceeded Reach 7R outlet invert by 0.85' @ 12.55 hrs

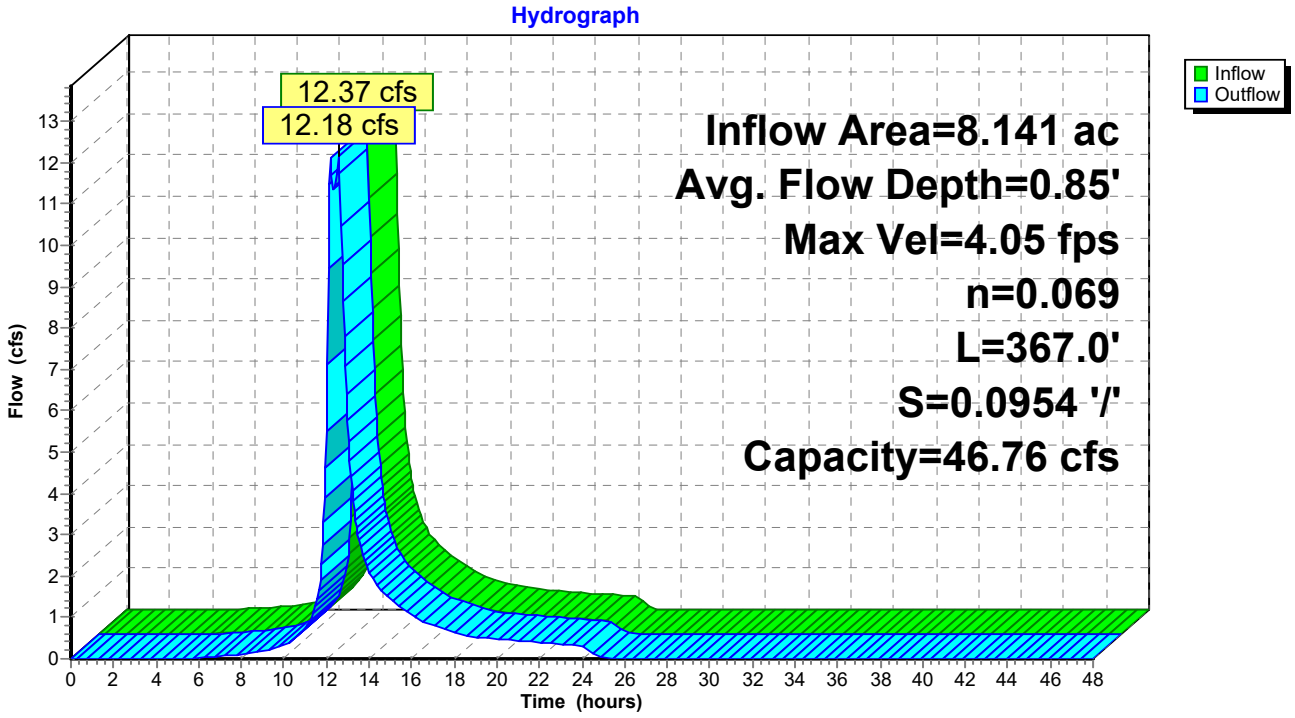
Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 2.85" for 50-Year event
Inflow = 12.37 cfs @ 12.15 hrs, Volume= 1.936 af
Outflow = 12.18 cfs @ 12.57 hrs, Volume= 1.936 af, Atten= 2%, Lag= 25.2 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.05 fps, Min. Travel Time= 1.5 min
Avg. Velocity = 1.62 fps, Avg. Travel Time= 3.8 min

Peak Storage= 1,118 cf @ 12.55 hrs
Average Depth at Peak Storage= 0.85'
Bank-Full Depth= 1.50' Flow Area= 8.3 sf, Capacity= 46.76 cfs

1.00' x 1.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 3.0 '/' Top Width= 10.00'
Length= 367.0' Slope= 0.0954 '/'
Inlet Invert= 395.00', Outlet Invert= 360.00'





Summary for Pond P-2A: P-2A

Inflow Area = 1.355 ac, 0.00% Impervious, Inflow Depth = 3.86" for 50-Year event
Inflow = 4.00 cfs @ 12.30 hrs, Volume= 0.436 af
Outflow = 2.51 cfs @ 12.58 hrs, Volume= 0.436 af, Atten= 37%, Lag= 16.7 min
Discarded = 0.37 cfs @ 12.58 hrs, Volume= 0.347 af
Primary = 2.14 cfs @ 12.58 hrs, Volume= 0.089 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 419.69' @ 12.58 hrs Surf.Area= 3,186 sf Storage= 6,077 cf

Plug-Flow detention time= 145.8 min calculated for 0.435 af (100% of inflow)
Center-of-Mass det. time= 145.7 min (987.7 - 842.0)

Volume	Invert	Avail.Storage	Storage Description
#1	417.00'	7,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

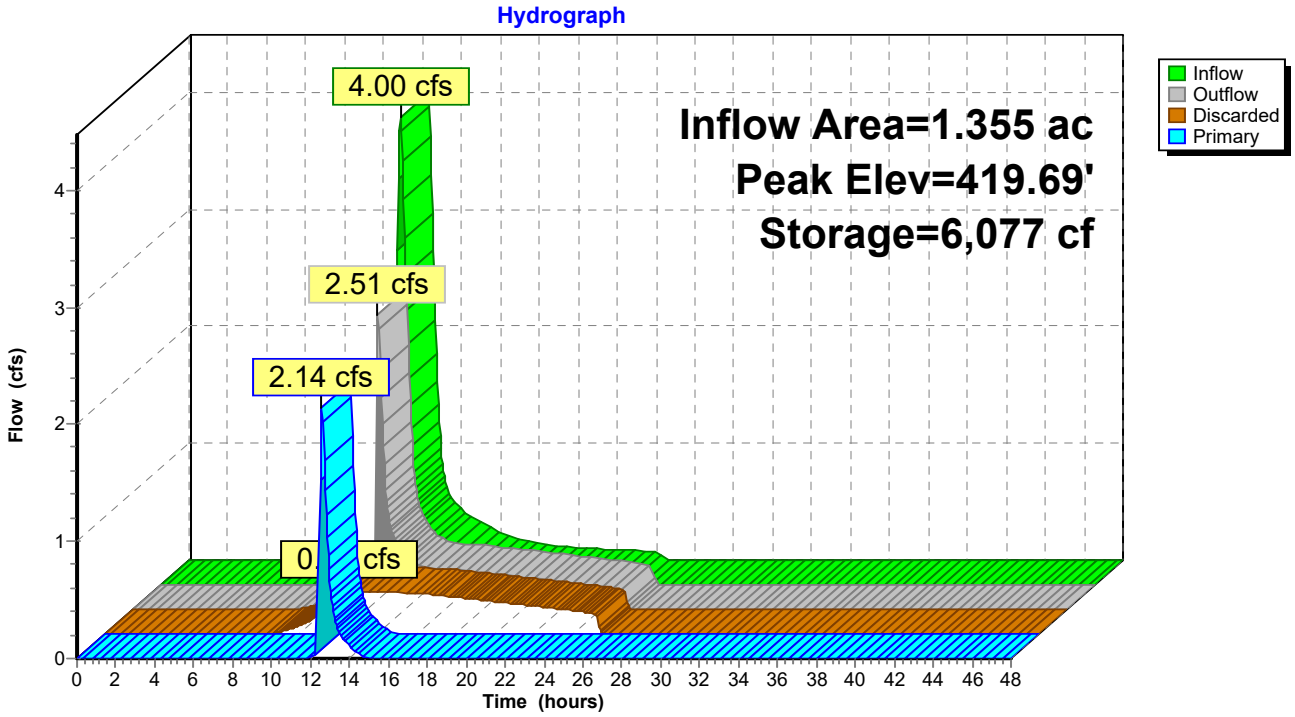
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
417.00	1,405	0	0
418.00	2,018	1,712	1,712
419.00	2,688	2,353	4,065
420.00	3,415	3,052	7,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	417.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	419.50'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.37 cfs @ 12.58 hrs HW=419.68' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.37 cfs)

Primary OutFlow Max=2.11 cfs @ 12.58 hrs HW=419.68' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 2.11 cfs @ 1.15 fps)

Pond P-2A: P-2A


Hydrograph
Inflow
Outflow
Discarded
Primary
4.00 cfs
2.51 cfs
2.14 cfs
0 cfs
Inflow Area=1.355 ac
Peak Elev=419.69'
Storage=6,077 cf
Flow (cfs)
Time (hours)
0 1 2 3 4
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Pond P-2B: P-2B

Inflow Area = 0.742 ac, 0.00% Impervious, Inflow Depth = 3.97" for 50-Year event
Inflow = 2.82 cfs @ 12.17 hrs, Volume= 0.245 af
Outflow = 0.30 cfs @ 13.27 hrs, Volume= 0.245 af, Atten= 89%, Lag= 66.3 min
Discarded = 0.30 cfs @ 13.27 hrs, Volume= 0.245 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 414.31' @ 13.27 hrs Surf.Area= 2,626 sf Storage= 4,512 cf

Plug-Flow detention time= 155.3 min calculated for 0.245 af (100% of inflow)
Center-of-Mass det. time= 155.2 min (986.2 - 831.0)

Volume	Invert	Avail.Storage	Storage Description
#1	412.00'	6,481 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

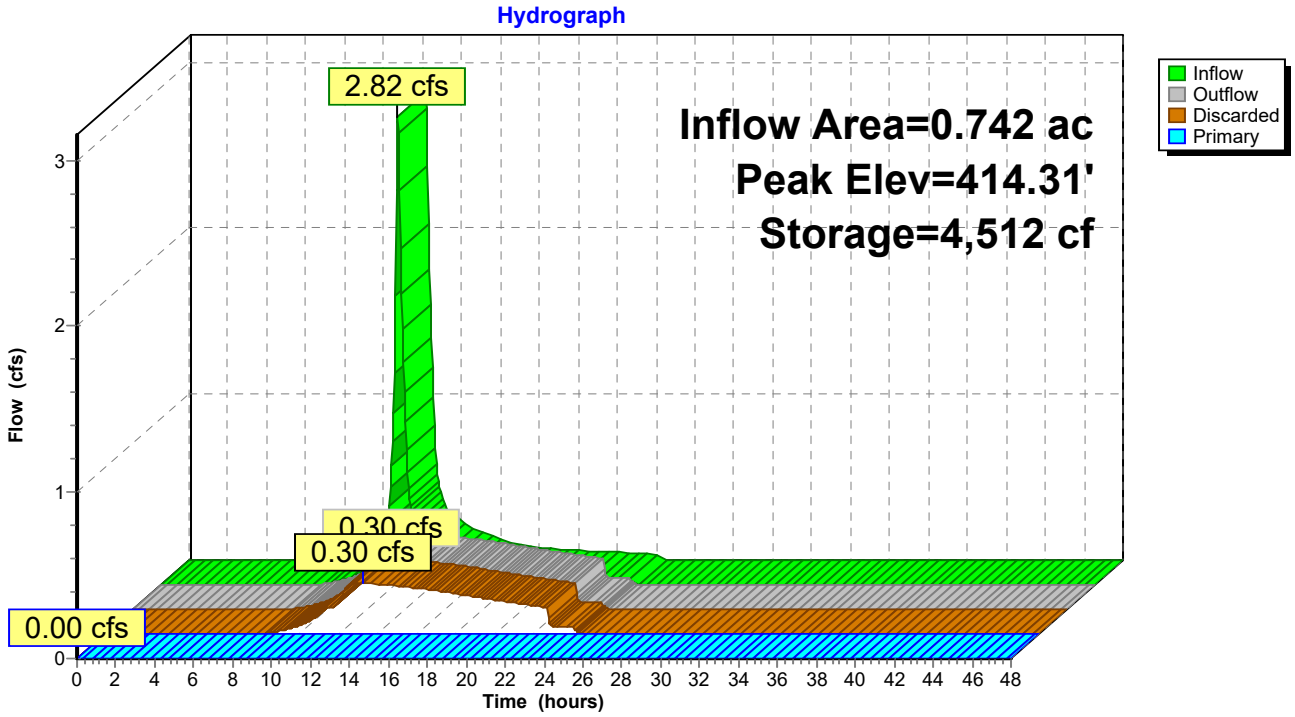
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
412.00	1,330	0	0
413.00	1,852	1,591	1,591
414.00	2,431	2,142	3,733
415.00	3,065	2,748	6,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	412.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	414.50'	**10.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.30 cfs @ 13.27 hrs HW=414.31' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.30 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=412.00' (Free Discharge)
2=Broad-Crested Rectangular Weir (Controls 0.00 cfs)

Pond P-2B: P-2B

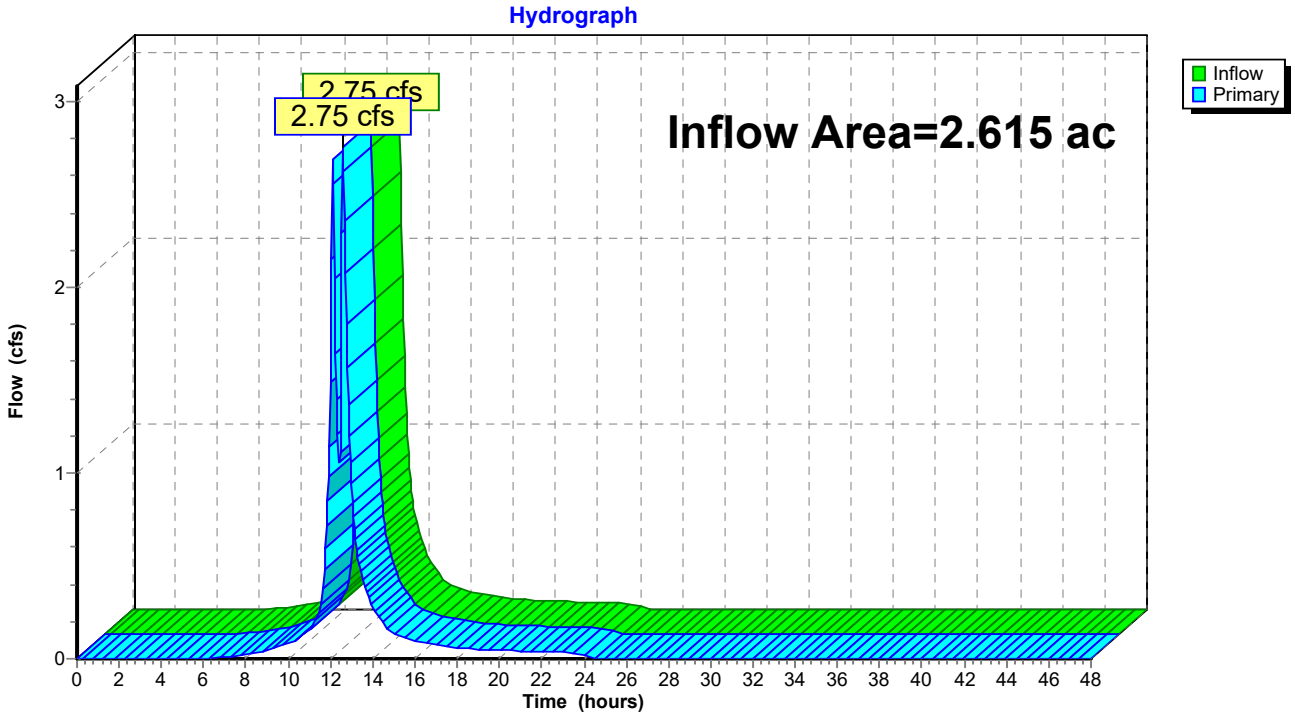

Hydrograph
Inflow
Outflow
Discarded
Primary
2.82 cfs
0.30 cfs
0.30 cfs
0.00 cfs
Inflow Area=0.742 ac
Peak Elev=414.31'
Storage=4,512 cf
Flow (cfs)
Time (hours)
0
1
2
3
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48

Summary for Link 2L: AP-2

Inflow Area = 2.615 ac, 0.00% Impervious, Inflow Depth = 1.39" for 50-Year event
Inflow = 2.75 cfs @ 12.57 hrs, Volume= 0.303 af
Primary = 2.75 cfs @ 12.57 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

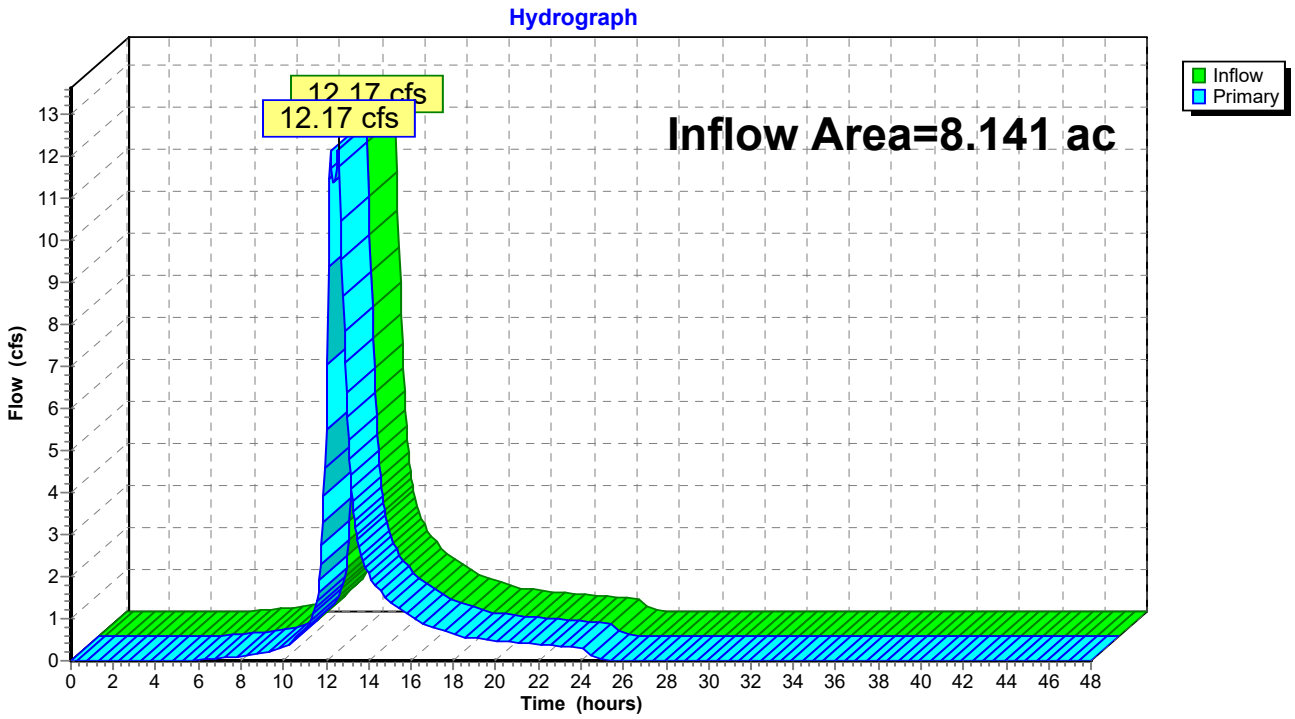


Summary for Link 10L: EX. CB

Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 2.85" for 50-Year event
Inflow = 12.17 cfs @ 12.57 hrs, Volume= 1.936 af
Primary = 12.17 cfs @ 12.57 hrs, Volume= 1.936 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 10L: EX. CB



Time span=0.00-48.00 hrs, dt=0.05 hrs, 961 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment 5S: PDA-WETLAND Runoff Area=190,126 sf 0.00% Impervious Runoff Depth=3.72"
Flow Length=802' Tc=33.3 min CN=63 Runoff=10.16 cfs 1.354 af

Subcatchment 9S: PDA-DRIVE Runoff Area=50,618 sf 0.00% Impervious Runoff Depth=6.40"
Flow Length=546' Tc=9.0 min CN=86 Runoff=7.45 cfs 0.620 af

Subcatchment PDA-2A: PDA-2A Runoff Area=59,006 sf 0.00% Impervious Runoff Depth=4.64"
Flow Length=275' Tc=21.5 min CN=71 Runoff=4.81 cfs 0.524 af

Subcatchment PDA-2B: PDA-2B Runoff Area=32,304 sf 0.00% Impervious Runoff Depth=4.76"
Flow Length=219' Tc=12.0 min CN=72 Runoff=3.38 cfs 0.294 af

Subcatchment PDA-2C: PDA-2C Runoff Area=22,584 sf 0.00% Impervious Runoff Depth=5.81"
Flow Length=346' Tc=8.2 min CN=81 Runoff=3.17 cfs 0.251 af

Reach 7R: Upper 24" RCP Avg. Flow Depth=0.65' Max Vel=11.71 fps Inflow=14.64 cfs 1.772 af
24.0" Round Pipe w/ 6.0" inside fill n=0.011 L=20.0' S=0.0250 '/' Capacity=30.61 cfs Outflow=14.65 cfs 1.772 af

Reach 8R: Lower 24" RCP Avg. Flow Depth=0.78' Max Vel=11.23 fps Inflow=16.91 cfs 2.392 af
24.0" Round Pipe w/ 6.0" inside fill n=0.011 L=25.0' S=0.0200 '/' Capacity=27.37 cfs Outflow=16.91 cfs 2.392 af

Reach 11R: swale Avg. Flow Depth=0.98' Max Vel=4.40 fps Inflow=17.14 cfs 2.392 af
n=0.069 L=367.0' S=0.0954 '/' Capacity=46.76 cfs Outflow=16.91 cfs 2.392 af

Pond P-2A: P-2A Peak Elev=419.76' Storage=6,308 cf Inflow=4.81 cfs 0.524 af
Discarded=0.37 cfs 0.372 af Primary=3.50 cfs 0.152 af Outflow=3.87 cfs 0.524 af

Pond P-2B: P-2B Peak Elev=414.56' Storage=5,202 cf Inflow=3.38 cfs 0.294 af
Discarded=0.32 cfs 0.279 af Primary=0.43 cfs 0.015 af Outflow=0.76 cfs 0.294 af

Link 2L: AP-2 Inflow=4.48 cfs 0.418 af
Primary=4.48 cfs 0.418 af

Link 10L: EX. CB Inflow=16.91 cfs 2.392 af
Primary=16.91 cfs 2.392 af

Total Runoff Area = 8.141 ac Runoff Volume = 3.043 af Average Runoff Depth = 4.48"
100.00% Pervious = 8.141 ac 0.00% Impervious = 0.000 ac

