Robinson+Cole

I

KENNETH C. BALDWIN

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Also admitted in Massachusetts
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October 28, 2020

Via Electronic Mail

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Petition No. 1407 – DG Connecticut Solar II LLC (formerly Torrington Solar One, LLC and VCP, LLC d/b/a Verogy) – Petition for a Declaratory Ruling that a Certificate of Environmental Compatibility and Public Need is not Required for the Construction, Operation and Maintenance of a 1.975 MWAC Solar Photovoltaic Project Off East Pearl Road in Torrington, Connecticut**

Compliance Filing No. 3

Dear Attorney Bachman:

As you know, on August 13, 2020, the Siting Council ("Council") approved the above-referenced Petition for Declaratory Ruling ("Petition") subject to certain conditions.

In accordance with Condition No. 2 of the Council's approval, attached you will find the Stormwater Pollution Control Plan, the Stormwater Registration Form and the Notice of Permit Authorization from the Department of Energy and Environmental Protection for the Torrington project. Also, in accordance with Condition No. 5 of the Council's approval, the total estimated cost of the project is $2,844,181.

Please let me know if you have any questions or need any additional information.

Sincerely,

Kenneth C. Baldwin

Attachment
Copy to:
Bryan Fitzgerald
William Herchel
Michael Libertine
Jennifer Young Gaudet
Brad Parsons

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

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

Bureau of Materials Management and Compliance Assurance

Notice of Permit Authorization

October, 26 2020

Bryan Fitzgerald
TORRINGTON SOLAR ONE, LLC
150 Trumbull St
Hartford, CT 06103-2403

Subject: General Permit Registration for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities
Application NO.: 202007019

Bryan Fitzgerald:

The Department of Energy and Environmental Protection, Water Permitting and Enforcement Division of the Bureau of Materials Management and Compliance Assurance, has completed the review of the Torrington Solar One, LLC (located at East Pearl Road, Town of Torrington) registration for the **General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, effective 10/1/13 (general permit)** . The project is compliant with the requirements of the general permit and the discharge(s) associated with this project is (are) authorized to commence as of the date of this letter. Permit No. GSN003598 has been assigned to authorize the stormwater discharge(s) from this project.

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

Connecticut Department of
Energy & Environmental Protection
Bureau of Materials Management & Compliance Assurance
Water Permitting & Enforcement Division

General Permit Registration Form for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, effective 10/1/13 (electronic form)

Prior to completing this form, you **must** read the instructions for the subject general permit at **DEEP-WPED-INST-015**.
This form must be filled out electronically before being printed.
You must submit the registration fee along with this form.

The status of your registration can be checked on the DEEP's ezFile. Portal. Please note that DEEP will no longer mail certificates of registration.

CPPU USE ONLY

App #: _____

Doc #: _____

Check #: _____

Program: **Stormwater**

Part I: Registration Type

Select the appropriate boxes identifying the registration type and registration deadline.

	Registration Type			Registration Timeline
☐	**Re-registration** **Existing Permit No. GSN** _____			**On or before February 1, 2014*** *Note: Failure to renew a permit by this date will require submission of new registration. Re-registrants must only complete Parts I, II, III, IV - Question 1, VII and submit Attachment A.
☑	**New Registration** (Refer to Section 2 of the permit for definitions of Locally Exempt and Locally Approvable Projects)	☐ **Locally Approvable** **Size of soil disturbance:** _____		**New registration - Sixty (60) days prior to the initiation of the construction activity for:** For sites with a total soil disturbance area of 5 or more acres
		☑ **Locally Exempt** **Size of soil disturbance:** 11.15	☑	**New registration - Sixty (60) days prior to the initiation of the construction activity for:** Sites with a total disturbance area of one (1) to twenty (20) acres except those with discharges to impaired waters or tidal wetlands
			☐	**New registration - Ninety (90) days prior to the initiation of the construction activity for:** (i) Sites with a total soil disturbance area greater than twenty (20) acres, or (ii) Sites discharging to a tidal wetland (that is not fresh-tidal and is located within 500 feet), or (iii) Sites discharging to the impaired water listed in the "Impaired Waters Table for Construction Stormwater Discharges"

Part II: Fee Information

1. New Registrations

   a. Locally approvable projects (registration only):

☐ $625

   b. Locally exempt projects (registration and Plan):

☑ $3,000 total soil disturbance area ≥ one (1) and < twenty (20) acres.

☐ $4,000 total soil disturbance ≥ twenty (20) acres and < fifty (50) acres.

☐ $5,000 total soil disturbance ≥ fifty (50) acres.

2. Re-Registrations

☐ $625 (sites previously registered prior to September 1, 2012)

☐ $0 (sites previously registered between to September 1, 2012 and effective date of this permit)

Total Fee: $3,000.00

The fees for municipalities shall be half of those indicated in subsections (a), (b) and (c) above pursuant to Section 22a-6(b) of the Connecticut General Statutes. State and Federal agencies shall pay the full fees specified in this subsection. The registration will not be processed without the fee. The fee shall be non-refundable and shall be paid by certified check or money order payable to the Department of Energy and Environmental Protection.

Part III: Registrant Information

- If a registrant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of the State. If applicable, the registrant's name shall be stated **exactly** as it is registered with the Secretary of the State. This information can be accessed at **CONCORD**
- If a registrant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).

1. Registrant /Client Name: TORRINGTON SOLAR ONE, LLC

   Registrant Type: Business Entity

   Secretary of the State business ID #:

   Mailing Address: 150 Trumbull St

   City/Town: Hartford State: CT Zip Code: 06103

   Business Phone: (203)257-3375 ext.:

   Example:(xxx) xxx-xxxx

   Contact Person: Bryan Fitzgerald Title : Project Manager

   E-Mail: bfitzgerald@verogy.com

2. List billing contact:

   Name: TORRINGTON SOLAR ONE, LLC

   Mailing Address: 150 Trumbull St

   City/Town: Hartford State: CT Zip Code: 06103

   Business Phone: (203)257-3375 ext.:

   Contact Person: Bryan Fitzgerald Title : Project Manager

3. List primary contact for departmental correspondence and inquiries:
   Name: TORRINGTON SOLAR ONE, LLC
   Mailing Address: 150 Trumbull St
   City/Town: Hartford State: CT Zip Code: 06103
   Business Phone: (203)257-3375 ext.
   Contact Person: Bryan Fitzgerald Title: Project Manager

4. List owner of the property on which the activity will take place:
   Name: CATHOLIC CEMETERIES ASSOCIATION OF THE ARCHDIOCESE OF HARTFORD, INC.
   Mailing Address: 700 MIDDLETOWN AVE
   City/Town: NORTH HAVEN State: CT Zip Code: 06473
   Business Phone: (203) 780-8412 ext.
   Contact Person: ROBERT BURNS
5. List preparer:
   Name: Kevin McCaffery
   Mailing Address: 567 Vauxhall Street Ext
   City/Town: Waterford State: CT Zip Code: 06385
   Business Phone: (860)581-4477 ext.
   Contact Person: . Title:
6. List design professional:
   Name: Bradley Parsons
   Mailing Address: 567 Vauxhall Street Ext
   City/Town: Waterford State: CT Zip Code: 06385
   Business Phone: (860) 663-1697 ext. 208
   Contact Person: Bradley Parsons Title: Project Manager
7. List Reviewing Qualified Professional (for locally approvable projects only):
   Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.
   Contact Person: Title:

Part IV: Site Information

1. Site Name: Torrington Solar One, LLC
   Street Address or Description of Location: East Pearl Road
   City/Town: Town of Torrington State: CT Zip Code: 06790
   Brief Description of construction activity:
   ground mounted solar array
   Project Start Date: 10 Aug 2020 Anticipated Completion Date: 10 Nov 2020
   Normal working hours: 8 to 6

2. **MINING** : Is the activity on the site in question part of mining operations (i.e. sand and gravel)? ☐Yes ☑No

If yes, mining is not authorized by this general permit. You must submit the Registration Form for the General Permit for the Discharge of Stormwater Associated with Industrial Activity.

3. **COMBINED OR SANITARY SEWER:** Does all of the stormwater from the proposed activity discharge to a combined or sanitary sewer (i.e. a sewage treatment plant)? ☐ Yes ☑No

If yes, this activity is not regulated by this permit. Contact the Water Permitting & Enforcement Division at 860-424-3018.

4. **INDIAN LANDS:** Is or will the facility be located on federally recognized Indian lands? ☐ Yes ☑No

5. **COASTAL BOUNDARY:** Is the activity which is the subject of this registration located within the coastal boundary as delineated on DEEP approved coastal boundary maps? ☐ Yes ☑No

The coastal boundaries fall within the following towns: Branford, Bridgeport, Chester, Clinton, Darien, Deep River, East Haven, East Lyme, Essex, Fairfield, Greenwich, Groton (City and Town), Old Lyme, Guilford, Hamden, Ledyard, Lyme, Madison, Milford, Montville, New London, New Haven, North Haven, Norwalk, Norwich, Old Saybrook, Orange, Preston, Shelton, Stamford, Stonington (Borough and Town), Stratford, Waterford, West Haven, Westbrook and Westport.

If "yes", and this registration is for a new authorization or a modification of an existing authorization where the physical footprint of the subject activity is modified, you must provide documentation to the DEEP Office of Long Island Sound Programs or the local governing authority has issued a coastal site plan approval or determined the project is exempt from coastal site plan review. Provide this documentation with your registration as Attachment B. See guidance in Appendix D of the general permit. Information on the coastal boundary is available at the local town hall or on the **Connecticut Coastal Resources Map** . Additional DEEP Maps and Publications are available by contacting DEEP Staff at 860-424-3555.

6. **ENDANGERED OR THREATENED SPECIES:**

In order to be eligible to register for this General permit, each registrant must either perform a self-assessment, obtain a limited one-year determination, or obtain a safe-harbor determination regarding threatened and endangered species. This may include the need to develop and implement a mitigation plan. While each alternative has different limitations, the alternatives are not mutually exclusive; a registrant may register for this General Permit using more than one alternative, See Appendix A of the general Permit. Each registrant must complete this AND Attachment C to this Registration form and a registrant who does not or cannot do so is not eligible to register under this General Permit.

Each registration must perform a review of the Department's Natural Diversity Database maps to determine if the site of the construction activity is located within or in proximity (within ¼ mile) to a shaded area.

a. Provide the date of the NDDB maps were reviewed: 9 Jun 2020 (Print a copy of the NDDB map you viewed since it must be submitted with this registration as part of Attachment C.)

b. For a registrant using a limited one-year determination or safe harbor determination to register for this General Permit, provide the Department's Wildlife Division NDDB identification number for any such determination:

_____ (The number is on the determination issued by the Department's Wildlife Division).

For more information on threatened and endangered species requirements, refer to Appendix A and section 3(b)(2) of this General Permit, Visit the DEEP website at **Natural Diversity Data Base** or call the NDDB at 860-424-3011.

c. I verify that I have completed Attachment C to this Registration Form. ☐ Yes

7. **WILD AND SCENIC RIVERS:** Is the proposed project within the watershed of a designated Wild and Scenic River? (See Appendix H for guidance) ☐ Yes ☑ No

8. **AQUIFER PROTECTION AREAS:** Is the site located within a mapped **Aquifer Protection Area** , as defined in Section 22a-354h of the CT General Statutes? (For additional guidance, please refer to Appendix C of the General Permit) ☐ Yes ☑ No

9. **Connecticut Guidelines for Soil Erosion and Sediment Control Guidelines:** Is the activity in accordance with Connecticut Guidelines for Soil Erosion and Sediment Control Guidelines and local erosion & sediment control ordinances, where applicable? ☑ Yes ☐ No

10. **HISTORIC AND/OR ARCHAEOLOGICAL RESOURCES:**

Has the site of the proposed activity been reviewed (using the process outlined in Appendix G of this permit) for historic and/or archaeological resources? ☑ Yes ☐ No

a. The review indicates the proposed site does not have the potential for historic/ archaeological resources, OR ☐ Yes ☑ No

b. The review indicated historic and/ or archaeological resource potential exists and the proposed activity is being or has been reviewed by the Offices of Culture and Tourism, OR ☐ NA ☑ Yes ☐ No

c. The proposed activity has been reviewed and authorized under an Army Corps of Engineers Section 404 wetland permit. ☑ NA ☐ Yes ☐ No

11. **CONSERVATION OR PRESERVATION RESTRICTION:**

Is the property subject to a conservation or preservation restriction? ☐ Yes ☑ No

If Yes, proof of written notice of this registration to the holder of such restriction or a letter from the holder of such restriction verifying this registration is in compliance with the terms of the restriction, must be submitted as Attachment D.

Part V: Stormwater Discharge Information

Table 1

Outfall #	a) Type	b) Pipe Material	c) Pipe Size	d) Note: To find lat/long, go to: CT ECO . A decimal format is required here. Directions on how to use CT ECO to find lat. /long. and conversions can be found in in Part V, section d of the DEEP-WPED-INST-015 .		e) What method was used to obtain your latitude/longitude information?
				Longitude *(Format: -xx.xxxxx)*	Latitude *(Format: xx.xxxxx)*	
1	Other(Please fill in below) level spreader			-73.075739	41.828290	ezFile Portal Map
2	Other(Please fill in below) level spreader			-73.074923	41.828210	ezFile Portal Map
3	Other(Please fill in below) level spreader			-73.073679	41.828593	ezFile Portal Map

Part V: Stormwater Discharge Information Continued

Table 2

2. Provide the following information about the receiving water(s)/wetland(s) that receive stormwater runoff from your site, either directly or through the storm sewer system:							
Outfall #	**Dates when this outfall will be active:**	**a) To what system or receiving water does your stormwater runoff discharge? either "storm sewer or wetlands" or "waterbody" (If you select storm sewer or wetlands, columns c.1&2 of this table are not required to be completed)**	**b) What is your watershed ID (freshwater) or 305b ID (estuary)? (Section 3.b, of the DEP-GP-INST-015 explains how to find this information)**	**c.1) Is your receiving water identified as an impaired water in the "Impaired Waters Table for Construction Stormwater Discharges"?**	***If you answered yes to question c.1, then answer the question below*** **c.2) Has any Total Maximum Daily Load (TMDL) been approved for your receiving waterbody?**	**For the drainage area associated with each outfall: Effective Impervious Area Before Construction (sq ft)**	**For the drainage area associated with each outfall: Effective Impervious Area After Construction (sq ft)**
1	Start: 10 Aug 2020 End: 10 Nov 2020	Storm Sewer or Wetlands		☐ Y ☐ N ☑ NA	☐ Y ☐ N ☑ NA	0	3233
2	Start: 10 Aug 2020 End: 10 Nov 2020	Storm Sewer or Wetlands		☐ Y ☐ N ☑ NA	☐ Y ☐ N ☑ NA	0	5136
3	Start: 10 Aug 2020 End: 10 Nov 2020	Storm Sewer or Wetlands		☐ Y ☐ N ☑ NA	☐ Y ☐ N ☑ NA	0	3816
	Start: End:	Select One		☐ Y ☐ N ☐ NA	☐ Y ☐ N ☐ NA		
	Start: End:	Select One		☐ Y ☐ N ☐ NA	☐ Y ☐ N ☐ NA		
Provide the total effective impervious area for the entire site(sq ft):						0	12185

Part V: Stormwater Discharge Information (continued)

Impaired waters: If you answered "yes" to Table 2, question 2.c.1, **verify** that the project's Pollution Control Plan (Plan) addresses the control measures below in Question 1 or 2, as appropriate.

1. **If the impaired water does not have a TMDL,** confirm compliance by selecting 1.a. or 2.b. below:

a. No more than 3 acres is disturbed at any time; ☐ Yes

OR

b. Stormwater runoff from a 2 yr, 24 rain event is **retained.** ☐ Yes

2. **If the impaired water has a TMDL,** confirm compliance by selecting 2.a. and 2.b. below and either question 2.c.1. or 2.c.2. below:

a. The Plan documents there is sufficient remaining Waste Load Allocations (WLA) in the TMDL for the proposed discharge, ☐ Yes

AND

b. Control measures shall be implemented to assure the WLA will not be exceeded, ☐ Yes

AND

c. 1. Stormwater discharges will be monitored for the indicator pollutant identified in the TMDL, ☐ Yes

OR

2. The Plan documents specific requirements for stormwater discharges specified in the TMDL. ☐ Yes

Part VI: Pollution Control Plan Availability (check one of the following four categories)

☑ I am registering a Locally Exempt project and submitting the required electronic Plan (in Adobe™ PDF or similarly publically available format) pursuant to Section 3(c)(2)(E) of this permit.

- ☑ Plan is attached to this registration form
- ☐ Plan is available at the following Internet Address (URL): _____

☐ I am registering a Locally Approvable project and have chosen not to submit the Plan with this registration pursuant to Section 3(c)(1) of this permit.

☐ I am registering a Locally Approvable project and have chosen to make my Plan electronically available pursuant to Section 4(c)(2)(N) of this permit.

- ☐ Plan is attached to this registration form
- ☐ Plan is available at the following Internet Address (URL): _____

☐ I am registering a Locally exempt project and do not have the capability to submit the Plan electronically. Therefore, I am submitting a paper copy with this registration as Attachment E.

Part VII: Registrant Certification

The registrant *and* the individual(s) responsible for actually preparing the registration must sign this part. A registration will be considered incomplete unless all required signatures are provided.

For New Registrants:

"I hereby certify that I am making this certification in connection with a registration under such general permit, submitted to the commissioner by TORRINGTON SOLAR ONE, LLC for an activity located at East Pearl Road, Town of Torrington, CT 06790 and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I certify that the registration filed pursuant to this general permit is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify that I have made an affirmative determination in accordance with Section 3(b) (8) (B) of this general permit. I understand that the registration filed in connection with such general permit is submitted in accordance with and shall comply with the requirements of Section 22a-430b of Connecticut General Statutes, as amended by Public Act 12-172. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and any other applicable law."

For Re-registrants:

"I hereby certify that I am making this certification in connection with a registration under the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner by _____ for an activity located at _____ and that all terms and conditions of the general permit are being met for all discharges which have been initiated and such activity is eligible for authorization under such permit. I further certify that all designs and plans for such activity meet the current terms and conditions of the general permit in accordance with Section 5(b)(5)(C) of such general permit and that a system is in place to ensure that all terms and conditions of this general permit will continue to be met for all discharges authorized by this general permit at the site. I verify that the registration filed pursuant to this general permit is on complete and accurate forms as prescribed by the commissioner without alteration of their text. I certify that I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(8)(A) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this verification is based is true, accurate and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement made in the submitted information and in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and an other applicable law."

Signature of Registrant	
Bryan Fitzgerald	Project Manager
Name of Registrant (print or type)	Title (if applicable)
Signature of Preparer and Date (if different than above)	
.	
Name of Preparer (print or type)	Title (if applicable)

Part VIII: Professional Engineer (or Landscape Architect, where appropriate) Design Certification (for publically approvable and exempt projects)

The following certification must be signed by a Professional Engineer, or Landscape Architect where appropriate.

"I hereby certify that I am a licensed in the State of Connecticut.
I am making this certification in connection with a registration under such general permit, submitted to the commissioner by TORRINGTON SOLAR ONE, LLC for an activity located at East Pearl Road, Town of Torrington, CT 06790 .
I certify that I have thoroughly and completely reviewed the Stormwater Pollution Control Plan for the project or activity covered by this certification. I further certify, based on such review and on the standard of care for such projects, that the Stormwater Pollution Control Plan has been prepared in accordance with the Connecticut Guidelines for Soil Erosion and Sediment Control, as amended, the Stormwater Quality Manual, as amended, and the conditions of the general permit, and that the controls required for such Plan are appropriate for the site. I further certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I also understand that knowingly making any false statement in this certification may subject me to sanction by the Department and/or be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and any other applicable law."

Signature of Design Professional and Date	
Bradley Parsons	26025
Name of Professional (print or type)	License Number

Affix P.E/L.A Stamp Here

Part IX: Reviewing Qualified Professional Certification

The following certification must be signed by a) a Conservation District reviewer OR, b) a qualified soil erosion and sediment control and/ or professional engineer

☐ **Review Certification by Conservation District:**

1.) District: _____

Date of Affirmative Determination: _____

" I am making this certification in connection with a registration under General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, submitted to the commissioner by _____ for an activity located at _____. I have personally examined and am familiar with the information that provides the basis for this certification, and I affirm, based on the review described in Section 3(b)(11)(C) of this general permit and on the standard of care for such projects, that the Stormwater Pollution Control Plan is adequate to assure that the activity authorized under this general permit will comply with the terms and conditions of such general permit and that all stormwater management systems: (i) have been designed to control pollution to the maximum extent achievable using measures that are technologically available and economically practicable and that conform to those in the Guidelines and the Stormwater Quality Manual; (ii) will function properly as designed; (iii) are adequate to ensure compliance with the terms and conditions of this general permit; and (iv) will protect the waters of the state from pollution."

_____

Signature of District Professional and Date

_____ _____

Name of District Professional License Number (if applicable)

Or

☐ **Review Certification by Qualified Professional:**

Company Name: _____

Name: _____

License #: _____

Level of independency of professional:

Required for all projects disturbing over 1 acre:

1. I verify I am not an employee of the registrant. ☐ Yes
2. I verify I have no ownership interest of any kind in the project for which the registration is being submitted. ☐ Yes

Required for projects with 15 or more acres of site disturbance (in addition to questions 1&2):

3. I verify I did not engage in any activities associated with the preparation, planning, designing or engineering of the soil erosion and sediment control plan or stormwater management systems plan for this registrant. ☐ Yes
4. I verify I am not under the same employ as any person associated with the preparation, planning, designing or engineering of the soil erosion and sediment control plan or stormwater management systems plan for this registrant. ☐ Yes

Part IX: Reviewing Qualified Professional Certification (continued)

"I hereby certify that I am a qualified professional engineer or qualified soil erosion and sediment control professional, or both, as defined in the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities and as further specified in Sections 3(b)(11)(A) and (B) of such general permit. I am making this certification in connection with a registration under such general permit, submitted to the commissioner by _____ for an activity located at _____ .
I have personally examined and am familiar with the information that provides the basis for this certification, including but not limited to all information described in Section 3(b)(11)(C) of such general permit, and I certify, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining such information, that the information upon which this certification is based is true, accurate and complete to the best of my knowledge and belief. I certify, based on my review of all information described in Section 3(b)(11)(C) of such general permit and on the standard of care for such projects, that I have made an affirmative determination in accordance with Sections 3(b)(11)(D)(i) and (ii) of this general permit. I understand that this certification is part of a registration submitted in accordance with Section 22a-430b of Connecticut General Statutes, as amended by Public Act 12-172, and is subject to the requirements and responsibilities for a qualified professional in such statute. I also understand that knowingly making any false statement in this certification may be punishable as a criminal offense, including the possibility of fine and imprisonment, under Section 53a-157b of the Connecticut General Statutes and any other applicable law."

_____

Signature of Reviewing Qualified Professional

_____ _____

Name of Reviewing Qualified Professional License No.

Affix P.E./ L.A. Stamp Here

Note: Please submit the fee along with a completed, printed and signed Registration Form and all additional supporting documents to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

STORMWATER POLLUTION CONTROL PLAN

PROPOSED
TORRINGTON SOLAR ONE, LLC
SOLAR PROJECT

EAST PEARL ROAD
TORRINGTON, CONNECTICUT
LITCHFIELD COUNTY

Prepared for:

Torrington Solar One, LLC
150 Trumbull Street, 4th Floor
Hartford, CT

Prepared by:

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

June 2020

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

Table of Contents

Attachment	Title
Attachment A	Site Location Map
Attachment B	Identification of Contractors and Certification Statements
Attachment C	Stormwater Manangement Report
Attachment D	Design Plans
Attachment E	Stormwater Monitoring Report Form
Attachment F	Notice of Termination Form

Wetland Delineation Report Provided Upon Request

Introduction

All-Points Technology Corporation, P.C. ("APT") prepared this Storm Water Pollution Control Plan ("SWPCP") on behalf of Torrington Solar One, LLC ("Torrington Solar One" or "Permittee" or "Applicant") for the Torrington Solar One, LLC Solar Project ("Project") in the City of Torrington, Connecticut. See site location map, Appendix A.

This SWPCP has been completed to support Torrington Solar One's application for the Connecticut Department of Energy and Environmental Protection's ("CTDEEP") General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ("General Permit"), effective date: October 1, 2013, expiration date: September 30, 2020.

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

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

The Permittee will be required to renew the General Permit application for this Project upon the issuance of the new General Permit.

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

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

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

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

Site Description and Proposed Work

The Site is located off East Pearl Road in Torrington, Connecticut (the "Site"; or "Project Site"). The property is a roughly rectangularly shaped parcel of approximately 66.45± acres. The property is owned by the Catholic Cemeteries Association of the Archdiocese of Hartford, Inc. and is the site of St. Peter's Cemetery and Mausoleum, located to the east of the area proposed for solar development. The property also contains the Bishop Donnelly Sports Complex operated by the City of Torrington under license agreement with the parcel owner. This area contains recreational fields located northwest of the area proposed for solar development. The site is privately owned and has mixed zoning, the west is zoned Residential (R-15S) and the east is in the Torrington Watershed Protection residential zone (R-WP). The Site vicinity is characterized as a mix of rural and agricultural. Appendix A, *Site Location Map*, depicts the location of the Site and surrounding area.

Upon its completion, the Facility (including stormwater controls) will occupy 11.15± acres of the Site ("Project Area"). The solar array within the Facility will occupy approximately 9± acres. The Facility will be comprised of approximately 1,274 Risen RSM144-6 380W and 5,876 Trina TSM-DE15MC 390W photovoltaic modules ("panels") installed at a tilt angle of 30.0 degrees; sixteen (16) 125 kW inverters; one (1) pad mounted switchgear; and one (1) 2,000 kVA transformer. A ground-mounted racking system, with posts mounted on driven piles, will be used to secure the panel arrays; the Facility will be enclosed within a six (6)-foot tall chain-link security fence. The proposed electrical interconnection will be to an existing distribution pole located on Torringford Street to the west of the Site.

Draft Appendix I – Stormwater Management at Solar Array Construction Projects

The Permittee and the Contractor should be aware that construction of large-scale solar arrays such as this Project are unlike typical development projects due to significant amounts of disturbed area that are at times un-stabilized soils. As such, it is imperative that the Contractor follow the sequence of construction within this SWPCP and on the design plans. Any deviations from the proposed sequence of construction will require approval in writing.

CTDEEP has developed a draft Appendix I for inclusion in the proposed new General Permit. This Project complies with the draft Appendix I as follows:

Design and Construction Requirements

Requirement No. 1

The Project is designed to meet the WQV requirements accounting for all roadways, gravel surfaces, and equipment pads as effective impervious cover for the purposes of calculating WQV.

Requirement No. 2

The height of the lowest point of the panels is 3 feet off the ground which will allow for a robust vegetative cover when stabilized post-construction.

Requirements No. 3-7

The Permittee will comply with any requirements of the General Permit that is in effect during construction period of the Project.

Requirement No. 8

If required by the Commissioner, the Permittee will secure a letter of credit in the amount and per the specifications listed in App I and section 3 of the guidance document issued on Jan 8, 2020.

Design requirements for post-construction stormwater management

Requirement No. 1

Stormwater control measures include riprap downgradient of each of the stormwater basin outlets and are located a minimum of 50 feet from the downgradient wetland. The property line is located a minimum of 20 feet from the stormwater control measures.

Requirement No. 2

The orientation of the solar panels was considered with respect to drainage patterns. The existing grade throughout the site will be maintained so that channelized flow is not developed and sheet/shallow concentrated flow remain. For this project there is a 0.5" gap between each of the panels and they are in portrait configuration (2 high). All on-site drainage is designed to flow overland on vegetated surfaces or reach a stormwater management basins.

Requirement No. 3

The attached Stormwater Management Report addresses items (a) thru (e) with no increase in peak flow, erosive velocities or adverse impacts to downstream properties, including the reduction of Hydrologic Soil Group to account for compaction and field infiltrations rates.

Estimated Runoff Coefficient

The drainage on the site was analyzed using the SCS TR-20 method. Soil types were determined from a Natural Resources Conservation Service Soil Survey. For existing conditions, the land use inputs and modeled curve numbers are as follows:

Drainage Area	*Area (sq-ft)*	*CN*	*Land Use Description*
EDA-1	**174,413**	**79**	
	11,901	77	Woods, Good, HSG D
	77,225	80	>75% Grass cover, Good, HSG D
	72,576	80	Pasture/grassland/range, Good, HSG D
	7,185	74	>75% Grass cover, Good, HSG C
	5,526	74	Pasture/grassland/range, Good, HSG C
EDA-2	**236,862**	**80**	
	1,581	80	>75% Grass cover, Good, HSG D
	207	80	Pasture/grassland/range, Good, HSG D
	22,057	85	Legumes, straight row, Good, HSG D
	7,154	74	>75% Grass cover, Good, HSG C
	24,171	74	Pasture/grassland/range, Good, HSG C
	169,594	81	Legumes, straight row, Good, HSG C
	12,098	70	Woods, Good, HSG C
EDA-3	**127,463**	**80**	
	115,099	80	Pasture/grassland/range, Good, HSG D
	12,364	77	Woods, Good, HSG D
EDA-4	**177,540**	**81**	
	1,041	74	Pasture/grassland/range, Good, HSG C
	118,654	80	Pasture/grassland/range, Good, HSG D
	54,522	85	Legumes, straight row, Good, HSG D
	3,323	77	Woods, Good, HSG D
EDA-5	**143,186**	**80**	
	57,018	85	Legumes, straight row, Good, HSG D
	1,408	77	Woods, Good, HSG D
	55,307	81	Legumes, straight row, Good, HSG C
	29,453	70	Woods, Good, HSG C

For proposed conditions, the land use inputs and modeled curve numbers are as follows:

Drainage Area	*Area (sq-ft)*	*CN*	*Land Use Description*
PDA-1	**174,413**	**79**	
	11,901	77	Woods, Good, HSG D
	77,225	80	>75% Grass cover, Good, HSG D
	75,886	80	Pasture/grassland/range, Good, HSG D
	7,185	74	>75% Grass cover, Good, HSG C
	2,216	74	Pasture/grassland/range, Good, HSG C
PDA-2	**209,934**	**75**	
	1,581	80	>75% Grass cover, Good, HSG D
	7,154	74	>75% Grass cover, Good, HSG C
	12,098	70	Woods, Good, HSG C
	84,899	71	Meadow, non-grazed, HSG C
	98,931	78	Meadow, non-grazed, HSG D
	5,271	96	Gravel surface, HSG D
PDA-3.1	**57,964**	**79**	
	480	98	Unconnected roofs, HSG D
	2,753	96	Gravel surface, HSG D
	54,731	78	Meadow, non-grazed, HSG D
PDA-3.2	**69,570**	**78**	
	12,364	77	Woods, Good, HSG D
	57,206	78	Meadow, non-grazed, HSG D
PDA-4.1	**145,593**	**79**	
	140,457	78	Meadow, non-grazed, HSG D
	5,136	96	Gravel surface, HSG D
PDA-4.2	**38,958**	**78**	
	3,323	77	Woods, Good, HSG D
	35,635	78	Meadow, non-grazed, HSG D
PDA-5.1	**68,699**	**78**	
	3,816	96	Gravel surface, HSG D
	52,945	78	Meadow, non-grazed, HSG D
	11,938	71	Meadow, non-grazed, HSG C
PDA-5.2	**94,333**	**72**	
	1,408	77	Woods, Good, HSG D
	29,453	70	Woods, Good, HSG C
	21,239	78	Meadow, non-grazed, HSG D
	42,233	71	Meadow, non-grazed, HSG C

The array area will not require clearing and grubbing since the project area is unforested. The existing root structure and vegetation in the portion of the site dominated by hay field will be preserved to the extent practicable, generally the western side of the site. The eastern area comprised of row crops will be graded to a uniform slope and seeded with temporary seed mix for stabilization during construction. The entire area will be seeded with a low growing forbs and grass mix following installation of the necessary utilities, access road, and stormwater

management features. Overall, hydrologically, the post-developed condition is designed to mimic the pre-developed condition.

No increase in post-development runoff was predicted by the initial modeling calculations, which accounted for a change in ground cover type, addition of effective impervious cover, and reduction of HSG for non-D soil areas. To account for State water quality rules three (3) water quality swales are proposed along the southern and eastern sides of the project area to provide sufficient treatment volumes. These are included in the final hydrologic model routing with the appropriate retention volume and 30-ft width level spreader outlets. It is assumed that these areas will infiltrate following storm events and not impound water (i.e. they will be empty at the beginning of a storm event).

Receiving Waters

Based upon a review of DEEP mapping, the Site is located in both Major Drainage Basins 4 (Connecticut River) and 6 (Housatonic); Regional Basins 43 (Farmington River) and 69 (Naugatuck River), Sub Regional Drainage Basins 4310 and 6908, and Local Drainage Basins 4310-01 and 6908-03. For each of these categories, the line between the designations bisects the Project Area from northwest to southeast.

Wetlands and Watercourses on Site

An APT Professional Soil Scientist identified two (2) wetlands and two (2) watercourses on the Site during a field inspection and wetland delineation completed on November 15, 2019. Cumulatively, these wetlands comprise approximately 5.47 acres on the Site. The results of the field delineation are summarized below.

Wetland 1 is located west of the Project Area, embedded within the Mixed Hardwood Forest and extending south into the Agricultural Field. It consists of a complex of forested and agricultural wet meadow habitats that have been significantly disturbed by historic agricultural use and residential development. The wetland corridor is dominated by forested habitat, with the southwestern portion comprised of a wet meadow used as a hayfield. Fringes of scrub/shrub habitat are found along the northern and southern edges of the hayfield. Extensive grading and filling have historically been undertaken within the open field in the southern extents of Wetland 1. An unnamed interior intermittent watercourse, identified as IWC-1, drains north to south. Historic wetland alteration has disconnected this watercourse from its former association with the East Branch of Leadmine Brook, which is located farther south off the Site.

Wetland 2 is located to the southwest of the Project Area along the Site's southern boundary. It currently consists primarily of forested habitat that has been significantly disturbed by historic agricultural activities. The wetland boundary is defined by the toe of fill slope that drops ±6 feet from the hayfield to the north. Wetland 2 was formerly connected to Wetland 1. However, extensive grading and filling has historically taken place within the hayfield that now separates these two (2) wetlands. Seepage from Wetland 2 now forms the headwaters to the East Branch of Leadmine Brook via an intermittent watercourse located entirely off-Site (and not shown on Figure 2).

Intermittent watercourse 2 ("IWC-2") is located along the western edge of the Mixed Hardwood Forest habitat area, northeast of the Project Area. It is a man-made channel, ranging from 1 to 2 feet in width. It appears to convey seasonal surface and shallow groundwater discharges that continue to flow beyond storm events and, as such, meets the definition of "intermittent watercourse" under Connecticut Inland Wetlands and Watercourses Act regulations.

Bakersville Brook is located in the eastern, heavily forested portion of the Site, approximately 800 feet east of the Project Area. This stream extends generally southeastward before flowing off the Site. Base on its distance and physical separation from the Project Area, this stream was neither field-delineated nor inspected.

Vernal Pools

A single vernal pool is present on the Site, embedded within the northern portion of Wetland 1. Vernal pool surveys were conducted on March 18, April 7 and April 14, 2020. Survey methods included audial surveys to record chorusing frogs, visual surveys to search for adults, egg masses and larvae, and dip-netting to identify species within the water column and benthic material.

Flood Zones

APT reviewed the United States Federal Emergency Management Agency ("FEMA") Flood Insurance Rate Maps ("FIRM") for the Site. A FIRM is the official map of a community on which FEMA has delineated both the special hazard areas and risk premium zones applicable to the community. The Site is mapped on FIRM PANEL #0950810012B, dated May 19, 1972. Based upon the reviewed mapping, the Site is classified as an area of minimal flooding, typically above the 500-year flood level.

Construction Sequence

The following suggested sequence of construction activities is projected based upon engineering judgement and best management practices. The contractor may elect to alter the sequencing to best meet the construction schedule, the existing site activities and weather conditions. Should the contractor alter the construction sequence or any erosion and sedimentation control measures they shall modify the Stormwater Pollution Control Plan ("SWPCP") as required by the general permit. Major changes in sequencing and/or methods may require regulatory approval prior to implementation.

1. The contractor shall schedule a pre-construction meeting. Physically flag the limits of disturbance in the field as necessary to facilitate the pre-construction meeting.

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

3. Notify City of Torrington agent at least forty-eight (48) hours prior to commencement of any demolition, construction or regulated activity on this project.

4. Notify Call Before You Dig at 1-800-922-4455, as required, prior to the start of construction.

5. Remove existing impediments as necessary and provide grading to install the required construction/site entrance.

6. All wetland areas shall be protected before major construction begins.

7. Install perimeter erosion control. This includes the silt fence wings. Silt fence wings shall be located in the field by survey and shall not be moved without written approval from the engineer.

8. Perform the array area preparation as necessary. Remove residual agricultural plant material and stockpile for future use or remove off-site. Remove and dispose of any encountered demolition debris off-site in accordance with applicable laws.

9. Temporarily seed disturbed areas not under construction for thirty (30) days or more.

10. Install electrical conduits and concrete pads.

11. Install racking posts for ground mounted solar panels.

12. Install ground mounted solar panels and complete electrical installation.

13. After substantial completion of the installation of the solar panels, complete remaining site work, including any required landscape screening, and stabilize all disturbed areas.

14. Fine grade, rake, seed and mulch all remaining disturbed areas.

15. After the site is stabilized and with the approval of the Permittee and City of Torrington Agent, remove perimeter erosion and sedimentation controls.

Control Measures

The Contractor shall install and maintain staked silt fence around the site as perimeter control throughout the duration of construction. Construction entrances shall be installed at the locations where the contractor will be leaving disturbed areas of the site. Material stockpile area with appropriate controls shall be placed as needed throughout the limits of the site.

Erosion and Sedimentation Controls General Notes

- All erosion and sediment control measures shall be constructed in accordance with the standards and specifications of the "2002 Connecticut Guidelines for Soil Erosion and Sediment Control" (CTDEEP Bulletin No. 34), and all amendments and addenda thereto as published by the Connecticut Department of Energy and Environmental Protection.

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

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

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

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

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

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

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

- The construction contractor shall keep all paved roadways clean.

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

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

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

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

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

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

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

Soil Stabilization and Protection

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

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

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

Temporary Stabilization Practices

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

Temporary Soil Protection: Temporary soil protection shall only be used when a disturbed area will be inactive for a period of 30 or more consecutive days, but less than 5 months. If surfaces will not be reworked within 5 months, temporary vegetative cover shall be used. This temporary soil protection shall consist of mulches, tackifiers, and erosion control blankets which shall be biodegradable or photo-degradable within 2 years but without substantial degradation for 5 months. Additionally, they shall be capable of being applied evenly such that it provides 100% initial soil coverage, still adheres to the soil surface, and are free of contaminates and foreign material.

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

geotextile fabric and wooden stakes) must be removed and properly disposed of off-site. It is important that this measure be installed on contour to reduce erosion along the system.

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

Permanent Stabilization Practices

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

Structural Measures

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

Maintenance

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

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

Silt Fence: Inspect silt fence at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.25 inch or greater. For dewatering operations, inspect frequently before, during, and after pumping operations. Remove the sediment deposits or install a secondary barrier upslope from the existing barrier when sediment deposits reach one half the height of the barrier.

Compost Filter Sock: Inspect compost filter sock at least once per week and within 24 hours of the end of a storm with a rainfall amount of 0.25 inch or greater. For dewatering operations, inspect frequently before, during, and after pumping operations. Repair/replace when failure or deterioration is observed.

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

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

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

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

Topsoil/Borrow Stockpiles: Inspect topsoil/borrow stockpiles daily. Repair/replace sediment barriers as necessary and stabilize stockpiles as needed.

Dewatering Wastewaters

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

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

It is expected that a pumping settling basin will be required and that this basin will be sized by the contractor in accordance with the 2002 Guidelines.

Post-Construction Stormwater Management

Post-construction Guidelines

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

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

Other Controls

Waste Disposal

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

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

Washout Areas

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

The designated area shall be designed and maintained such that no overflows can occur during rainfall or after snowmelt. Containers or pits shall be inspected at least once a week to ensure structural integrity, adequate holding capacity and will be repaired prior to future use if leaks are present. The contractor shall remove hardened concrete waste when it accumulates to a height

of ½ of the container or pit or as necessary to avoid overflows. All concrete waste shall be disposed of in a manner consistent will all applicable laws, regulations and guidelines.

Anti-tracking Pads and Dust Control

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

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

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

- Increase the length of the construction entrance,
- Modify the construction access road surface, or
- Install washing racks and associated settling area or similar devices before the vehicle enters a paved surface.

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

Post-Construction

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

Maintaining and Storing Vehicles and Equipment

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

Inspections

Inspection Guidelines

All construction activities shall be inspected initially for Plan implementation and then weekly for routine inspections.

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

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

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

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

Qualified personnel provided by the Permittee shall conduct Inspections.

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

Item	Procedure
Silt Fence/Haybales	Inspected weekly and within 24 hours of rainfall to ensure that the fence line is intact with no breaks or tears. Repair/replace when failure, or observed deterioration, is observed. Remove silt when it reaches ½ the height of the fence or bale.
Topsoil/Borrow Stockpiles	Inspect daily. Repair sediment barriers as necessary.
Temporary Soil Protection	Inspected weekly and within 24 hours of rainfall to ensure that the fence line is intact with no breaks or tears. Repair eroded/bare areas immediately. Reseed and mulch.

Construction Entrance	Inspect daily. Place additional stone, extend the length or remove and replace the stone. Clean paved surfaces of tracked sediment.
Compost Filter Sock	Inspect weekly and within 24 hours of rainfall greater than 0.25". Repair/replace when failure or deterioration is observed.
Temporary Sediment Basin (with Baffles)	Inspect weekly and withing 24 hours of rainfall greater than 0.5". Remove sediment once it has accumulated to one half of minimum required volume of the wet storage, dewatering as needed. Restore basin to original dimensions. Repair/replace baffles when failure or deterioration is observed.
Temporary Sediment Trap (with Baffles)	Inspect weekly and withing 24 hours of rainfall greater than 0.5". Remove sediment once it has accumulated to one half of minimum required volume of the wet storage, dewatering as needed. Restore trap to original dimensions. Repair/replace baffles when failure or deterioration is observed.

Corrective Actions

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

Monitoring Requirements

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

Turbidity monitoring shall be conducted at the one (1) location depicted on the Plan utilizing a procedure consistent with 40 CFR Part 136:

http://www.epa.gov/region9/qa/pdfs/40cfr136_03.pdf

and may be taken manually or by an in-situ turbidity probe or other automatic sampling device equipped to take individual turbidity readings. The first sample shall be taken within the first hour of stormwater discharge from the site and at least three grab samples shall be taken during a storm event and shall be representative of the flow and characteristics of the discharge. Sampling shall be conducted at least monthly when there is a discharge of stormwater from the

site while construction activity is ongoing, until final stabilization of the drainage area associated with each outfall is achieved.

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

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

Contractors

General

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

Certification Statement

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

Keeping Plans Current

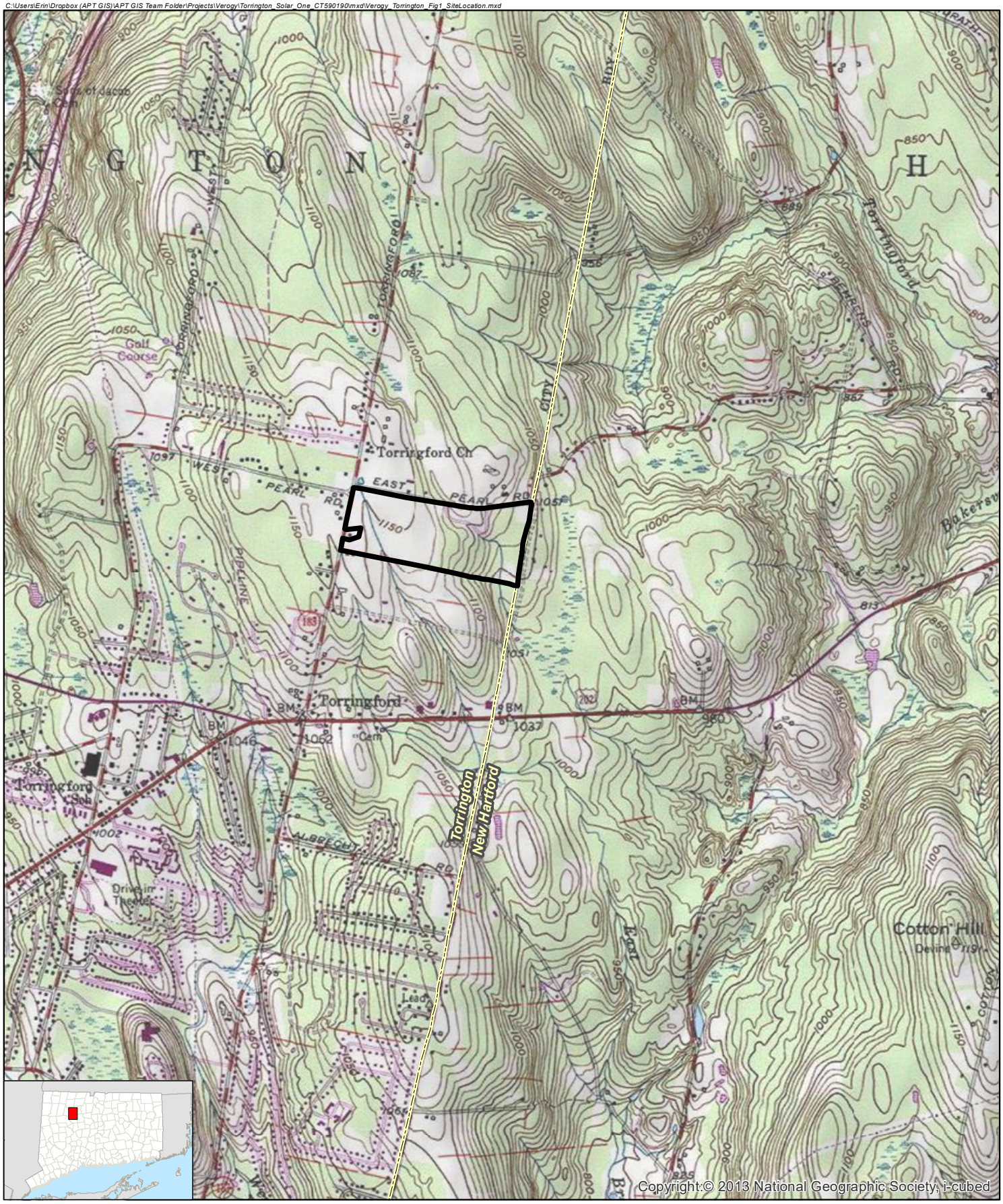
The Permittee shall amend the Plan whenever there is a change in contractors or subcontractors at the site, or a change in design, construction, operation, or maintenance at the site which has the potential for the discharge of pollutants to the waters of the state and which has not otherwise been addressed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

Termination

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

ATTACHMENT A
Site Location Map

C:\Users\Erin\Dropbox (APT GIS)\APT GIS Team Folder\Projects\Verogy\Torrington_Solar_One_CT590190\mxd\Verogy_Torrington_Fig1_SiteLocation.mxd



Legend

- Site
- Municipal Boundary

N
W E
S

2,000 1,000 0 2,000
Feet

Figure 1
Site Location Map

Proposed Solar Facility - Torrington Solar One
East Pearl Road
Torrington, Connecticut

Torrington Solar One, LLC

Map Notes:
Base Map Source: USGS 7.5 Minute Topographic Quadrangle Maps: Torrington (1984), CT
Map Scale: 1:24,000
Map Date: April 2020

ALL-POINTS TECHNOLOGY CORPORATION

ATTACHMENT B
Identification of Contractors and Certification Statements

TORRINGTON SOLAR ONE, LLC PROJECT
CITY OF TORRINGTON, CONNECTICUT

"I certify under penalty of law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater Associated with Construction Activity. I understand that as Contractor on the project, I am covered by this General Permit, and must comply with the terms and conditions of this permit, including, but not limited to, the requirements of the Stormwater Pollution Control Plan prepared for this project."

GENERAL CONTRACTOR

Signed:_____ Date:_____

Title:_____

Firm:_____ Telephone:_____

Address:_____

_____

_____

SUBCONTRACTOR

Signed:_____ Date:_____

Title:_____

Firm:_____ Telephone:_____

Address:_____

_____

_____

Provide additional sheets if necessary

ATTACHMENT C
Stormwater Management Report

STORMWATER MANAGEMENT REPORT

PROPOSED

TORRINGTON SOLAR ONE, LLC

SOLAR PROJECT

EAST PEARL ROAD
TORRINGTON, CONNECTICUT
LITCHFIELD COUNTY

Prepared for:

Torrington Solar One, LLC
150 Trumbull Street, 4th Floor
Hartford, CT

Prepared by:

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

May 2020

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Tables

Appendices

Introduction

At the request of Torrington Solar One, LLC, All-Points Technology Corporation, P.C. ("APT") has completed a hydrological analysis to assess potential stormwater effects from a proposed 2.85 MW DC solar electric generating facility in Torrington, Connecticut ("Project"). The Project, referred to as Torrington Solar One, LLC, involves the installation of solar panels and associated equipment south of East Pearl Road in Torrington, Connecticut ("Site").

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

Existing Site Conditions

The Site is a privately-owned irregular shaped parcel located at 236 East Pearl Road in Torrington, Connecticut, that consists of approximately 66.45 acres of land. The property is owned by the Catholic Cemeteries Association of the Archdiocese of Hartford, Inc. and is the site of St. Peter's Cemetery and Mausoleum, located to the east of the area proposed for solar development. The property also contains the Bishop Donnelly Sports Complex operated by the City of Torrington under license agreement with the parcel owner. This area contains recreational fields located northwest of the area proposed for solar development.

The west-central portion of the site is currently used for hay field and row crops, and will be the location for the proposed solar array. The terrain has gradual slopes with the highest elevations through the center of the project area (~El. 1152'), decreasing in elevation to the west, south, and east (~El. 1140'). Aside from a small area in the northeast corner of the project area, which has slopes approaching 10%, the project area has slopes less than 5%.

Two unconnected wetland areas are located in the western portion of the property, with one identified vernal pool located in the northern wetland. An intermittent watercourse was identified in the north-central portion of the parcel, east of the proposed project area.

Developed Site Conditions

The Project will be constructed in the west-central portion of the Site, between the delineated wetlands to the west and intermittent watercourse to the east. Access to the Site will be provided via a proposed gravel access road off of East Pearl Road. The Project includes the installation of 7,150 solar panels (1,274 Risen RSM144-6 380W and 5,876 Trina TSM-DE15MC 390W modules) and associated fencing, access road, utility and stormwater management features, within 11.55± acres of the Site. The entire acreage within the Project limits of disturbance is in existing brush/fields and will require minimal clearing.

The proposed solar panels will be installed on a post driven ground mounted racking system, with minimal changes to the existing grades. As a result, the post-development site conditions will mimic the pre-developed site conditions. Areas of clearing and grubbing and any existing

ground cover that is disturbed during construction will be reseeded with a low growth seed mix. To address State water quality rules grass-lined stormwater management swales are proposed along the western, eastern, and southern sides of the proposed Project area.

Stormwater Management

Analysis Methodology

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

Hydrographs for each watershed were developed using the SCS Synthetic Unit Hydrograph Method with a Type III rainfall distribution. Hydrographs were developed for the NOAA Atlas 14, Volume 10, Version 2 Precipitation 2-, 25-, 50-, and 100-year storm event with rainfall depths of 3.6, 7.2, 8.2, and 9.3 inches respectively.

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

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

Existing Drainage Patterns

The proposed Project area generally drains from the center of the site to the west, south, and east. The wetlands and intermittent watercourse are receiving waters with some drainage leaving the southeast portion of the project area as overland flow.

The Site was modeled at five (5) Analysis Points ("AP-1" to "AP-5"). AP-1 is tributary to the northern wetland (#1 flags). AP-2 discharges to the intermittent watercourse. AP-3 is tributary to the southern wetland (#2 flags). AP-4 and AP-5 are located in the southeastern portion of the site in overland areas. Peak discharges have been computed at the points of study for the 2-, 25-, 50-, and 100-year storm events.

Soils within the proposed project area as identified by the United States Department of Agriculture (USDA) Natural Resources Conservation Service consist of:

Map Unit #3 - Ridgebury, Leicester, and Whitman soils, 0-8%, ex. stony [HSG D]
Map Unit #45A - Woodbridge fine sandy loam, 0-3% [HSG C/D]
Map Unit #45B - Woodbridge fine sandy loam, 3-8% [HSG C/D]
Map Unit #84B - Paxton and Montauk fine sandy loams, 3-8% [HSG C]

Soil types with a dual rated hydrologic soil group (i.e. C/D) were modeled in their undrained condition. Time of concentration roughness coefficients and land use areas were based on existing ground cover, as assessed by site visits and review of aerial photography. Curve Numbers and Time of Concentration values for the existing conditions scenario are summarized on Sheet EDA-1. The predicted peak discharge rates at each Analysis Point are presented in Table 1-1, along with the site total.

Table 1-1

Analysis Point	**Existing Conditions Flows (cfs)**			
	2-year	**25-year**	**50-year**	**100-year**
AP-1	5.3	15.3	18.2	21.4
AP-2	8.8	25.0	29.6	34.6
AP-3	4.9	13.9	16.5	19.3
AP-4	5.7	15.9	18.8	22.0
AP-5	5.7	16.1	19.1	22.3
Site	30.4	86.2	102.2	119.6

Proposed Drainage Patterns

The array area will not require clearing and grubbing since the project area is unforested. The existing root structure and vegetation in the portion of the site dominated by hay field will be preserved to the extent practicable, generally the western side of the site. The eastern area comprised of row crops will be graded to a uniform slope and seeded with temporary seed mix for stabilization during construction. The entire area will be seeded with a low growing forbs and grass mix following installation of the necessary utilities, access road, and stormwater management features. Overall, hydrologically, the post-developed condition is designed to mimic the pre-developed condition.

No increase in post-development runoff was predicted by the initial modeling calculations, which accounted for a change in ground cover type, addition of effective impervious cover, and reduction of HSG for non-D soil areas. To account for State water quality rules three (3) water quality swales are proposed along the southern and eastern sides of the project area to provide sufficient treatment volumes. These are included in the final hydrologic model routing with the appropriate retention volume and 30-ft width level spreader outlets. It is assumed that these areas will infiltrate following storm events and not impound water (i.e. they will be empty at the beginning of a storm event).

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

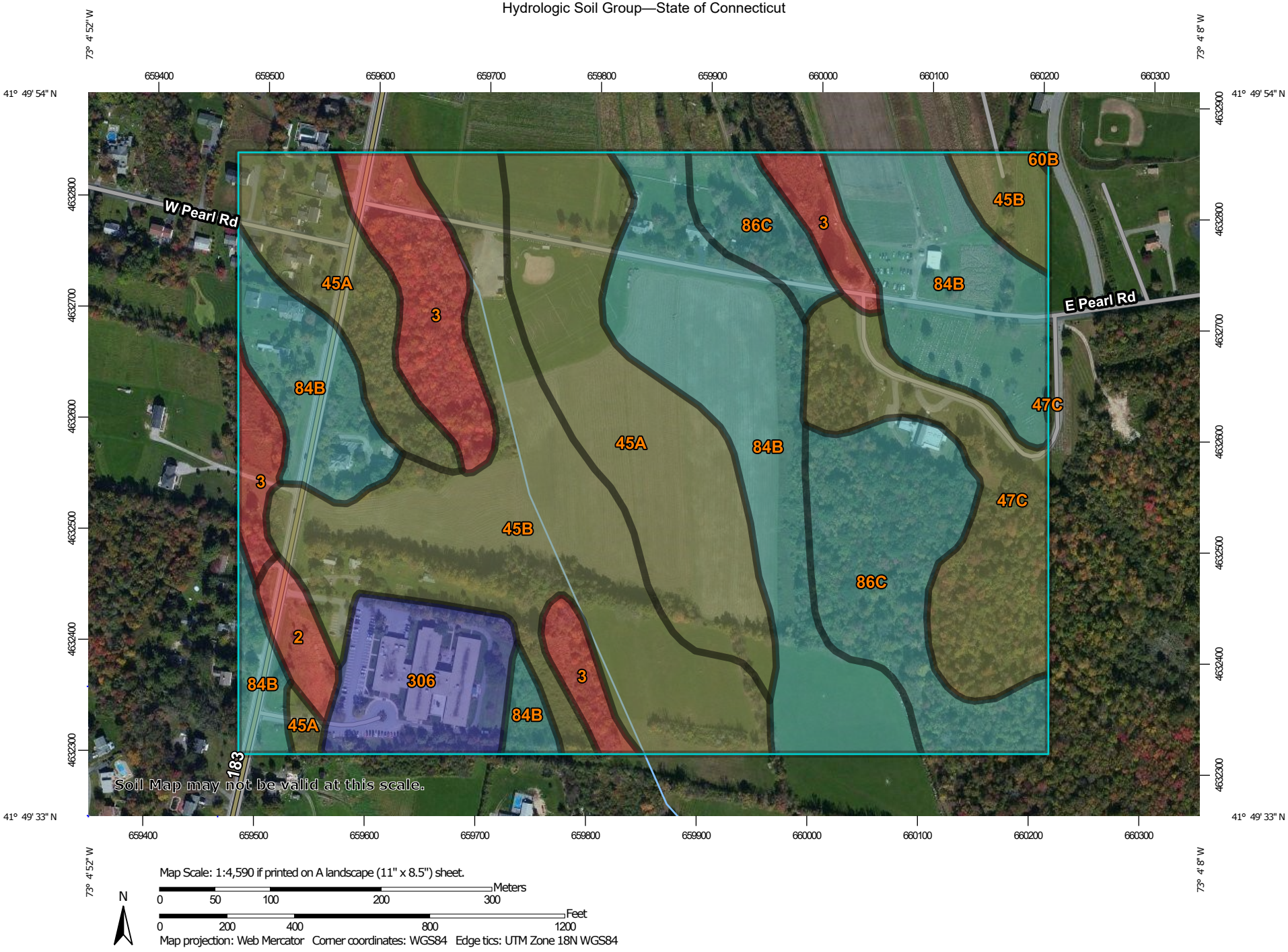
Table 1-2

Analysis Point	**Proposed Conditions Flows (cfs)**			
	2-year	**25-year**	**50-year**	**100-year**
AP-1	5.3	15.3	18.2	21.4
AP-2	5.7	18.5	22.2	26.4
AP-3	4.0	12.2	14.5	17.1
AP-4	5.0	14.7	17.5	20.6
AP-5	2.5	15.1	18.3	21.8
Site	22.5	75.8	90.7	107.3
% Change	-26%	-12%	-11%	-10%

Conclusion

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

APPENDIX A: NRCS SOIL SURVEY


73° 4' 52" W
73° 4' 8" W
41° 49' 54" N
41° 49' 33" N
659400
659500
659600
659700
659800
659900
660000
660100
660200
660300
4632900
4632800
4632700
4632600
4632500
4632400
4632300
W Pearl Rd
E Pearl Rd
183
60B
45B
86C
3
45A
84B
47C
2
306
Soil Map may not be valid at this scale.
Map Scale: 1:4,590 if printed on A landscape (11" x 8.5") sheet.
N
Meters
0 50 100 200 300
Feet
0 200 400 800 1200
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

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

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

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

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

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

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

Soil Survey Area: State of Connecticut
Survey Area Data: Version 19, Sep 13, 2019

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

Date(s) aerial images were photographed: Mar 28, 2011—Oct 9, 2011

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

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
2	Ridgebury fine sandy loam, 0 to 3 percent slopes	D	1.4	1.4%
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D	8.8	8.9%
45A	Woodbridge fine sandy loam, 0 to 3 percent slopes	C/D	17.5	17.8%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	C/D	19.8	20.1%
47C	Woodbridge fine sandy loam, 3 to 15 percent slopes, extremely stony	C/D	8.2	8.3%
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B	0.0	0.0%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	C	26.4	26.8%
86C	Paxton and Montauk fine sandy loams, 3 to 15 percent slopes, extremely stony	C	11.1	11.3%
306	Udorthents-Urban land complex	B	5.2	5.3%
Totals for Area of Interest			**98.4**	**100.0%**

Description

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

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

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

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

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

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

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

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

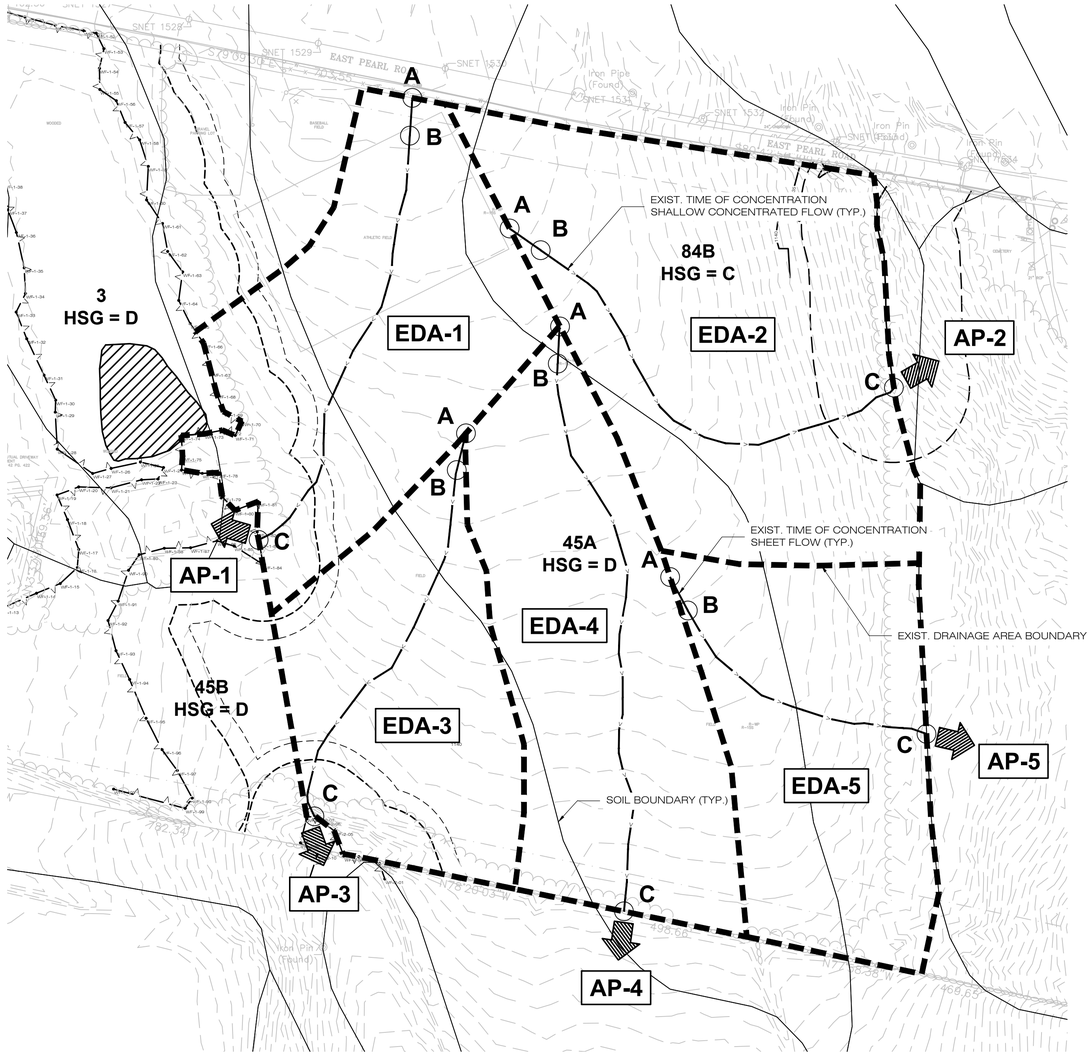
APPENDIX B: EXISTING DRAINAGE AREA MAP (EDA-1) & HYDROLOGIC COMPUTATION (HYDROCAD)

EXISTING DRAINAGE AREAS

WATERSHED	TOTAL AREA (ACRES)	COMPOSITE CN	TC (MINS.)
EDA-1	4.004	79	19
EDA-2	5.437	80	12
EDA-3	2.926	80	11
EDA-4	4.076	81	20
EDA-5	3.287	80	10
SITE	19.730	80	-

EXISTING CONDITIONS FLOWS

DISCH. POINT	2-YEAR (CFS)	25-YEAR (CFS)	50-YEAR (CFS)	100-YEAR (CFS)
AP-1	5.3	15.3	18.2	21.4
AP-2	8.8	25.0	29.6	34.6
AP-3	4.9	13.9	16.5	19.3
AP-4	5.7	15.9	18.8	22.0
AP-5	5.7	16.1	19.1	23.3
SITE	30.4	86.2	102.2	119.6



1 EDA-1 **EXISTING DRAINAGE AREA PLAN**

SCALE : 1-IN = 100-FT

100 0 50 100 200

(IN FEET) 1 inch = 100 ft.

