TOWN OF MONROE
APPLICATION FOR PERMIT
INLAND WETLANDS COMMISSION
7 Fan Hill Road, Monroe, CT 06468
Tel. (203)452-2809

FOR OFFICE USE ONLY:
Application Number _____
File Number: _____
Submittal Date: _____
Application Fee Collected _____
Public Hearing Fee Collected _____
Date of Receipt: _____
Extensions (cumulative ≤ 65 days) _____
_____
Public Hearing Start: _____ End _____
Hearing: Start: _____ End _____
Deliberation: Start: _____ End _____
Approval Date: _____ Denial Date: _____
270 Days Up: _____
Permit Expiration: _____

As the applicant, it is your responsibility to provide the information the Commission needs in order to process your application and make a fair determination of the issues. If you fail to supply the information it may result in delay, a denial of your application or both. We recommend that you read the Inland Wetlands and Watercourses Regulations and that you request a meeting with the Land Use Department prior to submitting your application. There is no charge to the applicant for this meeting.

SECTION A: Information about the property

1. **Location of the Property**:
   Street Address: 205 Spring Hill Road, Monroe, CT
   Assessor's Map Number: 5
   Parcel Number: 005 010 00
2. **Where is the property deed found in the Monroe Land Records?**
   Volume: 2208 Page: 0209
3. **Is the property located within a public water supply watershed?**
   ☒ No
   ☐ Yes (***If " Yes, " the Applicant must send a copy of this application BY CERTIFIED MAIL ON OR BEFORE THE DATE OF THE APPLICATION to the Aquarion Water Company of Connecticut, 714 Black Rock Road, Easton, CT 06612, and the Commissioner of Public Health, 410 Capitol Avenue, Hartford, CT 06106; See Regulations Section 8.3).***
4. **Is the property located within 500 feet of a town boundary?**
   ☐ No
   ☒ Yes ***(If" Yes ", the applicant must notify the Inland Wetland Agency of the adjacent municipality by certified mail and submit the receipt with this application).***
5. **Is the property subject to an existing conservation easement?**
   ☒ No
   ☐ Yes ***(If" Yes ", the applicant must notify the party holding such restriction by certified mail no later than sixty days prior to the filing of this permit application, or submit a letter from the party holding the restriction verifying that the application is in compliance with the terms of the restriction; see Regulations Section 7.9c & 7.9d).***
6. **Is there a flood plain located on the property?**
   ☒ No
   ☐ Yes ***(If" Yes ", indicate elevation and location of flood plain on the submission plan).***
7. **Please attach a list of the names and mailing addresses of all landowners within 100 feet of the property.**

SECTION B: Information about the applicant

8. **Applicant's name and contact information:**
   Name: GP 205 Spring Hill LLC
   Address: 1815 Lakewood Rd, Suite 237, Toms River, NJ 08753
   Telephone: (917)833-7939 Fax: N/A Email: az@shelbourneco.com
9. **What is the Applicant's interest in the property?**
   ☒ Owner
   ☐ Option to purchase
   ☐ Other _____

Application No. _____ File No._____

Applicant's representative's name and contact information:

Name: Kevin Solli

Business Name: Solli Engineering, LLC

Business Address: 501 Main Street, Suite 2A, Monroe, CT

Telephone: (203) 880-5455 Fax: _____ Email: Kevin@sollillc.com

10. Engineer's name and contact information:

Name: Kevin Solli

Business Name: Solli Engineering, LLC

Business Address: 501 Main Street, Suite 2A, Monroe, CT

Telephone: (203) 880-5455 Fax: _____ Email: Kevin@sollillc.com

11. Owner's name and contact information:

Name: GP 205 Spring Hill Road LLC

Address: 1815 Lakewood Road, Suite 237, Toms River, NJ 08753

Telephone: (917) 833-7939 Fax: N/A Email: az@shelbourneco.com

Owner's signature_____ (granting permission for submission of application by the applicant)

***Please note the following:**

If the applicant is not the current owner, this application must include the owner's signature or a written, witnessed consent to submit this application, signed and dated by the owner. Only the applicant and the agent listed on this application will receive copies of official action and correspondence.

SECTION C: Information about the proposed activity

(Please attach additional sheets if necessary)

12. Select one or more of the following types of Application requested:

- ☒ Regulated Activity
- ☐ Subdivision Report/Referral
- ☐ Renewal/Extension of Issued Permit Number _____
- ☐ Including Site Remediation
- ☐ Map Amendment
- ☐ Regulation Amendment

13. Describe the proposed activity covered by this application:

The proposed site improvements consist of the construction of a 31,200 sf industrial building with 1,000 sf of office space. This project has been designed with an above ground detention basin and hydrodynamic separators for runoff treatment prior to flowing off-site to the south. The existing basin/wetland will be expanded to improve water quality and attenuate runoff.

14. List all activities which take place in regulated areas, including the upland review areas:

Activities in regulated areas include site grading, driveway construction, utility installations, above ground detention basin and plantings.

15. List the total acreage of the following:

Overall project site: 3.31 acres

Wetlands on the property: 0.06 acres

Upland review areas on the property: 0.57 acres

16. List the total area of the regulated areas to be altered:

Wetlands: 0.05 acres; 2,029 sq. ft.

Upland review areas (within 100 feet of a wetland or 150 feet of a watercourse): 0.36 acres; 15,680 sq. ft.

Total Regulated area to be altered (a + b above) for determination of fee: _____acres;_____sq. ft.

17. What alternatives to the proposed regulated activity did you consider? Why did you choose the activity proposed in this application as opposed to the alternatives considered? (See Regulations *Section 7.5f)*

Two site layout alternatives were considered, both of which had significant wetlands impact. Alternatives have been included as part of this submission.

18. List all measures of Low Impact Design/Development that have been incorporated into this application in order to minimize impact to wetlands.

The project implements vegetated buffers, water quality units, a detention basin and hooded outlets on catch basins to minimize impacts to wetlands.

SECTION D: Determination of Application Fee

(See Regulations Section 19)

19. Select type of Application Fee (choose one):

□	Residential Use = $300.00	_____
☒	Commercial Use = $500.00	$500.00
□	Regulation Amendment = $500.00	_____
□	Map Amendment = $150.00	_____
□	Permit Modification = $100.00	_____
□	Renewal/Extension of Issue Permit = $100.00	_____

20. Select the following additional fees that apply for regulated areas proposed to be disturbed:

Square Feet of Disturbed Area:

□	Less than 1,000 square feet = $50.00	_____
□	1,000 to 5,000 square feet = $100.00	_____
☒	More than 5,000 square feet = $100.00 (base amount)	$100.00
	*(Plus $5.00 for every **additional** 5,000 square feet rounded up)*	
	Disturbed Area (Line 17c) (-) 5,000 sq.ft. (÷) 5,000 sq.ft. (x) $5.00 per sq.ft. rounded up...	$30.00
	21. Department of Environmental Protection State Surcharge	$60.00
	22. TOTAL APPLICATION FEE:	$690.00

****** Please note the Application Fees/State Fee must be payable to the Town of Monroe. Applicants paying with a personal check must include their driver's license number and telephone number on the check.***

SECTION E: Required support documents

(See Regulations Section 7)

Please indicate (check box) that the following documents have been included with the application:

23. Submit ten (10) copies of the following:

- ☒ Completed Inland Wetlands Application.
- ☒ A description of all filling and/or excavation activities within regulated areas (include estimates of quantity). See attached.
- ☒ A Soils Report by a Soil Scientist (include a sketch of flagged wetland areas within said report).
- ☒ A minimum of two alternative plans/sketches that were considered prior to choosing the proposed plans.
- ☒ A report from the Monroe Health Department. To be provided upon receipt.
- ☒ A Wetlands Assessment Report.
- ☒ An area plan showing all abutting properties and applicable downstream drainage systems.

24. Submit seven **(7)** reduced copies of the following (all plans must be folded):

- ☒ Reduced copies, **18' x 24'**, of the site plan showing existing and proposed conditions in relation to the wetlands, watercourses and upland review areas. Please include a location map, delineate the 100-foot wetland setback (upland review area) and/or the l50-foot watercourse setback (upland review area) in red, and incorporate an area plan showing all abutting properties and applicable downstream drainage systems. All plans must have a bar scale.

Application No._____ File No._____

25. Submit three **(3)** copies of the following (all plans must be folded):

☒ Full size copies of the site plan, **24' x 36'**, showing existing and proposed conditions in relation to the wetlands, watercourses and upland review areas. Please include a location map, delineate the 100-foot wetland setback (upland review area) and/or the l50-foot watercourse setback (upland review area) in red, and incorporate an area plan showing all abutting properties and applicable downstream drainage systems. All plans must have a bar scale.

26. Submit two (2) copies of the following:

☒ Drainage calculations, if applicable.

27. Submit one (1) copy of the following:

☒ A list of the names and mailing addresses of all abutting property owners.

☒ A completed **D.E.E.P** report form (available at the Inland Wetlands Office or on the Town Website at www.monroect.org/Town Hall Departments/Inland Wetlands/Applications & Forms).

☒ Verification in writing that all wetlands have been flagged and the property address/location is adequately delineated and/or marked at the property.

☒ A completed bond form listing all wetlands related work and protective measures for same (available at the Inland Wetlands Office or on the Town Website at www.monroect.org/Town Hall Departments/Inland Wetlands/Applications & Forms).

PLEASE INCLUDE TEN (10) COPIES OF ANY FUTURE SUPPORTING DOCUMENTATION SUBMITTED TO THE COMMISSION (Plans: 3 Full Size copies - 24' x 36', and 7 Reduced Size copies - 18' x 24'). Plans prepared by engineers, surveyors and architects must be signed and sealed. The Commission may request additional copies of the application or supporting documents at any time.

Title of original submission plan (include author and date) _____

_____

The undersigned applicant hereby consents for the owner, in the case where the applicant is not the owner, to necessary and proper access to the above mentioned property by the Inland Wetlands Commissioners, the Inland Wetlands Agent and other appropriate Town staff and/or authorized Town Consultants, at reasonable times, both before and after any permit has been granted or denied by the Commission, for the purpose of evaluating the application, monitoring compliance or correcting any violation of the Inland Wetlands and Watercourses Regulations brought about through actions or inactions of the applicant of permittee.

The undersigned warrants the truth of all statements contained herein and in all supporting documents according to the best of the applicant's knowledge and belief.

The undersigned applicant understands and agrees that the Commission may request additional information and it is the applicant's responsibility to provide this information in a timely fashion and to the Commission's satisfaction. If the information provided is incomplete or inaccurate, in the opinion of the Commission, the Commission may deny the application or request an extension to be granted by the Applicant in order to act within the legal time limits.

Type or Print the Name of the Applicant: Abe Zeigermann

Signature of Applicant: _____

205 Spring Hill Road, Monroe, CT
100' Abutters

Properties in Monroe

7 Victoria Drive
Swiss Army Land LLC
Doug Imri – VP NA DC Operations
PO Box 1212
Monroe, CT 06468-1212
004/037/03

101 Spring Hill Road
Town of Trumbull
5866 Main Street
Trumbull, CT 06611
005/001/00

171 Spring Hill Road
MTD Corporation
171 Spring Hill Road
Trumbull, CT 06611
005/002/00

207 Spring Hill Road
Grasmere Ast LLC
259 Hattertown Road
Monroe, CT 06468
005/009/00

28 Hickory Lane
Town of Monroe
7 Fan Hill Road
Monroe, CT 06468
005/011/00

27 Hickory Lane
Matthew & Colby Lemieux
27 Hickory Lane
Monroe, CT 06468
005/008/00

Properties in Trumbull

81 Spring Hill Road
Town of Trumbull
5866 Main Street
Trumbull, Ct 06611
D/01/00002/000

161 Spring Hill Road
Performance Alley LLC
PO Box 426
Monroe, CT 06468
D/01/00020/000

171 Spring Hill Road
MTD Corp / Millo N. Bertini Pres
171 Spring Hill Road
Trumbull, CT 06611
D/01/00021/000

207 Spring Hill Road
Grasmere Ast LLC
259 Hattertown Road
Monroe, CT 06468
D/01/00050/000

211 Spring Hill Road
Trumbull Congregation of Jehovah Witness Inc
211 Spring Hill Road
Trumbull, CT 06611
D/01/00012/000

30 Trefoil Drive
265 West 34th Street LLC
WM M Silverman MGR Trefoil PK Properties LLC
230 Park Ave 30th Floor
New York, NY 10169-005
D/01/00042/000

204 Spring Hill Road
265 West 34th Street LLC
WM M Silverman MGR Trefoil PK Properties LLC
230 Park Ave 30th Floor
New York, NY 10169-005
D/01/00043/000

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

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

STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

Pursuant to section 22a-39(m) of the General Statutes of Connecticut and section 22a-39-14 of the Regulations of Connecticut State Agencies, inland wetlands agencies must complete the Statewide Inland Wetlands & Watercourses Activity Reporting Form for **each** action taken by such agency.

This form may be made part of a municipality's inland wetlands application package. If the municipality chooses to do this, it is recommended that a copy of the Town and Quadrangle Index of Connecticut and a copy of the municipality's subregional drainage basin map be included in the package.

Please remember, the inland wetlands agency is responsible for ensuring that the information provided is **accurate** and that it reflects the **final** action of the agency. Incomplete or incomprehensible forms will be mailed back to the agency. Instructions for completing the form are located on the following pages.

The inland wetlands agency shall mail completed forms for actions taken during a calendar month no later than the 15th day of the following month to the Department of Energy and Environmental Protection (DEEP). Do **not** mail this cover page or the instruction pages. Please mail **only** the **completed** reporting form to:

DEEP Land & Water Resources Division
Inland Wetlands Management Program
79 Elm Street, 3rd Floor
Hartford, CT 06106

Questions may be directed to the DEEP's Inland Wetlands Management Program at (860) 424-3019.

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INSTRUCTIONS FOR COMPLETING

THE STATEWIDE INLAND WETLANDS & WATERCOURSES ACTIVITY REPORTING FORM

Use a separate form to report EACH action taken by the Agency. Complete the form as described below.
Do NOT submit a reporting form for withdrawn actions.

PART I: Must Be Completed By The Inland Wetlands Agency

1. Choose the year and month the Inland Wetlands Agency took the action being reported. If multiple actions were taken regarding the same project or activity then multiple forms need to be completed.

2. Choose ONE code letter to describe the final action or decision taken by the Inland Wetlands Agency. Do NOT submit a reporting form for withdrawn actions. Do NOT enter multiple code letters (for example, if the same project or activity had both a permit issued and enforcement action, submit two forms for the two separate actions).

   A = A Permit Granted by the Inland Wetlands Agency (not including map amendments, see code D below)
   B = Any Permit Denied by the Inland Wetlands Agency
   C = A Permit Renewed or Amended by the Inland Wetlands Agency
   D = A Map Amendment to the Official Town Wetlands Map - or -
   An Approved/Permitted Wetland or Watercourse Boundary Amendment to a Project Site Map
   E = An Enforcement Action: Permit Revocation, Citation, Notice of Violation, Order, Court Injunction, or Court Fines
   F = A Jurisdictional Ruling by the Inland Wetlands Agency (activities "permitted as of right" or activities considered non-regulated)
   G = An Agent Approval pursuant to CGS 22a-42a(c)(2)
   H = An Appeal of Agent Approval Pursuant to 22a-42a(c)(2)

3. Check "yes" if a public hearing was held in regards to the action taken; otherwise check "no".

4. Enter the name of the Inland Wetlands Agency official verifying that the information provided on this form is accurate and that it reflects the FINAL action of the agency.

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant - If Part II is completed by the applicant, the applicant MUST return the form to the Inland Wetlands Agency. The Inland Wetlands Agency MUST ensure that the information provided is accurate and that it reflects the FINAL action of the Agency.

5. Enter the name of the municipality for which the Inland Wetlands Agency has jurisdiction and in which the action/project/activity is occurring.

   Check "yes" if the action/project/activity crosses municipal boundaries and enter the name(s) of the other municipality(ies) where indicated. Check "no" if it does not cross municipal boundaries.

6. Enter the USGS Quad Map name or number (1 through 115) as found on the Connecticut Town and Quadrangle Index Map (the directory to all USGS Quad Maps) that contains the location of the action/project/activity. USGS Quad Map information is available at: https://portal.ct.gov/-/media/deep/gis/resources/IndexNamedQuadTownpdf.pdf

   ALSO enter the four-digit identification number of the corresponding Subregional Drainage Basin in which the action/project/activity is located. If located in more than one subregional drainage basin, enter the number of the basin in which the majority of the action/project/activity is located. Town subregional drainage basin maps can be found at UConn CLEAR's website: http://clear.uconn.edu/data/map_set/index.htm (no roads depicted) or at CTECO: http://www.cteco.uconn.edu/map_catalog.asp (depicts roads, choose town and a natural drainage basin map).

7. Enter the name of the individual applying for, petitioning, or receiving the action.

8. Enter the name and address or location of the action/project/activity. Check if the action/project/activity is TEMPORARY or PERMANENT in nature. Also provide a brief DESCRIPTION of the action/project/activity. It is always best to provide as much information as possible (for example, don't state "forestry," provide details such as "20 acre forest harvest, permit required for stream crossing.")

9. Carefully review the list below and enter ONLY ONE code letter which best characterizes the action/project/activity. All state agency projects must code "N".

A = Residential Improvement by Homeowner
B = New Residential Development for Single Family Units
C = New Residential Development for Multi-Family / Condos
D = Commercial / Industrial Uses
E = Municipal Project
F = Utility Company Project
G = Agriculture, Forestry or Conservation
H = Wetland Restoration, Enhancement, Creation
I = Storm Water / Flood Control
J = Erosion / Sedimentation Control
K = Recreation / Boating / Navigation
L = Routine Maintenance
M = Map Amendment
N = State Agency Project
P = Other (this code includes the approval of concept, subdivision or similar plans with no on-the-ground work)

10. Enter between one and four code numbers to best characterize the action/project/activity being reported. Enter "NA" if this form is being completed for the action of map amendment. You MUST provide code 12 if the activity is located in an established upland review area. You MUST provide code 14 if the activity is located beyond the established upland review area or no established upland review area exists.

1 = Filling
2 = Excavation
3 = Land Clearing / Grubbing (no other activity)
4 = Stream Channelization
5 = Stream Stabilization (includes lakeshore stabilization)
6 = Stream Clearance (removal of debris only)
7 = Culverting (not for roadways)
8 = Underground Utilities Only (no other activities)
9 = Roadway / Driveway Construction (including related culverts)
10 = Drainage Improvements
11 = Pond, Lake Dredging / Dam Construction
12 = Activity in an Established Upland Review Area
14 = Activity in Upland

Examples: Jurisdictional ruling allowing construction of a parking lot in an upland where the municipality does not have an established upland review area must use code 14, other possible codes are 2 and 10. Permitted construction of a free standing garage (residential improvement by homeowner) partially in an established upland review area with the remainder in the upland must use code 12 and 14, other possible codes are 1 and 2.

11. Leave blank for TEMPORARY alterations but please indicate action/project/activity is temporary under question #8 on the form. For PERMANENT alterations, enter in acres the area of wetland soils or watercourses altered. Include areas that are permanently altered, or are proposed to be, for all agency permits, denials, amendments, renewals, jurisdictional rulings, and enforcement actions. For those activities that involve filling or dredging of lakes, ponds or similar open water bodies enter the acres filled or dredged under "open water body." For those activities that involve directly altering a linear reach of a brook, river, lakeshore or similar linear watercourse, enter the total linear feet altered under "stream." Remember, these figures represent only the acreage altered, not the total acreage of wetlands or watercourses on the site. You MUST provide all information in ACRES (or linear feet as indicated) including those areas less than one acre. To convert from square feet to acres, divide square feet by the number 43,560. If this report is being completed for an agency jurisdictional ruling and detailed information is not available, provide an estimate. Enter zero if there is no alteration.

12. Enter in acres the area of upland altered as a result of an ACTIVITY REGULATED BY the inland wetlands agency, or as a result of an AGENT APPROVAL pursuant to CGS section 22a-42a(c)(2). Leave blank for TEMPORARY alterations but please indicate action/project/activity is temporary under question #8 on the form. Include areas that are permanently altered, or proposed to be permanently altered, for all agent approvals, agency permits, denials, amendments, renewals, jurisdictional rulings, and enforcement actions. You MUST provide all information in ACRES including those areas less than one acre. See directions above (#11) for conversion factor. If this report is being completed for an agent approval or an agency jurisdictional ruling and detailed information is not available, provide an estimate. Enter zero if there is no alteration.

13. Enter the acres that are, or are proposed to be, restored, enhanced or created for all agency permits, denials, amendments, renewals, jurisdictional rulings and enforcement actions. NOTE restored or enhanced applies to previously existing wetlands or watercourses. Created applies to a non-wetland or non-watercourse area which is converted into wetlands or watercourses. For created - question #10 must provide 12 and/or 14 as an answer, and question #12 must also be answered. You MUST provide all information in ACRES including those areas less than one acre. See directions above (#11) for conversion factor. Enter zero if there is no restoration, enhancement or creation.

PART III: To Be Completed By The DEEP - Please leave this area blank. Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

Connecticut Department of
ENERGY & ENVIRONMENTAL PROTECTION

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

GIS CODE #: ___ ___ ___ ___ ___ ___ ___ ___ ___ ___
For DEEP Use Only

Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete this form in accordance with the instructions on pages 2 and 3 and mail to:
DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106
Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

1. DATE ACTION WAS TAKEN: year: _____ month: _____
2. ACTION TAKEN (see instructions - one code only): _____
3. WAS A PUBLIC HEARING HELD (check one)? yes ☐ no ☐
4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
   (print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

5. TOWN IN WHICH THE ACTIVITY IS OCCURRING (print name): Monroe, CT
   does this project cross municipal boundaries (check one)? yes ☒ no ☐
   if yes, list the other town(s) in which the activity is occurring (print name(s)): Trumbull, _____
6. LOCATION (see instructions for information): USGS quad name: Long Hill or number: 93
   subregional drainage basin number: 7105
7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): Solli Engineering, LLC
8. NAME & ADDRESS OF ACTIVITY / PROJECT SITE (print information): 205 Spring Hill Road, Monroe, CT
   briefly describe the action/project/activity (check and print information): temporary ☐ permanent ☒ description:
   Construction of a 30,400 sf industrial building with associated parking and loading areas.
9. ACTIVITY *PURPOSE* CODE (see instructions - one code only): D
10. ACTIVITY *TYPE* CODE(S) (see instructions for codes): 9, 10, 12, _____
11. WETLAND / WATERCOURSE AREA ALTERED (see instructions for explanation, must provide acres or linear feet):
    wetlands: 0.05 acres open water body: 0 acres stream: 0 linear feet
12. UPLAND AREA ALTERED (must provide acres): 0.36 acres
13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0.38 acres

DATE RECEIVED:

PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

SOLLI ENGINEERING

February 6, 2024

Hand Delivery

Inland Wetlands Commission
Town of Monroe
7 Fan Hill Road
Monroe, CT 06468

RE: 205 Spring Hill Road
Monroe, Connecticut 06468
Wetlands Permit Application
Project Number: 221109501

Dear Commission Members:

Earthwork Volume Data One-Site		
Cut (CY)	Fill (CY)	Net Fill
3,048.49	5,368.93	2,320.44

Earthwork Volume Data in Regulated Area		
Cut (CY)	Fill (CY)	Net Fill
1,859.58	1,043.97	815.61

We look forward to working with you in the processing of this application.

Respectfully,

Solli Engineering, LLC

Kevin Solli, PE

Enclosures:

501 Main Street, Suite 2A
Monroe, CT 06468
Office: (203) 880-5455

11 Vanderbilt Avenue, Suite 240
Norwood, MA 02062
Office: (781) 352-8491

www.SolliEngineering.com

TOWN OF MONROE

Issued: 10-9-07

BOND ESTIMATE FORM (Private Site Development)

☐ PLANNING & ZONING COMMISSION
MEETING DATE_____

APPLICANT: GP 205 Spring Hill LLC
ENGINEER: Solli Engineering, LLC
TEL.: 203-880-5455

*APPLICATION NO:_____
*FILE NO:_____
DATE: February 6, 2024

PROJECT NAME: Wetlands Application

PROJECT LOCATION: 205 Spring Hill Road

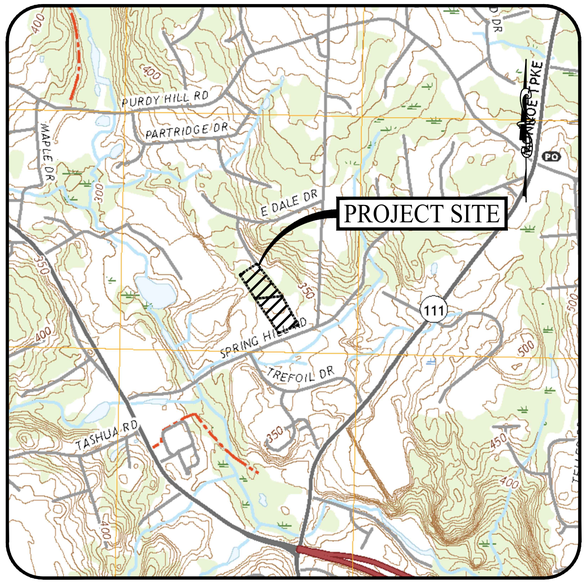
*BOND RECOMMENDATION

NO.	DESCRIPTION	UNIT	QUANTITY	UNIT PRICE	COST	Comments by Town Engr. Unit Price*	Comments by Town Engr. Cost*
1.	Sedimentation and Erosion Control Measures	L.S.	1	$1,500	$1,500		
2.	Silt Fence or Hay Bales	L.F.	650	$3.00	$1,950		
3.	Topsoil, Seed, Fertilizing, and Mulching (within Upland Review Area)	S.F.	6,000	$0.20	$1,200		
4.	Landscaping (extent to provide for restoration and aesthetic considerations)	L.S.	1	$2,000	$2,000		
5.	Grading (for site restoration that will provide safe and stable conditions)	L.S.	1	$3,000	$3,000		
6.	Other						
	(+) 10% for Contingencies				$965		
* To be filled in by the Town				Total Cost =	$10,615	*	

Submitted by:_____

Approved by:_____

Total costs as determined by the Town Engineer represent adjusted values assuming a Municipal bid arrangement with inflation, noting that the terms of the bond may be in effect for up to 10 or more years (statutory time allowance for performance of requirements).



USGS MAP

SCALE: 1" = 1,000'

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

PERMIT SET

PREPARED FOR:

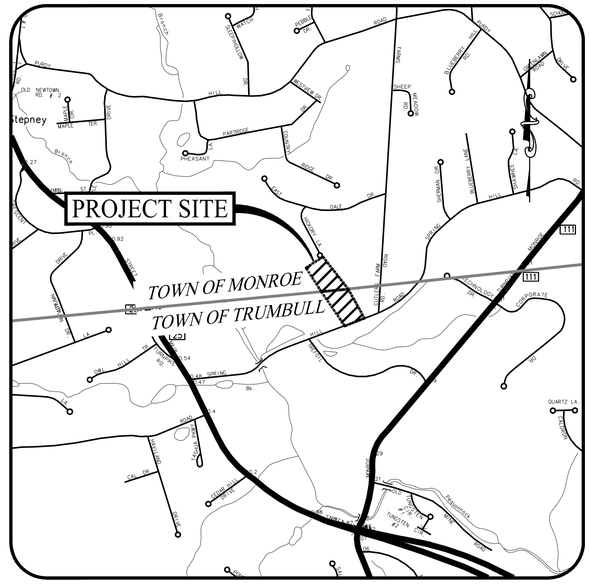
GP 205 SPRING HILL LLC

1815 LAKEWOOD ROAD, SUITE 237,
TOMS RIVER, NJ 08753

PREPARED BY:

SOLLI ENGINEERING

501 MAIN STREET, MONROE, CONNECTICUT 06468



LOCATION MAP

SCALE: 1" = 1,000'

PROPERTY INFORMATION

ADDRESS: 205 SPRING HILL ROAD
MONROE, CONNECTICUT 06468
MAP: 5 LOT: 10
TOTAL AREA: 7.116 AC
EXISTING ZONE: INDUSTRIAL DISTRICT (I-1)

OWNER / APPLICANT

GP 205 SPRING HILL LLC
1815 LAKEWOOD ROAD, SUITE 237
TOMS RIVER, NEW JERSEY 08753

SITE/CIVIL ENGINEER

KEVIN SOLLI, P.E., CPESC, LEED AP BD+C
LICENSE NO. 25759
SOLLI ENGINEERING, LLC
501 MAIN STREET
MONROE, CONNECTICUT 06468
(203) 880-5455

SURVEYOR OF RECORD

BRYAN NESTERIAK, PE, LS
ACCURATE LAND SURVEYING, LLC
15 RESEARCH DRIVE
WOODBRIDGE, CONNECTICUT 06525
(203) 881-8145

ARCHITECT

RAFAL ZELEK
ZELEK DESIGN, LLC.
34 FARRAGUT ROAD
SWAMPSCOTT, MA 01907
(617) 610-1797

LANDSCAPE ARCHITECT

MARY BLACKBURN, PLA
LICENSE NO. 1499
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DRAWING LIST

SITE CIVIL DRAWINGS

SHEET #	SHEET NAME	PLAN DATE	LATEST REVISION
0.00	COVER SHEET	02/06/24	N/A
1 OF 1	PROPERTY SURVEY	01/24/24	N/A
1.40	100' RADIUS MAP	02/06/24	N/A
2.11	SITE LAYOUT PLAN	02/06/24	N/A
2.21	GRADING & DRAINAGE PLAN	02/06/24	N/A
2.31	SOIL EROSION & SEDIMENT CONTROL PLAN - PHASE I	02/06/24	N/A
2.32	SOIL EROSION & SEDIMENT CONTROL PLAN - PHASE II	02/06/24	N/A
2.41	SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS	02/06/24	N/A
2.51	UTILITY PLAN	02/06/24	N/A
2.61	LANDSCAPE PLAN	02/06/24	N/A
2.62	BASIN LANDSCAPE PLAN	02/06/24	N/A
2.71	LIGHTING PLAN	02/06/24	N/A
3.01	DETAIL SHEET	02/06/24	N/A
3.02	DETAIL SHEET	02/06/24	N/A
3.03	DETAIL SHEET		N/A

ARCHITECTURAL DRAWINGS

ZELEK DESIGN

SHEET #	SHEET NAME	PLAN DATE	LATEST REVISION
A-1.0	FLOOR PLANS	01/30/24	N/A
A-2.0	EXTERIOR ELEVEATIONS	01/30/24	N/A
A-3.0	RENDERINGS	01/30/24	N/A

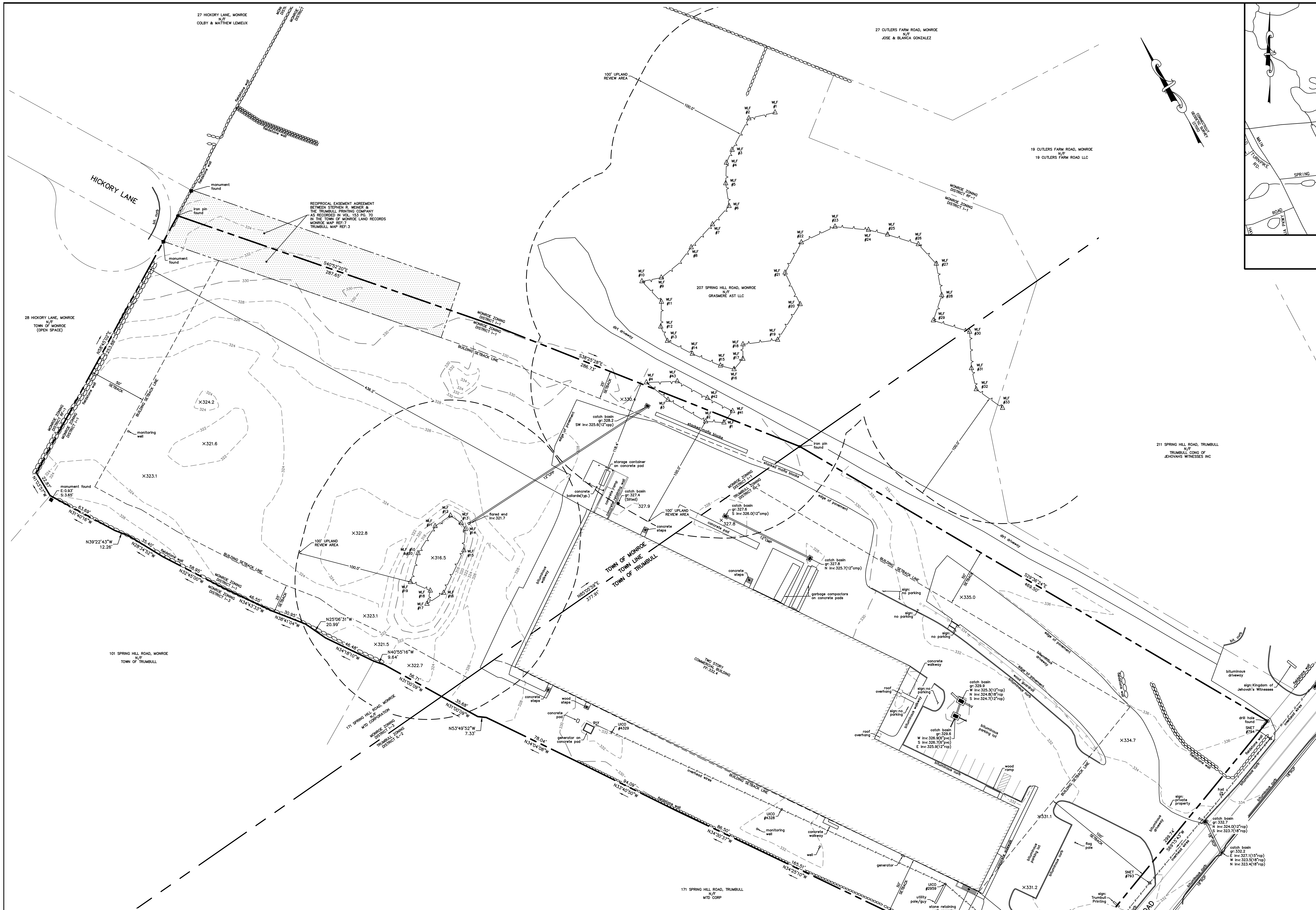
Rev. #:	Date	Description

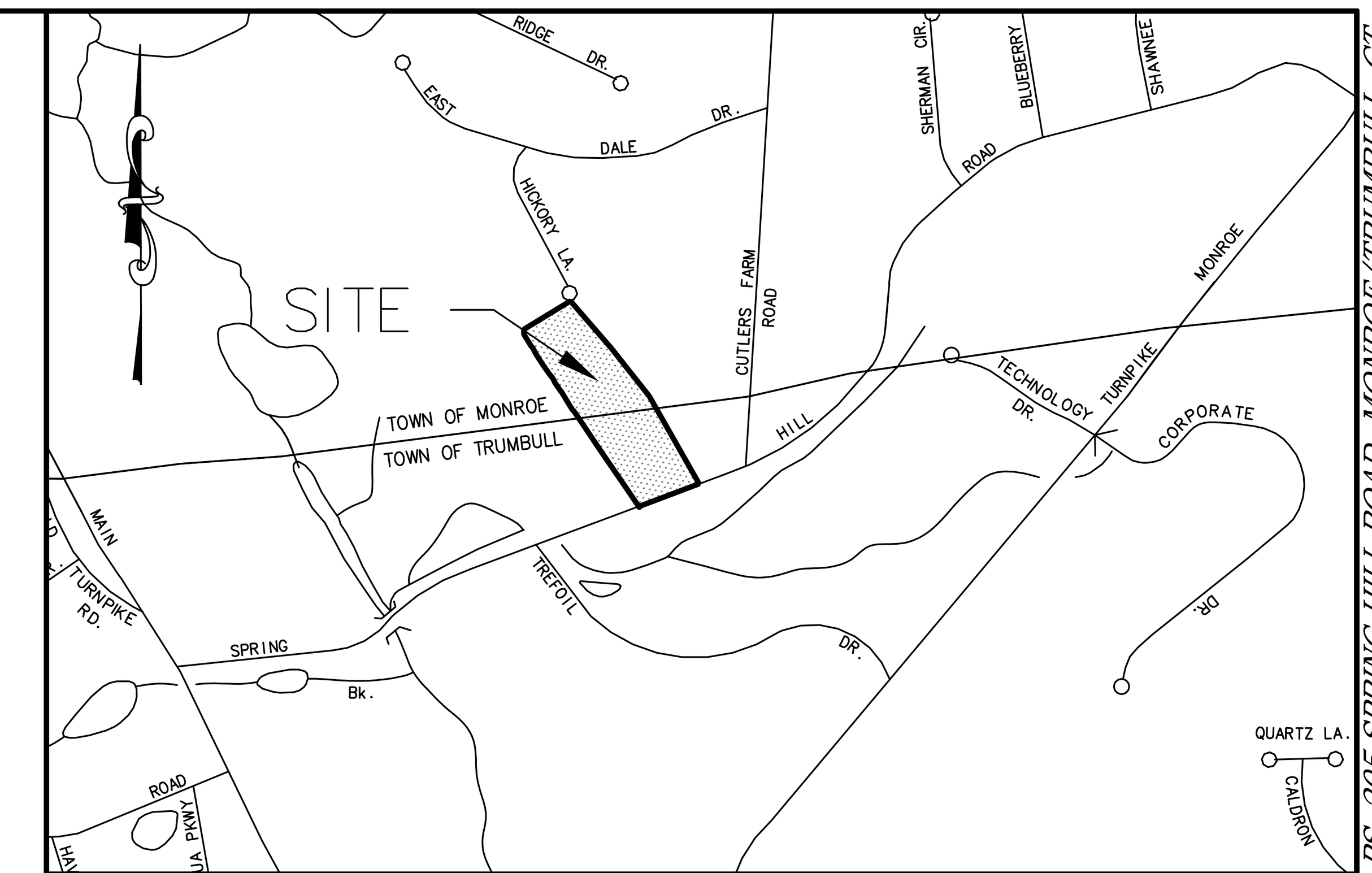
Project:

PROPOSED DEVELOPMENT
205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title: COVER SHEET

Sheet #: 0.00





LOCATION MAP

SCALE: 1"=800'

GENERAL SURVEY NOTES

1. THIS SURVEY AND MAP HAS BEEN PREPARED IN ACCORDANCE WITH THE REGULATION OF CONNECTICUT STATE AGENCIES, SECTION 20-300b-1 THROUGH 20-300b-20, EFFECTIVE OCTOBER 26, 2018, AND THE "MINIMUM STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC.
2. THE BOUNDARY DETERMINATION SHOWN HEREON IS CONSIDERED A RESURVEY.
3. THE SURVEY CONFORMS TO HORIZONTAL CLASS A-2 ACCURACY STANDARDS. VERTICAL DATA CONFORMS TO CLASS V-2 STANDARDS. TOPOGRAPHIC DATA CONFORMS TO CLASS T-2 STANDARDS. CONTOURS AND ELEVATIONS REFER TO NAVD 88 DATUM.
4. BEARINGS, COORDINATES AND ELEVATIONS ARE DERIVED FROM THE CONNECTICUT GEODETIC SURVEY (CTGS) VIA GPS TECHNOLOGY AND CONVENTIONAL SURVEY METHODS.
5. THIS IS A PROPERTY SURVEY. THE PURPOSE OF WHICH IS TO SHOW EXISTING CONDITIONS.
6. PROPERTY IS ALSO KNOWN AS:
   TOWN OF MONROE TAX LOT 10 ON ASSESSORS MAP 5.
   TOWN OF TRUMBULL TAX LOT 13 ON ASSESSORS MAP D01.
7. TOTAL AREA = 310,040.18 SQ.FT. OR 7.116 ACRES
   AREA IN MONROE = 144,320.90 SQ.FT. OR 3.313 ACRES
   AREA IN TRUMBULL = 165,719.28 SQ.FT. OR 3.803 ACRES
8. PROPERTY LIES IN ZONING DISTRICTS "I-1" IN MONROE AND "IL-2" IN TRUMBULL.
9. PROPERTY DOES NOT LIE WITHIN A FLOOD HAZARD ZONE AS DETERMINED BY FEMA.
10. WETLANDS DELINEATED BY WILLIAM KENNY ASSOCIATES ON NOVEMBER 16, 2023. FLAGS WERE LOCATED VIA CONVENTIONAL SURVEY METHODS
11. THE LOCATION OF UNDERGROUND UTILITIES SHOULD BE CONSIDERED APPROXIMATE AND OTHER THAN DEPICTED HEREON, IF ANY, IS UNKNOWN.