Summary for Subcatchment 5S: PDA-WETLAND

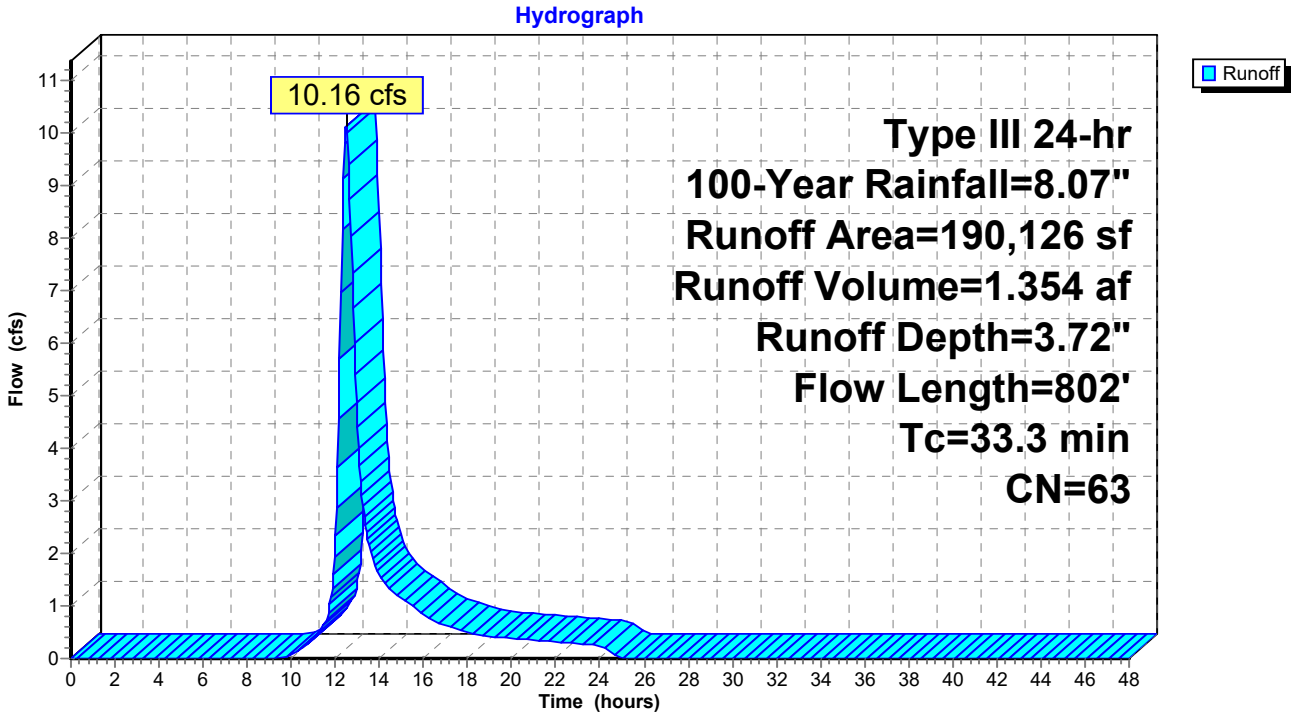
Runoff = 10.16 cfs @ 12.48 hrs, Volume= 1.354 af, Depth= 3.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
119,727	55	Woods, Good, HSG B
67,409	77	Woods, Good, HSG D
2,990	89	Dirt roads, HSG D
190,126	63	Weighted Average
190,126		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.1	100	0.0250	0.09		**Sheet Flow, A-B** Woods: Light underbrush n= 0.400 P2= 3.39"
10.6	452	0.0203	0.71		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
1.1	77	0.0519	1.14		**Shallow Concentrated Flow, C-D** Woodland Kv= 5.0 fps
1.4	82	0.0366	0.96		**Shallow Concentrated Flow, D-E** Woodland Kv= 5.0 fps
1.1	91	0.0769	1.39		**Shallow Concentrated Flow, E-F** Woodland Kv= 5.0 fps
33.3	802	Total			

Subcatchment 5S: PDA-WETLAND



Summary for Subcatchment 9S: PDA-DRIVE

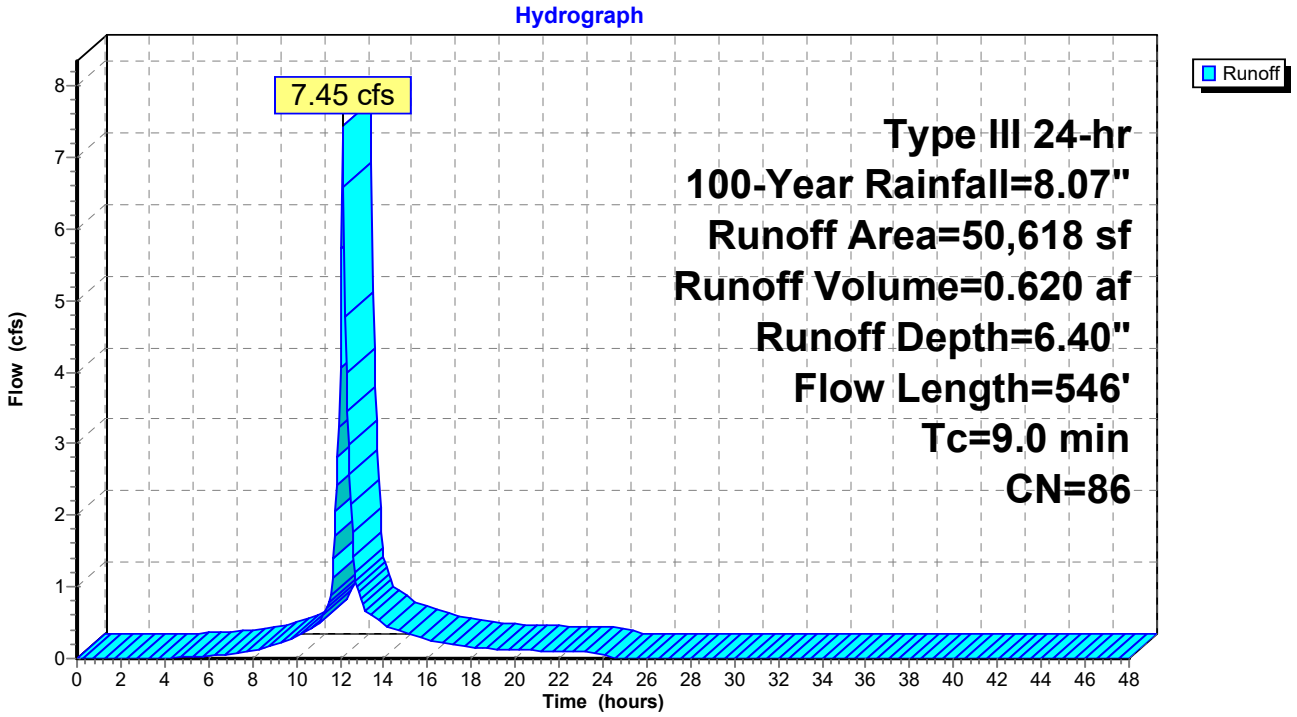
Runoff = 7.45 cfs @ 12.12 hrs, Volume= 0.620 af, Depth= 6.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
10,945	77	Woods, Good, HSG D
6,876	96	Gravel surface, HSG D
2,714	78	Meadow, non-grazed, HSG D
26,943	89	Dirt roads, HSG D
2,723	82	Dirt roads, HSG B
417	96	Gravel surface, HSG B
50,618	86	Weighted Average
50,618		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	100	0.0400	0.23		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
0.4	50	0.1700	2.06		**Shallow Concentrated Flow, B-C** Woodland Kv= 5.0 fps
0.8	87	0.0690	1.84		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
0.0	15	0.4000	10.18		**Shallow Concentrated Flow, D-E** Unpaved Kv= 16.1 fps
0.1	36	0.1700	6.64		**Shallow Concentrated Flow, E-F** Unpaved Kv= 16.1 fps
0.5	258	0.0954	9.49	77.85	**Channel Flow, F-G** Area= 8.2 sf Perim= 10.5' r= 0.78' n= 0.041 Riprap, 2-inch
9.0	546	Total			

Subcatchment 9S: PDA-DRIVE



Summary for Subcatchment PDA-2A: PDA-2A

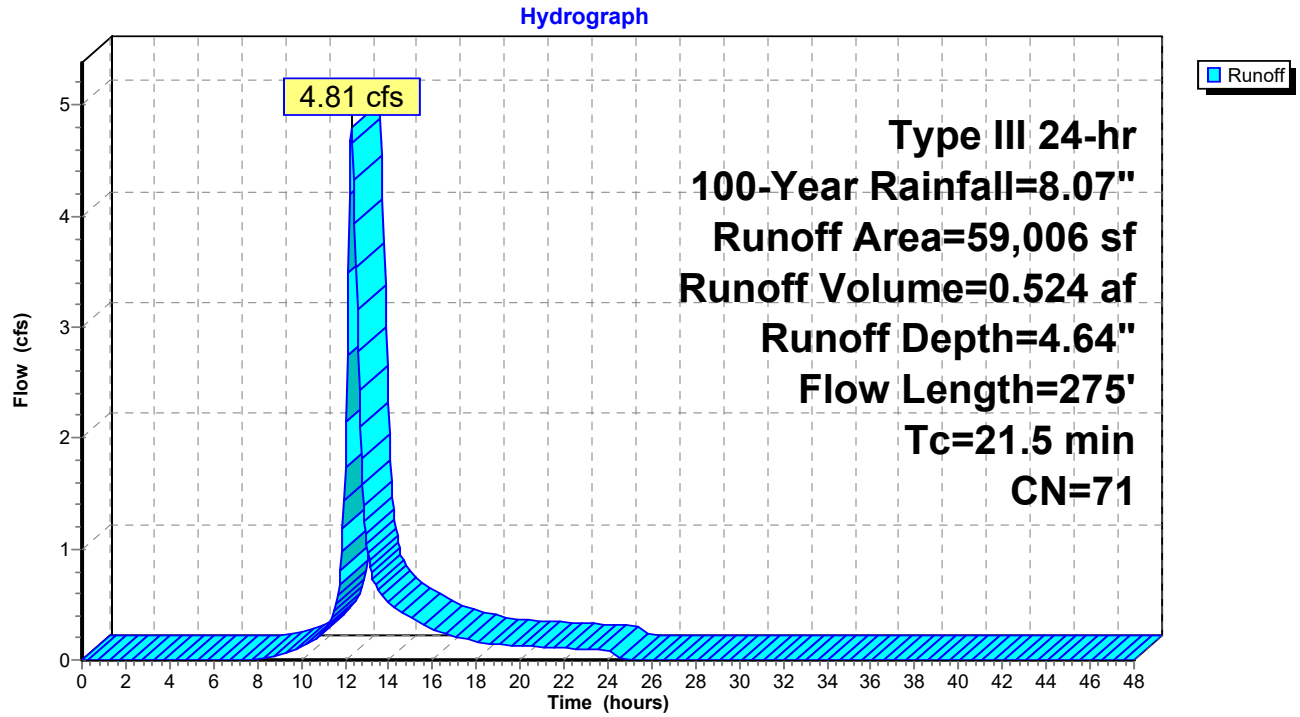
Runoff = 4.81 cfs @ 12.30 hrs, Volume= 0.524 af, Depth= 4.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
39,007	71	Meadow, non-grazed, HSG C
16,039	78	Meadow, non-grazed, HSG D
3,960	48	Brush, Good, HSG B
59,006	71	Weighted Average
59,006		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
16.0	70	0.0069	0.07		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
2.9	175	0.0211	1.02		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
21.5	275	Total			

Subcatchment PDA-2A: PDA-2A



Summary for Subcatchment PDA-2B: PDA-2B

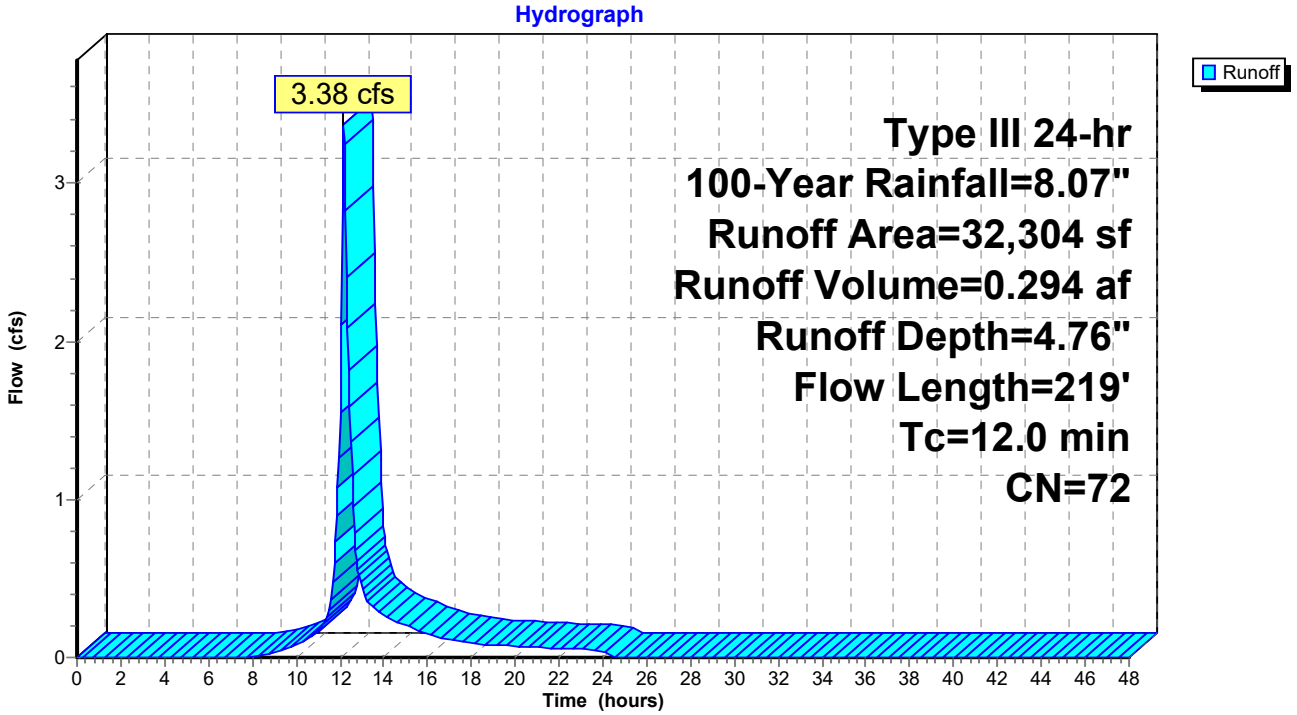
Runoff = 3.38 cfs @ 12.17 hrs, Volume= 0.294 af, Depth= 4.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
12,043	71	Meadow, non-grazed, HSG C
16,171	78	Meadow, non-grazed, HSG D
4,020	48	Brush, Good, HSG B
70	73	Brush, Good, HSG D
32,304	72	Weighted Average
32,304		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.6	30	0.1167	0.19		**Sheet Flow, A-B** Grass: Dense n= 0.240 P2= 3.39"
8.3	70	0.0357	0.14		**Sheet Flow, B-C** Grass: Dense n= 0.240 P2= 3.39"
1.1	119	0.0630	1.76		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
12.0	219	Total			

Subcatchment PDA-2B: PDA-2B



Summary for Subcatchment PDA-2C: PDA-2C

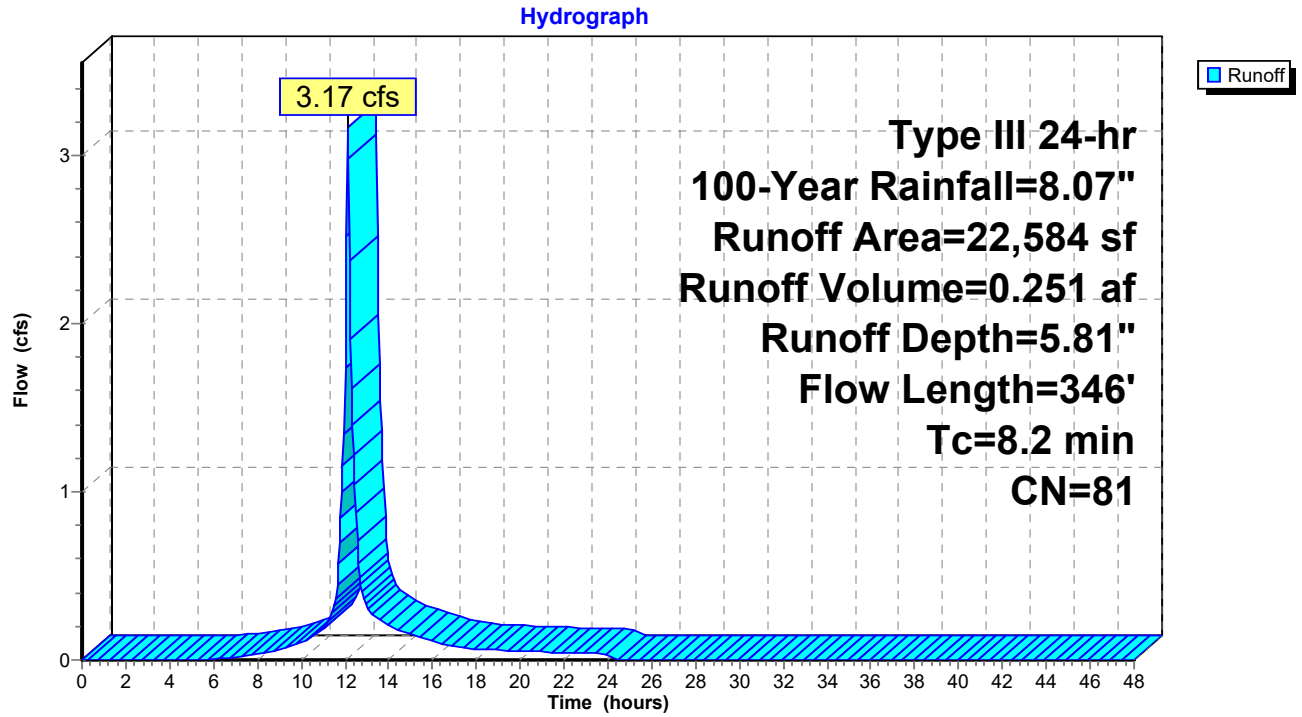
Runoff = 3.17 cfs @ 12.11 hrs, Volume= 0.251 af, Depth= 5.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=8.07"

Area (sf)	CN	Description
1,977	77	Woods, Good, HSG D
3,486	96	Gravel surface, HSG D
17,121	78	Meadow, non-grazed, HSG D
22,584	81	Weighted Average
22,584		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.1	100	0.0600	0.27		**Sheet Flow, A-B** Grass: Short n= 0.150 P2= 3.39"
1.3	146	0.0684	1.83		**Shallow Concentrated Flow, B-C** Short Grass Pasture Kv= 7.0 fps
0.8	100	0.0854	2.05		**Shallow Concentrated Flow, C-D** Short Grass Pasture Kv= 7.0 fps
8.2	346	Total			

Subcatchment PDA-2C: PDA-2C



Summary for Reach 7R: Upper 24" RCP

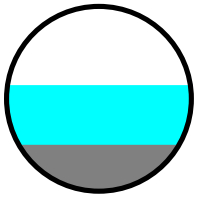
[52] Hint: Inlet/Outlet conditions not evaluated
[88] Warning: Qout>Qin may require smaller dt or Finer Routing

Inflow Area = 6.979 ac, 0.00% Impervious, Inflow Depth = 3.05" for 100-Year event
Inflow = 14.64 cfs @ 12.47 hrs, Volume= 1.772 af
Outflow = 14.65 cfs @ 12.47 hrs, Volume= 1.772 af, Atten= 0%, Lag= 0.0 min

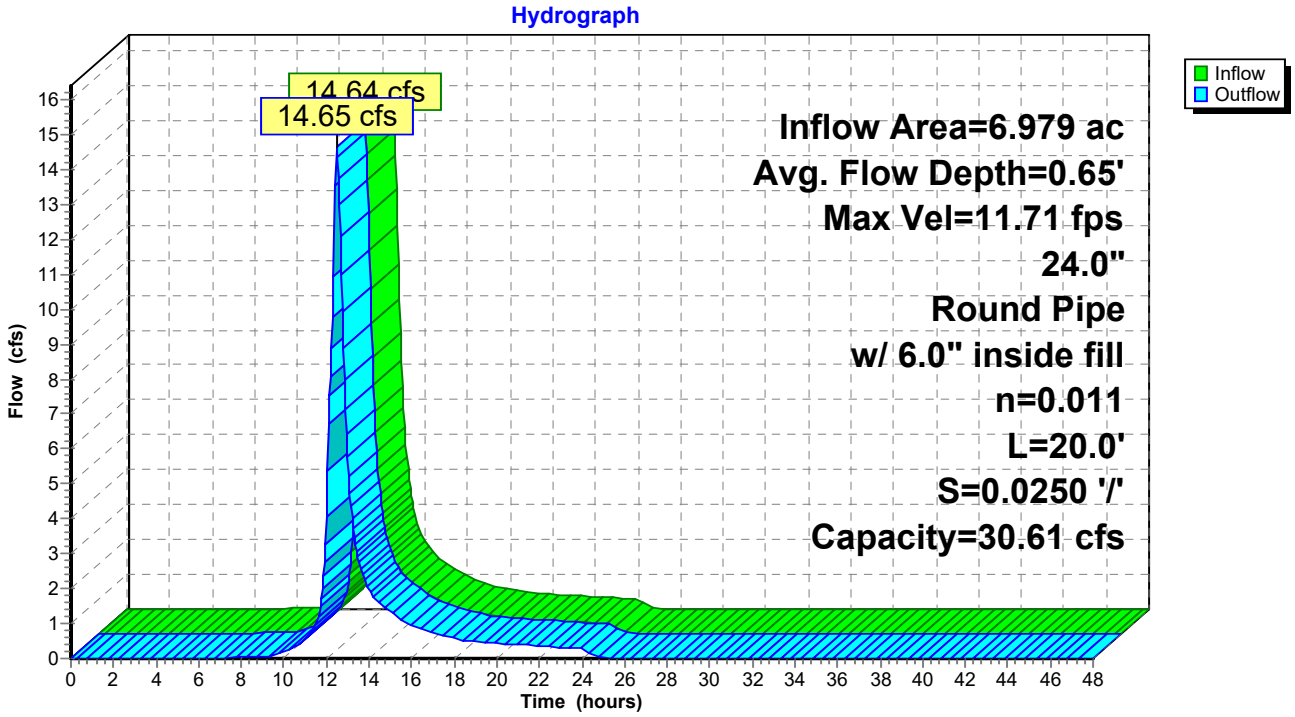
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 11.71 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.72 fps, Avg. Travel Time= 0.1 min

Peak Storage= 25 cf @ 12.47 hrs
Average Depth at Peak Storage= 1.15' above invert (0.65' above fill)
Bank-Full Depth= 2.00' above invert (1.50' above fill) Flow Area= 2.5 sf, Capacity= 30.61 cfs