TORRINGTON SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

PERMIT SET

NO	DATE	REVISION
0		
1		
2		
3		
4		
5		
6		

NOT FOR CONSTRUCTION

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES OF ARHDIOCESE OF HARTFORD
ADDRESS: EAST PEARL ROAD TORRINGTON, CT

TORRINGTON SOLAR ONE, LLC

SITE ADDRESS: EAST PEARL ROAD TORRINGTON, CT

APT FILING NUMBER: CT590190

DRAWN BY: KAM

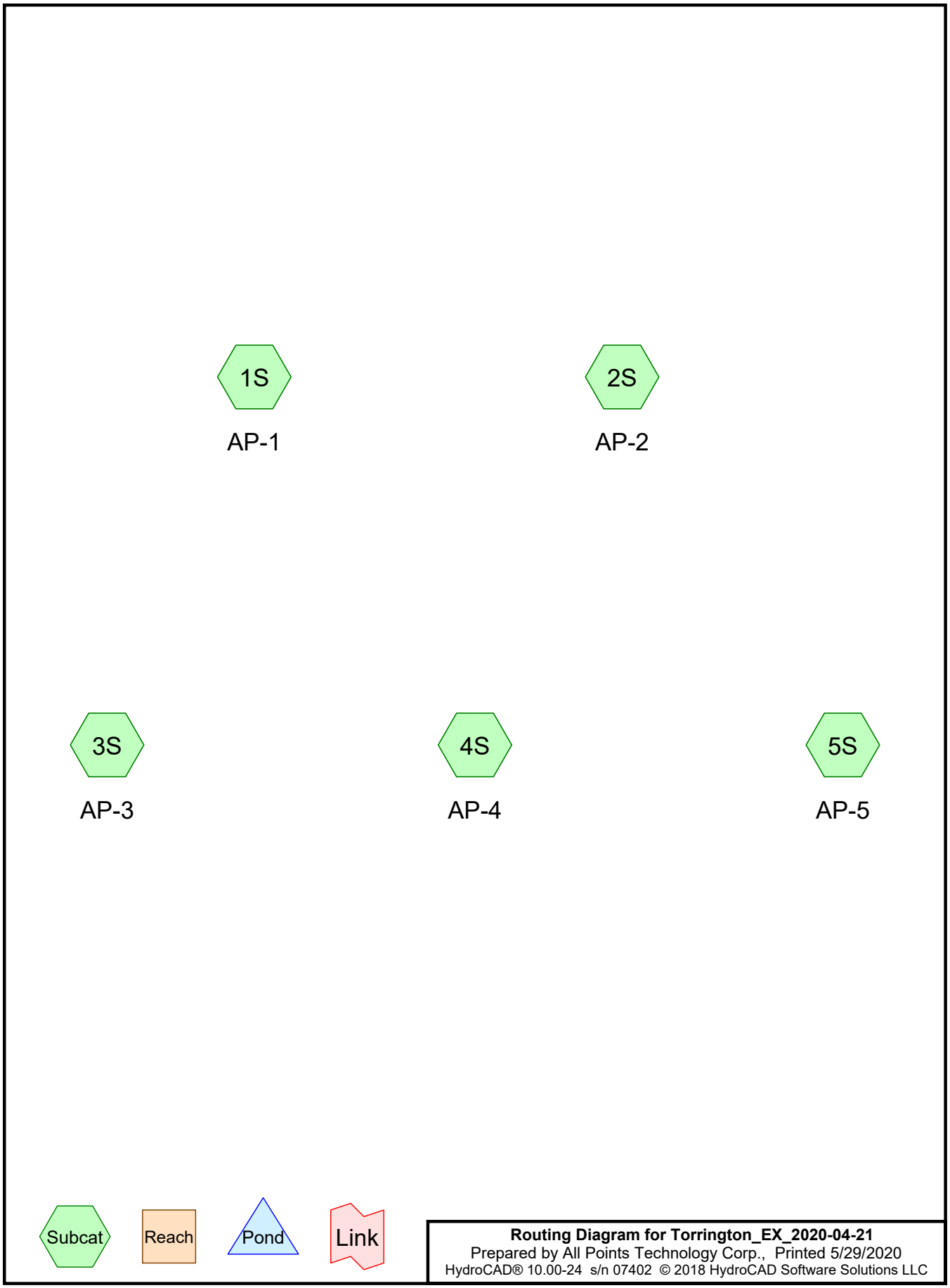
DATE: 05/29/20 CHECKED BY: BJP

SHEET TITLE:

EXISTING CONDITIONS HYDROLOGY PLAN

SHEET NUMBER:

EDA-1



Routing Diagram for Torrington_EX_2020-04-21
Prepared by All Points Technology Corp., Printed 5/29/2020

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
14,339	74	>75% Grass cover, Good, HSG C (1S, 2S)
78,806	80	>75% Grass cover, Good, HSG D (1S, 2S)
224,901	81	Legumes, straight row, Good, HSG C (2S, 5S)
133,597	85	Legumes, straight row, Good, HSG D (2S, 4S, 5S)
30,738	74	Pasture/grassland/range, Good, HSG C (1S, 2S, 4S)
306,536	80	Pasture/grassland/range, Good, HSG D (1S, 2S, 3S, 4S)
41,551	70	Woods, Good, HSG C (2S, 5S)
28,996	77	Woods, Good, HSG D (1S, 3S, 4S, 5S)
859,464	**80**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
311,529	HSG C	1S, 2S, 4S, 5S
547,935	HSG D	1S, 2S, 3S, 4S, 5S
0	Other	
859,464		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	14,339	78,806	0	93,145	>75% Grass cover, Good
0	0	224,901	133,597	0	358,498	Legumes, straight row, Good
0	0	30,738	306,536	0	337,274	Pasture/grassland /range, Good
0	0	41,551	28,996	0	70,547	Woods, Good
0	**0**	**311,529**	**547,935**	**0**	**859,464**	**TOTAL AREA**

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

Subcatchment 1S: AP-1 Runoff Area=174,413 sf 0.00% Impervious Runoff Depth=1.64"
Flow Length=720' Slope=0.0200 '/' Tc=19.0 min CN=79 Runoff=5.25 cfs 23,895 cf

Subcatchment 2S: AP-2 Runoff Area=236,862 sf 0.00% Impervious Runoff Depth=1.72"
Flow Length=655' Slope=0.0300 '/' Tc=12.3 min CN=80 Runoff=8.80 cfs 33,873 cf

Subcatchment 3S: AP-3 Runoff Area=127,463 sf 0.00% Impervious Runoff Depth=1.72"
Flow Length=570' Slope=0.0300 '/' Tc=11.1 min CN=80 Runoff=4.91 cfs 18,228 cf

Subcatchment 4S: AP-4 Runoff Area=177,540 sf 0.00% Impervious Runoff Depth=1.79"
Flow Length=800' Slope=0.0150 '/' Tc=19.9 min CN=81 Runoff=5.73 cfs 26,481 cf

Subcatchment 5S: AP-5 Runoff Area=143,186 sf 0.00% Impervious Runoff Depth=1.72"
Flow Length=425' Slope=0.0250 '/' Tc=9.9 min CN=80 Runoff=5.70 cfs 20,476 cf

Total Runoff Area = 859,464 sf Runoff Volume = 122,954 cf Average Runoff Depth = 1.72"
100.00% Pervious = 859,464 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: AP-1

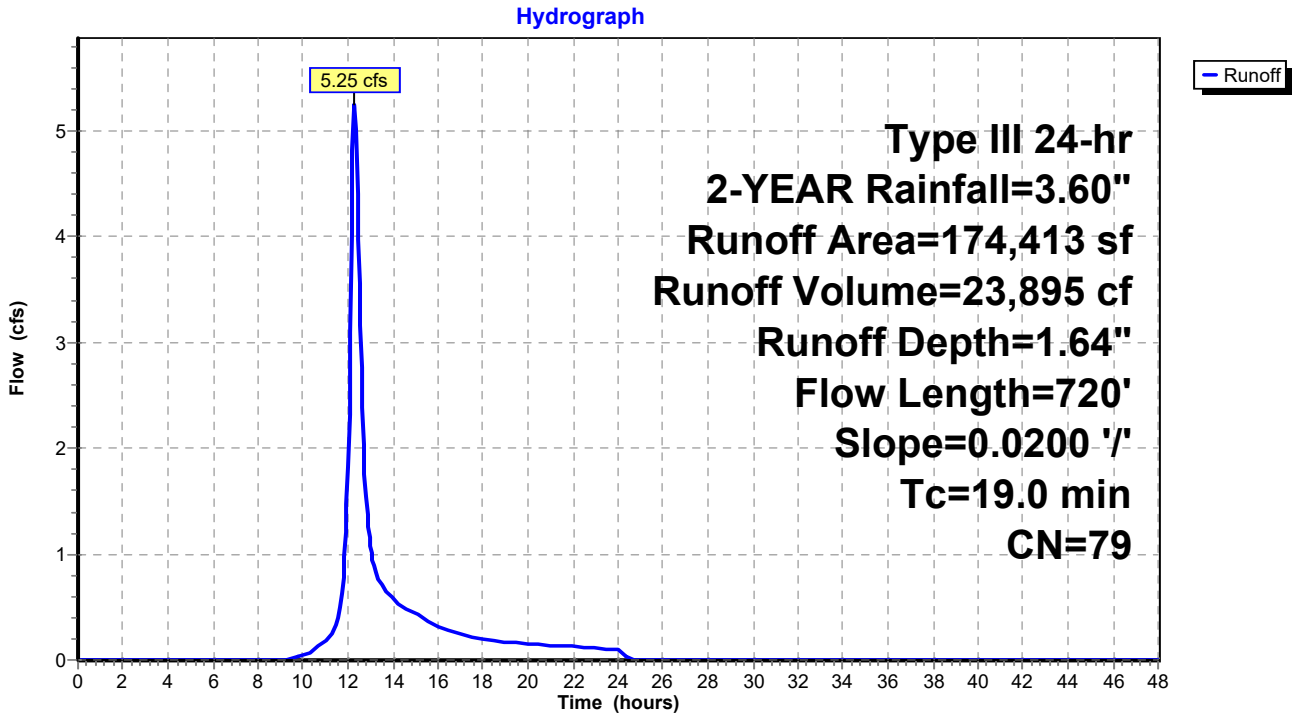
Runoff = 5.25 cfs @ 12.27 hrs, Volume= 23,895 cf, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
11,901	77	Woods, Good, HSG D
77,225	80	>75% Grass cover, Good, HSG D
72,576	80	Pasture/grassland/range, Good, HSG D
7,185	74	>75% Grass cover, Good, HSG C
5,526	74	Pasture/grassland/range, Good, HSG C
174,413	79	Weighted Average
174,413		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.3	670	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.0	720	Total			

Subcatchment 1S: AP-1



Summary for Subcatchment 2S: AP-2

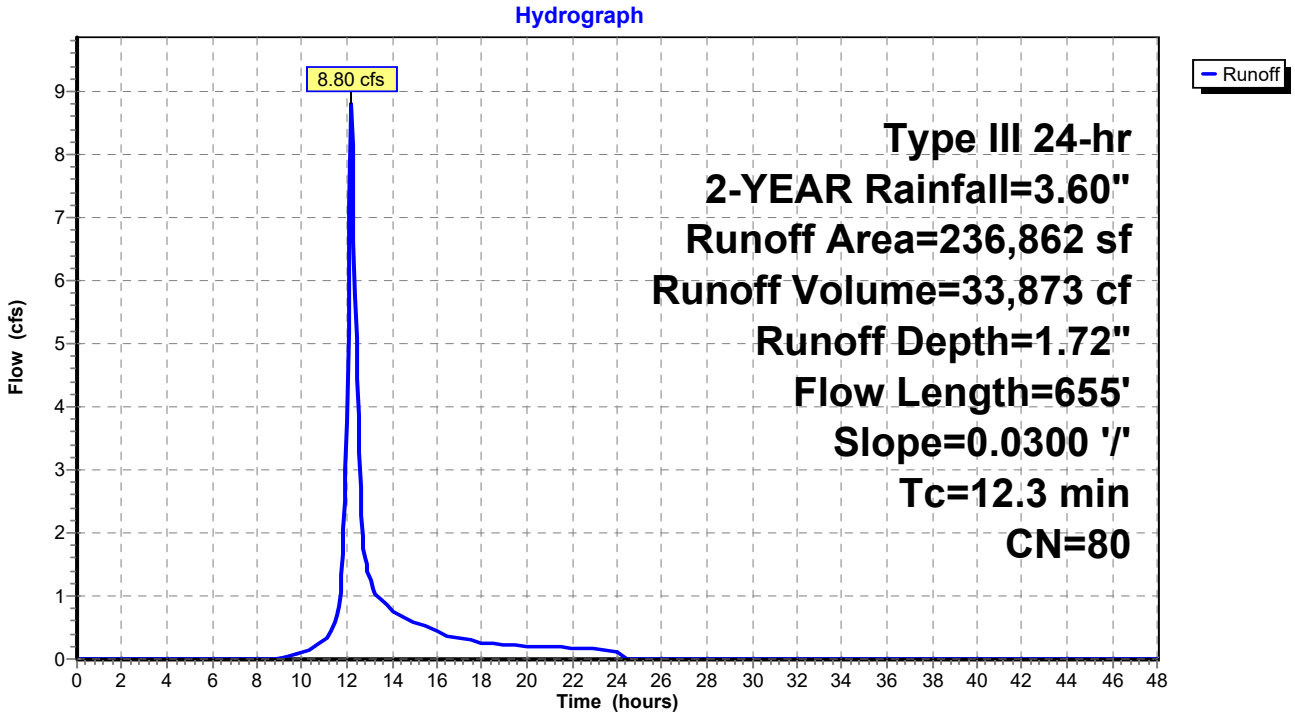
Runoff = 8.80 cfs @ 12.17 hrs, Volume= 33,873 cf, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
1,581	80	>75% Grass cover, Good, HSG D
207	80	Pasture/grassland/range, Good, HSG D
22,057	85	Legumes, straight row, Good, HSG D
7,154	74	>75% Grass cover, Good, HSG C
24,171	74	Pasture/grassland/range, Good, HSG C
169,594	81	Legumes, straight row, Good, HSG C
12,098	70	Woods, Good, HSG C
236,862	80	Weighted Average
236,862		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0300	0.21		**Sheet Flow,** Range n= 0.130 P2= 3.60"
8.3	605	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.3	655	Total			

Subcatchment 2S: AP-2



Summary for Subcatchment 3S: AP-3

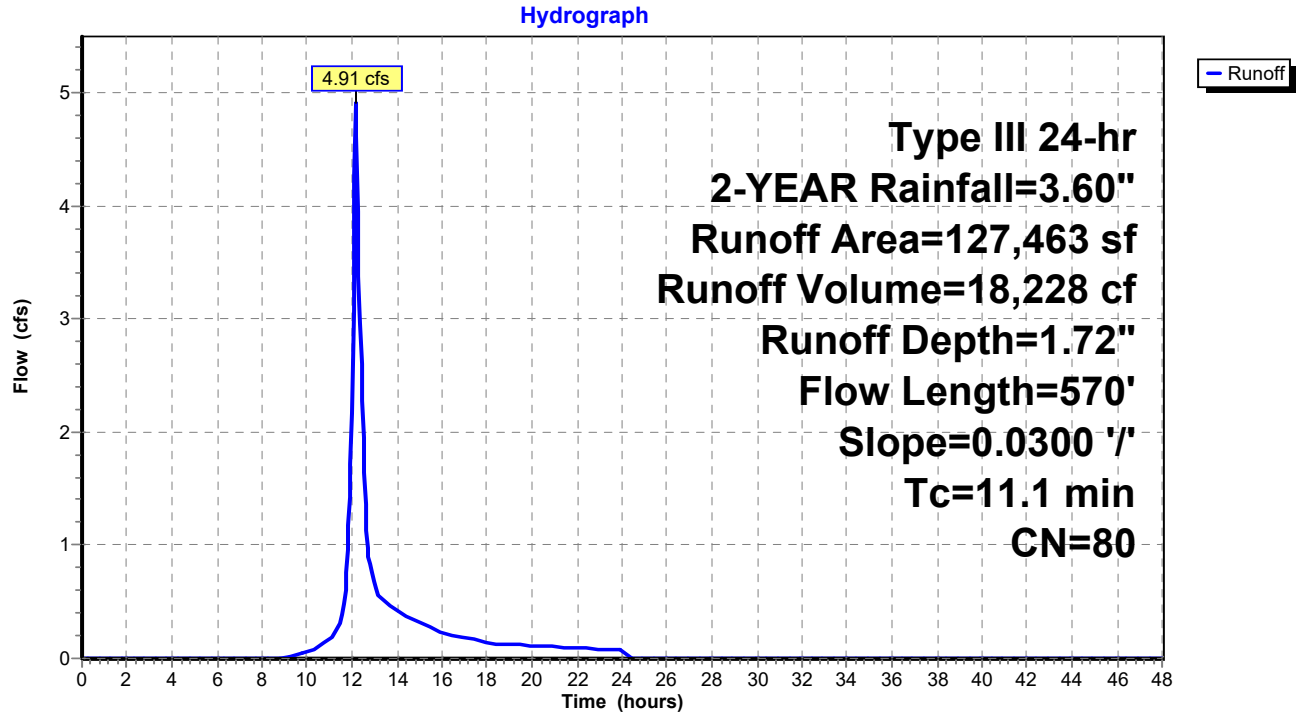
Runoff = 4.91 cfs @ 12.16 hrs, Volume= 18,228 cf, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
115,099	80	Pasture/grassland/range, Good, HSG D
12,364	77	Woods, Good, HSG D
127,463	80	Weighted Average
127,463		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0300	0.21		**Sheet Flow,** Range n= 0.130 P2= 3.60"
7.1	520	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.1	570	Total			

Subcatchment 3S: AP-3



Summary for Subcatchment 4S: AP-4

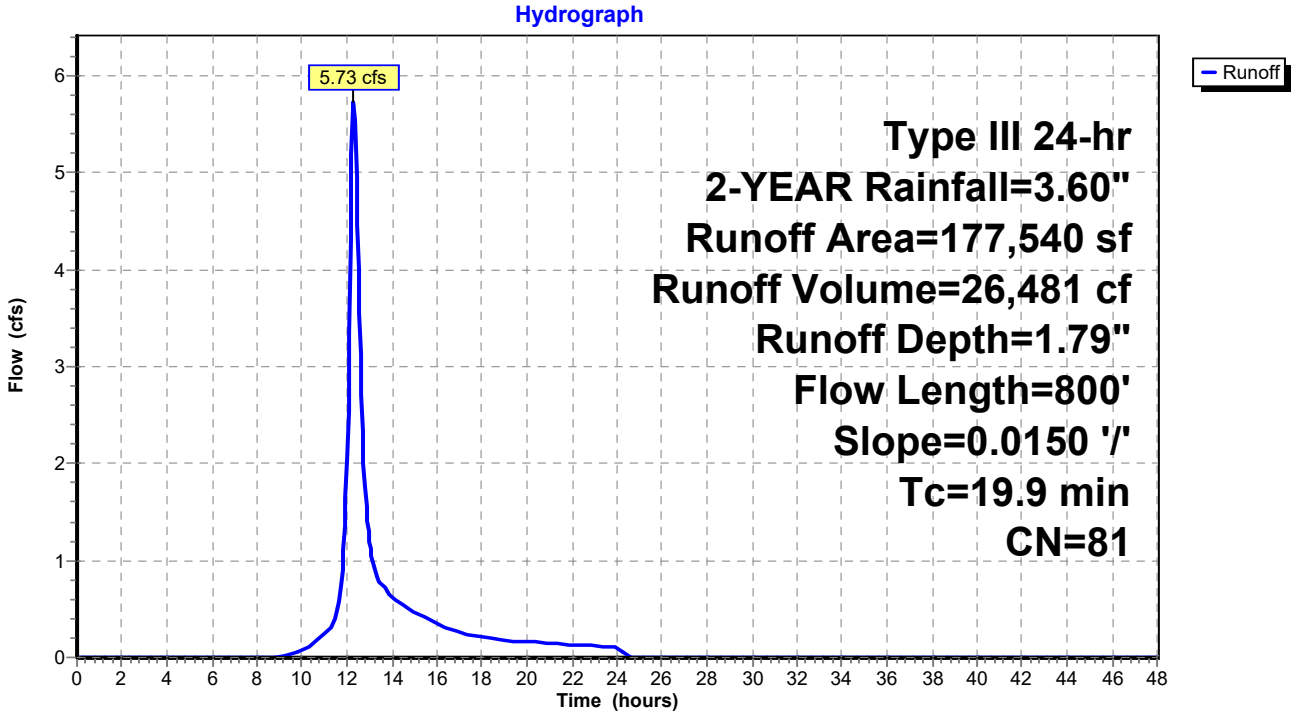
Runoff = 5.73 cfs @ 12.28 hrs, Volume= 26,481 cf, Depth= 1.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
1,041	74	Pasture/grassland/range, Good, HSG C
118,654	80	Pasture/grassland/range, Good, HSG D
54,522	85	Legumes, straight row, Good, HSG D
3,323	77	Woods, Good, HSG D
177,540	81	Weighted Average
177,540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0150	0.16		**Sheet Flow,** Range n= 0.130 P2= 3.60"
14.6	750	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.9	800	Total			

Subcatchment 4S: AP-4



Summary for Subcatchment 5S: AP-5

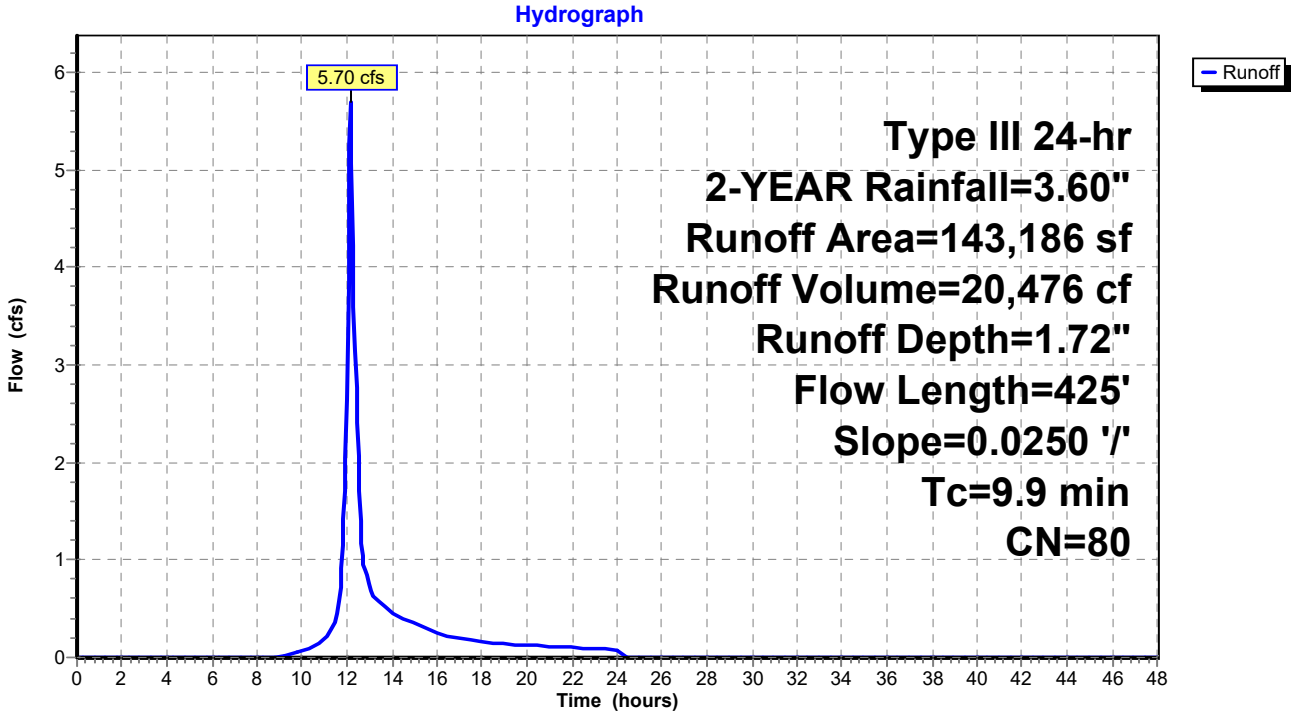
Runoff = 5.70 cfs @ 12.15 hrs, Volume= 20,476 cf, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
57,018	85	Legumes, straight row, Good, HSG D
1,408	77	Woods, Good, HSG D
55,307	81	Legumes, straight row, Good, HSG C
29,453	70	Woods, Good, HSG C
143,186	80	Weighted Average
143,186		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0250	0.19		**Sheet Flow,** Range n= 0.130 P2= 3.60"
5.6	375	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.9	425	Total			

Subcatchment 5S: AP-5



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

Subcatchment 1S: AP-1 Runoff Area=174,413 sf 0.00% Impervious Runoff Depth=4.77"
Flow Length=720' Slope=0.0200 '/' Tc=19.0 min CN=79 Runoff=15.29 cfs 69,297 cf

Subcatchment 2S: AP-2 Runoff Area=236,862 sf 0.00% Impervious Runoff Depth=4.88"
Flow Length=655' Slope=0.0300 '/' Tc=12.3 min CN=80 Runoff=24.96 cfs 96,311 cf

Subcatchment 3S: AP-3 Runoff Area=127,463 sf 0.00% Impervious Runoff Depth=4.88"
Flow Length=570' Slope=0.0300 '/' Tc=11.1 min CN=80 Runoff=13.90 cfs 51,828 cf

Subcatchment 4S: AP-4 Runoff Area=177,540 sf 0.00% Impervious Runoff Depth=4.99"
Flow Length=800' Slope=0.0150 '/' Tc=19.9 min CN=81 Runoff=15.93 cfs 73,848 cf

Subcatchment 5S: AP-5 Runoff Area=143,186 sf 0.00% Impervious Runoff Depth=4.88"
Flow Length=425' Slope=0.0250 '/' Tc=9.9 min CN=80 Runoff=16.11 cfs 58,221 cf

Total Runoff Area = 859,464 sf Runoff Volume = 349,504 cf Average Runoff Depth = 4.88"
100.00% Pervious = 859,464 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: AP-1

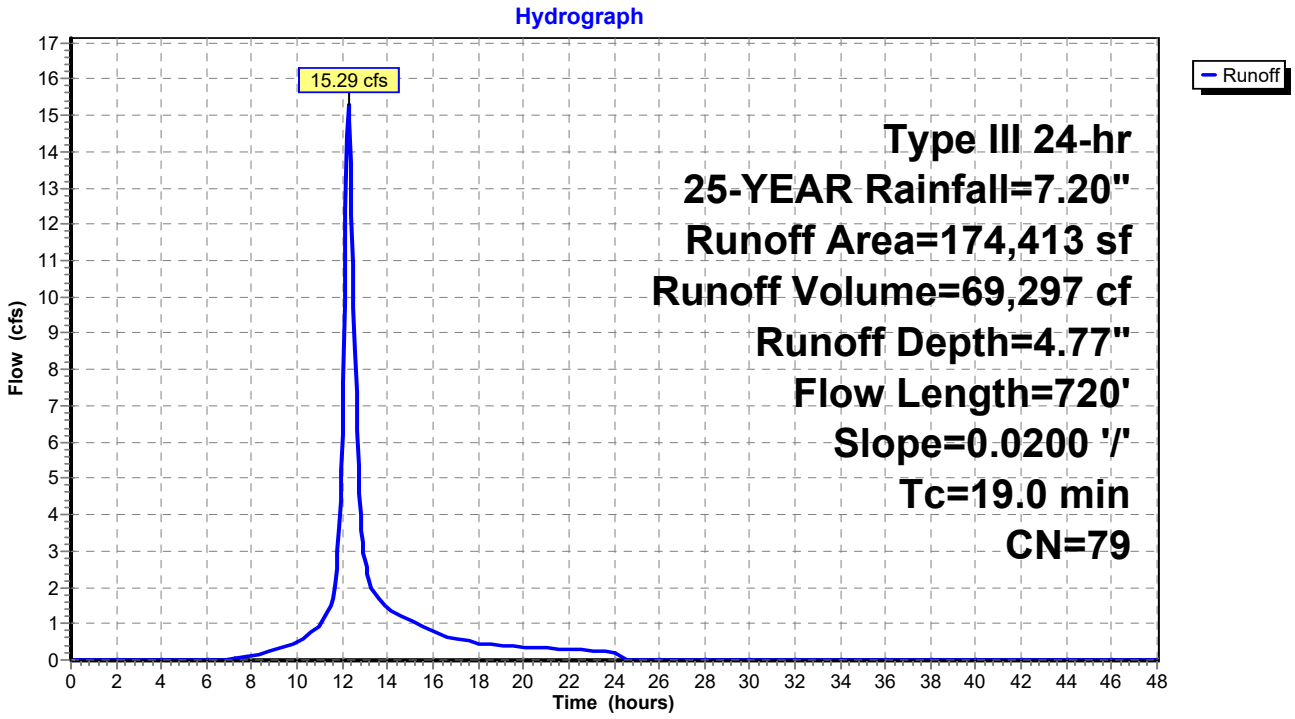
Runoff = 15.29 cfs @ 12.26 hrs, Volume= 69,297 cf, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
11,901	77	Woods, Good, HSG D
77,225	80	>75% Grass cover, Good, HSG D
72,576	80	Pasture/grassland/range, Good, HSG D
7,185	74	>75% Grass cover, Good, HSG C
5,526	74	Pasture/grassland/range, Good, HSG C
174,413	79	Weighted Average
174,413		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.3	670	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.0	720	Total			

Subcatchment 1S: AP-1



Summary for Subcatchment 2S: AP-2

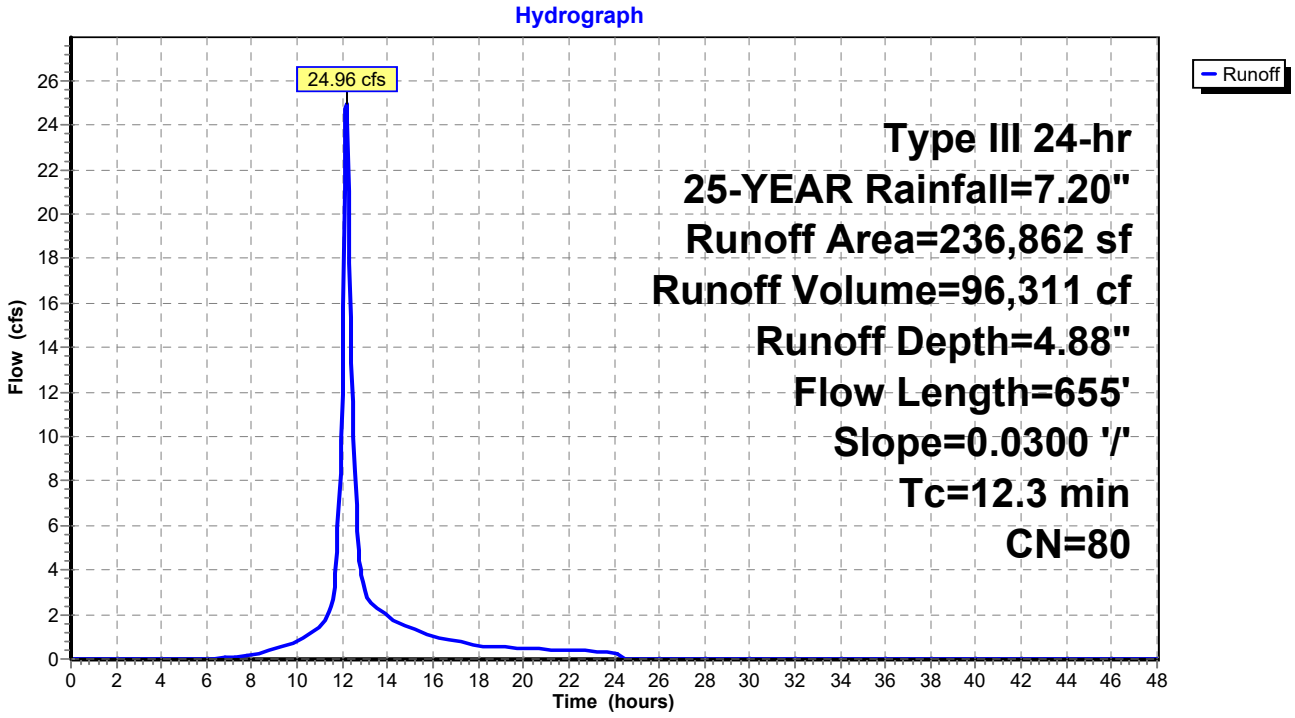
Runoff = 24.96 cfs @ 12.17 hrs, Volume= 96,311 cf, Depth= 4.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
1,581	80	>75% Grass cover, Good, HSG D
207	80	Pasture/grassland/range, Good, HSG D
22,057	85	Legumes, straight row, Good, HSG D
7,154	74	>75% Grass cover, Good, HSG C
24,171	74	Pasture/grassland/range, Good, HSG C
169,594	81	Legumes, straight row, Good, HSG C
12,098	70	Woods, Good, HSG C
236,862	80	Weighted Average
236,862		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0300	0.21		**Sheet Flow,** Range n= 0.130 P2= 3.60"
8.3	605	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.3	655	Total			

Subcatchment 2S: AP-2



Summary for Subcatchment 3S: AP-3

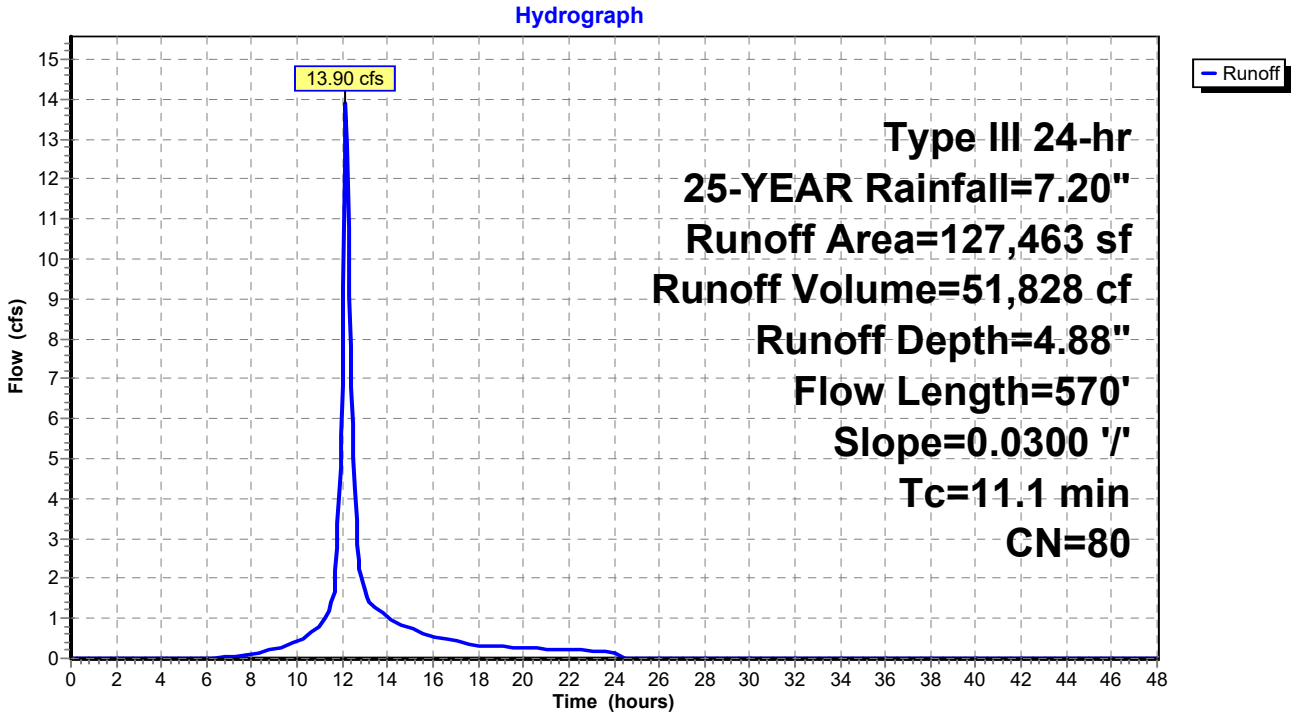
Runoff = 13.90 cfs @ 12.15 hrs, Volume= 51,828 cf, Depth= 4.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
115,099	80	Pasture/grassland/range, Good, HSG D
12,364	77	Woods, Good, HSG D
127,463	80	Weighted Average
127,463		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0300	0.21		**Sheet Flow,** Range n= 0.130 P2= 3.60"
7.1	520	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.1	570	Total			

Subcatchment 3S: AP-3



Summary for Subcatchment 4S: AP-4

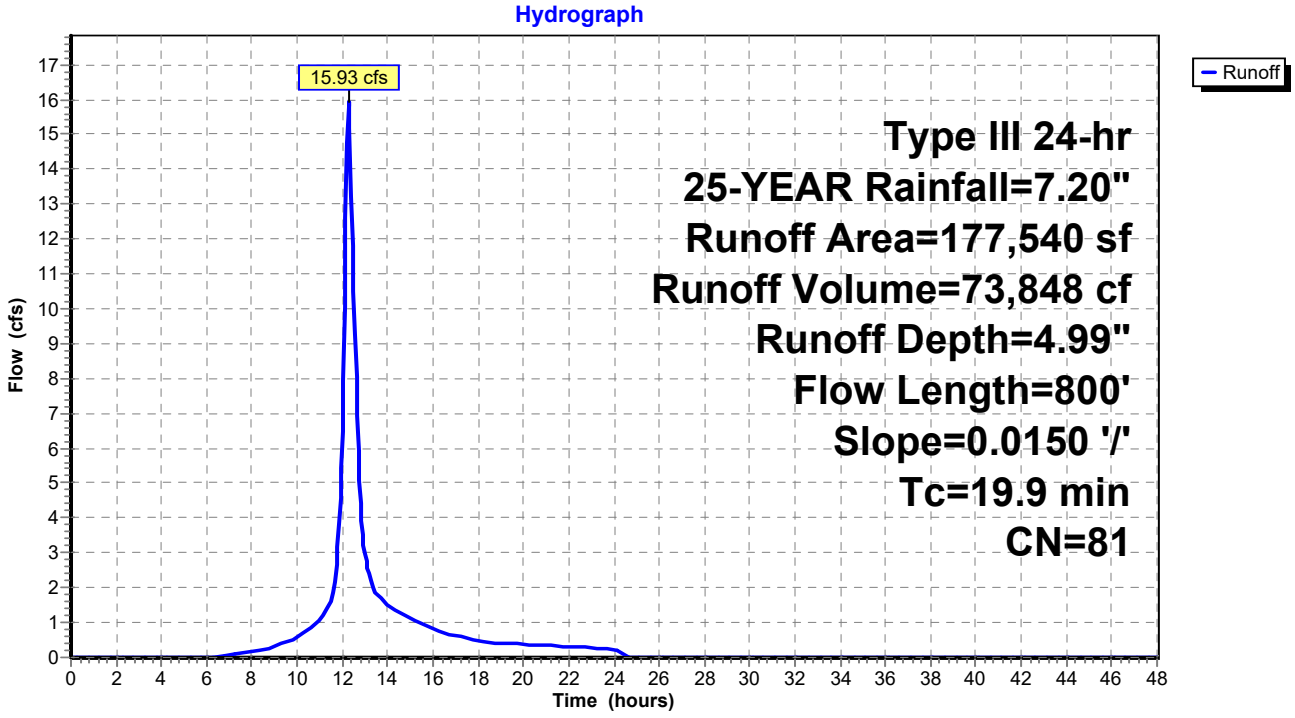
Runoff = 15.93 cfs @ 12.27 hrs, Volume= 73,848 cf, Depth= 4.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
1,041	74	Pasture/grassland/range, Good, HSG C
118,654	80	Pasture/grassland/range, Good, HSG D
54,522	85	Legumes, straight row, Good, HSG D
3,323	77	Woods, Good, HSG D
177,540	81	Weighted Average
177,540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0150	0.16		**Sheet Flow,** Range n= 0.130 P2= 3.60"
14.6	750	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.9	800	Total			

Subcatchment 4S: AP-4



Summary for Subcatchment 5S: AP-5

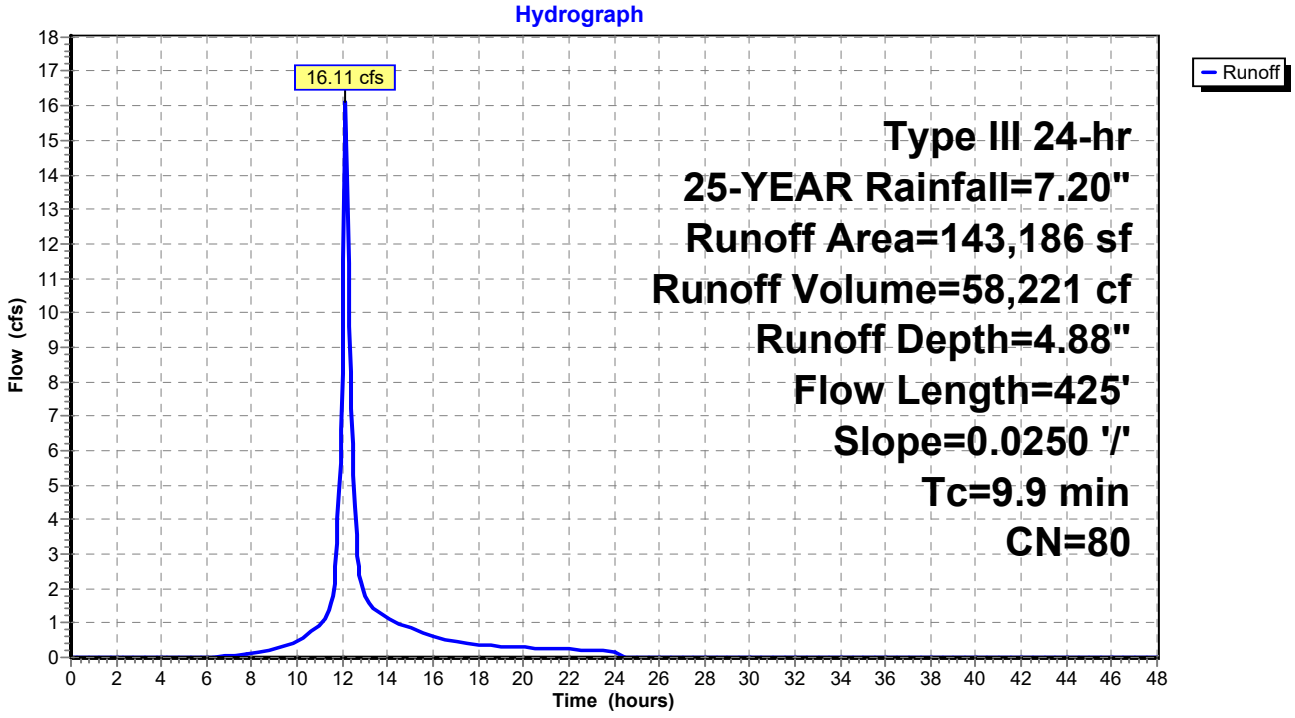
Runoff = 16.11 cfs @ 12.14 hrs, Volume= 58,221 cf, Depth= 4.88"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
57,018	85	Legumes, straight row, Good, HSG D
1,408	77	Woods, Good, HSG D
55,307	81	Legumes, straight row, Good, HSG C
29,453	70	Woods, Good, HSG C
143,186	80	Weighted Average
143,186		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0250	0.19		**Sheet Flow,** Range n= 0.130 P2= 3.60"
5.6	375	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.9	425	Total			

Subcatchment 5S: AP-5



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

Subcatchment 1S: AP-1 Runoff Area=174,413 sf 0.00% Impervious Runoff Depth=5.69"
Flow Length=720' Slope=0.0200 '/' Tc=19.0 min CN=79 Runoff=18.18 cfs 82,765 cf

Subcatchment 2S: AP-2 Runoff Area=236,862 sf 0.00% Impervious Runoff Depth=5.81"
Flow Length=655' Slope=0.0300 '/' Tc=12.3 min CN=80 Runoff=29.56 cfs 114,735 cf

Subcatchment 3S: AP-3 Runoff Area=127,463 sf 0.00% Impervious Runoff Depth=5.81"
Flow Length=570' Slope=0.0300 '/' Tc=11.1 min CN=80 Runoff=16.46 cfs 61,742 cf

Subcatchment 4S: AP-4 Runoff Area=177,540 sf 0.00% Impervious Runoff Depth=5.93"
Flow Length=800' Slope=0.0150 '/' Tc=19.9 min CN=81 Runoff=18.82 cfs 87,752 cf

Subcatchment 5S: AP-5 Runoff Area=143,186 sf 0.00% Impervious Runoff Depth=5.81"
Flow Length=425' Slope=0.0250 '/' Tc=9.9 min CN=80 Runoff=19.07 cfs 69,359 cf

Total Runoff Area = 859,464 sf Runoff Volume = 416,353 cf Average Runoff Depth = 5.81"
100.00% Pervious = 859,464 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: AP-1

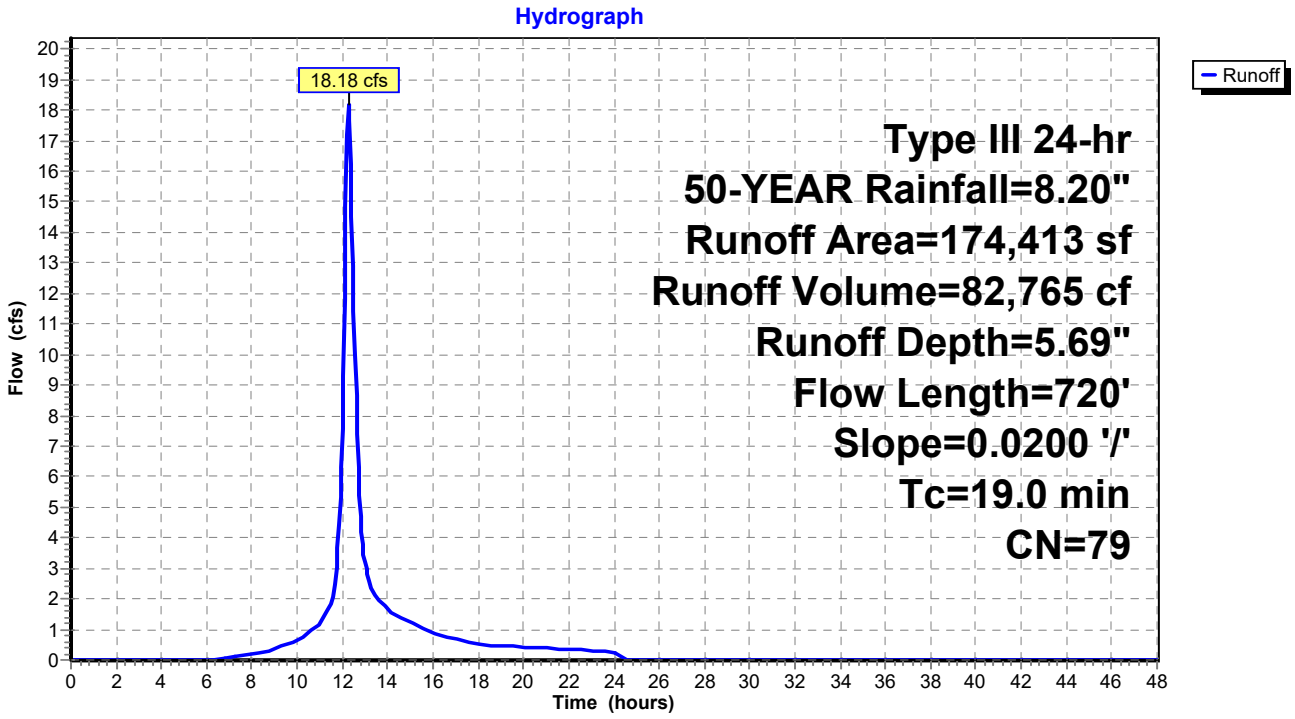
Runoff = 18.18 cfs @ 12.26 hrs, Volume= 82,765 cf, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
11,901	77	Woods, Good, HSG D
77,225	80	>75% Grass cover, Good, HSG D
72,576	80	Pasture/grassland/range, Good, HSG D
7,185	74	>75% Grass cover, Good, HSG C
5,526	74	Pasture/grassland/range, Good, HSG C
174,413	79	Weighted Average
174,413		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.3	670	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.0	720	Total			

Subcatchment 1S: AP-1



Summary for Subcatchment 2S: AP-2

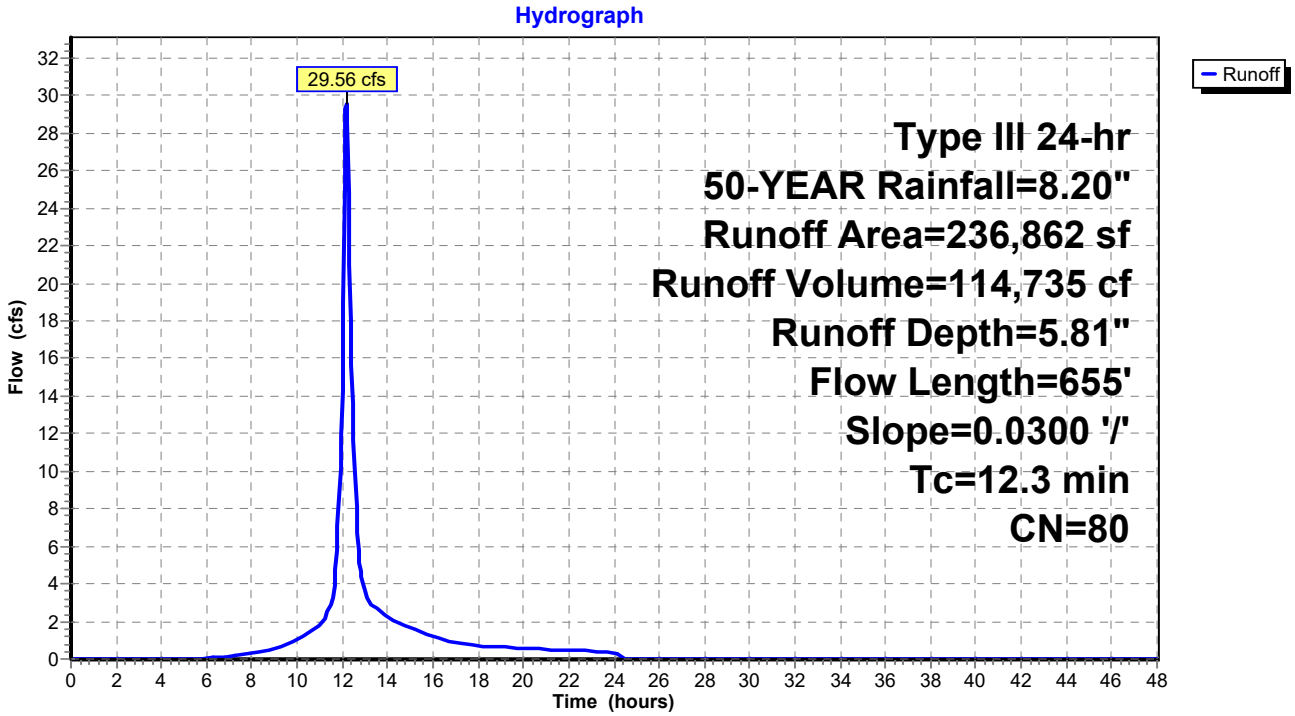
Runoff = 29.56 cfs @ 12.17 hrs, Volume= 114,735 cf, Depth= 5.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
1,581	80	>75% Grass cover, Good, HSG D
207	80	Pasture/grassland/range, Good, HSG D
22,057	85	Legumes, straight row, Good, HSG D
7,154	74	>75% Grass cover, Good, HSG C
24,171	74	Pasture/grassland/range, Good, HSG C
169,594	81	Legumes, straight row, Good, HSG C
12,098	70	Woods, Good, HSG C
236,862	80	Weighted Average
236,862		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0300	0.21		**Sheet Flow,** Range n= 0.130 P2= 3.60"
8.3	605	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.3	655	Total			

Subcatchment 2S: AP-2



Summary for Subcatchment 3S: AP-3

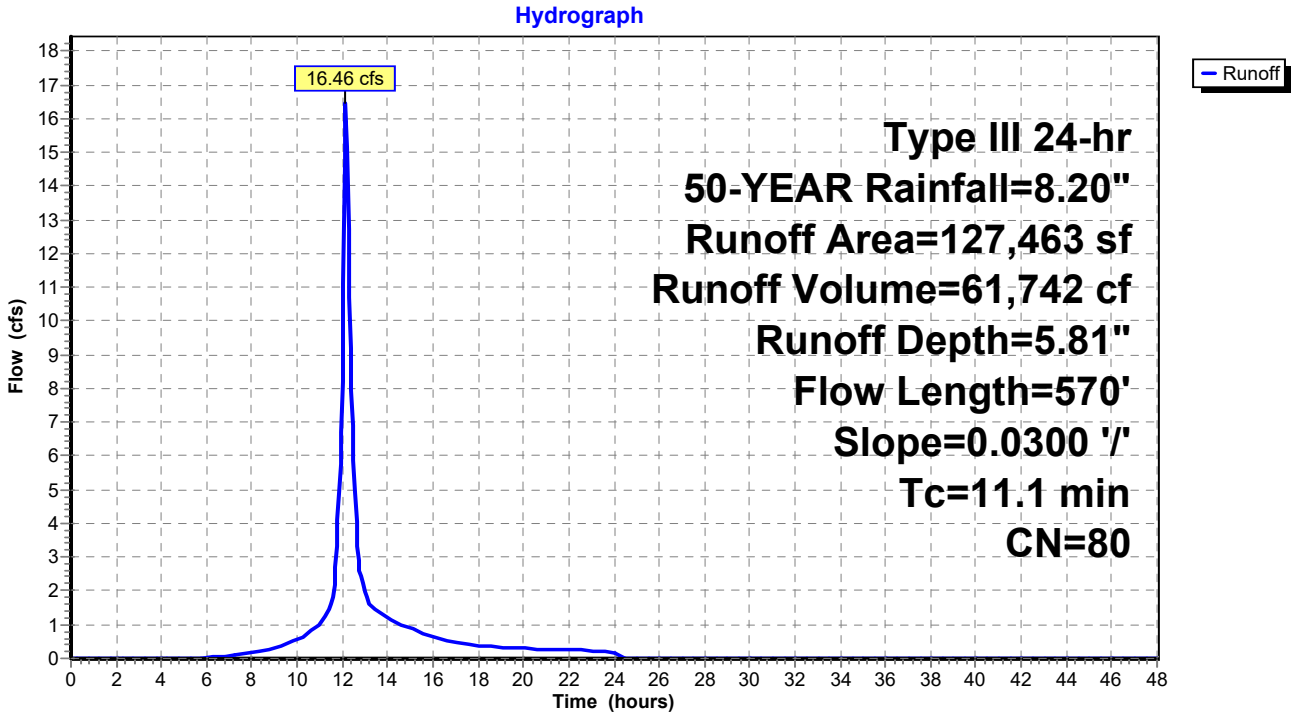
Runoff = 16.46 cfs @ 12.15 hrs, Volume= 61,742 cf, Depth= 5.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
115,099	80	Pasture/grassland/range, Good, HSG D
12,364	77	Woods, Good, HSG D
127,463	80	Weighted Average
127,463		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0300	0.21		**Sheet Flow,** Range n= 0.130 P2= 3.60"
7.1	520	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.1	570	Total			

Subcatchment 3S: AP-3



Summary for Subcatchment 4S: AP-4

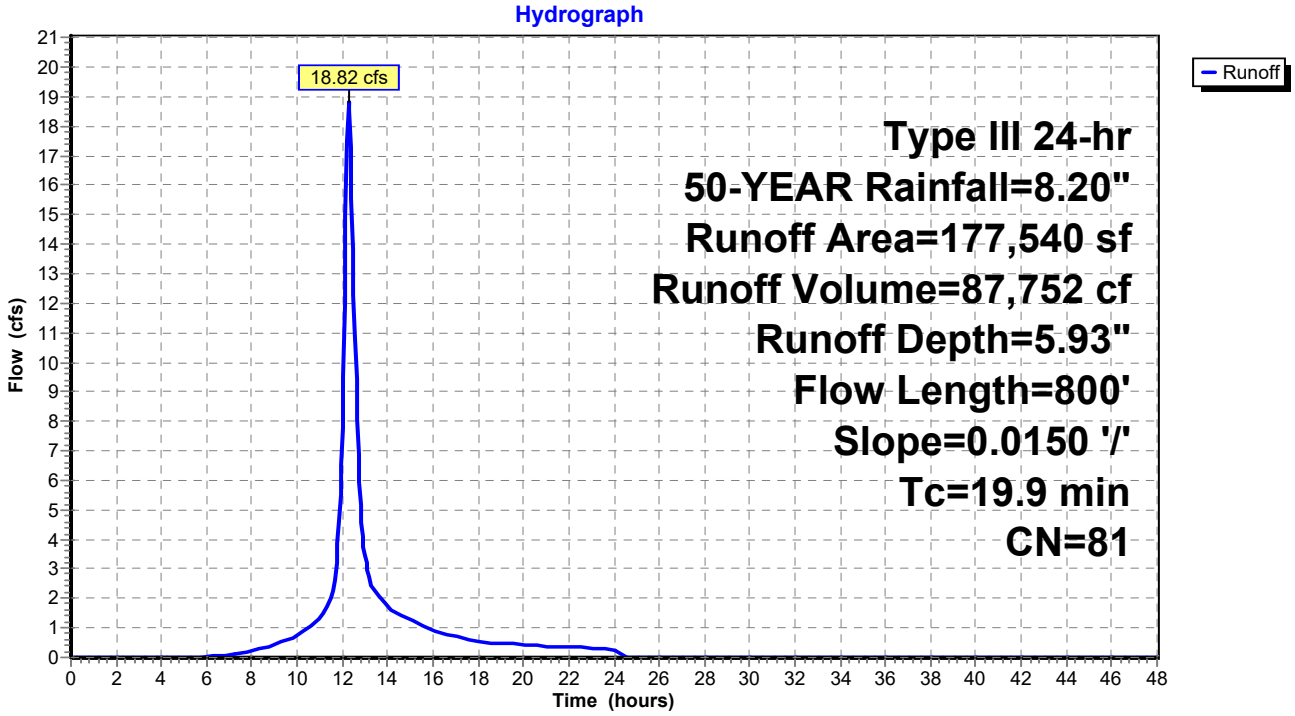
Runoff = 18.82 cfs @ 12.27 hrs, Volume= 87,752 cf, Depth= 5.93"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
1,041	74	Pasture/grassland/range, Good, HSG C
118,654	80	Pasture/grassland/range, Good, HSG D
54,522	85	Legumes, straight row, Good, HSG D
3,323	77	Woods, Good, HSG D
177,540	81	Weighted Average
177,540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0150	0.16		**Sheet Flow,** Range n= 0.130 P2= 3.60"
14.6	750	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.9	800	Total			

Subcatchment 4S: AP-4



Summary for Subcatchment 5S: AP-5

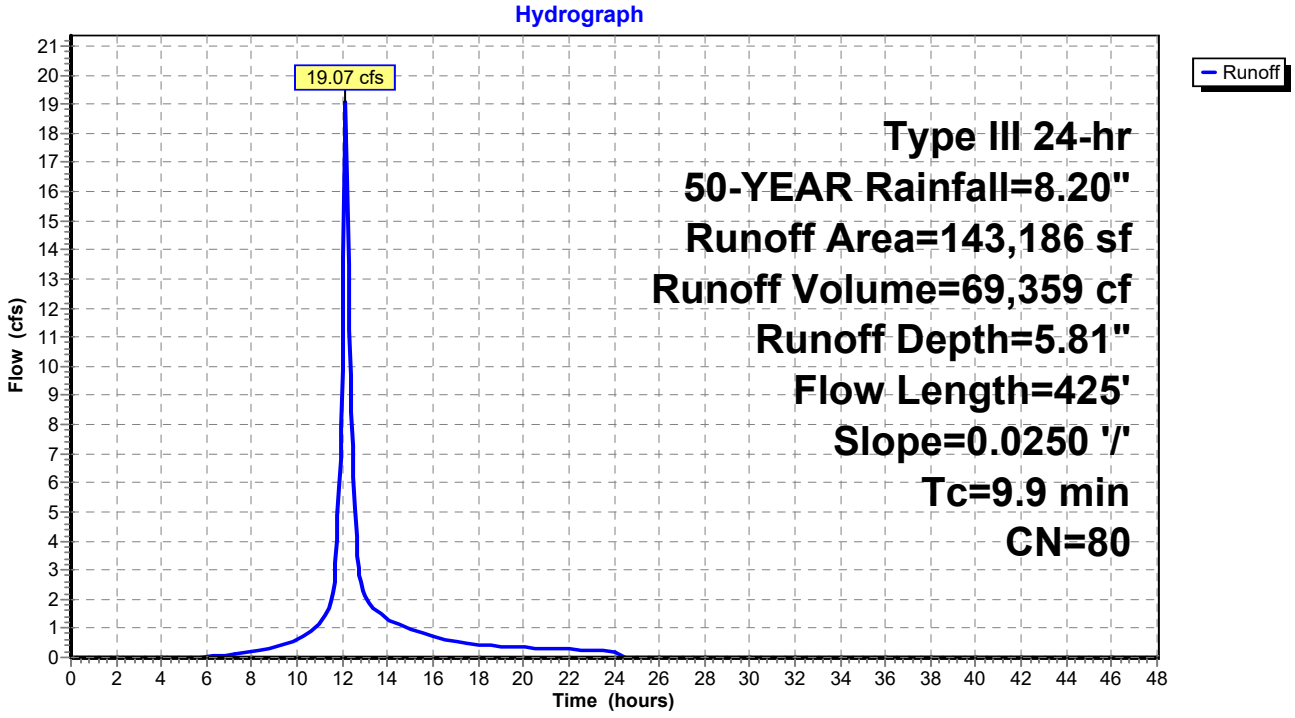
Runoff = 19.07 cfs @ 12.14 hrs, Volume= 69,359 cf, Depth= 5.81"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
57,018	85	Legumes, straight row, Good, HSG D
1,408	77	Woods, Good, HSG D
55,307	81	Legumes, straight row, Good, HSG C
29,453	70	Woods, Good, HSG C
143,186	80	Weighted Average
143,186		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0250	0.19		**Sheet Flow,** Range n= 0.130 P2= 3.60"
5.6	375	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.9	425	Total			

Subcatchment 5S: AP-5



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

Subcatchment 1S: AP-1 Runoff Area=174,413 sf 0.00% Impervious Runoff Depth=6.73"
Flow Length=720' Slope=0.0200 '/' Tc=19.0 min CN=79 Runoff=21.36 cfs 97,795 cf

Subcatchment 2S: AP-2 Runoff Area=236,862 sf 0.00% Impervious Runoff Depth=6.85"
Flow Length=655' Slope=0.0300 '/' Tc=12.3 min CN=80 Runoff=34.63 cfs 135,270 cf

Subcatchment 3S: AP-3 Runoff Area=127,463 sf 0.00% Impervious Runoff Depth=6.85"
Flow Length=570' Slope=0.0300 '/' Tc=11.1 min CN=80 Runoff=19.28 cfs 72,793 cf

Subcatchment 4S: AP-4 Runoff Area=177,540 sf 0.00% Impervious Runoff Depth=6.98"
Flow Length=800' Slope=0.0150 '/' Tc=19.9 min CN=81 Runoff=21.99 cfs 103,232 cf

Subcatchment 5S: AP-5 Runoff Area=143,186 sf 0.00% Impervious Runoff Depth=6.85"
Flow Length=425' Slope=0.0250 '/' Tc=9.9 min CN=80 Runoff=22.33 cfs 81,772 cf

Total Runoff Area = 859,464 sf Runoff Volume = 490,862 cf Average Runoff Depth = 6.85"
100.00% Pervious = 859,464 sf 0.00% Impervious = 0 sf

