ADDENDUM NO.: 9 DATE OF ADDENDUM: January 09, 2015

State Veterans' Cemetery
Expansion and Improvements
Middletown, CT
BI – C – 283

Original Bid Due Date / Time:	January 14, 2015	1:00 PM
Revised Bid Due Date / Time:	February 18, 2015	1:00 PM

Previous Addendums:
8 Dated December 1, 2014
7 Dated October 27, 2014
6 Dated October 17, 2014
5 Dated September 30, 2014
4 Dated September 29, 2014
3 Dated September 26, 2014
2 Dated September 17, 2014
1 Dated September 16, 2014

TO: **Prospective Bid Proposers:**
This Addendum forms part of the "Contract Documents" and modifies or clarifies the original "Contract Documents" for this Project dated September 03, 2014. Prospective Bid Proposers shall acknowledge receipt of the total number the Addenda issued for this Project on the space provided on Section 00 41 00 Bid Proposal Form. Failure to do may subject Bid Proposers to disqualification.

The following clarifications are applicable to drawings and specifications for the project referenced above.

Item 1

The bid opening will be changed from January 14, 2015 at 1:00 pm to February 18, 2015 at 1:00 pm.

Item 2

Please reference Specification Section 00 21 19 - NOTICE TO BIDDERS, Page 11, ARTICLE 20:
General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities:
"For projects involving one (1) acre or more of soil disturbance, the Apparent Low Bidder shall submit to the Connecticut Department of Energy and Environmental Protection (CT DEEP) the Registration and plans for the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (CT DEEPWPED-GP-015) within ten (10) business days of being notified of being the Apparent Low Bidder. The Owner shall be responsible for the cost of the General Permit Fee. The Apparent Low Bidder shall be responsible for notifying the CT DCS Project Manager when the Registration has been submitted to CT DEEP in order for the Owner to know when to transfer the funds to CT DEEP."

As per the Pre-Bid Meetings and Addendum No. 1, a General Permit (GP) Registration Form for the Discharge of Stormwater and Dewatering Wastewater Associated with Construction Activities has been filed with the State of Connecticut Department of Energy & Environmental Protection (CT DEEP) and the GP and GP responsibilities will be transferred to the successful bidder prior to construction.

DAS/DCS has paid the $3,000.00 initial permit fee for this project. The License Transfer form, all documentation as required by the DEEP, as well as the GP responsibilities, will be the responsibility of the successful bidder.

DAS/DCS will also pay for the CT DEEP's GP fees for the transfer.

All other costs associated with the GP are the responsibility of the successful bidder.

ADDENDUM NO.: 9 **DATE OF ADDENDUM: January 09, 2015**

Included with this addendum are the "Stormwater Pollution Control Plan" dated September 04, 2014 (181 pages) and the "Permit Application Transmittal Form" dated September 03, 2014 (22 pages) approved by the CT DEEP.

The "License Transfer Form" (ten pages) is also attached, partially complete for the current registrant information. The successful bidder will need to complete and submit this form for the transfer.

All questions must be in writing (not phone or e-mail) and must be forwarded to the consulting Architect/Engineer (BL Companies-Ray Gradwell at (860) 249-2400 with copies sent to the CT DCS Project Manager (Carlton Grodotzke / Sarah Tierney) at (860) 713-7261.

End of Addendum 9

Mellanee Walton

Mellanee Walton, Associate Fiscal Administrative Officer
Department of Administrative Services
On Behalf of the Division of Construction Services

Connecticut Department of Energy & Environmental Protection

CPPU USE ONLY
App #:
Doc #:
Check #:

Permit Application Transmittal Form

Please complete this transmittal form in accordance with the instructions in order to ensure the proper handling of your application(s) and the associated fee(s). Print legibly or type.

Part I: Applicant Information:

- **If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, applicant's name shall be stated **exactly** as it is registered with the Secretary of State.*
- *If an applicant 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.).*

Applicant: **State of Connecticut Department of Administrative Affairs**

Mailing Address: **165 Capital Avenue**

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

Business Phone: **860-713-5691** ext.: n/a Fax:

Contact Person: **Allen Herring** Phone: **n/a** ext. **n/a**

E-Mail: **allen.herring@po.state.ct.us**

Applicant (check one): ☐ individual ☐ *business entity ☐ federal agency ☒ state agency ☐ municipality ☐ tribal
*If a business entity, list type (e.g., corporation, limited partnership, etc.):

☐ Check if any co-applicants. If so, attach additional sheet(s) with the required information as supplied above.

Please provide the following information to be used for *billing purposes only*, if different:

Company/Individual Name:

Mailing Address:

City/Town: State: Zip Code:

Contact Person: Phone: ext.

Part II: Project Information

Brief Description of Project: *(Example: Development of a 50 slip marina on Long Island Sound)*
State Veterans' Cemetery Expansion and Improvements

Location (City/Town): **Middletown**

Other Project Related Permits (*not* included with this form):

Permit Description	Issuing Authority	Submittal Date	Issuance Date	Denial Date	Permit #

Part III: Individual Permit Application and Fee Information

New, Mod. or Renew	Individual Permit Applications	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
	New Source Review	$940.00			1 + 0
	Title V Operating Permits	none			1 + 0
	Title IV	none			1 + 0
	Clean Air Interstate Rule (CAIR)	none			1 + 0
	WATER DISCHARGES				
	To Groundwater	$1300.00			1 + 1
	To Sanitary Sewer (POTW)	$1300.00			1 + 1
	To Surface Water (NPDES)	$1300.00			1 + 2
	INLAND WATER RESOURCES-multiple permits 1 + 6 total copies				
	Dam Construction	none			1 + 2
	Flood Management Certification	none			1 + 1
	Inland 401 Water Quality Certification	none			1 + 5
	Inland Wetlands and Watercourses	none			
	Stream Channel Encroachment Lines	★			
	Water Diversion	★			1 + 5
	OFFICE OF LONG ISLAND SOUND PROGRAMS				
	Certificate of Permission	$375.00			1 + 3
	Coastal 401 Water Quality Certification	none			1 + 3
	Structures and Dredging/Tidal Wetlands	$660.00			1 + 3
	WASTE MANAGEMENT				
	Aerial Pesticide Application	★			1 + 2
	Aquatic Pesticide Application	$200.00			1 + 0
	CGS Section 22a-454 Waste Facilities	★			1 + 1
	Hazardous Waste Treatment, Storage and Disposal Facilities	★			1 + 1
	Marine Terminal License	$125.00			1 + 0
	Stewardship	$4000.00			1 + 1
	Solid Waste Facilities	★			1 + 1
	Waste Transportation	★			1 + 0
		Subtotal ➡			
	GENERAL PERMITS and AUTHORIZATIONS	Subtotals Page 3 ➡	1	$3000	
	Enter subtotals from Part IV, pages 3 & 4 & 5 of this form	Subtotals Page 4 ➡			
		Subtotals Page 5 ➡			
		TOTAL ➡	1	$3000	
☐	Indicate whether municipal discount or state waiver applies. Less Applicable Discount ➡				
		AMOUNT REMITTED ➡		$3000	

Check # ➡ _____

Check or money order should be made payable to: "Department of Energy and Environmental Protection"

★ See fee schedule on individual application.

Part IV: General Permit Registrations and Requests for Other Authorizations Application and Fee Information

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fees	Original + Required Copies
	AIR EMISSIONS				
☐	Limit Potential to Emit from Major Stationary Sources of Air Pollution	$2760.00			1 + 0
☐	Ionizing Radiation Registration	$200.00			1 + 0
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	WATER DISCHARGES				
☐	Domestic Sewage	$500.00			1 + 0
☐	Food Processing Wastewater	$500.00			1 + 0
☐	Groundwater Remediation Wastewater to a Sanitary Sewer	$500.00			1 + 0
☐ ☐	Groundwater Remediation Wastewater to a Surface Water Registration Only Approval of Registration by DEP	 $625.00 $1250.00			1 + 0
☐ ☐	Hydrostatic Pressure Testing Wastewater Registration Only Approval of Registration by DEP (natural gas pipelines)	 $625.00 $1250.00			1 + 0
☐ ☐	Miscellaneous Discharges of Sewer Compatible Wastewater Flow < 5,000 gpd and fire sprinkler system testwater Flow > 5,000 gpd	 $625.00 $1250.00			1 + 1
☐	Non-Contact Cooling and Heat Pump Water (Minor)	$625.00			1 + 1
☐	Photographic Processing Wastewater (Minor)	$100.00			1 + 0
☐	Printing & Publishing Wastewater (Minor) Flow < 40 gpd	$500.00 $100.00			1 + 0
☐	Stormwater Associated with Commercial Activities	$500.00			1 + 0
☐	Stormwater Associated with Industrial Activities <500 employees–see general permit for additional requirements >500 employees–see general permit for additional requirements	 $500.00 $1000.00			1 + 0
☐ ☒	Stormwater & Dewatering Wastewaters-Construction Activities 5 – 10 acres > 10 acres	 $625.00 $1250.00	 1	 $3000	1 + 0
☐	Stormwater from Small Municipal Separate Storm Sewer Systems (MS4)	$250.00			1 + 0
☐	Swimming Pool Wastewater - Public Pools and Contractors	$500.00			1 + 0
☐	Tumbling or Cleaning of Parts Wastewater (Minor)	$1000.00			1 + 1
☐ ☐	Vehicle Maintenance Wastewater Registration Only Approval of Registration by DEP	 $625.00 $1250.00			1 + 0
☐	Water Treatment Wastewater	$625.00			1 + 0
☐	Emergency/Temporary Authorization - Discharge to POTW	$1500.00			1 + 0
☐	Emergency/Temporary Authorization - Discharge to Surface Water	$1500.00			1 + 0
☐	Emergency/Temporary Authorization - Discharge to Groundwater	$1500.00			1 + 0
☐	Other, (please specify):				
	Note: Carry subtotals over to Part III, page 2 of this form.	Subtotal ➡	1	$3000	

★★ Contact the specific permit program for this information (Contact numbers are provided in the instructions).

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
	AQUIFER PROTECTION PROGRAM				
☐	Registration for Regulated Activities	$625.00			1 + 0
☐	Permit Application to Add a Regulated Activity	$1250.00			1 + 0
☐	Exemption Application from Registration	$1250.00			1 + 0
	INLAND WATER RESOURCES				
☐	Dam Safety Repair and Alteration	$1000.00			1 + 2
☐	Diversion of Water for Consumptive Use: Reauthorization Categories	$1000.00			1 + 2
☐	Diversion of Water for Consumptive Use: Authorization Required	$2500.00			1 + 5
☐	Diversion of Water for Consumptive Use: Filing Only	$1500.00			1 + 4
☐	Habitat Conservation	$1000.00			1 + 2
☐	Lake, Pond and Basin Dredging	$1000.00			1 + 2
☐	Minor Grading	$1000.00			1 + 2
☐	Minor Structures	$1000.00			1 + 2
☐	Utilities and Drainage	$1000.00			1 + 2
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	OFFICE OF LONG ISLAND SOUND PROGRAMS				
☐	4/40 Docks	$700.00			1 + 1
☐	Beach Grading	$100.00			1 + 1
☐	Coastal Remedial Activities Required by Order	$700.00			1 + 1
☐	Dock Reconstruction	$300.00			1 + 1
☐	Marina and Mooring Field Reconfiguration	$700.00			1 + 1
☐	Non-harbor Moorings	$100.00			1 + 1
☐	Osprey Platforms and Perch Poles	none			1 + 1
☐	Pump-out Facilities (no fee for Clean Vessel Act grant recipients)	$100.00			1 + 1
☐	Removal of Derelict Structures	$100.00			1 + 1
☐	Residential Flood Hazard Mitigation	$100.00			1 + 1
☐	Swim Floats	$100.00			1 + 1
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	Note: Carry subtotals over to Part III, page 2 of this form.	Subtotal →			

★ See fee schedule on registration/application. ★★ Contact the specific permit program for this information.

Part IV: General Permit Registrations and Requests for Other Authorizations (continued)

✓	General Permits and Other Authorizations	Initial Fees	No. of Permits Applied For	Total Initial Fee	Original + Required Copies
	WASTE MANAGEMENT				
☐	Addition of Grass Clippings at Registered Leaf Composting Facilities	$500.00			1 + 0
☐	Asbestos Disposal Authorization	$300.00			1 + 0
	Certain Recycling Facilities				
☐	Drop-site Recycling Facility	$200.00			1 + 0
☐	Limited Processing Recycling Facility	$500.00			1 + 0
☐	Recyclables Transfer Facility	$500.00			1 + 0
☐	Single Item Recycling Facility	$500.00			1 + 0
	Contaminated Soil and/or Staging Management (Staging/Transfer)				
☐	Registration Only	$250.00			1 + 0
☐	Approval of Registration by DEP	$1500.00			1 + 0
☐	Connecticut Solid Waste Demonstration Project	$1000.00			1 + 0
☐	Disassembling Used Electronics	$400.00			1 + 0
☐	Leaf Composting Facility	none			1 + 1
☐	Municipal Transfer Station	$800.00			1 + 1
☐	One Day Collection of Certain Wastes and Household Hazardous Waste	$1000.00			1 + 0
☐	Special Waste Authorization	$660.00			1 + 0
☐	Storage and Distribution of Two (2) Inch Nominal Tire Chip Aggregate	$500.00			1 + 0
☐	Storage and Processing of Asphalt Roofing Shingle Waste and/or Storage and Distribution of Ground Asphalt Aggregate	★			1 + 0
☐	Storage and Processing of Scrap Tires for Beneficial Use	$1000.00			1 + 0
☐	Emergency/Temporary Authorization	★★			★★
☐	Other, (please specify):				
	REMEDIATION				
☐	In Situ Groundwater Remediation: Enhance Aerobic Biodegradation	★			1 + 2
	Note: Carry subtotals over to Part III, page 2 of this form.	Subtotal ➡			

★See fee schedule on registration/application. ★★Contact the specific permit program for this information.

The Department of Energy and Environmental Protection is an affirmative action/equal opportunity employer and service provider. In conformance with the Americans with Disabilities Act, DEEP makes every effort to provide equally effective services for persons with disabilities. Individuals with disabilities who need this information in an alternative format, to allow them to benefit and/or participate in the agency's programs and services, should call 860-424-3035 or e-mail the ADA Coordinator at DEP.aaoffice@ct.gov. Persons who are hearing impaired should call the State of Connecticut relay number 711.

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

Prior to completing this form, you **must** read the instructions for the subject general permit available 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 (except Question 8), 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 Projects** **Size of soil disturbance:**	**New registration - Sixty (60) days prior to the initiation of the construction activity for:** Sites with a total soil disturbance area of 5 or more acres	
		☒ **Locally Exempt Projects** **Size of soil disturbance:**	☒	**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 an 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 [#1855]
   b. Locally exempt projects (registration and Plan):
      ☒ $3,000 total soil disturbance area ≥ one (1) and < twenty (20) acres. [#1856]
      ☐ $4,000 total soil disturbance ≥ twenty (20) acres and < fifty (50) acres. [#1857]
      ☐ $5,000 total soil disturbance ≥ fifty (50) acres. [#1858]
2. Re-Registrations
   ☐ $625 (sites previously registered prior to September 1, 2012) [#1853]
   ☐ $0 (sites previously registered between September 1, 2012 and the issuance date of this permit) [#1854]

The fees for municipalities shall be half of those indicated in subsections 1.a., 1.b., and 2 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: State of Connecticut Department of Administrative Services

   State Agency

   Secretary of the State business ID #:

   Mailing Address: 165 Capitol Avenue

   City/Town: Hartford State: CT Zip Code: 06106

   Business Phone: 860-713-5691 ext.: n/a

   Example:(xxx) xxx-xxxx

   Contact Person: Allen Herring Title: Chief Eng.

   E-Mail: **allen.herring@po.state.ct.gov**

   Additional Phone Number (if applicable): n/a ext. n/a

2. List billing contact, if different than the registrant:

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext.:

   Contact Person: Title:

Part III: Registrant Information (continued)

3. List primary contact for departmental correspondence and inquiries, if different than the registrant:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Site Phone: Emergency Phone:
Contact Person: Title:
Association (e.g. developer, general or site contractor, etc.):

4. List owner of the property on which the activity will take place, if different from registrant:

Name: Connecticut Department of Veterans' Affairs
Mailing Address: 287 West Street
City/Town: Rocky Hill State: CT Zip Code: 06067
Business Phone: 860-616-3606 ext.:
Contact Person: Dr. Babatunde O. Green

5. List developer, if different from registrant or primary contact:

Name: To Be Determined
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Title:

6. List general contractor, if different from registrant or primary contact:

Name: To Be Determined
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Site Phone: Off Hours Phone:
Contact Person: Title:

7. List any engineer(s) or other consultant(s) employed or retained to assist in preparing the registration and/or Stormwater Pollution Control Plan. ☐ Please select if additional sheets are necessary, and label and attach them to this sheet.

Name: BL Companies
Mailing Address: 150 Trumbull Street Floor 6
City/Town: Hartford State: CT Zip Code: 06103
Business Phone: 860-249-2200 ext.: 1902
Contact Person: Raymond Gradwell, P.E. Title: Project Manager
Service Provided: **A/E**

8. List Reviewing Qualified Professional (for locally approvable projects only):

Name: Contact Person:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:

Part IV: Site Information

1. Site Name: Middletown Veterans' Cemetery
   Street Address or Description of Location: 317 Bow Lane
   City/Town: Middletown State: CT Zip Code: 06457
   Brief Description of construction activity: Cemetery Expansion & Improvements (site & building)
   Project Start Date: 12 / 2014 *(month/ yr)* Anticipated Completion Date: 12 / 2015 *(month/ yr)*
   Normal working hours: **7 am** to **6 pm**

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 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 at www.cteco.uconn.edu/map_catalog.asp. Additional DEEP Maps and Publications are available by contacting DEEP staff at 860-424-3555.

Part IV: Site Information (continued)

6. ENDANGERED OR THREATENED SPECIES:

In order to be eligible to register for this General Permit, each registrant must 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 section 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 registrant 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 the NDDB maps were reviewed: December 2013 (Print a copy of the NDDB map you viewed since it must be submitted with this registration as part of Attacment 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 Divison NDDB identification number for any such determination: _____ (The number is on the determination issued by the Department's Wildlife Divison).

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

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 www.ct.gov/deep/nddbrequest or call the NDDB at 860-424-3011.

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 www.ct.gov/deep/aquiferprotection 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. CT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL: Is the activity in accordance with CT Guidelines for Erosion and Sediment Control 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 ☒ Yes ☐ No

c. The proposed activity has been reviewed and authorized under an Army Corps of Engineers Section 404 wetland permit. ☐ 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 that 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 Part V, Section d of the DEEP-WPED-INST-015 .		e) What method was used to obtain your latitude/longitude information?
				Longitude	Latitude	
1	pipe	concrete	24"	-72.623663	41.545288	CT ECO
2,3	pipe	concrete	other 30"	-72.624661	41.548669	CT ECO
4	pipe	other Brick	24"	-72.626552	41.547885	CT ECO
	Select One:	Select One:	Select One:	-		Select One:
	Select One:	Select One:	Select One:	-		Select One:

Table 2

Outfall #	a) For temporary and permanent outfalls, provide a start date. For temporary discharges, also provide a date the discharge will cease.	b) For the drainage area associated with each outfall: Effective Impervious Area Before Construction	c) For the drainage area associated with each outfall: Effective Impervious Area After Construction	d) To what system or receiving water does your stormwater runoff discharge? either "storm sewer" or "wetlands/waterbody" (If you select "storm sewer" proceed to Part VI of the form. If you select "wetlands/waterbody" proceed to next question)	e) For each outfall, does it discharge to any of the following towns: *Branford, Kent, Manchester, Meriden, North Branford, Norwalk, or Wilton?* (If no, proceed to Part VI of the form. If yes, proceed to next question.)	f) For each outfall, does it discharge to a "freshwater" or "salt water" ? (If you select "freshwater" proceed to Table 3. If you selected "salt water", proceed to Part VI of the form.)
1	- mm/dd-mm/dd	sq feet	sq feet	storm sewer	☐ Yes ☒ No	Select one:
2,3	- mm/dd-mm/dd	sq feet	sq feet	storm sewer	☐ Yes ☒ No	Select one:
4	- mm/dd-mm/dd	sq feet	sq feet	storm sewer	☐ Yes ☒ No	Select one:
	- mm/dd-mm/dd	sq feet	sq feet	Select one:	☐ Yes ☐ No	Select one:
	- mm/dd-mm/dd	sq feet	sq feet	Select one:	☐ Yes ☐ No	Select one:
		total sq feet	**total sq feet**			

Part V: Stormwater Discharge Information (continued)

Table 3 Provide the following information about the receiving water(s)/wetland(s) that receive stormwater runoff from your site:

Outfall #	a) What is your 305b ID # (water body ID #)? (Section 3.b, of the DEEP-WPED-INST-015, explains how to find this information)	b) Is your receiving water identified as a impaired water in the "Impaired Waters Table for Construction Stormwater Discharges"? If yes, proceed to next question. If no, proceed to Part VI: Pollution Control Plan.	c) Has any Total Maximum Daily Load (TMDL) been approved for the impaired water?
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ N
		☐ Y ☐ N	☐ Y ☐ N

Part V: Stormwater Discharge Information (continued)

Impaired waters: If you answered "yes" to Table 3, question b.,**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 1.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 theTMDL, ☐ Yes

   OR

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

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

☐ I am registering a Locally Exempt project and submitting the required electronic Plan (in Adobe™ PDF or similar 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,

[INSERT NAME OF REGISTRANT BELOW]

submitted to the commissioner by DAS - Division of Construction Services for

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

an activity located at 317 Bow Lane in Middletown, Connecticut 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. 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

[INSERT NAME OF REGISTRANT BELOW]

by _____ for an activity located at

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

_____ 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 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 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."

	September 3, 2014
Signature of Registrant	Date
Allen Herring Allen Herring	**Chief Engineer**
Name of Registrant (print or type)	Title (if applicable)
	September 3, 2014
Signature of Preparer (if different than above)	Date
Raymond Gradwell, P.E.	**Project Manager**
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 choose qualification 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

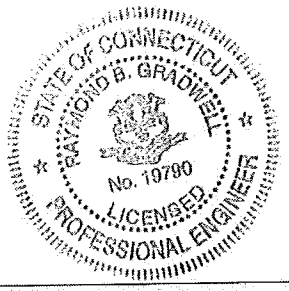
[INSERT NAME OF REGISTRANT BELOW]

DAS - Division of Construction Services for an activity located at

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

317 Bow Lane Middletown, Connecticut

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	**September 3, 2014** Date
Raymond Gradwell Name of Professional (print or type)	**Project Manager** Title
150 Trumbull Street Floor 6 Mailing Address	**Hartford** City/Town
CT **06103** State Zip Code	**860-249-2200** Business Phone
 Affix P.E/L.A Stamp Here	**19790** License #

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: list of districts

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

[INSERT NAME OF REGISTRANT BELOW]

by _____ for an activity located at

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

_____.

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 and License Number (if applicable)

Or

☒ **Review certification by Qualified Professional**

Company: BL Companies

Name: Raymond Gradwell, P.E.

License # : 19790

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,

[INSERT NAME OF REGISTRANT BELOW]

submitted to the commissioner by DAS - Division of Construction Services

[INSERT ADDRESS OF PROJECT OR ACTIVITY BELOW]

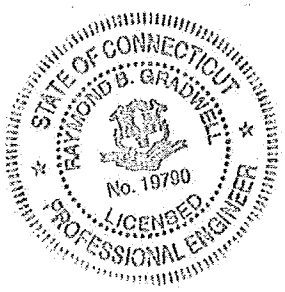
for an activity located at 317 Bow Lane, Middletown, Connecticut.

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 further certify that I have made the 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 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 Date: 9/3/14

Raymond Gradwell, P.E.
Name of Reviewing Qualified Professional License No.: 19790

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



Part X: Supporting Documents

Select the applicable box below for each attachment being submitted with this registration form. When submitting any supporting documents, please label the documents as indicated below (e.g., Attachment A, etc.) and be sure to include the registrant's name as indicated on this certification form.

☒	**Attachment A:**	Select here as verification that an 8 ½" X 11" copy of the relevant portion of a USGS Quadrangle Map with a scale of 1:24,000, showing the exact location of the facility has been submitted with this registration. Indicate the quadrangle name on the map, and be sure to include the registrant's name. (To obtain a copy of the relevant USGS Quadrangle Map, call your town hall or DEEP Maps and Publications Sales at 860-424-3555)
☐	**Attachment B:**	Documentation related to *Coastal Consistency Review,* if applicable.
☒	**Attachment C:**	Threatened and Endangered Species Form and any additional information (such as a copy of a NDDB map)
☐	**Attachment D:**	Conservation or Preservation Restriction Information, if applicable.
☒	**Attachment E:**	Where applicable, non-electronic Pollution Control Plan.

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

ATTACHMENT C: THREATENED AND ENDANGERED SPECIES

Information about compliance with the requirements of Section 3(b)(2) of this general permit, regarding threatened and endangered species, is in Appendix A of the general permit. Choose one or more (if applicable) of the following in order to be eligible to register for this General Permit. A registrant who does not or cannot do so is not eligible to register under this General Permit.

☒ Self Assessment using the NDDB maps – Select this only if:

a. The site of the construction activity is not entirely, partially or within a ¼ mile of a shaded area depicted on the Department's Natural Diversity Database maps and this determination was made not more than six months before the date of submitting this registration;

AND

b. The entity registering for this General Permit has no reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Attach a copy of the NDDB map used to conduct the self assessment used to register for this general permit.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the self-assessment option. If neither is true, a Registrant cannot use the self-assessment option to comply with Section 3(b)(2) and Appendix A of the General Permit.

☐ Limited One-Year Determination – Select this only if:

a. The entity registering for this General Permit has obtained a limited one-year determination from the Department's Wildlife Division regarding threatened and endangered species: i) within a year of the date of submitting this registration; or ii) more than 1 year before submitting this registration, but such determination has been extended by the Department within one year of the date of submitting this registration;

AND

b. The Registrant has provided to the Department's Wildlife Division any reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Provide the date the limited one-year determination was issued by the Department's Wildlife Division _____;

or

Provide the date that the most recent extension to a limited one year determination was issued by the Department's Wildlife Division _____.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the Limited One-Year Determination option. If a Limited One-Year Determination or extension to any such determination was issued by the Department's Wildlife Division more than one year before the submission of this registration, a Registrant cannot use any such determination or extension to comply with Section 3(b)(2) and Appendix A of the General Permit.

ATTACHMENT C: THREATENED AND ENDANGERED SPECIES (continued)

☐ **Select here if the Limited One-Year Determination issued by the Department includes a Mitigation Plan.**

Provide the date the Mitigation Plan was approved: _____

Governmental Entity Approving the Plan: _____

As of the date this Registration is submitted,

Has the Mitigation Plan been fully implemented? ☐ Yes ☐ No

Date commenced: _____ Date completed: _____

Is the Mitigation Plan partially implemented? ☐ Yes ☐ No

If yes, what actions have been taken? _____

And which actions are yet to be implemented and what is the timeframe for completion of such actions: _____

Is the Mitigation Plan yet to be implemented? ☐ Yes ☐ No

If yes, specify the timeframe for implementation: _____ to _____

And summarize actions to be implemented: _____

☐ Safe Harbor Determination - Select this only if:

a. The entity registering for this General Permit has obtained a Safe Harbor Determination from the Department's Wildlife Division regarding threatened and endangered species: i) within 3 years of the date of submitting this registration; or ii) more than 3 years before submitting this registration, but within one-year of a one-year extension issued by the Department's Wildlife Division to a safe harbor determination;

AND

b. The entity registering for this General Permit has provided to the Department's Wildlife Division any reasonably available verifiable scientific, or other credible information that the construction activity could reasonably be expected to have an adverse impact upon a federal or state species listed as threatened or endangered.

Provide the date the Department's Wildlife Division issued a Safe Harbor Determination: _____

If applicable, provide the date that any one-year extension to a Safe Harbor Determination was issued by the Department's Wildlife Division: _____.

Note: Both a and b as used in this section, must be true in order for a Registrant to register for this General Permit using the Safe Harbor Determination option. If a Safe Harbor Determination was issued by the Department's Wildlife Division more than three years before the submission of this registration, and has not been extended, a Registrant cannot use any such safe harbor to comply with section 3(b)(2) and Appendix A of this General Permit. If a Safe Harbor Determination was granted and extended for one-year, more than four years before the submission of this registration, a Registrant cannot use any such Safe Harbor Determination to comply with Section 3(b)(2) and Appendix A of the general permit.

ATTACHMENT C: THREATENED AND ENDANGERED SPECIES (continued)

☐ **Select here if the safe harbor noted above includes a Mitigation Plan.**

Provide the date the Mitigation Plan was approved: _____

Governmental Entity Approving the Plan: _____

As of the date this Registration is submitted,

Has the Mitigation Plan been fully implemented? ☐ Yes ☐ No

Date commenced: _____ Date completed: _____

Is the Mitigation Plan partially implemented? ☐ Yes ☐ No

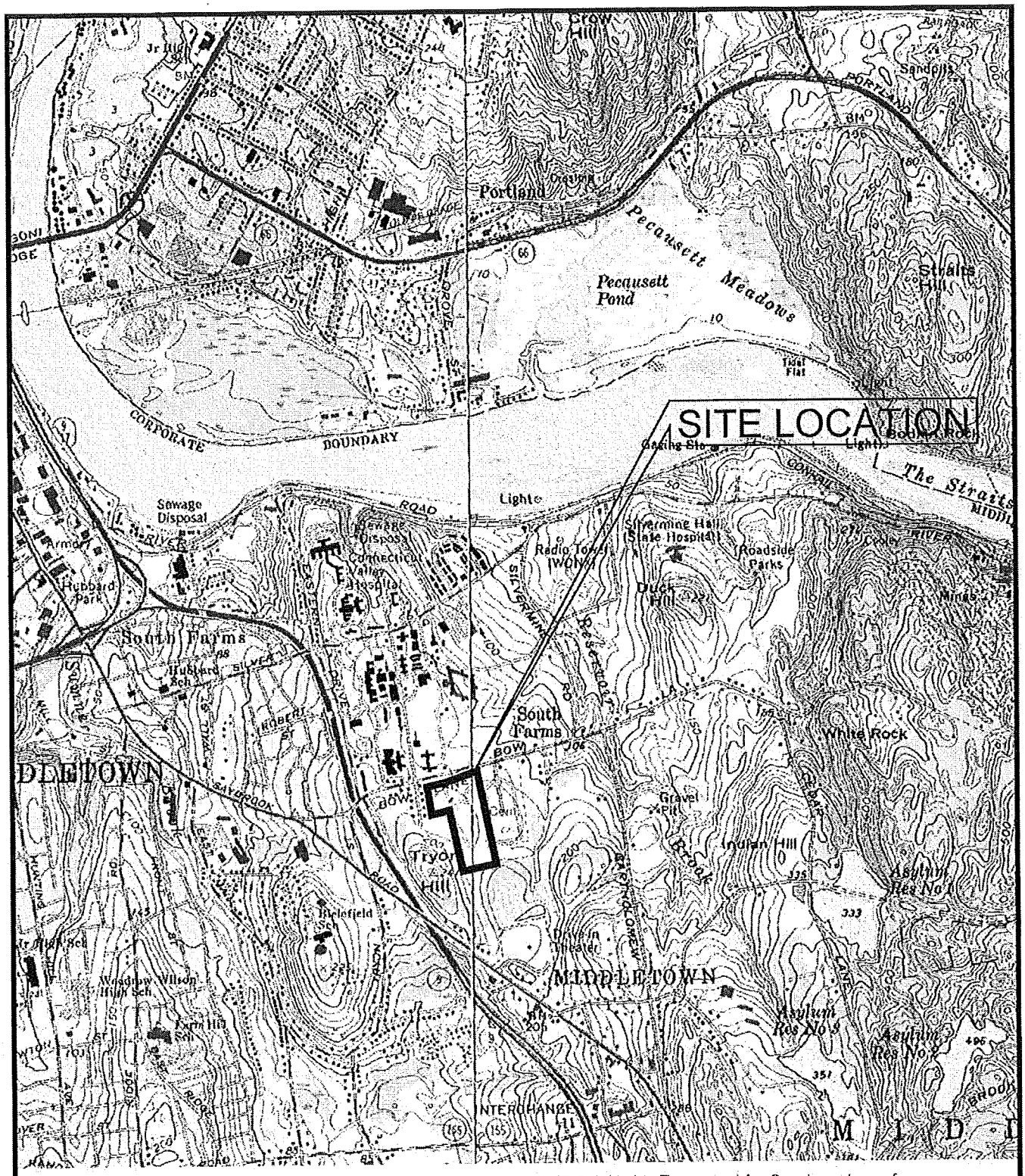
If yes, what actions have been taken? _____

And which actions are yet to be implemented and what is the timeframe for completion of such actions: _____

Is the Mitigation Plan yet to be implemented? ☐ Yes ☐ No

If yes, specify the timeframe for implementation: _____ to _____

And summarize actions to be implemented: _____



Base map is a reproduction of the U.S.G.S. 7.5 Minute Topographic Quadrangles of Middletown, Connecticut
Scale 1" = 2000'

N

BL Companies

USGS SITE LOCATION MAP

317 BOW LANE
MIDDLETOWN, CONNECTICUT

Designed	K.T.
Drawn	K.T.
Checked	
Approved	
Scale	1"=2000'
Project No.	13C4767
Date	03/21/2014
CAD File	USGS

ATTACHMENT A
USGS

Connecticut Department of
Energy & Environmental Protection

License Transfer Form

CPPU USE ONLY
App #:
Doc #:
Check #:

Please complete and submit this form and the appropriate transfer fee(s) to the CT Department of Energy and Environmental Protection, Central Permit Processing Unit, 79 Elm Street, Hartford, CT 06106-5127. DEEP will notify both the proposed transferee and the licensee of the approval or disapproval of the registration. Print or type unless otherwise noted.

Part I: License Type and Fee Information

License Type: (check all that apply)	No. of licenses	Transfer Fee for *each* license	Fee Subtotal
☐ **Air Emissions**		$940.00	
☐ NSR Permit, GPLPE Approval, and/or Registration pursuant to the former RCSA section 22a-174-2			
☐ Title IV **and** Request for Title IV Revision		$940.00	
App#:			
☐ Title V **and** Request for Title V Revision		$940.00	
App#:			
☐ **Aquifer Protection Area Program**		$750.00	
☐ **Inland Water Resources:** Water Diversion, Flood Management, Inland Wetlands and Watercourses, Dam Safety, Stream Channel Encroachment Lines, 401 Water Quality Certification		$750.00	
☐ **Office of Long Island Sound Program:** Structures, Dredging and Fill; Tidal Wetlands; Removal of Sand and Gravel (Marine Mining); 401 Water Quality Certification		$0	
☐ **Waste and Materials Management:** Solid Waste Facilities, Solid Waste Landfills, RCRA Hazardous Waste TSDF's, Hazardous Waste Landfills, CGS section 22a-454 Waste Facilities, Stewardship Permits		$940.00	
☐ Waste Transportation		$0	
☐ **Water Discharges**		$940.00	
		Fee Total	

Part I: License Type (continued)

Date of Closing: ☐ Proposed ☐ Actual

If the closing takes place after submittal of this completed form and before the license transfer is approved, you must complete and submit a *Confirmation of Closing – Before License Transfer Approval Form* (attached) immediately after said closing to confirm the change in ownership of the facility.

If the closing takes place after the license transfer is approved, you must complete and submit a *Confirmation of Closing – After License Transfer Approval Form* immediately after said closing to confirm the change in ownership of the facility and for the license transfer to be effective.

Table A: Licenses Being Transferred

License Type	License Number	Expiration Date

☐ Check the box if you have more licenses you are proposing to transfer. If so, label and attach additional sheet(s) with the above information for each license.

Table B: Other Licenses or Regulated Activities Not Being Transferred

License Type	License Number	Expiration Date	Continuing Activity?		Reason for not transferring
			Yes	No	
			☐	☐	
			☐	☐	
			☐	☐	

☐ Check the box if you have more licenses to identify. If so, label and attach additional sheet(s) with the above information for each license.

Table C: Pending Applications or Enforcement Actions

Name of Application or Enforcement Action	Application or Enforcement Case Number	Date of Submittal or Enforcement Action

☐ Check the box if you have more applications or actions to identify. If so, label and attach additional sheet(s) with the above information for each license.

Part II: General Information

1. Name of Site:

Street Address or Description of Location:

City/Town: State: Zip Code:

2. Current Licensee

Name:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Contact Person: Phone: ext.

E-mail:

☐ Check the box if there is more than one licensee.
If so, label and attach additional sheet(s) with the above information for each licensee.

- **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 State. If applicable, registrant's name shall be stated **exactly** as it is registered with the Secretary of State. Please note, for those entities registered with the Secretary of State, the registered name will be the name used by DEEP. This information can be accessed at the Secretary of State's database (CONCORD).* **(www.concord-sots.ct.gov/CONCORD/index.jsp)**
- *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.).*

3. Proposed Transferee (Registrant)

Name:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.:

Contact Person: Phone: ext.

*E-mail:

*By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject registration. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify DEEP if your e-mail address changes.

a) Registrant Type (check one):

☐ individual ☐ federal agency ☐ state agency ☐ municipality ☐ tribal

☐ *business entity (*If a business entity complete i through iii):

Part II: General Information (continued)

i) check type: ☐ corporation ☐ limited liability company ☐ limited partnership
☐ limited liability partnership ☐ statutory trust ☐ Other: _____

ii) provide Secretary of the State business ID #:_____This information can be accessed at *database (CONCORD).* **(www.concord-sots.ct.gov/CONCORD/index.jsp)**

iii) ☐ Check here if your business is **NOT** registered with the Secretary of State's office.

b) Registrant's interest in property at which the proposed activity is to be located:

☐ site owner ☐ option holder ☐ lessee ☐ easement holder
☐ facility owner ☐ operator ☐ other (specify): _____

☐ Check if any additional proposed transferees or co-registrants. If so, attach additional sheet(s) with the required information as requested above.

4. New Billing Contact, if different than the registrant.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

5. New Primary Contact for departmental correspondence and inquiries, if different than the registrant.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
*E-mail:

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject registration. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

6. New Authorized Representative, if applicable.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Part II: General Information (continued)

7. **New Attorney**, if applicable.
   Firm Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.:
   Attorney Name: Phone: ext.
   E-mail:

8. **New Site Owner**, if different than the registrant.
   Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.:
   Contact Person: Phone: ext.
   E-mail:

9. **New Facility Owner**, if different than the registrant.
   Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.:
   Contact Person: Phone: ext.
   E-mail:

10. **New Facility Operator**, if different than the registrant.
    Name:
    Mailing Address:
    City/Town: State: Zip Code:
    Business Phone: ext.:
    Contact Person: Phone: ext.
    E-mail:

11. **Preparer of this registration**, if different than the registrant.
    Name:
    Mailing Address:
    City/Town: State: Zip Code:
    Business Phone: ext.:
    Contact Person: Phone: ext.
    E-mail:

Part III: Supporting Documents

Be sure to read the instructions (DEEP-INST-006) to determine all documents that must be submitted with this registration form. Check the applicable boxes as verification that *all applicable* attachments have been submitted with this registration form. When submitting any supporting documents, please label the documents as indicated in this part (e.g., Attachment A, etc.) and be sure to include both the licensee and the proposed transferee's name.

☐ Attachment A: *Applicant Background Information* (DEEP-APP-008) (if applicable) (Do ***not*** include for transfer of licenses for solid waste facilities)

☐ Attachment B: *Applicant Compliance Information* (DEEP-APP-002)

☐ Attachment C: Submit the following only in the case where the closing has occurred before the department has approved the transfer of licenses.

- submit a completed *Confirmation of Closing Form* (DEEP- APP-006B) once such closing has been completed to the address indicated on the form. (attached)

☐ Attachment D: *Submit the following only for transfer of licenses for CGS Section 22a-454 Facilities, Hazardous Waste Landfills, RCRA Hazardous Waste TSDF's and Stewardship Permits:*

1. Business Information
2. Financial Assurance
3. *Revised EPA RCRA Part A and RCRA Part B application*

☐ Attachment E: *Submit the following only for transfer of licenses for Solid Waste Facilities and Solid Waste Landfills:*

1. *Background information* (DEEP-SW-APP-101)
2. *Business Information* (DEEP-SW-APP-103)

☐ Attachment F: *Submit the following only for transfer of licenses for Waste Transporters*:

1. *List of Transporter Permits Held in Other States* (DEEP-WEED-APP-401)
2. Certificate of Insurance and MCS-90 Forms
3. *Spill Clean-up Contractor Application* (DEEP-WEED-APP-407), if applicable
4. Additional Registrant Information

☐ Attachment G: *Submit the following only for transfer of licenses administered by OLISP pursuant to statutes regulating work in tidal, coastal or navigable waters or tidal wetlands:*

1. A copy of the permit drawings identifying the components of the project that have been completed and the portion of the project or work elements that remain to be conducted.
2. Photographs or other documentation showing that the completed work has been constructed/conducted in accordance with the permit. If the work authorized consisted of dredging, provide a current bathymetric survey of the dredged area.

Part III: Supporting Documents

☐ Attachment H: *Submit the following only for transfer of Title V licenses:*

- *Written Authorization Form RCSA Section 22a-174-2a(a)(2)(B)* (DEEP-AIR-SIG-REG-002), **IF APPLICABLE**.

☐ Attachment H-1: *Submit the following only for transfer of Title IV licenses or Title V licenses **with** a Title IV license incorporated:*

- a completed *EPA Phase II Acid Rain Permit Application Form* (EPA Form 7610-16) signed by the new designated representative or alternate designated representative. A copy should also be sent to EPA Region 1: Mr. Ian Cohen, US EPA, 5 Post Office Square, Suite 10, Mail Code O(o)EP0(zero)5-2, Boston, MA 02109-3912

☐ Attachment I: *Submit the following only for transfer of registrations and permits for the Aquifer Protection Area Program:*

- *Certification of Best Management Practices (found on p.5 of 7 of the Registration Form for Regulated Activities in Aquifer Protection Areas) (DEEP-APA-REG-100)*
- *Certification of Best Management Practices (found on p.7 of 9 of the Permit Application to Add a Regulated Activity to a Registered Facility in an Aquifer Protection Area) (DEEP-APA-APP-200)*

For transfer of registrations and permits for the Aquifer Protection Area Program, a copy of this completed form and the *Certification of Best Management Practices* to the municipality, the Department of Public Health and any affected water company.

For contact names and addresses refer to:

Municipal Contact Directory

Water Company Contact Directory

Connecticut Department of Public Health
Drinking Water Division
410 Capitol Avenue, MS #51 WAT
Hartford, CT 06134-0308

Part IV: Certification

The licensee(s) *and* the proposed transferee(s) and the individuals responsible for actually preparing the registration must sign this part. A registration will be considered insufficient unless *all* required signatures are provided ***and are the proper signatory authority as specified under Part IV in the instructions.***

"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 the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I certify that this license transfer registration and if applicable, the request for Title IV and/or Title V Revision, is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I understand that this transfer shall become effective immediately upon the commissioner's written approval of this request, or within the time frame specified in the subject approval. I understand that there are significant penalties for conducting any activity requiring a license from DEEP without the required license. I understand that this license transfer registration form is only to be used for changes in owners and operators of the licensed activity; if other changes are being proposed to the facility or site or facility operations, the proposed transferee must also request a license modification.

I understand that a false statement in the submitted information 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."

Signature of Authorized Representative for Current Licensee	Date
Printed Name of Authorized Representative for Current Licensee	Title (if applicable)

License Number(s):

In addition to the above certification statement, by signing below as transferee, I hereby further certify that I am willing and able to fully comply with the terms and conditions of the license(s) referenced in this document.

Signature of Authorized Representative for Proposed Transferee	Date
Printed Name of Authorized Representative for Proposed Transferee	Title (if applicable)
Signature of Preparer	Date
Name of Preparer (print or type)	Title (if applicable)

☐ Check the box if additional signatures are necessary. If so, please reproduce this sheet and attach signed copies to this sheet.

Connecticut Department of
Energy & Environmental Protection

Confirmation of Closing – Before License Transfer Approval

Complete this form only in the case where the closing has occurred after submittal of the license transfer registration form and ***before*** the department has approved the transfer of licenses. Once such closing has been completed submit this form to the applicable address indicated below, confirming the completion of the change in ownership of the facility.

To be completed by Transferee (registrant):

The undersigned confirm that the change in ownership of the _____
[address of facility]

facility from _____ to _____
[name of transferor – current license holder] [name of transferee - registrant]

occurred on the following date., _____
[date of closing]

Signature of Authorized Representative for Transferee

Printed Name of Authorized Representative for Transferee

Title of Authorized Representative for Transferee

Please submit this completed form, a copy of the department license transfer approval and any supporting documents to:

For mulit media license transfer requests (for example, transferring a waste, water and air license):	*For single media license transfer requests (for example , only transferring air licenses):*
OFFICE OF PLANNING AND PROGRAM DEVELOPMENT, 3RD FLOOR **DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION** **79 ELM STREET** **HARTFORD, CT 06106-5127** **ATTENTION: BOB HANNON**	**[INSERT APPLICABLE PROGRAM, for example, "AIR ENGINEERING]** **DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION** **79 ELM STREET** **HARTFORD, CT 06106-5127** **ATTENTION: [INSERT Program Staff Name]**

Stormwater Pollution Control Plan

Expansion and Improvements

at State Veterans Cemetery
City of Middletown

City of Middletown
Middlesex County, Connecticut

Prepared for Submission to:
Connecticut Department of Energy and Environmental Protection

Submission Date: June 1, 2014
Revision Date: September 4, 2014

Prepared by:
BL COMPANIES
150 Trumbull St
Hartford, Connecticut 06103
Phone: (860) 249-2200 Fax (860) 249-2400

Prepared for:
State of Connecticut
Department of Construction Services
Department of Veterans Affairs

Table of Contents

1. Site Plan

The Stormwater Pollution Control Plan (SWPCP) has been prepared in accordance with Section 22a-430b of the Connecticut General Statutes, and the General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, effective on October 1, 2013. The SWPCP has addressed pre- and post-construction issues associated with stormwater management during construction. All actions required by this plan shall be followed by the Registrant per the conditions of the General Permit.

The Site Plans can be found in Appendix A.

2. Site Description

Narrative Description

The Veterans Cemetery project consists of two parcels, the first parcel is 25.54 acres, belongs to State of Connecticut Department of Veteran's Home and Hospital Commission, located at 317 Bow Lane in Middletown, Middlesex County, Connecticut. The second parcel is 7.60 acres, belongs to State of Connecticut/ Connecticut Valley Hospital. This two-parcel site is bound on the west by residential, to the east by another cemetery, to the north by Bow Lane and to the south by a portion of commercial parking area and wooded area. The site is currently a cemetery with an administrative building, bituminous driveways with on-street parking, concrete sidewalks, a storm conveyance system and is serviced by water and sanitary sewer services.

The proposed expansion and improvements to the cemetery include a columbarium with associated driveway and parking spaces, concrete walkways, parking area, drainage system and utilities services. The parking area in front of the administrative building will be redesigned to accommodate handicapped parking spaces. In addition, the two 18-feet wide driveways will be constructed at the south cemetery area to improve the vehicular circulation.

The cemetery expansion and improvements will increase the overall impervious area to the site. Stormwater management for the proposed development consists of conveying runoff from the columbarium through an underground detention system and parking area through a rain garden and ultimately discharges to the existing stormwater system on-site. Currently, the existing conditions on the site do not include any retention or stormwater quality features. Portions of the runoff from the proposed development will be directed to the rain garden that designed to detain and infiltrate the full water quality volume. The stormwater will then be conveyed to the existing 18-inch RCP storm pipe and ultimately discharge to the existing 30-inch RCP pipe at Bow Lane.

The proposed project consists of both closed and open storm drainage system components. Rain Garden, Underground Detention System and Yard Drain inlets are proposed for use in this project. The closed drainage system pipes for the site portion of the project will utilize Reinforced Concrete Pile (RCP).

Estimated Disturbed Area

Based on the current site plans, the site disturbance is approximately 3.4 acres. Through the use of rain gardens and underground detention system to offset any increase in new impervious surfaces, there is a net increase of approximately 49,746 square feet of effective impervious surfaces.

Estimated Runoff Coefficient

Detailed hydrologic computations were prepared to determine hydrologic variables including runoff coefficients for pre and post development conditions. The pre-development site runoff weighted runoff coefficient is 0.35 while the post-development site weighted runoff coefficient is 0.41. The increase in the runoff coefficient is due to the proposed improvements. See Appendix D for the runoff coefficient calculations.

3. Construction Sequencing

The proposed construction staging associated with the project will limit construction operations as detailed below. The contractor will be required to stabilize disturbed areas using approved best management practices to comply with construction sequencing, erosion and sedimentation control plans and this SWPCP.

The anticipated starting date for construction is December 2014 with completion anticipated in December 2015. Appropriate erosion control measures as described herein, shall be installed by the contractor prior to the commencement of all demolition or construction activity. Schedule work to minimize the length of time that bare soil will be exposed. The following provides a description of recommended sequencing for major operations under this Contract:

Sequence and Schedule of Major Operations

General Notes:

a. Clearing, grubbing and major sitework should not be performed prior to the installation of Erosion and Sedimentation (E&S) control measures. E&S control practices will be maintained until permanent protection is established and/or the disturbed areas are stabilized by seeding, mulching, paving, stone cover or sod application to reduce the amount of exposed soil.

b. All construction staging will occur within the established E&S controls and the designated construction areas.

Sequence of Construction

The sediment and erosion control plan was developed to protect the existing roadway and storm drainage systems, adjacent properties, and any adjacent wetland area and any adjacent watercourse from sediment laden surface runoff and erosion. A construction sequence is provided to provide surface runoff erosion controls prior to the beginning of project demolition and/or construction.

Contingency erosion plan

The contractor shall install all specified erosion control measures and will be required to maintain them in their intended functioning condition. The Civil Engineer shall have the authority to require supplemental maintenance or additional measures if field conditions are encountered beyond what would normally be anticipated.

General Site Construction sequence

The following construction sequence is recommended:

1. Contact Connecticut Department of Construction Service and Department of Veterans Affairs agent at least forty-eight (48) hours prior to commencement of any demolition, construction or regulated activity on this project.
2. Clearing limits shall be physically marked in the field and approved by the Department of Construction Services agent prior to the start of work on the site. Install tree protection and perimeter silt fence.
3. Construct construction entrances at construction entrances/exits and wrap filter fabric around grates of catch basins or install silt sacks on catch basin inlets on offsite roads. Install silt fence, waddles and other erosion control devices indicated on these plans at perimeter of proposed site disturbance and install all erosion control measures and tree protection indicated on these plans. Install sediment basins and sediment traps if required at low areas of site or as ordered by the engineer or as shown on

these plans.