MONROE MAP REFERENCES

1. PLAN ENTITLED "PROPERTY OF JEAN BLOCH TO BE CONVEYED TO WENDEL A. & IRENE G. MANSFIELD CUTLERS FARM DIST., MONROE, CONNECTICUT", SCALE 1"=60'. DATED: OCTOBER 6, 1948. BY GEORGE SUMMERS. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 183.
2. PLAN ENTITLED "PROPERTY OF JEAN BLOCH CUTLERS FARM DIST., MONROE, CONNECTICUT", SCALE 1"=100'. DATED: OCTOBER 25, 1948. BY GEORGE SUMMERS. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 198.
3. PLAN ENTITLED "MAP OF PROPERTY OF HAROLD M. & EVELYN M. BURBANK MONROE, CONNECTICUT", SCALE 1"=40'. DATED: AUGUST 5, 1966. BY B.J. SHELOMIS. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 837.
4. PLAN ENTITLED "SECTION THREE FINAL MAP "DALE WOOD ESTATES" OWNED BY EDWARD J. MACKEY MONROE, CONNECTICUT", SCALE 1"=100'. DATED: MARCH 20, 1972. LAST REVISED: OCTOBER 25, 1972. BY JOSEPH ALBERTI. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 1096.
5. PLAN ENTITLED "MAP OF PROPERTY IN MONROE, CONNECTICUT TO BE AQUIRED BY RICHARD DIAMOND FROM STEPHEN WIENER", SCALE 1"=40'. DATED: SEPTEMBER 9, 1976. BY J & D KASPER & ASSOCIATES. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 1277.
6. PLAN ENTITLED "PLOT PLAN OF PROPERTY LOCATED ON CUTLERS FARM ROAD MONROE, CONNECTICUT", SCALE 1"=40'. DATED: JANUARY 15, 1987. BY J & D KASPER & ASSOCIATES. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 1928.
7. PLAN ENTITLED "DATA ACCUMULATION PLAN DEPICTING A LOT LINE REVISION PREPARED FOR GARY KNAUF SPRING HILL ROAD & CUTLERS FARM ROAD TRUMBULL/MONROE, CONNECTICUT", SCALE 1"=50'. DATED: APRIL 21, 2004. BY SPATH-BJORKLUND ASSOCIATES INC. ON FILE IN THE TOWN OF MONROE CLERK'S OFFICE AS MAP 2850.

TRUMBULL MAP REFERENCES

1. PLAN ENTITLED "RESUBDIVISION OF LAND IN TRUMBULL, CONNECTICUT", SCALE 1"=40'. DATED: JULY 8, 1976. LAST REVISED: OCTOBER 9, 1976. BY J & D KASPER & ASSOCIATES. ON FILE IN THE TOWN OF TRUMBULL CLERK'S OFFICE AS MAP 1909.
2. PLAN ENTITLED "DATA ACCUMULATION PLAN DEPICTING LAND TO BE ACQUIRED BY THE TRUMBULL CONGREGATION OF JEHOVAH'S WITNESSES, INCORPORATED SPRING HILL ROAD & CUTLERS FARM ROAD TRUMBULL, CONNECTICUT", SCALE 1"=50'. DATED: MARCH 4, 2004. BY SPATH-BJORKLUND ASSOCIATES INC. ON FILE IN THE TOWN OF TRUMBULL CLERK'S OFFICE AS MAP 3153.
3. PLAN ENTITLED "DATA ACCUMULATION PLAN DEPICTING A LOT LINE REVISION PREPARED FOR GARY KNAUF SPRING HILL ROAD & CUTLERS FARM ROAD TRUMBULL/MONROE, CONNECTICUT", SCALE 1"=50'. DATED: APRIL 21, 2004. LAST REVISED: JUNE 15, 2004. BY SPATH-BJORKLUND ASSOCIATES INC. ON FILE IN THE TOWN OF TRUMBULL CLERK'S OFFICE AS MAP 3167.

LEGEND

Symbol	Description	Symbol	Description	Symbol	Description
C.H.D.	Conn. Hwy. Dept. Monument	GG	Gas gate valve		Evergreen Tree
Mon.	Monument	WG	Water gate valve		Deciduous Tree
●	Iron Pin to be Set	WM	Water meter		Swamp or Wetlands
■	Conc. Monument to be Set	hyd	Hydrant		Tree Line
I. Pipe	Iron Pipe	W	Water main (existing)		Watercourse
●	Iron Pin	WS	Water service lateral	123	Existing Contours
D.H.	Drill Hole	G	Gas Main (existing)	R.C.P.	Reinforced Concrete Pipe
	Pile of Stones	SS	Sanitary Sewer Main (existing)	C.M.P.	Corrugated Metal Pipe
	Light Post	E	Electrical Line (existing)	PT A	Percolation Test Location
Fnd.	Found	S	Sanitary Manhole	TP 100	Deep Test Pit Location
N/F	Now or Formerly	D	Drain Manhole		Stone Retaining Wall
	Property Line		Chain Link or Split Rail Fence		Retaining Wall
	Property Line (adjoining)		Metal/Wire Fence		Stone Wall
	Building Setback Line		Wooden or Vinyl Fence		Wetland Limit
	Easement Line		Utility Pole	WL	Wetland Flag Number
	Edge of water	INV:	Invert Elevation of Pipe		Wetland Setback
	FEMA Flood Zone		Existing Catch Basin/Pipe		Benchmark
BFE:	Base Flood Elevation		Building (existing)		Well (Existing)
×200.0	Existing Spot Elevation			F.P.	Fence Post

SITE STATISTICS
(TRUMBULL)

ZONING DISTRICT "I-L2"	REQUIRED	PROVIDED
BULK STATISTICS		
MIN. LOT AREA	2.000 ACRES (87,100 S.F.)	3.804 ACRES (165,719.28 S.F.)
MIN. LOT FRONTAGE	250'	299.74'
MIN. BUILDING SETBACK (FRONT)	100'	100.4'
MIN. BUILDING SETBACK (SIDE)	50'	49.4'
ABUTTING RESIDENTIAL ZONE	100'	N/A
MIN. BUILDING SETBACK (REAR)	50'	N/A
ABUTTING RESIDENTIAL ZONE	100'	>100'
MAX. HEIGHT	40'	<40'
MAX. BUILDING COVERAGE	33% = 54,687.3 S.F.	BUILDING: 53,221.2 S.F. TOTAL: 53,221.2 S.F. (32.1%)
MAX. LOT COVERAGE	80% = 132,575.4 S.F.	BUILDING: 53,221.2 S.F. DRIVEWAYS: 42,291.7 S.F. PARKING LOTS: 6,974.1 S.F. CONCRETE PADS: 1,962.5 S.F. TOTAL: 104,449.5 S.F. (63.0%)

SITE STATISTICS
(MONROE)

ZONING DISTRICT "I-1"	REQUIRED	PROVIDED
BULK STATISTICS		
MIN. LOT AREA	1.000 ACRES (43,560 S.F.)	3.313 ACRES (144,320.90 S.F.)
MIN. LOT FRONTAGE	120'	N/A
MIN. BUILDING SETBACK (FRONT)	50'	0'
MIN. BUILDING SETBACK (SIDE)	25'	118.4'
ABUTTING RESIDENTIAL ZONE	50'	N/A
MIN. BUILDING SETBACK (REAR)	25'	N/A
ABUTTING RESIDENTIAL ZONE	50'	436.2'
MAX. HEIGHT	40'	<40'
MAX. BUILDING COVERAGE	25.0% = 36,080.2 S.F.	BUILDING: 3,921.5 S.F. TOTAL: 3,921.5 S.F. (2.7%)

No.	Date	REVISION DESCRIPTION

SCALE: 1"=40'

0 20 40 80 120

ACCURATE
LAND SURVEYING, LLC
15 RESEARCH DRIVE, WOODBRIDGE, CT 06525, TEL: 203.881.8145
501 MAIN STREET, MONROE, CT 06468, TEL: 203.880.5455

PROPERTY SURVEY

OF

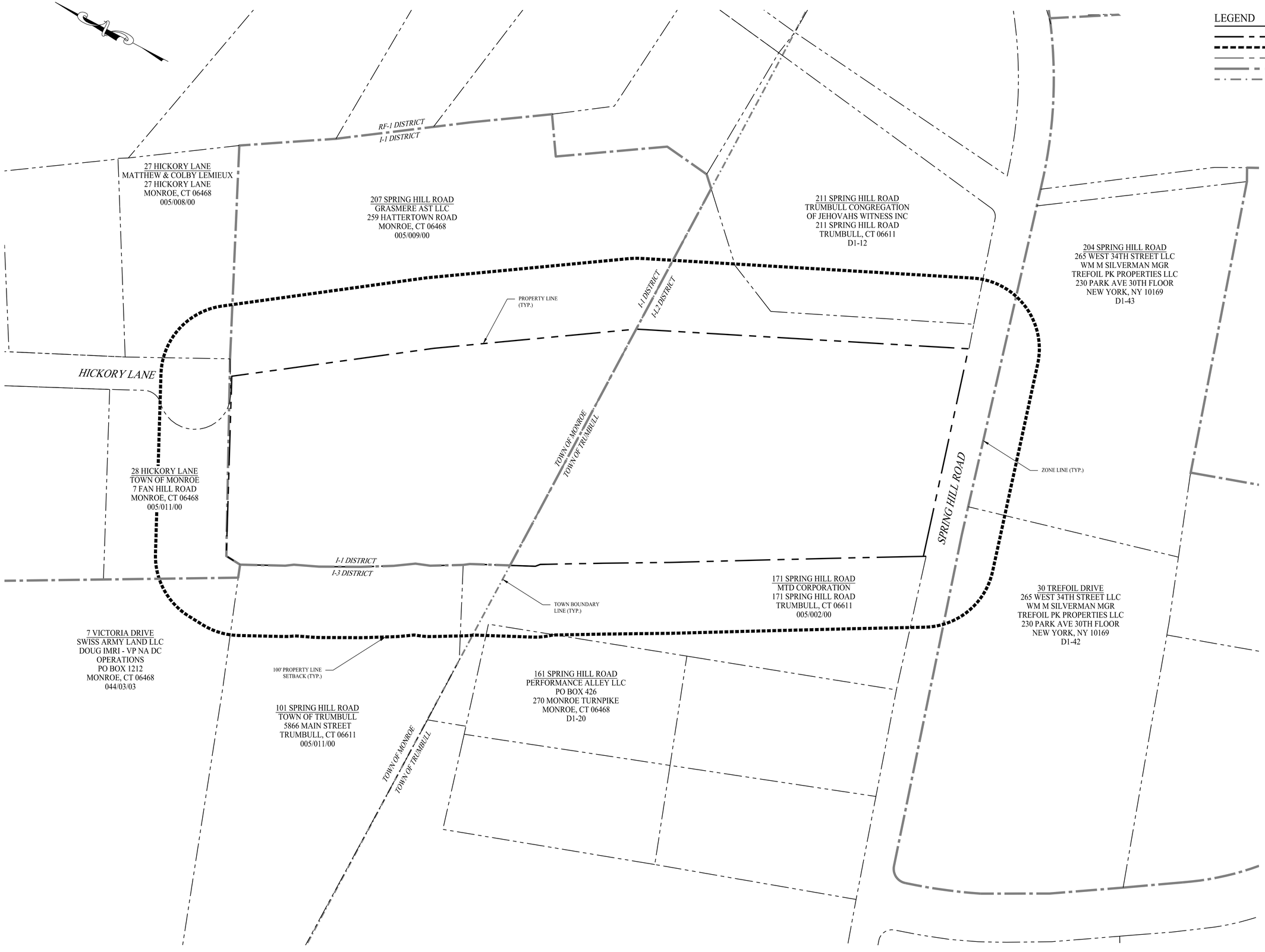
205 SPRING HILL ROAD
MONROE/TRUMBULL, CONNECTICUT

STATE OF CONNECTICUT · BRYAN P. NESTERIAK · # 23556 · LICENSED LAND SURVEYOR

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

BRYAN P. NESTERIAK, PE, LS 23556

Date	01/24/2024
Scale	1"=40'
Job No.	1386
Drawing No.	1 of 1



Rev. #: Date Description

Graphic Scale: 60 0 60 120

SOLLI ENGINEERING
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351 Newbury Street, Boston, MA 02115 T: (617) 203-3160 F: (203) 880-9695

Drawn By:	VER
Checked By:	LAM
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 60'

STATE OF CONNECTICUT · KEVIN M. SOLLI · 25759 · LICENSED PROFESSIONAL ENGINEER

Kevin Solli, P.E.
CT 25759

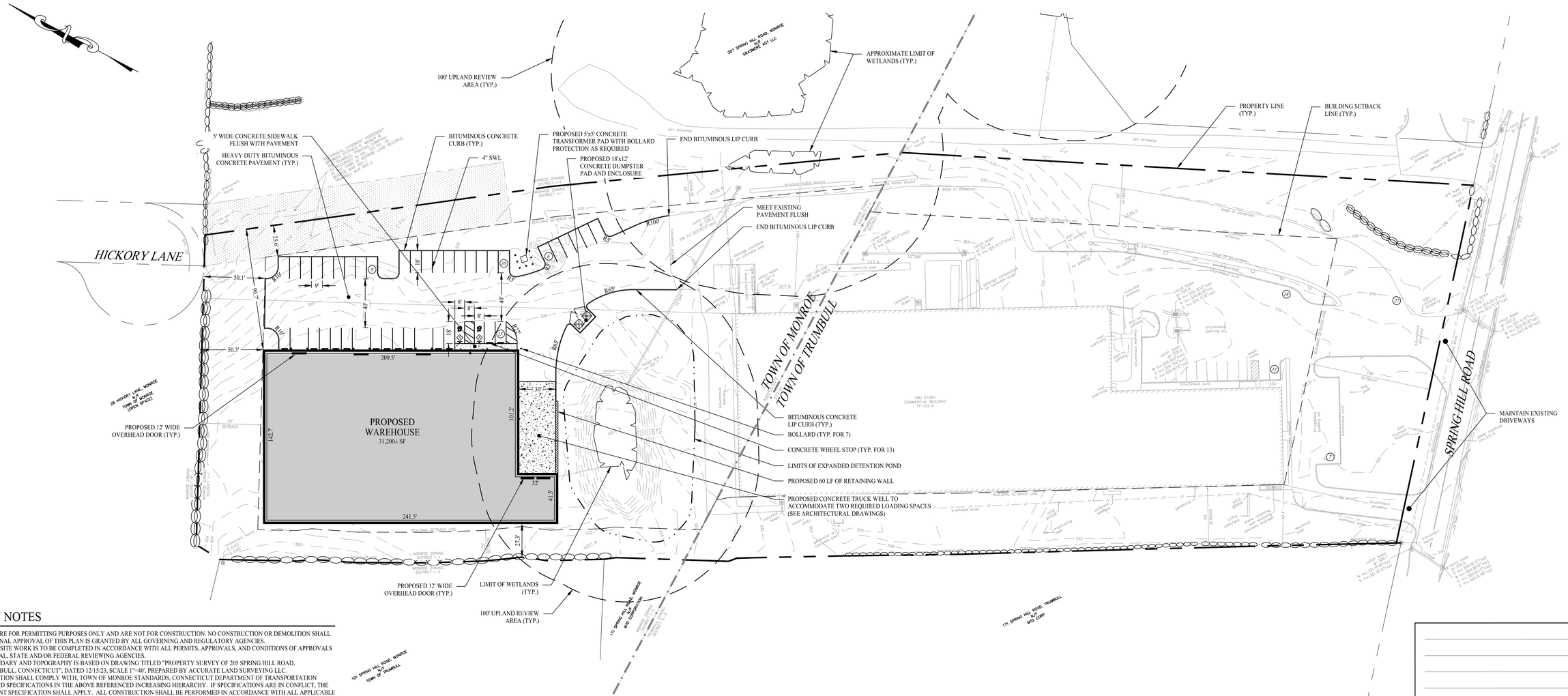
Project:

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title: 100' RADIUS MAP

Sheet #: 1.40



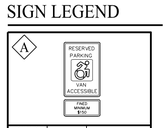
SITE PLAN NOTES

1. THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL FINAL APPROVAL OF THIS PLAN IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
2. ALL PROPOSED SITE WORK IS TO BE COMPLETED IN ACCORDANCE WITH ALL PERMITS, APPROVALS, AND CONDITIONS OF APPROVALS ISSUED BY LOCAL, STATE AND/OR FEDERAL REVIEWING AGENCIES.
3. EXISTING BOUNDARY AND TOPOGRAPHY IS BASED ON DRAWING TITLED "PROPERTY SURVEY OF 205 SPRING HILL ROAD, MONROE/TRUMBULL, CONNECTICUT", DATED 12/15/23, SCALE 1"=40', PREPARED BY ACCURATE LAND SURVEYING LLC.
4. ALL CONSTRUCTION SHALL COMPLY WITH, TOWN OF MONROE STANDARDS, CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.
5. THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL COUNTY AND TOWN CONSTRUCTION PERMITS, INCLUDING CONNECTICUT DOT PERMITS AND SEWER AND WATER CONNECTION PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
6. REFER TO PLANS BY SOLLI ENGINEERING, LLC DETAILS FOR ADDITIONAL INFORMATION. THE CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS IN THE FIELD AND CONTACT THE CIVIL ENGINEER IF THERE ARE ANY QUESTIONS OR CONFLICTS REGARDING THE CONSTRUCTION DOCUMENTS AND/OR FIELD CONDITIONS
7. THE CONTRACTOR SHALL FOLLOW THE SEQUENCE OF CONSTRUCTION NOTES PROVIDED ON THE EROSION CONTROL PLAN.
8. THE CONTRACTOR SHALL REFERENCE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS AND CONSTRUCTION DETAILS OF BUILDING, AND THE RAISED CONCRETE SIDEWALKS AND RAMPS.
9. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED, EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE CIVIL ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
10. DO NOT INTERRUPT EXISTING UTILITIES SERVICING FACILITIES OCCUPIED AND USED BY THE OWNER OR OTHERS DURING OCCUPIED HOURS EXCEPT WHEN SUCH INTERRUPTIONS HAVE BEEN AUTHORIZED IN WRITING BY THE OWNER AND THE LOCAL MUNICIPALITIES. INTERRUPTIONS SHALL ONLY OCCUR AFTER ACCEPTABLE TEMPORARY SERVICE HAS BEEN PROVIDED.
11. ALL SITE DIMENSIONS ARE REFERENCED TO THE FACE OF CURBS OR EDGE OF PAVING AS APPLICABLE UNLESS OTHERWISE NOTED. ALL BUILDING DIMENSIONS ARE REFERENCED TO THE OUTSIDE FACE OF THE STRUCTURE.
12. REFER TO DETAIL SHEETS FOR PAVEMENT, CURBING, AND SIDEWALK INFORMATION.
13. TRAFFIC CONTROL SIGNAGE SHALL CONFORM TO THE STATE DOT STANDARD DETAIL SHEETS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. SIGNS SHALL BE INSTALLED PLUMB WITH THE EDGE OF THE SIGN 2' OFF THE FACE OF THE CURB, AND WITH 7' VERTICAL CLEARANCE UNLESS OTHERWISE DETAILED OR NOTED.
14. THE CONTRACT LIMIT IS THE PROPERTY LINE UNLESS OTHERWISE SPECIFIED OR SHOWN ON THE CONTRACT DRAWINGS
15. PAVEMENT MARKING KEY:
    4" SWL - 4" SOLID WHITE LINE
    12" SWSB - 12" SOLID WHITE STOP BAR
    4" DYL = 4" DOUBLE YELLOW LINE
    LA = LANDSCAPE AREA
16. PARKING SPACES SHALL BE STRIPED WITH 4" SWL; HATCHED AREA SHALL BE STRIPED WITH 4" SWL AT A 45° ANGLE, 2' ON CENTER. HATCHING, SYMBOLS, AND STRIPING FOR HANDICAPPED SPACES SHALL BE PAINTED BLUE. OTHER MARKINGS SHALL BE PAINTED WHITE OR AS NOTED.
17. THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE CIVIL ENGINEER.
18. THE CONTRACTOR SHALL PROVIDE AS-BUILT RECORDS OF ALL CONSTRUCTION (INCLUDING UNDERGROUND UTILITIES) TO THE OWNER AT THE END OF CONSTRUCTION.
19. THE ARCHITECT AND ENGINEER ARE NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ARCHITECT AND ENGINEER HAVE NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
20. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT "(800) 922-4455" AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS.
21. THE SITE IS CURRENTLY SERVICED BY PUBLIC WATER.
22. NO PART OF THE PROJECT PARCEL IS LOCATED WITHIN ANY FEMA DESIGNATED FLOOD HAZARD AREAS.
23. WETLANDS WERE DELINEATED AND FLAGGED BY WILLIAM KENNY ASSOCIATES ON NOVEMBER 16, 2023.
24. FIRE LANES SHALL BE ESTABLISHED AND PROPERLY DESIGNATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE FIRE DISTRICT FIRE MARSHAL.
25. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL DOORS, UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC WATER SERVICE, ELECTRICAL, TELEPHONE AND GAS SERVICE, ROOF DRAINS, AND ALL OTHER UTILITIES. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE REGULATORY AGENCY AS TO LOCATION OF AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.

PARKING SUMMARY

PROPOSED DEVELOPMENT	UNIT	TOWN REQ.	REQUIRED	PROVIDED
EXISTING WAREHOUSE	50± EMPLOYEES (TRUMBULL) 3,120 SF OF OFFICE SPACE 4,031± SF WAREHOUSE (MONROE)	1 SPACES/1.5 EMPLOYEES 1 SPACE/250 SF OF OFFICE SPACE 1 SPACE/1,000 SF WAREHOUSE (MONROE)	52	63
PROPOSED WAREHOUSE BUILDING	2,713± SF OF OFFICE SPACE 27,400± SF WAREHOUSE (MONROE)	4 SPACE/1,000 SF OF OFFICE SPACE 1 SPACE/1,000 SF WAREHOUSE (MONROE)	39	40
TOTAL			91	103

SIGN LEGEND



SIZES (IN)	CONN DOT #	SUPPORTS
12"x18" 12"x6"	31-062SP 31-064S	1

ZONING COMPLIANCE TABLE - MONROE

ZONE: INDUSTRIAL DISTRICT 1 (I-1)

ZONING REQUIREMENT	ZONING STANDARD	PROPOSED CONDITIONS
MINIMUM LOT AREA	1.0 AC	3.31 AC
MINIMUM LOT FRONTAGE	120 FT	N/A
MININUM SQUARE	110 FT X 110 FT	PROVIDED
MINIMUM FRONT YARD	50 FT	>50 FT
MINIMUM YARD ABUTTING RESIDENTIAL REAR/SIDE	 50 FT 25 FT	 50.3 FT 27.3 FT
MAXIMUM HEIGHT	3 STORIES / 40 FT	39.0 FT
BUILDING COVERAGE	25%	21.6%
PARKING SETBACK/LANDSCAPE BUFFER SIDE ABUTTING RESIDENTIAL/PUBLIC STREET	 25 FT 50 FT	 25.6 FT 50.1 FT

ZONING COMPLIANCE TABLE - TRUMBULL

ZONE: INDUSTRIAL LIGHT ZONE 2 (IL-2)

ZONING REQUIREMENT	ZONING STANDARD	PROPOSED CONDITIONS
MINIMUM LOT AREA	2 AC	3.80 AC
MINIMUM LOT FRONTAGE	250 FT	299.7 FT
MININUM SQUARE	150 FT X 150 FT	PROVIDED
MINIMUM FRONT YARD	100 FT	100.4 FT
MINIMUM YARD ABUTTING RESIDENTIAL REAR/SIDE	 100 FT 50 FT	 436.2 FT 49.4 FT
MAXIMUM HEIGHT	40 FT	<40 FT
MAXIMUM BUILDING COVERAGE	33.3%	32.4%
MAXIMUM TOTAL LOT COVERAGE	80%	63.4%

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJOINING LOT LINE
- TOWN BOUNDARY
- BUILDING SETBACK
- EXISTING BUILDING LIMITS
- PROPOSED BUILDING LIMITS
- PROPOSED BUILDING HATCH
- BITUMINOUS CONCRETE CURB
- STANDARD DUTY BITUMINOUS CONCRETE PAVEMENT
- HEAVY DUTY BITUMINOUS CONCRETE PAVEMENT
- CONCRETE SIDEWALK / PAVEMENT
- RETAINING WALL / GRAVITY OR SEGMENTAL BLOCK
- PAVEMENT STRIPING - WHITE STANDARD AND ADA PARKING SPACES
- PARKING SPACE COUNT
- LIMIT OF WETLANDS
- UPLAND REVIEW AREA - 100 FT BUFFER
- GATE

Rev. #:	Date	Description

Graphic Scale: 40 0 40 80

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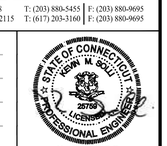
351 Newbury Street, Boston, MA 02115 T: (617) 203-3160 F: (203) 880-9695

Drawn By:	VER
Checked By:	LAM
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 40'



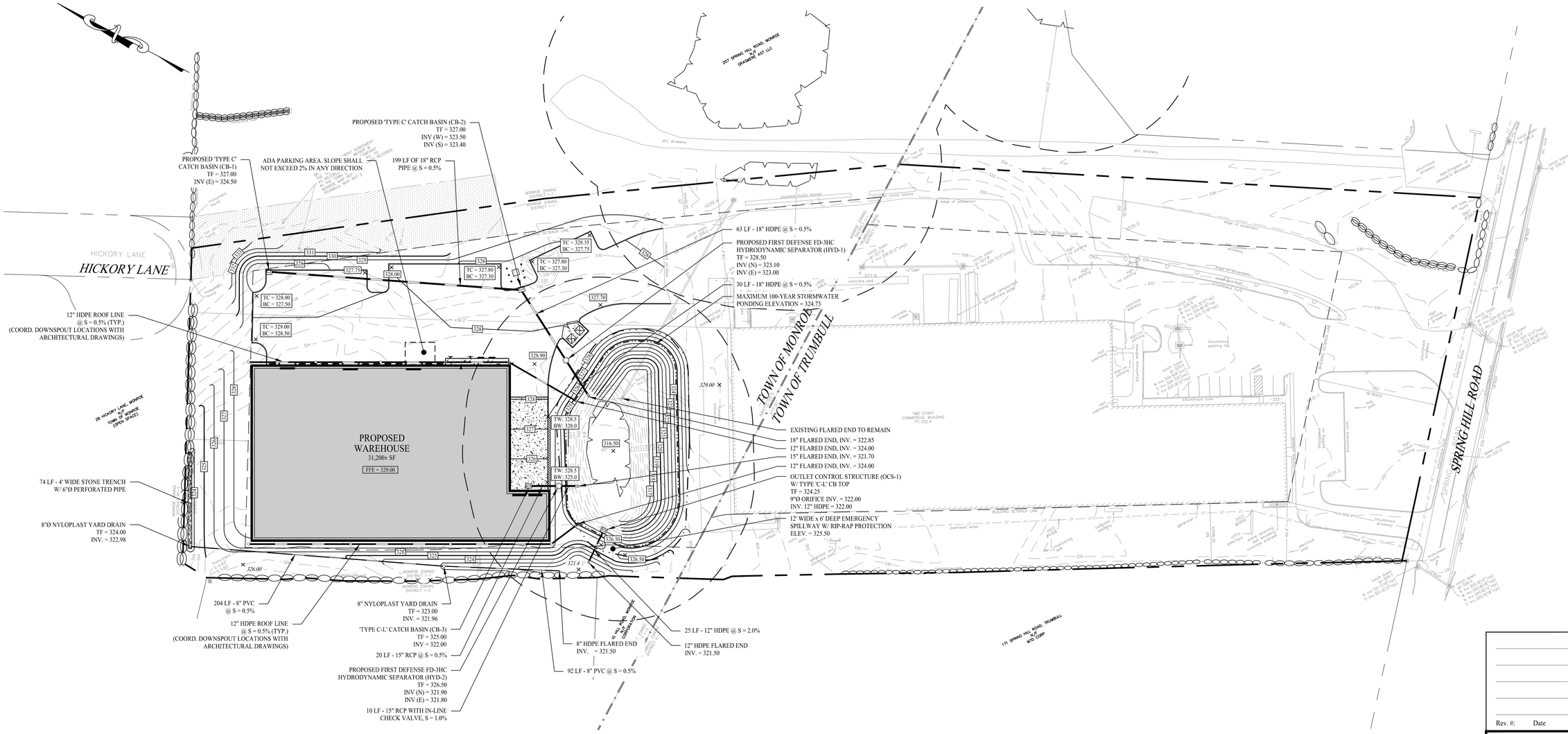
Kevin Solli, P.E.
CT 25759

Project:

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title:	Sheet #:
SITE LAYOUT PLAN	2.11



GRADING AND DRAINAGE NOTES

1. THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL FINAL APPROVAL OF THIS PLAN IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
2. ALL PROPOSED SITE WORK TO BE COMPLETED IN ACCORDANCE WITH ALL PERMITS, APPROVALS AND CONDITIONS OF APPROVALS ISSUED BY LOCAL, STATE AND/OR FEDERAL REVIEWING AGENCIES.
3. EXISTING BOUNDARY AND TOPOGRAPHY IS BASED ON DRAWING TITLED "PROPERTY SURVEY OF 205 SPRING HILL ROAD, MONROE/TRUMBULL, CONNECTICUT", DATED 12/15/23, CONNECTICUT", DATED 12/15/2023, SCALE 1"=40', PREPARED BY ACCURATE LAND SURVEYING LLC.
4. THIS DRAWING IS INTENDED TO DESCRIBE GRADING AND DRAINAGE ONLY. REFER TO SITE PLAN FOR GENERAL INFORMATION, AND DETAIL SHEETS FOR DETAILS.
5. THE CONTRACTOR SHALL PRESERVE EXISTING VEGETATION WHERE POSSIBLE AND/OR AS NOTED ON DRAWINGS. REFER TO EROSION CONTROL PLAN FOR LIMIT OF DISTURBANCE AND EROSION CONTROL NOTES.
6. TOPSOIL SHALL BE STRIPPED AND STOCKPILED ON SITE FOR USE IN FINAL LANDSCAPING.
7. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY CONSTRUCTION PERMITS REQUIRED BY GOVERNMENT AND LOCAL AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY CONSTRUCTION PERMITS FROM THE TOWN OF ENFIELD REQUIRED TO PERFORM ALL WORK, INCLUDING FOR STREET CUTS AND CONNECTIONS TO EXISTING UTILITIES. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
8. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN TRAFFIC DEVICES FOR PROTECTION OF VEHICLES AND PEDESTRIANS CONSISTING OF DRUMS, BARRIERS, SIGNS, LIGHTS, FENCES AND UNIFORMED TRAFFIC CONTROLLERS AS REQUIRED, ORDERED BY THE ENGINEER OR REQUIRED BY THE STATE AND LOCAL GOVERNING AUTHORITIES.
9. THE CONTRACTOR SHALL COMPACT FILL IN 12" MAXIMUM LIFTS UNDER ALL PARKING, BUILDING, AND DRIVE AREAS TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557 (MODIFIED PROCTOR TEST), OR AS DIRECTED BY THE GEOTECHINCAL ENGINEER.
10. UNDERDRAINS SHALL BE ADDED, IF DETERMINED NECESSARY IN THE FIELD BY THE OWNER/GEOTECHNICAL ENGINEER, AFTER SUBGRADE IS ROUGH GRADED.
11. ALL DISTURBANCE INCURRED TO TOWN OR STATE PROPERTY DUE TO CONSTRUCTION SHALL BE RESTORED TO ITS PREVIOUS CONDITION OR BETTER, TO THE SATISFACTION OF THE TOWN OF MONROE AUTHORITY.
12. IF IMPACTED OR CONTAMINATED SOIL IS ENCOUNTERED BY THE CONTRACTOR, THE CONTRACTOR SHALL SUSPEND EXCAVATION WORK OF IMPACTED SOIL AND NOTIFY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT PRIOR TO PROCEEDING WITH FURTHER WORK IN THE IMPACTED SOIL LOCATION UNTIL FURTHER INSTRUCTED BY THE OWNER AND/OR OWNER'S ENVIRONMENTAL CONSULTANT.
13. ALL PIPE LENGTHS ARE HORIZONTAL DISTANCES AND ARE APPROXIMATE.
14. GRADING CONTRACTOR SHALL RESTORE TO GRADE AND COMPACT ALL AREAS DISTURBED BY BUILDING CONSTRUCTION PRIOR TO BASE AND PAVING OPERATIONS COMMENCING.
15. ALL PROPOSED CATCH BASINS SHALL BE EQUIPPED WITH HOODED OUTLETS AND CONSTRUCTED WITH 2 FOOT SUMPS.

