AECOM Environment

Stormwater Report

Cranberry Point Energy Storage, LLC
Project: Cranberry Point Energy Storage Project
Developer: Plus Power, LLC
31 R Main Street, Carver, MA

August 05, 2021

Prepared by:
AECOM

AECOM Environment

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1.0 Introduction

1.1 Project Description

The proposed Cranberry Point Energy Storage Project is located at 31 R Main Street in Carver, Massachusetts. The property is undeveloped and contains unimproved roads to access a cell tower and cranberry bogs to the South.

Cranberry Point Energy Storage, LLC is proposing to lease a portion of the property to house battery storage system enclosures, each having its own 5,000 kVA transformer. There will be two separate storage areas, a Western storage area and an Eastern storage area, connected by an access road. The battery storage system enclosures, transformers, and breakers will be supported by concrete slab foundations. Other associated electrical equipment will be supported by concrete slabs or pier foundations. Site plans currently assume the battery storage technology will be Tesla Megapack 2 units. In addition, the project area will include a transmission owner substation, a facility substation, and low voltage/medium voltage equipment which will be supported by concrete pads.

2.0 Existing Conditions

2.1 Existing Site Description

The project site mainly consists of forest, sandy mounds, open sandy areas, and wetlands just South. A cranberry bog is located directly South of the Eastern portion of the lease area. North of the site is an Eversource Substation. The project site is divided into two drainage areas, separated by wetlands. The drainage area for the West site is 2.6 acres, and the drainage area for the East site is 2.2 acres.

Topography of existing site range from approximately 135 feet to approximately 105 feet. A wetlands feature was delineated approximately in the middle and South of the site. Overall, the area to the North is at a higher elevation and slopes down to the wetlands and cranberry bog in the South. Currently, runoff at the site flows overland and discharges to the wetlands and cranberry bog in the South.

Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panel No. 25023C0343J (July 17, 2012), the project site is outside of the special flood hazard areas subject to inundation by the 0.2% annual chance flood.

According to the Massachusetts Geographic Information System (MassGIS) online mapping tool (OLIVER), based on the 14th Edition Heritage Atlas (August 2017), the Project Site is not located within any Natural Heritage and Endangered Species Program (NHESP) Estimated Habitats of Rare Wildlife or Priority Habitats of Rare Species. There are no Certified Vernal Pools or Potential Vernal Pools located on the Project Site.

The soil type was identified by a Test Pit Excavation effort on December 21, 2018[1]. Soil analysis from all six test pits throughout the site showed the presence of poorly graded sand. The NRCS hydrologic soil

[1] The Particle Size Analysis performed by GeoTesting Express references the Project “Carver Energy Storage.” The same project site is now known as “Cranberry Point Energy Storage Project.”

group, which governs the infiltration rate, is type “A,” representing sandy soil. The results of the laboratory sieve analysis are included in Attachment D.

Geosearch, Inc. advanced eight soil test borings at the site in January 2021. The general subsurface conditions observed at the boring locations consisted of shallow surficial forest mat, subsoil and isolated areas of succession by sand and silt deposits. Groundwater levels were measured over two days in the Southern portion of the lease area where the stormwater BMPs will be located. The Geosearch report is included in Attachment D. The Geosearch 2021 soil borings showed consistent soil properties with the 2018 Test Pits.

Figures are provided in Attachment A. Figures A-1 and A-2 show the site location and two drainage areas and the existing land use. A detailed breakdown of soil type, land cover, and curve number is provided in Attachment C.

3.0 Proposed Conditions

3.1 Proposed Site Description

As mentioned above, the Cranberry Point Energy Storage Project is proposing to modify the undeveloped area to installed enclosures for a battery energy storage system to store and release electricity. The approximate project site area is 5.85 acres, including 3.27 acres of proposed crushed stone coverage and 0.91 acres of impervious surfaces in the form of concrete foundations or pillars. The proposed layout is shown in Attachment B.

The project will result in a net increase in impervious area and runoff from the site. To address the increase in runoff created by the project, two infiltration basins with sediment forebays will be installed. One will be installed in the Western Storage area, and one will be installed in the Eastern Storage area. The basins are designed to provide water quality treatment and to control the peak discharge from 2-year and 10-year storms not to exceed the pre-project peak levels as required by the MA DEP and the Carver Conservation Commission, and to control the discharge from larger storm events. The addition of sediment forebays is designed to provide pretreatment to the infiltration basins to achieve the 80% TSS removal required for water quality treatment. The infiltration basins are sized to treat the water quality volume according to the site soil properties per the Massachusetts Stormwater Handbook. One foot of freeboard was included in the design of both basins. Pond routing and water quantity calculations are performed using HydroCAD computer model (Attachment C). The calculations are provided in Attachment C. As discussed in Section 4, these stormwater management practices are designed in accordance with the DEP Stormwater Management Standards as described in the Massachusetts Stormwater Handbook, as well as the Carver Conservation Commission’s wetland bylaws.

To direct stormwater runoff to the sediment forebays, a drainage collection system consisting of catch basins and 12” HDPE drainage pipes is included on the proposed grading plans. Conduit Sizing Calculations and an Inlet Capacity Table are included in Attachment C.

The drainage areas, as well as proposed land coverages, are shown in Figure A-2. A detailed breakdown of soil type, land cover, and curve number for the proposed conditions are provided in Attachment C.

The Proposed Design Plans, in Attachment B, show the locations of proposed infiltration basins with sediment forebays. The supporting calculations and HydroCAD model are attached in Attachment C. A Mounding Analysis was performed for both infiltration basins using the Hantush Method, included in

Attachment C. For both ponds, the analysis showed that the 10-year storm runoff volume will infiltrate within 72 hours, the groundwater mound under the recharge system will not break above the bottom of the basins, and that impacts to water levels in the nearby wetlands are negligible.

4.0 Stormwater Management Standards

The Stormwater Management System for the Cranberry Point Energy Storage Project has been designed in accordance with the Massachusetts Stormwater Handbook, as well as the Carver Conservation Commission's wetland bylaws. Compliance with these standards is demonstrated below.

4.1 Regulatory Standards

To protect the wetlands and waters of the Commonwealth from the adverse impacts of stormwater runoff, the DEP issued a Stormwater Management Policy in November 1996. In 1997, DEP published the Massachusetts Stormwater Handbook as guidance on the Stormwater Policy. Revisions to the 1997 Handbook and associated stormwater management standards, however, promulgated by DEP and became effective on January 2, 2008. The Standards address both water quality (pollutants) and water quantity (flood control) by establishing the level of required controls that can be achieved through site planning non-structural measures, and Best Management Practices (BMPs). Specific BMPs selection is based on soil investigations performed to date, which identified soil parameters such as soil classification. This project is classified as a new development area, because it will result in an increase in impervious coverage. The project is subject to compliance under the Wetlands Protection Act and all ten performance standards described in the Massachusetts Stormwater Handbook.

Methods for Demonstrating Compliance with Performance Standards

Calculations were performed to demonstrate compliance with the Performance Standards. The TR-55 methodology was used to demonstrate compliance with Standard 2. Based on the design points and existing topography, drainage catchment areas were determined for the project. Times of concentration (TCs) as well as land-cover types, hydrologic soil groups, and weighted curve numbers (CNs) were determined for these areas. Considering the proposed grading, catchment areas, CNs, and TCs were also developed for the proposed project and modeled in HydroCAD. Excel spreadsheets were used to calculate CN values for each land use in existing and proposed conditions. The CN values for each land use were then used as input in the HydroCAD software, which is based on the NRCS TR-55 methodology. TC calculations were performed in Excel and are shown in Appendix B. The TC values were used as inputs in the HydroCAD model. Peak flows, as modeled by HydroCAD, were analyzed for the 2-, 10-, and 100- year storm events and are shown in the HydroCAD reports in Attachment C. In support of Standard 3 and Standards 4, recharge, drawdown, and water quality calculations were performed and are included in are included in Attachment C.

4.2 Compliance with MA Stormwater Checklist Standards

Standard 1- No New Untreated Discharges

> *No new stormwater conveyances (e.g.) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.*

The project is designed to prevent erosion to the receiving wetlands. All proposed discharges will be designed with erosion control rip-rap for scour protection. The stormwater BMPs provide water quality treatment as required by Standard 4 and so stormwater runoff is treated and controlled prior to discharge to the wetlands.

Standard 2- Peak Rate Attenuation

Stormwater management systems will be designed so that proposed conditions peak discharge rates do not exceed pre-development discharge peak rates for the 2-year and the 10-year, 24-hour storms.

The proposed infiltration basins are designed to manage the peak discharge from the 2-year and 10-year, 24-hour storms not to exceed pre-development levels. The table below illustrates the pre-development peak discharges and post-development peak discharges from the Site. Attachment C contains the Hydrologic Analysis Diagram and Report generated by HydroCAD.

Peak Discharge Rates		
Design Storm	Pre-Development Peak Flow	Post-Development Peak Flow with BMPs
2-yr	0.69 cfs	0 cfs
10-yr	2.83 cfs	2.12 cfs

Standard 3- Recharge to Groundwater

Loss of annual recharge to groundwater should be eliminated or minimized through the use of infiltration measures including environmental sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the proposed conditions will approximate the annual recharge from pre-development conditions based on soil type.

This project will not result in a loss of recharge to groundwater. Recharge calculations that demonstrate compliance with Standard 3 are included in the water quality calculations in Attachment C.

Standard 4- Water Quality

Stormwater management systems will be designed to remove 80% of the average annual proposed conditions load of Total Suspended Solids (TSS). This Standard is met when: a) Suitable practices for source control and pollution prevention are identified in a long- term pollution prevention plan, and thereafter are implemented and maintained; b) Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and c) Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.

The stormwater management systems have been designed to remove 80% TSS load prior to discharging into any wetland. This is achieved by the use of infiltration basins with sediment forebays Water quality calculations have been provided in Attachment C demonstrating compliance with Standard 4.

Infiltration Basin: 80% TSS Removal Rate

Two infiltration basins with sediment forebays are proposed at the site. Each basin's detailed dimensions are provided on the Drainage Drawings.

Standard 5- Higher Potential Pollutant Loads

For land uses with higher potential pollutant loads, source control and pollution prevention will be implemented in accordance with the Massachusetts Stormwater Handbook to eliminates or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads

cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent will use the specific structural stormwater BMPs determined by the department to be suitable for uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads will also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L c. 21, ss26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

The Cranberry Point Energy Storage Project is not within an area designated as an area that yields high pollutant loads and, consequently, this Standard does not directly apply to the project.

Standard 6- Critical Areas

Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply and stormwater discharges near or to any other critical area require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area, if there is a strong likelihood of a significant impact occurring to said area, taking into account site specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters will be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A stormwater discharge as defined in 314 CMR 3.04 (2)(a)1 or (b) to an Outstanding Resource Water of Special Resource Water will comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

The Cranberry Point Energy Storage Project and the downstream wetlands are not within any of these critical area categories. Therefore, this Standard does not directly apply to the project.

Standard 7- Redevelopment Standards

A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural best management practices requirements of Standards 4, 5, and 6. Existing stormwater discharges will comply with Standard 1 only to the maximum extent practicable. A redevelopment project will also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

Not applicable.

Standard 8- Erosion and Sediment Control

A plan to control construction related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) will be developed and implemented.

The installation of soil erosion and sediment controls will comply with the Massachusetts Erosion and Sediment Control Guidelines for Urban and Suburban Areas (Massachusetts Executive Office of Environmental Affairs et. al.; 2003), and all aspects of Standard No. 8. These controls will be inspected daily and after each rainfall event, and maintained, as required, until such time that all disturbed areas associated with construction have been stabilized with vegetation.

A National Pollutant Discharge Elimination System (NPDES) Stormwater General Permit for construction will be required. In conjunction with this permit, a project specific Stormwater Pollution Prevention Plan (SWPPP) will be generated for construction-related activities. The SWPPP, to be completed by the contractor prior to construction, will incorporate the soil erosion and sediment controls indicated on the project plans, and any other structural and non-structural controls that will or may be

used, as appropriate, to control erosion/sedimentation within the construction zone. These measures are anticipated to consist of straw/hay bales, compost filter tubes, check dams, catch basin/storm drain inlet protection, diversion berm(s), temporary sedimentation basins, and seeding/mulching, although not all of these BMPs necessarily will be implemented. The SWPPP also will document procedures associated with the inspection of erosion/sedimentation controls to ensure that all such controls are functioning properly. A copy of the SWPPP will be provided to the local Conservation Commission. To apply for coverage under the NPDES General Permit, a 'Notice of Intent for Stormwater Discharges Associated with Construction Activity under an NPDES Construction General Permit' will be filed with the U.S. Environmental Protection Agency (EPA) prior to the commencement of construction. As required, the SWPPP also will be kept at the construction site for review by regulatory agency staff. To facilitate potential reviews in this regard, the name, telephone/fax numbers and e-mail address of the contact person for SWPPP-related information will be provided to the local Conservation Commission.

The Erosion and Sediment Control Plan is included in the attached Proposed Design Plans. A more specific Construction Period Pollution Prevention and Erosion and Sediment Control plan will be developed before land disturbance begins.

Standard 9- Operation and Maintenance

> *A long-term operation and maintenance plan will be developed and implemented to ensure that stormwater management systems function as designed.*

Cranberry Point Energy Storage, LLC is responsible for the operation and maintenance of the proposed project. An Operation and Maintenance Plan (O&M) is provided in Attachment D.

Standard 10- Illicit Discharges

> *An illicit discharges to the stormwater management systems are prohibited.*

Cranberry Point Energy Storage, LLC will ensure that no illicit discharges to the stormwater management system associated with the project will occur. An Illicit Discharge Compliance Statement is included in Attachment D and will be filled out prior to the start of construction.

4.3 Compliance with Carver Conservation Commission Standards

Standard 1: A description of any alterations to the 100 year flood storage capacity of the site. If a change in flood storage capacity is proposed, demonstrate compensatory storage at every elevation in the flood plain.

According to FIRM panel No. 25023C0343J (July 17, 2012), the project site is outside the 100-year FEMA flood plain and therefore this Standard does not apply.

Standard 2: Maximum groundwater elevations must be given. The calendar dates of measurement, samplings and percolation tests shall be included.

In the geotechnical exploration performed in January 2021, stabilized groundwater readings were taken at two boring locations. The depths of groundwater correspond to Elevation 104± to 104.9± feet. More information is included in Attachment D.

Standard 3: Soil characteristics in representative portions of the site shall be provided.

Six test pits were dug throughout the site in December 2018. The result of laboratory soil texture analysis revealed poorly graded sand in all locations. The laboratory testing results are provided in Attachment D.

Eight soil borings were advanced by Geosearch, Inc. in January 2021. The geotechnical engineering report is included in Attachment D.

Standard 4: A stormwater management plan and calculations of runoff characteristics shall be provided.

The stormwater management plan was developed in accordance with the Massachusetts Stormwater Handbook. Therefore, calculations of runoff characteristics were based on the 10-year, 24-hour storm to satisfy the requirements for on-site drainage systems. In the post-development conditions, the infiltration basins are sized to attenuate the peak runoff associated from rain events up to the 10-year storm. For larger storm events, the basins will safely discharge through emergency spillways.

Standard 5: Runoff characteristics should be calculated for pre- and post-development conditions using the standard methods described in the U.S. Soil Conservation Service National Engineering Handbook– Fully Met

The Technical Release 55 (TR-55) method to calculate runoff and peak discharge was recommended by the USDA Natural Resources Conservation Service's National Engineering Handbook. Land Use Data (2005) was collected from Mass GIS and soil data was collected from the USDA's Web Soil Survey. TR-55 was used to calculate the inputs for the stormwater modeling software, HydroCAD. HydroCAD was used to calculate runoff and peak discharge using TR-55 methodology.

Standard 6: Hydrographs that illustrate runoff characteristics before and after the proposed activity– Fully Met

Hydrographs generated by HydroCAD are included in Attachment C.

Standard 7: An erosion control plan shall be submitted describing all methods to control erosion and siltation on site, temporarily and permanently.

Erosion and sediment control will be based off the sheet in the Proposed Design Plans, in Attachment B.

Standard 8: Hydrologists and engineers shall use the Cornell Atlas of Precipitation Extremes for rainfall quantities

The Cornell Atlas of Precipitation Extremes was used to identify the rainfall amount for the 2-year, 10-year, 25-year, and 100-year, 24-hour storm for the project site.

Standard 9: Existing and proposed location, rim elevation, and invert elevation of all catch basins, drains, culverts, and other drainage structures immediately upstream and downstream of the site, as well as those on-site must be shown.

Locations and elevations associated with catch basins, drains, culverts, and the stormwater BMPs are shown in the Proposed Design Plans in Attachment B.

5.0 Conclusion

To accommodate the change in runoff at the site by this project, two infiltration basins were selected to collect stormwater from the site during rain events. The structures were developed in accordance with Volume 2, Chapter 2 of the Massachusetts Stormwater Handbook. Both infiltration basins were placed just outside of the fence lines for the battery storage areas, and outside of the 65-foot wetland buffer.

The infiltration-based stormwater basins are designed to provide multi-level management of site stormwater runoff as required. With forebays, the basins are capable of achieving 80% TSS removal rates through infiltration. The basins are sized with adequate detention volumes to attenuate peak discharges from 2- and 10-year events not to exceed the pre-development levels.
To protect the basins during a larger storm, emergency spillways are designed to safely pass the discharge during a 100-year event.

Attachment A

Figures

1. Site Location Map
2. Land Use Map

N

0 125 250 500 Feet

Map Projection: MA State Plane NAD 83 Feet
Data Source: ESRI, MassGIS

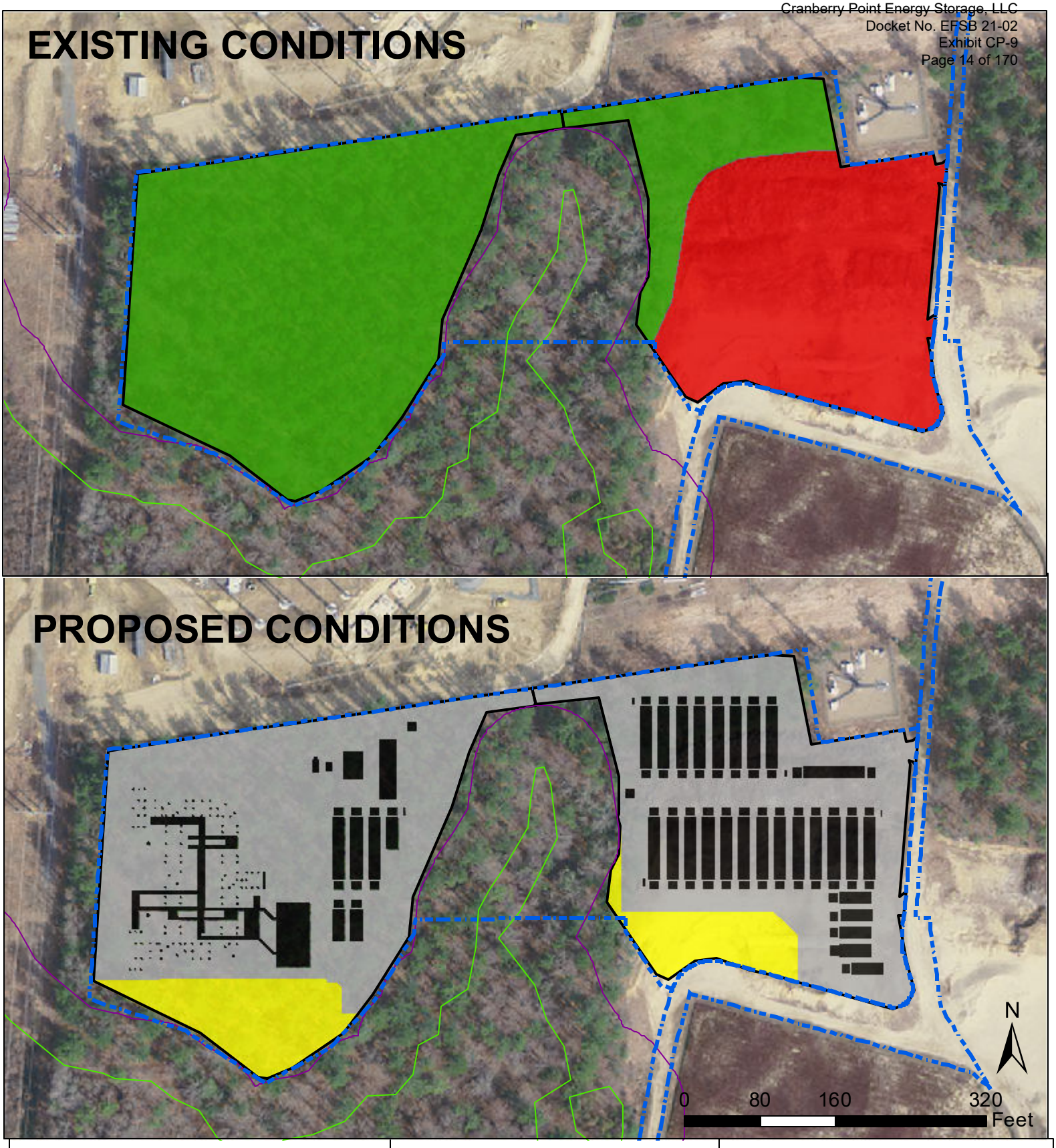
Figure A-1
Site Location Map

Cranberry Point Energy Storage
31 Main Street, Carver, MA

AECOM

Date: 6/10/2021

Project #: 60659634



Legend

- Site Lease
- 65 ft wetland buffer
- AECOM Delineated Wetlands
- Grading Limit

Land Use

- Forest
- Open Land
- Grass
- Gravel/Stone
- Impervious

FIGURE A-2
LAND USE

Cranberry Point Energy Storage
31 R Main Street, Carver, MA

AECOM

Date: 7/6/2021

Project #: 60581865

Attachment B

Proposed Design Plans

1. Cover Sheet
2. Existing Site Plan/ Test Pit Locations
3. Test Pit Logs
4. Proposed Grading and Stormwater Management
5. Sections and Profiles
6. Erosion & Sediment Control Plan
7. Details Page 1
8. Details Page 2
9. Proposed Site Layout

CRANBERRY POINT ENERGY STORAGE, LLC

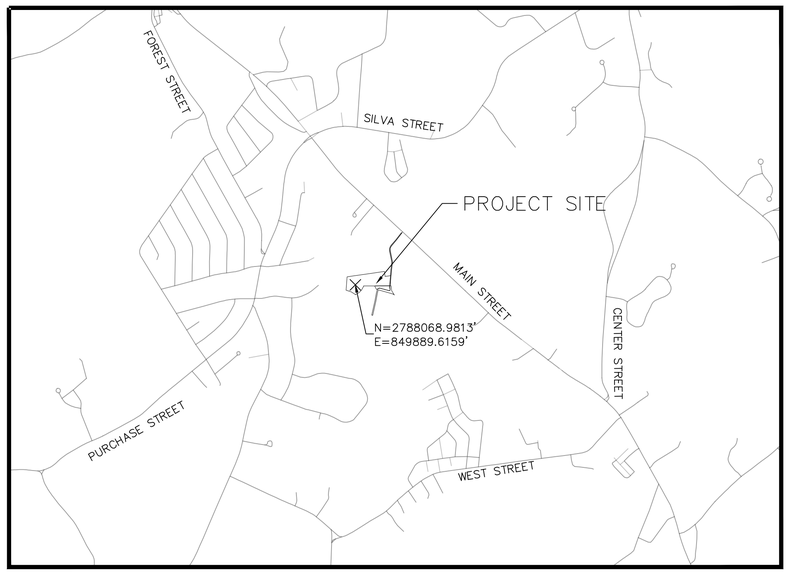
CRANBERRY POINT ENERGY STORAGE PROJECT

IN THE TOWN OF

CARVER

PLYMOUTH COUNTY, MA

INDEX



LOCATION MAP

JULY 26, 2021

AECOM

PROJECT

Cranberry Point Energy Storage Project
31 R Main Street
Carver, Massachusetts 02330

CLIENT

Cranberry Point Energy Storage, LLC

CONSULTANT

AECOM
250 Apollo Drive
Chelmsford, MA 01824
978.905.2100 tel 978.905.2101 fax
www.aecom.com

DRAFT

0 1500 3000
Feet

ISSUE/REVISION

I/R	DATE	DESCRIPTION
A	07/26/2021	ISSUE FOR PERMITTING

PROJECT NUMBER

60659634

SHEET TITLE

TITLE SHEET & INDEX

SHEET NUMBER

1

LEGEND (SHEETS 1–6)

OHW	OVERHEAD WIRE	■ P.C.H.B.	PLYMOUTH COUNTY HIGHWAY BOUND
CLF	CHAIN LINK FENCE	■ CB	CONCRETE BOUND
	TREE	25–13	ASSESSOR ID MAP/LOT
	LIMITS OF VEGETATION		TRANSMISSION EASEMENT
UP / D / OH / C	UTILITY POLE		PROPERTY LINE
	GUY WIRE	124	MINOR CONTOUR: EXISTING
	POST	130	MAJOR CONTOUR: EXISTING
BM	BENCH MARK	115	PROPOSED CONTOUR
BIT CONC / CONC	BITUMINOUS CONCRETE / CONCRETE		100' WETLAND BUFFER
T	TRANSFORMER		65' WETLAND SETBACK
WF	WOOD FENCE		DELINEATED WETLANDS
TP	TEST PIT		LIMIT OF WORK
W1–1	WETLAND FLAG		LIMIT OF GRADING
	BASIN GRASS MIX		LIMIT OF TREE CLEARING
	GRAVEL		EROSION CONTROL BARRIER

GENERAL NOTES

1) THIS PLAN WAS PREPARED FROM A SURVEY MADE ON THE GROUND USING TOTAL STATION METHODS ON OR BETWEEN OCTOBER 22, 2018 AND NOVEMBER 10, 2018 BY BEALS AND THOMAS, INC. TOPOGRAPHIC LIDAR INFORMATION TAKEN FROM NOAA DIGITAL COAST DATA VIEWER DATA SET ENTITLED "NEW ENGLAND CMGP SANDY LIDAR." THIS DATA WAS TESTED BY THE SURVEYOR TO MEET ASPRS POSITIONAL ACCURACY STANDARDS FOR DIGITIAL GEOSPATIAL DATA (2014) FOR A 18.13 CM (0.595') RMSEZ VERTICAL ACCURACY CLASS. ACTUAL NVA ACCURACY WAS FOUND TO BE RMSEZ 6.173 CM (0.203') EQUATING TO +/– 12.1 CM (0.397') AT 95% CONFIDENCE LEVEL. ACTUAL VVA ACCURACY WAS FOUND TO BE +\– 11.6 CM (0.381') AT THE 95 PERCENTILE.
2) UNDERGROUND UTILITIES SHOWN ARE BASED ON SURVEY. CONTRACTOR IS RESPONSIBLE TO VERIFY THE LOCATION, SIZE, AND ELEVATION OF ALL UTILITIES WITHIN THE AREA OF PROPOSED WORK LIMIT AND TO CONTACT "DIG–SAFE" AT 1–888–344–7233 AT LEAST 72 HOURS PRIOR TO ANY EXCAVATION, DEMOLITION, OR CONSTRUCTION.
3) WETLAND RESOURCE AREA FLAGS DELINEATED BY AECOM.
4) VERTICAL DATUM IS THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
5) HORIZONTAL PROJECTION IS NAD83 HORIZONTAL COORDINATE SYSTEM ESTABLISHED BY GPS–VRS METHODS, NAD_83(2011)(EPOCH2010).
6) EASEMENTS OF RECORD ARE SHOWN IN SO FAR AS DISCLOSED BY THE CURRENT DEED.
7) THE PARCEL SHOWN IS LOCATED IN FEMA ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN), AS SHOWN ON "FLOOD INSURANCE RATE MAP, PLYMOUTH COUNTY, MASSACHUSETTS (ALL JURISDICTIONS) PANEL 343 OF 650", MAP NUMBER 25023C0343J, EFFECTIVE DATE JULY 17, 2012.
8) ASSET ENGINEERING LOCATED AT 153 E CENTER ST, CANTON, MS 39046, PREPARED INITIAL SITE LAYOUT, MODIFICATIONS TO SITE LAYOUT WERE DEVELOPED BY AECOM IN JUNE AND JULY 2021.
9) AREA DISTURBED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED TO THE ORIGINAL CONDITION AND SEEDED TO PREVENT EROSION.
10) CONSTRUCTION DELIVERIES ARE RESTRICTED TO THE HOURS OF 7:30 AM TO 4:30 PM.
11) PROPERTY LINE SEPARATING FORMER ASSESSORS PARCEL 61–7 AND FORMER ASSESSORS PARCEL 61–10 HAS BEEN REMOVED BASED ON ANTICIPATED ANR APPROVAL.