4. Clear and grub site. Stockpile chips. Stockpile topsoil. Install erosion controls at stockpiles.
5. Construction staking of all columbarium items, access drives, and parking areas.
6. Selective building and site demolition and removal. Pavement removal
7. Install erosion control perimeter measures. Commence installation of columbarium driveways, parking areas, sidewalks, and utility systems.
8. Commence earthwork. Install additional erosion controls as work progresses and continue site construction, topsoil and seed slopes which have achieved final site grading.
9. Rough grading and filling of subgrades and slopes.
10. Immediately upon discovering unforeseen circumstances posing the potential for accelerated erosion and/or sediment pollution, the operator shall implement appropriate best management practices to eliminate the potential for accelerated erosion and/or sediment pollution.
11. Before disposing of soil or receiving borrow for the site, the contractor must provide evidence that each spoil or borrow area has an erosion and sediment control plan approved by the Connecticut Department of Construction Services and which is being implemented and maintained. The contractor shall also notify the Connecticut Department of Construction Services in writing of all receiving spoil and borrow areas when they have been identified.
12. Continue installation of utilities and burt trail as subgrade elevations are achieved.
13. Throughout construction sequence, remove sediment from behind silt fences, hay bales and other erosion control devices, and from sedimentation basins and sediment traps as required. Removal shall be on a periodic basis (every significant rainfall of 0.25 inch or greater). Inspection of erosion control measures shall be on a weekly basis and after each rainfall of 0.25 inches or greater. Sediment collected shall be deposited and spread evenly upland on slopes during construction.
14. Install utilities and storm drainage system.
15. Install cemetery finishes.
16. Complete grading to subgrades and construct parking area subgrade.
17. Construct curbs, pavement structure and sidewalks
18. Conduct fine grading.
19. Paving of parking areas and driveways
20. Final fine grading of slope and non-paved areas.
21. Place 4" topsoil on slopes after final grading is completed. Fertilize seed and mulch. Seed mixture to be installed April 15 - June 1 or August 15 - October 1. Use erosion control blankets as required or ordered for slopes greater than 3:1 and as shown on landscape plans or erosion control plans. For temporary stabilization beyond seeding dates use annual rye at 4.0 lbs/1,000 s.f. fertilize with 10-10-10 at 1.0 lbs. of nitrogen per 1,000 s.f. and lime at 100 lbs/1,000 s.f. (max.).
22. Landscape non-paved area and perimeter areas.
23. Install signing and pavement markings
24. Clean storm drainage pipe structures, detention systems and water quality devices of debris and sediment.
25. Upon direction of the Connecticut Department of Construction Services agent, erosion and sediment control measures shall be removed following stabilization of the site.

Operation requirements:

Clearing and grubbing operations

1. All sedimentation and erosion control measures, including the installation of perimeter silt fencing and construction entrance will be installed prior to the start of clearing and grubbing and demolition operations.
2. Following installation of all sedimentation and erosion control measures, the contractor shall not proceed with grading, filling or other construction operations until the engineer has inspected and approved all installations.
3. The contractor shall take extreme care during clearing and grubbing operations so as not to disturb

unprotected wetland areas or sedimentation and erosion control devices.

4. Following the completion of clearing and grubbing operations, all areas shall be stabilized with topsoil and seeding or processed aggregate stone as soon as practical.

Rough grading operations

1. During the removal and/or placement of earth as indicated on the grading plan, topsoil shall be stripped and appropriately stockpiled for reuse.
2. All stockpiled topsoil that will not be used within 30 days shall be seeded, mulched with hay, and enclosed by a silt fence.

Filling operations

1. Prior to filling, all sedimentation and erosion control devices shall be properly implemented, maintained and fully installed, as directed by the engineer and as shown on this plan.
2. All fill material adjacent to any wetland areas, if applicable to this project, shall be good quality, with less than 5% fines passing through a #200 sieve (bank run), shall be placed in lift thicknesses not greater than that specified in project specifications and/or the project geotechnical report. Lifts shall be compacted to 95% max. Dry density modified proctor or as specified in the contract specifications or in the geotechnical report.
3. As general grading operations progress, any temporary diversion ditches shall be raised or lowered, as necessary, to divert surface runoff to the sediment basins or sediment traps.

Recommended Method of Temporary Stormwater Handling:

The Contractor is required to provide temporary sediment traps (TST), or temporary sediment basin (TSB) for any disturbance over 2 acres, not to exceed disturbance areas of more than 5 acres. In accordance with the Guidelines any areas of disturbance less than 2 acres can drain to a sediment control system. These controls must be installed prior to commencement of work in these areas. All temporary sediment traps or temporary basins have been designed to provide a minimum of 134 cubic yards of water storage per disturbed acre drained and shall be maintained until final stabilization of the contributing drainage area. This requirement shall not apply to flows from off-site areas and flows from the site that are either undisturbed or have undergone final stabilization where such flows are diverted around the sediment trap or basin. Any exceptions must be approved by the Civil Engineer.

For discharge points that serve an area with more than five (5) disturbed acres at one time, an engineered sediment basin will be designed and installed in accordance with the Guidelines. These engineered sediment basins provide a minimum of 134 cubic yards of water storage per disturbed acre drained and will be maintained until final stabilization of the contributing area. This requirement shall not apply to off-site areas and flows from the site that are either undisturbed or have undergone final stabilization where such flows are diverted around the engineered sediment basin. Outlet structures from engineered sedimentation basins shall not encroach upon a wetland. Any exceptions must be approved by the Civil Engineer.

4. Control Measures

Erosion and Sedimentation Controls

Temporary Sediment Control Measures

For discharge points that serve an area with between 2 and 5 disturbed acres at one time, a temporary sediment basin or temporary sediment trap will be designed and constructed in accordance with the Guidelines. These controls must be installed prior to commencement of work in these areas. All temporary sediment traps or temporary basins have been designed to provide a minimum of 134 cubic yards of water storage per disturbed acre drained and shall be maintained until final stabilization of the contributing drainage area. This requirement shall not apply to flows from off-site areas and flows from the site that are either undisturbed or have undergone final stabilization where such flows are diverted around the sediment trap or basin. Any exceptions must be approved by the Civil Engineer.

For discharge points that serve an area with more than five (5) disturbed acres at one time, an engineered sediment basin will be designed and installed in accordance with the Guidelines. These engineered sediment basins provide a minimum of 134 cubic yards of water storage per disturbed acre drained and will be maintained until final stabilization of the contributing area. This requirement shall not apply to off-site areas and flows from the site that are either undisturbed or have undergone final stabilization where such flows are diverted around the engineered sediment basin. Outlet structures from engineered sedimentation basins shall not encroach upon a wetland. Any exceptions must be approved by the Civil Engineer.

Permanent Sediment Control Measures

Water quality will be achieved with the retention of the site, stormwater runoff via rain gardens as well as the implementation of a site maintenance program and a stormwater treatment train. The maintenance measure used on-site will be routine impervious surface sweeping, maintenance of all lawns and other grassed areas and regular tree maintenance of the wooded portions of the site. Per the EPA, this will provide 10% Total Suspended Solids (TSS) removal efficiency. The Rain gardens and grass swale will infiltrate runoff, recharging the groundwater and trap and sediment, debris, and/or trash from the parking lot. Per the CT DEEP, a grass swale would provide 25% TSS removal efficiency and the infiltration basins (rain gardens) will provide 75% TSS removal efficiency. Assuming the grass areas of the site act as a sediment trap (forebay), the above treatment train will provide an overall treatment train efficiency of approximately 96.6% TSS removal, exceeding the required minimum TSS removal rate of 80%.

Carlton Grodotzke of Department of Construction Service (860) 713-5640 is assigned the responsibility for implementing this Erosion and Sediment Control Plan. This responsibility includes the installation and maintenance of control measures, informing all parties engaged on the construction site of the requirements and objectives of the plan, notification of the State of Connecticut of any transfer of this responsibility and for conveying a copy of the erosion and sediment control plan if the title to the land is transferred.

Soil Stabilization and Protection

Schedule for Implementation of the Practices

The following timelines will be followed for the 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.
- When final grades are completed in any part of the site, stabilization activities will be implemented within 3 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 through 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. Keep runoff velocities low by keeping slope lengths short, gradients gentle, and preserving intermittent areas of vegetative cover. Areas to be graded with slopes steeper than 3:1 (horizontal: vertical) and higher than fifteen (15) feet shall be graded with appropriate slope benches or engineered slopes in accordance with the Guidelines. Roadway roadbed and shoulders shall be stabilized immediately upon completion of rough grading with compacted road aggregate. Requirements for soil stabilization are detailed in Form 816 article 1.10.03, Best Management Practices.

Stabilization practices

The following stabilization practices will be instituted as soon as possible after lands have been disturbed:

Temporary Stabilization Practices

Temporary practices include, but are not limited to, the following:

- *Silt fences*
- *Geotextile fabric*
- *Erosion Control Blankets*
- *Crushed stone*
- *Special rip-rap*
- *Temporary seeding*
- *Mulch*
- *Anti-tracking pads (Construction Entrances)*
- *Haybales*
- *Sweeping for dust controls*
- *Calcium chloride for dust controls*
- *Water for dust controls*
- *Check dams*
- *Siltation sacks*

Permanent Stabilization Practices

- *Permanent seeding*
- *Vegetation*
- *Riprap*

Temporary and Permanent Structural Practices

The following structural practices will be instituted as part of this contract:

Temporary Structure Practices

- Temporary Construction Entrance - A temporary construction entrance with wash rack shall be installed at the stone construction entrance of the development. Mud and debris shall be washed from all construction vehicles and equipment before leaving the site. The sediment laden water will be diverted to the proposed sediment basin and trap. Water tanks will be used if public water is unavailable.
- Haybale Check Dam - Haybale check dams will be installed in the bottom of grassy swales to filter sediment laden runoff.
- Silt Fence - Silt fence shall be installed downstream of disturbed areas to filter the sediment laden sheet flow.
- Outlet Protection - All storm outlets with the potential of discharging sediment laden runoff shall receive outlet protection.
- Temporary Diversion - Temporary diversions will be installed along the perimeter slopes to direct flow towards temporary sediment basins. The diversion shall be stabilized immediately following installation with temporary or permanent vegetation to prevent erosion.
- Temporary Sediment Basins - Temporary sediment basins will be installed to provide 134 cubic yards of storage per disturbed acre contributing to the basin.

Permanent Structure Practices

- Grass lined channel or ditch
- Storm drain inlet and outlet protection
- Retaining Walls

Sediment Basin and Sediment Trap Conversion to Permanent BMPs

As part of the construction sequencing the contractor will be responsible for scheduling and performing the followings steps to ensure the conversion of the Temporary Sediment trapping measures into permanent Stormwater BMP's. The following steps shall be followed:

1. Contact the Civil Engineer conservation agent(s) prior to conversion or removal of primary sediment control facilities. The Civil Engineer may require a site inspection prior to the conversion or removal of such facilities.
2. Upon stabilization of upslope areas and approval from the Civil Engineer, begin conversion of sediment basin to detention facility and conversion of sediment basin to rain garden facility.
3. Contractor shall dewater facilities as needed. Contractor to provide pump bypass around work area, should runoff be encountered from the inflow pipes.
4. Remove temporary riser from sediment basin and scarify bottom and bring to final grade. Remove riprap outlet from sediment basin and remove temporary bypass from proposed rain garden.
5. Excavate rain garden areas to underdrain elevation. Install underdrain piping and outlet structures within facilities.
6. In the event any problems occur or changes are required, the inspector must be notified for immediate solution.
7. Backfill and install media layer and filtration media. Contractor shall notify district during this conversion work to be present to inspect the installation.
8. Upon review and approval from the Civil Engineer, permanently stabilize side slopes of rain garden facilities and detention basin per landscape plan and install required plan material in facilities.
9. Upon direction of the Civil Engineer, erosion and sediment control measures shall be removed following stabilization of the site. Immediately seed and stabilize any areas disturbed during best management practices (BMP) removal.

Maintenance

The proposed project has been designed in accordance with, and complies with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control (the Guidelines), the 2004 Connecticut Stormwater Quality Manual and Public Act 83-388. Best Management Practices (BMPs) will primarily consist of E&S controls during construction. Maintenance shall be performed in accordance with the contract special provisions, permits, and Connecticut Guidelines for Soil Erosion and Sedimentation Control. The guidelines provide descriptions of the general maintenance activities required for each of the erosion and sedimentation controls and structures controls as well as inspection recommendations. However, the contract special provisions and permits may require more stringent inspection and maintenance intervals than those specified in the guidelines. In all cases, the more stringent requirements shall govern.

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

- All E&S controls will be inspected daily as well as within 24 hours of storm events to ensure they are still properly located, anchored, and in good working condition. All necessary repairs and/or replacements shall be made promptly by the Contractor as needed. Sediment and debris build-up will be removed by the Contractor as required based upon the outcome of inspections.
- Perimeter sediment control systems will be inspected daily to ensure they are properly secured and functioning as designed. Cleaning will occur when accumulated sediments reach ½ the original height of the silt or haybale fence or as directed by the Civil Engineer. If perimeter fencing is breached at any location, the breach will be immediately repaired by the Contractor and the repair will be verified by the Civil Engineer and/or the inspecting agent.
- Following the completion of construction, the Contractor shall repair any eroded areas as directed by the Civil Engineer. The Contractor shall repair all eroded slopes, displaced rip rap or geotextile matting, and shall clean any sediment from exposed rip-rap surfaces.
- The Contractor shall remove any dirty crushed stone and replace it with clean crushed stone as tracking pads (construction entrances) become saturated with mud and sediments during the course of construction. This is to be done to ensure that the tracking pads (construction entrances) are functioning properly to minimize offsite transport of sediments.
- The Contractor will clear sediment and debris from all drainage structures and pipes as required in order to keep the system functioning properly during construction and after the completion of construction. Culvert outlet protection devices shall be cleaned when sediment reaches the 50% volume level, with the excavated materials disposed of by removing off-site. The Civil Engineer will specify an appropriate inspection and maintenance schedule for all temporary and permanent sedimentation basins.

Dewatering Wastewaters

Dewatering Guidelines

If encountered, the dewatering of the site shall be accomplished in such a manner that it minimizes the discoloration of the receiving waters. No discharge of dewatering wastewater(s) shall contain or cause a visible oil sheet, floating solids or foaming in the receiving water. The dewatering wastewaters will be infiltrated into the ground unless otherwise directed by the Civil Engineer. When dewatering is necessary, pumps used for same shall not be allowed to discharge directly into a wetland or watercourse. Prior to any dewatering, the Contractor must submit to the Civil Engineer a written proposal for specific methods and devices to be used for same, and must obtain the Engineer's written approval of such methods and devices, 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 Civil Engineer determines that a pumping operation is causing turbidity problems, the Contractor shall halt said operation until a means of controlling the turbidity is submitted by the Contractor in writing to the Civil Engineer, approved in writing by the Civil Engineer and implemented by the Contractor.

Post Construction Stormwater Management

Post Construction Performance Standards

After the project is complete, the Registrant or any subsequent property owner will perform the following maintenance and restorative measures at the specified intervals:

a. Sediment will be removed from drainage structures annually or as needed. Additional cleaning and removal of debris will occur after rainfall if needed.
b. Litter/debris will be removed from the site regularly.
c. Mowing and maintenance of the turf areas and vegetated areas will occur as needed.
d. Pipes will be inspected for structural deterioration annually or as needed.
e. Embankments and side slopes of swales will be inspected and repaired annually or as needed.
f. Convert temporary sediment traps and basins into permanent BMP's, procedure follows.

Post Construction Control Measures

Velocity dissipation is an important long-term control to reduce the potential for erosion and sedimentation within the project area. The project will incorporate the following BMPs to promote long-term, permanent velocity dissipation:

- *Flared culvert ends*
- *Riprap Aprons*
- *Vegetated swales*

Post Construction Requirements

Following the completion of construction, the contractor shall repair all eroded areas and shall clean sediment covered stones and surfaces. Prior to the filing of the termination notice, the contractor shall remove all silt fence from the construction site and clean all structural stormwater structures

Other Controls

The following controls must be implemented:

Waste Disposal

Best management practices shall be implemented to minimize the discharge of litter, debris, building materials, hardened concrete waste, or similar materials to waters of the State. Additionally,

a. A waste collection area will be designated onsite. The selected area will minimize truck travel through the site and that does not allow will not drain directly to the adjacent wetlands.
b. Containers shall have lids so they can be covered before periods of rain.
c. Waste collection shall be scheduled regularly waste to prevent the containers from overfilling.
d. Spills shall be cleaned up immediately.
e. Defective containers or that may cause leaks or spills will be identified through regular inspection. Any found to be defective will be repaired or replaced immediately.

f. Any stockpiling of lumber or building materials should be confined to the area of disturbance.

g. No waste material shall be disposed of in areas where said waste might reach the stormwater system or discharged to waters of the State or pollute the receiving waters.

h. All construction vehicle maintenance/repairs shall not be conducted in areas where spills/waste might reach the stormwater system or otherwise pollute the receiving waters. Likewise, storage of materials which have the potential to pollute receiving waters shall be stored off-site or in safe areas on site and in accordance with state requirements and permits.

Throughout the duration of the work, the contractor must maintain on site a supply of absorbent pads and other approved materials needed to treat any hazardous spill or contamination. All spills or contaminations must be reported immediately to the DEEP Hazardous Materials Office as well as Local Authorities.

Washout Areas

The contractor shall washout all applicators, containers, vehicles and equipment for concrete, paint and other materials shall in a designated washout area. There shall be no surface discharge of washout wastewaters from this area.

The washout areas shall be sited such that it is outside of any buffers and at least 100 feet from any stream, wetland or other sensitive resource; or in an entirely self-contained washout system. The Contractor shall clearly flag off and designate areas to be used for washing and conduct such activities only in these areas. The Contractor shall direct all washwater into a container or pit designed such that no overflows can occur during rainfall or after snowmelt.

In addition, dumping of liquid wastes in storm sewers is prohibited. The Contractor shall remove and dispose of hardened concrete waste consistent with practices developed for the "Waste Disposal" section above. At least once per week, the Contractor shall inspect any containers or pits used for washout to ensure structural integrity, adequate holding capacity, and to check for leaks or overflows. If there are signs of leaks, holes or overflows in the containers or pits that could lead to a discharge, the Contractor shall repair them prior to further use. For concrete washout areas, the Contractor shall remove hardened concrete waste whenever the hardened concrete has accumulated to a height of one half of the container or pit or as necessary to avoid overflows. A narrative of maintenance procedures and a record of maintenance and inspections shall be included in the Plan.

Anti-Tracking Pads (Construction Entrances) and Dust Control

Off-site vehicle tracking of sediments and the generation of dust shall be minimized. Construction entrance tracking pads shall be utilized at the appropriate locations in addition to dust control measures.

Prior to any earthwork, an anti-tracking pad (construction entrance) shall be placed at the entrance to the work area in order to reduce mud and other sediments from leaving the site. 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. Roads adjacent to a construction site shall be 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 either (1) increase the length of the construction entrance, or (2) modify the construction access road surface. Construction site dust will be controlled by sprinkling the ground surface with water until it is moist on an as-needed basis.

Chemical and Petroleum Products

All chemical and petroleum product container stored on site (excluding those contained within vehicles and equipment) 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 container shall be stormed under a roofed area except for those chemicals stored in containers of 100 gallon capacity of more, in which case a roof is not required. Double-walled tanks satisfy this requirement.

Maintaining and Storing Vehicles and Equipment

The following measures shall be practiced while maintaining and storing construction equipment on the site:

- Fueling of equipment or machinery within 100 feet of any wetland or watercourse shall not be allowed.
- Equipment that may malfunction and cause leaks will be inspected regularly. Equipment that is found to have leaks will be repaired immediately or removed from the site.
- Equipment repair and maintenance shall not occur on the site unless the equipment cannot be removed. In this case, all practical measures shall be utilized to prevent contamination of surface and ground water from wash water and fuel, coolant, or antifreeze spills or leaks.

Vehicle Movement

Vehicular movement should be directed to established parking areas.

General Note

The cut face of earth excavation and permanent exposed faces of fills shall not be steeper than two horizontal to one vertical (2:1). All disturbed areas outside the limit of roadway, pavement, driveways, parking areas, buildings, concrete aprons and sidewalks shall be stabilized. Provision should be made to conduct surface water safely to storm drains to prevent surface runoff from damaging cut faces and fill slopes.

5. Runoff Reduction and Low Impact Development Information

There are various runoff reduction practices implemented on site including grass swales, and subsurface infiltrating detention ponds. The soil maps for this area, as well as test pit and soil boring information can be found in the appendices of this report and were used to determine the best areas for the siting of the driveways, and stormwater management entities.

Volume Reduction

In accordance with the CT DEEP Bureau of Materials Management & Compliance Assurance *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities*, DEEP-WPED-GP-015, the post constriction Stormwater management requirements dictate that the permittee shall utilize runoff reduction practices to meet runoff volume requirements.

Through the construction of the infiltrating rain garden, and underground detention system, the entire water quality volume is retained on site.

Table 1 below shows the Water Quality Volumes for the various site drainage areas. (See Appendices B for calculations).

Table 1

Water Quality Volumes

Analysis Point		Required Water Quality Volume		Stormwater Volume Retained on Site
		ac-ft	ft^3	
Rain Garden	PDA-2A	0.022	958	3,267
Underground Detention System	PDA-2B	0.026	1,133	5,924

6. Inspection

In accordance with the CT DEEP Bureau of Materials Management & Compliance Assurance *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities*, DEEP-WPED-GP-015, the Registrant or their agent shall routinely inspect the site for compliance until the Notice of Termination has been submitted. The inspection procedures for the routine inspections shall be addressed and implemented in the following manner:

Routine Inspections

- The Contractor shall maintain a rain gauge on-site to document rainfall amounts. At least once a week and within 24 hours of the end of a storm that generates a discharge, a qualified inspector (provided by the Contractor, see qualification specifications below), as defined in the "Definitions" section (Section 2) of this general permit, shall inspect, at a minimum, the following:
    - Disturbed areas of the construction activity that have not been finally stabilized
    - Verification all erosion and sedimentation control measures are operating correctly.
    - Verification that discharge areas are not adversely affecting receiving waters.
    - Inspection of the disturbed areas of the construction activity for evidence of, or the potential for pollutants entering the drainage system.
    - All structural control measures
    - Soil stockpile areas
    - Washout areas
    - Inspection of vehicle drive entrances and exits for evidence of off-site sediment tracking.

  These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and impacts to the receiving waters. Locations where vehicles enter or exit the site shall also be inspected for evidence of off-site sediment tracking. For storms that end on a weekend, holiday or other time after which normal 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 storms of less than 0.5 inches, an inspection shall occur immediately upon the start of the 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.
- The qualified inspector(s) shall evaluate the effectiveness of erosion and sediment controls, structural controls, stabilization practices, and any other controls implemented to prevent pollution and determine if it is necessary to install, maintain, or repair such controls and/or practices to improve the quality of stormwater discharge(s). Erosion and sediment control measures shall be observed to ensure that they are operating correctly. Where discharge locations or points are assessable, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.
- A report shall be prepared and retained as part of the Plan. This report shall summarize: the scope of the inspection; name(s) and qualifications of personnel making the inspection; the date(s) of the inspection; weather conditions including precipitation information; major observations relating to erosion and sediment controls and the implementation of the Plan; a description of the

stormwater discharge(s) from the site; and any water quality monitoring performed during the inspection. The report shall be signed by the Registrant or his/her authorized representative in accordance with the "Certification of Documents" section (subsection 5(i)) of this general permit.

The report shall include a statement that, in the judgment of the qualified inspector(s) conducting the site inspection, the site is either in compliance or out of compliance with the terms and conditions of the Plan and permit. If the site inspection indicates that the site is out of compliance, the inspection report shall include a summary of the remedial actions required to bring the site back into compliance. Non-engineered corrective actions (as identified in the Guidelines) shall be implemented on site within 24 hours and incorporated into a revised Plan 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 Plan within ten (10) days of the date of inspection, unless another schedule is specified in the Guidelines or is approved by the commissioner. During the period in which any corrective actions are being developed and have not yet been fully implemented, interim measures shall be implemented to minimize the potential for the discharge of pollutants from the site.

- Inspectors from the DEEP and the appropriate District or City may inspect the site for compliance with this general permit at any time construction activities are ongoing and upon completion of construction activities to verify the final stabilization of the site and/or the installation of post-construction stormwater management measures pursuant to Section 6(a).

Inspection Personnel Qualifications

Within the first 30 days following commencement of the construction activity on the site, the Registrant shall contact: (1) the appropriate District; or (2) a qualified soil erosion and sediment control professional or a qualified professional engineer to inspect the site. The site shall be inspected at least once and no more than three times during the first 90 days to confirm compliance with the general permit and proper initial implementation of all controls measures designated in the Plan for the site for the initial phase of construction. For sites not inspected by District personnel, the inspector shall be someone who:

(a) is not an employee, as defined by the Internal Revenue Service in the Internal Revenue Code of 1986, of the registrant, and

(b) has not engaged in any activities associated with the preparation, planning, designing or engineering of such plan for soil erosion and sediment control or plan for engineered stormwater management systems on behalf of such registrant, and

(c) is not under the same employ as any person who engaged in any activities associated with the preparation, planning, designing or engineering of such plans and specifications for soil erosion and sediment control or plans and specifications for engineered stormwater management systems on behalf of such registrant, and

(d) has no ownership interest of any kind in the project for which the registration is being submitted.

7. Monitoring

As outlined in the *General Permit for the Discharge of Stormwater and Dewatering Wastewaters Associated with Construction Activities*, the site monitoring requirement requirements are as follows:

Monitoring Frequency

- Turbidity Monitoring is required on a monthly basis with a method consistent with 40 CFR Part 136 when there is discharge of stormwater form the site while construction activity is ongoing, until final stabilization of the drainage area associated with each outfall is achieved.
- The Registrant is required to take samples during normal working hours. If sampling is discontinued due to the end of normal working hours, the Registrant shall resume sampling the following morning or the morning of the next working day following a weekend or holiday as long as discharge continues.
- Sampling may temporarily be suspended at any time conditions exist that may reasonably pose a threat to the safety of the person taking the sample. Such conditions may include high winds, lightening, impinging wave or tidal activity, intense rainfall or other hazardous condition. Once the unsafe condition is no longer present, sampling shall resume.
- If there is no stormwater discharge during a month, sampling is not required.

Sample Collection

- All samples shall be collected from discharges resulting from a storm event that occurs at least 24 hours after any previous storm event generating a stormwater discharge. Any sample containing snow or ice melt must be identified on the Stormwater Monitoring Report. Sampling of snow or ice melt in the absence of a storm event is not a valid sample.
- Samples shall be grab samples taken *at least* three separate times during a storm event and shall be *representative* of the flow and characteristics of the discharge(s). Samples may be taken manually or by an in-situ turbidity probe or other automatic sampling device equipped to take individual turbidity readings (i.e. not composite). The first sample shall be taken within the first hour of stormwater discharge from the site. In cases where samples are collected manually and the discharge begins outside of normal working hours, the first sample shall be taken at the start of normal working hours.

Sample Locations

- Sampling is required of all point source discharges of stormwater from disturbed areas except as may be modified for linear projects under subparagraph (ii) below. Where there are two or more discharge points that discharge substantially identical runoff, based on similarities of the exposed soils, slope, and type of stormwater controls used, a sample may be taken from just one of the discharge points. In such case, the Contractor shall report that the results also apply to the substantially identical discharge point(s). No more than 5 substantially identical outfalls may be identified for one representative discharge. If such project is planned to continue for more than one year, the Registrant shall rotate twice per year the location where samples are taken so that a different discharge point is sampled every six months. The Plan must identify each outfall authorized by this permit and describe the rationale for any substantially identical outfall determinations.

- All sampling point(s) shall be identified in the Plan and be clearly marked in the field with a flag, stake, or other visible marker.

Turbidity Values

- The stormwater discharge turbidity value for each sampling point shall be determined by taking the average of the turbidity values of all samples taken at that sampling point during a given storm.

Stormwater Monitoring Reports

- Within thirty (30) days following the end of each month, Registrant shall enter the stormwater sampling result(s) on the Stormwater Monitoring Report (SMR) form (available at www.ct.gov/deep/stormwater) and submit it in accordance with the NetDMR provisions in subsection F, below, or, if the Registrant has opted out of NetDMR, to the following address:

  Bureau of Materials Management and Compliance Assurance
  Water Permitting and Enforcement Division (Attn: DMR Processing)
  Connecticut Department of Energy and Environmental Protection
  79 Elm Street
  Hartford, CT 06106-5127

- If there was no discharge during any given monitoring period, the Registrant shall submit the form as required with the words "no discharge" entered in place of the monitoring results.
- If the Registrant monitors any discharge more frequently than required by this general permit, the results of this monitoring shall be included in additional SMRs for the month in which the samples were collected.
- If sampling protocols are modified due to the limitations of normal working hours or unsafe conditions in accordance with Section 5(c)(1)(A)(ii) or (iii) above, a description of and reason for the modifications shall be included with the SMR.
- If the Registrant samples a discharge that is representative of two or more substantially identical discharge points, the Registrant shall include the names or locations of the other discharge points.

NetDMR Reporting Requirements

- Prior to one-hundred and eighty (180) days after the issuance of this permit, the Registrant may either submit monitoring data and other reports to the Department in hard copy form or electronically using NetDMR, a web-based tool that allows Registrant to electronically submit stormwater monitoring reports through a secure internet connection. Unless otherwise approved in writing by the commissioner, no later than one-hundred and eighty (180) days after the issuance of this permit the Registrant shall begin reporting electronically using NetDMR. Specific requirements regarding subscription to NetDMR and submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

  (a) Submittal of NetDMR Subscriber Agreement
  On or before fifteen (15) days after the issuance of this permit, the Registrant and/or the person authorized to sign the Registrant's discharge monitoring reports ("Signatory Authority") as described in RCSA Section 22a-430-3(b)(2) shall contact the Department at deep.netdmr@ct.gov and initiate the NetDMR subscription process for electronic submission of Stormwater Monitoring Report information. Information on NetDMR is available on the

Department's website at www.ct.gov/deep/netdmr. On or before ninety (90) days after issuance of this permit the Registrant shall submit a signed and notarized copy of the *Connecticut DEEP NetDMR Subscriber Agreement* to the Department.

(b) Submittal of Reports Using NetDMR
Unless otherwise approved by the commissioner, on or before one-hundred and eighty (180) days after issuance of this permit, the Registrant and/or the Signatory Authority shall electronically submit SMRs required under this permit to the Department using NetDMR in satisfaction of the SMR submission requirements of Sections 5(c)(2)(A) of this permit. SMRs shall be submitted electronically to the Department no later than the 30thday of the month following the completed reporting period. Any additional monitoring conducted in accordance with 40 CFR 136 shall be submitted to the Department as an electronic attachment to the SMR in NetDMR. Once a Registrant begins submitting reports using NetDMR, it will no longer be required to submit hard copies of SMRs to the Department. NetDMR is accessed from: http://www.epa.gov/netdmr.

(c) Submittal of NetDMR Opt-Out Requests
If the Registrant is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for electronically submitting SMRs, the commissioner may approve the submission of SMRs in hard copy form ("opt-out request"). Opt-out requests must be submitted in writing to the Department for written approval on or before fifteen (15) days prior to the date a Registrant would be required under this permit to begin filing SMRs using NetDMR. This demonstration shall be valid for twelve (12) months from the date of the Department's approval and shall thereupon expire. At such time, SMRs shall be submitted electronically to the Department using NetDMR unless the Registrant submit s a renewed opt-out request and such request is approved by the Department.

All opt-out requests and requests for the NetDMR subscriber form should be sent to the following address or by email at deep.netdmr@ct.gov:

Attn: NetDMR Coordinator
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

8. Contractor Certification Statement

Contractors and Subcontractors

Each Contractor and Subcontractor that will perform actions on the site which may reasonably be expected to cause or have the potential to cause pollution of the waters of the State shall sign the certification statement included in this plan.

Certification Statement

"I certify under penalty of the law that I have read and understand the terms and conditions of the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. I understand that as a contractor or subcontractor at the site, I am authorized by this general permit, and must comply with the terms and conditions of this general permit, including but not limited to the requirements of the Stormwater Pollution Control Plan prepared for the site."

CONTRACTOR CERTIFICATION

Signature: _____ **Date:** _____

Name: _____ **Title:** _____

Company name: _____

Address: _____

Telephone: _____ **Fax:** _____

Project site: ***State Veterans Cemetery, 317 Bow Lane, Middletown Connecticut***

SUBCONTRACTOR CERTIFICATION

Signature: _____ **Date:** _____

Name: _____ **Title:** _____

Company name: _____

Address: _____

Telephone: _____ **Fax:** _____

Project site: ***State Veterans Cemetery, 317 Bow Lane, Middletown Connecticut***

SUBCONTRACTOR CERTIFICATION

Signature: _____ **Date:** _____

Name: _____ **Title:** _____

Company name: _____

Address: _____

Telephone: _____ **Fax:** _____

Project site: ***State Veterans Cemetery, 317 Bow Lane, Middletown Connecticut***

9. Reporting and Record Keeping

Keeping Plans Current

The Registrant is responsible for keeping their Plan in compliance with this general permit at all times. For a period of at least five years from the date that construction is complete, the Registrant shall retain copies of the Plan and all reports required by this general permit, and records of all data used to complete the registration for this general permit, unless the commissioner specifies another time period in writing. Inspection records must be retained as part of the Plan for a period of five (5) years after the date of inspection.

The Registrant shall retain an updated copy of the Plan required by this general permit at the construction site from the date construction is initiated at the site until the date construction at the site is completed.

Revisions to the plan may involve the following actions:

- The Registrant shall amend the Plan if the actions required by the Plan fail to prevent pollution or fail to otherwise comply with any other provision of this general permit. The Plan shall also be amended 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.
- The commissioner may notify the Registrant at any time that the Plan and/or the site do not meet one or more of the minimum requirements of this general permit. Within 7 days of such notice, or such other time as the commissioner may allow, the Registrant shall make the required changes to the Plan and perform all actions required by such revised Plan. Within 15 days of such notice, or such other time as the commissioner may allow, the Registrant shall submit to the commissioner a written certification that the requested changes have been made and implemented and such other information as the commissioner requires, in accordance with the „Duty to Provide Information" and "Certification of Documents" sections (subsections 5(h) and 5(i)) of this general permit.

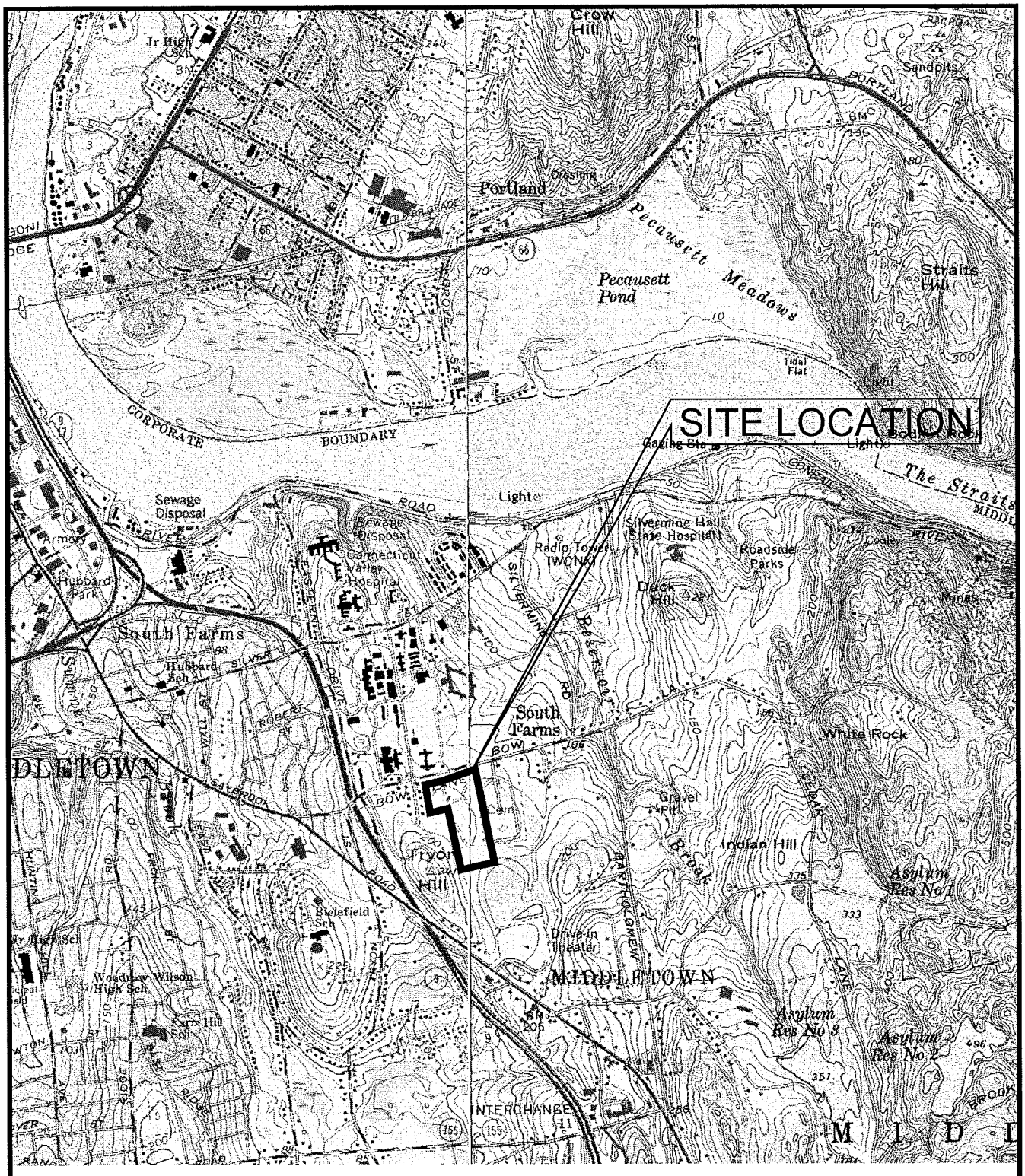
In no event shall failure to complete, maintain or update a Plan, in accordance with the "Development of Contents of the Plan" and "Keeping Plans Current" sections (subsections 5(*b*) (1) and 5(*b*) (5)) of this general permit, relieve a Registrant of responsibility to implement any actions required to protect the waters of the state and to comply with all conditions of the permit.

Appendix A –Maps and Plans

Soils Map

Natural Diversity Data Base Areas

Site Plans



Base map is a reproduction of the U.S.G.S. 7.5 Minute Topographic Quadrangles of Middletown, Connecticut
Scale 1" = 2000'

N

BL Companies

USGS SITE LOCATION MAP

317 BOW LANE
MIDDLETOWN, CONNECTICUT

Designed	K.T.
Drawn	K.T.
Checked	
Approved	
Scale	1"=2000'
Project No.	13C4767
Date	03/21/2014
CAD File	USGS

ATTACHMENT A
USGS

Hydrologic Soil Group—State of Connecticut
(Veterans State Cemetery)

Map Scale: 1:3,740 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 50 100 200 300

Feet
0 150 300 600 900

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: http://websoilsurvey.nrcs.usda.gov
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 11, Nov 19, 2013

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—May 12, 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

Hydrologic Soil Group— Summary by Map Unit — State of Connecticut (CT600)				
Map unit symbol	**Map unit name**	**Rating**	**Acres in AOI**	**Percent of AOI**
3	Ridgebury, Leicester, and Whitman soils, extremely stony	D	3.1	7.3%
6	Wilbraham and Menlo soils, extremely stony	D	0.5	1.3%
40A	Ludlow silt loam, 0 to 3 percent slopes	C	2.0	4.7%
40B	Ludlow silt loam, 3 to 8 percent slopes	C	24.0	56.8%
87B	Wethersfield loam, 3 to 8 percent slopes	C	6.7	15.8%
87C	Wethersfield loam, 8 to 15 percent slopes	C	6.0	14.2%
306	Udorthents-Urban land complex	B	0.0	0.0%
Totals for Area of Interest			**42.2**	**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.

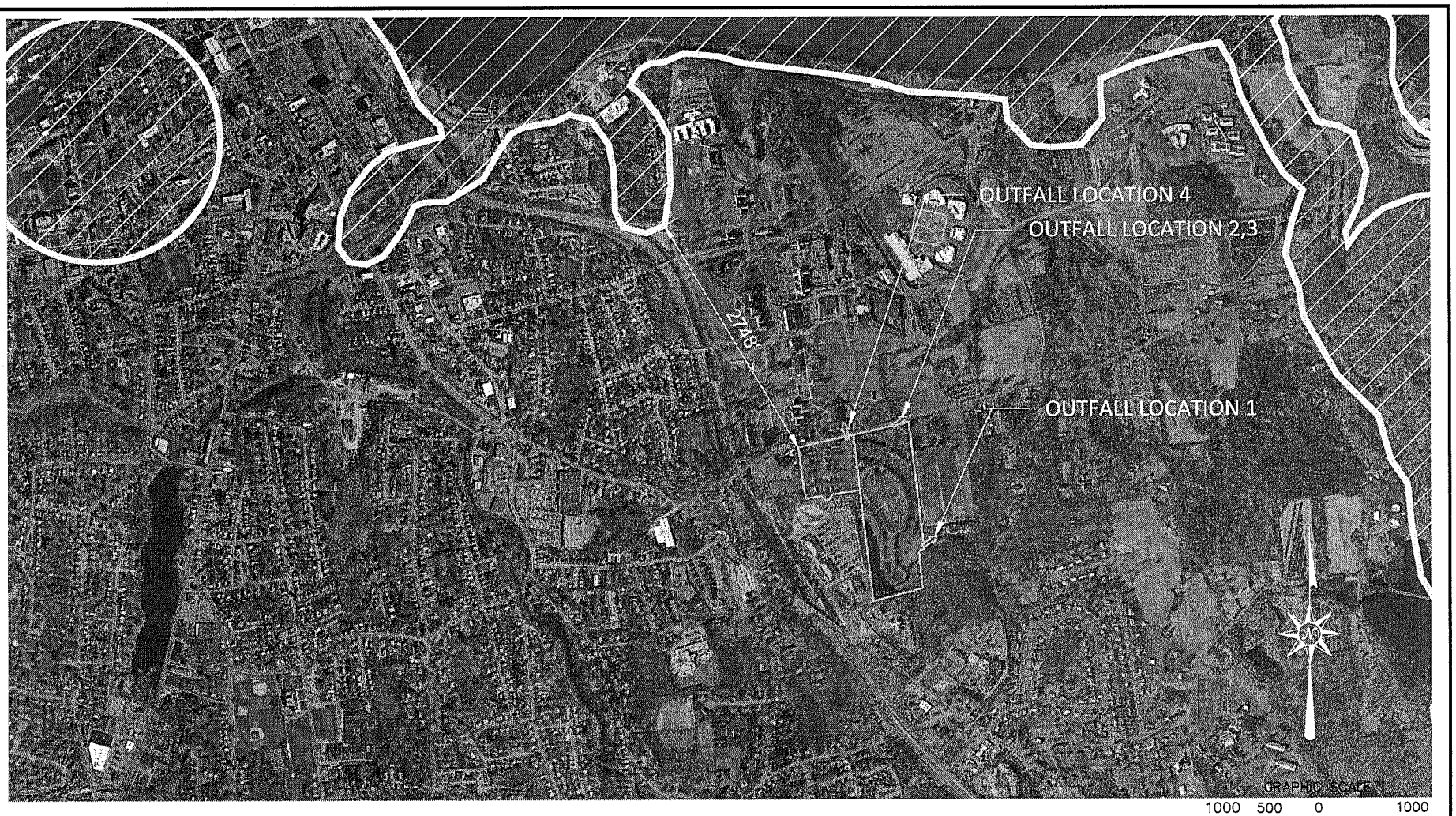
If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: *None Specified*

Tie-break Rule: Higher



BL Companies
ARCHITECTURE
ENGINEERING
ENVIRONMENTAL
LAND SURVEYING

150 Trumbull Street, 6th Floor
Hartford, CT 06103
(860) 249-2200
(860) 249-2400 Fax

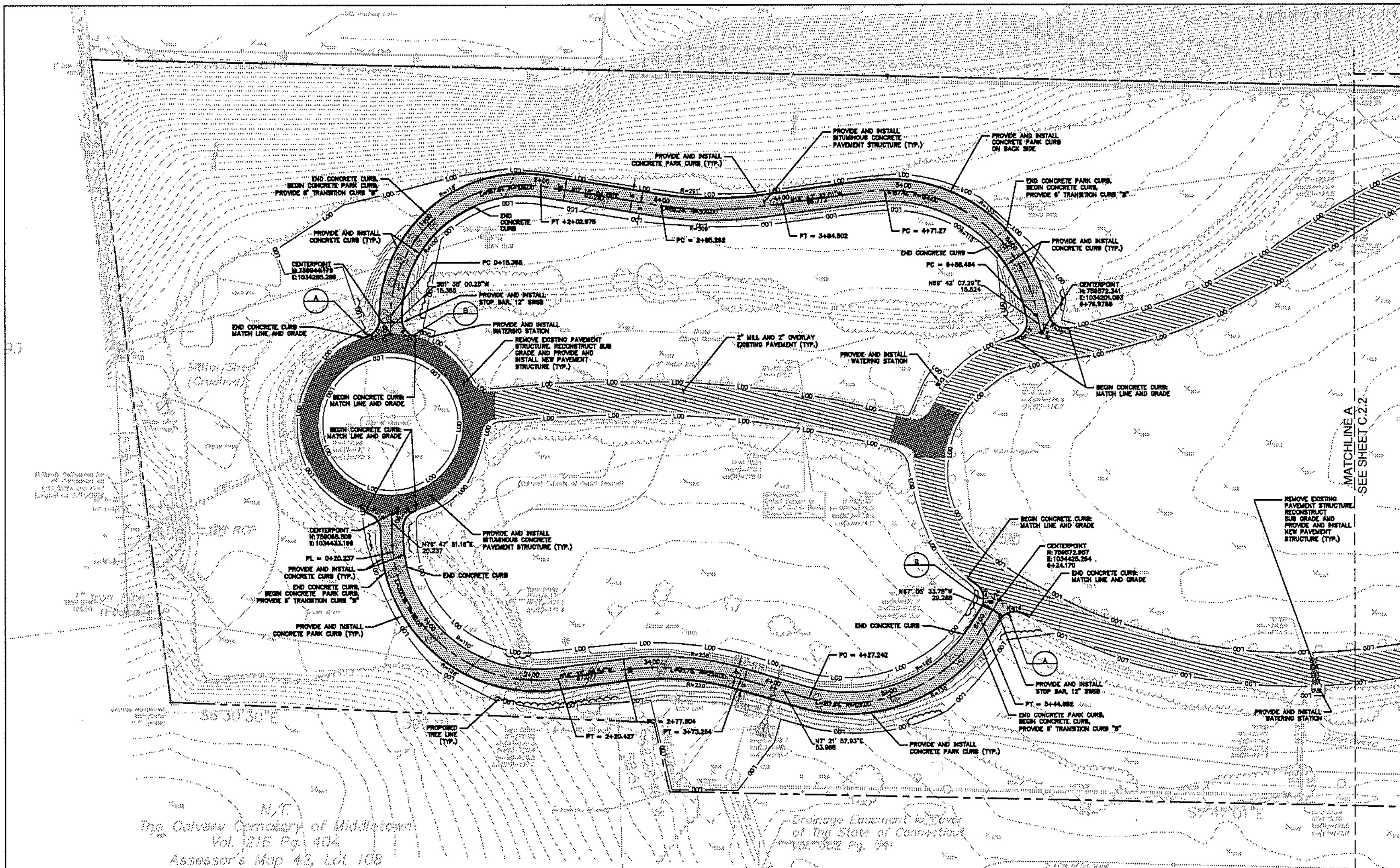
NATURAL DIVERSITY DATABASE FIGURE

STATE VETERANS CEMETERY
317 BOW LANE
MIDDLETOWN, CT

Designed	K.T.
Drawn	K.T.
Checked	
Approved	
Scale	1"=1000'
Project No.	1204226
Date	04/28/14
CAD File	NDDB

ATTACHMENT B

NDDB



LEGEND

Symbol	Description
— — —	PROPERTY LINE
LOD	PROPOSED LIMIT OF DISTURBANCE LINE / CONTRACT LIMIT LINE
	PROVIDE AND INSTALL PARKING LOT STRIPING
	SAW CUT LINE
DJ	DUMMY JOINT
EJ	EXPANSION JOINT
	PROVIDE AND INSTALL CURB
	EDGE OF PAVEMENT (NO CURB)
	PROVIDE AND INSTALL ACCESSIBLE PARKING SYMBOL
	PROVIDE AND INSTALL SIGN
	PROVIDE AND INSTALL BOLLARD
	EXISTING TREE TO REMAIN AND BE PROTECTED
B	SIGN CALLOUT (REFER TO SCHEDULE ON SHEET C.2.1)
	PROPOSED BITUMINOUS CONCRETE PAVEMENT
	PROPOSED CONCRETE SIDEWALK
	2" MILL AND 2" OVERLAY EXISTING PAVEMENT
	REMOVE EXISTING PAVEMENT STRUCTURE, RECONSTRUCT SUBGRADE AND NEW PAVEMENT STRUCTURE

NOTES
1. REFER TO DETAILS AND ENLARGEMENT PLANS FOR ADDITIONAL DUMMY JOINT AND EXPANSION JOINT LAYOUT INFORMATION.