Summary for Subcatchment 1S: AP-1

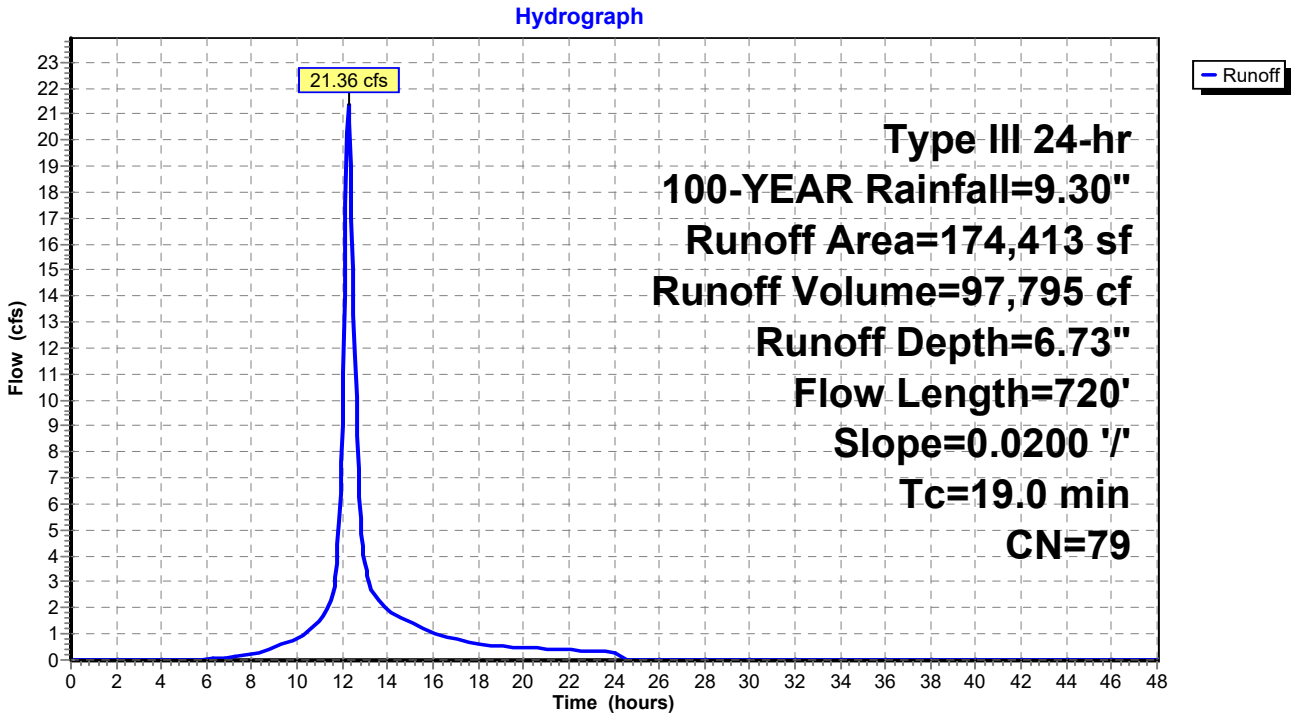
Runoff = 21.36 cfs @ 12.26 hrs, Volume= 97,795 cf, Depth= 6.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
11,901	77	Woods, Good, HSG D
77,225	80	>75% Grass cover, Good, HSG D
72,576	80	Pasture/grassland/range, Good, HSG D
7,185	74	>75% Grass cover, Good, HSG C
5,526	74	Pasture/grassland/range, Good, HSG C
174,413	79	Weighted Average
174,413		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.3	670	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.0	720	Total			

Subcatchment 1S: AP-1



Summary for Subcatchment 2S: AP-2

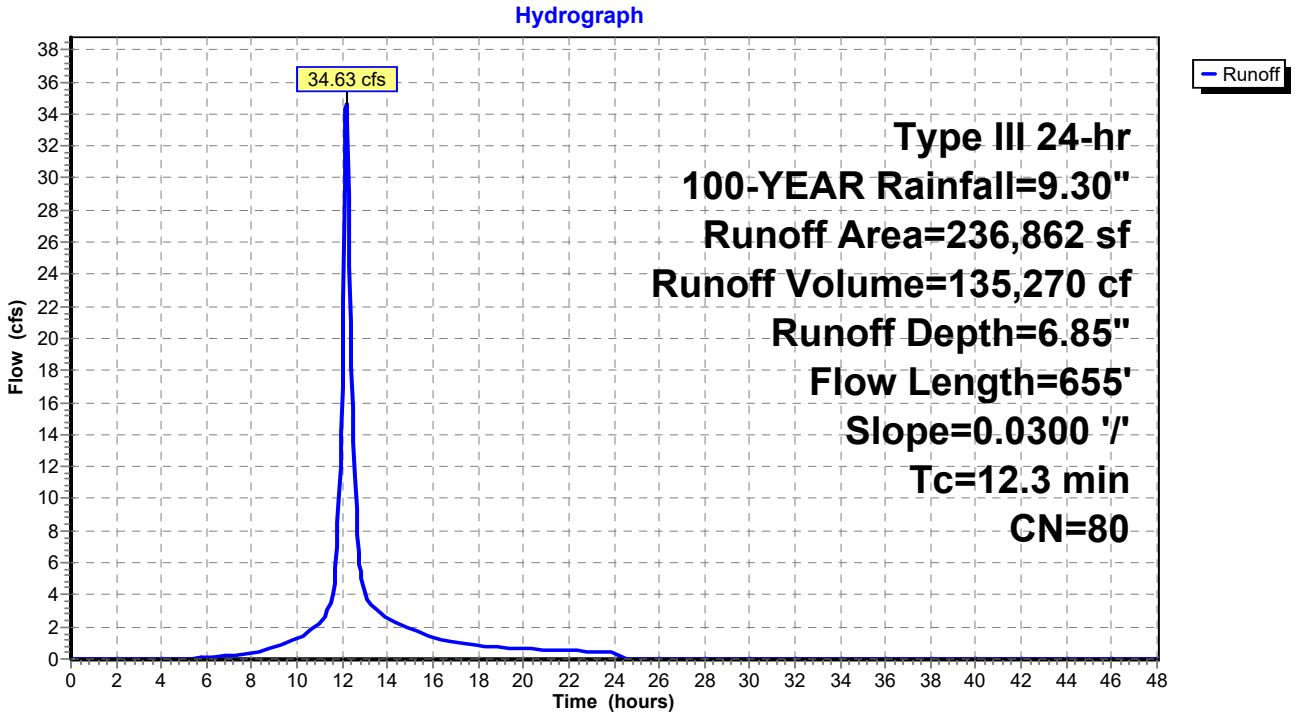
Runoff = 34.63 cfs @ 12.17 hrs, Volume= 135,270 cf, Depth= 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
1,581	80	>75% Grass cover, Good, HSG D
207	80	Pasture/grassland/range, Good, HSG D
22,057	85	Legumes, straight row, Good, HSG D
7,154	74	>75% Grass cover, Good, HSG C
24,171	74	Pasture/grassland/range, Good, HSG C
169,594	81	Legumes, straight row, Good, HSG C
12,098	70	Woods, Good, HSG C
236,862	80	Weighted Average
236,862		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0300	0.21		**Sheet Flow,** Range n= 0.130 P2= 3.60"
8.3	605	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.3	655	Total			

Subcatchment 2S: AP-2



Summary for Subcatchment 3S: AP-3

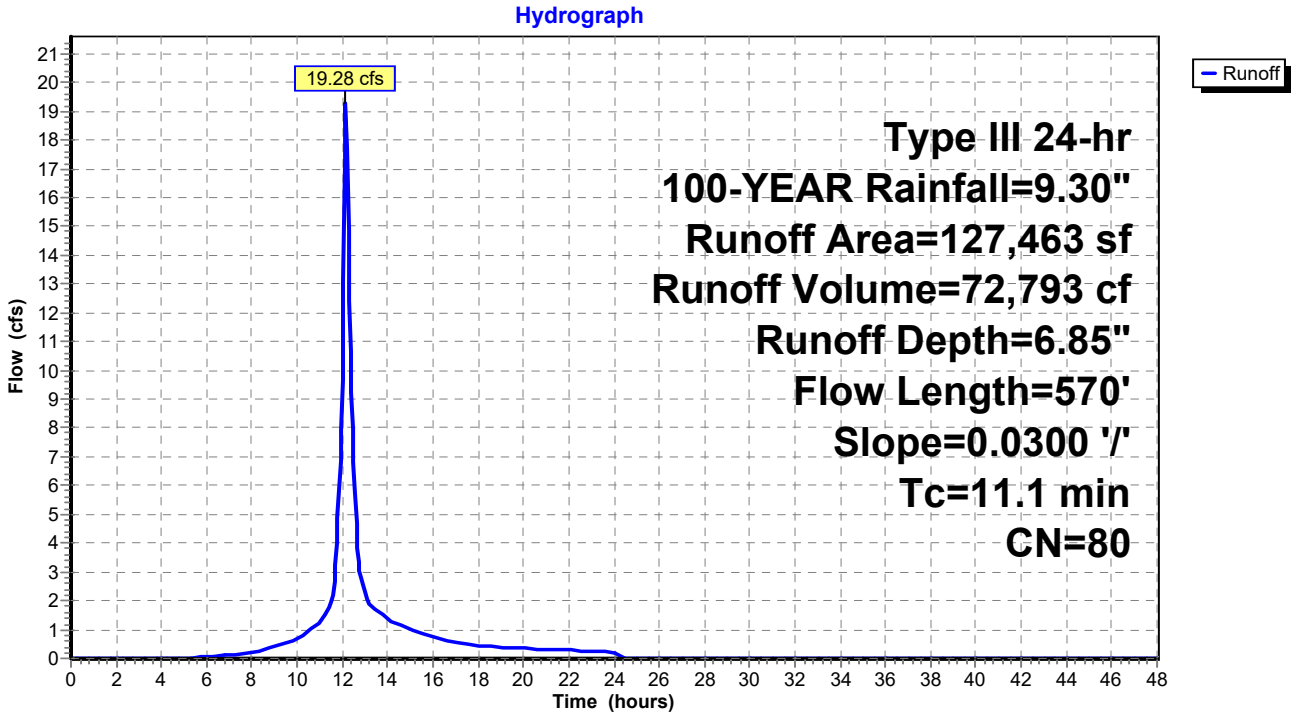
Runoff = 19.28 cfs @ 12.15 hrs, Volume= 72,793 cf, Depth= 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
115,099	80	Pasture/grassland/range, Good, HSG D
12,364	77	Woods, Good, HSG D
127,463	80	Weighted Average
127,463		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	50	0.0300	0.21		**Sheet Flow,** Range n= 0.130 P2= 3.60"
7.1	520	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.1	570	Total			

Subcatchment 3S: AP-3



Summary for Subcatchment 4S: AP-4

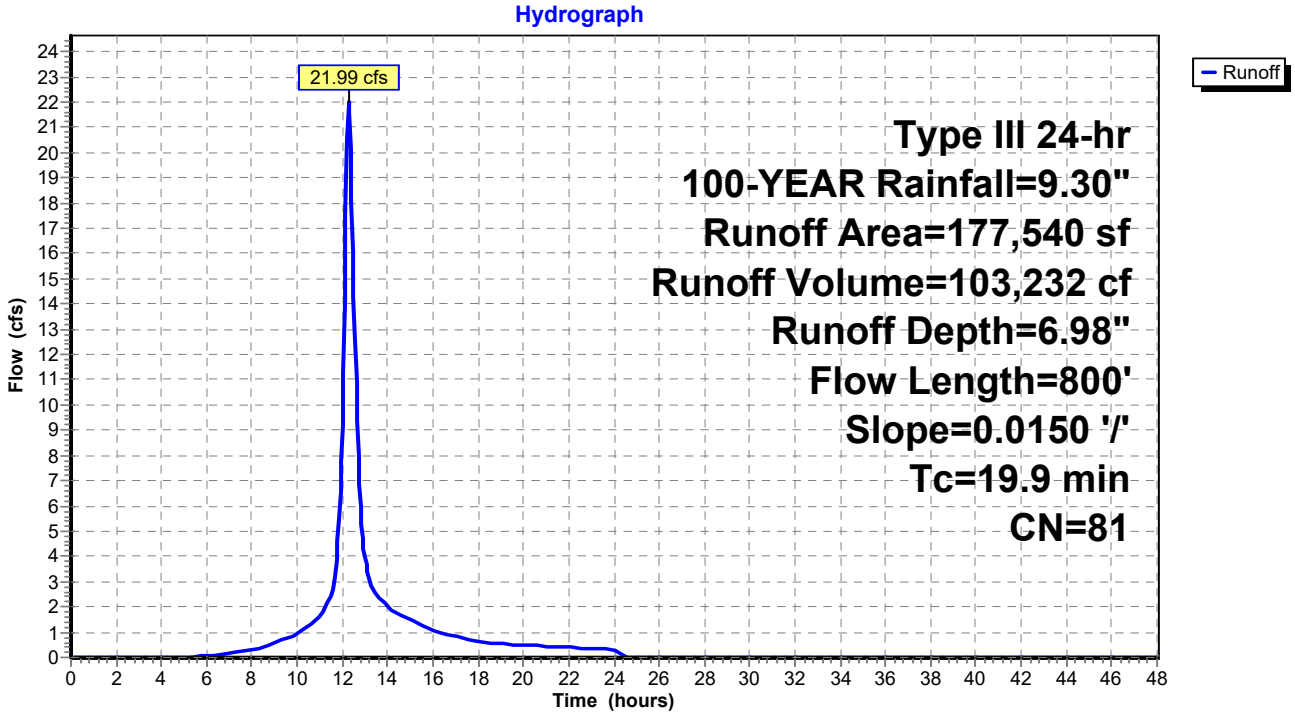
Runoff = 21.99 cfs @ 12.27 hrs, Volume= 103,232 cf, Depth= 6.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
1,041	74	Pasture/grassland/range, Good, HSG C
118,654	80	Pasture/grassland/range, Good, HSG D
54,522	85	Legumes, straight row, Good, HSG D
3,323	77	Woods, Good, HSG D
177,540	81	Weighted Average
177,540		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0150	0.16		**Sheet Flow,** Range n= 0.130 P2= 3.60"
14.6	750	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.9	800	Total			

Subcatchment 4S: AP-4



Summary for Subcatchment 5S: AP-5

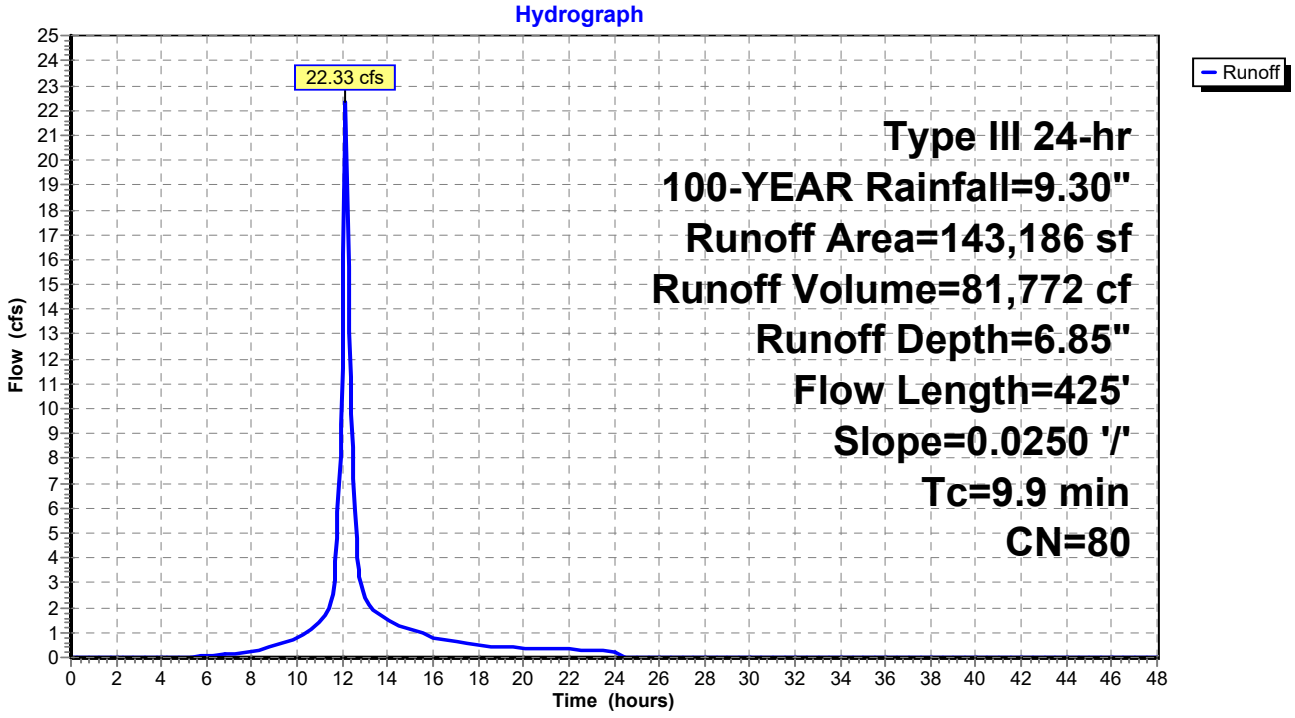
Runoff = 22.33 cfs @ 12.14 hrs, Volume= 81,772 cf, Depth= 6.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
57,018	85	Legumes, straight row, Good, HSG D
1,408	77	Woods, Good, HSG D
55,307	81	Legumes, straight row, Good, HSG C
29,453	70	Woods, Good, HSG C
143,186	80	Weighted Average
143,186		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.3	50	0.0250	0.19		**Sheet Flow,** Range n= 0.130 P2= 3.60"
5.6	375	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.9	425	Total			

Subcatchment 5S: AP-5



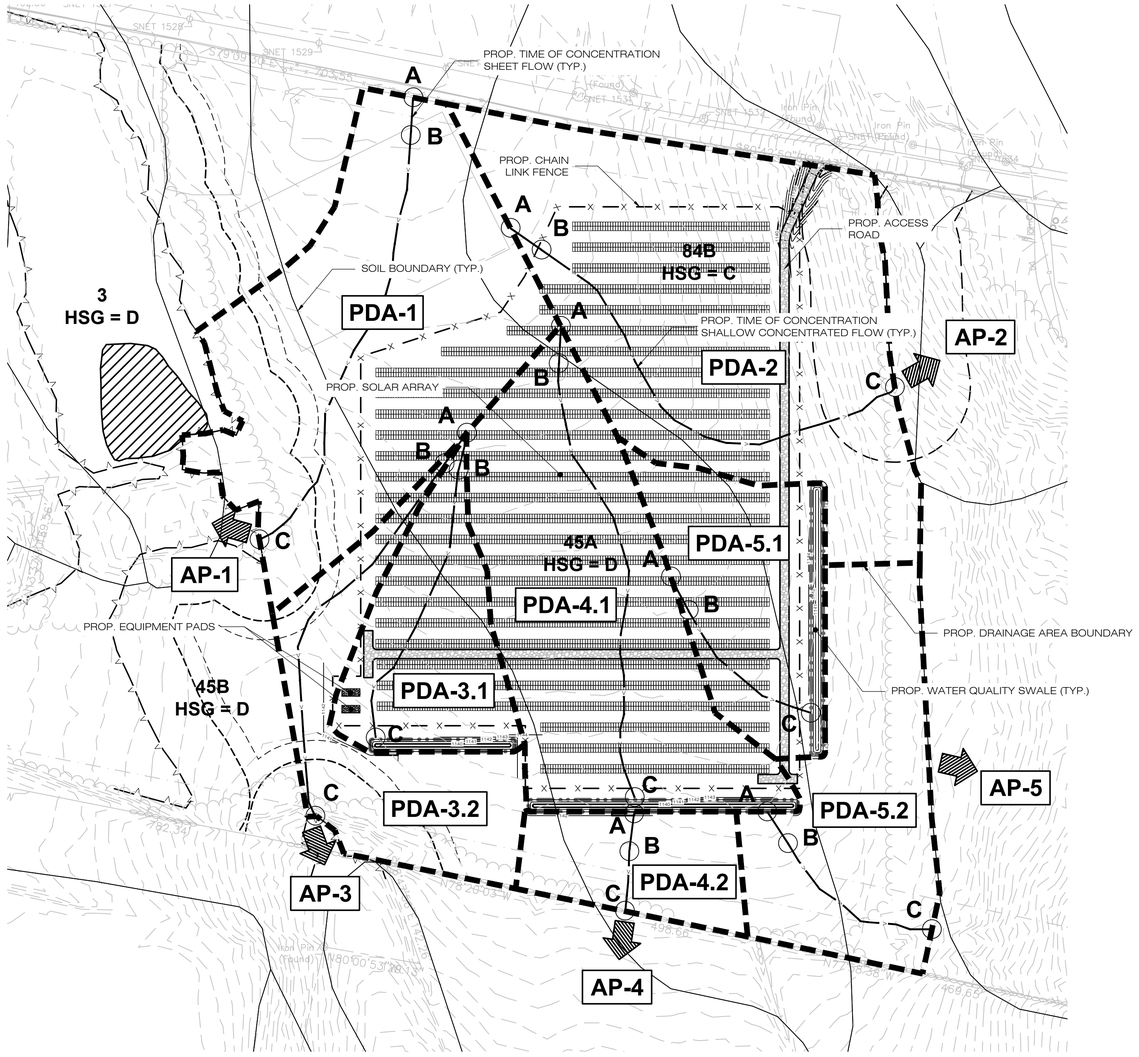
APPENDIX C: PROPOSED DRAINAGE AREA MAP (PDA-1) & HYDROLOGIC COMPUTATION (HYDROCAD)

PROPOSED DRAINAGE AREAS

WATERSHED	TOTAL AREA (ACRES)	COMPOSITE CN	TC (MINS.)
PDA-1	4.004	79	19
PDA-2	4.819	75	15
PDA-3.1	1.331	79	14
PDA-3.2	1.597	78	15
PDA-4.1	3.342	79	20
PDA-4.2	0.894	78	9
PDA-5.1	1.577	78	12
PDA-5.2	2.166	72	10
SITE	19.730	77	-

PROPOSED CONDITIONS FLOWS

DISCH. POINT	2-YEAR (CFS)	25-YEAR (CFS)	50-YEAR (CFS)	100-YEAR (CFS)
AP-1	5.3	15.3	18.2	21.4
AP-2	5.7	18.5	22.2	26.4
AP-3	4.0	12.2	14.5	17.1
AP-4	5.0	14.7	17.5	20.6
AP-5	2.5	15.1	18.3	21.8
SITE	22.5	75.8	90.7	107.3
% CHANGE	-26%	-12%	-11%	-10%



1 PDA-1 **PROPOSED DRAINAGE AREA PLAN**

SCALE : 1-IN = 100-FT

100 0 50 100 200

(IN FEET) 1 inch = 100 ft.

TORRINGTON SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

PERMIT SET

NO	DATE	REVISION
0		
1		
2		
3		
4		
5		
6		

NOT FOR CONSTRUCTION

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHAUL STREET EXTENSION - SUITE 311 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES OF ARHDIOCESE OF HARTFORD
ADDRESS: EAST PEARL ROAD TORRINGTON, CT

TORRINGTON SOLAR ONE, LLC

SITE ADDRESS: EAST PEARL ROAD TORRINGTON, CT

APT FILING NUMBER: CT590190

DRAWN BY: KAM

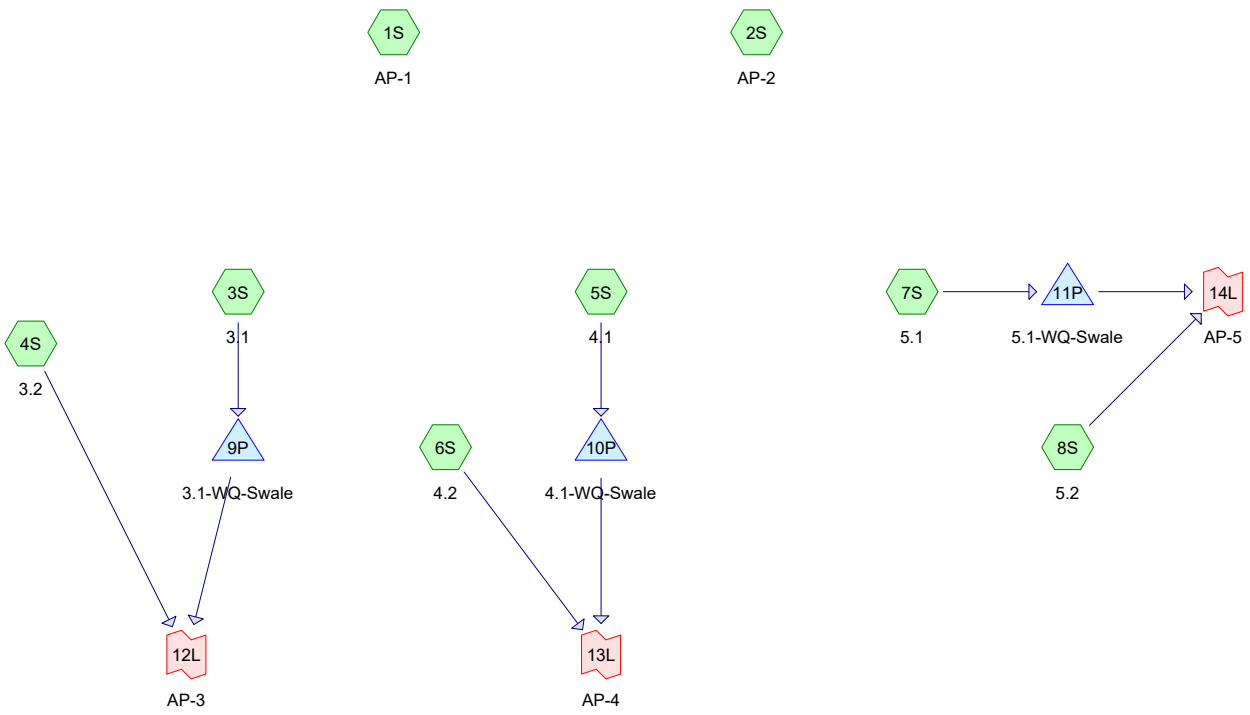
DATE: 05/29/20 CHECKED BY: BJP

SHEET TITLE:

PROPOSED CONDITIONS HYDROLOGY PLAN

SHEET NUMBER:

PDA-1



Subcat Reach Pond Link

Routing Diagram for Torrington_PR_2020-05-29
Prepared by All Points Technology Corp., Printed 5/29/2020

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
14,339	74	>75% Grass cover, Good, HSG C (1S, 2S)
78,806	80	>75% Grass cover, Good, HSG D (1S, 2S)
16,976	96	Gravel surface, HSG D (2S, 3S, 5S, 7S)
139,070	71	Meadow, non-grazed, HSG C (2S, 7S, 8S)
461,144	78	Meadow, non-grazed, HSG D (2S, 3S, 4S, 5S, 6S, 7S, 8S)
2,216	74	Pasture/grassland/range, Good, HSG C (1S)
75,886	80	Pasture/grassland/range, Good, HSG D (1S)
480	98	Unconnected roofs, HSG D (3S)
41,551	70	Woods, Good, HSG C (2S, 8S)
28,996	77	Woods, Good, HSG D (1S, 4S, 6S, 8S)
859,464	**77**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
197,176	HSG C	1S, 2S, 7S, 8S
662,288	HSG D	1S, 2S, 3S, 4S, 5S, 6S, 7S, 8S
0	Other	
859,464		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover
0	0	14,339	78,806	0	93,145	>75% Grass cover, Good
0	0	0	16,976	0	16,976	Gravel surface
0	0	139,070	461,144	0	600,214	Meadow, non-grazed
0	0	2,216	75,886	0	78,102	Pasture/grassland /range, Good
0	0	0	480	0	480	Unconnected roofs
0	0	41,551	28,996	0	70,547	Woods, Good
0	**0**	**197,176**	**662,288**	**0**	**859,464**	**TOTAL AREA**

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

Subcatchment 1S: AP-1 Runoff Area=174,413 sf 0.00% Impervious Runoff Depth=1.64"
Flow Length=720' Slope=0.0200 '/' Tc=19.0 min CN=79 Runoff=5.25 cfs 23,895 cf

Subcatchment 2S: AP-2 Runoff Area=209,934 sf 0.00% Impervious Runoff Depth=1.37"
Flow Length=655' Slope=0.0300 '/' Tc=14.9 min CN=75 Runoff=5.68 cfs 24,021 cf

Subcatchment 3S: 3.1 Runoff Area=57,964 sf 0.83% Impervious Runoff Depth=1.64"
Flow Length=430' Slope=0.0200 '/' Tc=14.1 min CN=79 Runoff=1.96 cfs 7,941 cf

Subcatchment 4S: 3.2 Runoff Area=69,570 sf 0.00% Impervious Runoff Depth=1.57"
Flow Length=590' Slope=0.0270 '/' Tc=14.7 min CN=78 Runoff=2.21 cfs 9,124 cf

Subcatchment 5S: 4.1 Runoff Area=145,593 sf 0.00% Impervious Runoff Depth=1.64"
Flow Length=650' Slope=0.0150 '/' Tc=20.4 min CN=79 Runoff=4.25 cfs 19,947 cf

Subcatchment 6S: 4.2 Runoff Area=38,958 sf 0.00% Impervious Runoff Depth=1.57"
Flow Length=130' Slope=0.0230 '/' Tc=8.6 min CN=78 Runoff=1.46 cfs 5,109 cf

Subcatchment 7S: 5.1 Runoff Area=68,699 sf 0.00% Impervious Runoff Depth=1.57"
Flow Length=270' Slope=0.0166 '/' Tc=12.4 min CN=78 Runoff=2.30 cfs 9,010 cf

Subcatchment 8S: 5.2 Runoff Area=94,333 sf 0.00% Impervious Runoff Depth=1.19"
Flow Length=290' Slope=0.0300 '/' Tc=9.9 min CN=72 Runoff=2.48 cfs 9,330 cf

Pond 9P: 3.1-WQ-Swale Peak Elev=1,141.34' Storage=1,974 cf Inflow=1.96 cfs 7,941 cf
Outflow=1.87 cfs 6,184 cf

Pond 10P: 4.1-WQ-Swale Peak Elev=1,141.40' Storage=4,009 cf Inflow=4.25 cfs 19,947 cf
Outflow=4.12 cfs 16,576 cf

Pond 11P: 5.1-WQ-Swale Peak Elev=1,142.31' Storage=3,630 cf Inflow=2.30 cfs 9,010 cf
Outflow=1.10 cfs 5,634 cf

Link 12L: AP-3 Inflow=3.95 cfs 15,308 cf
Primary=3.95 cfs 15,308 cf

Link 13L: AP-4 Inflow=4.95 cfs 21,686 cf
Primary=4.95 cfs 21,686 cf

Link 14L: AP-5 Inflow=2.48 cfs 14,964 cf
Primary=2.48 cfs 14,964 cf

Total Runoff Area = 859,464 sf Runoff Volume = 108,377 cf Average Runoff Depth = 1.51"
99.94% Pervious = 858,984 sf 0.06% Impervious = 480 sf

Summary for Subcatchment 1S: AP-1

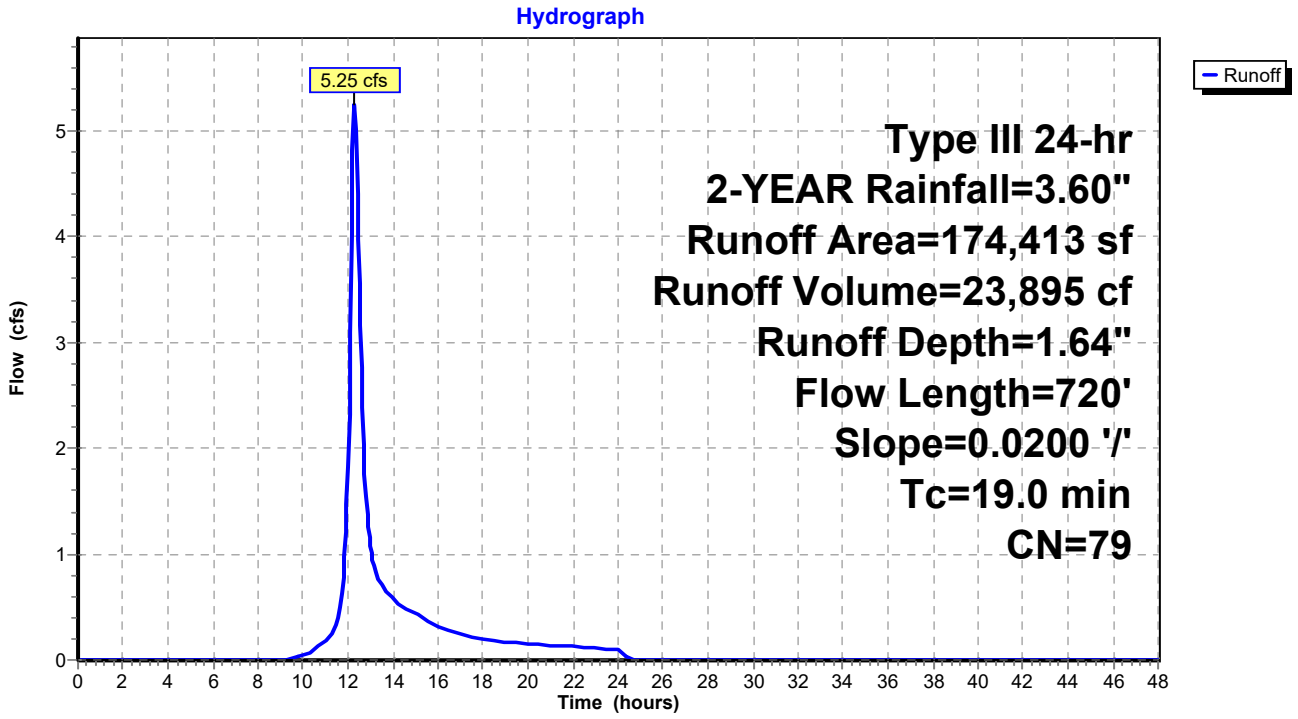
Runoff = 5.25 cfs @ 12.27 hrs, Volume= 23,895 cf, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
11,901	77	Woods, Good, HSG D
77,225	80	>75% Grass cover, Good, HSG D
75,886	80	Pasture/grassland/range, Good, HSG D
7,185	74	>75% Grass cover, Good, HSG C
2,216	74	Pasture/grassland/range, Good, HSG C
174,413	79	Weighted Average
174,413		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.3	670	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.0	720	Total			

Subcatchment 1S: AP-1



Summary for Subcatchment 2S: AP-2

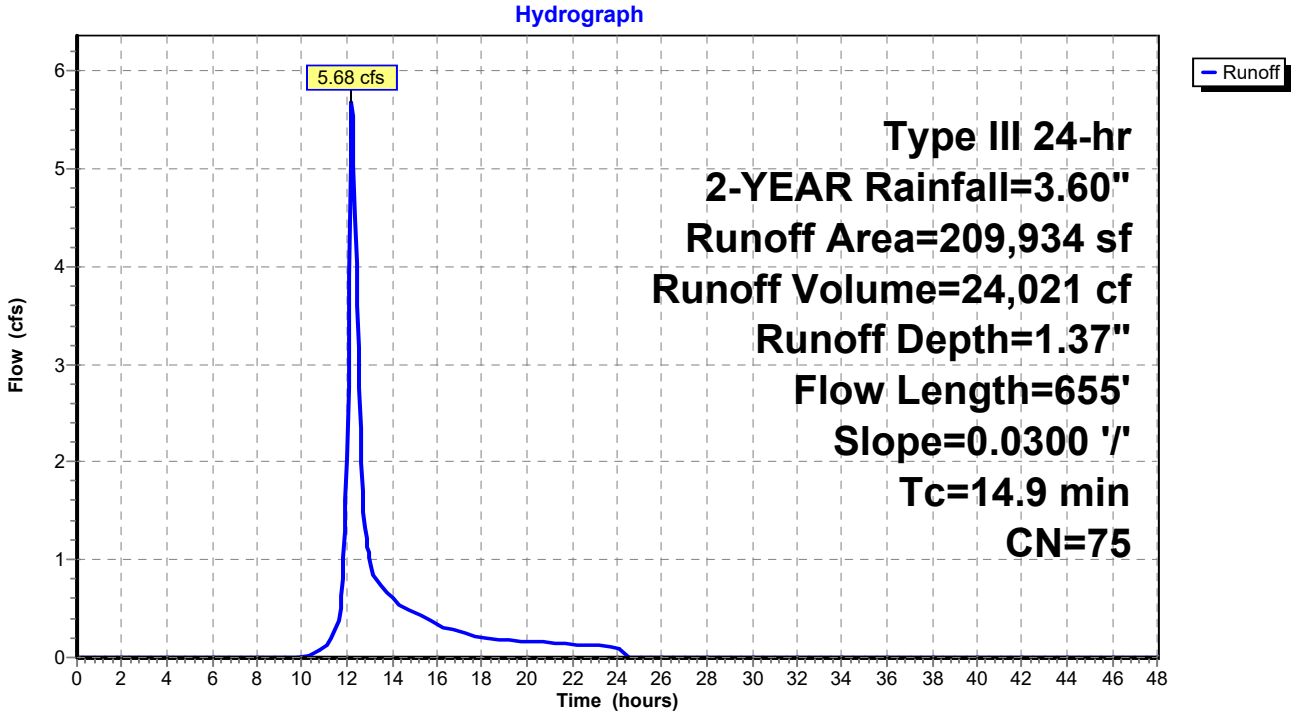
Runoff = 5.68 cfs @ 12.22 hrs, Volume= 24,021 cf, Depth= 1.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
1,581	80	>75% Grass cover, Good, HSG D
7,154	74	>75% Grass cover, Good, HSG C
12,098	70	Woods, Good, HSG C
84,899	71	Meadow, non-grazed, HSG C
98,931	78	Meadow, non-grazed, HSG D
5,271	96	Gravel surface, HSG D
209,934	75	Weighted Average
209,934		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
8.3	605	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.9	655	Total			

Subcatchment 2S: AP-2



Summary for Subcatchment 3S: 3.1

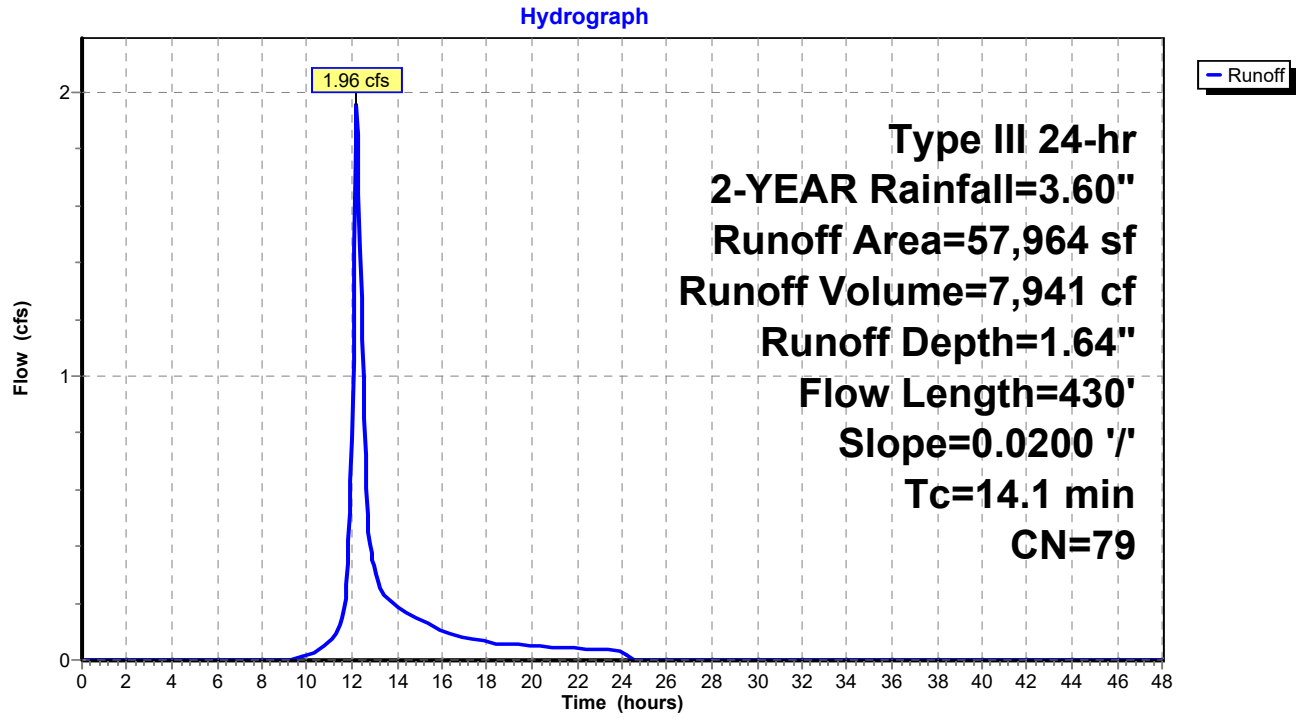
Runoff = 1.96 cfs @ 12.20 hrs, Volume= 7,941 cf, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
480	98	Unconnected roofs, HSG D
2,753	96	Gravel surface, HSG D
54,731	78	Meadow, non-grazed, HSG D
57,964	79	Weighted Average
57,484		99.17% Pervious Area
480		0.83% Impervious Area
480		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
6.4	380	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.1	430	Total			

Subcatchment 3S: 3.1



Summary for Subcatchment 4S: 3.2

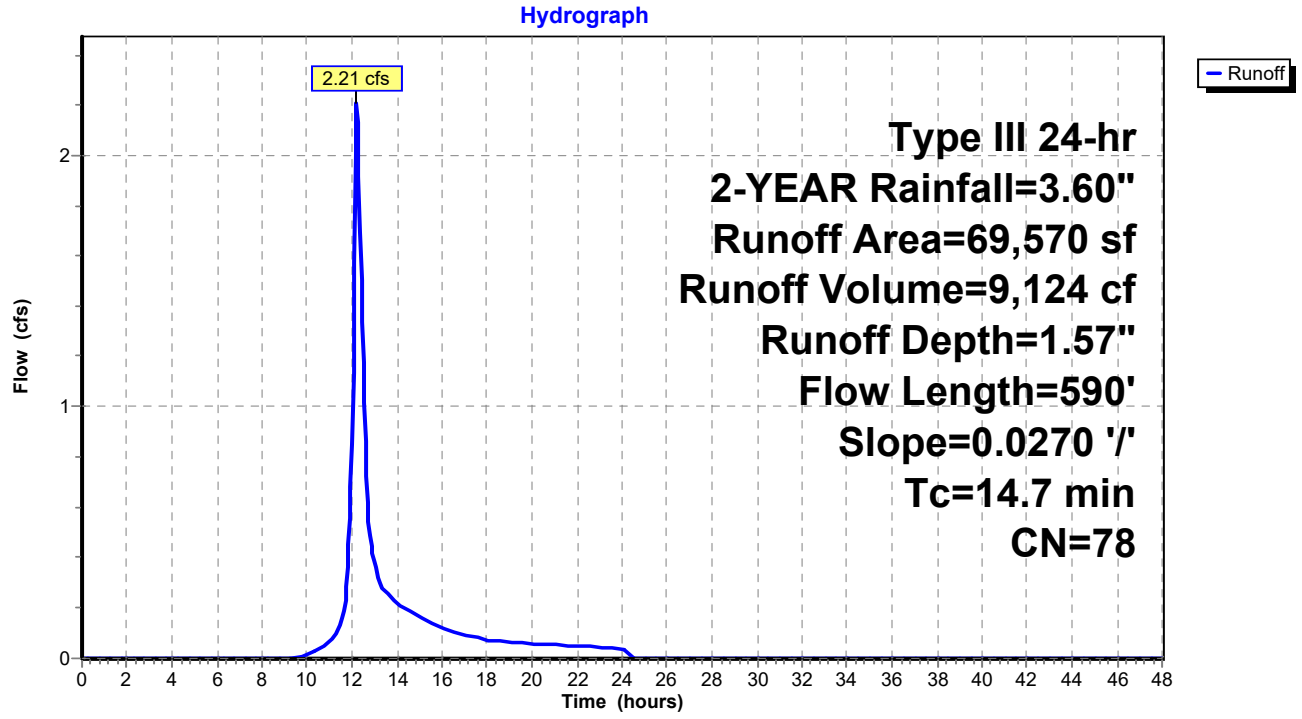
Runoff = 2.21 cfs @ 12.21 hrs, Volume= 9,124 cf, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
12,364	77	Woods, Good, HSG D
57,206	78	Meadow, non-grazed, HSG D
69,570	78	Weighted Average
69,570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0270	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
7.8	540	0.0270	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.7	590	Total			

Subcatchment 4S: 3.2



Summary for Subcatchment 5S: 4.1

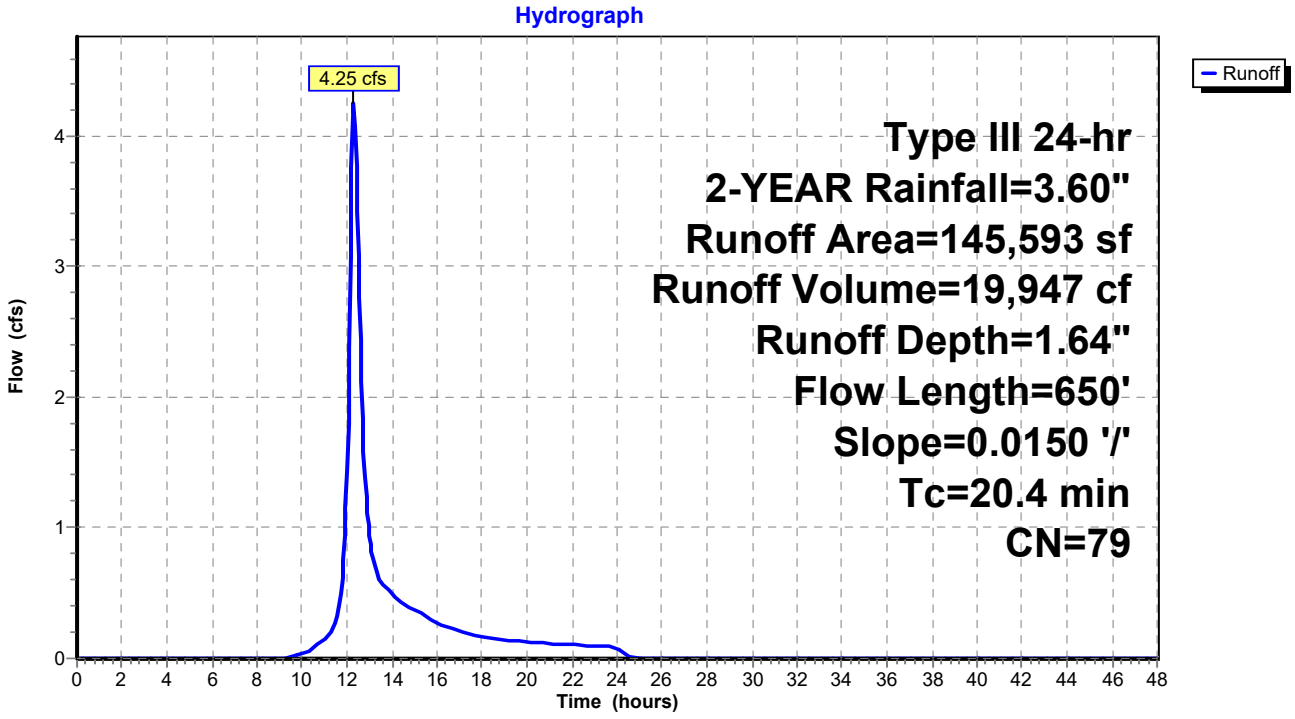
Runoff = 4.25 cfs @ 12.29 hrs, Volume= 19,947 cf, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
140,457	78	Meadow, non-grazed, HSG D
5,136	96	Gravel surface, HSG D
145,593	79	Weighted Average
145,593		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	50	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.7	600	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.4	650	Total			

Subcatchment 5S: 4.1



Summary for Subcatchment 6S: 4.2

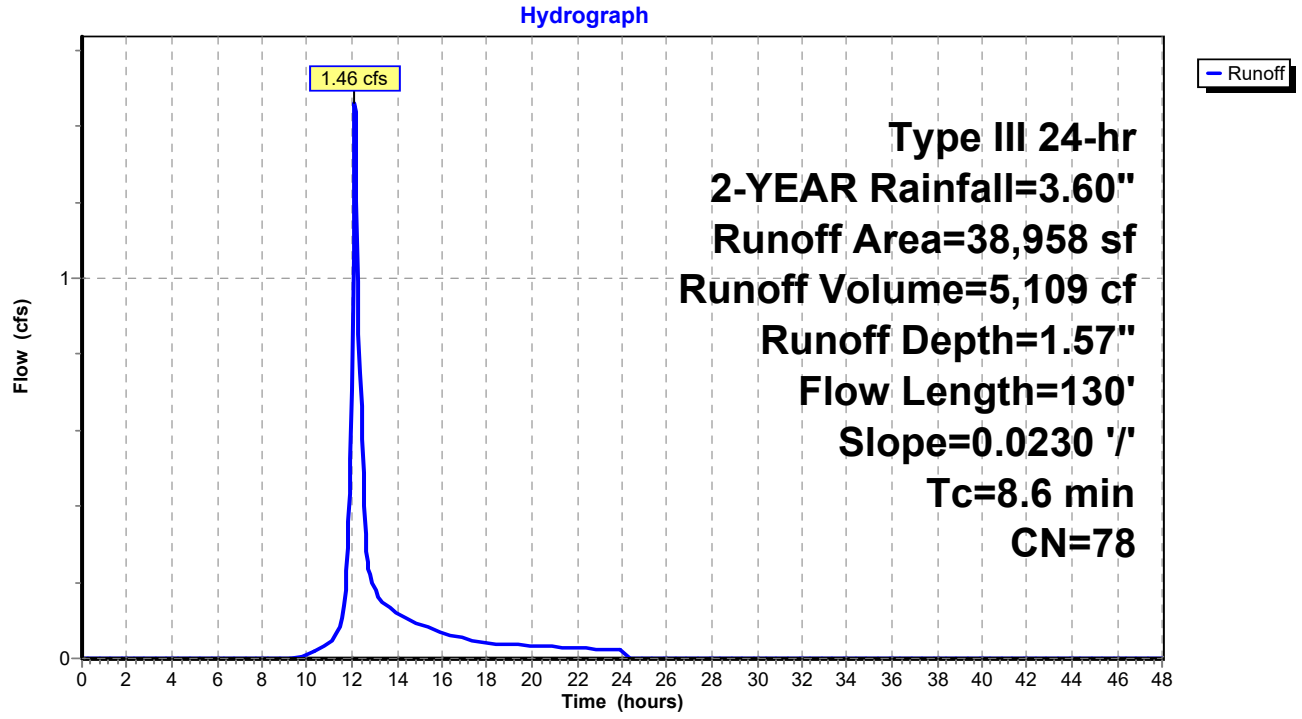
Runoff = 1.46 cfs @ 12.13 hrs, Volume= 5,109 cf, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
3,323	77	Woods, Good, HSG D
35,635	78	Meadow, non-grazed, HSG D
38,958	78	Weighted Average
38,958		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0230	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.3	80	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	130	Total			

Subcatchment 6S: 4.2



Summary for Subcatchment 7S: 5.1

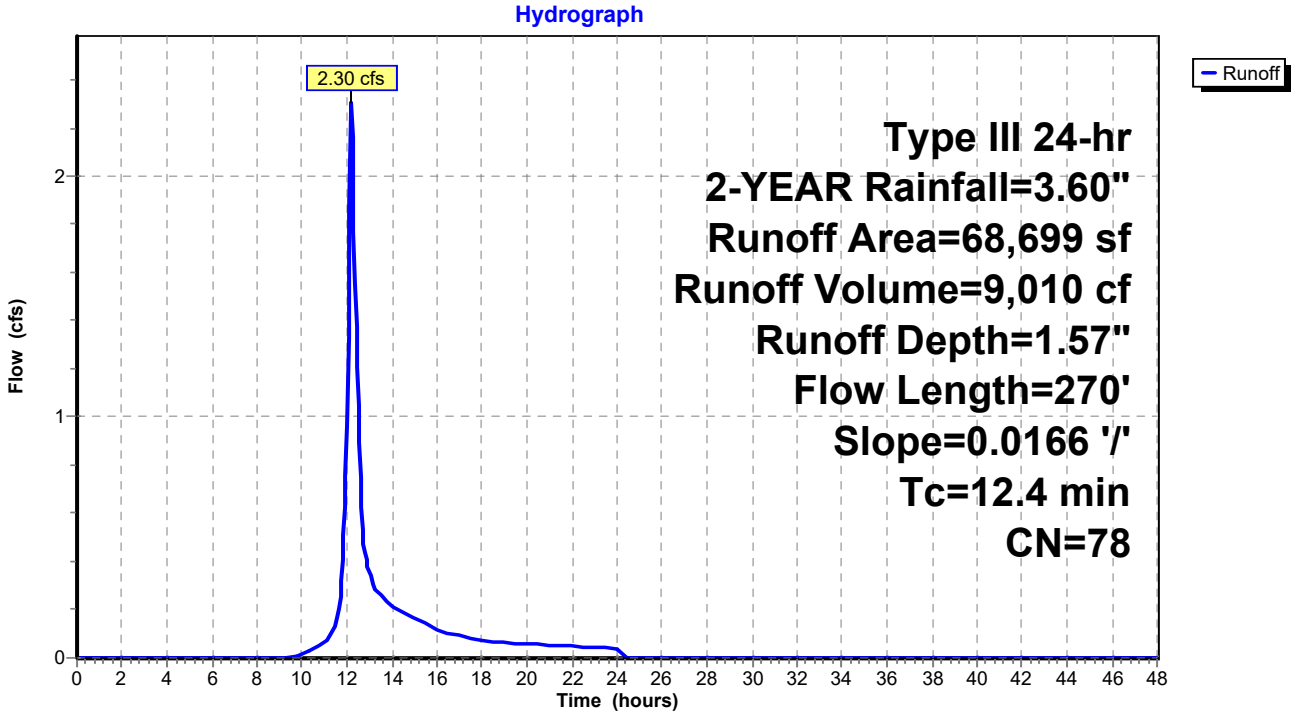
Runoff = 2.30 cfs @ 12.18 hrs, Volume= 9,010 cf, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
3,816	96	Gravel surface, HSG D
52,945	78	Meadow, non-grazed, HSG D
11,938	71	Meadow, non-grazed, HSG C
68,699	78	Weighted Average
68,699		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0166	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
4.1	220	0.0166	0.90		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.4	270	Total			

Subcatchment 7S: 5.1



Summary for Subcatchment 8S: 5.2

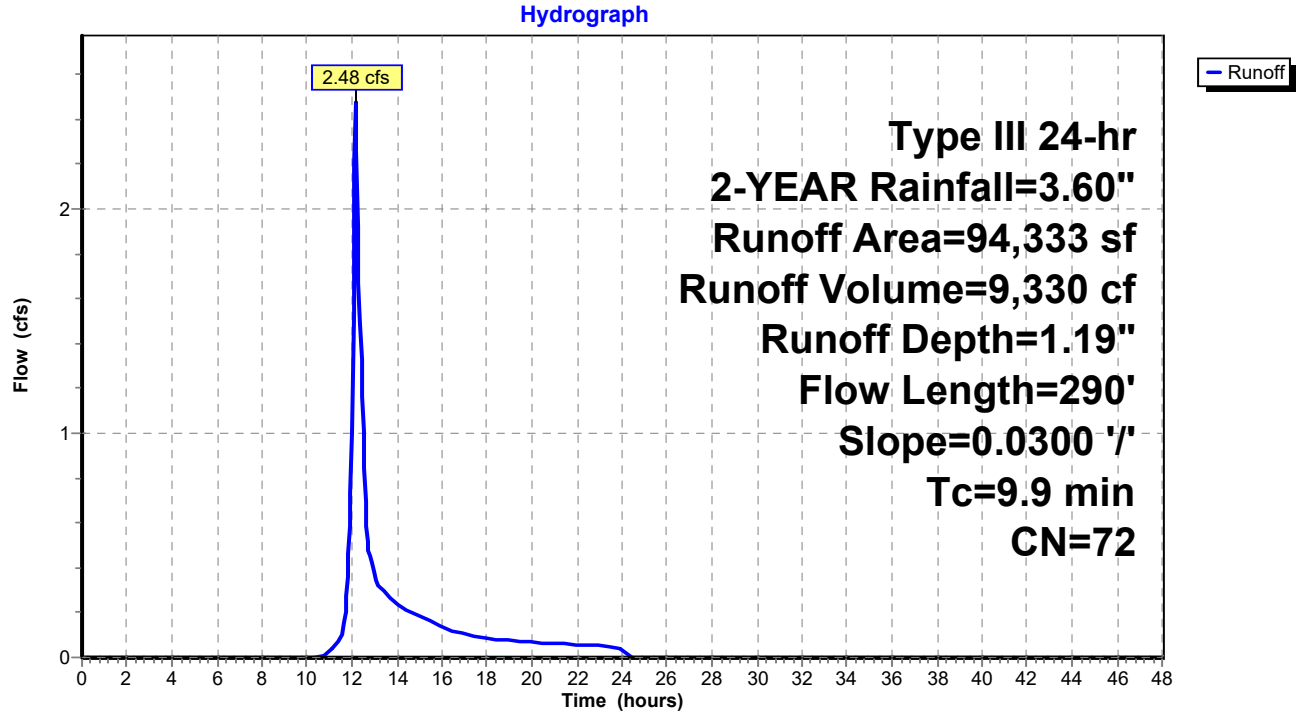
Runoff = 2.48 cfs @ 12.15 hrs, Volume= 9,330 cf, Depth= 1.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-YEAR Rainfall=3.60"

Area (sf)	CN	Description
1,408	77	Woods, Good, HSG D
29,453	70	Woods, Good, HSG C
21,239	78	Meadow, non-grazed, HSG D
42,233	71	Meadow, non-grazed, HSG C
94,333	72	Weighted Average
94,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
3.3	240	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.9	290	Total			

Subcatchment 8S: 5.2



Summary for Pond 9P: 3.1-WQ-Swale

Inflow Area = 57,964 sf, 0.83% Impervious, Inflow Depth = 1.64" for 2-YEAR event
Inflow = 1.96 cfs @ 12.20 hrs, Volume= 7,941 cf
Outflow = 1.87 cfs @ 12.27 hrs, Volume= 6,184 cf, Atten= 4%, Lag= 4.0 min
Primary = 1.87 cfs @ 12.27 hrs, Volume= 6,184 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,141.34' @ 12.27 hrs Surf.Area= 2,254 sf Storage= 1,974 cf

Plug-Flow detention time= 128.1 min calculated for 6,184 cf (78% of inflow)
Center-of-Mass det. time= 43.2 min (890.6 - 847.4)

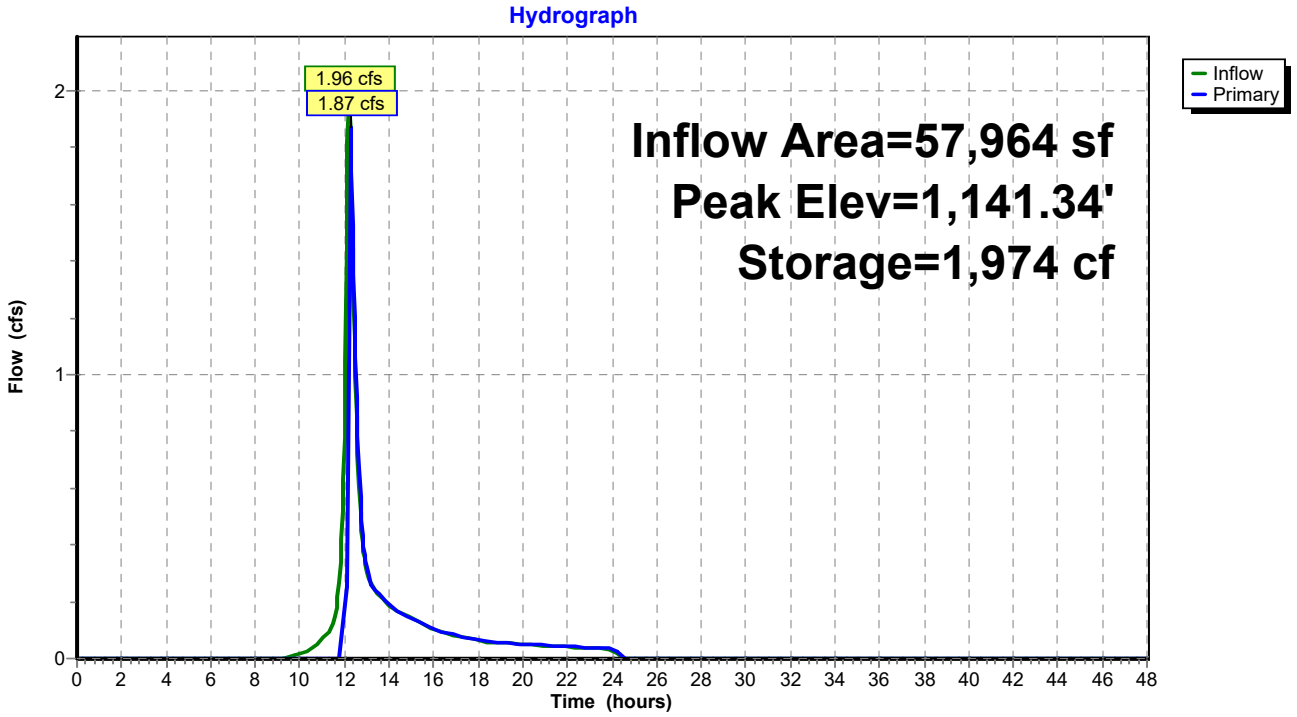
Volume	Invert	Avail.Storage	Storage Description
#1	1,140.00'	3,726 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,140.00	713	0	0
1,141.00	1,844	1,279	1,279
1,142.00	3,051	2,448	3,726

Device	Routing	Invert	Outlet Devices
#1	Primary	1,141.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=1.76 cfs @ 12.27 hrs HW=1,141.34' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 1.76 cfs @ 0.68 fps)

Pond 9P: 3.1-WQ-Swale



Summary for Pond 10P: 4.1-WQ-Swale

Inflow Area = 145,593 sf, 0.00% Impervious, Inflow Depth = 1.64" for 2-YEAR event
Inflow = 4.25 cfs @ 12.29 hrs, Volume= 19,947 cf
Outflow = 4.12 cfs @ 12.34 hrs, Volume= 16,576 cf, Atten= 3%, Lag= 3.0 min
Primary = 4.12 cfs @ 12.34 hrs, Volume= 16,576 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,141.40' @ 12.34 hrs Surf.Area= 4,373 sf Storage= 4,009 cf

Plug-Flow detention time= 106.6 min calculated for 16,576 cf (83% of inflow)
Center-of-Mass det. time= 34.8 min (888.0 - 853.2)

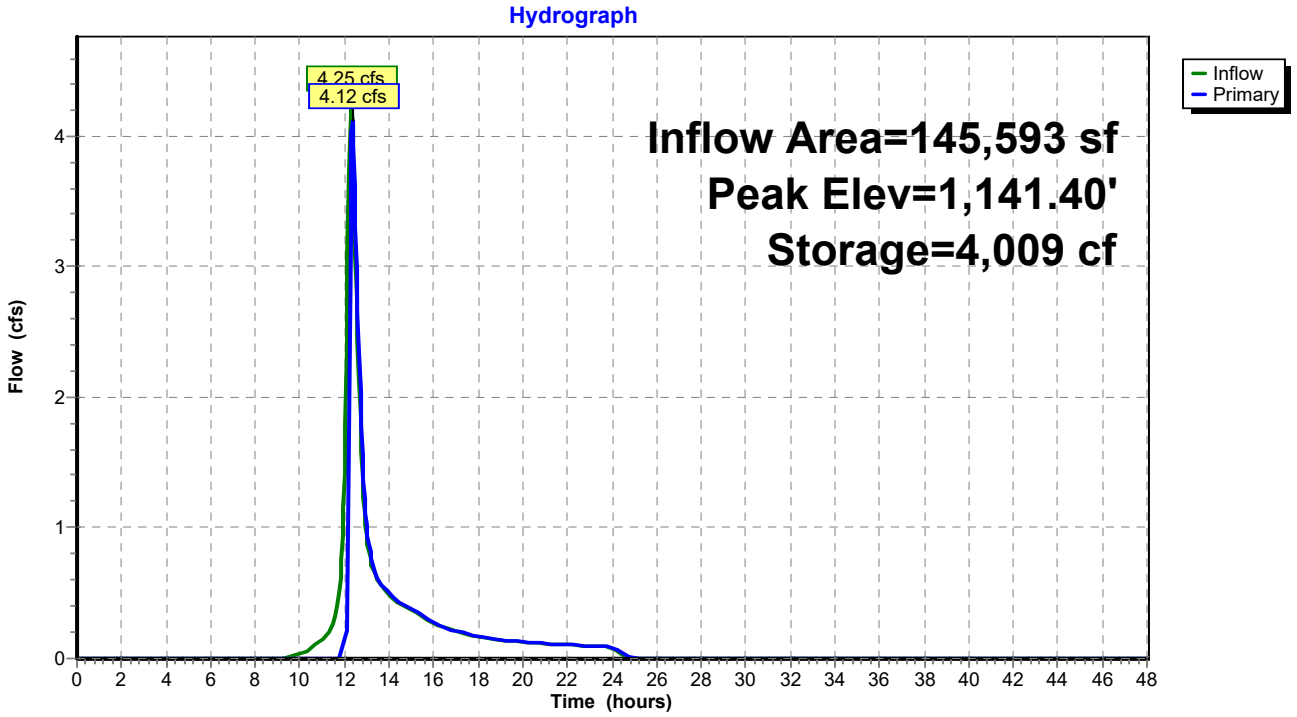
Volume	Invert	Avail.Storage	Storage Description
#1	1,140.00'	7,023 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,140.00	1,373	0	0
1,141.00	3,492	2,433	2,433
1,142.00	5,688	4,590	7,023

Device	Routing	Invert	Outlet Devices
#1	Primary	1,141.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=4.10 cfs @ 12.34 hrs HW=1,141.40' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 4.10 cfs @ 0.91 fps)