FIRE PROTECTION NOTES PER CARVER FIRE DEPARTMENT (CFD)

1) PROPER SIGNAGE PERTAINING TO PV INSTALLATIONS AS REQUIRED BY NEC, FEDERAL, STATE, AND LOCAL CODES SHALL BE INSTALLED.
2) ALL GATED ACCESS POINTS WILL HAVE THE ABILITY TO ACCOMMODATE A CFD – SUPPLIED PADLOCK OR BE EQUIPPED WITH A "SUPRA" KEY SAFE, WHICH MUST BE INSTALLED AT THE EXPENSE OF THE DEVELOPER. SPECIFICATIONS AND ORDERING INFORMATION FOR ORDERING THE "SUPRA" BOX WILL BE PROVIDED BY CFD UPON REQUEST.
3) THE OWNER SHALL SUBMIT AND MAINTAIN A GROUND FUELS MANICURING AND MAINTENANCE SCHEDULE. MANICURING OF GROUND FUELS SHOULD OCCUR TWICE PER YEAR, AT A MINIMUM, DURING THE "GROWING" SEASON.
4) THE PROPOSED LITHIUM–ION BATTERY STORAGE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH MA 527 CMR 1.00, CHAPTER 52, STATIONARY STORAGE BATTERY SYSTEMS. THIS INCLUDES, BUT IS NOT LIMITED TO: 52.3.10, AN APPROVED, SUPERVISED SMOKE DETECTION/FIRE ALARM SYSTEM, 52.3.2, A THERMAL RUNAWAY SYSTEM, AND 52.3.7, A TEMPERATURE MAINTAINED OPERATING ENVIRONMENT.
5) THE DESIGN OF THE INTEGRATED FIRE SUPPRESSION AND DETECTION SYSTEMS SHALL BE IN ACCORDANCE WITH ALL APPLICABLE CODES AND REQUIREMENTS, INCLUDING BUT NOT LIMITED TO NFPA 70, NFPA 72, NFPA 855, MA 527 CMR 1.00, AND UL 9540. THESE SYSTEMS SHALL BE APPROVED BY THE CFD.
6) A LOCAL DISCONNECT SHALL BE INSTALLED.
7) TRAINING SHALL BE PROVIDED TO CFD FOR MITIGATING ON SITE EMERGENCIES.
8) THE FINAL TECHNOLOGY HAS YET TO BE DETERMINED. WHEN THE TECHNOLOGY AND MANUFACTURER IS CHOSEN, CFD SHALL HAVE THE OPPORTUNITY TO PROVIDE FURTHER COMMENTS.
9) COMPONENTS OF CARVER'S PUBLIC SAFETY RADIO SYSTEM ARE LOCATED ADJACENT TO THE PROJECT. THE OWNER SHALL PROVIDE EVIDENCE THAT THE BESS WILL NOT CREATE RADIO INTERFERENCE WITH THIS MISSION CRITICAL INFRASTRUCTURE.

0 40 80 Feet

AECOM

PROJECT

Cranberry Point Energy Storage Project
31 R Main Street
Carver, Massachusetts 02330

CLIENT

Cranberry Point Energy Storage, LLC

CONSULTANT

AECOM
250 Apollo Drive
Chelmsford, MA 01824
978.905.2100 tel 978.905.2101 fax
www.aecom.com

ISSUE/REVISION

I/R	DATE	DESCRIPTION
A	07/26/2021	ISSUE FOR PERMITTING

PROJECT NUMBER

60659634

SHEET TITLE

EXISTING SITE PLAN/
TEST PIT LOCATION

SHEET NUMBER

2

Last saved by: MICHAELA.FITZGERALD(2021-07-26) Last Plotted: 2021-07-26
Filename: \\NA.AECOMNET.COM\LFSAMER\CHELMSFORD-USCHL1\LEGACY\USCHL1FP0011\DATA\PROJECTS\JOBS\WATER\PROJECTFILES\P_CLIENT\PLUS ENERGY - CRANBERRY POINT\900_WORKING\DOCS_CAD\02-SHEETS\SHEETS_EX.DWG

KEY:

5Y 4/4 : MUNSELL COLOR DESIGNATION OLIVE

5Y 6/4 : MUNSELL COLOR DESIGNATION PALE OLIVE

GR: SOIL STRUCTURE GRANULAR

SGR: SOIL STRUCTURE SINGLE GRAIN

*: LAB SAMPLE FOR THIS HORIZON NOT COLLECTED

NOTE:

GEOSEARCH, INC. OF STERLING, MASSACHUSETTS PERFORMED 8 SOIL TEST BORINGS (B-1 THROUGH B-8) AT THE SITE BETWEEN JANUARY 4 AND JANUARY 6, 2021 WITH AN ALL-TERRAIN VEHICLE MOUNTED DRILL RIG. A MAP OF THE BORING LOCATIONS AND THE BORING LOGS ARE INCLUDED IN THE GEOTECHNICAL ENGINEERING REPORT APPENDIX OF THE STORMWATER REPORT.

TEST PIT NUMBER: TP1A
SURFACE ELEVATION: 119'
COORDINATES: N: 2788084.446, E: 850304.310
DATE 12/21/18

DEPTH (IN.)	SOIL HORIZON/ LAYER	SOIL MATRIX: COLOR-MOIST (MUNSELL)	REDOXIMORPHIC FEATURES (MOTTLES)			SOIL TEXTURE (USDA)	COARSE FRAGMENTS % BY VOLUME		SOIL STRUCTURE	SOIL CONSISTENCE (MOIST)
			DEPTH	COLOR	PERCENT		GRAVEL	COBBLES AND STONES		
0'-2'	A	5Y 4/4	-	-	-	SAND	-*	0%	GR	FRIABLE
2'-108'	B	5Y 6/4	-	-	-	SAND	5.2%	0%	SGR	LOOSE

GROUNDWATER OBSERVED: NO
DEPTH WEEPING FROM PIT: NOT OBSERVED
DEPTH STANDING WATER IN HOLE: NOT OBSERVED
ESTIMATED DEPTH TO HIGH GROUNDWATER: NOT OBSERVED

TEST PIT NUMBER: TP2
SURFACE ELEVATION: 108'
COORDINATES: N: 2787938.616, E: 850296.454
DATE 12/21/18

DEPTH (IN.)	SOIL HORIZON/ LAYER	SOIL MATRIX: COLOR-MOIST (MUNSELL)	REDOXIMORPHIC FEATURES (MOTTLES)			SOIL TEXTURE (USDA)	COARSE FRAGMENTS % BY VOLUME		SOIL STRUCTURE	SOIL CONSISTENCE (MOIST)
			DEPTH	COLOR	PERCENT		GRAVEL	COBBLES AND STONES		
0'-4'	A	5Y 4/4	-	-	-	SAND	-*	0%	GR	FRIABLE
2'-108'	B	5Y 6/4	-	-	-	SAND	3.7%	0%	SGR	LOOSE

GROUNDWATER OBSERVED: SOIL MOIST AT BOTTOM OF PIT
DEPTH WEEPING FROM PIT: NOT OBSERVED
DEPTH STANDING WATER IN HOLE: NOT OBSERVED
ESTIMATED DEPTH TO HIGH GROUNDWATER: NOT OBSERVED

TEST PIT NUMBER: TP3
SURFACE ELEVATION: 118'
COORDINATES: N: 2787972.022, E: 849933.154
DATE 12/21/18

DEPTH (IN.)	SOIL HORIZON/ LAYER	SOIL MATRIX: COLOR-MOIST (MUNSELL)	REDOXIMORPHIC FEATURES (MOTTLES)			SOIL TEXTURE (USDA)	COARSE FRAGMENTS % BY VOLUME		SOIL STRUCTURE	SOIL CONSISTENCE (MOIST)
			DEPTH	COLOR	PERCENT		GRAVEL	COBBLES AND STONES		
0'-2'	A	5Y 4/4	-	-	-	SAND	-*	0%	GR	FRIABLE
2'-108'	B	5Y 6/4	-	-	-	SAND	3.9%	0%	SGR	LOOSE

GROUNDWATER OBSERVED: SOIL MOIST AT BOTTOM OF PIT
DEPTH WEEPING FROM PIT: NOT OBSERVED
DEPTH STANDING WATER IN HOLE: NOT OBSERVED
ESTIMATED DEPTH TO HIGH GROUNDWATER: NOT OBSERVED

TEST PIT NUMBER: TP4
SURFACE ELEVATION: 118'
COORDINATES: N: 2787923.211, E: 849906.335
DATE 12/21/18

DEPTH (IN.)	SOIL HORIZON/ LAYER	SOIL MATRIX: COLOR-MOIST (MUNSELL)	REDOXIMORPHIC FEATURES (MOTTLES)			SOIL TEXTURE (USDA)	COARSE FRAGMENTS % BY VOLUME		SOIL STRUCTURE	SOIL CONSISTENCE (MOIST)
			DEPTH	COLOR	PERCENT		GRAVEL	COBBLES AND STONES		
0'-2.5'	A	5Y 4/4	-	-	-	SAND	-*	0%	GR	FRIABLE
2.5'-108'	B	5Y 6/4	-	-	-	SAND	1.0%	0%	SGR	LOOSE

GROUNDWATER OBSERVED: NO
DEPTH WEEPING FROM PIT: NOT OBSERVED
DEPTH STANDING WATER IN HOLE: NOT OBSERVED
ESTIMATED DEPTH TO HIGH GROUNDWATER: NOT OBSERVED

TEST PIT NUMBER: TP5
SURFACE ELEVATION: 117'
COORDINATES: N: 2787892.277, E: 849838.527
DATE 12/21/18

DEPTH (IN.)	SOIL HORIZON/ LAYER	SOIL MATRIX: COLOR-MOIST (MUNSELL)	REDOXIMORPHIC FEATURES (MOTTLES)			SOIL TEXTURE (USDA)	COARSE FRAGMENTS % BY VOLUME		SOIL STRUCTURE	SOIL CONSISTENCE (MOIST)
			DEPTH	COLOR	PERCENT		GRAVEL	COBBLES AND STONES		
0'-2'	A	5Y 4/4	-	-	-	SAND	-*	0%	GR	FRIABLE
2'-129.6'	B	5Y 6/4	-	-	-	SAND	5.5%	0%	SGR	LOOSE

GROUNDWATER OBSERVED: NO
DEPTH WEEPING FROM PIT: NOT OBSERVED
DEPTH STANDING WATER IN HOLE: NOT OBSERVED
ESTIMATED DEPTH TO HIGH GROUNDWATER: NOT OBSERVED

TEST PIT NUMBER: TP8
SURFACE ELEVATION: 119'
COORDINATES: N: 2788073.780, E: 850481.371
DATE 12/21/18

DEPTH (IN.)	SOIL HORIZON/ LAYER	SOIL MATRIX: COLOR-MOIST (MUNSELL)	REDOXIMORPHIC FEATURES (MOTTLES)			SOIL TEXTURE (USDA)	COARSE FRAGMENTS % BY VOLUME		SOIL STRUCTURE	SOIL CONSISTENCE (MOIST)
			DEPTH	COLOR	PERCENT		GRAVEL	COBBLES AND STONES		
0'-2'	A	5Y 4/4	-	-	-	SAND	-*	0%	GR	FRIABLE
2'-108'	B	5Y 6/4	-	-	-	SAND	3.5%	0%	SGR	LOOSE

GROUNDWATER OBSERVED: NO
DEPTH WEEPING FROM PIT: NOT OBSERVED
DEPTH STANDING WATER IN HOLE: NOT OBSERVED
ESTIMATED DEPTH TO HIGH GROUNDWATER: NOT OBSERVED

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ISSUE/REVISION

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A	07/26/2021	ISSUE FOR PERMITTING

PROJECT NUMBER

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SHEET TITLE

TEST PIT LOGS

SHEET NUMBER

3

DRAINAGE SYSTEM COORDINATES

ID	NORTHING (FT)	EASTING (FT)
CB-1	2788013.2527	850480.9382
CB-2	2788079.2943	850338.0367
CB-3	2788271.4637	850279.0283
CB-4	2788180.7777	850080.6323
CB-5	2788037.4313	850011.6743
D-1	2788018.9131	850447.8833
D-2	2788046.3842	850311.7387
D-3	2788041.8252	850300.7634
D-4	2787966.6724	849939.7883

PROFILE c-c' COORDINATES

STATION	NORTHING (FT)	EASTING (FT)
0+00	2787985.3796	849908.4945
0+50	2787944.6500	849928.9716
1+00	2787949.4262	849974.9571
1+27.99	2787959.4625	85001.0158

PROFILE g-g' COORDINATES

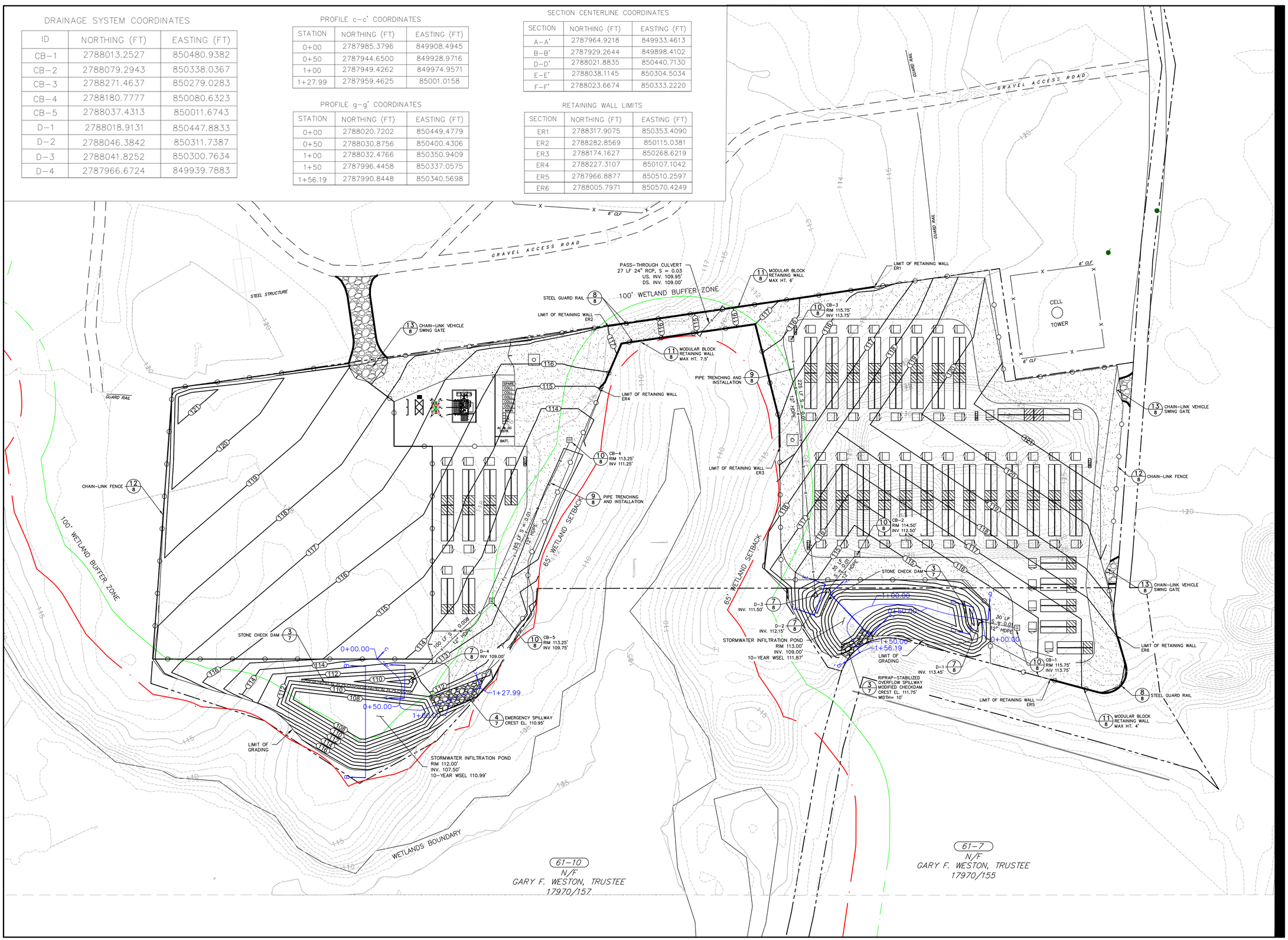
STATION	NORTHING (FT)	EASTING (FT)
0+00	2788020.7202	850449.4779
0+50	2788030.8756	850400.4306
1+00	2788032.4766	850350.9409
1+50	2787996.4458	850337.0575
1+56.19	2787990.8448	850340.5698

SECTION CENTERLINE COORDINATES

SECTION	NORTHING (FT)	EASTING (FT)
A-A'	2787964.9218	849933.4613
B-B'	2787929.2644	849898.4102
D-D'	2788021.8835	850440.7130
E-E'	2788038.1145	850304.5034
F-F'	2788023.6674	850333.2220

RETAINING WALL LIMITS

SECTION	NORTHING (FT)	EASTING (FT)
ER1	2788317.9075	850353.4090
ER2	2788282.8569	850115.0381
ER3	2788174.1627	850268.6219
ER4	2788227.3107	850107.1042
ER5	2787966.8877	850510.2597
ER6	2788005.7971	850570.4249



0 40 80 Feet

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SHEET TITLE

PROPOSED GRADING AND STORMWATER MANAGEMENT

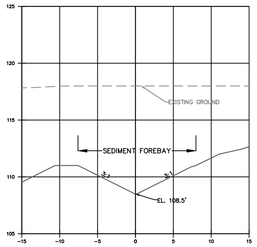
SHEET NUMBER

4

WEST STORAGE AREA

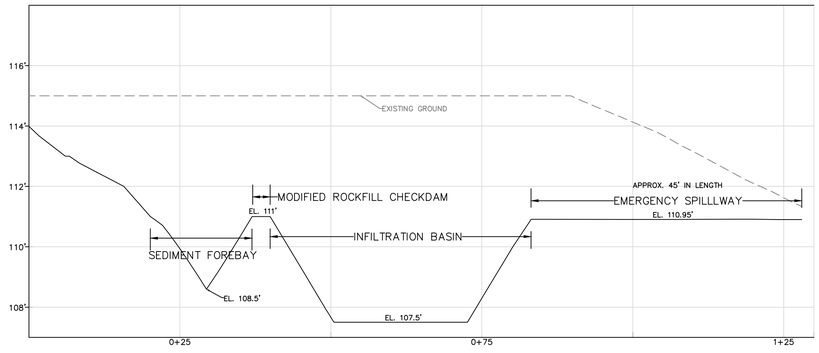
WEST SEDIMENT FOREBAY

SECTION A–A'



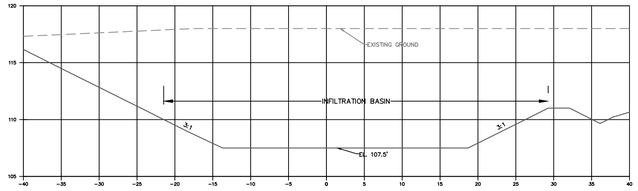
WEST STORMWATER BMP PROFILE

PROFILE c–c'



WEST INFILTRATION BASIN

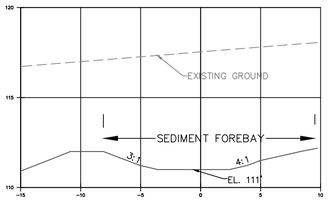
SECTION B–B'



EAST STORAGE AREA

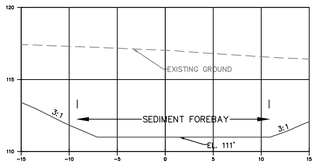
EAST SEDIMENT FOREBAY 1

SECTION D–D'



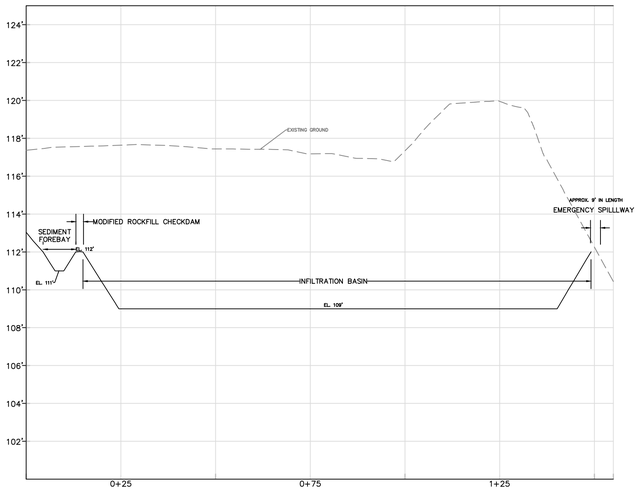
EASR SEDIMENT FOREBAY 2

SECTION E–E'



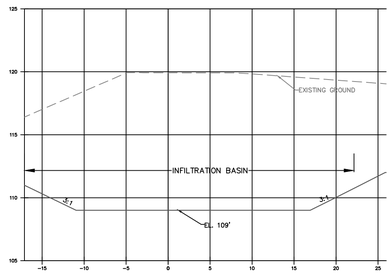
EAST STORMWATER BMP PROFILE

PROFILE g–g'



EAST INFILTRATION BASIN

SECTION F–F'



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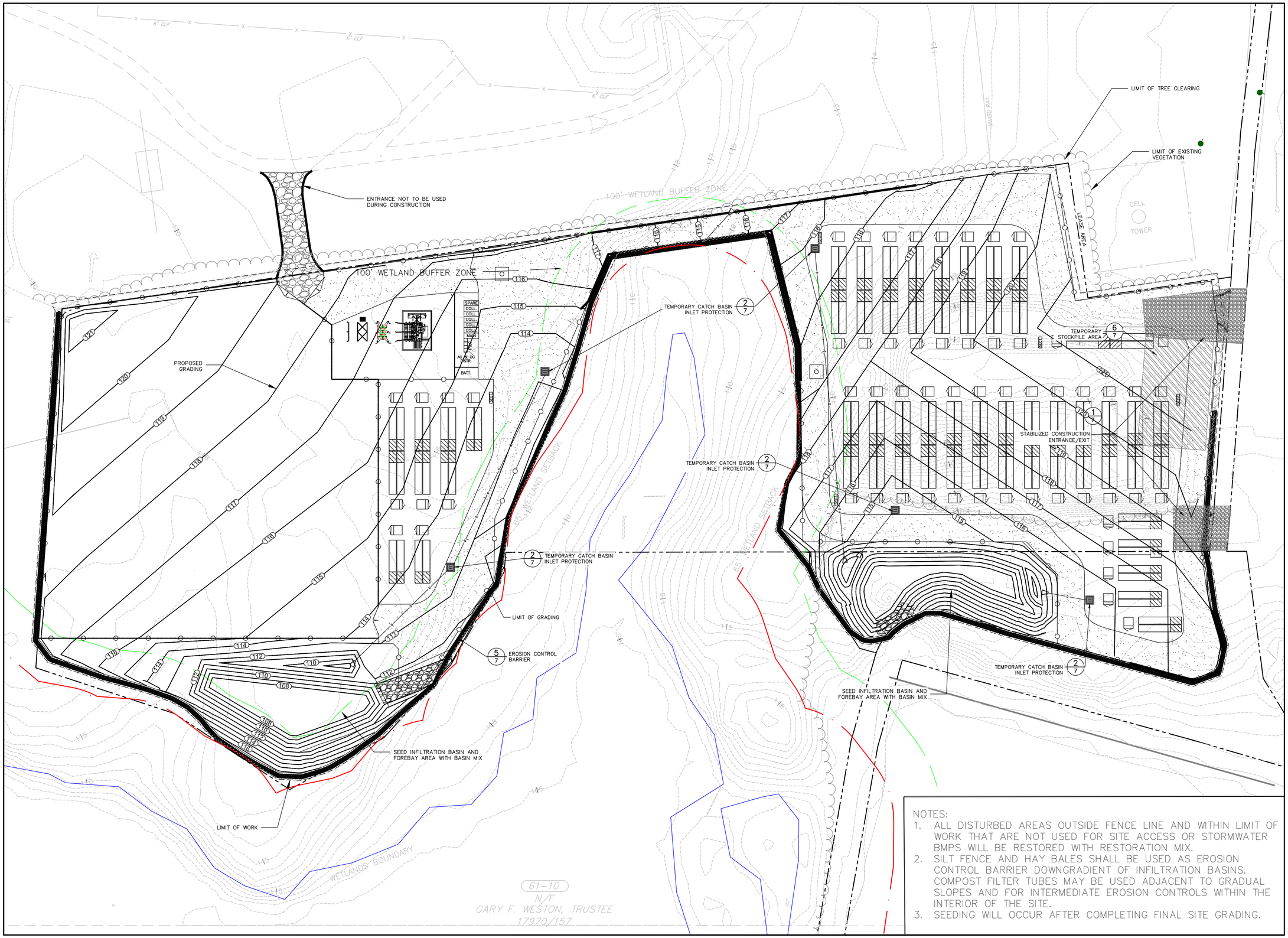
SHEET TITLE

SECTIONS AND PROFILES

SHEET NUMBER

5



NOTES:
1. ALL DISTURBED AREAS OUTSIDE FENCE LINE AND WITHIN LIMIT OF WORK THAT ARE NOT USED FOR SITE ACCESS OR STORMWATER BMPS WILL BE RESTORED WITH RESTORATION MIX.
2. SILT FENCE AND HAY BALES SHALL BE USED AS EROSION CONTROL BARRIER DOWNGRADIENT OF INFILTRATION BASINS. COMPOST FILTER TUBES MAY BE USED ADJACENT TO GRADUAL SLOPES AND FOR INTERMEDIATE EROSION CONTROLS WITHIN THE INTERIOR OF THE SITE.
3. SEEDING WILL OCCUR AFTER COMPLETING FINAL SITE GRADING.

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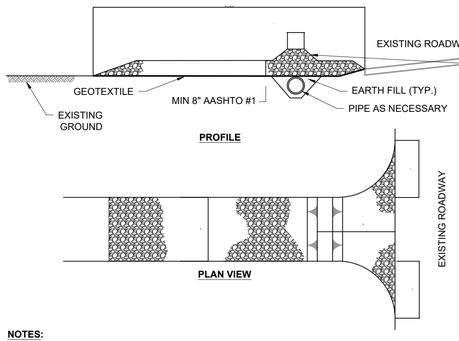
SHEET TITLE

EROSION AND SEDIMENT CONTROL PLAN

SHEET NUMBER

6

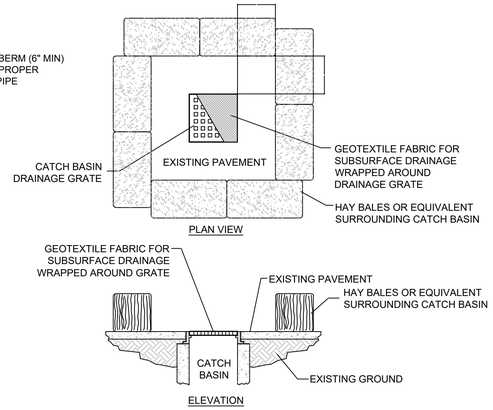


NOTES:

1. ENTRANCE TO BE AT LEAST 75' LONG AND USE STONE - 3"-5" OPEN GRADED ROCK.
2. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE SURFACE.
3. WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
4. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
5. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
6. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN STORM EVENT.