SIGN LEGEND (ENTIRE SITE) TO BE PROVIDED AND INSTALLED

SIGN NO.	C-DOT NO.	LEGEND
A	31-0552Z AND CUSTOM	STOP (1 AT 30", AT MAIN EXIT ONLY) (3 AT 12")
B	CUSTOM	DO NOT ENTER (3 AT 12"x12")
C	31-0829	(3)
D	31-0848	VAN ACCESSIBLE (1)

NOTE: HANDICAPPED SIGNS TO BE INSTALLED IN PIPE BOLLARDS (SEE DETAIL)

GRAPHIC SCALE
40 20 0 40
SCALE IN FEET

REFER TO SHEET C.0.1 FOR ADDITIONAL SITE PLAN NOTES

REFER TO SHEET C.0.0 FOR BENCHMARK LOCATIONS

drawing title: SOUTH CEMETERY SITE PLAN

REVISIONS

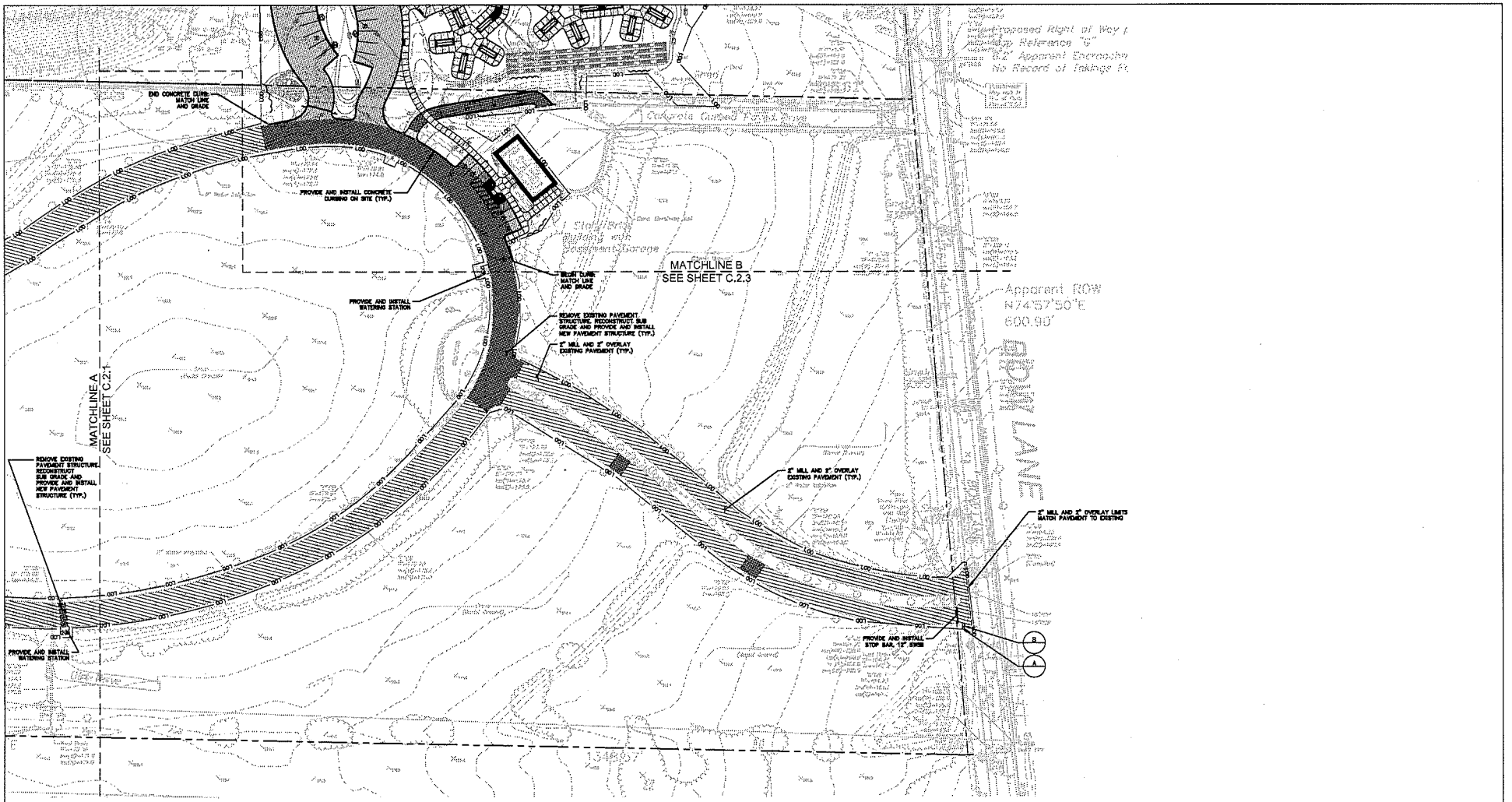
mark	date	description

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

drawing prepared by: BL COMPANIES
150 TRUMBULL STREET, 6TH FLOOR
HARTFORD, CT 06103

project: STATE VETERANS' CEMETERY EXPANSION AND IMPROVEMENTS
MIDDLETOWN, CONNECTICUT

date: 09/03/2014
scale: 1"=40'
drawn by: J.P.E.
approved by: D.J.C.
drawing no.: C.2.1
CAD no.: SP12C422801
project no.: BI-C-283



LEGEND

- PROPERTY LINE
- LOD — PROPOSED LIMIT OF DISTURBANCE LINE / CONTRACT LIMIT LINE
- PROVIDE AND INSTALL PARKING LOT STRIPING
- SAW CUT LINE
- DJ — DUMMY JOINT
- EJ — EXPANSION JOINT
- PROVIDE AND INSTALL CURB
- EDGE OF PAVEMENT (NO CURB)

- PROVIDE AND INSTALL ACCESSIBLE PARKING SYMBOL
- PROVIDE AND INSTALL SIGN
- PROVIDE AND INSTALL BOLLARD
- EXISTING TREE TO REMAIN AND BE PROTECTED
- SIGN CALLOUT (REFER TO SCHEDULE ON SHEET C.2.1)

- PROPOSED BITUMINOUS CONCRETE PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- 2" MILL AND 2" OVERLAY EXISTING PAVEMENT
- REMOVE EXISTING PAVEMENT STRUCTURE, RECONSTRUCT SUBGRADE AND NEW PAVEMENT STRUCTURE

NOTES:
1. REFER TO DETAILS AND ENLARGEMENT PLANS FOR ADDITIONAL DUMMY JOINT AND EXPANSION JOINT LAYOUT INFORMATION.

GRAPHIC SCALE
40 20 0 40
SCALE IN FEET

REFER TO SHEET C.0.1 FOR ADDITIONAL SITE PLAN NOTES

REFER TO SHEET C.0.0 FOR BENCHMARK LOCATIONS

drawing title: NORTH CEMETERY SITE PLAN

REVISIONS

mark	date	description

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

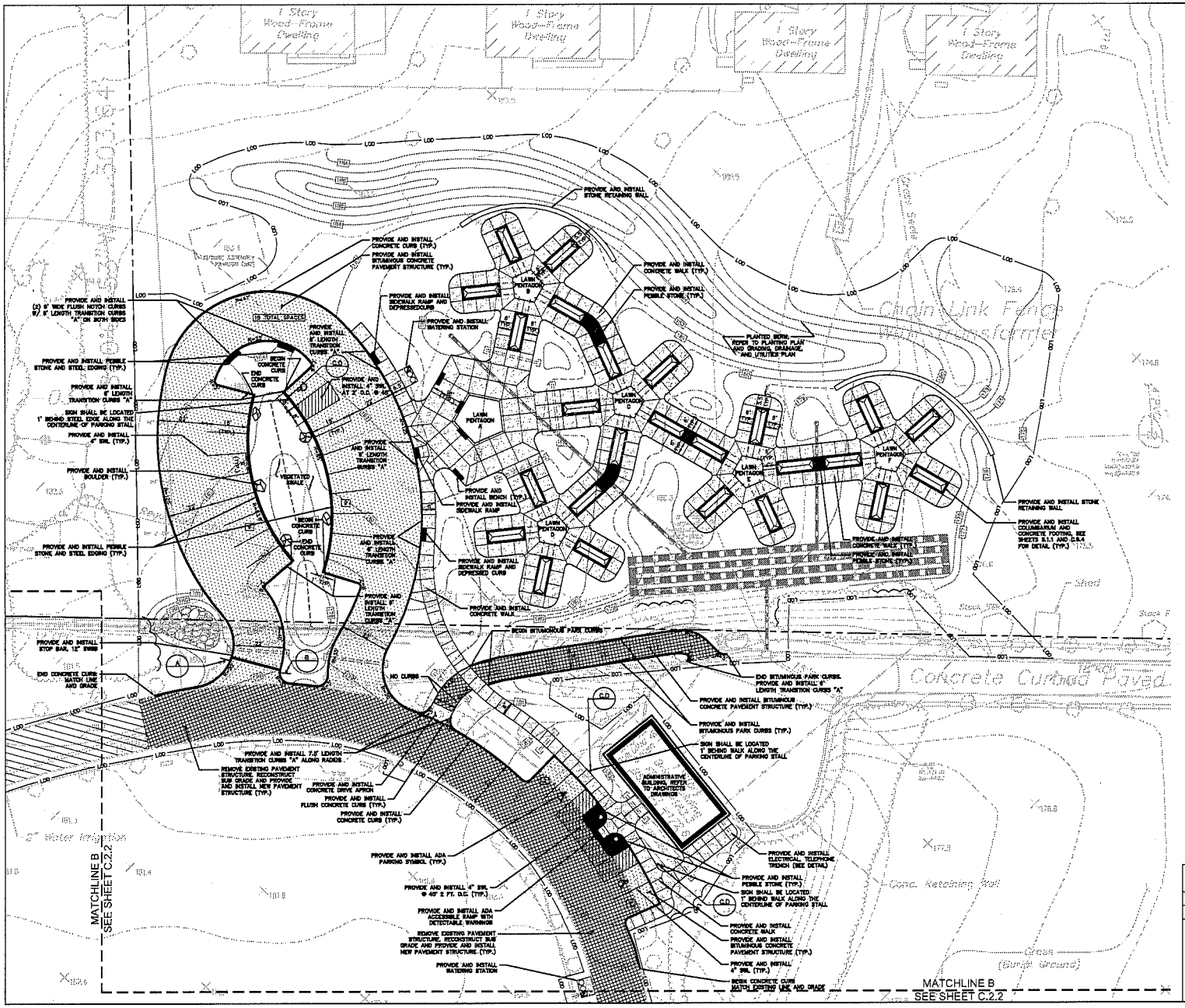
drawing prepared by: BL COMPANIES
150 TRUMBULL STREET, 6TH FLOOR
HARTFORD, CT 06103

date: 04/03/2014
scale: 1"=40'
drawn by: J.P.E.
approved by: D.J.C.

project: STATE VETERANS' CEMETERY EXPANSION AND IMPROVEMENTS
MIDDLETOWN, CONNECTICUT

CAD no.: SP12C422801
project no.: BI-C-283

drawing no.: C.2.2



LEGEND

- LOD — PROPOSED LIMIT OF DISTURBANCE LINE / CONTRACT LIMIT LINE
- PROVIDE AND INSTALL PARKING LOT STRIPING
- SAW CUT LINE
- PROVIDE AND INSTALL STONE WALL
- DJ — DUMMY JOINT
- EJ — EXPANSION JOINT
- PROVIDE AND INSTALL ACCESSIBLE PARKING SYMBOL
- PROVIDE AND INSTALL SIGN AND SIGN POST
- PROVIDE AND INSTALL BOLLARD
- PROVIDE AND INSTALL WHEEL STOP
- PROVIDE AND INSTALL BENCH
- EXISTING TREE TO REMAIN AND BE PROTECTED
- PROVIDE AND INSTALL BITUMINOUS CONCRETE PAVEMENT STRUCTURE
- PROVIDE AND INSTALL CONCRETE SIDEWALK
- PROVIDE AND INSTALL BOULDER
- SIGN CALLOUT (REFER TO SCHEDULE ON SHEET C.2.1)

NOTES:
1. REFER TO DETAILS AND ENLARGEMENT PLANS FOR ADDITIONAL DUMMY JOINT AND EXPANSION JOINT LAYOUT INFORMATION.

SEE SHEET C.2.4 FOR ADDITIONAL DIMENSIONS AND LAYOUT INFORMATION

GRAPHIC SCALE
20 10 0 20
SCALE IN FEET

REFER TO SHEET C.0.1 FOR ADDITIONAL SITE PLAN NOTES

REFER TO SHEET C.0.0 FOR BENCHMARK LOCATIONS

Drawing title: COLUMBARIUM SITE PLAN

REVISIONS

mark	date	description

STATE OF CONNECTICUT
DEPARTMENT OF ADMINISTRATIVE SERVICES
DIVISION OF CONSTRUCTION SERVICES

Drawing prepared by:
BL COMPANIES
150 TRUMBULL STREET, 6TH FLOOR
HARTFORD, CT 06103

date: 06/03/2014
scale: 1"=20'
drawn by: J.P.E.
approved by: D.J.C.
drawing no.: C.2.3

project:
STATE VETERANS' CEMETERY
EXPANSION AND IMPROVEMENTS
MIDDLETOWN, CONNECTICUT

CAD no.: SP12C422603
project no.: BL-C-283

Appendix B –Calculations

Water Quality Volume Calculations

Rainfall Retention Calculations

Runoff Reduction Calculations

Water Quality Calculations

Determine Water Quality Volume

From CT 2004 Stormwater Quality Manual:

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

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

$$R = 0.05 + 0.009(I)$$

Area	Total Area		Impervious Area		Impervious Cover	Volumetric Runoff Coefficient	Water Quality Volume (WQV)		Volume Provided
ID	ac	ft^2	ac	ft^2	%	R	acre-feet	ft^3	ft^3
PDA-2A	0.581	25308	0.264	11500.00	45.44	0.459	0.022	958	2997.0
PDA-2B	0.760	33106	0.305	13286.00	40.13	0.411	0.026	1,133	4095.0

Water Quality Calculations

Determine Water Quality Volume

From CT 2004 Stormwater Quality Manual:

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

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

$$R = 0.05 + 0.009(I)$$

Area	Total Area		Impervious Area		Impervious Cover	Volumetric Runoff Coefficient	Water Quality Volume (WQV)		Volume Req'd	Volume Provided
ID	ac	ft^2	ac	ft^2	%	R	acre-feet	ft^3	yd^3	yd^3
Raingarden	0.581	25,308	0.264	11,500	45.44	0.459	0.022	958	35	111
UG	0.760	33,106	0.305	13,286	40.13	0.411	0.026	1,133	42	152

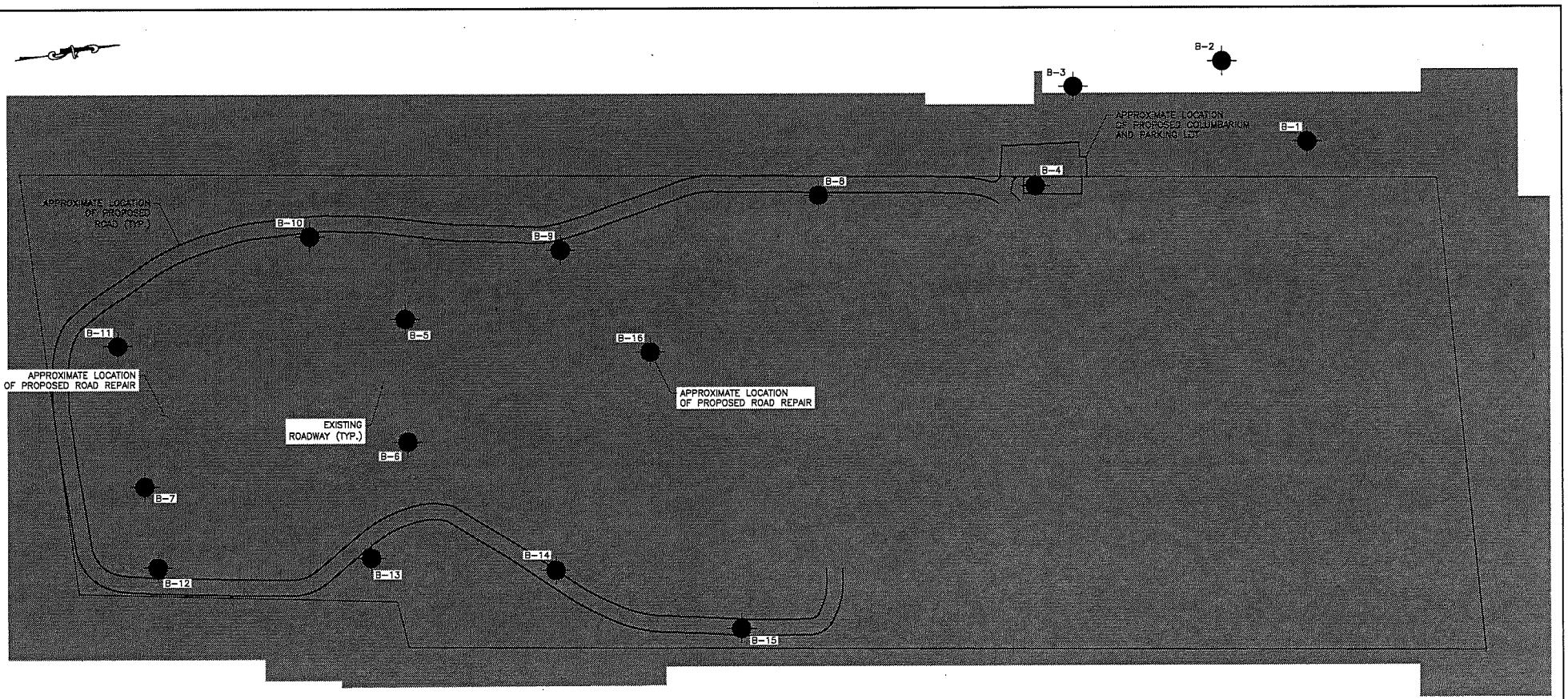
Table 1
Rainfall

Return Period	24-hr Rainfall Depth
2-year	3.3 inches
10-year	5.0 inches
100-year	7.1 inches

Table 2
Pre and Post-development Peak Flow Comparison

Analysis Point	Peak Flow (cfs) / Volume (af)					
	2-Year		10-Year		100 Year	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
POS-1 (to 18" RCP)	16.78	16.78	33.86	33.86	56.30	56.30
POS-2,3 (To 30" RCP)	19.92	19.88	40.34	39.60	67.16	67.15
POS-4 (TO 24" Brick Pipe)	8.47	8.07	17.10	16.28	28.40	27.04

Appendix C – Boring Locations and Test Pit Logs



LEGEND

B-1 — TEST BORING DESIGNATION AND LOCATION

NOTES:
1. BASE MAP DEVELOPED FROM AN ELECTRONIC FILE PROVIDED BY BL COMPANIES ENTITLED "GRAVESITE LAYOUT" DATED 1/10/86. ORIGINAL SCALE 1"=40' AND A SKETCH (SK-100) PROVIDED BY BL COMPANIES, DATED 8/3/12. ORIGINAL SCALE 1"=120'.
2. BORINGS WERE PERFORMED BY SITE LLC AND OBSERVED AND LOGGED BY GEODESIGN PERSONNEL IN FEBRUARY 2014.
3. THE LOCATIONS OF THE BORINGS WERE DETERMINED BY TAPING AND VISUAL ESTIMATES FROM EXISTING SITE FEATURES. THESE LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

DESIGNED BY DFL						
DRAWN BY CPF						
CHECKED BY DFL	NO.	DATE	REVISIONS	DRWN	CHKD	APPVD
APPROVED BY JWK						

SCALE 1"= 120'
120 60 0' 120

GEODESIGN INCORPORATED
Geotechnical | Construction | Environmental Engineers and Scientists
984 SOUTHFORD ROAD • MIDDLEBURY, CONNECTICUT 06762
TELEPHONE: 203.758.8836 • FACSIMILE: 203.758.8842

PROJECT: VETERANS ADMINISTRATION CEMETERY IMPROVEMENTS MIDDLETOWN, CONNECTICUT

DWG. TITLE: SITE AND BORING LOCATION PLAN

PROJECT NO. 0277-010.00
SCALE AS NOTED
DATE 2/11/14
FIGURE NO. 2

M:\CL\0277\10\CAD\Geo Base File.dwg Conor Fitzpatrick 3/5/2014 4:12 PM GEO Standard Pen Table.ctb

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-1
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC				
Foreman:	John DeAngelis				
GeoDesign Rep.:	Robert Marshall				
Date Started:	February 24, 2014	Date Finished:	February 24, 2014		
N. Coordinate:		E. Coordinate:			
Ground Surface Elevation (feet):	174				
Station:		Offset: ft			

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:		140 lbs
Hammer Fall:		30 in.
Rig Type:	ATV CME 300/45	
Hammer Type:	Automatic - Hydraulic	

Groundwater Observations			
Date	Depth (ft)	Elev. (ft)	Notes
▼ 2/24/14	5.3	168.7	Open hole 0 hours
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Information: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description: Depth & Elevation(feet)	Symbol	Sample Description: Classification System: Modified Burmister
		1	SS	24	18	0.0	WH	1	3	5			0.7 Topsoil		Loose, Top 8": TOPSOIL
													Glacial Till 173.3		Bottom 10": brown fine to medium SAND, some Silt, little fine to coarse Gravel
		2	SS	24	24	2.0	6	6	14	16					
5															Medium dense, red brown fine to medium SAND, little Silt, little fine Gravel, damp
		3	SS	24	20	5.0	7	12	13	10			▼		Medium dense, red brown fine to medium SAND, little some Silt, little fine to coarse Gravel
		4	SS	24	14	7.0	10	13	18	16					Dense, red brown fine to medium SAND, little fine to coarse Gravel, little Silt
10															
		5	SS	24	16	10.0	6	12	17	12					Dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
													12.0 Bottom of Exploration at 12.0 ft	162.0	
15															
20															
25															
30															
Remarks															

Notes:
1) Stratification lines represent approximate boundary between material types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.
3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-2
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC		
Foreman:	John DeAngelis		
GeoDesign Rep.:	Robert Marshall		
Date Started:	February 24, 2014	Date Finished:	February 24, 2014
N. Coordinate:		E. Coordinate:	
Ground Surface Elevation (feet):	175		
Station:		Offset: ft	

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:		140 lbs
Hammer Fall:		30 in.
Rig Type:	ATV CME 300/45	
Hammer Type:	Automatic - Hydraulic	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
2/24/14	1.9	173.1	Open hole 5 minutes

Depth (ft)	Casing Blows/ft	Sample Information: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description: Depth & Elevation(feet)	Symbol	Sample Description: Classification System: Modified Burmister
		1	SS	24	4	0.0	1	2	2	3			0.9 Topsoil		Loose, brown TOPSOIL, damp
													Glacial Till 174.1 ▼		
		2	SS	24	16	2.0	9	13	18	14					Dense, red brown fine to medium SAND, some fine to coarse Gravel, some Silt
5															
		3	SS	24	15	5.0	7	9	7	7					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		4	SS	24	19	7.0	10	8	11	11					Medium dense, red brown fine to medium SAND, little fine to coarse Gravel, little Silt
10															
		5	SS	24	16	10.0	6	11	15	24					Medium dense, red brown fine to medium SAND, little fine to coarse Gravel, little Silt
													12.0 Bottom of Exploration at 12.0 ft 163.0		
15															
20															
25															
30															

Remarks

Notes:
1) Stratification lines represent approximate boundary between material types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.
3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-3
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company: Site LLC
Foreman: John DeAngelis
GeoDesign Rep.: Robert Marshall
Date Started: February 24, 2014 Date Finished: February 24, 2014
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 180
Station: Offset: ft

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:		140 lbs
Hammer Fall:		30 in.
Rig Type:		ATV CME 300/45
Hammer Type:		Automatic - Hydraulic

Groundwater Observations			
Date	Depth (ft)	Elev. (ft)	Notes
2/24/14	4.0	176.0	Open hole 5 min

Depth (ft)	Casing Blows/ft	Sample Information: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description: Depth & Elevation(feet)	Symbol	Sample Description: Classification System: Modified Burmister
		1	SS	24	16	0.0	1	1	1	1			Topsoil 1.2		Very loose, Top 14": TOPSOIL Bottom 2": red brown fine to medium SAND, some Silt
		2	SS	24	16	2.0	2	8	15	14			Glacial Till 178.8		Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
5		3	SS	24	17	5.0	6	9	16	9					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		4	SS	24	20	7.0	7	8	9	9					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
10		5	SS	24	24	10.0	8	19	27	42			12.0		Dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
													Bottom of Exploration at 12.0 ft 168.0		
15															
20															
25															
30															

Remarks

Notes:
1) Stratification lines represent approximate boundary between material types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.
3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-4
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC		
Foreman:	John DeAngelis		
GeoDesign Rep.:	Robert Marshall		
Date Started:	February 24, 2014	Date Finished:	February 24, 2014
N. Coordinate:		E. Coordinate:	
Ground Surface Elevation (feet):	180		
Station:		Offset: ft	

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:		140 lbs
Hammer Fall:		30 in.
Rig Type:	ATV CME 300/45	
Hammer Type:	Automatic - Hydraulic	

Groundwater Observations			
Date	Depth (ft)	Elev. (ft)	Notes
▼ 2/24/14			None observed
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Info: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description: Depth & Elevation(feet)	Symbol	Sample Description: Classification System: Modified Burmister
		1	SS	24	19	0.0	1	4	8	13			0.7 Topsoil		Medium dense, Top 8": TOPSOIL Bottom 11": red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		2	SS	24	24	2.0	18	15	19	18			Glacial Till 179.3		Dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
5		3	SS	24	24	5.0	8	13	10	10					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		4	SS	24	19	7.0	9	12	20	27					Dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
10		5	SS	24	21	10.0	12	16	17	22					Dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
													12.0 Bottom of Exploration at 12.0 ft 168.0		
15															
20															
25															
30															

Remarks

Notes:
1) Stratification lines represent approximate boundary between material types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.
3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-5
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC		Casing:	Sampler:	
Foreman:	John DeAngelis	Type:	H.S.A.	SS	
GeoDesign Rep.:	Robert Marshall	I.D.:	2.25 in.	1.38 in.	
Date Started:	February 24, 2014	Date Finished:	February 24, 2014	Hammer Wt.:	140 lbs
N. Coordinate:		E. Coordinate:		Hammer Fall:	30 in.
Ground Surface Elevation (feet):	185			Rig Type:	ATV CME 300/45
Station:		Offset:	ft	Hammer Type:	Automatic - Hydraulic

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼ 2/24/14			None observed
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Information: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description: Depth & Elevation(feet)	Symbol	Sample Description: Classification System: Modified Burmister
		1	SS	24	16	0.0	1	4	6	10			0.7 Topsoil		Loose, Top 8": TOPSOIL
													Glacial Till 184.3		Bottom 8": red brown fine to coarse SAND, some Silt, little fine to coarse Gravel
		2	SS	24	19	2.0	9	10	10	8					Medium dense, red brown fine to medium SAND, some Silt, trace fine to coarse Gravel
5															
		3	SS	24	24	5.0	8	16	19	30					Dense, red brown fine to medium SAND, some fine to coarse Gravel, some Silt
		4	SS	24	16	7.0	25	28	30	50/2"					Very dense, red brown fine to medium SAND, little fine to coarse Gravel, little Silt
													9.0 Bottom of Exploration at 9.0 ft 176.0		
10															
15															
20															
25															
30															

Remarks: 1.) Sampler refusal at 8.7 feet and auger refusal at 9.0 feet.

Notes:
1) Stratification lines represent approximate boundary between material types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.
3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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Geotechnical | Construction | Environmental Engineers and Scientists
984 Southford Road - Middlebury, CT 06762
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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-6
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC			Casing:	Sampler:	Groundwater Observations	
Foreman:	John DeAngelis			Type:	H.S.A.	SS	Date / Depth (ft) / Elev. (ft) / Notes
GeoDesign Rep.:	Robert Marshall			I.D.:	2.25 in.	1.38 in.	
Date Started:	February 25, 2014	Date Finished:	February 25, 2014	Hammer Wt.:		140 lbs	2/25/14 / None observed
N. Coordinate:		E. Coordinate:		Hammer Fall:		30 in.	
Ground Surface Elevation (feet):	179			Rig Type:		ATV CME 300/45	
Station:		Offset: ft		Hammer Type:		Automatic - Hydraulic	

Depth (ft)	Casing Blows/ft	Sample Number	Sample Type	Penetration (inches)	Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation (feet))	Symbol	Sample Description (Classification System: Modified Burmister)
		1	SS	24	18	0.0	3	2	5	5			Topsoil 178.7		Loose,
													Fill		Top 3": TOPSOIL
		2	SS	24	24	2.0	6	7	12	11					Bottom 15": red brown fine to medium SAND, some Silt, little fine to coarse Gravel
5															Medium dense, red brown fine to medium SAND, some fine to coarse Gravel, some Silt
		3	SS	24	18	5.0	6	4	4	5			6.0		Loose,
													Glacial Till 173.0		Top 8": red brown fine to medium SAND, some Silt, trace fine Gravel, trace Root Fibers
		4	SS	24	24	7.0	7	8	9	11					Bottom 10": gray brown fine to medium SAND, some Silt, trace Root Fibers
10															Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		5	SS	24	19	10.0	4	6	7	10					Medium dense, red brown fine to medium SAND, some Silt, some fine to coarse Gravel
													12.0		
													Bottom of Exploration at 12.0 ft 167.0		
15															
20															
25															
30															
Remarks															

Notes:
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3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-7
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC			Casing:	Sampler:	Groundwater Observations	
Foreman:	John DeAngelis			Type: H.S.A.	SS	Date / Depth (ft) / Elev. (ft) / Notes	
GeoDesign Rep.:	Robert Marshall			I.D.: 2.25 in.	1.38 in.		
Date Started:	February 25, 2014	Date Finished:	February 25, 2014	Hammer Wt.:	140 lbs	2/25/14	None observed
N. Coordinate:		E. Coordinate:		Hammer Fall:	30 in.		
Ground Surface Elevation (feet):	184			Rig Type:	ATV CME 300/45		
Station:		Offset: ft		Hammer Type:	Automatic - Hydraulic		

Depth (ft)	Casing Blows/ft	Sample Information: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description: Depth & Elevation(feet)	Symbol	Sample Description: Classification System: Modified Burmister
		1	SS	24	20	0.0	1	2	3	5			Topsoil 1.0		Loose, Top 12": TOPSOIL
													Fill 183.0		Bottom 8": red brown fine to medium SAND, some Silt, little fine Gravel
		2	SS	24	17	2.0	8	7	7	6					Medium dense, red brown fine to medium SAND, some Silt, some fine Gravel
5															
		3	SS	24	21	5.0	3	8	9	9					Medium dense, red brown fine to medium SAND, some Silt, some fine to coarse Gravel
		4	SS	24	20	7.0	13	10	8	9			8.0		Medium dense,
													Glacial Till 176.0		Top 10": red brown fine to medium SAND, some Silt, little fine to coarse Gravel, trace Root Fibers, damp
10		5	SS	24	19	9.0	9	11	11	9					Bottom 10": Brown fine to medium SAND, some Silt, trace fine Gravel, trace Root Fibers
													12.0		
													Bottom of Exploration at 12.0 ft 172.0		Medium dense, red brown fine to medium SAND, little Silt, little fine to coarse Gravel
15															
20															
25															
30															

Remarks

Notes:
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4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-8
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC		
Foreman:	John DeAngelis		
GeoDesign Rep.:	Robert Marshall		
Date Started:	February 24, 2014	Date Finished:	February 24, 2014
N. Coordinate:		E. Coordinate:	
Ground Surface Elevation (feet):	186		
Station:		Offset: ft	

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:		140 lbs
Hammer Fall:		30 in.
Rig Type:	ATV CME 300/45	
Hammer Type:	Automatic - Hydraulic	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼ 2/24/14			None observed
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Number	Sample Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System: Modified Burmister)
		1	SS	24	20	0.0	1	4	10	13			Topsoil 185.7		Medium dense, Top 4": TOPSOIL
													Glacial Till		Bottom 16": red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		2	SS	24	24	2.0	11	18	16	20					
5															Dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		3	SS	24	24	5.0	10	13	10	10					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		4	SS	24	20	7.0	12	15	13	12					Medium dense, red brown fine to coarse SAND, little fine to coarse Gravel, little Silt
10															
		5	SS	24	16	10.0	7	14	14	19					Medium dense, red brown fine to medium SAND, some fine to coarse Gravel, some Silt
													12.0 Bottom of Exploration at 12.0 ft 174.0		
15															
20															
25															
30															

Remarks

Notes:
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4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-9
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC			Casing:	Sampler:	Groundwater Observations
Foreman:	John DeAngelis		Type:	H.S.A.	SS	Date / Depth (ft) / Elev. (ft) / Notes
GeoDesign Rep.:	Robert Marshall		I.D.:	2.25 in.	1.38 in.	
Date Started:	February 24, 2014	Date Finished: February 24, 2014	Hammer Wt.:		140 lbs	2/24/14 — None observed
N. Coordinate:		E. Coordinate:	Hammer Fall:		30 in.	
Ground Surface Elevation (feet):	190		Rig Type:		ATV CME 300/45	
Station:	Offset: ft		Hammer Type:		Automatic - Hydraulic	

Depth (ft)	Casing Blows/ft	Sample Info: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System: Modified Burmister)
		1	SS	24	21	0.0	WH	1	5	10			0.9 Topsoil		Loose, Top 11": TOPSOIL
													Glacial Till 189.1		Bottom 10": red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		2	SS	24	18	2.0	8	8	12	12					Medium dense, red brown fine to medium SAND, some Silt, some fine to coarse Gravel
5															
		3	SS	24	17	5.0	9	9	10	12					Medium dense, red brown fine to medium SAND, some fine to coarse Gravel, some Silt
		4	SS	24	22	7.0	12	11	11	11					Medium dense, red brown fine to medium SAND, some Silt, some fine to coarse Gravel
10															
		5	SS	24	20	10.0	7	16	16	24					Dense, red brown fine to medium SAND, some Silt, some fine to coarse Gravel
													12.0 Bottom of Exploration at 12.0 ft 178.0		
15															
20															
25															
30															

Remarks

Notes:
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4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-10
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC		
Foreman:	John DeAngelis		
GeoDesign Rep.:	Robert Marshall		
Date Started:	February 24, 2014	Date Finished:	February 24, 2014
N. Coordinate:		E. Coordinate:	
Ground Surface Elevation (feet):	195		
Station:		Offset: ft	

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:		140 lbs
Hammer Fall:		30 in.
Rig Type:	ATV CME 300/45	
Hammer Type:	Automatic - Hydraulic	

Groundwater Observations			
Date	Depth (ft)	Elev. (ft)	Notes
▼ 2/24/14			None observed

Depth (ft)	Casing Blows/ft	Sample Information: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System: Modified Burmister)
		1	SS	24	20	0.0	1	2	10	22			0.8 Topsoil		Medium dense, Top 9": TOPSOIL Bottom 11": red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		2	SS	24	17	2.0	12	20	13	13			Glacial Till 194.2		Dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
5															
		3	SS	24	16	5.0	6	5	6	4					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		4	SS	24	24	7.0	9	8	10	14					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
10															
		5	SS	24	24	10.0	10	16	33	33					Dense, red brown to brown fine to medium SAND, some Silt, some fine to coarse Gravel
													12.0 Bottom of Exploration at 12.0 ft 183.0		
15															
20															
25															
30															

Remarks

Notes:
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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-11
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC			Casing:	Sampler:	Groundwater Observations	
Foreman:	John DeAngelis			Type:	H.S.A.	SS	Date / Depth (ft) / Elev. (ft) / Notes
GeoDesign Rep.:	Robert Marshall			I.D.:	2.25 in.	1.38 in.	
Date Started:	February 25, 2014	Date Finished:	February 25, 2014	Hammer Wt.:		140 lbs	2/25/14 / None observed
N. Coordinate:		E. Coordinate:		Hammer Fall:		30 in.	
Ground Surface Elevation (feet):	190			Rig Type:		ATV CME 300/45	
Station:		Offset: ft		Hammer Type:		Automatic - Hydraulic	

Depth (ft)	Casing Blows/ft	Sample Number	Sample Type	Penetration (inches)	Recovery (inches)	Sample Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation (feet))	Symbol	Sample Description (Classification System: Modified Burmister)
		1	SS	24	20	0.0	1	4	7	5			Topsoil		Medium dense,
													Glacial Till 189.5		Top 6": TOPSOIL
		2	SS	24	24	2.0	10	10	12	11					Bottom 14": red brown fine to medium SAND, some Silt, little fine to coarse Gravel
5		3	SS	24	21	5.0	5	7	9	11					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		4	SS	24	18	7.0	12	13	15	16					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
10		5	SS	24	23	10.0	11	11	9	7					Medium dense, red brown fine to medium SAND, some Silt, some fine to coarse Gravel
													12.0 Bottom of Exploration at 12.0 ft 178.0		
15															
20															
25															
30															

Remarks

Notes:
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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-12
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC			Casing:	Sampler:	
Foreman:	John DeAngelis		Type:	H.S.A.	SS	
GeoDesign Rep.:	Robert Marshall		I.D.:	2.25 in.	1.38 in.	
Date Started:	February 25, 2014	Date Finished:	February 25, 2014	Hammer Wt.:		140 lbs
N. Coordinate:		E. Coordinate:		Hammer Fall:		30 in.
Ground Surface Elevation (feet):	191			Rig Type:		ATV CME 300/45
Station:		Offset:	ft	Hammer Type:		Automatic - Hydraulic

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼ 2/25/14			None observed
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Information: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description: Depth & Elevation(feet)	Symbol	Sample Description: Classification System: Modified Burmister
		1	SS	24	12	0.0	1	6	14	18			Topsoil		Medium dense,
													Glacial Till 190.5		Top 6": TOPSOIL
		2	SS	24	20	2.0	18	10	16	13					Bottom 6": red brown fine to medium SAND, some fine to coarse Gravel, little Silt
															Medium dense, red brown fine to medium SAND, little fine Gravel, little Silt
5															
		3	SS	24	19	5.0	6	17	26	21					Dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		4	SS	24	22	7.0	22	22	20	31					Dense, red brown fine to medium SAND, some Silt, some fine to coarse Gravel
10															
		5	SS	24	21	10.0	12	23	35	38					Very dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
													12.0		
													Bottom of Exploration at 12.0 ft 179.0		
15															
20															
25															
30															

Remarks

Notes:
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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-13
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC
Foreman:	John DeAngelis
GeoDesign Rep.:	Robert Marshall
Date Started:	February 25, 2014
Date Finished:	February 25, 2014
N. Coordinate:	
E. Coordinate:	
Ground Surface Elevation (feet):	177
Station:	Offset: ft

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:		140 lbs
Hammer Fall:		30 in.
Rig Type:	ATV CME 300/45	
Hammer Type:	Automatic - Hydraulic	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼ 2/25/14			None observed
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Information: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System: Modified Burmister)
		1	SS	24	19	0.0	1	2	5	11			Topsoil		Loose,
													Fill 176.5		Top 6": TOPSOIL
		2	SS	24	18	2.0	6	4	4	3					Bottom 13": red brown fine to medium SAND, some Silt, little fine to coarse Gravel
													4.0		Loose, red brown fine to coarse SAND, little fine Gravel, trace Silt
5													Clayey Silt 173.0		
		3	SS	24	16	5.0	2	1	2	5					Soft, gray brown Clayey SILT, trace fine Sand
		4	SS	24	18	7.0	6	7	11	10			8.0		Medium dense,
													Glacial Till 169.0		Top 12": Soft, gray brown Clayey SILT, trace fine Sand, damp
10															Bottom 6": Red brown fine to coarse SAND, little fine to coarse Gravel, trace Silt
		5	SS	24		10.0	3	5	6	7			12.0		Medium dense, red brown fine to medium SAND, some Silt
													Bottom of Exploration at 12.0 ft 165.0		
15															
20															
25															
30															
Remarks															

Notes:
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3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-14
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC				
Foreman:	John DeAngelis				
GeoDesign Rep.:	Robert Marshall				
Date Started:	February 25, 2014	Date Finished:	February 25, 2014		
N. Coordinate:		E. Coordinate:			
Ground Surface Elevation (feet):	176				
Station:		Offset:	ft		

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:		140 lbs
Hammer Fall:		30 in.
Rig Type:	ATV CME 300/45	
Hammer Type:	Automatic - Hydraulic	

Groundwater Observations			
Date	Depth (ft)	Elev. (ft)	Notes
▼ 2/25/14			None observed
▼			
▼			
▼			

Depth (ft)	Casing Blows/ft	Sample Info: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description: Depth & Elevation(feet)	Symbol	Sample Description: Classification System: Modified Burmister
		1	SS	24	18	0.0	0	2	6	8			0.7 Topsoil		Loose.
													Fill 175.3		Top 6": TOPSOIL
													2.0		Bottom12": red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		2	SS	24	20	2.0	9	6	4	4			Glacial Till 174.0		Medium dense, red brown fine to coarse SAND, some fine Gravel, trace Silt
5															
		3	SS	24	10	5.0	2	4	8	7					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		4	SS	24	15	7.0	10	19	23	16					Dense, red brown fine to medium SAND, some fine to coarse Gravel, little Silt
10															
		5	SS	24	21	10.0	11	22	23	41					Dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
													12.0		
													Bottom of Exploration at 12.0 ft 164.0		
15															
20															
25															
30															

Remarks

Notes:
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3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-15
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company:	Site LLC		
Foreman:	John DeAngelis		
GeoDesign Rep.:	Robert Marshall		
Date Started:	February 25, 2014	Date Finished:	February 25, 2014
N. Coordinate:		E. Coordinate:	
Ground Surface Elevation (feet):	176		
Station:		Offset: ft	

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:		140 lbs
Hammer Fall:		30 in.
Rig Type:	ATV CME 300/45	
Hammer Type:	Automatic - Hydraulic	

Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼ 2/25/14			None observed

Depth (ft)	Casing Blows/ft	Sample Info: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System: Modified Burmister)
		1	SS	24	15	0.0	1	2	6	7			Topsoil 1.2		Loose, Top 9": TOPSOIL
		2	SS	24	21	2.0	4	10	14	17			Glacial Till 174.8		Bottom 6": red brown fine to medium SAND, little Silt, little fine to coarse Gravel
5		3	SS	24	16	5.0	7	5	8	7					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
		4	SS	24	21	7.0	7	10	20	18					Medium dense, red brown fine to medium SAND, some Silt, some fine to coarse Gravel
10		5	SS	8	6	10.0	22	50/2"							Medium dense, red brown fine to coarse SAND, some Silt, little fine to coarse Gravel
													10.7 Bottom of Exploration at 10.7 ft 165.3		Very dense, red brown fine to medium SAND, some Silt, some fine to coarse Gravel
15															
20															
25															
30															

Remarks: 1.) Spoon refusal at 10.5 feet.

Notes:
1) Stratification lines represent approximate boundary between material types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.
3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%

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BORING LOG

Project Name

Veterans Administration Cemetery Improvements
Middletown, Connecticut

Boring No.: B-16
Page No.: 1 of 1
File No.: 0277-010.00
Checked By: DFL

Boring Company: Site LLC
Foreman: John DeAngelis
GeoDesign Rep.: Robert Marshall
Date Started: February 25, 2014 Date Finished: February 25, 2014
N. Coordinate: E. Coordinate:
Ground Surface Elevation (feet): 181
Station: Offset: ft

	Casing:	Sampler:
Type:	H.S.A.	SS
I.D.:	2.25 in.	1.38 in.
Hammer Wt.:		140 lbs
Hammer Fall:		30 in.
Rig Type:	ATV CME 300/45	
Hammer Type:	Automatic - Hydraulic	

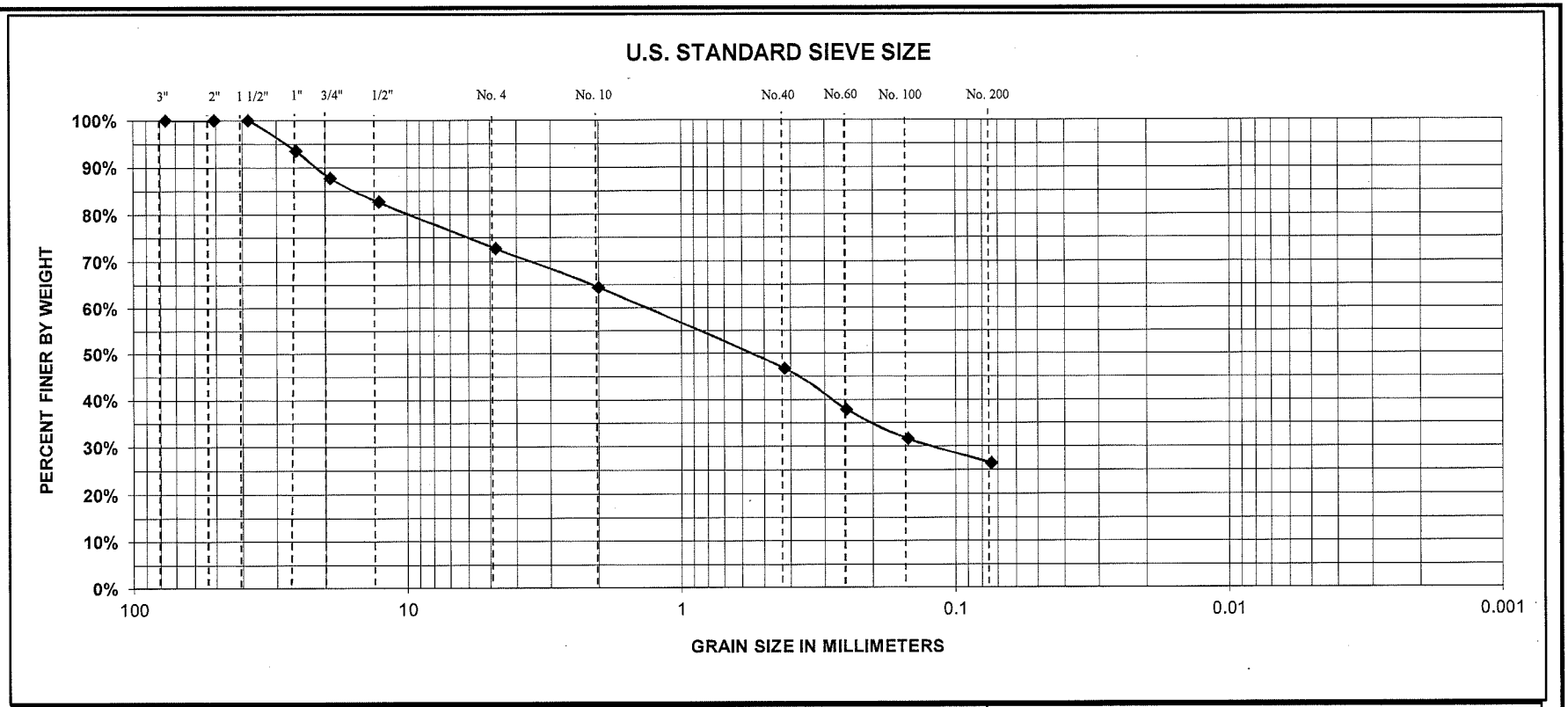
Groundwater Observations

Date	Depth (ft)	Elev. (ft)	Notes
▼ 2/25/14	1.6	179.4	Open hole 10 minutes

Depth (ft)	Casing Blows/ft	Sample Information: Number	Type	Penetration (inches)	Recovery (inches)	Depth (ft)	Blows / 6 inch Interval: 0 - 6	6 - 12	12 - 18	18 - 24	Coring Time (min./ft)	Moisture Content (%)	Strata Description (Depth & Elevation(feet))	Symbol	Sample Description (Classification System: Modified Burmister)
		1	SS	24	16	0.0	22	10	11	9			Asphalt 180.7		Medium dense, Top 4": ASPHALT PAVEMENT
													Glacial Till ▼		Bottom 12": Red brown fine to coarse SAND, some fine to coarse Gravel, little Silt
		2	SS	24	16	2.0	6	7	11	6					
5		3	SS	24	6	4.0	9	11	11	9					Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
													6.0		Medium dense, red brown fine to medium SAND, some Silt, little fine to coarse Gravel
													Bottom of Exploration at 6.0 ft 175.0		
10															
15															
20															
25															
30															

Remarks: 1.) Pushed Cobble on first attempt at S-1 with poor recovery, redrove S-1 2 feet North with 3" spoon for increased recovery.