ABBREVIATIONS

&	AND
@	AT
BW	BOTTOM OF WALL
DIA	DIAMETER
ELEV	ELEVATION
FEE	FINCH FLOOR ELEVATION
GFA	GROSS FLOOR AREA
HDPE	HIGH DENSITY POLYETHYLENE
INV	INVERT
LOD	LIMIT OF DISTURBANCE
LF	LINEAR FEET
MCL	MAJOR CONTOUR LAY
RCP	REINFORCED CONCRETE PIPE
S	SLOPE
SF	SQUARE FEET
TF	TOP OF FRAME
TR	TOP OF RIM
TW	TOP OF WALL
W/	WITH

LEGEND

PROPERTY LINE
RIGHT-OF-WAY LINE
ADJOINING LOT LINE
MAJOR CONTOURS
MINOR CONTOURS
EXISTING MAJOR CONTOURS
EXISTING MINOR CONTOURS
CONTOUR LABEL
PROPOSED SPOT ELEVATION
EXISTING SPOT ELEVATION
GRADE TO DRAIN
SWALE
STORM DRAIN PIPE
PERFORATED UNDERDRAIN / TRENCH DRAIN
TYPE "C" CATCH BASIN
TYPE "CL" CATCH BASIN
STORM MANHOLE
WATER QUALITY UNIT
FLARE END SECTION
RAMP (SWALES / DRAINAGE BASIN ACCESS)
WATER ELEVATION WITHIN BASIN
RIP RAP

Rev. #:	Date	Description

Graphic Scale: 40 0 40 80

SOLLI ENGINEERING
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Drawn By:	VER
Checked By:	LAM
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 40'

STATE OF CONNECTICUT KEVIN M. SOLLI 25759 LICENSED PROFESSIONAL ENGINEER
Kevin Solli, P.E.
CT 25759

Project:

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title:	Sheet #:
GRADING & DRAINAGE PLAN	2.21

SEDIMENT TRAP CALCULATIONS

NOTE:
TEMPORARY SEDIMENT TRAPS HAVE BEEN SIZED TO PROVIDE A MINIMUM STORAGE VOLUME OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA PER THE 2002 CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL.

SEDIMENT TRAP A:
CONTRIBUTING DRAINAGE AREA = 1.25± ACRES
1.25 AC x 134 CY/AC = 167.5 CY
167.5 CY x 27 CF/CY = 4,522 CF

SEDIMENT TRAP B:
CONTRIBUTING DRAINAGE AREA = 1.80± ACRES
1.80 AC x 134 CY/AC = 241 CY
241 CY x 27 CF/CY = 6,512 CF

LEGEND

- PROPERTY LINE
- LOD — LOD — LIMIT OF DISTURBANCE
- ADJOINING LOT LINE
- LIMIT OF TREE CLEARING
- SF — SF — SILT FENCE PROTECTION
- HAYBALE PROTECTION
- DIVERSION SWALE/BERM
- TEMPORARY SEDIMENT TRAP / BASIN
- CONSTRUCTION ENTRANCE

PHASE I CONSTRUCTION SEQUENCE

1. INSTALL SILT FENCE(S) AND HAY BALES ON THE SITE (CLEAR ONLY THOSE AREAS NECESSARY TO INSTALL SILT FENCE AND HAY BALE PROTECTION).
2. INSTALL SILT SACK INLET PROTECTIONS.
3. PREPARE TEMPORARY PARKING AND STORAGE AREAS.
4. HALT ALL ACTIVITIES AND CONTACT THE ENGINEER OF RECORD TO PERFORM INSPECTION AND CERTIFICATION OF BEST MANAGEMENT PRACTICES (BMP'S). GENERAL CONTRACTOR SHALL SCHEDULE AND CONDUCT THE STORM WATER PRE-CONSTRUCTION MEETING WITH THE ENGINEER, AGENCIES AND GROUND-DISTURBING CONTRACTOR BEFORE PROCEEDING WITH CONSTRUCTION.
5. BEGIN ROUGH GRADING OF THE SITE.

GENERAL NOTES

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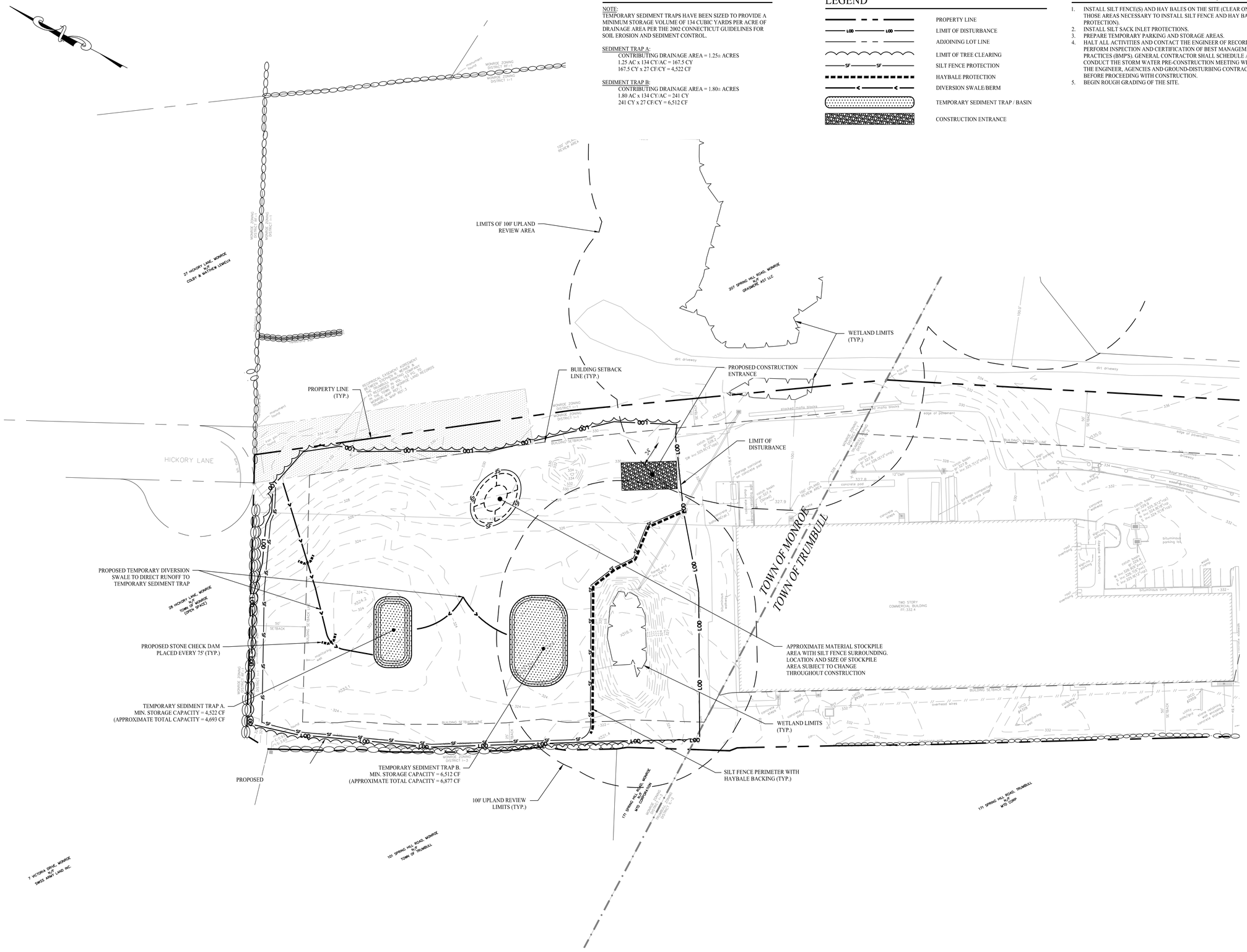
4. ALL SITE WORK TO BE COMPLETED IN ACCORDANCE WITH ALL PERMITS, APPROVALS AND CONDITIONS OF APPROVALS ISSUED BY THE TOWN OF MONROE AND THE TOWN OF TRUMBULL FOR THIS PROJECT.
5. PRIOR TO DEMOLITION OR CONSTRUCTION, THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" 72 HOURS BEFORE COMMENCEMENT OF WORK AT 1-800-922-4455 AND VERIFY ALL UTILITY AND STORM DRAINAGE SYSTEM LOCATIONS. INFORMATION ON EXISTING UTILITIES AND STORM DRAINAGE SYSTEMS HAS BEEN COMPILED FROM AVAILABLE INFORMATION INCLUDING UTILITY PROVIDER AND MUNICIPAL RECORD MAPS AND/OR FIELD SURVEY AND IS NOT GUARANTEED CORRECT OR COMPLETE. UTILITIES AND STORM DRAINAGE SYSTEMS ARE SHOWN TO ALERT THE CONTRACTOR TO THEIR PRESENCE AND THE CONTRACTOR IS SOLELY RESPONSIBLE FOR DETERMINING ACTUAL LOCATIONS AND ELEVATIONS OF ALL UTILITIES AND STORM DRAINAGE SYSTEMS INCLUDING SERVICES.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY AND SECURITY OF THE SITE DURING ALL PHASES OF CONSTRUCTION. THE ARCHITECT AND ENGINEER ARE NOT RESPONSIBLE FOR SITE SAFETY MEASURES TO BE EMPLOYED DURING CONSTRUCTION. THE ARCHITECT AND ENGINEER HAVE NO CONTRACTUAL DUTY TO CONTROL THE SAFEST METHODS OR MEANS OF THE WORK, JOB SITE RESPONSIBILITIES, SUPERVISION OR TO SUPERVISE SAFETY AND DOES NOT VOLUNTARILY ASSUME ANY SUCH DUTY OR RESPONSIBILITY.
7. THE OWNER IS RESPONSIBLE FOR OBTAINING ALL NECESSARY ZONING PERMITS REQUIRED BY GOVERNMENT AGENCIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL OBTAIN ALL LOCAL AND STATE PERMITS. THE CONTRACTOR SHALL POST ALL BONDS, PAY ALL FEES, PROVIDE PROOF OF INSURANCE AND PROVIDE TRAFFIC CONTROL NECESSARY FOR THIS WORK.
8. SHOULD ANY UNCHARTED OR INCORRECTLY CHARTED, EXISTING PIPING OR OTHER UTILITY BE UNCOVERED DURING EXCAVATION, CONSULT THE CIVIL ENGINEER IMMEDIATELY FOR DIRECTIONS BEFORE PROCEEDING FURTHER WITH WORK IN THIS AREA.
9. THE CONTRACTOR SHALL RESTORE ANY DRAINAGE STRUCTURE, PIPE, UTILITY, PAVEMENT, CURBS, SIDEWALKS, LANDSCAPED AREAS OR SIGNAGE DISTURBED DURING CONSTRUCTION TO THEIR ORIGINAL CONDITION OR BETTER, AS APPROVED BY THE CIVIL ENGINEER. DURING CONSTRUCTION CONTRACTOR IS TO HAVE THE SITE MAINTAINED FREE OF ALL TRASH, LITTER, DEBRIS AND OVERGROWN VEGETATION.
10. THE OWNER SHALL BE RESPONSIBLE TO HAVE THE SITE MAINTAINED FREE OF ALL TRASH, LITTER, DEBRIS AND OVERGROWN VEGETATION.
11. REFER TO SHEET 2.32 FOR PHASE II CONSTRUCTION AND ASSOCIATED SOIL EROSION AND SEDIMENT CONTROL MEASURES.
12. REFER TO SHEET 2.41 FOR SOIL EROSION AND SEDIMENT CONTROL NOTES AND CONSTRUCTION DETAILS.



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STATE OF CONNECTICUT · KEVIN M. SOLLI · 25759 · LICENSED PROFESSIONAL ENGINEER

Kevin Solli, P.E.
CT 25759

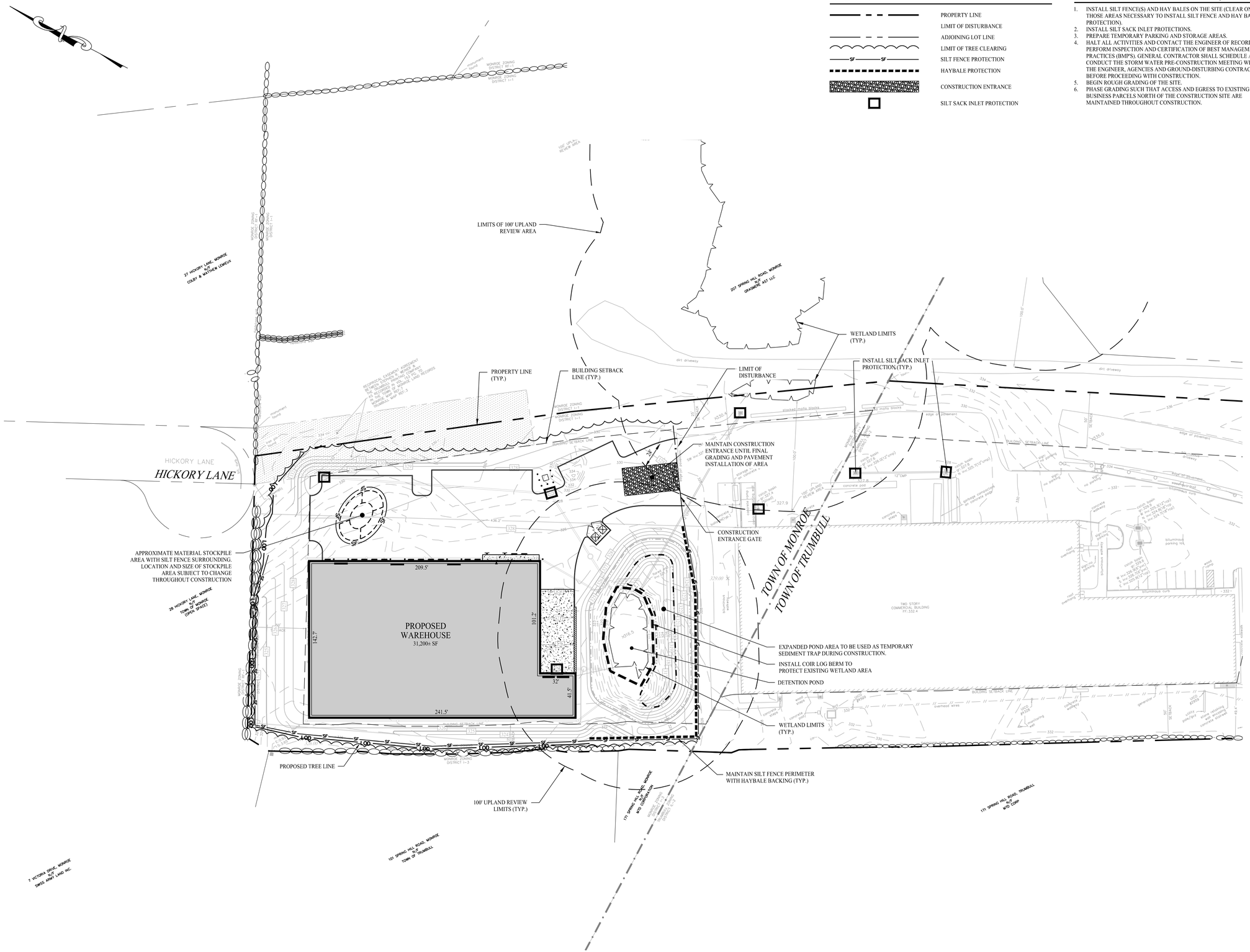
Project:

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title: SOIL EROSION & SEDIMENT CONTROL PLAN - PHASE I

Sheet #: 2.31



LEGEND

- PROPERTY LINE
- LIMIT OF DISTURBANCE
- ADJOINING LOT LINE
- LIMIT OF TREE CLEARING
- SILT FENCE PROTECTION
- HAYBALE PROTECTION
- CONSTRUCTION ENTRANCE
- SILT SACK INLET PROTECTION

PHASE I CONSTRUCTION SEQUENCE

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5. BEGIN ROUGH GRADING OF THE SITE.
6. PHASE GRADING SUCH THAT ACCESS AND EGRESS TO EXISTING BUSINESS PARCELS NORTH OF THE CONSTRUCTION SITE ARE MAINTAINED THROUGHOUT CONSTRUCTION.

GENERAL NOTES

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STATE OF CONNECTICUT · KEVIN M. SOLLI · 25759 · LICENSED PROFESSIONAL ENGINEER

Kevin Solli, P.E.
CT 25759

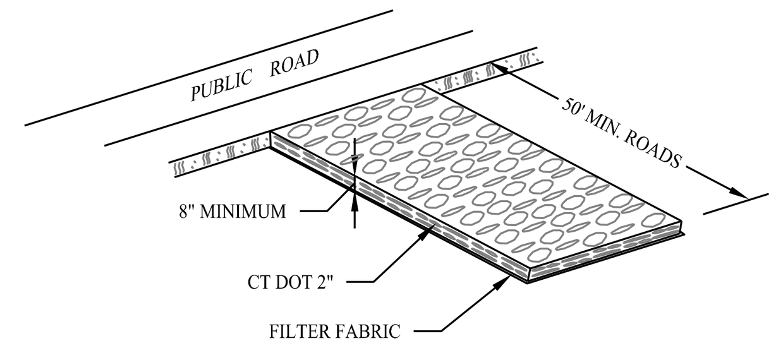
Project:

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title: SOIL EROSION & SEDIMENT CONTROL PLAN - PHASE II

Sheet #: 2.32



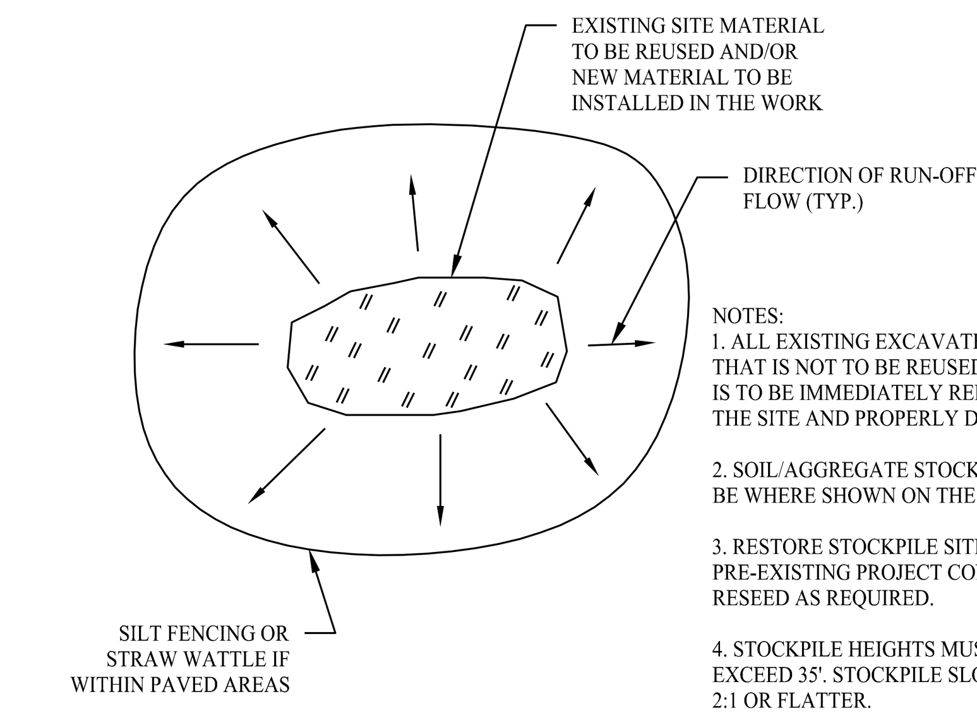
GRADATION TABLE

	CONN. DOT 2" CRUSHED GRAVEL	ASTM C-33 NO. 2	ASTM C-33 NO. 3
SQUARE MESH SIEVES	% FINER	% FINER	% FINER
2 1/2 INCHES	100	90-100	100
2 INCHES	95-100	35-70	90-100
1 1/2 INCHES	35-70	0-15	35-70
1 1/4 INCHES	0-25	---	---
1 INCHES	0-10	---	0-15
3/4 INCHES	---	0-5	---
1/2 INCHES	---	---	0-5
3/8 INCHES	---	---	---

SOURCE:
U.S. DEPARTMENT OF AGRICULTURE, SOIL CONSERVATION SERVICE, STORRS, CONNECTICUT

CONSTRUCTION ENTRANCE

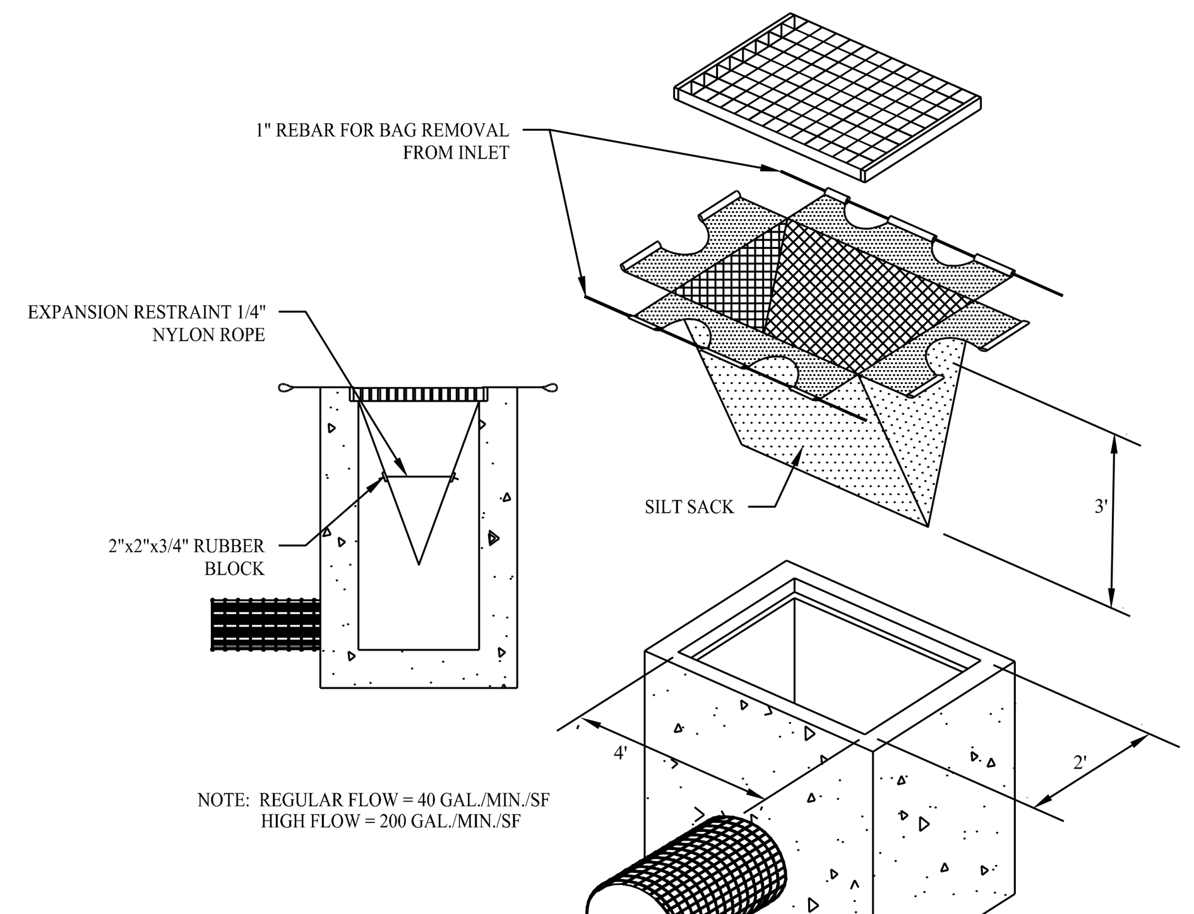
SCALE: NTS



NOTES:
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY REMOVED FROM THE SITE AND PROPERLY DISPOSED OF.
2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
3. RESTORE STOCKPILE SITES TO PRE-EXISTING PROJECT CONDITION AND RESEED AS REQUIRED.
4. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

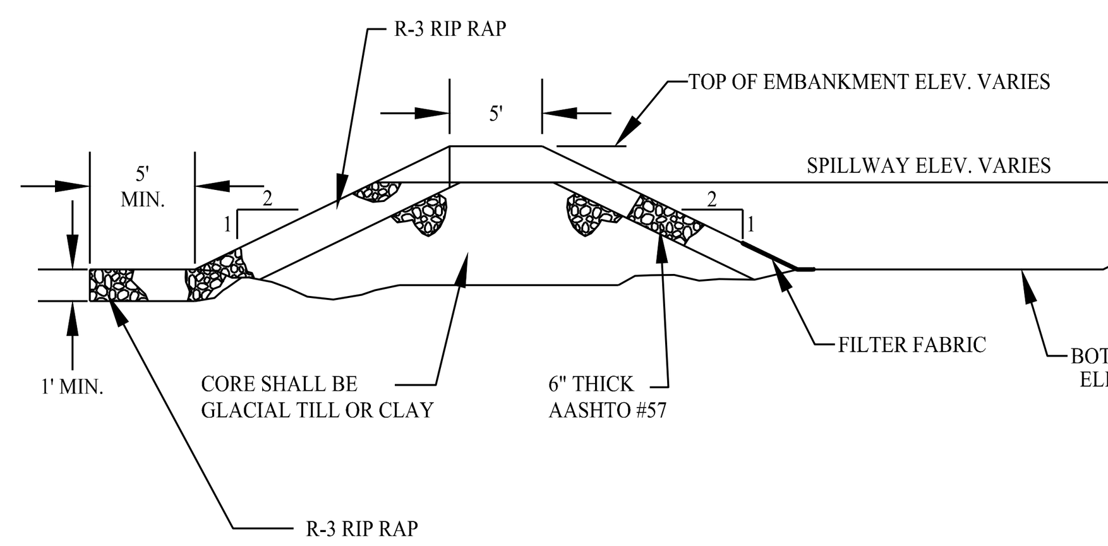
STOCKPILE AREA DETAIL

SCALE: NTS



SILT SACK INLET PROTECTION DETAIL

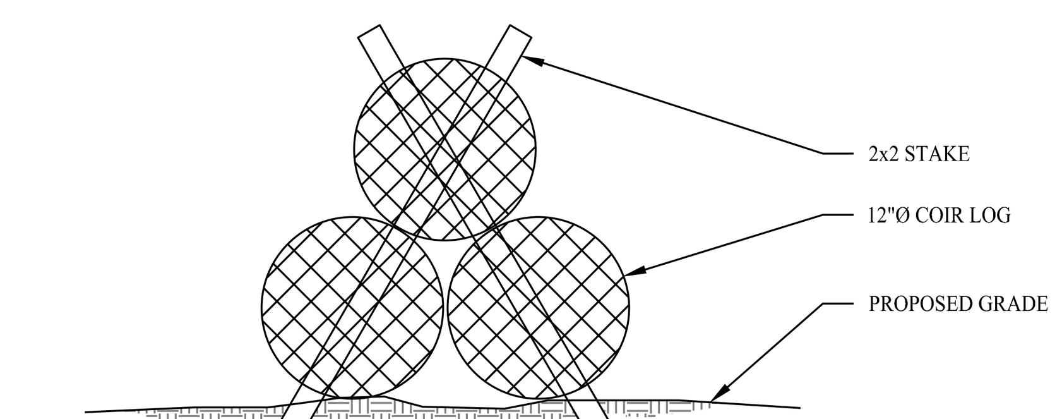
SCALE: NTS



NOTE:
1. SEDIMENT TRAPS SHOULD PROVIDE A MINIMUM OF 134 CUBIC YARDS OF SEDIMENT STORAGE PER DISTURBED ACRE CONTRIBUTING TO THE TRAP. SEE SAID VOLUMES ON SOIL, EROSION AND SEDIMENT CONTROL SHEETS.
2. THE OUTLET EMBANKMENT SHELL IS TO BE ENTIRELY OF ROCK. THE DOWNSTREAM SLOPE SHOULD BE LARGER ROCK (R-3) WITH AN UPSTREAM LAYER OF SMALLER STONE (AASHTO #57)

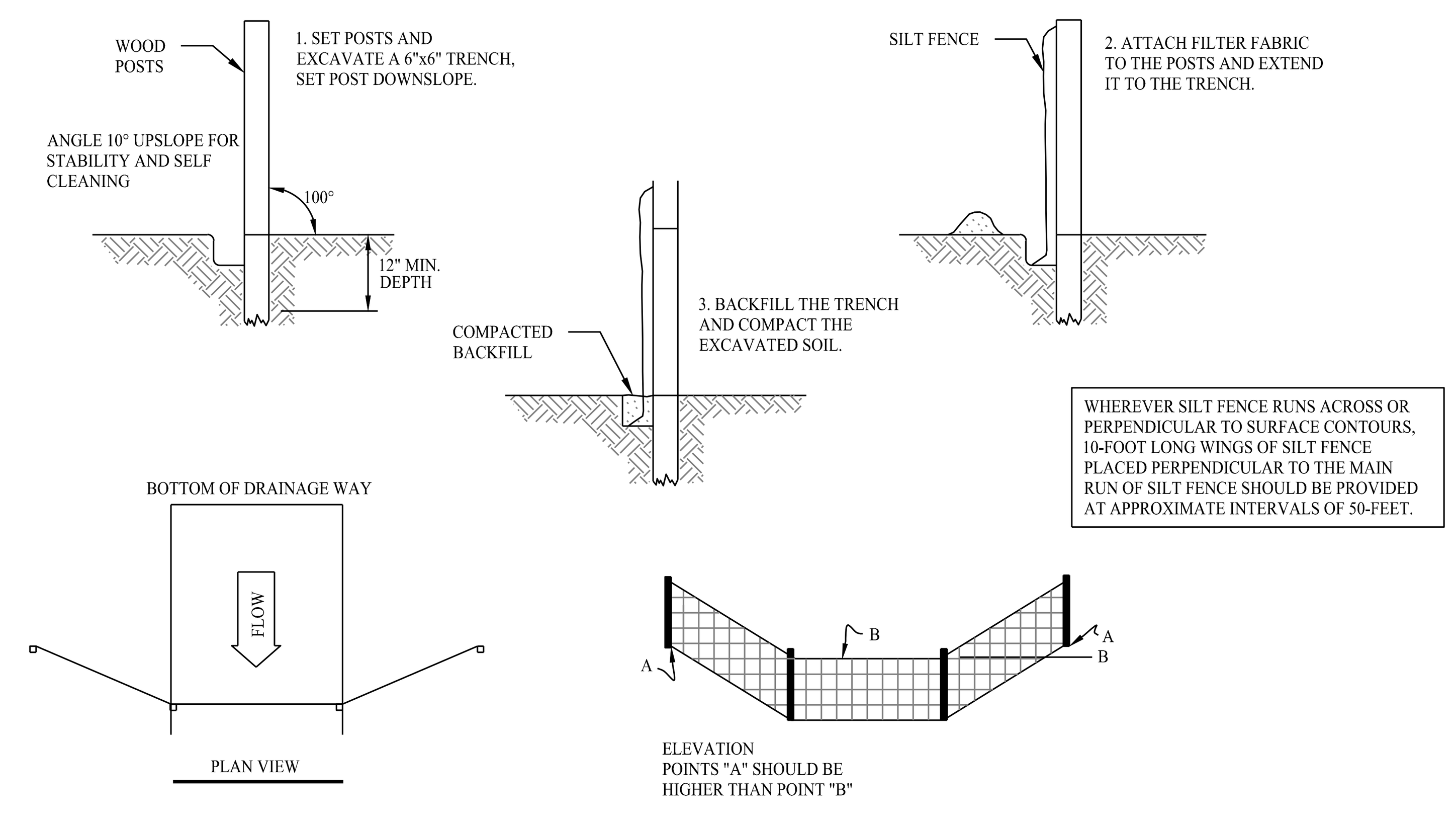
TYPICAL SEDIMENT TRAP DETAIL

SCALE: NTS



STAKED COIR LOG BERM

SCALE: NTS



SILT FENCE PROTECTION DETAIL

SCALE: NTS

SOIL EROSION & SEDIMENT CONTROL NOTES

SEDIMENT & EROSION CONTROL NARRATIVE
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 WATER COURSE FROM SEDIMENT LADEN SURFACE RUNOFF AND EROSION.

CONSTRUCTION SCHEDULE
THE ANTICIPATED STARTING DATE FOR CONSTRUCTION IS SPRING 2024 WITH COMPLETION ANTICIPATED BY SPRING 2025. APPROPRIATE EROSION CONTROL MEASURES AS DESCRIBED HEREIN, SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ALL SITE CLEARING OR CONSTRUCTION ACTIVITY. SCHEDULE WORK TO MINIMIZE THE LENGTH OF TIME THAT BARE SOIL WILL BE EXPOSED.

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 LAND USE AGENTS OF THE TOWN OF MONROE AND PROJECT ENGINEER SHALL HAVE THE AUTHORITY TO REQUIRE SUPPLEMENTAL MAINTENANCE OR ADDITIONAL MEASURES IF FIELD CONDITIONS ARE ENCOUNTERED BEYOND WHAT WOULD NORMALLY BE ANTICIPATED.

OPERATION REQUIREMENTS
CLEARING AND GRUBBING OPERATIONS:
1. ALL SEDIMENTATION AND EROSION CONTROL MEASURES WILL BE INSTALLED PRIOR TO THE START OF CLEARING AND GRUBBING 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.
5. ALL REMOVED INVASIVE PLANT SPECIES MATERIAL SHALL BE FULLY REMOVED FROM THE SITE AND TAKEN TO AN APPROVED AND/OR ACCEPTABLE DISPOSAL LOCATION.

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 SHALL BE SEEDED, MULCHED WITH HAY, AND ENCLOSED BY A SILTATION 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 THICKNESS NOT GREATER THAN THAT SPECIFIED IN PROJECT SPECIFICATIONS. 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 TRAPS AND BASIN.

PLACEMENT OF DRAINAGE STRUCTURES, UTILITIES, AND ROADWAY CONSTRUCTION OPERATIONS:
1. SILT FENCES SHALL BE INSTALLED AT THE DOWNHILL SIDES OF TEMPORARY SEDIMENT TRAP AND BASIN SLOPES, MUD PUMP DISCHARGES, AND UTILITY TRENCH MATERIAL STOCKPILES. HAY BALES MAY BE USED IF SHOWN ON THE EROSION CONTROL PLANS OR IF DIRECTED BY THE PROJECT ENGINEER.