Pond 10P: 4.1-WQ-Swale



Summary for Pond 11P: 5.1-WQ-Swale

Inflow Area = 68,699 sf, 0.00% Impervious, Inflow Depth = 1.57" for 2-YEAR event
Inflow = 2.30 cfs @ 12.18 hrs, Volume= 9,010 cf
Outflow = 1.10 cfs @ 12.49 hrs, Volume= 5,634 cf, Atten= 52%, Lag= 18.5 min
Primary = 1.10 cfs @ 12.49 hrs, Volume= 5,634 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,142.31' @ 12.49 hrs Surf.Area= 4,178 sf Storage= 3,630 cf

Plug-Flow detention time= 195.8 min calculated for 5,634 cf (63% of inflow)
Center-of-Mass det. time= 84.4 min (933.2 - 848.8)

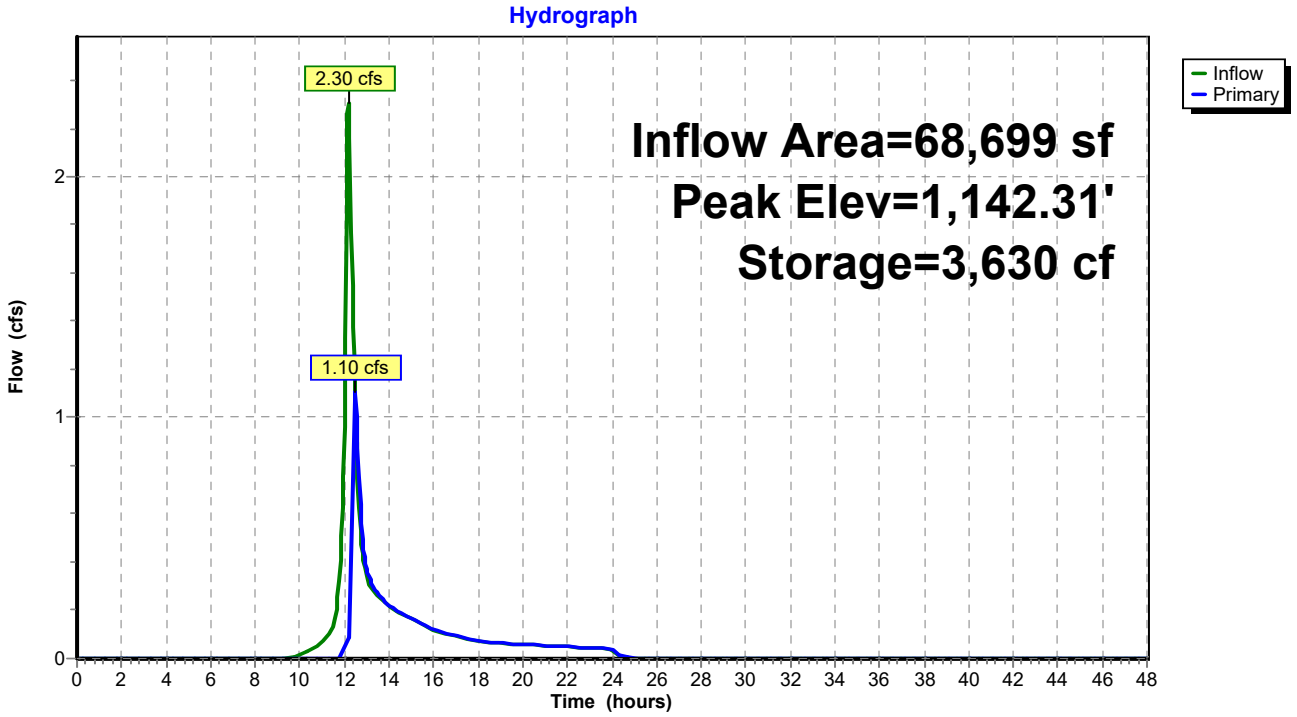
Volume	Invert	Avail.Storage	Storage Description
#1	1,141.00'	7,023 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,141.00	1,373	0	0
1,142.00	3,492	2,433	2,433
1,143.00	5,688	4,590	7,023

Device	Routing	Invert	Outlet Devices
#1	Primary	1,142.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=1.08 cfs @ 12.49 hrs HW=1,142.31' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.08 cfs @ 0.58 fps)

Pond 11P: 5.1-WQ-Swale

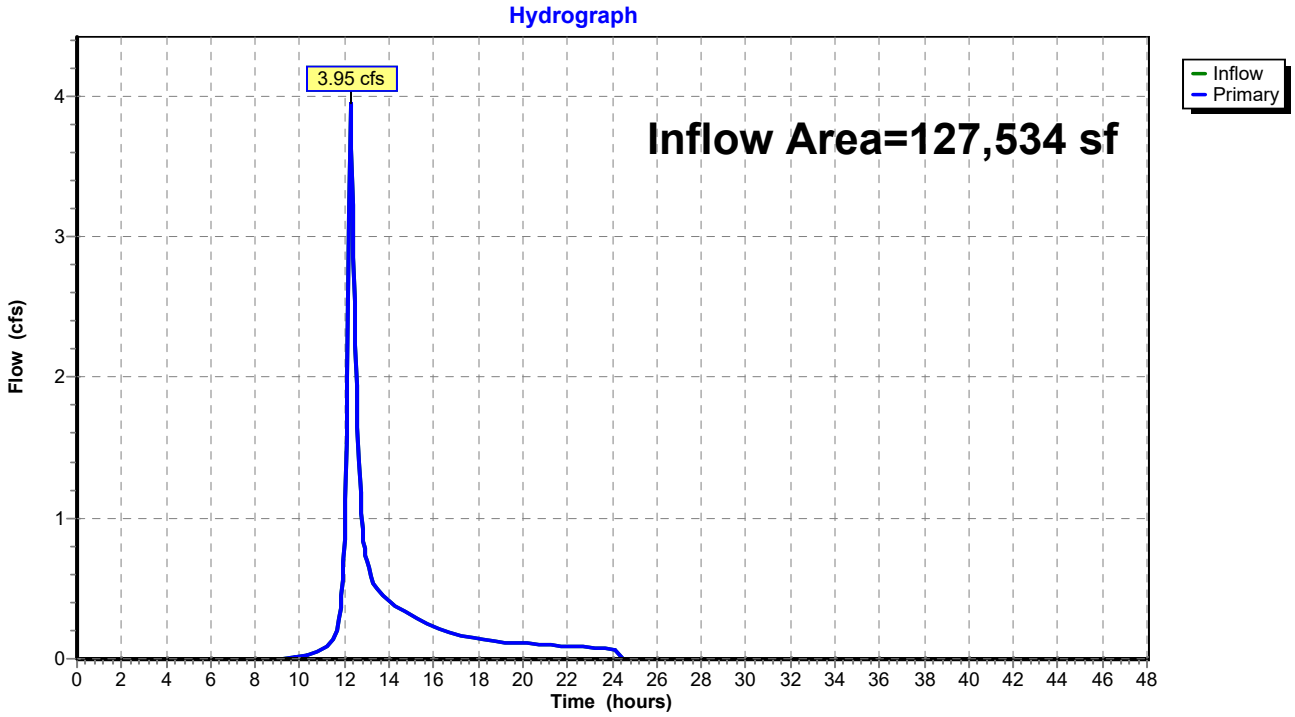


Summary for Link 12L: AP-3

Inflow Area = 127,534 sf, 0.38% Impervious, Inflow Depth = 1.44" for 2-YEAR event
Inflow = 3.95 cfs @ 12.26 hrs, Volume= 15,308 cf
Primary = 3.95 cfs @ 12.26 hrs, Volume= 15,308 cf, Atten= 0%, Lag= 0.0 min

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

Link 12L: AP-3

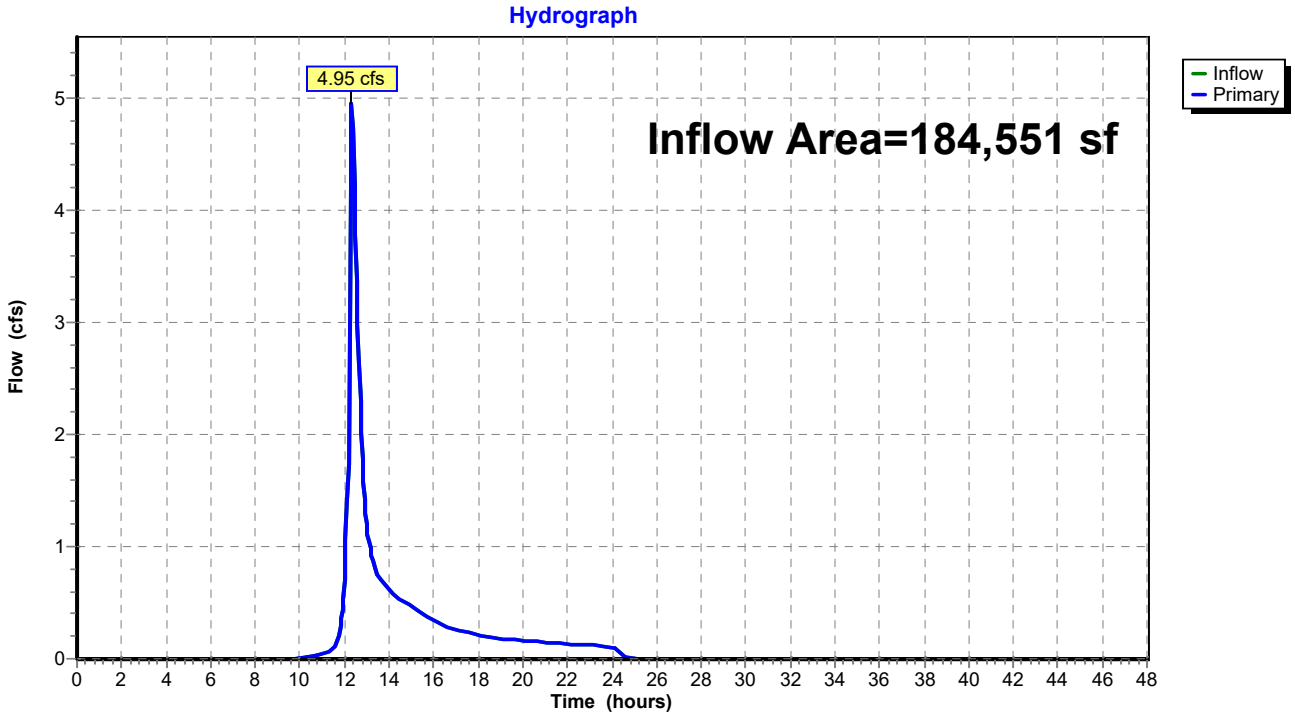


Summary for Link 13L: AP-4

Inflow Area = 184,551 sf, 0.00% Impervious, Inflow Depth = 1.41" for 2-YEAR event
Inflow = 4.95 cfs @ 12.32 hrs, Volume= 21,686 cf
Primary = 4.95 cfs @ 12.32 hrs, Volume= 21,686 cf, Atten= 0%, Lag= 0.0 min

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

Link 13L: AP-4

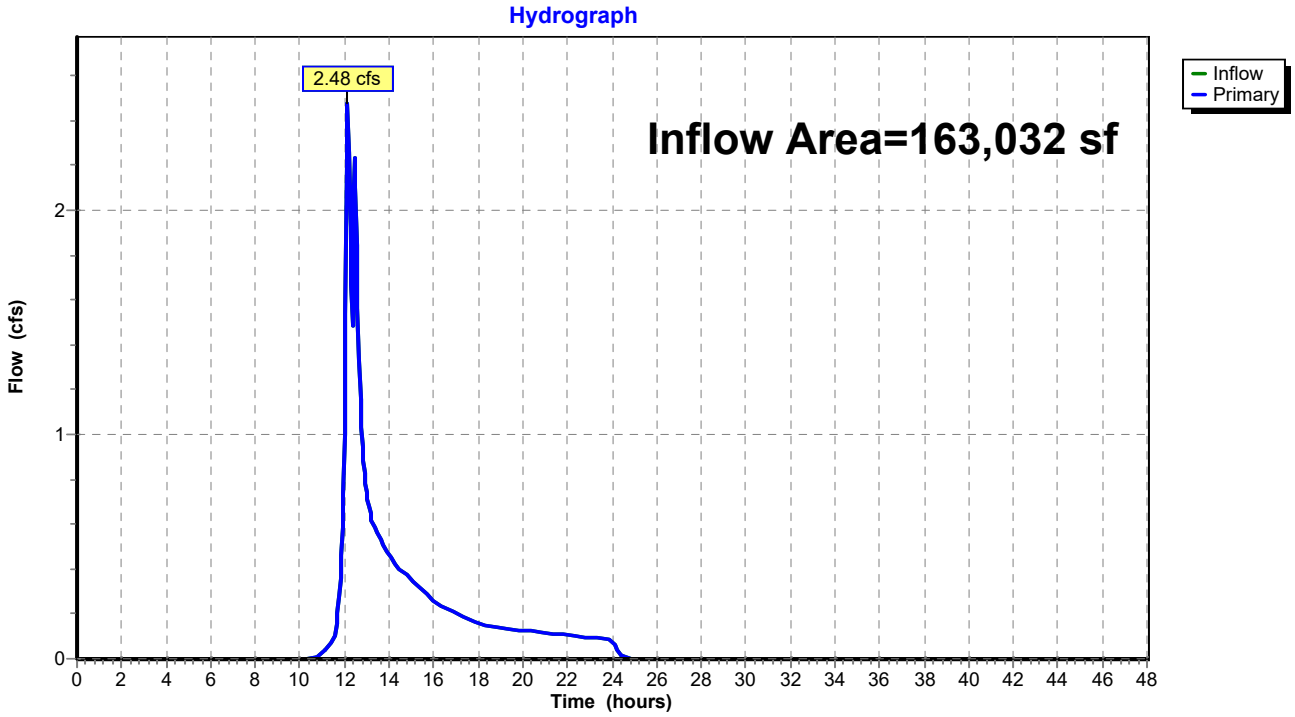


Summary for Link 14L: AP-5

Inflow Area = 163,032 sf, 0.00% Impervious, Inflow Depth = 1.10" for 2-YEAR event
Inflow = 2.48 cfs @ 12.15 hrs, Volume= 14,964 cf
Primary = 2.48 cfs @ 12.15 hrs, Volume= 14,964 cf, Atten= 0%, Lag= 0.0 min

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

Link 14L: AP-5



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

Subcatchment 1S: AP-1 Runoff Area=174,413 sf 0.00% Impervious Runoff Depth=4.77"
Flow Length=720' Slope=0.0200 '/' Tc=19.0 min CN=79 Runoff=15.29 cfs 69,297 cf

Subcatchment 2S: AP-2 Runoff Area=209,934 sf 0.00% Impervious Runoff Depth=4.33"
Flow Length=655' Slope=0.0300 '/' Tc=14.9 min CN=75 Runoff=18.46 cfs 75,683 cf

Subcatchment 3S: 3.1 Runoff Area=57,964 sf 0.83% Impervious Runoff Depth=4.77"
Flow Length=430' Slope=0.0200 '/' Tc=14.1 min CN=79 Runoff=5.69 cfs 23,030 cf

Subcatchment 4S: 3.2 Runoff Area=69,570 sf 0.00% Impervious Runoff Depth=4.66"
Flow Length=590' Slope=0.0270 '/' Tc=14.7 min CN=78 Runoff=6.59 cfs 26,997 cf

Subcatchment 5S: 4.1 Runoff Area=145,593 sf 0.00% Impervious Runoff Depth=4.77"
Flow Length=650' Slope=0.0150 '/' Tc=20.4 min CN=79 Runoff=12.37 cfs 57,846 cf

Subcatchment 6S: 4.2 Runoff Area=38,958 sf 0.00% Impervious Runoff Depth=4.66"
Flow Length=130' Slope=0.0230 '/' Tc=8.6 min CN=78 Runoff=4.38 cfs 15,118 cf

Subcatchment 7S: 5.1 Runoff Area=68,699 sf 0.00% Impervious Runoff Depth=4.66"
Flow Length=270' Slope=0.0166 '/' Tc=12.4 min CN=78 Runoff=6.92 cfs 26,659 cf

Subcatchment 8S: 5.2 Runoff Area=94,333 sf 0.00% Impervious Runoff Depth=4.00"
Flow Length=290' Slope=0.0300 '/' Tc=9.9 min CN=72 Runoff=8.79 cfs 31,445 cf

Pond 9P: 3.1-WQ-Swale Peak Elev=1,141.44' Storage=2,196 cf Inflow=5.69 cfs 23,030 cf
Outflow=5.61 cfs 21,256 cf

Pond 10P: 4.1-WQ-Swale Peak Elev=1,141.55' Storage=4,709 cf Inflow=12.37 cfs 57,846 cf
Outflow=12.25 cfs 54,477 cf

Pond 11P: 5.1-WQ-Swale Peak Elev=1,142.46' Storage=4,263 cf Inflow=6.92 cfs 26,659 cf
Outflow=6.69 cfs 23,290 cf

Link 12L: AP-3 Inflow=12.20 cfs 48,253 cf
Primary=12.20 cfs 48,253 cf

Link 13L: AP-4 Inflow=14.70 cfs 69,595 cf
Primary=14.70 cfs 69,595 cf

Link 14L: AP-5 Inflow=15.11 cfs 54,734 cf
Primary=15.11 cfs 54,734 cf

Total Runoff Area = 859,464 sf Runoff Volume = 326,074 cf Average Runoff Depth = 4.55"
99.94% Pervious = 858,984 sf 0.06% Impervious = 480 sf

Summary for Subcatchment 1S: AP-1

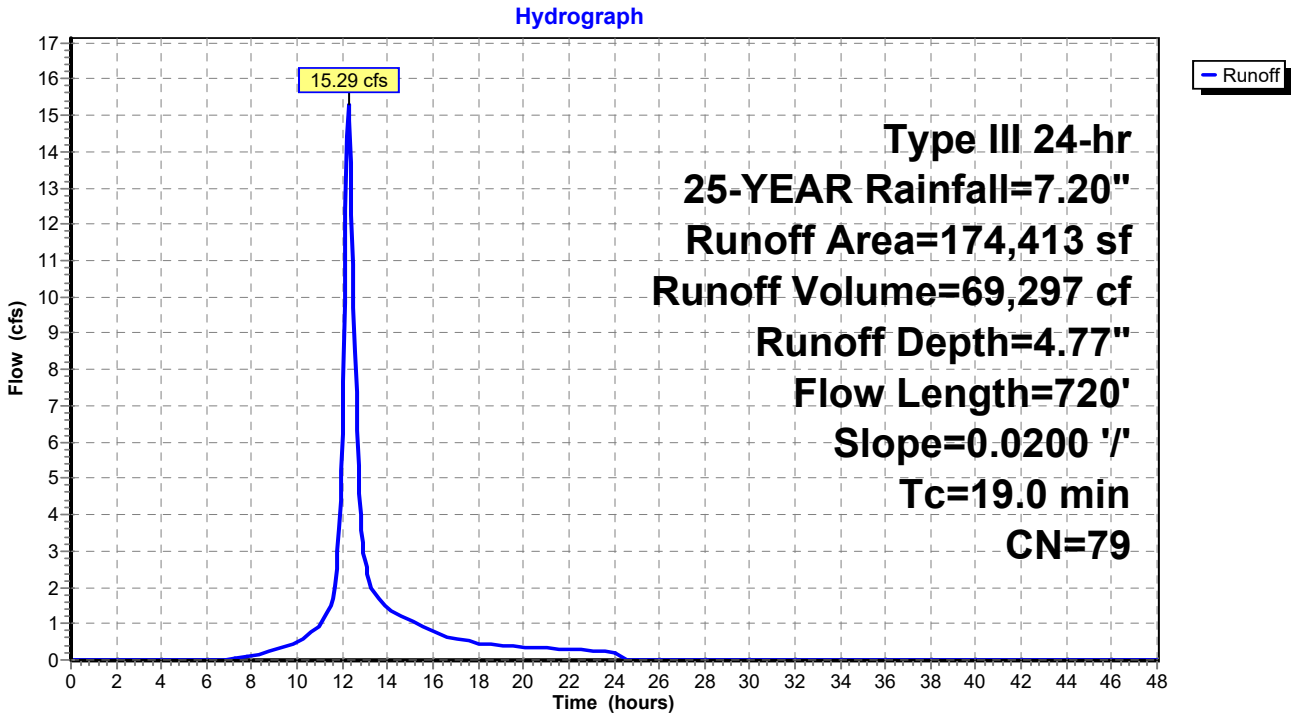
Runoff = 15.29 cfs @ 12.26 hrs, Volume= 69,297 cf, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
11,901	77	Woods, Good, HSG D
77,225	80	>75% Grass cover, Good, HSG D
75,886	80	Pasture/grassland/range, Good, HSG D
7,185	74	>75% Grass cover, Good, HSG C
2,216	74	Pasture/grassland/range, Good, HSG C
174,413	79	Weighted Average
174,413		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.3	670	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.0	720	Total			

Subcatchment 1S: AP-1



Summary for Subcatchment 2S: AP-2

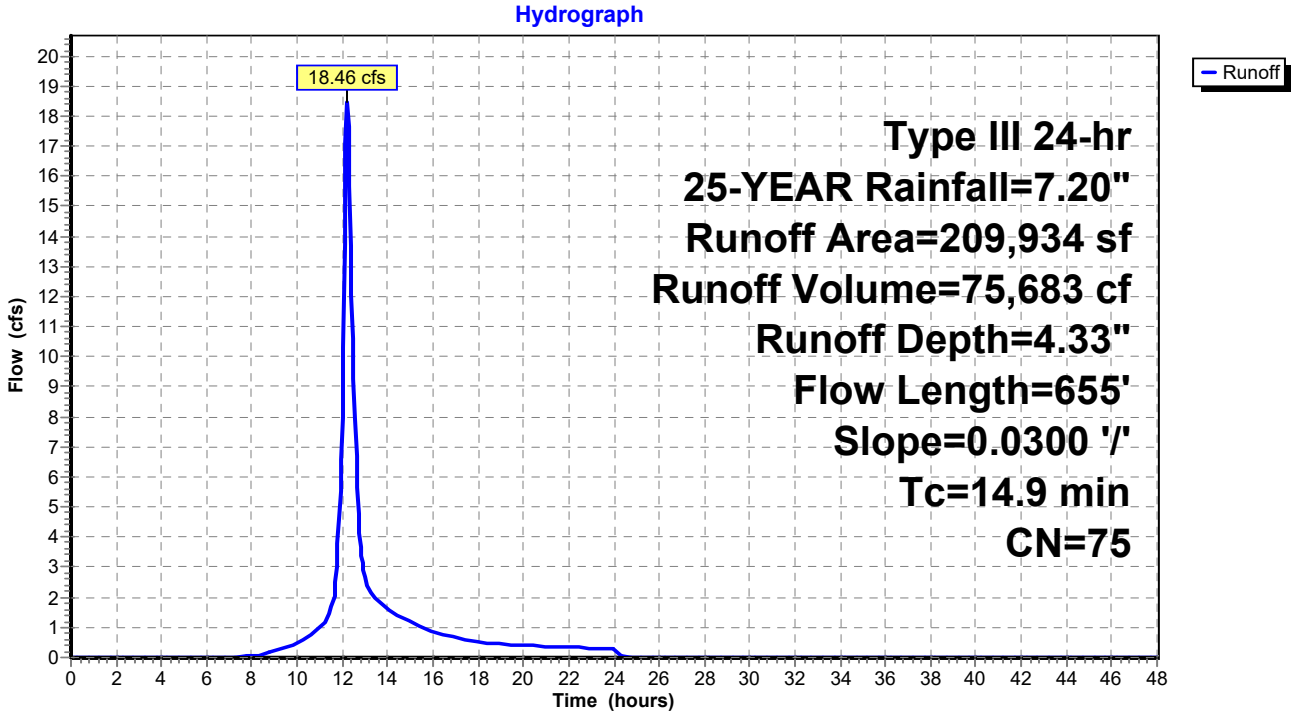
Runoff = 18.46 cfs @ 12.21 hrs, Volume= 75,683 cf, Depth= 4.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
1,581	80	>75% Grass cover, Good, HSG D
7,154	74	>75% Grass cover, Good, HSG C
12,098	70	Woods, Good, HSG C
84,899	71	Meadow, non-grazed, HSG C
98,931	78	Meadow, non-grazed, HSG D
5,271	96	Gravel surface, HSG D
209,934	75	Weighted Average
209,934		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
8.3	605	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.9	655	Total			

Subcatchment 2S: AP-2



Summary for Subcatchment 3S: 3.1

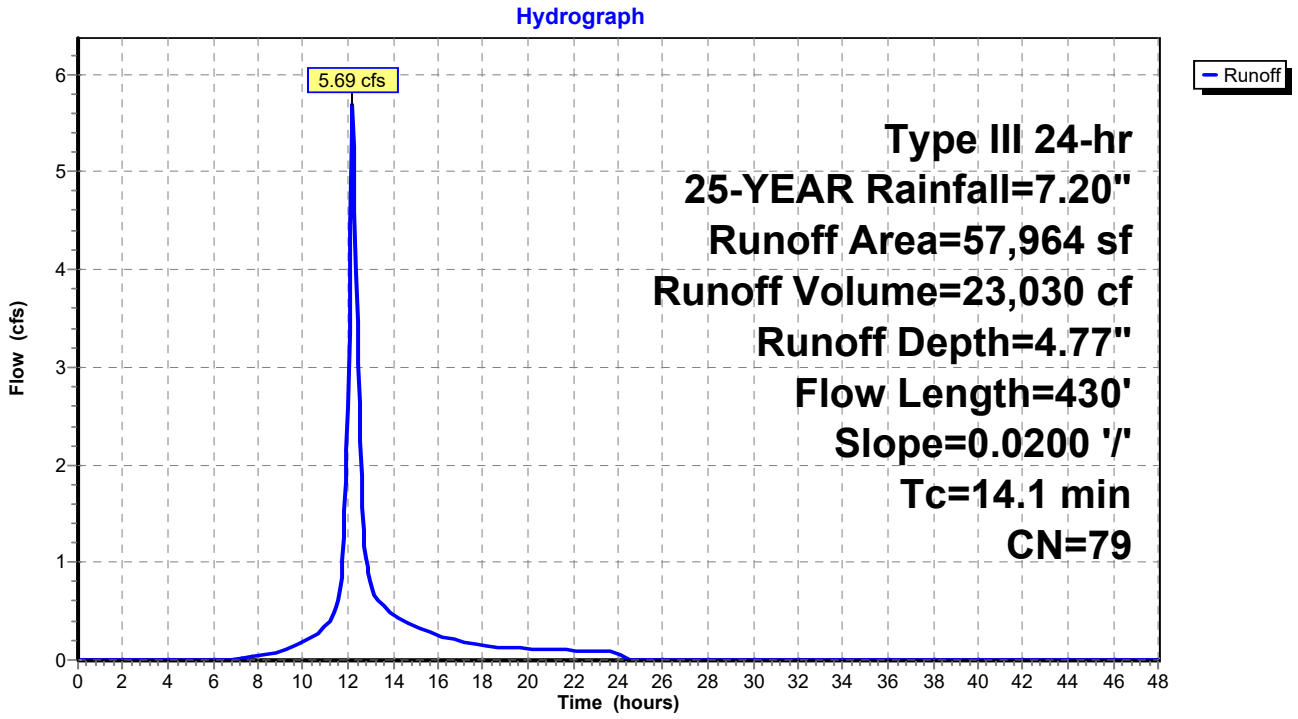
Runoff = 5.69 cfs @ 12.19 hrs, Volume= 23,030 cf, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
480	98	Unconnected roofs, HSG D
2,753	96	Gravel surface, HSG D
54,731	78	Meadow, non-grazed, HSG D
57,964	79	Weighted Average
57,484		99.17% Pervious Area
480		0.83% Impervious Area
480		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
6.4	380	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.1	430	Total			

Subcatchment 3S: 3.1



Summary for Subcatchment 4S: 3.2

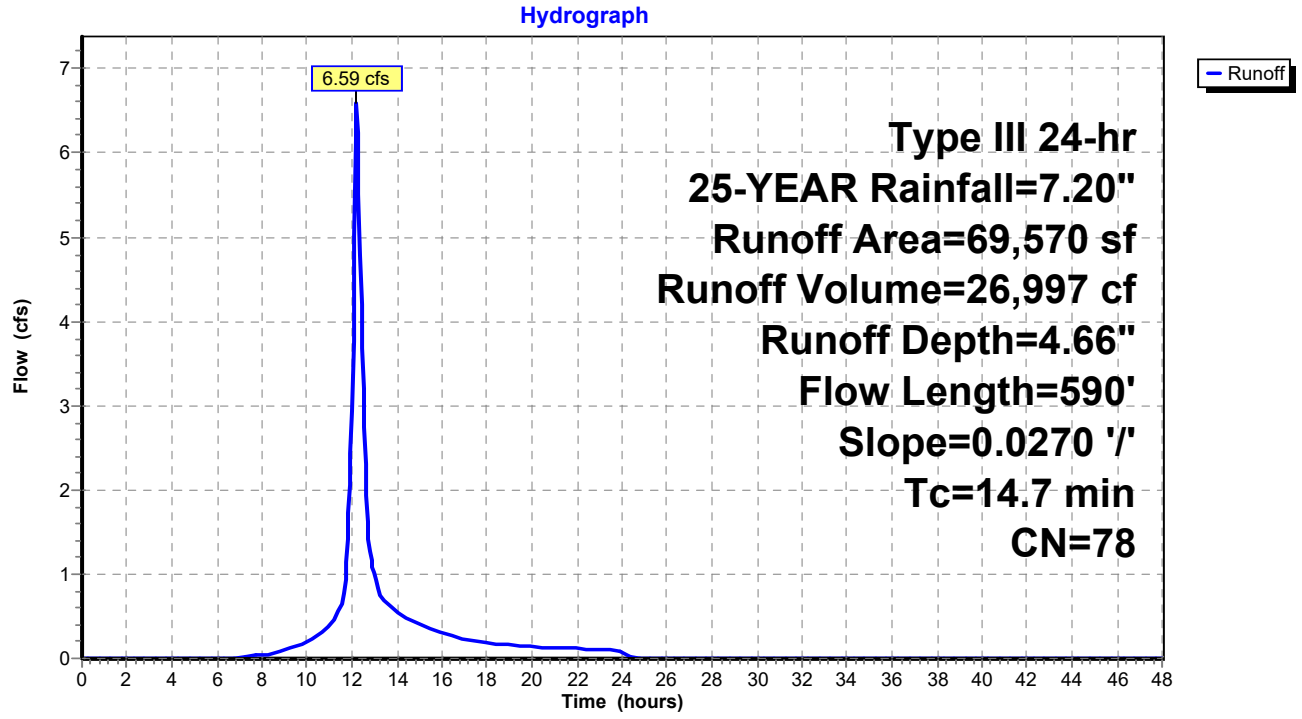
Runoff = 6.59 cfs @ 12.20 hrs, Volume= 26,997 cf, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
12,364	77	Woods, Good, HSG D
57,206	78	Meadow, non-grazed, HSG D
69,570	78	Weighted Average
69,570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0270	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
7.8	540	0.0270	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.7	590	Total			

Subcatchment 4S: 3.2



Summary for Subcatchment 5S: 4.1

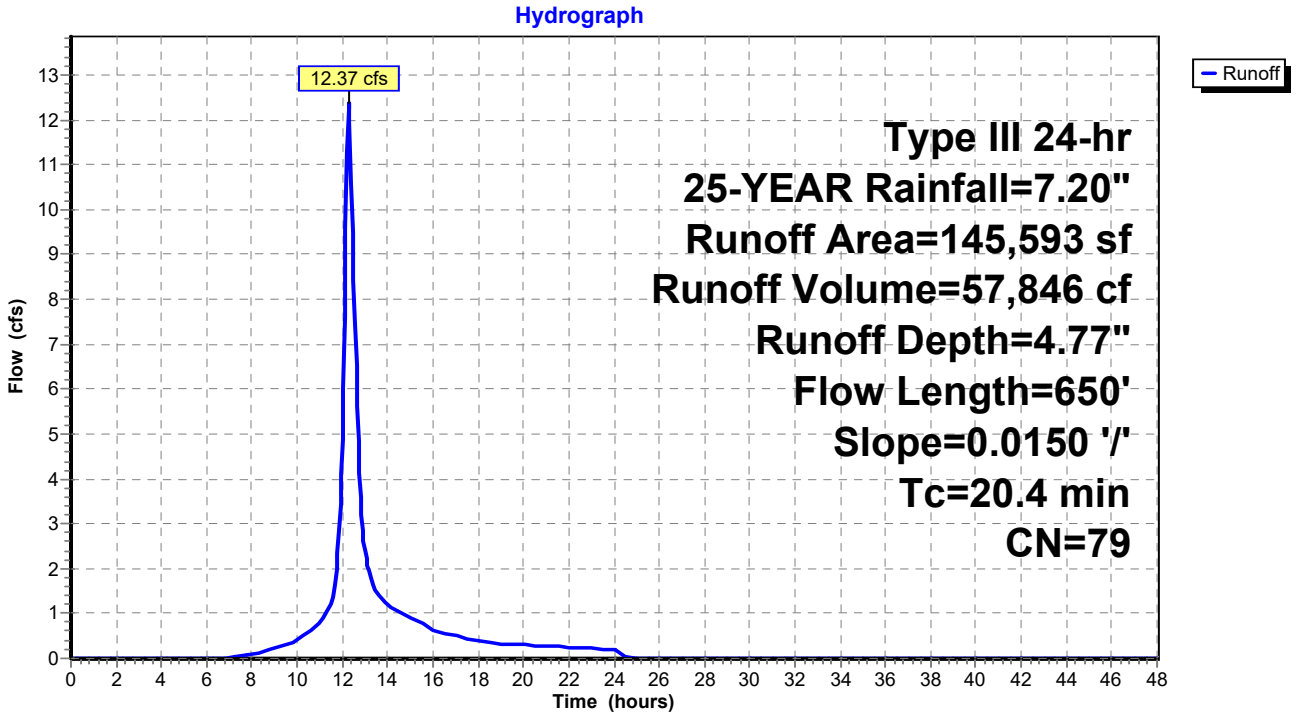
Runoff = 12.37 cfs @ 12.28 hrs, Volume= 57,846 cf, Depth= 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
140,457	78	Meadow, non-grazed, HSG D
5,136	96	Gravel surface, HSG D
145,593	79	Weighted Average
145,593		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	50	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.7	600	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.4	650	Total			

Subcatchment 5S: 4.1



Summary for Subcatchment 6S: 4.2

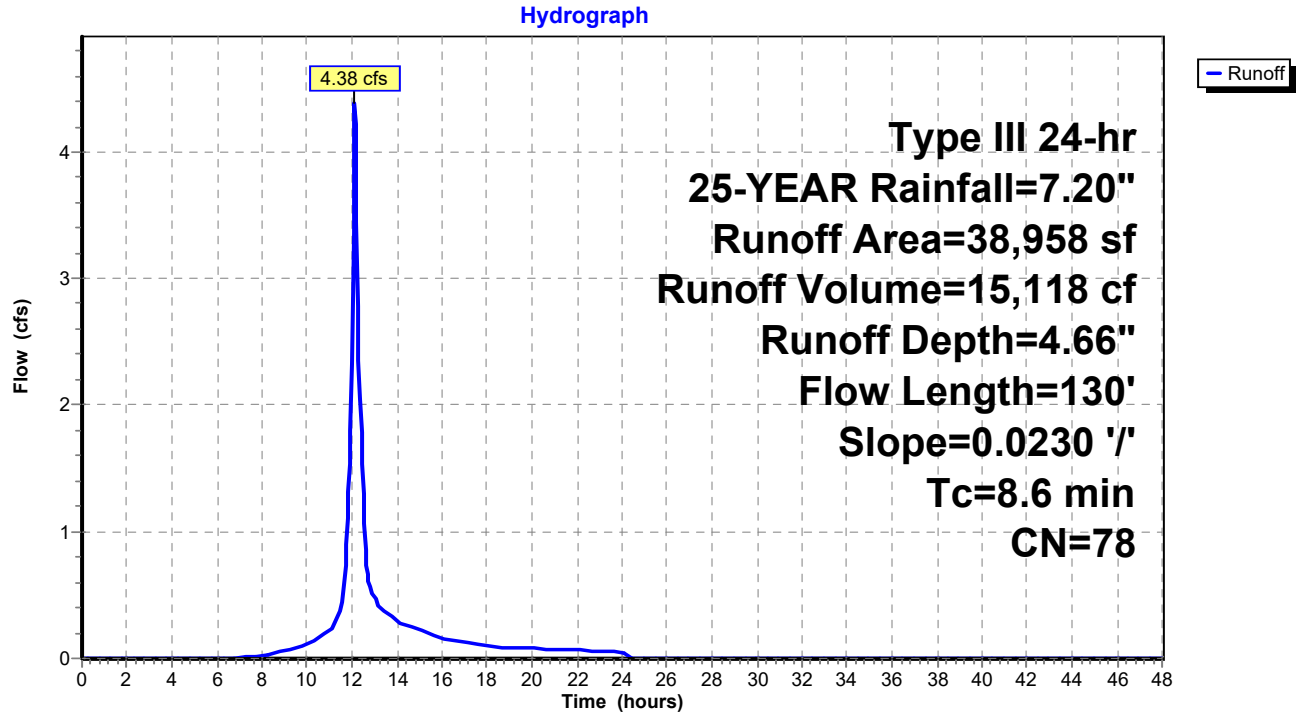
Runoff = 4.38 cfs @ 12.12 hrs, Volume= 15,118 cf, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
3,323	77	Woods, Good, HSG D
35,635	78	Meadow, non-grazed, HSG D
38,958	78	Weighted Average
38,958		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0230	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.3	80	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	130	Total			

Subcatchment 6S: 4.2



Summary for Subcatchment 7S: 5.1

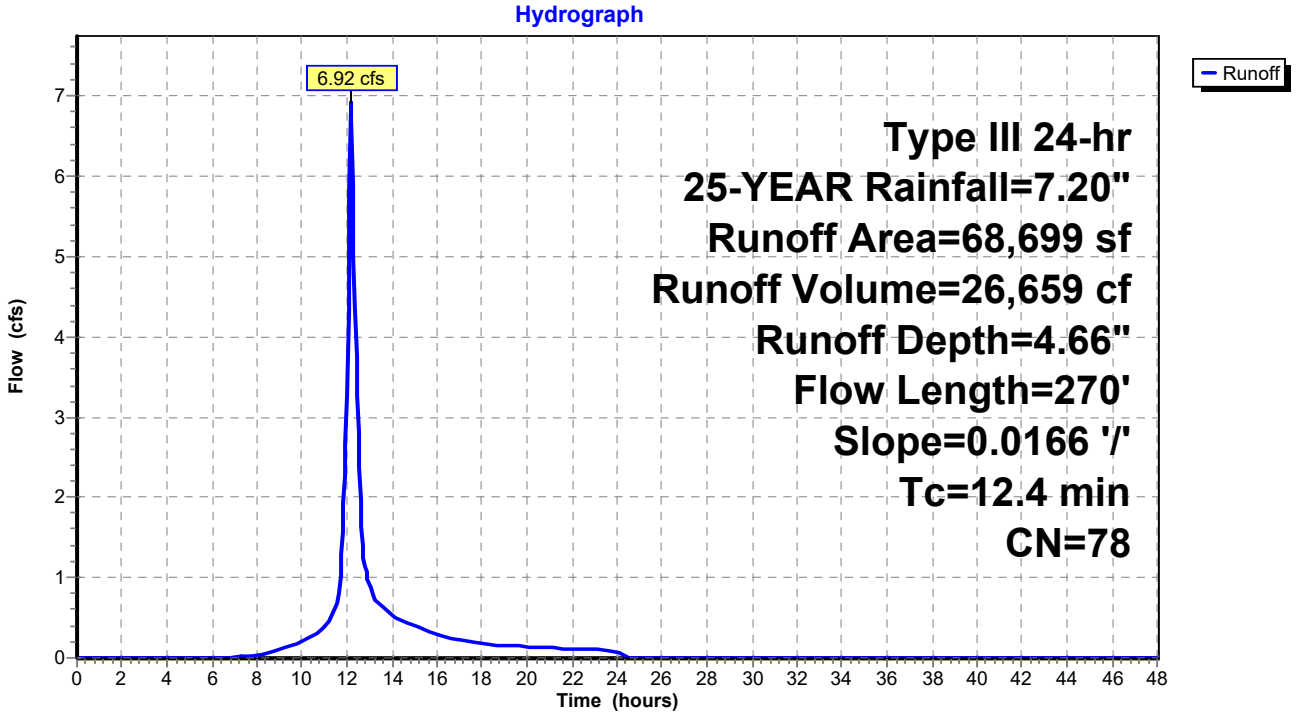
Runoff = 6.92 cfs @ 12.17 hrs, Volume= 26,659 cf, Depth= 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
3,816	96	Gravel surface, HSG D
52,945	78	Meadow, non-grazed, HSG D
11,938	71	Meadow, non-grazed, HSG C
68,699	78	Weighted Average
68,699		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0166	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
4.1	220	0.0166	0.90		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.4	270	Total			

Subcatchment 7S: 5.1



Summary for Subcatchment 8S: 5.2

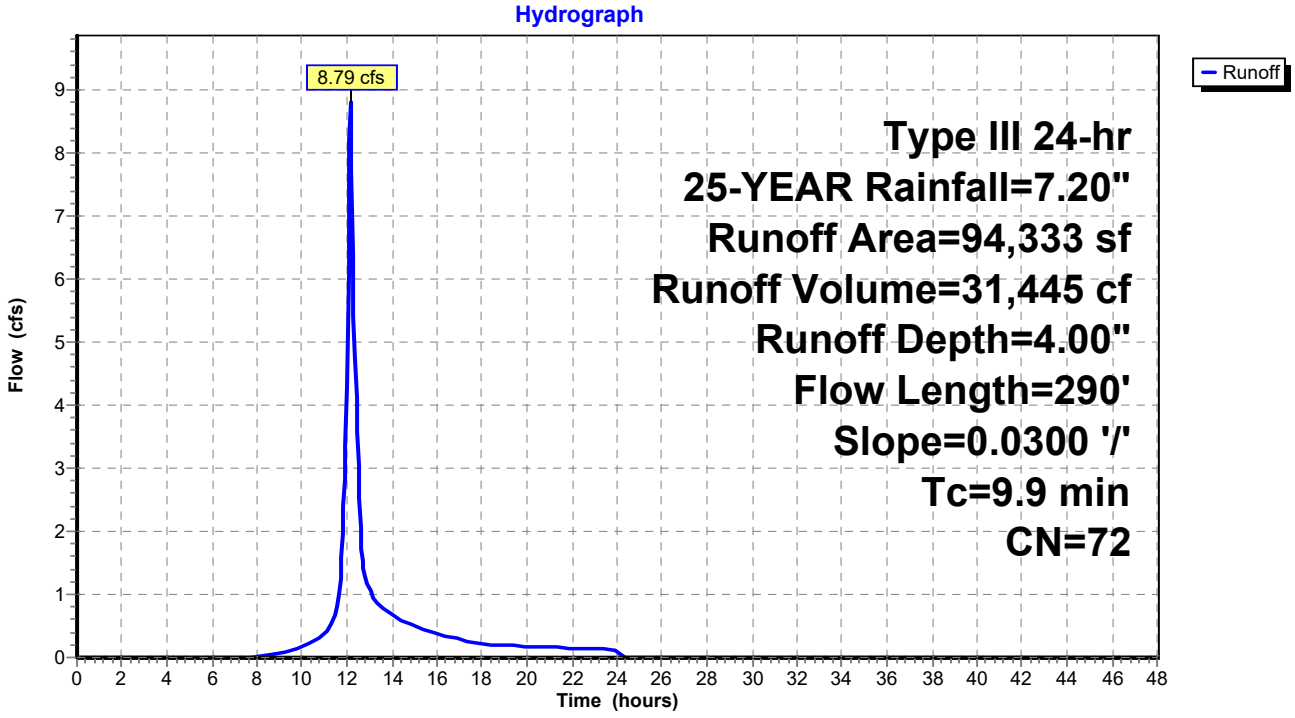
Runoff = 8.79 cfs @ 12.14 hrs, Volume= 31,445 cf, Depth= 4.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-YEAR Rainfall=7.20"

Area (sf)	CN	Description
1,408	77	Woods, Good, HSG D
29,453	70	Woods, Good, HSG C
21,239	78	Meadow, non-grazed, HSG D
42,233	71	Meadow, non-grazed, HSG C
94,333	72	Weighted Average
94,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
3.3	240	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.9	290	Total			

Subcatchment 8S: 5.2



Summary for Pond 9P: 3.1-WQ-Swale

Inflow Area = 57,964 sf, 0.83% Impervious, Inflow Depth = 4.77" for 25-YEAR event
Inflow = 5.69 cfs @ 12.19 hrs, Volume= 23,030 cf
Outflow = 5.61 cfs @ 12.21 hrs, Volume= 21,256 cf, Atten= 1%, Lag= 0.9 min
Primary = 5.61 cfs @ 12.21 hrs, Volume= 21,256 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,141.44' @ 12.21 hrs Surf.Area= 2,370 sf Storage= 2,196 cf

Plug-Flow detention time= 61.3 min calculated for 21,256 cf (92% of inflow)
Center-of-Mass det. time= 21.0 min (837.8 - 816.8)

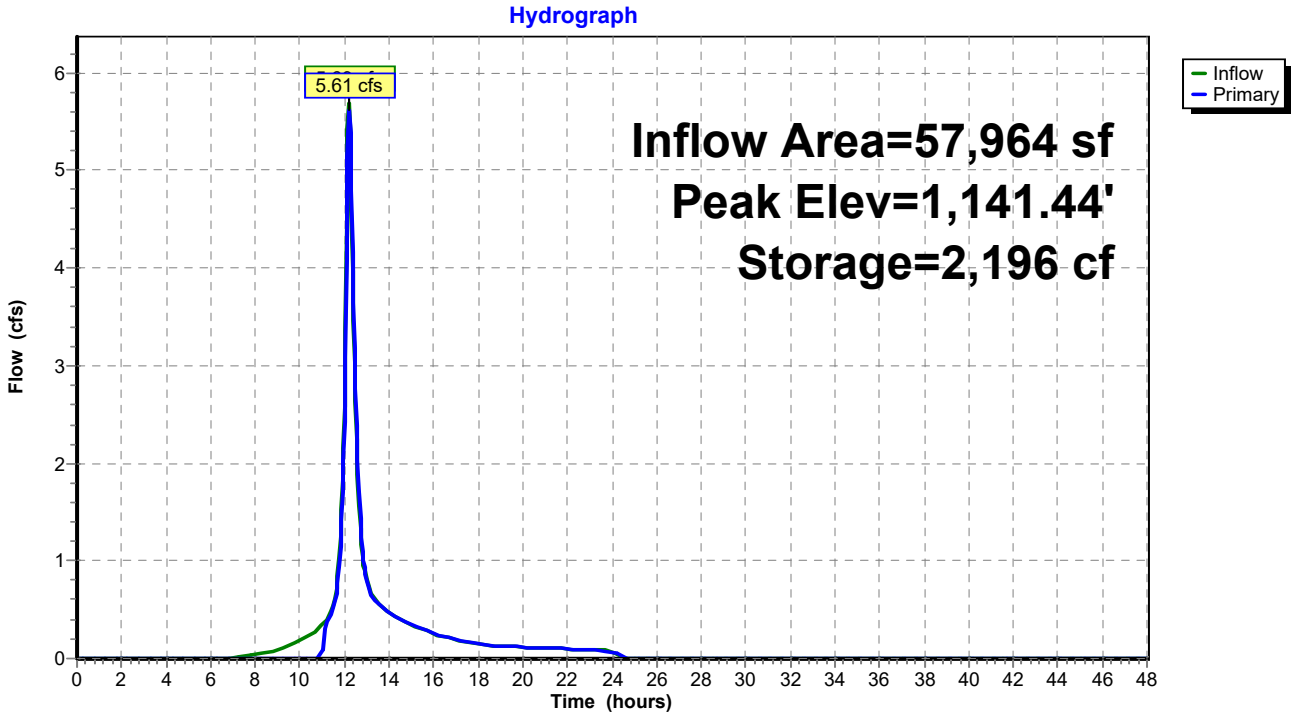
Volume	Invert	Avail.Storage	Storage Description
#1	1,140.00'	3,726 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,140.00	713	0	0
1,141.00	1,844	1,279	1,279
1,142.00	3,051	2,448	3,726

Device	Routing	Invert	Outlet Devices
#1	Primary	1,141.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=5.56 cfs @ 12.21 hrs HW=1,141.43' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 5.56 cfs @ 1.00 fps)

Pond 9P: 3.1-WQ-Swale



Summary for Pond 10P: 4.1-WQ-Swale

Inflow Area = 145,593 sf, 0.00% Impervious, Inflow Depth = 4.77" for 25-YEAR event
Inflow = 12.37 cfs @ 12.28 hrs, Volume= 57,846 cf
Outflow = 12.25 cfs @ 12.30 hrs, Volume= 54,477 cf, Atten= 1%, Lag= 1.4 min
Primary = 12.25 cfs @ 12.30 hrs, Volume= 54,477 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,141.55' @ 12.30 hrs Surf.Area= 4,711 sf Storage= 4,709 cf

Plug-Flow detention time= 50.0 min calculated for 54,477 cf (94% of inflow)
Center-of-Mass det. time= 18.4 min (841.0 - 822.6)

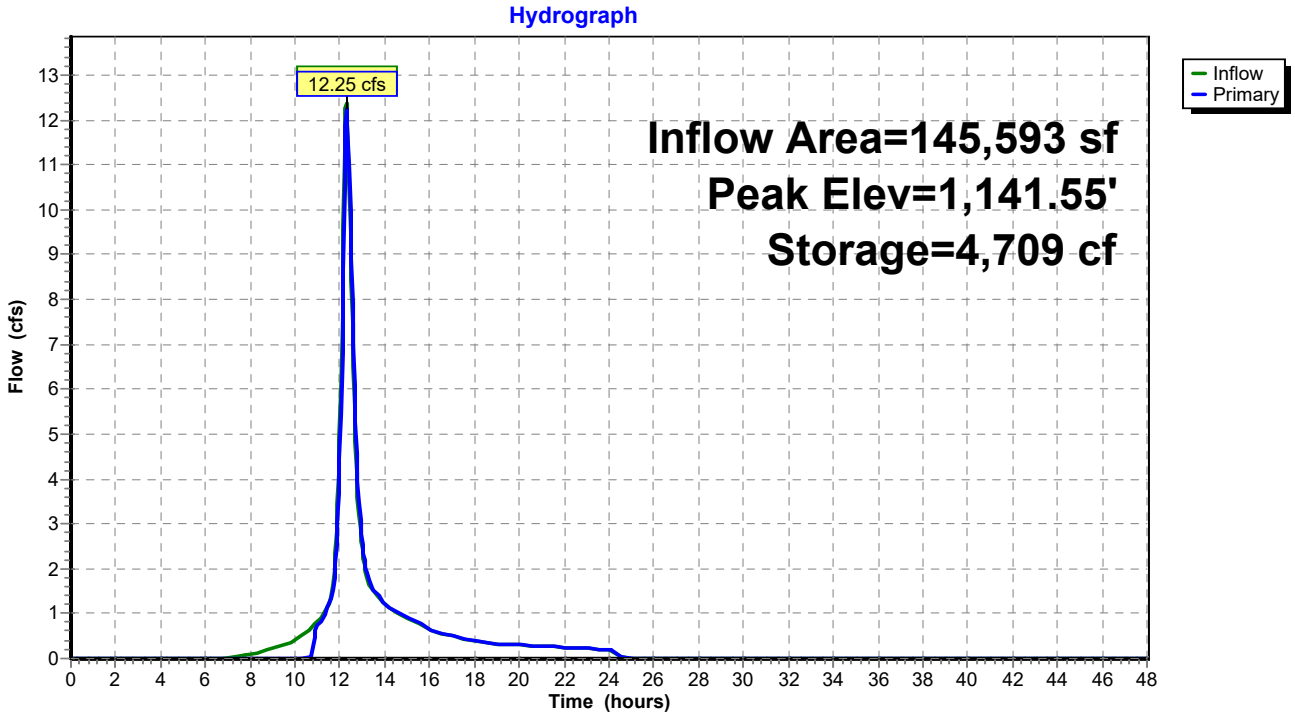
Volume	Invert	Avail.Storage	Storage Description
#1	1,140.00'	7,023 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,140.00	1,373	0	0
1,141.00	3,492	2,433	2,433
1,142.00	5,688	4,590	7,023

Device	Routing	Invert	Outlet Devices
#1	Primary	1,141.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=12.24 cfs @ 12.30 hrs HW=1,141.55' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 12.24 cfs @ 1.34 fps)

Pond 10P: 4.1-WQ-Swale



Summary for Pond 11P: 5.1-WQ-Swale

Inflow Area = 68,699 sf, 0.00% Impervious, Inflow Depth = 4.66" for 25-YEAR event
Inflow = 6.92 cfs @ 12.17 hrs, Volume= 26,659 cf
Outflow = 6.69 cfs @ 12.20 hrs, Volume= 23,290 cf, Atten= 3%, Lag= 1.8 min
Primary = 6.69 cfs @ 12.20 hrs, Volume= 23,290 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,142.46' @ 12.20 hrs Surf.Area= 4,498 sf Storage= 4,263 cf

Plug-Flow detention time= 87.7 min calculated for 23,265 cf (87% of inflow)
Center-of-Mass det. time= 30.8 min (848.3 - 817.6)

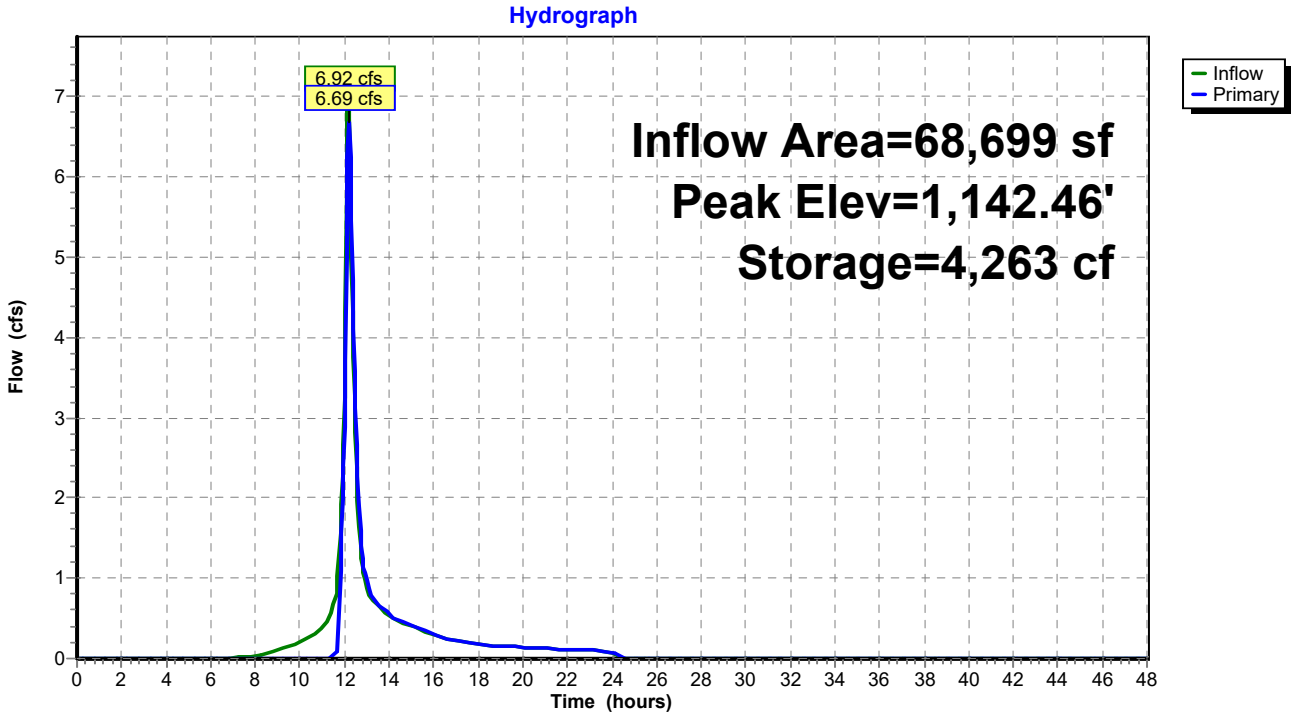
Volume	Invert	Avail.Storage	Storage Description
#1	1,141.00'	7,023 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,141.00	1,373	0	0
1,142.00	3,492	2,433	2,433
1,143.00	5,688	4,590	7,023

Device	Routing	Invert	Outlet Devices
#1	Primary	1,142.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=6.68 cfs @ 12.20 hrs HW=1,142.46' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 6.68 cfs @ 1.07 fps)

Pond 11P: 5.1-WQ-Swale

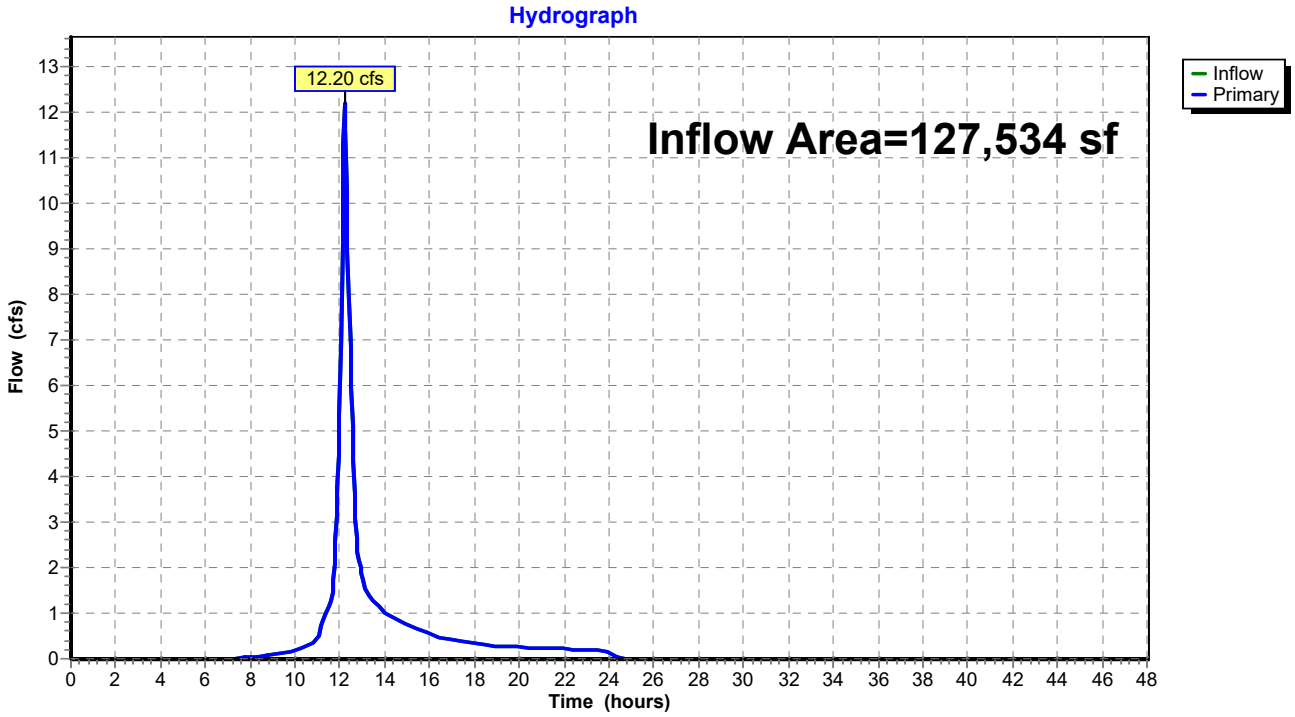


Summary for Link 12L: AP-3

Inflow Area = 127,534 sf, 0.38% Impervious, Inflow Depth = 4.54" for 25-YEAR event
Inflow = 12.20 cfs @ 12.21 hrs, Volume= 48,253 cf
Primary = 12.20 cfs @ 12.21 hrs, Volume= 48,253 cf, Atten= 0%, Lag= 0.0 min

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

Link 12L: AP-3

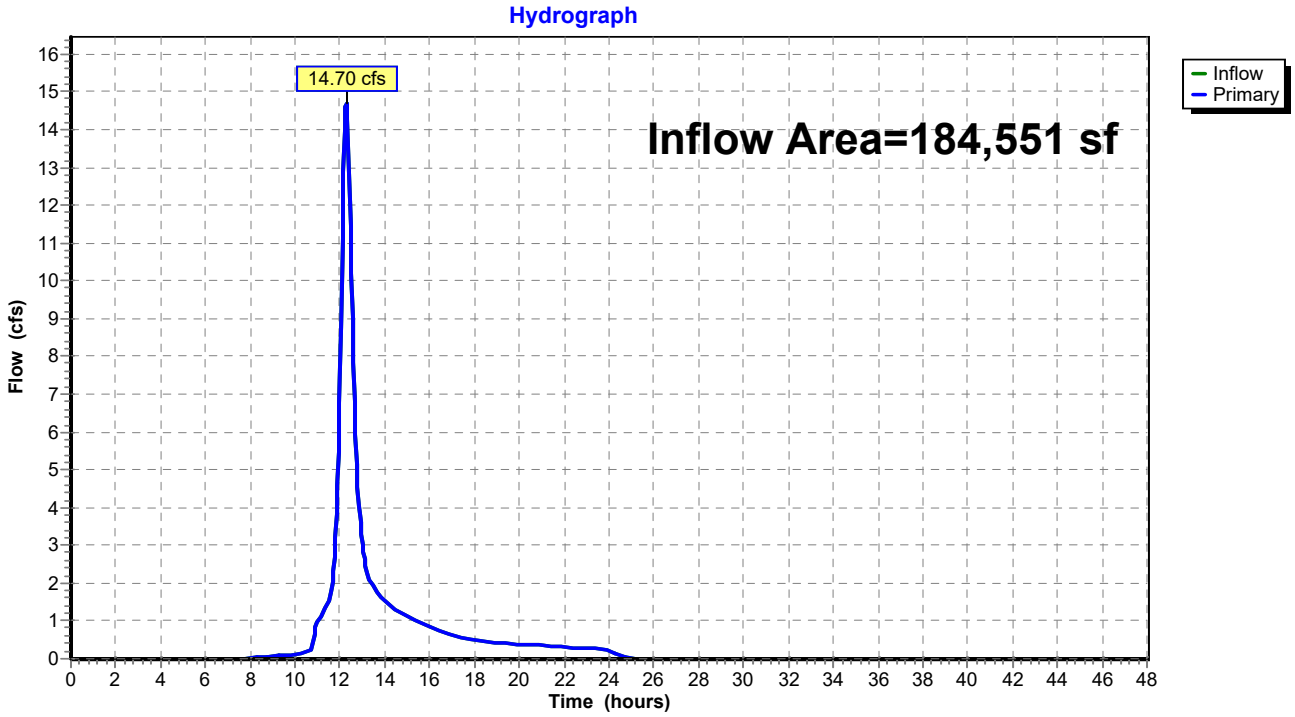


Summary for Link 13L: AP-4

Inflow Area = 184,551 sf, 0.00% Impervious, Inflow Depth = 4.53" for 25-YEAR event
Inflow = 14.70 cfs @ 12.27 hrs, Volume= 69,595 cf
Primary = 14.70 cfs @ 12.27 hrs, Volume= 69,595 cf, Atten= 0%, Lag= 0.0 min