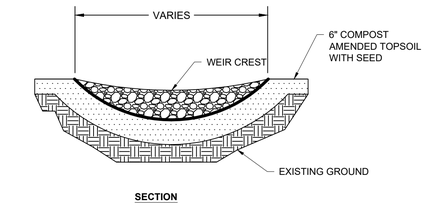
STABILIZED CONSTRUCTION ENTRANCE / EXIT 1/6

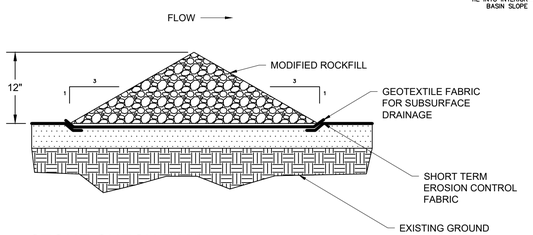
SCALE: NONE



TEMPORARY CATCH BASIN INLET PROTECTION 2/6

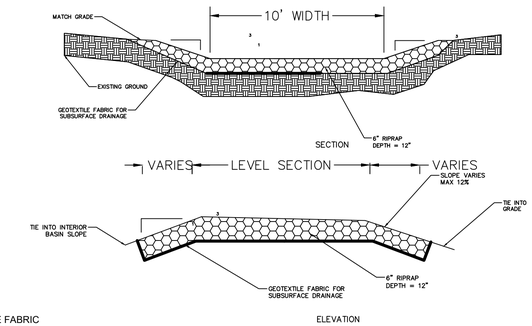
SCALE: NONE





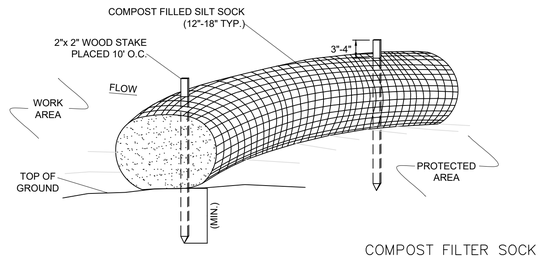
STONE CHECK DAM 3/4

SCALE: NONE



EMERGENCY SPILLWAY 4/4

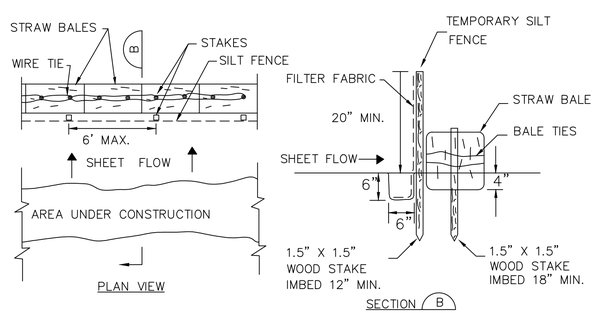
SCALE: NONE



COMPOST FILTER SOCK
NOT TO SCALE

NOTES:

1. SILT SOCK SHALL BE FILTREXX™ SILTSOXX™ OR APPROVED EQUIVALENT.
2. SEE SPECIFICATIONS FOR SOCK SIZE AND COMPOST FILL REQUIREMENTS.
3. SILT SOCK SHALL BE INSPECTED PERIODICALLY AND AFTER ALL STORM EVENTS, AND REPAIR OR REPLACEMENT SHALL BE PERFORMED AS NEEDED.
4. COMPOST MATERIAL SHALL BE DISPERSED ON SITE, AS DETERMINED BY THE QUALIFIED PROFESSIONAL.



EROSION CONTROL BARRIER 5/6

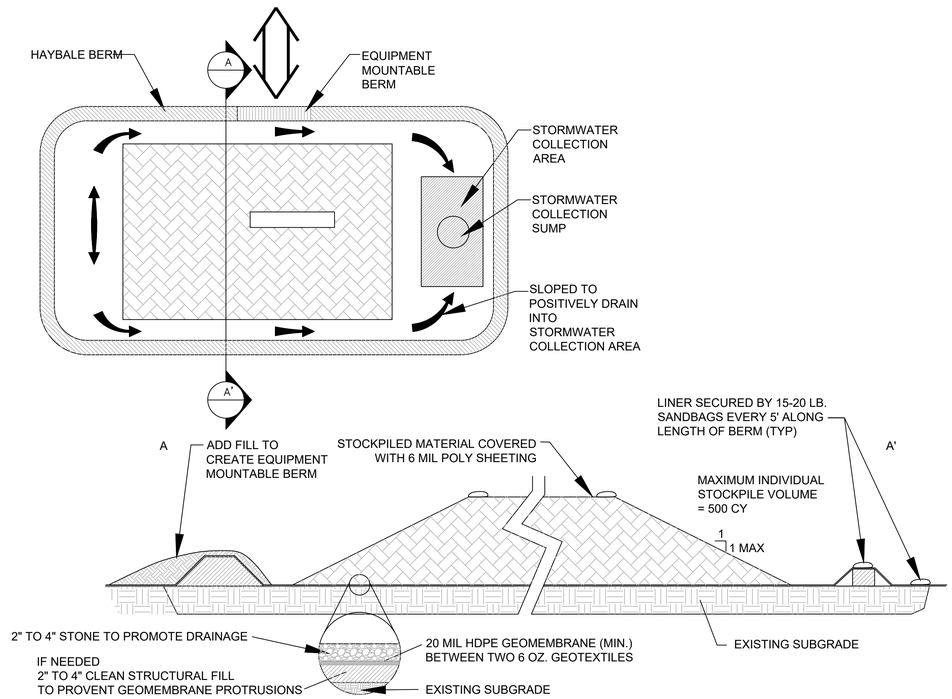
SCALE: NONE

SILT FENCE INSTALLATION NOTES:

1. SET POSTS AND EXCAVATE A 6" BY 6" TRENCH UPSLOPE ALONG THE LINE OF STAKES.
2. ATTACH FILTER FABRIC TO STAKES AND EXTEND IT INTO THE TRENCH.
3. BACKFILL AND COMPACT THE TRENCH USING THE EXCAVATED SOIL.

STRAW BALE INSTALLATION NOTES:

1. EXCAVATE A 4" DEEP TRENCH TO MATCH THE WIDTH OF THE STRAW BALES.
2. PLACE BALES IN TRENCH WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
3. ANCHOR BALES BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE SHOULD BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
4. ADJOINING BALES SHOULD BE SECURELY TIED TOGETHER TO PREVENT MOVEMENT.
5. STRAW WATTLES OR COMPOST FILTER TUBES MAY BE USED IN LIEU OF STRAW BALES. IF USED, WATTLES OR FILTER TUBES SHALL BE INSTALLED AND SECURED IN PLACE PER MANUFACTURER'S RECOMMENDATIONS.



TEMPORARY STOCKPILE AREA 6/6

SCALE: NONE

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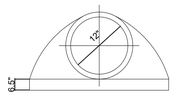
60659634

SHEET TITLE

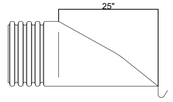
EROSION AND SEDIMENT CONTROL DETAILS

SHEET NUMBER

7

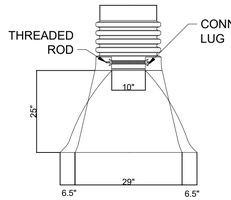


ELEVATION



END VIEW

TYPICAL CROSS-SECTION



PLAN

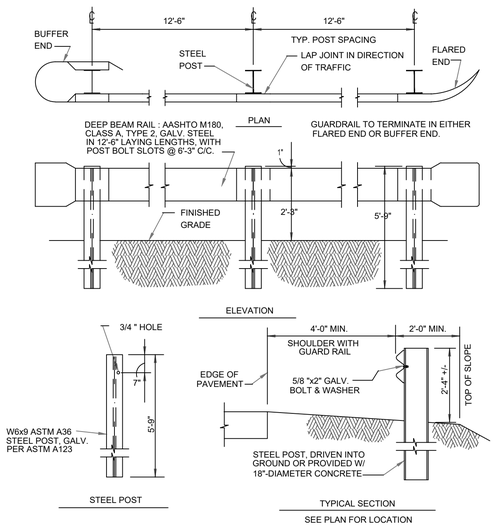
NOTES:

1. FLARED END SECTION SHALL BE HIGH DENSITY POLYETHYLENE MEETING ASTM D3350 MINIMUM CELL CLASSIFICATION 213320C.
2. METAL THREADED FASTENING ROD SHALL BE STAINLESS STEEL.
3. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURERS INSTALLATION INSTRUCTIONS

END SECTION FOR HDPE PIPE

SCALE: NONE

7/4

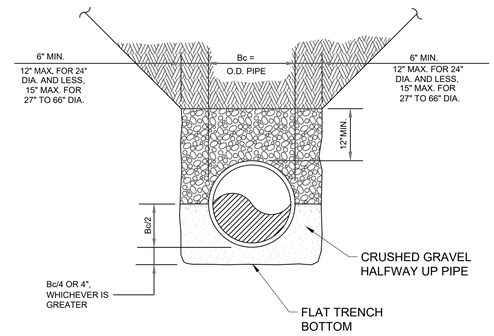


ALTERNATE POST: 6"x8" MIN, OR 8" DIA. WOOD POST, SOUTHERN PINE, GRADE No. 1, DENSE SR, PER AASHTO M 168. PRESSURE TREATED PER AASHTO M133.

STEEL GUARD RAIL

SCALE: NONE

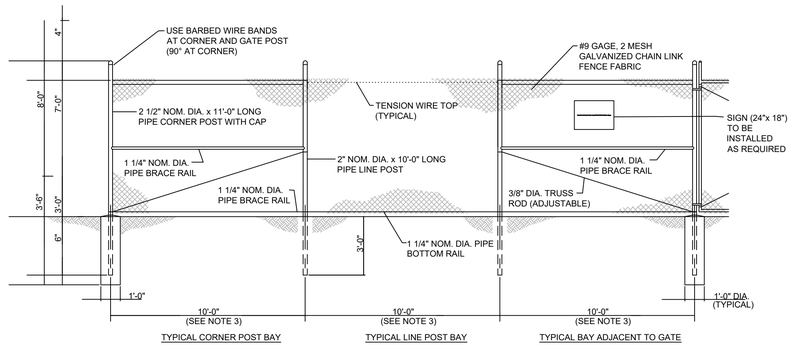
8/4



PIPE TRENCHING AND INSTALLATION

SCALE: NONE

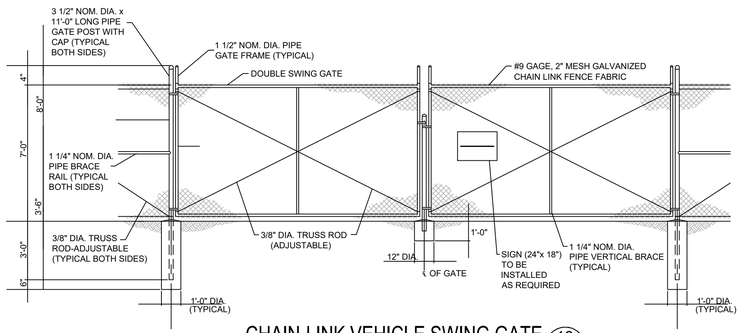
9/4



CHAIN-LINK FENCE

SCALE: NONE

12/4



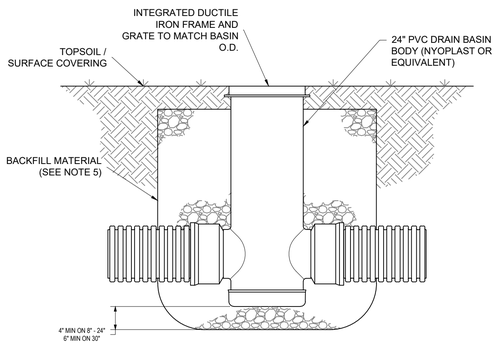
CHAIN-LINK VEHICLE SWING GATE

SCALE: NONE

13/4

CHAIN LINK FENCING AND GATE NOTES:

1. ALL PIVOT POST HOLES SHALL BE AUGURED, DO NOT FORM.
2. CONCRETE SHALL REACH A MINIMUM STENGTH OF 4,000 P.S.I. AT 28 DAYS
3. LINE POSTS SHALL BE DRIVEN AND INSTALLED EQUALLY SPACED ALONG FENCE LINE AT A MAXIMUM OF 10'-0" CENTER TO CENTER
4. ALL WIRE, FENCE FABRIC, POST, BRACE RAILS AND HARDWARE TO BE HOT DIPPED GALVANIZED
5. SWING GATES TO PROVIDE 20-FOOT CLEARANCE FOR VEHICLE PASSAGE.



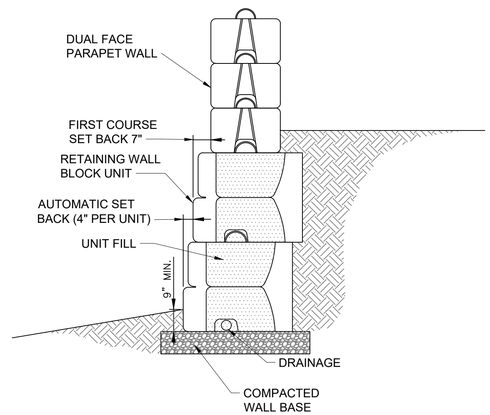
NOTES:

1. GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
2. FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-50-05.
3. DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS.
4. DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212 FOR CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP & PVC SEWER.
5. THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

PVC DRAIN BASIN BODY

SCALE: NONE

10/4



NOTES:

1. MODULAR BLOCK GRAVITY RETAINING WALLS TO BE STONE STRONG, VERTIBLOCK, OR EQUIVALENT. TYPICAL DETAIL SHOWN HERE FOR INFORMATION.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR STRUCTURAL DESIGN OF RETAINING WALLS. DESIGNS APPROVED BY A LICENSED PROFESSIONAL ENGINEER TO BE PROVIDED TO CONTRACTING OFFICER FOR APPROVAL PRIOR TO THE COMMENCEMENT OF SITE GRADING WORK.
3. RETAINING WALLS TO BE INSTALLED AT THE LOCATIONS AND TO THE ELEVATIONS DEPICTED ON THE GRADING AND STORMWATER PLAN.

MODULAR BLOCK RETAINING WALL

SCALE: NONE

11/4

AECOM

PROJECT

Cranberry Point Energy Storage Project
31 R Main Street
Carver, Massachusetts 02330

CLIENT

Cranberry Point Energy Storage, LLC

CONSULTANT

AECOM
250 Apollo Drive
Chelmsford, MA 01824
978.905.2100 tel 978.905.2101 fax
www.aecom.com

ISSUE/REVISION

A	07/26/2021	ISSUE FOR PERMITTING
I/R	DATE	DESCRIPTION

PROJECT NUMBER

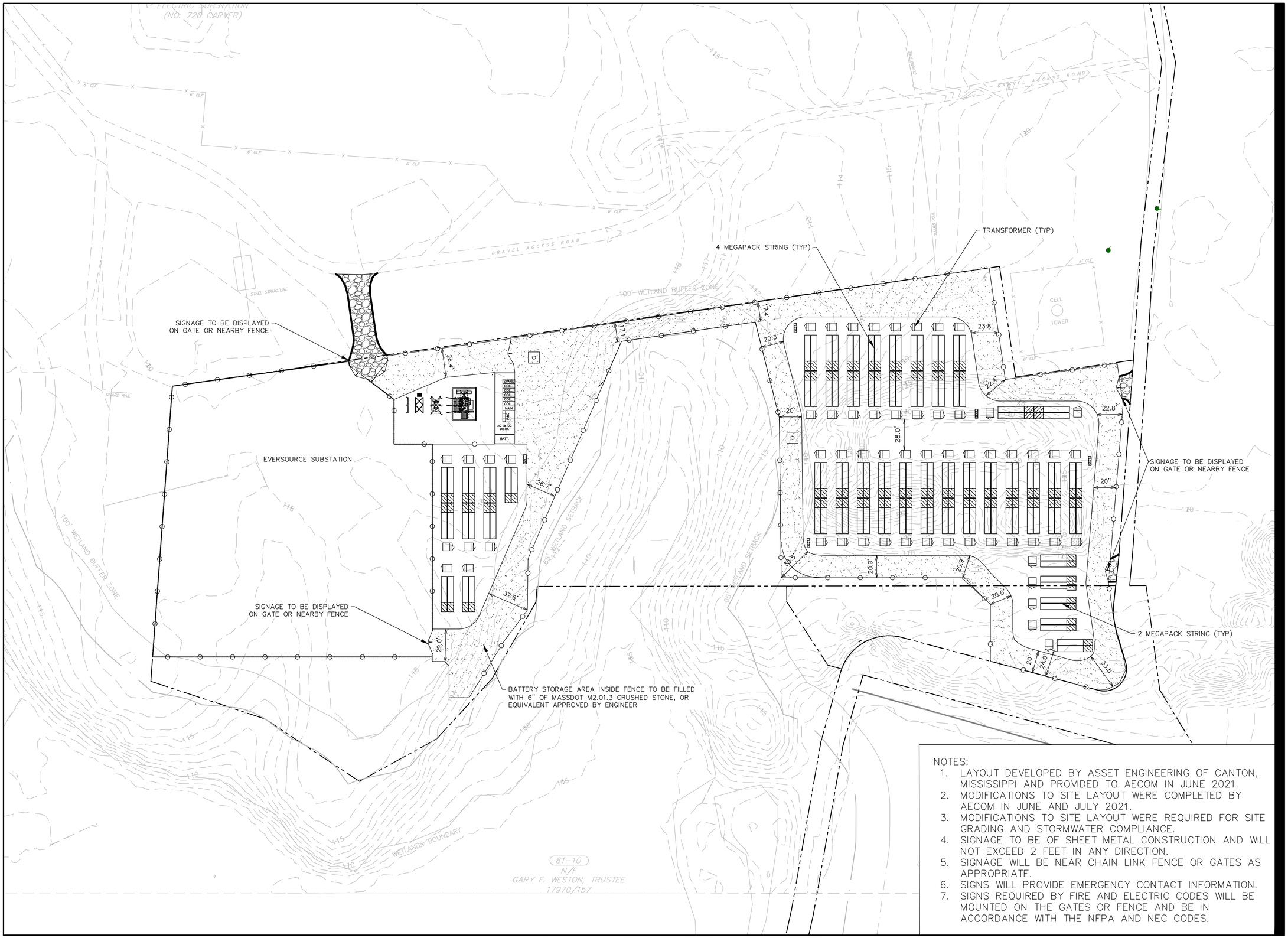
60659634

SHEET TITLE

SITE & STORMWATER DETAILS

SHEET NUMBER

8



NOTES:
1. LAYOUT DEVELOPED BY ASSET ENGINEERING OF CANTON, MISSISSIPPI AND PROVIDED TO AECOM IN JUNE 2021.
2. MODIFICATIONS TO SITE LAYOUT WERE COMPLETED BY AECOM IN JUNE AND JULY 2021.
3. MODIFICATIONS TO SITE LAYOUT WERE REQUIRED FOR SITE GRADING AND STORMWATER COMPLIANCE.
4. SIGNAGE TO BE OF SHEET METAL CONSTRUCTION AND WILL NOT EXCEED 2 FEET IN ANY DIRECTION.
5. SIGNAGE WILL BE NEAR CHAIN LINK FENCE OR GATES AS APPROPRIATE.
6. SIGNS WILL PROVIDE EMERGENCY CONTACT INFORMATION.
7. SIGNS REQUIRED BY FIRE AND ELECTRIC CODES WILL BE MOUNTED ON THE GATES OR FENCE AND BE IN ACCORDANCE WITH THE NFPA AND NEC CODES.

0 40 80
Feet

ISSUE/REVISION

A	07/26/2021	ISSUE FOR PERMITTING
I/R	DATE	DESCRIPTION

PROJECT NUMBER

60659634

SHEET TITLE

PROPOSED LAYOUT

SHEET NUMBER

9

AECOM

PROJECT

Cranberry Point Energy Storage Project
31 R Main Street
Carver, Massachusetts 02330

CLIENT

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CONSULTANT

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Attachment C

Calculations

1. TR-55 Curve Number
2. Water Quality Volume Calculations
3. Conduit Sizing Calculations
4. Inlet Capacity Table
5. HydroCAD Reports- Existing & Proposed Conditions
6. Groundwater Mounding Analysis

CN and TC Calculations for Exisiting Site Conditions

Performed by: KMT Date: 6/21/2021
Checked by: CMD Date: 7/7/2021

AECOM

Area weighted curve number (CN) calculation*

Site Location	Land Use	Area (acres)	% of Total Area	TR-55 CN	**Area Weighted CN**
West	Forest	2.607	54.31	30	30.0
East	Forest	0.555	11.57	30	58.4
	Open Land	1.638	34.12	68	

Soil Type A for entire site based on geotechnical investigations.

Total Area (acres)	4.80

Time of concentration calculation*

Sheet Flow	West	East	*Notes*
Length (ft)	93.43	97.56	
Upstream elev (ft)	120	134	
Downstream elev (ft)	118	121.5	
Slope (ft/ft)	0.0214	0.1281	
N, roughness coeff	0.40	0.200	***see note*
2-yr 24 hr storm (in)	3.37	3.37	*NRCC precipitation data*
Travel time (min)	19.29	5.61	*Manning's kinematic solution*

Shallow concentrated flow			
Length (ft)	317.382	250.354	
Upstream elev (ft)	118	121.5	
Downstream elev (ft)	110	109	
Slope (ft/ft)	0.02521	0.04993	
Vel (ft/s)	2.562	3.605	*Unpaved surfaces*
Travel time (min)	2.07	1.16	

TC (min)	21.4	6.8

*Source: USDA-SCS (1986) Urban Hydrology for Small Watersheds. Technical Release No. 55 (TR-55).
**West - Woods, light underbrush. East - Combo cultivated and woods

CN and TC Calculations for Proposed Site Conditions

Performed by: KMT Date: 6/21/2021
Checked by: CMD Date: 7/9/2021

Area weighted curve number (CN) calculation*

Site Location	Land Use	Area (acres)	% of Total Area	TR-55 CN	**Area Weighted CN**
West	Grass	0.370	7.70	49	74.9
	Impervious	0.320	6.67	98	
	Gravel/Stone	1.919	39.98	76	
East	Grass	0.255	5.30	49	78.8
	Impervious	0.590	12.30	98	
	Gravel/Stone	1.346	28.05	76	

Soil Type A for entire site based on geotechnical investigations.

Total Area (acres) 4.80

Time of concentration calculation*

Sheet Flow	West	East	*Notes*
Length (ft)	69.14	83.26	
Upstream elev (ft)	121	121	
Downstream elev (ft)	119.5	120.5	
Slope (ft/ft)	0.0217	0.0060	
N, roughness coeff	0.011	0.011	*Smooth surface (concrete, gravel)*
2-yr 24 hr storm (in)	3.37	3.37	*NRCC precipitation data*
Travel time (min)	0.85	1.65	*Manning's kinematic solution*

Shallow concentrated flow- Gravel/P			
Length (ft)	171.882	124.244	
Upstream elev (ft)	119.5	120.5	
Downstream elev (ft)	115	115	
Slope (ft/ft)	0.02618	0.04427	
Vel (ft/s)	3.289	4.277	*Gravel and paved*
Travel time (min)	0.87	0.48	

Shallow concentrated flow- Grass			
Length (ft)	134.83	47.44	
Upstream elev (ft)	115	115	
Downstream elev (ft)	107	108	
Slope (ft/ft)	0.05933	0.14755	
Vel (ft/s)	3.930	6.198	*Unpaved*
Travel time (min)	0.57	0.13	

TC (min)	2.29	2.26

6 min minimum TC used for runoff calculations.

*Source: USDA-SCS (1986) Urban Hydrology for Small Watersheds. Technical Release No. 55 (TR-55).