FINAL GRADING AND PAVING OPERATIONS:
1. ALL INLET AND OUTLET PROTECTION SHALL BE PLACED AND MAINTAINED AS SHOWN ON EROSION CONTROL PLANS AND DETAILS, AND AS DESCRIBED IN SPECIFICATIONS AND AS DESCRIBED HEREIN.
2. NO CUT OR FILL SLOPES SHALL EXCEED 2:1 EXCEPT WHERE STABILIZED BY ROCK FACED EMBANKMENTS OR EROSION CONTROL BLANKETS, JUTE MESH AND VEGETATION. ALL SLOPES SHALL BE SEEDED, AND ANY ROAD OR DRIVEWAY SHOULDER AND BANKS SHALL BE STABILIZED IMMEDIATELY UPON COMPLETION OF FINAL GRADING UNTIL TURF IS ESTABLISHED.
3. PAVEMENT SUB-BASE AND BASE COURSES SHALL BE INSTALLED OVER AREAS TO BE PAVED AS SOON AS FINAL SUB-GRADES ARE ESTABLISHED AND UNDERGROUND UTILITIES AND STORM DRAINAGE SYSTEMS HAVE BEEN INSTALLED.
4. AFTER CONSTRUCTION OF PAVEMENT, TOPSOIL, FINAL SEED, MULCH AND LANDSCAPING, REMOVE ALL TEMPORARY EROSION CONTROL DEVICES ONLY AFTER ALL AREAS HAVE BEEN PAVED AND/OR GRASS HAS BEEN WELL ESTABLISHED AND THE SITE HAS BEEN INSPECTED AND APPROVED BY THE TOWN OF MONROE AND TOWN OF MONROE INLAND WETLANDS COMMISSION.

INSTALLATION OF SEDIMENTATION AND EROSION CONTROL MEASURES

I. SILTATION FENCE:
A. DIG A SIX INCH TRENCH ON THE UPHILL SIDE OF THE DESIGNATED FENCE LINE LOCATION.
B. POSITION THE POST AT THE BACK OF THE TRENCH (DOWNHILL SIDE), AND HAMMER THE POST AT LEAST 1.5 FEET INTO THE GROUND.
C. LAY THE BOTTOM SIX INCHES OF THE FABRIC INTO THE TRENCH TO PREVENT UNDERMINING BY STORM WATER RUN-OFF.
D. BACKFILL THE TRENCH AND COMPACT.

II. SILT SACK INLET PROTECTION
A. REMOVE CATCH BASIN GRATE AND PROPERLY PLACE THE SILT SACK INTO THE FRAME OF THE CATCH BASIN.
B. PLACE GRATE BACK ONTO FRAME AND ENSURE NO PORTIONS OF THE SILT SACK HAVE SAGGED INTO THE CATCH BASIN.
C. ONCE GRATE IS PLACED BACK ONTO FRAME OBSERVE TO SEE IF SILT SACK IS INSTALLED IN A MANNER THAT WILL ALLOW FOR SEDIMENT TO BE FILTERED OUT DURING STORM EVENTS.

III. CONSTRUCTION ENTRANCE
A. REMOVE ALL VEGETATION AND OTHER MATERIALS FROM THE FOUNDATION AREA. GRADE AND CROWN FOUNDATION FOR POSITIVE DRAINAGE.
B. PLACE 1-3IN STONE A MINIMUM OF 50FT ALONG THE FULL WIDTH OF THE CONSTRUCTION ACCESS ROAD. AGGREGATE SHOULD BE PLACED AT LEAST 6" THICK.
C. GEOTEXTILE FILTER FABRIC SHALL BE PLACED BETWEEN STONE FILL AND EARTH SURFACE TO TO REDUCE THE MIGRATION OF SOIL PARTICLES FROM THE UNDERLYING SOIL INTO THE STONE AND VICE VERSA.
D. ALL SURFACE WATER THAT IS FLOWING TO OR DIVERTED TOWARD THE CONSTRUCTION ENTRANCE SHALL BE PIPED BENEATH THE ENTRANCE.
E. FILTER FABRIC FENCE SHALL BE INSTALLED DOWN GRADIENT FROM THE CONSTRUCTION ENTRANCE IN ORDER TO CONTAIN ANY SEDIMENT-LADEN RUNOFF FROM THE ENTRANCE.

IV. SEDIMENT TRAP
A. CLEAR, GRUB, AND STRIP ALL VEGETATION FROM THE EMBANKMENT AREA.
B. COMPACT AND FILL EMBANKMENT IN 9" LIFTS.
C. OVERFILL EMBANKMENT 6" ABOVE DESIGN ELEVATION TO ALLOW FOR SETTLEMENT.
D. EVACUATE TRAPEZOIDAL STONE OUTLET SECTION FROM COMPACTED EMBANKMENT. INSTALL FILER FABRIC UNDER RIPRAP.

V. HAY BALES:
A. BALES SHALL BE PLACED IN A SINGLE ROW, LENGTHWISE, ORIENTED PARALLEL TO THE CONTOUR, WITH ENDS OF ADJACENT BALES TIGHTLY ABUTTING ONE ANOTHER
B. BALES SHALL BE ENTRENCHED AND BACKFILLED. A TRENCH SHALL BE EXCAVATED THE WIDTH OF A BALE AND THE LENGTH OF THE PROPOSED BARRIER TO A MINIMUM DEPTH OF FOUR INCHES. AFTER THE BALES ARE STAKED. THE EXCAVATED SOIL SHALL BE BACKFILLED AGAINST THE BARRIER.
C. EACH BALE SHALL BE SECURELY ANCHORED BY AT LEAST TWO (2) STAKES.
D. THE BARRIER SHALL BE EXTENDED TO SUCH A LENGTH THAT THE BOTTOMS OF THE END BALES ARE HIGHER IN ELEVATION THAT THE TOP OF THE LOWEST MIDDLE BALE, TO ENSURE THAT RUN-OFF WILL FLOW EITHER THROUGH OR OVER THE BARRIER, BUT NOT AROUND IT.

VI. DIVERSION SWALE
A. EXCAVATE A MINIMUM CROSS SECTION WIDTH OF 4 FT, HEIGHT OF 1.5 FT, AND SIDE SLOPES 2:1.
B. SEED AND MULCH DIVERSION AS SOON AS THE SWALE IS CONSTRUCTED.
C. THE MAXIMUM CHANNEL GRADE SHALL BE LIMITED TO 1.0 PERCENT AND HAVE A POSITIVE GRADE TO THE OUTLET.
D. OUTLET THE DIVERTED RUNOFF INTO THE STABILIZED SEDIMENTATION TRAP.

OPERATION AND MAINTENANCE OF SEDIMENTATION AND EROSION CONTROL MEASURES

I . SILTATION FENCE:
A. ALL SILTATION FENCES SHALL BE INSPECTED AS A MINIMUM WEEKLY OR AFTER EACH RAINFALL. ALL DETERIORATED FABRIC AND DAMAGED POSTS SHALL BE REPLACED AND PROPERLY REPOSITIONED IN ACCORDANCE WITH THIS PLAN.
B. SEDIMENT DEPOSITS SHALL BE REMOVED FROM BEHIND THE FENCE WHEN THEY EXCEED A HEIGHT OF ONE FOOT.

II. SILT SACK INLET PROTECTION
A. ALL SILT SACK INLET PROTECTION DEVICES SHALL BE INSPECTED AS A MINIMUM WEEKLY OR AFTER EACH RAINFALL. ALL DETERIORATE SILT SACKS AND SACKS THAT APPEAR TO HAVE AN EXCESS OF SEDIMENT SHALL BE REPLACED AND PROPERLY REPOSITIONED IN ACCORDANCE WITH THIS PLAN.
B. SEDIMENT DEPOSITS SHALL BE REMOVED FROM THE SILT SACKS WHEN THEY EXCEED A COUPLE INCHES OF SEDIMENT WITHIN THE CATCH BASIN.

III. CONSTRUCTION ENTRANCE
A. THE CONSTRUCTION ENTRANCE AND FENCE SHALL BE INSPECTED AT A MINIMUM WEEKLY AND AFTER HEAVY RAINS OR HEAVY USE.
B. REMOVE MUD AND HEAVY SEDIMENT TRACKED OR WASHED ONTO PUBLIC ROAD IMMEDIATELY.
C. THE GRAVEL PAD SHALL BE TOPDRESSED WITH NEW STONE WHEN MUD AND SOIL PARTICLES CLOG THE VOIDS IN THE GRAVEL.
D. RESHAPE PAD AS NEEDED FOR DRAINAGE AND RUNOFF CONTROL.
E. REPAIR ANY BROKEN ROAD PAVEMENT IMMEDIATELY.

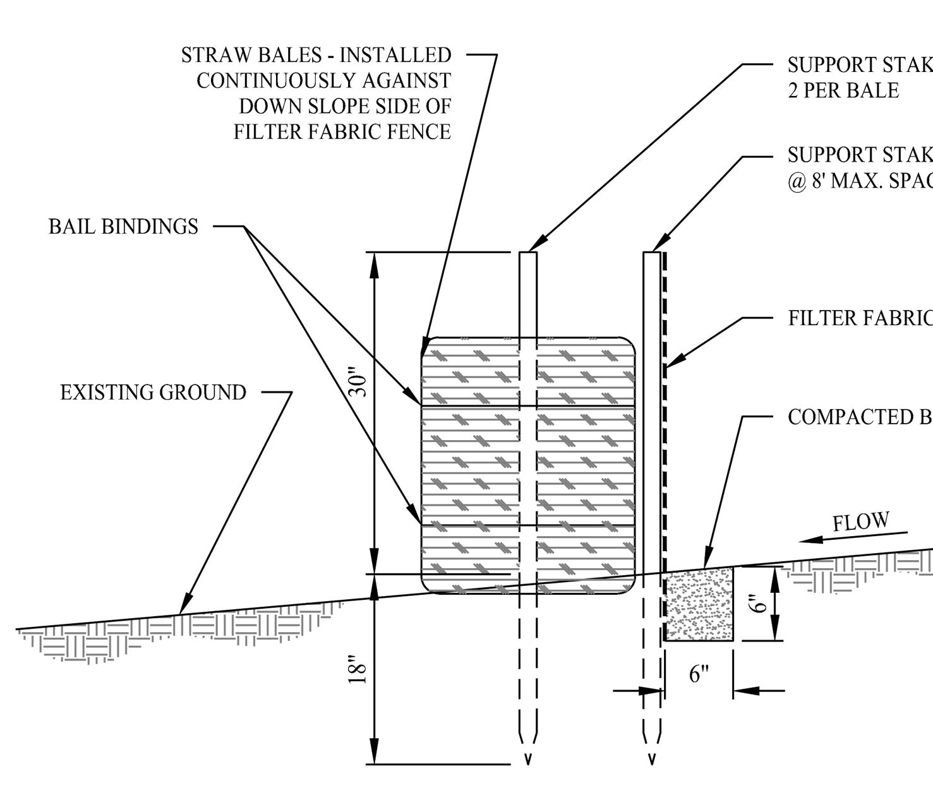
IV. SEDIMENT TRAP
A. INSPECT SEDIMENT TRAP AFTER EACH SIGNIFICANT RAINFALL EVENT. REPAIR ANY EROSION OR PIPING HOLES IMMEDIATELY.
B. SET A STAKE AT ONE HALF THE DESIGN DEPTH OF THE SEDIMENT TRAP. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH.
C. CLEAN OR REPLACE SPILLWAY GRAVEL FACING IF CLOGGED.
D. PROMPTLY REPLACE ANY DISPLACED RIPRAP.
E. INSPECT VEGETATION; RESEED AND REMULCH IF NECESSARY.
F. CHECK SPILLWAY DEPTH PERIODICALLY. FILL ANY LOW AREAS OF THE EMBANKMENT TO MAINTAIN DESIGN ELEVATION.

V. HAY BALES:
A. ALL HAY BALE RINGS SHALL BE INSPECTED FOLLOWING EACH RAINFALL. REPAIR OR REPLACEMENT SHALL BE PROMPTLY MADE AS NEEDED.
B. DEPOSITS SHALL BE REMOVED AND CLEANED-OUT IF ONE HALF OF THE ORIGINAL HEIGHT OF THE BALES BECOMES FILLED WITH SEDIMENT.

VI. DIVERSION SWALE
A. ALL TEMPORARY DIVERSION SWALES SHALL BE INSPECTED AS A MINIMUM WEEKLY OR AFTER EACH RAINFALL.
B. DAMAGE CAUSED BY CONSTRUCTION TRAFFIC OR OTHER ACTIVITY SHALL BE REPAIRED BY THE END OF EACH WORK DAY. IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE DIVERSION RIDGE. CHECK OUTLETS CAREFULLY AND MAKE TIMELY REPAIRS AS NEEDED.
C. WHEN THE AREA PROTECTED HAS BEEN PERMANENTLY STABILIZED, REMOVE THE RIDGE AND THE CHANNEL TO BLEND WITH THE NATURAL GROUND LEVEL, AND APPROXIMATELY STABILIZE IT.

EROSION AND SEDIMENT CONTROL PLAN
1. HAY BALE FILTERS OR SILTATION FENCE WILL BE INSTALLED AT ALL CULVERT OUTLETS IF CULVERT OUTLETS ARE APPLICABLE TO THIS PROJECT AND ALONG THE TOE OF ALL CRITICAL CUT AND FILL SLOPES.
2. CULVERT DISCHARGE AREAS WILL BE PROTECTED WITH RIP RAP CHANNELS; ENERGY DISSIPATERS WILL BE INSTALLED AS SHOWN ON THESE PLANS AND AS NECESSARY.
3. CATCH BASINS WILL BE PROTECTED WITH HAY BALE FILTERS, SILT SACKS, SILTATION FENCE, OR OTHER INLET PROTECTION DEVICES PER DETAILS, THROUGHOUT THE CONSTRUCTION PERIOD AND UNTIL ALL DISTURBED AREAS ARE THOROUGHLY STABILIZED.
4. ALL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL MANUAL, LATEST EDITION.
5. EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED PRIOR TO CONSTRUCTION WHENEVER POSSIBLE
6. ALL CONTROL MEASURES WILL BE MAINTAINED IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD.
7. ADDITIONAL CONTROL MEASURES WILL BE INSTALLED DURING THE CONSTRUCTION PERIOD, IF NECESSARY OR REQUIRED OR AS DIRECTED BY THE CIVIL ENGINEER OR BY LOCAL GOVERNING OFFICIALS.
8. SEDIMENT REMOVED FROM EROSION CONTROL STRUCTURES WILL BE DISPOSED IN A MANNER WHICH IS CONSISTENT WITH THE INTENT AND REQUIREMENTS OF THE EROSION CONTROL PLANS, NOTES, AND DETAILS.
9. THE OWNER 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.

CONSTRUCTION SEQUENCE
THE FOLLOWING CONSTRUCTION SEQUENCE IS RECOMMENDED:
1. CONTACT TOWN OF MONROE 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 TOWN OF MONROE AGENT PRIOR TO THE START OF WORK ON THE SITE. INSTALL TREE PROTECTION AND PERIMETER SILT FENCE.
3. WRAP FILTER FABRIC AROUND GRATES OF CATCH BASINS OR INSTALL SILT SACKS ON CATCH BASIN INLETS ON OFF SITE ROADS. INSTALL SILT FENCE 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. COMMENCE EARTHWORK. CONSTRUCT FILL SLOPE AND RETAINING WALLS. INSTALL ADDITIONAL EROSION CONTROLS AS WORK PROGRESSES AND CONTINUE STORM DRAINAGE SYSTEM CONSTRUCTION, TOPSOIL AND SEED SLOPES WHICH HAVE ACHIEVED FINAL SITE GRADING.
6. CONSTRUCTION STAKING OF ALL BUILDING CORNERS, UTILITIES, ACCESS DRIVES, AND PARKING AREAS.
7. ROUGH GRADING AND FILLING OF SUBGRADES AND SLOPES.
8. 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.
9. 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 TOWN OF MONROE AND WHICH IS BEING IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL ALSO NOTIFY THE TOWN OF MONROE IN WRITING OF ALL RECEIVING SPOIL AND BORROW AREAS WHEN THEY HAVE BEEN IDENTIFIED.
10. CONTINUE INSTALLATION OF STORM DRAINAGE AS SUBGRADE ELEVATIONS ARE ACHIEVED.
11. THROUGHOUT CONSTRUCTION SEQUENCE, REMOVE SEDIMENT FROM BEHIND SILT FENCES, HAY BALES AND OTHER EROSION CONTROL DEVICES. 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.
12. COMPLETE STORM DRAINAGE SYSTEM.
13. INSTALL SITE LIGHTING AND TRASH ENCLOSURE.
14. COMPLETE GRADING TO SUBGRADES AND CONSTRUCT PARKING AREA SUBGRADE.
15. CONSTRUCT CURBS, PAVEMENT STRUCTURE AND SIDEWALKS
16. CONDUCT FINE GRADING.
17. PAVING OF PARKING AREAS AND DRIVEWAYS
18. FINAL FINE GRADING OF SLOPE AND NON-PAVED AREAS.
19. 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.).
20. LANDSCAPE ISLANDS INTERIOR NON-PAVED AREA AND PERIMETER AREAS.
21. INSTALL SIGNING AND PAVEMENT MARKINGS
22. CLEAN STORM DRAINAGE PIPE STRUCTURES OF DEBRIS AND SEDIMENT.
23. UPON DIRECTION OF THE TOWN OF MONROE AGENT, EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED FOLLOWING STABILIZATION OF THE SITE.



NOTE:
1. USE 2" x 2" x 48" WOODEN STAKES OR EQUIVALENT STEEL (U OR T) STAKES.

SILT FENCE WITH HAYBALE BACKING

SCALE: NTS

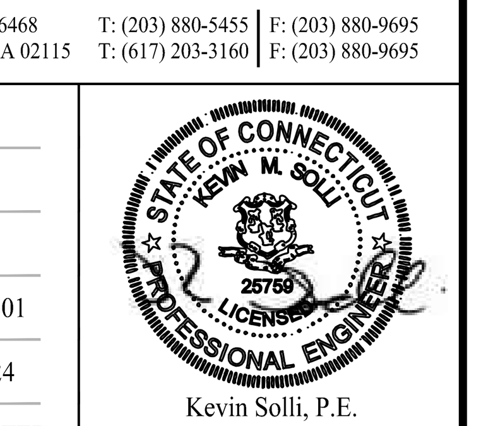
SEDIMENT AND EROSION CONTROL NOTES
1. THE OWNER IS RESPONSIBLE FOR IMPLEMENTING THIS SEDIMENT AND EROSION CONTROL PLAN. THIS RESPONSIBILITY INCLUDES THE PROPER INSTALLATION AND MAINTENANCE OF EROSION CONTROL MEASURES, INFORMING ALL PARTIES ENGAGED WITH CONSTRUCTION ON THE SITE OF THE REQUIREMENTS AND OBJECTIVES OF THIS PLAN, INFORMING THE GOVERNING AUTHORITY OR INLAND WETLANDS AGENCY OF ANY TRANSFER OF THIS RESPONSIBILITY, AND FOR CONVEYING A COPY OF THE SEDIMENT & EROSION CONTROL PLAN IF THE TITLE TO THE LAND IS TRANSFERRED.
2. AN EROSION CONTROL BOND MAY BE REQUIRED TO BE POSTED WITH THE TOWN OF MONROE TO ENSURE IMPLEMENTATION OF THE EROSION CONTROL MEASURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE POSTING OF THIS BOND AND FOR INQUIRIES TO THE TOWN OF MONROE FOR INFORMATION ON THE METHOD, TYPE AND AMOUNT OF THE BOND POSTING UNLESS OTHERWISE DIRECTED BY THE OWNER.
3. VISUAL SITE INSPECTIONS SHALL BE CONDUCTED WEEKLY, AND AFTER EACH MEASURABLE PRECIPITATION EVENT BY QUALIFIED PERSONNEL, TRAINED AND EXPERIENCED IN EROSION AND SEDIMENT CONTROL, TO ASCERTAIN THAT THE EROSION AND SEDIMENT CONTROL (E&S) BMPS ARE OPERATIONAL AND EFFECTIVE IN PREVENTING POLLUTION. A WRITTEN REPORT OF EACH INSPECTION SHALL BE KEPT, AND INCLUDE:
A) A SUMMARY OF THE SITE CONDITIONS, E&S BMPS, AND COMPLIANCE; AND
B) THE DATE, TIME, AND THE NAME OF THE PERSON CONDUCTING THE INSPECTION
4. THE CONTRACTOR SHALL CONSTRUCT ALL SEDIMENT AND EROSION CONTROLS IN ACCORDANCE WITH THE CONNECTICUT GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, PREPARED BY CTDEEP, LATEST EDITION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS, AND AS DIRECTED BY THE TOWN OF MONROE. THE CONTRACTOR SHALL KEEP A COPY OF THE GUIDELINES ON-SITE FOR REFERENCE DURING CONSTRUCTION.
5. ADDITIONAL AND/OR ALTERNATIVE SEDIMENT AND EROSION CONTROL MEASURES MAY BE INSTALLED DURING THE CONSTRUCTION PERIOD IF FOUND NECESSARY BY THE CONTRACTOR, OWNER, CIVIL ENGINEER, TOWN OF MONROE, TOWN OF MONROE INLAND WETLANDS COMMISSION, OR GOVERNING AGENCIES. THE CONTRACTOR SHALL CONTACT THE OWNER AND APPROPRIATE GOVERNING AGENCIES FOR APPROVAL IF ALTERNATIVE CONTROLS OTHER THAN THOSE SHOWN ON THE PLANS ARE PROPOSED.
6. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROLS BEFORE AND AFTER EACH STORM, OR AT LEAST WEEKLY, TO VERIFY THAT THE CONTROLS ARE OPERATING PROPERLY AND MAKE REPAIRS WHERE NECESSARY.
7. THE CONTRACTOR SHALL KEEP A SUPPLY OF EROSION CONTROL MATERIAL (HAY BALES, SILT FENCE, JUTE MESH,RIP RAP ETC.) ON-SITE FOR MAINTENANCE AND EMERGENCY REPAIRS.
8. INSTALL PERIMETER SEDIMENT CONTROLS PRIOR TO CLEARING OR CONSTRUCTION. ALL CONSTRUCTION SHALL BE CONTAINED WITHIN THE LIMIT OF DISTURBANCE, WHICH SHALL BE MARKED WITH SILT FENCE, SAFETY FENCE, HAY BALES, RIBBONS, OR OTHER MEANS PRIOR TO CLEARING. CONSTRUCTION ACTIVITY SHALL REMAIN ON THE UPHILL SIDE OF THE SILT FENCE UNLESS WORK IS SPECIFICALLY CALLED FOR ON THE DOWNHILL SIDE OF THE FENCE.
9. TOPSOIL SHALL BE STRIPPED AND STOCKPILED FOR USE IN FINAL LANDSCAPING. ALL EARTH STOCKPILES SHALL HAVE HAY BALES OR SILT FENCE AROUND THE LIMIT OF PILE. PILES SHALL BE TEMPORARILY SEEDED IF PILE IS TO REMAIN IN PLACE FOR MORE THAN 7 DAYS.
10. MINIMIZE LAND DISTURBANCES. SEED AND MULCH DISTURBED AREAS WITH TEMPORARY MIX AS SOON AS PRACTICABLE (2 WEEK MAXIMUM UNSTABILIZED PERIOD) USING PERENNIAL RYEGRASS AT 40 LBS PER ACRE. MULCH ALL CUT AND FILL SLOPES AND SWALES WITH LOOSE HAY AT A RATE OF 2 TONS PER ACRE. IF NECESSARY, REPLACE LOOSE HAY ON SLOPES WITH EROSION CONTROL BLANKETS OR JUTE CLOTH. MODERATELY GRADED AREAS, ISLANDS, AND TEMPORARY CONSTRUCTION STAGING AREAS MAY BE HYDROSEEDED WITH TACKIFIER.
11. SILT FENCE AND OTHER SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH CONTRACT DRAWINGS AND MANUFACTURER'S RECOMMENDATIONS PRIOR TO WORK IN ANY UPLAND AREAS.
12. INSTALL SILT FENCE ACCORDING TO MANUFACTURER'S INSTRUCTION, PARTICULARLY, BURY LOWER EDGE OF FABRIC INTO GROUND. SILT FENCE SHALL BE MIRAFI ENVIROFENCE, AMOCO SILT STOP OR EQUIVALENT APPROVED BY THE CIVIL ENGINEER. FILTER FABRIC USED SHALL BE MIRAFI 100X OR EQUIVALENT. SEE SPECIFICATIONS FOR FURTHER INFORMATION.
13. DIRECT ALL DEWATERING PUMP DISCHARGE TO A SEDIMENT CONTROL DEVICE SUCH AS TEMPORARY PITS, SEDIMENT TRAPS OR GRASS FILTERS WITHIN THE APPROVED LIMIT OF DISTURBANCE. DISCHARGE TO STORM DRAINAGE SYSTEM OR SURFACE WATERS FROM SEDIMENT CONTROLS SHALL BE CLEAR.
14. SWEEP AFFECTED PORTIONS OF OFF SITE ROADS ONE OR MORE TIMES A DAY (OR LESS FREQUENTLY IF TRACKING IS NOT A PROBLEM) DURING CONSTRUCTION. OTHER DUST CONTROL MEASURES TO BE USED AS NECESSARY INCLUDE WATERING DOWN DISTURBED AREAS, USING CALCIUM CHLORIDE, AND COVERING LOADS ON DUMP TRUCKS.
15. CLEAN ACCUMULATED SEDIMENT FROM CATCH BASIN SUMPS AS NECESSARY AND AS DIRECTED BY THE CIVIL ENGINEER OR OWNER'S CONSTRUCTION REPRESENTATIVE. REMOVE ACCUMULATED SEDIMENT FROM BEHIND HAY BALES AND SILT FENCE WHEN LEVEL REACHES HALF THE HEIGHT OF THE HAY BALE OR ONE FOOT AT SILT FENCE. DISPOSE OF SEDIMENT LEGALLY EITHER ON OR OFF SITE.
16. 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.
17. ALL PUMPING OF SEDIMENT LADEN WATER SHALL BE THROUGH A SEDIMENT CONTROL BMP, SUCH AS A PUMPED WATER FILTER BAG OR EQUIVALENT SEDIMENT REMOVAL FACILITY, OVER UNDISTURBED VEGETATED AREAS.
18. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE OF UTILITY AND STORM PIPE TRENCHES SO AS TO ALLOW THE TRENCH TO INTERCEPT ALL SILT LADEN RUNOFF.
19. CONTRACTOR SHALL ONLY EXCAVATE AS MUCH UTILITY AND STORM PIPE TRENCH WORK AS CAN BE COMPLETED, BACKFILLED AND STABILIZED IN ONE DAY SO AS TO LIMIT THE AMOUNT OF OPEN, DISTURBED TRENCHING.
20. ANY STOCKPILES OF STRIPPED MATERIALS ARE TO BE PERIODICALLY SPRAYED WITH WATER OR A CRUSTING AGENT TO STABILIZE POTENTIALLY WIND-BLOWN MATERIAL. HAUL ROADS BOTH INTO AND AROUND THE SITE ARE TO BE SPRAYED AS NEEDED TO SUPPRESS DUST. TRUCKS HAULING IMPORT FILL MATERIAL ARE TO BE TARPED TO AID IN THE CONTROL OF AIRBORNE DUST. DURING HIGH WIND EVENTS (20 TO 30 MPH SUSTAINED) CONSTRUCTION ACTIVITY SHALL BE LIMITED OR CEASED IF DUST CANNOT BE CONTROLLED BY WETTING.
21. AN AREA SHALL BE CONSIDERED TO HAVE ACHIEVED FINAL STABILIZATION WHEN IT HAS A MINIMUM OF 70% UNIFORM PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED SURFACE EROSION AND SUBSURFACE CHARACTERISTICS SUFFICIENT TO RESIST SLIDING OR OTHER MOVEMENTS.
22. MAINTAIN ALL PERMANENT AND TEMPORARY SEDIMENT CONTROL DEVICES IN EFFECTIVE CONDITION THROUGHOUT THE CONSTRUCTION PERIOD. UPON COMPLETION OF WORK SWEEP PARKING LOT AND REMOVE ALL TEMPORARY SEDIMENT CONTROLS WHEN AUTHORIZED BY LOCAL GOVERNING AUTHORITY. FILE NOT (NOTICE OF TERMINATION) WITH GOVERNING AUTHORITY RESPONSIBLE FOR REGULATING STORM WATER DISCHARGES FROM CONSTRUCTION ACTIVITIES PER NPDES.

Rev. #:	Date	Description

Graphic Scale:

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695
351 Newbury Street, Boston, MA 02115 T: (617) 203-3160 F: (203) 880-9695

Drawn By:	VER
Checked By:	LAM
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	AS NOTED



Kevin Solli, P.E.
CT 25759

Project:
PROPOSED DEVELOPMENT
205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title:
SOIL EROSION & SEDIMENT CONTROL NOTES & DETAILS

Sheet #:
2.41

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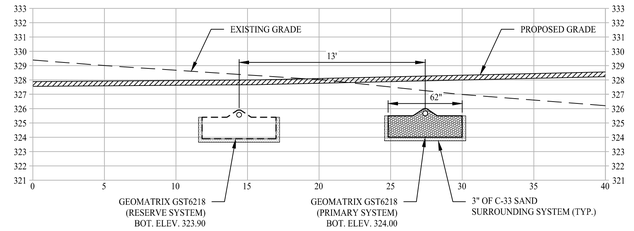
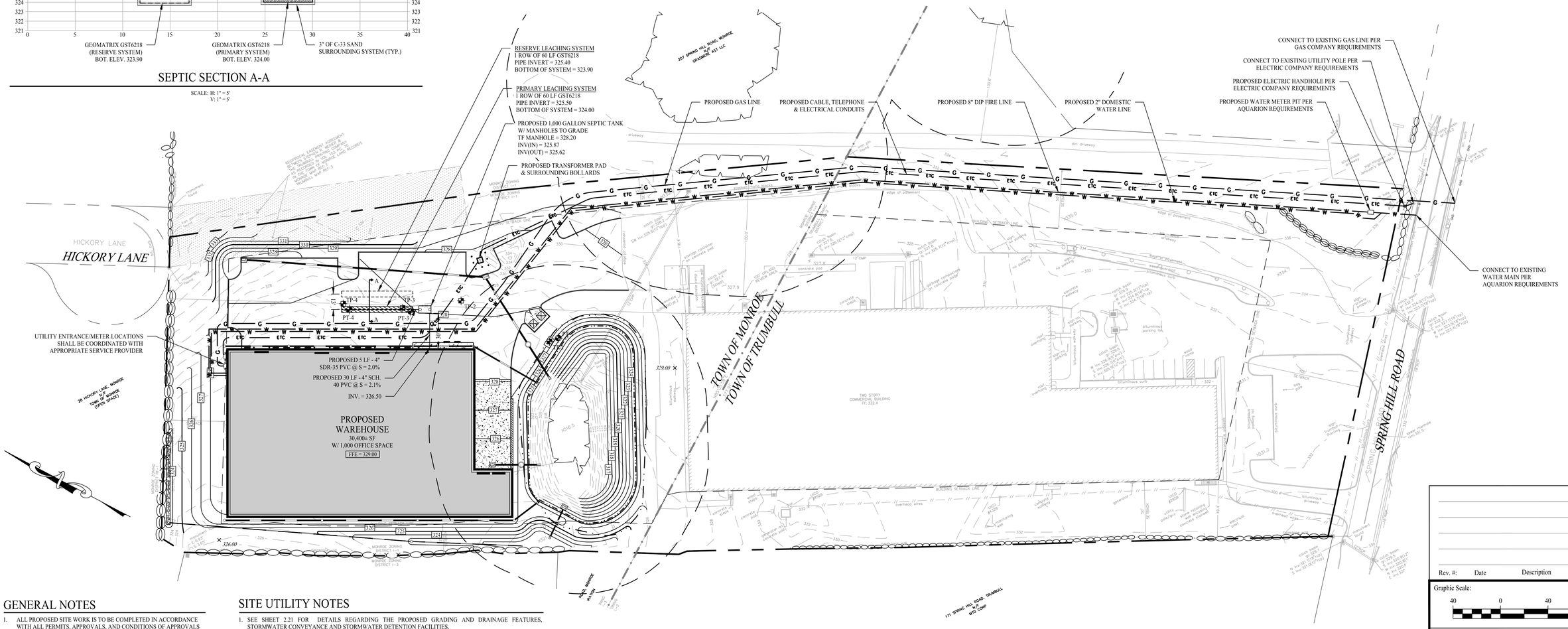


SEPTIC SECTION A-A

SCALE: H: 1" = 5'
V: 1" = 5'



GENERAL NOTES

1. ALL PROPOSED SITE WORK IS TO BE COMPLETED IN ACCORDANCE WITH ALL PERMITS, APPROVALS, AND CONDITIONS OF APPROVALS ISSUED BY LOCAL, STATE AND/OR FEDERAL REVIEWING AGENCIES.
2. EXISTING BOUNDARY AND TOPOGRAPHY IS BASED ON DRAWING TITLED "PROPERTY SURVEY OF 205 SPRING HILL ROAD, MONROE/TRUMBULL, CONNECTICUT", DATED 12/15/2023 BY "ACCURATE LAND SURVEYING, LLC"
3. ALL CONSTRUCTION SHALL COMPLY WITH TOWN OF MONROE, CONNECTICUT STANDARDS, DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS IN THE ABOVE REFERENCED INCREASING HIERARCHY. IF SPECIFICATIONS ARE IN CONFLICT, THE MORE STRINGENT SPECIFICATION SHALL APPLY. ALL CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE OSHA, FEDERAL, STATE AND LOCAL REGULATIONS.

SEPTIC SYSTEM DESIGN

ALL PRIMARY AND RESERVE LEACHING AREAS WERE DESIGNED IN ACCORDANCE WITH CONNECTICUT PUBLIC HEALTH CODE, ON-SITE SEWAGE DISPOSAL REGULATIONS, AND TECHNICAL STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS.

PROPOSED INDUSTRIAL WAREHOUSE SPACE (40 EMPLOYEES MAX)
PERCOLATION RATE = 10.1-20.0 MIN/INCH
APPLICATION RATE = 1.2 GPD PER SQ. FT. (NON-PROBLEMATIC)
EFFECTIVE LEACHING AREA (ELA):
DESIGN FLOW = (40 EMPLOYEES) x (25 GPD/EMPLOYEE) = 1,000 GPD
DESIGN FLOW/APPLICATION RATE = REQUIRED ELA
1,000 GPD/1.2 GPD PER SQ. FT. = 834 SF

TOTAL REQUIRED ELA = 834 SF ELA

PROPOSED LEACHING SYSTEM
GEOMATRIX EST 6218: ELA = 14.0 SF/LF
UNIT DEPTH = 18"
UNIT WIDTH = 62"
CENTER TO CENTER SPACING = 13'

REQUIRED LENGTH = 834 SF / 14 LF/SF = 60 LF
PROVIDED LENGTH = 1 ROW OF 60 LF

NOTE: MLSS NOT REQUIRED, RECEIVING SOIL DEPTH IS GREATER THAN 60" DEEP.