24.0" Round Pipe w/ 6.0" inside fill
n= 0.011 Concrete pipe, straight & clean
Length= 20.0' Slope= 0.0250 '/'
Inlet Invert= 395.50', Outlet Invert= 395.00'



Reach 7R: Upper 24" RCP



Summary for Reach 8R: Lower 24" RCP

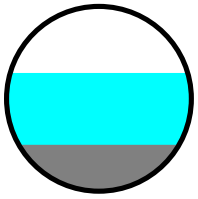
[52] Hint: Inlet/Outlet conditions not evaluated
[61] Hint: Exceeded Reach 11R outlet invert by 0.28' @ 12.50 hrs

Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 3.53" for 100-Year event
Inflow = 16.91 cfs @ 12.50 hrs, Volume= 2.392 af
Outflow = 16.91 cfs @ 12.50 hrs, Volume= 2.392 af, Atten= 0%, Lag= 0.1 min

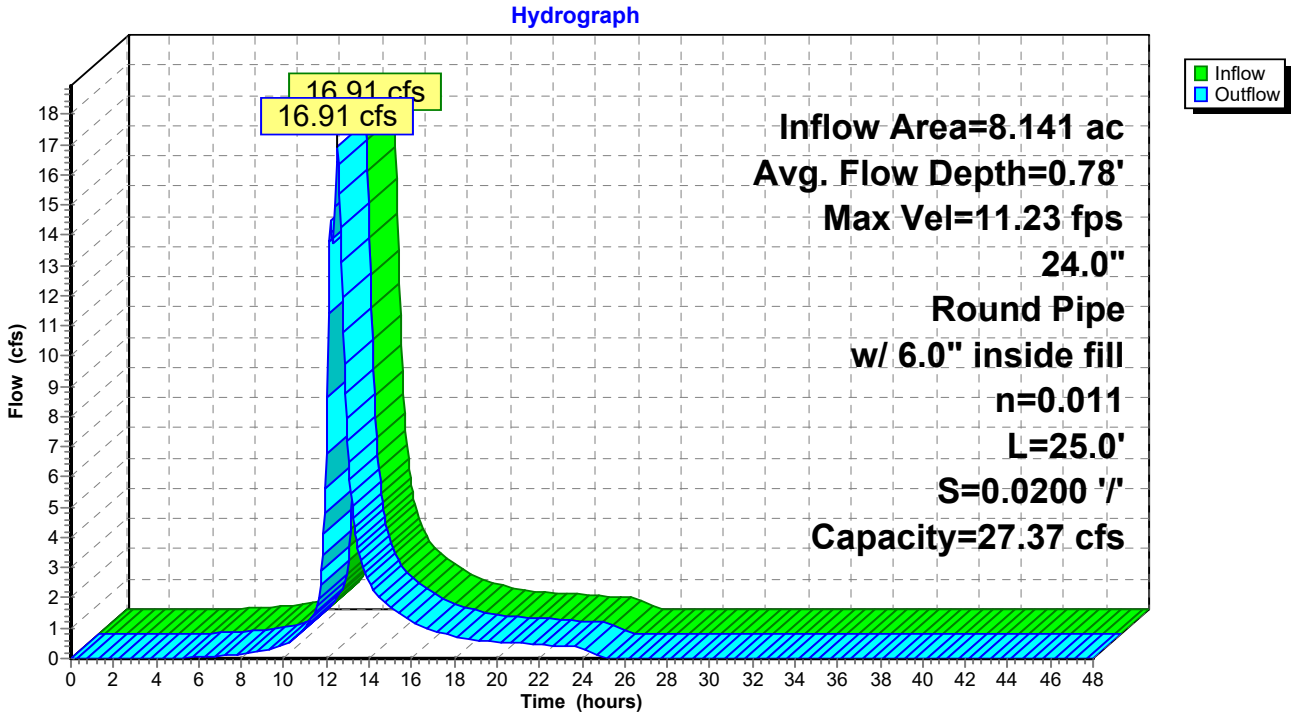
Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 11.23 fps, Min. Travel Time= 0.0 min
Avg. Velocity = 3.70 fps, Avg. Travel Time= 0.1 min

Peak Storage= 38 cf @ 12.50 hrs
Average Depth at Peak Storage= 1.28' above invert (0.78' above fill)
Bank-Full Depth= 2.00' above invert (1.50' above fill) Flow Area= 2.5 sf, Capacity= 27.37 cfs

24.0" Round Pipe w/ 6.0" inside fill
n= 0.011 Concrete pipe, straight & clean
Length= 25.0' Slope= 0.0200 '/'
Inlet Invert= 359.00', Outlet Invert= 358.50'



Reach 8R: Lower 24" RCP



Summary for Reach 11R: swale

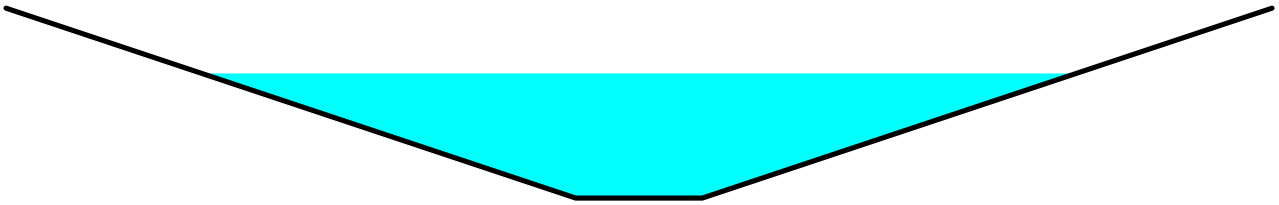
[62] Hint: Exceeded Reach 7R OUTLET depth by 0.01' @ 12.15 hrs

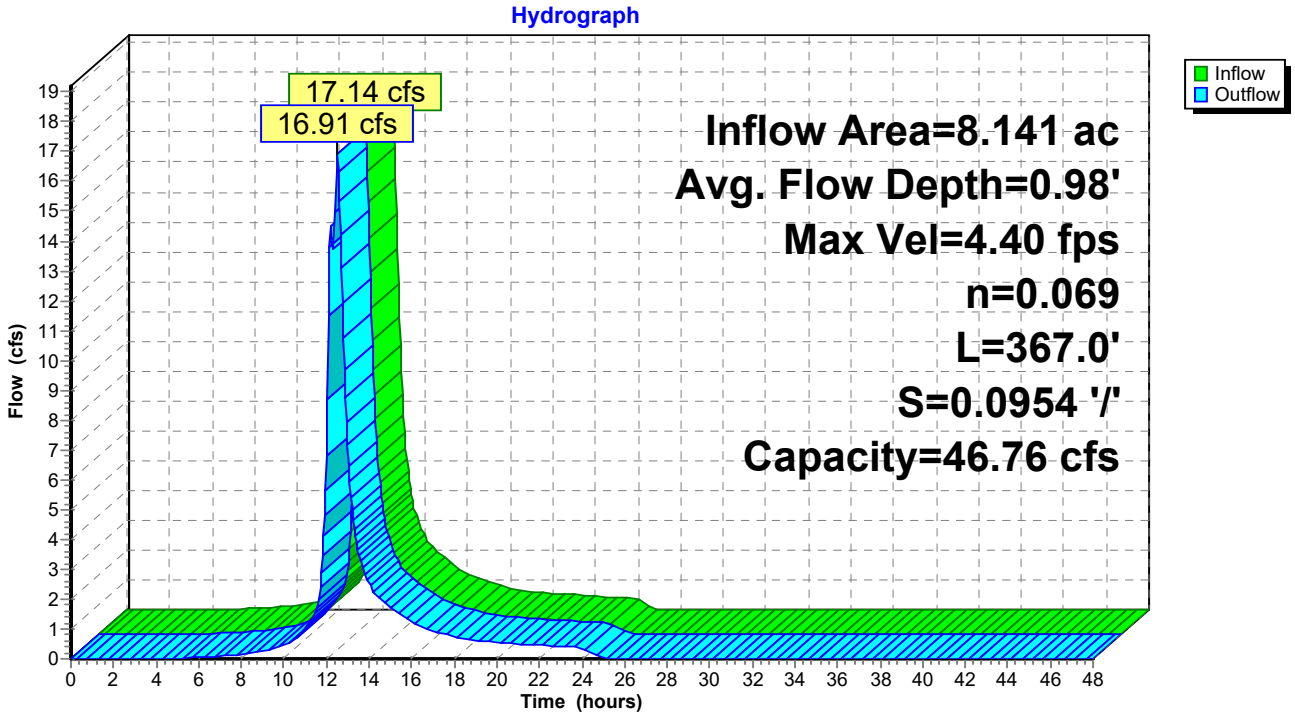
Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 3.53" for 100-Year event
Inflow = 17.14 cfs @ 12.45 hrs, Volume= 2.392 af
Outflow = 16.91 cfs @ 12.50 hrs, Volume= 2.392 af, Atten= 1%, Lag= 2.9 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Max. Velocity= 4.40 fps, Min. Travel Time= 1.4 min
Avg. Velocity = 1.70 fps, Avg. Travel Time= 3.6 min

Peak Storage= 1,429 cf @ 12.47 hrs
Average Depth at Peak Storage= 0.98'
Bank-Full Depth= 1.50' Flow Area= 8.3 sf, Capacity= 46.76 cfs

1.00' x 1.50' deep channel, n= 0.069 Riprap, 6-inch
Side Slope Z-value= 3.0 '/' Top Width= 10.00'
Length= 367.0' Slope= 0.0954 '/'
Inlet Invert= 395.00', Outlet Invert= 360.00'





Summary for Pond P-2A: P-2A

Inflow Area = 1.355 ac, 0.00% Impervious, Inflow Depth = 4.64" for 100-Year event
Inflow = 4.81 cfs @ 12.30 hrs, Volume= 0.524 af
Outflow = 3.87 cfs @ 12.47 hrs, Volume= 0.524 af, Atten= 19%, Lag= 10.4 min
Discarded = 0.37 cfs @ 12.47 hrs, Volume= 0.372 af
Primary = 3.50 cfs @ 12.47 hrs, Volume= 0.152 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 419.76' @ 12.47 hrs Surf.Area= 3,238 sf Storage= 6,308 cf

Plug-Flow detention time= 132.6 min calculated for 0.523 af (100% of inflow)
Center-of-Mass det. time= 132.5 min (969.2 - 836.7)

Volume	Invert	Avail.Storage	Storage Description
#1	417.00'	7,116 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

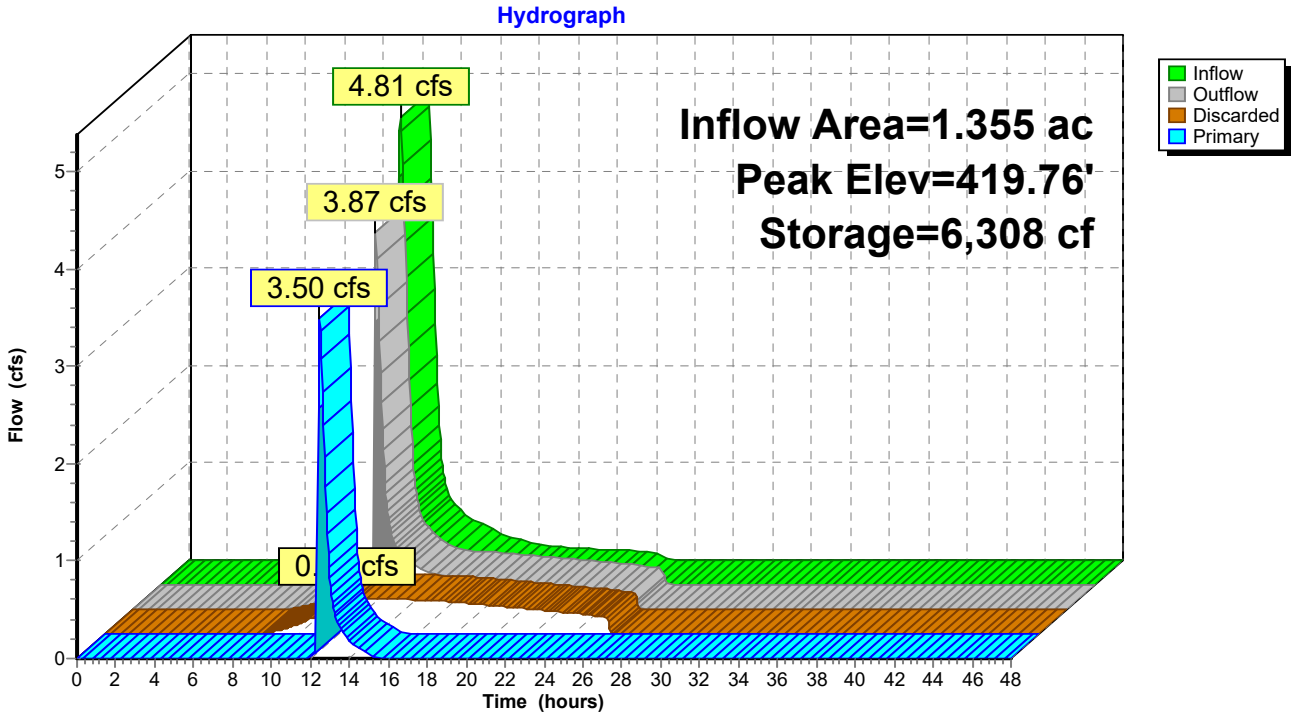
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
417.00	1,405	0	0
418.00	2,018	1,712	1,712
419.00	2,688	2,353	4,065
420.00	3,415	3,052	7,116

Device	Routing	Invert	Outlet Devices
#1	Discarded	417.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	419.50'	**10.0' long x 20.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.37 cfs @ 12.47 hrs HW=419.75' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.37 cfs)

Primary OutFlow Max=3.39 cfs @ 12.47 hrs HW=419.75' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 3.39 cfs @ 1.35 fps)

Pond P-2A: P-2A


Hydrograph
4.81 cfs
3.87 cfs
3.50 cfs
Inflow Area=1.355 ac
Peak Elev=419.76'
Storage=6,308 cf
Inflow
Outflow
Discarded
Primary
Flow (cfs)
Time (hours)

Summary for Pond P-2B: P-2B

Inflow Area = 0.742 ac, 0.00% Impervious, Inflow Depth = 4.76" for 100-Year event
Inflow = 3.38 cfs @ 12.17 hrs, Volume= 0.294 af
Outflow = 0.76 cfs @ 12.67 hrs, Volume= 0.294 af, Atten= 78%, Lag= 30.4 min
Discarded = 0.32 cfs @ 12.67 hrs, Volume= 0.279 af
Primary = 0.43 cfs @ 12.67 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Peak Elev= 414.56' @ 12.67 hrs Surf.Area= 2,788 sf Storage= 5,202 cf

Plug-Flow detention time= 162.0 min calculated for 0.294 af (100% of inflow)
Center-of-Mass det. time= 161.8 min (987.6 - 825.8)

Volume	Invert	Avail.Storage	Storage Description
#1	412.00'	6,481 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

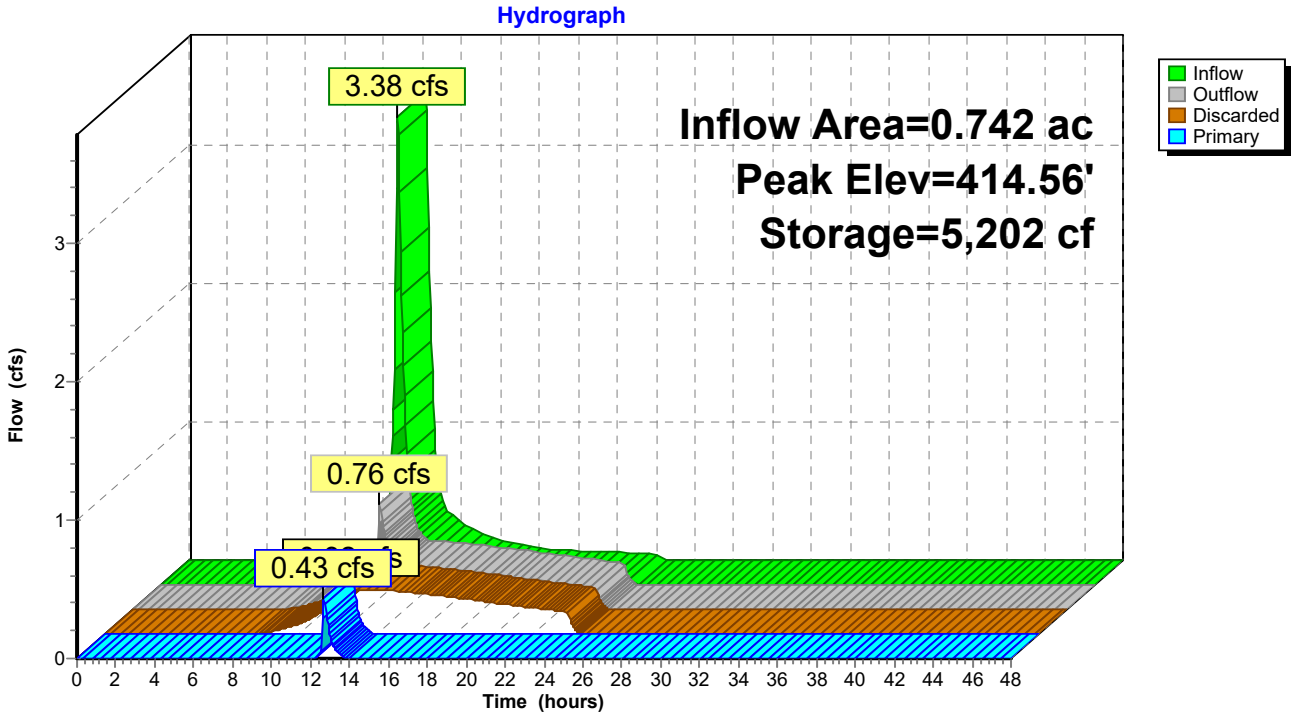
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
412.00	1,330	0	0
413.00	1,852	1,591	1,591
414.00	2,431	2,142	3,733
415.00	3,065	2,748	6,481

Device	Routing	Invert	Outlet Devices
#1	Discarded	412.00'	**5.000 in/hr Exfiltration over Surface area**
#2	Primary	414.50'	**10.0' long x 15.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.68 2.70 2.70 2.64 2.63 2.64 2.64 2.63

Discarded OutFlow Max=0.32 cfs @ 12.67 hrs HW=414.56' (Free Discharge)
1=Exfiltration (Exfiltration Controls 0.32 cfs)

Primary OutFlow Max=0.41 cfs @ 12.67 hrs HW=414.56' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 0.41 cfs @ 0.66 fps)

Pond P-2B: P-2B

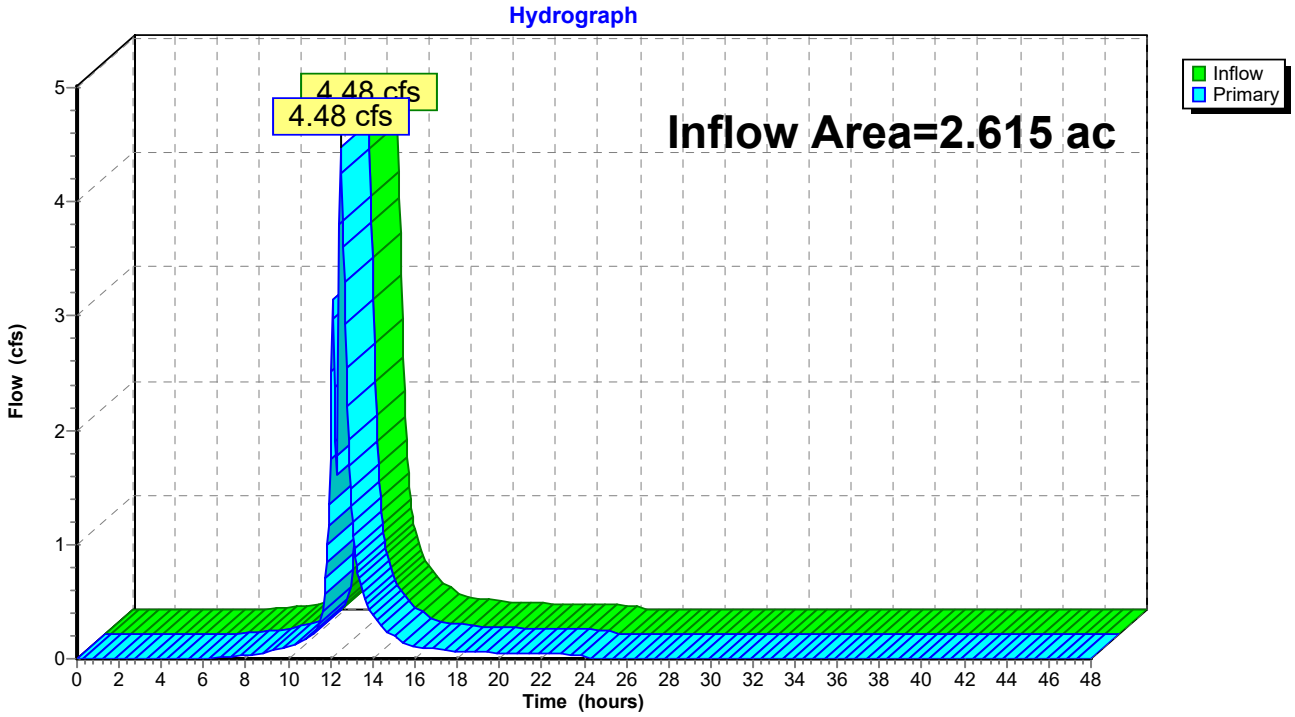

Hydrograph
Inflow Area=0.742 ac
Peak Elev=414.56'
Storage=5,202 cf
3.38 cfs
0.76 cfs
0.43 cfs
Inflow
Outflow
Discarded
Primary
Flow (cfs)
0
1
2
3
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48
Time (hours)

Summary for Link 2L: AP-2

Inflow Area = 2.615 ac, 0.00% Impervious, Inflow Depth = 1.92" for 100-Year event
Inflow = 4.48 cfs @ 12.46 hrs, Volume= 0.418 af
Primary = 4.48 cfs @ 12.46 hrs, Volume= 0.418 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 2L: AP-2