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

Link 13L: AP-4

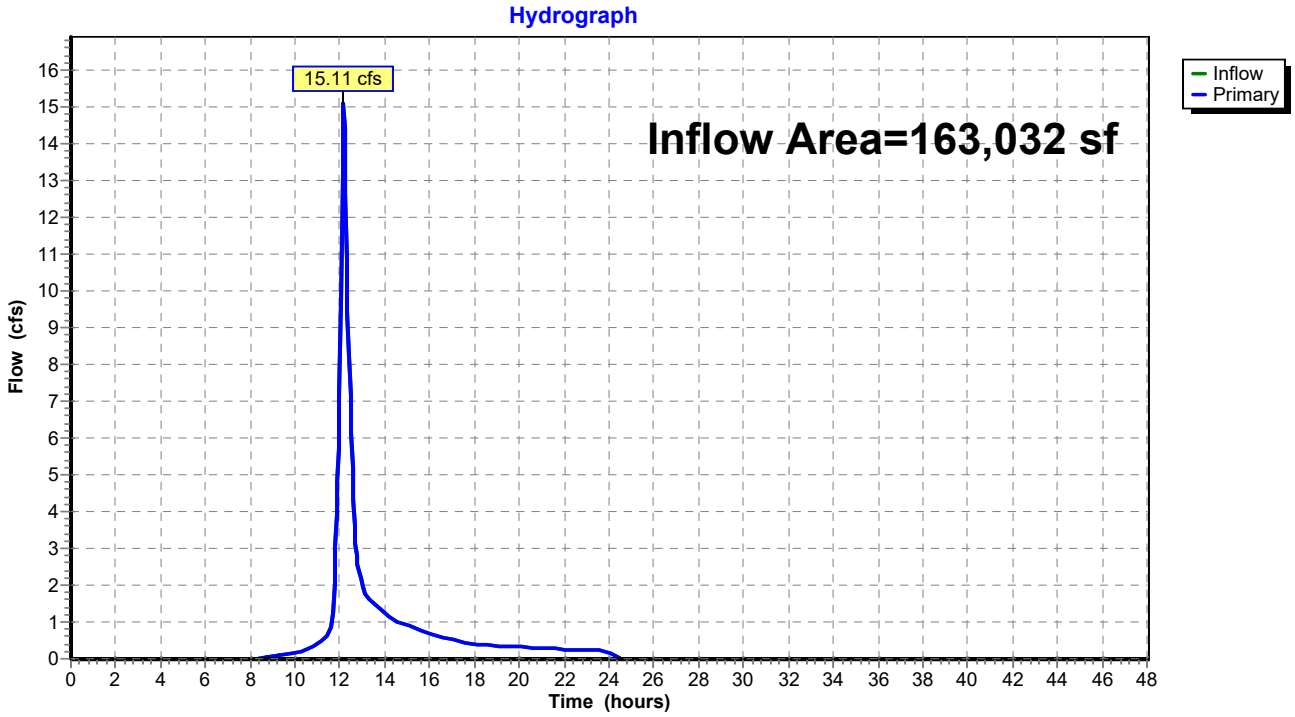


Summary for Link 14L: AP-5

Inflow Area = 163,032 sf, 0.00% Impervious, Inflow Depth = 4.03" for 25-YEAR event
Inflow = 15.11 cfs @ 12.16 hrs, Volume= 54,734 cf
Primary = 15.11 cfs @ 12.16 hrs, Volume= 54,734 cf, Atten= 0%, Lag= 0.0 min

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

Link 14L: AP-5



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

Subcatchment 1S: AP-1 Runoff Area=174,413 sf 0.00% Impervious Runoff Depth=5.69"
Flow Length=720' Slope=0.0200 '/' Tc=19.0 min CN=79 Runoff=18.18 cfs 82,765 cf

Subcatchment 2S: AP-2 Runoff Area=209,934 sf 0.00% Impervious Runoff Depth=5.22"
Flow Length=655' Slope=0.0300 '/' Tc=14.9 min CN=75 Runoff=22.22 cfs 91,365 cf

Subcatchment 3S: 3.1 Runoff Area=57,964 sf 0.83% Impervious Runoff Depth=5.69"
Flow Length=430' Slope=0.0200 '/' Tc=14.1 min CN=79 Runoff=6.76 cfs 27,506 cf

Subcatchment 4S: 3.2 Runoff Area=69,570 sf 0.00% Impervious Runoff Depth=5.58"
Flow Length=590' Slope=0.0270 '/' Tc=14.7 min CN=78 Runoff=7.86 cfs 32,328 cf

Subcatchment 5S: 4.1 Runoff Area=145,593 sf 0.00% Impervious Runoff Depth=5.69"
Flow Length=650' Slope=0.0150 '/' Tc=20.4 min CN=79 Runoff=14.74 cfs 69,089 cf

Subcatchment 6S: 4.2 Runoff Area=38,958 sf 0.00% Impervious Runoff Depth=5.58"
Flow Length=130' Slope=0.0230 '/' Tc=8.6 min CN=78 Runoff=5.22 cfs 18,103 cf

Subcatchment 7S: 5.1 Runoff Area=68,699 sf 0.00% Impervious Runoff Depth=5.58"
Flow Length=270' Slope=0.0166 '/' Tc=12.4 min CN=78 Runoff=8.25 cfs 31,923 cf

Subcatchment 8S: 5.2 Runoff Area=94,333 sf 0.00% Impervious Runoff Depth=4.87"
Flow Length=290' Slope=0.0300 '/' Tc=9.9 min CN=72 Runoff=10.69 cfs 38,286 cf

Pond 9P: 3.1-WQ-Swale Peak Elev=1,141.46' Storage=2,249 cf Inflow=6.76 cfs 27,506 cf
Outflow=6.68 cfs 25,731 cf

Pond 10P: 4.1-WQ-Swale Peak Elev=1,141.59' Storage=4,874 cf Inflow=14.74 cfs 69,089 cf
Outflow=14.57 cfs 65,717 cf

Pond 11P: 5.1-WQ-Swale Peak Elev=1,142.48' Storage=4,375 cf Inflow=8.25 cfs 31,923 cf
Outflow=7.99 cfs 28,551 cf

Link 12L: AP-3 Inflow=14.53 cfs 58,059 cf
Primary=14.53 cfs 58,059 cf

Link 13L: AP-4 Inflow=17.49 cfs 83,820 cf
Primary=17.49 cfs 83,820 cf

Link 14L: AP-5 Inflow=18.27 cfs 66,837 cf
Primary=18.27 cfs 66,837 cf

Total Runoff Area = 859,464 sf Runoff Volume = 391,365 cf Average Runoff Depth = 5.46"
99.94% Pervious = 858,984 sf 0.06% Impervious = 480 sf

Summary for Subcatchment 1S: AP-1

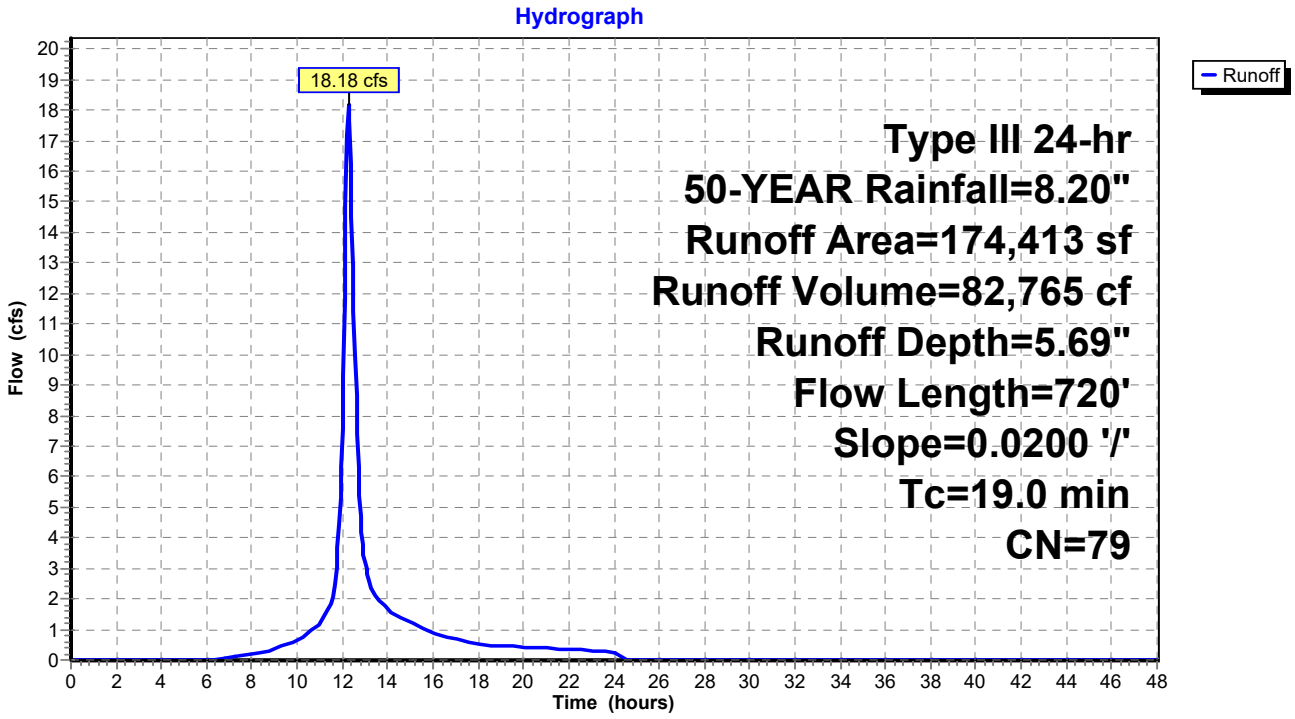
Runoff = 18.18 cfs @ 12.26 hrs, Volume= 82,765 cf, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
11,901	77	Woods, Good, HSG D
77,225	80	>75% Grass cover, Good, HSG D
75,886	80	Pasture/grassland/range, Good, HSG D
7,185	74	>75% Grass cover, Good, HSG C
2,216	74	Pasture/grassland/range, Good, HSG C
174,413	79	Weighted Average
174,413		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.3	670	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.0	720	Total			

Subcatchment 1S: AP-1



Summary for Subcatchment 2S: AP-2

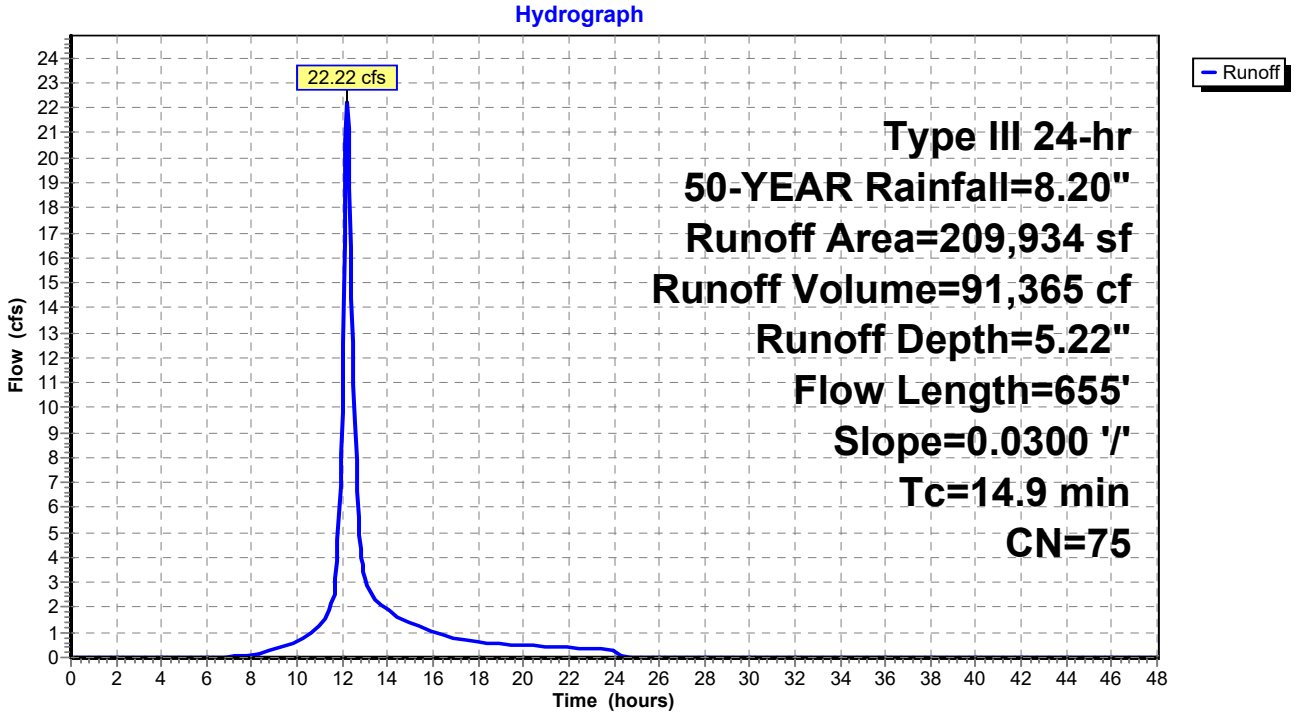
Runoff = 22.22 cfs @ 12.21 hrs, Volume= 91,365 cf, Depth= 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
1,581	80	>75% Grass cover, Good, HSG D
7,154	74	>75% Grass cover, Good, HSG C
12,098	70	Woods, Good, HSG C
84,899	71	Meadow, non-grazed, HSG C
98,931	78	Meadow, non-grazed, HSG D
5,271	96	Gravel surface, HSG D
209,934	75	Weighted Average
209,934		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
8.3	605	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.9	655	Total			

Subcatchment 2S: AP-2



Summary for Subcatchment 3S: 3.1

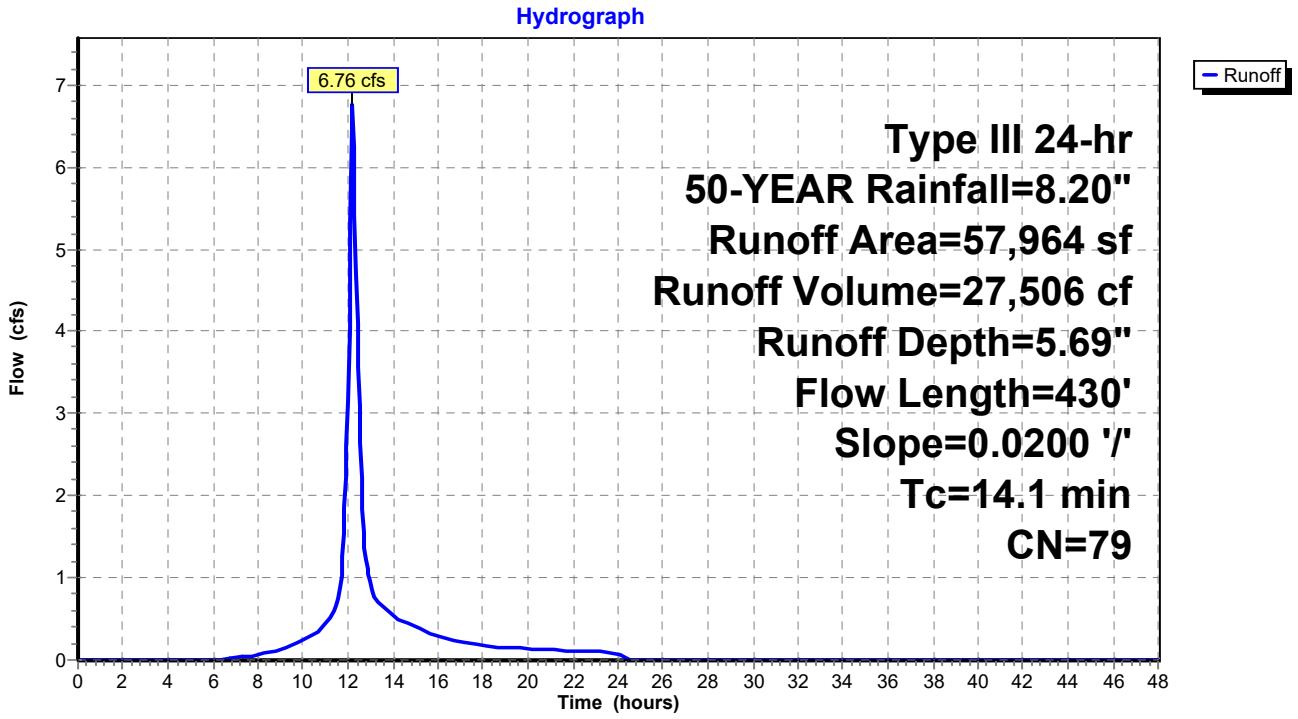
Runoff = 6.76 cfs @ 12.19 hrs, Volume= 27,506 cf, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
480	98	Unconnected roofs, HSG D
2,753	96	Gravel surface, HSG D
54,731	78	Meadow, non-grazed, HSG D
57,964	79	Weighted Average
57,484		99.17% Pervious Area
480		0.83% Impervious Area
480		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
6.4	380	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.1	430	Total			

Subcatchment 3S: 3.1



Summary for Subcatchment 4S: 3.2

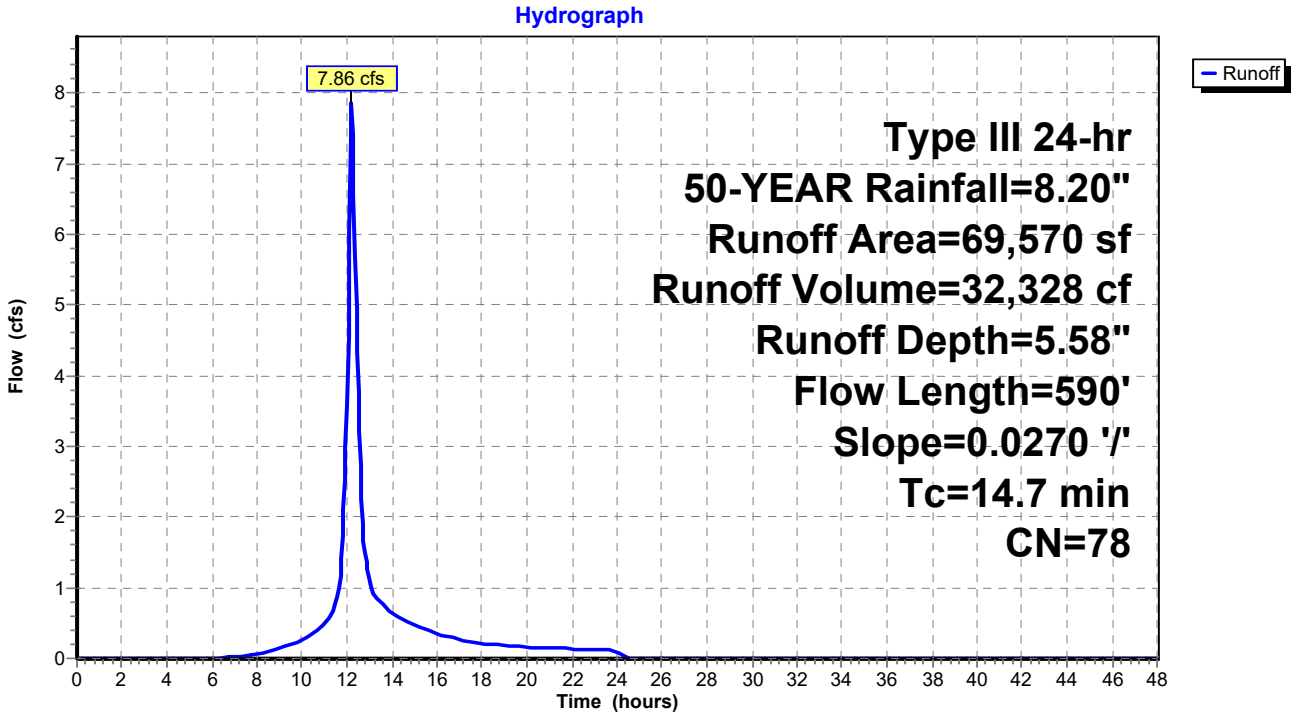
Runoff = 7.86 cfs @ 12.20 hrs, Volume= 32,328 cf, Depth= 5.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
12,364	77	Woods, Good, HSG D
57,206	78	Meadow, non-grazed, HSG D
69,570	78	Weighted Average
69,570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0270	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
7.8	540	0.0270	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.7	590	Total			

Subcatchment 4S: 3.2



Summary for Subcatchment 5S: 4.1

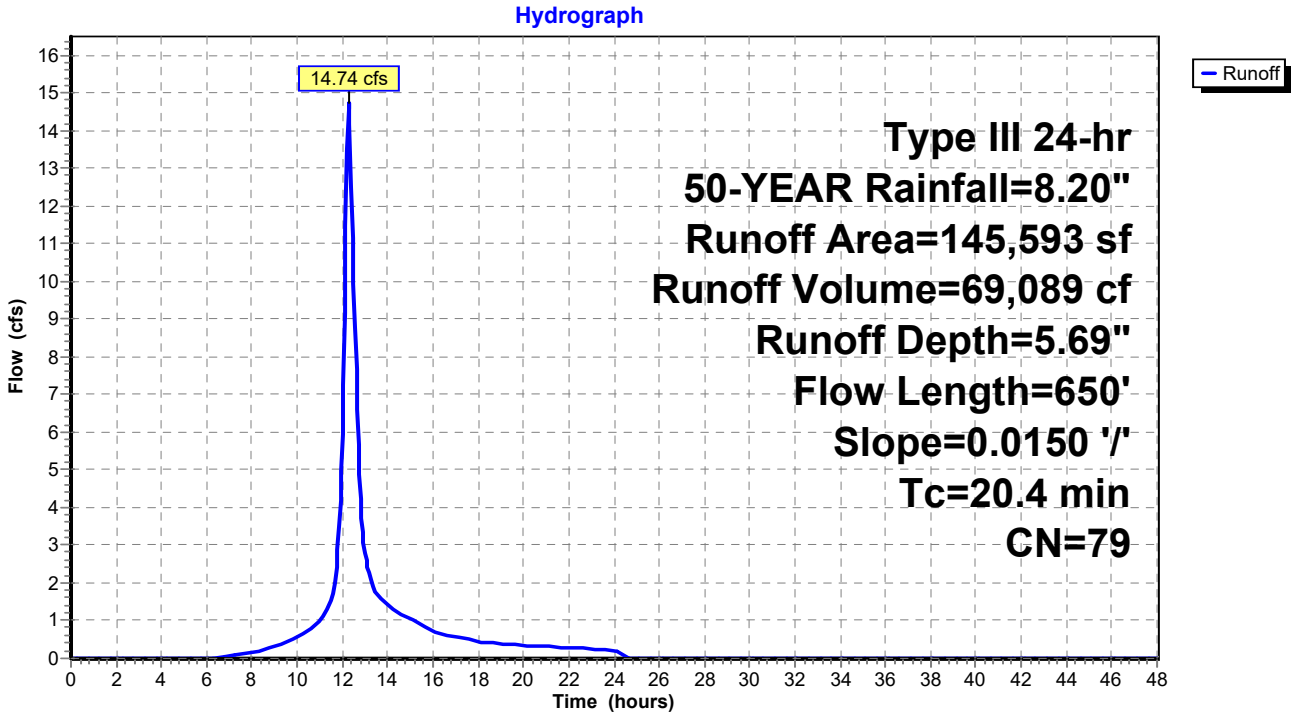
Runoff = 14.74 cfs @ 12.27 hrs, Volume= 69,089 cf, Depth= 5.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
140,457	78	Meadow, non-grazed, HSG D
5,136	96	Gravel surface, HSG D
145,593	79	Weighted Average
145,593		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	50	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.7	600	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.4	650	Total			

Subcatchment 5S: 4.1



Summary for Subcatchment 6S: 4.2

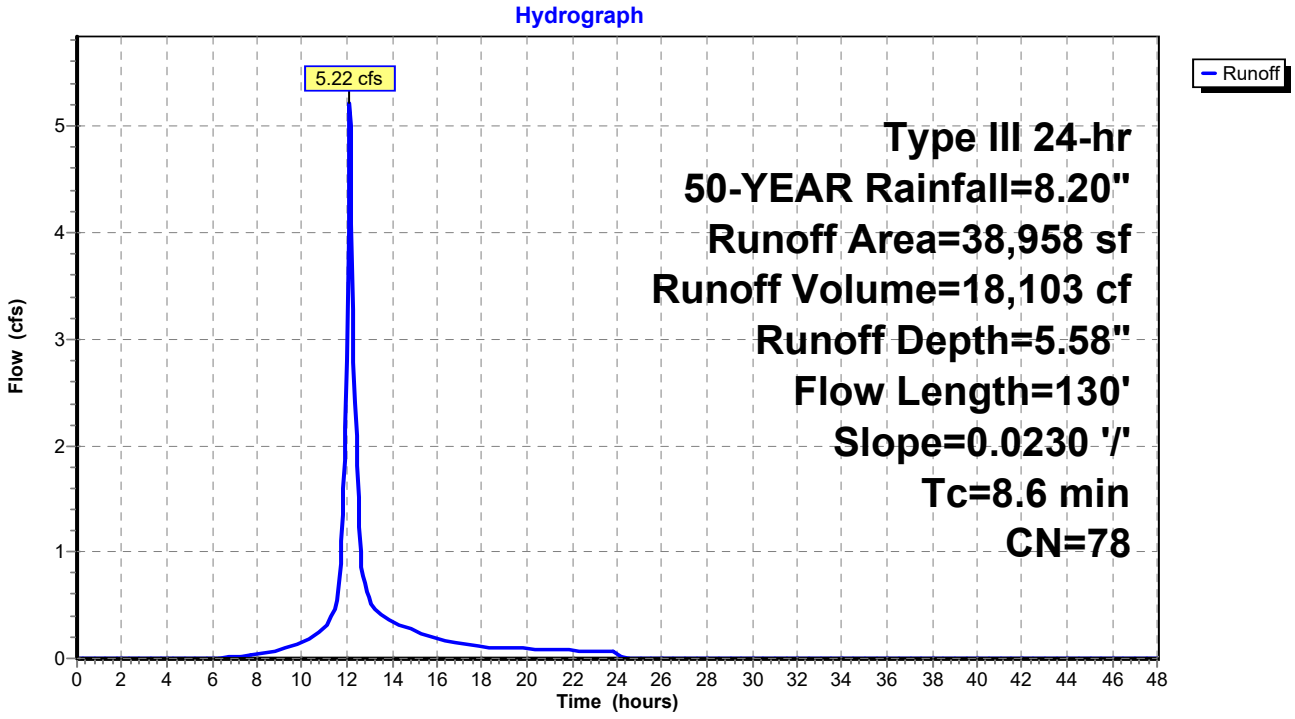
Runoff = 5.22 cfs @ 12.12 hrs, Volume= 18,103 cf, Depth= 5.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
3,323	77	Woods, Good, HSG D
35,635	78	Meadow, non-grazed, HSG D
38,958	78	Weighted Average
38,958		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0230	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.3	80	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	130	Total			

Subcatchment 6S: 4.2



Summary for Subcatchment 7S: 5.1

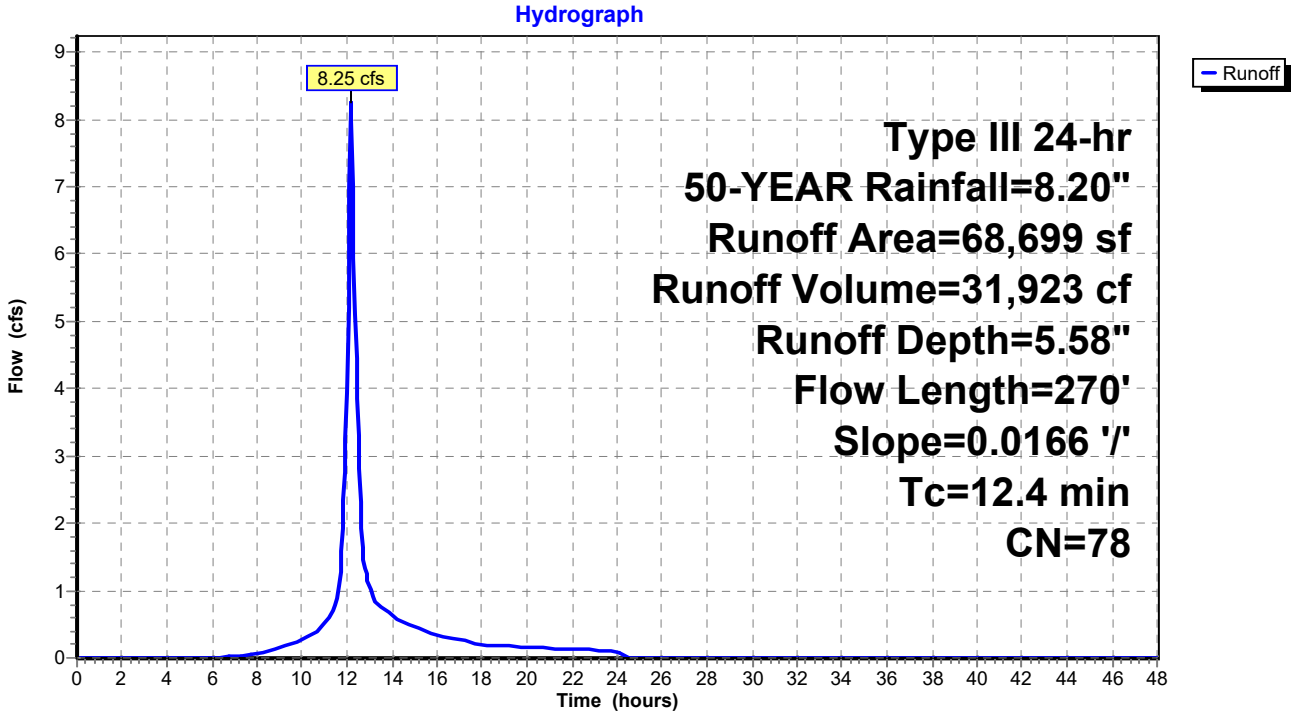
Runoff = 8.25 cfs @ 12.17 hrs, Volume= 31,923 cf, Depth= 5.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
3,816	96	Gravel surface, HSG D
52,945	78	Meadow, non-grazed, HSG D
11,938	71	Meadow, non-grazed, HSG C
68,699	78	Weighted Average
68,699		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0166	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
4.1	220	0.0166	0.90		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.4	270	Total			

Subcatchment 7S: 5.1



Summary for Subcatchment 8S: 5.2

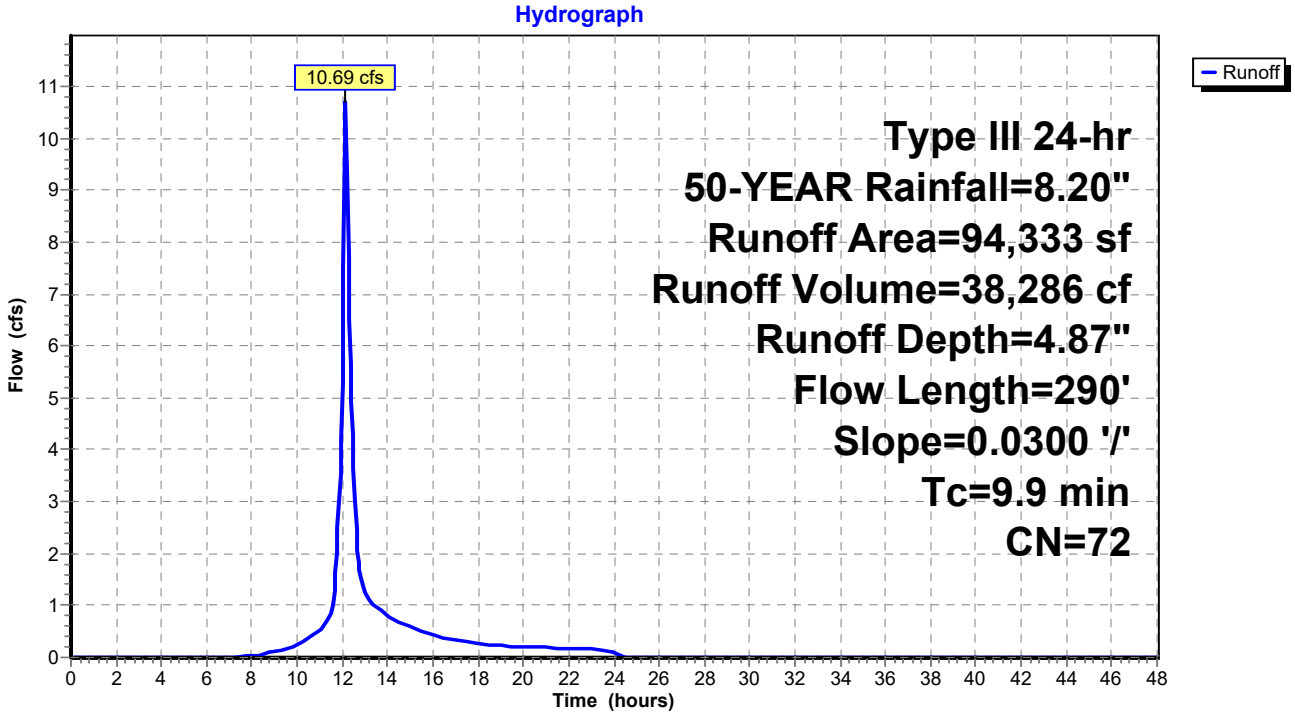
Runoff = 10.69 cfs @ 12.14 hrs, Volume= 38,286 cf, Depth= 4.87"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 50-YEAR Rainfall=8.20"

Area (sf)	CN	Description
1,408	77	Woods, Good, HSG D
29,453	70	Woods, Good, HSG C
21,239	78	Meadow, non-grazed, HSG D
42,233	71	Meadow, non-grazed, HSG C
94,333	72	Weighted Average
94,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
3.3	240	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.9	290	Total			

Subcatchment 8S: 5.2



Summary for Pond 9P: 3.1-WQ-Swale

Inflow Area = 57,964 sf, 0.83% Impervious, Inflow Depth = 5.69" for 50-YEAR event
Inflow = 6.76 cfs @ 12.19 hrs, Volume= 27,506 cf
Outflow = 6.68 cfs @ 12.21 hrs, Volume= 25,731 cf, Atten= 1%, Lag= 0.8 min
Primary = 6.68 cfs @ 12.21 hrs, Volume= 25,731 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,141.46' @ 12.21 hrs Surf.Area= 2,397 sf Storage= 2,249 cf

Plug-Flow detention time= 53.9 min calculated for 25,731 cf (94% of inflow)
Center-of-Mass det. time= 19.4 min (831.2 - 811.8)

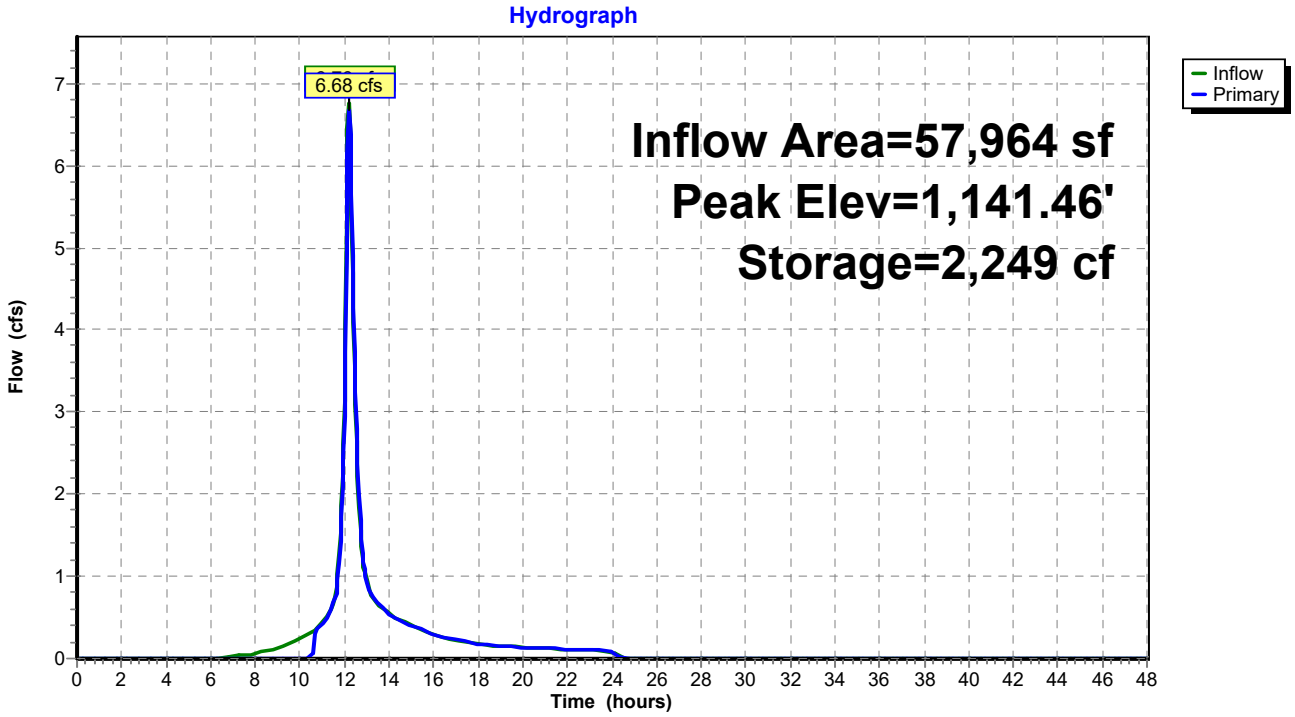
Volume	Invert	Avail.Storage	Storage Description
#1	1,140.00'	3,726 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,140.00	713	0	0
1,141.00	1,844	1,279	1,279
1,142.00	3,051	2,448	3,726

Device	Routing	Invert	Outlet Devices
#1	Primary	1,141.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=6.62 cfs @ 12.21 hrs HW=1,141.46' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 6.62 cfs @ 1.07 fps)

Pond 9P: 3.1-WQ-Swale



Summary for Pond 10P: 4.1-WQ-Swale

Inflow Area = 145,593 sf, 0.00% Impervious, Inflow Depth = 5.69" for 50-YEAR event
Inflow = 14.74 cfs @ 12.27 hrs, Volume= 69,089 cf
Outflow = 14.57 cfs @ 12.30 hrs, Volume= 65,717 cf, Atten= 1%, Lag= 1.4 min
Primary = 14.57 cfs @ 12.30 hrs, Volume= 65,717 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,141.59' @ 12.30 hrs Surf.Area= 4,787 sf Storage= 4,874 cf

Plug-Flow detention time= 44.2 min calculated for 65,717 cf (95% of inflow)
Center-of-Mass det. time= 17.0 min (834.6 - 817.6)

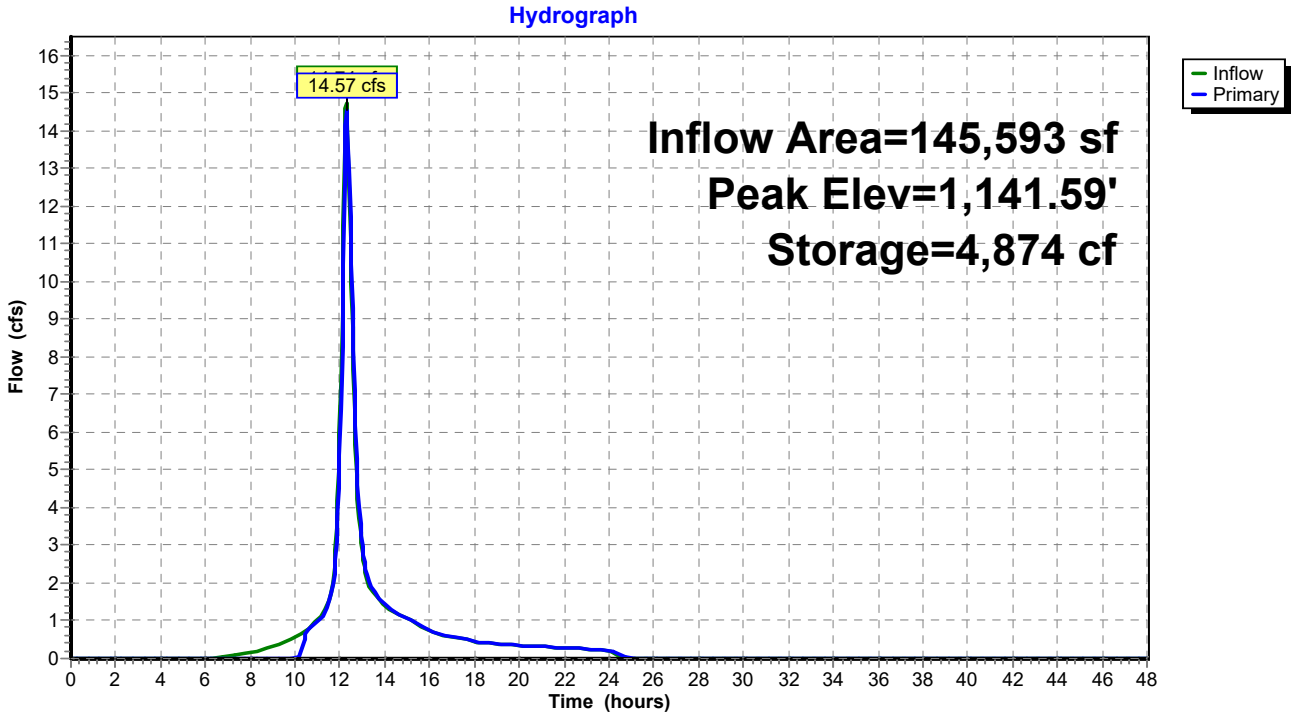
Volume	Invert	Avail.Storage	Storage Description
#1	1,140.00'	7,023 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,140.00	1,373	0	0
1,141.00	3,492	2,433	2,433
1,142.00	5,688	4,590	7,023

Device	Routing	Invert	Outlet Devices
#1	Primary	1,141.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=14.55 cfs @ 12.30 hrs HW=1,141.59' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 14.55 cfs @ 1.43 fps)

Pond 10P: 4.1-WQ-Swale



Summary for Pond 11P: 5.1-WQ-Swale

Inflow Area = 68,699 sf, 0.00% Impervious, Inflow Depth = 5.58" for 50-YEAR event
Inflow = 8.25 cfs @ 12.17 hrs, Volume= 31,923 cf
Outflow = 7.99 cfs @ 12.20 hrs, Volume= 28,551 cf, Atten= 3%, Lag= 1.7 min
Primary = 7.99 cfs @ 12.20 hrs, Volume= 28,551 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,142.48' @ 12.20 hrs Surf.Area= 4,553 sf Storage= 4,375 cf

Plug-Flow detention time= 78.4 min calculated for 28,521 cf (89% of inflow)
Center-of-Mass det. time= 28.3 min (840.8 - 812.5)

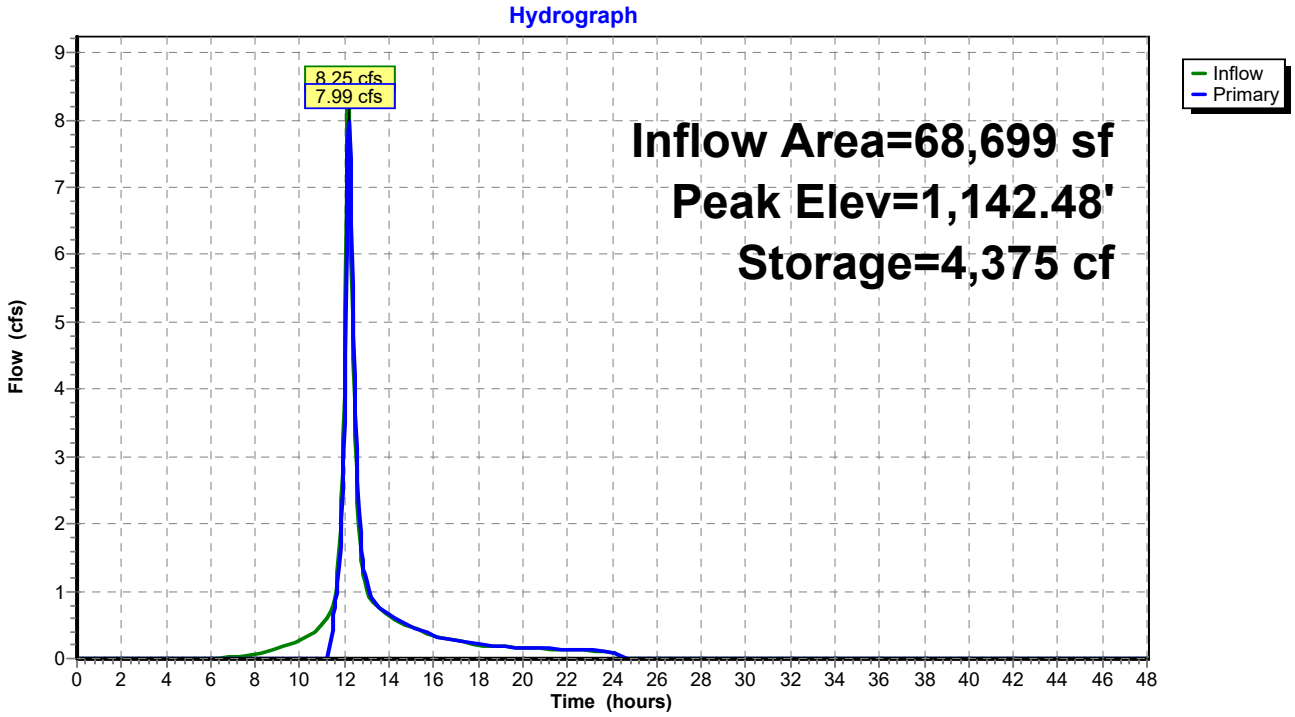
Volume	Invert	Avail.Storage	Storage Description
#1	1,141.00'	7,023 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,141.00	1,373	0	0
1,142.00	3,492	2,433	2,433
1,143.00	5,688	4,590	7,023

Device	Routing	Invert	Outlet Devices
#1	Primary	1,142.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=7.96 cfs @ 12.20 hrs HW=1,142.48' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 7.96 cfs @ 1.14 fps)

Pond 11P: 5.1-WQ-Swale

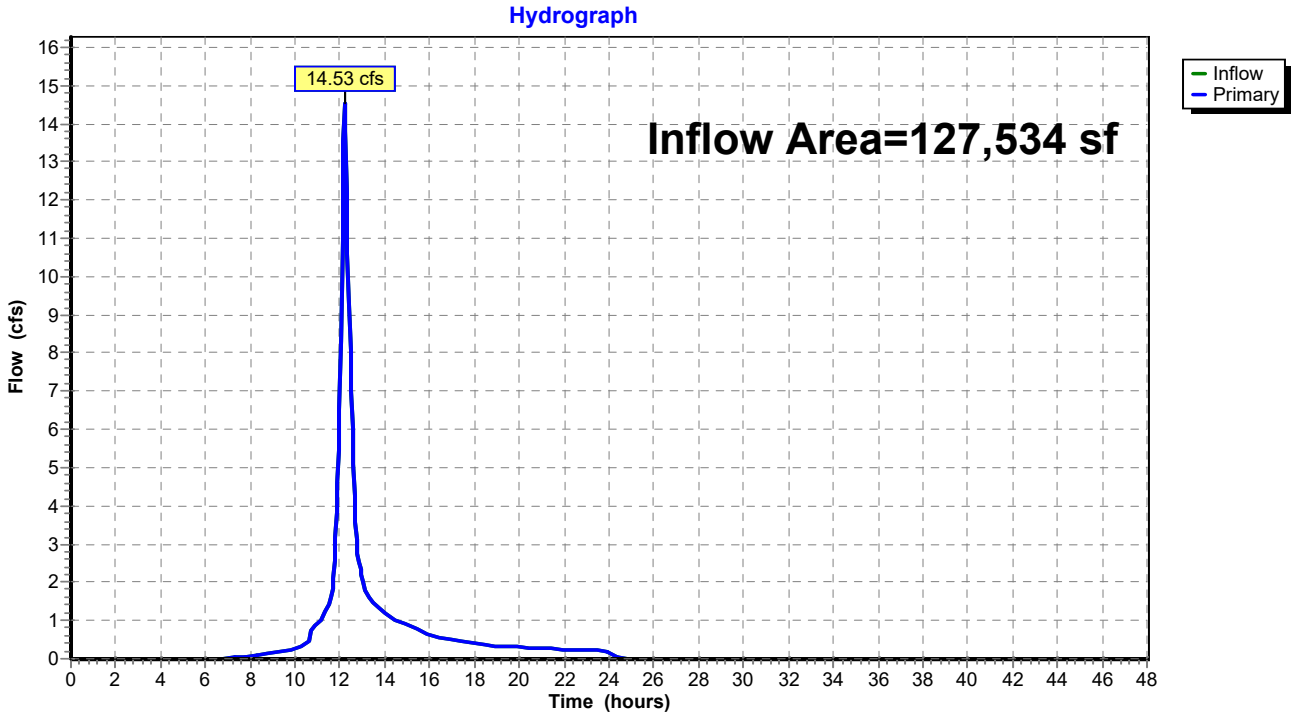


Summary for Link 12L: AP-3

Inflow Area = 127,534 sf, 0.38% Impervious, Inflow Depth = 5.46" for 50-YEAR event
Inflow = 14.53 cfs @ 12.20 hrs, Volume= 58,059 cf
Primary = 14.53 cfs @ 12.20 hrs, Volume= 58,059 cf, Atten= 0%, Lag= 0.0 min

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

Link 12L: AP-3

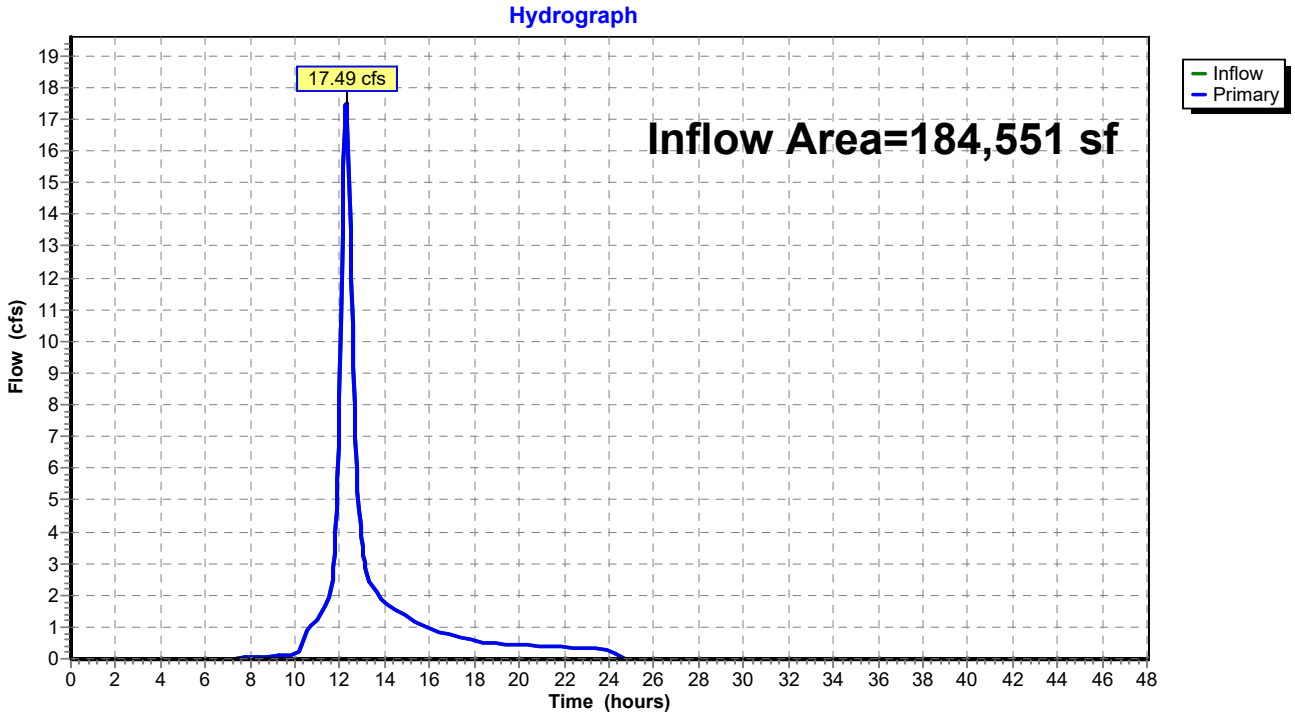


Summary for Link 13L: AP-4

Inflow Area = 184,551 sf, 0.00% Impervious, Inflow Depth = 5.45" for 50-YEAR event
Inflow = 17.49 cfs @ 12.27 hrs, Volume= 83,820 cf
Primary = 17.49 cfs @ 12.27 hrs, Volume= 83,820 cf, Atten= 0%, Lag= 0.0 min

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

Link 13L: AP-4

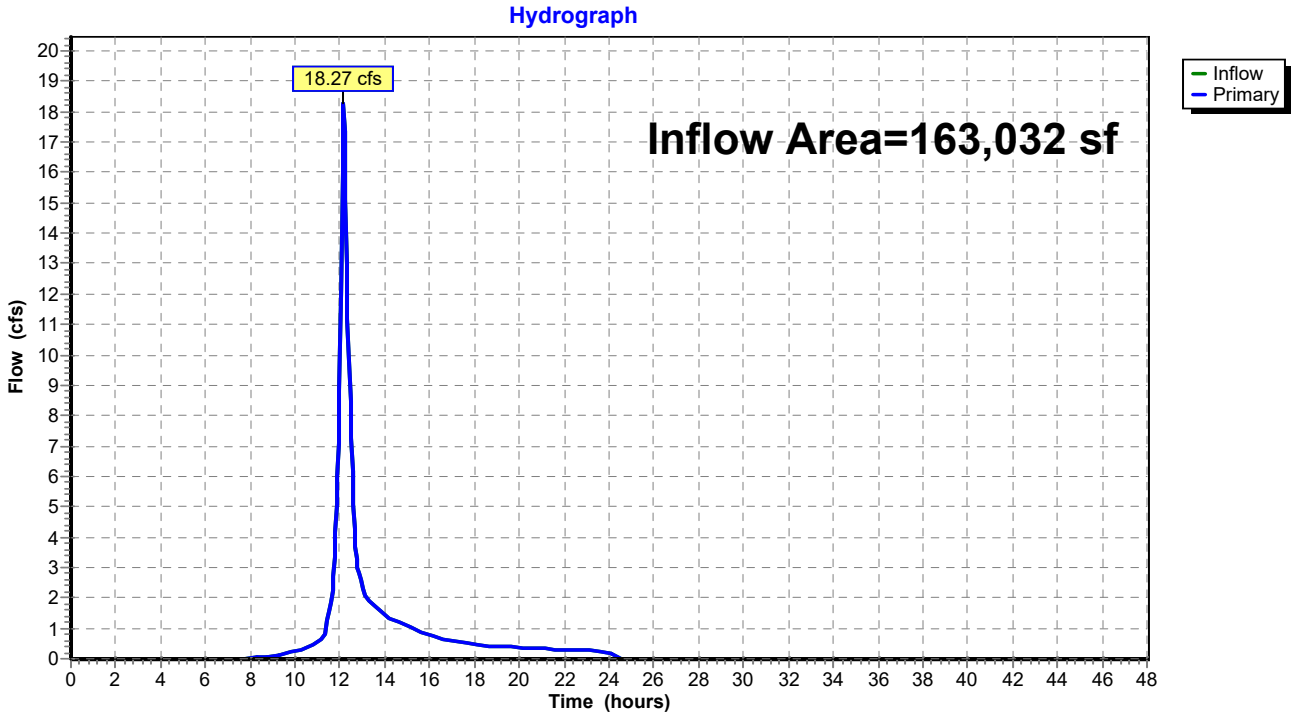


Summary for Link 14L: AP-5

Inflow Area = 163,032 sf, 0.00% Impervious, Inflow Depth = 4.92" for 50-YEAR event
Inflow = 18.27 cfs @ 12.16 hrs, Volume= 66,837 cf
Primary = 18.27 cfs @ 12.16 hrs, Volume= 66,837 cf, Atten= 0%, Lag= 0.0 min

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

Link 14L: AP-5



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

Subcatchment 1S: AP-1 Runoff Area=174,413 sf 0.00% Impervious Runoff Depth=6.73"
Flow Length=720' Slope=0.0200 '/' Tc=19.0 min CN=79 Runoff=21.36 cfs 97,795 cf

Subcatchment 2S: AP-2 Runoff Area=209,934 sf 0.00% Impervious Runoff Depth=6.23"
Flow Length=655' Slope=0.0300 '/' Tc=14.9 min CN=75 Runoff=26.40 cfs 108,965 cf

Subcatchment 3S: 3.1 Runoff Area=57,964 sf 0.83% Impervious Runoff Depth=6.73"
Flow Length=430' Slope=0.0200 '/' Tc=14.1 min CN=79 Runoff=7.94 cfs 32,501 cf

Subcatchment 4S: 3.2 Runoff Area=69,570 sf 0.00% Impervious Runoff Depth=6.60"
Flow Length=590' Slope=0.0270 '/' Tc=14.7 min CN=78 Runoff=9.25 cfs 38,285 cf

Subcatchment 5S: 4.1 Runoff Area=145,593 sf 0.00% Impervious Runoff Depth=6.73"
Flow Length=650' Slope=0.0150 '/' Tc=20.4 min CN=79 Runoff=17.32 cfs 81,636 cf

Subcatchment 6S: 4.2 Runoff Area=38,958 sf 0.00% Impervious Runoff Depth=6.60"
Flow Length=130' Slope=0.0230 '/' Tc=8.6 min CN=78 Runoff=6.15 cfs 21,439 cf

Subcatchment 7S: 5.1 Runoff Area=68,699 sf 0.00% Impervious Runoff Depth=6.60"
Flow Length=270' Slope=0.0166 '/' Tc=12.4 min CN=78 Runoff=9.72 cfs 37,806 cf

Subcatchment 8S: 5.2 Runoff Area=94,333 sf 0.00% Impervious Runoff Depth=5.85"
Flow Length=290' Slope=0.0300 '/' Tc=9.9 min CN=72 Runoff=12.81 cfs 46,002 cf

Pond 9P: 3.1-WQ-Swale Peak Elev=1,141.48' Storage=2,304 cf Inflow=7.94 cfs 32,501 cf
Outflow=7.85 cfs 30,727 cf

Pond 10P: 4.1-WQ-Swale Peak Elev=1,141.63' Storage=5,046 cf Inflow=17.32 cfs 81,636 cf
Outflow=17.13 cfs 78,266 cf

Pond 11P: 5.1-WQ-Swale Peak Elev=1,142.51' Storage=4,492 cf Inflow=9.72 cfs 37,806 cf
Outflow=9.42 cfs 34,435 cf

Link 12L: AP-3 Inflow=17.10 cfs 69,012 cf
Primary=17.10 cfs 69,012 cf

Link 13L: AP-4 Inflow=20.57 cfs 99,706 cf
Primary=20.57 cfs 99,706 cf

Link 14L: AP-5 Inflow=21.77 cfs 80,437 cf
Primary=21.77 cfs 80,437 cf

Total Runoff Area = 859,464 sf Runoff Volume = 464,429 cf Average Runoff Depth = 6.48"
99.94% Pervious = 858,984 sf 0.06% Impervious = 480 sf

Summary for Subcatchment 1S: AP-1

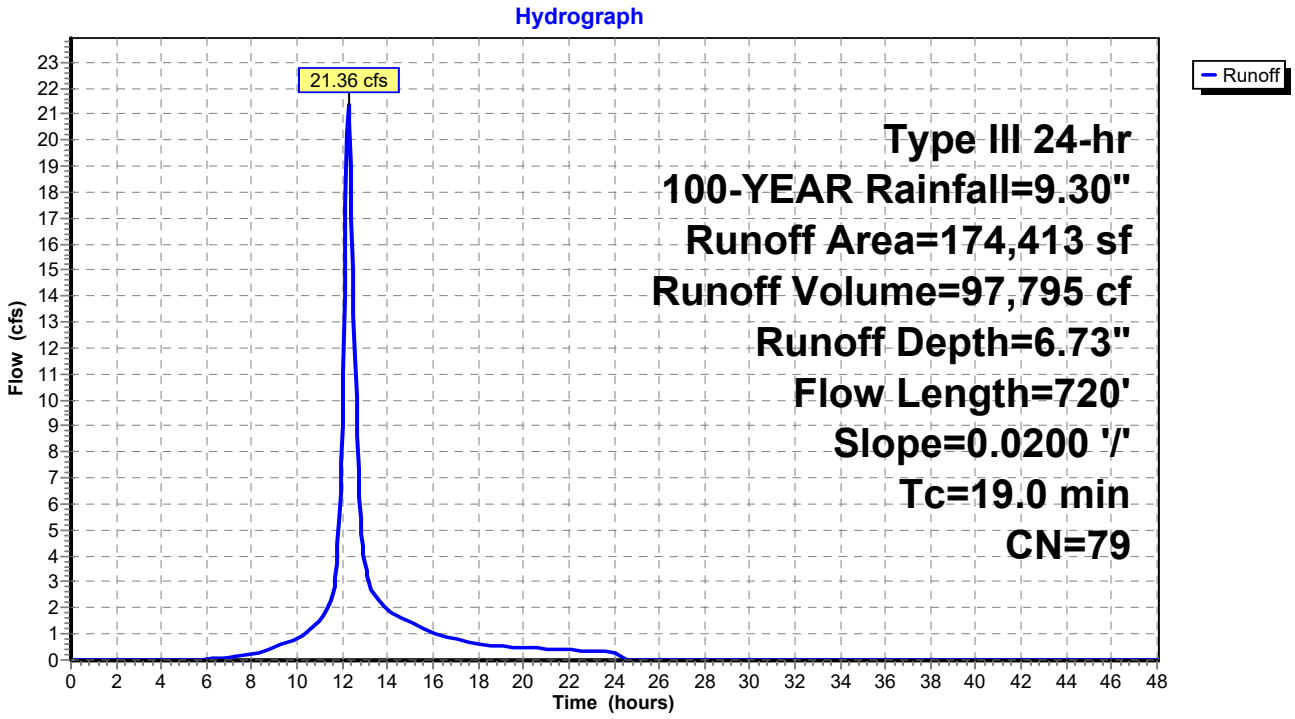
Runoff = 21.36 cfs @ 12.26 hrs, Volume= 97,795 cf, Depth= 6.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
11,901	77	Woods, Good, HSG D
77,225	80	>75% Grass cover, Good, HSG D
75,886	80	Pasture/grassland/range, Good, HSG D
7,185	74	>75% Grass cover, Good, HSG C
2,216	74	Pasture/grassland/range, Good, HSG C
174,413	79	Weighted Average
174,413		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.3	670	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
19.0	720	Total			

Subcatchment 1S: AP-1



Summary for Subcatchment 2S: AP-2

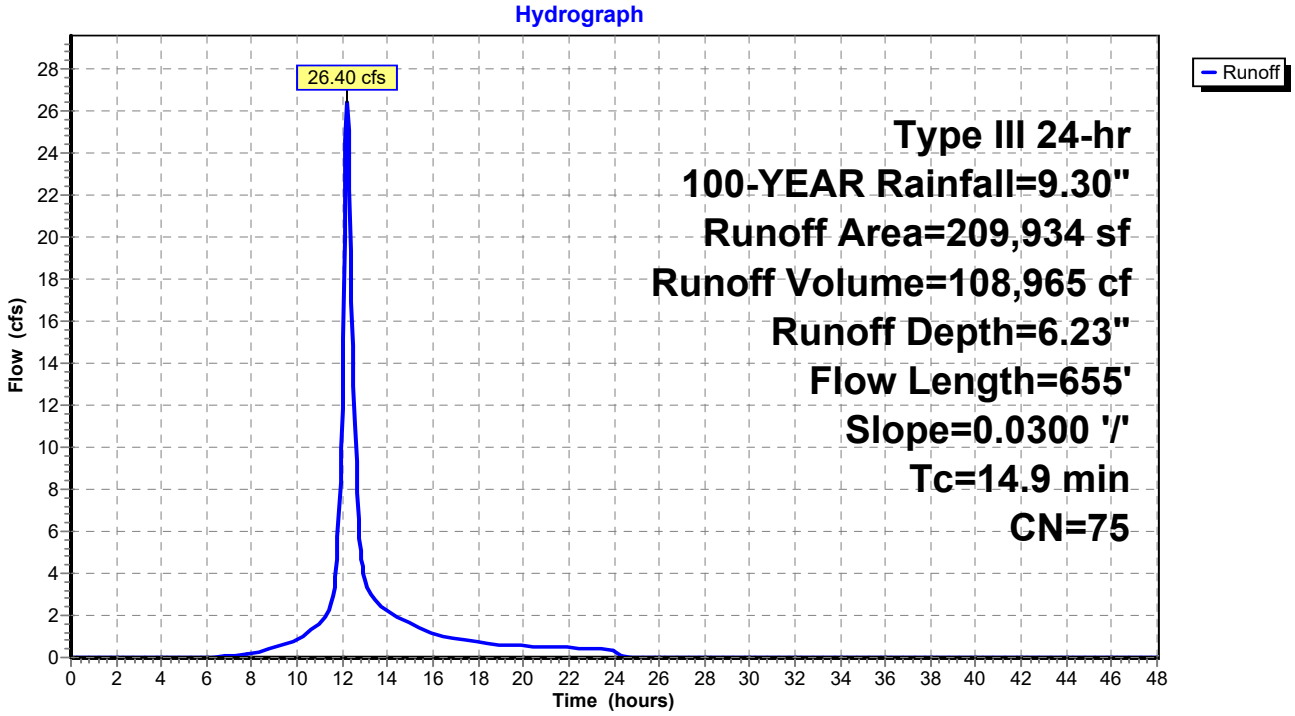
Runoff = 26.40 cfs @ 12.20 hrs, Volume= 108,965 cf, Depth= 6.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
1,581	80	>75% Grass cover, Good, HSG D
7,154	74	>75% Grass cover, Good, HSG C
12,098	70	Woods, Good, HSG C
84,899	71	Meadow, non-grazed, HSG C
98,931	78	Meadow, non-grazed, HSG D
5,271	96	Gravel surface, HSG D
209,934	75	Weighted Average
209,934		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
8.3	605	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.9	655	Total			