SITE UTILITY NOTES

1. SEE SHEET 2.21 FOR DETAILS REGARDING THE PROPOSED GRADING AND DRAINAGE FEATURES, STORMWATER CONVEYANCE AND STORMWATER DETENTION FACILITIES.
2. THE CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS, UTILITY LOCATIONS, AND INVERTS PRIOR TO CONSTRUCTION. ANY CONDITIONS FOUND TO DIFFER FROM THOSE SHOWN IN THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE PROJECT ENGINEER.
3. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ACTUAL LOCATIONS OF ALL UTILITY ENTRANCES TO INCLUDE SANITARY SEWER LATERALS, DOMESTIC AND FIRE PROTECTION WATER SERVICE, ELECTRICAL, TELEPHONE AND GAS SERVICE, ROOF DRAINS, AND ALL OTHER UTILITIES. CONTRACTOR SHALL COORDINATE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO AVOID CONFLICTS AND TO ENSURE PROPER DEPTHS ARE ACHIEVED AS WELL AS COORDINATING WITH THE REGULATORY AGENCY AS TO LOCATION OF AND SCHEDULING OF CONNECTIONS TO THEIR FACILITIES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING UTILITY COMPANIES 72 HOURS PRIOR TO BEGINNING EXCAVATION AND INSTALLATION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND ALL PAVEMENT REPAIRS REQUIRED AS A RESULT OF ANY UTILITY WORK.
6. ALL TRENCHING, PIPE LAYING, AND BACKFILLING SHALL BE IN ACCORDANCE WITH FEDERAL OSHA REGULATIONS.
7. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 2 FEET OF COVER FOR ALL UNDERGROUND ELECTRIC, TELEPHONE AND GAS UTILITIES.
8. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 4.5 FEET OF COVER FOR ALL WATER DISTRIBUTION PIPING.
9. ALL NEW WATER LINES SHALL BE PRESSURE TESTED AND LEAKAGE TESTED IN ACCORDANCE WITH THE LATEST EDITION OF AWWA STANDARD C600.
10. ALL NEW WATER MAINS SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651.
11. ALL DOMESTIC WATER AND SANITARY SEWER STUBS TO BE TERMINATED 5 FEET OUTSIDE OF THE BUILDING UNLESS OTHERWISE NOTED. THE END OF THESE SERVICE LINES SHALL BE TIGHTLY PLUGGED OR CAPPED AND MARKED UNTIL SUCH TIME AS CONNECTION IS MADE INSIDE BUILDING BY PLUMBING CONTRACTOR.
12. ALL WORK SHALL COMPLY WITH ALL APPLICABLE CODES, REGULATIONS, AND/OR LOCAL STANDARDS IMPOSED BY LOCAL UTILITY AUTHORITIES.
13. CONTRACTOR SHALL ADJUST LOCATION OF PROPOSED WATER LINES AS REQUIRED TO AVOID CONFLICTS WITH STORM SEWER OR OTHER UTILITIES AT NO EXTRA COST.
14. ALL MATERIAL SHALL BE APPROVED BY THE LOCAL UTILITY COMPANIES UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
15. SHOULD LATENT SOIL CONDITIONS NECESSITATE, CONTRACTOR SHALL INSTALL SPECIAL SUPPORTS FOR PIPING AND/OR APPURTENANCES INCLUDING THE REMOVAL OF UNSUITABLE MATERIAL AND BACKFILLING WITH GRAVEL OR OTHER APPROVED MATERIAL. CONTRACTOR SHALL PERFORM ANY SUCH WORK AS DIRECTED BY THE CIVIL ENGINEER AND/OR SOILS ENGINEER AT NO COST TO OWNER.
16. V.I.F. = VERIFY IN FIELD
17. PROJECT MUST BE CONSTRUCTED TO ALL WATER COMPANY SPECIFICATIONS.
18. COPPER AND/OR DUCTILE IRON SERVICE LATERAL MATERIAL REQUIRED.
19. GATE VALVES OPEN LEFT.
20. SITE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING ANY REQUIRED CONNECTORS/ADAPTORS TO CONNECT SITE PIPING/CONDUITS, ETC. TO BUILDING UTILITIES INSTALLED BY OTHERS.

TEST PIT OBSERVATIONS

TESTING PERFORMED BY SOLLI ENGINEERING, LLC ON JANUARY 23, 2024.

TEST PIT 1
0"-4" TOPSOIL
4"-17" ORANGE-BROWN SAND & GRAVEL
17"-50" TAN SAND & GRAVEL
50"-82" TAN SAND
ROOTS TO 22"
GROUNDWATER @ 72"
NO LEDGE
RESTRICTIVE LAYER AT 72"

TEST PIT 2
0"-73" MISCELLANEOUS FILL

TEST PIT 3
0"-5" TOPSOIL
5"-20" BROWN SANDY LOAM
20"-72" TAN SAND & GRAVEL W/ ROCKS
ROOTS TO 25"
NO LEDGE, NO GROUNDWATER
NO RESTRICTIVE LAYER ENCOUNTERED

TEST PIT 4
0"-14" TOPSOIL
14"-20" ORANGE-BROWN SAND & GRAVEL
20"-35" TAN SAND & GRAVEL
35"-75" TAN SAND & GRAVEL W/ ROCKS
ROOTS TO 46"
NO LEDGE, NO GROUNDWATER
NO RESTRICTIVE LAYER ENCOUNTERED

PERCOLATION TEST PIT DATA

TEST PIT OBSERVATIONS AND PERCOLATION TESTS WERE PERFORMED ON JANUARY 23, 2024 BY SOLLI ENGINEERING, LLC.

PERCOLATION TEST: PT-1
DIAMETER OF PIT: 10"
DEPTH OF PIT: 21"
HOLE PRESOAKED PRIOR TO TEST

ELAPSED TIME (MIN.)	READING (IN.)
0	5"
5	6.75"
10	8.25"
15	9.5"
20	10.5"
25	11.5"
30	12.75"
35	13.5"
40	14.25"
45	15"
50	15.75"
55	DRY

PERCOLATION RATE:
0-10.0 MIN. PER INCH

PERCOLATION TEST: PT-3
DIAMETER OF PIT: 9"
DEPTH OF PIT: 19"
HOLE PRESOAKED PRIOR TO TEST

ELAPSED TIME (MIN.)	READING (IN.)
0	3.5"
5	5.25"
10	7"
15	8.5"
20	10"
25	11.25"
30	12.25"
35	13"
40	13.75"
45	14.5"
50	15"
55	15.5
60	DRY

PERCOLATION RATE:
0-10.0 MIN. PER INCH

PERCOLATION TEST: PT-4
DIAMETER OF PIT: 10"
DEPTH OF PIT: 22"
HOLE PRESOAKED PRIOR TO TEST

ELAPSED TIME (MIN.)	READING (IN.)
0	4.5"
5	6.5"
10	7.75"
15	9"
20	10"
25	10.75"
30	11.5"
35	12.25"
40	12.75"
45	13.25"
50	13.75"
55	14.25"
60	14.75"

PERCOLATION RATE:
0-10.0 MIN. PER INCH

LEGEND

- PROPERTY LINE
- ADJOINING LOT LINE
- WATER MAIN / LATERAL
- GAS LINE
- ELECTRIC CONDUIT
- TELEPHONE CONDUIT
- CABLE TV UNDERGROUND LINE
- CABLE & TELEPHONE CONDUIT
- UNDERGROUND ELECTRIC, TELEPHONE AND CABLE LINES
- SANITARY SEWER PIPE
- LEACHING TRENCH
- RESERVE LEACHING AREA
- TP-103 TEST PIT
- PT-103 PERC TEST PIT
- S SEPTIC TANK
- WATER VALVE
- ELECTRIC/GAS METER
- ELECTRIC TRANSFORMER

Rev. #:	Date	Description

Graphic Scale: 40 0 40 80

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Drawn By:	VER
Checked By:	LAM
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 40'

STATE OF CONNECTICUT · KEVIN M. SOLLI · 25759 · LICENSED PROFESSIONAL ENGINEER

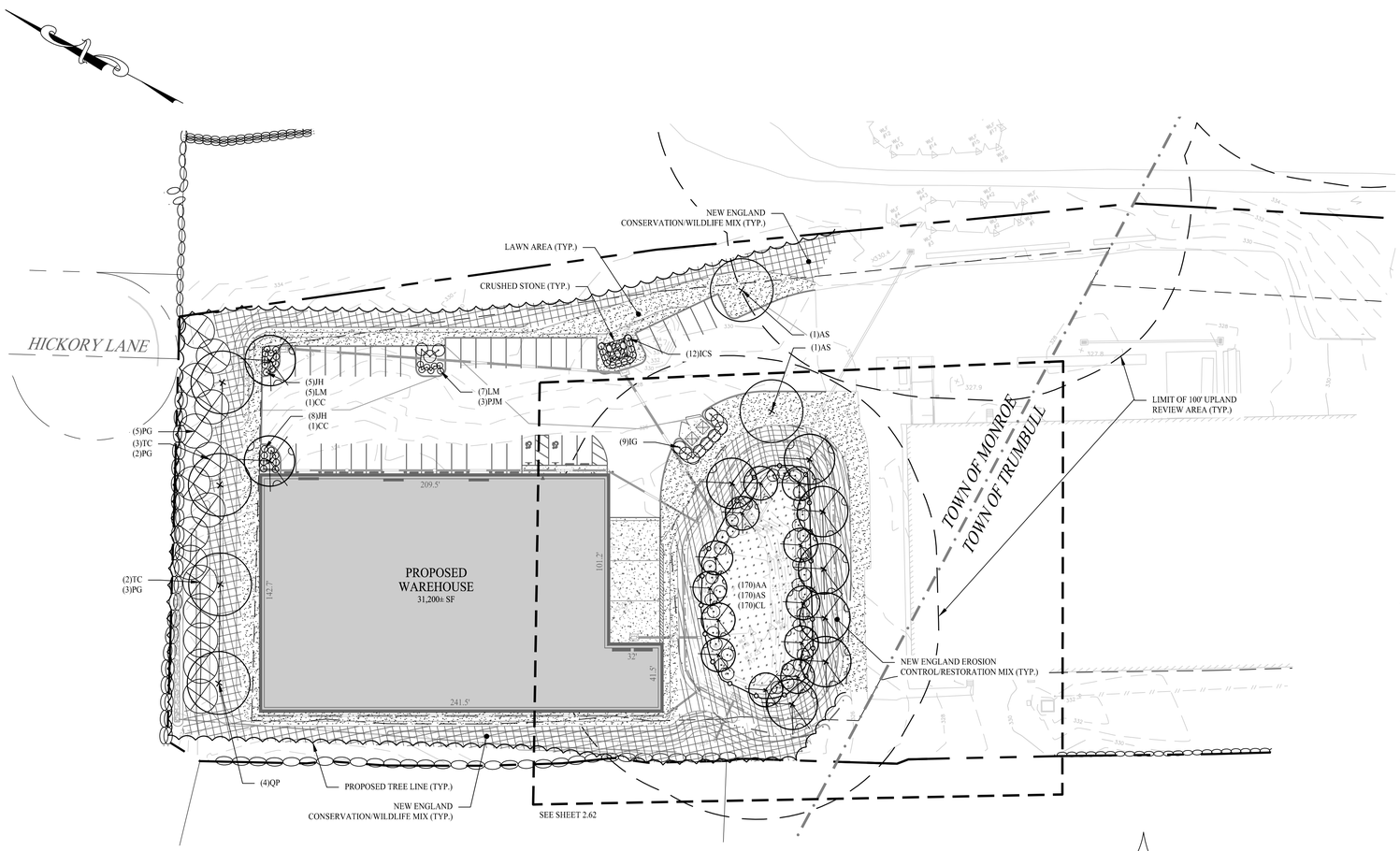
Kevin Solli, P.E.
CT 25759

Project:

PROPOSED DEVELOPMENT
205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

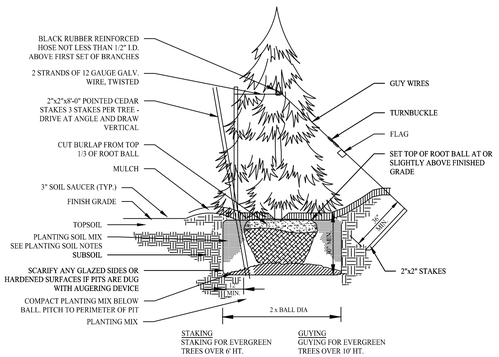
Sheet Title: UTILITY PLAN

Sheet #: 2.51



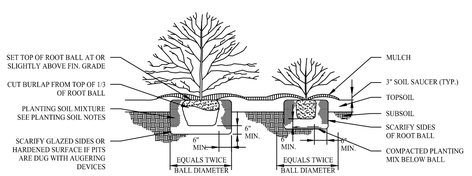
PLANTING SCHEDULE

KEY	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	COMMENTS
TREES						
AS	2	ACER SACCHARUM	SUGAR MAPLE	B&B	3" - 3 1/2" DBH	FULL, EXTRA HEAVY
TC	5	TSUGA CANADENSIS	EASTERN HEMLOCK	B&B	8-10' HT	FULL, EXTRA HEAVY
PG	10	PICEA GLAUCA	WHITE SPRUCE	B&B	8-10' HT	FULL, EXTRA HEAVY
QP	4	QUERCUS PALUSTRIS	PIN OAK	B&B	3" - 3 1/2" DBH	FULL, EXTRA HEAVY
UNDERSTORY TREES						
CC	2	CERCIS CANADENSIS	EASTERN REDBUD	B&B	2" - 2 1/2" DBH	FULL, EXTRA HEAVY
UPLAND SHRUBS						
ICS	9	ILEX CRENATA 'SKY PENCIL'	SKY PENCIL HOLLY	CONT	18" - 24" HT	FULL, EXTRA HEAVY
IG	9	ILEX GLABRA 'SHAMROCK'	SHAMROCK INKBERRY	CONT	18" - 24" HT	FULL, EXTRA HEAVY
PJM	3	PJM RHODODENDRON	PJM RHODODENDRON	CONT	18" - 24" HT	FULL, EXTRA HEAVY
GRASSES / GROUNDCOVER / PERENNIALS						
JH	13	JUNIPERUS HORIZONTALIS 'BAR HARBOR'	BAR HARBOR CREEPING JUNIPER	CONT	1 GAL	FULL, EXTRA HEAVY
LM	12	LIRIOPE MUSCARI	LILY TURF	CONT	1 GAL	FULL, EXTRA HEAVY
SEED MIXES						
NEW ENGLAND WETMIX (NEW ENGLAND WETLAND PLANTS, INC.)						
		APPLICATION RATE: 1 LB/2,500 S.F.				
NEW ENGLAND EROSION CONTROL/RESTORATION NO MOW MIX (NEW ENGLAND WETLAND PLANTS, INC.)						
		APPLICATION RATE: 1 LB/2,500 S.F.				
NEW ENGLAND CONSERVATION / WILDLIFE MIX (NEW ENGLAND WETLAND PLANTS, INC.)						
		APPLICATION RATE: 1 LB/1,750 S.F.				
LAWN: PENNINGTON SMART SEED SUN AND SHADE						
		APPLICATION RATE NEW LAWNS: 9 LB/1,000 S.F.				



EVERGREEN TREE PLANTING

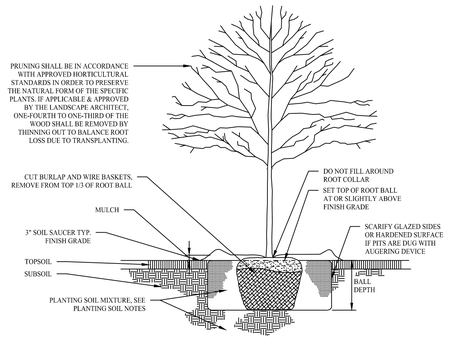
SCALE: NTS



NOTE
1. IN AREAS OF MASS PLANTING, CONTINUOUSLY EXCAVATE AND ADD BROWNSTONE ENTIRE BED.

SHRUB / GROUNDCOVER PLANTING

SCALE: NTS



TREE PLANTING

SCALE: NTS

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJOINING LOT LINE
- PROPOSED TREE LINE
- TEMPORARY DEER FENCE
- OVERSTORY TREE
- UNDERSTORY TREE
- EVERGREEN TREE
- SHRUBS & GROUNDCOVER
- LAWN
- NEW ENGLAND CONSERVATION/WILDLIFE MIX
- NEW ENGLAND EROSION CONTROL/RESTORATION MIX
- NEW ENGLAND WETMIX
- CRUSHED STONE

PLANTING SOIL NOTES

1. ALL PLANTING MIXES SHALL BE PREPARED PRIOR TO DELIVERY TO SITE.
2. PLANTING MIX FOR TREES AND SHRUBS SHALL BE AS FOLLOWS:
   3 PARTS SCREED TOPSOIL
   1 PART CLEAN WASHED COARSE SAND
   1 PART PEAT HUMUS
   5 LBS. SUPER PHOSPHATE PER CUBIC YARD OF MIX
3. MYCORRHIZAL INNCOULANT TO BE MYCOR TREE SAVER TRANSPLANT BY PLANT HEALTH CARE, INC. (1-800-421-9051) OR APPROVED EQUAL.
4. TERRASORB AVAILABLE FROM PLANT HEALTH CARE, INC. OR APPROVED EQUAL
5. SUBMIT CERTIFICATION OF PLANTING MIX FOR TREES AND SHRUBS FROM SOIL DISTRIBUTOR.
6. TOPSOIL MIX SHALL INCLUDE:
   3 PARTS SCREENED TOPSOIL
   1 PART SAND
   1 PART HUMUS
   5 LBS. SUPER PHOSPHATE PER CU. YD. OF MIX
7. TOPSOIL:
   A. PROVIDE A NATURAL, FERTILE, FRIABLE, NATURAL LOAM SURFACE SOIL CAPABLE OF SUSTAINING VIGOROUS PLANT GROWTH. OF UNIFORM COMPOSITION THROUGHOUT AND WITHOUT ADMIXTURES OF SUBSOIL, AND FREE OF STONES, LUMPS, PLANTS, ROOTS, STICKS OR OTHER EXTRANEOUS MATTER.
   B. TOPSOIL SHALL CONTAIN NOT LESS THAN 4% NOR MORE THAN 20% ORGANIC MATTER AS DETERMINED BY THE WET COMBUSTION METHOD.
   C. MECHANICAL ANALYSIS

SCREEN SIZE	% BY WEIGHT PASSING
1"	100
1/4"	97 - 100
NO. 200	20 - 65

   D. CONTRACTORS SHALL BE RESPONSIBLE FOR ALL TESTING AND ANALYSIS OF EXISTING AND IMPORTED SOILS. FURNISH A SOIL ANALYSIS MADE BY A QUALIFIED INDEPENDENT SOIL-TESTING AGENCY STATING PERCENTAGES OF ORGANIC MATTER, INORGANIC MATTER (SILT, CLAY, AND SAND), DELETERIOUS MATERIAL, PH, AND MINERAL AND PLANT-NUTRIENT CONTENT OF TOPSOIL.
   E. REPORT SUITABILITY OF TOPSOIL FOR LAWN AND SHRUB PLANTING GROWTH. RECOMMEND QUANTITIES OF NITROGEN, PHOSPHORUS, AND POTASH NUTRIENT AND ANY LIMESTONE, ALUMINUM SULFATE, OR OTHER SOIL AMENDMENTS TO BE ADDED TO PRODUCE A SATISFACTORY TOPSOIL.

PLANTING NOTES

1. BE AWARE OF ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION OR PLANTING OPERATIONS. USE CARE TO PROTECT EXISTING UTILITIES FROM DAMAGE, CONTACT "CALL BEFORE YOU DIG" PRIOR TO EXCAVATION.
2. ALL PLANTINGS ARE TO BE INSTALLED BY A QUALIFIED LANDSCAPE CONTRACTOR.
3. THE CONTRACTOR SHALL BE REQUIRED TO CARRY WORKMEN'S COMPENSATION INSURANCE AND COMPREHENSIVE GENERAL LIABILITY INSURANCE. CERTIFICATES WILL BE REQUIRED PRIOR TO SIGNING CONTRACTS.
4. CONTRACTOR IS RESPONSIBLE FOR JOBSITE SAFETY. CONTRACTOR SHALL MAINTAIN A SAFE JOBSITE AT ALL TIMES.
5. CONTRACTOR SHALL BE FAMILIAR WITH THE SITE VERIFY ALL DIMENSIONS, GRADES AND EXISTING CONDITIONS. REPORT ANY DISCREPANCIES TO LANDSCAPE DESIGNER.
6. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL PERMITS AND LICENSES REQUIRED FOR COMPLETING WORK.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR DISPOSAL OF ALL EXCAVATED SOIL, BRUSH AND DEBRIS OFF-SITE IN A SAFE AND LEGAL MANNER.
8. NOTIFY OWNER OR LANDSCAPE DESIGNER 72 HOURS MINIMUM IN ADVANCE OF STARTING PLANTING OPERATIONS. RECEIVE APPROVAL FOR LAYOUT OF ALL BED LINES AND MATERIAL LOCATIONS PRIOR TO INSTALLATION.
9. PROTECT EXISTING VEGETATION TO REMAIN FROM DAMAGE DURING CONSTRUCTION. IT IS THE INTENT OF THIS CONTRACT TO AVOID ANY DISTURBANCE TO EXISTING VEGETATION ON THE SITE OTHER THAN THOSE SPECIFICALLY DESIGNATED FOR REMOVAL. ADJUSTMENTS SHALL BE MADE IN THE FIELD AT THE DIRECTION OF THE LANDSCAPE DESIGNER.
10. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL PLANTING, SEEDING AND TREE WORK WITH OTHER TRADES. RESPECT OTHER TRADES WORK AT ALL TIMES.
11. CONTRACTOR IS TO EXERCISE EXTREME CARE DURING THE COURSE OF DEMOLITION AND REMOVALS ANY DAMAGE TO EXISTING FACILITIES, UTILITIES OR TREES TO REMAIN SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO REPLACE IN KIND.
12. CONTRACTOR IS RESPONSIBLE FOR RESTORING ALL AREAS DAMAGED TO PRE-EXISTING CONDITIONS AS A RESULT OF PLANTING OPERATIONS TO OWNERS AND/OR LANDSCAPE DESIGNERS APPROVAL.
13. VEGETATION TO BE REMOVED, NOT INDICATED ON PLAN, SHALL BE TAGGED IN FIELD BY LANDSCAPE DESIGNER.
14. THE LANDSCAPE DESIGNER RESERVES THE RIGHT TO REJECT INFERIOR PLANT MATERIALS AND SUBSTITUTIONS. THE LANDSCAPE DESIGNER IS WILLING TO MAKE TWO TRIPS TO SUPPLIERS TO TAG, REVIEW AND APPROVE MATERIALS. PREVIOUSLY UNAPPROVED MATERIALS MAY BE REJECTED AT THE SITE. MINIMALLY, ALL MATERIALS WILL CONFORM TO THE "AMERICAN STANDARD FOR NURSERY STOCK" (ANSI Z60.1 - 2004) OF THE AMERICAN ASSOCIATION OF NURSERYMEN.
15. ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR TO BE IN GOOD, HEALTHY AND FLOURISHING CONDITION FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE. THE CONTRACTOR SHALL REPLACE, AS SOON AS WEATHER AND SEASONAL CONDITIONS PERMIT, ALL DEAD PLANTS AND ALL PLANTS NOT IN A VIGOROUS, THRIVING CONDITION, AS DETERMINED BY THE LANDSCAPE DESIGNER DURING, AND AT THE END OF THE GUARANTEE PERIOD. WARRANTY REPLACEMENT WILL BE PROVIDED AT NO COST TO THE OWNER AND INCLUDE MATERIALS AND LABOR. CONTRACTOR IS RESPONSIBLE FOR REPAIR OF ANY DAMAGE INCURRED DURING REPLACEMENT OF WARRANTY MATERIALS.
16. WHEN THERE IS A DISCREPANCY BETWEEN PLANT QUANTITIES SHOWN ON THE PLANT LIST & THE PLAN, USE THE QUANTITIES FROM THE PLAN.
17. PERENNIALS, GROUNDCOVERS & GRASSES TO BE FIELD LOCATED BY LANDSCAPE DESIGNER. COORDINATE TO NOTIFY LANDSCAPE DESIGNER AT LEAST 72 HOURS IN ADVANCE OF EXPECTED INSTALLATION DATE. ON THAT DATE ALL BEDS SHALL BE PREPARED & ALL PLANT MATERIAL SHALL BE ON SITE.
18. PROVIDE A MINIMUM 6" TOPSOIL FOR ALL DISTURBED AREAS. SUBMIT SAMPLE OF TOPSOIL AND SOIL TEST RESULTS FOR LANDSCAPE DESIGNER APPROVAL PRIOR TO DELIVERING TO SITE.
19. MULCH ALL BEDS SHOWN AS CONTINUOUS WITH A 3" MINIMUM OF DOUBLE SHREDDED CEDAR BARK MULCH. SAMPLE TO BE SUBMITTED TO LANDSCAPE DESIGNER FOR APPROVAL.
20. ALL PLANT MATERIALS TO BE SOURCED FROM LOCALLY GROWN GROWERS.

GENERAL NOTES

1. EXISTING BOUNDARY INFORMATION TAKEN FROM A PLAN TITLED "EXHIBIT "C": DECLARATION OF ENVIRONMENTAL LAND USE RESTRICTION AND GRANT OF EASEMENT, TRUMBULL PRINTING, LLC, 205 SPRING HILL ROAD, TRUMBULL, CONNECTICUT", PREPARED BY CONKLIN & SOROKA, INC. - SCALE 1" = 40', DATED 5/3/10, REVISED 11/4/11.

Rev. #:	Date	Description

Graphic Scale: 40 0 40 80

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Drawn By:	JJS
Checked By:	MFB
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 40'

STATE OF CONNECTICUT · MARY F. BLACKBURN · REGISTERED LANDSCAPE ARCHITECT

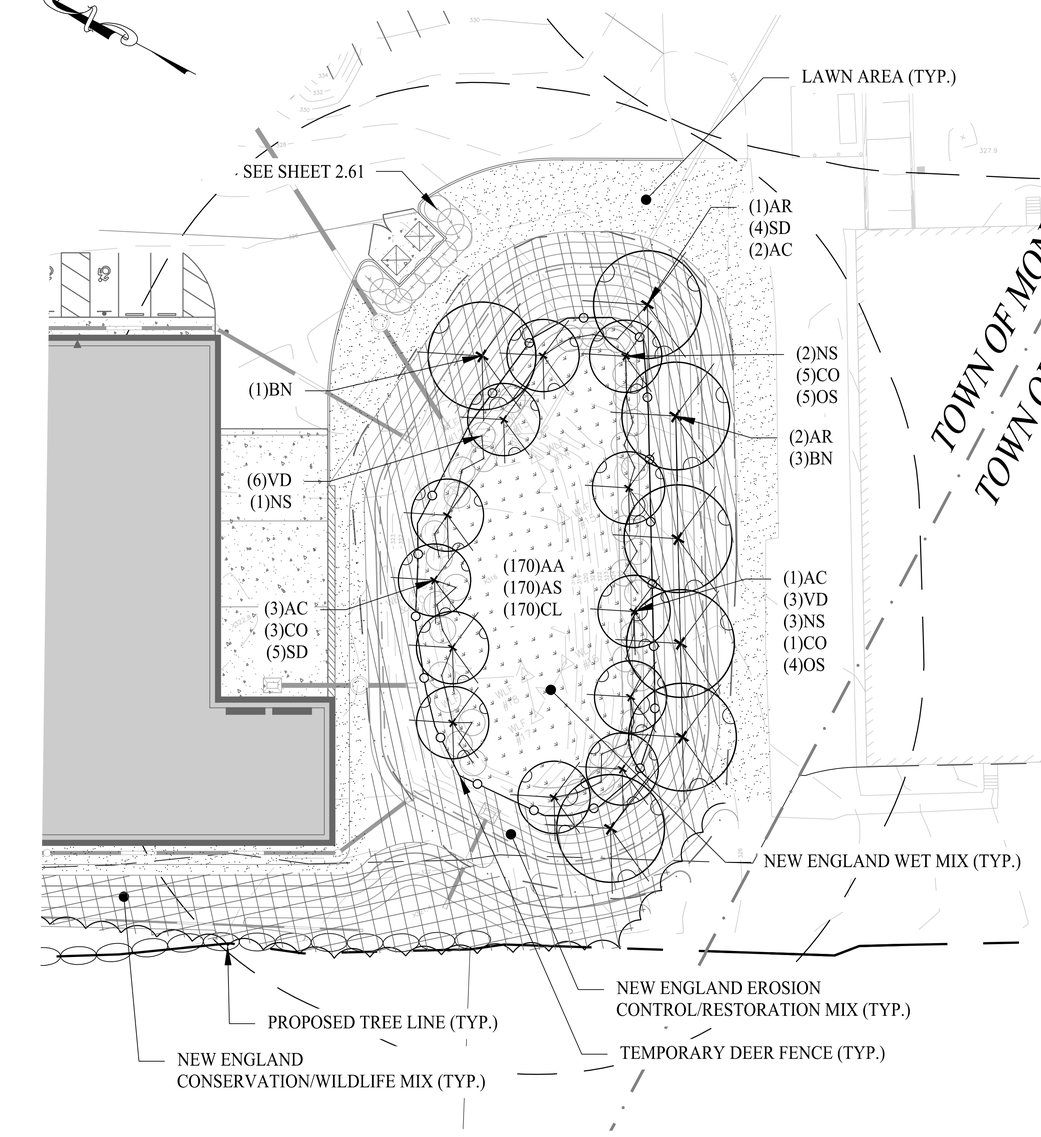
Mary Blackburn, P.L.A.
CT 1499

Project:

PROPOSED DEVELOPMENT
205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title: LANDSCAPE PLAN

Sheet #: 2.61



PLANTING SCHEDULE

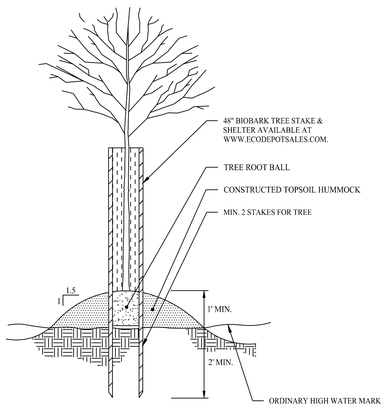
KEY	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	COMMENTS
WETLAND TREES						
AR	4	ACER RUBRUM	RED MAPLE	CONT	8' HT	FULL, EXTRA HEAVY
AC	6	AMELANCHIER CANADENSIS	SHADBLOW	CONT	6' HT	FULL, EXTRA HEAVY
BN	3	BETULA NIGRA	RIVER BIRCH	CONT	8' HT	FULL, EXTRA HEAVY
NS	6	NYSSA SYLVATICA	BLACKGUM	CONT	6' HT	FULL, EXTRA HEAVY
WETLAND SHRUBS						
CO	9	CEPHALANTHUS OCCIDENTALIS	BUTTON BUSH	CONT	1 GAL	FULL, EXTRA HEAVY
OS	9	ONOCLEA SENSIBILIS	SENSITIVE FERN	CONT	1 GAL	FULL, EXTRA HEAVY
SD	9	SALIX DISCOLOR	PUSSY WILLOW	CONT	1 GAL	FULL, EXTRA HEAVY
VD	9	VIBURNUM DENTATUM	ARROWHEAD VIBURNUM	CONT	1 GAL	FULL, EXTRA HEAVY
WETLAND HERBS						
AA	170	ACORUS AMERICANA	SWEETFLAG	PLUG	2" PLUG	
AS	170	ALISMA SUBCORDATUM	WATER PLANTAIN	PLUG	2" PLUG	
CL	170	CAREX LURIDA	LURID SEDGE	PLUG	2" PLUG	

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- ADJOINING LOT LINE
- PROPOSED TREE LINE
- TEMPORARY DEER FENCE
- OVERSTORY TREE
- UNDERSTORY TREE
- EVERGREEN TREE
- SHRUBS & GROUNDCOVER
- LAWN
- NEW ENGLAND CONSERVATION/WILDLIFE MIX
- NEW ENGLAND EROSION CONTROL/RESTORATION MIX
- WETLAND HERBS

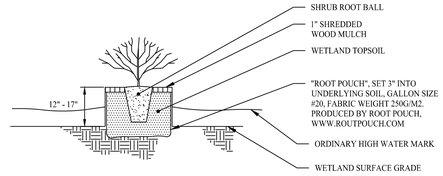
GENERAL NOTES

1. EXISTING BOUNDARY INFORMATION TAKEN FROM A PLAN TITLED "EXHIBIT "C": DECLARATION OF ENVIRONMENTAL LAND USE RESTRICTION AND GRANT OF EASEMENT, TRUMBULL PRINTING, LLC, 205 SPRING HILL ROAD, TRUMBULL, CONNECTICUT", PREPARED BY CONKLIN & SOROKA, INC. - SCALE 1" = 40', DATED 5/3/10, REVISED 11/4/11.



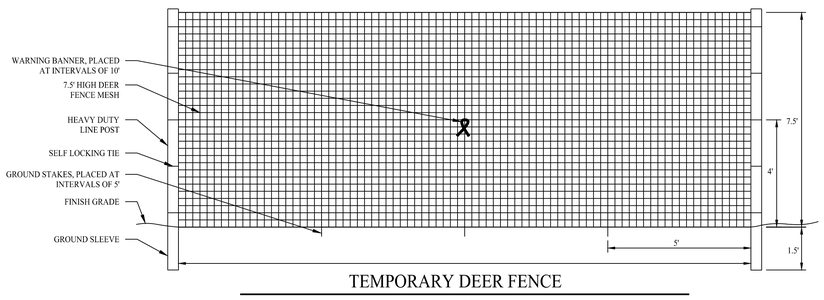
WETLAND TREE PLANTING

SCALE: NTS



WETLAND SHRUB / GROUNDCOVER PLANTING

SCALE: NTS



TEMPORARY DEER FENCE

SCALE: NTS

Rev. #:	Date	Description

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Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 20'

STATE OF CONNECTICUT · MARY F. BLACKBURN · LICENSED LANDSCAPE ARCHITECT

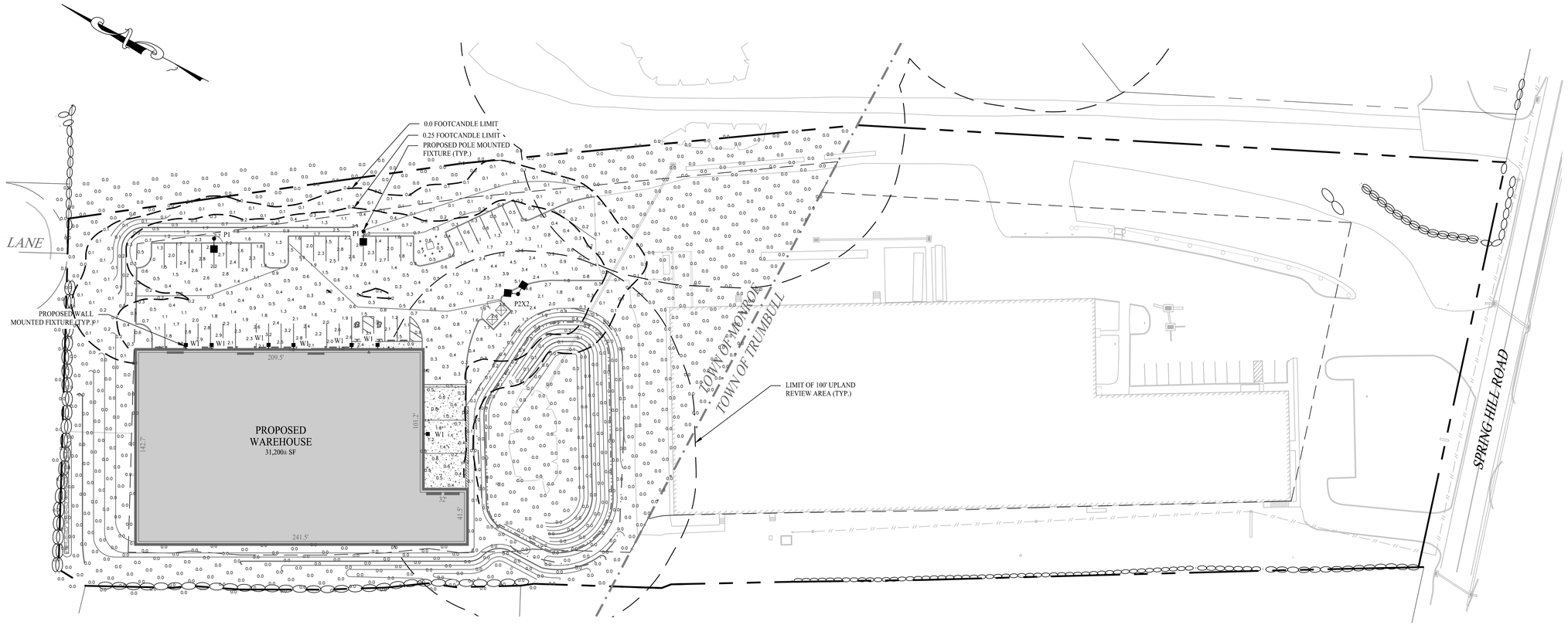
Mary Blackburn, P.L.A.
CT 1499

Project:

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title:	Sheet #:
BASIN LANDSCAPE PLAN	2.62



LEGEND

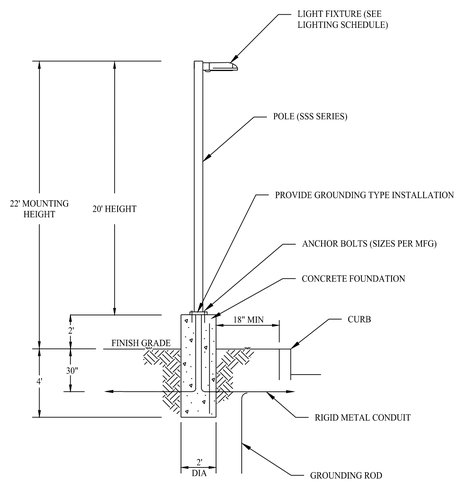
0.1 0.1 0.1 / 0.1 0.1 0.0 / 0.1 0.0 0.0	PROPOSED FOOTCANDLES
	PROPOSED WALL MOUNTED FIXTURES
	PROPOSED POLE MOUNTED FIXTURE
	LINE OF 0.25 & 0.0 FOOTCANDLES

LIGHTING NOTES

1. THESE PLANS ARE FOR PERMITTING PURPOSES ONLY AND ARE NOT FOR CONSTRUCTION. NO CONSTRUCTION OR DEMOLITION SHALL BEGIN UNTIL APPROVAL OF THE FINAL PLANS IS GRANTED BY ALL GOVERNING AND REGULATORY AGENCIES.
2. CONTRACTOR TO PERFORM ALL SITE WORK PROPOSED HEREON IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL PERMITS AND CONDITIONS OF APPROVALS ISSUED FOR THIS PROJECT.
3. EXISTING CONDITIONS INFORMATION TAKEN FROM A PLAN ENTITLED "PROPERTY SURVEY OF 270 SPRING HILL ROAD, MONROE/TRUMBULL, CONNECTICUT," DATED 06/07/22, SCALE: 1"=40', PREPARED BY ACCURATE LAND SURVEYING LLC.
4. ALL LIGHT FIXTURES TO BE MOUNTED AND INSTALLED PER MANUFACTURER SPECIFICATIONS.
5. ALL WORK AND RELATED MATERIALS SHALL COMPLY WITH CITY, COUNTY, AND OTHER APPLICABLE GOVERNING AUTHORITY REQUIREMENTS.