Notes:
1) Stratification lines represent approximate boundary between material types, transitions may be gradual.
2) Water level readings have been made at times and under conditions stated, fluctuations of groundwater may occur due to other factors than those present at the time measurements were made. AC = After coring; NR = Not Recorded.
3) Abbreviations: A = Auger; C = Core; MC=Macrocore; D = Driven; G = Grab; PS = Piston Sample; SS = Split Spoon; SSL = 3.5 Inch ID Split Spoon; ST = Shelby Tube; V = Vane; WOR/H = Weight of Rod/Hammer
4) Proportions Used: Trace = 1-10%; Little = 10-20%; Some = 20-35%; And = 35-50%



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

GRADATION TEST

VA Cemetery Expansion, Middletown, CT

BORING NO.	B-2
SAMPLE NO.	S-2
DEPTH	2-4'
TECH.	RJM
REVIEWER	JWK
DATE	02/28/14
FILE NO.	277-010

BURMISTER SOIL CLASSIFICATION SYSTEM

TEST NO.	MATERIAL SOURCE	DESCRIPTION
1 of 4	Jar sample	Fine to medium SAND, some (26%) Silt, some fine to coarse Gravel

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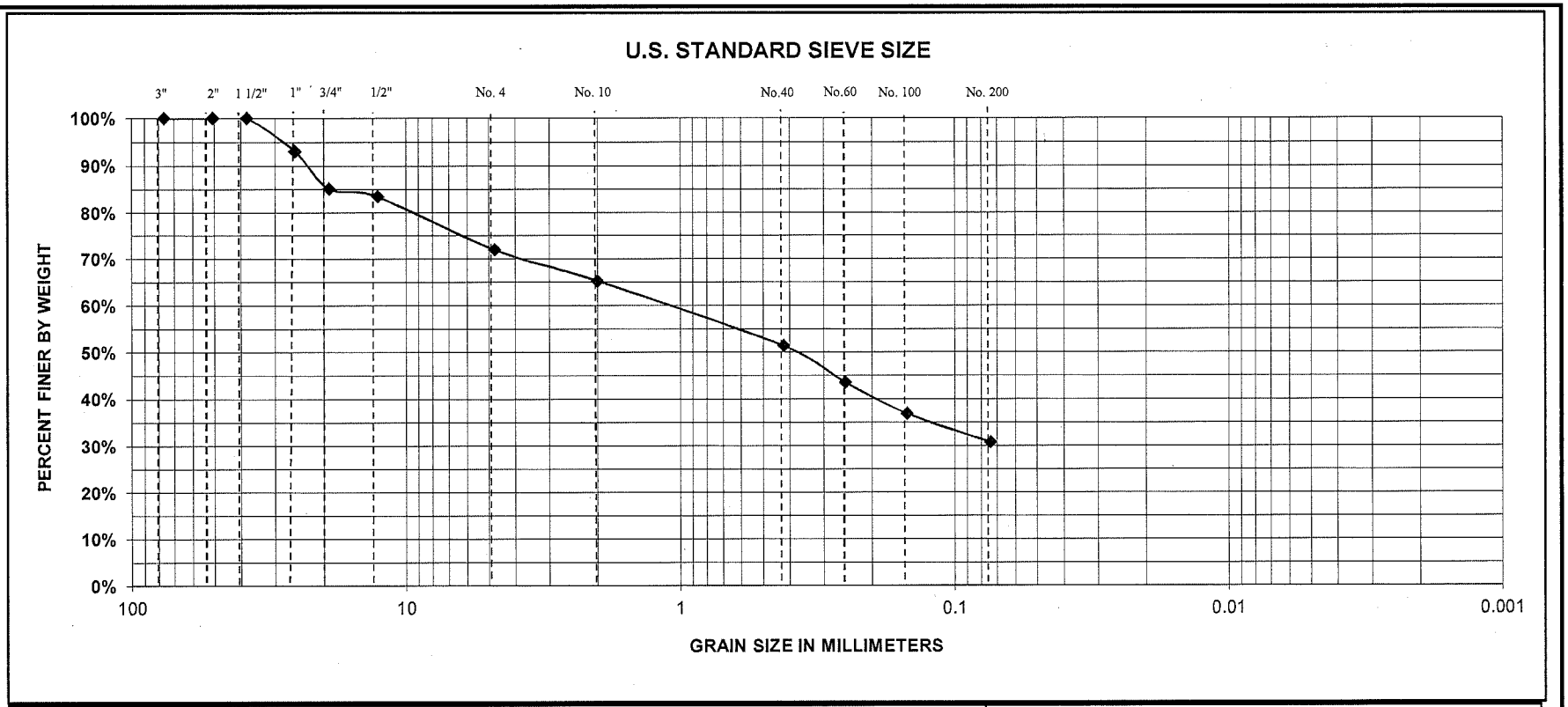

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

GRADATION TEST

VA Cemetery Expansion, Middletown, CT

BORING NO.	B-7
SAMPLE NO.	S-2
DEPTH	2-4'
TECH.	RJM
REVIEWER	JWK
DATE	02/28/14
FILE NO.	277-010

BURMISTER SOIL CLASSIFICATION SYSTEM

TEST NO.	MATERIAL SOURCE	DESCRIPTION
2 of 4	Jar sample	Fine to medium SAND, some (31%) Silt, some fine to coarse Gravel

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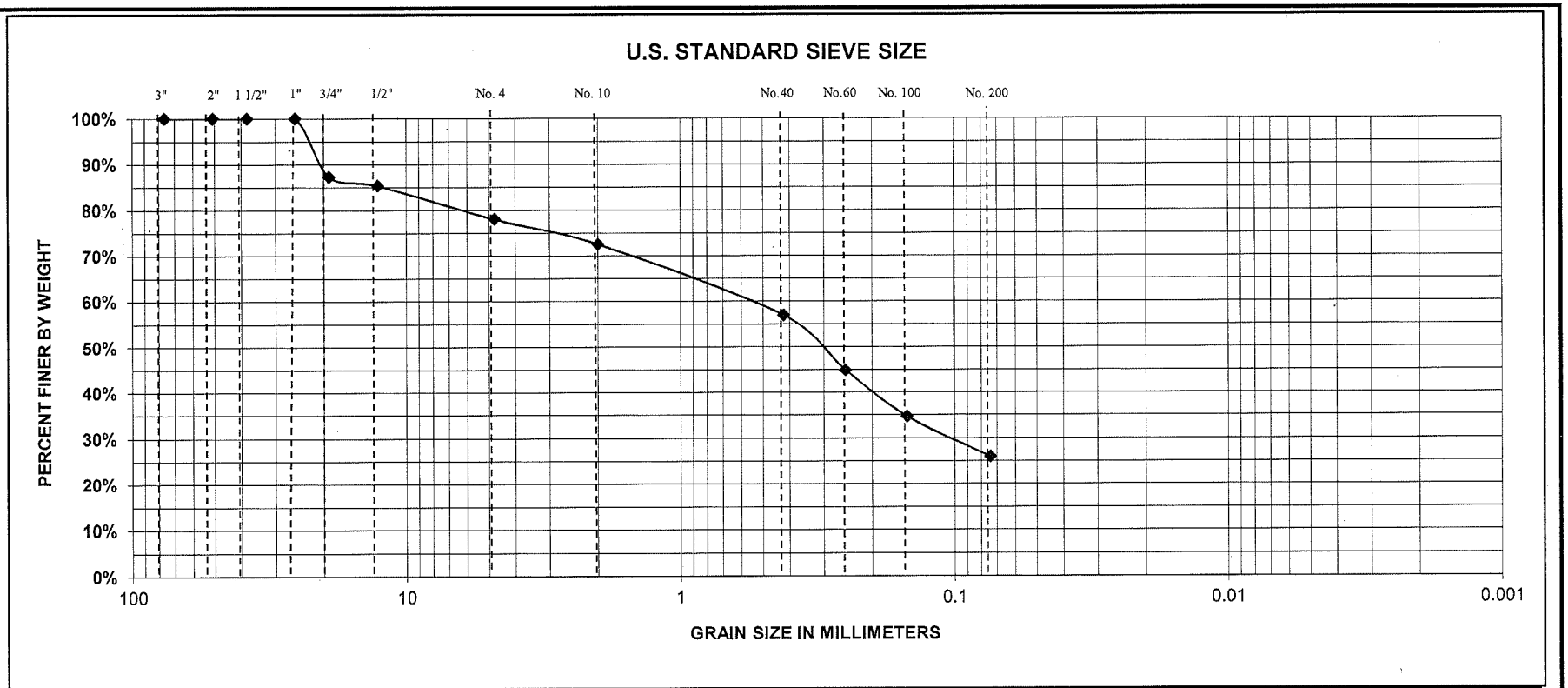

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

GRADATION TEST

VA Cemetery Expansion, Middletown, CT

BORING NO.	B-9
SAMPLE NO.	S-2
DEPTH	2-4'
TECH.	RJM
REVIEWER	JWK
DATE	
FILE NO.	277-010

BURMISTER SOIL CLASSIFICATION SYSTEM

TEST NO.	MATERIAL SOURCE	DESCRIPTION
3 of 4	Jar sample	Fine to medium SAND, some (26%) Silt, some fine to coarse Gravel

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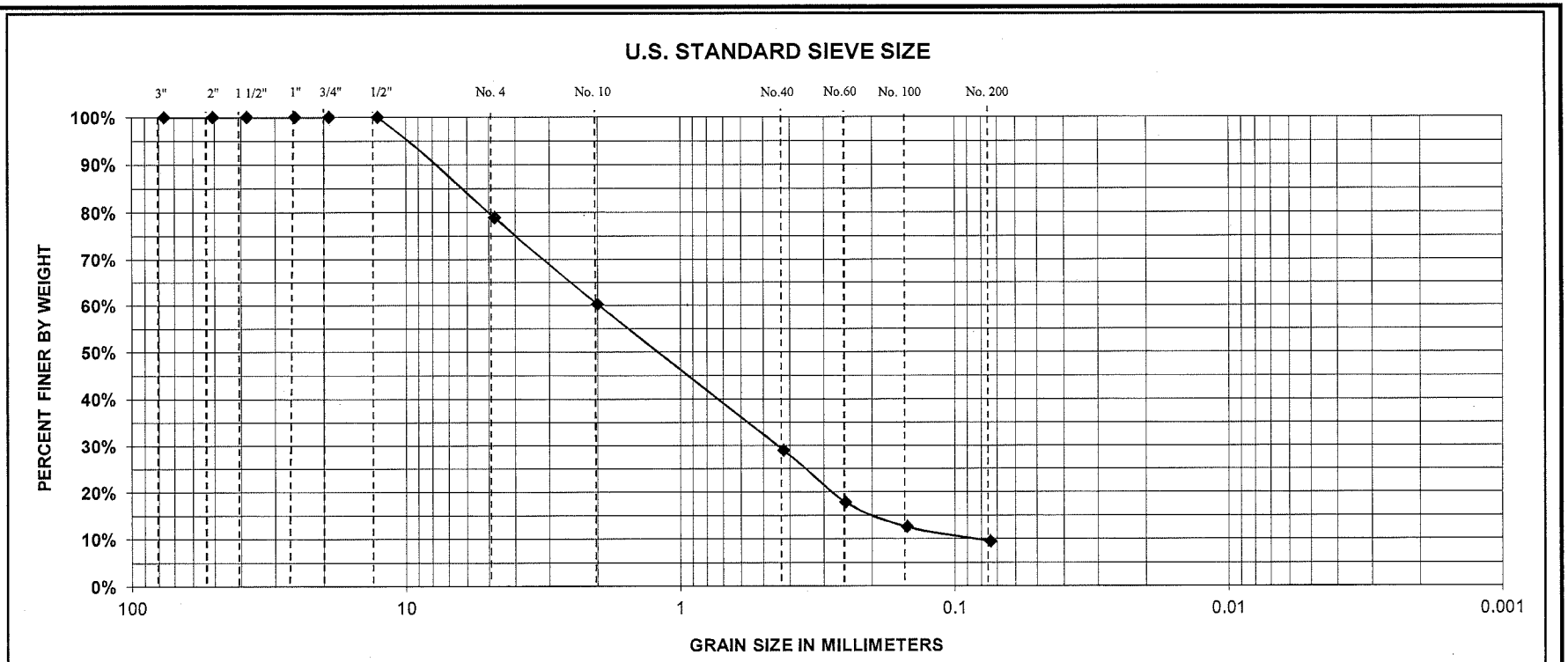

COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

GRADATION TEST

VA Cemetery Expansion, Middletown, CT

BORING NO.	B-14
SAMPLE NO.	S-2
DEPTH	2-4'
TECH.	RJM
REVIEWER	JWK
DATE	02/28/14
FILE NO.	277-010

BURMISTER SOIL CLASSIFICATION SYSTEM

TEST NO.	MATERIAL SOURCE	DESCRIPTION
4 of 4	Jar sample	Fine to coarse SAND, some fine Gravel, trace (9%) Silt

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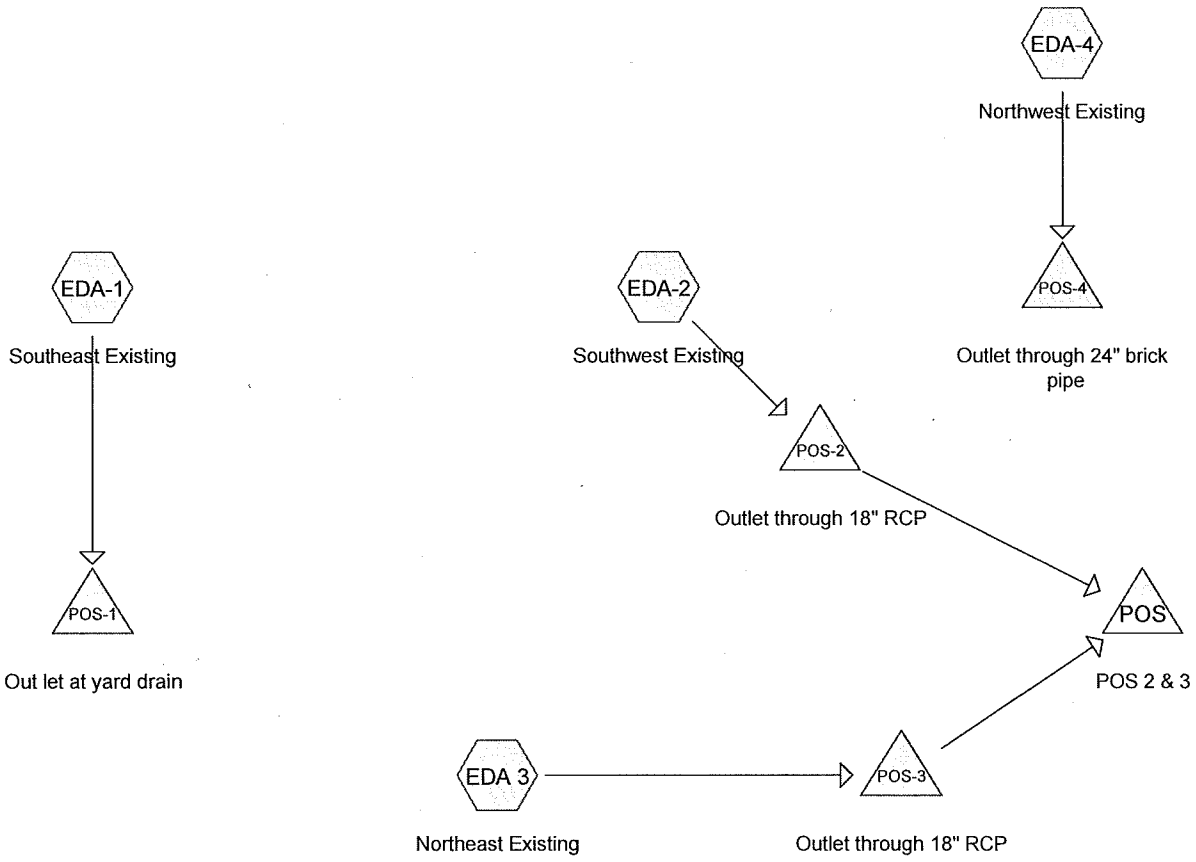
Appendix D – Hydrologic and Hydraulic Calculations

Pre and Post Construction Peak Flow Rates

Post Construction Average Runoff Coefficient



Subcat Reach Pond Link

Routing Diagram for EXISTING-12C4226
Prepared by Microsoft, Printed 5/19/2014

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
15.929	79	50-75% Grass cover, Fair, HSG C (EDA 3, EDA-1)
1.737	84	50-75% Grass cover, Fair, HSG D (EDA 3, EDA-1, EDA-2)
11.622	74	>75% Grass cover, Good, HSG C (EDA-2, EDA-4)
0.902	80	>75% Grass cover, Good, HSG D (EDA-4)
4.731	98	Paved parking, HSG C (EDA 3, EDA-1, EDA-2, EDA-4)
8.154	73	Woods, Fair, HSG C (EDA 3, EDA-1, EDA-2, EDA-4)
0.375	79	Woods, Fair, HSG D (EDA 3)
43.450	**79**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
40.436	HSG C	EDA 3, EDA-1, EDA-2, EDA-4
3.014	HSG D	EDA 3, EDA-1, EDA-2, EDA-4
0.000	Other	
43.450		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	15.929	1.737	0.000	17.666	50-75% Grass cover, Fair	EDA 3, EDA-1, EDA-2
0.000	0.000	11.622	0.902	0.000	12.524	>75% Grass cover, Good	EDA-2, EDA-4
0.000	0.000	4.731	0.000	0.000	4.731	Paved parking	EDA 3, EDA-1, EDA-2, EDA-4
0.000	0.000	8.154	0.375	0.000	8.529	Woods, Fair	EDA 3, EDA-1, EDA-2, EDA-4
0.000	**0.000**	**40.436**	**3.014**	**0.000**	**43.450**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	EDA 3	0.00	0.00	669.0	0.0240	0.013	15.0	0.0	0.0
2	EDA 3	0.00	0.00	19.0	0.0210	0.011	18.0	0.0	0.0
3	EDA-1	0.00	0.00	499.0	0.0076	0.013	18.0	0.0	0.0
4	EDA-2	0.00	0.00	458.0	0.0164	0.013	15.0	0.0	0.0
5	EDA-2	0.00	0.00	298.0	0.0064	0.012	18.0	0.0	0.0
6	EDA-4	0.00	0.00	133.0	0.0196	0.010	8.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA 3: Northeast Existing Runoff Area=9.610 ac 10.04% Impervious Runoff Depth=1.55"
Flow Length=906' Tc=16.1 min CN=81 Runoff=12.75 cfs 1.240 af

Subcatchment EDA-1: Southeast Existing Runoff Area=18.380 ac 9.19% Impervious Runoff Depth=1.41"
Flow Length=891' Tc=30.6 min CN=79 Runoff=16.78 cfs 2.163 af

Subcatchment EDA-2: Southwest Existing Runoff Area=8.360 ac 8.95% Impervious Runoff Depth=1.22"
Flow Length=1,068' Tc=20.9 min CN=76 Runoff=7.64 cfs 0.851 af

Subcatchment EDA-4: Northwest Existing Runoff Area=7.100 ac 18.70% Impervious Runoff Depth=1.41"
Flow Length=1,048' Tc=16.3 min CN=79 Runoff=8.47 cfs 0.836 af

Pond POS: POS 2 & 3 Inflow=19.92 cfs 2.091 af
Primary=19.92 cfs 2.091 af

Pond POS-1: Out let at yard drain Inflow=16.78 cfs 2.163 af
Primary=16.78 cfs 2.163 af

Pond POS-2: Outlet through 18" RCP Inflow=7.64 cfs 0.851 af
Primary=7.64 cfs 0.851 af

Pond POS-3: Outlet through 18" RCP Inflow=12.75 cfs 1.240 af
Primary=12.75 cfs 1.240 af

Pond POS-4: Outlet through 24" brick pipe Inflow=8.47 cfs 0.836 af
Primary=8.47 cfs 0.836 af

Total Runoff Area = 43.450 ac Runoff Volume = 5.090 af Average Runoff Depth = 1.41"
89.11% Pervious = 38.719 ac 10.89% Impervious = 4.731 ac

Summary for Subcatchment EDA 3: Northeast Existing

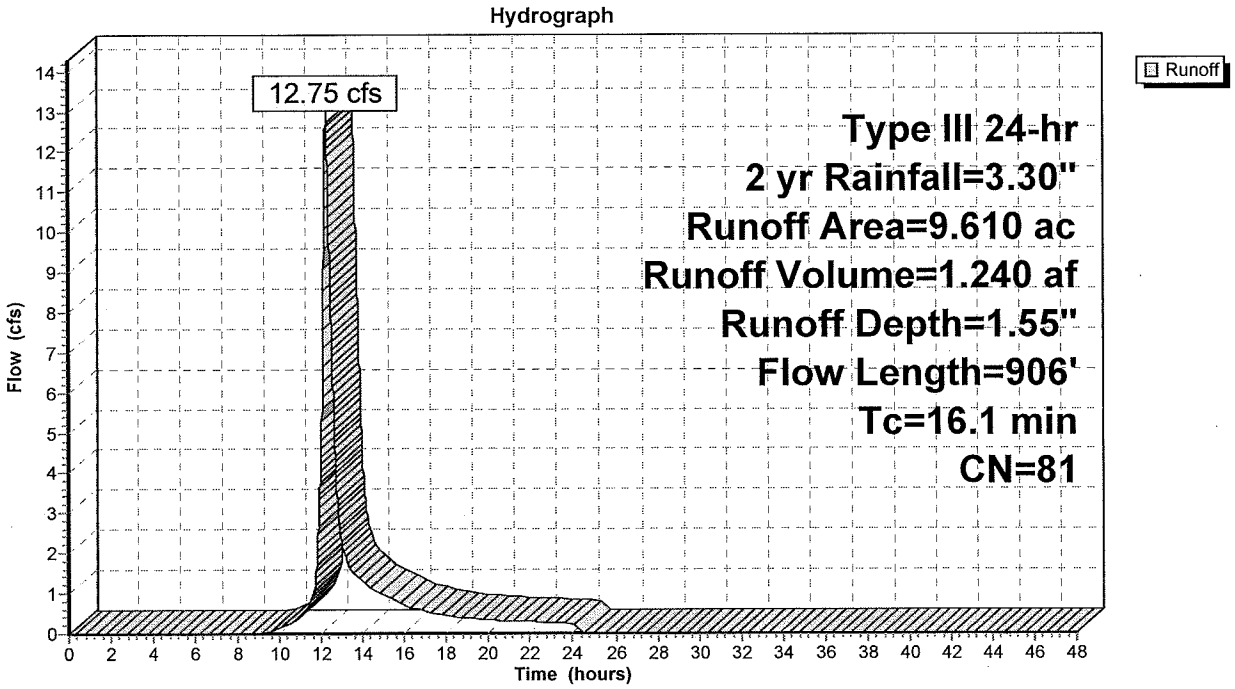
Runoff = 12.75 cfs @ 12.22 hrs, Volume= 1.240 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (ac)	CN	Description
0.965	98	Paved parking, HSG C
0.846	73	Woods, Fair, HSG C
0.375	79	Woods, Fair, HSG D
6.289	79	50-75% Grass cover, Fair, HSG C
1.135	84	50-75% Grass cover, Fair, HSG D
9.610	81	Weighted Average
8.645		89.96% Pervious Area
0.965		10.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	177	0.0249	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.5	41	0.0046	1.38		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	669	0.0240	8.15	10.01	**Pipe Channel, RCP_Round 15"** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
0.0	19	0.0210	10.18	17.99	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.011 Concrete pipe, straight & clean
16.1	906	Total			

Subcatchment EDA 3: Northeast Existing



Summary for Subcatchment EDA-1: Southeast Existing

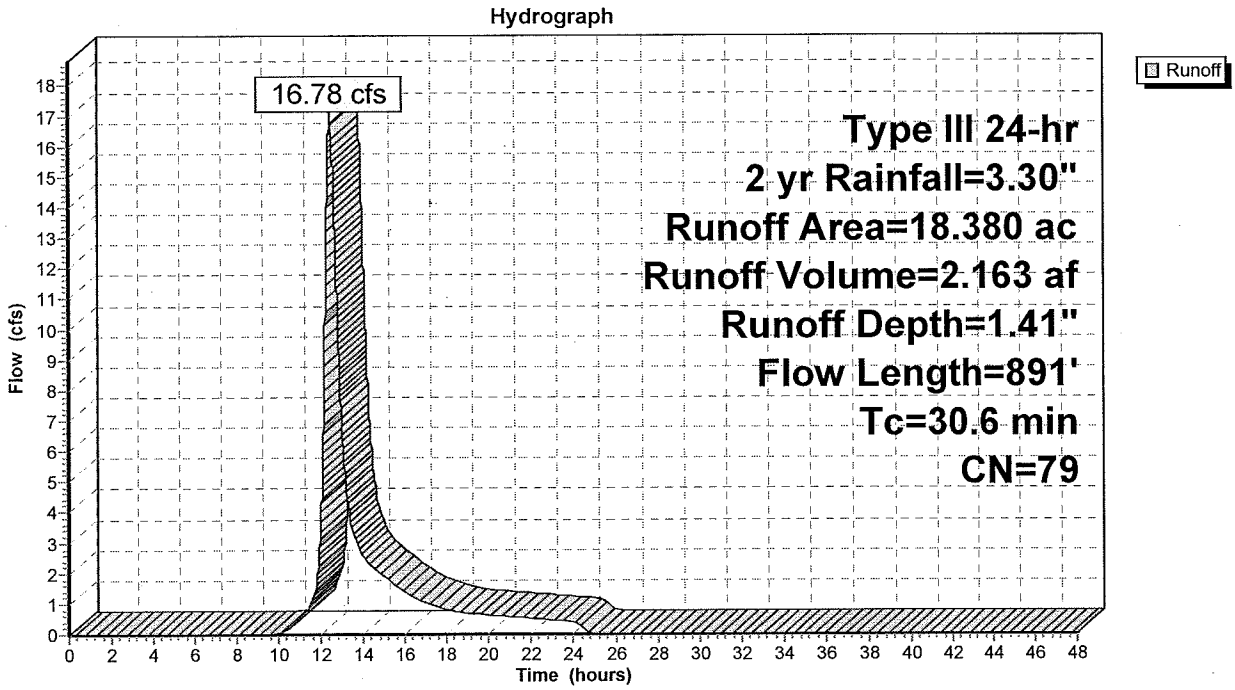
Runoff = 16.78 cfs @ 12.44 hrs, Volume= 2.163 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (ac)	CN	Description
1.690	98	Paved parking, HSG C
6.670	73	Woods, Fair, HSG C
9.640	79	50-75% Grass cover, Fair, HSG C
0.380	84	50-75% Grass cover, Fair, HSG D
18.380	79	Weighted Average
16.690		90.81% Pervious Area
1.690		9.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.1	178	0.1556	0.11		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.20"
2.1	120	0.0192	0.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	54	0.1157	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	40	0.0152	2.50		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	499	0.0076	5.18	9.16	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Concrete pipe, bends & connections
30.6	891	Total			

Subcatchment EDA-1: Southeast Existing



Summary for Subcatchment EDA-2: Southwest Existing

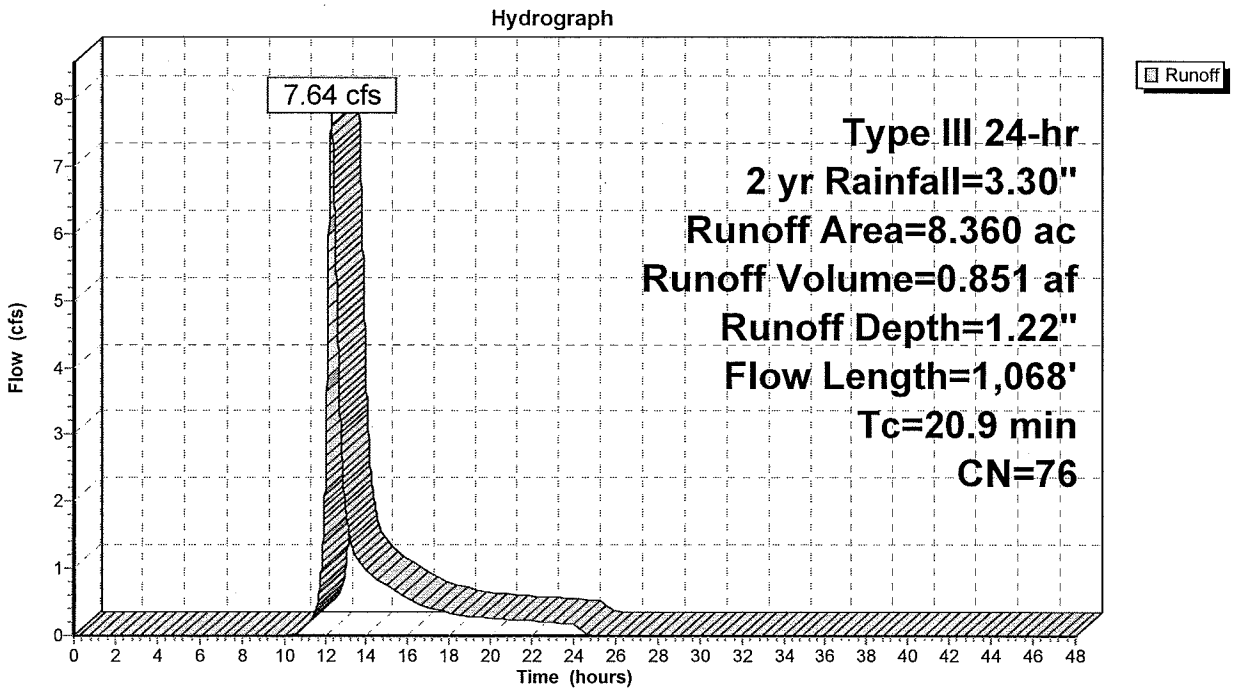
Runoff = 7.64 cfs @ 12.31 hrs, Volume= 0.851 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (ac)	CN	Description
0.748	98	Paved parking, HSG C
0.512	73	Woods, Fair, HSG C
6.878	74	>75% Grass cover, Good, HSG C
0.222	84	50-75% Grass cover, Fair, HSG D
8.360	76	Weighted Average
7.612		91.05% Pervious Area
0.748		8.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	49	0.1224	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
12.5	194	0.0412	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.4	69	0.0196	2.84		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	458	0.0164	6.74	8.27	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
1.0	298	0.0064	5.15	9.10	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Concrete pipe, finished
20.9	1,068	Total			

Subcatchment EDA-2: Southwest Existing



Summary for Subcatchment EDA-4: Northwest Existing

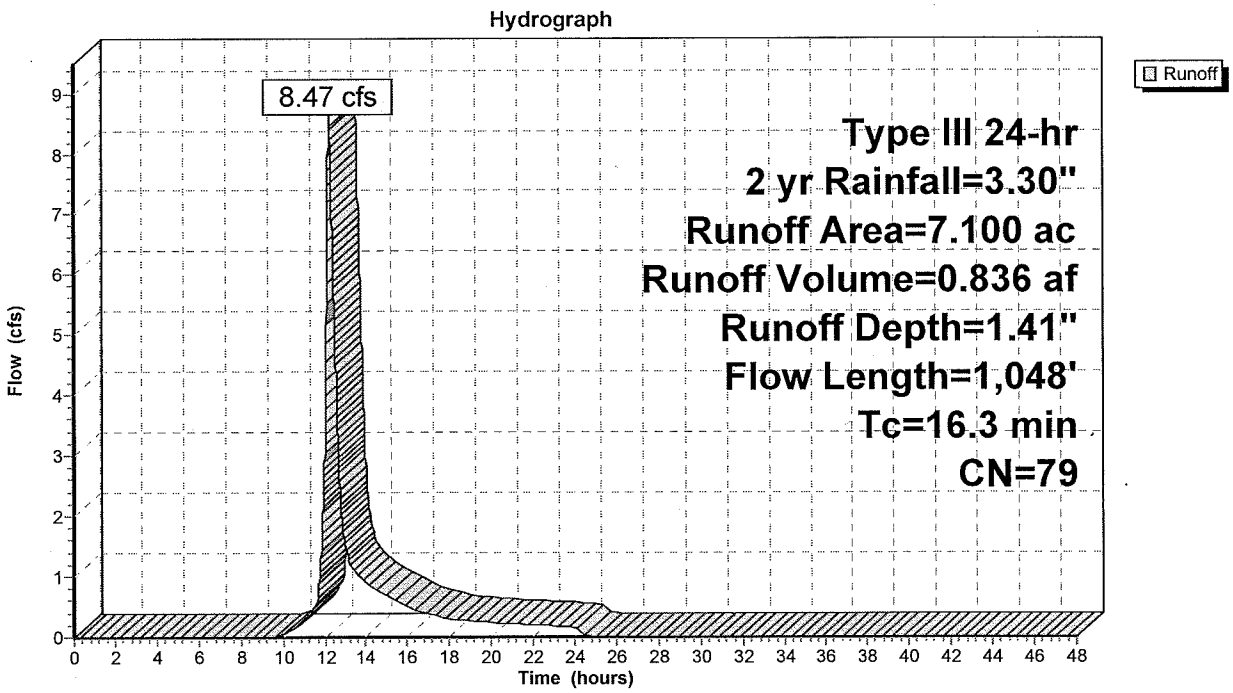
Runoff = 8.47 cfs @ 12.23 hrs, Volume= 0.836 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (ac)	CN	Description
1.328	98	Paved parking, HSG C
0.126	73	Woods, Fair, HSG C
4.744	74	>75% Grass cover, Good, HSG C
0.902	80	>75% Grass cover, Good, HSG D
7.100	79	Weighted Average
5.772		81.30% Pervious Area
1.328		18.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	145	0.0966	0.24		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
5.0	354	0.0282	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	74	0.0203	2.89		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	342	0.0241	16.85	1,802.48	**Channel Flow,** Area= 107.0 sf Perim= 33.0' r= 3.24' n= 0.030 Earth, grassed & winding
0.4	133	0.0196	6.30	2.20	**Pipe Channel,** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
16.3	1,048	Total			

Subcatchment EDA-4: Northwest Existing

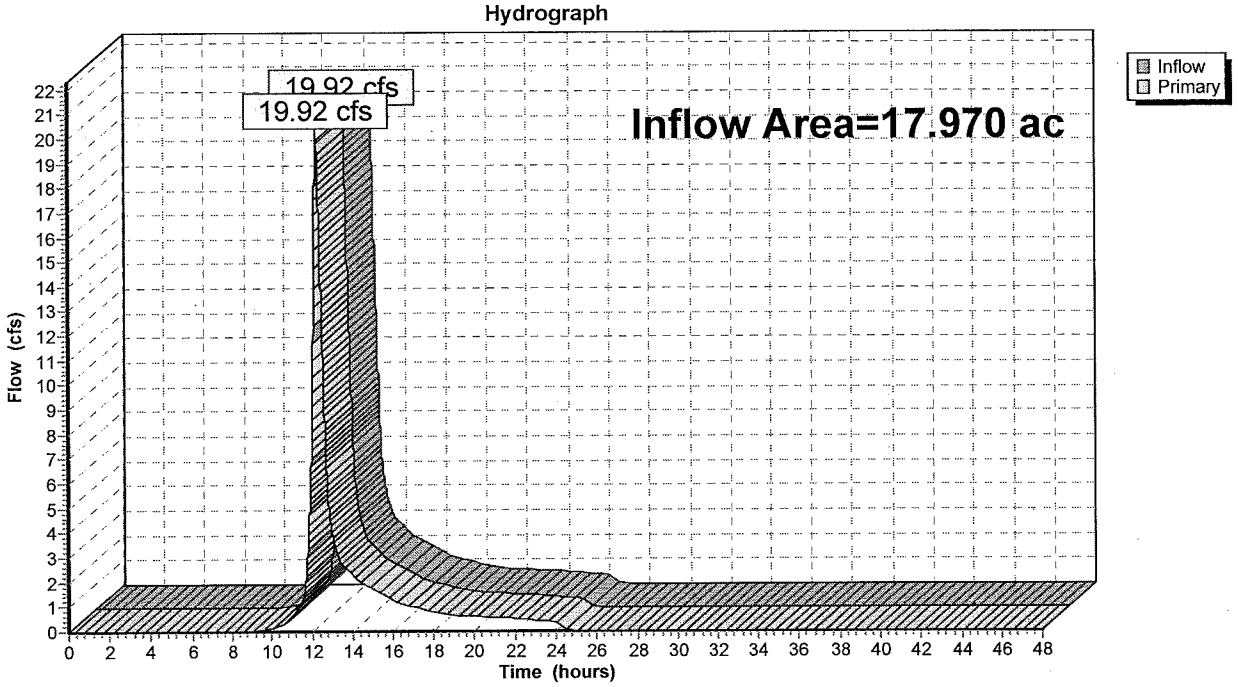


Summary for Pond POS: POS 2 & 3

Inflow Area = 17.970 ac, 9.53% Impervious, Inflow Depth = 1.40" for 2 yr event
Inflow = 19.92 cfs @ 12.25 hrs, Volume= 2.091 af
Primary = 19.92 cfs @ 12.25 hrs, Volume= 2.091 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS: POS 2 & 3

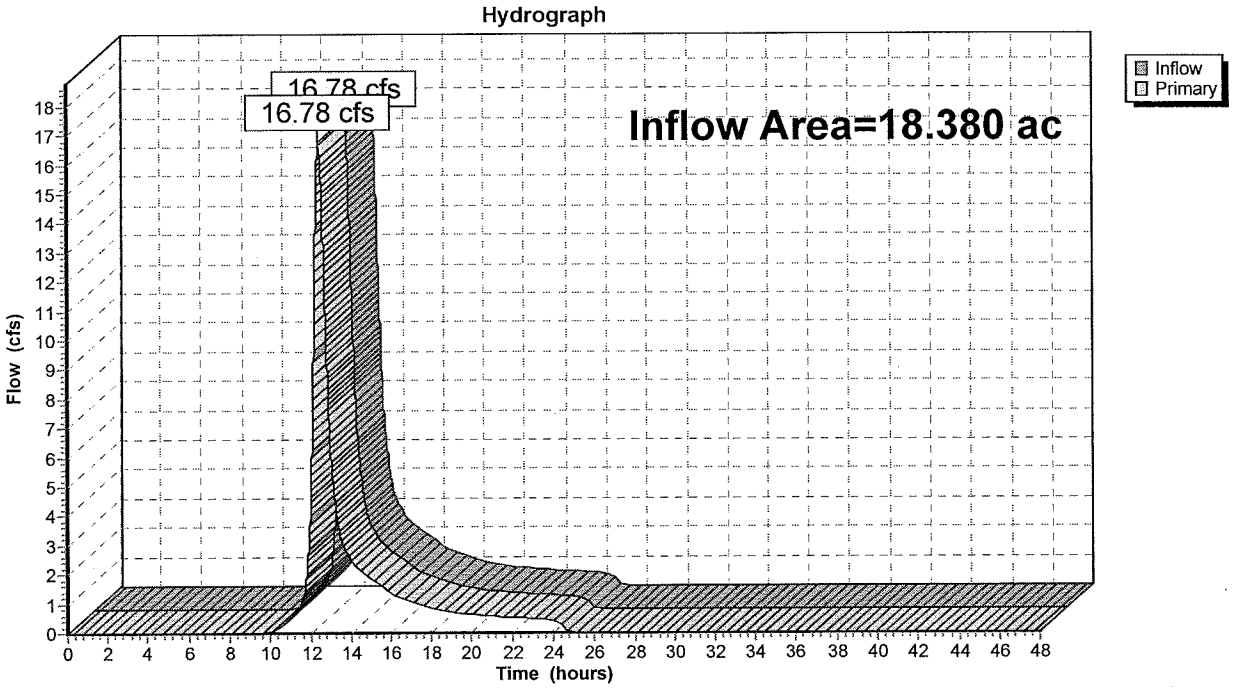


Summary for Pond POS-1: Out let at yard drain

Inflow Area = 18.380 ac, 9.19% Impervious, Inflow Depth = 1.41" for 2 yr event
Inflow = 16.78 cfs @ 12.44 hrs, Volume= 2.163 af
Primary = 16.78 cfs @ 12.44 hrs, Volume= 2.163 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-1: Out let at yard drain

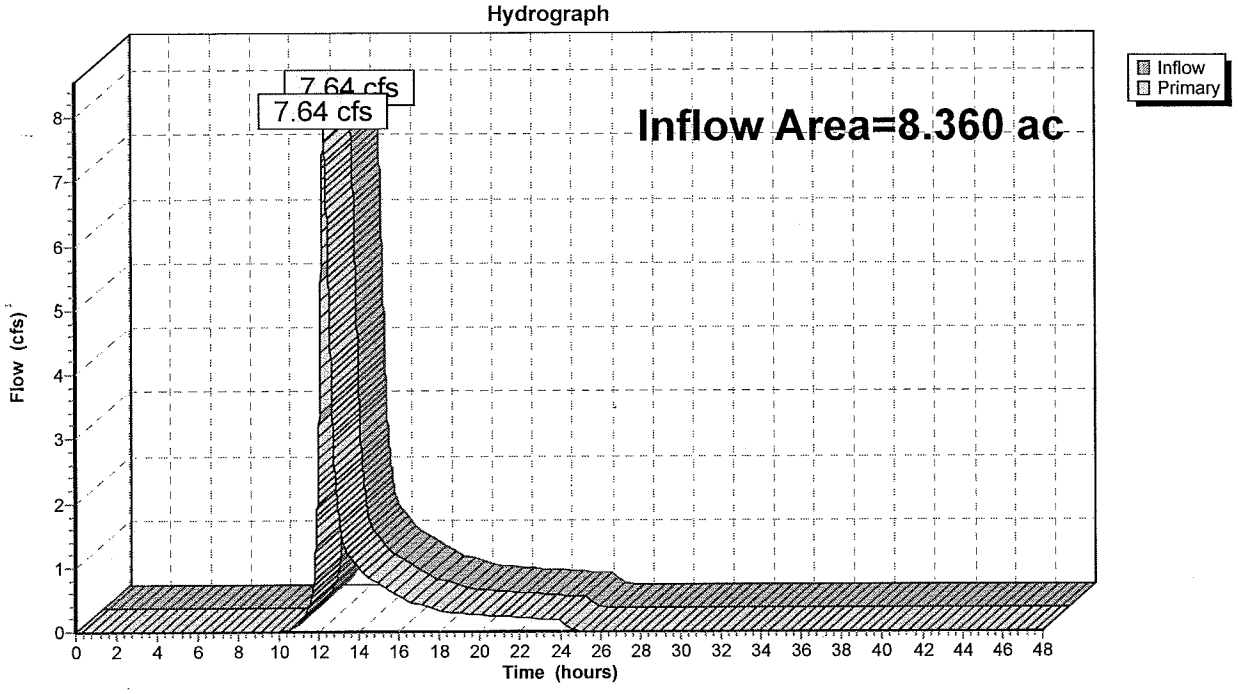


Summary for Pond POS-2: Outlet through 18" RCP

Inflow Area = 8.360 ac, 8.95% Impervious, Inflow Depth = 1.22" for 2 yr event
Inflow = 7.64 cfs @ 12.31 hrs, Volume= 0.851 af
Primary = 7.64 cfs @ 12.31 hrs, Volume= 0.851 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-2: Outlet through 18" RCP

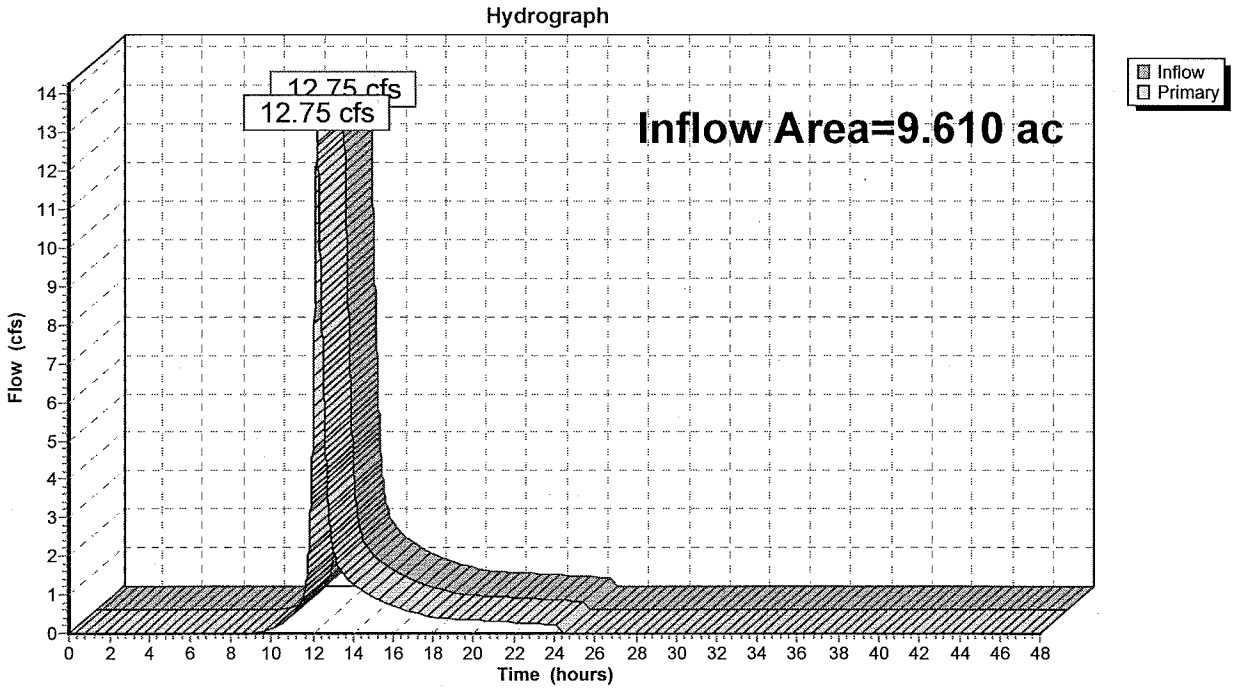


Summary for Pond POS-3: Outlet through 18" RCP

Inflow Area = 9.610 ac, 10.04% Impervious, Inflow Depth = 1.55" for 2 yr event
Inflow = 12.75 cfs @ 12.22 hrs, Volume= 1.240 af
Primary = 12.75 cfs @ 12.22 hrs, Volume= 1.240 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-3: Outlet through 18" RCP

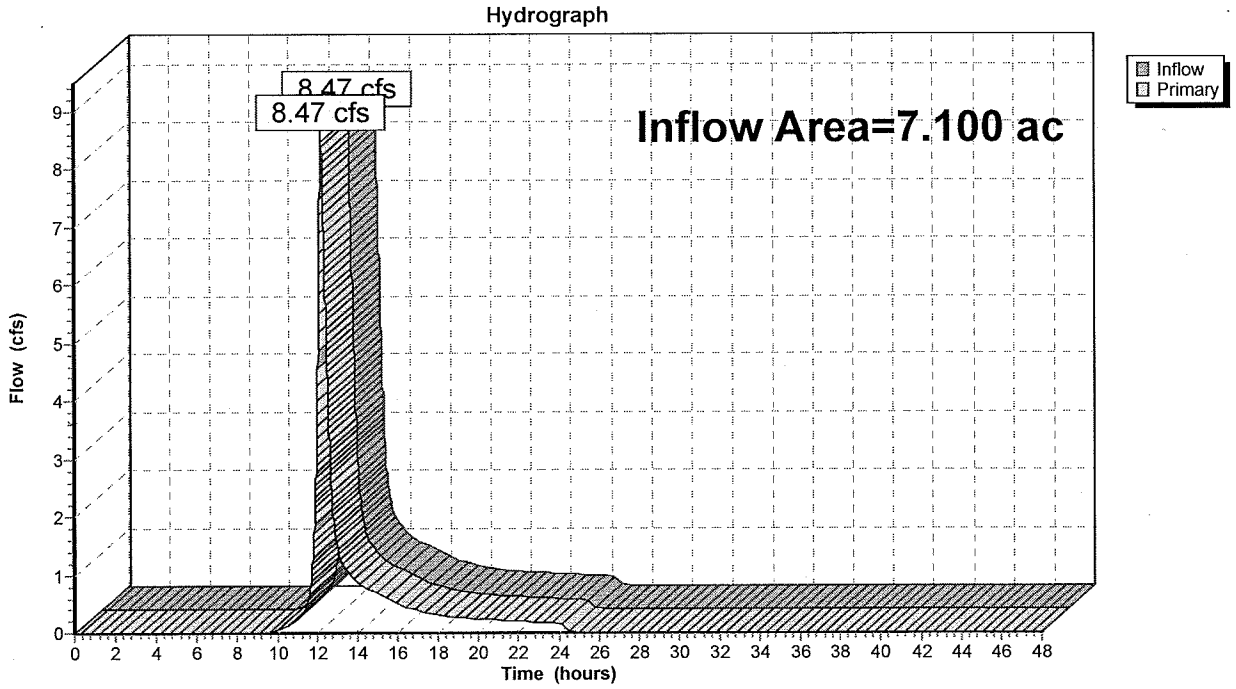


Summary for Pond POS-4: Outlet through 24" brick pipe

Inflow Area = 7.100 ac, 18.70% Impervious, Inflow Depth = 1.41" for 2 yr event
Inflow = 8.47 cfs @ 12.23 hrs, Volume= 0.836 af
Primary = 8.47 cfs @ 12.23 hrs, Volume= 0.836 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-4: Outlet through 24" brick pipe



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA 3: Northeast Existing Runoff Area=9.610 ac 10.04% Impervious Runoff Depth=2.99"
Flow Length=906' Tc=16.1 min CN=81 Runoff=24.80 cfs 2.391 af

Subcatchment EDA-1: Southeast Existing Runoff Area=18.380 ac 9.19% Impervious Runoff Depth=2.80"
Flow Length=891' Tc=30.6 min CN=79 Runoff=33.86 cfs 4.291 af

Subcatchment EDA-2: Southwest Existing Runoff Area=8.360 ac 8.95% Impervious Runoff Depth=2.54"
Flow Length=1,068' Tc=20.9 min CN=76 Runoff=16.41 cfs 1.766 af

Subcatchment EDA-4: Northwest Existing Runoff Area=7.100 ac 18.70% Impervious Runoff Depth=2.80"
Flow Length=1,048' Tc=16.3 min CN=79 Runoff=17.10 cfs 1.658 af

Pond POS: POS 2 & 3 Inflow=40.34 cfs 4.157 af
Primary=40.34 cfs 4.157 af

Pond POS-1: Out let at yard drain Inflow=33.86 cfs 4.291 af
Primary=33.86 cfs 4.291 af

Pond POS-2: Outlet through 18" RCP Inflow=16.41 cfs 1.766 af
Primary=16.41 cfs 1.766 af

Pond POS-3: Outlet through 18" RCP Inflow=24.80 cfs 2.391 af
Primary=24.80 cfs 2.391 af

Pond POS-4: Outlet through 24" brick pipe Inflow=17.10 cfs 1.658 af
Primary=17.10 cfs 1.658 af

Total Runoff Area = 43.450 ac Runoff Volume = 10.106 af Average Runoff Depth = 2.79"
89.11% Pervious = 38.719 ac 10.89% Impervious = 4.731 ac

Summary for Subcatchment EDA 3: Northeast Existing

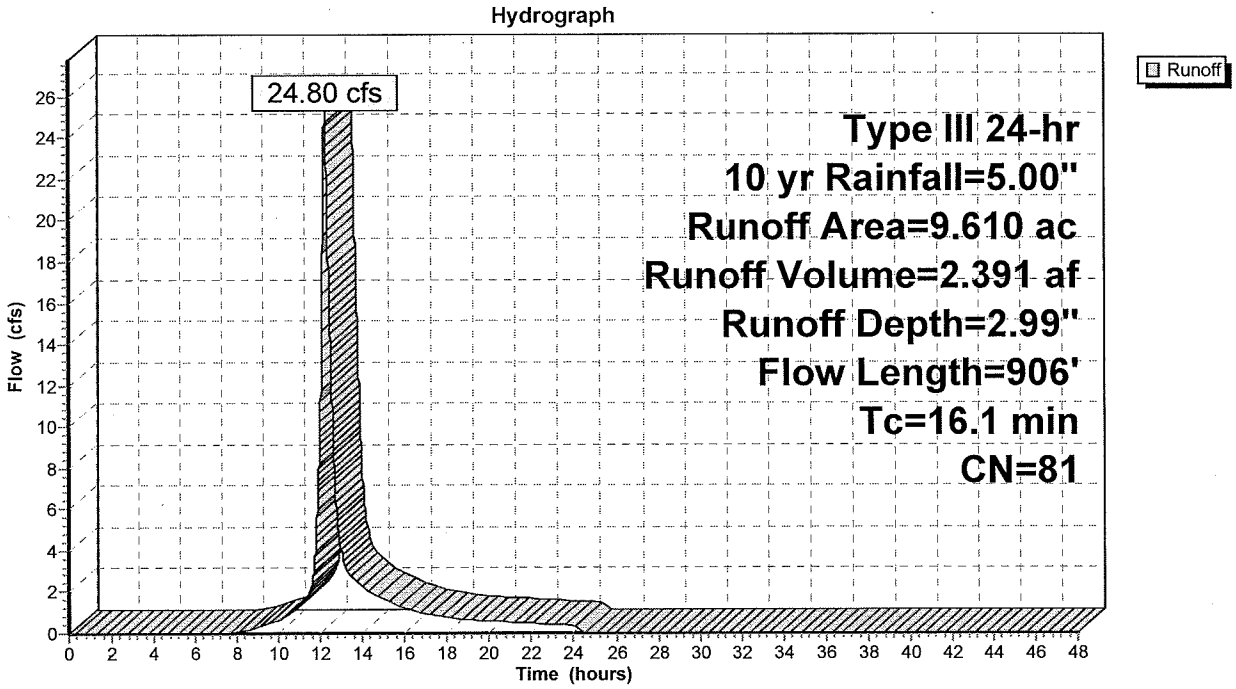
Runoff = 24.80 cfs @ 12.22 hrs, Volume= 2.391 af, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (ac)	CN	Description
0.965	98	Paved parking, HSG C
0.846	73	Woods, Fair, HSG C
0.375	79	Woods, Fair, HSG D
6.289	79	50-75% Grass cover, Fair, HSG C
1.135	84	50-75% Grass cover, Fair, HSG D
9.610	81	Weighted Average
8.645		89.96% Pervious Area
0.965		10.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	177	0.0249	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.5	41	0.0046	1.38		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	669	0.0240	8.15	10.01	**Pipe Channel, RCP_Round 15"** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
0.0	19	0.0210	10.18	17.99	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.011 Concrete pipe, straight & clean
16.1	906	Total			