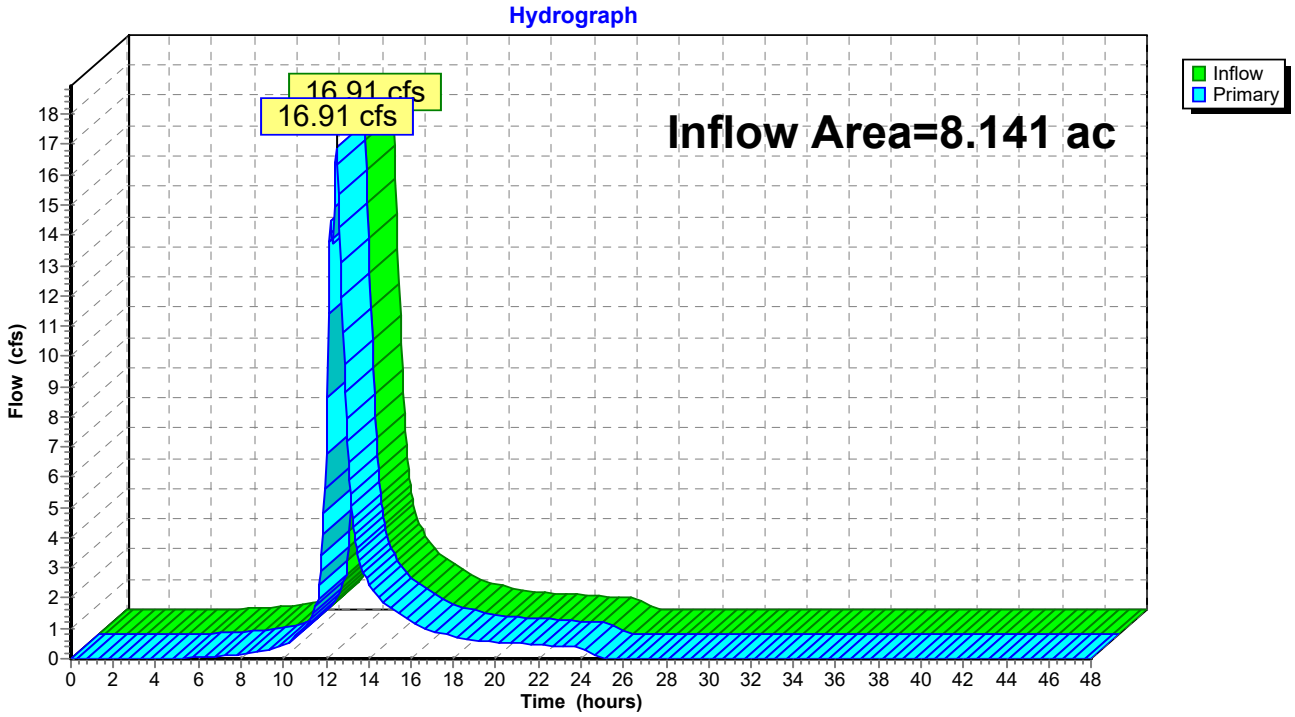


Summary for Link 10L: EX. CB

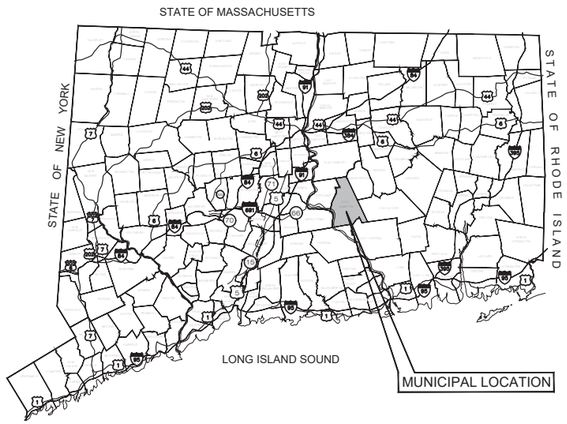
Inflow Area = 8.141 ac, 0.00% Impervious, Inflow Depth = 3.53" for 100-Year event
Inflow = 16.91 cfs @ 12.50 hrs, Volume= 2.392 af
Primary = 16.91 cfs @ 12.50 hrs, Volume= 2.392 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs

Link 10L: EX. CB



APPENDIX D
Design Plans



CITRINE POWER, LLC

"CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II"

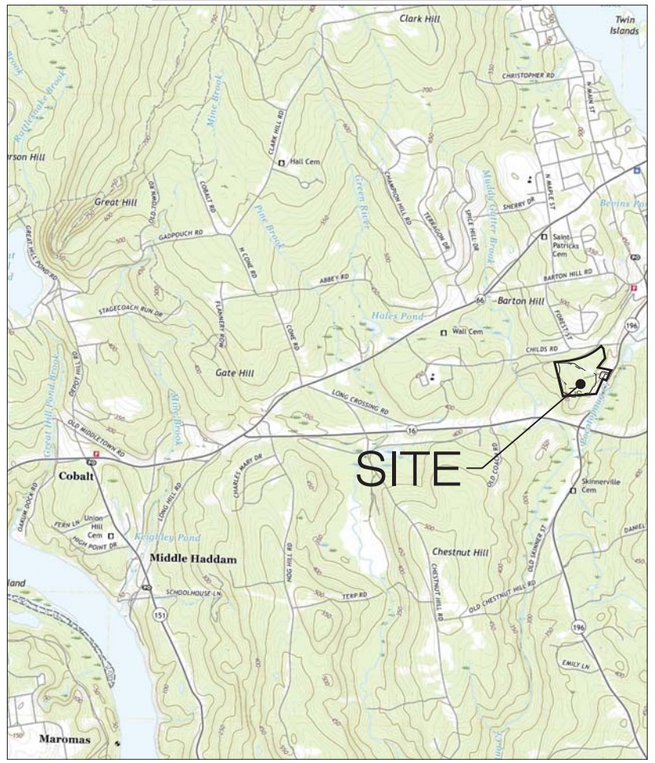
SKINNER STREET
EAST HAMPTON, CT 06424

LIST OF DRAWINGS

SITE INFORMATION

SITE NAME:	"CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II"
LOCATION:	SKINNER STREET EAST HAMPTON, CT 06424
SITE TYPE/DESCRIPTION:	ADD TWO (2) GROUND MOUNTED SOLAR PANEL ARRAY W/ ASSOCIATED EQUIPMENT.
PROPERTY OWNER:	SKINNER STREET PROPERTIES LLC 9 SEQUONIA TRAIL EAST HAMPTON, CT 06424
APPLICANT:	CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II 55 GREENS FARMS ROAD WESTPORT, CT 06880
ENGINEER CONTACT:	BRADLEY J. PARSONS, P.E. (860) 663-1697 x208
LATITUDE:	41°34'05.44" N
LONGITUDE:	72°30'31.80" W
ELEVATION:	425'± AMSL
MBLU:	20-48C-9
ZONE:	I
EXISTING LAND USE:	INDUSTRIAL
PROPOSED LAND USE:	COMMUNICATIONS, TRANSPORTATION AND PUBLIC UTILITY USES - LARGE SCALE GROUND MOUNTED SOLAR PHOTOVOLTAIC INSTALLATIONS
TOTAL SITE ACERAGE:	27.42± AC.
TOTAL DISTURBED AREA:	14.93± AC.
APPROX. VOLUME OF CUT:	2,919± CY
APPROX. VOLUME OF FILL:	1,445± CY
APPROX. NET VOLUME:	1,474± CY OF CUT

USGS TOPOGRAPHIC MAP



SCALE : 1" = 2000'± SOURCE: USGS 7.5 MIDDLE HADDAM QUADRANGLE, CT 2018

CITRINE
55 GREENS FARMS ROAD
WESTPORT, CT 06880
OFFICE: (203)-557-5554

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

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DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: SKINNER STREET PROPERTIES LLC
ADDRESS: 9 SEQUONIA TRAIL EAST HAMPTON, CT 06424

CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II

SITE ADDRESS: SKINNER STREET EAST HAMPTON, CT 06424

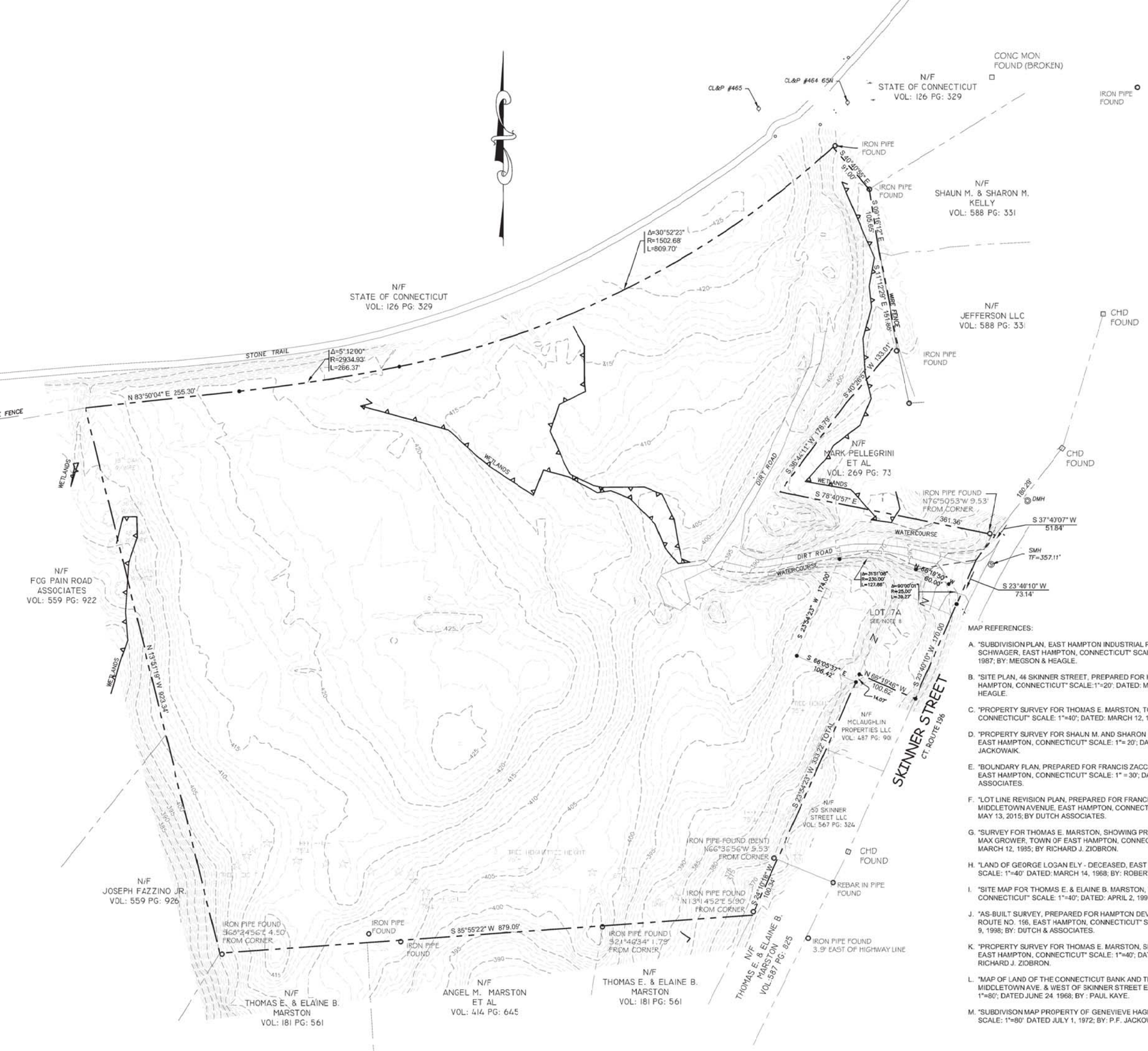
APT FILING NUMBER: CT567110

DRAWN BY: CSH
DATE: 02/14/20 CHECKED BY: BJP

SHEET TITLE:
TITLE SHEET & INDEX

SHEET NUMBER:
T-1

STATE OF CONNECTICUT BRADLEY J. PARSONS No. 25025 LICENSED PROFESSIONAL ENGINEER



SITE LOCATION MAP (NOT TO SCALE)

MAP NOTES:

1. THIS MAP AND SURVEY HAVE BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND "THE MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" ADOPTED JUNE 21, 1996; AMENDED OCTOBER 26, 2018.
2. THE TYPE OF SURVEY PERFORMED AND THE MAPPED FEATURES DEPICTED HEREON ARE IN ACCORDANCE WITH THE REQUIREMENTS OF A PROPERTY & TOPOGRAPHIC SURVEY.
3. THE PROPERTY/BOUNDARY DETERMINATION/OPINION IS BASED UPON A RESURVEY OF MAP REFERENCE 'A'.
4. THE MAPPED FEATURES DEPICTED HEREON ON ARE A RESULT OF A FIELD SURVEY CONDUCTED ON JANUARY 6, 2020.
5. THE GROUND RELIEF CONTCURS DEPICTED HEREON ARE BASED UPON THE 2016 ORTHOPHOTOGRAPHY AND LIDAR DATA SET AVAILABLE AT CTECO.UCONN.EDU
6. THE HORIZONTAL BASELINE CONFORMS TO A CLASS A-2 ACCURACY. THE VERTICAL BASELINE CONFORMS TO A CLASS V-2 ACCURACY. THE TOPOGRAPHIC FEATURES CONFORM TO A CLASS T-3 ACCURACY.
7. THE NORTH ARROW AND BEARINGS ARE BASED UPON THE CONNECTICUT STATE COORDINATE SYSTEM NA.D. 1983 (2011). THE ELEVATIONS ARE BASED UPON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) USING GEOID 12B. COORDINATES AND ELEVATIONS WERE DETERMINED FROM RTK GPS OBSERVATIONS MADE ON JANUARY 6, 2020, USING THE CT DOT RTK NETWORK KNOWN AS ACCRN (CTNE BASE), HAVING THE FOLLOWING VALUES:

   LATITUDE = N 41° 40' 24.71719"
   LONGITUDE = W 72° 42' 52.25224"
   ELLIPSOID HEIGHT = 41.746M

8. THE AREA DEPICTED AS LOT 17A IS INCLUDED IN THE LEGAL DESCRIPTION AS DESCRIBED IN VOLUME 437 PAGE 989 OF THE TOWN OF EAST HAMPTON LAND RECORDS AND APPEARS TO BE DIVIDED AND APPROVED BY THE TOWN PLANING AND ZONING COMMISSION. NO DEED OF RECORD FOR DESCRIBING LOT 17A AS A SEPARATE PARCEL.
9. UNDERGROUND UTILITIES, STRUCTURES AND FACILITY LOCATIONS DEPICTED AND NOTED HEREON HAVE BEEN COMPILED, IN PART FROM RECORD MAPPING SUPPLIED BY THE RESPECTIVE COMPANIES OR GOVERNMENTAL AGENCIES AND FROM OTHER SOURCES. THESE LOCATIONS MUST BE CONSIDERED AS APPROXIMATE IN NATURE. ADDITIONALLY, OTHER SUCH FEATURES MAY EXIST ON THE SITE, THE EXISTENCE WHICH IS UNKNOWN TO MARTIN SURVEYING ASSOCIATES, LLC.. ALL CONTRACTORS ARE REQUIRED TO CONTACT CALL-BEFORE-YOU-DIG AT 1-800-922-4455 FOR LOCATION AND OR STAKEOUT OF ANY UTILITY PRIOR TO ANY EXCAVATION.

MAP REFERENCES:

A. "SUBDIVISION PLAN, EAST HAMPTON INDUSTRIAL PARK, PREPARED FOR HOWARD SCHWAGER, EAST HAMPTON, CONNECTICUT" SCALE:1"=40'; DATED:NOVEMBER 21, 1987; BY: MEGSON & HEAGLE.

B. "SITE PLAN, 46 SKINNER STREET, PREPARED FOR HOWARD SCHWAGER, EAST HAMPTON, CONNECTICUT" SCALE:1"=20', DATED: MARCH 21, 2006; BY: MEGSON & HEAGLE.

C. "PROPERTY SURVEY FOR THOMAS E. MARSTON, TOWN OF EAST HAMPTON, CONNECTICUT" SCALE: 1"=40'; DATED: MARCH 12, 1985; BY: RICHARD J. ZIOBRON.

D. "PROPERTY SURVEY FOR SHAUN M. AND SHARON KELLY, 30 SKINNER STREET, EAST HAMPTON, CONNECTICUT" SCALE: 1"= 20'; DATED: AUGUST 18, 1999; BY: JACKOWAIK.

E. "BOUNDARY PLAN, PREPARED FOR FRANCIS ZACCHERA, 76 MIDDLETOWN AVENUE, EAST HAMPTON, CONNECTICUT" SCALE: 1" = 30'; DATED: MAY 19, 2015; BY DUTCH ASSOCIATES.

F. "LOT LINE REVISION PLAN, PREPARED FOR FRANCIS ZACCHERA, 78 & 76 MIDDLETOWN AVENUE, EAST HAMPTON, CONNECTICUT" SCALE 1"= 40'; DATED: MAY 13, 2015; BY DUTCH ASSOCIATES.

G. "SURVEY FOR THOMAS E. MARSTON, SHOWING PROPERTY TO BE RETAINED BY MAX GROWER, TOWN OF EAST HAMPTON, CONNECTICUT" SCALE: 1"=40'; DATED: MARCH 12, 1985; BY RICHARD J. ZIOBRON.

H. "LAND OF GEORGE LOGAN ELY - DECEASED, EAST HAMPTON, CONNECTICUT" SCALE: 1"=40' DATED: MARCH 14, 1968; BY: ROBERT A. DUTCH.

I. "SITE MAP FOR THOMAS E. & ELAINE B. MARSTON, TOWN OF EAST HAMPTON, CONNECTICUT" SCALE: 1"=40'; DATED: APRIL 2, 1997; BY: RICHARD J. ZIOBRON.

J. "AS-BUILT SURVEY, PREPARED FOR HAMPTON DEVELOPMENT, CONNECTICUT ROUTE NO. 156, EAST HAMPTON, CONNECTICUT" SCALE: 1"=20'; DATED: NOVEMBER 9, 1998; BY: DUTCH & ASSOCIATES.

K. "PROPERTY SURVEY FOR THOMAS E. MARSTON, SHOWING PROPERTY TOWN OF EAST HAMPTON, CONNECTICUT" SCALE: 1"=40'; DATED: MARCH 12, 1985; BY: RICHARD J. ZIOBRON.

L. "MAP OF LAND OF THE CONNECTICUT BANK AND TRUST CO. NORTH OF MIDDLETOWN AVE. & WEST OF SKINNER STREET EAST HAMPTON, CONN." SCALE: 1"=80'; DATED JUNE 24. 1968; BY : PAUL KAYE.

M. "SUBDIVISON MAP PROPERTY OF GENEVIEVE HAGLUND EAST HAMPTON, CONN." SCALE: 1"=80' DATED JULY 1, 1972; BY: P.F. JACKOWAIK.

SUBJECT PARCEL
1,194,325 S.F. ±
27.42 ACRES ±
VOL. 437 PG. 989

40 0 40 80 120
SCALE IN FEET

TO MY KNOWLEDGE AND BELIEF, THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

DEAN MARTIN — LICENSE NO. 70147

- Rebar/Drill Hole (To Be Set)
- MONUMENT (FOUND)
- MANHOLE
- DRAINAGE MANHOLE
- SANITARY MANHOLE
- ELEC. MANHOLE
- TELE. MANHOLE
- "C" CATCH BASIN
- "C-L" CATCH BASIN
- DECIDUOUS TREES
- EVERGREEN TREES
- SHRUB/BUSH
- FLAG POLE
- TRAFFIC CONTROL BOX
- POST
- LIGHT
- GUY
- UTILI
- WATE
- WATE
- GAS
- GAS
- TRAN
- ELEC
- MAIL
- HAN
- BUTT
- A.C.
- TRAF
- BOUNDARY LIN
- GUARD RAIL
- UNDERGROUND PIPING (San.,S
- U/G GAS LINE
- U/G ELEC. LIN
- WATER LINE
- OVERHEAD UTI
- U/G TELE. LIN
- CHAIN LINK FE
- TREE LINE

martin
Surveying Associates,
201 CHRISTIAN LANE BERLIN, CT
860-832-9328 860-357-4604 (FA

REVISIONS:

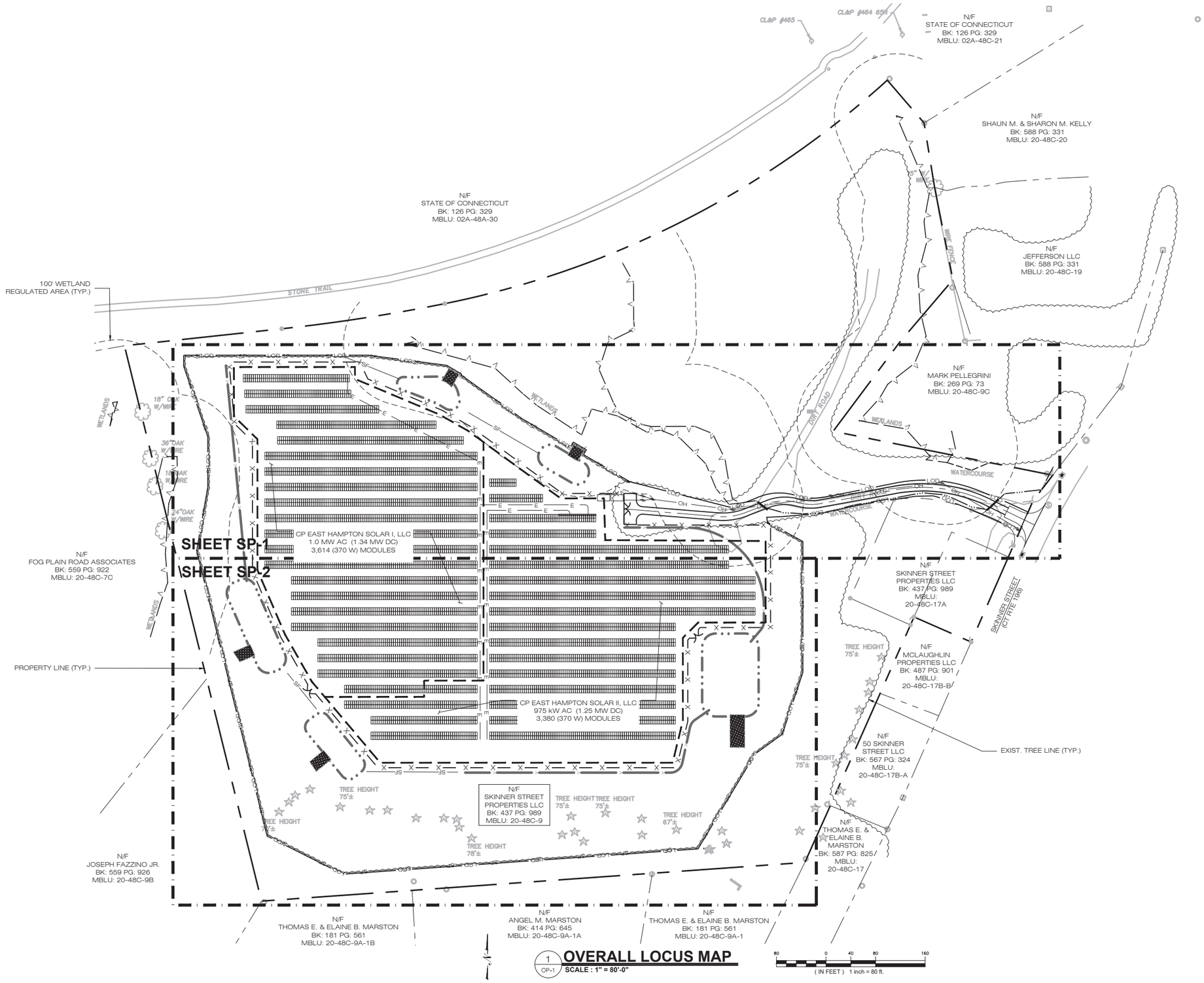
PROPERTY & TOPOGRPHIC SURVEY
PREPARED FOR
CITRINE POWER, LLC
LAND OF
SKINNER STREET PROPERTIES, LLC
SKINNER STREET