Subcatchment 2S: AP-2



Summary for Subcatchment 3S: 3.1

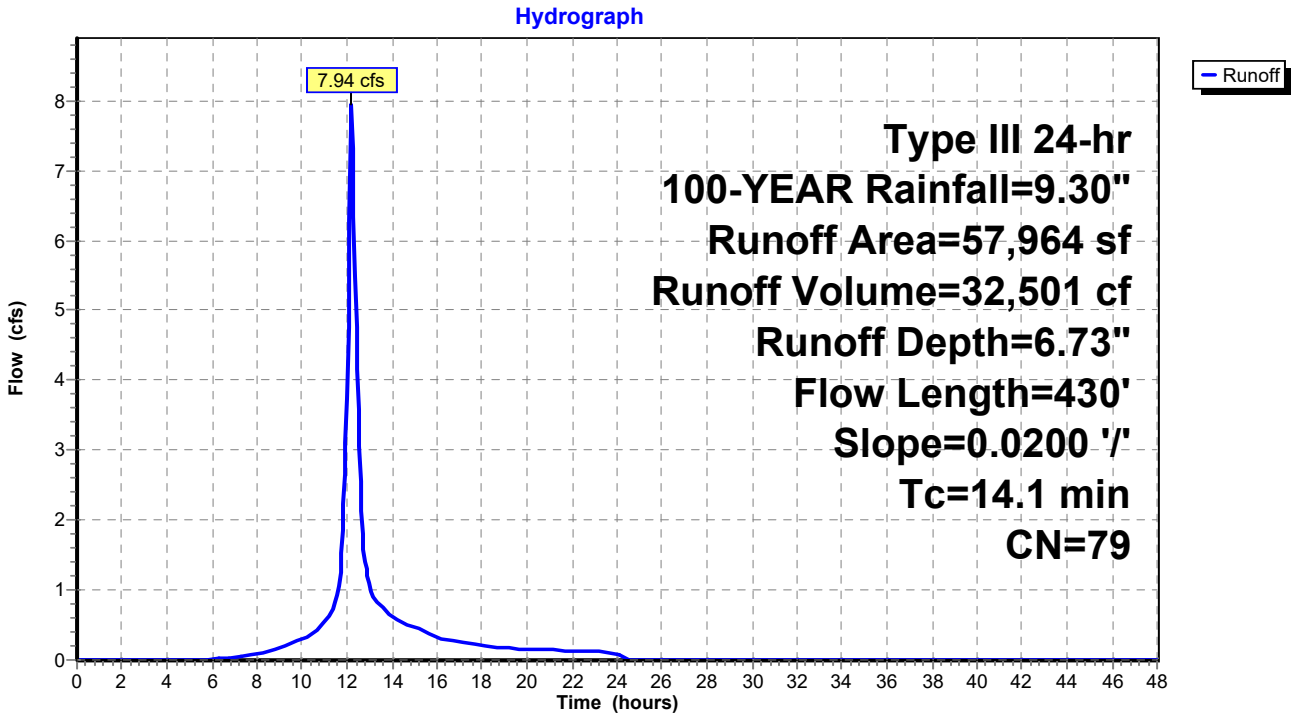
Runoff = 7.94 cfs @ 12.19 hrs, Volume= 32,501 cf, Depth= 6.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
480	98	Unconnected roofs, HSG D
2,753	96	Gravel surface, HSG D
54,731	78	Meadow, non-grazed, HSG D
57,964	79	Weighted Average
57,484		99.17% Pervious Area
480		0.83% Impervious Area
480		100.00% Unconnected

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.7	50	0.0200	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
6.4	380	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.1	430	Total			

Subcatchment 3S: 3.1



Summary for Subcatchment 4S: 3.2

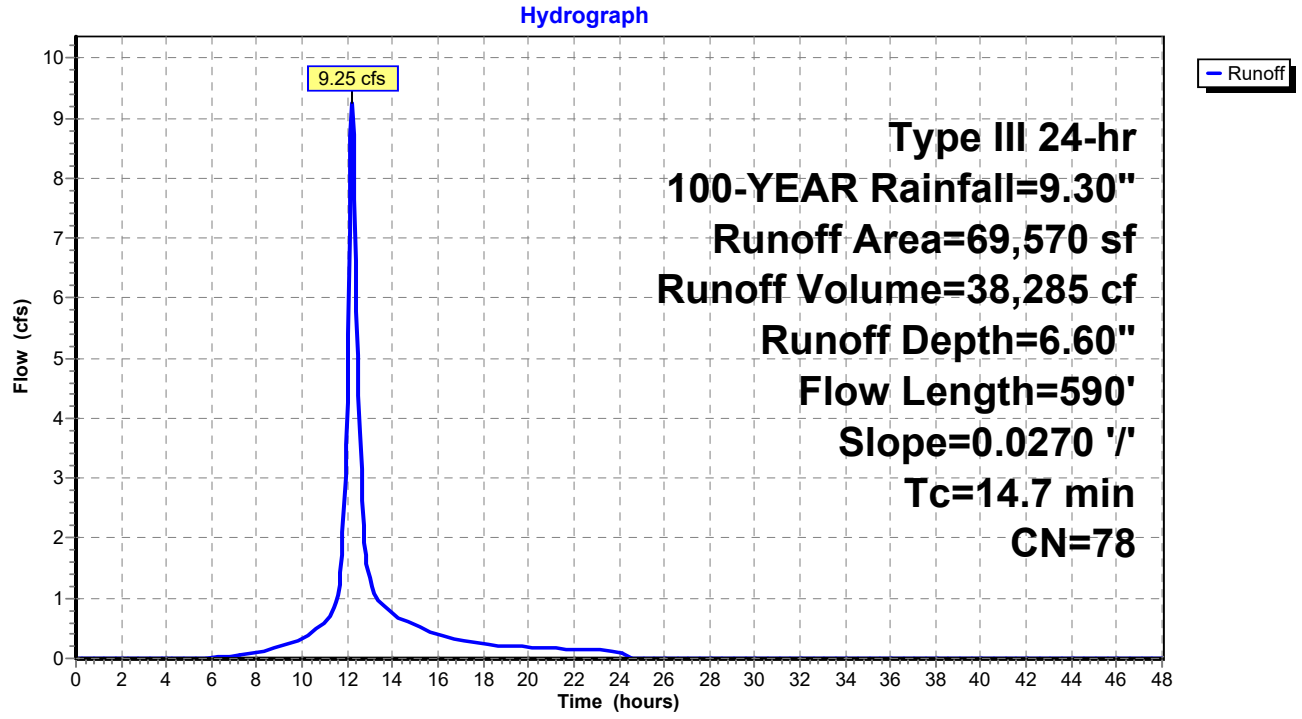
Runoff = 9.25 cfs @ 12.20 hrs, Volume= 38,285 cf, Depth= 6.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
12,364	77	Woods, Good, HSG D
57,206	78	Meadow, non-grazed, HSG D
69,570	78	Weighted Average
69,570		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.9	50	0.0270	0.12		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
7.8	540	0.0270	1.15		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
14.7	590	Total			

Subcatchment 4S: 3.2



Summary for Subcatchment 5S: 4.1

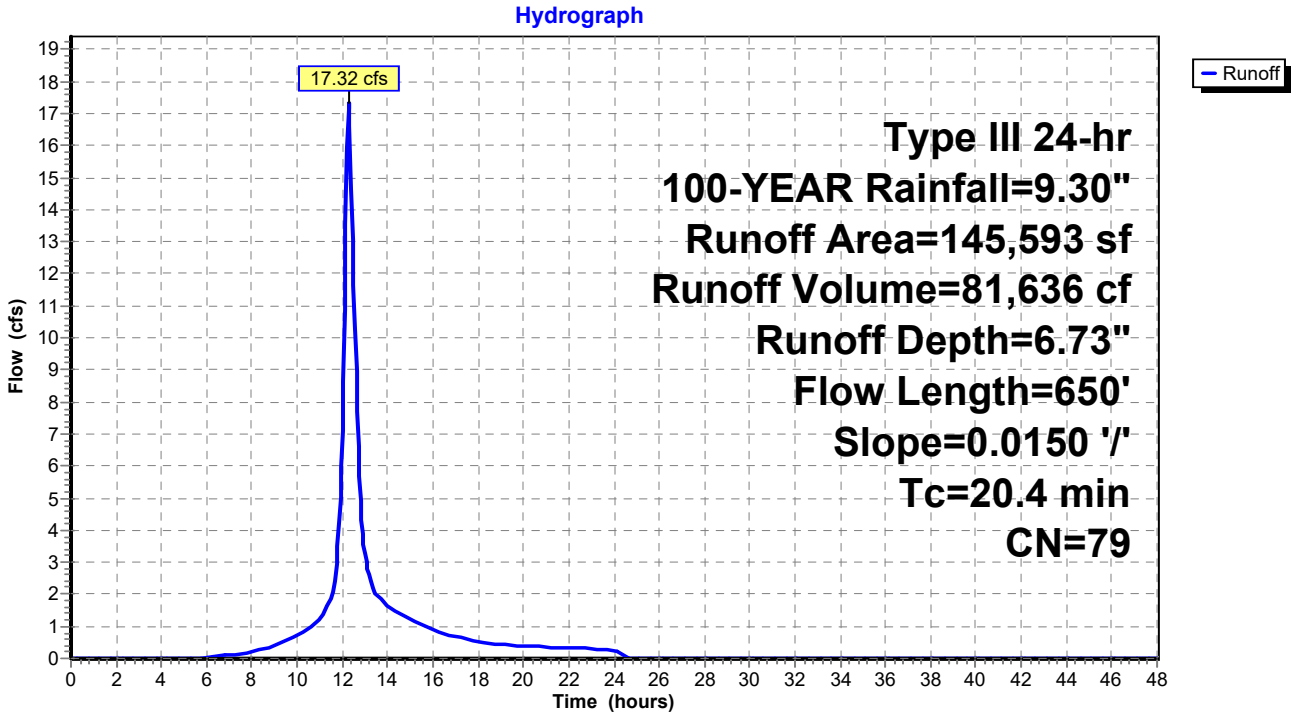
Runoff = 17.32 cfs @ 12.27 hrs, Volume= 81,636 cf, Depth= 6.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
140,457	78	Meadow, non-grazed, HSG D
5,136	96	Gravel surface, HSG D
145,593	79	Weighted Average
145,593		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.7	50	0.0150	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
11.7	600	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.4	650	Total			

Subcatchment 5S: 4.1



Summary for Subcatchment 6S: 4.2

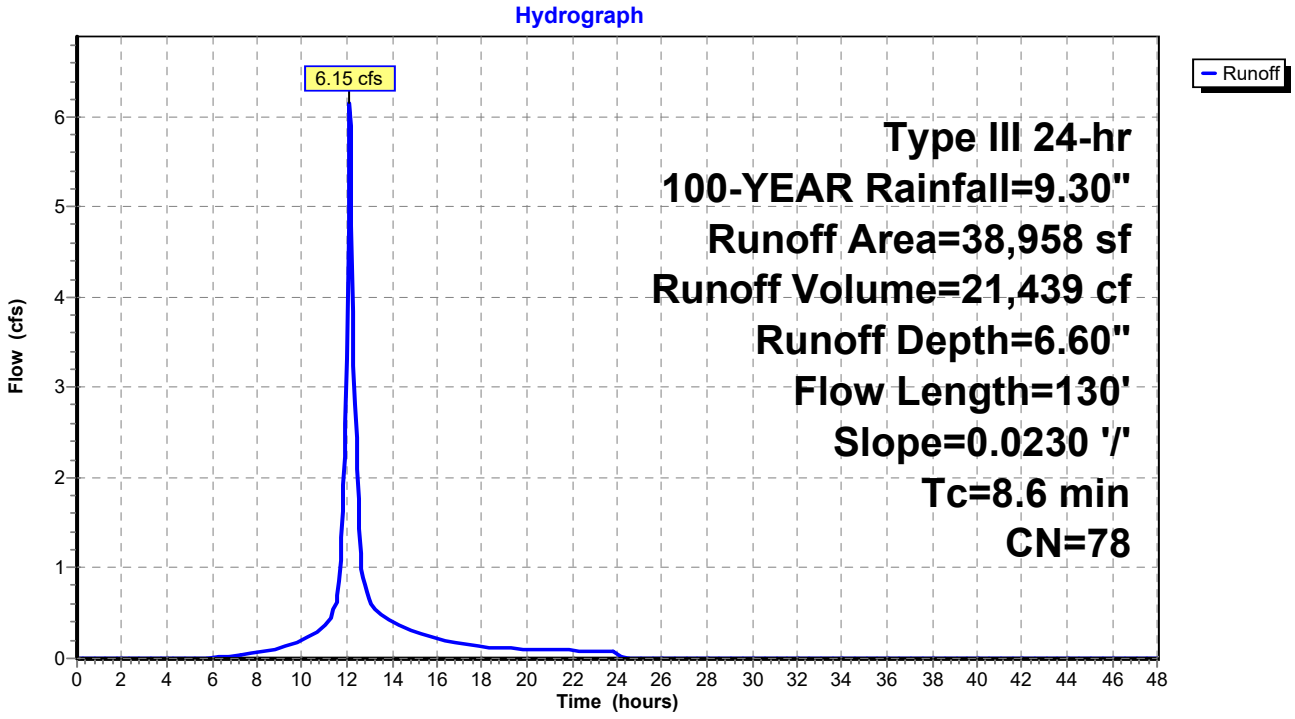
Runoff = 6.15 cfs @ 12.12 hrs, Volume= 21,439 cf, Depth= 6.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
3,323	77	Woods, Good, HSG D
35,635	78	Meadow, non-grazed, HSG D
38,958	78	Weighted Average
38,958		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0230	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
1.3	80	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	130	Total			

Subcatchment 6S: 4.2



Summary for Subcatchment 7S: 5.1

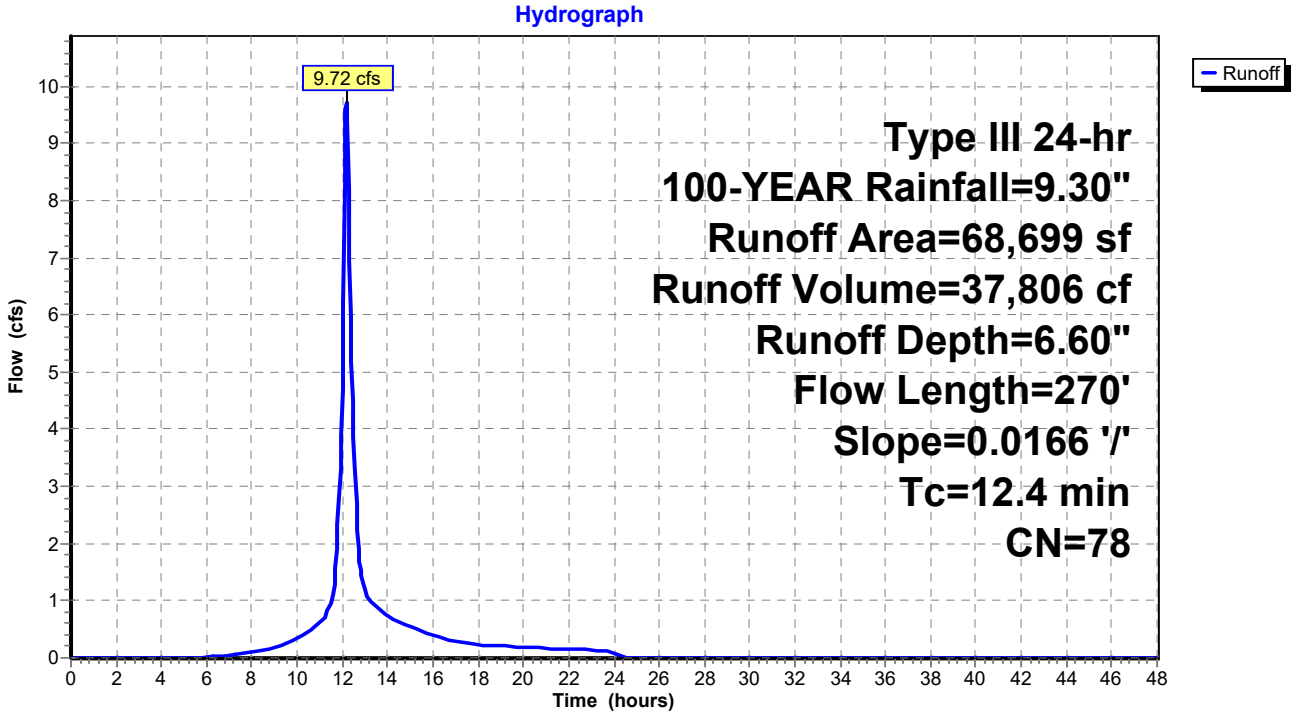
Runoff = 9.72 cfs @ 12.17 hrs, Volume= 37,806 cf, Depth= 6.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
3,816	96	Gravel surface, HSG D
52,945	78	Meadow, non-grazed, HSG D
11,938	71	Meadow, non-grazed, HSG C
68,699	78	Weighted Average
68,699		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	50	0.0166	0.10		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
4.1	220	0.0166	0.90		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.4	270	Total			

Subcatchment 7S: 5.1



Summary for Subcatchment 8S: 5.2

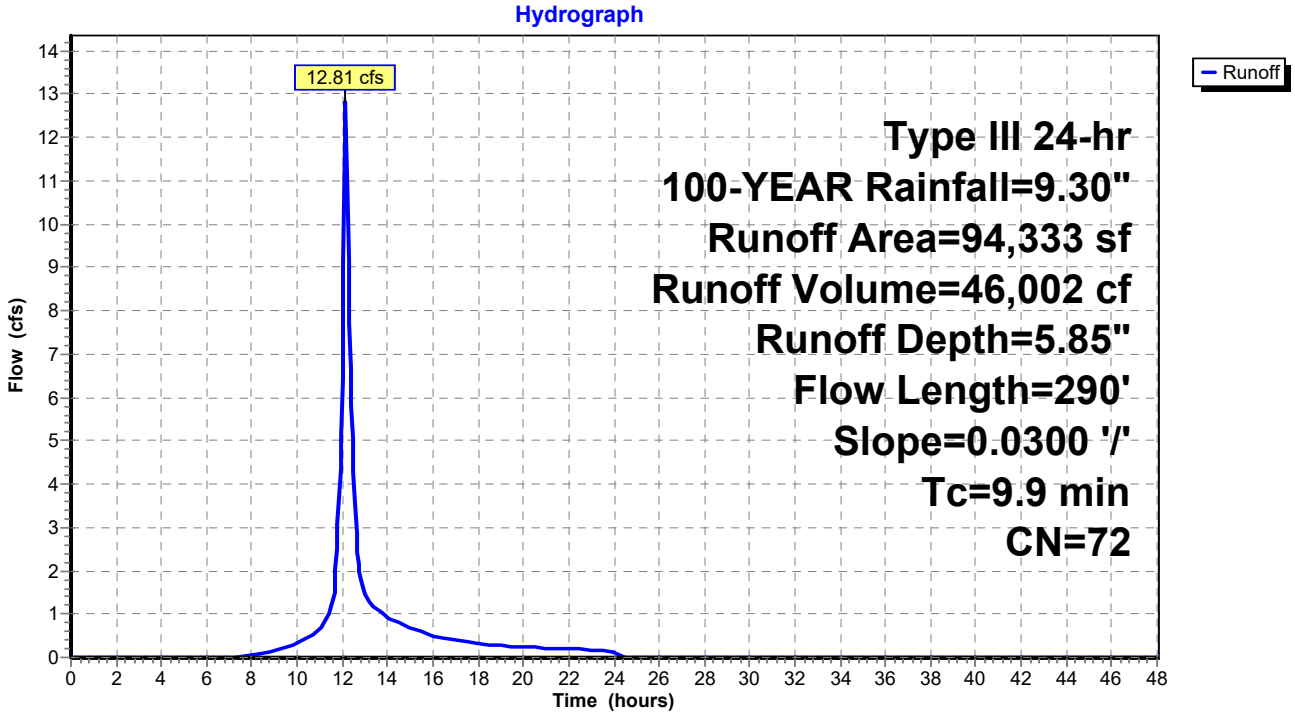
Runoff = 12.81 cfs @ 12.14 hrs, Volume= 46,002 cf, Depth= 5.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-YEAR Rainfall=9.30"

Area (sf)	CN	Description
1,408	77	Woods, Good, HSG D
29,453	70	Woods, Good, HSG C
21,239	78	Meadow, non-grazed, HSG D
42,233	71	Meadow, non-grazed, HSG C
94,333	72	Weighted Average
94,333		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.6	50	0.0300	0.13		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.60"
3.3	240	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.9	290	Total			

Subcatchment 8S: 5.2



Summary for Pond 9P: 3.1-WQ-Swale

Inflow Area = 57,964 sf, 0.83% Impervious, Inflow Depth = 6.73" for 100-YEAR event
Inflow = 7.94 cfs @ 12.19 hrs, Volume= 32,501 cf
Outflow = 7.85 cfs @ 12.21 hrs, Volume= 30,727 cf, Atten= 1%, Lag= 0.8 min
Primary = 7.85 cfs @ 12.21 hrs, Volume= 30,727 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,141.48' @ 12.21 hrs Surf.Area= 2,424 sf Storage= 2,304 cf

Plug-Flow detention time= 48.0 min calculated for 30,727 cf (95% of inflow)
Center-of-Mass det. time= 18.0 min (825.1 - 807.1)

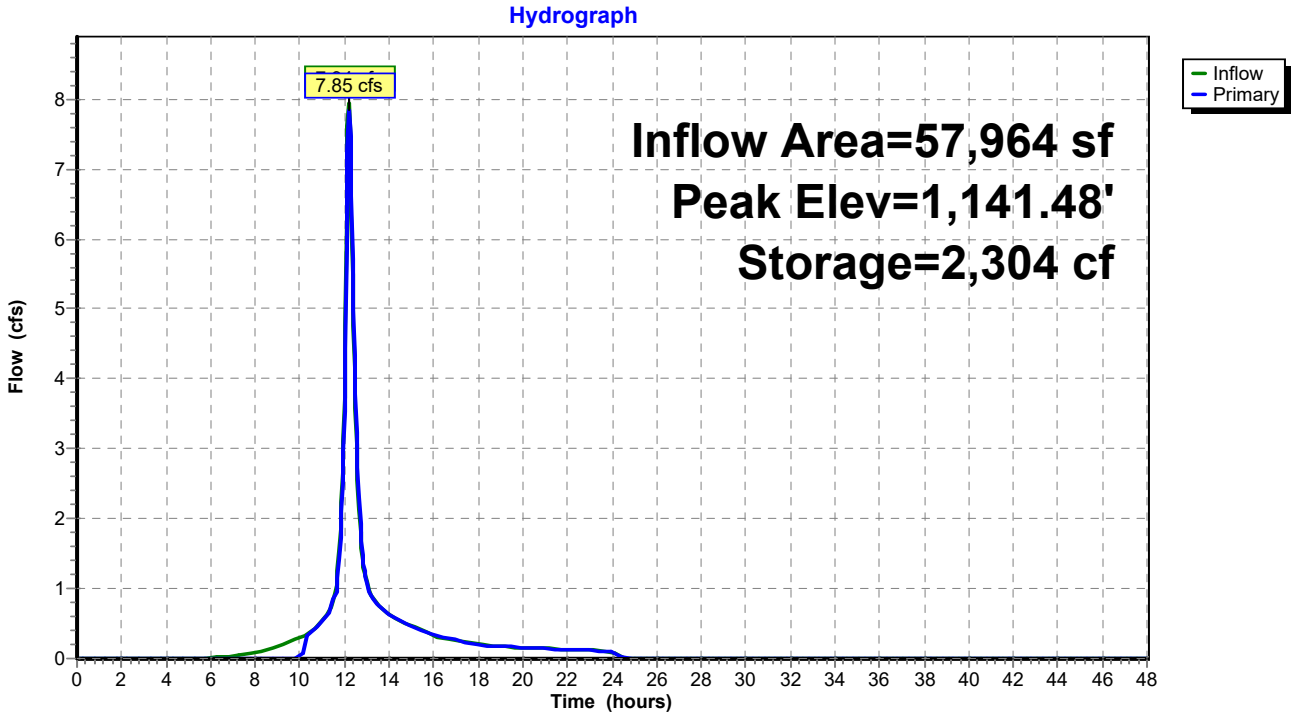
Volume	Invert	Avail.Storage	Storage Description
#1	1,140.00'	3,726 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,140.00	713	0	0
1,141.00	1,844	1,279	1,279
1,142.00	3,051	2,448	3,726

Device	Routing	Invert	Outlet Devices
#1	Primary	1,141.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=7.80 cfs @ 12.21 hrs HW=1,141.48' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 7.80 cfs @ 1.13 fps)

Pond 9P: 3.1-WQ-Swale



Summary for Pond 10P: 4.1-WQ-Swale

Inflow Area = 145,593 sf, 0.00% Impervious, Inflow Depth = 6.73" for 100-YEAR event
Inflow = 17.32 cfs @ 12.27 hrs, Volume= 81,636 cf
Outflow = 17.13 cfs @ 12.30 hrs, Volume= 78,266 cf, Atten= 1%, Lag= 1.3 min
Primary = 17.13 cfs @ 12.30 hrs, Volume= 78,266 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,141.63' @ 12.30 hrs Surf.Area= 4,866 sf Storage= 5,046 cf

Plug-Flow detention time= 39.0 min calculated for 78,185 cf (96% of inflow)
Center-of-Mass det. time= 15.7 min (828.7 - 812.9)

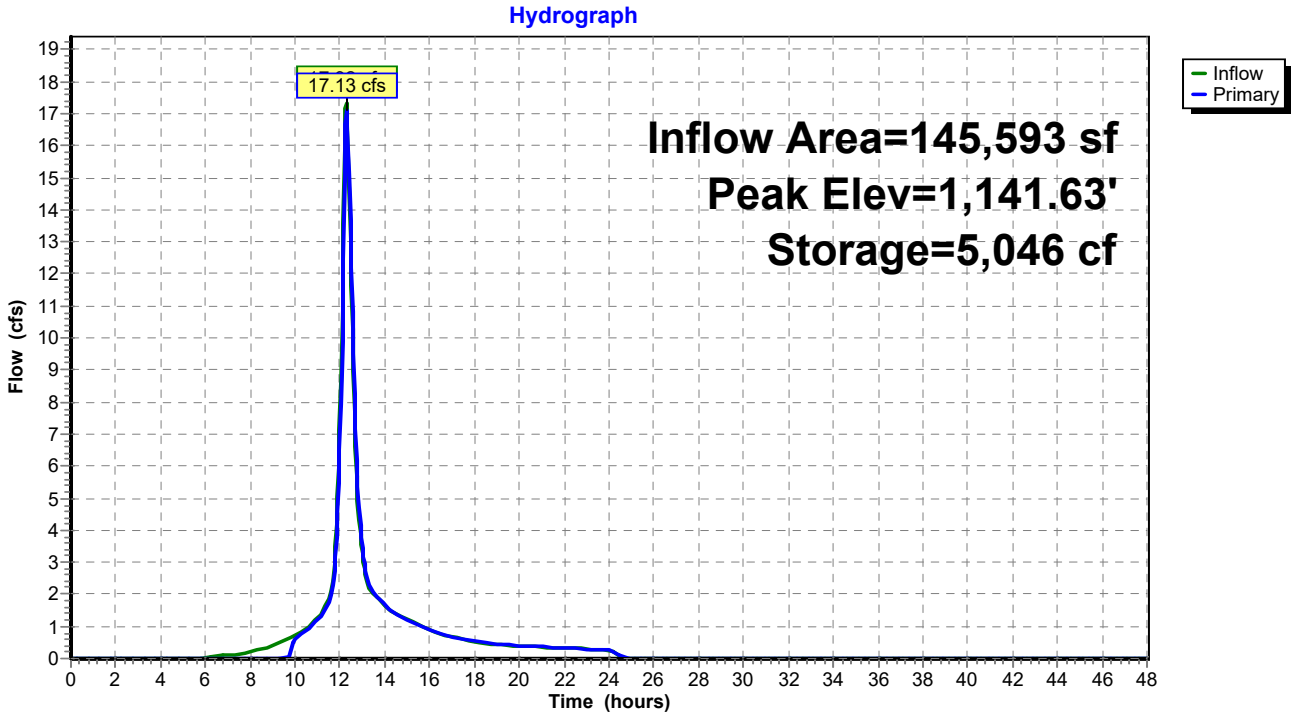
Volume	Invert	Avail.Storage	Storage Description
#1	1,140.00'	7,023 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,140.00	1,373	0	0
1,141.00	3,492	2,433	2,433
1,142.00	5,688	4,590	7,023

Device	Routing	Invert	Outlet Devices
#1	Primary	1,141.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=17.08 cfs @ 12.30 hrs HW=1,141.62' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 17.08 cfs @ 1.52 fps)

Pond 10P: 4.1-WQ-Swale



Summary for Pond 11P: 5.1-WQ-Swale

Inflow Area = 68,699 sf, 0.00% Impervious, Inflow Depth = 6.60" for 100-YEAR event
Inflow = 9.72 cfs @ 12.17 hrs, Volume= 37,806 cf
Outflow = 9.42 cfs @ 12.19 hrs, Volume= 34,435 cf, Atten= 3%, Lag= 1.6 min
Primary = 9.42 cfs @ 12.19 hrs, Volume= 34,435 cf

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.05 hrs / 9
Peak Elev= 1,142.51' @ 12.19 hrs Surf.Area= 4,609 sf Storage= 4,492 cf

Plug-Flow detention time= 70.4 min calculated for 34,399 cf (91% of inflow)
Center-of-Mass det. time= 26.3 min (834.0 - 807.7)

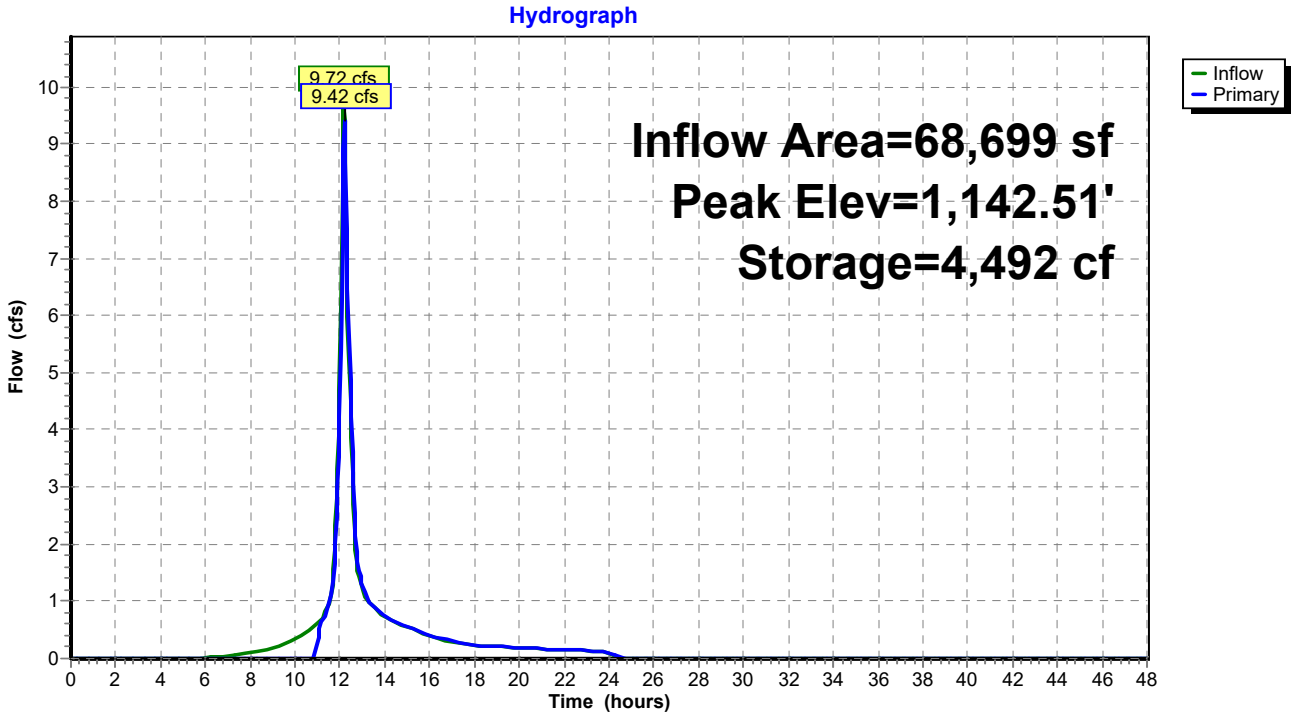
Volume	Invert	Avail.Storage	Storage Description
#1	1,141.00'	7,023 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
1,141.00	1,373	0	0
1,142.00	3,492	2,433	2,433
1,143.00	5,688	4,590	7,023

Device	Routing	Invert	Outlet Devices
#1	Primary	1,142.25'	**30.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=9.36 cfs @ 12.19 hrs HW=1,142.51' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 9.36 cfs @ 1.21 fps)

Pond 11P: 5.1-WQ-Swale

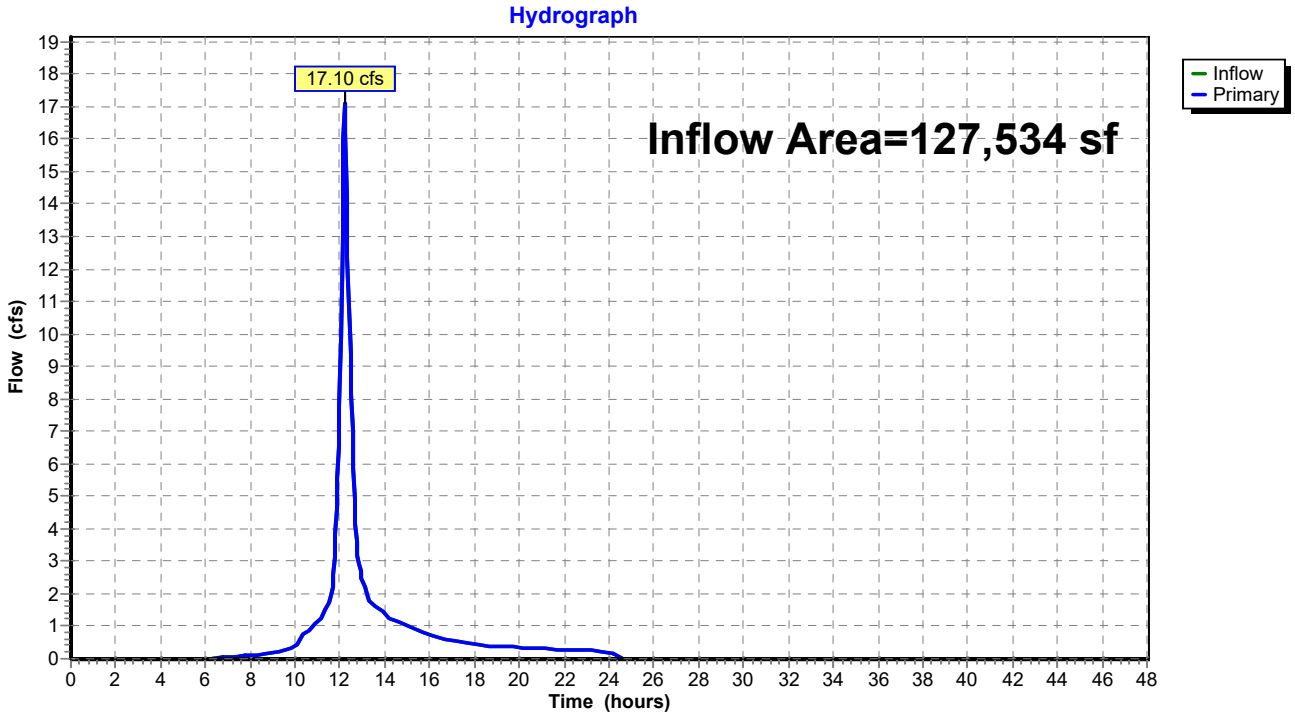


Summary for Link 12L: AP-3

Inflow Area = 127,534 sf, 0.38% Impervious, Inflow Depth = 6.49" for 100-YEAR event
Inflow = 17.10 cfs @ 12.20 hrs, Volume= 69,012 cf
Primary = 17.10 cfs @ 12.20 hrs, Volume= 69,012 cf, Atten= 0%, Lag= 0.0 min

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

Link 12L: AP-3

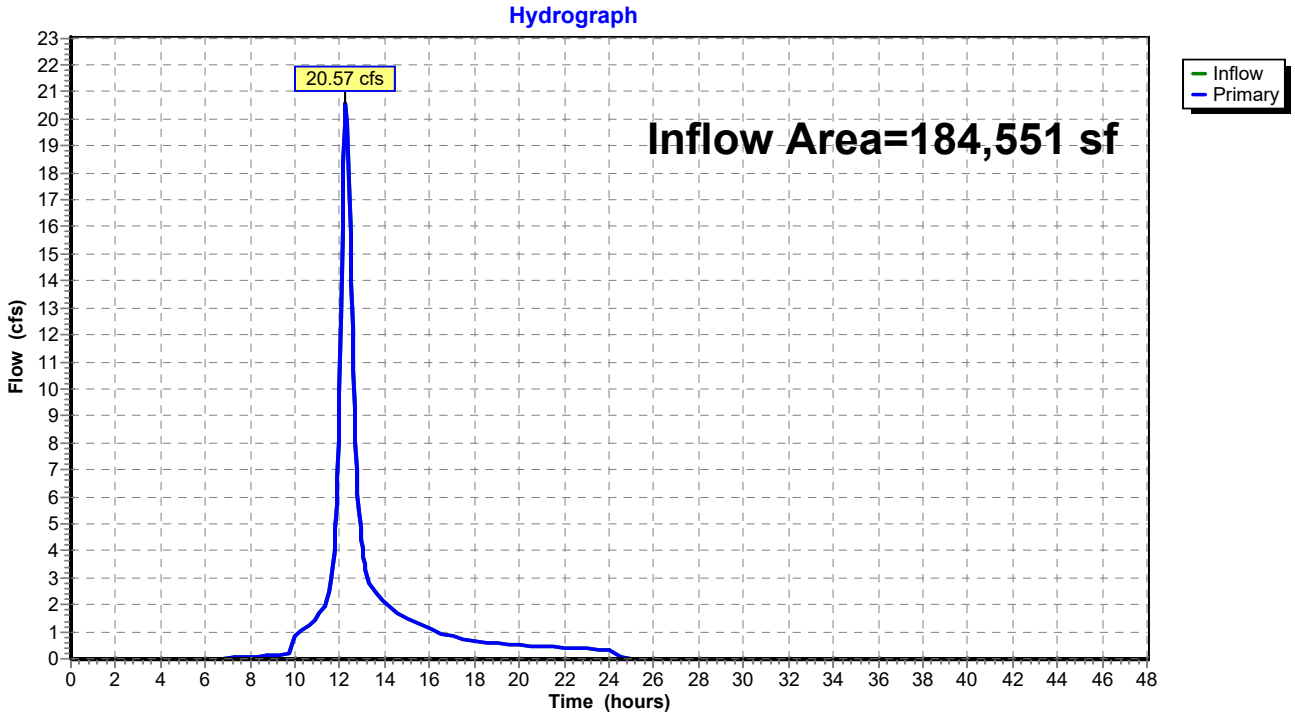


Summary for Link 13L: AP-4

Inflow Area = 184,551 sf, 0.00% Impervious, Inflow Depth = 6.48" for 100-YEAR event
Inflow = 20.57 cfs @ 12.27 hrs, Volume= 99,706 cf
Primary = 20.57 cfs @ 12.27 hrs, Volume= 99,706 cf, Atten= 0%, Lag= 0.0 min

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

Link 13L: AP-4

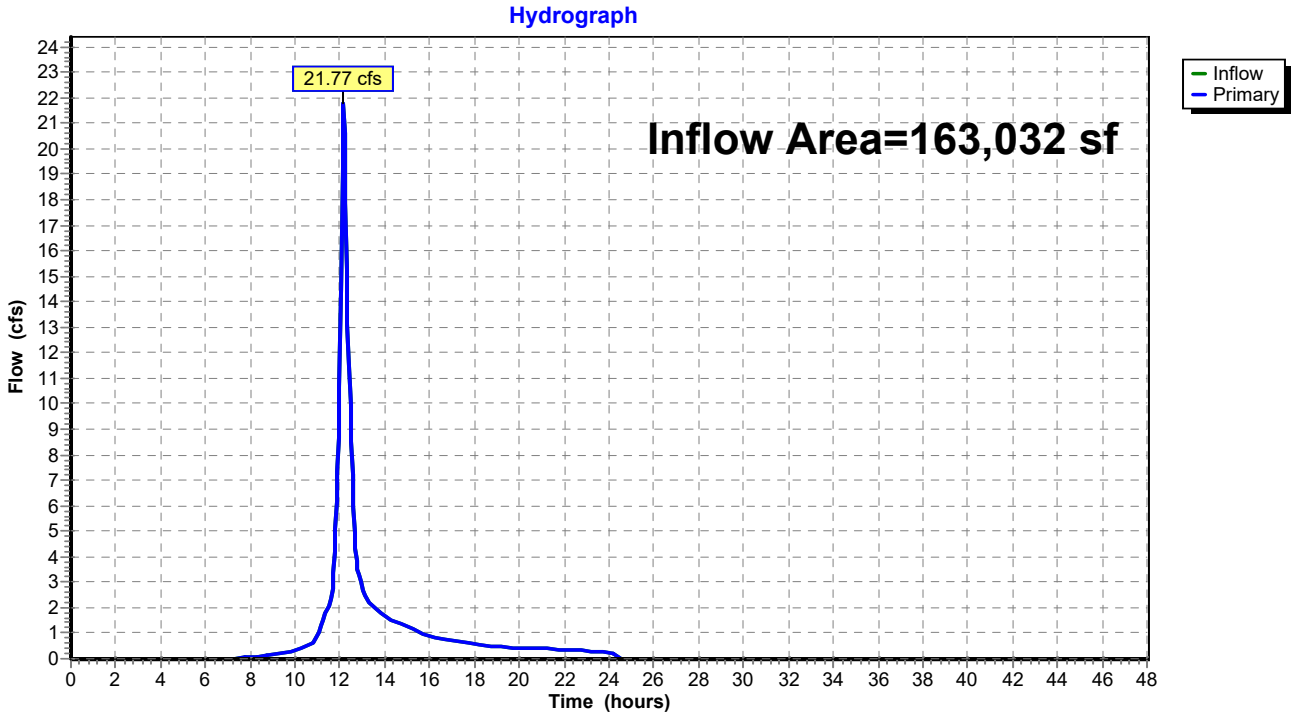


Summary for Link 14L: AP-5

Inflow Area = 163,032 sf, 0.00% Impervious, Inflow Depth = 5.92" for 100-YEAR event
Inflow = 21.77 cfs @ 12.16 hrs, Volume= 80,437 cf
Primary = 21.77 cfs @ 12.16 hrs, Volume= 80,437 cf, Atten= 0%, Lag= 0.0 min

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

Link 14L: AP-5



APPENDIX D: NOAA ATLAS 14 PRECIPITATION FREQUENCY TABLE

NOAA Atlas 14, Volume 10, Version 3
Location name: Town of Torrington, Connecticut, USA*
Latitude: 41.829°, Longitude: -73.0751°
Elevation: 1148.25 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sandra Pavlovic, Michael St. Laurent, Carl Trypaluk, Dale Unruh, Orlan Wilhite

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	0.361 (0.275-0.469)	0.430 (0.328-0.559)	0.542 (0.412-0.709)	0.636 (0.481-0.833)	0.764 (0.561-1.05)	0.862 (0.621-1.21)	0.963 (0.673-1.39)	1.07 (0.717-1.60)	1.22 (0.788-1.88)	1.33 (0.843-2.11)
10-min	0.511 (0.390-0.664)	0.609 (0.464-0.792)	0.769 (0.585-1.00)	0.901 (0.681-1.18)	1.08 (0.794-1.48)	1.22 (0.879-1.71)	1.36 (0.954-1.97)	1.52 (1.01-2.26)	1.72 (1.12-2.67)	1.89 (1.20-2.98)
15-min	0.602 (0.459-0.781)	0.716 (0.546-0.931)	0.903 (0.687-1.18)	1.06 (0.801-1.39)	1.27 (0.935-1.74)	1.44 (1.03-2.01)	1.60 (1.12-2.32)	1.78 (1.19-2.66)	2.03 (1.31-3.14)	2.22 (1.41-3.51)
30-min	0.819 (0.625-1.06)	0.975 (0.744-1.27)	1.23 (0.936-1.61)	1.44 (1.09-1.89)	1.74 (1.27-2.38)	1.96 (1.41-2.74)	2.19 (1.53-3.16)	2.43 (1.63-3.62)	2.76 (1.79-4.27)	3.03 (1.91-4.78)
60-min	1.04 (0.791-1.35)	1.23 (0.941-1.61)	1.56 (1.18-2.03)	1.83 (1.38-2.40)	2.20 (1.61-3.01)	2.48 (1.78-3.46)	2.77 (1.94-4.00)	3.07 (2.06-4.58)	3.50 (2.26-5.41)	3.83 (2.42-6.05)
2-hr	1.36 (1.05-1.76)	1.60 (1.23-2.07)	1.99 (1.53-2.59)	2.32 (1.76-3.02)	2.76 (2.04-3.77)	3.10 (2.25-4.32)	3.45 (2.44-5.00)	3.85 (2.59-5.72)	4.41 (2.86-6.80)	4.87 (3.09-7.67)
3-hr	1.58 (1.22-2.04)	1.86 (1.43-2.39)	2.31 (1.78-2.99)	2.69 (2.05-3.49)	3.21 (2.38-4.37)	3.59 (2.62-5.01)	4.00 (2.85-5.81)	4.48 (3.02-6.65)	5.18 (3.37-7.98)	5.77 (3.67-9.07)
6-hr	1.99 (1.55-2.55)	2.38 (1.84-3.04)	3.01 (2.32-3.86)	3.53 (2.71-4.55)	4.25 (3.18-5.77)	4.78 (3.51-6.66)	5.35 (3.85-7.81)	6.06 (4.09-8.96)	7.14 (4.65-11.0)	8.07 (5.15-12.6)
12-hr	2.43 (1.90-3.08)	2.98 (2.33-3.79)	3.89 (3.02-4.95)	4.64 (3.58-5.95)	5.67 (4.28-7.70)	6.43 (4.77-8.96)	7.26 (5.28-10.6)	8.32 (5.64-12.3)	9.99 (6.53-15.3)	11.5 (7.33-17.9)
24-hr	2.83 (2.22-3.56)	3.57 (2.80-4.50)	4.77 (3.73-6.04)	5.78 (4.49-7.36)	7.15 (5.44-9.70)	8.16 (6.11-11.4)	9.28 (6.83-13.6)	10.8 (7.31-15.8)	13.2 (8.62-20.1)	15.3 (9.81-23.8)
2-day	3.19 (2.52-3.99)	4.08 (3.23-5.12)	5.55 (4.37-6.99)	6.77 (5.30-8.57)	8.45 (6.47-11.4)	9.66 (7.30-13.5)	11.0 (8.22-16.3)	12.9 (8.80-18.9)	16.1 (10.5-24.4)	18.9 (12.2-29.3)
3-day	3.47 (2.76-4.33)	4.46 (3.54-5.57)	6.08 (4.80-7.62)	7.42 (5.83-9.36)	9.27 (7.13-12.5)	10.6 (8.04-14.8)	12.1 (9.06-17.9)	14.2 (9.70-20.8)	17.7 (11.7-26.9)	20.9 (13.5-32.4)
4-day	3.74 (2.97-4.64)	4.79 (3.81-5.97)	6.52 (5.17-8.15)	7.96 (6.27-10.0)	9.93 (7.66-13.4)	11.4 (8.63-15.8)	13.0 (9.72-19.1)	15.2 (10.4-22.2)	19.0 (12.5-28.8)	22.4 (14.5-34.7)
7-day	4.47 (3.57-5.52)	5.66 (4.52-7.01)	7.62 (6.06-9.46)	9.24 (7.31-11.6)	11.5 (8.87-15.3)	13.1 (9.97-18.1)	14.9 (11.2-21.8)	17.4 (11.9-25.3)	21.5 (14.2-32.6)	25.3 (16.4-39.0)
10-day	5.21 (4.18-6.41)	6.47 (5.19-7.97)	8.53 (6.82-10.6)	10.2 (8.14-12.8)	12.6 (9.77-16.8)	14.3 (10.9-19.6)	16.2 (12.2-23.6)	18.8 (13.0-27.3)	23.1 (15.3-34.8)	26.9 (17.4-41.5)
20-day	7.55 (6.10-9.23)	8.85 (7.14-10.8)	11.0 (8.83-13.5)	12.8 (10.2-15.8)	15.2 (11.8-20.0)	17.0 (13.0-23.0)	18.9 (14.1-27.0)	21.5 (14.9-31.0)	25.6 (17.0-38.5)	29.2 (19.0-44.9)
30-day	9.50 (7.70-11.6)	10.8 (8.76-13.2)	13.0 (10.5-15.9)	14.7 (11.8-18.2)	17.2 (13.4-22.4)	19.0 (14.5-25.5)	21.0 (15.6-29.5)	23.4 (16.3-33.6)	27.2 (18.1-40.7)	30.4 (19.8-46.7)
45-day	11.9 (9.67-14.4)	13.2 (10.7-16.1)	15.4 (12.5-18.8)	17.2 (13.9-21.2)	19.7 (15.4-25.5)	21.6 (16.5-28.7)	23.6 (17.4-32.7)	25.9 (18.1-37.0)	29.1 (19.5-43.5)	31.9 (20.8-48.8)
60-day	13.8 (11.3-16.7)	15.2 (12.4-18.4)	17.5 (14.2-21.3)	19.4 (15.7-23.7)	22.0 (17.1-28.2)	24.0 (18.2-31.5)	26.0 (19.1-35.5)	28.1 (19.7-40.0)	30.9 (20.8-46.0)	33.1 (21.7-50.6)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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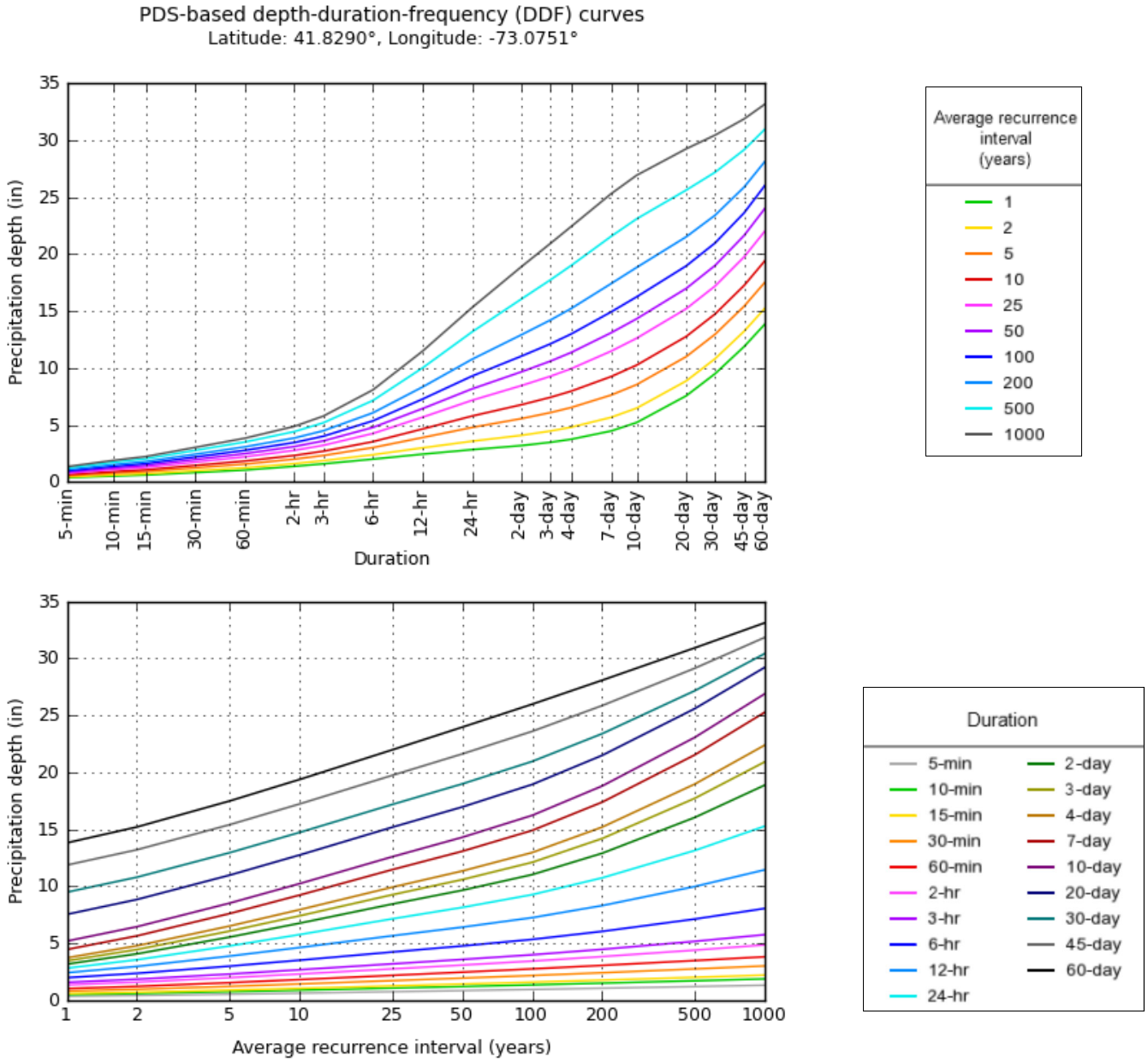
PF graphical



NOAA Atlas 14, Volume 10, Version 3

Created (GMT): Thu Apr 9 14:13:13 2020

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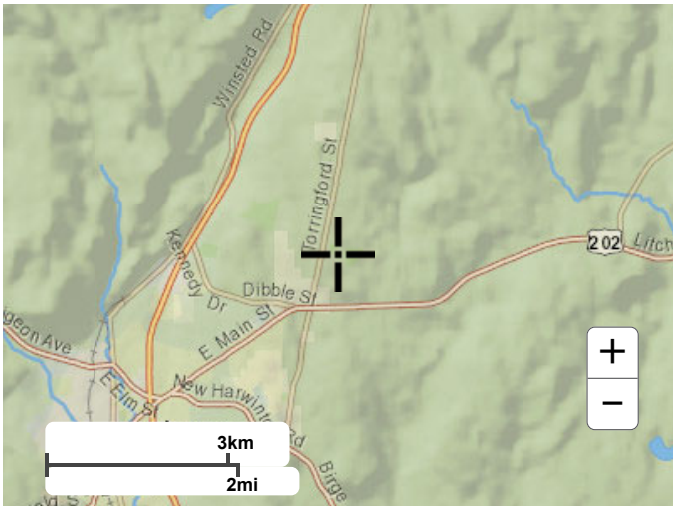
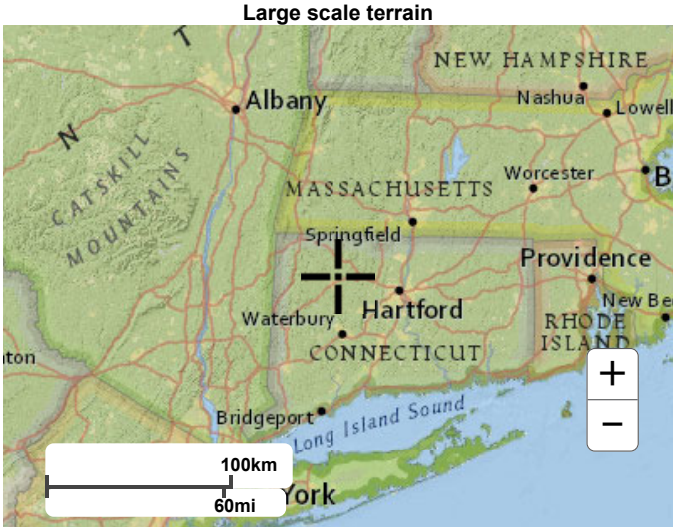
Maps & aerials

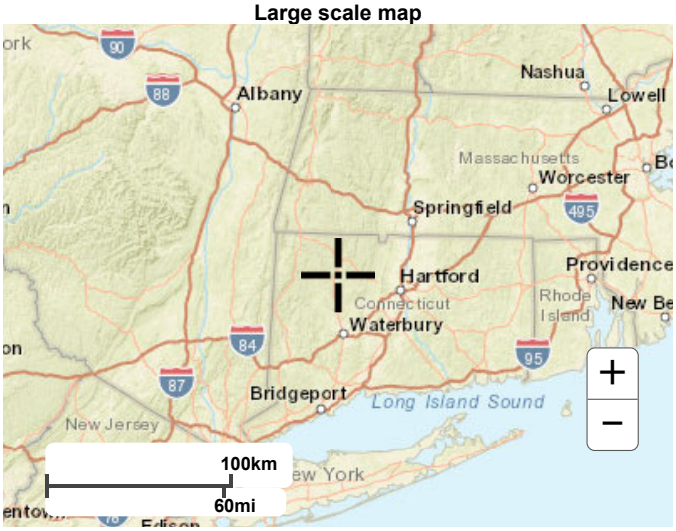
Small scale terrain



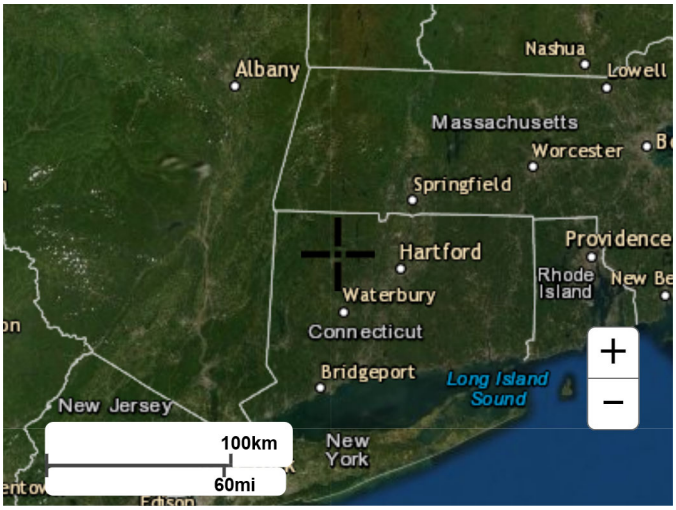
Large scale terrain



Large scale map



Large scale aerial



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

APPENDIX E: WATER QUALITY VOLUME CALCULATIONS

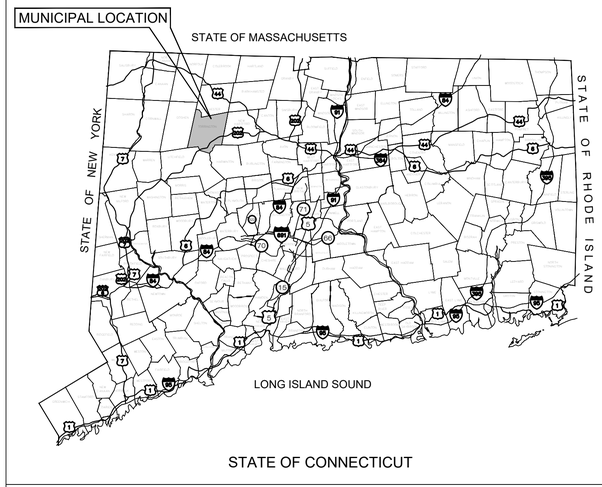
WATER QUALITY VOLUME CALCULATIONS
FOR
TORRINGTON SOLAR ONE, LLC
EAST PEARL ROAD, TORRINGTON, CT

$$WQV = \frac{(1")(R)(A)}{12}$$

where: WQV = water quality volume (ac-ft)
R = volumetric runoff coefficient
= 0.05+0.009(I)
I = percent impervious cover
A = site area in acres

Subwatershed	Area (ac)	Pervious (ac)	Imperv. (ac)	I	R	WQV (ac-ft)	Total V Req. (cu-ft)	V Provided (cu-ft)
1	4.00	4.00	-	0%	0.05	0.017	727	0
2	5.44	5.29	0.15	3%	0.08	0.034	1,485	0
3	2.93	2.85	0.07	3%	0.07	0.018	770	1,777
4	4.08	3.97	0.11	3%	0.07	0.025	1,090	3,374
5	3.29	3.23	0.06	2%	0.07	0.018	789	3,374
Overall Site	**19.73**	**19.40**	**0.33**	**2%**	**0.07**	**0.107**	**4,862**	**8,525**

ATTACHMENT D
Design Plans



TORRINGTON SOLAR ONE, LLC

"TORRINGTON SOLAR ONE, LLC"

EAST PEARL ROAD
TORRINGTON, CT

PERMIT APPLICATION DRAWINGS
MAY 28, 2020

LIST OF DRAWINGS

SITE INFORMATION

SITE NAME: "TORRINGTON SOLAR ONE, LLC"

LOCATION: EAST PEARL ROAD
TORRINGTON, CT

SITE TYPE/DESCRIPTION: ADD (1) GROUND MOUNTED SOLAR PANEL ARRAY W/ ASSOCIATED EQUIPMENT.

PROPERTY OWNER: CATHOLIC CEMETERIES ASSOCIATION OF THE ARCHDIOCESE OF HARTFORD, INC.
700 MIDDLETOWN AVENUE
NORTH HAVEN, CT 06473

APPLICANT: TORRINGTON SOLAR ONE, LLC
150 TRUMBULL STREET, 4TH FLOOR
HARTFORD, CT 06103

ENGINEER CONTACT: BRADLEY J. PARSONS, P.E.
(860) 663-1697 x208

LATITUDE: 41° 49' 49" N
LONGITUDE: 73° 4' 24" W
ELEVATION: 1145'± AMSL

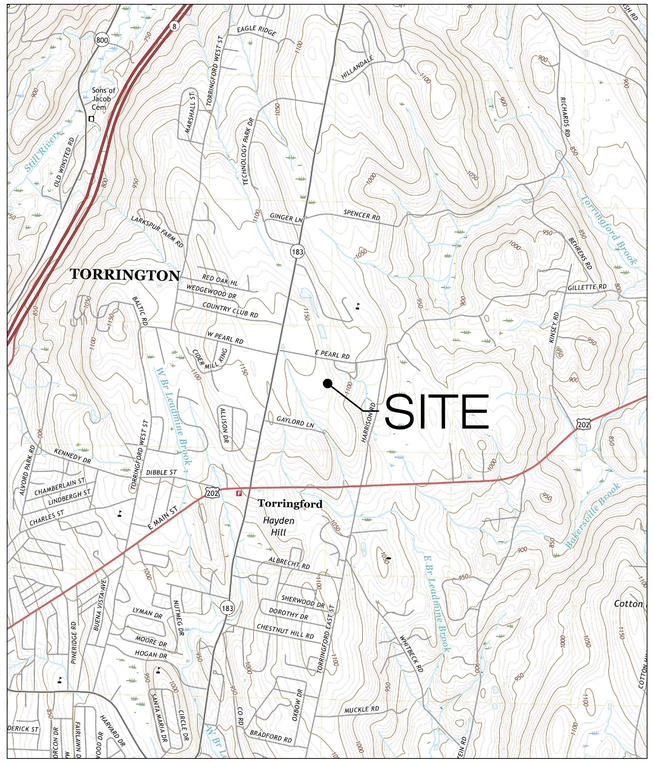
MBLU: 246/003/003/2
ZONE: R-15S/R-WP
EXISTING LAND USE: AGRICULTURAL
PROPOSED LAND USE: 20.00 UTILITY COMPANIES AND ENERGY PRODUCTION

TOTAL SITE ACERAGE: 66.45± AC.
TOTAL DISTURBED AREA: 11.15± AC.