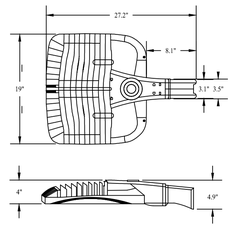
FIXTURE SCHEDULE

QTY	CALLOUT	SYMBOL	FIXTURE DESCRIPTION	MODEL	NOTES	LUMENS
7	W1		WALL MOUNTED FIXTURE	CREE LIGHTING XSPW WALL MOUNT, TYPE II MEDIUM DISTRIBUTION, 2L, 3000K	20W 3K LED, 15' MOUNTING HEIGHT	2,490
2	P1		POLE MOUNTED FIXTURE	CREE LIGHTING OSQ LED SERIES, MODEL OSQ-BLMSF-A-NM-2ME-B-30K, POWDER COATED ALUMINUM, BRONZE	86W 3K LED, 22' MOUNTING HEIGHT	8,251
2	P2		POLE MOUNTED FIXTURE	CREE LIGHTING OSQ LED SERIES, MODEL OSQ-BLMSF-A-NM-4ME-B-30K, POWDER COATED ALUMINUM, BRONZE	86W 3K LED, 22' MOUNTING HEIGHT	8,251
2	N/A	N/A	20' POLE	MODEL: SSS-4-11-15-CW-BS-1D-C-BZ	22' MOUNTING HEIGHT WITH 2' HEIGHT FOUNDATION (SEE P1 & P2 DETAIL)	N/A
1	N/A	N/A	20' POLE	MODEL: SSS-4-11-15-CW-BS-2D90-C-BZ	22' MOUNTING HEIGHT WITH 2' HEIGHT FOUNDATION (SEE P1 & P2 DETAIL)	N/A



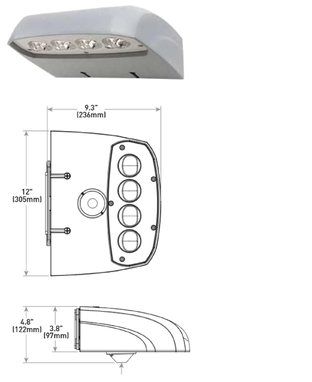
PROPOSED LIGHT POLE - P1 & P2

SCALE: NTS



POLE MOUNTED LIGHT FIXTURE - P1 & P2

CREE LIGHTING, OSQ-A LED SERIES
SCALE: NTS



PROPOSED WALL MOUNTED FIXTURE - W1

CREE LIGHTING, XSPW LED WALL MOUNT
SCALE: NTS

Rev. #: Date Description

Graphic Scale: 40 0 40 80

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695
351 Newbury Street, Boston, MA 02115 T: (617) 203-3160 F: (203) 880-9695

Drawn By:	MMH
Checked By:	MFB
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 40'

STATE OF CONNECTICUT · MARY F. BLACKBURN · LICENSED LANDSCAPE ARCHITECT

Mary Blackburn, P.L.A.
CT 1499

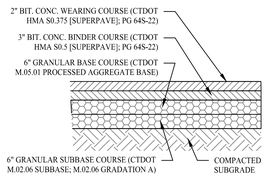
Project:

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

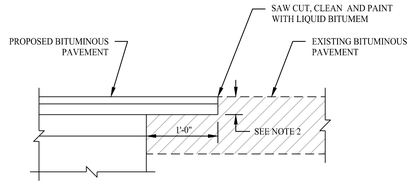
Sheet Title: LIGHTING PLAN

Sheet #: 2.71



HEAVY DUTY ASPHALT PAVING DETAIL

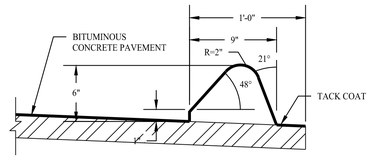
SCALE: NTS



NOTES
1. OVERLAP BOTH PROPOSED BITUMINOUS CONCRETE COURSES (CLASS 1 AND CLASS 2) OVER EXISTING SUBBASE.
2. MINIMUM THICKNESS TO BE SAME AS PROPOSED BITUMINOUS OR MATCH THICKNESS OF EXISTING PAVEMENT, WHICH EVER IS GREATER.

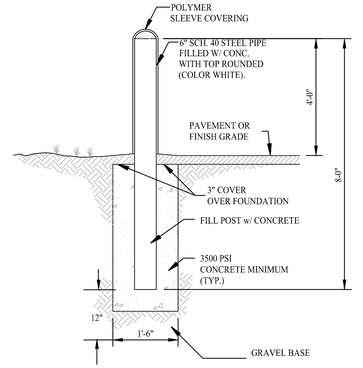
PAVEMENT MATCH TREATMENT DETAIL

SCALE: NTS



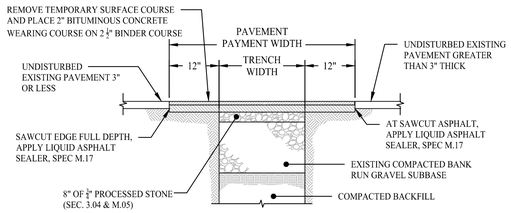
EXTRUDED BITUMINOUS CONCRETE LIP CURBING DETAIL

SCALE: NTS



PROTECTION BOLLARD DETAIL

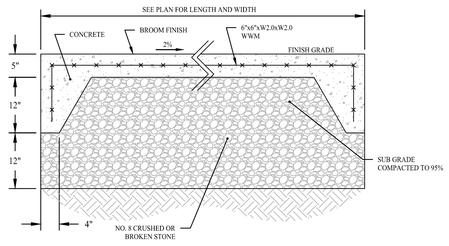
SCALE: NTS



NOTE:
1. ALL PAVEMENT PATCH CONSTRUCTION SHALL CONFORM TO CONN. DOT FORM 816 SPECIFICATIONS AND STANDARDS.

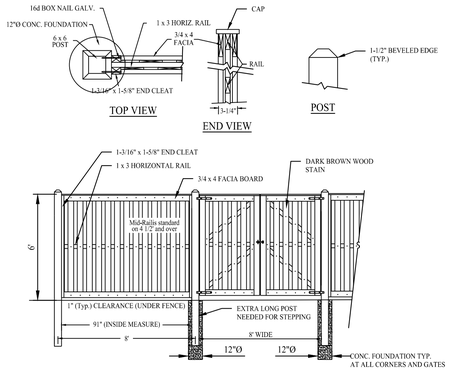
PERMANENT PAVEMENT REPAIR

SCALE: NTS



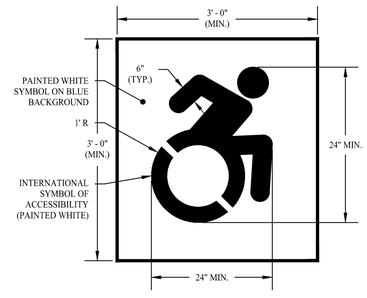
CONCRETE DUMPSTER PAD DETAIL

SCALE: NTS



DUMPSTER PAD ENCLOSURE - BOARD ON BOARD FENCE

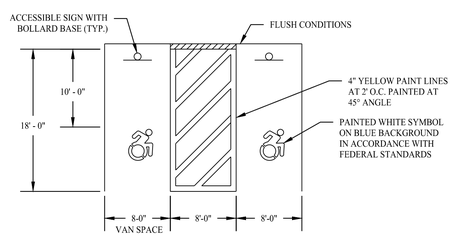
SCALE: NTS



NOTE
LOCATE AT 3' FROM EDGE OF PARKING SPACE UNLESS ACCOMPANIED BY "VAN" LETTERING

ACCESSIBLE PARKING SYMBOL

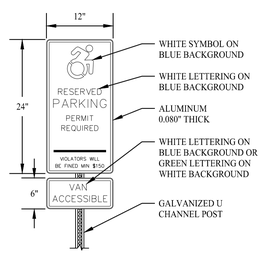
SCALE: NTS



NOTES
1. SEE SITE PLAN FOR ACCESSIBLE SPACE LOCATIONS
2. PROVIDE 2 COATS OF PAINT ON ALL SURFACES.

ACCESSIBLE PARKING SPACE DETAIL

SCALE: NTS

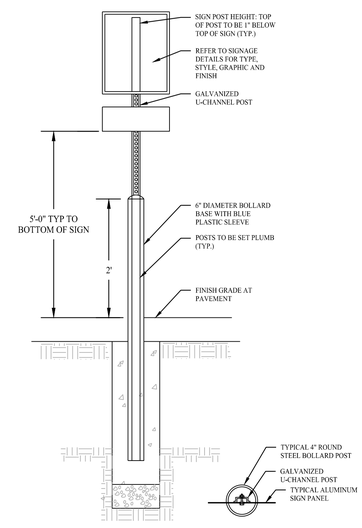


ACCESSIBLE PARKING SIGN

NOTE
SUPPORTS-SEE SIGN MOUNTING FOR ACCESSIBLE SIGN DETAIL.

ACCESSIBLE SIGN DETAILS

SCALE: NTS



SIGN MOUNTING FOR ACCESSIBLE SIGN

SCALE: NTS

Rev. #:	Date	Description

Graphic Scale:

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501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695
351 Newbury Street, Boston, MA 02115 T: (617) 203-3160 F: (203) 880-9695

Drawn By:	ARM
Checked By:	LAM
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	AS NOTED

STATE OF CONNECTICUT KEVIN M. SOLLI 25759 LICENSED PROFESSIONAL ENGINEER

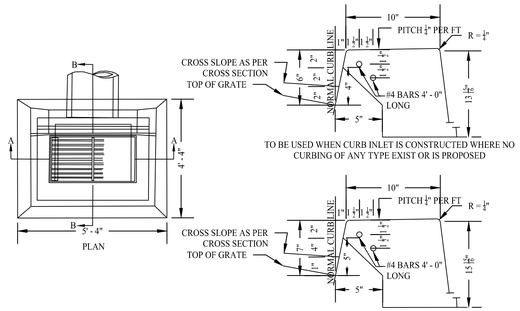
Kevin Solli, P.E.
CT 25759

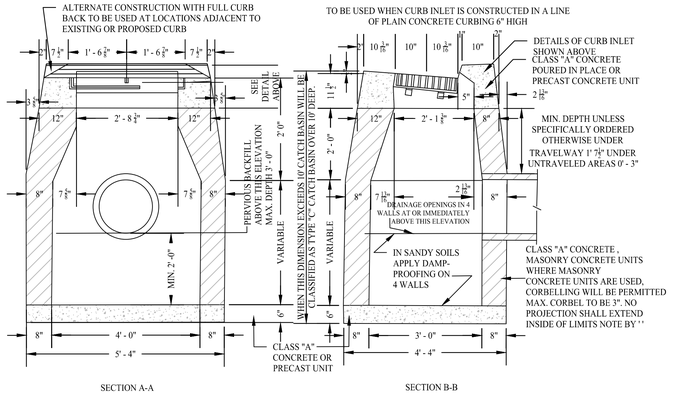
Project:

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title:	Sheet #:
DETAIL SHEET	3.01

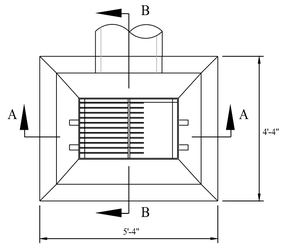


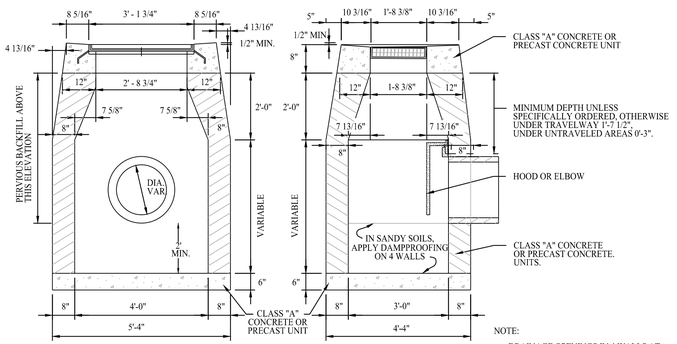


WHERE PRECAST CONCRETE UNIT IS USED FOR SUMP, THE TOP OF THE UNIT SHALL BE AT LEAST 6" BELOW THE BOTTOM OF THE, PIPE OUTLETTING FROM THE CATCH BASIN

TYPE "C" CATCH BASIN

SCALE: NTS — DETAIL PER TOWN OF MONROE STANDARDS

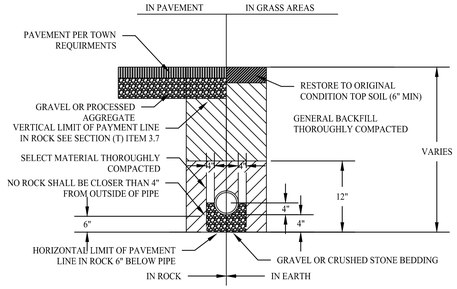




NOTE:
DRAINAGE OPENINGS IN 4 WALLS AT OR IMMEDIATELY ABOVE THE BOTTOM OF THE PERVIOUS BACKFILL.

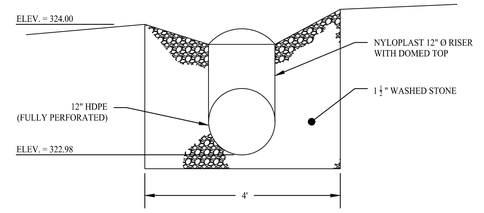
TYPE "C-L" CATCH BASIN

SCALE: NTS



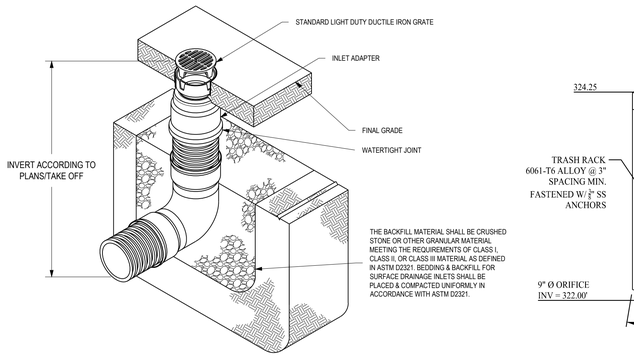
STORM TRENCH DETAIL

SCALE: NTS



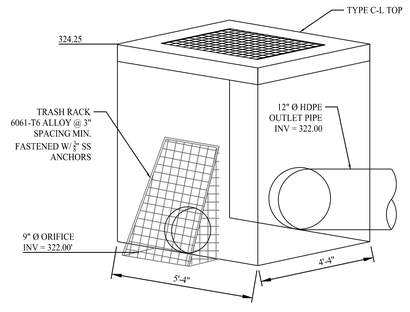
FRENCH DRAIN

SCALE: NTS



NYLOPLAST INLINE YARD DRAIN

SCALE: NTS — DETAIL PER ADS



OUTLET CONTROL STRUCTURE (OCS-1)

SCALE: NTS

PO Box 458 · 1462 340th Street · Adair, Iowa 50002
Phone: 1-800-232-4742 · Fax: 1-800-282-3353
www.agridrain.com · email: info@agridrain.com

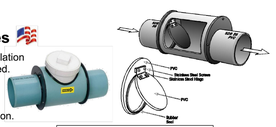
Check Valves

Helps prevent backflow in drainage lines.

- Must provide a stable base, and installation using flexible couplers is recommended.
- Horizontal installation in drainage systems helps keep basements from flooding.
- Eliminates backup in the field tile when creeks rise.
- Clean out with threaded plug allows easy maintenance and inspection.
- Fits SCH40 PVC pipe.
- Available in 3" and 4".

Check Valve Size	Overall Length	Total Height	OD of Stub
3"	7.56"	6.1"	3.937"
4"	11.18"	7.18"	5"

Check Valves

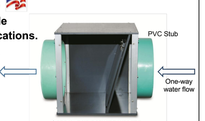


- Must provide a stable base, and installation using flexible couplers is recommended.
- Constructed of rugged SDR35 PVC.
- Available with or without clean out.
- Clean out option with threaded plug allows easy maintenance and inspection.
- Full flow for drainage.
- Valves are not pressure rated.
- Valves are intended for gravity flow: Low pressure and some seepage will occur.
- Available in 6" through 12".

Check Valve Size	Overall Length	Stub Length
6"	17.75"	4"
8"	20.75"	4"
10"	21.25"	4"
12"	23.75"	4"

Oversized Check Valves

Unique in-ground, in-line backwater protection for tile drainage systems and a variety of commercial applications.



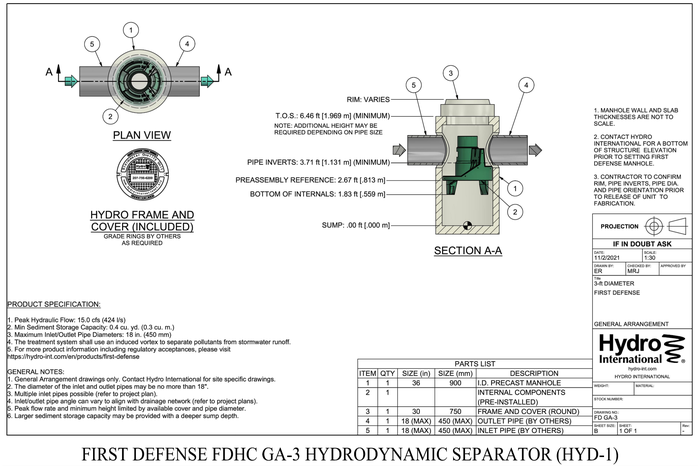
Check Valve showing working parts and water flow direction.

- Must provide a stable base, and installation using flexible couplers is recommended.
- Body constructed of rugged, ½"-thick PVC with SDR35 PVC stubs.
- Available with or without a clean out.
- Stainless steel screws and custom anodized aluminum corner extrusions used for strength and durability.
- Full flow for drainage.
- Valves are not pressure rated.
- Valves are intended for gravity flow: Low pressure and some seepage will occur.
- Available in 15" and 18".

Check Valve Size	Overall Length	Stub Length
15"	27.25"	4"
18"	31.25"	4"

IN-LINE CHECK VALVE

SCALE: NTS



1. MANHOLE WALL AND SLAB THICKNESSES ARE NOT TO SCALE.
2. CONTACT HYDRO INTERNATIONAL FOR A BOTTOM OF STRUCTURE ELEVATION PRIOR TO SETTING FIRST DEFENSE MANHOLE.
3. CONTRACTOR TO CONFIRM RIM, PIPE INVERTS, PIPE DIA. AND PIPE ORIENTATION PRIOR TO RELEASE OF UNIT TO FABRICATION.

PROJECTION
IF IN DOUBT ASK
DATE: 11/2/2021 SCALE: 1:30
DRAWN BY: ER ENGINEER BY: MRJ APPROVED BY:
Title: 3-ft DIAMETER FIRST DEFENSE
GENERAL ARRANGEMENT
Hydro International
hydroint.com
HYDRO INTERNATIONAL
WEIGHT: MATERIAL:
STOCK NUMBER:
DRAWING NO.: FD GA-3
SHEET SIZE: B SHEET: 1 OF 1 Rev:

PRODUCT SPECIFICATION:

1. Peak Hydraulic Flow: 15.0 cfs (424 l/s)
2. Min Sediment Storage Capacity: 0.4 cu. yd. (0.3 cu. m.)
3. Maximum Inlet/Outlet Pipe Diameters: 18 in. (450 mm)
4. The treatment system shall use an induced vortex to separate pollutants from stormwater runoff.
5. For more product information including regulatory acceptances, please visit https://hydro-int.com/en/products/first-defense

GENERAL NOTES:
1. General Arrangement drawings only. Contact Hydro International for site specific drawings.
2. The diameter of the inlet and outlet pipes may be no more than 18".
3. Multiple inlet pipes possible (refer to project plan).
4. Inlet/outlet pipe angle can vary to align with drainage network (refer to project plans).
5. Peak flow rate and minimum height limited by available cover and pipe diameter.
6. Larger sediment storage capacity may be provided with a deeper sump depth.

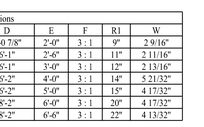
ITEM	QTY	SIZE (in)	SIZE (mm)	DESCRIPTION
1	1	36	900	I.D. PRECAST MANHOLE
2	1			INTERNAL COMPONENTS (PRE-INSTALLED)
3	1	30	750	FRAME AND COVER (ROUND)
4	1	18 (MAX)	450 (MAX)	OUTLET PIPE (BY OTHERS)
5	1	18 (MAX)	450 (MAX)	INLET PIPE (BY OTHERS)

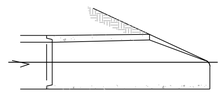
FIRST DEFENSE FDHC GA-3 HYDRODYNAMIC SEPARATOR (HYD-1)

SCALE: NTS

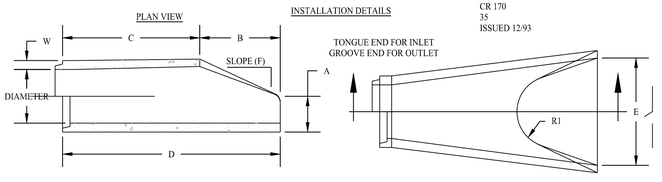
SECTION AT CENTERLINE (PROFILE VIEW)

Dimensions								
Diameter	A	B	C	D	E	F	R1	W
12"Ø	4"	2'-0"	4'-0 7/8"	6'-0 7/8"	2'-0"	3 : 1	9"	2 9/16"
15"Ø	6"	2'-3"	3'-10"	6'-1"	2'-6"	3 : 1	11"	2 11/16"
18"Ø	9"	2'-3"	3'-10"	6'-1"	3'-0"	3 : 1	12"	2 13/16"
24"Ø	10"	3'-8"	2'-6"	6'-2"	4'-0"	3 : 1	14"	5 21/32"
30"Ø	12"	4'-6"	1'-8"	6'-2"	5'-0"	3 : 1	15"	4 17/32"
36"Ø	15"	5'-3"	2'-11"	8'-2"	6'-0"	3 : 1	20"	4 17/32"
42"Ø	21"	5'-3"	2'-11"	8'-2"	6'-6"	3 : 1	22"	4 13/32"





INSTALLATION DETAILS



FLARED END SECTION DETAILS

SCALE: NTS — DETAIL PER ADVANCED DRAINAGE SYSTEMS, INC.

Rev. #:	Date	Description

Graphic Scale:

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351 Newbury Street, Boston, MA 02115 T: (617) 203-3160 F: (203) 880-9695

Drawn By:	ARM
Checked By:	LAM
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	AS NOTED

STATE OF CONNECTICUT KEVIN M. SOLLI 25759 LICENSED PROFESSIONAL ENGINEER

Kevin Solli, P.E.
CT 25759

Project:

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title:	Sheet #:
DETAIL SHEET	3.02

Feb 01, 2024 - 11:15am Victoria
X:\SE Files\Project Data\2021\21109501 - 205 Spring Hill Rd - Monroe, CT\Cadd Data\21109501-3.02.dwg

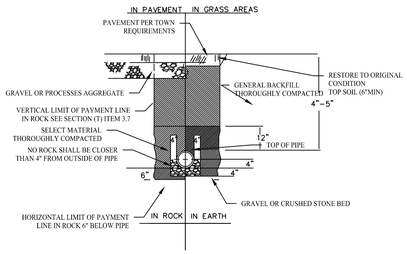
GENERAL SEPTIC NOTES

1. THE PROPOSED SEPTIC SYSTEM IS TO BE CONSTRUCTED TO CONFORM TO THE LATEST REVISION OF THE STATE OF CONNECTICUT PUBLIC HEALTH CODE.
2. IT IS THE RESPONSIBILITY OF THE INSTALLER TO CALL "CALL BEFORE YOU DIG," 1-800-922-4455, TWO FULL WORKING DAYS PRIOR TO ANY EXCAVATION WORK ON THE PROPERTY.
3. IT IS THE RESPONSIBILITY OF THE INSTALLER TO KEEP THE LOCAL HEALTH DEPARTMENT AND THE ENGINEER OF RECORD INFORMED OF CONSTRUCTION PROGRESS. NO DEVIATIONS FROM THE APPROVED DESIGN PLAN SHALL BE ALLOWED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER AND SANITARIAN. ENGINEER AND SANITARIAN WILL BE CONTACTED IF SOIL CONDITIONS OTHER THAN THOSE SHOWN ON PLAN ARE ENCOUNTERED AND WORK WILL BE HALTED PENDING REVIEW OF THOSE CONDITIONS.
4. THE INSTALLATION OF THE SEPTIC SYSTEM SHALL BE UNDER THE SUPERVISION OF A PROFESSIONAL ENGINEER.
5. ELEVATIONS SHOWN REFER TO THE INVERT (FLOW LINE) OF THE PROPOSED LEACHING SYSTEM UNLESS NOTED OTHERWISE.
6. SEPTIC TANK ACCESS SHALL BE OUTFITTED WITH 24" DIAMETER RISERS TO FINISHED GRADE WHERE SOIL COVER OVER THE TANK EXCEEDS 12 INCHES. SEAL ALL JOINTS WATERTIGHT. ALL TANK INLET AND OUTLET PIPING SHALL BE SEALED WITH A POLYETHYLENE GASKET, "POLYLOK" OR EQUIVALENT. TANK TO BE WATERTIGHT.
7. SEPTIC TANK BAFFLES SHALL CONFORM TO TECHNICAL STANDARDS OF THE PUBLIC HEALTH CODE.
8. SEPTIC TANK SHALL HAVE AN APPROVED NON-BYPASS EFFLUENT FILTER AT THE OUTLET.
9. ALL PIPING BETWEEN BUILDING AND SEPTIC TANK SHALL BE FOUR INCHES IN DIAMETER WITH A MINIMUM SLOPE OF ¼" PER FOOT OR SIX INCHES IN DIAMETER WITH A MINIMUM SLOPE OF ⅛" PER FOOT. PIPE SHALL BE LAID WITH TIGHT JOINTS AND IN A STRAIGHT LINE WITH UNIFORM GRADES. ACCESSIBLE MANHOLES OR SURFACE CLEANOUTS SHALL BE PROVIDED AT ONE OR MORE CUMULATIVE CHANGES OF DIRECTION EXCEEDING 45 DEGREES OR WHERE BUILDING SEWER EXCEEDS 75 FEET IN LENGTH. MATERIALS TO BE ALLOWED BY TECHNICAL STANDARDS.
10. ALL PIPE USED BETWEEN SEPTIC TANK AND LEACHING AREA SHALL BE 4" SCH. 40 PVC PIPE WITH WATERTIGHT JOINTS OR EQUIVALENT ALLOWED BY TECHNICAL STANDARDS. PIPE SHALL BE SET ON A MINIMUM SLOPE OF ⅛" PER FOOT.
11. DISTRIBUTION BOXES ARE TO BE SET ON A STABLE FOOTING OF 12" MINIMUM DEPTH OF 1" CRUSHED STONE.
12. ALL FILTER FABRIC SHALL BE 1.5 OZ./YD. (ASTM D-5261), PERMEABILITY OF 1.0/SEC. (AS TM D-4491) AND A TRAPEZOID TEAR OF 15 LBS. (ASTM D-4533) OR EQUIVALENT.
13. NO FOOTING DRAINS OR OTHER GROUNDWATER DRAINS SHALL BE INSTALLED WITHIN 25' OF PROPOSED SEPTIC SYSTEM OR WITHIN 50 FEET OF SEPTIC SYSTEM IF DRAIN IS DOWN GRADIENT.
14. PRIOR TO CONSTRUCTION ACTIVITIES THE LEACHING SYSTEM AREAS SHALL BE ROPED OFF OR OTHERWISE DELINEATED SO AS TO KEEP CONSTRUCTION TRAFFIC OFF THE SEPTIC AREA.
15. STRIP AND STOCKPILE TOPSOIL AND REMOVE BOULDERS PRIOR TO PLACING FILL. ALL TOPSOIL MUST BE REMOVED IN FILL SYSTEMS.
16. GRAVEL FILL TO BE DUMPED AT THE EDGE OF PREPARED LEACHING AREA AND PUSHED ONTO HARROWED SURFACE WITH TRACK MACHINE IN 12" (MAX) LIFTS. GRAVEL TO BE COMPACTED TO 90-95% STANDARDS PROCTOR DENSITY - ASTM D-698. THE ENGINEER OF RECORD AND THE HEALTH DEPARTMENT MUST APPROVE THE SELECT GRAVEL PRIOR TO ITS PLACEMENT.
17. SELECT FILL SHALL BE COMPRISED OF CLEAN SAND, OR SAND AND GRAVEL, FREE FROM ORGANIC MATTER AND FOREIGN SUBSTANCES. SELECT FILL SHALL MEET THE FOLLOWING REQUIREMENTS:
    A. THE SELECT FILL SHALL NOT CONTAIN ANY MATERIAL LARGER THAN THE 3 INCH SIEVE.
    B. UP TO 45% OF THE DRY WEIGHT OF THE REPRESENTATIVE SAMPLE MAY BE RETAINED ON THE #4 SIEVE.
    C. THE MATERIAL THAT PASSES THE #4 SIEVE IS TO BE RE-WEIGHED AND A SECOND SIEVE ANALYSIS COMPLETED.
    D. THE REMAINING SAMPLE SHALL MEET THE FOLLOWING GRADATION CRITERIA.

SIEVE SIZE	PERCENT PASSING	
	WET SIEVE	DRY SIEVE
#4	100	100
#10	70-100	70-100
#40	10-50*	10-75
#100	0-20	0-5
#200	0-5	0-2.5

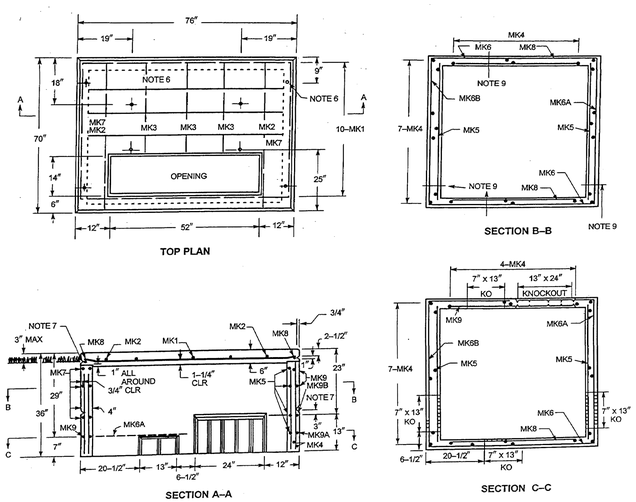
*PERCENT PASSING THE #40 SIEVE CAN BE INCREASED TO NO GREATER THAN 75% IF THE PERCENT PASSING THE #100 SIEVE DOES NOT EXCEED 10% AND THE #200 SIEVE DOES NOT EXCEED 5%.

20. NON-SELECT FILL SHALL BE A CLEAN LOAM OR BETTER FREE OF ORGANIC MATTER.
21. MEASUREMENTS FOR AS-BUILT DRAWING TO BE COMPLETED BY PROFESSIONAL ENGINEER PRIOR TO BACKFILLING.
22. FINAL GRADING TO BE COMPLETED IMMEDIATELY AFTER INSPECTION AND COMPLETION OF MEASUREMENTS FOR AS-BUILT DRAWING.
23. THERE ARE NO WELLS WITHIN 75' OF PROPOSED SEPTIC SYSTEM.
24. THIS DESIGN CONFORMS TO APPLICABLE CODES AND ACCEPTED PRACTICE. NO OTHER WARRANTY IS EXPRESSED OR IMPLIED.
25. SOLLI ENGINEERING LLC, ASSUMES NO RESPONSIBILITY FOR SEPTIC SYSTEM SITE PREPARATION, LOCATION OR INVERT ELEVATIONS IN COMPLIANCE WITH THE APPROVED PLAN, UNLESS IT SUPERVISES EACH PHASE OF SYSTEM INSTALLATION.
26. NO PART OF THE PROPOSED SEPTIC SYSTEM IS WITHIN THE REQUIRED SEPARATION DISTANCE FROM A WATER SUPPLY WELL OR CLOSED LOOP GEOTHERMAL SYSTEM BOREHOLE/TRENCH AS DEFINED IN TABLE 1 OF THE "TECHNICAL STANDARDS FOR SUBSURFACE SEWAGE DISPOSAL SYSTEMS", LATEST REVISION.



TYPICAL WATER TRENCH DETAIL

SCALE: NTS



PAD - PRECAST CONCRETE - THREE-PHASE TRANSFORMER

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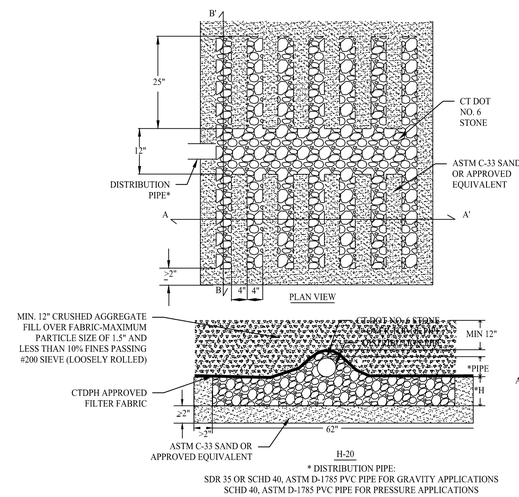
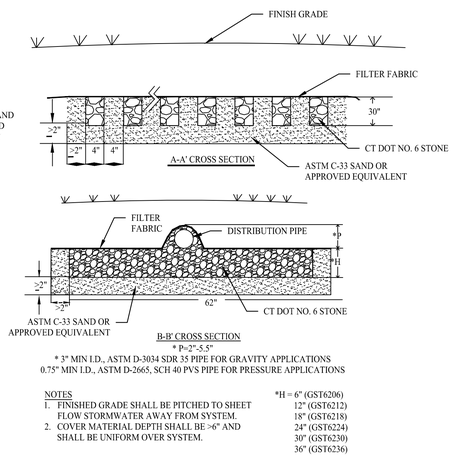


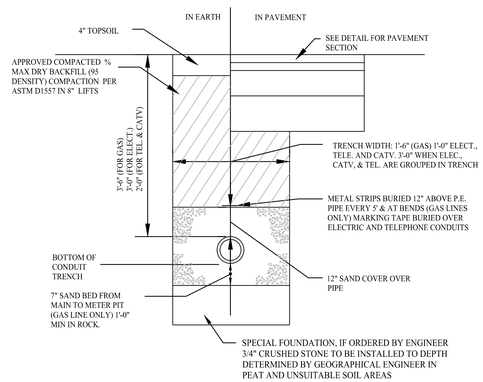


NOTES
1. FINISHED GRADE SHALL BE PITCHED TO SHEET FLOW STORMWATER AWAY FROM SYSTEM.
2. COVER MATERIAL DEPTH SHALL BE >6" AND SHALL BE UNIFORM OVER SYSTEM.