MSA PROJECT NO: 19-131

SCALE: 1"=80'	DRAWN BY
DATE: 1/15/2020	CHECKED

STATE OF CONNECTICUT DEAN G. MARTIN No.70147 LICENSED LAND SURVEYOR

SHEET: 1 OF



CITRINE
55 GREENS FARMS ROAD
WESTPORT, CT 06880
OFFICE: (203)-557-5554

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

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0	02/14/20	FOR REVIEW: BJP
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6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: SKINNER STREET PROPERTIES LLC
ADDRESS: 9 SEQUONIA TRAIL EAST HAMPTON, CT 06424

CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II

SITE ADDRESS: SKINNER STREET EAST HAMPTON, CT 06424

APT FILING NUMBER: CT567110

DRAWN BY: CSH

DATE: 02/14/20 CHECKED BY: BJP

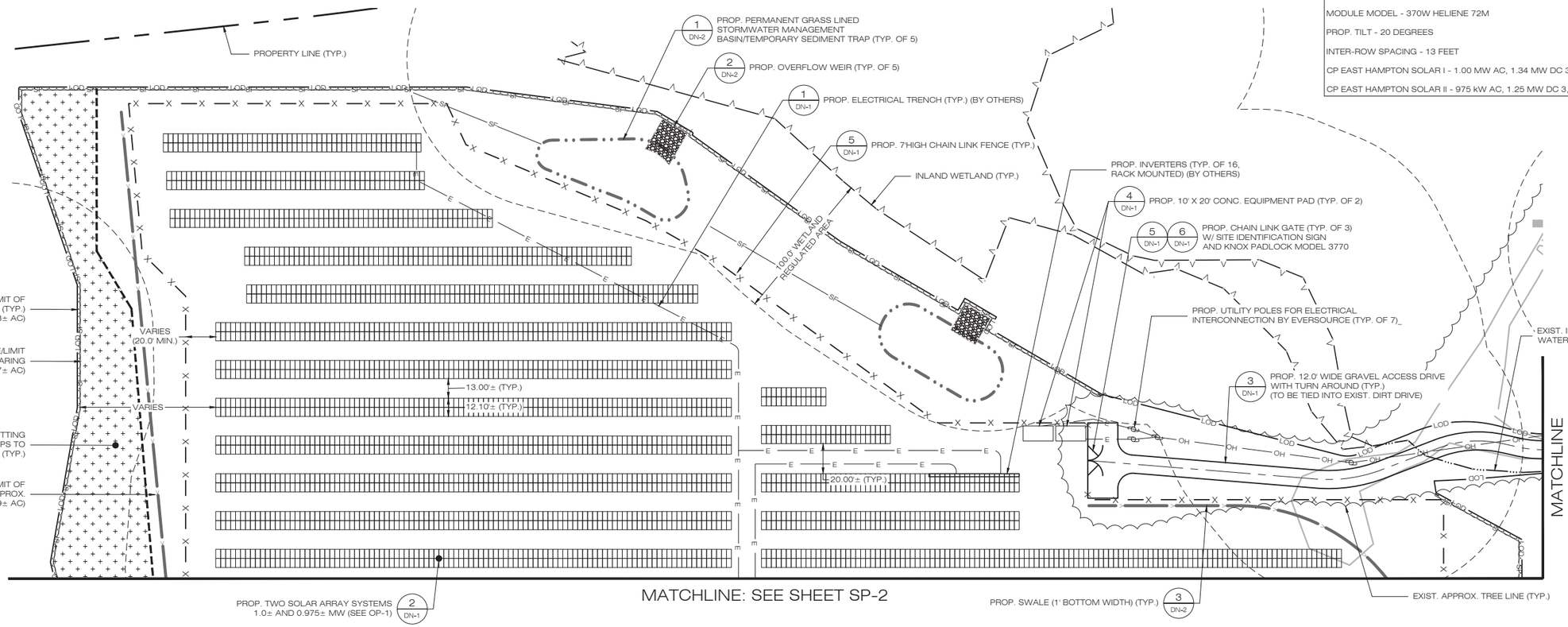
SHEET TITLE:

OVERALL LOCUS MAP

SHEET NUMBER:

OP-1

STATE OF CONNECTICUT BRADLEY J. PARSONS 24 2005 LICENSED PROFESSIONAL ENGINEER



DESIGN TABLE:

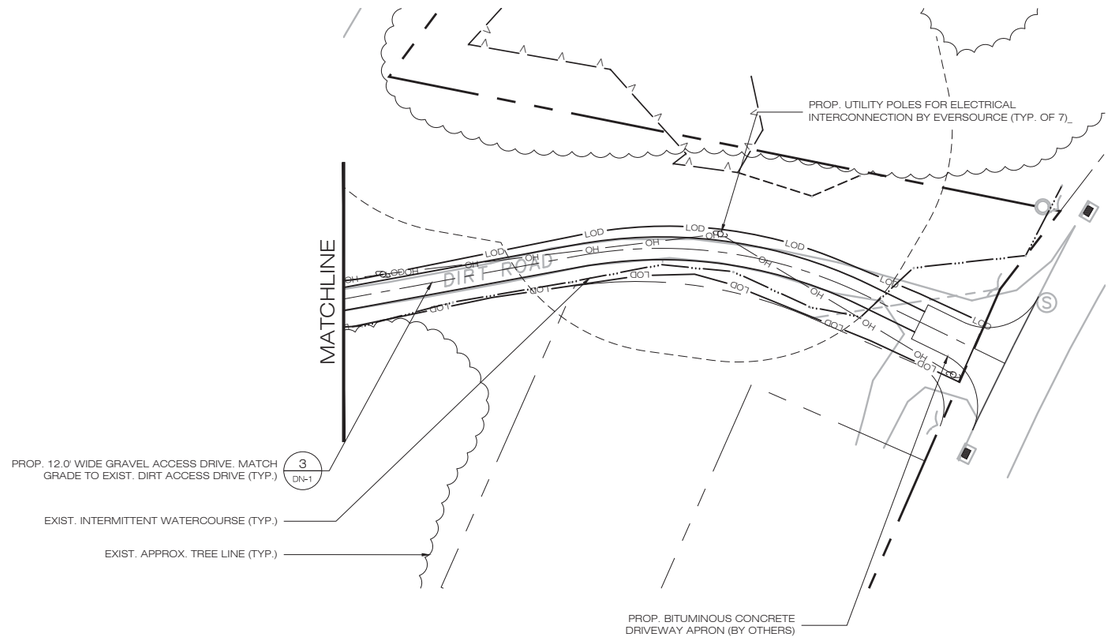
MODULE MODEL - 370W HELIENE 72M

PROP. TILT - 20 DEGREES

INTER-ROW SPACING - 13 FEET

CP EAST HAMPTON SOLAR I - 1.00 MW AC, 1.34 MW DC 3,614 MODULES

CP EAST HAMPTON SOLAR II - 975 kW AC, 1.25 MW DC 3,380 MODULES



1 SP-1 **SITE & UTILITY PLAN**

SCALE : 1" = 40'-0"

40 0 20 40 80

(IN FEET) 1 inch = 40 ft.

CITRINE

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DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: SKINNER STREET PROPERTIES LLC
ADDRESS: 9 SEQUONIA TRAIL EAST HAMPTON, CT 06424

CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II

SITE ADDRESS: SKINNER STREET EAST HAMPTON, CT 06424

APT FILING NUMBER: CT567110

DRAWN BY: CSH

DATE: 02/14/20 CHECKED BY: BJP

SHEET TITLE:

SITE & UTILITY PLAN

SHEET NUMBER:

SP-1

STATE OF CONNECTICUT BRADLEY J. PARSONS No. 28025 LICENSED PROFESSIONAL ENGINEER

DESIGN TABLE:

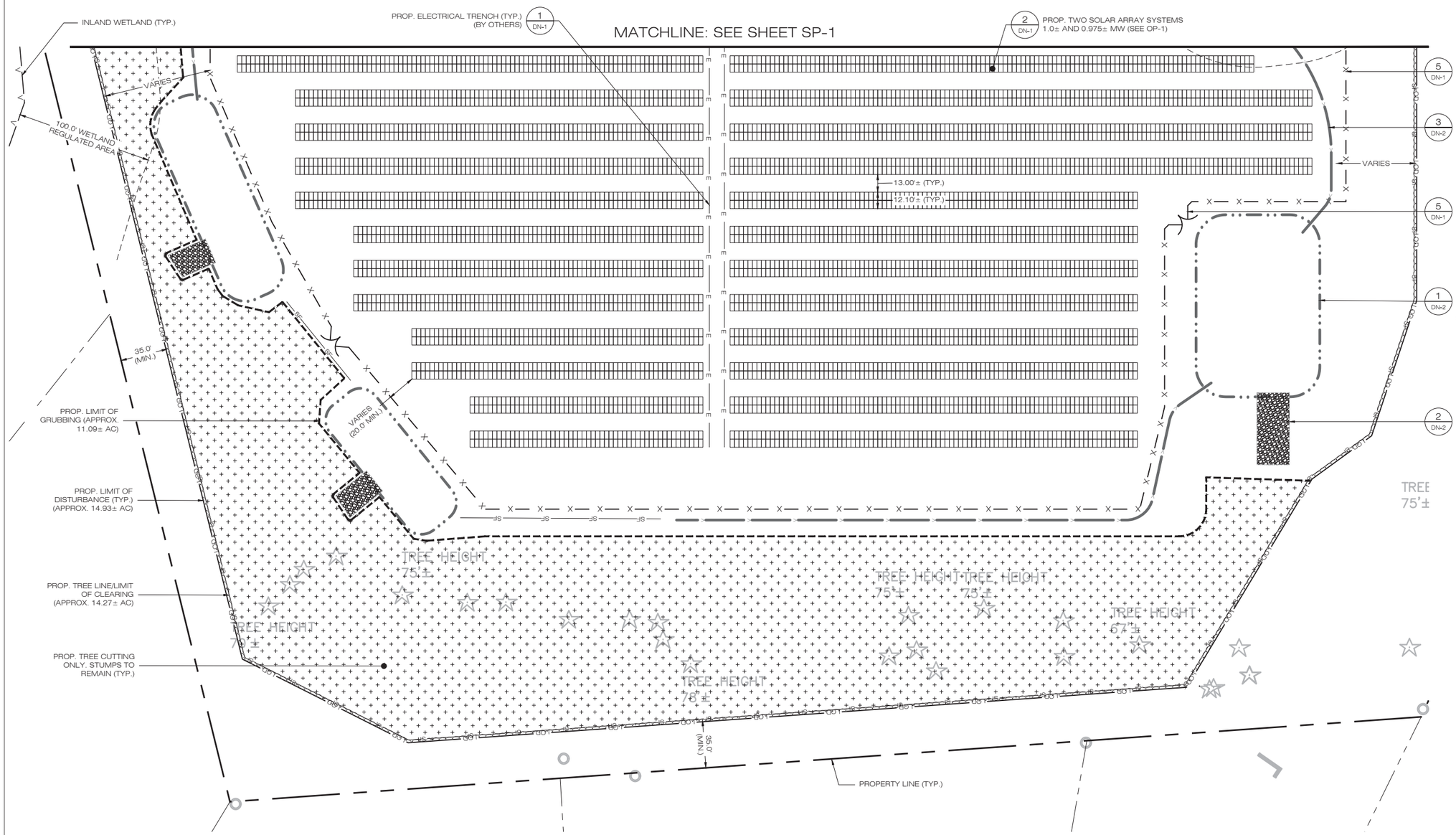
MODULE MODEL - 370W HELIENE 72M

PROP. TILT - 20 DEGREES

INTER-ROW SPACING - 13 FEET

CP EAST HAMPTON SOLAR I - 1.00 MW AC, 1.34 MW DC 3,614 MODULES

CP EAST HAMPTON SOLAR II - 975 kW AC, 1.25 MW DC 3,380 MODULES



1 SP-2 **SITE & UTILITY PLAN**

SCALE : 1" = 40'-0"

40 0 20 40 80

(IN FEET) 1 inch = 40 ft.

CITRINE

55 GREENS FARMS ROAD
WESTPORT, CT 06880
OFFICE: (203)-557-5554

ALL-POINTS TECHNOLOGY CORPORATION

3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
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DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: SKINNER STREET PROPERTIES LLC
ADDRESS: 9 SEQUONIA TRAIL EAST HAMPTON, CT 06424

CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II

SITE ADDRESS: SKINNER STREET EAST HAMPTON, CT 06424

APT FILING NUMBER: CT567110

DRAWN BY: CSH

DATE: 02/14/20 CHECKED BY: BJP

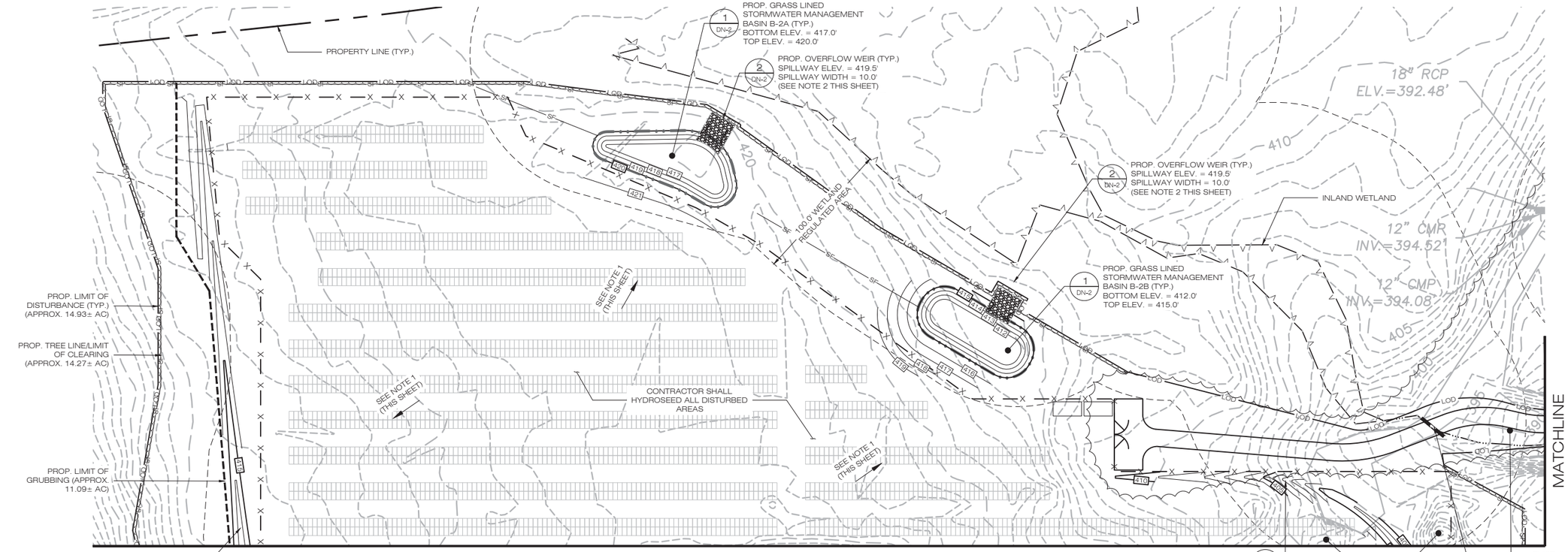
SHEET TITLE:

SITE & UTILITY PLAN

SHEET NUMBER:

SP-2

STATE OF CONNECTICUT BRADLEY J. PARSONS No. 28025 LICENSED PROFESSIONAL ENGINEER



1 GP-1 **GRADING & DRAINAGE PLAN**
SCALE : 1" = 40'-0"

40 0 20 40 80
(IN FEET) 1 inch = 40 ft.

NOTES:
1. GRADE/SHAPE DISTURBED AREA TO MATCH EXISTING GRADE AND FLOW TOWARDS PROP. GRASS LINED STORMWATER MANAGEMENT BASINS.
2. CONTRACTOR SHALL REPLACE TEMPORARY SEDIMENT TRAP OUTLET WITH RIP-RAP OVERFLOW WEIR UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP.

CITRINE
55 GREENS FARMS ROAD
WESTPORT, CT 06880
OFFICE: (203)-557-5554

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
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DESIGN PROFESSIONAL OF RECORD
PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: SKINNER STREET PROPERTIES LLC
ADDRESS: 9 SEQUOIA TRAIL EAST HAMPTON, CT 06424

CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II

SITE ADDRESS: SKINNER STREET EAST HAMPTON, CT 06424

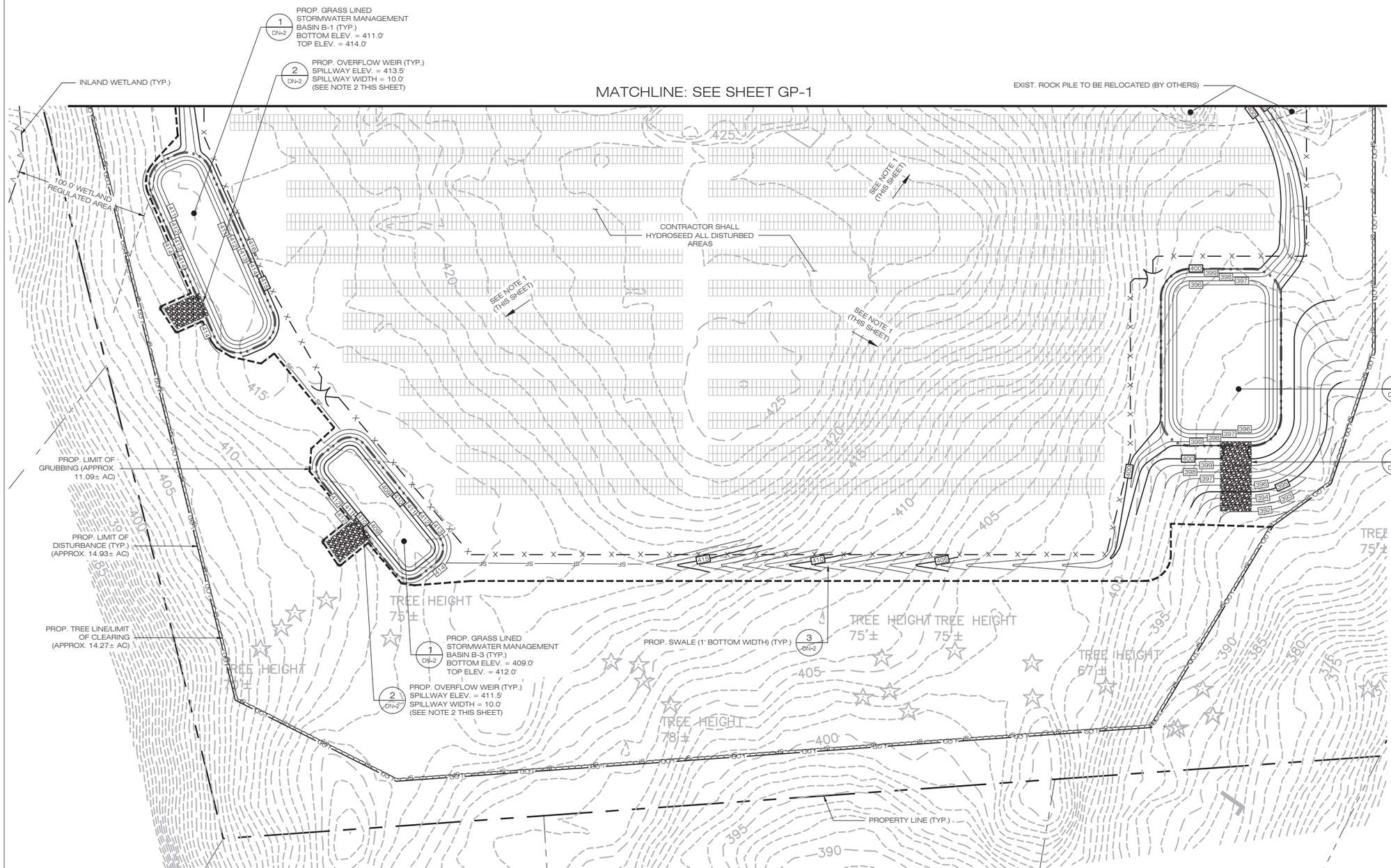
APT FILING NUMBER: CT567110

DRAWN BY: CSH
DATE: 02/14/20 CHECKED BY: BJP

SHEET TITLE:
GRADING & DRAINAGE PLAN

SHEET NUMBER:
GP-1

STATE OF CONNECTICUT BRADLEY J. PARSONS 24605 LICENSED PROFESSIONAL ENGINEER



1 GP-2 GRADING & DRAINAGE PLAN

SCALE : 1" = 40'-0"

40 0 20 40 80

(IN FEET) 1 inch = 40 ft.

NOTES:
1. GRADE/SHAPE DISTURBED AREA TO MATCH EXISTING GRADE AND FLOW TOWARDS PROP. GRASS LINED STORMWATER MANAGEMENT BASINS.
2. CONTRACTOR SHALL REPLACE TEMPORARY SEDIMENT TRAP OUTLET WITH RIP-RAP OVERFLOW WEIR UPON THE SITE OR DRAINAGE AREA BEING DEEMED STABILIZED PER THE SWPCP.