APPROX. VOLUME OF CUT: 905± CY
APPROX. VOLUME OF FILL: 0 ± CY
APPROX. NET VOLUME: 905 ± CY OF CUT

PROP. GRAVEL ACCESS ROAD: 1,385± LINEAR FEET
PROP. SILT FENCE: 2,740± LINEAR FEET
TREE CLEARING AREA: 0 ACRE
EFFECTIVE IMPERVIOUS AREA: 17,500± SQUARE FEET

USGS TOPOGRAPHIC MAP



SCALE : 1-IN = 2000-FT SOURCE: USGS TORRINGTON QUADRANGLE 2018 (TOPOZONE)

TORRINGTON SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/15/20	INTERCONNECT SCREENING
1	08/12/20	ROAD DETAIL; IFC
2	08/13/20	PANEL LAYOUT & INTERCONN.
3	08/31/20	90% PERMIT SET
4	10/22/20	100% IFC SET
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHALL ST EXT - STE 311 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES OF ARCHDIOCESE OF HARTFORD
ADDRESS: 700 MIDDLETOWN AVENUE NORTH HAVEN, CT 06473

TORRINGTON SOLAR ONE, LLC

SITE ADDRESS: EAST PEARL ROAD TORRINGTON, CT

APT FILING NUMBER: CT590190

DRAWN BY: KAM

DATE: 05/28/2020 CHECKED BY: BJP

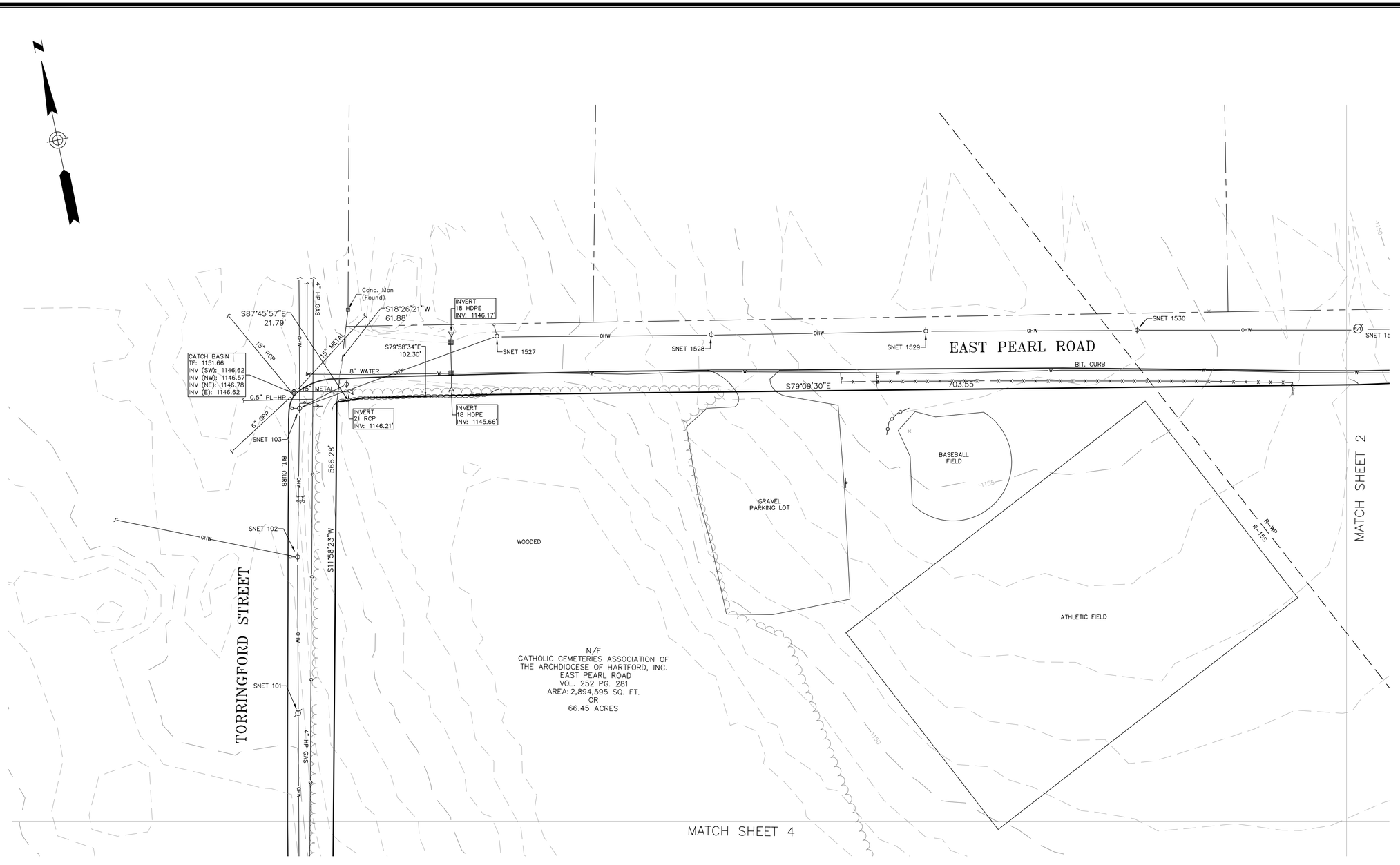
SHEET TITLE:

TITLE SHEET & INDEX

SHEET NUMBER:

T-1

STATE OF CONNECTICUT · BRADLEY J. PARSONS · No. 28025 · LICENSED PROFESSIONAL ENGINEER



LOCUS MAP
(N.T.S.)

GENERAL NOTES

1. A) THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES, SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS.

   B) THIS PLAN CONFORMS TO HORIZONTAL ACCURACY CLASS A-2, AND TOPOGRAPHIC ACCURACY CLASS T-2.

   C) BOUNDARY DETERMINATION IS BASED UPON A RESURVEY WITH RESPECT TO TORRINGFORD STREET AND THE EASTERN AND SOUTHERN MOST PROPERTY LINES. BOUNDARY DETERMINATIONS OF THE NORTHERN LINE OF EAST PEARL ROAD AND THE WESTERN LINE OF HARRISON STREET ARE BASED UPON AN ORIGINAL SURVEY AND SHOULD BE CONSIDERED ASSUMED, NO LAYOUTS OF EITHER STREET OR PREVIOUS SURVEYS WERE FOUND DEPICTING ROADWAY GEOMETRY.

   D) THE TYPE OF SURVEY PERFORMED IS A PROPERTY AND TOPOGRAPHIC SURVEY AND IS INTENDED TO DEPICT LAND NOW OR FORMERLY CATHOLIC CEMETERIES ASSOCIATION OF THE ARCHDIOCESE OF HARTFORD, INC. LOCATED SOUTH OF EAST PEARL ROAD.

2. NORTH ARROW AND BEARINGS REFER TO THE CONNECTICUT STATE PLANE COORDINATE SYSTEM (NAD83 EPOCH2011) AND ARE BASED ON GPS OBSERVATIONS PREFORMED BY WSP USA.

3. ELEVATIONS REFER TO NAVD 88 AND ARE BASED ON GPS OBSERVATIONS PREFORMED BY WSP USA.

4. UNDERGROUND UTILITIES DEPICTED HAVE BEEN PLOTTED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES DEPICTED COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES DEPICTED ARE IN THE EXACT LOCATION INDICATED, THE SURVEYOR HAS NOT PHYSICALLY EXPOSED THE UNDERGROUND UTILITIES. PER CONNECTICUT STATE LAW THE CONTRACTOR SHALL CONFIRM THE LOCATION OF ALL UTILITIES PRIOR TO THE COMMENCEMENT OF EXCAVATION.

5. SUBJECT PARCEL IS LOCATED IN ZONE C: "AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN" AS DEPICTED ON FIRM MAP NUMBER 09004800011B, PANEL NUMBER 11 OF 20, EFFECTIVE DATE; FEBRUARY 3, 1982.

6. SUBJECT PARCEL IS LOCATED PARTIALLY IN R-15S (RESIDENTIAL 15,000 SF LOT SIZE, SINGLE FAMILY, AND PARTIALLY IN RWP (WATERSHED PROTECTION ZONE).

7. PARCEL IS SUBJECT TO A LICENSE AGREEMENT BETWEEN CATHOLIC CEMETERIES ASSOCIATION OF THE ARCHDIOCESE OF HARTFORD, INC. AND THE CITY OF TORRINGTON.

MAP REFERENCES

A. "MAP SHOWING REVISED PROPERTY LINE", SCALE: 1"=10'; DATE: AUGUST 1994; PREPARED BY NERIANI SURVEYING, AND RECORDED AS MAP NUMBER 4108 WITH THE TORRINGTON LAND RECORDS.

B. "PLAN PREPARED FOR JOYCE C. WEINGART, PHILIP DONALD WEINGART, JR. & WILLIAM WEINGART", SCALE: 1"=100'; DATE: SEPTEMBER 2010; PREPARED BY DAVID J. LITTLE, AND RECORDED AS MAP NUMBER 5360 WITH THE TORRINGTON LAND RECORDS.

C. "LOT LINE REVISION", SCALE: 1"=30'; DATE: OCTOBER, 2001; PREPARED BY STERLING LAND SURVEYING AND RECORDED AS MAP NUMBER 4650 WITH THE TORRINGTON LAND RECORDS.

D. "PEARLWOOD A SUBDIVISION OF PROPERTY", SCALE: 1"=50'; DATE: SEPTEMBER 1966; PREPARED BY G.A. HANSON, AND RECORDED AS MAP NUMBER 794 WITH THE TORRINGTON LAND RECORDS.

E. "PROPERTY SURVEY", SCALE: 1"=60'; DATE: SEPTEMBER 9, 2011; PREPARED BY HRICA ASSOCIATES LLC AND RECORDED AS MAP NUMBER 5419 WITH THE TORRINGTON LAND RECORDS.

F. "PROPERTY LINE REVISION & MERGER MAP", SCALE: 1"=100'; DATE: OCTOBER 20, 2016; PREPARED BY ARTHUR HOWLAND & ASSOCIATES AND RECORDED AS MAP NUMBER 5566 WITH THE TORRINGTON LAND RECORDS.

G. "IMPROVEMENT LOCATION SURVEY, PROPERTY OF LAURIE A. ZUCCA, 1440 TORRINGFORD STREET, TORRINGTON, CONNECTICUT" SCALE: 1"=20'; DATE: MAY, 2009; PREPARED BY GM2 ASSOCIATES.

H. CTDOT BASE MAP SHEETS 1 AND 2 FOR PROJECT NUMBER 143-15.

REVISION

DATE	DESCRIPTION
--/--/--	---

PROPERTY AND TOPOGRAPHIC SURVEY
EAST PEARL ROAD
TORRINGTON, CONNECTICUT
PREPARED FOR
TORRINGTON ONE SOLAR, LLC.

WSP USA Inc.
500 Winding Brook Drive,1st Floor
Glastonbury, CT 06033
860-659-0444

LEGEND

CB ⊡	CONCRETE BOUND		UTILITY POLE WITH RISER
IPF ◎	IRON PIPE FOUND		UTILITY POLE
IRF ◎	IRON ROD FOUND		UTILITY POLE WITH LIGHT
SB ⊡	STONE BOUND		UTILITY POLE WITH LIGHT AND RISER
▦	CATCH BASIN		UTILITY POLE WITH LIGHT AND TRANSFORMER
◁	CULVERT		UTILITY POLE WITH LIGHT, RISER AND TRANSFORMER
◎	DRAIN MANHOLE		UTILITY POLE WITH TRANSFORMER
⊠	ELECTRIC BOX		UTILITY POLE WITH RISER AND TRANSFORMER
Ⓔ	ELECTRIC METER		FIRE HYDRANT
⋈	WATER GATE		

	DECIDUOUS TREE
	CONIFER TREE
	SHRUB
	SIGN (SINGLE POSTED)
	SIGN (DOUBLE POSTED)
	POST
	MAILBOX
	LIGHT POLE
	BOLLARD
	VALVE

	ABUTTERS LOT LINE
	PROPERTY LINE
	CHAIN LINK FENCE
	WOOD FENCE
	METAL/WIRE FENCE
D	DRAIN LINE
	WATER LINE
E	UNDERGROUND ELECTRIC
C	UNDERGROUND CABLE
T	TELEPHONE LINE
	OVERHEAD WIRES
	STONE WALL
	TREE LINE
52	INTERMEDIATE CONTOURS
50	INDEX CONTOURS

GRAPHIC SCALE

40 0 20 40 80 160

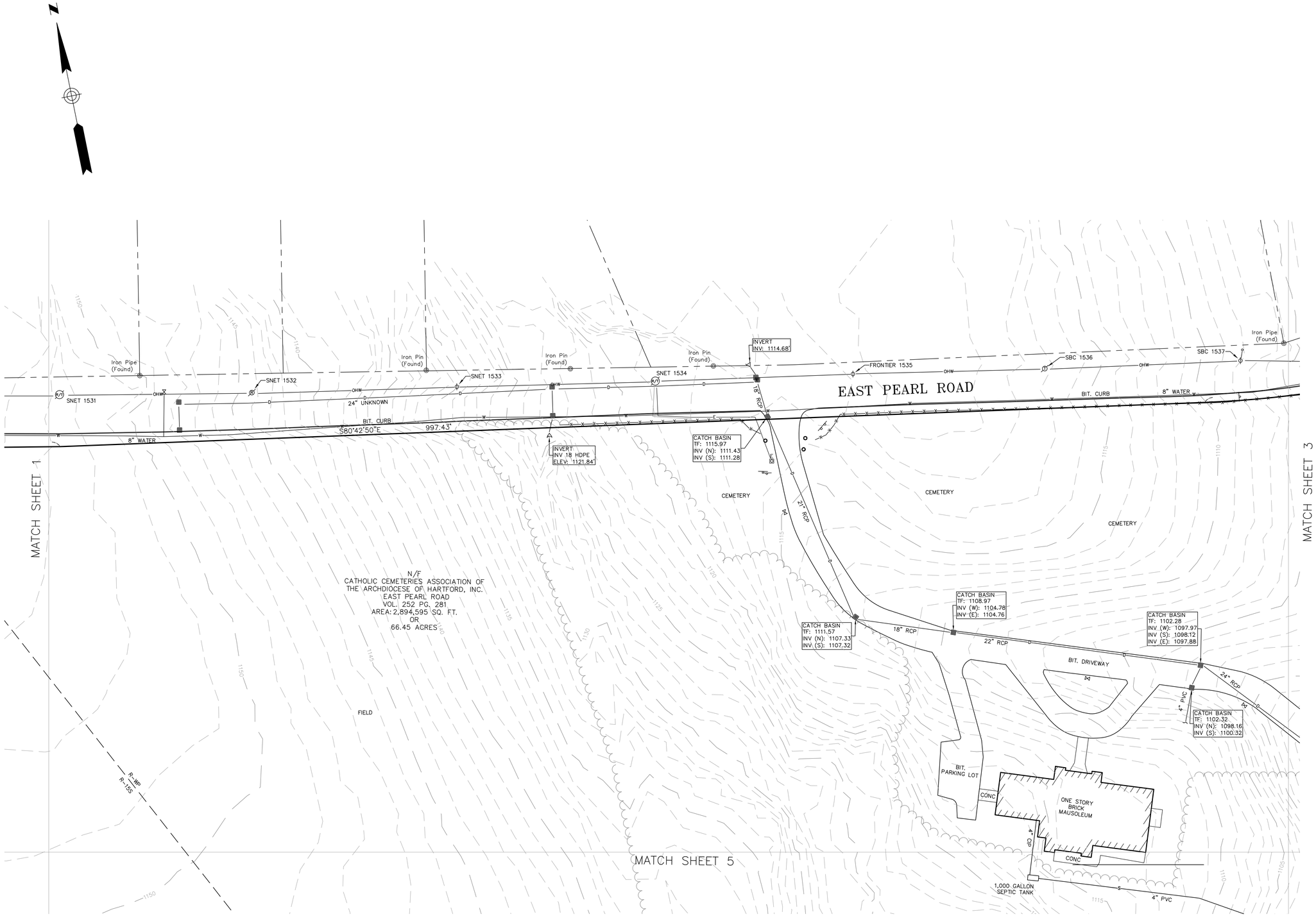
(IN FEET)
1 inch = 40 ft.

TO MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON.

MICHAEL J. GARON L.S. #70366

NO CERTIFICATION IS EXPRESSED OR IMPLIED UNLESS THIS MAP BEARS THE ORIGINAL SIGNATURE AND EMBOSSED SEAL OF THE ABOVE NAMED LAND SURVEYOR.

Drawn By	MG/JWG	Date	Job No.
Surveyed By	JWG/ZJM	APRIL 1, 2020	190379B
Checked By	MG	Scale	Sheet No.
Book No.	–	1" = 40'	1 OF 6



LOCUS MAP
(N.T.S.)

LEGEND

CB ⊡	CONCRETE BOUND
IPF ◎	IRON PIPE FOUND
IRF ◎	IRON ROD FOUND
SB ⊡	STONE BOUND
▦	CATCH BASIN
◁	CULVERT
Ⓜ	DRAIN MANHOLE
⊠	ELECTRIC BOX
Ⓔ	ELECTRIC METER
⋈	WATER GATE
⌀	UTILITY POLE WITH RISER
⌀	UTILITY POLE
⌀	UTILITY POLE WITH LIGHT
⌀	UTILITY POLE W/ LIGHT/TRANSFORMER
⌀	UTILITY POLE WITH TRANSFORMER
R/T	UTILITY POLE W/ RISER/TRANSFORMER
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REVISION	
DATE	DESCRIPTION
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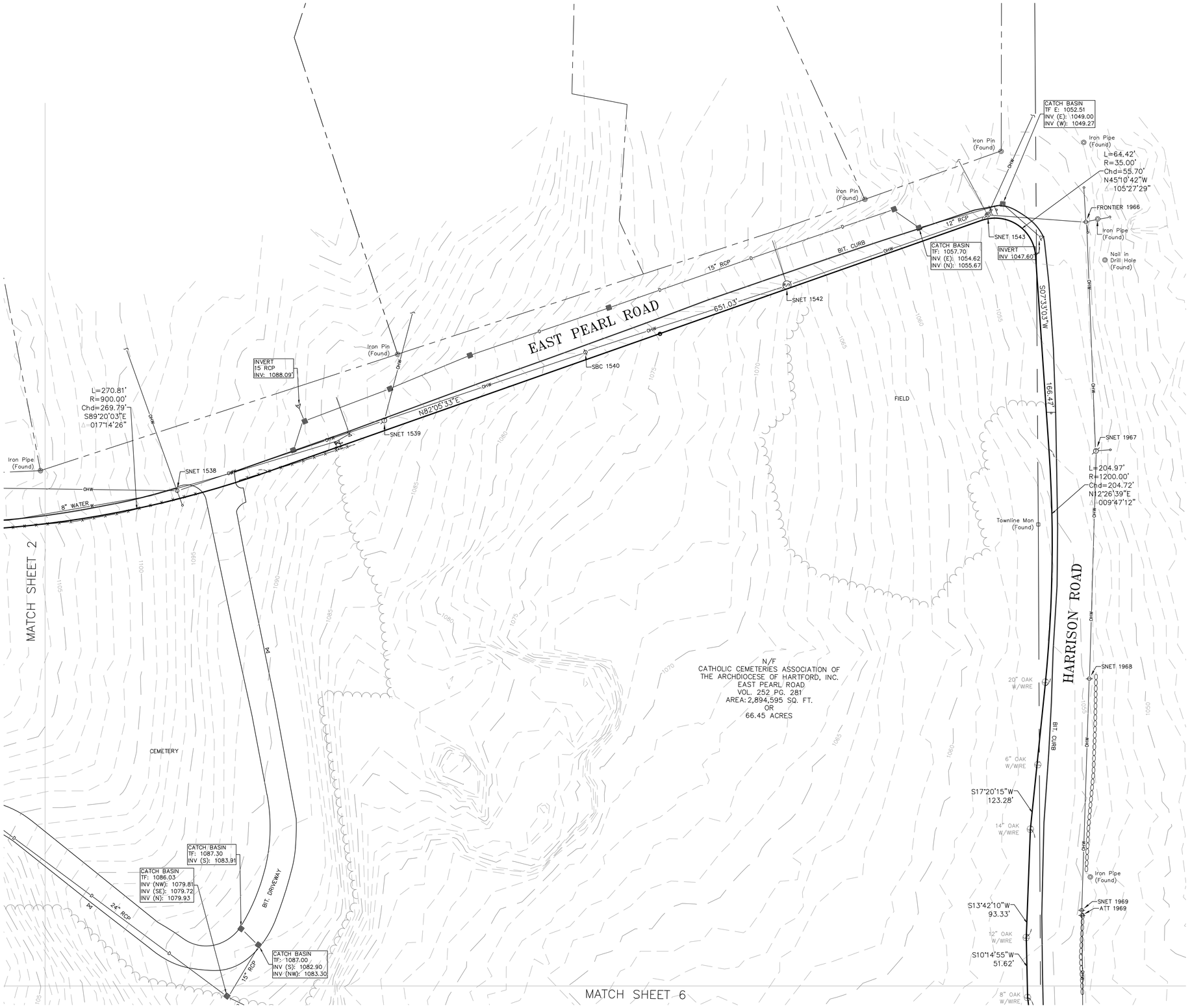
PROPERTY AND TOPOGRAPHIC SURVEY
EAST PEARL ROAD
TORRINGTON, CONNECTICUT
PREPARED FOR
TORRINGTON ONE SOLAR, LLC.

WSP USA Inc.
500 Winding Brook Drive,1st Floor
Glastonbury, CT 06033
860-659-0444

Drawn By MG/JWG	Date	Job No.
Surveyed By JWG/ZJM	APRIL 1, 2020	190379B
Checked By MG	Scale	Sheet No.
Book No. –	1" = 40'	2 OF 6



LOCUS MAP
(N.T.S.)

LEGEND

CB	CONCRETE BOUND
IPF	IRON PIPE FOUND
IRF	IRON ROD FOUND
SB	STONE BOUND
	CATCH BASIN
	CULVERT
	DRAIN MANHOLE
	ELECTRIC BOX
E	ELECTRIC METER
	WATER GATE
	UTILITY POLE WITH RISER
	UTILITY POLE
	UTILITY POLE WITH LIGHT
	UTILITY POLE W/ LIGHT/TRANSFORMER
	UTILITY POLE WITH TRANSFORMER
M	UTILITY POLE W/ RISER/TRANSFORMER
	FIRE HYDRANT
	DECIDUOUS TREE
	CONIFER TREE
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	SIGN (SINGLE POSTED)
	SIGN (DOUBLE POSTED)
	POST
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40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

REVISION	
DATE	DESCRIPTION
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PROPERTY AND TOPOGRAPHIC SURVEY
EAST PEARL ROAD
TORRINGTON, CONNECTICUT
PREPARED FOR
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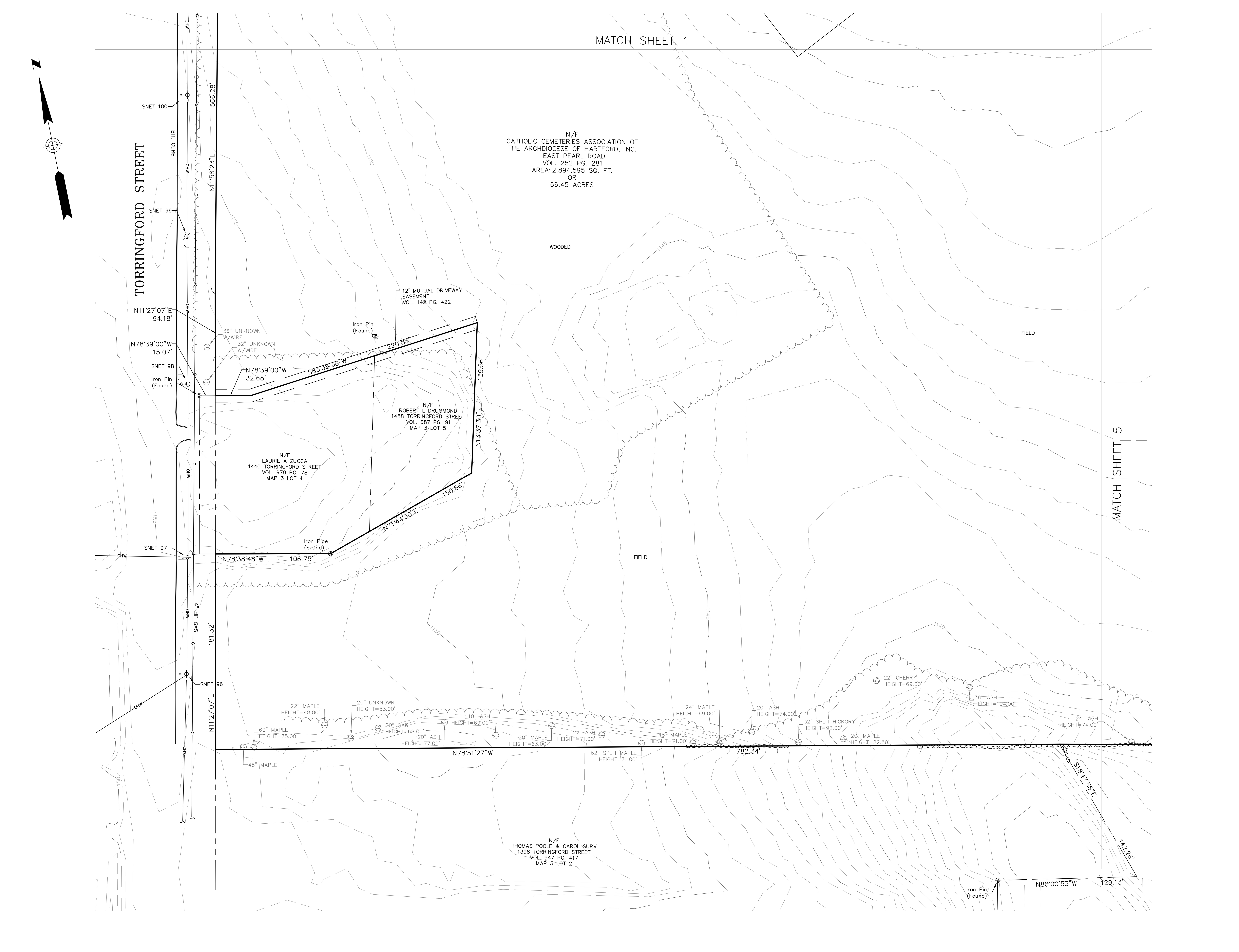
WSP USA Inc.
500 Winding Brook Drive,1st Floor
Glastonbury, CT 06033
860-659-0444

Drawn By MG/JWG	Date	Job No.
Surveyed By JWG/ZJM	APRIL 1, 2020	190379B
Checked By MG	Scale	Sheet No.
Book No. –	1" = 40'	3 OF 6



MATCH SHEET 1
MATCH SHEET 5
TORRINGFORD STREET
N
SNET 100
SNET 99
SNET 98
SNET 97
SNET 96
BIT. CURB
OHW
4" HP GAS
566.28'
N11°58'23"E
N11°27'07"E
94.18'
N78°39'00"W
15.07'
Iron Pin (Found)
36" UNKNOWN W/WIRE
32" UNKNOWN W/WIRE
N78°39'00"W
32.65'
12' MUTUAL DRIVEWAY EASEMENT VOL. 142 PG. 422
Iron Pin (Found)
S83°38'30"W
220.83'
139.56'
N13°37'30"E
N/F CATHOLIC CEMETERIES ASSOCIATION OF THE ARCHDIOCESE OF HARTFORD, INC. EAST PEARL ROAD VOL. 252 PG. 281 AREA: 2,894,595 SQ. FT. OR 66.45 ACRES
WOODED
FIELD
N/F ROBERT L DRUMMOND 1488 TORRINGFORD STREET VOL. 687 PG. 91 MAP 3 LOT 5
N/F LAURIE A ZUCCA 1440 TORRINGFORD STREET VOL. 979 PG. 78 MAP 3 LOT 4
150.66'
N71°44'30"E
Iron Pipe (Found)
N78°38'48"W
106.75'
FIELD
181.32'
N11°27'07"E
22" MAPLE HEIGHT=48.00'
20" UNKNOWN HEIGHT=53.00'
60" MAPLE HEIGHT=75.00'
18" ASH HEIGHT=69.00'
20" OAK HEIGHT=68.00'
20" ASH HEIGHT=77.00'
20" MAPLE HEIGHT=63.00'
22" ASH HEIGHT=71.00'
48" MAPLE HEIGHT=71.00'
24" MAPLE HEIGHT=69.00'
20" ASH HEIGHT=74.00'
32" SPLIT HICKORY HEIGHT=92.00'
20" MAPLE HEIGHT=82.00'
22" CHERRY HEIGHT=69.00'
36" ASH HEIGHT=104.00'
24" ASH HEIGHT=74.00'
48" MAPLE
62" SPLIT MAPLE HEIGHT=71.00'
N78°51'27"W
782.34'
S18°47'56"E
142.26'
N80°00'53"W
129.13'
Iron Pin (Found)
N/F THOMAS POOLE & CAROL SURV 1398 TORRINGFORD STREET VOL. 947 PG. 417 MAP 3 LOT 2
1150
1145
1140
1155

LOCUS MAP
(N.T.S.)

LEGEND

- CB CONCRETE BOUND
- IPF IRON PIPE FOUND
- IRF IRON ROD FOUND
- SB STONE BOUND
- CATCH BASIN
- CULVERT
- DRAIN MANHOLE
- ELECTRIC BOX
- ELECTRIC METER
- WATER GATE
- UTILITY POLE WITH RISER
- UTILITY POLE
- UTILITY POLE WITH LIGHT
- UTILITY POLE W/ LIGHT/TRANSFORMER
- UTILITY POLE WITH TRANSFORMER
- UTILITY POLE W/ RISER/TRANSFORMER
- FIRE HYDRANT
- DECIDUOUS TREE
- CONIFER TREE
- SHRUB
- SIGN (SINGLE POSTED)
- SIGN (DOUBLE POSTED)
- POST
- MAILBOX
- LIGHT POLE
- BOLLARD
- VALVE
- ABUTTERS LOT LINE
- PROPERTY LINE
- CHAIN LINK FENCE
- WOOD FENCE
- METAL/WIRE FENCE
- DRAIN LINE
- WATER LINE
- UNDERGROUND ELECTRIC
- UNDERGROUND CABLE
- TELEPHONE LINE
- OVERHEAD WIRES
- STONE WALL
- TREE LINE
- 52 INTERMEDIATE CONTOURS
- 50 INDEX CONTOURS

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

REVISION	
DATE	DESCRIPTION
--/--/--	---

PROPERTY AND TOPOGRAPHIC SURVEY
EAST PEARL ROAD
TORRINGTON, CONNECTICUT
PREPARED FOR
TORRINGTON ONE SOLAR, LLC.

WSP
WSP USA Inc.
500 Winding Brook Drive,1st Floor
Glastonbury, CT 06033
860-659-0444

	Date	Job No.
Drawn By MG/JWG Surveyed By JWG/ZJM	APRIL 1, 2020	190379B
Checked By MG Book No. –	Scale 1" = 40'	Sheet No. 4 OF 6

MATCH SHEET 2

MATCH SHEET 4

MATCH SHEET 6

N/F
CATHOLIC CEMETERIES ASSOCIATION OF
THE ARCHDIOCESE OF HARTFORD, INC.
EAST PEARL ROAD
VOL. 252 PG. 281
AREA: 2,894,595 SQ. FT.
OR
66.45 ACRES

FIELD

R-MP
R-15S

1,000 GALLON
SEPTIC TANK

4" PVC

CONC

4" DIP

48" SPLIT MAPLE
HEIGHT=72.00'

22" MAPLE
HEIGHT=59.00'

30" MAPLE
HEIGHT=60.00'

20" MAPLE
HEIGHT=49.00'

36" MAPLE
HEIGHT=82.00'

30" SPLIT MAPLE
HEIGHT=44.00'

20" MAPLE
HEIGHT=52.00'

18" MAPLE
HEIGHT=56.00'

N78°20'03"W
498.66'

N77°58'38"W
469.65'

N79°40'26"W
106.31'

26" OAK
W/WIRE

4"
W

N/F
MAD INVESTMENTS LLC & TIC
GAYLORD LANE
VOL. 1247 PG. 213
MAP 3 LOT 7

N/F
PHILIP & LINDA WEINGARD
341 GAYLORD LANE
VOL. 558 PG. 783
MAP 1 LOT 6

142.26'
129.13'

LOCUS MAP
(N.T.S.)

LEGEND

CB	CONCRETE BOUND
IPF	IRON PIPE FOUND
IRF	IRON ROD FOUND
SB	STONE BOUND
	CATCH BASIN
	CULVERT
	DRAIN MANHOLE
	ELECTRIC BOX
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GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
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REVISION

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--/--/--	---

PROPERTY AND TOPOGRAPHIC SURVEY
EAST PEARL ROAD
TORRINGTON, CONNECTICUT
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WSP USA Inc.
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Drawn By MG/JWG	Date	Job No.
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MATCH SHEET 3

MATCH SHEET 5

CATCH BASIN
TF: 1087.00
INV (S): 1082.90
INV (NW): 1083.30

15" RCP

24" RCP

4" PVC

LEACHING FIELD

N/F
CATHOLIC CEMETERIES ASSOCIATION OF THE ARCHDIOCESE OF HARTFORD, INC.
EAST PEARL ROAD
VOL. 252 PG. 281
AREA: 2,894,595 SQ. FT.
OR
66.45 ACRES

N/F
PHILIP & LINDA WEINGARD
341 GAYLORD LANE
VOL. 558 PG. 783
MAP 1 LOT 6

HARRISON ROAD

BIT. CURB

S10°14'55"W
51.62'

S4°29'49"W
109.63'

S10°29'01"W
84.56'

S8°40'56"W
264.10'

S4°48'22"W
180.63'

N76°09'11"W
104.00'

N76°01'03"W
91.83'

N82°59'51"W
88.40'

N78°00'57"W
109.56'

N84°24'59"W
86.53'

N78°34'46"W
216.14'

N77°10'52"W
114.62'

N75°09'57"W
69.55'

N79°41'02"W
59.39'

Iron Pin (Found)

SVC 1970

SNET 2147

SNET 2148

ONE STORY BRICK BUILDING

BIT.

INVERT
INV 24 RCP
ELEV: 1044.07'

INVERT
INV 24 RCP
ELEV: 1044.48'

INVERT
INV 24 RCP
ELEV: 1044.06'

INVERT
INV 24 RCP
ELEV: 1043.89'

12" OAK W/WIRE
8" OAK W/WIRE
36" OAK W/WIRE
12" OAK W/WIRE
4" ASH W/WIRE
22" HICKORY W/WIRE
20" BEECH W/WIRE
12" HICKORY W/WIRE
14" HICKORY W/WIRE
8" OAK W/WIRE
22" MAPLE W/WIRE
12" BEECH W/WIRE
20" BEECH W/WIRE
12" BIRCH W/WIRE
4" UNKNOWN W/WIRE
30" UNKNOWN W/WIRE
8" OAK W/WIRE
6" OAK W/WIRE
10" HICKORY W/WIRE
4" HICKORY W/WIRE
8" HICKORY W/WIRE
12" OAK W/WIRE
4" IRONWOOD W/WIRE
36" SPLIT OAK W/WIRE
14" OAK W/WIRE
12" BEECH W/WIRE
12" OAK W/WIRE
30" OAK W/WIRE
30" OAK W/WIRE
Iron Pin (Found)

1105 1100 1095 1090 1085 1080 1075 1070 1065 1060 1055 1050

LOCUS MAP
(N.T.S.)

LEGEND

CB	CONCRETE BOUND
IPF	IRON PIPE FOUND
IRF	IRON ROD FOUND
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	DRAIN MANHOLE
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	WATER GATE
	UTILITY POLE WITH RISER
	UTILITY POLE
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	UTILITY POLE W/ LIGHT/TRANSFORMER
	UTILITY POLE WITH TRANSFORMER
R/T	UTILITY POLE W/ RISER/TRANSFORMER
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50	INDEX CONTOURS

GRAPHIC SCALE

40 0 20 40 80 160

(IN FEET)
1 inch = 40 ft.

REVISION	
DATE	DESCRIPTION
--/--/--	---

PROPERTY AND TOPOGRAPHIC SURVEY
EAST PEARL ROAD
TORRINGTON, CONNECTICUT
PREPARED FOR
TORRINGTON ONE SOLAR, LLC.

WSP USA Inc.
500 Winding Brook Drive,1st Floor
Glastonbury, CT 06033
860-659-0444

Drawn By	MG/JWG	Date	Job No.
Surveyed By	JWG/ZJM	APRIL 1, 2020	190379B
Checked By	MG	Scale	Sheet No.
Book No.	–	1" = 40'	6 OF 6

GENERAL NOTES

1. ALL CONSTRUCTION SHALL COMPLY WITH PROJECT DEVELOPER STANDARDS, CITY OF TORRINGTON STANDARDS, CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY.
2. IF NO PROJECT CONSTRUCTION SPECIFICATION PACKAGE IS PROVIDED BY THE PROJECT DEVELOPER OR THEIR REPRESENTATIVE, THE CONTRACTOR SHALL COMPLY WITH THE MANUFACTURE, CITY OF TORRINGTON, OR CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS, AND BE IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
3. THE PROJECT DEVELOPER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING AND STORMWATER PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL CITY OF TORRINGTON CONSTRUCTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
4. REFER TO PLANS, DETAILS AND REPORTS PREPARED BY ALL-POINTS TECHNOLOGY CORPORATION FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE PROJECT DEVELOPER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS SO THAT APPROPRIATE REVISIONS CAN BE MADE PRIOR TO BIDDING/CONSTRUCTION. ANY CONFLICT BETWEEN THE DRAWINGS AND SPECIFICATIONS SHALL BE CONFIRMED WITH THE PROJECT DEVELOPERS CONSTRUCTION MANAGER PRIOR TO CONSTRUCTION.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, MATERIALS PER PLANS AND SPECIFICATIONS TO THE PROJECT DEVELOPER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION OR DELIVERY TO THE SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
6. SHOULD ANY UNKNOWN OR INCORRECTLY LOCATED EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE PROJECT DEVELOPER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
7. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE PROJECT DEVELOPER OR OTHERS DURING OCCUPIED HOURS, EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE PROJECT DEVELOPER AND THE LOCAL MUNICIPALITY. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
8. THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS.
9. THE CONTRACTOR SHALL ABIDE BY ALL OSHA, FEDERAL, STATE AND LOCAL REGULATIONS WHEN OPERATING CRANES, BOOMS, HOISTS, ETC. IN CLOSE PROXIMITY TO OVERHEAD ELECTRIC LINES. IF CONTRACTOR MUST OPERATE EQUIPMENT CLOSE TO ELECTRIC LINES, CONTACT POWER COMPANY TO MAKE ARRANGEMENTS FOR PROPER SAFEGUARDS. ANY UTILITY COMPANY FEES SHALL BE PAID FOR BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL COMPLY WITH OSHA CFR 29 PART 1926 FOR EXCAVATION TRENCHING AND TRENCH PROTECTION REQUIREMENTS.
11. THE ENGINEER IS NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ENGINEER HAS NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OF PERSONNEL OR TO SUPERVISE SAFETY AND DO NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
12. THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE PROJECT DEVELOPER OR CITY OF TORRINGTON.
13. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE PROJECT DEVELOPER AT THE END OF CONSTRUCTION.
14. ALTERNATIVE METHODS AND PRODUCTS, OTHER THAN THOSE SPECIFIED, MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCY PRIOR TO INSTALLATION DURING THE BIDDING/CONSTRUCTION PROCESS.
15. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "DIG SAFE" 72 HOURS BEFORE COMMENCEMENT OF WORK AT "811" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
16. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.

SITE PLAN NOTES

1. THE SURVEY WAS PROVIDED BY WSP USA INC. DATED APRIL 1, 2020.
2. THERE ARE WETLANDS AND WATERWAYS LOCATED ON THE SITE AS INDICATED ON THE PLANS. BOUNDARIES WERE FLAGGED AND LOCATED VIA GPS BY APT, IN NOVEMBER 2019 AND APRIL 2020.
3. THERE WILL BE MINIMAL GRADING ON SITE IN THE AREAS OF THE MINOR CLEARING, TO ENSURE THAT PROPER DRAINAGE IS MAINTAINED.
4. THE CONTRACTOR SHALL FOLLOW THE RECOMMENDED SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION CONTROL PLAN OR SUBMIT AN ALTERNATE PLAN FOR APPROVAL BY THE ENGINEER AND/OR PERMITTING AGENCIES PRIOR TO THE START CONSTRUCTION. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW.
5. PROPER CONSTRUCTION PROCEDURES SHALL BE FOLLOWED ON ALL IMPROVEMENTS WITHIN THIS PARCEL SO AS TO PREVENT THE SILTING OF ANY WATERCOURSE OR BVWS IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS. IN ADDITION, THE CONTRACTOR SHALL ADHERE TO "EROSION CONTROL PLAN" CONTAINED HEREIN. THE CONTRACTOR SHALL BE RESPONSIBLE TO POST ALL BONDS AS REQUIRED BY GOVERNMENT AGENCIES WHICH WOULD GUARANTEE THE PROPER IMPLEMENTATION OF THE PLAN.
6. ALL SITE WORK, MATERIALS OF CONSTRUCTION, AND CONSTRUCTION METHODS FOR EARTHWORK AND STORM DRAINAGE WORK, SHALL CONFORM TO THE SPECIFICATIONS AND DETAILS AND APPLICABLE SECTIONS OF THE PROJECT SPECIFICATIONS MANUAL. OTHERWISE THIS WORK SHALL CONFORM TO THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION AND PROJECT GEOTECHNICAL REPORT IF THERE IS NO PROJECT SPECIFICATIONS MANUAL. ALL FILL MATERIAL UNDER STRUCTURES AND PAVED AREAS SHALL BE PER THE ABOVE STATED APPLICABLE SPECIFICATIONS, AND/OR PROJECT GEOTECHNICAL REPORT, AND SHALL BE PLACED IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS UNDER THE SUPERVISION OF A QUALIFIED PROFESSIONAL ENGINEER. MATERIAL SHALL BE COMPACTED IN 8" LIFTS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D 1557 AT 95% PERCENT OF OPTIMUM MOISTURE CONTENT.
7. ALL DISTURBANCE INCURRED TO PUBLIC, MUNICIPAL, COUNTY, STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE CITY OF TORRINGTON AND STATE OF CONNECTICUT.
8. IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPERS ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE PROJECT DEVELOPER AND/OR PROJECT DEVELOPERS ENVIRONMENTAL CONSULTANT.

UTILITY NOTES

1. CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE CITY OF TORRINGTON TO SECURE CONSTRUCTION PERMITS AND FOR PAYMENT OF FEES FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES.
2. REFER TO DRAWINGS BY PROJECT DEVELOPER FOR THE ONSITE ELECTRICAL DRAWINGS AND INTERCONNECTION TO EXISTING ELECTRICAL GRID. SITE CONTRACTOR SHALL SUPPLY AND INSTALL PIPE ADAPTERS AS NECESSARY AT BUILDING CONNECTION POINT OR AT EXISTING UTILITY OR PIPE CONNECTION POINT. THESE DETAILS ARE NOT INCLUDED IN THESE PLANS.
3. UTILITY LOCATIONS AND PENETRATIONS ARE SHOWN FOR THE CONTRACTOR'S INFORMATION AND SHALL BE VERIFIED WITH THE ELECTRICAL ENGINEER AND THE PROJECT DEVELOPER'S CONSTRUCTION MANAGER PRIOR TO THE START OF CONSTRUCTION.
4. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY THE ELEVATION AND LOCATION OF ALL UTILITIES BY VARIOUS MEANS PRIOR TO BEGINNING ANY EXCAVATION. TEST PITS SHALL BE DUG AT ALL LOCATIONS WHERE PROP. SANITARY SEWERS AND WHERE PROP. STORM PIPING WILL CROSS EXISTING UTILITIES, AND THE HORIZONTAL AND VERTICAL LOCATIONS OF THE UTILITIES SHALL BE DETERMINED. THE CONTRACTOR SHALL CONTACT THE PROJECT DEVELOPER IN THE EVENT OF ANY DISCOVERED OR UNFORESEEN CONFLICTS BETWEEN EXISTING AND PROPOSED SANITARY SEWERS, STORM PIPING AND UTILITIES SO THAT AN APPROPRIATE MODIFICATION MAY BE MADE.
5. UTILITY CONNECTION DESIGN AS REFLECTED ON THE PLAN MAY CHANGE SUBJECT TO UTILITY PROVIDER AND GOVERNING AUTHORITY STAFF REVIEW.
6. THE CONTRACTOR SHALL ENSURE THAT ALL UTILITY PROVIDERS AND GOVERNING AUTHORITY STANDARDS FOR MATERIALS AND CONSTRUCTION METHODS ARE MET. THE CONTRACTOR SHALL PERFORM PROPER COORDINATION WITH THE RESPECTIVE UTILITY PROVIDER.
7. THE CONTRACTOR SHALL ARRANGE FOR AND COORDINATE WITH THE RESPECTIVE UTILITY PROVIDERS FOR SERVICE INSTALLATIONS AND CONNECTIONS. THE CONTRACTOR SHALL COORDINATE WORK TO BE PERFORMED BY THE VARIOUS UTILITY PROVIDERS AND SHALL PAY ALL FEES FOR CONNECTIONS, DISCONNECTIONS, RELOCATIONS, INSPECTIONS, AND DEMOLITION UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATIONS MANUAL AND/OR GENERAL CONDITIONS OF THE CONTRACT.
8. ALL EXISTING PAVEMENT WHERE UTILITY PIPING IS TO BE INSTALLED SHALL BE SAW CUT. AFTER UTILITY INSTALLATION IS COMPLETED, THE CONTRACTOR SHALL INSTALL TEMPORARY AND/OR PERMANENT PAVEMENT REPAIR AS DETAILED ON THE DRAWINGS OR AS REQUIRED BY THE CITY OF TORRINGTON.
9. ALL PIPES SHALL BE LAID ON STRAIGHT ALIGNMENTS AND EVEN GRADES USING A PIPE LASER OR OTHER ACCURATE METHOD.
10. RELOCATION OF UTILITY PROVIDER FACILITIES, SUCH AS POLES, SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE UTILITY PROVIDER.
11. THE CONTRACTOR SHALL COMPACT PIPE BACKFILL IN 8" LIFTS ACCORDING TO THE PIPE BEDDING DETAILS. TRENCH BOTTOM SHALL BE STABLE IN HIGH GROUNDWATER AREAS. A PIPE FOUNDATION SHALL BE USED PER THE TRENCH DETAILS AND IN AREAS OF ROCK EXCAVATION.
12. CONTRACTOR TO PROVIDE STEEL SLEEVES AND ANNULAR SPACE SAND FILL FOR UTILITY PIPE AND CONDUIT CONNECTIONS UNDER FOOTINGS.
13. ALL UTILITY CONSTRUCTION IS SUBJECT TO INSPECTION FOR APPROVAL PRIOR TO BACKFILLING, IN ACCORDANCE WITH THE APPROPRIATE UTILITY PROVIDER REQUIREMENTS.
14. A ONE-FOOT MINIMUM VERTICAL CLEARANCE BETWEEN WATER, GAS, ELECTRICAL, AND TELEPHONE LINES AND STORM PIPING SHALL BE PROVIDED. A SIX-INCH MINIMUM CLEARANCE SHALL BE MAINTAINED BETWEEN STORM PIPING AND SANITARY SEWER. A 6-INCH TO 18-INCH VERTICAL CLEARANCE BETWEEN SANITARY SEWER PIPING AND STORM PIPING SHALL REQUIRE CONCRETE ENCASEMENT OF THE PROP. SANITARY PIPING.
15. THE CONTRACTOR SHALL RESTORE ANY UTILITY STRUCTURE, PIPE, CONDUIT, PAVEMENT, CURBING, SIDEWALKS, DRAINAGE STRUCTURE, SWALE OR LANDSCAPED AREAS DISTURBED DURING CONSTRUCTION, TO THEIR ORIGINAL CONDITION OR BETTER TO THE SATISFACTION OF THE PROJECT DEVELOPER AND CITY OF TORRINGTON.
16. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY, AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE INCLUDING SERVICES. CONTACT "DIG SAFE" AT 811 72 HOURS PRIOR TO CONSTRUCTION AND VERIFY ALL UNDERGROUND AND OVERHEAD UTILITY AND STORM DRAINAGE LOCATIONS. THE CONTRACTOR SHALL EMPLOY THE USE OF A UTILITY LOCATING COMPANY TO PROVIDE SUBSURFACE UTILITY ENGINEERING CONSISTING OF DESIGNATING UTILITIES AND STORM PIPING ON PRIVATE PROPERTY WITHIN THE CONTRACT LIMIT AND CONSISTING OF DESIGNATING AND LOCATING WHERE PROP. UTILITIES AND STORM PIPING CROSS EXISTING UTILITIES AND STORM PIPING WITHIN THE CONTRACT LIMITS.
17. THE CONTRACTOR SHALL ARRANGE AND COORDINATE WITH UTILITY PROVIDERS FOR WORK TO BE PERFORMED BY UTILITY PROVIDERS. THE CONTRACTOR SHALL PAY ALL UTILITY FEES UNLESS OTHERWISE STATED IN THE PROJECT SPECIFICATION MANUAL AND GENERAL CONDITIONS, AND REPAIR PAVEMENTS AS NECESSARY.
18. ELECTRIC DRAWINGS AND REQUIREMENTS ARE NOT INCLUDED AS PART OF THIS DRAWING SET AND SHOULD BE OBTAINED FROM THE PROJECT DEVELOPER.
19. ALTERNATIVE METHODS AND PRODUCTS OTHER THAN THOSE SPECIFIED MAY BE USED IF REVIEWED AND APPROVED BY THE PROJECT DEVELOPER, ENGINEER, AND APPROPRIATE REGULATORY AGENCIES PRIOR TO INSTALLATION.
20. THE CONTRACTOR SHALL MAINTAIN ALL FLOWS AND UTILITY CONNECTIONS TO EXISTING BUILDINGS WITHOUT INTERRUPTION UNLESS/UNTIL AUTHORIZED TO DISCONNECT BY THE PROJECT DEVELOPER, CITY OF TORRINGTON, UTILITY PROVIDERS AND GOVERNING AUTHORITIES.

GENERAL LEGEND

	EXISTING	PROPOSED
PROPERTY LINE		
BUILDING SETBACK		
SOLAR SETBACK		
EASEMENT		
TREE LINE		
WETLAND		
WETLAND BUFFER		
VERNAL POOL		
VERNAL POOL BUFFER		
WATERCOURSE		
WATERCOURSE BUFFER		
MAJOR CONTOUR		
MINOR CONTOUR		
UNDERGROUND ELECTRIC		E E
OVERHEAD ELECTRIC	OH OH	OH OH
GAS LINE		
WATER LINE	W W	W W
WATER QUALITY SWALE		
FENCE		X X X
LIMIT OF DISTURBANCE		LOD
SILT FENCE		SF SF

TORRINGTON SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/15/20	INTERCONNECT SCREENING
1	08/12/20	ROAD DETAIL; IFC
2	08/13/20	PANEL LAYOUT & INTERCONN.
3	08/31/20	90% PERMIT SET
4	10/22/20	100% IFC SET
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHALL ST EXT - STE 311 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES OF ARCHDIOCESE OF HARTFORD
ADDRESS: 700 MIDDLETOWN AVENUE NORTH HAVEN, CT 06473

TORRINGTON SOLAR ONE, LLC

SITE ADDRESS: EAST PEARL ROAD TORRINGTON, CT

APT FILING NUMBER: CT590190

DRAWN BY: KAM
DATE: 05/28/2020 CHECKED BY: BJP

SHEET TITLE:

GENERAL NOTES

SHEET NUMBER:

GN-1

STATE OF CONNECTICUT · BRADLEY J. PARSONS · No. 28025 · LICENSED PROFESSIONAL ENGINEER

DESIGN TABLE:

MODULE MODEL - TRINA TSM-DEG15MC.20II (400W) & RISEN RSM144-6 (380W)

PROP. TILT - 30 DEGREES

INTER-ROW SPACING - 16.0 FEET

PROP. AZIMUTH - ±0 DEGREES

150 0 75 150 300

(IN FEET) 1 inch = 150 ft.

1 / OP-1 **OVERALL SITE PLAN**

SCALE : 1-IN = 150-FT (AT 22" X 34")

SCALE : 1-IN = 300-FT (AT 11" X 17")

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OVERALL SITE PLAN

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STATE OF CONNECTICUT BRADLEY J. PARSONS No. 28025 LICENSED PROFESSIONAL ENGINEER

INGFORD ST
7 PG. 274
LOT 56

TH

75-FT LOCAL WETLAND BUFFER (TYP)

100-FT STATE WETLAND BUFFER (TYP)

DELINEATED WETLAND (TYP)

VERNAL POOL

100.0

75.0

PROP. SILT FENCE WINGS (12 LOCATIONS, 33 TYP.) LOCATIONS SHALL BE STAKED BY A SURVEYOR AND SHALL NOT BE CHANGED WITHOUT APPROVAL FROM ENGINEER
5 EC-3

4 EC-3 PLACE TEMPORARY CONSTRUCTION MATTING FOR UTILITY WORK WITHIN WETLANDS. SEE SHEET DN-2. ENVIRONMENTAL NOTES

BLANKET, SEED, & MULCH CUT SLOPE (3H:1V)

INSTALL STABILIZED CONSTRUCTION ENTRANCE 2 EC-3

INSTALL ROCK CHECK DAMS IN DITCHLINE 6 EC-3

SF AREA 0.96 AC

SILT FENCE DRAINAGE AREA BOUNDARY (TYP.)

1 EC-3 PERIMETER SILT FENCE TO BE INSTALLED PRIOR TO SITE WORK. TO BE STAKED BY SURVEYOR.

SF AREA 0.95 AC

100-FT BUFFER TO INTERMITTENT WATERCOURSE

SF AREA 0.99 AC

PROP. SITE PREPARATION WITHIN THE LIMITS OF DISTURBANCE (±11.15 AC.) TO INCLUDE THE REMOVAL OF RESIDUAL AGRICULTURAL PLANT MATERIAL ON EASTERN PORTION OF SITE FOLLOWED BY GRADING TO UNIFORM SLOPE. PRESERVE EXISTING GROUND COVER IN HAY FIELDS TO PROVIDE STABILITY. CROSS-HATCHED AREA TO BE SCARIFIED AND SEEDED WITH NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX FOLLOWING SITE PREPARATION.

SF AREA 0.94 AC

PROP. SILT FENCE WINGS (12 LOCATIONS, TYP.) LOCATIONS SHALL BE STAKED BY A SURVEYOR AND SHALL NOT BE CHANGED WITHOUT APPROVAL FROM ENGINEER 5 EC-3

3 EC-3 PROP. STOCK PILE AREA WITH DOUBLE ROW SILT FENCE (TYP.) (IF REQUIRED)

SF AREA 0.96 AC

PROP. GRAVEL ACCESS DRIVE. TO BE PLACED FOLLOWING INSTALLATION OF EROSION CONTROLS AND DRAINAGE MANAGEMENT. 3 DN-1

SF AREA 0.93 AC

SF AREA 0.94 AC

SF AREA 0.84 AC

SF AREA 0.72 AC

SF AREA 0.75 AC

SF AREA 0.91 AC

4 DN-1 PROP. CONCRETE EQUIPMENT PAD, BROOM FINISH. 820- SQ-FT. SEE ELECTRICAL SHEETS (E110) FOR ADDITIONAL DETAIL.

SF AREA 0.63 AC

(IN FEET) 1 inch = 50 ft.

1 EC-1 **SEDIMENTATION & EROSION CONTROL PLAN**
SCALE : 1-IN = 50-FT

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SEDIMENTATION & EROSION CONTROL PLAN

SHEET NUMBER:

EC-1

STATE OF CONNECTICUT
BRADLEY J. PARSONS
No. 28025
LICENSED PROFESSIONAL ENGINEER

EROSION CONTROL NOTES

EROSION AND SEDIMENT CONTROL PLAN NOTES

1. THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, LATEST EDITION, IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE CITY OF TORRINGTON, PERMITTEE, AND/OR SWPCP MONITOR. ALL PERIMETER SEDIMENTATION AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING AND DEMOLITION OPERATIONS.

2. THESE DRAWINGS ARE ONLY INTENDED TO DESCRIBE THE SEDIMENT AND EROSION CONTROL MEASURES FOR THIS SITE. SEE CONSTRUCTION SEQUENCE FOR ADDITIONAL INFORMATION. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHOWN ON THE EROSION & SEDIMENT CONTROL PLAN ARE SHOWN AS REQUIRED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL EROSION CONTROL MEASURES ARE CONFIGURED AND CONSTRUCTED IN A MANNER THAT WILL MINIMIZE EROSION OF SOILS AND PREVENT THE TRANSPORT OF SEDIMENTS AND OTHER POLLUTANTS TO STORM DRAINAGE SYSTEMS AND/OR WATERCOURSES. ACTUAL SITE CONDITIONS OR SEASONAL AND CLIMATIC CONDITIONS MAY WARRANT ADDITIONAL CONTROLS OR CONFIGURATIONS, AS REQUIRED, AND AS DIRECTED BY THE PERMITTEE AND/OR SWPCP MONITOR. REFER TO SITE PLAN FOR GENERAL INFORMATION AND OTHER CONTRACT PLANS FOR APPROPRIATE INFORMATION.

3. A BOND OR LETTER OF CREDIT MAY BE REQUIRED TO BE POSTED WITH THE GOVERNING AUTHORITY FOR THE EROSION CONTROL INSTALLATION AND MAINTENANCE.

4. THE CONTRACTOR SHALL APPLY THE MINIMUM EROSION & SEDIMENT CONTROL MEASURES SHOWN ON THE PLAN IN CONJUNCTION WITH CONSTRUCTION SEQUENCING, SUCH THAT ALL ACTIVE WORK ZONES ARE PROTECTED. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, SITE ENGINEER, MUNICIPAL OFFICIALS, OR ANY GOVERNING AGENCY. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED BY THE CONTRACTOR.

5. THE CONTRACTOR SHALL TAKE EXTREME CARE DURING CONSTRUCTION SO AS NOT TO DISTURB UNPROTECTED WETLAND AREAS OR INSTALLED SEDIMENTATION AND EROSION CONTROL MEASURES. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS WEEKLY AND WITHIN 24 HOURS OF A STORM WITH A RAINFALL AMOUNT OF 0.25 INCHES OR GREATER TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS AS NECESSARY IN A TIMELY MANOR.

6. THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (SILT FENCE, COMPOST FILTER SOCK, EROSION CONTROL BLANKET, ETC.) ON-SITE FOR PERIODIC MAINTENANCE AND EMERGENCY REPAIRS.

7. ALL FILL MATERIAL PLACED ADJACENT TO ANY WETLAND AREA SHALL BE GOOD QUALITY, WITH LESS THAN 5% FINES PASSING THROUGH A #200 SIEVE (BANK RUN), SHALL BE PLACED IN MAXIMUM ONE FOOT LIFTS, AND SHALL BE COMPACTED TO 95% MAX. DRY DENSITY MODIFIED PROCTOR OR AS SPECIFIED IN THE CONTRACT SPECIFICATIONS.

8. PROTECT EXISTING TREES THAT ARE TO BE SAVED BY FENCING, ORANGE SAFETY FENCE, CONSTRUCTION TAPE, OR EQUIVALENT FENCING/TAPE. ANY LIMB TRIMMING SHOULD BE DONE AFTER CONSULTATION WITH AN ARBORIST AND BEFORE CONSTRUCTION BEGINS IN THAT AREA; FENCING SHALL BE MAINTAINED AND REPAIRED DURING CONSTRUCTION.

9. CONSTRUCTION ENTRANCES (ANTI-TRACKING PADS) SHALL BE INSTALLED PRIOR TO ANY SITE EXCAVATION OR CONSTRUCTION ACTIVITY AND SHALL BE MAINTAINED THROUGHOUT THE DURATION OF ALL CONSTRUCTION IF REQUIRED. THE LOCATION OF THE TRACKING PADS MAY CHANGE AS VARIOUS PHASES OF CONSTRUCTION ARE COMPLETED. CONTRACTOR SHALL ENSURE THAT ALL VEHICLES EXITING THE SITE ARE PASSING OVER THE ANTI-TRACKING PADS PRIOR TO EXISTING.

10. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SEDIMENT BARRIER UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE BARRIER.

11. NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS. ALL SLOPES SHALL BE SEEDED AND BANKS WILL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.

12. DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE CONFORMING TO THE GUIDELINES WITHIN THE APPROVED LIMIT OF DISTURBANCE IF REQUIRED. DISCHARGE TO STORM DRAINS OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR AND APPROVED BY THE PERMITTEE OR MUNICIPALITY.

13. THE CONTRACTOR SHALL MAINTAIN A CLEAN CONSTRUCTION SITE AND SHALL NOT ALLOW THE ACCUMULATION OF RUBBISH OR CONSTRUCTION DEBRIS ON THE SITE. PROPER SANITARY DEVICES SHALL BE MAINTAINED ON-SITE AT ALL TIMES AND SECURED APPROPRIATELY. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO AVOID THE SPILLAGE OF FUEL OR OTHER POLLUTANTS ON THE CONSTRUCTION SITE AND SHALL ADHERE TO ALL APPLICABLE POLICIES AND REGULATIONS RELATED TO SPILL PREVENTION AND RESPONSE/CONTAINMENT.

14. MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.

15. SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. FOR DUST CONTROL, PERIODICALLY MOISTEN EXPOSED SOIL SURFACES WITH WATER ON UNPAVED TRAVELWAYS TO KEEP THE TRAVELWAYS DAMP. CALCIUM CHLORIDE MAY ALSO BE APPLIED TO ACCESS ROADS. DUMP TRUCK LOADS EXITING THE SITE SHALL BE COVERED.

16. VEGETATIVE ESTABLISHMENT SHALL OCCUR ON ALL DISTURBED SOIL, UNLESS THE AREA IS UNDER ACTIVE CONSTRUCTION, IT IS COVERED IN STONE OR SCHEDULED FOR PAVING WITHIN 30 DAYS. TEMPORARY SEEDING OR NON-LIVING SOIL PROTECTION OF ALL EXPOSED SOILS AND SLOPES SHALL BE INITIATED WITHIN THE FIRST 7 DAYS OF SUSPENDING WORK IN AREAS TO BE LEFT LONGER THAN 30 DAYS.

17. MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP CONCRETE PADS, CLEAN THE STORMWATER MANAGEMENT SYSTEMS AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS ONCE THE SITE IS FULLY STABILIZED AND APPROVAL HAS BEEN RECEIVED FROM PERMITTEE OR THE MUNICIPALITY.

18. SEEDING MIXTURES SHALL BE NEW ENGLAND SEMI-SHADE GRASS AND FORBS MIX (SEE SITE DETAILS SHEET DN-1), OR APPROVED EQUAL BY OWNER.

SEDIMENT & EROSION CONTROL NARRATIVE

1. THE PROJECT INVOLVES THE CONSTRUCTION OF A GROUND MOUNTED SOLAR PANEL FACILITY WITH ASSOCIATED EQUIPMENT, INCLUDING THE CLEARING, GRUBBING AND GRADING OF APPROXIMATELY 11.55± ACRES OF EXISTING LOT.

THE PROPOSED PROJECT INVOLVES THE FOLLOWING CONSTRUCTION:

A. INSTALLATION OF WATER QUALITY BASINS AND ACCESS DRIVE.
B. CONSTRUCTION OF 7,150 GROUND MOUNTED SOLAR PANELS AND ASSOCIATED EQUIPMENT.
B. THE STABILIZATION OF DISTURBED AREAS WITH PERMANENT VEGETATIVE TREATMENTS.

2. FOR THIS PROJECT, THERE ARE APPROXIMATELY 11.55± ACRES OF THE SITE BEING DISTURBED WITH NEGLIGIBLE INCREASE IN THE IMPERVIOUS AREA OF THE SITE, AS ALL ACCESS THOUGH THE SITE WILL BE GRAVEL. IMPERVIOUS AREAS ARE LIMITED TO THE CONCRETE PADS FOR ELECTRICAL EQUIPMENT.

THE PROJECT SITE, AS MAPPED IN THE SOIL SURVEY OF STATE OF CONNECTICUT (NRCS, VERSION 18, DEC 6, 2018), CONTAINS:

Map Unit #3 - Ridgebury, Leicester, and Whitman soils, 0-8%, ex. stony [HSG D]
Map Unit #45A - Woodbridge fine sandy loam, 0-3% [HSG C/D]
Map Unit #45B - Woodbridge fine sandy loam, 3-8% [HSG C/D]
Map Unit #84B - Paxton and Montauk fine sandy loams, 3-8% [HSG C]

3. A GEOTECHNICAL ENGINEERING REPORT HAS NOT BEEN COMPLETED.

4. IT IS ANTICIPATED THAT CONSTRUCTION WILL BE COMPLETED IN APPROXIMATELY 3-4 MONTHS.

5. REFER TO THE CONSTRUCTION SEQUENCING AND EROSION AND SEDIMENTATION NOTES FOR INFORMATION REGARDING SEQUENCING OF MAJOR OPERATIONS IN THE ON-SITE CONSTRUCTION PHASES.

6. STORMWATER MANAGEMENT DESIGN CRITERIA UTILIZES THE APPLICABLE SECTIONS OF THE 2004 CONNECTICUT STORMWATER QUALITY MANUAL AND THE CITY OF TORRINGTON STANDARDS, TO THE EXTENT POSSIBLE AND PRACTICABLE FOR THIS PROJECT ON THIS SITE. EROSION AND SEDIMENTATION MEASURES ARE BASED UPON ENGINEERING PRACTICE, JUDGEMENT AND THE APPLICABLE SECTIONS OF THE CONNECTICUT EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS, LATEST EDITION.

7. DETAILS FOR THE TYPICAL STORMWATER MANAGEMENT AND EROSION AND SEDIMENTATION MEASURES ARE SHOWN ON THE PLAN SHEETS OR PROVIDED AS SEPARATE SUPPORT DOCUMENTATION FOR REVIEW IN THIS PLAN.

8. CONSERVATION PRACTICES TO BE USED DURING CONSTRUCTION:
   A. STAGED CONSTRUCTION;
   B. MINIMIZE THE DISTURBED AREAS TO THE EXTENT PRACTICABLE DURING CONSTRUCTION;
   C. STABILIZE DISTURBED AREAS WITH TEMPORARY OR PERMANENT MEASURES AS SOON AS POSSIBLE, BUT NO LATER THAN 7-DAYS FOLLOWING DISTURBANCE;
   D. MINIMIZE IMPERVIOUS AREAS;
   E. UTILIZE APPROPRIATE CONSTRUCTION EROSION AND SEDIMENTATION MEASURES.