Water Quality Volume Calculations
Performed by: MCF Date: 7/13/2021
Checked by: CMD Date: 7/14/2021

WATER QUALITY VOLUME CALCULATIONS

Site: East Area
Description: Eastern Battery Storage Area

Watershed Area	SF	Acres	Notes
Impervious/Concrete coverage	25,700.40	0.59	Concrete slab foundations
Total Impervious	25,700.40	0.59	

Water Quality Volume			Notes
First Flush Depth	1	in	High infiltration rate (sand)
Water Quality Volume (WQV)	**2142**	cf	Includes concrete slab foundations

Infiltration Basin

Depth (ft)	Area (ft2)	Perimeter (ft)	Volume (ft3)
109.00	1,697.00	282.00	
110.00	2,578.13	307.60	2,137.57
111.00	3,560.81	340.40	3,069.47
112.00	4,637.18	369.90	4,098.99
113.00	6,544.00	406.00	5,590.59
		Subtotal:	**14,896.62 cf**
			Exceeds Volume Required for Water Quality

Required Sediment Forebay Volume
Impervious area= 25,700.40 sq ft
First flush depth= 0.1 inch
Required WQV= **214.170 cf**

Volume Calcs

Forebay 1

Elevation (ft)	Area (ft2)	Perimeter (ft)	Volume (ft3)
111.00	24.30	33.12	0.00
112.00	174.51	65.28	99.40
		Subtotal:	**99.40 cf**

Forebay 2

Elevation (ft)	Area (ft2)	Perimeter (ft)	Volume (ft3)
111.00	108.90	48.64	0.00
112.00	285.39	68.60	197.14
		Subtotal:	**197.14 cf**
		Total Forebay Volume:	**296.55 cf**
			Exceeds Required Volume for Water Quality

Drawdown Time (Needs to be <72 hrs)			Notes
Td=Rv/(K*Bottom Area)			
WQV/Rv	2142	cubic feet	
Bottom Area	1,697.00	square feet	
K	1.02	inches/hr	Conservative infiltration rate used
Td	14.85	hours	

Drawdown time is less than 72 hours
Exceeds Requirement

Required Recharge Volume			Notes
Total Impervious	25,700.40	square feet	
Target Depth Factor	0.6	in	HSG Type A Soil
V= (Impervious A)*(Depth Factor/12)	1285	cubic feet	

Recharge Volume is less than Infiltration Basin Volume
Exceeds Requirement

Water Quality Volume Calculations

Performed by: MCF Date: 7/13/2021
Checked by: CMD Date: 7/14/2021

WATER QUALITY VOLUME CALCULATIONS

Site: West Area
Description: Western Battery Storage Area

Watershed Area	SF	Acres	Notes
Impervious/Concrete coverage	13,951.35	0.32	Concrete slab foundations
Total Impervious	13,951.35	0.32	

Water Quality Volume			Notes
First Flush Depth	1	in	High infiltration rate (sand)
Water Quality Volume (WQV)	**1163**	cf	Includes concrete slab foundations

Infiltration Basin

Depth (ft)	Area (ft2)	Perimeter (ft)	Volume (ft3)
107.50	2,277.07	250.80	0.00
108.00	2,659.91	261.40	1,234.24
109.00	3,477.27	282.60	3,068.59
110.00	4,358.49	303.90	3,917.88
111.00	5,302.95	325.00	4,830.72
112.00	7,554.86	357.60	6,428.90
		Subtotal:	**19,480.33 cf**

Exceeds Required Volume

Required Sediment Forebay Volume

Impervious area=	13,951.35	sq ft
First flush depth=	0.1	inch
Required WQV=	**116.261**	**cf**

Volume Calcs

Forebay 1

Elevation (ft)	Area (ft2)	Perimeter (ft)	Volume (ft3)
108.50	1.51	8.39	0.00
109.00	40.28	43.30	10.45
110.00	274.89	113.11	157.59
111.00	868.62	218.45	571.76
		Subtotal:	**739.79 cf**

Exceeds Required Volume

Drawdown Time (Needs to be <72 hrs)			Notes
Td=Rv/(K*Bottom Area)			
WQV/Rv	1163	cubic feet	
Bottom Area	2,277.07	square feet	
K	1.02	inches/hr	Conservative infiltration rate used
Td	6.01	hours	

Drawdown time is less than 72 hours
Exceeds Requirement

Required Recharge Volume			Notes
Total Impervious	13,951.35	square feet	
Target Depth Factor	0.6	in	HSG Type A Soil
V= (Impervious A)*(Depth Factor/12)	698	cubic feet	

Recharge Volume is less than Infiltration Basin Volume
Exceeds Requirement

Conduit Sizing

Performed by: MCF Date: 7/9/2021 Page 1 of 2 AECOM
Checked by: CMD Date: 7/9/2021

Conduit Sizing - Cranberry Point Energy Storage Project
Sources: USDA Urban Hydrology for Small Watersheds (TR-55)
Note: Rainfall intensity is NRCC 10-year storm, 4.97 in

Table 1: Flow for Each Drainage Area

DA	A	A	CN	S	Ia	P	Q
	sf	acres				in	in
CB-1	25761.8304	0.591410248	76	3.1578947	0.631579	4.97	2.51082
CB-2	24190.4454	0.555336212	76	3.1578947	0.631579	4.97	2.51082
CB-3	27310.6113	0.626965365	76	3.1578947	0.631579	4.97	2.51082
CB-4	10387.289	0.238459343	76	3.1578947	0.631579	4.97	2.51082
CB-5	34745.3873	0.797644337	76	3.1578947	0.631579	4.97	2.51082

Table 2: Travel Time for Sheet Flow

DA	Length	Upstream El	Downstream El	Slope	N	P (2-yr, 24 hr)	Tt
	ft	ft	ft				min
CB-1	79.782	121.5	121	0.006	0.011	3.37	1.57
CB-2	60	121.5	121	0.004	0.011	3.37	1.47
CB-3	85.7457	121.5	121	0.006	0.011	3.37	1.71
CB-4	79.2244	118.25	116.25	0.025	0.011	3.37	0.89
CB-5	113.4981	119.7	117	0.024	0.011	3.37	1.22

Table 3: Travel Time for Shallow Concentrated Flow

DA	Length	Upstream El	Downstream El	Slope	V	Tt	TC
	ft	ft	ft		Paved	min	min
CB-1	236.814	121	116	0.022	3.03	1.30	2.87
CB-2	283	121	115	0.024	3.14	1.50	2.97
CB-3	231.428	121	115.75	0.023	3.06	1.26	2.97
CB-4	111.7866	116	113.25	0.027	3.33	0.56	1.45
CB-5	269.3365	117	113.25	0.014	2.40	1.87	3.09

Table 4: Peak Flows

DA	Ia/P	qu	A	Q	Peak Q
		csm/in	sq miles	in	cfs
CB-1	0.13	640	0.000924079	2.5108197	1.484924
CB-2	0.13	640	0.000867713	2.5108197	1.394349
CB-3	0.13	640	0.000979633	2.5108197	1.574197
CB-4	0.13	640	0.000372593	2.5108197	0.598728
CB-5	0.13	640	0.001246319	2.5108197	2.002741

Table 5: Conduit Sizing using Manning's Eq
Q=(1.486*A*R^(2/3)*S^(1/2))/n

Conduit	Q peak	n	K	So	A	P	D	D used	A used	Rh used	Flow check
	cfs		1.49	ft/ft	ft2	ft	ft	ft			cfs
CB-1 to SF	1.48	0.01	1.49	0.01	0.334631359	1.025317	0.65	1	0.7854	0.25	4.63
CB-2 to SF	1.39	0.01	1.49	0.01	0.319203024	1.001402	0.64	1	0.7854	0.25	4.63
CB-3 to SF	1.57	0.01	1.49	0.01	0.349609049	1.048012	0.67	1	0.7854	0.25	4.63
CB-4 to CB-5	0.60	0.01	1.49	0.008	0.184099248	0.760503	0.48	1	0.7854	0.25	4.14
CB-5 to SF	2.00	0.01	1.49	0.008	0.45535302	1.196049	0.76	1	0.7854	0.25	4.14

Table 6: Conduit Properties

Conduit	Inv. In	Inv. Out	Length	Slope	Pipe Diameter	Material
	ft	ft	ft	ft/ft	ft	
CB-1 to SF	113.75	113.45	30.0	0.010	1.00	HDPE
CB-2 to SF	112.50	112.15	35.0	0.010	1.00	HDPE
CB-3 to SF	113.75	111.50	225.0	0.010	1.00	HDPE
CB-4 to CB-5	111.25	109.75	155	0.008	1.00	HDPE
CB-5 to SF	109.75	109	95	0.008	1.00	HDPE

Nyloplast Inlet Capacity Table

DISCLAIMER: SAFETY FACTORS ARE NOT INCLUDED IN THESE CALCULATIONS. ACTUAL CALCULATIONS SHOULD BE CARRIED OUT AND VERIFIED BY THE DESIGN ENGINEER TAKING INTO ACCOUNT ALL LOCAL CONDITIONS. NYLOPLAST RECOMMENDS USING A MINIMUM SAFETY FACTOR OF 1.25 FOR PAVED AREAS AND 2.0 FOR TURF AREAS. ADS/NYLOPLAST IS NOT RESPONSIBLE FOR MISUSE OF THIS TOOL.

Input	
Type of Grate	24" Standard
Head (ft)	0.25

Properties	
Orifice Flow Area (in)	**194.60**
Orifice Flow Area (ft)	**1.34**
Weir Flow Perimeter (in)	**77.04**
Weir Flow Perimeter (ft)	**6.42**

Solution	
Capacity (cfs)	**2.67**
Capacity (gpm)	**1199.34**

$$Q_{weir} = CLH^{3/2}$$

$C = 3.33\ Weir\ Discharge\ Coefficient$

$L = Perimeter\ of\ Grate\ Opening\ (ft)$

$H = Flow\ Height\ of\ Water\ Surface\ Above\ Weir\ (ft)$

$$Q_{orifice} = CA\sqrt{2gh}$$

$C = 0.60\ Orifice\ Discharge\ Coefficient$

$A = Area\ of\ the\ Orifice\ (ft^2)$

$g = Gravitational\ Constant\ \left(32.2\frac{ft}{s^2}\right)$

$H = Depth\ of\ Water\ Above\ Center\ of\ Orifice\ (ft)$

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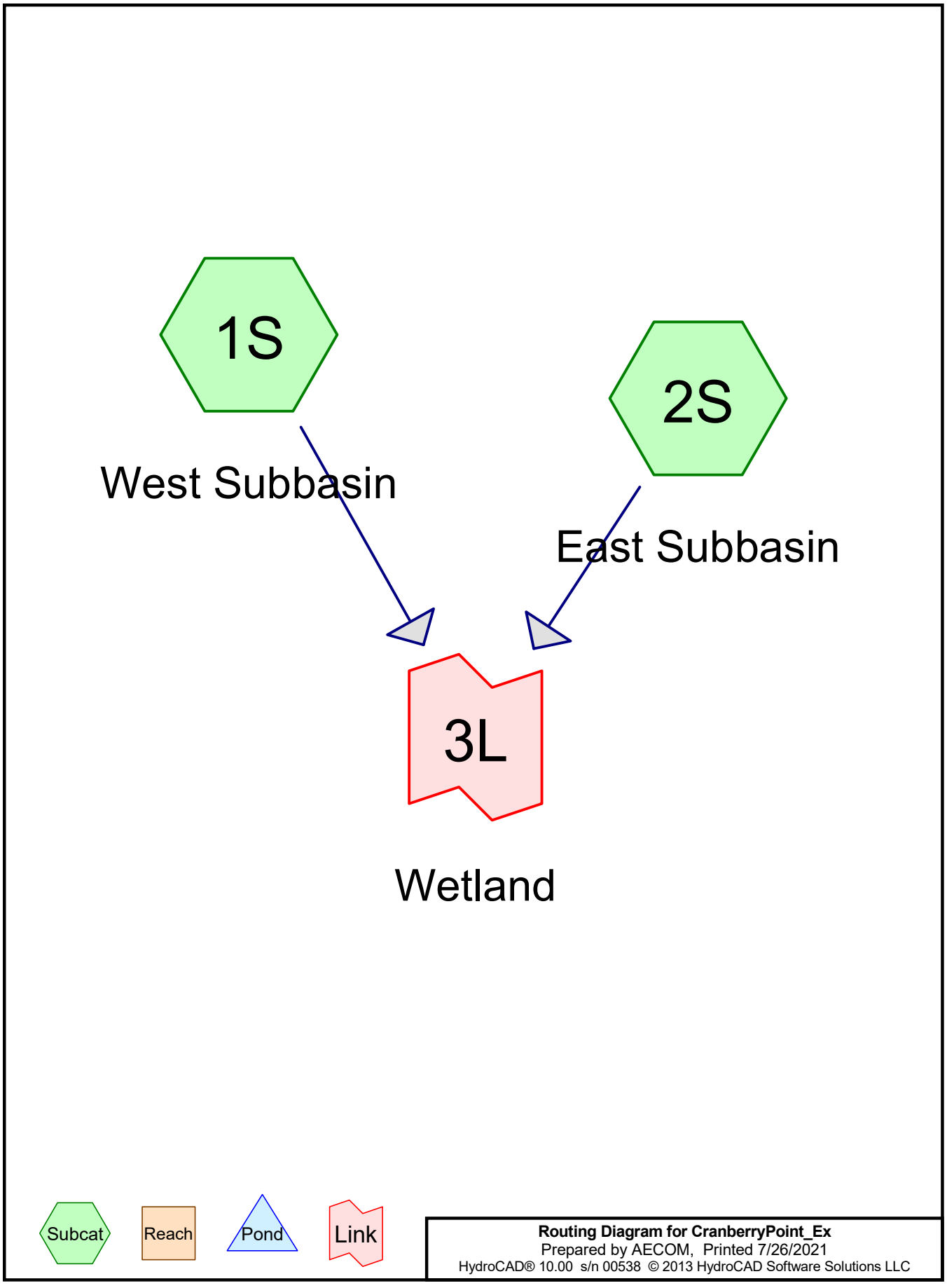

1S
2S
West Subbasin
East Subbasin
3L
Wetland
Subcat
Reach
Pond
Link
Routing Diagram for CranberryPoint_Ex
Prepared by AECOM, Printed 7/26/2021
HydroCAD® 10.00 s/n 00538 © 2013 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.63763	68.0	Open Land, HSG A (2S)
2.60708	30.0	Woods, Good, HSG A (1S)
0.55534	30.0	Woods, HSG A (2S)
4.80005	**43.0**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
4.80005	HSG A	1S, 2S
0.00000	HSG B	
0.00000	HSG C	
0.00000	HSG D	
0.00000	Other	
4.80005		**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
1.63763	0.00000	0.00000	0.00000	0.00000	1.63763	Open Land	2S
0.55534	0.00000	0.00000	0.00000	0.00000	0.55534	Woods	2S
2.60708	0.00000	0.00000	0.00000	0.00000	2.60708	Woods, Good	1S
4.80005	**0.00000**	**0.00000**	**0.00000**	**0.00000**	**4.80005**	**TOTAL AREA**	

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 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 1S: West Subbasin Runoff Area=2.60708 ac 0.00% Impervious Runoff Depth=0.00"
Tc=21.4 min CN=30.0 Runoff=0.00 cfs 0.000 af

Subcatchment 2S: East Subbasin Runoff Area=2.19297 ac 0.00% Impervious Runoff Depth=0.42"
Tc=6.8 min CN=58.4 Runoff=0.69 cfs 0.076 af

Link 3L: Wetland Inflow=0.69 cfs 0.076 af
Primary=0.69 cfs 0.076 af

Total Runoff Area = 4.80005 ac Runoff Volume = 0.076 af Average Runoff Depth = 0.19"
100.00% Pervious = 4.80005 ac 0.00% Impervious = 0.00000 ac

Summary for Subcatchment 1S: West Subbasin

[45] Hint: Runoff=Zero

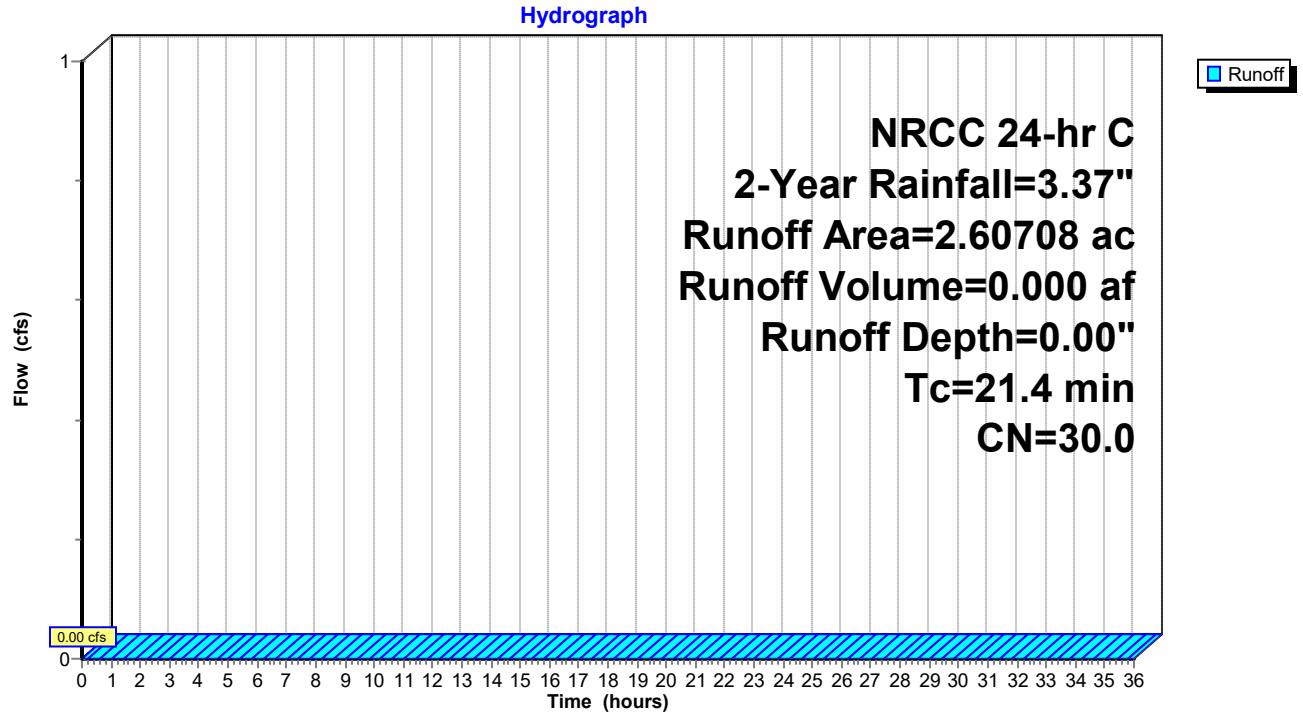
Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 2-Year Rainfall=3.37"

Area (ac)	CN	Description
2.60708	30.0	Woods, Good, HSG A
2.60708		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.4					**Direct Entry, Calculated in Excel**

Subcatchment 1S: West Subbasin



Hydrograph for Subcatchment 1S: West Subbasin

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	**0.00**	**0.00**
0.50	0.02	0.00	0.00
1.00	0.04	0.00	0.00
1.50	0.06	0.00	0.00
2.00	0.08	0.00	0.00
2.50	0.10	0.00	0.00
3.00	0.13	0.00	0.00
3.50	0.15	0.00	0.00
4.00	0.18	0.00	0.00
4.50	0.20	0.00	0.00
5.00	0.23	0.00	0.00
5.50	0.26	0.00	0.00
6.00	0.29	0.00	0.00
6.50	0.32	0.00	0.00
7.00	0.36	0.00	0.00
7.50	0.40	0.00	0.00
8.00	0.44	0.00	0.00
8.50	0.48	0.00	0.00
9.00	0.53	0.00	0.00
9.50	0.59	0.00	0.00
10.00	0.67	0.00	0.00
10.50	0.75	0.00	0.00
11.00	0.87	0.00	0.00
11.50	1.05	0.00	0.00
12.00	1.60	0.00	0.00
12.50	2.32	0.00	0.00
13.00	2.50	0.00	0.00
13.50	2.62	0.00	0.00
14.00	2.70	0.00	0.00
14.50	2.78	0.00	0.00
15.00	2.84	0.00	0.00
15.50	2.89	0.00	0.00
16.00	2.93	0.00	0.00
16.50	2.97	0.00	0.00
17.00	3.01	0.00	0.00
17.50	3.05	0.00	0.00
18.00	3.08	0.00	0.00
18.50	3.11	0.00	0.00
19.00	3.14	0.00	0.00
19.50	3.17	0.00	0.00
20.00	3.19	0.00	0.00
20.50	3.22	0.00	0.00
21.00	3.24	0.00	0.00
21.50	3.27	0.00	0.00
22.00	3.29	0.00	0.00
22.50	3.31	0.00	0.00
23.00	3.33	0.00	0.00
23.50	3.35	0.00	0.00
24.00	**3.37**	0.00	0.00
24.50	3.37	0.00	0.00
25.00	3.37	0.00	0.00
25.50	3.37	0.00	0.00
26.00	3.37	0.00	0.00
26.50	3.37	0.00	0.00
27.00	3.37	0.00	0.00
27.50	3.37	0.00	0.00
28.00	3.37	0.00	0.00
28.50	3.37	0.00	0.00
29.00	3.37	0.00	0.00
29.50	3.37	0.00	0.00
30.00	3.37	0.00	0.00
30.50	3.37	0.00	0.00
31.00	3.37	0.00	0.00
31.50	3.37	0.00	0.00
32.00	3.37	0.00	0.00
32.50	3.37	0.00	0.00
33.00	3.37	0.00	0.00
33.50	3.37	0.00	0.00
34.00	3.37	0.00	0.00
34.50	3.37	0.00	0.00
35.00	3.37	0.00	0.00
35.50	3.37	0.00	0.00
36.00	3.37	0.00	0.00

Summary for Subcatchment 2S: East Subbasin

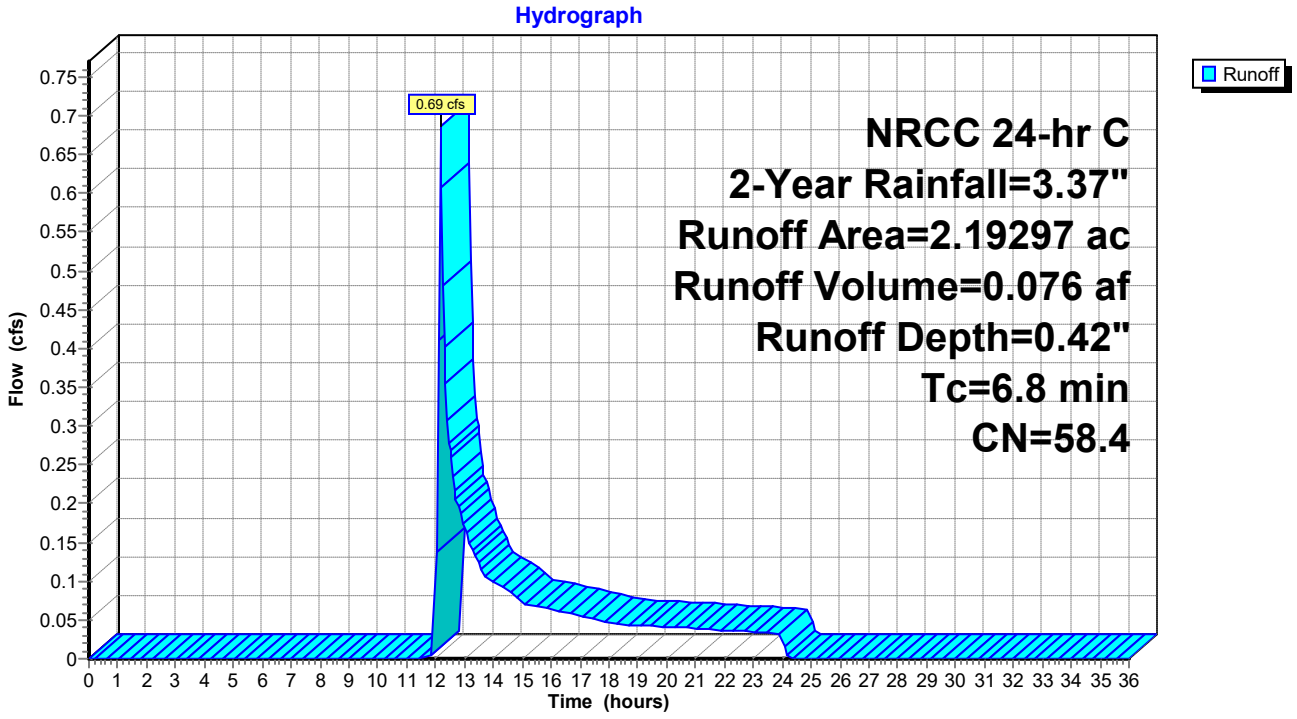
Runoff = 0.69 cfs @ 12.17 hrs, Volume= 0.076 af, Depth= 0.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 2-Year Rainfall=3.37"

	Area (ac)	CN	Description
*	0.55534	30.0	Woods, HSG A
*	1.63763	68.0	Open Land, HSG A
	2.19297	58.4	Weighted Average
	2.19297		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8					**Direct Entry, Calculated in Excel**

Subcatchment 2S: East Subbasin



Hydrograph for Subcatchment 2S: East Subbasin

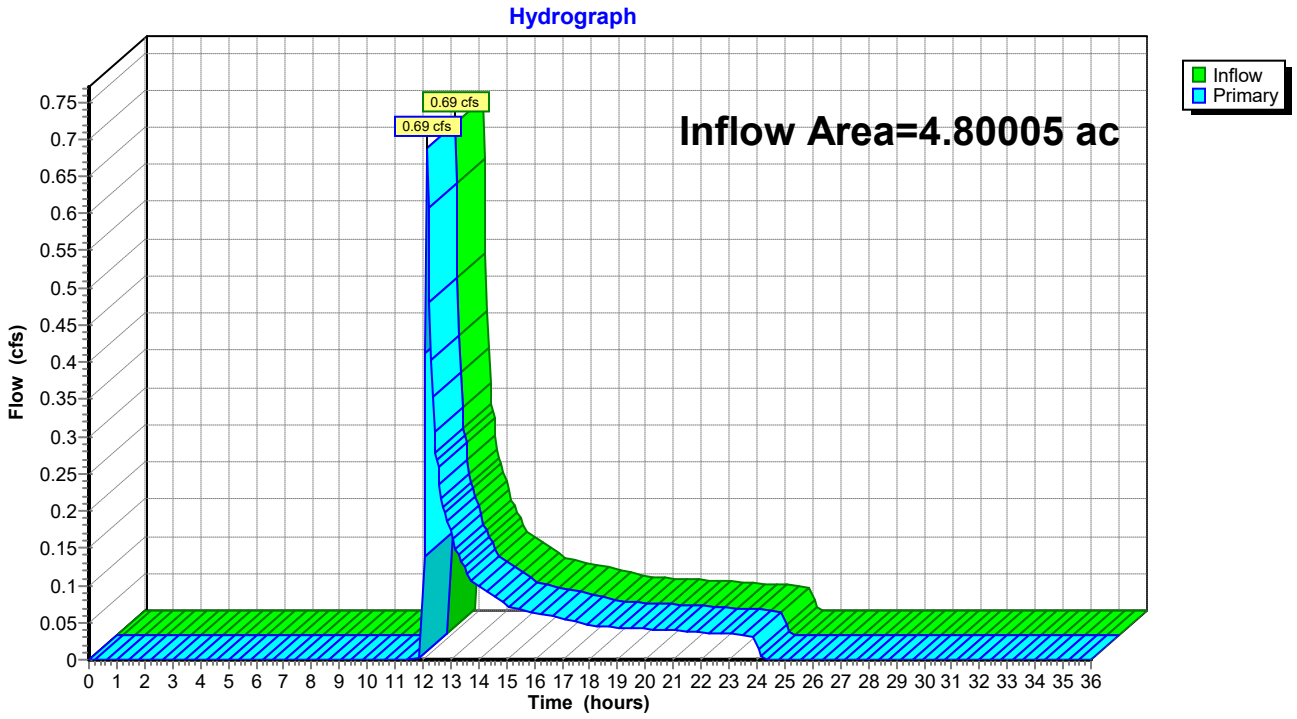
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.04	0.00	0.00
1.50	0.06	0.00	0.00
2.00	0.08	0.00	0.00
2.50	0.10	0.00	0.00
3.00	0.13	0.00	0.00
3.50	0.15	0.00	0.00
4.00	0.18	0.00	0.00
4.50	0.20	0.00	0.00
5.00	0.23	0.00	0.00
5.50	0.26	0.00	0.00
6.00	0.29	0.00	0.00
6.50	0.32	0.00	0.00
7.00	0.36	0.00	0.00
7.50	0.40	0.00	0.00
8.00	0.44	0.00	0.00
8.50	0.48	0.00	0.00
9.00	0.53	0.00	0.00
9.50	0.59	0.00	0.00
10.00	0.67	0.00	0.00
10.50	0.75	0.00	0.00
11.00	0.87	0.00	0.00
11.50	1.05	0.00	0.00
12.00	1.60	0.00	**0.03**
12.50	2.32	0.10	**0.27**
13.00	2.50	0.14	0.17
13.50	2.62	0.17	0.12
14.00	2.70	0.19	0.10
14.50	2.78	0.22	0.09
15.00	2.84	0.23	0.07
15.50	2.89	0.25	0.07
16.00	2.93	0.26	0.06
16.50	2.97	0.28	0.06
17.00	3.01	0.29	0.06
17.50	3.05	0.30	0.05
18.00	3.08	0.31	0.05
18.50	3.11	0.32	0.04
19.00	3.14	0.33	0.04
19.50	3.17	0.34	0.04
20.00	3.19	0.35	0.04
20.50	3.22	0.36	0.04
21.00	3.24	0.37	0.04
21.50	3.27	0.38	0.04
22.00	3.29	0.39	0.04
22.50	3.31	0.39	0.04
23.00	3.33	0.40	0.03
23.50	3.35	0.41	0.03
24.00	**3.37**	**0.42**	0.03
24.50	3.37	0.42	0.00
25.00	3.37	0.42	0.00
25.50	3.37	0.42	0.00
26.00	3.37	0.42	0.00
26.50	3.37	0.42	0.00
27.00	3.37	0.42	0.00
27.50	3.37	0.42	0.00
28.00	3.37	0.42	0.00
28.50	3.37	0.42	0.00
29.00	3.37	0.42	0.00
29.50	3.37	0.42	0.00
30.00	3.37	0.42	0.00
30.50	3.37	0.42	0.00
31.00	3.37	0.42	0.00
31.50	3.37	0.42	0.00
32.00	3.37	0.42	0.00
32.50	3.37	0.42	0.00
33.00	3.37	0.42	0.00
33.50	3.37	0.42	0.00
34.00	3.37	0.42	0.00
34.50	3.37	0.42	0.00
35.00	3.37	0.42	0.00
35.50	3.37	0.42	0.00
36.00	3.37	0.42	0.00