CITRINE
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DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: SKINNER STREET PROPERTIES LLC
ADDRESS: 9 SEQUONIA TRAIL EAST HAMPTON, CT 06424

CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II

SITE ADDRESS: SKINNER STREET EAST HAMPTON, CT 06424

APT FILING NUMBER: CT567110

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DATE: 02/14/20 CHECKED BY: BJP

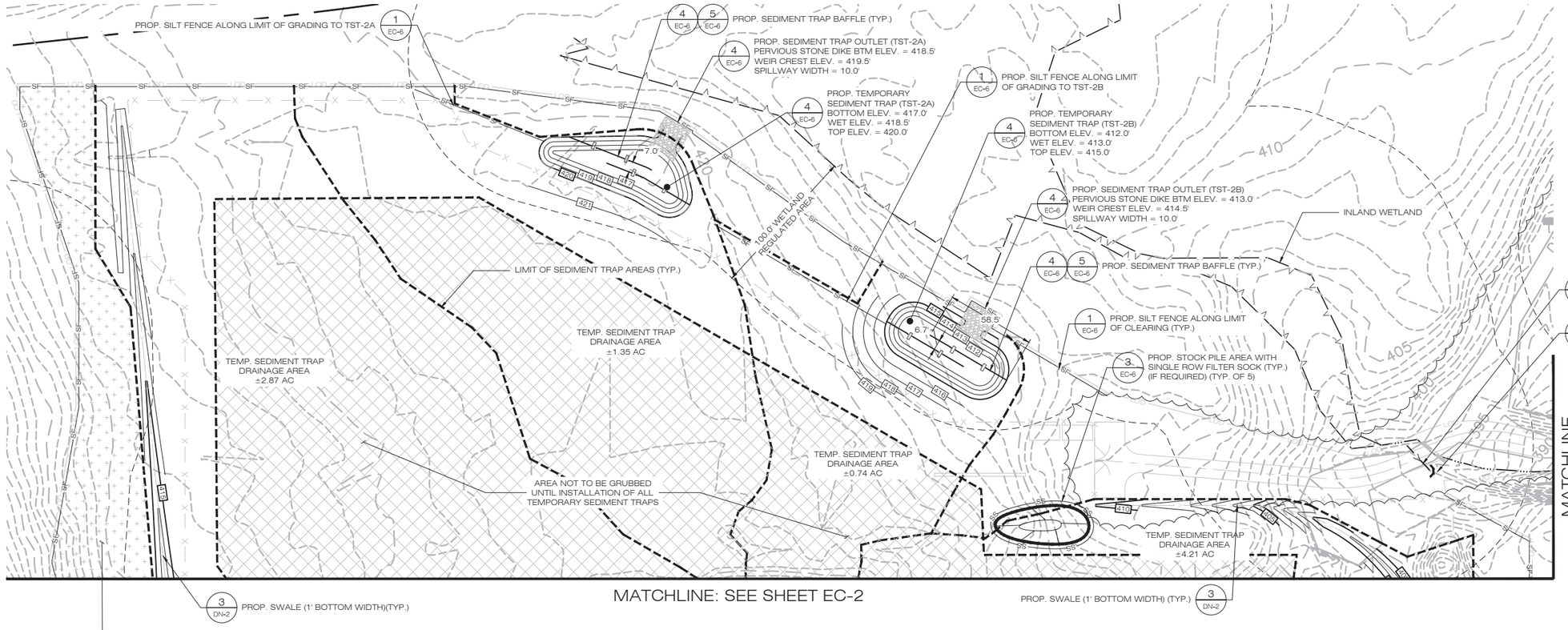
SHEET TITLE:

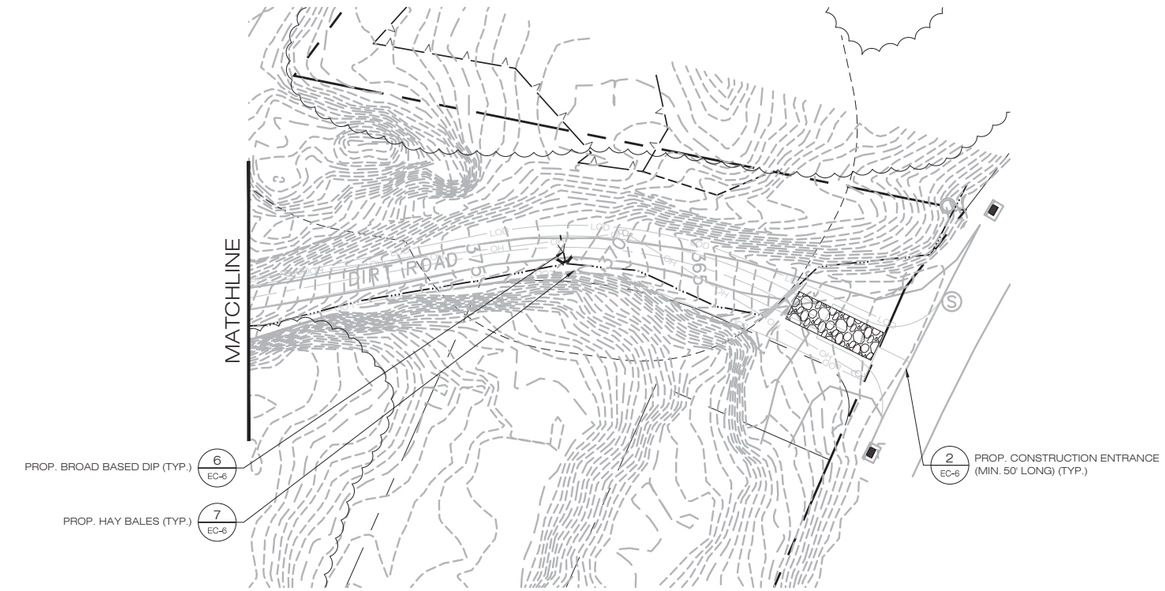
GRADING & DRAINAGE PLAN

SHEET NUMBER:

GP-2

STATE OF CONNECTICUT BRADLEY J. PARSONS No. 26025 REGISTERED PROFESSIONAL ENGINEER





SEDIMENTATION & EROSION CONTROL PLAN

SCALE : 1" = 40'-0"

(IN FEET) 1 inch = 40 ft.

CITRINE
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SITE ADDRESS: SKINNER STREET EAST HAMPTON, CT 06424

APT FILING NUMBER: CT567110

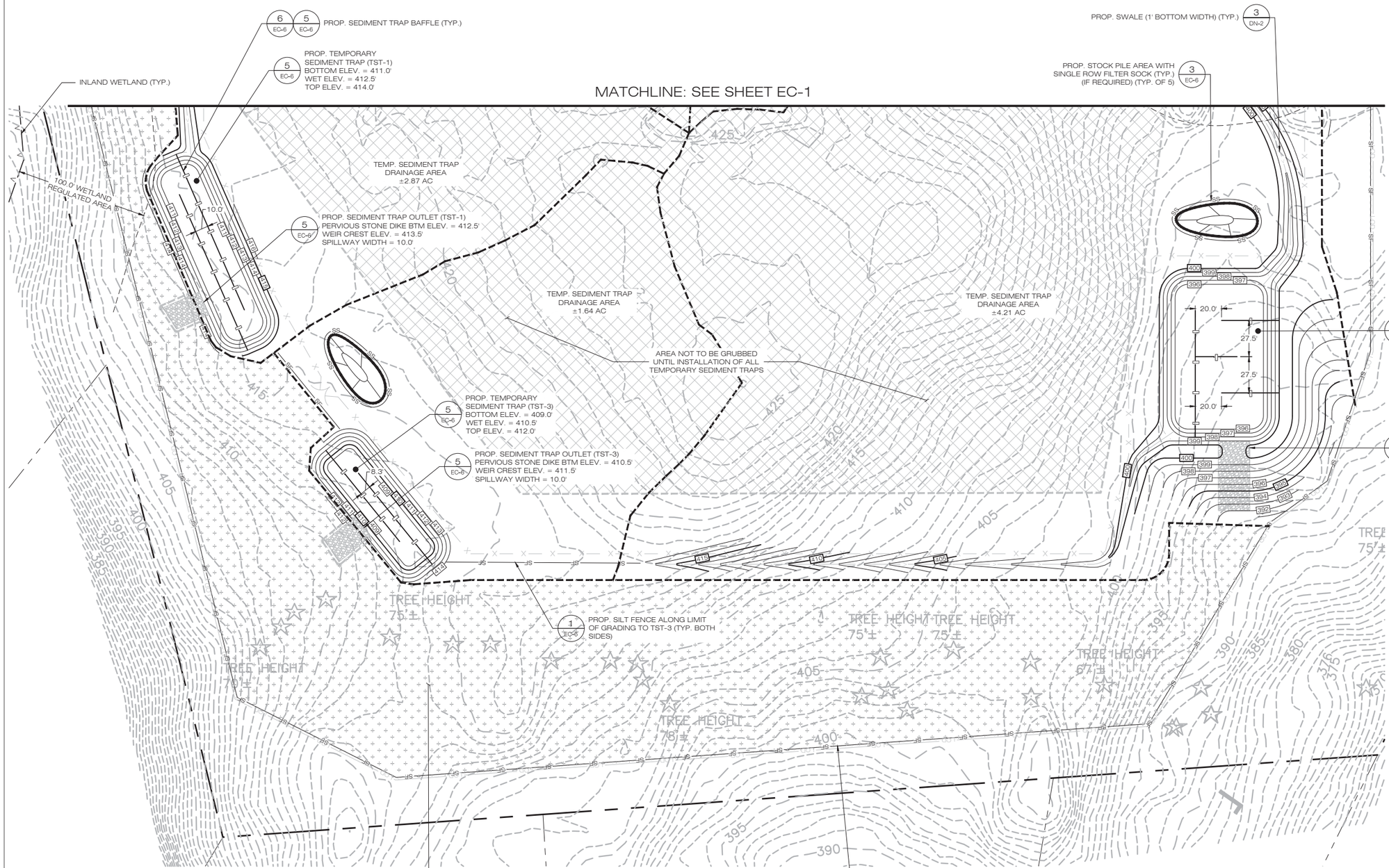
DRAWN BY: CSH

DATE: 02/14/20 CHECKED BY: BJP

SHEET TITLE:
SEDIMENTATION & EROSION CONTROL PLAN (PHASE 1)

SHEET NUMBER:
EC-1

STATE OF CONNECTICUT · BRADLEY J. PARSONS · NO. 28026 · LICENSED PROFESSIONAL ENGINEER



1 EC-2 SEDIMENTATION & EROSION CONTROL PLAN

SCALE : 1" = 40'-0"

40 0 20 40 80

(IN FEET) 1 inch = 40 ft.

CITRINE

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CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II

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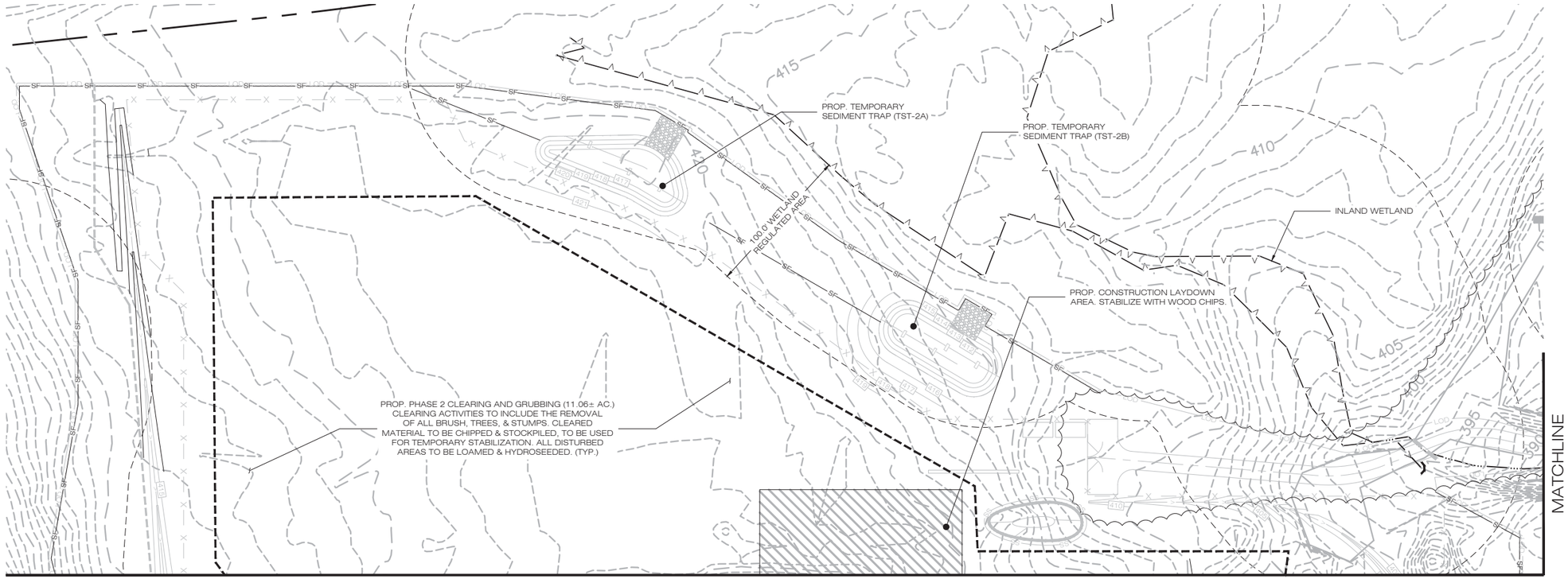
SHEET TITLE:

SEDIMENTATION & EROSION CONTROL PLAN (PHASE 1)

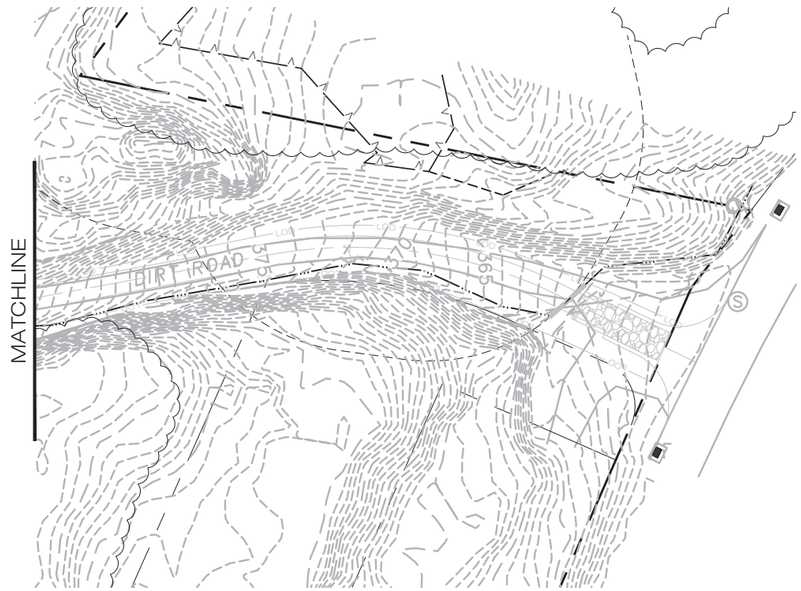
SHEET NUMBER:

EC-2

STATE OF CONNECTICUT BRADLEY J. PARSONS No. 28025 LICENSED PROFESSIONAL ENGINEER



MATCHLINE: SEE SHEET EC-4



1 EC-3 **SEDIMENTATION & EROSION CONTROL PLAN**
SCALE : 1" = 40'-0"

40 0 20 40 80
(IN FEET) 1 inch = 40 ft.

CITRINE
55 GREENS FARMS ROAD
WESTPORT, CT 06880
OFFICE: (203)-557-5554

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419
PHONE: (860)-663-1697 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

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NO	DATE	REVISION
0	02/14/20	FOR REVIEW: BJP
1	02/24/20	CSC SUBMISSION: BJP
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DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: SKINNER STREET PROPERTIES LLC
ADDRESS: 9 SEQUONIA TRAIL EAST HAMPTON, CT 06424

CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II

SITE ADDRESS: SKINNER STREET EAST HAMPTON, CT 06424

APT FILING NUMBER: CT567110

DRAWN BY: CSH
DATE: 02/14/20
CHECKED BY: BJP

SHEET TITLE:
SEDIMENTATION & EROSION CONTROL PLAN (PHASE 2)

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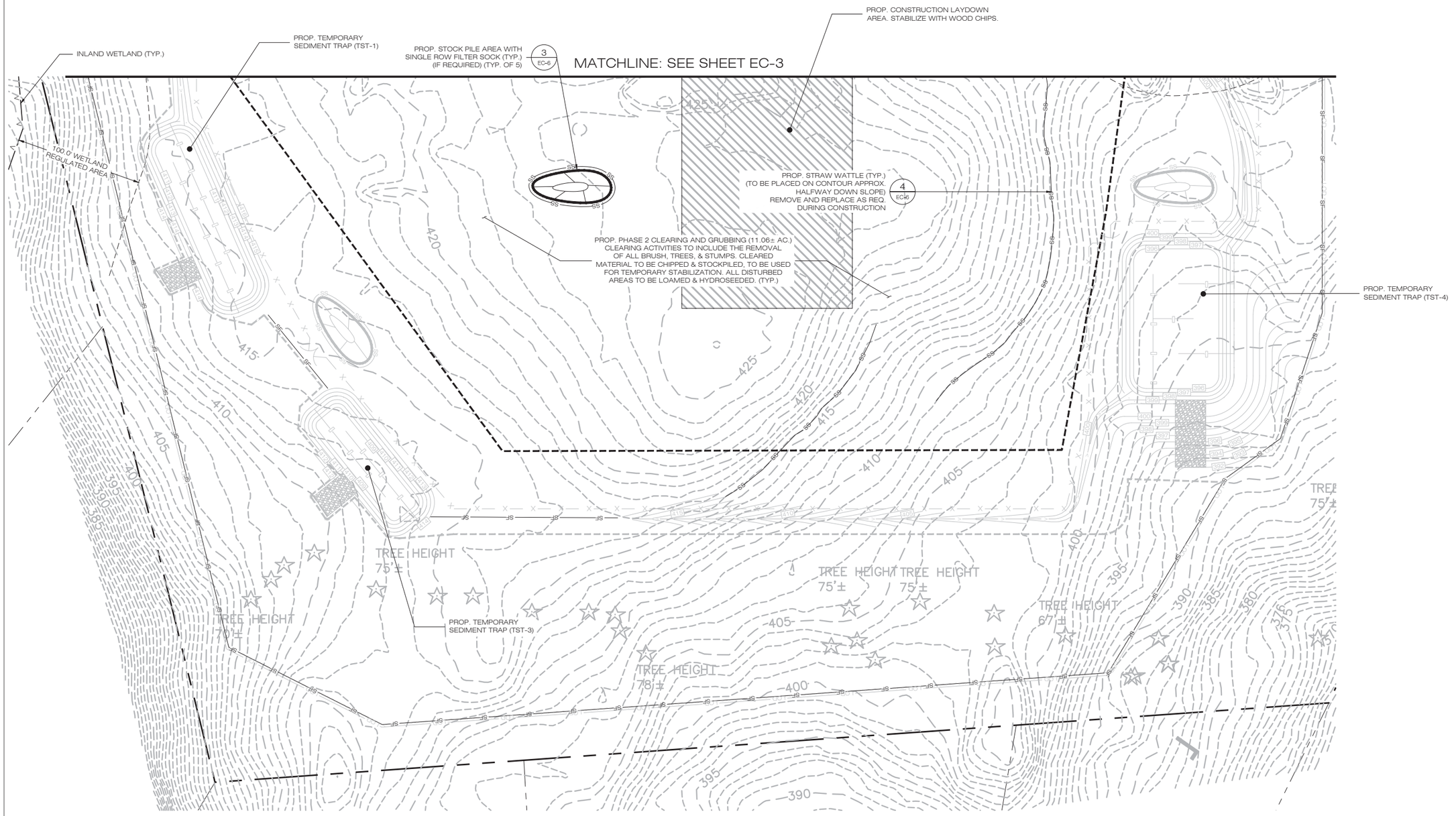

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SEDIMENTATION & EROSION CONTROL PLAN (PHASE 2)

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EC-4

STATE OF CONNECTICUT BRADLEY J. PARSONS No. 28025 LICENSED PROFESSIONAL ENGINEER

EROSION CONTROL NOTES

EROSION AND SEDIMENT CONTROL PLAN NOTES

1. THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE TOWN OF PERMITTEE AND/OR SWPCP MONITOR. ALL PERIMETER SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.

2. THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN IN A GENERAL SIZE AND LOCATION ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS, AS REQUIRED, AND AS DIRECTED BY THE PERMITTEE AND/OR SWPCP MONITOR. SEE SEDIMENT AND EROSION CONTROL DETAILS AND SUGGESTED CONSTRUCTION SEQUENCE FOR MORE INFORMATION. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.

3. THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPAL OFFICIALS, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.

4. THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR INSTALLED SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.25 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS AS NECESSARY IN A TIMELY MANOR.

5. THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (SILT FENCE, COMPOST FILTER SOCK, EROSION CONTROL BLANKET, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND EMERGENCY REPAIRS.

6. ALL FILL MATERIAL PLACED ADJACENT TO ANY WETLAND AREA SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN), SHALL BE PLACED IN MAXIMUM ONE FOOT LIFTS, AND SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS.

7. CONSTRUCTION ENTRANCES (ANTI-TRACKING PADS) SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF ALL CONSTRUCTION IF REQUIRED. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED. CONTRACTOR SHALL ENSURE THAT ALL VEHICLES EXITING THE SITE ARE PASSING OVER THE ANTI-TRACKING PADS PRIOR TO EXISTING.

8. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER.

9. NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS. ALL SLOPES SHALL BE SEEDED AND BANKS WILL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.

10. DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE THE GUIDELINES WITHIN THE APPROVED LIMIT OF DISTURBANCE IF REQUIRED. DISCHARGE TO STORM DRAINS OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR AND APPROVED BY THE PERMITTEE OR MUNICIPALITY.

11. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES AND SECURED APPROPRIATELY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.

12. MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.

13. SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.

14. TURF ESTABLISHMENT SHALL BE PERFORMED OVER ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION, IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.

15. MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP CONCRETE PADS, CLEAN THE STORMWATER MANAGEMENT SYSTEMS AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM PERMITTEE OR THE MUNICIPALITY.

16. SEEDING MIXTURES SHALL BE NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX (SEE SITE DETIALS SHEET DN-1), OR APPROVED EQUAL BY OWNER.

SEDIMENT & EROSION CONTROL NARRATIVE

1. THE PROJECT INVOLVES THE CONSTRUCTION OF A GROUND MOUNTED SOLAR PANEL FACILITY WITH ASSOCIATED EQUIPMENT, INCLUDING THE CLEARING ONLY OF APPROXIMATELY 3.21 ACRES AND THE CLEARING, GRUBBING AND GRADING OF APPROXIMATELY 11.06 ACRES OF EXISTING LOT.

THE PROPOSED PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:

A. CLEARING, GRUBBING, AND GRADING OF EXISTING LOT.
B. CONSTRUCTION OF 6,994 GROUND MOUNTED SOLAR PANELS AND ASSOCIATED EQUIPMENT.
B. THE STABILIZATION OF DISTURBED AREAS WITH PERMANENT GRASS TREATMENTS.