*H = 6" (GST6206)
12" (GST6212)
18" (GST6218)
24" (GST6224)
30" (GST6230)
36" (GST6236)

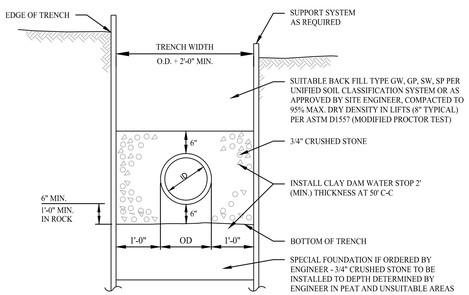
GEOMATRIX GST™ LEACHING SYSTEM

SCALE: NTS



TYPICAL ELECTRICAL/TELEPHONE/CABLE AND GAS TRENCH

SCALE: NTS



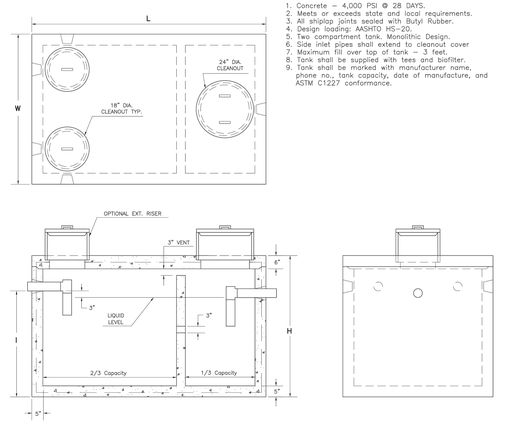
TYPICAL SANITARY SEWER TRENCH SECTION

SCALE: NTS

PRECAST CONCRETE 1000 Gallon Capacity H-20 Loading

MODEL NO.	LIQUID CAPACITY	LENGTH L	WIDTH W	INVERT I	HEIGHT H	WEIGHT (LBS.)
T1000H20	1000	8'-10"	5'-8"	4'-3"	5'-4"	14300

NOTES:
1. Concrete – 4,000 PSI @ 28 DAYS.
2. Meets or exceeds state and local requirements.
3. All shiplap joints sealed with Butyl Rubber.
4. Design loading: AASHTO HS-20.
5. Two compartment tank. Monolithic Design.
6. Side inlet pipes shall extend to cleanout cover
7. Maximum fill over top of tank – 3 feet.
8. Tank shall be supplied with tees and biofilter.
9. Tank shall be marked with manufacturer name, phone no., tank capacity, date of manufacture, and ASTM C1227 conformance.



**=Nominal Dimension. Slight variation in dimensions may occur due to tapering for manufacturing purposes.

1,000 GALLON CONCRETE SEPTIC TANK

SCALE: NTS

DETAIL PROVIDED BY CT PRECAST INC.

Rev. #:	Date	Description

Graphic Scale:

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695
351 Newbury Street, Boston, MA 02115 T: (617) 203-3160 F: (203) 880-9695

Drawn By:	ARM
Checked By:	LAM
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	AS NOTED

STATE OF CONNECTICUT KEVIN M. SOLLI 25759 LICENSED PROFESSIONAL ENGINEER

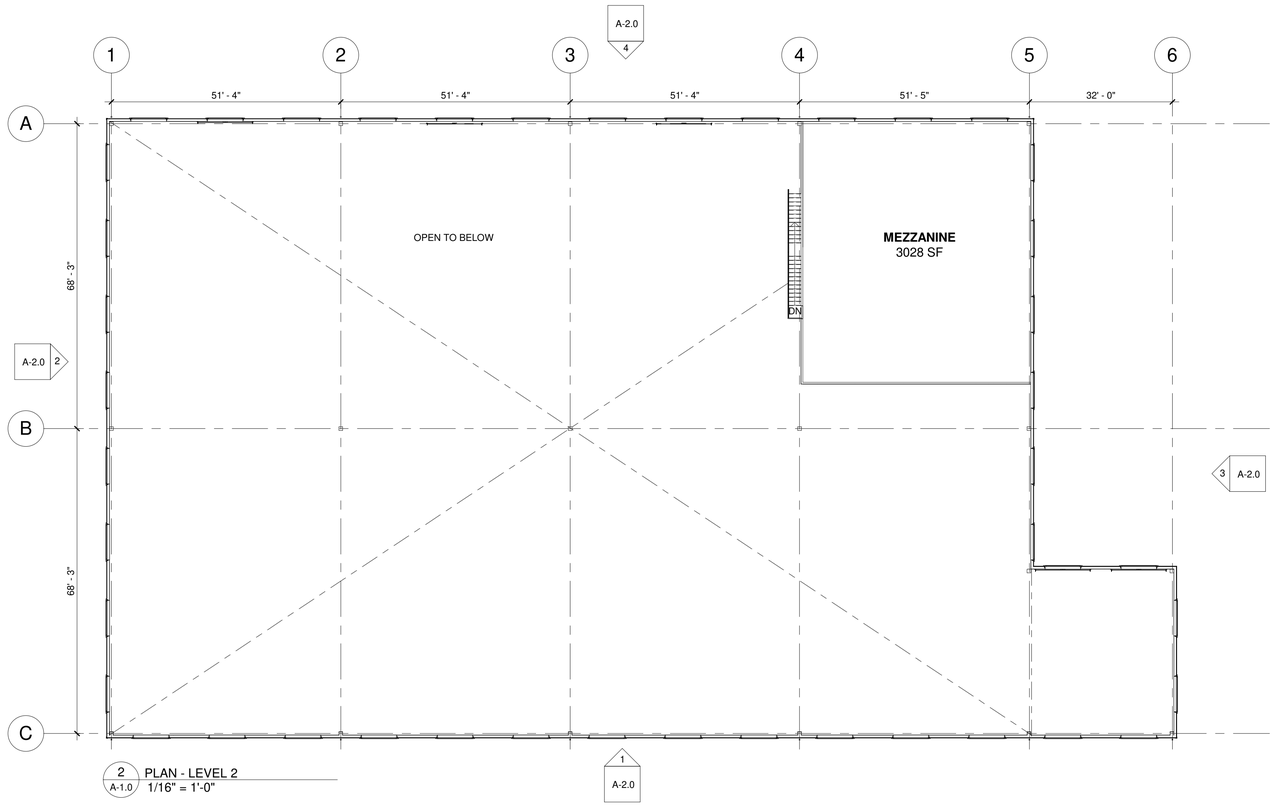
Kevin Solli, P.E.
CT 25759

Project:

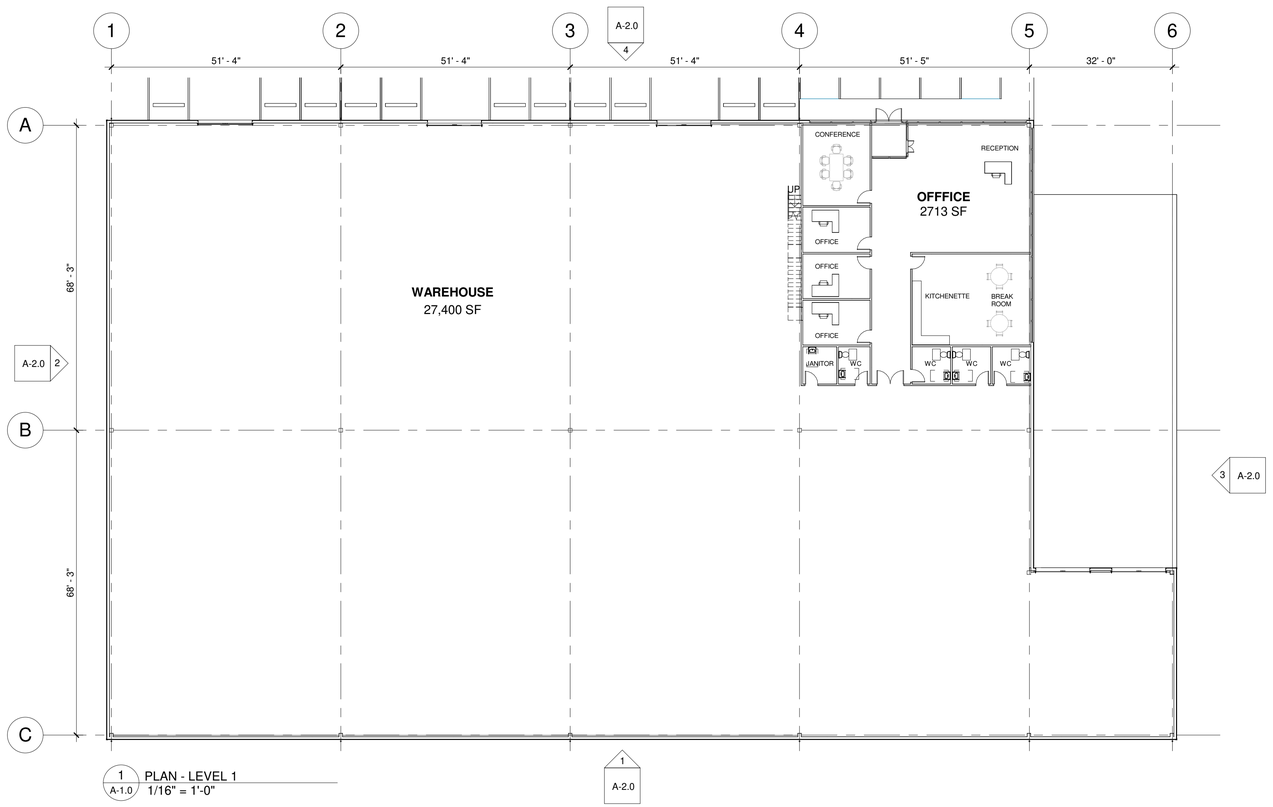
PROPOSED DEVELOPMENT
205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title:	Sheet #:
DETAIL SHEET	3.03

Feb 01, 2024 – 11:16am Victorio
X:\SE Files\Project Data\2021\21109501 – 205 Spring Hill Rd – Monroe, CT\Cadd Data\21109501 – 3.03.dwg



2 PLAN - LEVEL 2
A-1.0 1/16" = 1'-0"



1 PLAN - LEVEL 1
A-1.0 1/16" = 1'-0"

1/30/2024 11:18:01 AM

24X36"

ZELEK DESIGN LLC.

No.	Date	Issue Notes

Designed By: RZ
Drawn By: AH
Date: 01/30/2024
Revision:
Reviewed By: RZ
Project ID: 2402
Project Manager: RZ

Design Firm
ZELEK DESIGN, LLC.
34 FARRAGUT ROAD
SWAMPSCOTT, MA. 01907

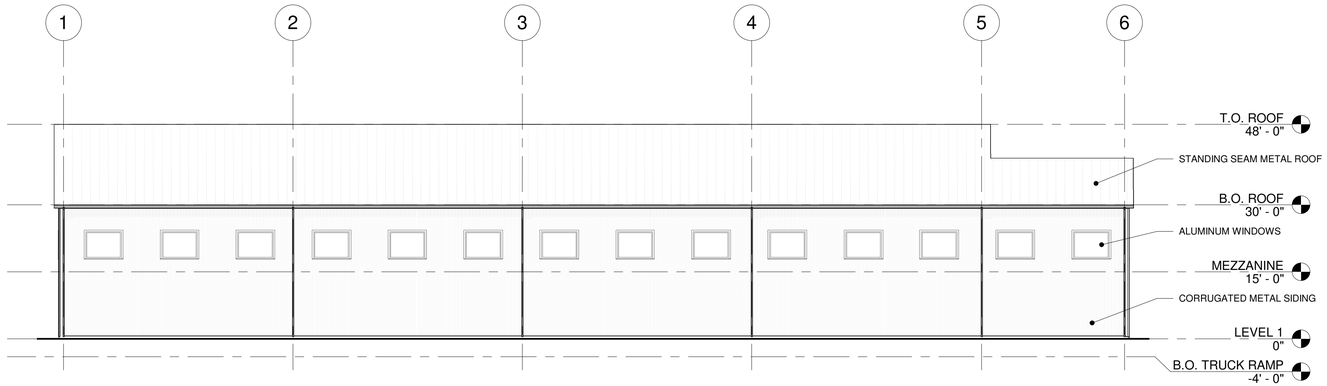
Consultant

Project Title
205 SPRING HILL ROAD
205 SPRING HILL ROAD, TRUMBULL CT 06488

Drawing Title
FLOOR PLANS

Scale
1/16" = 1'-0"

Drawing No.
A-1.0



1 A-2.0 ELEVATION - NORTH
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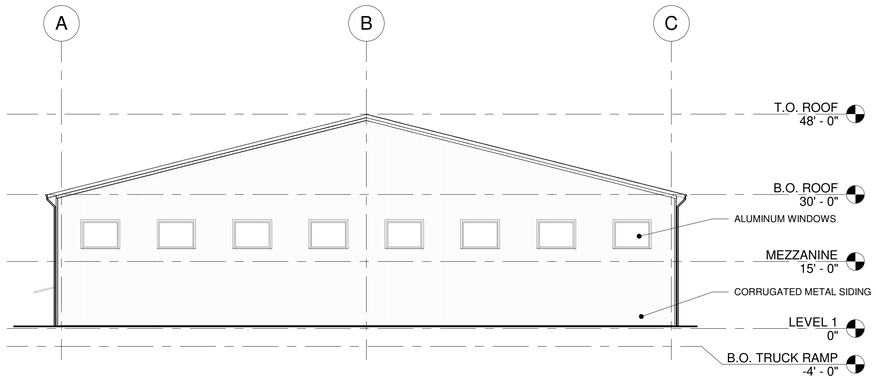

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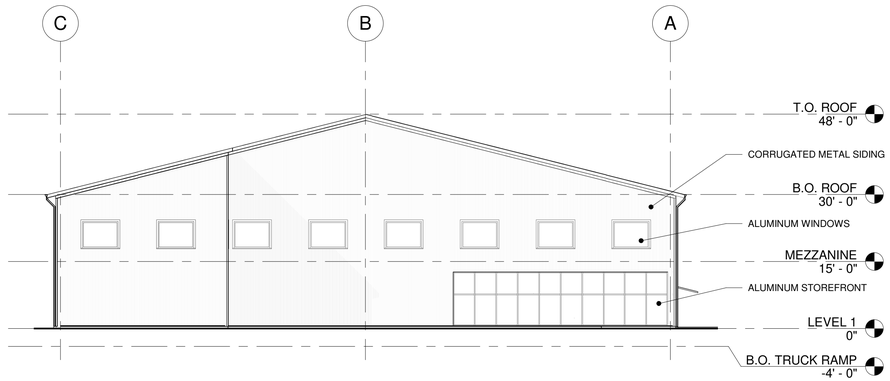
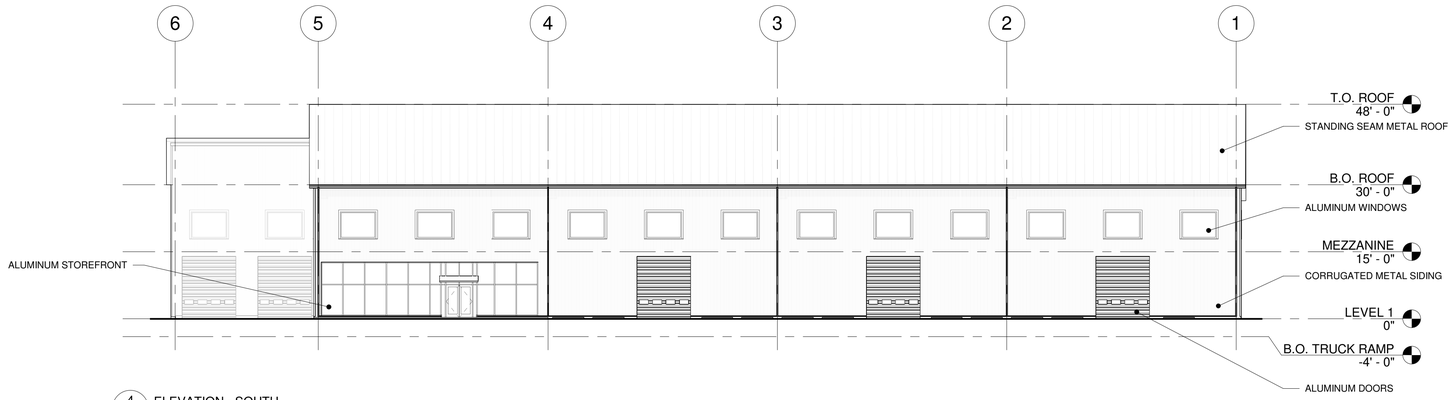
1/16" = 1'-0"



3 A-2.0 ELEVATION - WEST
1/16" = 1'-0"



4 A-2.0 ELEVATION - SOUTH
1/16" = 1'-0"

ZELEK DESIGN LLC.

No.	Date	Issue Notes

Date: 01/30/2024
Revision:
Project ID: 2402

Designed By: RZ
Drawn By: AH
Reviewed By: RZ
Project Manager: RZ

Design Firm
ZELEK DESIGN, LLC.
34 FARRAGUT ROAD
SWAMPSCOTT, MA. 01907
Consultant

Project Title
205 SPRING HILL ROAD
205 SPRING HILL ROAD, TRUMBULL CT 06488

Drawing Title
EXTERIOR ELEVATIONS

Scale
1/16" = 1'-0"

Drawing No.
A-2.0

1/30/2024 11:18:08 AM
24"x36"

GROUND VIEW

AERIAL VIEW

ZELEK DESIGN LLC.

No.	Date	Issue Notes

Designed By: RZ
Drawn By: AH
Reviewed By: RZ
Project Manager: RZ
Date: 01/30/2024
Revision:
Project ID: 2402

Design Firm
ZELEK DESIGN, LLC.
34 FARRAGUT ROAD
SWAMPSCOTT, MA. 01907

Consultant

Project Title
205 SPRING HILL ROAD
205 SPRING HILL ROAD, TRUMBULL CT 06488

Drawing Title
RENDERINGS

Scale

Drawing No.
A-3.0

1/30/2024 11:18:09 AM

24"x36"

ENGINEERING REPORT

For The Proposed:

Site Development

Located At:
205 Spring Hill Road
Monroe, Connecticut 06468

Prepared On:
February 6, 2024

Prepared By:

SOLLI ENGINEERING

501 Main Street
Monroe, Connecticut 06468
T: (203) 880-5455 F: (203) 880-9695

Prepared For:

GP 205 Spring Hill LLC

Kevin M. Solli
CT PE #25759

TABLE OF CONTENTS

LIST OF APPENDICES

INTRODUCTION

Solli Engineering has prepared this Engineering Report to provide an analysis of the stormwater drainage and soil erosion and sediment control measures associated with the proposed site development of 205 Spring Hill Road in Monroe, Connecticut. The development proposes a 31,200 SF industrial warehouse building with associated parking. The design is in compliance with all applicable Town of Monroe codes and regulations as well as all other applicable state and federal requirements and regulations.

PROJECT DESCRIPTION

EXISTING CONDITIONS

The site is located at 205 Spring Hill in Monroe, Connecticut (the property is located partially within the Town of Trumbull, but all proposed activity will be within the Town of Monroe). The overall site totals approximately 7.12 acres. The site is bounded by residential uses to the north, and commercial/industrial uses to the east, west and south. The property is located in the Industrial District 1 (I-1) zone in the Town of Monroe. See Figure 1, Site Location Map, for a depiction of the project location.

According to FEMA, no portion of the project site is within a special flood hazard area subject to inundation by the 1% annual chance flood (100-year flood), also known as the base flood. See Figure 2, FEMA Flood Map, for a depiction of the property in relation to the FEMA flood plains.

A portion of the existing property is currently developed for industrial use (the developed portion is within the Town of Trumbull) and is accessed via an access driveway from Spring Hill Road. There is a pocket of wetlands, in the form of a man-made stormwater basin, located near the center of the property and a small wetlands area at the north-central part of the site.

PROPOSED SITE IMPROVEMENTS

The proposed site development consists of the construction of a 31,200 SF industrial warehouse with loading areas, associated parking and a truck well. The development will be accessed via the existing driveway from Spring Hill Road. For more details regarding the site layout, refer to the Site Layout Plan provided in Appendix D.

The project has been designed with an expansion to the existing above ground stormwater detention basin to attenuate the proposed peak discharge rate, so that the overall proposed peak flow is less than the overall existing peak flow within the project area. Additionally, two hydrodynamic separators will be utilized to treat the water quality flow, ensuring that runoff from the proposed development will be treated prior to entering the existing basin. The project proposes to utilize catch basins and drainage pipes to convey the stormwater runoff associated within the proposed development to the drainage basin on site. Refer to the "Stormwater Management" section of this report for detailed information regarding the hydrology of the existing conditions.

STORMWATER MANAGEMENT

The stormwater management plan and design for the project has been designed to be in compliance with the Town of Monroe Zoning Regulations and the 2004 Connecticut Stormwater Quality Manual and the CT DOT 2000 Drainage Manual, while taking prevailing site conditions and practical considerations into account.

METHODOLOGY

Stormwater runoff analysis for both existing and proposed conditions was performed using the software package HydroCAD. These software packages use a computer implementation of the SCS – Synthetic Unit Hydrograph methodology to compute volumes and rates of runoff. The watershed area, rainfall depths and intensity, curve number and time of concentration are factors that influence the computed results.

Rainfall depths for this property were used for calculating the volumes and rates of runoff for this particular project. The depths were taken from the NOAA Atlas 14 documents (Latitude: 41.2969°, Longitude: -73.2367°) and are listed in Table 1 below.

Table 1: Rainfall Data

Return Period	24-hr Rainfall Depth (in)
2-year	3.57
5-year	4.63
10-year	5.52
25-year	6.74
50-year	7.64
100-year	8.62

HydroCAD automatically computes the rainfall intensity from its own IDF curves when the rainfall intensity data is provided. Table 2 shows the data that was used to generate the IDF curves. This information was taken from the NOAA Atlas 14 documents (Latitude: 41.2969°, Longitude: -73.2367°) and are listed in Table 2 below.

Table 2: IDF Table

Intermediate Intensity Values (in/hr.)				
Return Period	**5-Minute**	**15-Minute**	**30-Minute**	**60-Minute**
2-year	5.10	2.83	1.97	1.26
5-year	6.34	3.52	2.44	1.56
10-year	7.34	4.08	2.83	1.82
25-year	8.75	4.86	3.38	2.16
50-year	9.80	5.44	3.79	2.43
100-year	10.90	6.06	4.21	2.70

SCS uses the runoff curve number (CN) method to estimate runoff from storm rainfall. The major factors that determine CN are the watershed's soil and cover conditions, cover type, treatment and hydrologic condition. The higher percentage of impervious cover within a watershed will result in a higher curve number. A composite curve number was calculated for each analyzed watershed.

The time of concentration is the time it takes for runoff to travel from the hydraulically most distant point of the watershed to a point of interest within the watershed. The time of concentration is calculated by adding the travel times of sheet flow, shallow concentrated flow and open channel flow, or some combination of these depending on the watershed and its features.

EXISTING HYDROLOGY

The northwest portion of the site is somewhat steeply sloping before flattening out towards the center of the site, with a maximum slope of approximately 15 percent, with a high elevation of approximately 336 feet at the northwest corner of the site, and a low elevation of approximately 318 feet at the wetlands/drainage basin at the center of the site. The site generally slopes towards the south. According to the NRCS Soil Survey Geographic database for the State of Connecticut, the majority of the site, in which the project is proposed, is comprised of Agawam Fine Sandy Loams. These soils have a hydrologic soil group rating of B. The NRCS Soil Survey Map for the site can be found in Appendix A, Figure 3.

Approximately 3.24 acres were analyzed for stormwater management purposes. Based on existing drainage patterns, the site was divided into 3 contributing drainage areas, labeled Existing Drainage Area 1A (EDA-1A), Existing Drainage Area 1B (EDA-1B) and Existing Drainage Area 1C (EDA-1C). The approximate location and delineation of these drainage areas can be seen on Sheet EDA, Existing Drainage Area Map, found in Appendix C.

EDA-1A has a contributing area of approximately 1.64 acres. This area encompasses the northeastern area of the site, in which the runoff flows south to the existing pond/wetlands and eventually overflows off-site to the south.

EDA-1B has a contributing area of approximately 1.22 acres. This area encompasses the northwestern portion of the site, in which the runoff flows southeast off-site to the south.

EDA-1C has a contributing area of approximately 0.38 acres. This area encompasses the southwestern portion of the site, in which the runoff flows off-site to the south.

Characteristics of the drainage area are summarized in Table 3. The approximate location and delineation of the drainage areas can be seen on Sheet EDA-1, Existing Drainage Area Map, found in Appendix B.

Table 3: Existing Drainage Area Characteristics

Drainage Area	Area (Acres)	Curve Number (CN)	Time of Concentration (Minutes)
EDA-1A	1.64	68	34.8
EDA-1B	1.22	65	32.6
EDA-1C	0.38	68	44.0

Existing peak flows of runoff for all analyzed storm-events are summarized in Table 4. Calculations for the existing hydrology can be found in Appendix B.

Table 4: Existing Peak Flows

Drainage Area	Storm Event Peak Flows (cfs)					
	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
EDA-1	2.13	3.47	4.72	6.59	8.04	9.65

PROPOSED HYROLOGY & HYDRAULICS

Based on proposed drainage patterns, the site was divided into 2 contributing drainage areas, labeled Proposed Drainage Area 1A (PDA-1A) and Proposed Drainage Area 1B (PDA-1B).

Proposed Drainage Area 1A (PDA-1A) has a contributing area of approximately 2.89 acres. This area consists of the bituminous parking lot, building roof, woods and grass lawn areas. Runoff from this area flows to the proposed above-ground detention basin via the stormwater conveyance system before overflowing to the property to the south.

Proposed Drainage Area 1B (PDA-1B) has a contributing area of approximately 0.35 acres. This area consists of woods and grass lawn areas. Runoff from this area flows via yard drains directly to the property to the south.

Characteristics of these drainage areas are summarized in Table 5. A map depicting proposed drainage areas can be found in Appendix B.

Table 5: Proposed Drainage Area Characteristics

Drainage Area	Area (Acres)	Curve Number (CN)	Time of Concentration (Minutes)
PDA-1A	2.89	80	6.0
PDA-1B	0.35	61	6.0

Proposed peak flows and volumes for all analyzed storms are summarized in Table 6. Calculations for the proposed hydrology can be found in Appendix B.

Table 6: Proposed Peak Flows

Drainage Area	Storm Event Peak Flows (cfs)					
	2-yr	5-yr	10-yr	25-yr	50-yr	100-yr
PDA-1	1.77	2.27	2.66	3.28	4.51	5.05

The existing pond on site will be expanded and utilized for stormwater detention as a part of this project. Based on several field visits and test pits, the water constant level in the pond was taken to be at elevation 319.0 (although during certain visits, the water level was below this elevation). Therefore, a starting water elevation of 319.0 was used when calculating available stormwater storage.

In an effort to improve the quality of the stormwater discharged from the site, the project will include two hydrodynamic separators to treat water quality flows and volumes from the paved parking lot and truck well. This stormwater quality measure is intended to provide limited removal of pollutants before runoff flows to the pond and eventually off-site to the south. The stormwater conveyance system for the project was designed to accommodate the 25-year design storm.

A crushed stone French drain will be installed along the west side of the site that will capture and direct runoff to a yard drain structure. Additionally, a grass swale will be implemented at the rear of the building at the southern part of the site, which will direct runoff to another yard drain structure. The series of yard drain structures will direct these flows directly off-site to the south.

STORMWATER CONCLUSION

The development will result in an increase in impervious areas compared to that of existing conditions. The project features an above ground stormwater detention basin which will attenuate the proposed peak discharge rate, so that the overall proposed peak flow is less than the overall existing peak flow within the project area. Additionally, the bituminous parking area will drain into a proposed hydrodynamic separator which will clean runoff before discharging into the detention basin. The proposed stormwater system design has provided a reduction in the peak discharge rates compared to that of existing conditions for all storm events analyzed.

The stormwater quality measures provided as part of the proposed redevelopment include an above ground stormwater detention basin, a hydrodynamic separator and catch basins. These measures will result in an enhancement to the stormwater runoff discharged from the site.

Table 7: Peak Flow Comparison Table

Drainage Area	Storm Event Peak Flows (cfs)					
	2-yr	**5-yr**	**10-yr**	**25-yr**	**50-yr**	**100-yr**
EDA-1	2.13	3.47	4.72	6.59	8.04	9.65
PDA-1	**1.77**	**2.27**	**2.66**	**3.28**	**4.51**	**5.05**

SOIL EROSION AND SEDIMENT CONTROL

The proposed plans for soil erosion and sediment control prepared for this project have been developed in accordance with the Town of Monroe Zoning Regulations, as well as the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, prepared by the Connecticut Council on Soil and Water Conservation in cooperation with the Connecticut Department of Environmental Protection.

The soil erosion and sediment control measures that will be proposed as part of this project include geotextile silt fences, haybale backing, construction entrance, dust control measures, temporary stockpile area, temporary sediment traps and inlet protection for stormwater drainage features.

The Soil Erosion and Sediment Control Plan is split into two phases, Phase I for the initial clearing and prepping of the site, and Phase II to proceed with building and side construction while maintaining soil erosion and sediment control measures. For more detail regarding layout and design of the soil erosion and sediment control measures implemented as part of this project see Sheets 2.31 & 2.32, Soil Erosion & Sediment Control Plan and Sheet 2.41, Soil Erosion & Sediment Control Notes & Details within the civil plan set.

SITE UTILITIES

WATER

Water service for the building is proposed via the existing water main within Spring Hill Road. The water main will be tapped within Spring Hill Road. A 8" DIP fire line will be installed and tie into the west façade of the building. A 2" domestic water line will run parallel to the 8" DIP line and tie into the same location.

TELEPHONE AND CABLE

Existing telephone and cable services are located overhead on Spring Hill Road. Telephone and cable services are proposed to be routed, via underground conduits, to the existing utility pole per utility company requirements.

GAS

The project proposes to connect into the existing gas main within Spring Hill Road. The gas line will run to the west façade of the proposed building before tying into a proposed gas meter.

ELECTRIC

The project proposes a pad mounted transformer at the north side of the proposed parking area. The proposed electric line will run from the existing utility pole located on the west side of Spring Hill Road, into the proposed transformer, before running into the west façade of the proposed building and tying into the utility room.

SUBSURFACE SEWAGE DISPOSAL SYSTEM

The subsurface sewage disposal system proposed for the development was designed in accordance with the technical standards established in the "Connecticut Public Health Code; On-site Sewage Disposal Regulations, and Technical Standards for Subsurface Sewage Disposal Systems" published by the Commissioner of Public Health, dated January 2023.

EXISTING SITE CONDITIONS

A site investigation was performed on January 23rd, 2024, by Solli Engineering, LLC and witnessed by the Monroe Health Department. The investigation included the digging of 4 deep test holes labeled TP-1

through TP-4. Approximate locations of the test holes, soil observations and descriptions for each test hole can be seen on the Site Utility Plan (See Sheet 2.51).

Test Pit 1 consisted of a thin topsoil layer underlain with orange-brown or tan sand & gravel layers. Groundwater was encountered at a depth of 72" deep (about elevation 319).

Test Pits 3 and 4 were generally found to consist of topsoil, underlain with orange-brown or tan sand & gravel. The restrictive layer was not encountered in either of these test pits.

Test Pit 2 consisted of miscellaneous fill material.

Three percolation tests were performed by Solli Engineering LLC on January 23rd, 2024. The average percolation rate was less than 10 minutes per inch, however, the proposed septic system was designed with a percolation rate of 10.1 to 20 inches minutes per inch to be conservative.

EFFECTIVE LEACHING AREA

The effective leaching area (ELA) was determined for the proposed primary and reserve leaching area and of the proposed facilities. The effective leaching area is defined as a measure, in square feet, of the relative size of a leaching system or product that takes into account the amount of infiltrative area and type of infiltrative interface.

The daily design flow was calculated based on the maximum number of employees, which in this case is 40 (based on the number of provided parking spaces for the building). Each employee was assumed to require 25 gallons of design flow per day. The proposed operations have been calculated to have a design flow of 1,000 gallons per day (GPD) of effluent. With a percolation rate of 10.1-20.0 min/inch, and an application rate of 1.2 GPD per square foot, the Effective Leaching Area is calculated to be approximately 834 square feet.

MINIMUM LEACHING SYSTEM SPREAD

The minimum leaching system spread (MLSS) is not applicable as receiving soils in the area of the proposed septic system are greater than 60" deep.

PROPOSED SEPTIC SYSTEM DESIGN

The proposed subsurface sewage disposal system includes a 1,000-gallon septic tank and 60 linear feet Geomatrix GST6218 leaching system. The leaching system is 18 inches high and 62 inches wide. This system will provide approximately 840 square feet of ELA, meeting the required 834 square feet of ELA.

CONCLUSION:

Although the proposed site improvements result in an increase in impervious area, the stormwater management features proposed as part of this project will provide a decrease in overall peak flows for the

2-, 5-, 10-, 25-, 50-, and 100-year storm events and provide adequate water quality treatment prior to discharging off-site to the south.