Summary for Link 3L: Wetland

Inflow Area = 4.80005 ac, 0.00% Impervious, Inflow Depth = 0.19" for 2-Year event
Inflow = 0.69 cfs @ 12.17 hrs, Volume= 0.076 af
Primary = 0.69 cfs @ 12.17 hrs, Volume= 0.076 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 3L: Wetland



Hydrograph for Link 3L: Wetland

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00
0.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	**0.03**	0.00	**0.03**
12.50	**0.27**	0.00	**0.27**
13.00	0.17	0.00	0.17
13.50	0.12	0.00	0.12
14.00	0.10	0.00	0.10
14.50	0.09	0.00	0.09
15.00	0.07	0.00	0.07
15.50	0.07	0.00	0.07
16.00	0.06	0.00	0.06
16.50	0.06	0.00	0.06
17.00	0.06	0.00	0.06
17.50	0.05	0.00	0.05
18.00	0.05	0.00	0.05
18.50	0.04	0.00	0.04
19.00	0.04	0.00	0.04
19.50	0.04	0.00	0.04
20.00	0.04	0.00	0.04
20.50	0.04	0.00	0.04
21.00	0.04	0.00	0.04
21.50	0.04	0.00	0.04
22.00	0.04	0.00	0.04
22.50	0.04	0.00	0.04
23.00	0.03	0.00	0.03
23.50	0.03	0.00	0.03
24.00	0.03	0.00	0.03
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 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 1S: West Subbasin Runoff Area=2.60708 ac 0.00% Impervious Runoff Depth=0.00"
Tc=21.4 min CN=30.0 Runoff=0.00 cfs 0.001 af

Subcatchment 2S: East Subbasin Runoff Area=2.19297 ac 0.00% Impervious Runoff Depth=1.18"
Tc=6.8 min CN=58.4 Runoff=2.83 cfs 0.215 af

Link 3L: Wetland Inflow=2.83 cfs 0.216 af
Primary=2.83 cfs 0.216 af

Total Runoff Area = 4.80005 ac Runoff Volume = 0.216 af Average Runoff Depth = 0.54"
100.00% Pervious = 4.80005 ac 0.00% Impervious = 0.00000 ac

Summary for Subcatchment 1S: West Subbasin

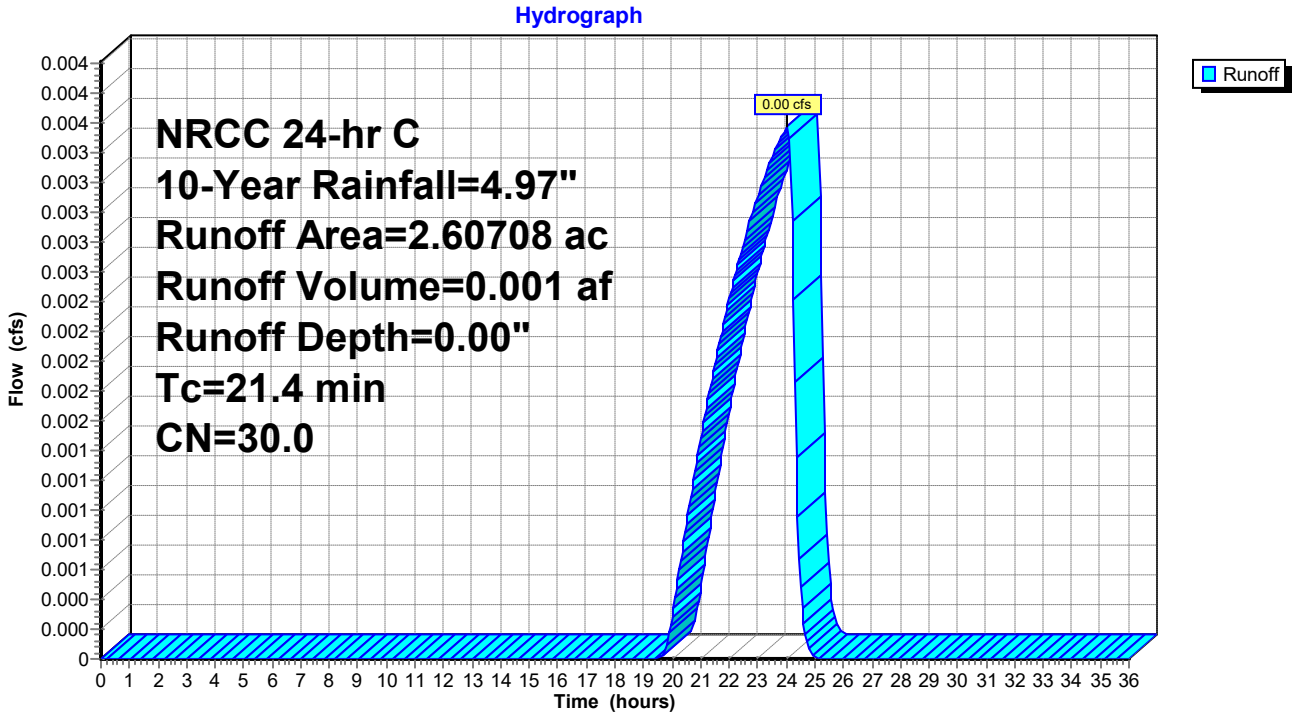
Runoff = 0.00 cfs @ 24.03 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 10-Year Rainfall=4.97"

Area (ac)	CN	Description
2.60708	30.0	Woods, Good, HSG A
2.60708		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.4					**Direct Entry, Calculated in Excel**

Subcatchment 1S: West Subbasin



Hydrograph for Subcatchment 1S: West Subbasin

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.06	0.00	0.00
1.50	0.09	0.00	0.00
2.00	0.12	0.00	0.00
2.50	0.15	0.00	0.00
3.00	0.19	0.00	0.00
3.50	0.23	0.00	0.00
4.00	0.26	0.00	0.00
4.50	0.30	0.00	0.00
5.00	0.34	0.00	0.00
5.50	0.38	0.00	0.00
6.00	0.43	0.00	0.00
6.50	0.47	0.00	0.00
7.00	0.53	0.00	0.00
7.50	0.58	0.00	0.00
8.00	0.65	0.00	0.00
8.50	0.71	0.00	0.00
9.00	0.79	0.00	0.00
9.50	0.88	0.00	0.00
10.00	0.98	0.00	0.00
10.50	1.11	0.00	0.00
11.00	1.28	0.00	0.00
11.50	1.56	0.00	0.00
12.00	2.37	0.00	0.00
12.50	3.41	0.00	0.00
13.00	3.69	0.00	0.00
13.50	3.86	0.00	0.00
14.00	3.99	0.00	0.00
14.50	4.09	0.00	0.00
15.00	4.18	0.00	0.00
15.50	4.26	0.00	0.00
16.00	4.32	0.00	0.00
16.50	4.39	0.00	0.00
17.00	4.44	0.00	0.00
17.50	4.50	0.00	0.00
18.00	4.54	0.00	0.00
18.50	4.59	0.00	0.00
19.00	4.63	0.00	0.00
19.50	4.67	0.00	0.00
20.00	4.71	0.00	0.00
20.50	4.74	0.00	0.00
21.00	4.78	0.00	0.00
21.50	4.82	0.00	0.00
22.00	4.85	0.00	0.00
22.50	4.88	0.00	0.00
23.00	4.91	0.00	0.00
23.50	4.94	0.00	0.00
24.00	**4.97**	**0.00**	**0.00**
24.50	4.97	0.00	**0.00**
25.00	4.97	0.00	0.00
25.50	4.97	0.00	0.00
26.00	4.97	0.00	0.00
26.50	4.97	0.00	0.00
27.00	4.97	0.00	0.00
27.50	4.97	0.00	0.00
28.00	4.97	0.00	0.00
28.50	4.97	0.00	0.00
29.00	4.97	0.00	0.00
29.50	4.97	0.00	0.00
30.00	4.97	0.00	0.00
30.50	4.97	0.00	0.00
31.00	4.97	0.00	0.00
31.50	4.97	0.00	0.00
32.00	4.97	0.00	0.00
32.50	4.97	0.00	0.00
33.00	4.97	0.00	0.00
33.50	4.97	0.00	0.00
34.00	4.97	0.00	0.00
34.50	4.97	0.00	0.00
35.00	4.97	0.00	0.00
35.50	4.97	0.00	0.00
36.00	4.97	0.00	0.00

Summary for Subcatchment 2S: East Subbasin

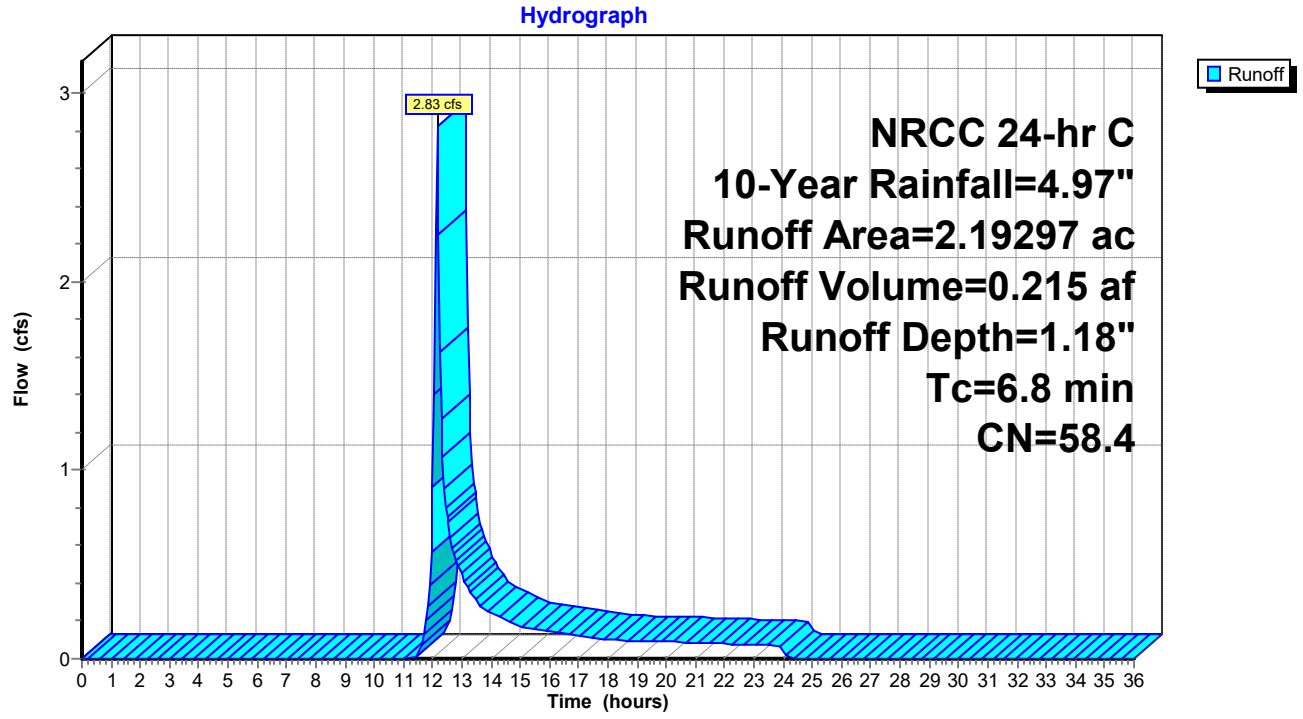
Runoff = 2.83 cfs @ 12.15 hrs, Volume= 0.215 af, Depth= 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 10-Year Rainfall=4.97"

	Area (ac)	CN	Description
*	0.55534	30.0	Woods, HSG A
*	1.63763	68.0	Open Land, HSG A
	2.19297	58.4	Weighted Average
	2.19297		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8					**Direct Entry, Calculated in Excel**

Subcatchment 2S: East Subbasin



Hydrograph for Subcatchment 2S: East Subbasin

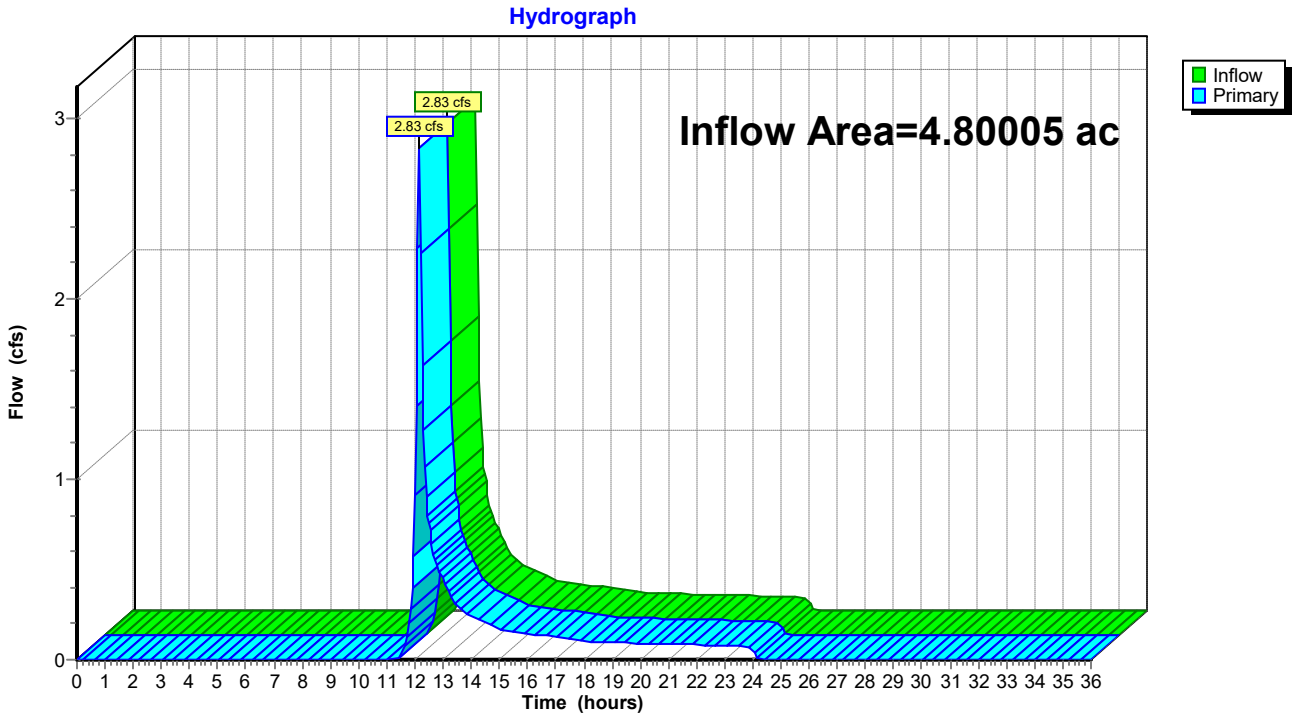
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.06	0.00	0.00
1.50	0.09	0.00	0.00
2.00	0.12	0.00	0.00
2.50	0.15	0.00	0.00
3.00	0.19	0.00	0.00
3.50	0.23	0.00	0.00
4.00	0.26	0.00	0.00
4.50	0.30	0.00	0.00
5.00	0.34	0.00	0.00
5.50	0.38	0.00	0.00
6.00	0.43	0.00	0.00
6.50	0.47	0.00	0.00
7.00	0.53	0.00	0.00
7.50	0.58	0.00	0.00
8.00	0.65	0.00	0.00
8.50	0.71	0.00	0.00
9.00	0.79	0.00	0.00
9.50	0.88	0.00	0.00
10.00	0.98	0.00	0.00
10.50	1.11	0.00	0.00
11.00	1.28	0.00	0.00
11.50	1.56	0.00	0.03
12.00	2.37	0.11	**0.91**
12.50	3.41	0.43	**0.76**
13.00	3.69	0.55	0.44
13.50	3.86	0.62	0.30
14.00	3.99	0.68	0.24
14.50	4.09	0.73	0.21
15.00	4.18	0.77	0.17
15.50	4.26	0.81	0.16
16.00	4.32	0.84	0.15
16.50	4.39	0.87	0.14
17.00	4.44	0.90	0.13
17.50	4.50	0.93	0.11
18.00	4.54	0.95	0.10
18.50	4.59	0.97	0.10
19.00	4.63	0.99	0.10
19.50	4.67	1.01	0.09
20.00	4.71	1.04	0.09
20.50	4.74	1.06	0.09
21.00	4.78	1.07	0.09
21.50	4.82	1.09	0.08
22.00	4.85	1.11	0.08
22.50	4.88	1.13	0.08
23.00	4.91	1.15	0.07
23.50	4.94	1.16	0.07
24.00	**4.97**	**1.18**	0.07
24.50	4.97	1.18	0.00
25.00	4.97	1.18	0.00
25.50	4.97	1.18	0.00
26.00	4.97	1.18	0.00
26.50	4.97	1.18	0.00
27.00	4.97	1.18	0.00
27.50	4.97	1.18	0.00
28.00	4.97	1.18	0.00
28.50	4.97	1.18	0.00
29.00	4.97	1.18	0.00
29.50	4.97	1.18	0.00
30.00	4.97	1.18	0.00
30.50	4.97	1.18	0.00
31.00	4.97	1.18	0.00
31.50	4.97	1.18	0.00
32.00	4.97	1.18	0.00
32.50	4.97	1.18	0.00
33.00	4.97	1.18	0.00
33.50	4.97	1.18	0.00
34.00	4.97	1.18	0.00
34.50	4.97	1.18	0.00
35.00	4.97	1.18	0.00
35.50	4.97	1.18	0.00
36.00	4.97	1.18	0.00

Summary for Link 3L: Wetland

Inflow Area = 4.80005 ac, 0.00% Impervious, Inflow Depth = 0.54" for 10-Year event
Inflow = 2.83 cfs @ 12.15 hrs, Volume= 0.216 af
Primary = 2.83 cfs @ 12.15 hrs, Volume= 0.216 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 3L: Wetland



Hydrograph for Link 3L: Wetland

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00
0.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.03	0.00	0.03
12.00	**0.91**	0.00	**0.91**
12.50	**0.76**	0.00	**0.76**
13.00	0.44	0.00	0.44
13.50	0.30	0.00	0.30
14.00	0.24	0.00	0.24
14.50	0.21	0.00	0.21
15.00	0.17	0.00	0.17
15.50	0.16	0.00	0.16
16.00	0.15	0.00	0.15
16.50	0.14	0.00	0.14
17.00	0.13	0.00	0.13
17.50	0.11	0.00	0.11
18.00	0.10	0.00	0.10
18.50	0.10	0.00	0.10
19.00	0.10	0.00	0.10
19.50	0.09	0.00	0.09
20.00	0.09	0.00	0.09
20.50	0.09	0.00	0.09
21.00	0.09	0.00	0.09
21.50	0.08	0.00	0.08
22.00	0.08	0.00	0.08
22.50	0.08	0.00	0.08
23.00	0.08	0.00	0.08
23.50	0.07	0.00	0.07
24.00	0.07	0.00	0.07
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 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 1S: West Subbasin Runoff Area=2.60708 ac 0.00% Impervious Runoff Depth=0.60"
Tc=21.4 min CN=30.0 Runoff=0.37 cfs 0.130 af

Subcatchment 2S: East Subbasin Runoff Area=2.19297 ac 0.00% Impervious Runoff Depth=3.69"
Tc=6.8 min CN=58.4 Runoff=9.70 cfs 0.675 af

Link 3L: Wetland Inflow=9.71 cfs 0.805 af
Primary=9.71 cfs 0.805 af

Total Runoff Area = 4.80005 ac Runoff Volume = 0.805 af Average Runoff Depth = 2.01"
100.00% Pervious = 4.80005 ac 0.00% Impervious = 0.00000 ac

Summary for Subcatchment 1S: West Subbasin

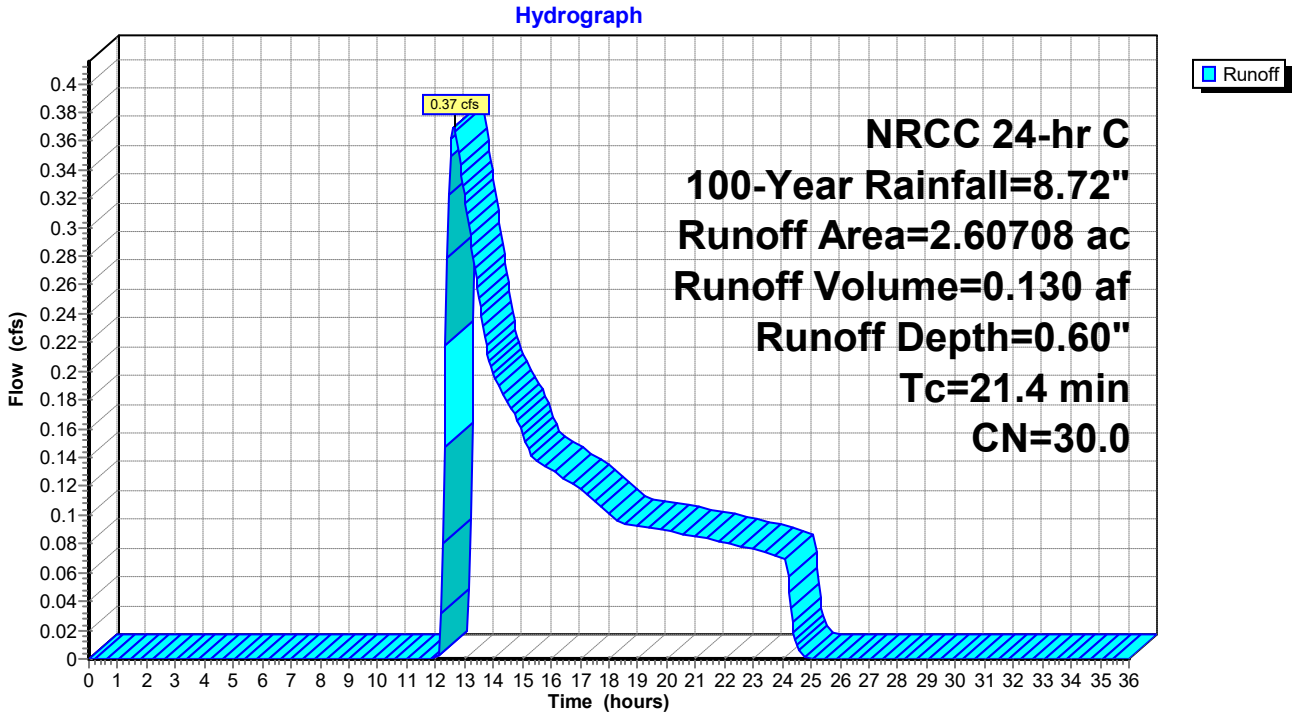
Runoff = 0.37 cfs @ 12.64 hrs, Volume= 0.130 af, Depth= 0.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 100-Year Rainfall=8.72"

Area (ac)	CN	Description
2.60708	30.0	Woods, Good, HSG A
2.60708		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.4					**Direct Entry, Calculated in Excel**

Subcatchment 1S: West Subbasin



Hydrograph for Subcatchment 1S: West Subbasin

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.05	0.00	0.00
1.00	0.10	0.00	0.00
1.50	0.16	0.00	0.00
2.00	0.21	0.00	0.00
2.50	0.27	0.00	0.00
3.00	0.33	0.00	0.00
3.50	0.39	0.00	0.00
4.00	0.46	0.00	0.00
4.50	0.53	0.00	0.00
5.00	0.60	0.00	0.00
5.50	0.67	0.00	0.00
6.00	0.75	0.00	0.00
6.50	0.83	0.00	0.00
7.00	0.92	0.00	0.00
7.50	1.02	0.00	0.00
8.00	1.13	0.00	0.00
8.50	1.25	0.00	0.00
9.00	1.38	0.00	0.00
9.50	1.54	0.00	0.00
10.00	1.72	0.00	0.00
10.50	1.94	0.00	0.00
11.00	2.25	0.00	0.00
11.50	2.73	0.00	0.00
12.00	4.15	0.00	0.00
12.50	5.99	0.07	**0.35**
13.00	6.47	0.13	**0.32**
13.50	6.78	0.18	0.25
14.00	7.00	0.21	0.20
14.50	7.18	0.25	0.18
15.00	7.34	0.27	0.16
15.50	7.47	0.30	0.14
16.00	7.59	0.32	0.13
16.50	7.70	0.35	0.12
17.00	7.80	0.37	0.12
17.50	7.89	0.39	0.11
18.00	7.97	0.41	0.10
18.50	8.05	0.43	0.09
19.00	8.12	0.45	0.09
19.50	8.19	0.46	0.09
20.00	8.26	0.48	0.09
20.50	8.33	0.50	0.09
21.00	8.39	0.51	0.09
21.50	8.45	0.53	0.08
22.00	8.51	0.54	0.08
22.50	8.56	0.56	0.08
23.00	8.62	0.57	0.08
23.50	8.67	0.59	0.07
24.00	**8.72**	**0.60**	0.07
24.50	8.72	0.60	0.01
25.00	8.72	0.60	0.00
25.50	8.72	0.60	0.00
26.00	8.72	0.60	0.00
26.50	8.72	0.60	0.00
27.00	8.72	0.60	0.00
27.50	8.72	0.60	0.00
28.00	8.72	0.60	0.00
28.50	8.72	0.60	0.00
29.00	8.72	0.60	0.00
29.50	8.72	0.60	0.00
30.00	8.72	0.60	0.00
30.50	8.72	0.60	0.00
31.00	8.72	0.60	0.00
31.50	8.72	0.60	0.00
32.00	8.72	0.60	0.00
32.50	8.72	0.60	0.00
33.00	8.72	0.60	0.00
33.50	8.72	0.60	0.00
34.00	8.72	0.60	0.00
34.50	8.72	0.60	0.00
35.00	8.72	0.60	0.00
35.50	8.72	0.60	0.00
36.00	8.72	0.60	0.00

Summary for Subcatchment 2S: East Subbasin

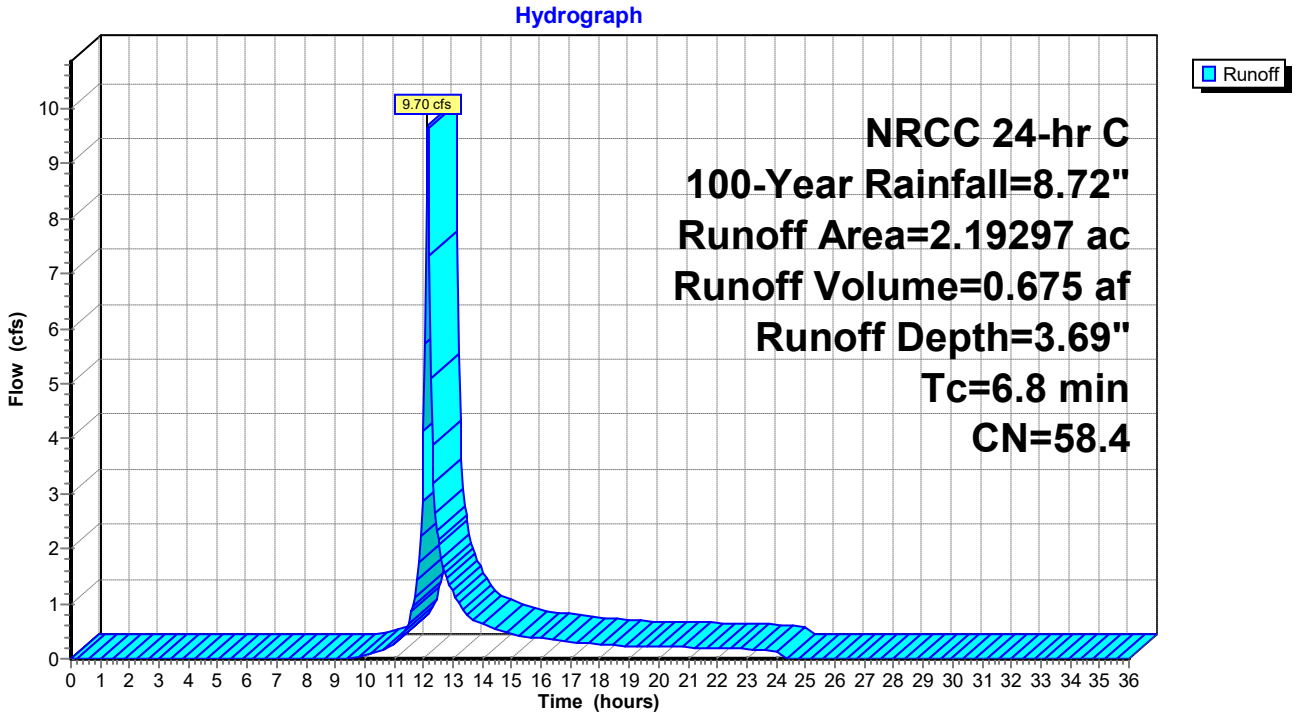
Runoff = 9.70 cfs @ 12.14 hrs, Volume= 0.675 af, Depth= 3.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 100-Year Rainfall=8.72"