2. FOR THIS PROJECT, THERE ARE APPROXIMATELY 14.93± ACRE OF THE SITE BEING DISTURBED WITH NEGLIGIBLE INCREASE IN THE IMPERVIOUS AREA OF THE SITE, AS ALL ACCESS THOUGH THE SITE WILL BE GRAVEL. IMPERVIOUS AREAS ARE LIMITED TO THE CONCRETE PADS FOR ELECTRICAL EQUIPMENT.

3. THE PROJECT SITE, AS MAPPED IN THE SOIL SURVEY OF STATE OF CONNECTICUT (NRCS, VERSION 18, DEC 6, 2018), CONTAINS TYPE 61B AND 71C (HYDROLOGIC SOIL GROUP B), 308 (HYDROLOGIC SOIL GROUP C) AND 71E (HYDROLOGIC SOIL GROUP D) SOILS.

4. IT IS ANTICIPATED THAT CONSTRUCTION WILL BE COMPLETED IN APPROXIMATELY 3-4 MONTHS.

5. REFER TO THE CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENTATION NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.

6. STORMWATER MANAGEMENT DESIGN CRITERIA UTILIZES THE APPLICABLE SECTIONS OF THE 2004 CONNECTICUT STORMWATER QUALITY MANUAL AND THE TOWN OF EAST HAMPTON STANDARDS, TO THE EXTENT POSSIBLE AND PRACTICABLE FOR THIS PROJECT ON THIS SITE. EROSION AND SEDIMENTATION MEASURES ARE BASED UPON ENGINEERING PRACTICE, JUDGEMENT AND THE APPLICABLE SECTIONS OF THE CONNECTICUT EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, LATEST EDITION.

7. DETAILS FOR THE TYPICAL STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION MEASURES ARE SHOWN ON THE PLAN SHEETS OR PROVIDED AS SEPARATE SUPPORT DOCUMENTATION FOR REVIEW IN THIS PLAN.

8. CONSERVATION PRACTICES TO BE USED DURING CONSTRUCTION AREA:
   A. STAGED CONSTRUCTION;
   B. MINIMIZE THE DISTURBED AREAS TO THE EXTENT PRACTICABLE DURING CONSTRUCTION;
   C. STABILIZE DISTURBED AREAS AS SOON AS POSSIBLE WITH TEMPORARY OR PERMANENT MEASURES;
   D. MINIMIZE IMPERVIOUS AREAS;
   E. UTILIZE APPROPRIATE CONSTRUCTION EROSION AND SEDIMENTATION MEASURES.

9. THE FOLLOWING SEPARATE DOCUMENTS ARE TO BE CONSIDERED A PART OF THE EROSION AND SEDIMENTATION PLAN:
   A. STORMWATER MANAGEMENT MEMO FOR EXISTING AND PROPOSED PEAK FLOWS.

CONSTRUCTION OPERATION AND MAINTENANCE PLAN - BY CONTRACTOR

E&S MEASURE	INSPECTION SCHEDULE	MAINTENANCE REQUIRED
CONSTRUCTION ENTRANCE	DAILY	PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE. CLEAN PAVED SURFACES OF TRACKED SEDIMENT.
COMPOST FILTER SOCK	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED.
SILT FENCE	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.
TOPSOIL/BORROW STOCKPILES	DAILY	REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY.
TEMPORARY SEDIMENT BASIN (W/ BAFFLES)	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.5"	REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE HALF OF MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATERING AS NEEDED. RESTORE TRAP TO ORIGINAL DIMENSIONS. REPAIR/REPLACE BAFFLES WHEN FAILURE OR DETERIORATION IS OBSERVED.
TEMPORARY SEDIMENT TRAP (W/ BAFFLES)	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.5"	REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE HALF OF MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATERING AS NEEDED. RESTORE TRAP TO ORIGINAL DIMENSIONS. REPAIR/REPLACE BAFFLES WHEN FAILURE OR DETERIORATION IS OBSERVED.
TEMPORARY SOIL PROTECTION	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR ERODED OR BARE AREAS IMMEDIATELY. RESEED AND MULCH.

CONSTRUCTION SEQUENCE

THE FOLLOWING SEQUENCE OF CONSTRUCTION ACTIVITIES IS PROJECTED BASED UPON ENGINEERING JUDGEMENT AND BEST MANAGEMENT PRACTICES. THE CONTRACTOR SHALL NOT ALTER THE CONSTRUCTION SEQUENCE WITHOUT PRIOR WRITTEN APPROVAL FROM THE ENGINEER AND CT DEEP. ANY PROPOSED CHANGES TO THE CONSTRUCTION SEQUENCE SHALL BE SUBMITTED TO THE ENGINEER IN WRITING FOR REVIEW PRIOR TO THE START OF CONSTRUCTION.

PRE-CONSTRUCTION

1. CONTACT THE APPLICANT, ENGINEER, CT DEEP, AND REPRESENTATIVES TO SCHEDULE A PRE-CONSTRUCTION MEETING AT LEAST 5 DAYS PRIOR TO THE START OF CONSTRUCTION. PHYSICALLY FLAG THE LIMITS OF CLEARING IN THE FIELD AS NECESSARY TO FACILITATE THE PRE-CONSTRUCTION MEETING.
2. CONDUCT A PRE-CONSTRUCTION MEETING TO DISCUSS THE PROP. WORK AND EROSION AND SEDIMENTATION CONTROL MEASURES. THE MEETING SHOULD BE ATTENDED BY THE APPLICANT, THE APPLICANT REPRESENTATIVE(S), CT DEEP, THE GENERAL CONTRACTOR, DESIGNATED SUB-CONTRACTORS AND THE PERSON, OR PERSONS, RESPONSIBLE FOR THE IMPLEMENTATION, OPERATION, MONITORING AND MAINTENANCE OF THE EROSION AND SEDIMENTATION MEASURES. THE CONSTRUCTION PROCEDURES FOR THE ENTIRE PROJECT SHALL BE REVIEWED AT THIS MEETING.
3. NOTIFY THE APPLICANT AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT. NOTIFY CALL BEFORE YOU DIG AT 1-800-922-4455.

PHASE 1

- PERFORM CLEARING OF TREES ON SITE WITH NO GRUBBING, STUMPS TO REMAIN. CLEARING WORK SHALL BE ALLOWED DURING THE WINTER MONTHS ONLY IF THE GROUND IS FROZEN.
- CLEAR AND GRUB AS REQUIRED AND SHOWN ON EC-1 AND EC-2 TO INSTALL THE PERIMETER EROSION SEDIMENTATION CONTROL MEASURES AND CONSTRUCTION ENTRANCE.
- INSTALL PERIMETER SILT FENCE.
- ALL WETLAND AREAS SHALL BE PROTECTED PRIOR TO THE START OF MAJOR CONSTRUCTION.
- INSTALL GRAVEL AND COMPACTED EARTH ACCESS ROADS.
- INSTALL SWALES, TST-1, TST-2A, TST-2B, TST-3, AND TST-4.
- STOCKPILE TOPSOIL FOR REUSE.
- STABILIZE DISTURBED AREAS WITH LOAM AND HYDROSEED WITH TACKIFIER.
- INSTALL TREE PROTECTION IF APPLICABLE.
- NOTIFY CONNECTICUT RIVER COASTAL CONSERVATION DISTRICT AND QUALIFIED PROFESSIONAL OF COMPLETION PHASE FOR REQUIRED SITE INSPECTIONS IN ACCORDANCE WITH THE GENERAL PERMIT.

PHASE 2 (UPON INSTALLATION OF TEMPORARY SEDIMENT TRAPS)

- PERFORM REMAINING GRUBBING AS NECESSARY. REMOVE CUT WOOD AND STOCKPILE FOR FUTURE USE OR REMOVE OFF-SITE. REMOVE AND DISPOSE OF DEMOLITION DEBRIS OFF-SITE IN ACCORDANCE WITH APPLICABLE LAWS.
- STOCKPILE TOPSOIL.
- PERFORM ANY GRADING NECESSARY FOR THE SHAPING OF THE SITE EAST OF THE COMPACTED EARTH ACCESS ROAD.
- LOAM AND HYDROSEED (WITH TEMPORARY SEED MIX) WITH TACKIFIER REMAINING DISTURBED AREAS.
- NOTIFY CONNECTICUT RIVER COASTAL CONSERVATION DISTRICT AND QUALIFIED PROFESSIONAL OF COMPLETION PHASE FOR REQUIRED SITE INSPECTIONS IN ACCORDANCE WITH THE GENERAL PERMIT.

PHASE 3

- INSTALL ELECTRICAL CONDUIT AND CONCRETE PADS.
- INSTALL RACKING POSTS FOR GROUND MOUNTED SOLAR PANELS
- INSTALL GROUND MOUNTED SOLAR PANELS AND COMPLETE ELECTRICAL INSTALLATION.
- INSTALL PERIMETER CHAIN LINK FENCE AS SHOWN ON THE PLANS.
- NOTIFY CONNECTICUT RIVER COASTAL CONSERVATION DISTRICT AND QUALIFIED PROFESSIONAL OF COMPLETION PHASE FOR REQUIRED SITE INSPECTIONS IN ACCORDANCE WITH THE GENERAL PERMIT.

PHASE 4

- HYDROSEED WITH TACKIFIER ALL REMAINING DISTURBED AREAS.
- HYDROSEED WITH TACKIFIER THE POLLINATOR HABITAT.
- AFTER SUBSTANTIAL COMPLETION OF THE INSTALLATION OF THE SOLAR FACILITY AND THE AREAS ABOVE TST'S ARE DEEMED STABILIZED BY THE QUALIFIED INSPECTOR, COMPLETE REMAINING SITE WORK, INCLUDING CLEANING INFILTRATION BASINS, REMOVING BAFFLES, AND REBUILDING OVERFLOW WEIRS WITH IMPERVIOUS CORE.
- INSTALL/REBUILD GRAVEL ACCESS DRIVES.
- FINE GRADE, RAKE, SEED, AND MULCH ALL REMAINING DISTURBED AREAS.
- NOTIFY CONNECTICUT RIVER COASTAL CONSERVATION DISTRICT AND QUALIFIED PROFESSIONAL OF COMPLETION PHASE FOR REQUIRED SITE INSPECTIONS IN ACCORDANCE WITH THE GENERAL PERMIT.
- AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE PERMITTEE AND QUALIFIED INSPECTOR, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS.
- ISSUE NOTICE OF TERMINATION AND PERFORM PROJECT CLEANUP.

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SEDIMENTATION & EROSION CONTROL NOTES

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EC-5

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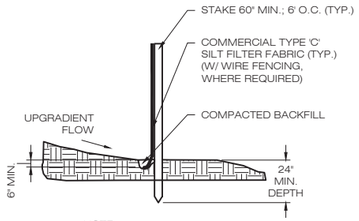
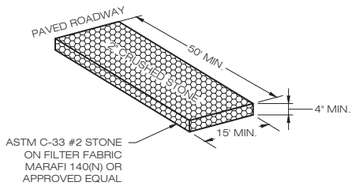


NOTE:
SILT FENCE SHALL BE LAPPED ONLY WHEN NECESSARY PER THE MANUFACTURER RECOMMENDATIONS.

1 EC-6 SILT FENCE DETAIL

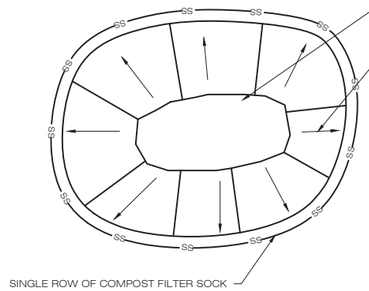
SCALE : N.T.S.



CONSTRUCTION ENTRANCE DETAIL

2 EC-6

SCALE : N.T.S.



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.

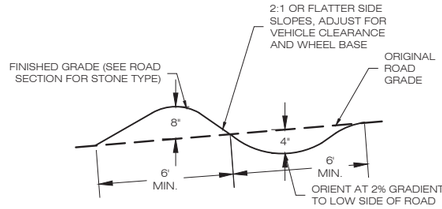
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.

3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

3 EC-6 MATERIALS STOCKPILE DETAIL

SCALE : N.T.S.



PROFILE VIEW

NOTES:

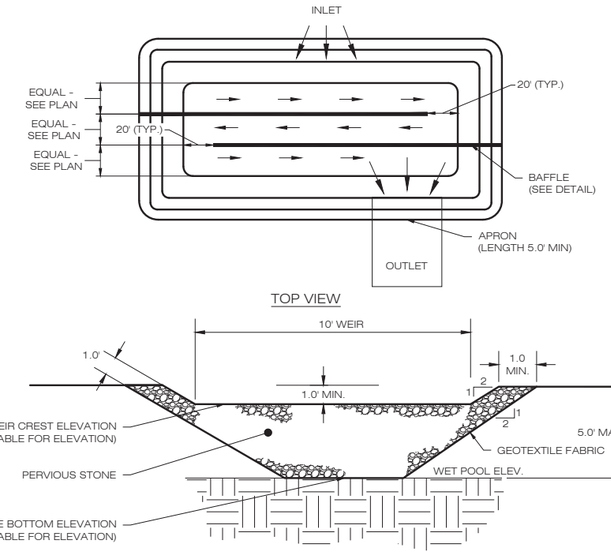
1. SHALL BE ORIENTATED AT A 10 DEGREE ANGLE DOWNGRADE.
2. RIP-RAP OUTFALL SHALL BE INSTALLED AT OUTFALL TO AVOID WASHOUT.
3. WATER BARS SHALL MAINTAIN A MINIMUM OF 6" STONE IN ALL AREAS.
2. WATERBARS SHALL DISCHARGE TO A STABLE AREA OR HAVE A RIP-RAP OUTFALL SHALL BE INSTALLED TO AVOID WASHOUT.
3. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 48 HOURS OF INSPECTION.
4. MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ROADWAY, SKIDTRAIL, OR DITCH HAS ACHIEVED PERMANENT STABILIZATION.
5. WATERBARS SHALL BE INSTALLED PRIOR TO ANY SWITCH BACK OR SHARP CURVE.
6. WATERBARS SHALL BE GRADED TO PREVENT DAMAGE DURING CONSTRUCTION

RECOMMENDED WATER BAR SPACING	
PERCENT SLOPE	SPACING (FT)
1%	400*
5%	125
10%	78
15%	58

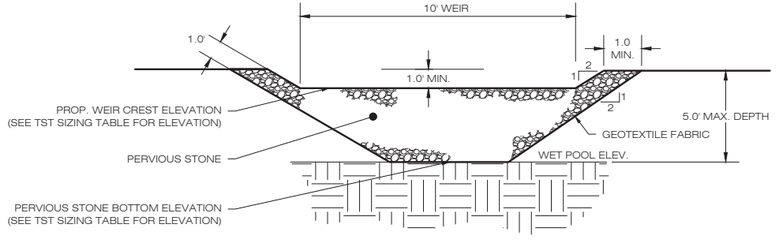
* OR AS DIRECTED BY THE ENGINEER OF RECORD.

6 EC-6 BROAD BASED DIP DETAIL

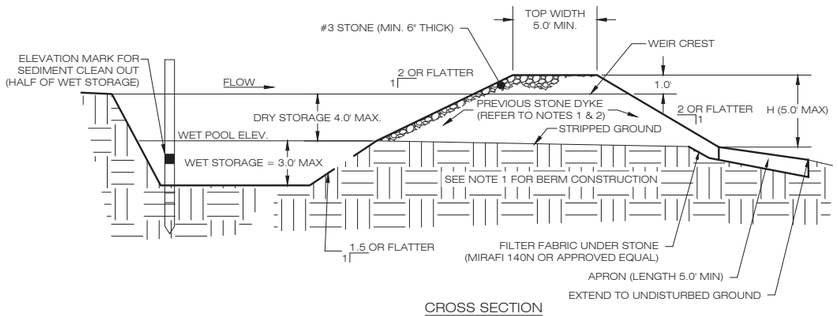
SCALE : N.T.S.



TOP VIEW



OUTLET ELEVATION

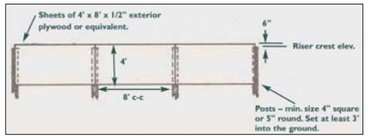


CROSS SECTION

NOTES:
1. CONSTRUCT TEMPORARY SEDIMENT TRAP BERMS AND SIDEWALLS PER THE INFILTRATION BASIN DETAIL.
2. PERVIOUS STONE DIKE SHALL BE CONSTRUCTED OF CT DOT MODIFIED RIP-RAP WITH #3 STONE ON FACE.
3. SEDIMENT TRAP BAFFLES SHALL BE INSTALLED AS SHOWN ON EC-1 AND EC-2.
4. SEE TST SIZING TABLE FOR WET AND DRY STORAGE VOLUMES.

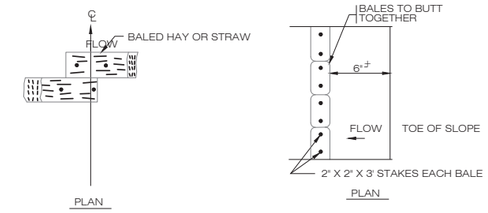
4 EC-6 TEMPORARY SEDIMENT TRAP

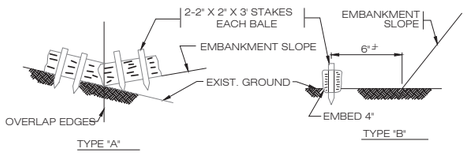
SCALE : N.T.S.



5 EC-6 SEDIMENT TRAP BAFFLE

SCALE : N.T.S.





NOTE:
TO BE USED IN LOCATIONS WHERE THE EXISTING GROUND SLOPES IN TOWARD THE TOE OF THE EMBANKMENT.

NOTE:
TO BE USED WHERE THE EXISTING GROUND SLOPES AWAY FROM THE TOE OF THE EMBANKMENT

HAYBALE CHECK DAM SEDIMENTATION CONTROL BARRIER

7 EC-6

SCALE : N.T.S.

TEMPORARY SEDIMENT TRAP SIZING TABLE

NAME	DRAINAGE AREA (AC)	SEDIMENT VOLUME/ACRE AREA (CY)	REQ. VOLUME (CY)	REQ. WET VOLUME (CY)	PROP. BTM. ELEV. (FT)	PROP. STONE DIKE BTM. ELEV. (FT)	PROP. WEIR CREST ELEV. (FT)	PROP. TOP ELEV. (FT)	WET VOL. PROVIDED (CY)	TOTAL VOL. PROVIDED. (CY)
TST-1	2.83 AC	134 CYD	379.87 CY	189.93 CYD	411.0	412.5	413.5	414.0	270.32 CY	498.88 CY
TST-2A	1.26 AC	134 CYD	168.49 CY	84.25 CYD	417.0	418.5	419.5	420.0	103.86 CY	203.68 CY
TST-2B	0.67 AC	134 CYD	89.45 CY	44.73 CYD	412.0	413.0	414.5	415.0	58.93 CY	186.17 CY
TST-3	1.62 AC	134 CYD	216.75 CY	108.38 CYD	409.0	410.5	411.5	412.5	169.30 CY	319.19 CY
TST-4	4.32 AC	134 CYD	578.66 CY	289.33 CYD	396.0	397.0	399.5	400.5	289.39 CY	1190.41 CY

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DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: SKINNER STREET PROPERTIES LLC
ADDRESS: 9 SEQUONIA TRAIL EAST HAMPTON, CT 06424

CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II

SITE ADDRESS: SKINNER STREET EAST HAMPTON, CT 06424

APT FILING NUMBER: CT567110

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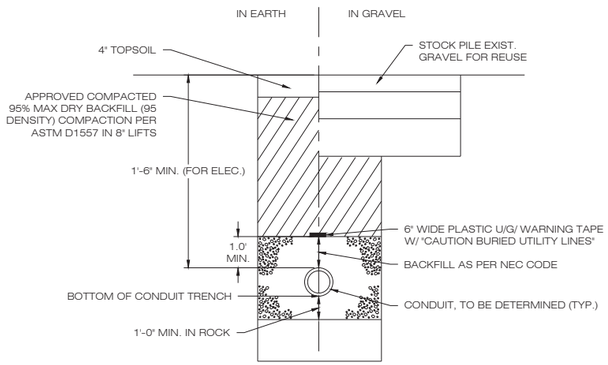
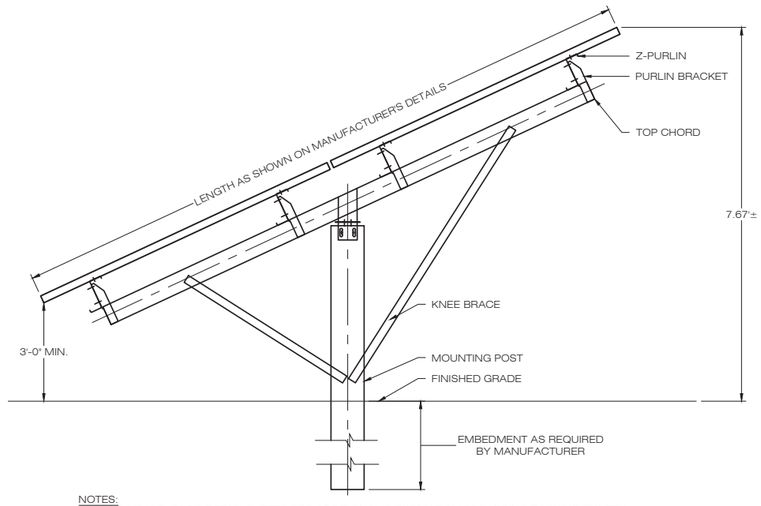
SHEET TITLE:
SEDIMENTATION & EROSION CONTROL DETAILS

SHEET NUMBER:
EC-6

STATE OF CONNECTICUT BRADLEY J. PARSONS No. 28025 LICENSED PROFESSIONAL ENGINEER

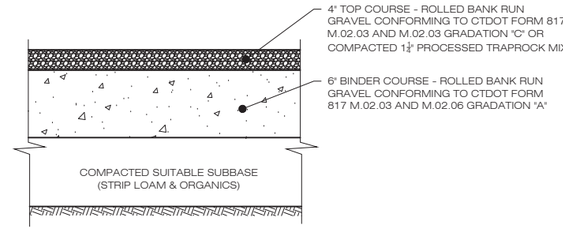


1 DN-1 **ELECTRICAL TRENCH DETAIL**
SCALE : N.T.S.



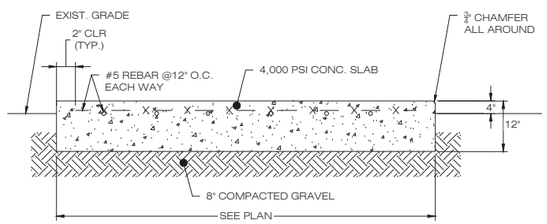
NOTES:
SEE MANUFACTURER'S DETAIL SHEETS FOR ADDITIONAL INFORMATION REGARDING RACKING SYSTEM REQUIREMENTS AND INSTALLATION PROCEDURES. RACKING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.