Subcatchment EDA 3: Northeast Existing



Summary for Subcatchment EDA-1: Southeast Existing

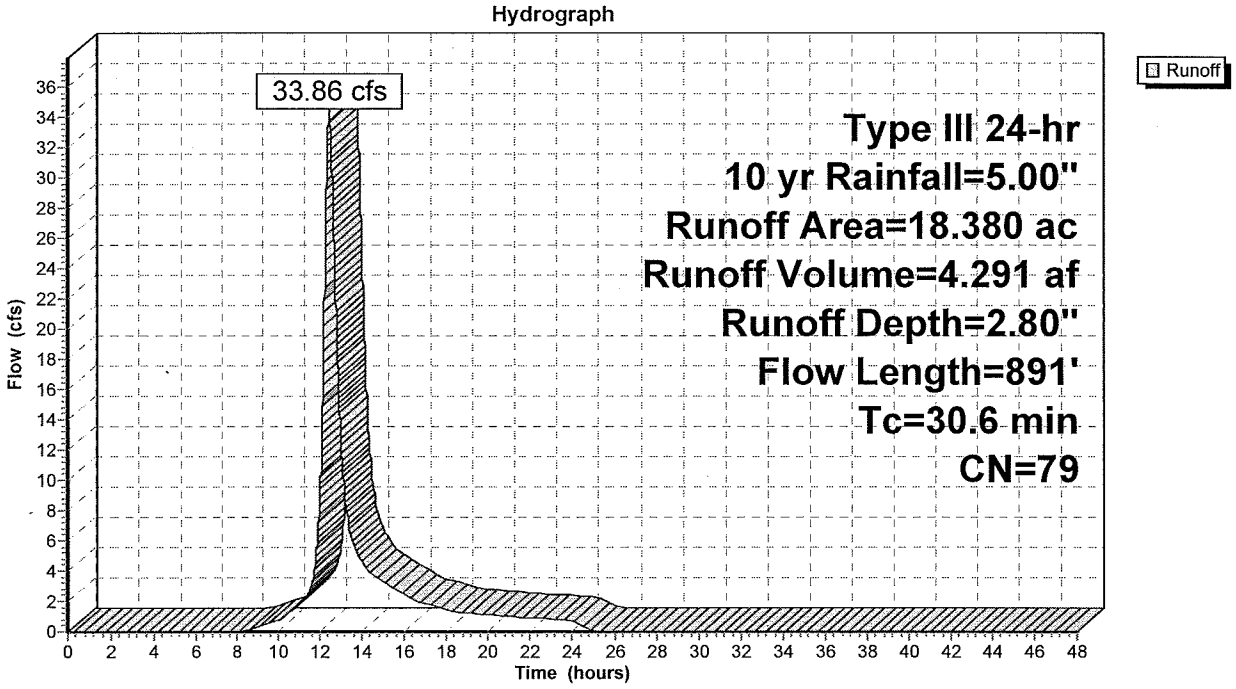
Runoff = 33.86 cfs @ 12.41 hrs, Volume= 4.291 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (ac)	CN	Description
1.690	98	Paved parking, HSG C
6.670	73	Woods, Fair, HSG C
9.640	79	50-75% Grass cover, Fair, HSG C
0.380	84	50-75% Grass cover, Fair, HSG D
18.380	79	Weighted Average
16.690		90.81% Pervious Area
1.690		9.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.1	178	0.1556	0.11		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.20"
2.1	120	0.0192	0.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	54	0.1157	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	40	0.0152	2.50		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	499	0.0076	5.18	9.16	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Concrete pipe, bends & connections
30.6	891	Total			

Subcatchment EDA-1: Southeast Existing



Summary for Subcatchment EDA-2: Southwest Existing

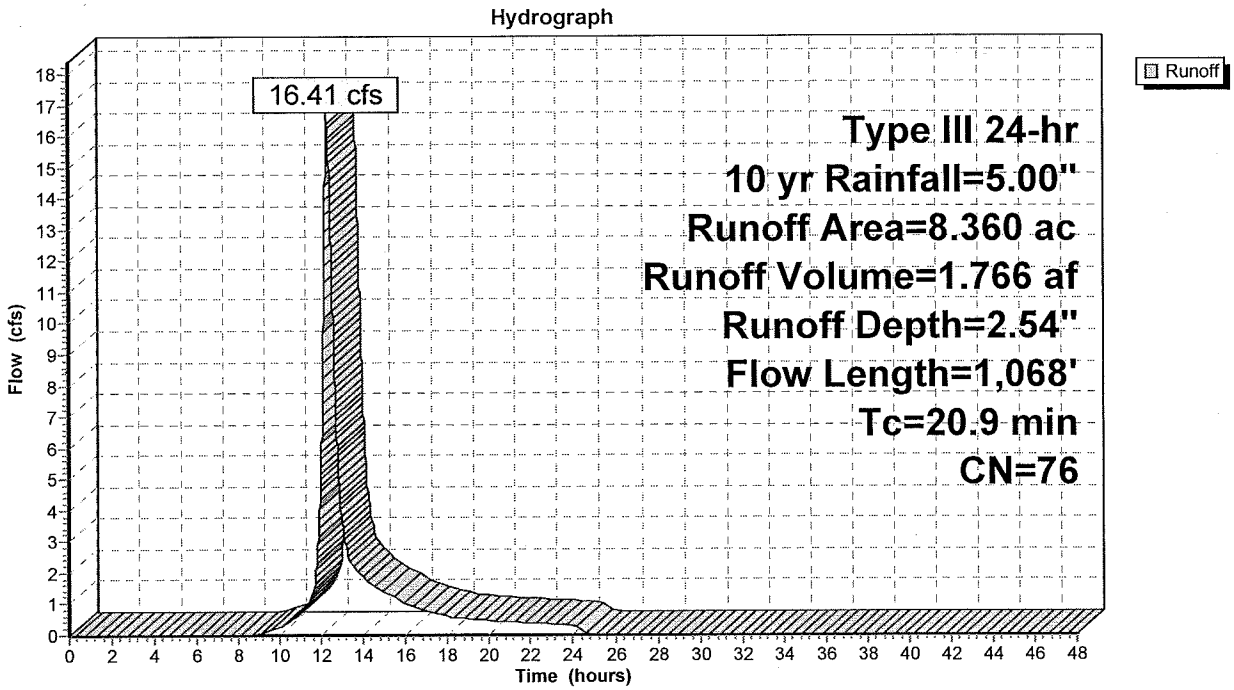
Runoff = 16.41 cfs @ 12.29 hrs, Volume= 1.766 af, Depth= 2.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (ac)	CN	Description
0.748	98	Paved parking, HSG C
0.512	73	Woods, Fair, HSG C
6.878	74	>75% Grass cover, Good, HSG C
0.222	84	50-75% Grass cover, Fair, HSG D
8.360	76	Weighted Average
7.612		91.05% Pervious Area
0.748		8.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	49	0.1224	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
12.5	194	0.0412	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.4	69	0.0196	2.84		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	458	0.0164	6.74	8.27	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
1.0	298	0.0064	5.15	9.10	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Concrete pipe, finished
20.9	1,068	Total			

Subcatchment EDA-2: Southwest Existing



Summary for Subcatchment EDA-4: Northwest Existing

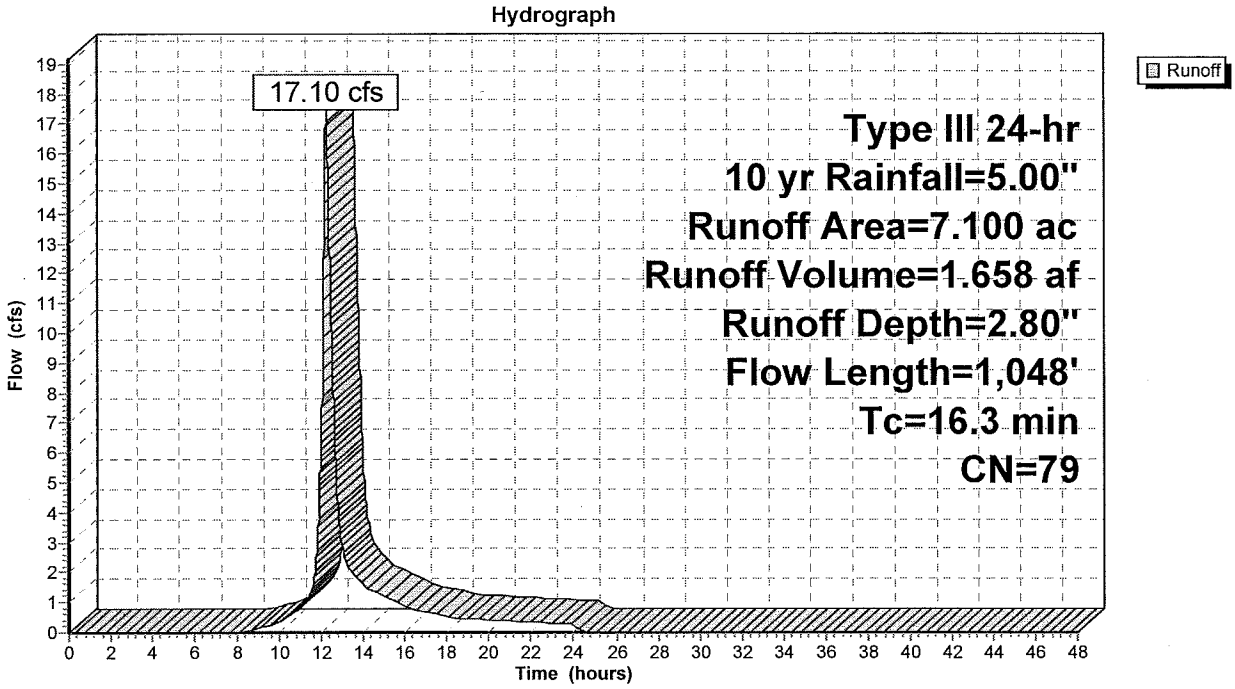
Runoff = 17.10 cfs @ 12.22 hrs, Volume= 1.658 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (ac)	CN	Description
1.328	98	Paved parking, HSG C
0.126	73	Woods, Fair, HSG C
4.744	74	>75% Grass cover, Good, HSG C
0.902	80	>75% Grass cover, Good, HSG D
7.100	79	Weighted Average
5.772		81.30% Pervious Area
1.328		18.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	145	0.0966	0.24		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
5.0	354	0.0282	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	74	0.0203	2.89		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	342	0.0241	16.85	1,802.48	**Channel Flow,** Area= 107.0 sf Perim= 33.0' r= 3.24' n= 0.030 Earth, grassed & winding
0.4	133	0.0196	6.30	2.20	**Pipe Channel,** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
16.3	1,048	Total			

Subcatchment EDA-4: Northwest Existing

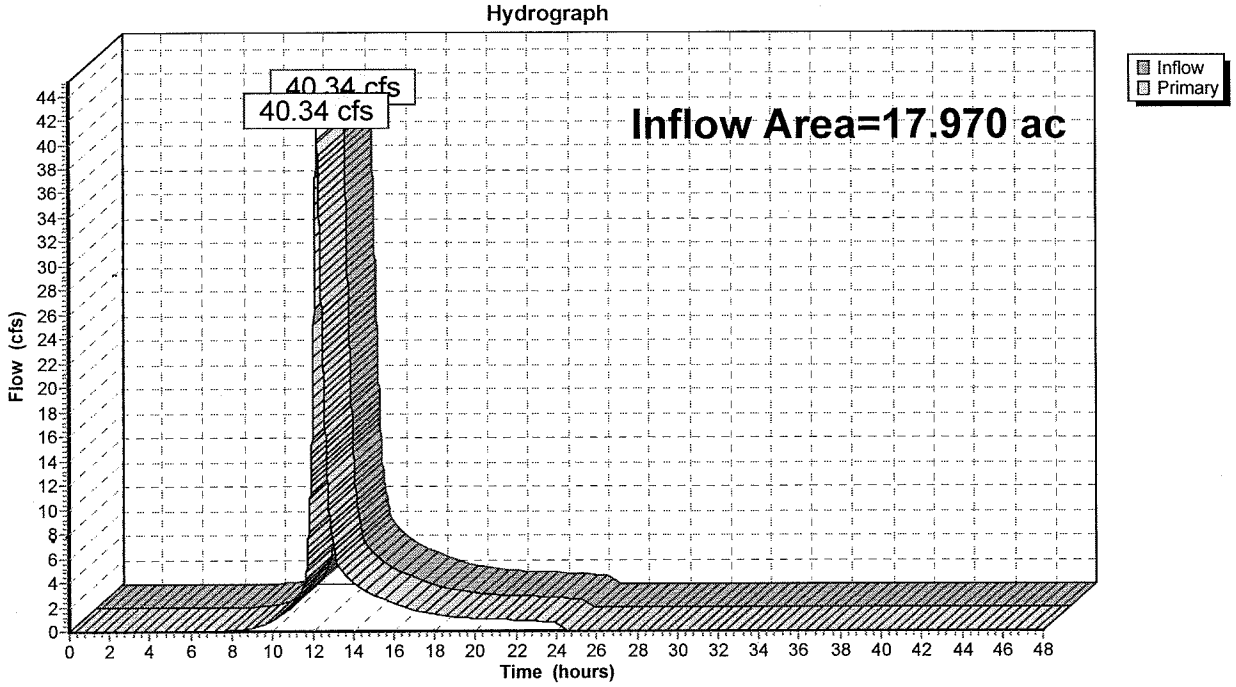


Summary for Pond POS: POS 2 & 3

Inflow Area = 17.970 ac, 9.53% Impervious, Inflow Depth = 2.78" for 10 yr event
Inflow = 40.34 cfs @ 12.24 hrs, Volume= 4.157 af
Primary = 40.34 cfs @ 12.24 hrs, Volume= 4.157 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS: POS 2 & 3

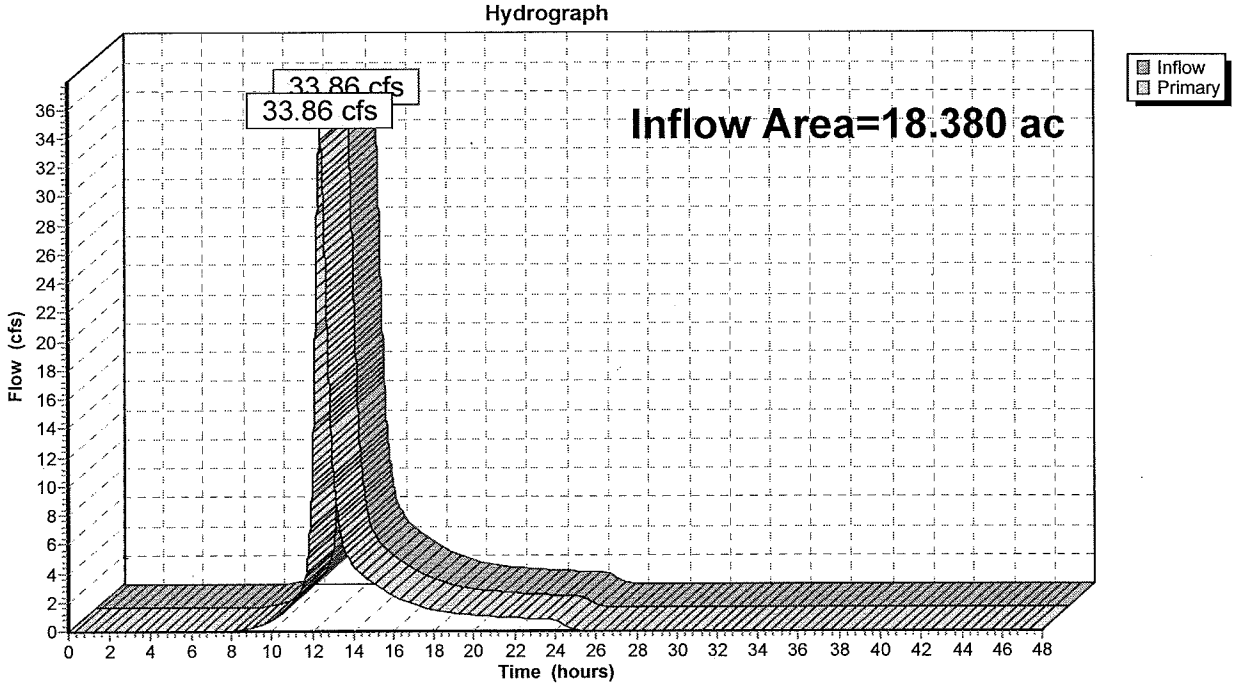


Summary for Pond POS-1: Out let at yard drain

Inflow Area = 18.380 ac, 9.19% Impervious, Inflow Depth = 2.80" for 10 yr event
Inflow = 33.86 cfs @ 12.41 hrs, Volume= 4.291 af
Primary = 33.86 cfs @ 12.41 hrs, Volume= 4.291 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-1: Out let at yard drain

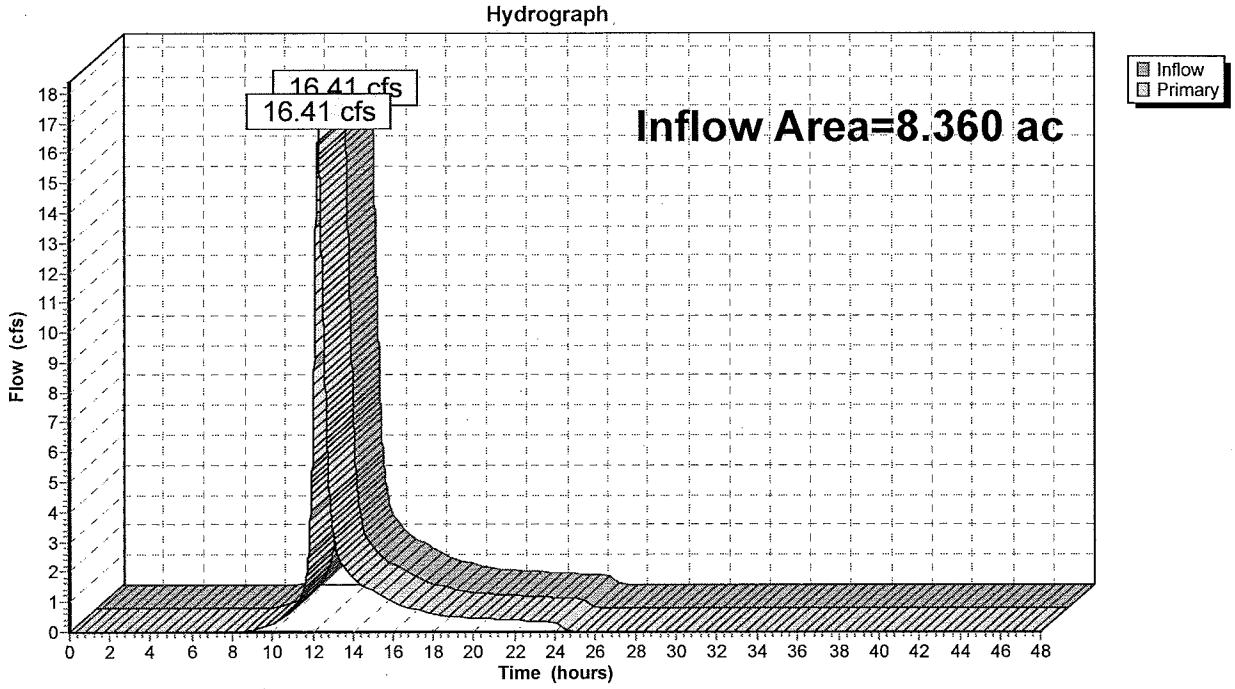


Summary for Pond POS-2: Outlet through 18" RCP

Inflow Area = 8.360 ac, 8.95% Impervious, Inflow Depth = 2.54" for 10 yr event
Inflow = 16.41 cfs @ 12.29 hrs, Volume= 1.766 af
Primary = 16.41 cfs @ 12.29 hrs, Volume= 1.766 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-2: Outlet through 18" RCP

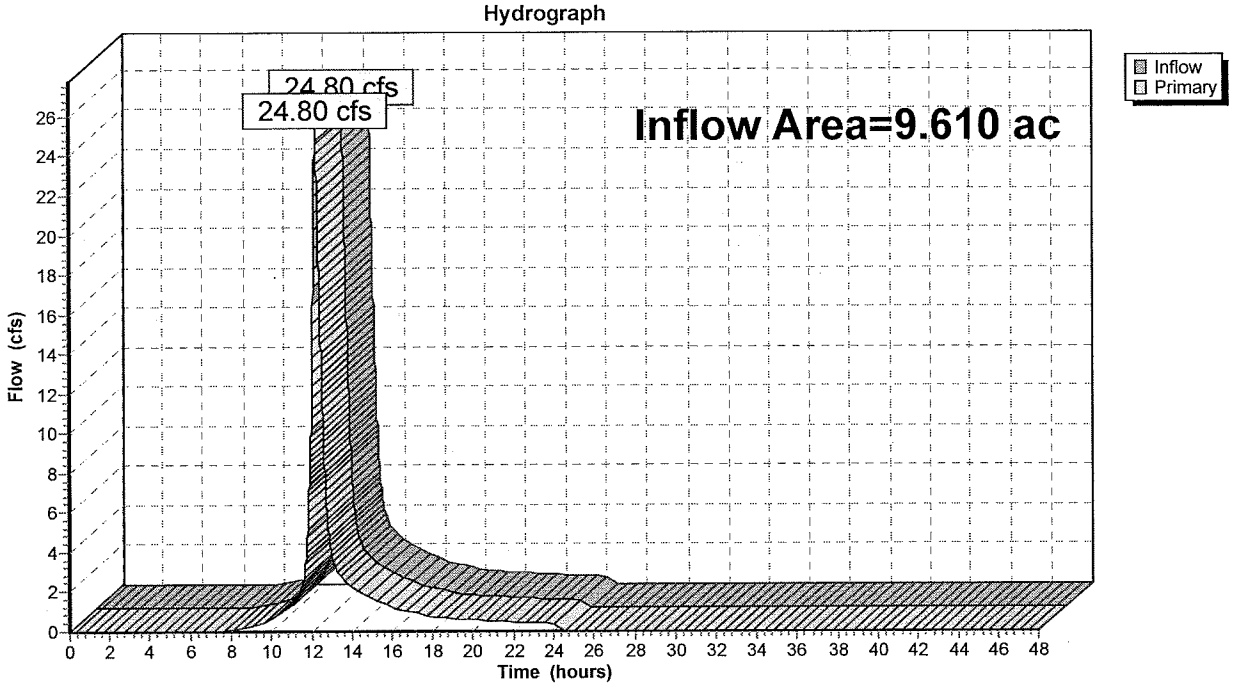


Summary for Pond POS-3: Outlet through 18" RCP

Inflow Area = 9.610 ac, 10.04% Impervious, Inflow Depth = 2.99" for 10 yr event
Inflow = 24.80 cfs @ 12.22 hrs, Volume= 2.391 af
Primary = 24.80 cfs @ 12.22 hrs, Volume= 2.391 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-3: Outlet through 18" RCP

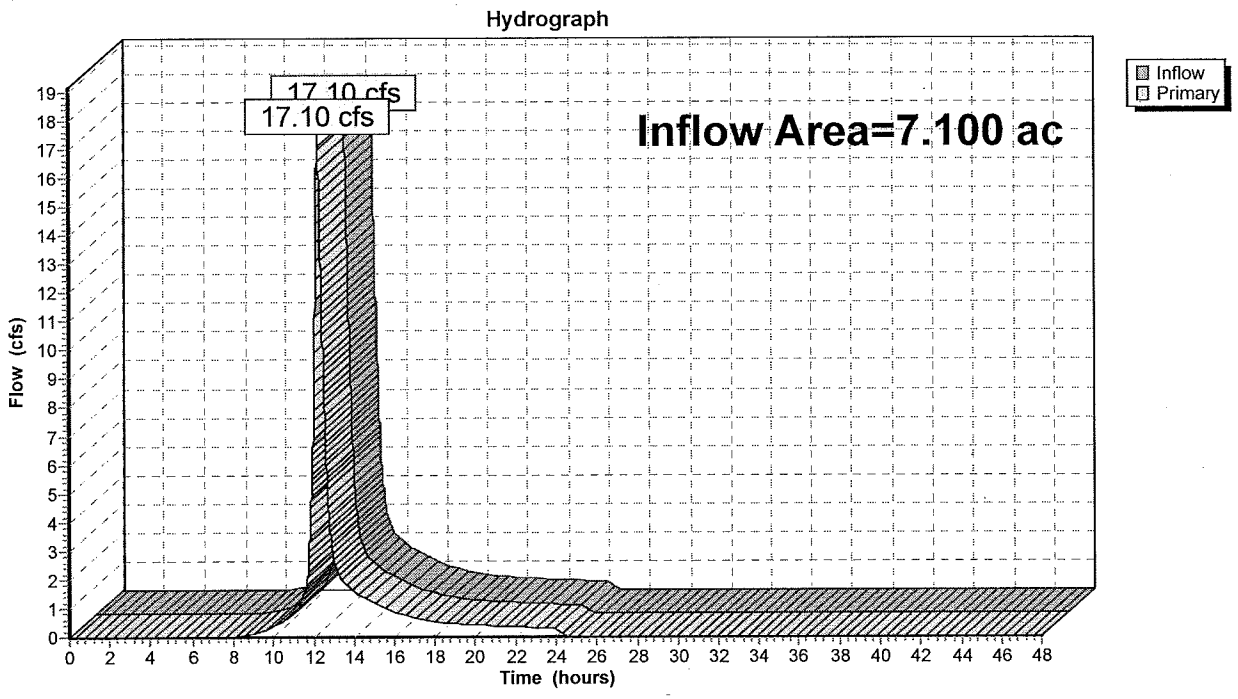


Summary for Pond POS-4: Outlet through 24" brick pipe

Inflow Area = 7.100 ac, 18.70% Impervious, Inflow Depth = 2.80" for 10 yr event
Inflow = 17.10 cfs @ 12.22 hrs, Volume= 1.658 af
Primary = 17.10 cfs @ 12.22 hrs, Volume= 1.658 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-4: Outlet through 24" brick pipe



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EDA 3: Northeast Existing Runoff Area=9.610 ac 10.04% Impervious Runoff Depth=4.90"
Flow Length=906' Tc=16.1 min CN=81 Runoff=40.30 cfs 3.923 af

Subcatchment EDA-1: Southeast Existing Runoff Area=18.380 ac 9.19% Impervious Runoff Depth=4.68"
Flow Length=891' Tc=30.6 min CN=79 Runoff=56.30 cfs 7.162 af

Subcatchment EDA-2: Southwest Existing Runoff Area=8.360 ac 8.95% Impervious Runoff Depth=4.35"
Flow Length=1,068' Tc=20.9 min CN=76 Runoff=28.21 cfs 3.028 af

Subcatchment EDA-4: Northwest Existing Runoff Area=7.100 ac 18.70% Impervious Runoff Depth=4.68"
Flow Length=1,048' Tc=16.3 min CN=79 Runoff=28.40 cfs 2.767 af

Pond POS: POS 2 & 3 Inflow=67.16 cfs 6.951 af
Primary=67.16 cfs 6.951 af

Pond POS-1: Out let at yard drain Inflow=56.30 cfs 7.162 af
Primary=56.30 cfs 7.162 af

Pond POS-2: Outlet through 18" RCP Inflow=28.21 cfs 3.028 af
Primary=28.21 cfs 3.028 af

Pond POS-3: Outlet through 18" RCP Inflow=40.30 cfs 3.923 af
Primary=40.30 cfs 3.923 af

Pond POS-4: Outlet through 24" brick pipe Inflow=28.40 cfs 2.767 af
Primary=28.40 cfs 2.767 af

Total Runoff Area = 43.450 ac Runoff Volume = 16.879 af Average Runoff Depth = 4.66"
89.11% Pervious = 38.719 ac 10.89% Impervious = 4.731 ac

Summary for Subcatchment EDA 3: Northeast Existing

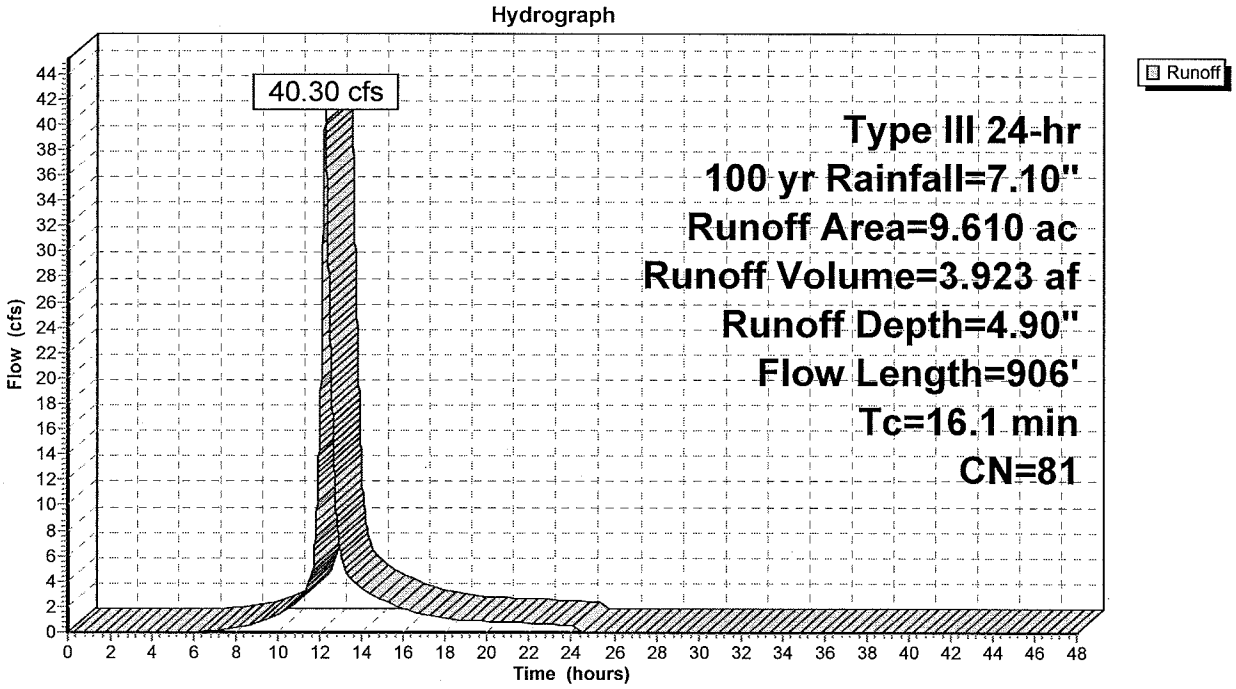
Runoff = 40.30 cfs @ 12.22 hrs, Volume= 3.923 af, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=7.10"

Area (ac)	CN	Description
0.965	98	Paved parking, HSG C
0.846	73	Woods, Fair, HSG C
0.375	79	Woods, Fair, HSG D
6.289	79	50-75% Grass cover, Fair, HSG C
1.135	84	50-75% Grass cover, Fair, HSG D
9.610	81	Weighted Average
8.645		89.96% Pervious Area
0.965		10.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	177	0.0249	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.5	41	0.0046	1.38		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	669	0.0240	8.15	10.01	**Pipe Channel, RCP_Round 15"** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
0.0	19	0.0210	10.18	17.99	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.011 Concrete pipe, straight & clean
16.1	906	Total			

Subcatchment EDA 3: Northeast Existing



Summary for Subcatchment EDA-1: Southeast Existing

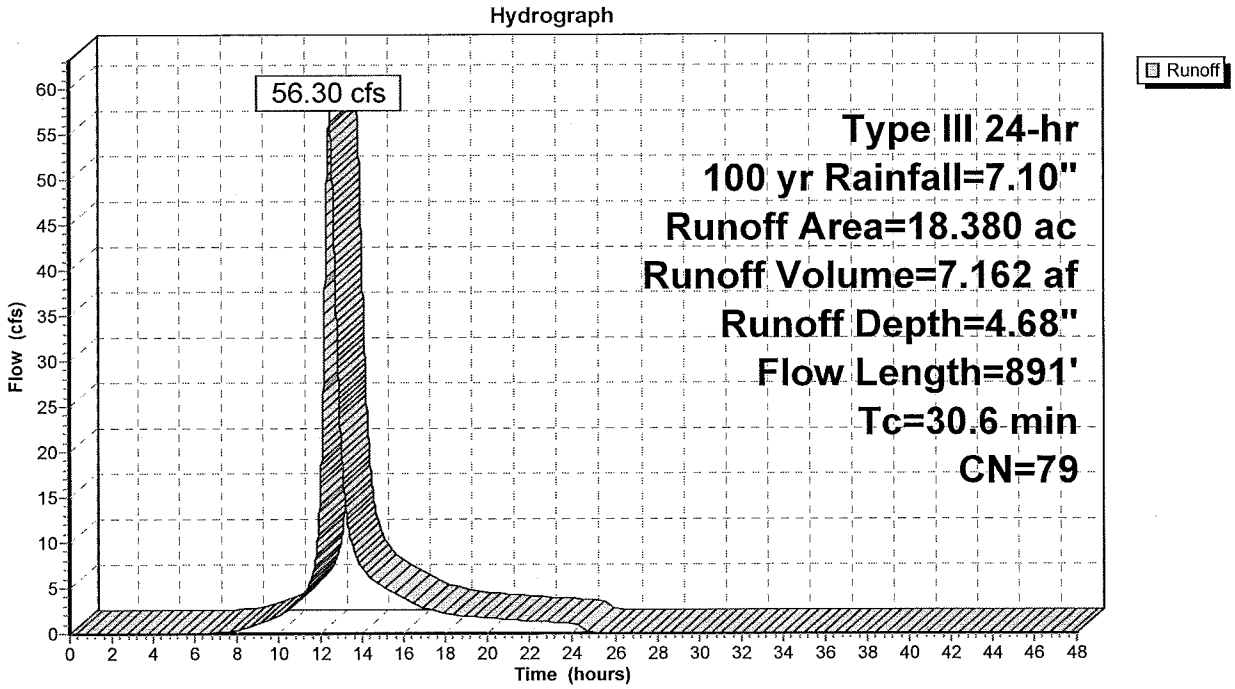
Runoff = 56.30 cfs @ 12.41 hrs, Volume= 7.162 af, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=7.10"

Area (ac)	CN	Description
1.690	98	Paved parking, HSG C
6.670	73	Woods, Fair, HSG C
9.640	79	50-75% Grass cover, Fair, HSG C
0.380	84	50-75% Grass cover, Fair, HSG D
18.380	79	Weighted Average
16.690		90.81% Pervious Area
1.690		9.19% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.1	178	0.1556	0.11		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.20"
2.1	120	0.0192	0.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	54	0.1157	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	40	0.0152	2.50		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	499	0.0076	5.18	9.16	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Concrete pipe, bends & connections
30.6	891	Total			

Subcatchment EDA-1: Southeast Existing



Summary for Subcatchment EDA-2: Southwest Existing

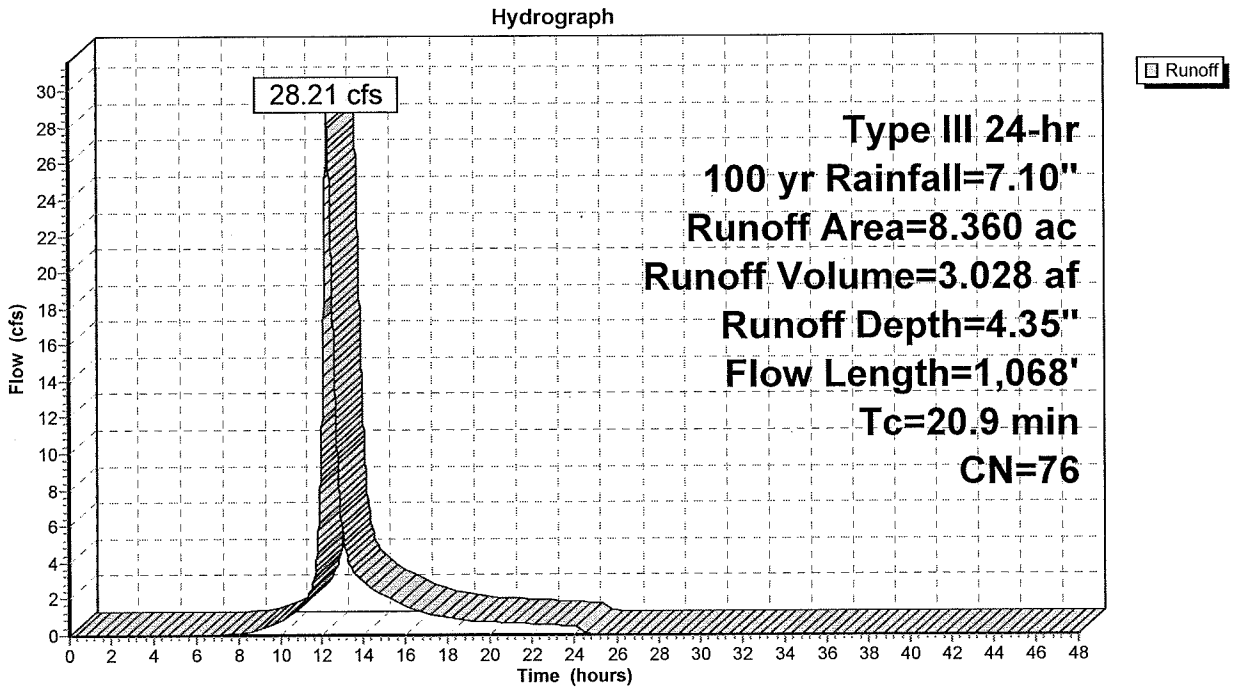
Runoff = 28.21 cfs @ 12.28 hrs, Volume= 3.028 af, Depth= 4.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=7.10"

Area (ac)	CN	Description
0.748	98	Paved parking, HSG C
0.512	73	Woods, Fair, HSG C
6.878	74	>75% Grass cover, Good, HSG C
0.222	84	50-75% Grass cover, Fair, HSG D
8.360	76	Weighted Average
7.612		91.05% Pervious Area
0.748		8.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	49	0.1224	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
12.5	194	0.0412	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.4	69	0.0196	2.84		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	458	0.0164	6.74	8.27	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
1.0	298	0.0064	5.15	9.10	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Concrete pipe, finished
20.9	1,068	Total			

Subcatchment EDA-2: Southwest Existing



Summary for Subcatchment EDA-4: Northwest Existing

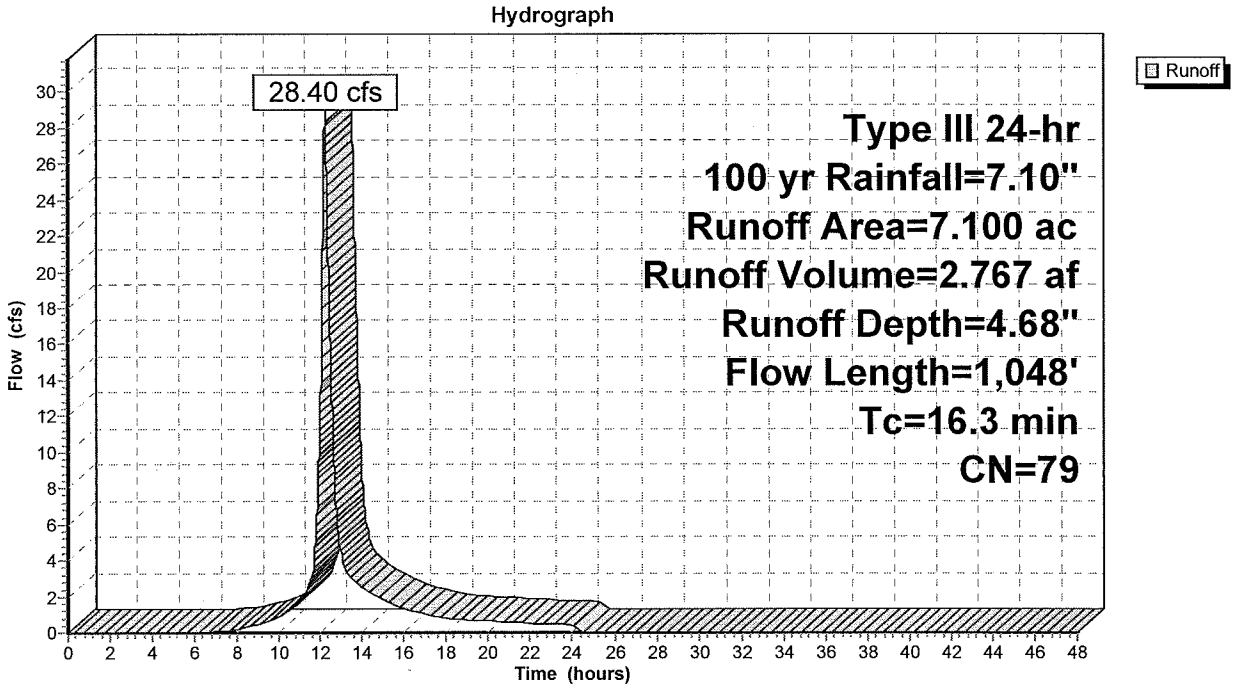
Runoff = 28.40 cfs @ 12.22 hrs, Volume= 2.767 af, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=7.10"

Area (ac)	CN	Description
1.328	98	Paved parking, HSG C
0.126	73	Woods, Fair, HSG C
4.744	74	>75% Grass cover, Good, HSG C
0.902	80	>75% Grass cover, Good, HSG D
7.100	79	Weighted Average
5.772		81.30% Pervious Area
1.328		18.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	145	0.0966	0.24		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
5.0	354	0.0282	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	74	0.0203	2.89		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	342	0.0241	16.85	1,802.48	**Channel Flow,** Area= 107.0 sf Perim= 33.0' r= 3.24' n= 0.030 Earth, grassed & winding
0.4	133	0.0196	6.30	2.20	**Pipe Channel,** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
16.3	1,048	Total			

Subcatchment EDA-4: Northwest Existing

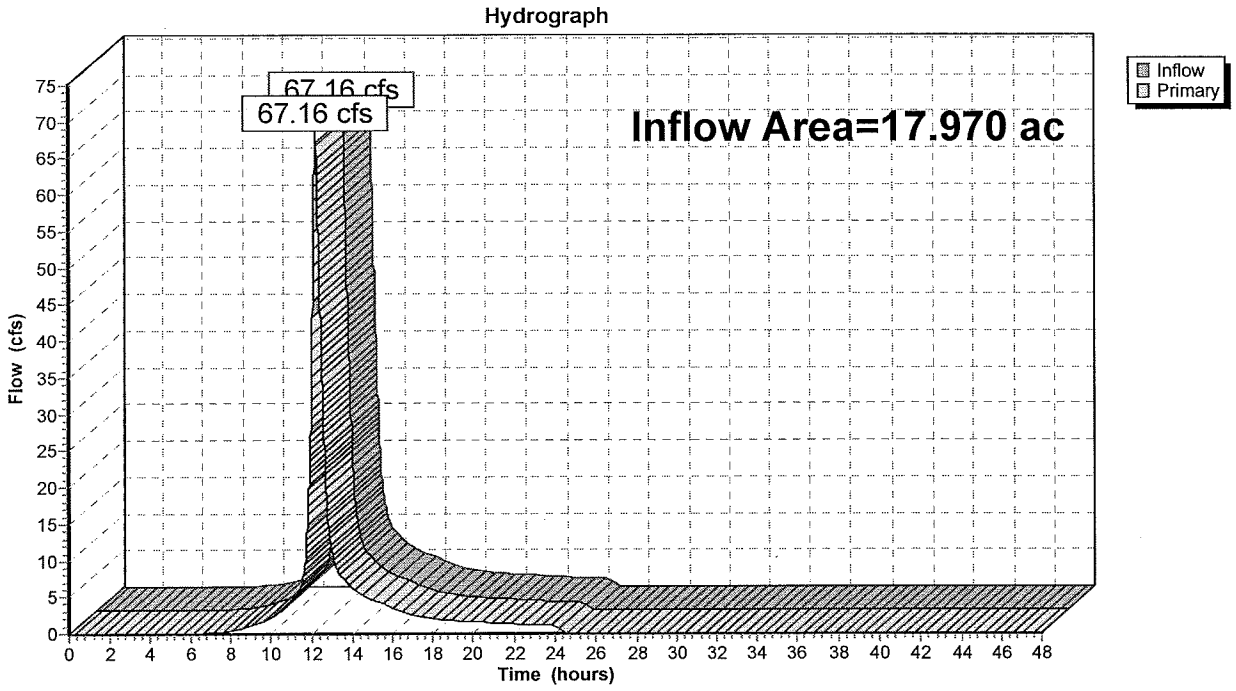


Summary for Pond POS: POS 2 & 3

Inflow Area = 17.970 ac, 9.53% Impervious, Inflow Depth = 4.64" for 100 yr event
Inflow = 67.16 cfs @ 12.24 hrs, Volume= 6.951 af
Primary = 67.16 cfs @ 12.24 hrs, Volume= 6.951 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS: POS 2 & 3

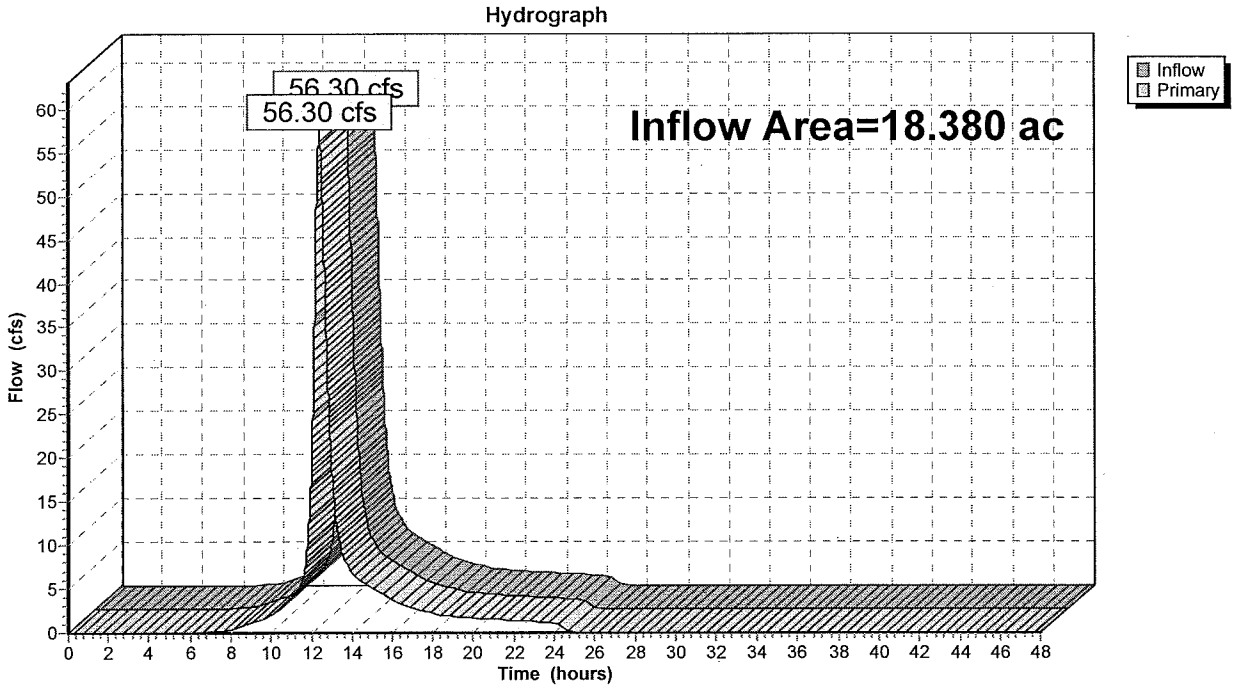


Summary for Pond POS-1: Out let at yard drain

Inflow Area = 18.380 ac, 9.19% Impervious, Inflow Depth = 4.68" for 100 yr event
Inflow = 56.30 cfs @ 12.41 hrs, Volume= 7.162 af
Primary = 56.30 cfs @ 12.41 hrs, Volume= 7.162 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-1: Out let at yard drain

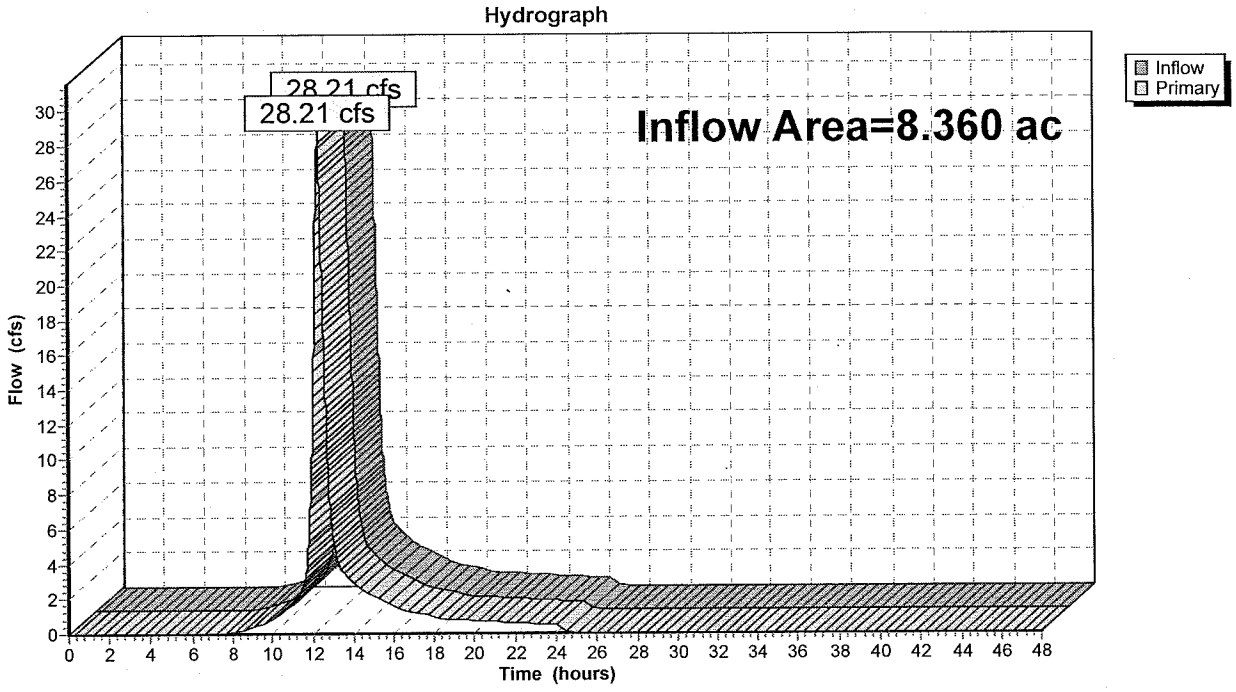


Summary for Pond POS-2: Outlet through 18" RCP

Inflow Area = 8.360 ac, 8.95% Impervious, Inflow Depth = 4.35" for 100 yr event
Inflow = 28.21 cfs @ 12.28 hrs, Volume= 3.028 af
Primary = 28.21 cfs @ 12.28 hrs, Volume= 3.028 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-2: Outlet through 18" RCP