	Area (ac)	CN	Description
*	0.55534	30.0	Woods, HSG A
*	1.63763	68.0	Open Land, HSG A
	2.19297	58.4	Weighted Average
	2.19297		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.8					**Direct Entry, Calculated in Excel**

Subcatchment 2S: East Subbasin



Hydrograph for Subcatchment 2S: East Subbasin

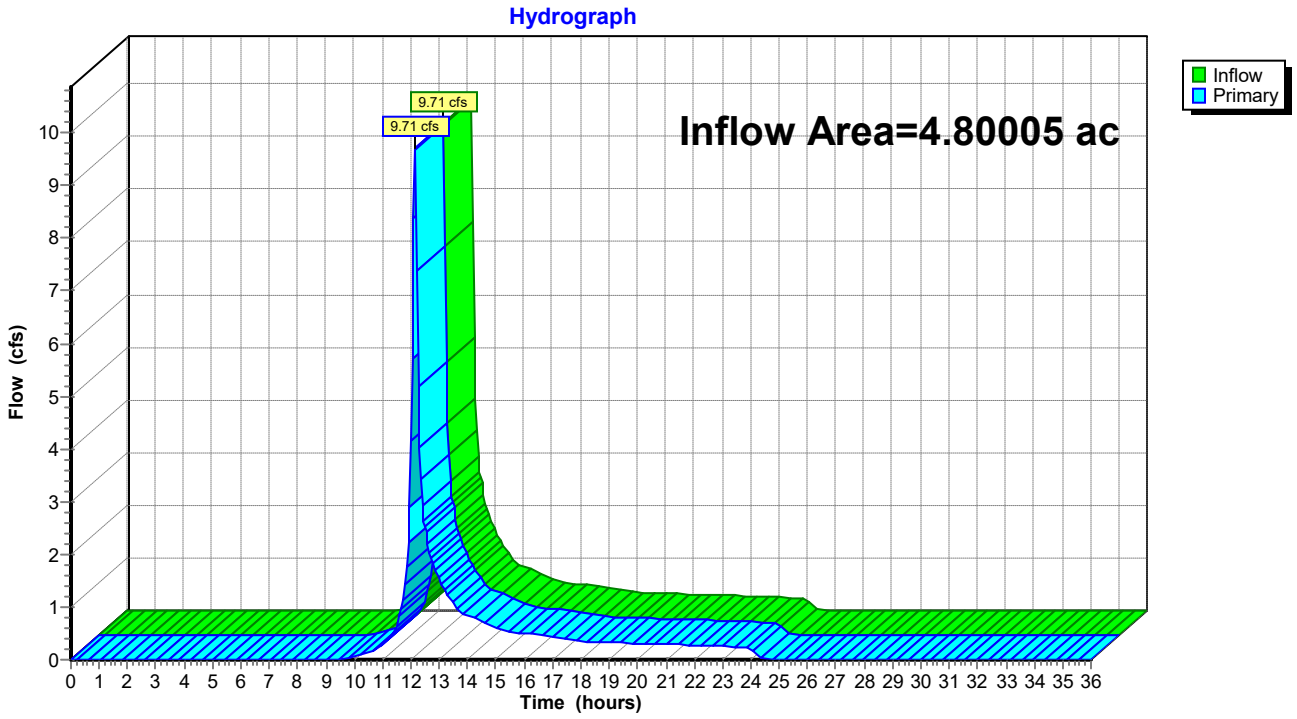
Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.05	0.00	0.00
1.00	0.10	0.00	0.00
1.50	0.16	0.00	0.00
2.00	0.21	0.00	0.00
2.50	0.27	0.00	0.00
3.00	0.33	0.00	0.00
3.50	0.39	0.00	0.00
4.00	0.46	0.00	0.00
4.50	0.53	0.00	0.00
5.00	0.60	0.00	0.00
5.50	0.67	0.00	0.00
6.00	0.75	0.00	0.00
6.50	0.83	0.00	0.00
7.00	0.92	0.00	0.00
7.50	1.02	0.00	0.00
8.00	1.13	0.00	0.00
8.50	1.25	0.00	0.00
9.00	1.38	0.00	0.00
9.50	1.54	0.00	0.02
10.00	1.72	0.01	0.06
10.50	1.94	0.04	0.12
11.00	2.25	0.09	0.27
11.50	2.73	0.20	0.64
12.00	4.15	0.76	**4.14**
12.50	5.99	1.78	**2.18**
13.00	6.47	2.09	1.21
13.50	6.78	2.30	0.80
14.00	7.00	2.45	0.63
14.50	7.18	2.58	0.54
15.00	7.34	2.68	0.44
15.50	7.47	2.77	0.40
16.00	7.59	2.86	0.37
16.50	7.70	2.94	0.34
17.00	7.80	3.01	0.31
17.50	7.89	3.08	0.28
18.00	7.97	3.14	0.26
18.50	8.05	3.19	0.24
19.00	8.12	3.24	0.23
19.50	8.19	3.30	0.23
20.00	8.26	3.35	0.22
20.50	8.33	3.40	0.21
21.00	8.39	3.44	0.21
21.50	8.45	3.49	0.20
22.00	8.51	3.53	0.19
22.50	8.56	3.57	0.18
23.00	8.62	3.61	0.18
23.50	8.67	3.65	0.17
24.00	**8.72**	**3.69**	0.16
24.50	8.72	3.69	0.00
25.00	8.72	3.69	0.00
25.50	8.72	3.69	0.00
26.00	8.72	3.69	0.00
26.50	8.72	3.69	0.00
27.00	8.72	3.69	0.00
27.50	8.72	3.69	0.00
28.00	8.72	3.69	0.00
28.50	8.72	3.69	0.00
29.00	8.72	3.69	0.00
29.50	8.72	3.69	0.00
30.00	8.72	3.69	0.00
30.50	8.72	3.69	0.00
31.00	8.72	3.69	0.00
31.50	8.72	3.69	0.00
32.00	8.72	3.69	0.00
32.50	8.72	3.69	0.00
33.00	8.72	3.69	0.00
33.50	8.72	3.69	0.00
34.00	8.72	3.69	0.00
34.50	8.72	3.69	0.00
35.00	8.72	3.69	0.00
35.50	8.72	3.69	0.00
36.00	8.72	3.69	0.00

Summary for Link 3L: Wetland

Inflow Area = 4.80005 ac, 0.00% Impervious, Inflow Depth = 2.01" for 100-Year event
Inflow = 9.71 cfs @ 12.14 hrs, Volume= 0.805 af
Primary = 9.71 cfs @ 12.14 hrs, Volume= 0.805 af, Atten= 0%, Lag= 0.0 min

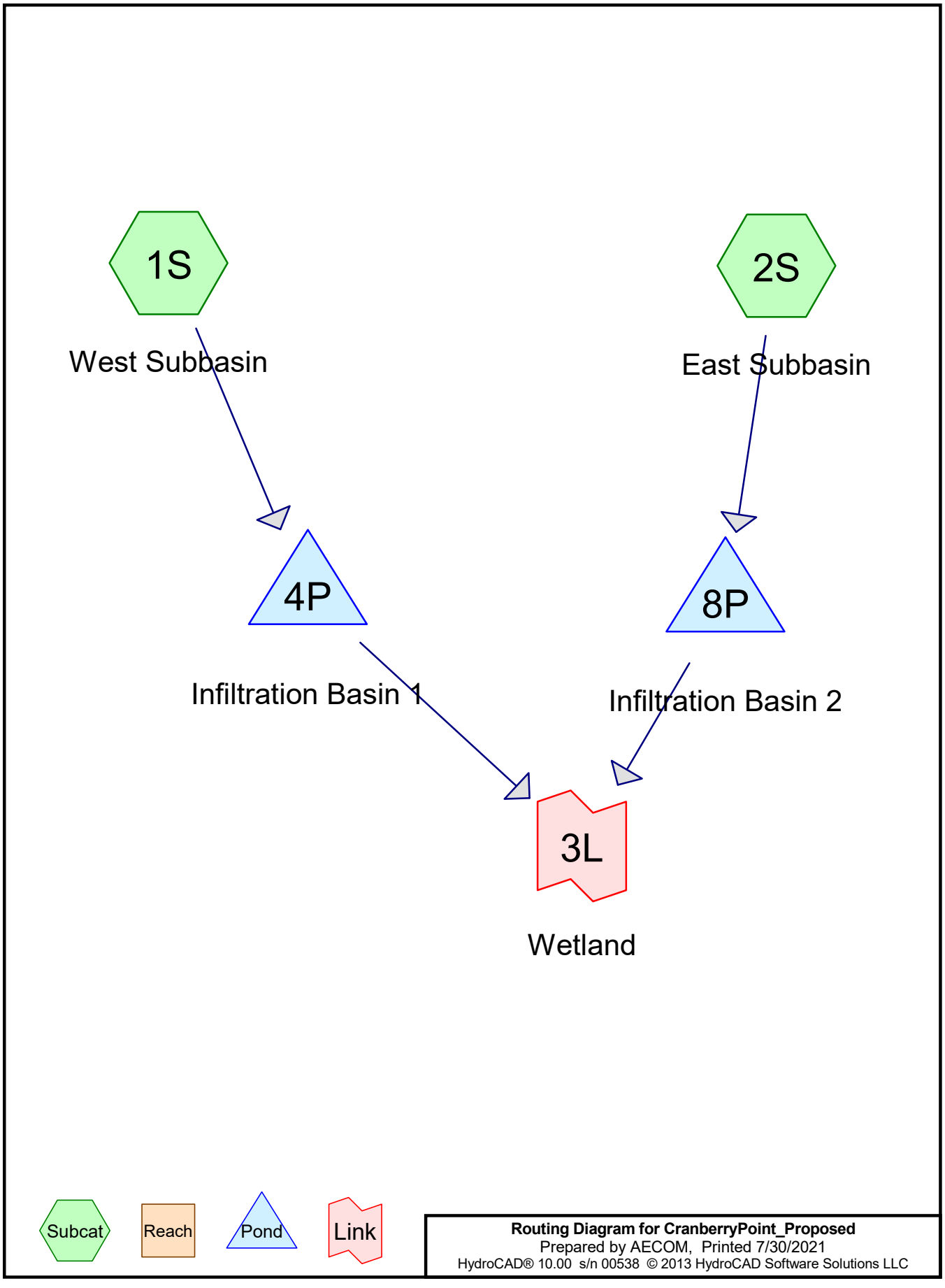
Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 3L: Wetland



Hydrograph for Link 3L: Wetland

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00
0.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.02	0.00	0.02
10.00	0.06	0.00	0.06
10.50	0.12	0.00	0.12
11.00	0.27	0.00	0.27
11.50	0.64	0.00	0.64
12.00	**4.14**	0.00	**4.14**
12.50	**2.53**	0.00	**2.53**
13.00	1.53	0.00	1.53
13.50	1.05	0.00	1.05
14.00	0.83	0.00	0.83
14.50	0.72	0.00	0.72
15.00	0.60	0.00	0.60
15.50	0.53	0.00	0.53
16.00	0.50	0.00	0.50
16.50	0.47	0.00	0.47
17.00	0.43	0.00	0.43
17.50	0.39	0.00	0.39
18.00	0.36	0.00	0.36
18.50	0.33	0.00	0.33
19.00	0.33	0.00	0.33
19.50	0.32	0.00	0.32
20.00	0.31	0.00	0.31
20.50	0.30	0.00	0.30
21.00	0.29	0.00	0.29
21.50	0.28	0.00	0.28
22.00	0.27	0.00	0.27
22.50	0.26	0.00	0.26
23.00	0.25	0.00	0.25
23.50	0.24	0.00	0.24
24.00	0.23	0.00	0.23
24.50	0.01	0.00	0.01
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00


1S
West Subbasin
2S
East Subbasin
4P
Infiltration Basin 1
8P
Infiltration Basin 2
3L
Wetland
Subcat
Reach
Pond
Link
Routing Diagram for CranberryPoint_Proposed
Prepared by AECOM, Printed 7/30/2021
HydroCAD® 10.00 s/n 00538 © 2013 HydroCAD Software Solutions LLC

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.62431	49.0	50-75% Grass cover, Fair, HSG A (1S, 2S)
3.26505	76.0	Gravel roads, HSG A (1S, 2S)
0.91068	98.0	Impervious, HSG A (1S, 2S)
4.80004	**76.7**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
4.80004	HSG A	1S, 2S
0.00000	HSG B	
0.00000	HSG C	
0.00000	HSG D	
0.00000	Other	
4.80004		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subca Numb
0.62431	0.00000	0.00000	0.00000	0.00000	0.62431	50-75% Grass cover, Fair	
3.26505	0.00000	0.00000	0.00000	0.00000	3.26505	Gravel roads	
0.91068	0.00000	0.00000	0.00000	0.00000	0.91068	Impervious	
4.80004	**0.00000**	**0.00000**	**0.00000**	**0.00000**	**4.80004**	**TOTAL AREA**	

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 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 1S: West Subbasin Runoff Area=2.60886 ac 12.27663% Impervious Runoff Depth=1.20"
Tc=6.0 min CN=74.9 Runoff=3.80 cfs 0.262 af

Subcatchment 2S: East Subbasin Runoff Area=2.19118 ac 26.94439% Impervious Runoff Depth=1.45"
Tc=6.0 min CN=78.8 Runoff=3.90 cfs 0.265 af

Pond 4P: Infiltration Basin 1 Peak Elev=109.56' Storage=6,381 cf Inflow=3.80 cfs 0.262 af
Discarded=0.15 cfs 0.241 af Primary=0.00 cfs 0.000 af Outflow=0.15 cfs 0.241 af

Pond 8P: Infiltration Basin 2 Peak Elev=111.47' Storage=6,967 cf Inflow=3.90 cfs 0.265 af
Discarded=0.13 cfs 0.218 af Primary=0.00 cfs 0.000 af Outflow=0.13 cfs 0.218 af

Link 3L: Wetland Inflow=0.00 cfs 0.000 af
Primary=0.00 cfs 0.000 af

Total Runoff Area = 4.80004 ac Runoff Volume = 0.527 af Average Runoff Depth = 1.32"
81.02766% Pervious = 3.88936 ac 18.97234% Impervious = 0.91068 ac

Summary for Subcatchment 1S: West Subbasin

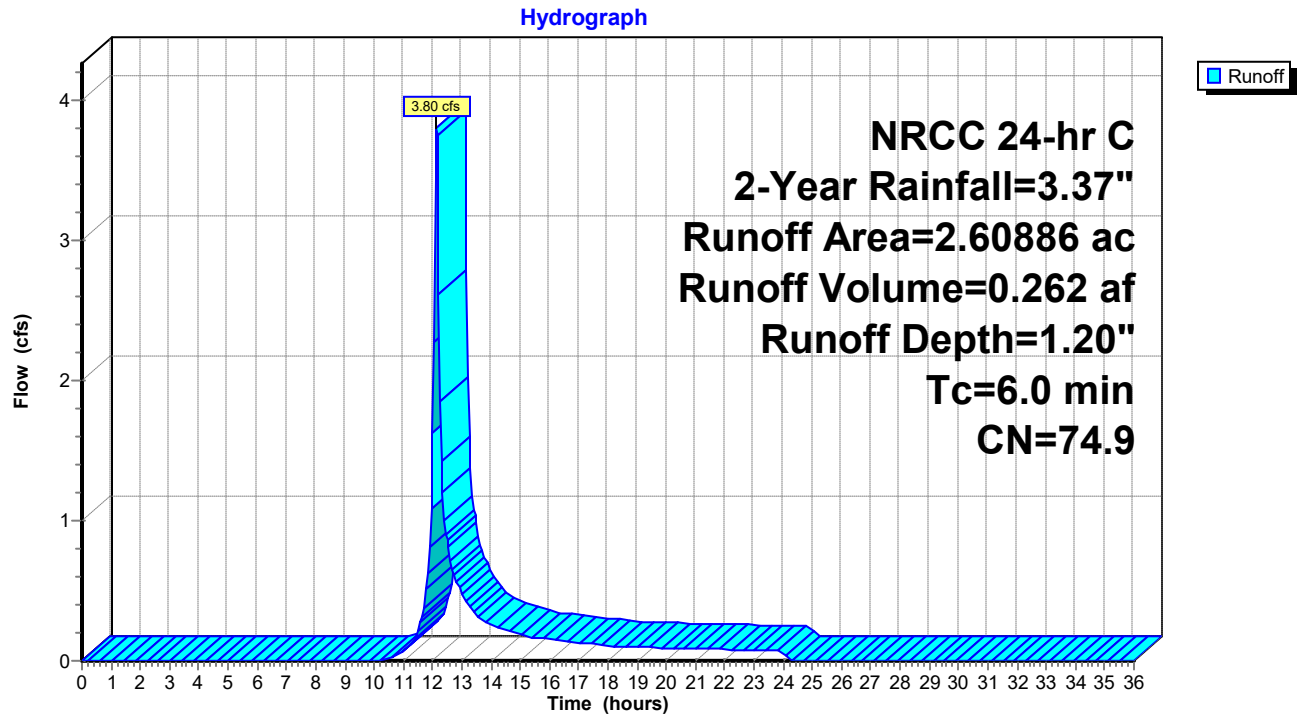
Runoff = 3.80 cfs @ 12.14 hrs, Volume= 0.262 af, Depth= 1.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 2-Year Rainfall=3.37"

	Area (ac)	CN	Description
	0.36972	49.0	50-75% Grass cover, Fair, HSG A
*	0.32028	98.0	Impervious, HSG A
	1.91886	76.0	Gravel roads, HSG A
	2.60886	74.9	Weighted Average
	2.28858		87.72337% Pervious Area
	0.32028		12.27663% Impervious Area

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

Subcatchment 1S: West Subbasin



Hydrograph for Subcatchment 1S: West Subbasin

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.04	0.00	0.00
1.50	0.06	0.00	0.00
2.00	0.08	0.00	0.00
2.50	0.10	0.00	0.00
3.00	0.13	0.00	0.00
3.50	0.15	0.00	0.00
4.00	0.18	0.00	0.00
4.50	0.20	0.00	0.00
5.00	0.23	0.00	0.00
5.50	0.26	0.00	0.00
6.00	0.29	0.00	0.00
6.50	0.32	0.00	0.00
7.00	0.36	0.00	0.00
7.50	0.40	0.00	0.00
8.00	0.44	0.00	0.00
8.50	0.48	0.00	0.00
9.00	0.53	0.00	0.00
9.50	0.59	0.00	0.00
10.00	0.67	0.00	0.00
10.50	0.75	0.00	0.02
11.00	0.87	0.01	0.07
11.50	1.05	0.04	0.20
12.00	1.60	0.20	**1.62**
12.50	2.32	0.54	**0.86**
13.00	2.50	0.65	0.49
13.50	2.62	0.72	0.32
14.00	2.70	0.77	0.26
14.50	2.78	0.81	0.22
15.00	2.84	0.85	0.18
15.50	2.89	0.88	0.16
16.00	2.93	0.91	0.15
16.50	2.97	0.94	0.14
17.00	3.01	0.96	0.13
17.50	3.05	0.99	0.12
18.00	3.08	1.01	0.11
18.50	3.11	1.03	0.10
19.00	3.14	1.05	0.10
19.50	3.17	1.06	0.10
20.00	3.19	1.08	0.09
20.50	3.22	1.10	0.09
21.00	3.24	1.12	0.09
21.50	3.27	1.13	0.08
22.00	3.29	1.15	0.08
22.50	3.31	1.16	0.08
23.00	3.33	1.18	0.07
23.50	3.35	1.19	0.07
24.00	**3.37**	**1.20**	0.07
24.50	3.37	1.20	0.00
25.00	3.37	1.20	0.00
25.50	3.37	1.20	0.00
26.00	3.37	1.20	0.00
26.50	3.37	1.20	0.00
27.00	3.37	1.20	0.00
27.50	3.37	1.20	0.00
28.00	3.37	1.20	0.00
28.50	3.37	1.20	0.00
29.00	3.37	1.20	0.00
29.50	3.37	1.20	0.00
30.00	3.37	1.20	0.00
30.50	3.37	1.20	0.00
31.00	3.37	1.20	0.00
31.50	3.37	1.20	0.00
32.00	3.37	1.20	0.00
32.50	3.37	1.20	0.00
33.00	3.37	1.20	0.00
33.50	3.37	1.20	0.00
34.00	3.37	1.20	0.00
34.50	3.37	1.20	0.00
35.00	3.37	1.20	0.00
35.50	3.37	1.20	0.00
36.00	3.37	1.20	0.00

Summary for Subcatchment 2S: East Subbasin

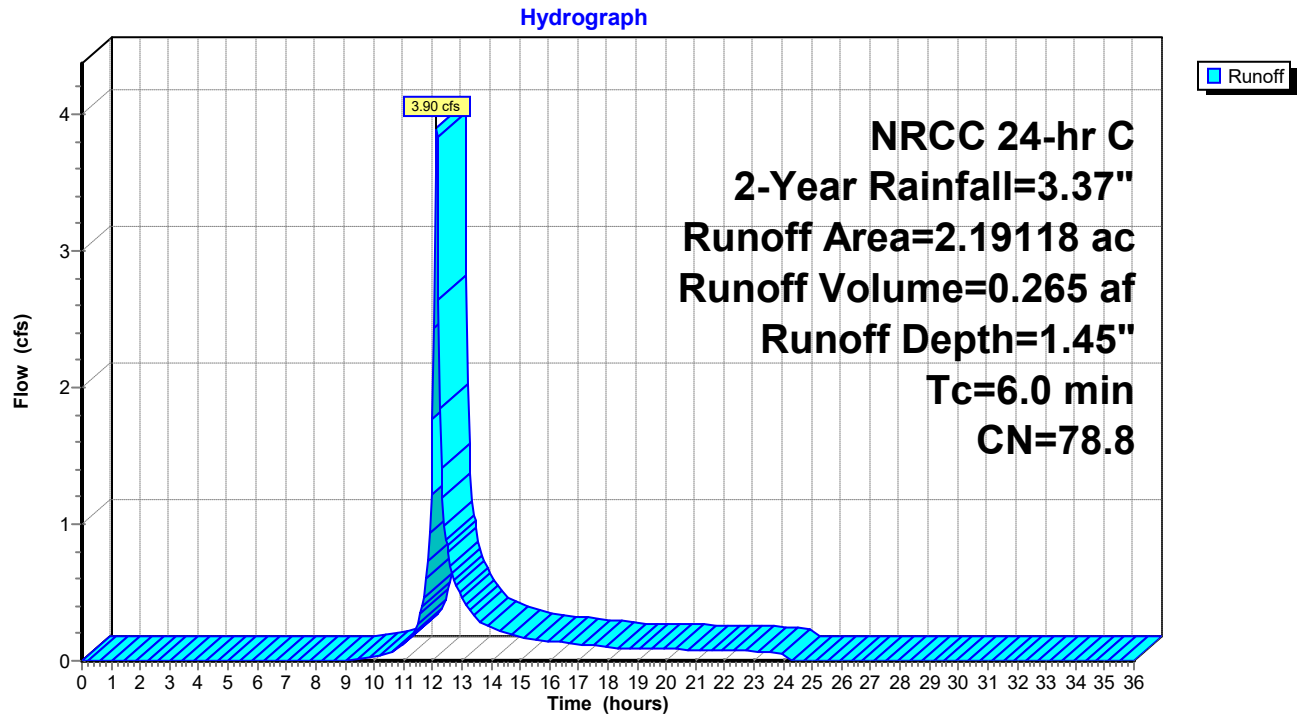
Runoff = 3.90 cfs @ 12.13 hrs, Volume= 0.265 af, Depth= 1.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 2-Year Rainfall=3.37"

	Area (ac)	CN	Description
	0.25459	49.0	50-75% Grass cover, Fair, HSG A
*	0.59040	98.0	Impervious, HSG A
	1.34619	76.0	Gravel roads, HSG A
	2.19118	78.8	Weighted Average
	1.60078		73.05561% Pervious Area
	0.59040		26.94439% Impervious Area

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

Subcatchment 2S: East Subbasin



Hydrograph for Subcatchment 2S: East Subbasin

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.02	0.00	0.00
1.00	0.04	0.00	0.00
1.50	0.06	0.00	0.00
2.00	0.08	0.00	0.00
2.50	0.10	0.00	0.00
3.00	0.13	0.00	0.00
3.50	0.15	0.00	0.00
4.00	0.18	0.00	0.00
4.50	0.20	0.00	0.00
5.00	0.23	0.00	0.00
5.50	0.26	0.00	0.00
6.00	0.29	0.00	0.00
6.50	0.32	0.00	0.00
7.00	0.36	0.00	0.00
7.50	0.40	0.00	0.00
8.00	0.44	0.00	0.00
8.50	0.48	0.00	0.00
9.00	0.53	0.00	0.00
9.50	0.59	0.00	0.01
10.00	0.67	0.01	0.03
10.50	0.75	0.02	0.05
11.00	0.87	0.04	0.11
11.50	1.05	0.08	0.26
12.00	1.60	0.30	**1.77**
12.50	2.32	0.71	**0.84**
13.00	2.50	0.83	0.47
13.50	2.62	0.91	0.31
14.00	2.70	0.97	0.25
14.50	2.78	1.02	0.21
15.00	2.84	1.06	0.17
15.50	2.89	1.09	0.15
16.00	2.93	1.13	0.14
16.50	2.97	1.16	0.13
17.00	3.01	1.19	0.12
17.50	3.05	1.21	0.11
18.00	3.08	1.24	0.10
18.50	3.11	1.26	0.09
19.00	3.14	1.28	0.09
19.50	3.17	1.30	0.09
20.00	3.19	1.32	0.09
20.50	3.22	1.34	0.08
21.00	3.24	1.36	0.08
21.50	3.27	1.37	0.08
22.00	3.29	1.39	0.07
22.50	3.31	1.41	0.07
23.00	3.33	1.42	0.07
23.50	3.35	1.44	0.07
24.00	**3.37**	**1.45**	0.06
24.50	3.37	1.45	0.00
25.00	3.37	1.45	0.00
25.50	3.37	1.45	0.00
26.00	3.37	1.45	0.00
26.50	3.37	1.45	0.00
27.00	3.37	1.45	0.00
27.50	3.37	1.45	0.00
28.00	3.37	1.45	0.00
28.50	3.37	1.45	0.00
29.00	3.37	1.45	0.00
29.50	3.37	1.45	0.00
30.00	3.37	1.45	0.00
30.50	3.37	1.45	0.00
31.00	3.37	1.45	0.00
31.50	3.37	1.45	0.00
32.00	3.37	1.45	0.00
32.50	3.37	1.45	0.00
33.00	3.37	1.45	0.00
33.50	3.37	1.45	0.00
34.00	3.37	1.45	0.00
34.50	3.37	1.45	0.00
35.00	3.37	1.45	0.00
35.50	3.37	1.45	0.00
36.00	3.37	1.45	0.00