2 DN-1 **TYPICAL POST MOUNTED RACKING SYSTEM**
SCALE : N.T.S.

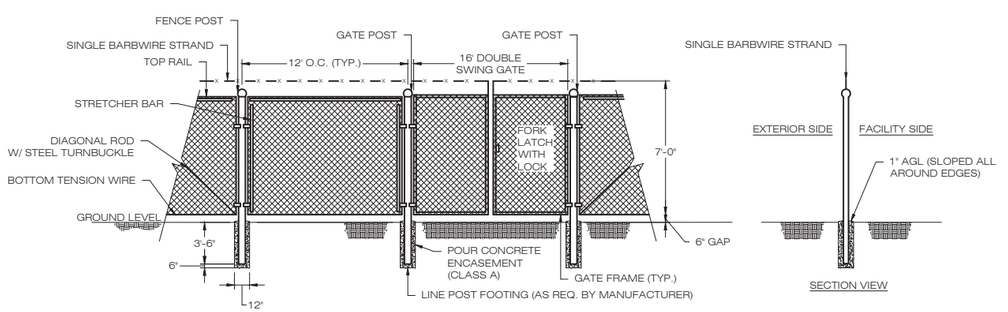


NOTES:
1. SUBBASE MAY CONSIST OF NATIVE MATERIALS IF FOUND ACCEPTABLE BY THE ENGINEER. SUBBASE TO BE COMPACTED TO 95% MAX DRY DENSITY.
2. SUBBASE IS TO BE FREE FROM DEBRIS AND UNSUITABLE MATERIALS.

3 DN-1 **GRAVEL ACCESS DRIVE SECTION**
SCALE : N.T.S.



4 DN-1 **CONCRETE EQUIPMENT PAD**
SCALE : N.T.S.



5 DN-1 **CHAIN-LINK FENCE & GATE DETAIL**
SCALE : N.T.S.

CP EAST HAMPTON
GROUND MOUNT SOLAR FARM

IN CASE OF EMERGENCY
CALL T.B.D.

NOTES:
EMERGENCY CALL NUMBER TO BE PROVIDED ONCE DETERMINED.

6 DN-1 **NOTIFICATION SIGN DETAIL**
SCALE : N.T.S.

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SHEET TITLE:
SITE DETAILS

SHEET NUMBER:
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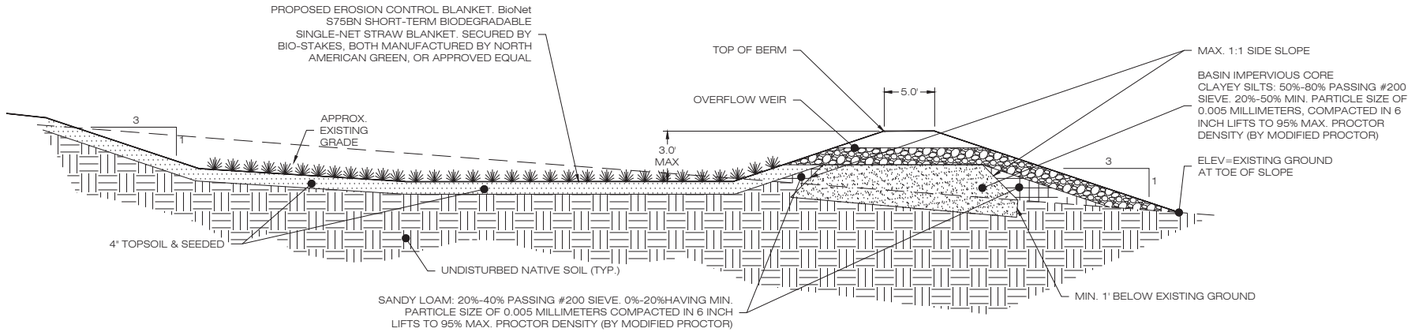
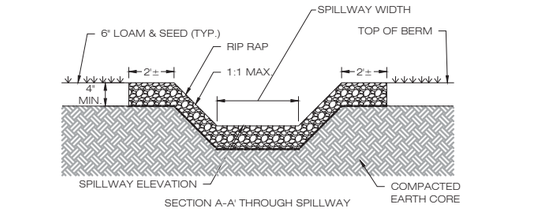


NOTES:

- SEED MIX TO BE NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SITES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.
- FOR CONVERTING TST TO INFILTRATION BASIN, REMOVE BAFFLES, CLEAN OUT SEDIMENT, RESHAPE AS REQUIRED, RECONSTRUCT OUTLET WEIR INCLUDING ADDITIONAL IMPERVIOUS CORE, AND RESEEDING.
- INSPECT AND CLEAN PIPES PRIOR TO INSTALLING PERMANENT OUTLET.

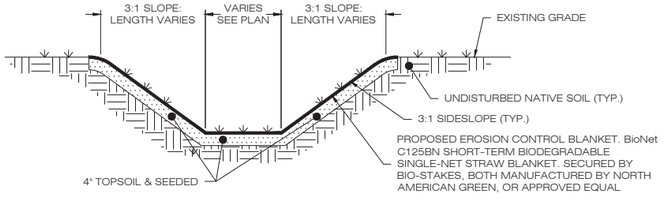
1 GRASS LINED INFILTRATION BASIN

DN-2 **SCALE : N.T.S.**



2 OVERFLOW WEIR DETAIL

DN-2 **SCALE : N.T.S.**

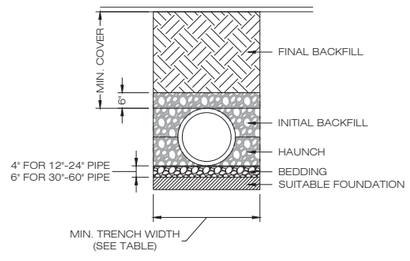


NOTES:

1. SEED MIX TO BE NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SITES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.

3 GRASS LINED SWALE

DN-2 **SCALE : N.T.S.**



RECOMMENDED MIN. TRENCH WIDTH	
PIPE DIA.	MIN. TRENCH WIDTH
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
48"	80"
60"	96"

NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321 , "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS", LATEST ADDITION.
2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II OR III. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 4"-24" (100mm-600mm); 6" (150mm) FOR 30"-60" (7S0mm-900mm).
5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II OR III IN THE PIPE ZONE EXTENDING NOT LESS THAN 6" ABOVE CROWN OF PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOATION. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" UP TO 48" DIAMETER PIPE AND 24" OF COVER FOR 54"-60" DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

4 HDPE STORM DRAINAGE TRENCH DETAIL

DN-2 **SCALE : N.T.S.**

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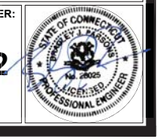


GENERAL NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH PROJECT DEVELOPER STANDARDS, TOWN OF EAST HAMPTON STANDARDS, CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY.

2. IF NO PROJECT CONSTRUCTION SPECIFICATION PACKAGE IS PROVIDED BY THE PROJECT DEVELOPER OR THEIR REPRESENTATIVE, THE CONTRACTOR SHALL COMPLY WITH THE MANUFACTURE, TOWN OF EAST HAMPTON, OR CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AND BE IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.

3. THE PROJECT DEVELOPER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING AND STORMWATER PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL TOWN OF EAST HAMPTON CONSTRUCTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.

4. REFER TO PLANS, DETAILS AND REPORTS PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE PROJECT DEVELOPER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING/CONSTRUCTION. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE PROJECT DEVELOPERS CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.

5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS PER PLANS AND SPECIFICATIONS TO THE PROJECT DEVELOPER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.

6. SHOULD ANY UNKNOWN OR INCORRECTLY LOCATED EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE PROJECT DEVELOPER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.

7. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE PROJECT DEVELOPER OR OTHERS DURING OCCUPIED HOURS, EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE PROJECT DEVELOPER AND THE LOCAL MUNICIPALITY. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.

8. THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.

9. THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.

10. THE CONTRACTOR SHALL COMPLY WITH OSHA CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.

11. THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OF PERSONNEL OR TO SUPERVISE SAFETY AND DO NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.

12. THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE PROJECT DEVELOPER OR TOWN OF EAST HAMPTON.

13. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE PROJECT DEVELOPER AT THE END OF CONSTRUCTION.

14. ALTERNATIVE METHODS AND PRODUCTS, OTHER THAN THOSE SPECIFIED, MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING/CONSTRUCTION PROCESS.

15. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "DIG SAFE" 72 HOURS BEFORE COMMENCEMENT OF WORK AT "811" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.

16. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.

SITE PLAN NOTES

1. THE SURVEY WAS PROVIDED BY MARTIN SURVEYING ASSOCIATES. DATED JANUARY 15, 2020.

2. THERE ARE BVWS LOCATED ON THE SITE AS INDICATED ON THE PLANS. BVW BOUNDARIES WERE FLAGGED AND LOCATED BY ALL POINTS TECHNOLOGY, INC, IN JANUARY 2020.

3. THERE WILL BE MINIMAL GRADING ON SITE IN THE AREAS OF THE MINOR CLEARING, TO ENSURE THAT PROPER DRAINAGE IS MAINTAINED.

4. THE CONTRACTOR SHALL FOLLOW THE RECOMMENDED SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION CONTROL PLAN OR SUBMIT AN ALTERNATE PLAN FOR APPROVAL BY THE ENGINEER AND/OR PERMITTING AGENCIES PRIOR TO THE START CONSTRUCTION. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.

5. PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR BVWS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. IN ADDITION, THE CONTRACTOR SHALL ADHERE TO "EROSION CONTROL PLAN" CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY GOVERNMENT AGENCIES WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.

6. ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK, SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL. OTHERWISE THIS WORK SHALL CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN 8" LIFTS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT 95% PERCENT OF OPTIMUM MOISTURE CONTENT.

7. ALL DISTURBANCE INCURRED TO PUBLIC, MUNICIPAL, COUNTY, STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF EAST HAMPTON AND STATE OF CONNECTICUT.

8. IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPER'S ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPER'S ENVIRONMENTAL CONSULTANT.

UTILITY NOTES

1. CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE TOWN OF EAST HAMPTON TO SECURE CONSTRUCTION PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
2. REFER TO DRAWINGS BY PROJECT DEVELOPER FOR THE ONSITE ELECTRICAL DRAWINGS AND INTERCONNECTION TO EXISTING ELECTRICAL GRID. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT. THESE DETAILS ARE NOT INCLUDED IN THESE PLANS.
3. UTILITY LOCATIONS AND PENETRATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE ELECTRICAL ENGINEER AND THE PROJECT DEVELOPER'S CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROP. SANITARY SEWERS AND WHERE PROP. STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE PROJECT DEVELOPER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
5. UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
6. THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
7. THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
8. ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE TOWN OF EAST HAMPTON.
9. ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
10. RELOCATION OF UTILITY PROVIDER FACILITIES, SUCH AS POLES, SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
11. THE CONTRACTOR SHALL COMPACT PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION.
12. CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
13. ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
14. A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER. A 6-INCH TO 18-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASEMENT OF THE PROP. SANITARY PIPING.
15. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, DRAINAGE STRUCTURE, SWALE OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE PROJECT DEVELOPER AND TOWN OF EAST HAMPTON.
16. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY, AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE INCLUDING SERVICES. CONTACT "DIG SAFE" AT 811 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY AND STORM DRAINAGE LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROP. UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
17. THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
18. ELECTRIC DRAWINGS AND REQUIREMENTS ARE NOT INCLUDED AS PART OF THIS DRAWING SET AND SHOULD BE OBTAINED FROM THE PROJECT DEVELOPER.
19. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
20. THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE PROJECT DEVELOPER, TOWN OF EAST HAMPTON, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.

CITRINE
55 GREENS FARMS ROAD
WESTPORT, CT 06880
OFFICE: (203)-557-5554

ALL-POINTS TECHNOLOGY CORPORATION
3 SADDLEBROOK DRIVE PHONE: (860)-663-1697
KILLINGWORTH, CT 06419 FAX: (860)-663-0935
WWW.ALLPOINTSTECH.COM

CSC PERMIT SET		
NO	DATE	REVISION
0	02/14/20	FOR REVIEW: BJP
1	02/24/20	CSC SUBMISSION: BJP
2		
3		
4		
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 3 SADDLEBROOK DRIVE KILLINGWORTH, CT 06419

OWNER: SKINNER STREET PROPERTIES LLC
ADDRESS: 9 SEQUONIA TRAIL EAST HAMPTON, CT 06424

CP EAST HAMPTON SOLAR I & CP EAST HAMPTON SOLAR II

SITE ADDRESS: SKINNER STREET EAST HAMPTON, CT 06424

APT FILING NUMBER: CT567110

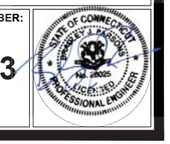
DRAWN BY: CSH
DATE: 02/14/20
CHECKED BY: BJP

SHEET TITLE:

SITE NOTES

SHEET NUMBER:

DN-3



APPENDIX E
SWPCP Inspection and Stormwater Monitoring Report Form

General Information					
Name of Project				**Inspection Date**	
Inspector Name, Title & Contact Information					
Inspector Qualifications					
Present Phase of Construction					
Inspection Location (if multiple inspections are required, specify location where this inspection is being conducted)					

Inspection Frequency *(Note: you may be subject to different inspection frequencies in different areas of the site. Check all that apply.)*

Standard Frequency: ☐ Weekly ☐ Within 24 hours of the end of a storm that generates a discharge

Reduced Frequency:

- ☐ Once per month (for stabilized areas)

Date of last rainfall:

Total rainfall amount:

Current Weather Conditions:

Condition and Effectiveness of Erosion and Sediment (E&S) Controls (see reverse for instructions)			
Type/Location of E&S Control [Add an additional sheet if necessary]	**Repairs or Other Maintenance Needed?***	**Corrective Action Required?***	**Notes**
1. Sediment Traps	☐Yes ☐No	☐Yes ☐No	
2. Sediment Basins	☐Yes ☐No	☐Yes ☐No	
3. Diversion Ditches	☐Yes ☐No	☐Yes ☐No	
4. Perimeter Control	☐Yes ☐No	☐Yes ☐No	
5. Surface Stabilization	☐Yes ☐No	☐Yes ☐No	
6. Construction Entrance	☐Yes ☐No	☐Yes ☐No	
7. Soil Stockpile Areas	☐Yes ☐No	☐Yes ☐No	
8. Natural Depression	☐Yes ☐No	☐Yes ☐No	

*** Note:** The permit differentiates between conditions requiring repairs and maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition and requires repairs if controls are not operating as intended. Corrective actions are triggered only for specific, more serious conditions, which include: 1) A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in the Guidelines; 2) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements; 3) A prohibited discharge is occurring or has occurred; or 4) Corrective actions are required as a result of a permit violation found during an inspection. If a condition on your site requires a corrective action, engineered corrective actions shall be implemented within 7 days of the inspection.

Condition and Effectiveness of Pollution Prevention (Good Housekeeping) Practices (see reverse for instructions)			
Type/Location of PP Practices [Add an additional sheet if necessary]	**Repairs or Other Maintenance Needed?***	**Corrective Action Required?***	**Notes**
1. Storage of Construction Materials	☐Yes ☐No	☐Yes ☐No	
2. Oil/Gas/Chemicals	☐Yes ☐No	☐Yes ☐No	
3. Haz/Toxic Waste	☐Yes ☐No	☐Yes ☐No	
4. Construction Waste	☐Yes ☐No	☐Yes ☐No	
5. Sanitary Waste	☐Yes ☐No	☐Yes ☐No	
6. Offsite Vehicle Tracking	☐Yes ☐No	☐Yes ☐No	
7.	☐Yes ☐No	☐Yes ☐No	
8.	☐Yes ☐No	☐Yes ☐No	

*** Note:** The permit differentiates between conditions requiring repairs and maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition and requires repairs if controls are not operating as intended. Corrective actions are triggered only for specific, more serious conditions, which include: 1) A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in the Guidelines; 2) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements; 3) A prohibited discharge is occurring or has occurred; or 4) Corrective actions are required as a result of a permit violation found during an inspection. If a condition on your site requires a corrective action, engineered corrective actions shall be implemented within 7 days of the inspection.

Stabilization of Exposed Soil			
Stabilization Area [Add an additional sheet if necessary]	**Stabilization Method**	**Have Stabilization Been Initiated?**	**Notes**
1. Interior (Solar Array)		☐ YES ☐ NO If yes, provide date: 04/2019	
2. Soil Stockpile		☐ YES ☐ NO If yes, provide date: 05/29/2019	
3.		☐ YES ☐ NO If yes, provide date: 5	
4.		☐ YES ☐ NO If yes, provide date:	
5.		☐ YES ☐ NO If yes, provide date:	

Instructions for Filling Out the "Stabilization of Exposed Soil" Table

Stabilization Area

List all areas where soil stabilization is required to begin because construction work in that area has permanently stopped or temporarily stopped, and all areas where stabilization has been implemented.

Stabilization Method
For each area, specify the method of stabilization (e.g., hydroseed, sod, planted vegetation, erosion control blanket, mulch, rock).

Have You Initiated Stabilization
For each area, indicate whether stabilization has been initiated.

Notes
For each area where stabilization has been initiated, describe the progress that has been made, and what additional actions are necessary to complete stabilization. Note the effectiveness of stabilization in preventing erosion. If stabilization has been initiated but not completed, make a note of the date it is to be completed. If stabilization has been completed, make a note of the date it was completed. If stabilization has not yet been initiated, make a note of the date it is to be initiated, and the date it is to be completed.

Description of Discharges	
Was a stormwater discharge or other discharge occurring from any part of your site at the time of the inspection? ☐ Yes ☐ No **If "yes", provide the following information for each point of discharge:**	
Discharge Location [Add an additional sheet if necessary]	**Observations**
1.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐ Yes ☐ No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
2.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐ Yes ☐ No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
3.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐ Yes ☐ No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
4.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐ Yes ☐ No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:

Summary
The Site is: ☐ In Compliance ☐ Out of Compliance **with the terms and conditions of the SWPCP and General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.**
Describe remedial actions required to bring the Site back into compliance (Refer to Corrective Action Log Form):
Describe interim measures required to minimize the potential for the discharge of pollutants from the Site:
Notes: Non-engineered corrective actions (as identified in the Guidelines) shall be implemented on site within 24 hours and incorporated into a revised SWPCP within three (3) calendar days of the date of inspection unless another schedule is specified in the Guidelines. Engineered corrective actions (as identified in the Guidelines) shall be implemented on site within seven (7) days and incorporated into a revised SWPCP within ten (10) days of the date of inspection unless another schedule is specified in the Guidelines or is approved by DEEP.

Section B – Corrective Action Progress (Complete this section no later than 7 calendar days after discovering the condition that triggered corrective action)			
Stormwater Control Modifications to be Implemented to Correct the Problem			
List of Stormwater Control Modification(s) Needed to Correct Problem (Add an additional sheet if necessary)	**Date of Completion**	**SWPCP Update Necessary?**	**Notes**
1.		☐Yes ☐No If yes, provide date SWPCP modified:	
2.		☐Yes ☐No If yes, provide date SWPCP modified:	
3.		☐Yes ☐No If yes, provide date SWPCP modified:	
4.		☐Yes ☐No If yes, provide date SWPCP modified:	
5.		☐Yes ☐No If yes, provide date SWPCP modified:	
6.		☐Yes ☐No If yes, provide date SWPCP modified:	
7.			

Stormwater Construction Site Inspection Report

CERTIFICATION STATEMENT

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

Inspector:

SIGNATURE:_____

PRINTED NAME: _____

TITLE:_____

AFFILIATION:_____

ADDRESS: _____

_____

PHONE: _____

DATE: _____

Permittee or his/her authorized representative:

SIGNATURE:_____

PRINTED NAME: _____

TITLE:_____

AFFILIATION:_____

ADDRESS: _____

_____

PHONE: _____

DATE: _____

Connecticut Department of
Energy & Environmental Protection
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, issued 8/21/13, effective 10/1/13
Stormwater Monitoring Report

SITE INFORMATION

Permittee: _____

Mailing Address: _____

Business Phone: _____ ext.: _____ Fax: _____

Contact Person: _____ Title: _____

Site Name: _____

Site Address: _____

Receiving Water (name, basin): _____

Stormwater Permit No. GSN _____

SAMPLING INFORMATION (Submit a separate form for each outfall)

Outfall Designation: _____ Date/Time Collected: _____

Outfall Location(s) (lat/lon or map link): _____

Person Collecting Sample: _____

Storm Magnitude (inches): _____ Storm Duration (hours): _____

Size of Disturbed Area at any time: _____

MONITORING RESULTS

Sample #	Parameter	Method	Results (units)	Laboratory (if applicable)
1	Turbidity			
2	Turbidity			
3	Turbidity			
4	Turbidity			

(provide an attachment if more than 4 samples were taken for this outfall) Avg =

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: _____

Signature: _____ Date: _____

Please send completed form to:

DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
79 ELM STREET
HARTFORD, CT 06106-5127
ATTN: NEAL WILLIAMS

APPENDIX F
Notice of Termination Form

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Notice of Termination Form

Please complete and submit this form in accordance with the general permit (DEP-PED-GP-015) in order to ensure the proper handling of your termination. Print or type unless otherwise noted.

Note: Ensure that for commercial and industrial facilities, registrations under the *General Permit for the Discharge of Stormwater Associated with Industrial Activity* (DEP-PED-GP-014) or the *General Permit for the Discharge of Stormwater from Commercial Activities* (DEP-PED-GP-004) have been filed where applicable. For questions about the applicability of these general permits, please call the Department at 860-424-3018.

Part I: Registrant Information

1. Permit number: ***GSN***
2. Fill in the name of the registrant(s) as indicated on the registration certificate:

   Registrant:
3. Site Address:

   City/Town: State: Zip Code:
4. Date all storm drainage structures were cleaned of construction sediment:

   Date of Completion of Construction:

   Date of Last Inspection (must be at least three months after final stabilization pursuant to Section 6(b)(6)(D) of the general permit):
5. Check the post-construction activities at the site (check all that apply):

   ☐ Industrial ☐ Residential ☐ Commercial ☐ Capped Landfill

   ☐ Other (describe):

Part II: Certification

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

Signature of Permittee	Date
Name of Permittee (print or type)	Title (if applicable)

Note: Please submit this Notice of Termination Form to:

STORMWATER PERMIT COORDINATOR
BUREAU OF WATER MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127