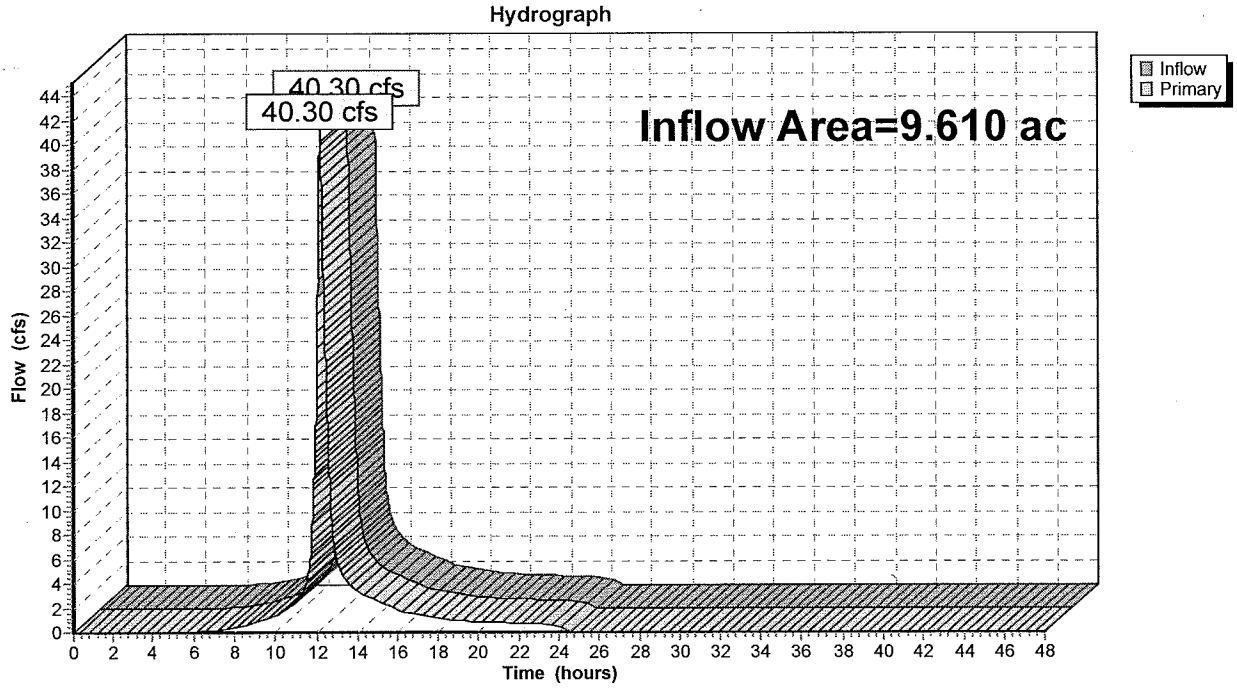


Summary for Pond POS-3: Outlet through 18" RCP

Inflow Area = 9.610 ac, 10.04% Impervious, Inflow Depth = 4.90" for 100 yr event
Inflow = 40.30 cfs @ 12.22 hrs, Volume= 3.923 af
Primary = 40.30 cfs @ 12.22 hrs, Volume= 3.923 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-3: Outlet through 18" RCP

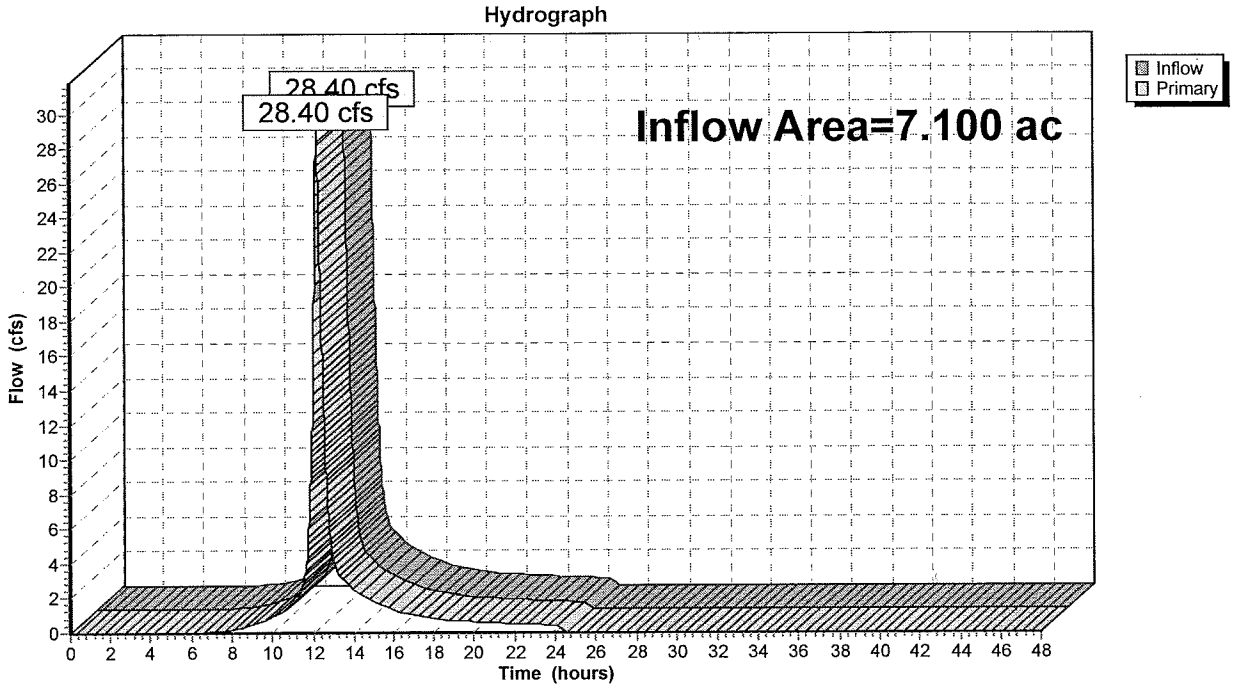


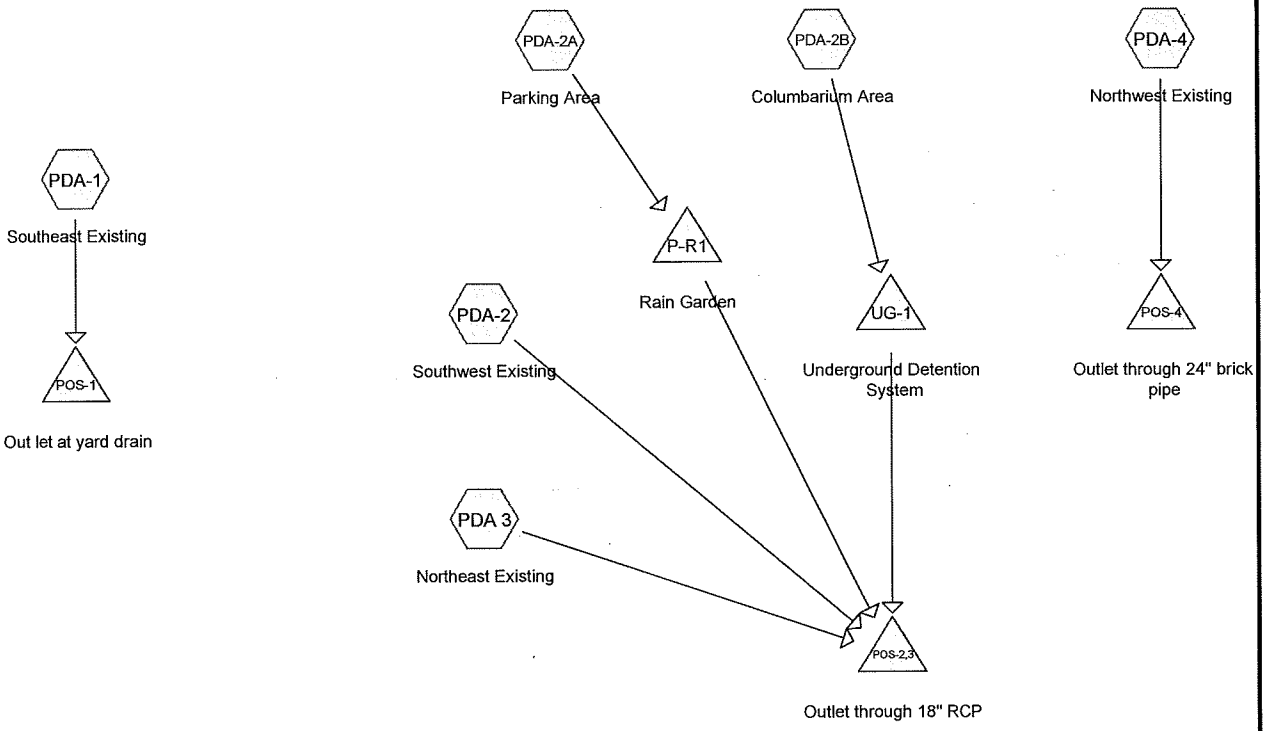
Summary for Pond POS-4: Outlet through 24" brick pipe

Inflow Area = 7.100 ac, 18.70% Impervious, Inflow Depth = 4.68" for 100 yr event
Inflow = 28.40 cfs @ 12.22 hrs, Volume= 2.767 af
Primary = 28.40 cfs @ 12.22 hrs, Volume= 2.767 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-4: Outlet through 24" brick pipe





Subcat Reach Pond Link

Routing Diagram for PROPOSED-12C4226
Prepared by Microsoft, Printed 5/19/2014

Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
15.365	79	50-75% Grass cover, Fair, HSG C (PDA 3, PDA-1)
1.737	84	50-75% Grass cover, Fair, HSG D (PDA 3, PDA-1, PDA-2)
11.044	74	>75% Grass cover, Good, HSG C (PDA-2, PDA-2A, PDA-2B, PDA-4)
0.902	80	>75% Grass cover, Good, HSG D (PDA-4)
5.873	98	Paved parking, HSG C (PDA 3, PDA-1, PDA-2, PDA-2A, PDA-2B, PDA-4)
8.154	73	Woods, Fair, HSG C (PDA 3, PDA-1, PDA-2, PDA-4)
0.375	79	Woods, Fair, HSG D (PDA 3)
43.450	**79**	**TOTAL AREA**

Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
40.436	HSG C	PDA 3, PDA-1, PDA-2, PDA-2A, PDA-2B, PDA-4
3.014	HSG D	PDA 3, PDA-1, PDA-2, PDA-4
0.000	Other	
43.450		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	15.365	1.737	0.000	17.102	50-75% Grass cover, Fair	PDA 3, PDA-1, PDA-2
0.000	0.000	11.044	0.902	0.000	11.946	>75% Grass cover, Good	PDA-2, PDA-2A, PDA-2B, PDA-4
0.000	0.000	5.873	0.000	0.000	5.873	Paved parking	PDA 3, PDA-1, PDA-2, PDA-2A, PDA-2B, PDA-4
0.000	0.000	8.154	0.375	0.000	8.529	Woods, Fair	PDA 3, PDA-1, PDA-2, PDA-4
0.000	**0.000**	**40.436**	**3.014**	**0.000**	**43.450**	**TOTAL AREA**	

Pipe Listing (all nodes)

Line#	Node Number	In-Invert (feet)	Out-Invert (feet)	Length (feet)	Slope (ft/ft)	n	Diam/Width (inches)	Height (inches)	Inside-Fill (inches)
1	PDA 3	0.00	0.00	669.0	0.0240	0.013	15.0	0.0	0.0
2	PDA 3	0.00	0.00	19.0	0.0210	0.011	18.0	0.0	0.0
3	PDA-1	0.00	0.00	499.0	0.0076	0.013	18.0	0.0	0.0
4	PDA-2	0.00	0.00	458.0	0.0164	0.013	15.0	0.0	0.0
5	PDA-2	0.00	0.00	298.0	0.0064	0.012	18.0	0.0	0.0
6	PDA-4	0.00	0.00	133.0	0.0196	0.010	8.0	0.0	0.0

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA 3: Northeast Existing Runoff Area=9.610 ac 10.23% Impervious Runoff Depth=1.55"
Flow Length=906' Tc=16.1 min CN=81 Runoff=12.75 cfs 1.240 af

Subcatchment PDA-1: Southeast Existing Runoff Area=18.380 ac 12.17% Impervious Runoff Depth=1.41"
Flow Length=891' Tc=30.6 min CN=79 Runoff=16.78 cfs 2.163 af

Subcatchment PDA-2: Southwest Existing Runoff Area=7.364 ac 10.28% Impervious Runoff Depth=1.28"
Flow Length=1,068' Tc=20.9 min CN=77 Runoff=7.12 cfs 0.788 af

Subcatchment PDA-2A: Parking Area Runoff Area=0.581 ac 45.44% Impervious Runoff Depth=1.84"
Flow Length=255' Tc=16.2 min CN=85 Runoff=0.92 cfs 0.089 af

Subcatchment PDA-2B: Columbarium Area Runoff Area=0.755 ac 40.40% Impervious Runoff Depth=1.77"
Tc=10.0 min CN=84 Runoff=1.37 cfs 0.111 af

Subcatchment PDA-4: Northwest Existing Runoff Area=6.760 ac 19.64% Impervious Runoff Depth=1.41"
Flow Length=1,048' Tc=16.3 min CN=79 Runoff=8.07 cfs 0.796 af

Pond P-R1: Rain Garden Peak Elev=179.74' Storage=1,362 cf Inflow=0.92 cfs 0.089 af
Discarded=0.08 cfs 0.054 af Primary=0.18 cfs 0.046 af Outflow=0.26 cfs 0.100 af

Pond POS-1: Out let at yard drain Inflow=16.78 cfs 2.163 af
Primary=16.78 cfs 2.163 af

Pond POS-2,3: Outlet through 18" RCP Inflow=19.88 cfs 2.129 af
Primary=19.88 cfs 2.129 af

Pond POS-4: Outlet through 24" brick pipe Inflow=8.07 cfs 0.796 af
Primary=8.07 cfs 0.796 af

Pond UG-1: Underground Detention System Peak Elev=173.77' Storage=0.032 af Inflow=1.37 cfs 0.111 af
Discarded=0.08 cfs 0.056 af Primary=0.33 cfs 0.055 af Outflow=0.41 cfs 0.111 af

Total Runoff Area = 43.450 ac Runoff Volume = 5.187 af Average Runoff Depth = 1.43"
86.48% Pervious = 37.577 ac 13.52% Impervious = 5.873 ac

Summary for Subcatchment PDA 3: Northeast Existing

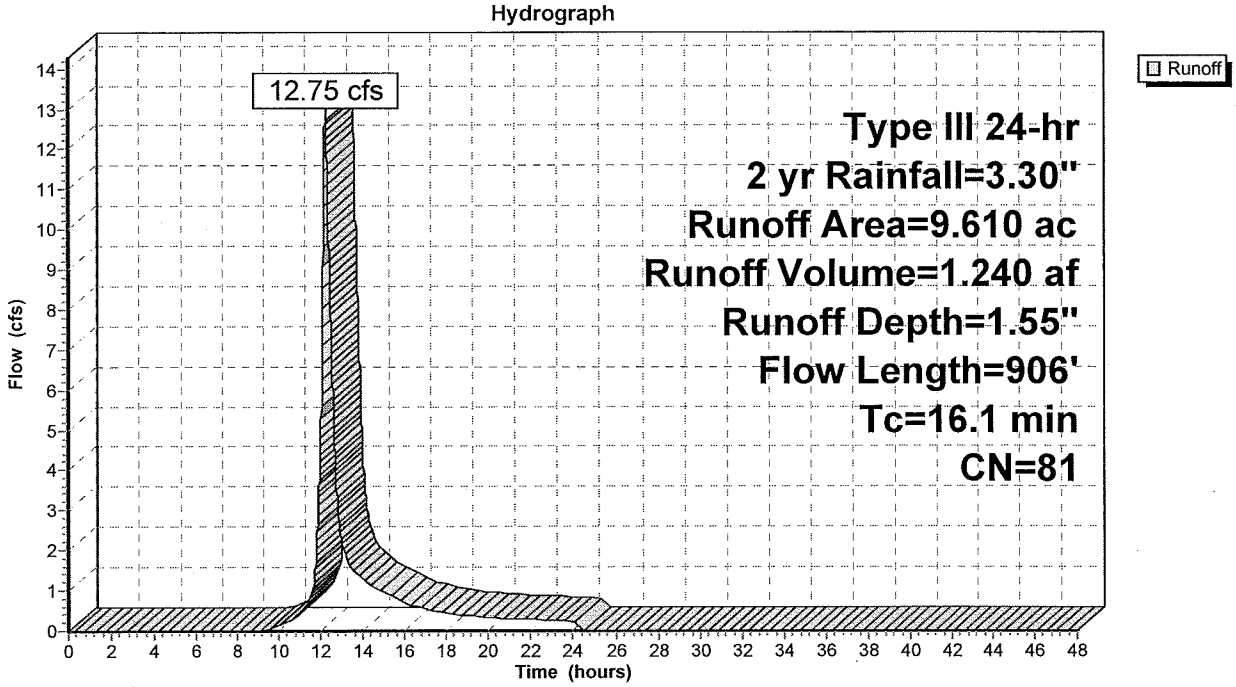
Runoff = 12.75 cfs @ 12.22 hrs, Volume= 1.240 af, Depth= 1.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (ac)	CN	Description
0.983	98	Paved parking, HSG C
0.846	73	Woods, Fair, HSG C
0.375	79	Woods, Fair, HSG D
6.271	79	50-75% Grass cover, Fair, HSG C
1.135	84	50-75% Grass cover, Fair, HSG D
9.610	81	Weighted Average
8.627		89.77% Pervious Area
0.983		10.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	177	0.0249	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.5	41	0.0046	1.38		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	669	0.0240	8.15	10.01	**Pipe Channel, RCP_Round 15"** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
0.0	19	0.0210	10.18	17.99	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.011 Concrete pipe, straight & clean
16.1	906	Total			

Subcatchment PDA 3: Northeast Existing



Summary for Subcatchment PDA-1: Southeast Existing

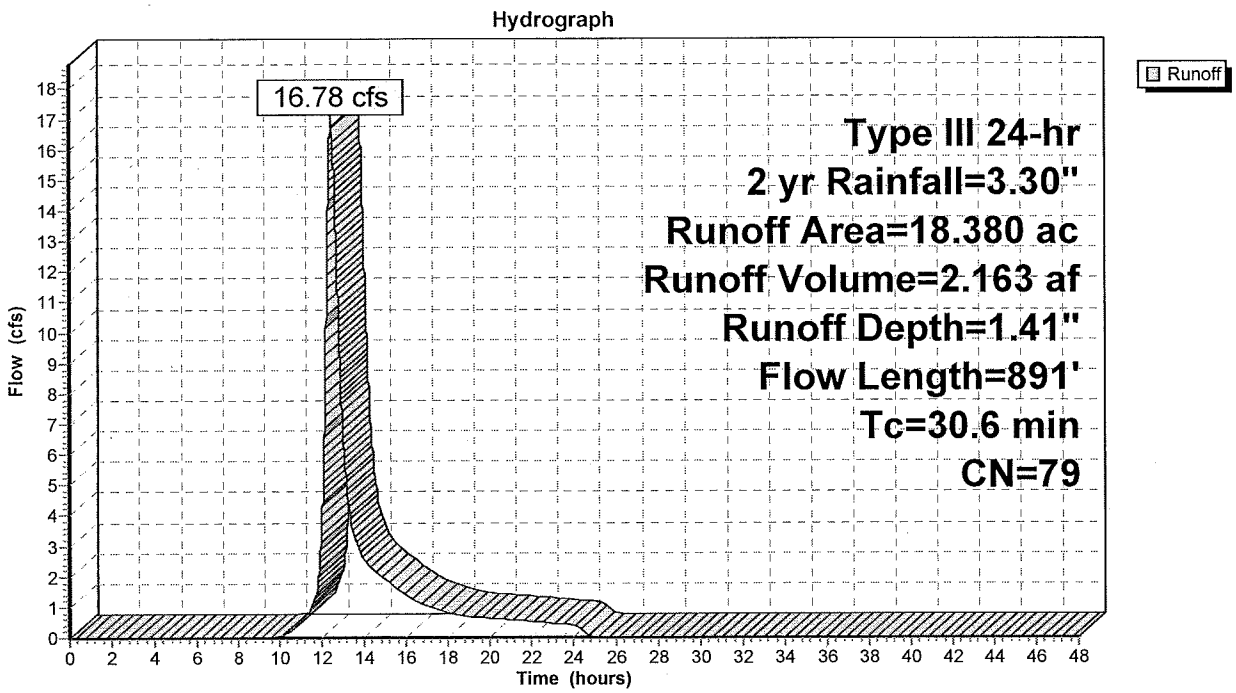
Runoff = 16.78 cfs @ 12.44 hrs, Volume= 2.163 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (ac)	CN	Description
2.236	98	Paved parking, HSG C
6.670	73	Woods, Fair, HSG C
9.094	79	50-75% Grass cover, Fair, HSG C
0.380	84	50-75% Grass cover, Fair, HSG D
18.380	79	Weighted Average
16.144		87.83% Pervious Area
2.236		12.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.1	178	0.1556	0.11		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.20"
2.1	120	0.0192	0.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	54	0.1157	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	40	0.0152	2.50		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	499	0.0076	5.18	9.16	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Concrete pipe, bends & connections
30.6	891	Total			

Subcatchment PDA-1: Southeast Existing



Summary for Subcatchment PDA-2: Southwest Existing

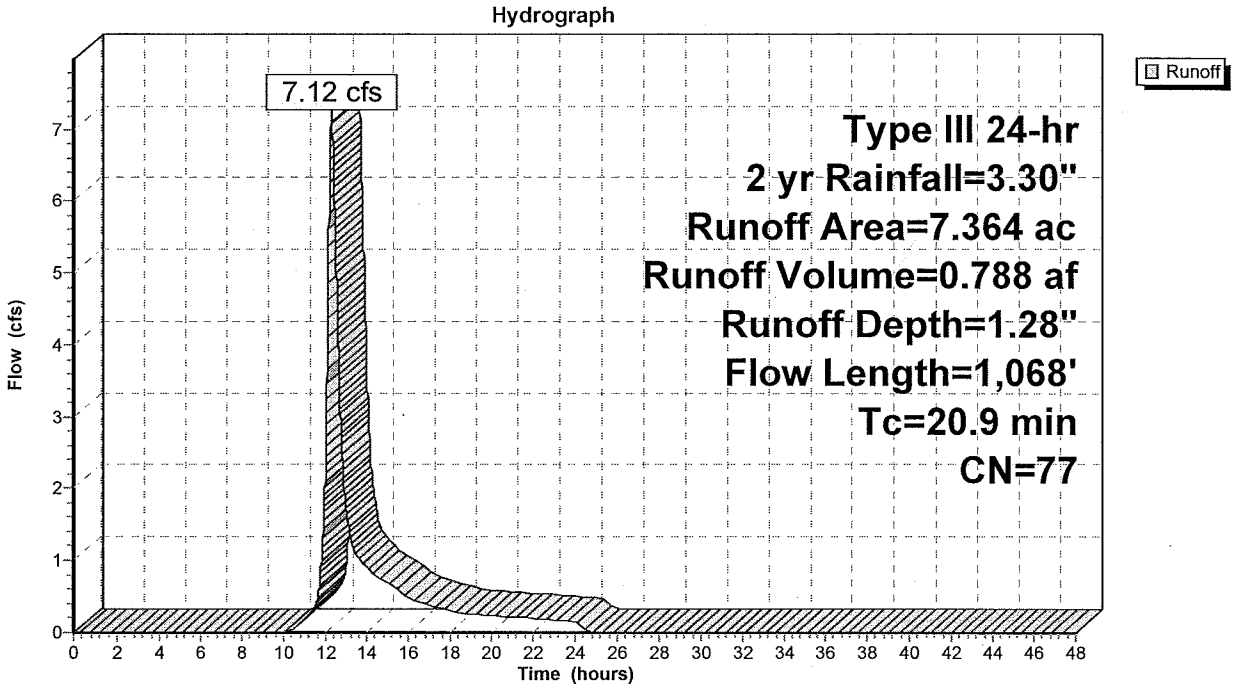
Runoff = 7.12 cfs @ 12.30 hrs, Volume= 0.788 af, Depth= 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (ac)	CN	Description
0.757	98	Paved parking, HSG C
0.512	73	Woods, Fair, HSG C
5.873	74	>75% Grass cover, Good, HSG C
0.222	84	50-75% Grass cover, Fair, HSG D
7.364	77	Weighted Average
6.607		89.72% Pervious Area
0.757		10.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	49	0.1224	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
12.5	194	0.0412	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.4	69	0.0196	2.84		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	458	0.0164	6.74	8.27	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
1.0	298	0.0064	5.15	9.10	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Concrete pipe, finished
20.9	1,068	Total			

Subcatchment PDA-2: Southwest Existing



Summary for Subcatchment PDA-2A: Parking Area

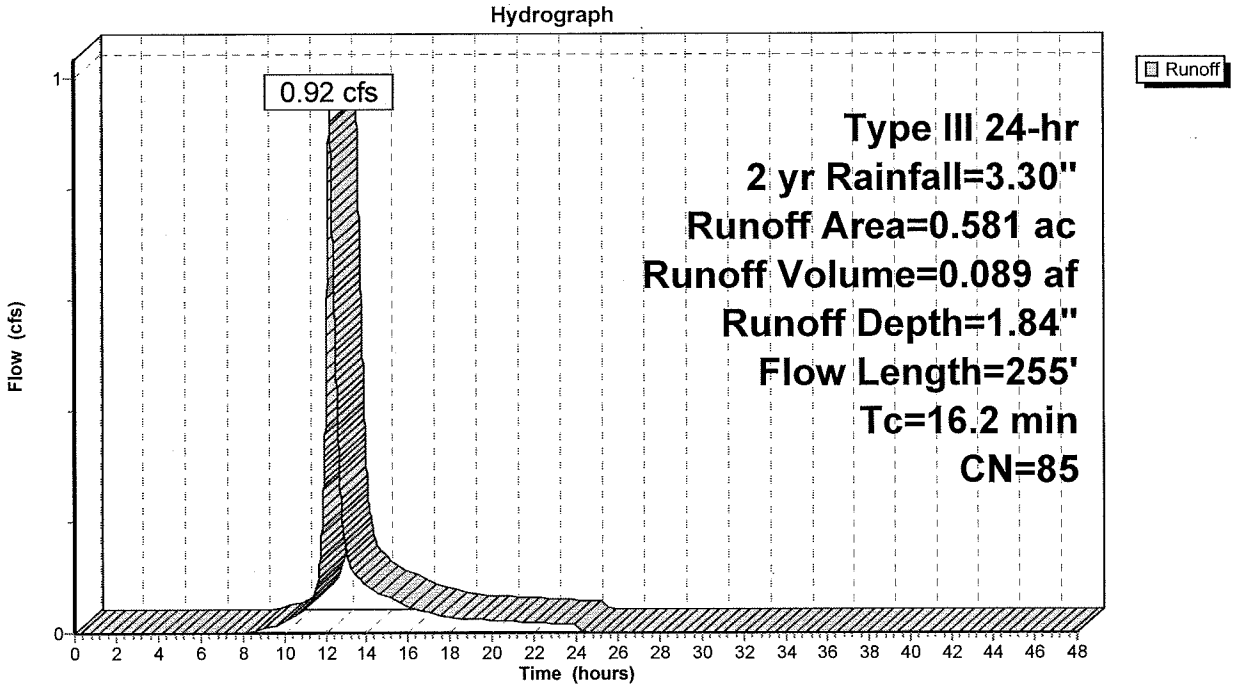
Runoff = 0.92 cfs @ 12.22 hrs, Volume= 0.089 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (ac)	CN	Description
0.264	98	Paved parking, HSG C
0.102	74	>75% Grass cover, Good, HSG C
0.215	74	>75% Grass cover, Good, HSG C
0.581	85	Weighted Average
0.317		54.56% Pervious Area
0.264		45.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	155	0.0387	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.6	100	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.2	255	Total			

Subcatchment PDA-2A: Parking Area



Summary for Subcatchment PDA-2B: Columbarium Area

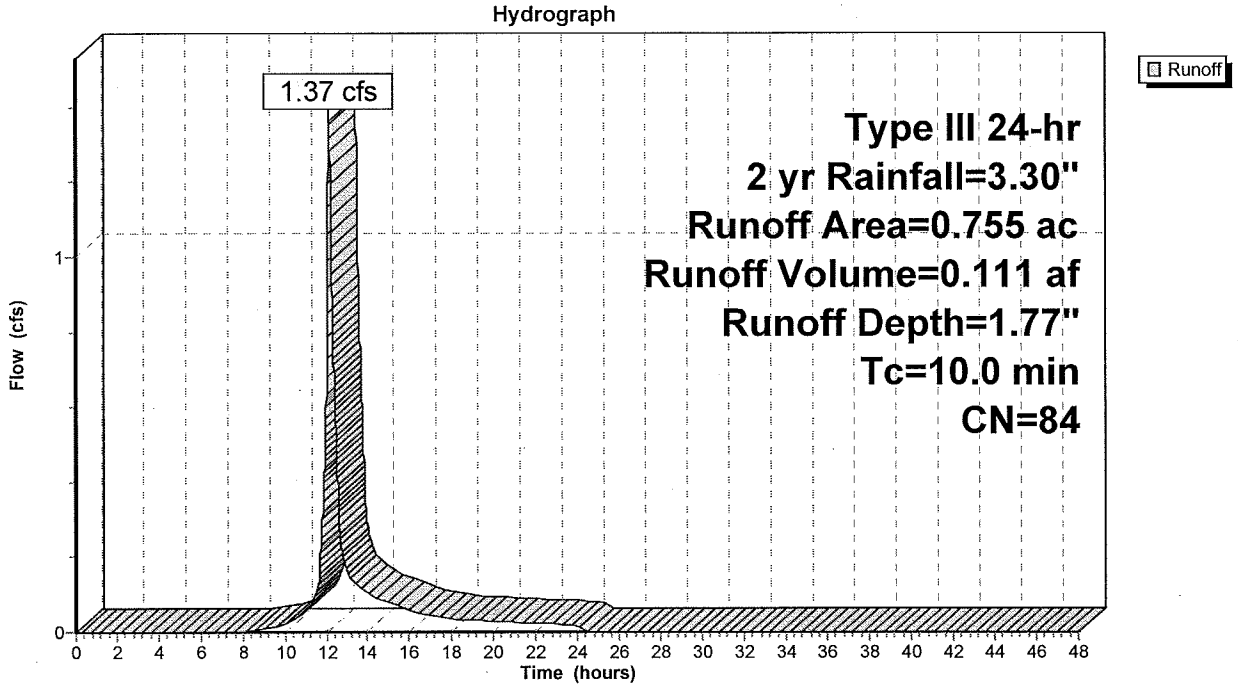
Runoff = 1.37 cfs @ 12.14 hrs, Volume= 0.111 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (ac)	CN	Description
0.305	98	Paved parking, HSG C
0.450	74	>75% Grass cover, Good, HSG C
0.755	84	Weighted Average
0.450		59.60% Pervious Area
0.305		40.40% Impervious Area

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

Subcatchment PDA-2B: Columbarium Area



Summary for Subcatchment PDA-4: Northwest Existing

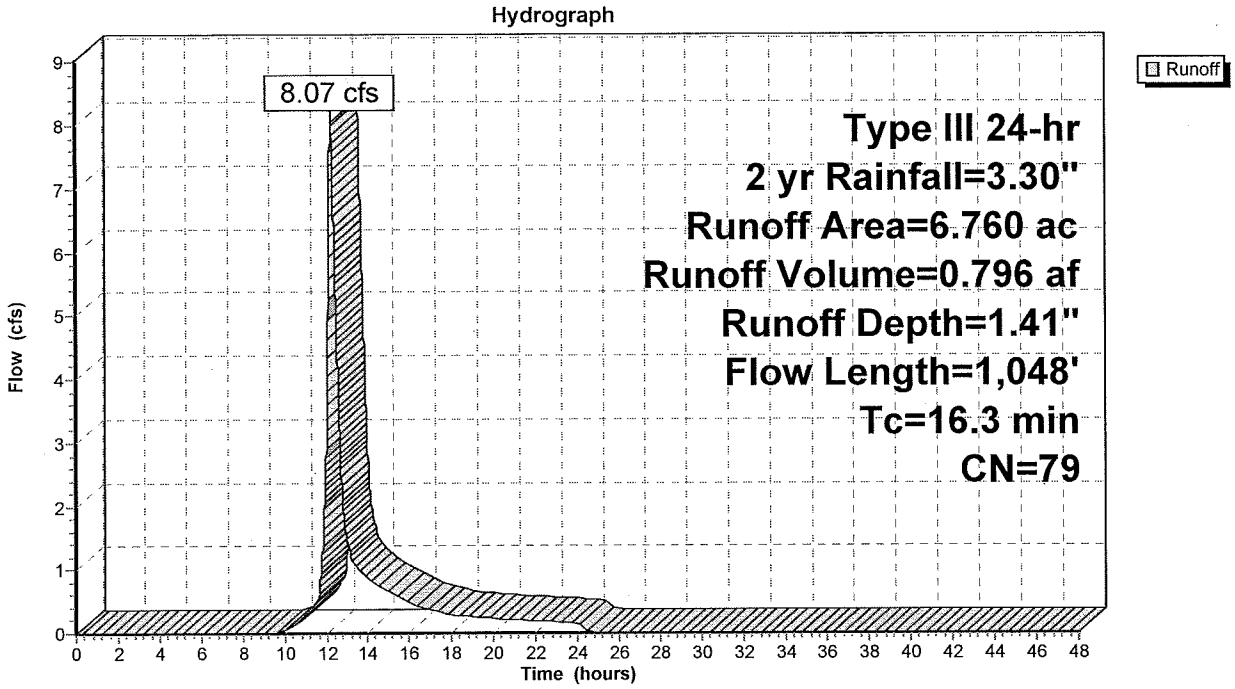
Runoff = 8.07 cfs @ 12.23 hrs, Volume= 0.796 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 2 yr Rainfall=3.30"

Area (ac)	CN	Description
1.328	98	Paved parking, HSG C
0.126	73	Woods, Fair, HSG C
4.404	74	>75% Grass cover, Good, HSG C
0.902	80	>75% Grass cover, Good, HSG D
6.760	79	Weighted Average
5.432		80.36% Pervious Area
1.328		19.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	145	0.0966	0.24		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
5.0	354	0.0282	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	74	0.0203	2.89		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	342	0.0241	16.85	1,802.48	**Channel Flow,** Area= 107.0 sf Perim= 33.0' r= 3.24' n= 0.030 Earth, grassed & winding
0.4	133	0.0196	6.30	2.20	**Pipe Channel,** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
16.3	1,048	Total			

Subcatchment PDA-4: Northwest Existing



Summary for Pond P-R1: Rain Garden

Inflow Area = 0.581 ac, 45.44% Impervious, Inflow Depth = 1.84" for 2 yr event
Inflow = 0.92 cfs @ 12.22 hrs, Volume= 0.089 af
Outflow = 0.26 cfs @ 12.72 hrs, Volume= 0.100 af, Atten= 72%, Lag= 29.8 min
Discarded = 0.08 cfs @ 12.72 hrs, Volume= 0.054 af
Primary = 0.18 cfs @ 12.72 hrs, Volume= 0.046 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 179.00' Surf.Area= 1,483 sf Storage= 465 cf
Peak Elev= 179.74' @ 12.72 hrs Surf.Area= 2,890 sf Storage= 1,362 cf (898 cf above start)

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

Volume	Invert	Avail.Storage	Storage Description
#1	178.50'	3,023 cf	**Exposed Basin (Prismatic)**Listed below (Recalc)
#2	177.50'	147 cf	**Sand (Prismatic)**Listed below (Recalc) 489 cf Overall x 30.0% Voids
#3	177.00'	98 cf	**Stone (Prismatic)**Listed below (Recalc) 245 cf Overall x 40.0% Voids
		3,267 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.50	375	0	0
179.00	505	220	220
180.00	2,400	1,453	1,673
180.50	3,000	1,350	3,023

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
177.50	489	0	0
178.50	489	489	489

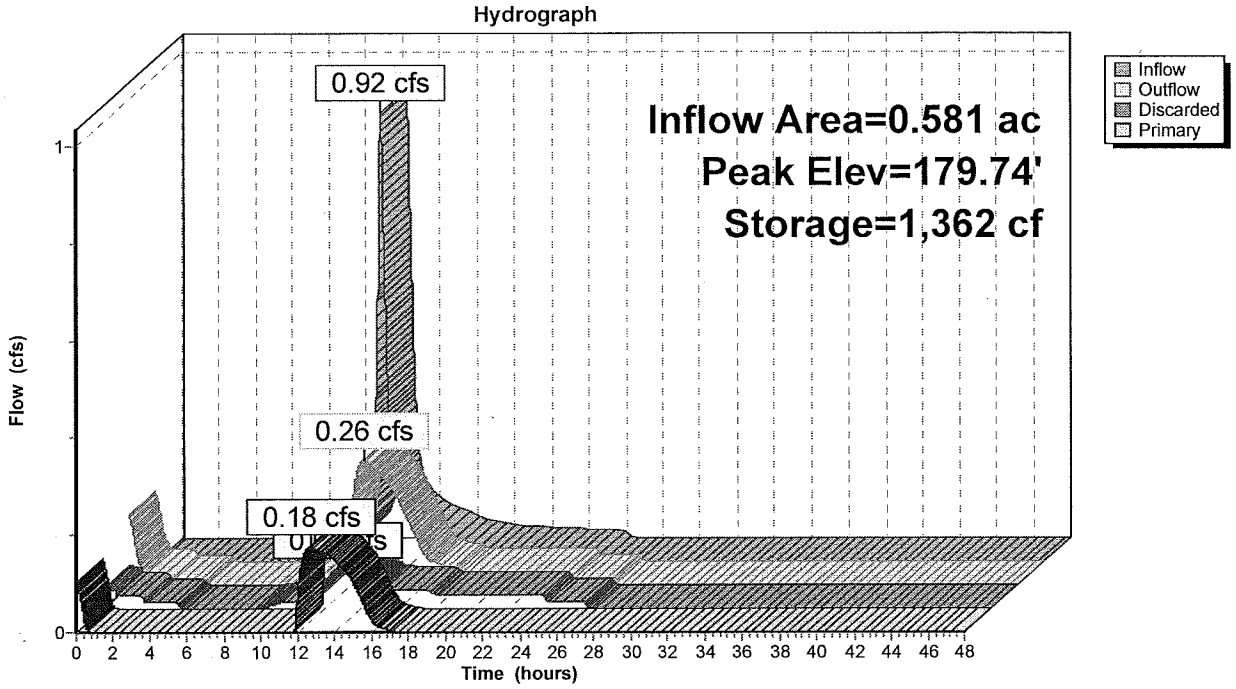
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
177.00	489	0	0
177.50	489	245	245

Device	Routing	Invert	Outlet Devices
#1	Discarded	177.00'	**1.200 in/hr Exfiltration over Surface area**
#2	Primary	180.20'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	178.50'	**2.5" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.08 cfs @ 12.72 hrs HW=179.74' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.18 cfs @ 12.72 hrs HW=179.74' (Free Discharge)
├**2=Orifice/Grate** (Controls 0.00 cfs)
└**3=Orifice/Grate** (Orifice Controls 0.18 cfs @ 5.14 fps)

Pond P-R1: Rain Garden

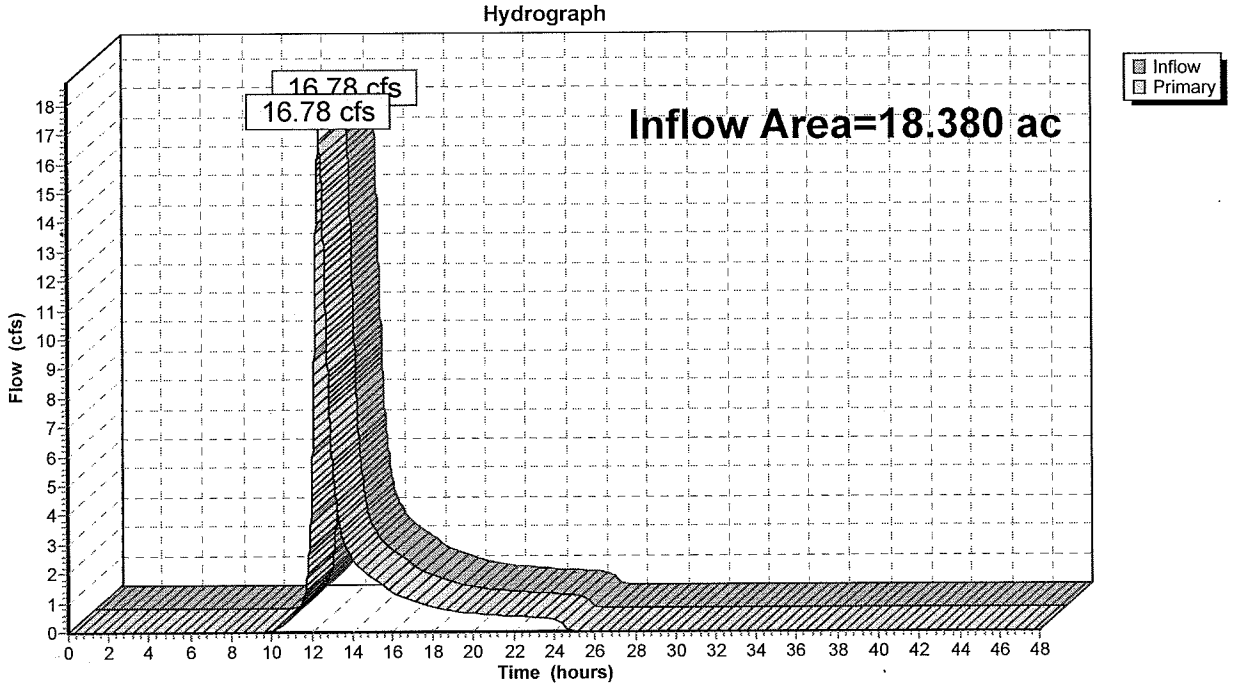


Summary for Pond POS-1: Out let at yard drain

Inflow Area = 18.380 ac, 12.17% Impervious, Inflow Depth = 1.41" for 2 yr event
Inflow = 16.78 cfs @ 12.44 hrs, Volume= 2.163 af
Primary = 16.78 cfs @ 12.44 hrs, Volume= 2.163 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-1: Out let at yard drain

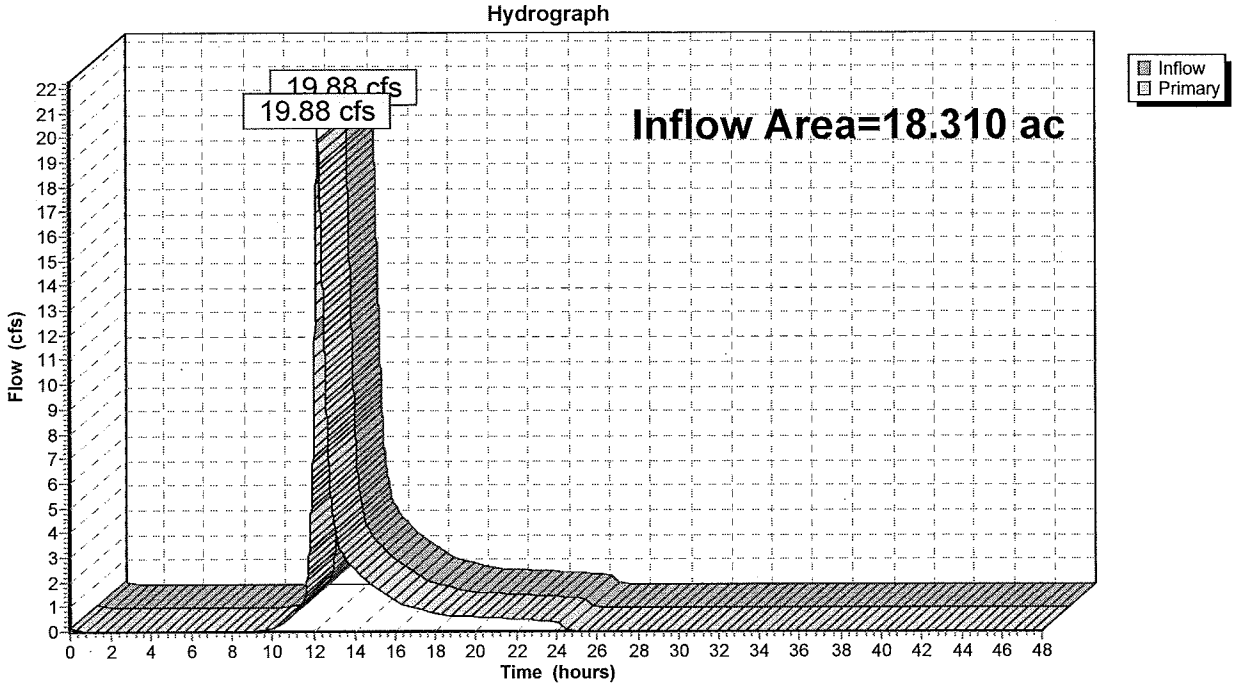


Summary for Pond POS-2,3: Outlet through 18" RCP

Inflow Area = 18.310 ac, 12.61% Impervious, Inflow Depth = 1.39" for 2 yr event
Inflow = 19.88 cfs @ 12.25 hrs, Volume= 2.129 af
Primary = 19.88 cfs @ 12.25 hrs, Volume= 2.129 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-2,3: Outlet through 18" RCP

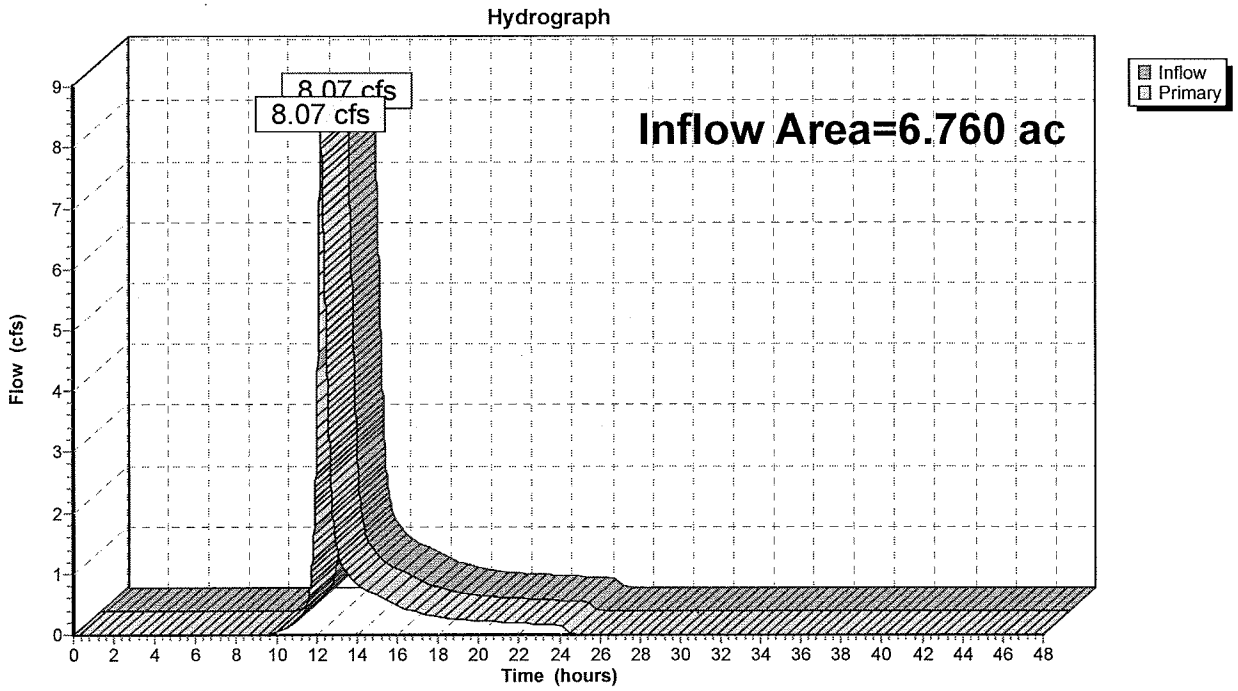


Summary for Pond POS-4: Outlet through 24" brick pipe

Inflow Area = 6.760 ac, 19.64% Impervious, Inflow Depth = 1.41" for 2 yr event
Inflow = 8.07 cfs @ 12.23 hrs, Volume= 0.796 af
Primary = 8.07 cfs @ 12.23 hrs, Volume= 0.796 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-4: Outlet through 24" brick pipe



Summary for Pond UG-1: Underground Detention System

Inflow Area = 0.755 ac, 40.40% Impervious, Inflow Depth = 1.77" for 2 yr event
Inflow = 1.37 cfs @ 12.14 hrs, Volume= 0.111 af
Outflow = 0.41 cfs @ 12.54 hrs, Volume= 0.111 af, Atten= 70%, Lag= 24.2 min
Discarded = 0.08 cfs @ 11.54 hrs, Volume= 0.056 af
Primary = 0.33 cfs @ 12.54 hrs, Volume= 0.055 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 173.77' @ 12.54 hrs Surf.Area= 0.067 ac Storage= 0.032 af

Plug-Flow detention time= 33.5 min calculated for 0.111 af (100% of inflow)
Center-of-Mass det. time= 33.5 min (865.4 - 831.9)