9. THE FOLLOWING SEPARATE DOCUMENTS ARE TO BE CONSIDERED A PART OF THE EROSION AND SEDIMENTATION PLAN:
   A. STORMWATER MANAGEMENT MEMO FOR EXISTING AND PROPOSED PEAK FLOWS DATED MAY 2020.
   B. SWPCP DATED MAY 2020

SUGGESTED CONSTRUCTION SEQUENCE

THE FOLLOWING SUGGESTED SEQUENCE OF CONSTRUCTION ACTIVITIES IS PROJECTED BASED UPON ENGINEERING JUDGEMENT AND BEST MANAGEMENT PRACTICES. THE CONTRACTOR MAY ELECT TO ALTER THE SEQUENCING TO BEST MEET THE CONSTRUCTION SCHEDULE, THE EXISTING SITE ACTIVITIES AND WEATHER CONDITIONS. SHOULD THE CONTRACTOR ALTER THE CONSTRUCTION SEQUENCE OR ANY EROSION AND SEDIMENTATION CONTROL MEASURES THEY SHALL MODIFY THE STORMWATER POLLUTION CONTROL PLAN ("SWPCP") AS REQUIRED BY THE GENERAL PERMIT. MAJOR CHANGES IN SEQUENCING AND/OR METHODS MAY REQUIRE REGULATORY APPROVAL PRIOR TO IMPLEMENTATION.

1. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING. PHYSICALLY FLAG THE LIMITS OF DISTURBANCE IN THE FIELD AS NECESSARY TO FACILITATE THE PRE-CONSTRUCTION MEETING.

2. CONDUCT A PRE-CONSTRUCTION MEETING TO DISCUSS THE PROPOSED WORK AND EROSION AND SEDIMENTATION CONTROL MEASURES. THE MEETING SHOULD BE ATTENDED BY THE OWNER, THE OWNER REPRESENTATIVE(S), THE MUNICIPALITY, THE GENERAL CONTRACTOR, DESIGNATED SUB-CONTRACTORS AND THE PERSON, OR PERSONS, RESPONSIBLE FOR THE IMPLEMENTATION, OPERATION, MONITORING AND MAINTENANCE OF THE EROSION AND SEDIMENTATION MEASURES. THE CONSTRUCTION PROCEDURES FOR THE ENTIRE PROJECT SHALL BE REVIEWED AT THIS MEETING.

3. NOTIFY CITY OF TORRINGTON AGENT AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCEMENT OF ANY DEMOLITION, CONSTRUCTION OR REGULATED ACTIVITY ON THIS PROJECT.

4. NOTIFY CALL BEFORE YOU DIG AT 811, AS REQUIRED, PRIOR TO THE START OF CONSTRUCTION.

5. REMOVE EXISTING IMPEDIMENTS AS NECESSARY AND PROVIDE GRADING TO INSTALL THE REQUIRED CONSTRUCTION/SITE ENTRANCE.

6. ALL WETLAND AREAS SHALL BE PROTECTED BEFORE MAJOR CONSTRUCTION BEGINS.

7. INSTALL PERIMETER EROSION CONTROL. THIS INCLUDES THE SILT FENCE WINGS. SILT FENCE WINGS SHALL BE LOCATED IN THE FIELD BY SURVEY AND SHALL NOT BE MOVED WITHOUT WRITTEN APPROVAL FROM THE ENGINEER.

8. PERFORM THE ARRAY AREA PREPARATION AS NECESSARY. REMOVE RESIDUAL AGRICULTURAL PLANT MATERIAL AND STOCKPILE FOR FUTURE USE OR REMOVE OFF-SITE. REMOVE AND DISPOSE OF ANY ENCOUNTERED DEMOLITION DEBRIS OFF-SITE IN ACCORDANCE WITH APPLICABLE LAWS.

9. TEMPORARILY SEED DISTURBED AREAS NOT UNDER CONSTRUCTION FOR THIRTY (30) DAYS OR MORE.

10. INSTALL ELECTRICAL CONDUIT AND CONCRETE PADS.

11. INSTALL RACKING POSTS FOR GROUND MOUNTED SOLAR PANELS

12. INSTALL GROUND MOUNTED SOLAR PANELS AND COMPLETE ELECTRICAL INSTALLATION.

13. AFTER SUBSTANTIAL COMPLETION OF THE INSTALLATION OF THE SOLAR PANELS, COMPLETE REMAINING SITE WORK, INCLUDING ANY REQUIRED LANDSCAPE SCREENING, AND STABILIZE ALL DISTURBED AREAS. CONSTRUCT WATER QUALITY BASINS AS SHOWN ON THE PLANS.

14. FINE GRADE, RAKE, SEED AND MULCH ALL REMAINING DISTURBED AREAS.

15. AFTER THE SITE IS STABILIZED AND WITH THE APPROVAL OF THE PERMITTEE AND CITY OF TORRINGTON AGENT, REMOVE PERIMETER EROSION AND SEDIMENTATION CONTROLS.

CONSTRUCTION OPERATION AND MAINTENANCE PLAN - BY CONTRACTOR

E&S MEASURE	INSPECTION SCHEDULE	MAINTENANCE REQUIRED
CONSTRUCTION ENTRANCE	DAILY	PLACE ADDITIONAL STONE, EXTEND THE LENGTH OR REMOVE AND REPLACE THE STONE. CLEAN PAVED SURFACES OF TRACKED SEDIMENT.
COMPOST FILTER SOCK	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED.
SILT FENCE	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR/REPLACE WHEN FAILURE OR DETERIORATION IS OBSERVED. REMOVE SILT WHEN IT REACHES 1/2 THE HEIGHT OF THE FENCE.
TOPSOIL/BORROW STOCKPILES	DAILY	REPAIR/REPLACE SEDIMENT BARRIERS AS NECESSARY.
TEMPORARY SEDIMENT BASIN (W/ BAFFLES)	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.5"	REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE HALF OF MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATERING AS NEEDED. RESTORE TRAP TO ORIGINAL DIMENSIONS. REPAIR/REPLACE BAFFLES WHEN FAILURE OR DETERIORATION IS OBSERVED.
TEMPORARY SEDIMENT TRAP (W/ BAFFLES)	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.5"	REMOVE SEDIMENT ONCE IT HAS ACCUMULATED TO ONE HALF OF MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATERING AS NEEDED. RESTORE TRAP TO ORIGINAL DIMENSIONS. REPAIR/REPLACE BAFFLES WHEN FAILURE OR DETERIORATION IS OBSERVED.
TEMPORARY SOIL PROTECTION	WEEKLY & WITHIN 24 HOURS OF RAINFALL > 0.25"	REPAIR ERODED OR BARE AREAS IMMEDIATELY. RESEED AND MULCH.

TORRINGTON SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/15/20	INTERCONNECT SCREENING
1	08/12/20	ROAD DETAIL; IFC
2	08/13/20	PANEL LAYOUT & INTERCONN.
3	08/31/20	90% PERMIT SET
4	10/22/20	100% IFC SET
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHALL ST EXT - STE 311 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES OF ARCHDIOCESE OF HARTFORD
ADDRESS: 700 MIDDLETOWN AVENUE NORTH HAVEN, CT 06473

TORRINGTON SOLAR ONE, LLC

SITE ADDRESS: EAST PEARL ROAD TORRINGTON, CT

APT FILING NUMBER: CT590190

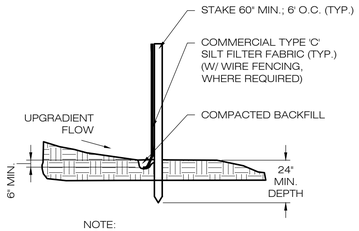
DRAWN BY: KAM

DATE: 05/28/2020 CHECKED BY: BJP

SHEET TITLE:
SEDIMENTATION & EROSION CONTROL NOTES

SHEET NUMBER:
EC-2

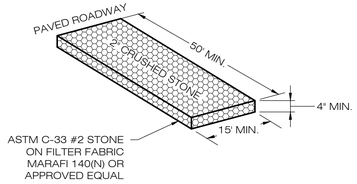
STATE OF CONNECTICUT BRADLEY J. PARSONS No. 28025 LICENSED PROFESSIONAL ENGINEER



NOTE:
SILT FENCE SHALL BE LAPPED ONLY WHEN NECESSARY PER THE MANUFACTURER RECOMMENDATIONS.

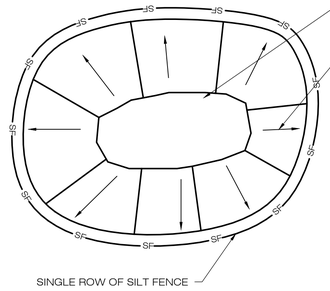
1 EC-3 SILT FENCE DETAIL

SCALE : N.T.S.



2 EC-3 CONSTRUCTION ENTRANCE DETAIL

SCALE : N.T.S.



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.

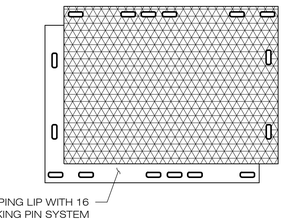
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.

3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.

4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

3 EC-3 MATERIALS STOCKPILE DETAIL

SCALE : N.T.S.



NOTES:

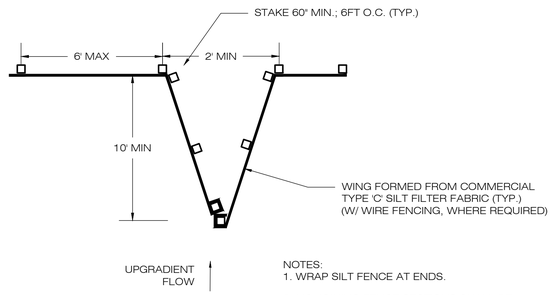
1. DURA-BASE COMPOSITE MAT SYSTEM (OR EQUAL). SEE SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FROM MANUFACTURER.

2. OVERALL DIMENSIONS: 8'X14'X4"

3. SURFACE DIMENSIONS: 7'X13'

4 EC-3 TEMPORARY CONSTRUCTION MATTING

SCALE : N.T.S.

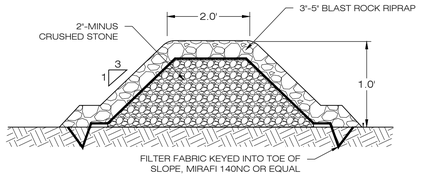


NOTES:
1. WRAP SILT FENCE AT ENDS.

2. NO JOINING FENCE SECTIONS SHALL BE INSTALLED WITHIN 30 FEET OF WING.

5 EC-3 SILT FENCE WING DETAIL

SCALE : N.T.S.



NOTES:
1. STONE SHALL BE PLACED MECHANICALLY OR BY HAND. STONE SHALL NOT BE DUMPED DIRECTLY INTO SWALE.
2. SEE GRADING AND DRAINAGE PLAN.

6 EC-3 STONE CHECK DAM

SCALE : N.T.S.

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CSC PERMIT SET

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2	08/13/20	PANEL LAYOUT & INTERCONN.
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5		
6		

DESIGN PROFESSIONAL OF RECORD

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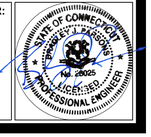
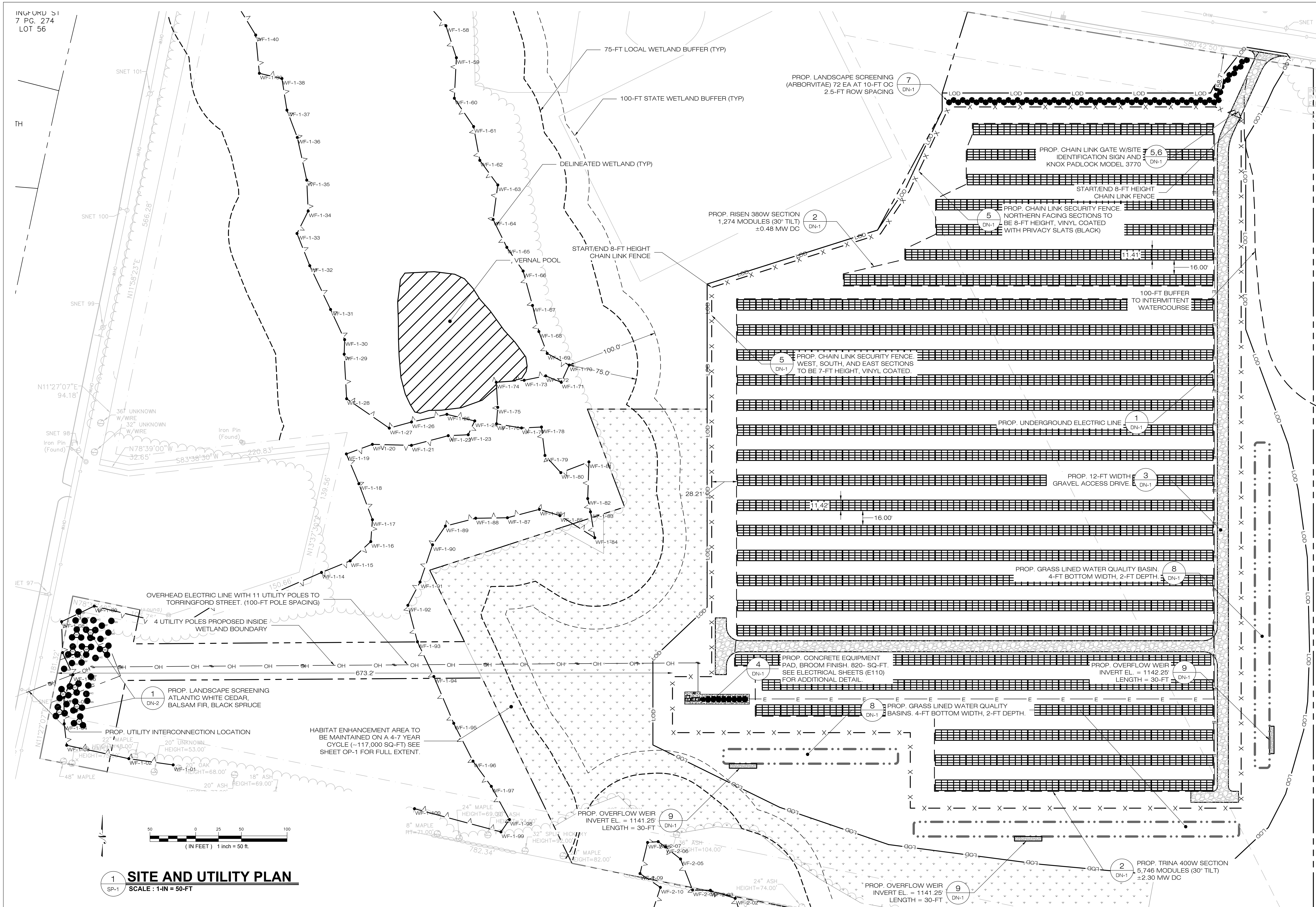
APT FILING NUMBER: CT590190

DRAWN BY: KAM
DATE: 05/28/2020 CHECKED BY: BJP

SHEET TITLE:
SEDIMENTATION & EROSION CONTROL DETAILS

SHEET NUMBER:
EC-3




75-FT LOCAL WETLAND BUFFER (TYP)
100-FT STATE WETLAND BUFFER (TYP)
DELINEATED WETLAND (TYP)
VERNAL POOL
START/END 8-FT HEIGHT CHAIN LINK FENCE
PROP. LANDSCAPE SCREENING (ARBORVITAE) 72 EA AT 10-FT OC 2.5-FT ROW SPACING
PROP. CHAIN LINK GATE W/SITE IDENTIFICATION SIGN AND KNOX PADLOCK MODEL 3770
START/END 8-FT HEIGHT CHAIN LINK FENCE
PROP. RISEN 380W SECTION 1,274 MODULES (30° TILT) ±0.48 MW DC
PROP. CHAIN LINK SECURITY FENCE NORTHERN FACING SECTIONS TO BE 8-FT HEIGHT, VINYL COATED WITH PRIVACY SLATS (BLACK)
100-FT BUFFER TO INTERMITTENT WATERCOURSE
PROP. CHAIN LINK SECURITY FENCE. WEST, SOUTH, AND EAST SECTIONS TO BE 7-FT HEIGHT, VINYL COATED.
PROP. UNDERGROUND ELECTRIC LINE
PROP. 12-FT WIDTH GRAVEL ACCESS DRIVE.
PROP. GRASS LINED WATER QUALITY BASIN. 4-FT BOTTOM WIDTH, 2-FT DEPTH.
OVERHEAD ELECTRIC LINE WITH 11 UTILITY POLES TO TORRINGFORD STREET. (100-FT POLE SPACING)
4 UTILITY POLES PROPOSED INSIDE WETLAND BOUNDARY
PROP. CONCRETE EQUIPMENT PAD, BROOM FINISH. 820± SQ-FT. SEE ELECTRICAL SHEETS (E110) FOR ADDITIONAL DETAIL.
PROP. OVERFLOW WEIR INVERT EL. = 1142.25' LENGTH = 30-FT
PROP. LANDSCAPE SCREENING ATLANTIC WHITE CEDAR, BALSAM FIR, BLACK SPRUCE
PROP. GRASS LINED WATER QUALITY BASINS. 4-FT BOTTOM WIDTH, 2-FT DEPTH.
PROP. UTILITY INTERCONNECTION LOCATION
HABITAT ENHANCEMENT AREA TO BE MAINTAINED ON A 4-7 YEAR CYCLE (~117,000 SQ-FT) SEE SHEET OP-1 FOR FULL EXTENT.
PROP. OVERFLOW WEIR INVERT EL. = 1141.25' LENGTH = 30-FT
PROP. TRINA 400W SECTION 5,746 MODULES (30° TILT) ±2.30 MW DC
PROP. OVERFLOW WEIR INVERT EL. = 1141.25' LENGTH = 30-FT
673.2'
(IN FEET) 1 inch = 50 ft.

SITE AND UTILITY PLAN

SCALE : 1-IN = 50-FT

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6		

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APT FILING NUMBER: CT590190

DRAWN BY: KAM

DATE: 05/28/2020

CHECKED BY: BJP

SHEET TITLE:

SITE & UTILITY PLAN

SHEET NUMBER:

SP-1

INGFORD ST
7 PG. 274
LOT 56

75-FT LOCAL WETLAND BUFFER (TYP)

100-FT STATE WETLAND BUFFER (TYP)

DELINEATED WETLAND (TYP)

VERNAL POOL

100.0

75.0

PROP. LANDSCAPE SCREENING
(ARBORVITAE) 72 EA AT 10-FT OC,
2.5-FT ROW SPACING
7 DN-1

MAINTAIN EXISTING
DRAINAGE PATTERNS

PROP. UNDERGROUND ELECTRIC LINE
1 DN-1

100-FT BUFFER
TO INTERMITTENT
WATERCOURSE

PROP. 12-FT WIDTH
GRAVEL ACCESS DRIVE
3 DN-1

CONTRACTOR SHALL SEED AND MULCH OR
HYDROSEED ALL DISTURBED AREAS

MAINTAIN EXISTING
DRAINAGE PATTERNS

MAINTAIN EXISTING
DRAINAGE PATTERNS

MAINTAIN EXISTING
DRAINAGE PATTERNS

PROP. GRASS LINED WATER QUALITY
BASIN, 4-FT BOTTOM WIDTH, 2-FT DEPTH
8 DN-1

OVERHEAD LINE TO
TORRINGFORD STREET.

1
DN-2
PROP. LANDSCAPE SCREENING
ATLANTIC WHITE CEDAR,
BALSAM FIR, BLACK SPRUCE

RESTORE TEMPORARY
CONSTRUCTION MATTING FOOTPRINT
(SEE DN-2: ENVIRONMENTAL NOTES)

PROP. OVERFLOW WEIR
INVERT EL. = 1142.25'
LENGTH = 30-FT
9 DN-1

PROP. GRASS LINED WATER QUALITY
BASINS, 4-FT BOTTOM WIDTH, 2-FT DEPTH.
8 DN-1

PROP. OVERFLOW WEIR
INVERT EL. = 1141.25'
LENGTH = 30-FT
9 DN-1

PROP. OVERFLOW WEIR
INVERT EL. = 1141.25'
LENGTH = 30-FT
9 DN-1

50 0 25 50 100
(IN FEET) 1 inch = 50 ft.

1 GP-1 **GRADING AND DRAINAGE PLAN**
SCALE : 1-IN = 50-FT

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4	10/22/20	100% IFC SET
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHALL ST EXT - STE 311 WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES OF ARCHDIOCESE OF HARTFORD
ADDRESS: 700 MIDDLETOWN AVENUE NORTH HAVEN, CT 06473

TORRINGTON SOLAR ONE, LLC

SITE ADDRESS: EAST PEARL ROAD TORRINGTON, CT

APT FILING NUMBER: CT590190

DRAWN BY: KAM
DATE: 05/28/2020 CHECKED BY: BJP

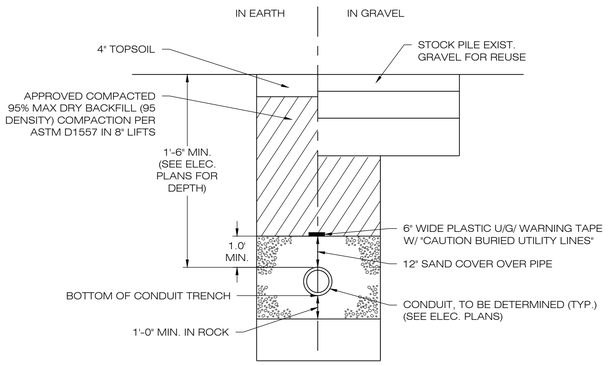
SHEET TITLE:

GRADING & DRAINAGE PLAN

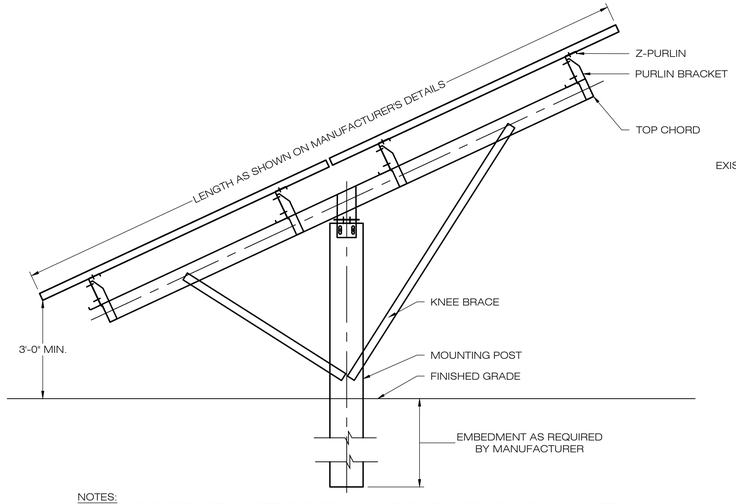
SHEET NUMBER:

GP-1

STATE OF CONNECTICUT
BRADLEY J. PARSONS
No. 28025
LICENSED PROFESSIONAL ENGINEER

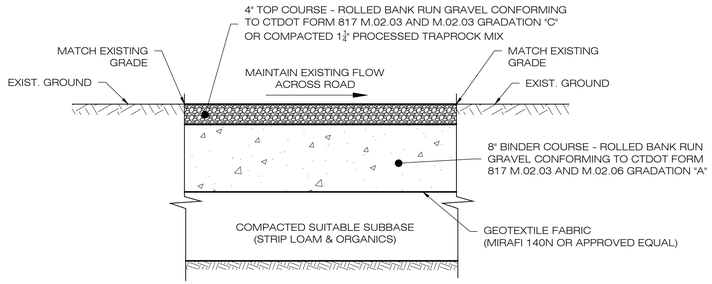


1 DN-1 **ELECTRICAL TRENCH DETAIL**
SCALE : N.T.S.



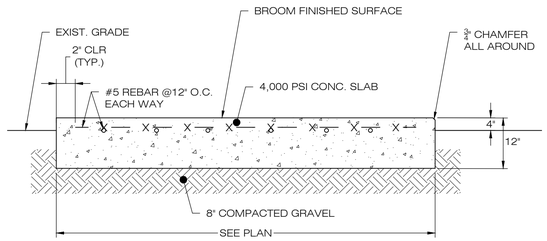
NOTES:
SEE MANUFACTURER'S DETAIL SHEETS FOR ADDITIONAL INFORMATION REGARDING RACKING SYSTEM REQUIREMENTS AND INSTALLATION PROCEDURES. RACKING SYSTEM TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS.

2 DN-1 **TYPICAL POST MOUNTED RACKING SYSTEM**
SCALE : N.T.S.



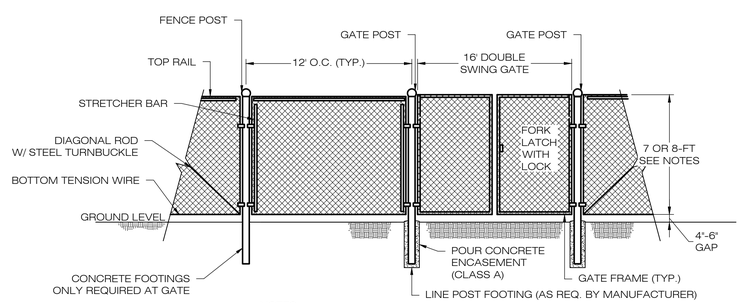
NOTES:
1. SUBBASE MAY CONSIST OF NATIVE MATERIALS IF FOUND ACCEPTABLE BY THE ENGINEER. SUBBASE TO BE COMPACTED TO 95% MAX DRY DENSITY.
2. SUBBASE IS TO BE FREE FROM DEBRIS AND UNSUITABLE MATERIALS.
3. CONTRACTOR SHALL INSTALL ACCESS ROAD FLUSH WITH EXISTING GRADE TO ENSURE DRAINAGE FLOW PATHS ARE MAINTAINED.
4. SEE PLAN VIEW SHEETS FOR ROAD WIDTH.

3 DN-1 **GRAVEL ACCESS DRIVE SECTION**
SCALE : N.T.S.

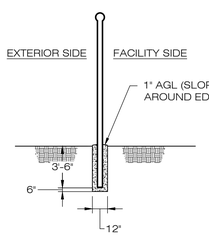


NOTES:
SEE ELECTRICAL PLANS FOR ADDITIONAL DETAIL, SPECIFICALLY SHEET E110.

4 DN-1 **CONCRETE EQUIPMENT PAD**
SCALE : N.T.S.



NOTES:
1. SEE PLAN SHEETS FOR LOCATIONS OF CHAIN LINK FENCE WITH VINYL PRIVACY SLATS.
2. VINYL COATED AND PRIVACY SLAT SECTIONS TO BE 8-FT ABOVE GRADE.
3. VINYL COATED ONLY SECTIONS TO BE 7-FT ABOVE GRADE.
4. DEVELOPER AND ENGINEER SHALL APPROVE PRIVACY SLAT AND COATING COLOR PRIOR TO ORDERING.



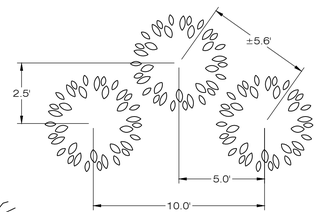
5 DN-1 **CHAIN-LINK FENCE & GATE DETAIL**
SCALE : N.T.S.

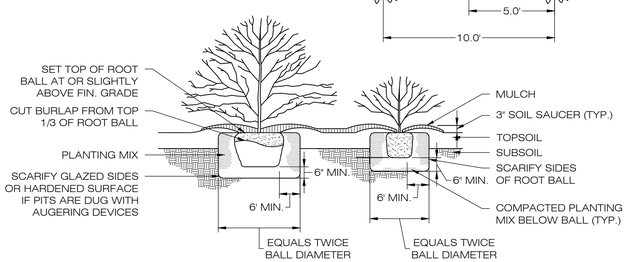
TORRINGTON SOLAR ONE, LLC

IN CASE OF EMERGENCY
CALL (561) 304-5562 (8A-5P)
(561) 694-3636 OTHER HOURS

6 DN-1 **NOTIFICATION SIGN DETAIL**
SCALE : N.T.S.

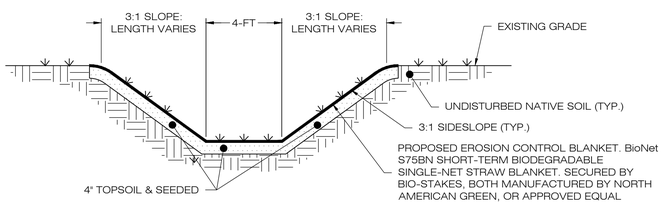
PLANTING SCHEMATIC FOR ARBORVITAE (NORTHERN FENCELINE) SEE DN-2 FOR DETAILS ON INTERCONNECTION SCREENING LAYOUT.





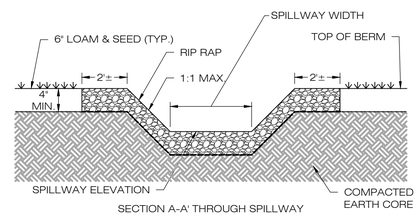
NOTES:
IN AREAS OF MASS PLANTINGS, CONTINUOUSLY EXCAVATE AND MULCH ENTIRE BED..

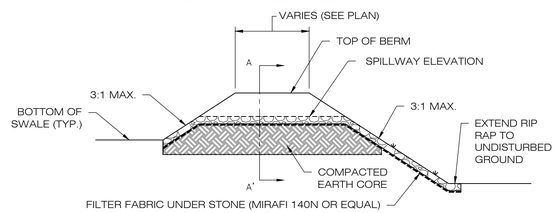
7 DN-1 **TYPICAL PLANTING DETAIL**
SCALE : N.T.S.



NOTES:
1. SEED MIX TO BE NEW ENGLAND EROSION CONTROL/ RESTORATION MIX FOR MOIST SITES ON THE BOTTOM OF THE BASIN AND NEW ENGLAND EROSION/RESTORATION MIX FOR DRY SITES ON THE SIDE SLOPES.

8 DN-1 **GRASS LINED WATER QUALITY BASIN**
SCALE : N.T.S.





9 DN-1 **OVERFLOW WEIR DETAIL**
SCALE : N.T.S.

TORRINGTON SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS TECHNOLOGY CORPORATION
567 VAUXHAUL STREET EXTENSION - SUITE 311
WATERFORD, CT 06385 PHONE: (860)-663-1697
WWW.ALLPOINTSTECH.COM FAX: (860)-663-0935

CSC PERMIT SET

NO	DATE	REVISION
0	06/15/20	INTERCONNECT SCREENING
1	08/12/20	ROAD DETAIL; IFC
2	08/13/20	PANEL LAYOUT & INTERCONN.
3	08/31/20	90% PERMIT SET
4	10/22/20	100% IFC SET
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHALL ST EXT - STE 311 WATERFORD, CT 06385

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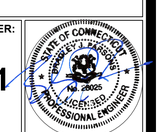


ENVIRONMENTAL NOTES

WETLAND AND VERNAL POOL PROTECTION PLAN

AS A RESULT OF THE PROPOSED DEVELOPMENT'S LOCATION IN THE VICINITY OF WETLANDS AND VERNAL POOL HABITATS, THE FOLLOWING BEST MANAGEMENT PRACTICES ("BMPS") ARE RECOMMENDED TO AVOID UNINTENTIONAL IMPACT TO WETLAND HABITATS OR MORTALITY TO VERNAL POOL HERPETOFAUNA (I.E., SPOTTED SALAMANDER, WOOD FROG, TURTLES, ETC.) DURING CONSTRUCTION ACTIVITIES. THIS PLAN INCLUDES ELEMENTS THAT WILL PROTECT HERPETOFAUNA SHOULD CONSTRUCTION ACTIVITIES OCCUR DURING PEAK AMPHIBIAN MOVEMENT PERIODS (EARLY SPRING BREEDING [MARCH 1ST TO MAY 15TH] AND LATE SUMMER DISPERSAL [JULY 15TH TO SEPTEMBER 15TH]) AS WELL AS WETLANDS REGARDLESS OF THE TIME OF YEAR. COMPLETE DETAILS OF THE RECOMMENDED BMPS ARE PROVIDED BELOW, WHICH WILL BE INCORPORATED INTO THE CONSTRUCTION DRAWINGS TO ENSURE THE CONTRACTOR IS FULLY AWARE OF THE PROJECT'S ENVIRONMENTALLY SENSITIVE SETTING.

IN ADDITION, A PORTION OF THE PROPOSED SOLAR FACILITY UTILITY INTERCONNECTION IS LOCATED WITHIN WETLANDS THAT WERE PREVIOUSLY DISTURBED BY AGRICULTURAL ACTIVITIES. AS A RESULT, MINOR PERMANENT WETLAND IMPACTS ARE ASSOCIATED WITH DISTRIBUTION POLE INSTALLATION WORK AND TEMPORARY DISTURBANCE TO WETLANDS WILL RESULT FROM SWAMP MAT INSTALLATION TO ACCESS THE DISTRIBUTION POLE WORK AREAS. THE FOLLOWING PROTECTIVE MEASURES AND RESTORATION ACTIVITIES SHALL BE FOLLOWED TO HELP AVOID DEGRADATION OF AND PROPERLY RESTORE THESE WETLANDS.

A WETLAND SCIENTIST FROM ALL-POINTS TECHNOLOGY CORP. ("APT") EXPERIENCED IN COMPLIANCE MONITORING OF CONSTRUCTION ACTIVITIES WILL SERVE AS THE ENVIRONMENTAL MONITOR FOR THIS PROJECT TO ENSURE THAT THE FOLLOWING BMPS ARE IMPLEMENTED PROPERLY. THE PROPOSED WETLAND AND VERNAL POOL PROTECTION PROGRAM CONSISTS OF SEVERAL COMPONENTS INCLUDING: ISOLATION OF THE TOWER/COMPOUND PERIMETER; PERIODIC INSPECTION AND MAINTENANCE OF EROSION CONTROLS AND ISOLATION STRUCTURES; HERPETOFAUNA SWEEPS; EDUCATION OF ALL CONTRACTORS AND SUB-CONTRACTORS PRIOR TO INITIATION OF WORK ON THE SITE; PROTECTIVE MEASURES; AND, REPORTING.

1. EROSION AND SEDIMENTATION CONTROLS
   - a. PLASTIC NETTING WITH LARGE MESH OPENINGS (> ¼") USED IN A VARIETY OF EROSION CONTROL PRODUCTS (I.E., EROSION CONTROL BLANKETS, FIBER ROLLS [WATTLES], REINFORCED SILT FENCE) HAS BEEN FOUND TO ENTANGLE WILDLIFE, INCLUDING REPTILES, AMPHIBIANS, BIRDS AND SMALL MAMMALS. NO PERMANENT EROSION CONTROL PRODUCTS OR REINFORCED SILT FENCE WILL BE USED ON THE PROJECT. TEMPORARY EROSION CONTROL PRODUCTS THAT WILL BE EXPOSED AT THE GROUND SURFACE REPRESENT A POTENTIAL FOR WILDLIFE ENTANGLEMENT WILL USE EITHER EROSION CONTROL BLANKETS AND FIBER ROLLS COMPOSED OF PROCESSED FIBERS MECHANICALLY BOUND TOGETHER TO FORM A CONTINUOUS MATRIX (NETLESS) OR NETTING WITH A MESH SIZE <¼" SUCH AS THAT TYPICALLY USED IN COMPOST FILTER SOCKS TO AVOID/MINIMIZE WILDLIFE ENTANGLEMENT.
   - b. INSTALLATION OF EROSION AND SEDIMENTATION CONTROLS, REQUIRED FOR EROSION CONTROL COMPLIANCE AND CREATION OF A BARRIER TO POSSIBLE MIGRATING/DISPERSING HERPETOFAUNA, SHALL BE PERFORMED BY THE CONTRACTOR FOLLOWING CLEARING ACTIVITIES AND PRIOR TO ANY EARTHWORK. THE ENVIRONMENTAL MONITOR WILL INSPECT THE WORK ZONE AREA PRIOR TO AND FOLLOWING EROSION CONTROL BARRIER INSTALLATION TO ENSURE THE AREA IS FREE OF HERPETOFAUNA AND SATISFACTORILY INSTALLED. THE INTENT OF THE BARRIER IS TO SEGREGATE THE MAJORITY OF THE WORK ZONE FROM MIGRATING/DISPERSING HERPETOFAUNA. OFTENTIMES COMPLETE ISOLATION OF A WORK ZONE IS NOT FEASIBLE DUE TO ACCESSIBILITY NEEDS AND LOCATIONS OF STAGING/MATERIAL STORAGE AREAS, ETC. IN THOSE CIRCUMSTANCES, THE BARRIERS WILL BE POSITIONED TO DEFLECT MIGRATING/DISPERSAL ROUTES AWAY FROM THE WORK ZONE TO MINIMIZE POTENTIAL ENCOUNTERS WITH HERPETOFAUNA.
   - c. IF A STAGING AREA FOR EQUIPMENT, VEHICLES OR CONSTRUCTION MATERIALS IS REQUIRED FOR THIS PROJECT, SUCH AREA(S) SHALL BE LOCATED OUTSIDE OF ANY WETLAND RESOURCE BUFFER ZONE AND SURROUNDED BY SILT FENCE TO ISOLATE THE AREA FROM POSSIBLE MIGRATING HERPETOFAUNA.
   - d. ALL EROSION CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS OF COMPLETION OF WORK AND PERMANENT STABILIZATION OF SITE SOILS SO THAT HERPETOFAUNA MOVEMENTS BETWEEN UPLANDS AND WETLANDS ARE NOT RESTRICTED.

2. WETLAND RESTORATION MEASURES
   - a. SWAMP MATS, TRUCK MATS OR SIMILAR DEVICES SHALL BE USED DURING THE INSTALLATION OF THE UTILITY INTERCONNECTION LINE WITHIN WETLAND AREAS. THESE DEVICES SHALL BE KEPT FREE OF TRACKED SEDIMENTS.
   - b. VEGETATION CLEARED TO FACILITATE THE INSTALLATION OF SWAMP MATS/TUCK MATS ETC. SHALL HAVE THE STUMPS LEFT IN PLACE TO MINIMIZE SOIL DISTURBANCE AND ALLOW FOR NATURAL REVEGETATION POST REMOVAL OF THE MATTING.
   - c. SOIL EXCAVATED FROM THE UTILITY POLE PITS SHALL BE REMOVED FROM WETLAND AREAS AND SPREAD/STABILIZED WITHIN UPLAND AREAS OR REMOVED OFF-SITE.
   - d. MATTING USED TO ACCESS THE UTILITY INTERCONNECTION WORK SHALL BE REMOVED IMMEDIATELY AFTER COMPLETION. ANY EXPOSED SOILS/DISTURBED AREAS RESULTING FROM THESE MATTING ACTIVITIES SHALL BE SEEDED WITH A NEW ENGLAND WET SEED MIX (NEW ENGLAND WETLAND PLANTS, INC., OR APPROVED EQUIVALENT) AT THE MANUFACTURERS RECOMMENDED SEED RATE. MULCH DISTURBED WETLAND AREAS WITH NON-WOVEN NATURAL FIBER EROSION CONTROL BLANKET OR 2 TO 3 INCHES OF CLEAN STRAW MULCH.

3. CONTRACTOR EDUCATION:
   - a. PRIOR TO WORK ON SITE AND INITIAL DEPLOYMENT/MOBILIZATION OF EQUIPMENT AND MATERIALS, THE CONTRACTOR SHALL ATTEND AN EDUCATIONAL SESSION AT THE PRE-CONSTRUCTION MEETING WITH THE ENVIRONMENTAL MONITOR. THIS ORIENTATION AND EDUCATIONAL SESSION WILL CONSIST OF INFORMATION SUCH AS, BUT NOT LIMITED TO: REPRESENTATIVE PHOTOGRAPHS OF TYPICAL HERPETOFAUNA THAT MAY BE ENCOUNTERED, RARE THAT COULD BE ENCOUNTERED (IF POSSIBLE), TYPICAL SPECIES BEHAVIOR, AND PROPER PROCEDURES TO PROTECT SUCH SPECIES IF THEY ARE ENCOUNTERED. THE MEETING WILL FURTHER EMPHASIZE THE NON-AGGRESSIVE NATURE OF THESE SPECIES, THE ABSENCE OF NEED TO DESTROY SUCH ANIMALS AND THE NEED TO FOLLOW PROTECTIVE MEASURES AS DESCRIBED IN SECTION 4 BELOW. THE CONTRACTOR WILL DESIGNATE ONE OF ITS WORKERS AS THE "PROJECT MONITOR", WHO WILL RECEIVE MORE INTENSE TRAINING ON THE IDENTIFICATION AND PROPER HANDLING OF HERPETOFAUNA.
   - b. THE CONTRACTOR WILL DESIGNATE A MEMBER OF ITS CREW AS THE PROJECT MONITOR TO BE RESPONSIBLE FOR THE DAILY "SWEEPS" FOR HERPETOFAUNA WITHIN THE WORK ZONE EACH MORNING, DURING ANY AND ALL TRANSPORTATION OF VEHICLES ALONG THE ACCESS DRIVE, AND FOR ANY GROUND DISTURBANCE WORK. THIS INDIVIDUAL WILL RECEIVE MORE INTENSE TRAINING FROM THE ENVIRONMENTAL MONITOR ON THE IDENTIFICATION AND PROTECTION OF HERPETOFAUNA IN ORDER TO PERFORM SWEEPS. ANY HERPETOFAUNA DISCOVERED WILL BE REPORTED TO THE ENVIRONMENTAL MONITOR, PHOTOGRAPHED IF POSSIBLE, AND RELOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED.
   - c. THE ENVIRONMENTAL MONITOR WILL ALSO POST CAUTION SIGNS THROUGHOUT THE PROJECT SITE AND MAINTAIN THEM FOR THE DURATION OF CONSTRUCTION TO PROVIDE NOTICE OF THE ENVIRONMENTALLY SENSITIVE NATURE OF THE WORK AREA, THE POTENTIAL FOR ENCOUNTERING VARIOUS AMPHIBIANS AND REPTILES AND PRECAUTIONS TO BE TAKEN TO AVOID INJURY TO OR MORTALITY OF THESE ANIMALS.
   - d. THE CONTRACTOR WILL BE PROVIDED WITH THE ENVIRONMENTAL MONITOR'S CELL PHONE AND EMAIL CONTACT INFORMATION TO IMMEDIATELY REPORT ANY ENCOUNTERS WITH HERPETOFAUNA.

4. PETROLEUM MATERIALS STORAGE AND SPILL PREVENTION
   - a. CERTAIN PRECAUTIONS ARE NECESSARY TO STORE PETROLEUM MATERIALS, REFUEL AND CONTAIN AND PROPERLY CLEAN UP ANY INADVERTENT FUEL OR PETROLEUM (I.E., OIL, HYDRAULIC FLUID, ETC.) SPILL DUE TO THE PROJECT'S LOCATION IN PROXIMITY TO SENSITIVE WETLAND RESOURCES.
   - b. A SPILL CONTAINMENT KIT CONSISTING OF A SUFFICIENT SUPPLY OF ABSORBENT PADS AND ABSORBENT MATERIAL WILL BE MAINTAINED BY THE CONTRACTOR AT THE CONSTRUCTION SITE THROUGHOUT THE DURATION OF THE PROJECT. IN ADDITION, A WASTE DRUM WILL BE KEPT ON SITE TO CONTAIN ANY USED ABSORBENT PADS/MATERIAL FOR PROPER AND TIMELY DISPOSAL OFF SITE IN ACCORDANCE WITH APPLICABLE LOCAL, STATE AND FEDERAL LAWS.
   - c. THE FOLLOWING PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING RESTRICTIONS AND SPILL RESPONSE PROCEDURES WILL BE ADHERED TO BY THE CONTRACTOR.
     - i. PETROLEUM AND HAZARDOUS MATERIALS STORAGE AND REFUELING
       - 5. REFUELING OF VEHICLES OR MACHINERY SHALL TAKE PLACE ON AN IMPERVIOUS PAD WITH SECONDARY CONTAINMENT DESIGNED TO CONTAIN FUELS.
       - 6. ANY REFUELING DRUMS/TANKS OR HAZARDOUS MATERIALS THAT MUST BE KEPT ON SITE SHALL BE STORED ON AN IMPERVIOUS SURFACE UTILIZING SECONDARY CONTAINMENT A MINIMUM OF 100 FEET FROM WETLANDS OR WATERCOURSES.

ii. INITIAL SPILL RESPONSE PROCEDURES
   - 1. STOP OPERATIONS AND SHUT OFF EQUIPMENT.
   - 2. REMOVE ANY SOURCES OF SPARK OR FLAME.
   - 3. CONTAIN THE SOURCE OF THE SPILL.
   - 4. DETERMINE THE APPROXIMATE VOLUME OF THE SPILL.
   - 5. IDENTIFY THE LOCATION OF NATURAL FLOW PATHS TO PREVENT THE RELEASE OF THE SPILL TO SENSITIVE NEARBY WATERWAYS OR WETLANDS.
   - 6. ENSURE THAT FELLOW WORKERS ARE NOTIFIED OF THE SPILL.

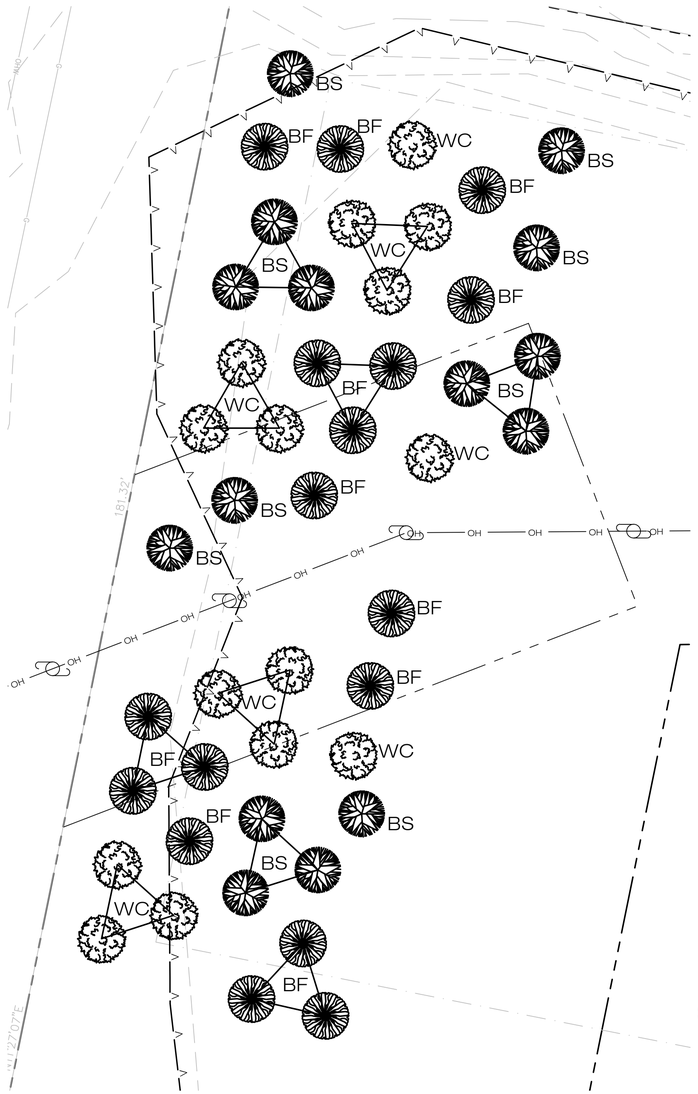
iii. SPILL CLEAN UP & CONTAINMENT
   - 1. OBTAIN SPILL RESPONSE MATERIALS FROM THE ON-SITE SPILL RESPONSE KIT. PLACE ABSORBENT MATERIALS DIRECTLY ON THE RELEASE AREA.
   - 2. LIMIT THE SPREAD OF THE SPILL BY PLACING ABSORBENT MATERIALS AROUND THE PERIMETER OF THE SPILL.
   - 3. ISOLATE AND ELIMINATE THE SPILL SOURCE.
   - 4. CONTACT THE APPROPRIATE LOCAL, STATE AND/OR FEDERAL AGENCIES, AS NECESSARY.
   - 5. CONTACT A DISPOSAL COMPANY TO PROPERLY DISPOSE OF CONTAMINATED MATERIALS.

iv. REPORTING
   - 1. COMPLETE AN INCIDENT REPORT.
   - 2. SUBMIT A COMPLETED INCIDENT REPORT TO LOCAL, STATE AND FEDERAL AGENCIES, AS REQUIRED.

5. PROTECTIVE MEASURES
   - a. A THOROUGH COVER SEARCH OF THE CONSTRUCTION AREA WILL BE PERFORMED BY THE ENVIRONMENTAL MONITOR FOR HERPETOFAUNA PRIOR TO AND FOLLOWING INSTALLATION OF EROSION CONTROL MEASURES/SILT FENCING BARRIERS TO REMOVE ANY SPECIES FROM THE WORK ZONE PRIOR TO THE INITIATION OF CONSTRUCTION ACTIVITIES. ANY HERPETOFAUNA DISCOVERED WOULD BE RELOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED. PERIODIC INSPECTIONS WILL BE PERFORMED BY THE ENVIRONMENTAL MONITOR THROUGHOUT THE DURATION OF CONSTRUCTION.
   - b. THE CONTRACTOR'S PROJECT MONITOR WILL INSPECT THE WORK AREA EACH MORNING AND ESCORT INITIAL VEHICLE ACCESS INTO THE SITE EACH MORNING ALONG THE ACCESS DRIVE TO VISUALLY INSPECT FOR ANY HERPETOFAUNA. ANY HERPETOFAUNA DISCOVERED WOULD BE RELOCATED OUTSIDE THE WORK ZONE IN THE GENERAL DIRECTION THE ANIMAL WAS ORIENTED.
   - c. ANY HERPETOFAUNA REQUIRING RELOCATION OUT OF THE WORK ZONE WILL BE CAPTURED WITH THE USE OF A NET OR CLEAN PLASTIC BAG THAT HAS BEEN MOISTENED WITH CLEAN WATER FOR CAREFUL HANDLING AND PLACEMENT OUT OF THE WORK ZONE IN THE GENERAL DIRECTION IT WAS OBSERVED HEADING.
   - d. ANY STORMWATER MANAGEMENT FEATURES, RUTS OR ARTIFICIAL DEPRESSIONS THAT COULD HOLD WATER CREATED INTENTIONALLY OR UNINTENTIONALLY BY SITE CLEARING/CONSTRUCTION ACTIVITIES WILL BE PROPERLY FILLED IN AND PERMANENTLY STABILIZED WITH VEGETATION TO AVOID THE CREATION OF VERNAL POOL "DECOY POOLS" THAT COULD INTERCEPT AMPHIBIANS MOVING TOWARD THE VERNAL POOLS. STORMWATER MANAGEMENT FEATURES SUCH AS LEVEL SPREADERS WILL BE CAREFULLY REVIEWED IN THE FIELD TO ENSURE THAT STANDING WATER DOES NOT ENDURE FOR MORE THAN A 24 HOUR PERIOD TO AVOID CREATION OF DECOY POOLS AND MAY BE SUBJECT TO FIELD DESIGN CHANGES. ANY SUCH PROPOSED DESIGN CHANGES WILL BE REVIEWED BY THE DESIGN ENGINEER TO ENSURE STORMWATER MANAGEMENT FUNCTIONS ARE MAINTAINED.

REPORTING

- e. INSPECTION REPORTS (BRIEF NARRATIVE AND APPLICABLE PHOTOS) WILL BE PREPARED BY THE ENVIRONMENTAL MONITOR DOCUMENTING EACH INSPECTION AND SUBMITTED TO THE PERMITTEE FOR COMPLIANCE VERIFICATION. ANY NON-COMPLIANCE OBSERVATIONS OF EROSION CONTROL MEASURES OR EVIDENCE OF EROSION OR SEDIMENT RELEASE WILL BE IMMEDIATELY REPORTED TO THE PERMITTEE AND ITS CONTRACTOR AND INCLUDED IN THE REPORTS.
- f. ANY INCIDENTS OF RELEASE OF SEDIMENT OR OTHER MATERIALS INTO WETLAND RESOURCE AREAS SHALL BE REPORTED BY THE PERMITTEE WITHIN 24 HOURS TO THE PERMITTEE.
- g. ANY OBSERVATIONS OF RARE SPECIES WILL BE REPORTED TO THE CONNECTICUT DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION'S NATURAL DIVERSITY DATA BASE PROGRAM.
- h. FOLLOWING COMPLETION OF THE PROJECT, A SUMMARY REPORT WILL BE PREPARED BY THE ENVIRONMENTAL MONITOR DOCUMENTING COMPLIANCE WITH THE WETLAND AND VERNAL POOL PROTECTION PLAN AND SUBMITTED TO THE PERMITTEE, WHO SHALL SUBMIT A COPY TO THE CONNECTICUT SITING COUNCIL



INTERCONNECTION SCREENING NOTES:

ALL TREES TO BE PLANTED WITHIN PROPERTY PARCEL BOUNDARY.

NO EXISTING TREES SHALL BE REMOVED TO INSTALL PLAN AS SHOWN, IN THE EVENT THE FIELD STAKEOUT ENCROACHES ON EXISTING TREES THOSE PROPOSED TREES SHALL NOT BE PLANTED.

TREE SPACING IS GENERALLY 10-FT, STAGGER ROWS TO PROVIDE MAXIMUM SCREENING.

ENCIRCLE PERIMETER OF PLANTING ZONES WITH TEMPORARY CONSTRUCTION FENCING UNTIL TREES ARE ESTABLISHED AND CAN WITHSTAND BROWSING.

GROUP SIMILAR SPECIES IN GROUPS OF AT LEAST THREE WHERE PRACTICABLE.

SCREENING CONSISTS OF THREE SPECIES, KEYED AND QUANTIFIED AS FOLLOWS:

WC = ATLANTIC WHITE CEDAR (Chamaecyparis thyoides) 15 EA

BS = BLACK SPRUCE (Picea mariana) 15 EA

BF = BALSAM FIR (Abies balsamea) 17 EA

INSTALL HEIGHT = 6 TO 8-FT

PROPOSED TREE STOCK AND FIELD STAKED LAYOUT TO BE INSPECTED AND APPROVED BY OWNER PRIOR TO INSTALLATION.

10 0 5 10 20
(IN FEET) 1 inch = 10 ft.

1/DN-2 INTERCONNECTION SCREENING DETAIL

SCALE : 1-IN = 10-FT

TORRINGTON
SOLAR ONE, LLC
150 TRUMBULL STREET
4TH FLOOR
HARTFORD, CT, 06103

ALL-POINTS
TECHNOLOGY CORPORATION

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WATERFORD, CT 06385 PHONE: (860)-663-1697
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CSC PERMIT SET

NO	DATE	REVISION
0	06/15/20	INTERCONNECT SCREENING
1	08/12/20	ROAD DETAIL; IFC
2	08/13/20	PANEL LAYOUT & INTERCONN.
3	08/31/20	90% PERMIT SET
4	10/22/20	100% IFC SET
5		
6		

DESIGN PROFESSIONAL OF RECORD

PROF: BRADLEY J. PARSONS P.E.
COMP: ALL-POINTS TECHNOLOGY CORPORATION
ADD: 567 VAUXHALL ST EXT - STE 311
WATERFORD, CT 06385

OWNER: CATHOLIC CEMETERIES OF ARCHDIOCESE OF HARTFORD
ADDRESS: 700 MIDDLETOWN AVENUE
NORTH HAVEN, CT 06473

TORRINGTON SOLAR ONE, LLC

SITE ADDRESS: EAST PEARL ROAD
TORRINGTON, CT

APT FILING NUMBER: CT590190

DRAWN BY: KAM

DATE: 05/28/2020

CHECKED BY: BJP

SHEET TITLE:

ENVIRONMENTAL NOTES

SHEET NUMBER:

DN-2

BRADLEY J. PARSONS
No. 28025

ATTACHMENT E
Stormwater Monitoring Report Form

General Information					
Name of Project	Bristol Solar One, LLC			**Inspection Date**	
Inspector Name, Title & Contact Information					
Inspector Qualifications					
Present Phase of Construction					
Inspection Location (if multiple inspections are required, specify location where this inspection is being conducted)					

Inspection Frequency *(Note: you may be subject to different inspection frequencies in different areas of the site. Check all that apply.)*

Standard Frequency: ☐ Weekly ☐ Within 24 hours of the end of a storm that generates a discharge

Reduced Frequency:

- ☐ Once per month (for stabilized areas)

Date of last rainfall:

Total rainfall amount:

Current Weather Conditions:

Condition and Effectiveness of Erosion and Sediment (E&S) Controls (see reverse for instructions)			
Type/Location of E&S Control [Add an additional sheet if necessary]	**Repairs or Other Maintenance Needed?***	**Corrective Action Required?***	**Notes**
1. Sediment Traps	☐Yes ☐No	☐Yes ☐No	
2. Sediment Basins	☐Yes ☐No	☐Yes ☐No	
3. Diversion Ditches	☐Yes ☐No	☐Yes ☐No	
4. Perimeter Control	☐Yes ☐No	☐Yes ☐No	
5. Surface Stabilization	☐Yes ☐No	☐Yes ☐No	
6. Construction Entrance	☐Yes ☐No	☐Yes ☐No	
7. Soil Stockpile Areas	☐Yes ☐No	☐Yes ☐No	
8. Natural Depression	☐Yes ☐No	☐Yes ☐No	

*** Note:** The permit differentiates between conditions requiring repairs and maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition and requires repairs if controls are not operating as intended. Corrective actions are triggered only for specific, more serious conditions, which include: 1) A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in the Guidelines; 2) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements; 3) A prohibited discharge is occurring or has occurred; or 4) Corrective actions are required as a result of a permit violation found during an inspection. If a condition on your site requires a corrective action, engineered corrective actions shall be implemented within 7 days of the inspection.

Condition and Effectiveness of Pollution Prevention (Good Housekeeping) Practices (see reverse for instructions)			
Type/Location of PP Practices [Add an additional sheet if necessary]	**Repairs or Other Maintenance Needed?***	**Corrective Action Required?***	**Notes**
1. Storage of Construction Materials	☐Yes ☐No	☐Yes ☐No	
2. Oil/Gas/Chemicals	☐Yes ☐No	☐Yes ☐No	
3. Haz/Toxic Waste	☐Yes ☐No	☐Yes ☐No	
4. Construction Waste	☐Yes ☐No	☐Yes ☐No	
5. Sanitary Waste	☐Yes ☐No	☐Yes ☐No	
6. Offsite Vehicle Tracking	☐Yes ☐No	☐Yes ☐No	
7.	☐Yes ☐No	☐Yes ☐No	
8.	☐Yes ☐No	☐Yes ☐No	

*** Note:** The permit differentiates between conditions requiring repairs and maintenance, and those requiring corrective action. The permit requires maintenance in order to keep controls in effective operating condition and requires repairs if controls are not operating as intended. Corrective actions are triggered only for specific, more serious conditions, which include: 1) A required stormwater control was never installed, was installed incorrectly, or not in accordance with the requirements in the Guidelines; 2) You become aware that the stormwater controls you have installed and are maintaining are not effective enough for the discharge to meet applicable water quality standards or applicable requirements; 3) A prohibited discharge is occurring or has occurred; or 4) Corrective actions are required as a result of a permit violation found during an inspection. If a condition on your site requires a corrective action, engineered corrective actions shall be implemented within 7 days of the inspection.

Stabilization of Exposed Soil			
Stabilization Area [Add an additional sheet if necessary]	**Stabilization Method**	**Have Stabilization Been Initiated?**	**Notes**
1. Interior (Solar Array)		☐ YES ☐ NO If yes, provide date: 04/2019	
2. Soil Stockpile		☐ YES ☐ NO If yes, provide date: 05/29/2019	
3.		☐ YES ☐ NO If yes, provide date: 5	
4.		☐ YES ☐ NO If yes, provide date:	
5.		☐ YES ☐ NO If yes, provide date:	

Instructions for Filling Out the "Stabilization of Exposed Soil" Table

Stabilization Area

List all areas where soil stabilization is required to begin because construction work in that area has permanently stopped or temporarily stopped, and all areas where stabilization has been implemented.

Stabilization Method
For each area, specify the method of stabilization (e.g., hydroseed, sod, planted vegetation, erosion control blanket, mulch, rock).

Have You Initiated Stabilization
For each area, indicate whether stabilization has been initiated.
Notes
For each area where stabilization has been initiated, describe the progress that has been made, and what additional actions are necessary to complete stabilization. Note the effectiveness of stabilization in preventing erosion. If stabilization has been initiated but not completed, make a note of the date it is to be completed. If stabilization has been completed, make a note of the date it was completed. If stabilization has not yet been initiated, make a note of the date it is to be initiated, and the date it is to be completed.

Description of Discharges	
Was a stormwater discharge or other discharge occurring from any part of your site at the time of the inspection? ☐ Yes ☐ No **If "yes", provide the following information for each point of discharge:**	
Discharge Location [Add an additional sheet if necessary]	**Observations**
1.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐ Yes ☐ No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
2.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐ Yes ☐ No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
3.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐ Yes ☐ No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:
4.	Describe the discharge:
	At points of discharge and the channels and banks of surface waters in the immediate vicinity, are there any visible signs of erosion and/or sediment accumulation that can be attributed to your discharge? ☐ Yes ☐ No
	If yes, describe what you see, specify the location(s) where these conditions were found, and indicate whether modification, maintenance, or corrective action is needed to resolve the issue:

Summary
The Site is: ☐ In Compliance ☐ Out of Compliance **with the terms and conditions of the SWPCP and General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities.**
Describe remedial actions required to bring the Site back into compliance (Refer to Corrective Action Log Form):
Describe interim measures required to minimize the potential for the discharge of pollutants from the Site:
Notes: Non-engineered corrective actions (as identified in the Guidelines) shall be implemented on site within 24 hours and incorporated into a revised SWPCP within three (3) calendar days of the date of inspection unless another schedule is specified in the Guidelines. Engineered corrective actions (as identified in the Guidelines) shall be implemented on site within seven (7) days and incorporated into a revised SWPCP within ten (10) days of the date of inspection unless another schedule is specified in the Guidelines or is approved by DEEP.

Section B – Corrective Action Progress (Complete this section no later than 7 calendar days after discovering the condition that triggered corrective action)			
Stormwater Control Modifications to be Implemented to Correct the Problem			
List of Stormwater Control Modification(s) Needed to Correct Problem (Add an additional sheet if necessary)	**Date of Completion**	**SWPCP Update Necessary?**	**Notes**
1.		☐Yes ☐No If yes, provide date SWPCP modified:	
2.		☐Yes ☐No If yes, provide date SWPCP modified:	
3.		☐Yes ☐No If yes, provide date SWPCP modified:	
4.		☐Yes ☐No If yes, provide date SWPCP modified:	
5.		☐Yes ☐No If yes, provide date SWPCP modified:	
6.		☐Yes ☐No If yes, provide date SWPCP modified:	
7.			

Stormwater Construction Site Inspection Report

CERTIFICATION STATEMENT

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the General Statutes, pursuant to Section 53a-157b of the General Statutes, and in accordance with any other applicable statute."

Inspector:

SIGNATURE:_____

PRINTED NAME: _____

TITLE:_____

AFFILIATION:_____

ADDRESS: _____

_____

PHONE: _____

DATE: _____

Permittee or his/her authorized representative:

SIGNATURE:_____

PRINTED NAME: _____

TITLE:_____

AFFILIATION:_____

ADDRESS: _____

_____

PHONE: _____

DATE: _____

ATTACHMENT F
Notice of Termination Form

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Notice of Termination Form

Please complete and submit this form in accordance with the general permit (DEP-PED-GP-015) in order to ensure the proper handling of your termination. Print or type unless otherwise noted.

Note: Ensure that for commercial and industrial facilities, registrations under the *General Permit for the Discharge of Stormwater Associated with Industrial Activity* (DEP-PED-GP-014) or the *General Permit for the Discharge of Stormwater from Commercial Activities* (DEP-PED-GP-004) have been filed where applicable. For questions about the applicability of these general permits, please call the Department at 860-424-3018.

Part I: Registrant Information

1. Permit number: ***GSN***
2. Fill in the name of the registrant(s) as indicated on the registration certificate:

   Registrant:
3. Site Address:

   City/Town: State: Zip Code:
4. Date all storm drainage structures were cleaned of construction sediment:

   Date of Completion of Construction:

   Date of Last Inspection (must be at least three months after final stabilization pursuant to Section 6(b)(6)(D) of the general permit):
5. Check the post-construction activities at the site (check all that apply):

   ☐ Industrial ☐ Residential ☐ Commercial ☐ Capped Landfill

   ☐ Other (describe):

Part II: Certification

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that, based on reasonable investigation, including my inquiry of those individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief. I understand that a false statement made in this document or its attachments may be punishable as a criminal offense, in accordance with Section 22a-6 of the Connecticut General Statutes, pursuant to Section 53a-157b of the Connecticut General Statutes, and in accordance with any other applicable statute."

Signature of Permittee	Date
Name of Permittee (print or type)	Title (if applicable)

Note: Please submit this Notice of Termination Form to:

STORMWATER PERMIT COORDINATOR
BUREAU OF WATER MANAGEMENT
DEPARTMENT OF ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127