Summary for Pond 4P: Infiltration Basin 1

Inflow Area = 2.60886 ac, 12.27663% Impervious, Inflow Depth = 1.20" for 2-Year event
Inflow = 3.80 cfs @ 12.14 hrs, Volume= 0.262 af
Outflow = 0.15 cfs @ 16.22 hrs, Volume= 0.241 af, Atten= 96%, Lag= 244.8 min
Discarded = 0.15 cfs @ 16.22 hrs, Volume= 0.241 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 109.56' @ 16.22 hrs Surf.Area= 3,960.36640 sf Storage= 6,381 cf

Plug-Flow detention time= 519.6 min calculated for 0.241 af (92% of inflow)
Center-of-Mass det. time= 478.1 min (1,346.5 - 868.4)

Volume	Invert	Avail.Storage	Storage Description
#1	107.50'	19,421 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

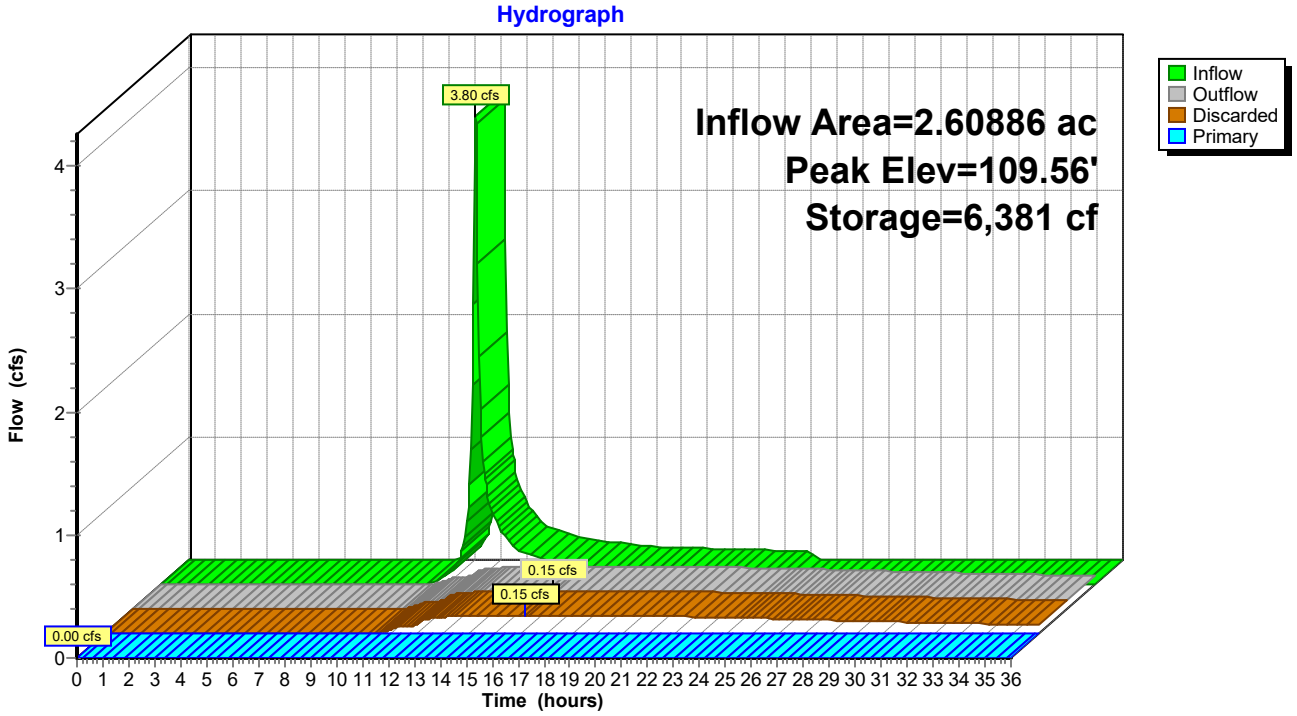
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
107.50	2,277.07000	250.8	0	0	2,277.07000
108.00	2,659.90790	261.4	1,233	1,233	2,727.69773
109.00	3,477.27120	282.6	3,059	4,292	3,684.90775
110.00	4,358.48500	303.9	3,910	8,202	4,721.37547
111.00	5,302.94520	325.0	4,823	13,025	5,823.17619
112.00	7,554.86440	357.6	6,396	19,421	7,626.58502

Device	Routing	Invert	Outlet Devices
#1	Discarded	107.50'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 104.90'
#2	Primary	110.95'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 1.00 Width (feet) 10.00 16.00

Discarded OutFlow Max=0.15 cfs @ 16.22 hrs HW=109.56' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.15 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=107.50' (Free Discharge)
↑—**2=Custom Weir/Orifice** (Controls 0.00 cfs)

Pond 4P: Infiltration Basin 1



Hydrograph for Pond 4P: Infiltration Basin 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	107.50	0.00	0.00	**0.00**
1.00	0.00	0	107.50	0.00	0.00	0.00
2.00	0.00	0	107.50	0.00	0.00	0.00
3.00	0.00	0	107.50	0.00	0.00	0.00
4.00	0.00	0	107.50	0.00	0.00	0.00
5.00	0.00	0	107.50	0.00	0.00	0.00
6.00	0.00	0	107.50	0.00	0.00	0.00
7.00	0.00	0	107.50	0.00	0.00	0.00
8.00	0.00	0	107.50	0.00	0.00	0.00
9.00	0.00	0	107.50	0.00	0.00	0.00
10.00	0.00	0	107.50	0.00	0.00	0.00
11.00	0.07	53	107.52	0.03	0.03	0.00
12.00	**1.62**	1,076	107.94	0.07	0.07	0.00
13.00	**0.49**	5,326	109.29	0.13	0.13	0.00
14.00	0.26	6,046	109.48	0.14	0.14	0.00
15.00	0.18	6,321	109.55	0.15	0.15	0.00
16.00	0.15	**6,380**	**109.56**	**0.15**	**0.15**	0.00
17.00	0.13	**6,356**	**109.56**	**0.15**	**0.15**	0.00
18.00	0.11	6,252	109.53	0.15	0.15	0.00
19.00	0.10	6,093	109.49	0.14	0.14	0.00
20.00	0.09	5,921	109.44	0.14	0.14	0.00
21.00	0.09	5,737	109.40	0.14	0.14	0.00
22.00	0.08	5,541	109.34	0.14	0.14	0.00
23.00	0.07	5,333	109.29	0.13	0.13	0.00
24.00	0.07	5,114	109.23	0.13	0.13	0.00
25.00	0.00	4,676	109.11	0.12	0.12	0.00
26.00	0.00	4,237	108.98	0.12	0.12	0.00
27.00	0.00	3,820	108.86	0.11	0.11	0.00
28.00	0.00	3,424	108.74	0.11	0.11	0.00
29.00	0.00	3,049	108.62	0.10	0.10	0.00
30.00	0.00	2,693	108.51	0.10	0.10	0.00
31.00	0.00	2,356	108.40	0.09	0.09	0.00
32.00	0.00	2,036	108.29	0.09	0.09	0.00
33.00	0.00	1,734	108.18	0.08	0.08	0.00
34.00	0.00	1,448	108.08	0.08	0.08	0.00
35.00	0.00	1,178	107.98	0.07	0.07	0.00
36.00	0.00	922	107.88	0.07	0.07	0.00

Summary for Pond 8P: Infiltration Basin 2

Inflow Area = 2.19118 ac, 26.94439% Impervious, Inflow Depth = 1.45" for 2-Year event
Inflow = 3.90 cfs @ 12.13 hrs, Volume= 0.265 af
Outflow = 0.13 cfs @ 16.80 hrs, Volume= 0.218 af, Atten= 97%, Lag= 279.8 min
Discarded = 0.13 cfs @ 16.80 hrs, Volume= 0.218 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 111.47' @ 16.80 hrs Surf.Area= 4,049.27571 sf Storage= 6,967 cf

Plug-Flow detention time= 581.9 min calculated for 0.218 af (82% of inflow)
Center-of-Mass det. time= 503.3 min (1,358.5 - 855.2)

Volume	Invert	Avail.Storage	Storage Description
#1	109.00'	14,829 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

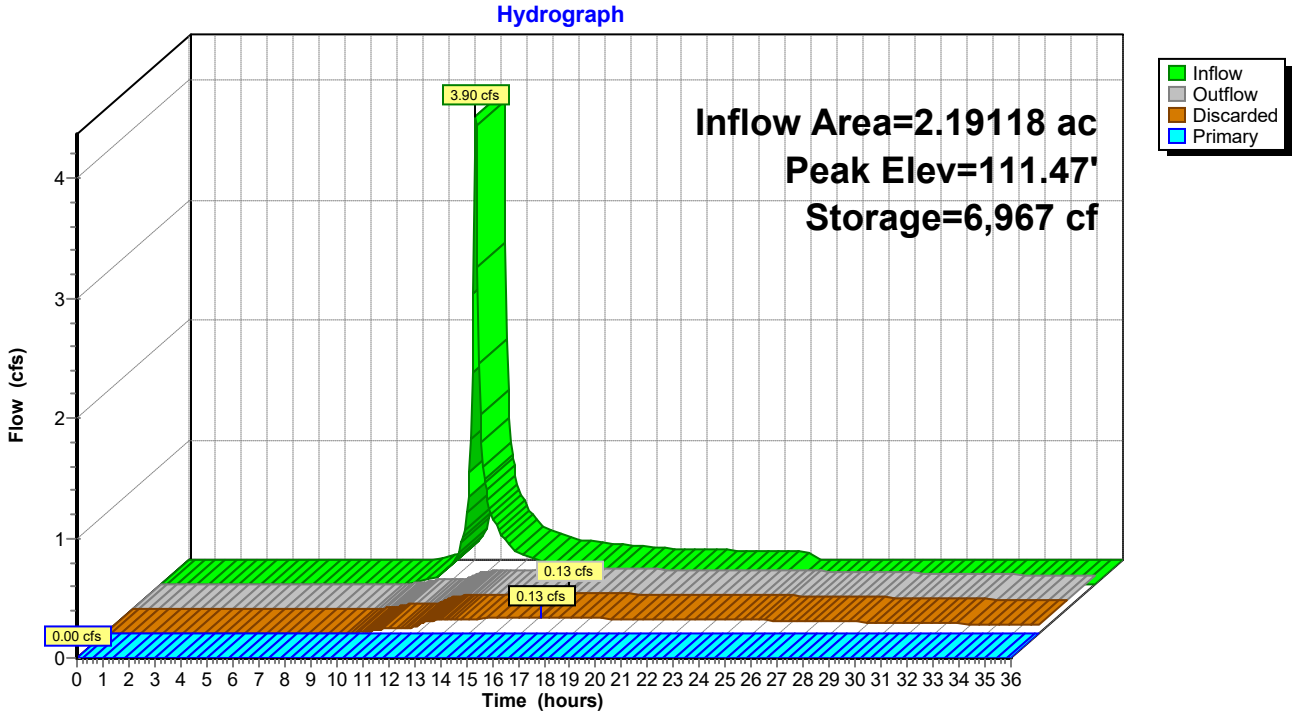
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
109.00	1,697.00420	282.0	0	0	1,697.00420
110.00	2,578.13020	307.6	2,122	2,122	2,933.77585
111.00	3,560.81360	340.3	3,056	5,179	4,650.57125
112.00	4,637.17960	369.9	4,087	9,266	6,360.71574
113.00	6,544.00000	406.0	5,563	14,829	8,623.18928

Device	Routing	Invert	Outlet Devices
#1	Discarded	109.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 104.00'
#2	Primary	111.75'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 1.00 Width (feet) 10.00 13.00 16.00

Discarded OutFlow Max=0.13 cfs @ 16.80 hrs HW=111.47' (Free Discharge)
↑**1=Exfiltration** (Controls 0.13 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=109.00' (Free Discharge)
↑**2=Custom Weir/Orifice** (Controls 0.00 cfs)

Pond 8P: Infiltration Basin 2



Hydrograph for Pond 8P: Infiltration Basin 2

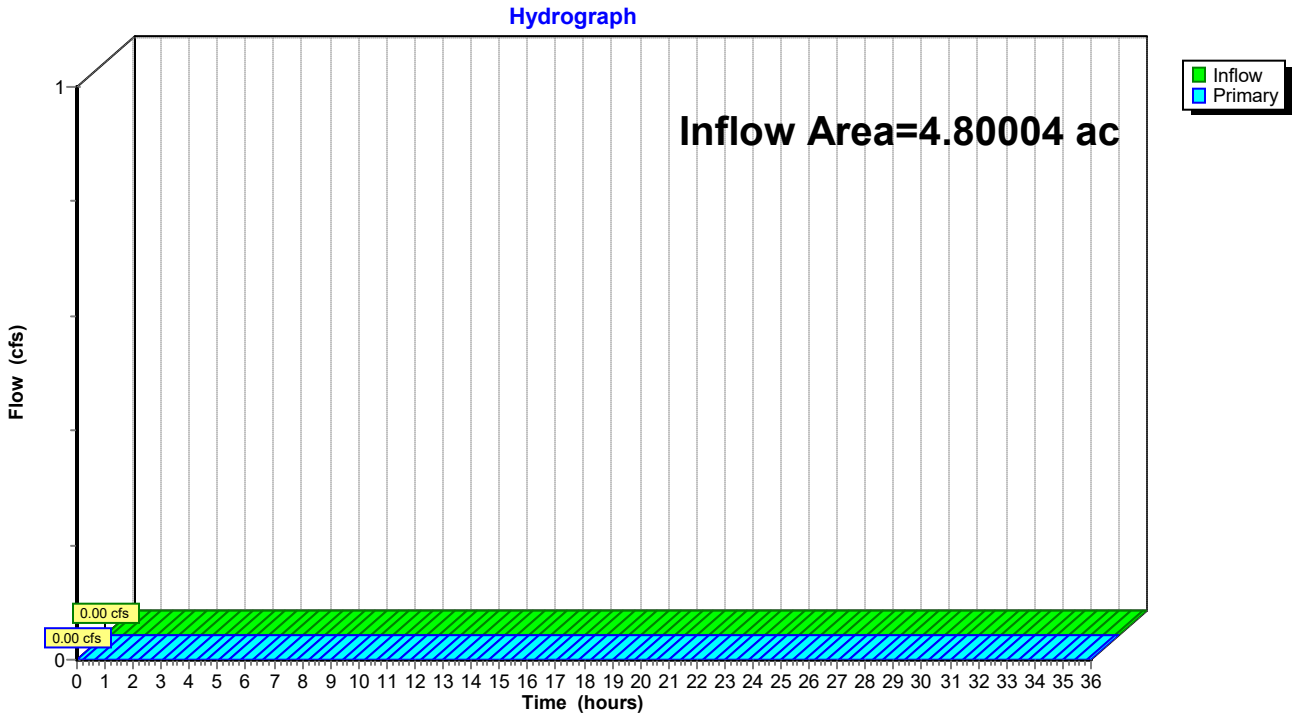
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	109.00	0.00	0.00	**0.00**
1.00	0.00	0	109.00	0.00	0.00	0.00
2.00	0.00	0	109.00	0.00	0.00	0.00
3.00	0.00	0	109.00	0.00	0.00	0.00
4.00	0.00	0	109.00	0.00	0.00	0.00
5.00	0.00	0	109.00	0.00	0.00	0.00
6.00	0.00	0	109.00	0.00	0.00	0.00
7.00	0.00	0	109.00	0.00	0.00	0.00
8.00	0.00	0	109.00	0.00	0.00	0.00
9.00	0.00	0	109.00	0.00	0.00	0.00
10.00	0.03	22	109.01	0.01	0.01	0.00
11.00	0.11	124	109.07	0.04	0.04	0.00
12.00	**1.77**	1,437	109.72	0.06	0.06	0.00
13.00	**0.47**	5,783	111.17	0.11	0.11	0.00
14.00	0.25	6,526	111.36	0.12	0.12	0.00
15.00	0.17	6,838	111.44	0.13	0.13	0.00
16.00	0.14	**6,942**	**111.46**	**0.13**	**0.13**	0.00
17.00	0.12	**6,965**	**111.47**	**0.13**	**0.13**	0.00
18.00	0.10	6,909	111.46	0.13	0.13	0.00
19.00	0.09	6,797	111.43	0.12	0.12	0.00
20.00	0.09	6,670	111.40	0.12	0.12	0.00
21.00	0.08	6,528	111.36	0.12	0.12	0.00
22.00	0.07	6,372	111.32	0.12	0.12	0.00
23.00	0.07	6,201	111.28	0.12	0.12	0.00
24.00	0.06	6,017	111.23	0.12	0.12	0.00
25.00	0.00	5,626	111.12	0.11	0.11	0.00
26.00	0.00	5,230	111.01	0.11	0.11	0.00
27.00	0.00	4,849	110.91	0.10	0.10	0.00
28.00	0.00	4,484	110.80	0.10	0.10	0.00
29.00	0.00	4,133	110.69	0.10	0.10	0.00
30.00	0.00	3,797	110.59	0.09	0.09	0.00
31.00	0.00	3,475	110.48	0.09	0.09	0.00
32.00	0.00	3,167	110.38	0.08	0.08	0.00
33.00	0.00	2,872	110.28	0.08	0.08	0.00
34.00	0.00	2,590	110.18	0.08	0.08	0.00
35.00	0.00	2,320	110.08	0.07	0.07	0.00
36.00	0.00	2,063	109.98	0.07	0.07	0.00

Summary for Link 3L: Wetland

Inflow Area = 4.80004 ac, 18.97234% Impervious, Inflow Depth = 0.00" for 2-Year event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 3L: Wetland



Hydrograph for Link 3L: Wetland

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	**0.00**	**0.00**	**0.00**
0.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	0.00	0.00	0.00
12.50	0.00	0.00	0.00
13.00	0.00	0.00	0.00
13.50	0.00	0.00	0.00
14.00	0.00	0.00	0.00
14.50	0.00	0.00	0.00
15.00	0.00	0.00	0.00
15.50	0.00	0.00	0.00
16.00	0.00	0.00	0.00
16.50	0.00	0.00	0.00
17.00	0.00	0.00	0.00
17.50	0.00	0.00	0.00
18.00	0.00	0.00	0.00
18.50	0.00	0.00	0.00
19.00	0.00	0.00	0.00
19.50	0.00	0.00	0.00
20.00	0.00	0.00	0.00
20.50	0.00	0.00	0.00
21.00	0.00	0.00	0.00
21.50	0.00	0.00	0.00
22.00	0.00	0.00	0.00
22.50	0.00	0.00	0.00
23.00	0.00	0.00	0.00
23.50	0.00	0.00	0.00
24.00	0.00	0.00	0.00
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 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 1S: West Subbasin Runoff Area=2.60886 ac 12.27663% Impervious Runoff Depth=2.42"
Tc=6.0 min CN=74.9 Runoff=7.74 cfs 0.525 af

Subcatchment 2S: East Subbasin Runoff Area=2.19118 ac 26.94439% Impervious Runoff Depth=2.76"
Tc=6.0 min CN=78.8 Runoff=7.39 cfs 0.504 af

Pond 4P: Infiltration Basin 1 Peak Elev=110.99' Storage=12,960 cf Inflow=7.74 cfs 0.525 af
Discarded=0.23 cfs 0.392 af Primary=0.26 cfs 0.036 af Outflow=0.49 cfs 0.427 af

Pond 8P: Infiltration Basin 2 Peak Elev=111.91' Storage=8,837 cf Inflow=7.39 cfs 0.504 af
Discarded=0.15 cfs 0.261 af Primary=2.12 cfs 0.168 af Outflow=2.26 cfs 0.429 af

Link 3L: Wetland Inflow=2.12 cfs 0.204 af
Primary=2.12 cfs 0.204 af

Total Runoff Area = 4.80004 ac Runoff Volume = 1.029 af Average Runoff Depth = 2.57"
81.02766% Pervious = 3.88936 ac 18.97234% Impervious = 0.91068 ac

Summary for Subcatchment 1S: West Subbasin

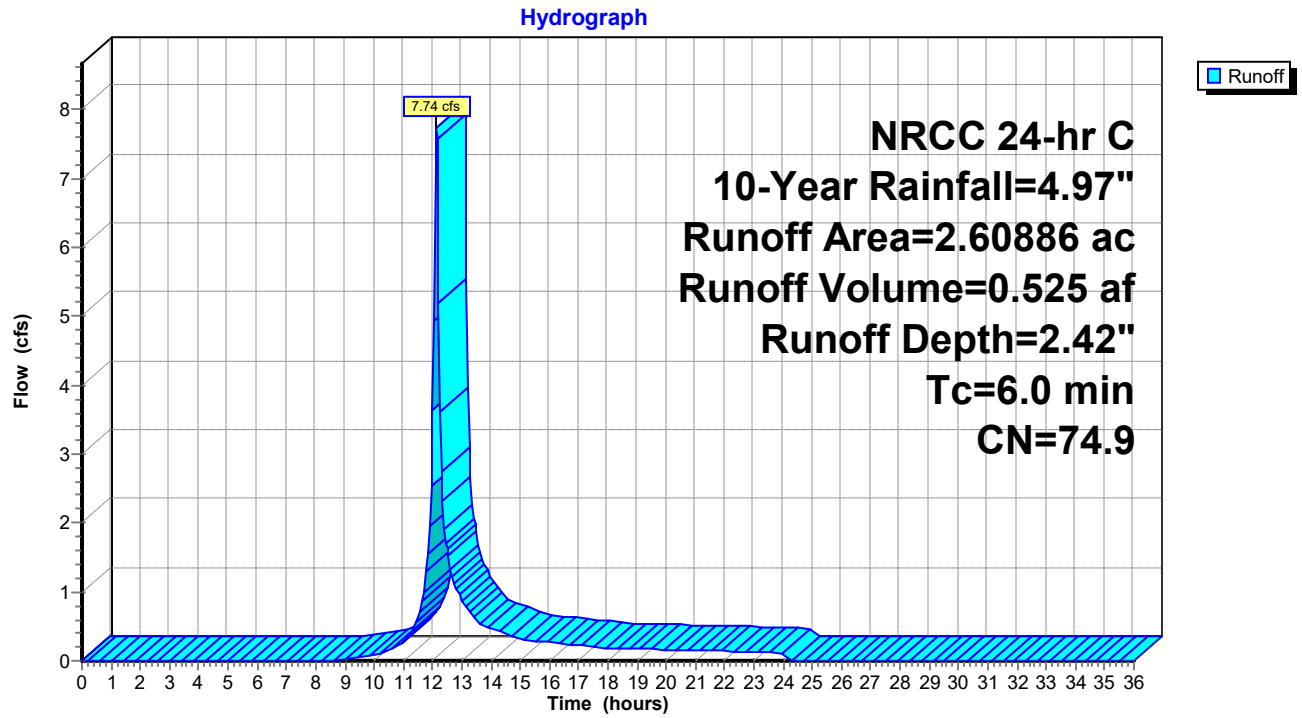
Runoff = 7.74 cfs @ 12.13 hrs, Volume= 0.525 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 10-Year Rainfall=4.97"

	Area (ac)	CN	Description
	0.36972	49.0	50-75% Grass cover, Fair, HSG A
*	0.32028	98.0	Impervious, HSG A
	1.91886	76.0	Gravel roads, HSG A
	2.60886	74.9	Weighted Average
	2.28858		87.72337% Pervious Area
	0.32028		12.27663% Impervious Area

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

Subcatchment 1S: West Subbasin



Hydrograph for Subcatchment 1S: West Subbasin

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.06	0.00	0.00
1.50	0.09	0.00	0.00
2.00	0.12	0.00	0.00
2.50	0.15	0.00	0.00
3.00	0.19	0.00	0.00
3.50	0.23	0.00	0.00
4.00	0.26	0.00	0.00
4.50	0.30	0.00	0.00
5.00	0.34	0.00	0.00
5.50	0.38	0.00	0.00
6.00	0.43	0.00	0.00
6.50	0.47	0.00	0.00
7.00	0.53	0.00	0.00
7.50	0.58	0.00	0.00
8.00	0.65	0.00	0.00
8.50	0.71	0.00	0.01
9.00	0.79	0.00	0.02
9.50	0.88	0.01	0.05
10.00	0.98	0.03	0.09
10.50	1.11	0.05	0.14
11.00	1.28	0.09	0.28
11.50	1.56	0.19	0.59
12.00	2.37	0.57	**3.63**
12.50	3.41	1.24	**1.62**
13.00	3.69	1.43	0.89
13.50	3.86	1.56	0.59
14.00	3.99	1.65	0.47
14.50	4.09	1.73	0.40
15.00	4.18	1.80	0.32
15.50	4.26	1.85	0.29
16.00	4.32	1.91	0.27
16.50	4.39	1.95	0.25
17.00	4.44	2.00	0.23
17.50	4.50	2.04	0.21
18.00	4.54	2.08	0.19
18.50	4.59	2.11	0.18
19.00	4.63	2.14	0.17
19.50	4.67	2.18	0.17
20.00	4.71	2.21	0.16
20.50	4.74	2.24	0.16
21.00	4.78	2.26	0.15
21.50	4.82	2.29	0.14
22.00	4.85	2.32	0.14
22.50	4.88	2.35	0.13
23.00	4.91	2.37	0.13
23.50	4.94	2.39	0.12
24.00	**4.97**	**2.42**	0.12
24.50	4.97	2.42	0.00
25.00	4.97	2.42	0.00
25.50	4.97	2.42	0.00
26.00	4.97	2.42	0.00
26.50	4.97	2.42	0.00
27.00	4.97	2.42	0.00
27.50	4.97	2.42	0.00
28.00	4.97	2.42	0.00
28.50	4.97	2.42	0.00
29.00	4.97	2.42	0.00
29.50	4.97	2.42	0.00
30.00	4.97	2.42	0.00
30.50	4.97	2.42	0.00
31.00	4.97	2.42	0.00
31.50	4.97	2.42	0.00
32.00	4.97	2.42	0.00
32.50	4.97	2.42	0.00
33.00	4.97	2.42	0.00
33.50	4.97	2.42	0.00
34.00	4.97	2.42	0.00
34.50	4.97	2.42	0.00
35.00	4.97	2.42	0.00
35.50	4.97	2.42	0.00
36.00	4.97	2.42	0.00