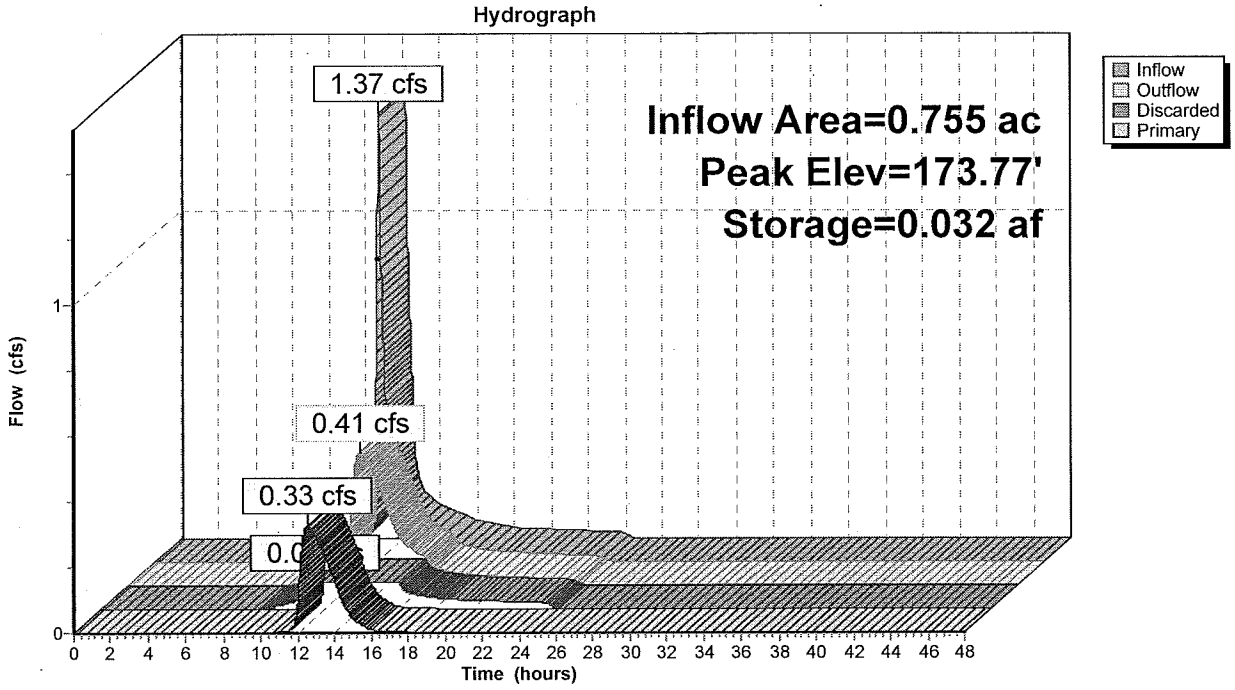
Volume	Invert	Avail.Storage	Storage Description
#1	173.00'	0.094 af	**36.0" Round Pipe Storage** x 4 Inside #2 L= 145.0'
#2	173.00'	0.042 af	**5.00'W x 145.00'L x 3.00'H Prismatoid** x 4 0.200 af Overall - 0.094 af Embedded = 0.106 af x 40.0% Voids
		0.136 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	173.00'	**1.200 in/hr Exfiltration over Surface area**
#2	Primary	173.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	174.78'	**3.0' long x 3.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 5.0' Crest Height

Discarded OutFlow Max=0.08 cfs @ 11.54 hrs HW=173.05' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.33 cfs @ 12.54 hrs HW=173.77' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.33 cfs @ 3.73 fps)
└**3=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond UG-1: Underground Detention System



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA 3: Northeast Existing Runoff Area=9.610 ac 10.23% Impervious Runoff Depth=2.99"
Flow Length=906' Tc=16.1 min CN=81 Runoff=24.80 cfs 2.391 af

Subcatchment PDA-1: Southeast Existing Runoff Area=18.380 ac 12.17% Impervious Runoff Depth=2.80"
Flow Length=891' Tc=30.6 min CN=79 Runoff=33.86 cfs 4.291 af

Subcatchment PDA-2: Southwest Existing Runoff Area=7.364 ac 10.28% Impervious Runoff Depth=2.62"
Flow Length=1,068' Tc=20.9 min CN=77 Runoff=14.98 cfs 1.610 af

Subcatchment PDA-2A: Parking Area Runoff Area=0.581 ac 45.44% Impervious Runoff Depth=3.37"
Flow Length=255' Tc=16.2 min CN=85 Runoff=1.68 cfs 0.163 af

Subcatchment PDA-2B: Columbarium Area Runoff Area=0.755 ac 40.40% Impervious Runoff Depth=3.27"
Tc=10.0 min CN=84 Runoff=2.51 cfs 0.206 af

Subcatchment PDA-4: Northwest Existing Runoff Area=6.760 ac 19.64% Impervious Runoff Depth=2.80"
Flow Length=1,048' Tc=16.3 min CN=79 Runoff=16.28 cfs 1.578 af

Pond P-R1: Rain Garden Peak Elev=180.25' Storage=2,555 cf Inflow=1.68 cfs 0.163 af
Discarded=0.10 cfs 0.077 af Primary=0.59 cfs 0.097 af Outflow=0.69 cfs 0.174 af

Pond POS-1: Out let at yard drain Inflow=33.86 cfs 4.291 af
Primary=33.86 cfs 4.291 af

Pond POS-2,3: Outlet through 18" RCP Inflow=39.60 cfs 4.224 af
Primary=39.60 cfs 4.224 af

Pond POS-4: Outlet through 24" brick pipe Inflow=16.28 cfs 1.578 af
Primary=16.28 cfs 1.578 af

Pond UG-1: Underground Detention System Peak Elev=174.52' Storage=0.069 af Inflow=2.51 cfs 0.206 af
Discarded=0.08 cfs 0.079 af Primary=0.49 cfs 0.126 af Outflow=0.57 cfs 0.206 af

Total Runoff Area = 43.450 ac Runoff Volume = 10.239 af Average Runoff Depth = 2.83"
86.48% Pervious = 37.577 ac 13.52% Impervious = 5.873 ac

Summary for Subcatchment PDA 3: Northeast Existing

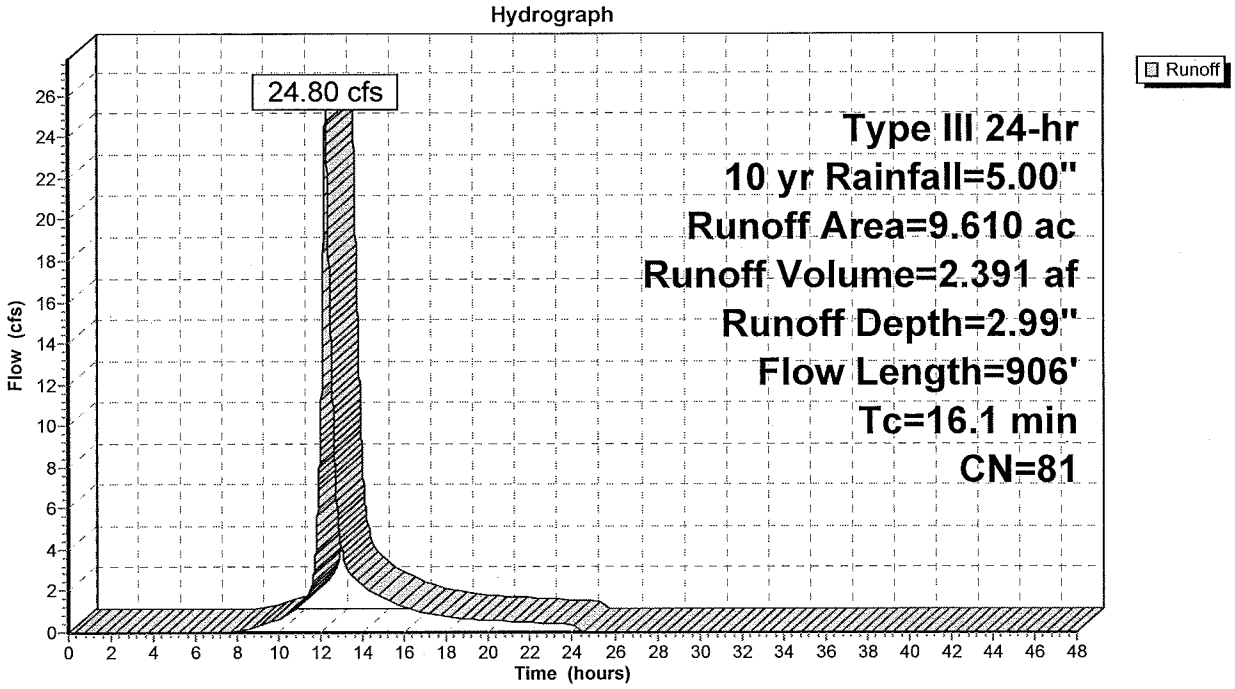
Runoff = 24.80 cfs @ 12.22 hrs, Volume= 2.391 af, Depth= 2.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (ac)	CN	Description
0.983	98	Paved parking, HSG C
0.846	73	Woods, Fair, HSG C
0.375	79	Woods, Fair, HSG D
6.271	79	50-75% Grass cover, Fair, HSG C
1.135	84	50-75% Grass cover, Fair, HSG D
9.610	81	Weighted Average
8.627		89.77% Pervious Area
0.983		10.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	177	0.0249	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.5	41	0.0046	1.38		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	669	0.0240	8.15	10.01	**Pipe Channel, RCP_Round 15"** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
0.0	19	0.0210	10.18	17.99	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.011 Concrete pipe, straight & clean
16.1	906	Total			

Subcatchment PDA 3: Northeast Existing



Summary for Subcatchment PDA-1: Southeast Existing

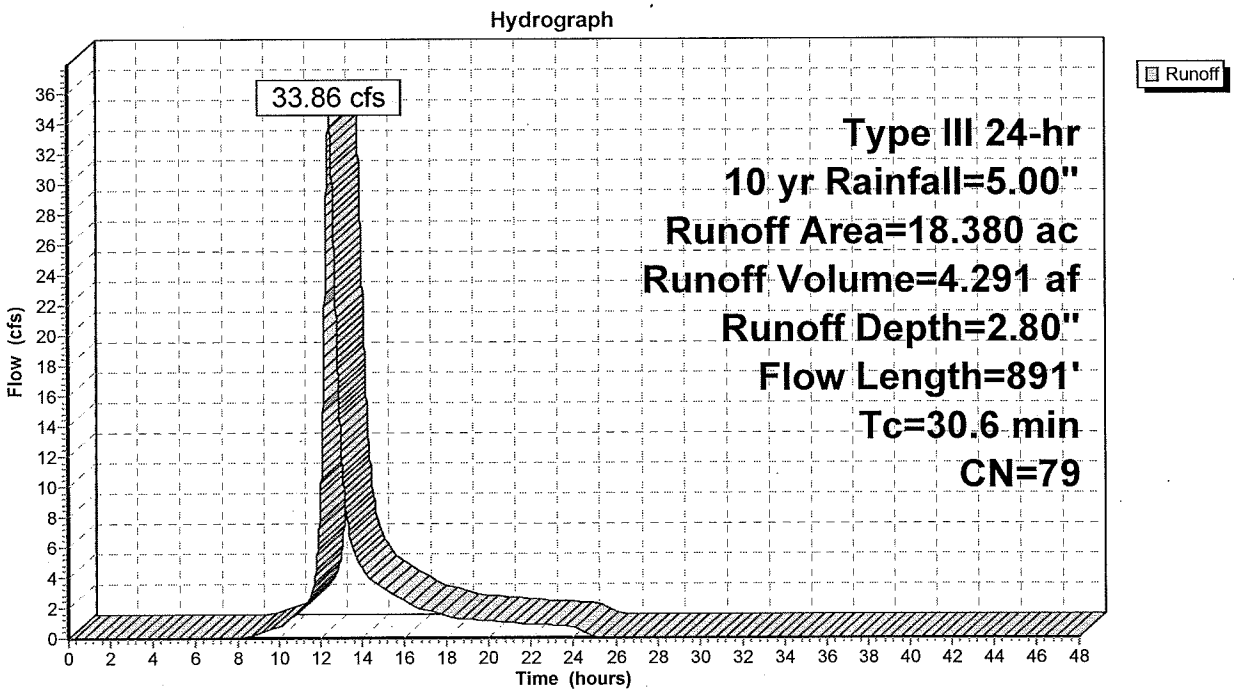
Runoff = 33.86 cfs @ 12.41 hrs, Volume= 4.291 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (ac)	CN	Description
2.236	98	Paved parking, HSG C
6.670	73	Woods, Fair, HSG C
9.094	79	50-75% Grass cover, Fair, HSG C
0.380	84	50-75% Grass cover, Fair, HSG D
18.380	79	Weighted Average
16.144		87.83% Pervious Area
2.236		12.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.1	178	0.1556	0.11		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.20"
2.1	120	0.0192	0.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	54	0.1157	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	40	0.0152	2.50		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	499	0.0076	5.18	9.16	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Concrete pipe, bends & connections
30.6	891	Total			

Subcatchment PDA-1: Southeast Existing



Summary for Subcatchment PDA-2: Southwest Existing

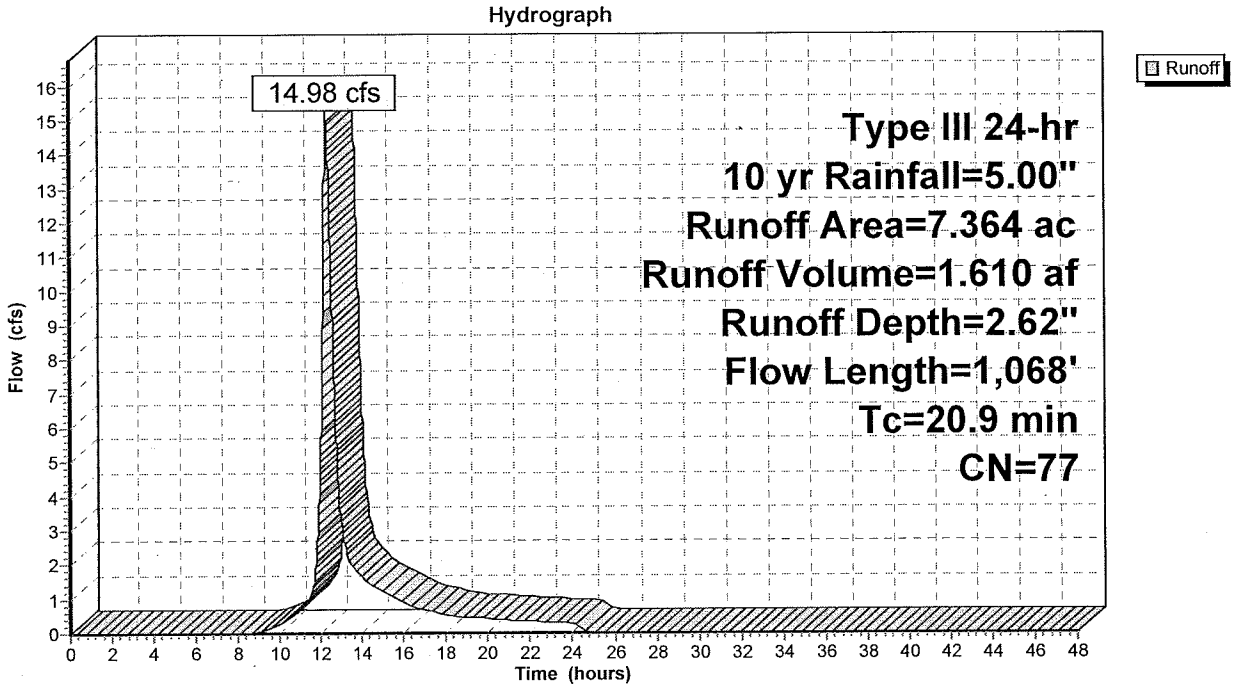
Runoff = 14.98 cfs @ 12.29 hrs, Volume= 1.610 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (ac)	CN	Description
0.757	98	Paved parking, HSG C
0.512	73	Woods, Fair, HSG C
5.873	74	>75% Grass cover, Good, HSG C
0.222	84	50-75% Grass cover, Fair, HSG D
7.364	77	Weighted Average
6.607		89.72% Pervious Area
0.757		10.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	49	0.1224	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
12.5	194	0.0412	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.4	69	0.0196	2.84		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	458	0.0164	6.74	8.27	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
1.0	298	0.0064	5.15	9.10	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Concrete pipe, finished
20.9	1,068	Total			

Subcatchment PDA-2: Southwest Existing



Summary for Subcatchment PDA-2A: Parking Area

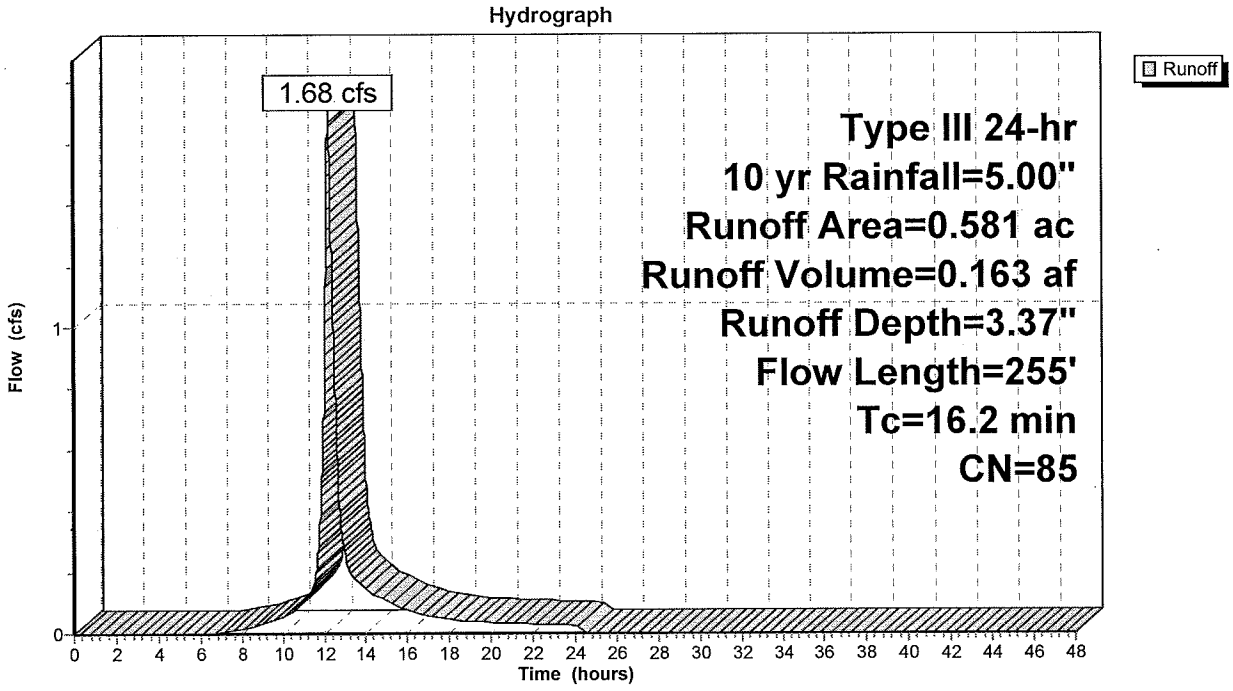
Runoff = 1.68 cfs @ 12.22 hrs, Volume= 0.163 af, Depth= 3.37"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (ac)	CN	Description
0.264	98	Paved parking, HSG C
0.102	74	>75% Grass cover, Good, HSG C
0.215	74	>75% Grass cover, Good, HSG C
0.581	85	Weighted Average
0.317		54.56% Pervious Area
0.264		45.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	155	0.0387	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.6	100	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.2	255	Total			

Subcatchment PDA-2A: Parking Area



Summary for Subcatchment PDA-2B: Columbarium Area

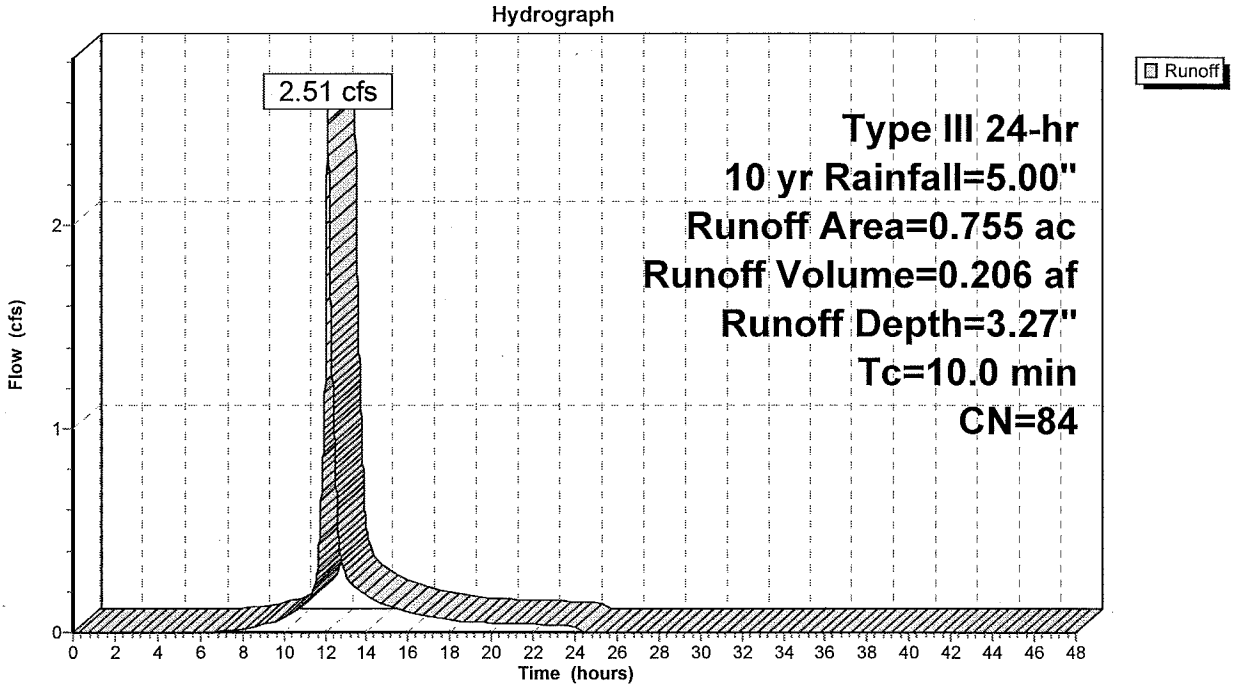
Runoff = 2.51 cfs @ 12.14 hrs, Volume= 0.206 af, Depth= 3.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (ac)	CN	Description
0.305	98	Paved parking, HSG C
0.450	74	>75% Grass cover, Good, HSG C
0.755	84	Weighted Average
0.450		59.60% Pervious Area
0.305		40.40% Impervious Area

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

Subcatchment PDA-2B: Columbarium Area



Summary for Subcatchment PDA-4: Northwest Existing

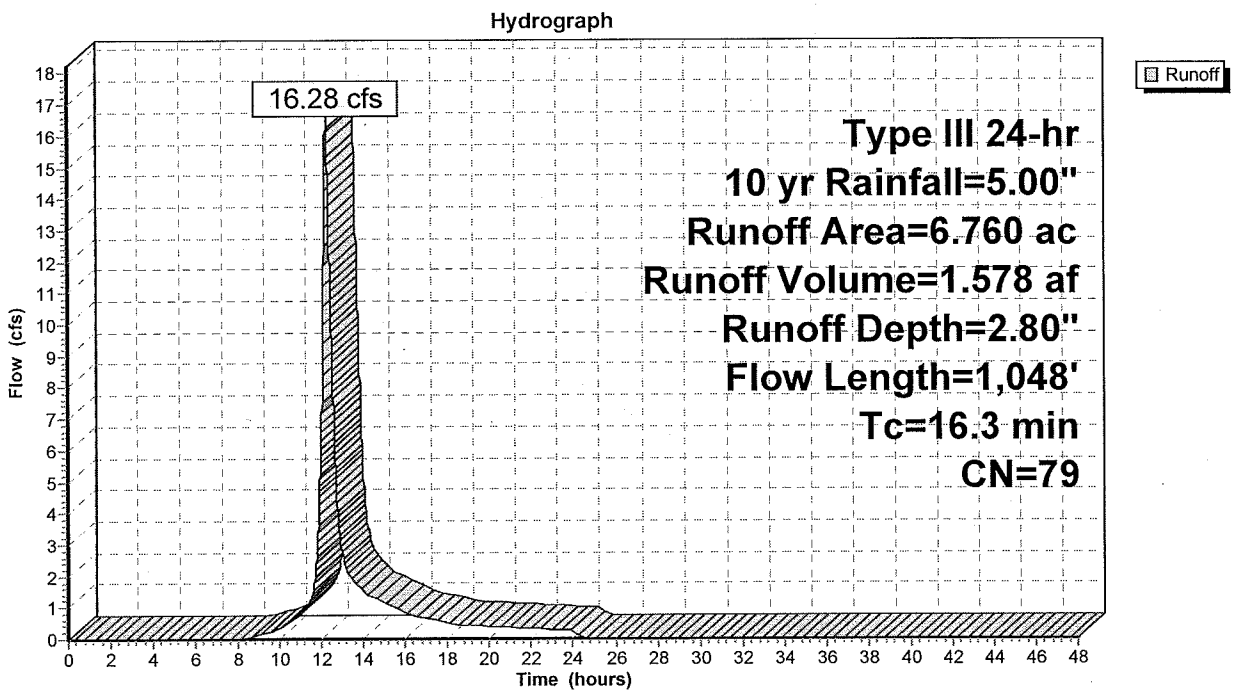
Runoff = 16.28 cfs @ 12.22 hrs, Volume= 1.578 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 10 yr Rainfall=5.00"

Area (ac)	CN	Description
1.328	98	Paved parking, HSG C
0.126	73	Woods, Fair, HSG C
4.404	74	>75% Grass cover, Good, HSG C
0.902	80	>75% Grass cover, Good, HSG D
6.760	79	Weighted Average
5.432		80.36% Pervious Area
1.328		19.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	145	0.0966	0.24		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
5.0	354	0.0282	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	74	0.0203	2.89		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	342	0.0241	16.85	1,802.48	**Channel Flow,** Area= 107.0 sf Perim= 33.0' r= 3.24' n= 0.030 Earth, grassed & winding
0.4	133	0.0196	6.30	2.20	**Pipe Channel,** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
16.3	1,048	Total			

Subcatchment PDA-4: Northwest Existing



Summary for Pond P-R1: Rain Garden

Inflow Area = 0.581 ac, 45.44% Impervious, Inflow Depth = 3.37" for 10 yr event
Inflow = 1.68 cfs @ 12.22 hrs, Volume= 0.163 af
Outflow = 0.69 cfs @ 12.58 hrs, Volume= 0.174 af, Atten= 59%, Lag= 21.9 min
Discarded = 0.10 cfs @ 12.58 hrs, Volume= 0.077 af
Primary = 0.59 cfs @ 12.58 hrs, Volume= 0.097 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 179.00' Surf.Area= 1,483 sf Storage= 465 cf
Peak Elev= 180.25' @ 12.58 hrs Surf.Area= 3,678 sf Storage= 2,555 cf (2,091 cf above start)

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 39.8 min (856.8 - 817.0)

Volume	Invert	Avail.Storage	Storage Description
#1	178.50'	3,023 cf	**Exposed Basin (Prismatic)**Listed below (Recalc)
#2	177.50'	147 cf	**Sand (Prismatic)**Listed below (Recalc) 489 cf Overall x 30.0% Voids
#3	177.00'	98 cf	**Stone (Prismatic)**Listed below (Recalc) 245 cf Overall x 40.0% Voids
		3,267 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.50	375	0	0
179.00	505	220	220
180.00	2,400	1,453	1,673
180.50	3,000	1,350	3,023

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
177.50	489	0	0
178.50	489	489	489

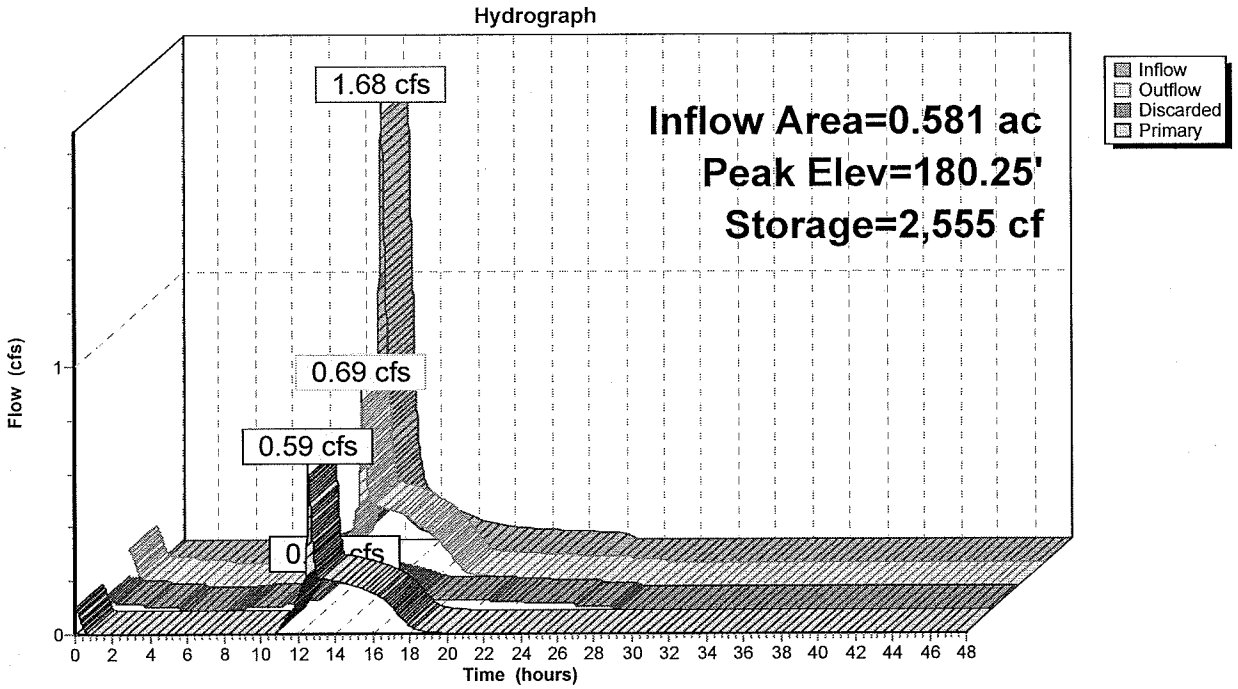
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
177.00	489	0	0
177.50	489	245	245

Device	Routing	Invert	Outlet Devices
#1	Discarded	177.00'	**1.200 in/hr Exfiltration over Surface area**
#2	Primary	180.20'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	178.50'	**2.5" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.10 cfs @ 12.58 hrs HW=180.25' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.10 cfs)

Primary OutFlow Max=0.58 cfs @ 12.58 hrs HW=180.25' (Free Discharge)
├**2=Orifice/Grate** (Weir Controls 0.37 cfs @ 0.73 fps)
└**3=Orifice/Grate** (Orifice Controls 0.21 cfs @ 6.18 fps)

Pond P-R1: Rain Garden

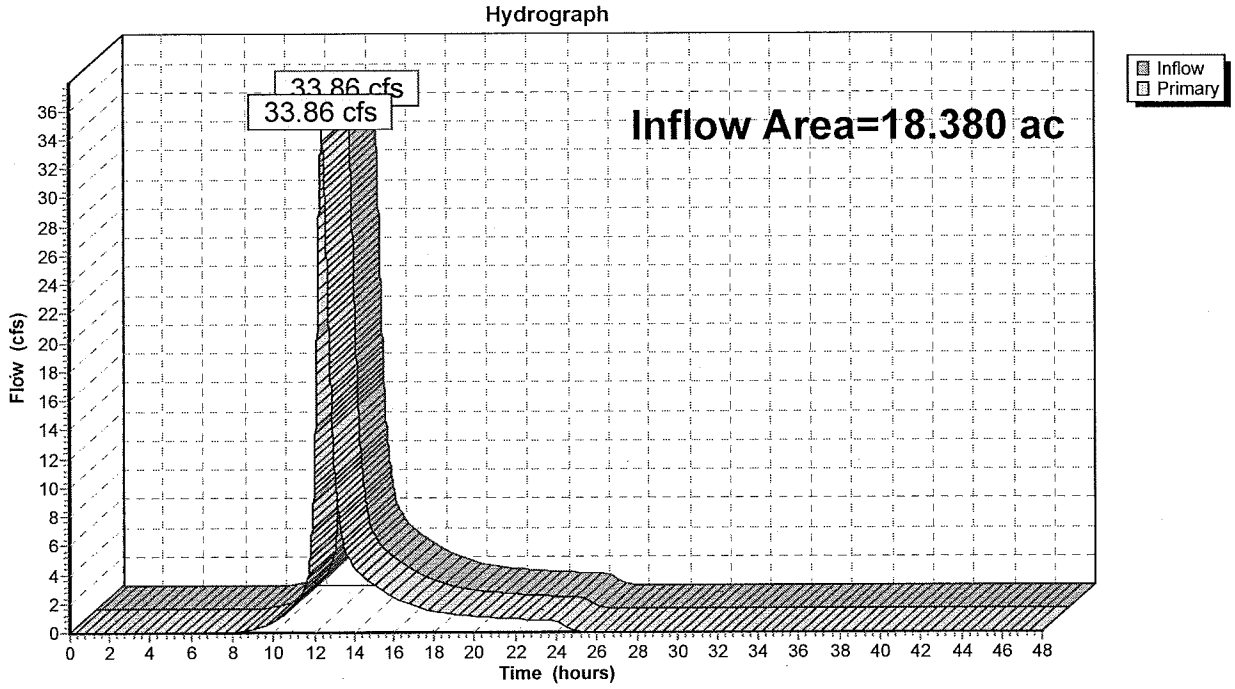


Summary for Pond POS-1: Out let at yard drain

Inflow Area = 18.380 ac, 12.17% Impervious, Inflow Depth = 2.80" for 10 yr event
Inflow = 33.86 cfs @ 12.41 hrs, Volume= 4.291 af
Primary = 33.86 cfs @ 12.41 hrs, Volume= 4.291 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-1: Out let at yard drain

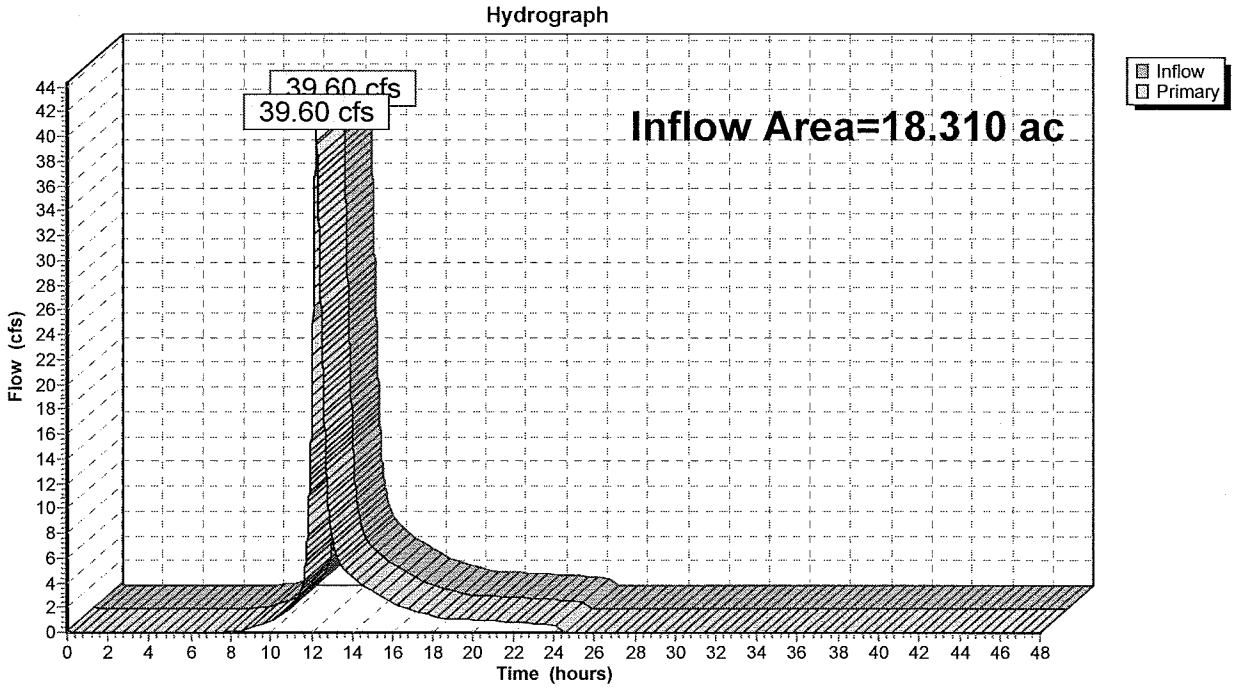


Summary for Pond POS-2,3: Outlet through 18" RCP

Inflow Area = 18.310 ac, 12.61% Impervious, Inflow Depth = 2.77" for 10 yr event
Inflow = 39.60 cfs @ 12.24 hrs, Volume= 4.224 af
Primary = 39.60 cfs @ 12.24 hrs, Volume= 4.224 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-2,3: Outlet through 18" RCP

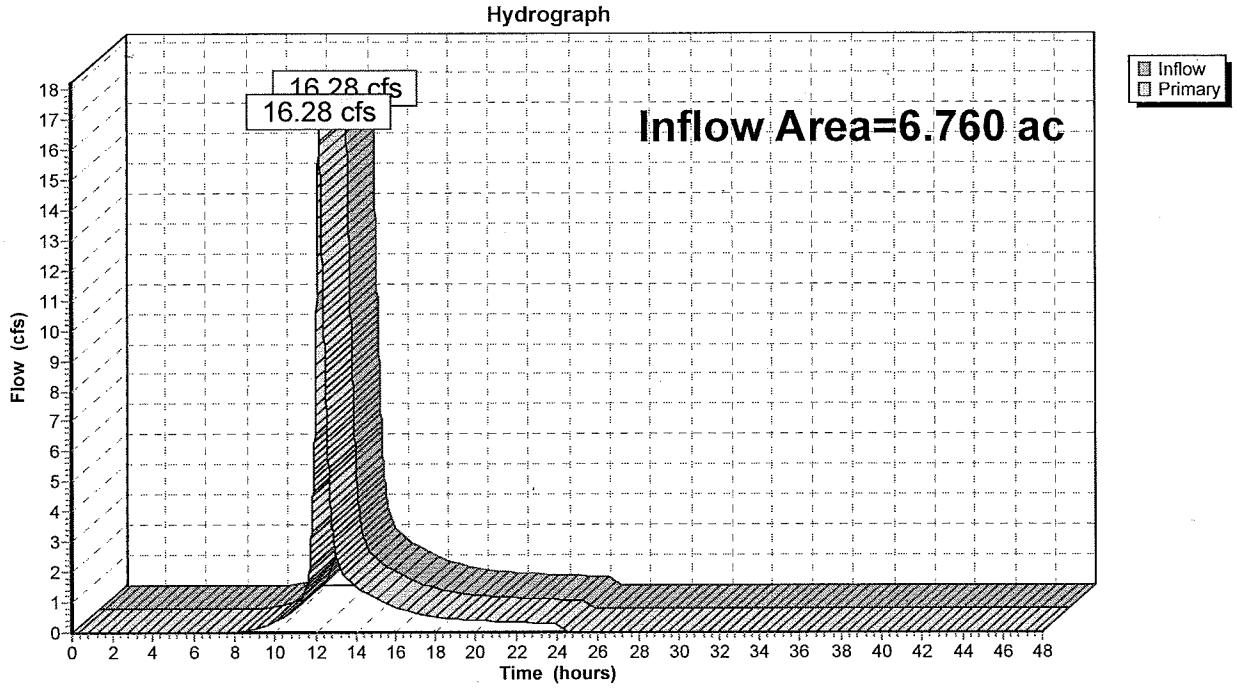


Summary for Pond POS-4: Outlet through 24" brick pipe

Inflow Area = 6.760 ac, 19.64% Impervious, Inflow Depth = 2.80" for 10 yr event
Inflow = 16.28 cfs @ 12.22 hrs, Volume= 1.578 af
Primary = 16.28 cfs @ 12.22 hrs, Volume= 1.578 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-4: Outlet through 24" brick pipe



Summary for Pond UG-1: Underground Detention System

Inflow Area = 0.755 ac, 40.40% Impervious, Inflow Depth = 3.27" for 10 yr event
Inflow = 2.51 cfs @ 12.14 hrs, Volume= 0.206 af
Outflow = 0.57 cfs @ 12.59 hrs, Volume= 0.206 af, Atten= 77%, Lag= 27.4 min
Discarded = 0.08 cfs @ 10.52 hrs, Volume= 0.079 af
Primary = 0.49 cfs @ 12.59 hrs, Volume= 0.126 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 174.52' @ 12.59 hrs Surf.Area= 0.067 ac Storage= 0.069 af

Plug-Flow detention time= 50.7 min calculated for 0.206 af (100% of inflow)
Center-of-Mass det. time= 50.7 min (865.0 - 814.2)

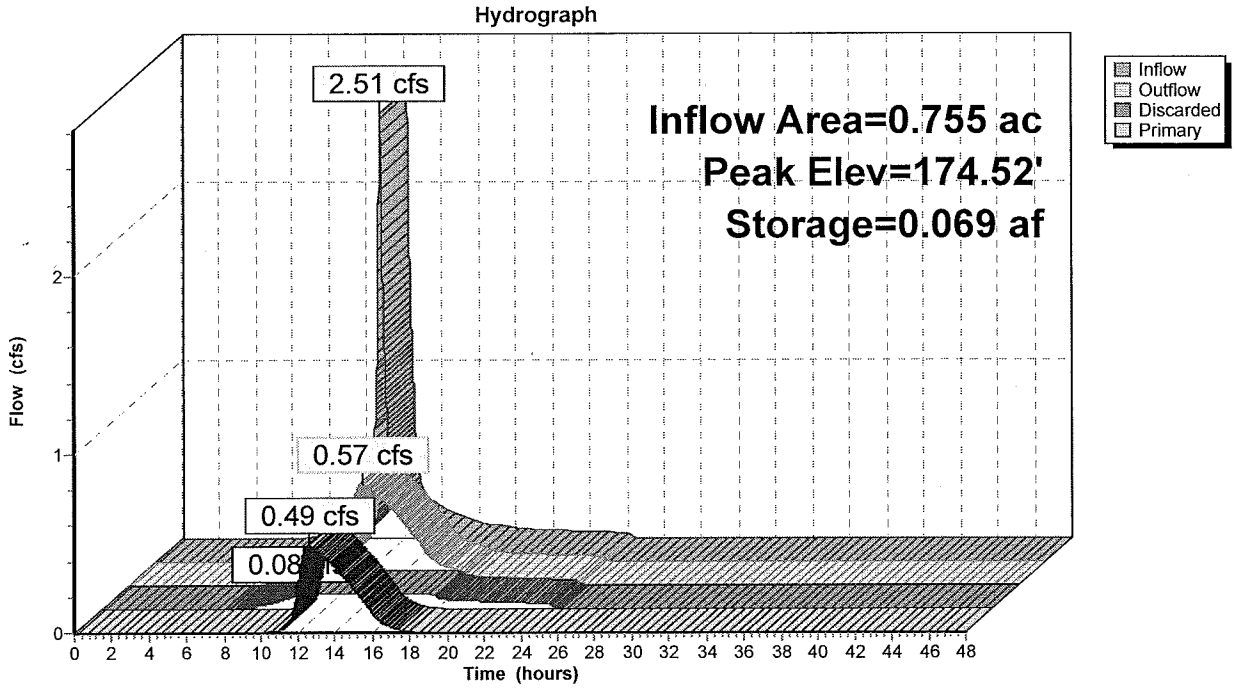
Volume	Invert	Avail.Storage	Storage Description
#1	173.00'	0.094 af	**36.0" Round Pipe Storage** x 4 Inside #2 L= 145.0'
#2	173.00'	0.042 af	**5.00'W x 145.00'L x 3.00'H Prismatoid** x 4 0.200 af Overall - 0.094 af Embedded = 0.106 af x 40.0% Voids
		0.136 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	173.00'	**1.200 in/hr Exfiltration over Surface area**
#2	Primary	173.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	174.78'	**3.0' long x 3.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 5.0' Crest Height

Discarded OutFlow Max=0.08 cfs @ 10.52 hrs HW=173.05' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=0.49 cfs @ 12.59 hrs HW=174.52' (Free Discharge)
↑**2=Orifice/Grate** (Orifice Controls 0.49 cfs @ 5.59 fps)
3=Sharp-Crested Rectangular Weir (Controls 0.00 cfs)

Pond UG-1: Underground Detention System



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PDA 3: Northeast Existing Runoff Area=9.610 ac 10.23% Impervious Runoff Depth=4.90"
Flow Length=906' Tc=16.1 min CN=81 Runoff=40.30 cfs 3.923 af

Subcatchment PDA-1: Southeast Existing Runoff Area=18.380 ac 12.17% Impervious Runoff Depth=4.68"
Flow Length=891' Tc=30.6 min CN=79 Runoff=56.30 cfs 7.162 af

Subcatchment PDA-2: Southwest Existing Runoff Area=7.364 ac 10.28% Impervious Runoff Depth=4.46"
Flow Length=1,068' Tc=20.9 min CN=77 Runoff=25.45 cfs 2.734 af

Subcatchment PDA-2A: Parking Area Runoff Area=0.581 ac 45.44% Impervious Runoff Depth=5.35"
Flow Length=255' Tc=16.2 min CN=85 Runoff=2.62 cfs 0.259 af

Subcatchment PDA-2B: Columbarium Area Runoff Area=0.755 ac 40.40% Impervious Runoff Depth=5.23"
Tc=10.0 min CN=84 Runoff=3.96 cfs 0.329 af

Subcatchment PDA-4: Northwest Existing Runoff Area=6.760 ac 19.64% Impervious Runoff Depth=4.68"
Flow Length=1,048' Tc=16.3 min CN=79 Runoff=27.04 cfs 2.634 af

Pond P-R1: Rain Garden Peak Elev=180.35' Storage=2,823 cf Inflow=2.62 cfs 0.259 af
Discarded=0.11 cfs 0.090 af Primary=2.08 cfs 0.179 af Outflow=2.18 cfs 0.270 af

Pond POS-1: Out let at yard drain Inflow=56.30 cfs 7.162 af
Primary=56.30 cfs 7.162 af

Pond POS-2,3: Outlet through 18" RCP Inflow=67.15 cfs 7.066 af
Primary=67.15 cfs 7.066 af

Pond POS-4: Outlet through 24" brick pipe Inflow=27.04 cfs 2.634 af
Primary=27.04 cfs 2.634 af

Pond UG-1: Underground Detention System Peak Elev=175.05' Storage=0.096 af Inflow=3.96 cfs 0.329 af
Discarded=0.08 cfs 0.099 af Primary=1.94 cfs 0.230 af Outflow=2.02 cfs 0.329 af

Total Runoff Area = 43.450 ac Runoff Volume = 17.041 af Average Runoff Depth = 4.71"
86.48% Pervious = 37.577 ac 13.52% Impervious = 5.873 ac

Summary for Subcatchment PDA 3: Northeast Existing

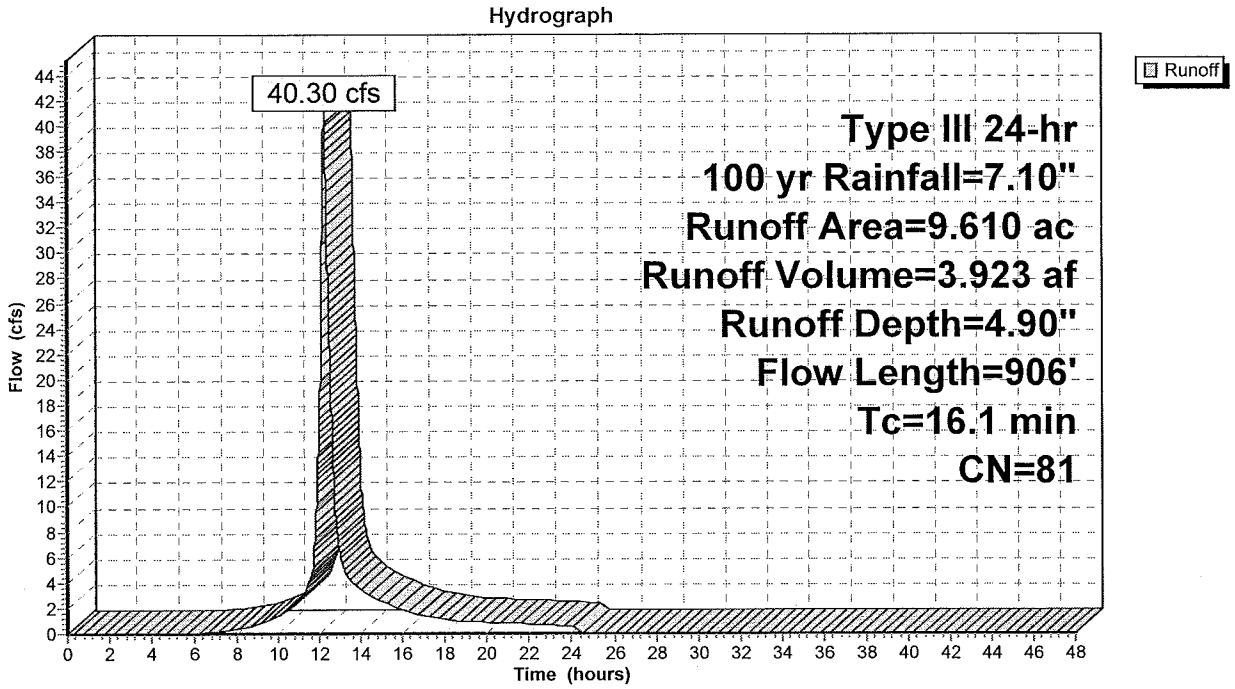
Runoff = 40.30 cfs @ 12.22 hrs, Volume= 3.923 af, Depth= 4.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=7.10"

Area (ac)	CN	Description
0.983	98	Paved parking, HSG C
0.846	73	Woods, Fair, HSG C
0.375	79	Woods, Fair, HSG D
6.271	79	50-75% Grass cover, Fair, HSG C
1.135	84	50-75% Grass cover, Fair, HSG D
9.610	81	Weighted Average
8.627		89.77% Pervious Area
0.983		10.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.2	177	0.0249	0.21		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.5	41	0.0046	1.38		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	669	0.0240	8.15	10.01	**Pipe Channel, RCP_Round 15"** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
0.0	19	0.0210	10.18	17.99	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.011 Concrete pipe, straight & clean
16.1	906	Total			

Subcatchment PDA 3: Northeast Existing



Summary for Subcatchment PDA-1: Southeast Existing

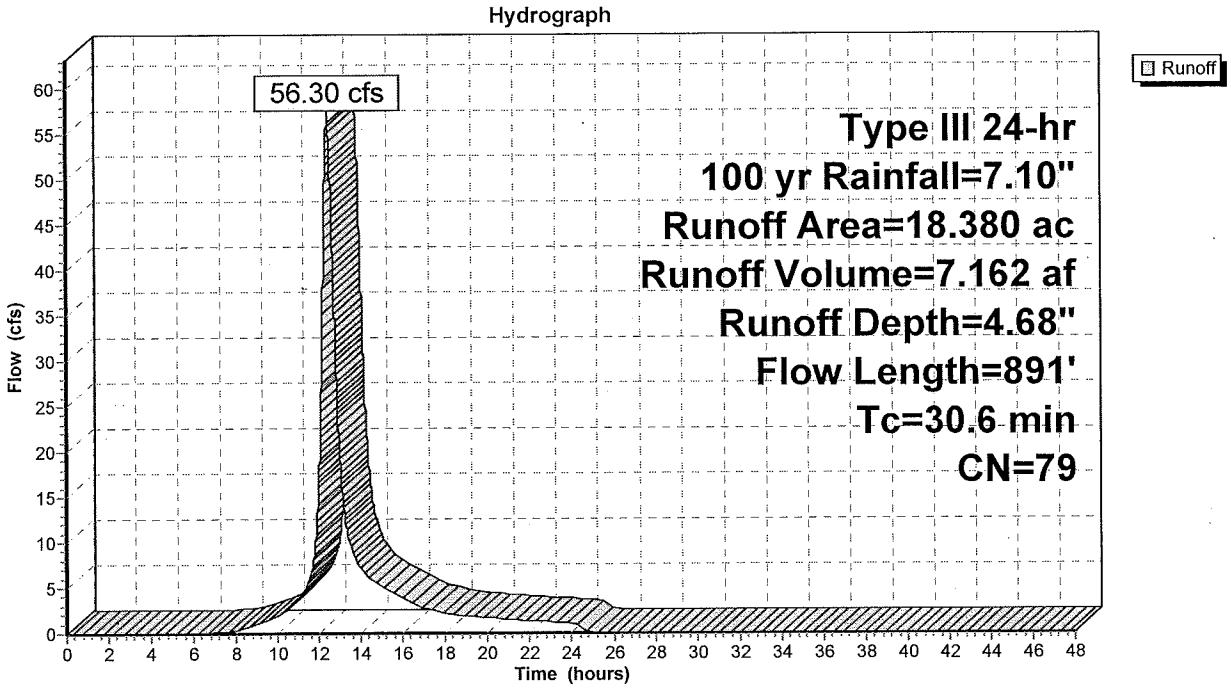
Runoff = 56.30 cfs @ 12.41 hrs, Volume= 7.162 af, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=7.10"

Area (ac)	CN	Description
2.236	98	Paved parking, HSG C
6.670	73	Woods, Fair, HSG C
9.094	79	50-75% Grass cover, Fair, HSG C
0.380	84	50-75% Grass cover, Fair, HSG D
18.380	79	Weighted Average
16.144		87.83% Pervious Area
2.236		12.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.1	178	0.1556	0.11		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.20"
2.1	120	0.0192	0.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	54	0.1157	1.70		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	40	0.0152	2.50		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.6	499	0.0076	5.18	9.16	**Pipe Channel, RCP_Round 18"** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.013 Concrete pipe, bends & connections
30.6	891	Total			

Subcatchment PDA-1: Southeast Existing



Summary for Subcatchment PDA-2: Southwest Existing

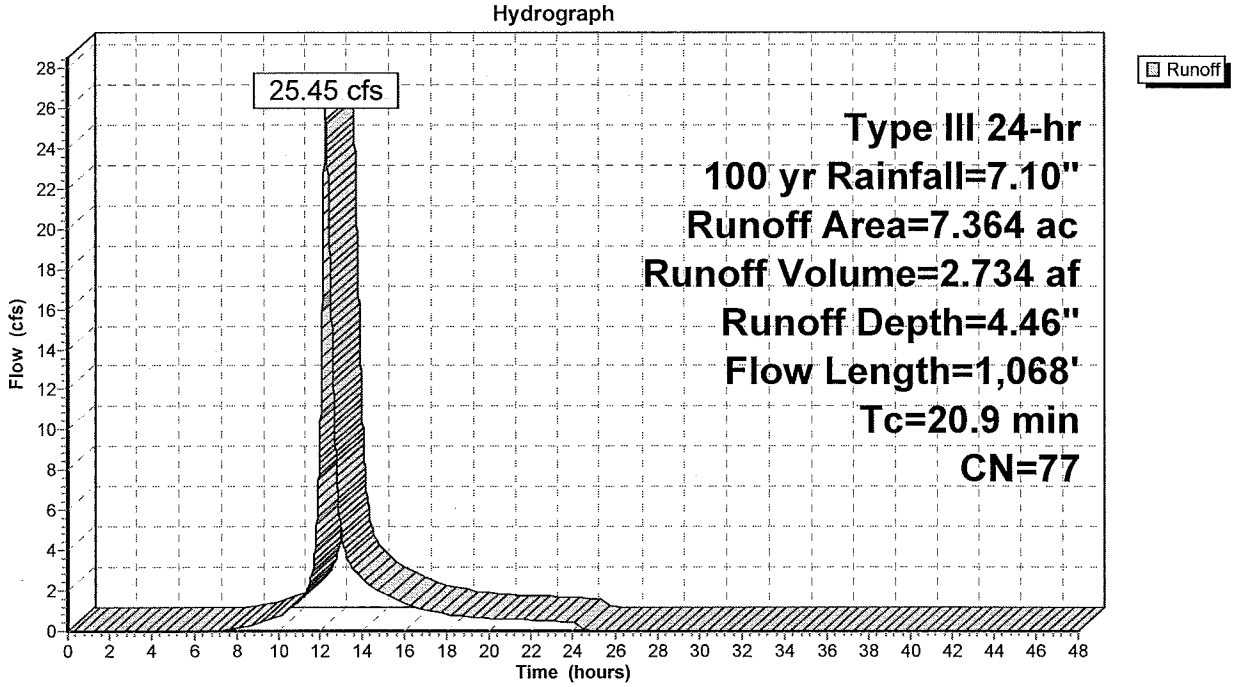
Runoff = 25.45 cfs @ 12.28 hrs, Volume= 2.734 af, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=7.10"

Area (ac)	CN	Description
0.757	98	Paved parking, HSG C
0.512	73	Woods, Fair, HSG C
5.873	74	>75% Grass cover, Good, HSG C
0.222	84	50-75% Grass cover, Fair, HSG D
7.364	77	Weighted Average
6.607		89.72% Pervious Area
0.757		10.28% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.9	49	0.1224	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.20"
12.5	194	0.0412	0.26		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.20"
0.4	69	0.0196	2.84		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.1	458	0.0164	6.74	8.27	**Pipe Channel,** 15.0" Round Area= 1.2 sf Perim= 3.9' r= 0.31' n= 0.013 Concrete pipe, bends & connections
1.0	298	0.0064	5.15	9.10	**Pipe Channel,** 18.0" Round Area= 1.8 sf Perim= 4.7' r= 0.38' n= 0.012 Concrete pipe, finished
20.9	1,068	Total			

Subcatchment PDA-2: Southwest Existing



Summary for Subcatchment PDA-2A: Parking Area

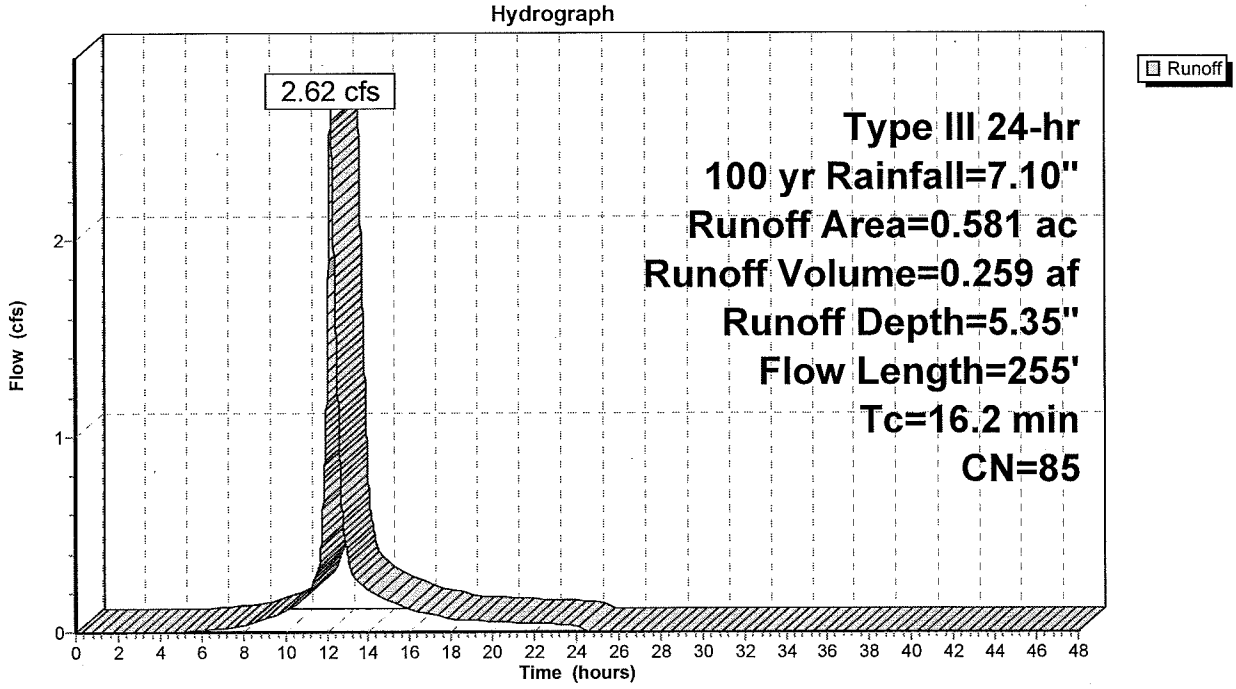
Runoff = 2.62 cfs @ 12.22 hrs, Volume= 0.259 af, Depth= 5.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=7.10"

Area (ac)	CN	Description
0.264	98	Paved parking, HSG C
0.102	74	>75% Grass cover, Good, HSG C
0.215	74	>75% Grass cover, Good, HSG C
0.581	85	Weighted Average
0.317		54.56% Pervious Area
0.264		45.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.6	155	0.0387	0.17		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
0.6	100	0.0200	2.87		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
16.2	255	Total			

Subcatchment PDA-2A: Parking Area



Summary for Subcatchment PDA-2B: Columbarium Area

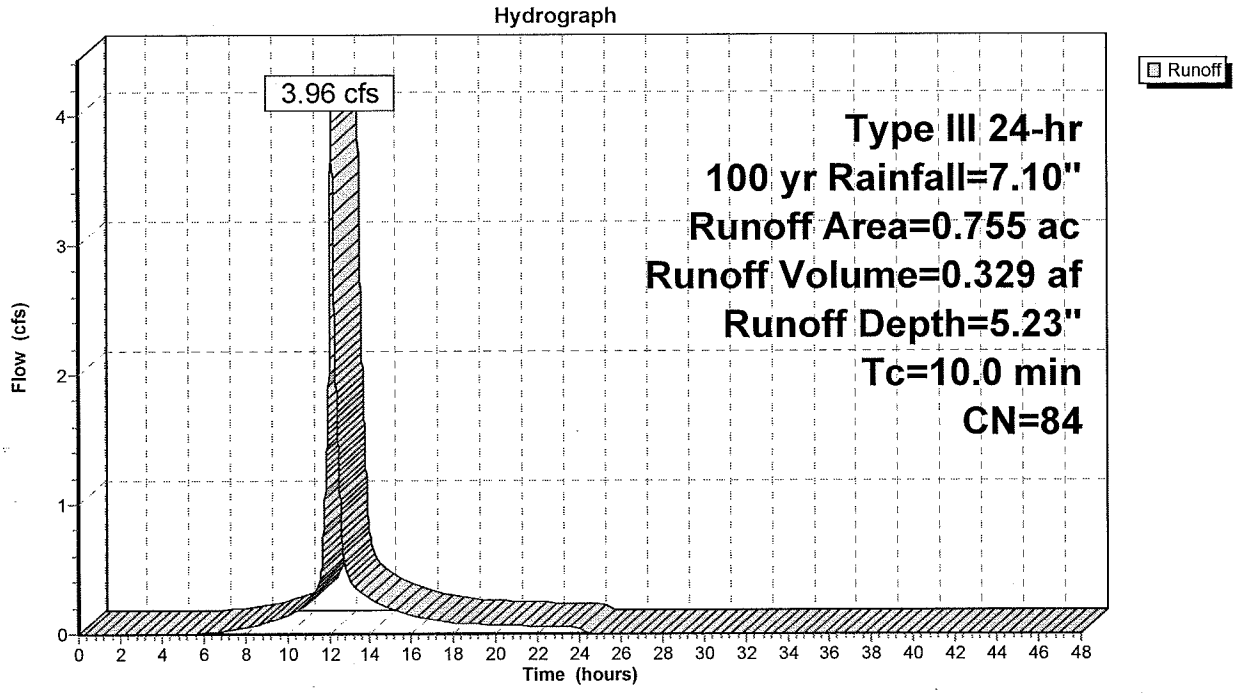
Runoff = 3.96 cfs @ 12.14 hrs, Volume= 0.329 af, Depth= 5.23"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=7.10"

Area (ac)	CN	Description
0.305	98	Paved parking, HSG C
0.450	74	>75% Grass cover, Good, HSG C
0.755	84	Weighted Average
0.450		59.60% Pervious Area
0.305		40.40% Impervious Area

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

Subcatchment PDA-2B: Columbarium Area



Summary for Subcatchment PDA-4: Northwest Existing

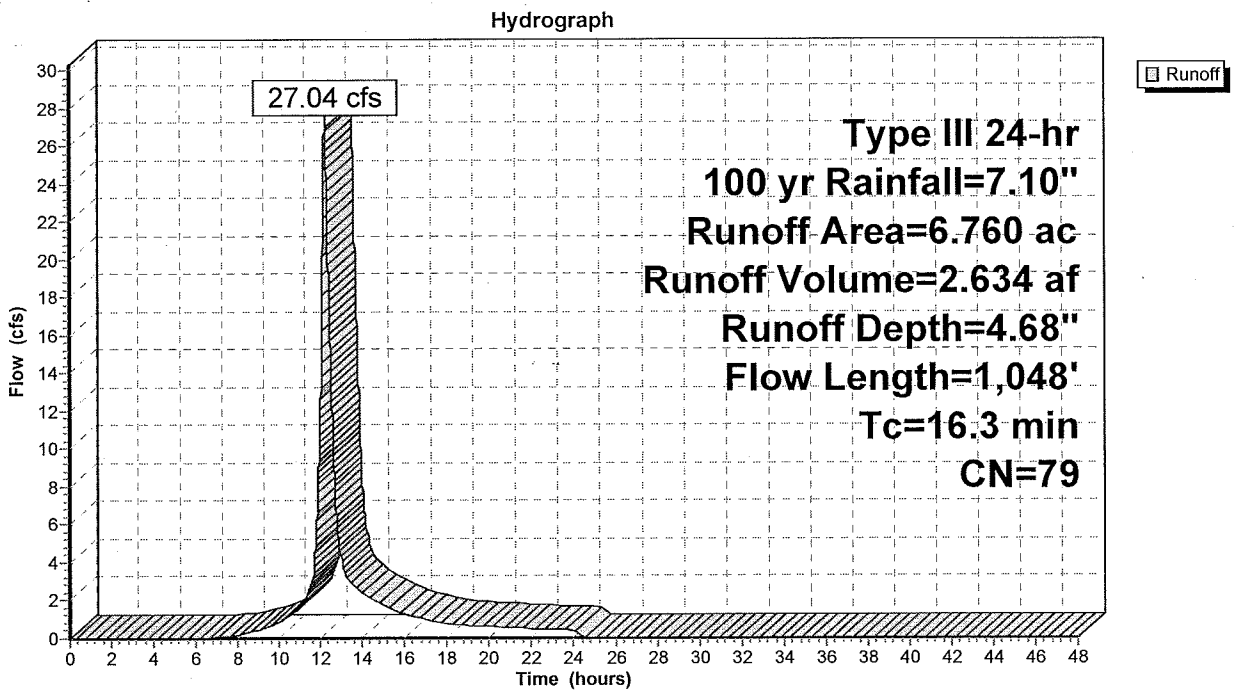
Runoff = 27.04 cfs @ 12.22 hrs, Volume= 2.634 af, Depth= 4.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Type III 24-hr 100 yr Rainfall=7.10"

Area (ac)	CN	Description
1.328	98	Paved parking, HSG C
0.126	73	Woods, Fair, HSG C
4.404	74	>75% Grass cover, Good, HSG C
0.902	80	>75% Grass cover, Good, HSG D
6.760	79	Weighted Average
5.432		80.36% Pervious Area
1.328		19.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.2	145	0.0966	0.24		**Sheet Flow,** Grass: Dense n= 0.240 P2= 3.20"
5.0	354	0.0282	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	74	0.0203	2.89		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.3	342	0.0241	16.85	1,802.48	**Channel Flow,** Area= 107.0 sf Perim= 33.0' r= 3.24' n= 0.030 Earth, grassed & winding
0.4	133	0.0196	6.30	2.20	**Pipe Channel,** 8.0" Round Area= 0.3 sf Perim= 2.1' r= 0.17' n= 0.010 PVC, smooth interior
16.3	1,048	Total			

Subcatchment PDA-4: Northwest Existing



Summary for Pond P-R1: Rain Garden

Inflow Area = 0.581 ac, 45.44% Impervious, Inflow Depth = 5.35" for 100 yr event
Inflow = 2.62 cfs @ 12.22 hrs, Volume= 0.259 af
Outflow = 2.18 cfs @ 12.32 hrs, Volume= 0.270 af, Atten= 17%, Lag= 6.3 min
Discarded = 0.11 cfs @ 12.32 hrs, Volume= 0.090 af
Primary = 2.08 cfs @ 12.32 hrs, Volume= 0.179 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 179.00' Surf.Area= 1,483 sf Storage= 465 cf
Peak Elev= 180.35' @ 12.32 hrs Surf.Area= 3,795 sf Storage= 2,823 cf (2,359 cf above start)

Plug-Flow detention time= (not calculated: outflow precedes inflow)
Center-of-Mass det. time= 42.3 min (846.3 - 804.0)

Volume	Invert	Avail.Storage	Storage Description
#1	178.50'	3,023 cf	**Exposed Basin (Prismatic)**Listed below (Recalc)
#2	177.50'	147 cf	**Sand (Prismatic)**Listed below (Recalc) 489 cf Overall x 30.0% Voids
#3	177.00'	98 cf	**Stone (Prismatic)**Listed below (Recalc) 245 cf Overall x 40.0% Voids
		3,267 cf	Total Available Storage

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.50	375	0	0
179.00	505	220	220
180.00	2,400	1,453	1,673
180.50	3,000	1,350	3,023

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
177.50	489	0	0
178.50	489	489	489

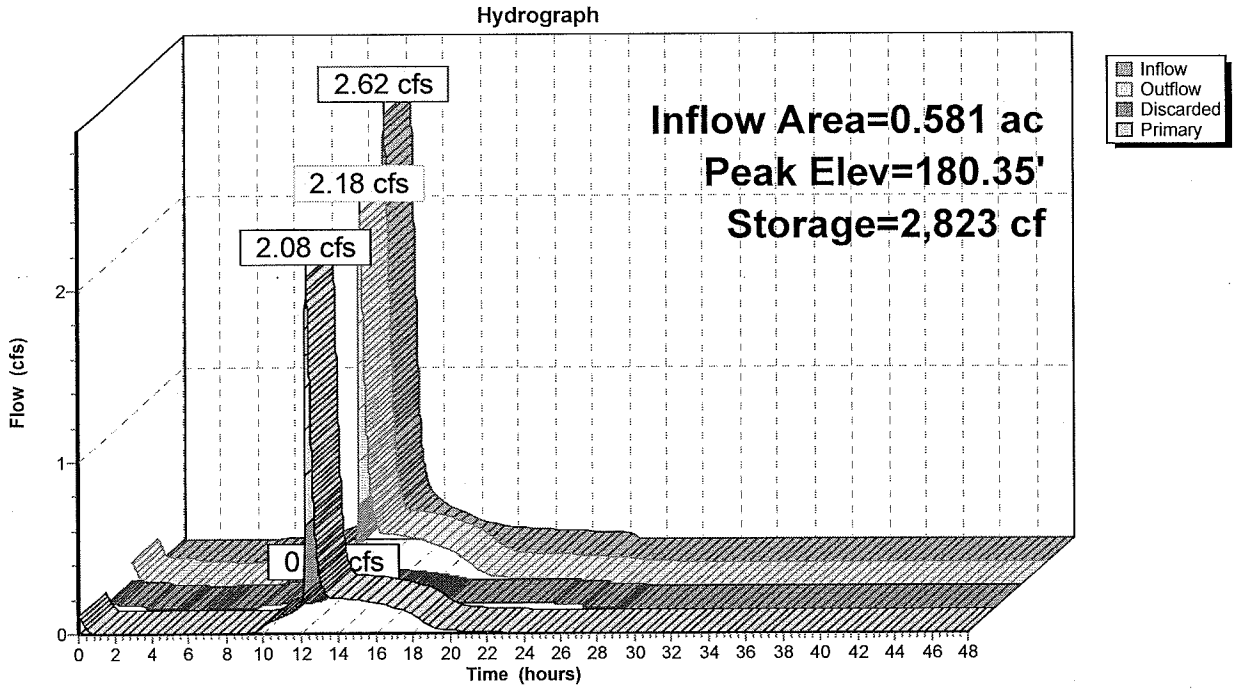
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
177.00	489	0	0
177.50	489	245	245

Device	Routing	Invert	Outlet Devices
#1	Discarded	177.00'	**1.200 in/hr Exfiltration over Surface area**
#2	Primary	180.20'	**24.0" x 36.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Primary	178.50'	**2.5" Vert. Orifice/Grate** C= 0.600

Discarded OutFlow Max=0.11 cfs @ 12.32 hrs HW=180.35' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=2.06 cfs @ 12.32 hrs HW=180.35' (Free Discharge)
├**2=Orifice/Grate** (Weir Controls 1.85 cfs @ 1.25 fps)
└**3=Orifice/Grate** (Orifice Controls 0.22 cfs @ 6.36 fps)

Pond P-R1: Rain Garden

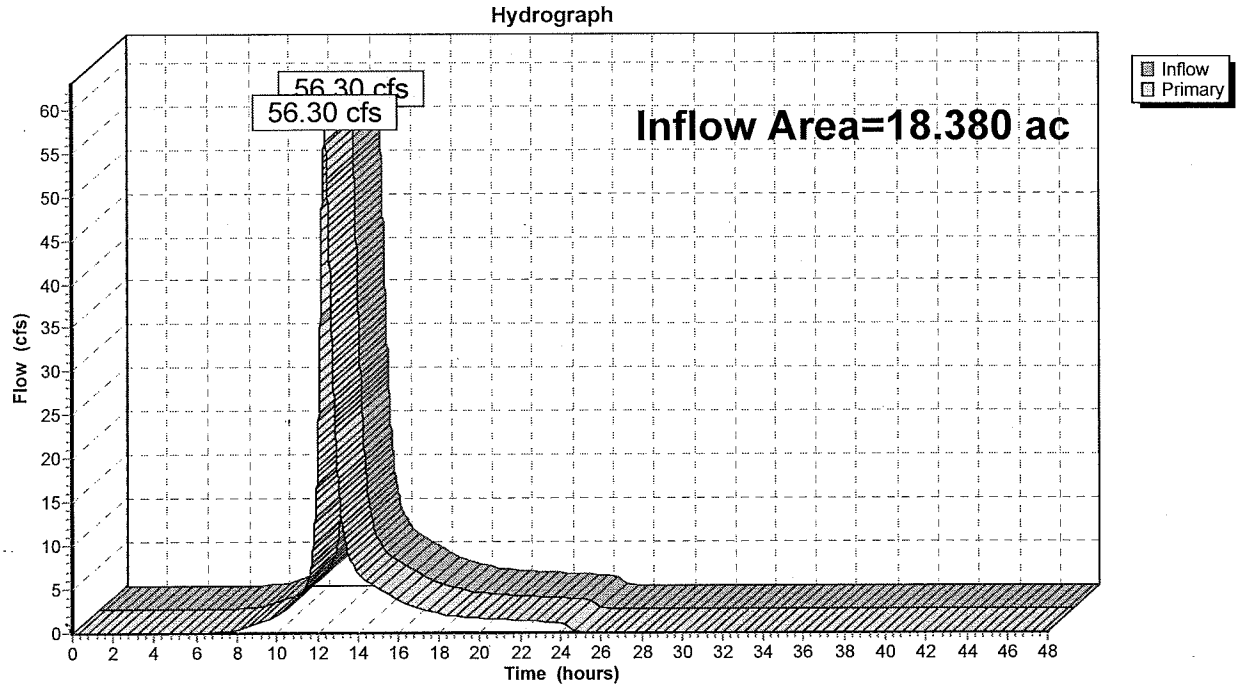


Summary for Pond POS-1: Out let at yard drain

Inflow Area = 18.380 ac, 12.17% Impervious, Inflow Depth = 4.68" for 100 yr event
Inflow = 56.30 cfs @ 12.41 hrs, Volume= 7.162 af
Primary = 56.30 cfs @ 12.41 hrs, Volume= 7.162 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-1: Out let at yard drain

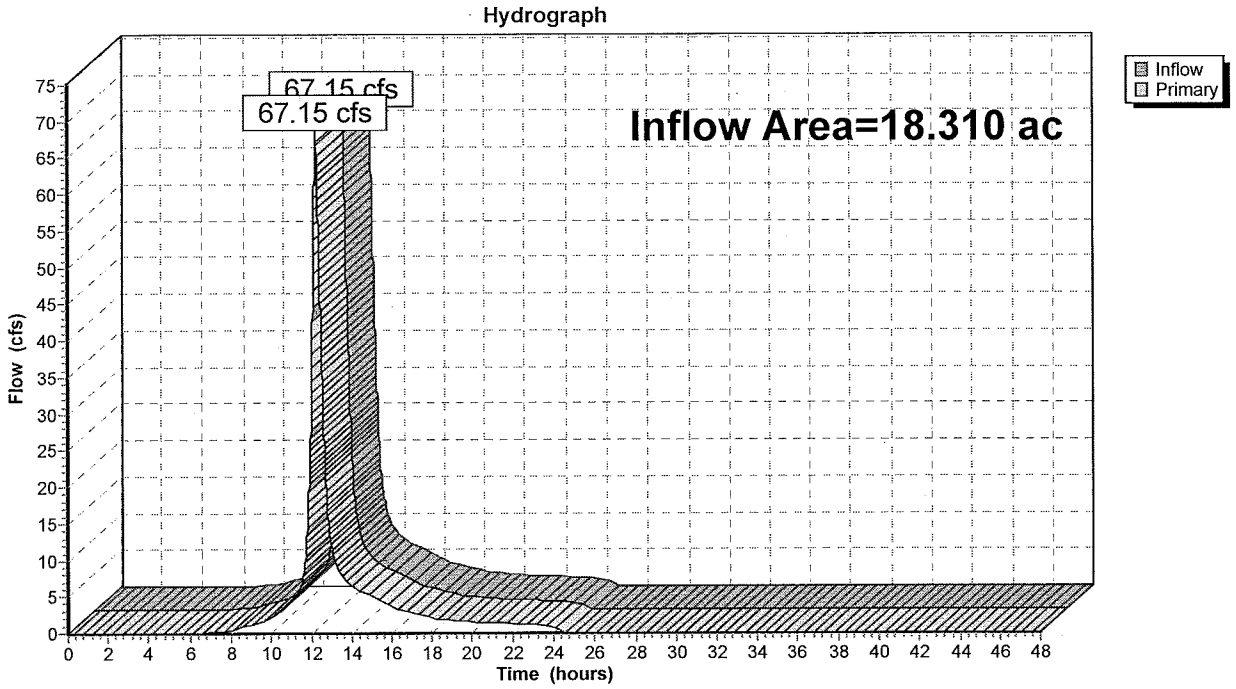


Summary for Pond POS-2,3: Outlet through 18" RCP

Inflow Area = 18.310 ac, 12.61% Impervious, Inflow Depth = 4.63" for 100 yr event
Inflow = 67.15 cfs @ 12.25 hrs, Volume= 7.066 af
Primary = 67.15 cfs @ 12.25 hrs, Volume= 7.066 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-2,3: Outlet through 18" RCP

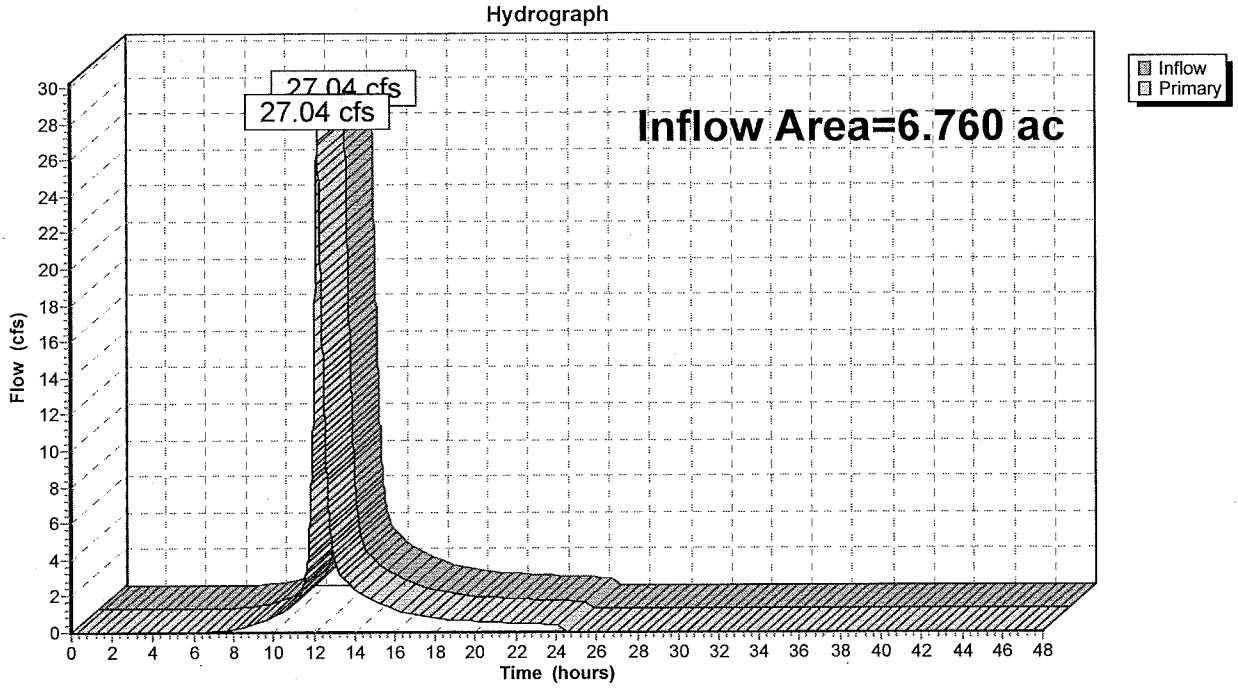


Summary for Pond POS-4: Outlet through 24" brick pipe

Inflow Area = 6.760 ac, 19.64% Impervious, Inflow Depth = 4.68" for 100 yr event
Inflow = 27.04 cfs @ 12.22 hrs, Volume= 2.634 af
Primary = 27.04 cfs @ 12.22 hrs, Volume= 2.634 af, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs

Pond POS-4: Outlet through 24" brick pipe



Summary for Pond UG-1: Underground Detention System

Inflow Area = 0.755 ac, 40.40% Impervious, Inflow Depth = 5.23" for 100 yr event
Inflow = 3.96 cfs @ 12.14 hrs, Volume= 0.329 af
Outflow = 2.02 cfs @ 12.34 hrs, Volume= 0.329 af, Atten= 49%, Lag= 12.5 min
Discarded = 0.08 cfs @ 9.28 hrs, Volume= 0.099 af
Primary = 1.94 cfs @ 12.34 hrs, Volume= 0.230 af

Routing by Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Peak Elev= 175.05' @ 12.34 hrs Surf.Area= 0.067 ac Storage= 0.096 af

Plug-Flow detention time= 52.4 min calculated for 0.329 af (100% of inflow)
Center-of-Mass det. time= 52.4 min (853.4 - 801.0)

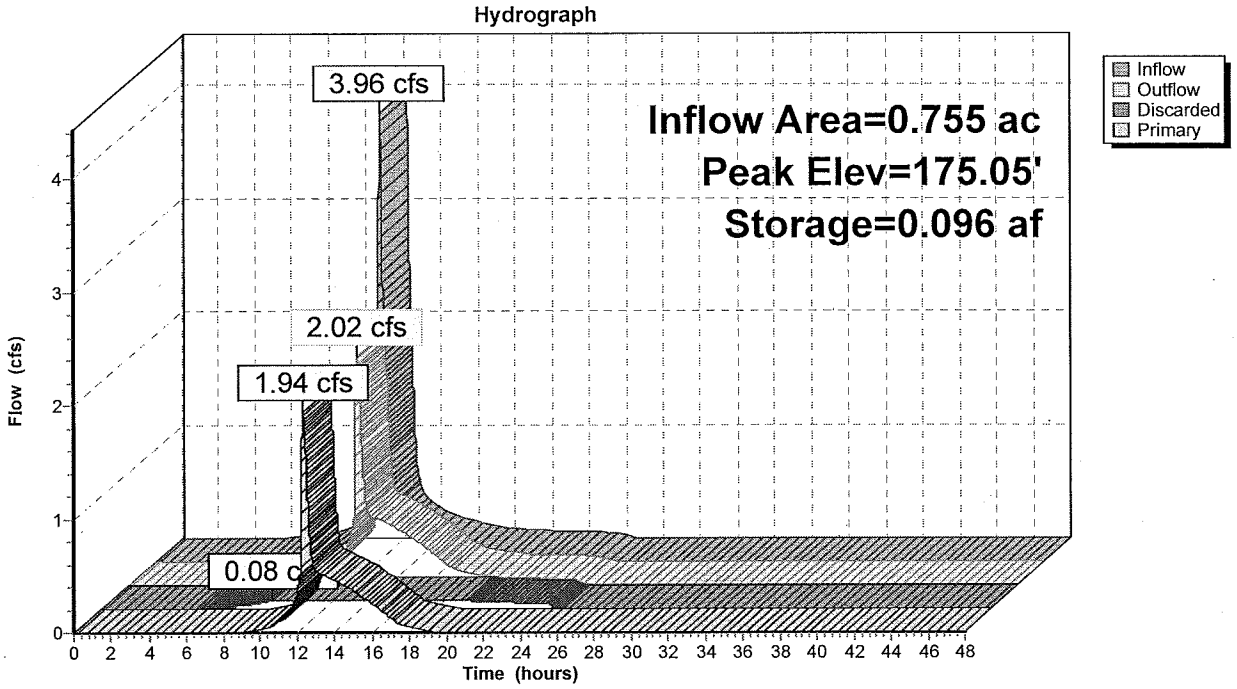
Volume	Invert	Avail.Storage	Storage Description
#1	173.00'	0.094 af	**36.0" Round Pipe Storage** x 4 Inside #2 L= 145.0'
#2	173.00'	0.042 af	**5.00'W x 145.00'L x 3.00'H Prismatoid** x 4 0.200 af Overall - 0.094 af Embedded = 0.106 af x 40.0% Voids
		0.136 af	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	173.00'	**1.200 in/hr Exfiltration over Surface area**
#2	Primary	173.00'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	174.78'	**3.0' long x 3.00' rise Sharp-Crested Rectangular Weir** 2 End Contraction(s) 5.0' Crest Height

Discarded OutFlow Max=0.08 cfs @ 9.28 hrs HW=173.05' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.08 cfs)

Primary OutFlow Max=1.93 cfs @ 12.34 hrs HW=175.05' (Free Discharge)
├**2=Orifice/Grate** (Orifice Controls 0.58 cfs @ 6.61 fps)
└**3=Sharp-Crested Rectangular Weir** (Weir Controls 1.36 cfs @ 1.71 fps)

Pond UG-1: Underground Detention System



Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
15.365	79	50-75% Grass cover, Fair, HSG C (PDA 3, PDA-1)
1.737	84	50-75% Grass cover, Fair, HSG D (PDA 3, PDA-1, PDA-2)
11.044	74	>75% Grass cover, Good, HSG C (PDA-2, PDA-2A, PDA-2B, PDA-4)
0.902	80	>75% Grass cover, Good, HSG D (PDA-4)
5.873	98	Paved parking, HSG C (PDA 3, PDA-1, PDA-2, PDA-2A, PDA-2B, PDA-4)
8.154	73	Woods, Fair, HSG C (PDA 3, PDA-1, PDA-2, PDA-4)
0.375	79	Woods, Fair, HSG D (PDA 3)

Veterans Cemetery

25 Year Storm

C, Values (Obtained from Table6-3, 6-4 and 6-5, CT DOT Drainage Manual 2000)

Impervious	0.900
Pervious	0.300
Unimproved Areas	0.200

Existing

Impervious	2.755
Pervious	30.385
Unimproved Areas	-
Area	33.140
C	0.350

Proposed

Impervious	5.873
Pervious	27.267
Unimproved Areas	-
Area	33.140
C	0.406

Appendix E – Inspection Forms

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

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities, issued 8/21/13, effective 10/1/13
Stormwater Monitoring Report

SITE INFORMATION

Permittee: **Department of Construction Service**
Mailing Address: **165 Capital Avenue**
Business Phone: **(860) 713-5640** ext.: _____ Fax: _____
Contact Person: **Carlton Grodotzke** Title: **DCS Project Manager**
Site Name: **State Veterans Cemetery**
Site Address: **317 Bow Lane, Middletown, CT 06457**
Receiving Water (name, basin): **Unnammed Brook, Connecticut River Basin**
Stormwater Permit No. GSN

SAMPLING INFORMATION (Submit a separate form for each outfall)

Outfall Designation: _____ Date/Time Collected: _____
Outfall Location(s) (lat/lon or map link): _____
Person Collecting Sample: _____
Storm Magnitude (inches): _____ Storm Duration (hours): _____
Size of Disturbed Area at any time: _____

MONITORING RESULTS

Sample #	Parameter	Method	Results (units)	Laboratory (if applicable)
1	Turbidity			
2	Turbidity			
3	Turbidity			
4	Turbidity			

(provide an attachment if more than 4 samples were taken for this outfall) | Avg = |

STATEMENT OF ACKNOWLEDGMENT

I certify that the data reported on this document were prepared under my direction or supervision in accordance with the General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities. The information submitted is, to the best of my knowledge and belief, true, accurate and complete.

Authorized Official: _____

Signature: _____ Date: _____

Please send completed form to:

DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
BUREAU OF MATERIALS MANAGEMENT AND COMPLIANCE ASSURANCE
79 ELM STREET
HARTFORD, CT 06106-5127
ATTN: NEAL WILLIAMS

Appendix F – Notice of Termination Form

General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

Notice of Termination Form

Please complete and submit this form in accordance with the general permit (DEP-PED-GP-015) in order to ensure the proper handling of your termination. Print or type unless otherwise noted.

Note: Ensure that for commercial and industrial facilities, registrations under the *General Permit for the Discharge of Stormwater Associated with Industrial Activity* (DEP-PED-GP-014) or the *General Permit for the Discharge of Stormwater from Commercial Activities* (DEP-PED-GP-004) have been filed where applicable. For questions about the applicability of these general permits, please call the Department at 860-424-3018.

Part I: Registrant Information

1. Permit number: ***GSN***
2. Fill in the name of the registrant(s) as indicated on the registration certificate:

   Registrant: **Department of Construction Service**
3. Site Address: **317 Bow Lane**

   City/Town: **Middletown** State: **CT** Zip Code: **06457**
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): **State Veterans Cemetery**

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
Carlton Grodotzke	**DCS Project Manager**
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

Appendix G – License Transfer Form

Connecticut Department of
Energy & Environmental Protection

License Transfer Form

CPPU USE ONLY
App #:
Doc #:
Check #:

Please complete and submit this form and the appropriate transfer fee(s) to the CT Department of Energy and Environmental Protection, Central Permit Processing Unit, 79 Elm Street, Hartford, CT 06106-5127. DEEP will notify both the proposed transferee and the licensee of the approval or disapproval of the registration. Print or type unless otherwise noted.

Part I: License Type and Fee Information

License Type: (check all that apply)	No. of licenses	Transfer Fee for *each* license	Fee Subtotal
☐ **Air Emissions**		$940.00	
☐ NSR Permit, GPLPE Approval, and/or Registration pursuant to the former RCSA section 22a-174-2			
☐ Title IV **and** Request for Title IV Revision		$940.00	
App#:			
☐ Title V **and** Request for Title V Revision		$940.00	
App#:			
☐ **Aquifer Protection Area Program**		$750.00	
☐ **Inland Water Resources:** Water Diversion, Flood Management, Inland Wetlands and Watercourses, Dam Safety, Stream Channel Encroachment Lines, 401 Water Quality Certification		$750.00	
☐ **Office of Long Island Sound Program:** Structures, Dredging and Fill; Tidal Wetlands; Removal of Sand and Gravel (Marine Mining); 401 Water Quality Certification		$0	
☐ **Waste and Materials Management:** Solid Waste Facilities, Solid Waste Landfills, RCRA Hazardous Waste TSDF's, Hazardous Waste Landfills, CGS section 22a-454 Waste Facilities, Stewardship Permits		$940.00	
☐ Waste Transportation		$0	
☐ **Water Discharges**		$940.00	
		Fee Total	

Part I: License Type (continued)

Date of Closing: ☐ Proposed ☐ Actual

If the closing takes place after submittal of this completed form and before the license transfer is approved, you must complete and submit a *Confirmation of Closing – Before License Transfer Approval Form* (attached) immediately after said closing to confirm the change in ownership of the facility.

If the closing takes place after the license transfer is approved, you must complete and submit a *Confirmation of Closing – After License Transfer Approval Form* immediately after said closing to confirm the change in ownership of the facility and for the license transfer to be effective.

Table A: Licenses Being Transferred

License Type	License Number	Expiration Date

☐ Check the box if you have more licenses you are proposing to transfer. If so, label and attach additional sheet(s) with the above information for each license.

Table B: Other Licenses or Regulated Activities Not Being Transferred

License Type	License Number	Expiration Date	Continuing Activity?		Reason for not transferring
			Yes	No	
			☐	☐	
			☐	☐	
			☐	☐	

☐ Check the box if you have more licenses to identify. If so, label and attach additional sheet(s) with the above information for each license.

Table C: Pending Applications or Enforcement Actions

Name of Application or Enforcement Action	Application or Enforcement Case Number	Date of Submittal or Enforcement Action

☐ Check the box if you have more applications or actions to identify. If so, label and attach additional sheet(s) with the above information for each license.

Part II: General Information

1. **Name of Site:**

   Street Address or Description of Location:

   City/Town: State: Zip Code:

2. **Current Licensee**

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext.:

   Contact Person: Phone: ext.

   E-mail:

   ☐ Check the box if there is more than one licensee.
   If so, label and attach additional sheet(s) with the above information for each licensee.

- **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 State. If applicable, registrant's name shall be stated **exactly** as it is registered with the Secretary of State. Please note, for those entities registered with the Secretary of State, the registered name will be the name used by DEEP. This information can be accessed at the Secretary of State's database (CONCORD).* **(www.concord-sots.ct.gov/CONCORD/index.jsp)**
- *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.).*

3. **Proposed Transferee (Registrant)**

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext.:

   Contact Person: Phone: ext.

   *E-mail:

   *By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject registration. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify DEEP if your e-mail address changes.

a) Registrant Type (check one):

   ☐ individual ☐ federal agency ☐ state agency ☐ municipality ☐ tribal

   ☐ *business entity (*If a business entity complete i through iii):

Part II: General Information (continued)

i) check type: ☐ corporation ☐ limited liability company ☐ limited partnership
☐ limited liability partnership ☐ statutory trust ☐ Other: _____

ii) provide Secretary of the State business ID #:_____This information can be accessed at *database (CONCORD).* **(www.concord-sots.ct.gov/CONCORD/index.jsp)**

iii) ☐ Check here if your business is **NOT** registered with the Secretary of State's office.

b) Registrant's interest in property at which the proposed activity is to be located:

☐ site owner ☐ option holder ☐ lessee ☐ easement holder
☐ facility owner ☐ operator ☐ other (specify): _____

☐ Check if any additional proposed transferees or co-registrants. If so, attach additional sheet(s) with the required information as requested above.

4. New Billing Contact, if different than the registrant.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

5. New Primary Contact for departmental correspondence and inquiries, if different than the registrant.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
*E-mail:

*By providing this e-mail address you are agreeing to receive official correspondence from the department, at this electronic address, concerning the subject registration. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes.

6. New Authorized Representative, if applicable.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Part II: General Information (continued)

7. **New Attorney**, if applicable.

   Firm Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext.:

   Attorney Name: Phone: ext.

   E-mail:

8. **New Site Owner**, if different than the registrant.

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext.:

   Contact Person: Phone: ext.

   E-mail:

9. **New Facility Owner**, if different than the registrant.

   Name:

   Mailing Address:

   City/Town: State: Zip Code:

   Business Phone: ext.:

   Contact Person: Phone: ext.

   E-mail:

10. **New Facility Operator**, if different than the registrant.

    Name:

    Mailing Address:

    City/Town: State: Zip Code:

    Business Phone: ext.:

    Contact Person: Phone: ext.

    E-mail:

11. **Preparer of this registration**, if different than the registrant.

    Name:

    Mailing Address:

    City/Town: State: Zip Code:

    Business Phone: ext.:

    Contact Person: Phone: ext.

    E-mail:

Part III: Supporting Documents

Be sure to read the instructions (DEEP-INST-006) to determine all documents that must be submitted with this registration form. Check the applicable boxes as verification that *all applicable* attachments have been submitted with this registration form. When submitting any supporting documents, please label the documents as indicated in this part (e.g., Attachment A, etc.) and be sure to include both the licensee and the proposed transferee's name.

☐ Attachment A: *Applicant Background Information* (DEEP-APP-008) (if applicable) (Do ***not*** include for transfer of licenses for solid waste facilities)

☐ Attachment B: *Applicant Compliance Information* (DEEP-APP-002)

☐ Attachment C: Submit the following only in the case where the closing has occurred before the department has approved the transfer of licenses.

- submit a completed *Confirmation of Closing Form* (DEEP- APP-006B) once such closing has been completed to the address indicated on the form. (attached)

☐ Attachment D: *Submit the following only for transfer of licenses for CGS Section 22a-454 Facilities, Hazardous Waste Landfills, RCRA Hazardous Waste TSDF's and Stewardship Permits:*

1. Business Information
2. Financial Assurance
3. *Revised EPA RCRA Part A and RCRA Part B application*

☐ Attachment E: *Submit the following only for transfer of licenses for Solid Waste Facilities and Solid Waste Landfills:*

1. *Background information* (DEEP-SW-APP-101)
2. *Business Information* (DEEP-SW-APP-103)

☐ Attachment F: *Submit the following only for transfer of licenses for Waste Transporters:*

1. *List of Transporter Permits Held in Other States* (DEEP-WEED-APP-401)
2. Certificate of Insurance and MCS-90 Forms
3. *Spill Clean-up Contractor Application* (DEEP-WEED-APP-407), if applicable
4. Additional Registrant Information

☐ Attachment G: *Submit the following only for transfer of licenses administered by OLISP pursuant to statutes regulating work in tidal, coastal or navigable waters or tidal wetlands:*

1. A copy of the permit drawings identifying the components of the project that have been completed and the portion of the project or work elements that remain to be conducted.
2. Photographs or other documentation showing that the completed work has been constructed/conducted in accordance with the permit. If the work authorized consisted of dredging, provide a current bathymetric survey of the dredged area.

Part III: Supporting Documents

☐ Attachment H: *Submit the following only for transfer of Title V licenses:*

- *Written Authorization Form RCSA Section 22a-174-2a(a)(2)(B)* (DEEP-AIR-SIG-REG-002), **IF APPLICABLE**.

☐ Attachment H-1: *Submit the following only for transfer of Title IV licenses or Title V licenses **with** a Title IV license incorporated:*

- a completed *EPA Phase II Acid Rain Permit Application Form* (EPA Form 7610-16) signed by the new designated representative or alternate designated representative. A copy should also be sent to EPA Region 1: Mr. Ian Cohen, US EPA, 5 Post Office Square, Suite 10, Mail Code O(o)EP0(zero)5-2, Boston, MA 02109-3912

☐ Attachment I: *Submit the following only for transfer of registrations and permits for the Aquifer Protection Area Program:*

- *Certification of Best Management Practices (found on p.5 of 7 of the Registration Form for Regulated Activities in Aquifer Protection Areas) (DEEP-APA-REG-100)*
- *Certification of Best Management Practices (found on p.7 of 9 of the Permit Application to Add a Regulated Activity to a Registered Facility in an Aquifer Protection Area) (DEEP-APA-APP-200)*

For transfer of registrations and permits for the Aquifer Protection Area Program, a copy of this completed form and the *Certification of Best Management Practices* to the municipality, the Department of Public Health and any affected water company.

For contact names and addresses refer to:

Municipal Contact Directory

Water Company Contact Directory

Connecticut Department of Public Health
Drinking Water Division
410 Capitol Avenue, MS #51 WAT
Hartford, CT 06134-0308

Part IV: Certification

The licensee(s) *and* the proposed transferee(s) and the individuals responsible for actually preparing the registration must sign this part. A registration will be considered insufficient unless *all* required signatures are provided ***and are the proper signatory authority as specified under Part IV in the instructions.***

"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 the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I certify that this license transfer registration and if applicable, the request for Title IV and/or Title V Revision, is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I understand that this transfer shall become effective immediately upon the commissioner's written approval of this request, or within the time frame specified in the subject approval. I understand that there are significant penalties for conducting any activity requiring a license from DEEP without the required license. I understand that this license transfer registration form is only to be used for changes in owners and operators of the licensed activity; if other changes are being proposed to the facility or site or facility operations, the proposed transferee must also request a license modification.

I understand that a false statement in the submitted information 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."

Signature of Authorized Representative for Current Licensee	Date
Printed Name of Authorized Representative for Current Licensee	Title (if applicable)

License Number(s):

In addition to the above certification statement, by signing below as transferee, I hereby further certify that I am willing and able to fully comply with the terms and conditions of the license(s) referenced in this document.

Signature of Authorized Representative for Proposed Transferee	Date
Printed Name of Authorized Representative for Proposed Transferee	Title (if applicable)
Signature of Preparer	Date
Name of Preparer (print or type)	Title (if applicable)

☐ Check the box if additional signatures are necessary. If so, please reproduce this sheet and attach signed copies to this sheet.

Connecticut Department of
Energy & Environmental Protection

Confirmation of Closing – Before License Transfer Approval

Complete this form only in the case where the closing has occurred after submittal of the license transfer registration form and ***before*** the department has approved the transfer of licenses. Once such closing has been completed submit this form to the applicable address indicated below, confirming the completion of the change in ownership of the facility.

To be completed by Transferee (registrant):

The undersigned confirm that the change in ownership of the _____
[address of facility]

facility from _____ to _____
[name of transferor – current license holder] [name of transferee - registrant]

occurred on the following date., _____
[date of closing]

Signature of Authorized Representative for Transferee

Printed Name of Authorized Representative for Transferee

Title of Authorized Representative for Transferee

Please submit this completed form, a copy of the department license transfer approval and any supporting documents to:

For mulit media license transfer requests (for example, transferring a waste, water and air license):	*For single media license transfer requests (for example , only transferring air licenses):*
OFFICE OF PLANNING AND PROGRAM DEVELOPMENT, 3RD FLOOR **DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION** **79 ELM STREET** **HARTFORD, CT 06106-5127** **ATTENTION: BOB HANNON**	**[INSERT APPLICABLE PROGRAM, for example, "AIR ENGINEERING]** **DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION** **79 ELM STREET** **HARTFORD, CT 06106-5127** **ATTENTION: [INSERT Program Staff Name]**