Summary for Subcatchment 2S: East Subbasin

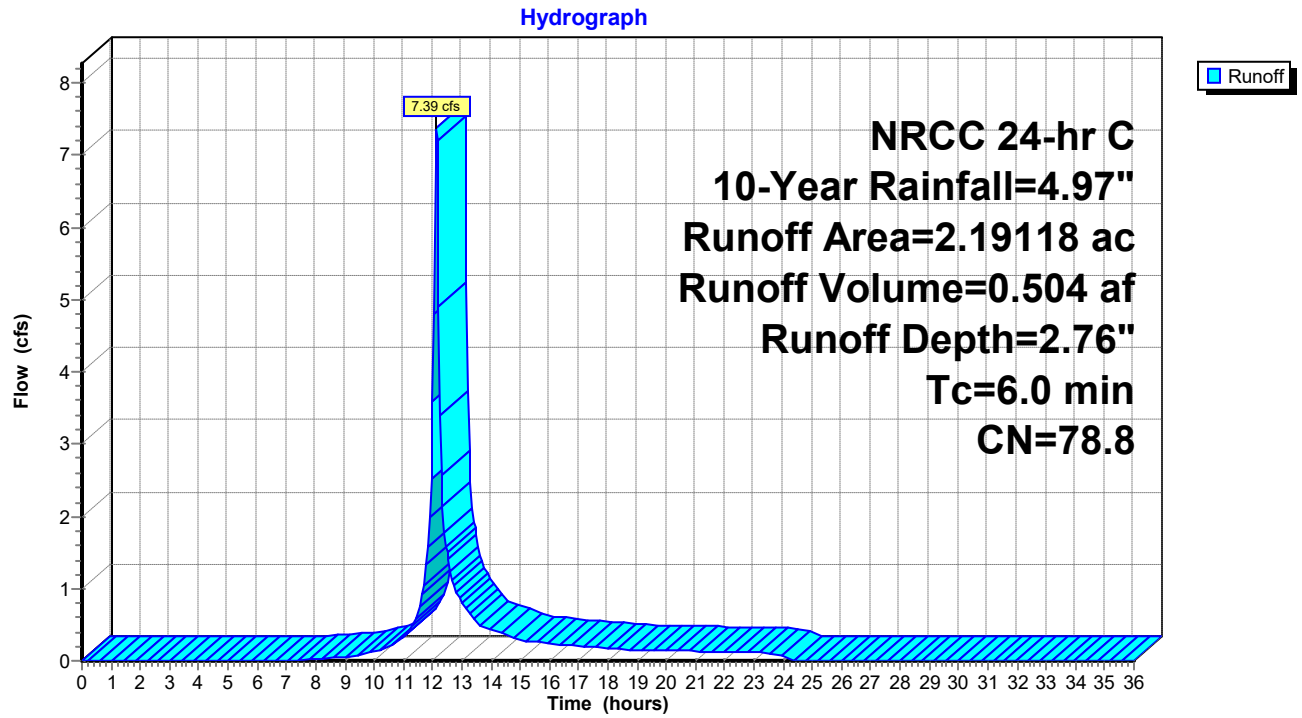
Runoff = 7.39 cfs @ 12.13 hrs, Volume= 0.504 af, Depth= 2.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
NRCC 24-hr C 10-Year Rainfall=4.97"

	Area (ac)	CN	Description
	0.25459	49.0	50-75% Grass cover, Fair, HSG A
*	0.59040	98.0	Impervious, HSG A
	1.34619	76.0	Gravel roads, HSG A
	2.19118	78.8	Weighted Average
	1.60078		73.05561% Pervious Area
	0.59040		26.94439% Impervious Area

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

Subcatchment 2S: East Subbasin



Hydrograph for Subcatchment 2S: East Subbasin

Time (hours)	Precip. (inches)	Excess (inches)	Runoff (cfs)
0.00	0.00	0.00	0.00
0.50	0.03	0.00	0.00
1.00	0.06	0.00	0.00
1.50	0.09	0.00	0.00
2.00	0.12	0.00	0.00
2.50	0.15	0.00	0.00
3.00	0.19	0.00	0.00
3.50	0.23	0.00	0.00
4.00	0.26	0.00	0.00
4.50	0.30	0.00	0.00
5.00	0.34	0.00	0.00
5.50	0.38	0.00	0.00
6.00	0.43	0.00	0.00
6.50	0.47	0.00	0.00
7.00	0.53	0.00	0.00
7.50	0.58	0.00	0.01
8.00	0.65	0.00	0.02
8.50	0.71	0.01	0.03
9.00	0.79	0.02	0.05
9.50	0.88	0.04	0.08
10.00	0.98	0.06	0.13
10.50	1.11	0.10	0.18
11.00	1.28	0.16	0.32
11.50	1.56	0.28	0.63
12.00	2.37	0.74	**3.59**
12.50	3.41	1.49	**1.50**
13.00	3.69	1.70	0.82
13.50	3.86	1.84	0.54
14.00	3.99	1.94	0.43
14.50	4.09	2.02	0.36
15.00	4.18	2.10	0.29
15.50	4.26	2.16	0.26
16.00	4.32	2.21	0.24
16.50	4.39	2.27	0.22
17.00	4.44	2.31	0.21
17.50	4.50	2.36	0.19
18.00	4.54	2.40	0.17
18.50	4.59	2.43	0.16
19.00	4.63	2.47	0.15
19.50	4.67	2.50	0.15
20.00	4.71	2.53	0.14
20.50	4.74	2.57	0.14
21.00	4.78	2.60	0.13
21.50	4.82	2.63	0.13
22.00	4.85	2.65	0.12
22.50	4.88	2.68	0.12
23.00	4.91	2.71	0.11
23.50	4.94	2.73	0.11
24.00	**4.97**	**2.76**	0.11
24.50	4.97	2.76	0.00
25.00	4.97	2.76	0.00
25.50	4.97	2.76	0.00
26.00	4.97	2.76	0.00
26.50	4.97	2.76	0.00
27.00	4.97	2.76	0.00
27.50	4.97	2.76	0.00
28.00	4.97	2.76	0.00
28.50	4.97	2.76	0.00
29.00	4.97	2.76	0.00
29.50	4.97	2.76	0.00
30.00	4.97	2.76	0.00
30.50	4.97	2.76	0.00
31.00	4.97	2.76	0.00
31.50	4.97	2.76	0.00
32.00	4.97	2.76	0.00
32.50	4.97	2.76	0.00
33.00	4.97	2.76	0.00
33.50	4.97	2.76	0.00
34.00	4.97	2.76	0.00
34.50	4.97	2.76	0.00
35.00	4.97	2.76	0.00
35.50	4.97	2.76	0.00
36.00	4.97	2.76	0.00

Summary for Pond 4P: Infiltration Basin 1

Inflow Area = 2.60886 ac, 12.27663% Impervious, Inflow Depth = 2.42" for 10-Year event
Inflow = 7.74 cfs @ 12.13 hrs, Volume= 0.525 af
Outflow = 0.49 cfs @ 13.84 hrs, Volume= 0.427 af, Atten= 94%, Lag= 102.7 min
Discarded = 0.23 cfs @ 13.84 hrs, Volume= 0.392 af
Primary = 0.26 cfs @ 13.84 hrs, Volume= 0.036 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs
Peak Elev= 110.99' @ 13.84 hrs Surf.Area= 5,290.76263 sf Storage= 12,960 cf

Plug-Flow detention time= 543.2 min calculated for 0.427 af (81% of inflow)
Center-of-Mass det. time= 461.7 min (1,307.6 - 845.9)

Volume	Invert	Avail.Storage	Storage Description
#1	107.50'	19,421 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

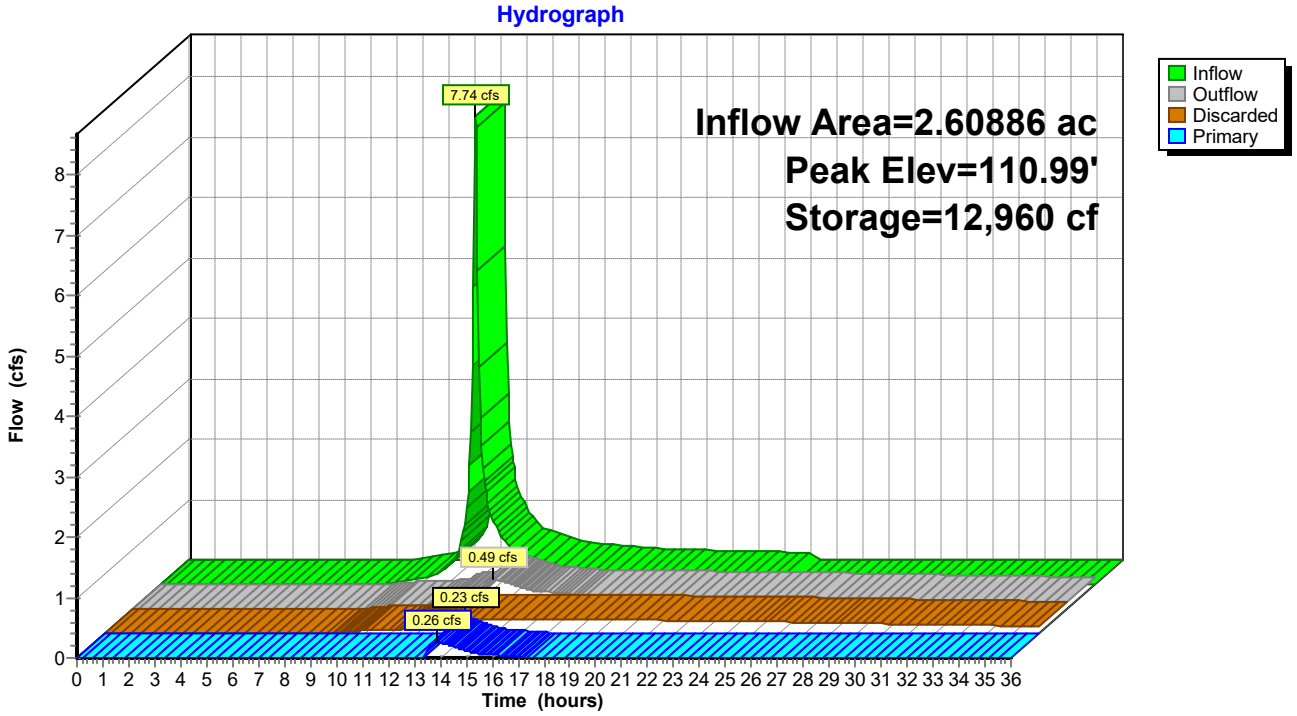
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
107.50	2,277.07000	250.8	0	0	2,277.07000
108.00	2,659.90790	261.4	1,233	1,233	2,727.69773
109.00	3,477.27120	282.6	3,059	4,292	3,684.90775
110.00	4,358.48500	303.9	3,910	8,202	4,721.37547
111.00	5,302.94520	325.0	4,823	13,025	5,823.17619
112.00	7,554.86440	357.6	6,396	19,421	7,626.58502

Device	Routing	Invert	Outlet Devices
#1	Discarded	107.50'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 104.90'
#2	Primary	110.95'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 1.00 Width (feet) 10.00 16.00

Discarded OutFlow Max=0.23 cfs @ 13.84 hrs HW=110.99' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.23 cfs)

Primary OutFlow Max=0.24 cfs @ 13.84 hrs HW=110.99' (Free Discharge)
↑—**2=Custom Weir/Orifice** (Weir Controls 0.24 cfs @ 0.63 fps)

Pond 4P: Infiltration Basin 1



Hydrograph for Pond 4P: Infiltration Basin 1

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	107.50	0.00	0.00	0.00
1.00	0.00	0	107.50	0.00	0.00	0.00
2.00	0.00	0	107.50	0.00	0.00	0.00
3.00	0.00	0	107.50	0.00	0.00	0.00
4.00	0.00	0	107.50	0.00	0.00	0.00
5.00	0.00	0	107.50	0.00	0.00	0.00
6.00	0.00	0	107.50	0.00	0.00	0.00
7.00	0.00	0	107.50	0.00	0.00	0.00
8.00	0.00	0	107.50	0.00	0.00	0.00
9.00	0.02	20	107.51	0.01	0.01	0.00
10.00	0.09	103	107.55	0.06	0.06	0.00
11.00	0.28	472	107.70	0.06	0.06	0.00
12.00	**3.63**	3,424	108.74	0.11	0.11	0.00
13.00	**0.89**	**11,987**	**110.80**	**0.22**	**0.22**	**0.00**
14.00	0.47	**12,955**	**110.99**	**0.48**	**0.23**	**0.25**
15.00	0.32	12,877	110.97	0.35	0.23	0.12
16.00	0.27	12,831	110.96	0.28	0.23	0.05
17.00	0.23	12,783	110.95	0.24	0.23	0.02
18.00	0.19	12,702	110.94	0.23	0.23	0.00
19.00	0.17	12,527	110.91	0.22	0.22	0.00
20.00	0.16	12,322	110.87	0.22	0.22	0.00
21.00	0.15	12,089	110.82	0.22	0.22	0.00
22.00	0.14	11,828	110.77	0.22	0.22	0.00
23.00	0.13	11,540	110.71	0.21	0.21	0.00
24.00	0.12	11,225	110.65	0.21	0.21	0.00
25.00	0.00	10,528	110.51	0.20	0.20	0.00
26.00	0.00	9,822	110.36	0.19	0.19	0.00
27.00	0.00	9,146	110.21	0.18	0.18	0.00
28.00	0.00	8,500	110.07	0.18	0.18	0.00
29.00	0.00	7,882	109.93	0.17	0.17	0.00
30.00	0.00	7,292	109.79	0.16	0.16	0.00
31.00	0.00	6,730	109.65	0.15	0.15	0.00
32.00	0.00	6,193	109.51	0.15	0.15	0.00
33.00	0.00	5,681	109.38	0.14	0.14	0.00
34.00	0.00	5,194	109.25	0.13	0.13	0.00
35.00	0.00	4,730	109.12	0.13	0.13	0.00
36.00	0.00	4,288	109.00	0.12	0.12	0.00

Summary for Pond 8P: Infiltration Basin 2

Inflow Area = 2.19118 ac, 26.94439% Impervious, Inflow Depth = 2.76" for 10-Year event
Inflow = 7.39 cfs @ 12.13 hrs, Volume= 0.504 af
Outflow = 2.26 cfs @ 12.34 hrs, Volume= 0.429 af, Atten= 69%, Lag= 12.6 min
Discarded = 0.15 cfs @ 12.34 hrs, Volume= 0.261 af
Primary = 2.12 cfs @ 12.34 hrs, Volume= 0.168 af

Routing by Stor-Ind method, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs / 3
Peak Elev= 111.91' @ 12.34 hrs Surf.Area= 4,530.58182 sf Storage= 8,837 cf

Plug-Flow detention time= 369.0 min calculated for 0.429 af (85% of inflow)
Center-of-Mass det. time= 301.4 min (1,136.1 - 834.7)

Volume	Invert	Avail.Storage	Storage Description
#1	109.00'	14,829 cf	**Custom Stage Data (Irregular)** Listed below (Recalc)

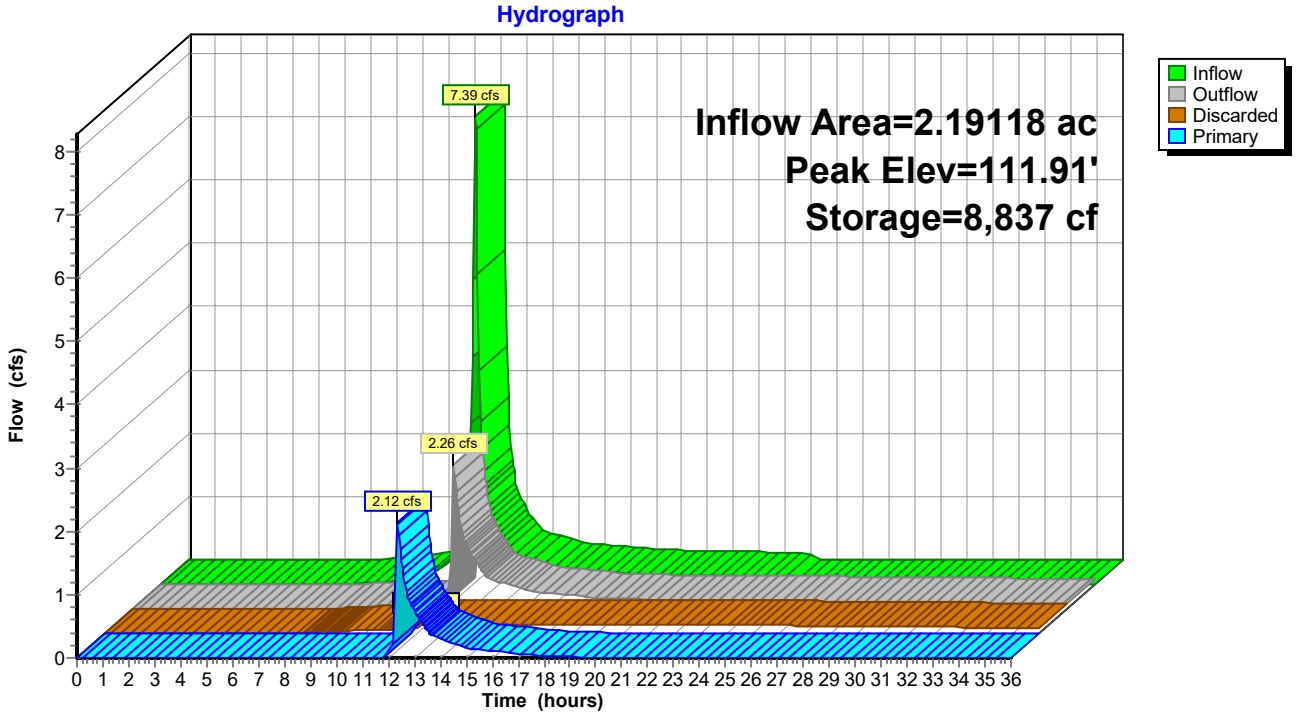
Elevation (feet)	Surf.Area (sq-ft)	Perim. (feet)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)	Wet.Area (sq-ft)
109.00	1,697.00420	282.0	0	0	1,697.00420
110.00	2,578.13020	307.6	2,122	2,122	2,933.77585
111.00	3,560.81360	340.3	3,056	5,179	4,650.57125
112.00	4,637.17960	369.9	4,087	9,266	6,360.71574
113.00	6,544.00000	406.0	5,563	14,829	8,623.18928

Device	Routing	Invert	Outlet Devices
#1	Discarded	109.00'	**1.020 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 104.00'
#2	Primary	111.75'	**Custom Weir/Orifice, Cv= 2.62 (C= 3.28)** Head (feet) 0.00 0.50 1.00 Width (feet) 10.00 13.00 16.00

Discarded OutFlow Max=0.15 cfs @ 12.34 hrs HW=111.91' (Free Discharge)
↑**1=Exfiltration** (Controls 0.15 cfs)

Primary OutFlow Max=2.09 cfs @ 12.34 hrs HW=111.91' (Free Discharge)
↑**2=Custom Weir/Orifice** (Weir Controls 2.09 cfs @ 1.28 fps)

Pond 8P: Infiltration Basin 2



Hydrograph for Pond 8P: Infiltration Basin 2

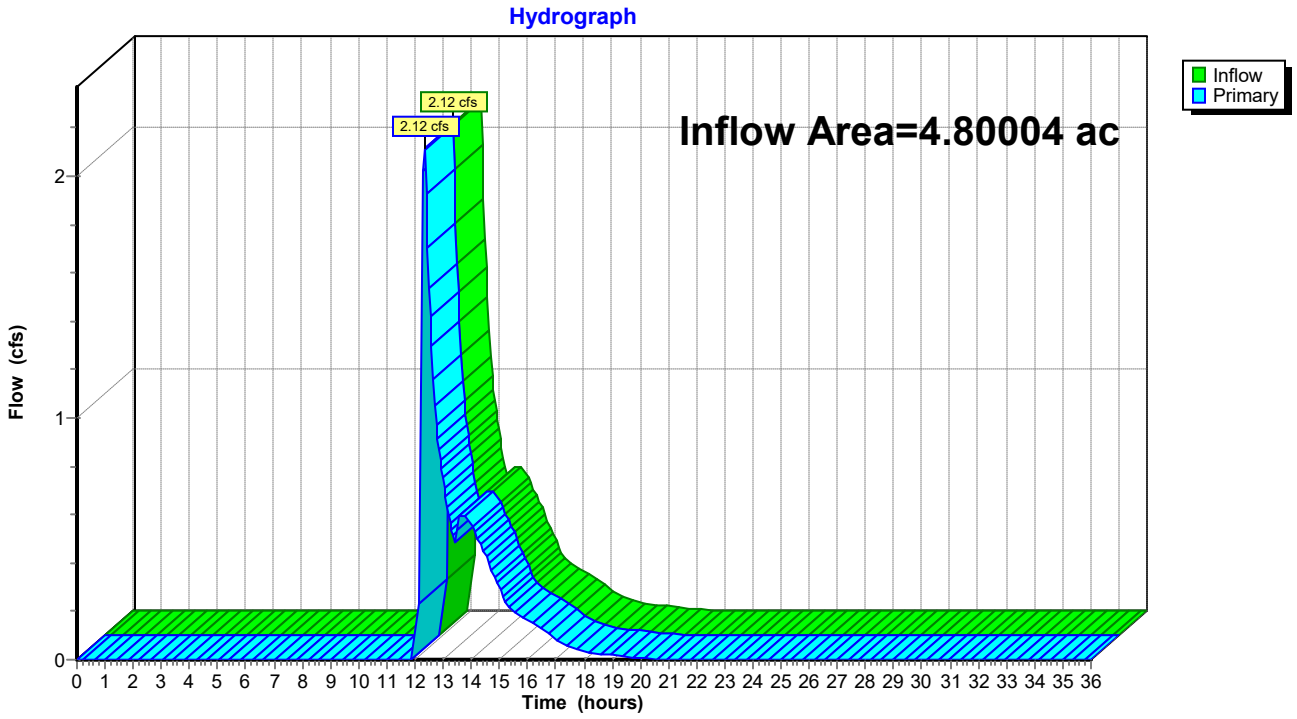
Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	109.00	0.00	0.00	0.00
1.00	0.00	0	109.00	0.00	0.00	0.00
2.00	0.00	0	109.00	0.00	0.00	0.00
3.00	0.00	0	109.00	0.00	0.00	0.00
4.00	0.00	0	109.00	0.00	0.00	0.00
5.00	0.00	0	109.00	0.00	0.00	0.00
6.00	0.00	0	109.00	0.00	0.00	0.00
7.00	0.00	0	109.00	0.00	0.00	0.00
8.00	0.02	16	109.01	0.01	0.01	0.00
9.00	0.05	61	109.04	0.04	0.04	0.00
10.00	0.13	216	109.12	0.04	0.04	0.00
11.00	0.32	761	109.41	0.05	0.05	0.00
12.00	**3.59**	**3,888**	**110.62**	**0.09**	**0.09**	**0.00**
13.00	**0.82**	**8,488**	**111.83**	**0.89**	**0.14**	**0.75**
14.00	0.43	8,327	111.79	0.45	0.14	0.31
15.00	0.29	8,259	111.78	0.31	0.14	0.17
16.00	0.24	8,225	111.77	0.25	0.14	0.11
17.00	0.21	8,206	111.76	0.21	0.14	0.07
18.00	0.17	8,186	111.76	0.17	0.14	0.03
19.00	0.15	8,166	111.76	0.16	0.14	0.02
20.00	0.14	8,153	111.75	0.15	0.14	0.01
21.00	0.13	8,141	111.75	0.14	0.14	0.00
22.00	0.12	8,108	111.74	0.14	0.14	0.00
23.00	0.11	8,043	111.73	0.14	0.14	0.00
24.00	0.11	7,945	111.70	0.14	0.14	0.00
25.00	0.00	7,496	111.60	0.13	0.13	0.00
26.00	0.00	7,030	111.49	0.13	0.13	0.00
27.00	0.00	6,581	111.37	0.12	0.12	0.00
28.00	0.00	6,148	111.26	0.12	0.12	0.00
29.00	0.00	5,732	111.15	0.11	0.11	0.00
30.00	0.00	5,332	111.04	0.11	0.11	0.00
31.00	0.00	4,947	110.93	0.10	0.10	0.00
32.00	0.00	4,577	110.83	0.10	0.10	0.00
33.00	0.00	4,223	110.72	0.10	0.10	0.00
34.00	0.00	3,883	110.61	0.09	0.09	0.00
35.00	0.00	3,558	110.51	0.09	0.09	0.00
36.00	0.00	3,246	110.41	0.08	0.08	0.00

Summary for Link 3L: Wetland

Inflow Area = 4.80004 ac, 18.97234% Impervious, Inflow Depth = 0.51" for 10-Year event
Inflow = 2.12 cfs @ 12.34 hrs, Volume= 0.204 af
Primary = 2.12 cfs @ 12.34 hrs, Volume= 0.204 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-36.00 hrs, dt= 0.05 hrs

Link 3L: Wetland



Hydrograph for Link 3L: Wetland

Time (hours)	Inflow (cfs)	Elevation (feet)	Primary (cfs)
0.00	0.00	**0.00**	0.00
0.50	0.00	0.00	0.00
1.00	0.00	0.00	0.00
1.50	0.00	0.00	0.00
2.00	0.00	0.00	0.00
2.50	0.00	0.00	0.00
3.00	0.00	0.00	0.00
3.50	0.00	0.00	0.00
4.00	0.00	0.00	0.00
4.50	0.00	0.00	0.00
5.00	0.00	0.00	0.00
5.50	0.00	0.00	0.00
6.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00
7.00	0.00	0.00	0.00
7.50	0.00	0.00	0.00
8.00	0.00	0.00	0.00
8.50	0.00	0.00	0.00
9.00	0.00	0.00	0.00
9.50	0.00	0.00	0.00
10.00	0.00	0.00	0.00
10.50	0.00	0.00	0.00
11.00	0.00	0.00	0.00
11.50	0.00	0.00	0.00
12.00	**0.00**	0.00	**0.00**
12.50	**1.54**	0.00	**1.54**
13.00	0.75	0.00	0.75
13.50	0.56	0.00	0.56
14.00	0.56	0.00	0.56
14.50	0.43	0.00	0.43
15.00	0.30	0.00	0.30
15.50	0.20	0.00	0.20
16.00	0.16	0.00	0.16
16.50	0.13	0.00	0.13
17.00	0.09	0.00	0.09
17.50	0.05	0.00	0.05
18.00	0.03	0.00	0.03
18.50	0.02	0.00	0.02
19.00	0.02	0.00	0.02
19.50	0.01	0.00	0.01
20.00	0.01	0.00	0.01
20.50	0.00	0.00	0.00
21.00	0.00	0.00	0.00
21.50	0.00	0.00	0.00
22.00	0.00	0.00	0.00
22.50	0.00	0.00	0.00
23.00	0.00	0.00	0.00
23.50	0.00	0.00	0.00
24.00	0.00	0.00	0.00
24.50	0.00	0.00	0.00
25.00	0.00	0.00	0.00
25.50	0.00	0.00	0.00
26.00	0.00	0.00	0.00
26.50	0.00	0.00	0.00
27.00	0.00	0.00	0.00
27.50	0.00	0.00	0.00
28.00	0.00	0.00	0.00
28.50	0.00	0.00	0.00
29.00	0.00	0.00	0.00
29.50	0.00	0.00	0.00
30.00	0.00	0.00	0.00
30.50	0.00	0.00	0.00
31.00	0.00	0.00	0.00
31.50	0.00	0.00	0.00
32.00	0.00	0.00	0.00
32.50	0.00	0.00	0.00
33.00	0.00	0.00	0.00
33.50	0.00	0.00	0.00
34.00	0.00	0.00	0.00
34.50	0.00	0.00	0.00
35.00	0.00	0.00	0.00
35.50	0.00	0.00	0.00
36.00	0.00	0.00	0.00

Time span=0.00-36.00 hrs, dt=0.05 hrs, 721 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 1S: West Subbasin Runoff Area=2.60886 ac 12.27663% Impervious Runoff Depth=5.68"
Tc=6.0 min CN=74.9 Runoff=17.84 cfs 1.236 af

Subcatchment 2S: East Subbasin Runoff Area=2.19118 ac 26.94439% Impervious Runoff Depth=6.16"
Tc=6.0 min CN=78.8 Runoff=16.00 cfs 1.124 af

Pond 4P: Infiltration Basin 1 Peak Elev=111.51' Storage=15,981 cf Inflow=17.84 cfs 1.236 af
Discarded=0.28 cfs 0.441 af Primary=15.34 cfs 0.676 af Outflow=15.62 cfs 1.116 af

Pond 8P: Infiltration Basin 2 Peak Elev=112.29' Storage=10,666 cf Inflow=16.00 cfs 1.124 af
Discarded=0.17 cfs 0.285 af Primary=14.52 cfs 0.761 af Outflow=14.69 cfs 1.046 af

Link 3L: Wetland Inflow=29.71 cfs 1.437 af
Primary=29.71 cfs 1.437 af

Total Runoff Area = 4.80004 ac Runoff Volume = 2.360 af Average Runoff Depth = 5.90"
81.02766% Pervious = 3.88936 ac 18.97234% Impervious = 0.91068 ac