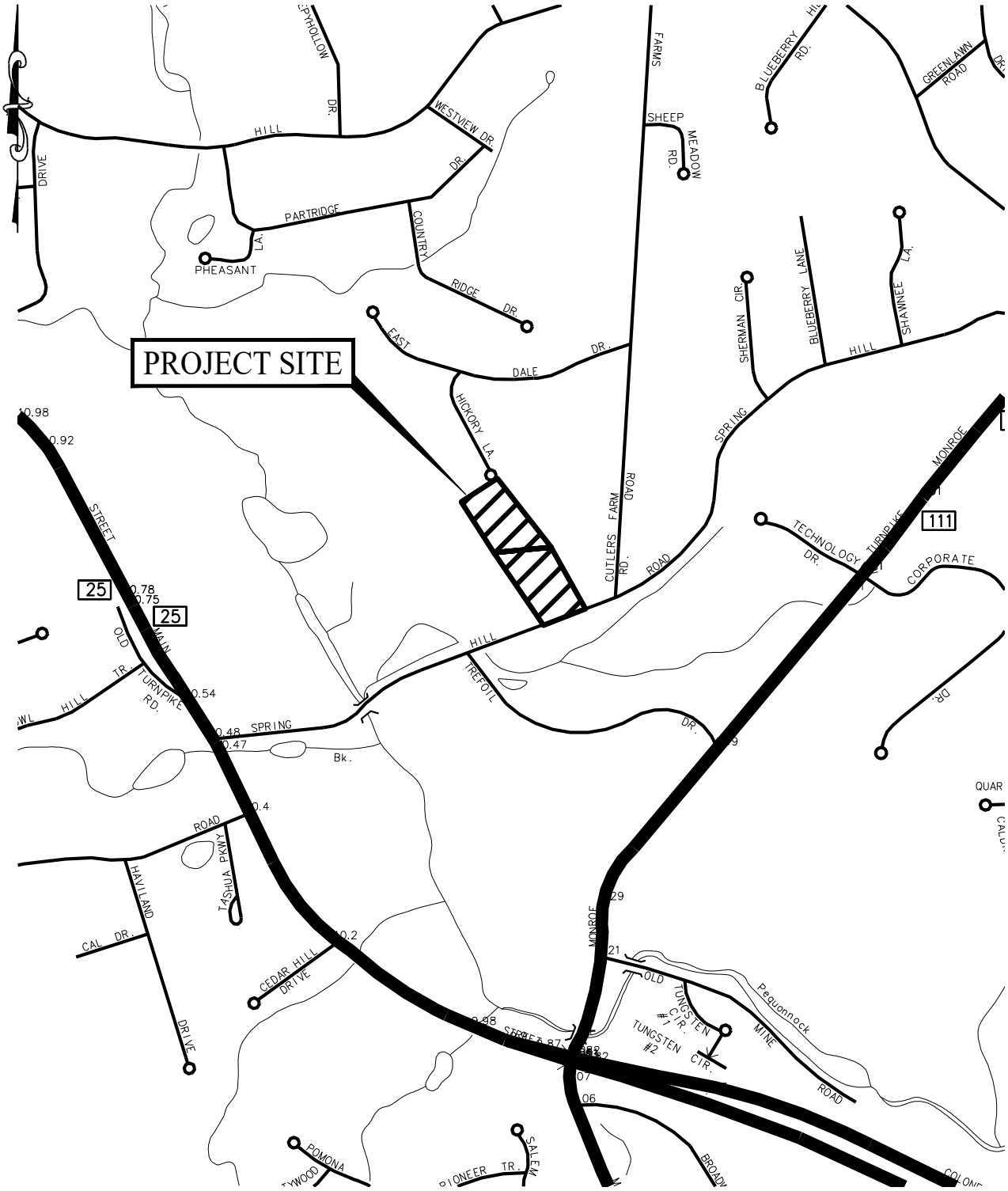
The proposed site utilities have been designed and coordinated with their associated utility companies and local agencies and provide adequate service to the proposed building.

The proposed industrial warehouse is an appropriate use for the area and has been designed to conform to the Town of Monroe Zoning Regulations.

List of Appendices

APPENDIX A
FIGURES

Site Location Map (Figure 1)
FEMA Flood Map (Figure 2)
Soil Survey Map (Figure 3)
Natural Diversity Database Map (Figure 4)
Public Watershed Supply Map (Figure 5)
USGS Map (Figure 6)
Regulated Area Map (Figure 7)
Slope Area Map (Figure 8)
Truck Turning Figure (Figure 9)
Alternative Site Plan 1 (Figure 10a)
Alternative Site Plan 2 (Figure 10b)



NOTE: BASE MAP INFORMATION TAKEN FROM CT TRU MAP NUMBER 084 & 144.

1,000 0 500 1,000

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468
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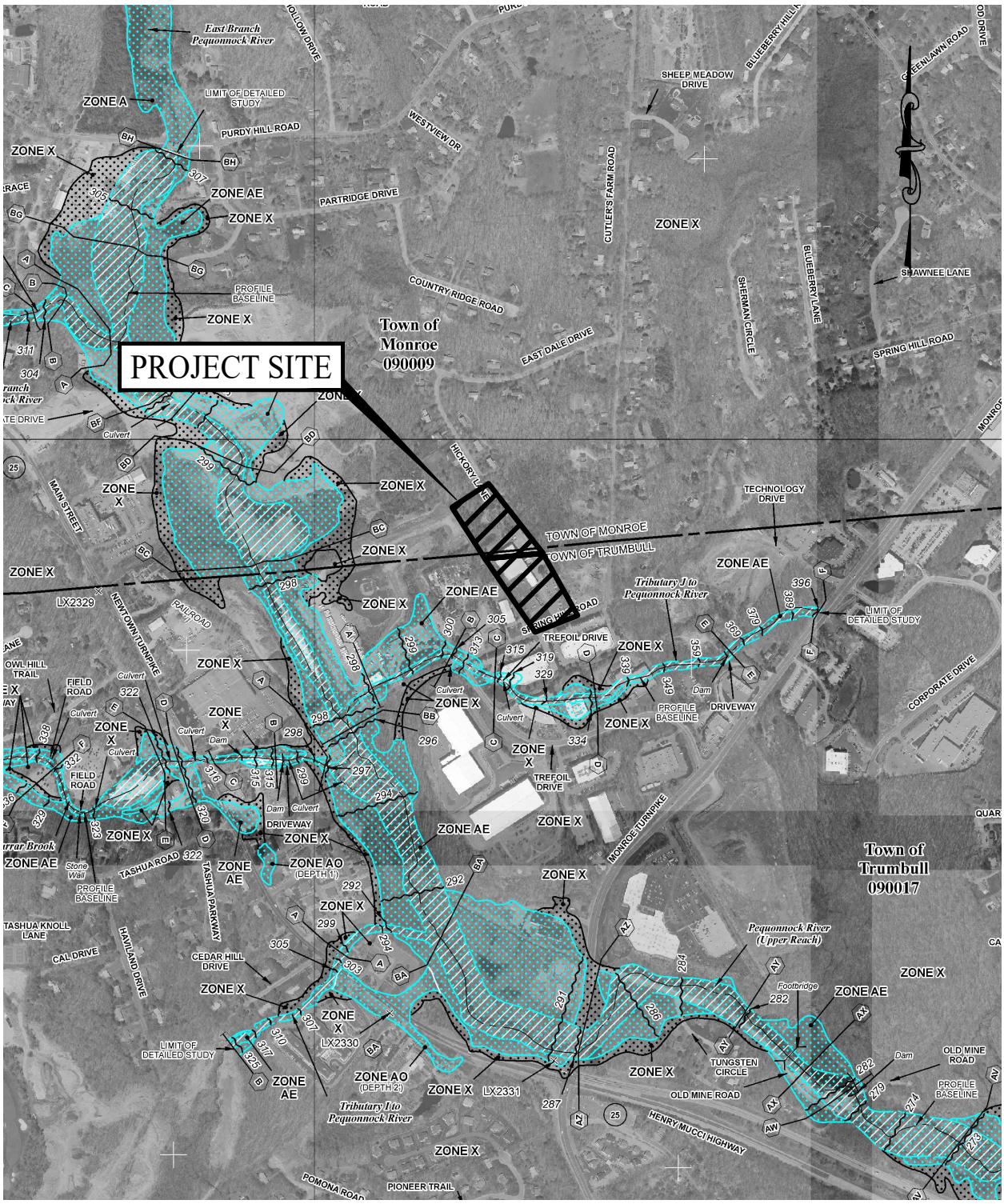
SITE LOCATION MAP

205 SPRING HILL ROAD
MONROE, CONNECTICUT

Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 1,000'
Figure:	1



BASE MAP INFORMATION TAKEN FROM
FEMA FLOOD INSURANCE RATE MAP, MAP
NUMBER 09001C0286F, EFFECTIVE 06/18/2010

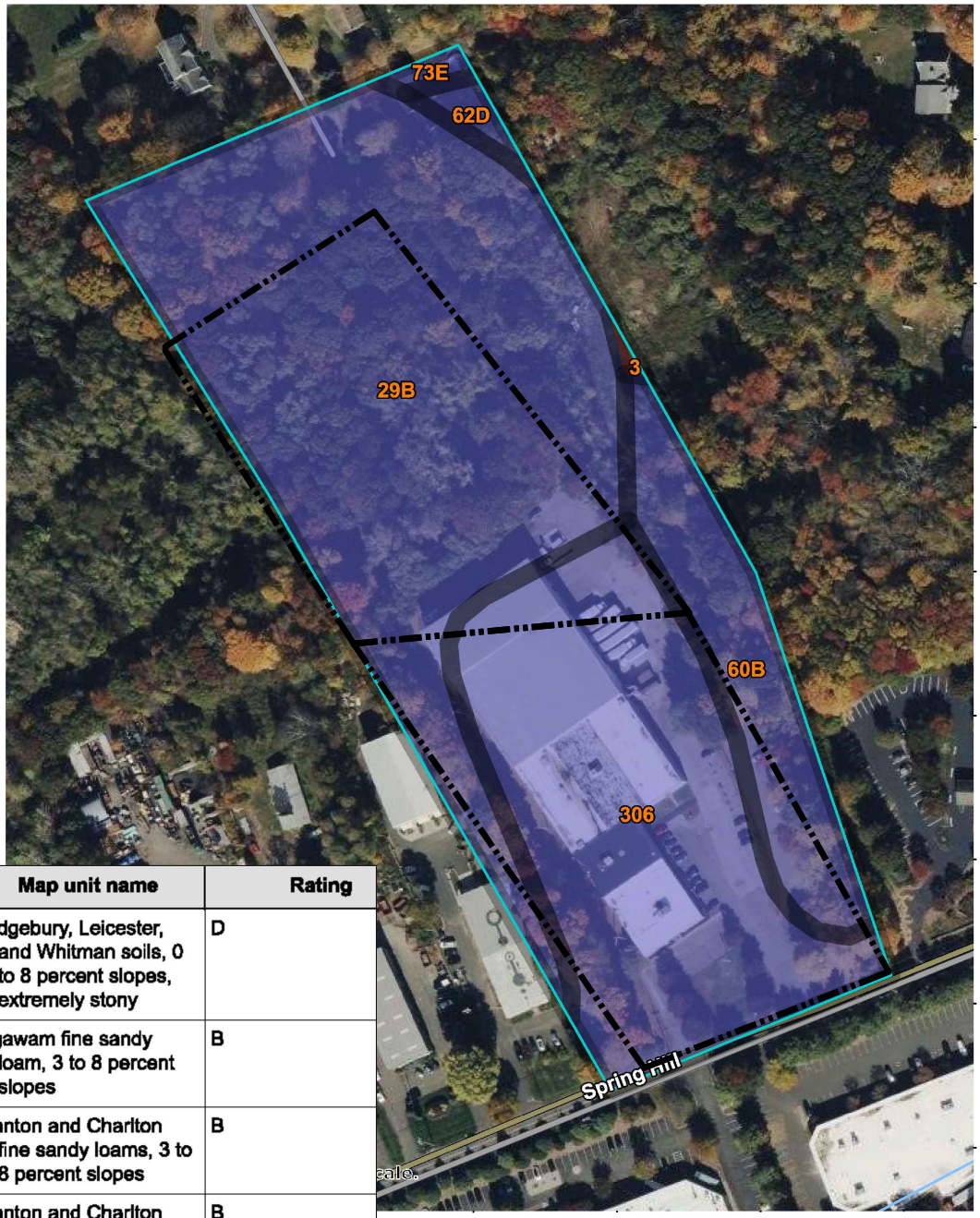
1,000 0 500 1,000

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

FEMA FLOOD MAP

205 SPRING HILL ROAD
MONROE, CONNECTICUT

Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 1,000'
Figure:	2



Map unit symbol	Map unit name	Rating
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	D
29B	Agawam fine sandy loam, 3 to 8 percent slopes	B
60B	Canton and Charlton fine sandy loams, 3 to 8 percent slopes	B
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	B
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	B
306	Udorthents-Urban land complex	B

NOTE: BASE MAP INFORMATION TAKEN FROM USGS WEB SOIL SURVEY DATA.

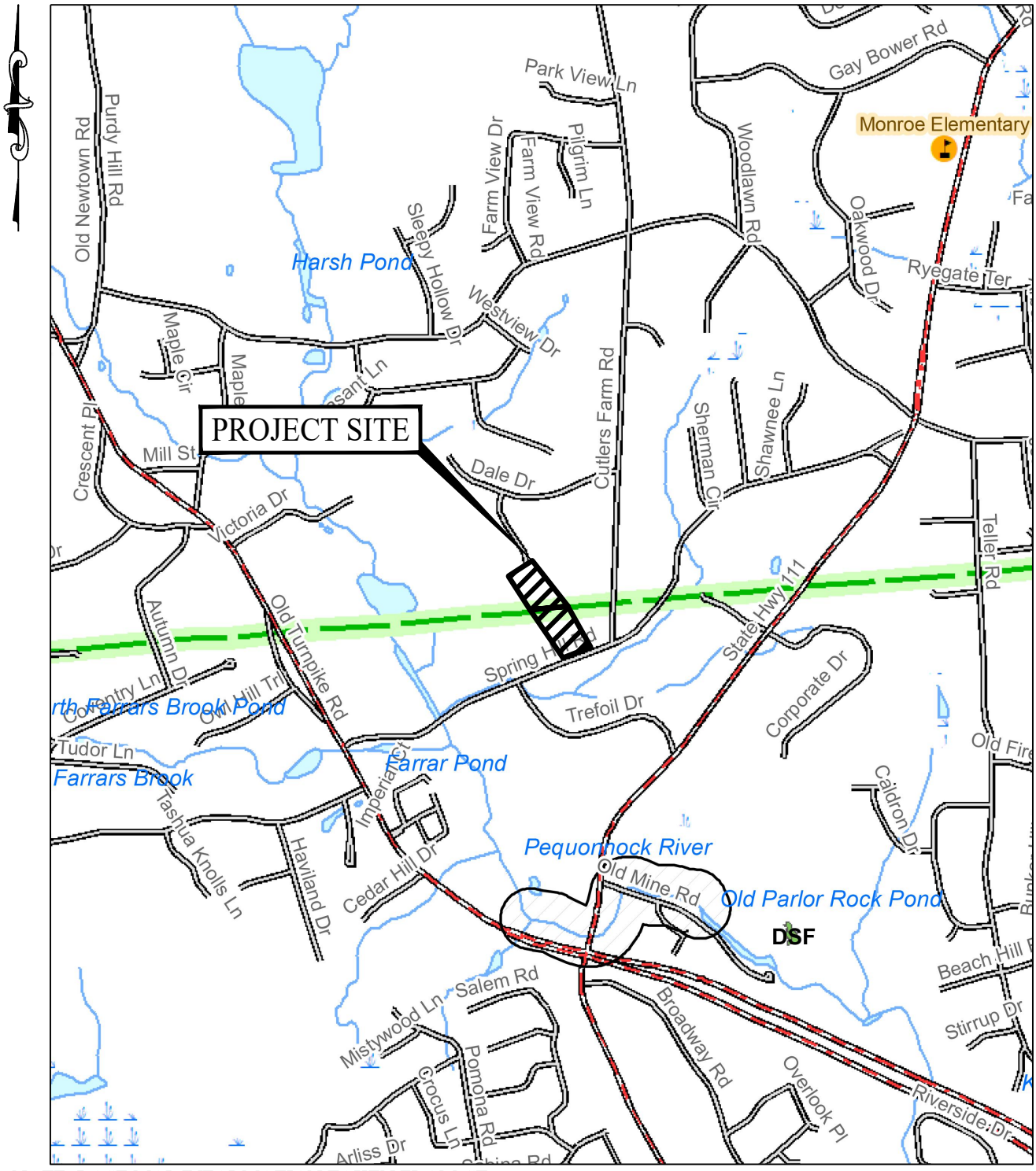
200 0 100 200

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468
T: (203) 880-5455 F: (203) 880-9695

SOIL SURVEY MAP

205 SPRING HILL ROAD
MONROE, CONNECTICUT

Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 200'
Figure:	3



NOTE: BASE MAP INFORMATION TAKEN FROM CT DEEP NATURAL DIVERSITY DATA BASE AREAS, MONROE, CT DECEMBER 2021
URL:HTTP://CTECO.UCONN.EDU/MAPS/TOWN/NDDB/NDDB_MONROE.PDF

1,500 0 750 1,500

SOLLI ENGINEERING
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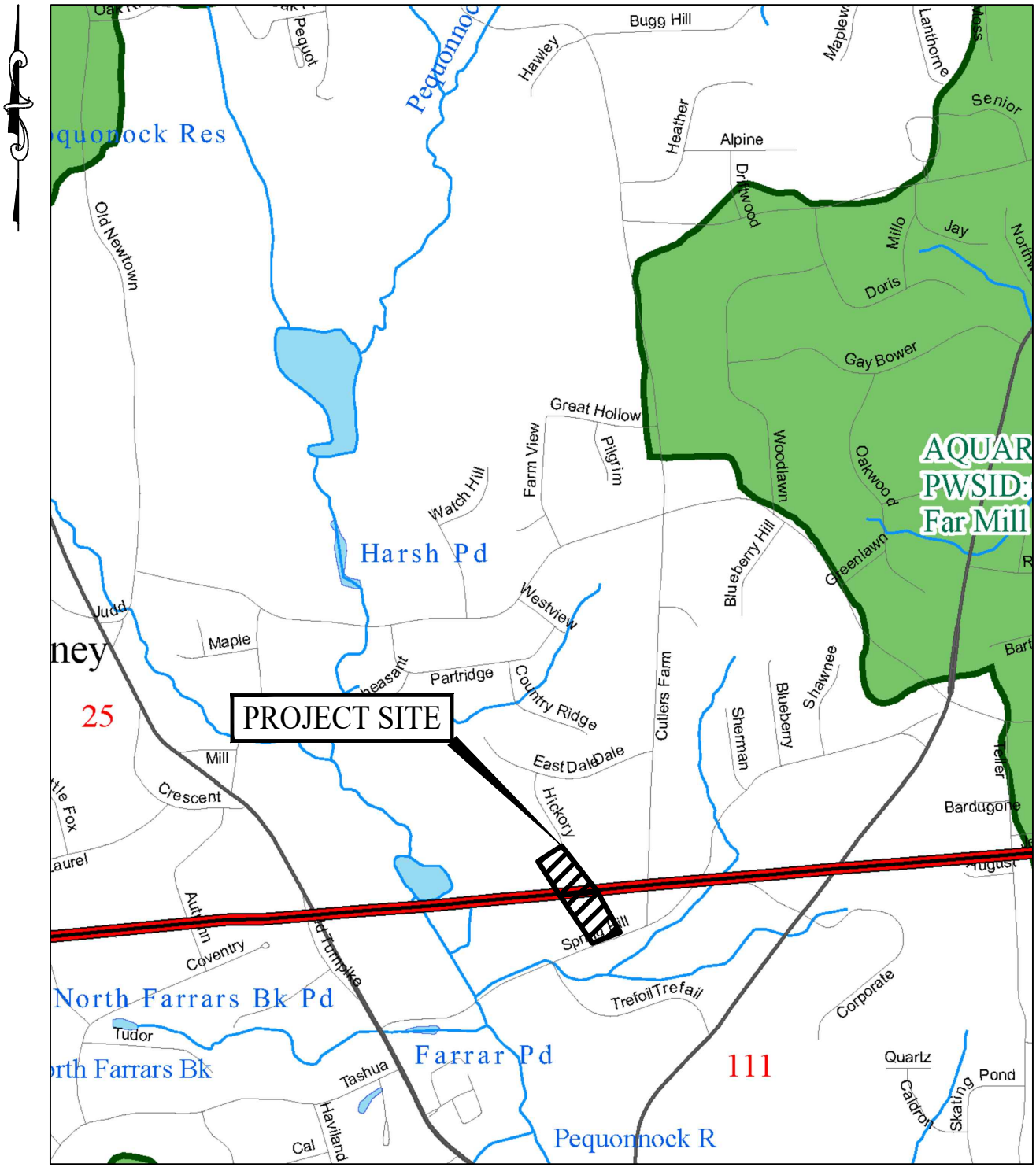
T: (203) 880-5455 F: (203) 880-9695

NATURAL DIVERSITY DATABASE MAP

205 SPRING HILL ROAD
MONROE, CONNECTICUT

Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 1500'
Figure:	4



NOTE: WATERSHED INFORMATION TAKEN FROM A MAP ENTITLED "MONROE PUBLIC DRINKING WATER SOURCE PROTECTION AREAS" PROVIDED BY THE TOWN OF MONROE.

1,500 0 750 1,500

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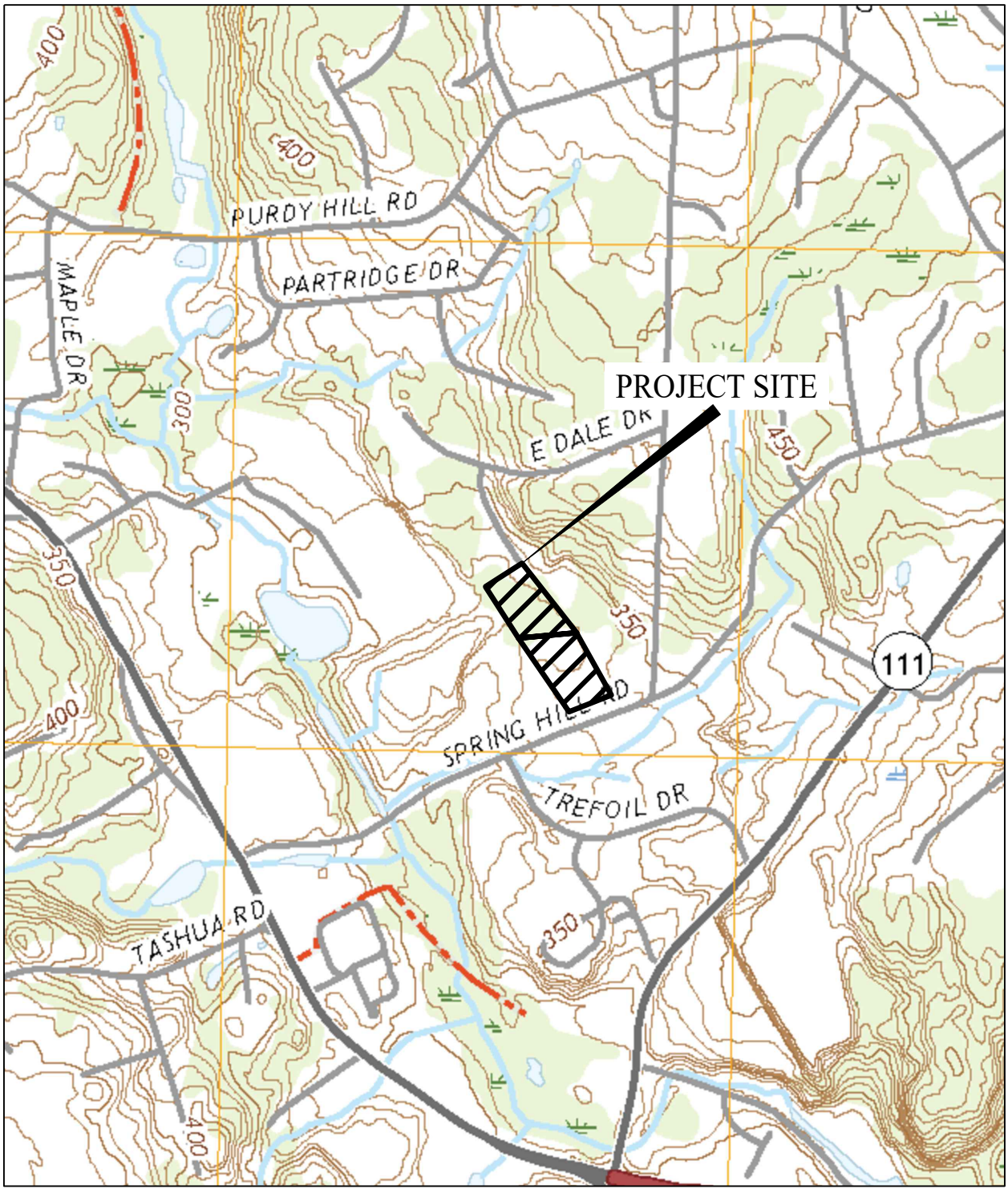
T: (203) 880-5455 F: (203) 880-9695

PUBLIC WATERSHED SUPPLY MAP

205 SPRING HILL ROAD
MONROE, CONNECTICUT

Project #:	21109501
Plan Date:	11/09/23
Scale:	1" = 1500'
Figure:	5



NOTE: BASE MAP INFORMATION TAKEN FROM UNITED STATES GEOLOGICAL SURVEY MAP - LONG HILL, CT QUADRANGLE, DATED 2021

1,000 0 500 1,000

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468
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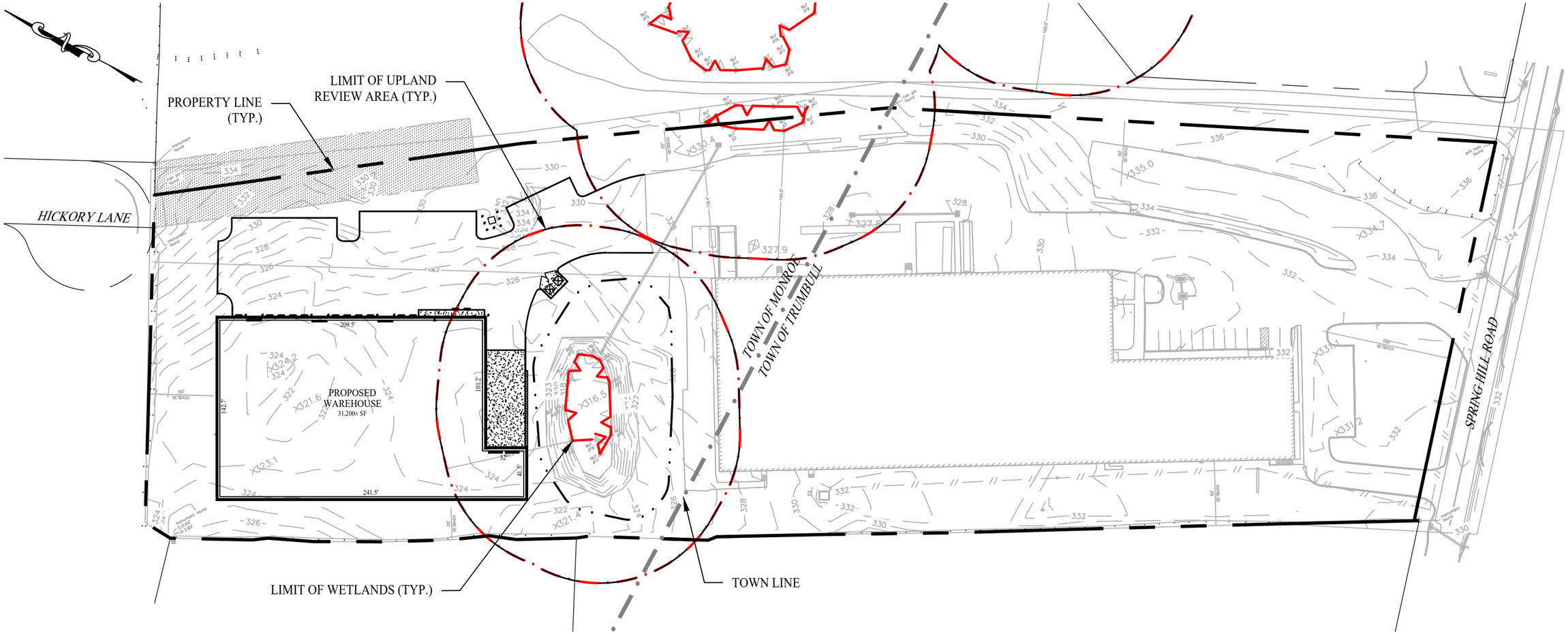
USGS MAP

205 SPRING HILL ROAD
MONROE, CONNECTICUT

Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 1000'
Figure:	6



WETLAND AREA TABLE

AREA	ACRES
PROPERTY AREA	±7.11
WETLANDS ON PROPERTY	±0.06
UPLAND REVIEW AREA ON PROPERTY	±1.60
WETLANDS TO BE ALTERED	±0.05
UPLAND REVIEW AREA TO BE ALTERED	±0.57
TOTAL REGULATED AREA TO BE ALTERED	±0.62

LEGEND

- PROPERTY LINE
- RIGHT-OF-WAY LINE
- LIMIT OF WETLANDS
- LIMIT OF UPLAND REVIEW AREA

GENERAL NOTES

1. WETLANDS DELINEATED AND FLAGGED BY WILLIAM KENNY ASSOCIATES NOVEMBER 16, 2023.

80 0 40 80

Rev. #: Date Description

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468
T: (203) 880-5455 | F: (203) 880-9695

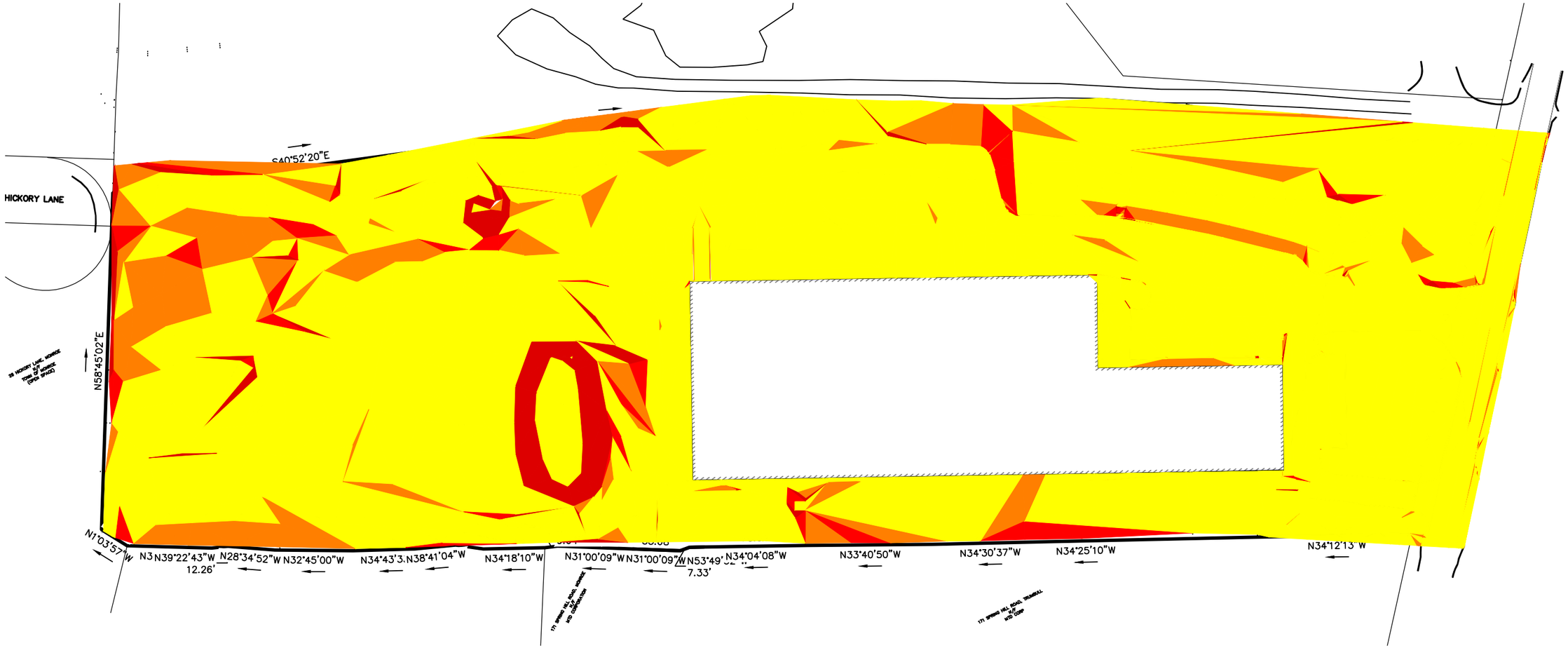
Drawn By:	BPD
Checked By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 80'

Project:
PROPOSED DEVELOPMENT
205 SPRING HILL ROAD
MONROE, CONNECTICUT

Sheet Title:
REGULATED AREA MAP

SHEET #:
FIG-7

Slopes Table			
Minimum Slope	Maximum Slope	Area (Acres)	Color
0.00%	10.00%	5.40	
10.00%	15.00%	0.58	
15.00%	25.00%	0.15	
25.00%	100.00%	0.18	



Rev. #: Date Description

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T: (203) 880-5455 | F: (203) 880-9695

Drawn By:	VER
Checked By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 80'

Project:

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE, CONNECTICUT

Sheet Title:

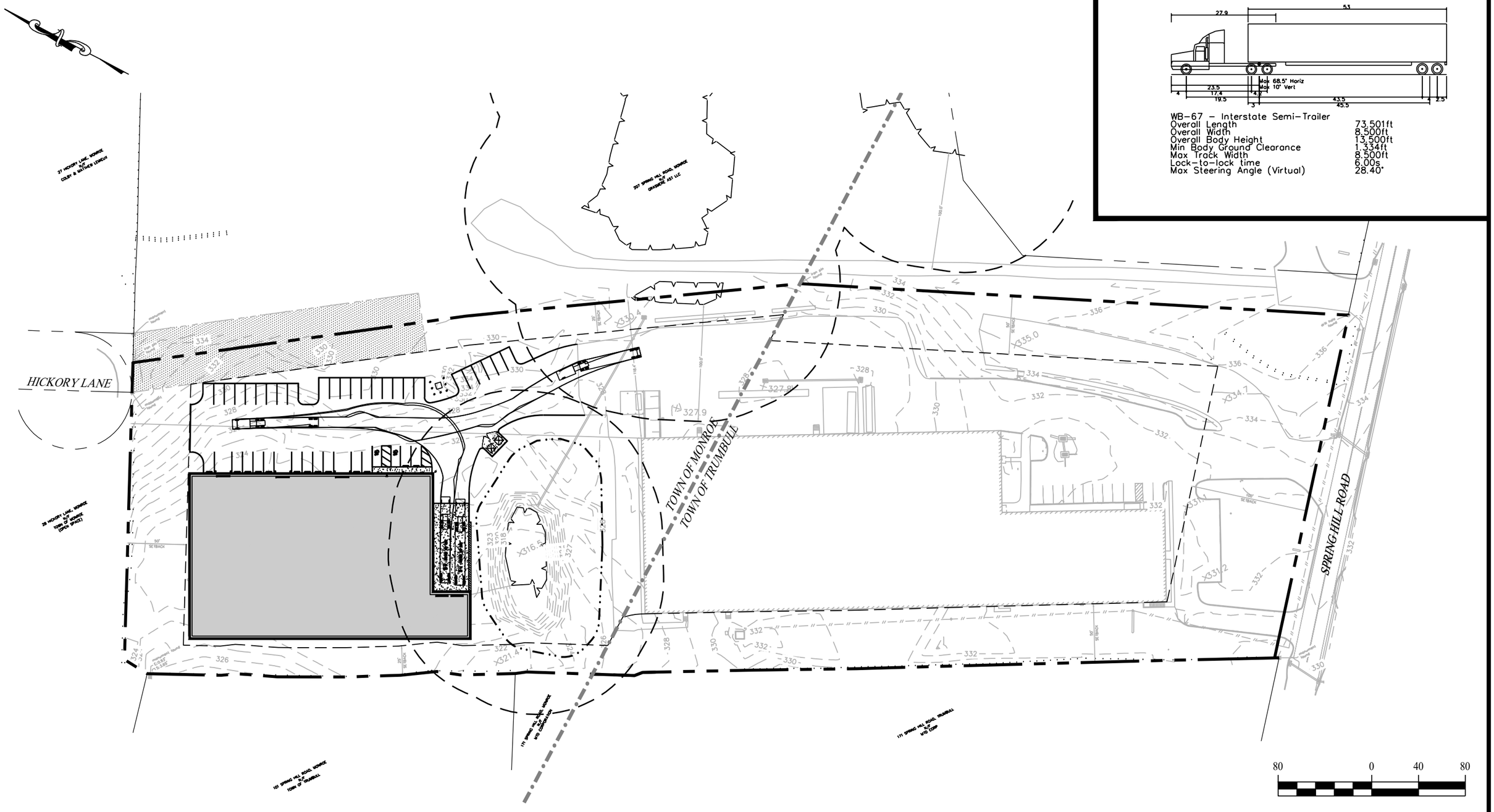
SLOPE AREA MAP

SHEET #:

FIG-8

WB-67 – Interstate Semi-Trailer

Overall Length	73.501ft
Overall Width	8.500ft
Overall Body Height	13.500ft
Min Body Ground Clearance	1.334ft
Max Track Width	8.500ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	28.40°



Rev. #	Date	Description

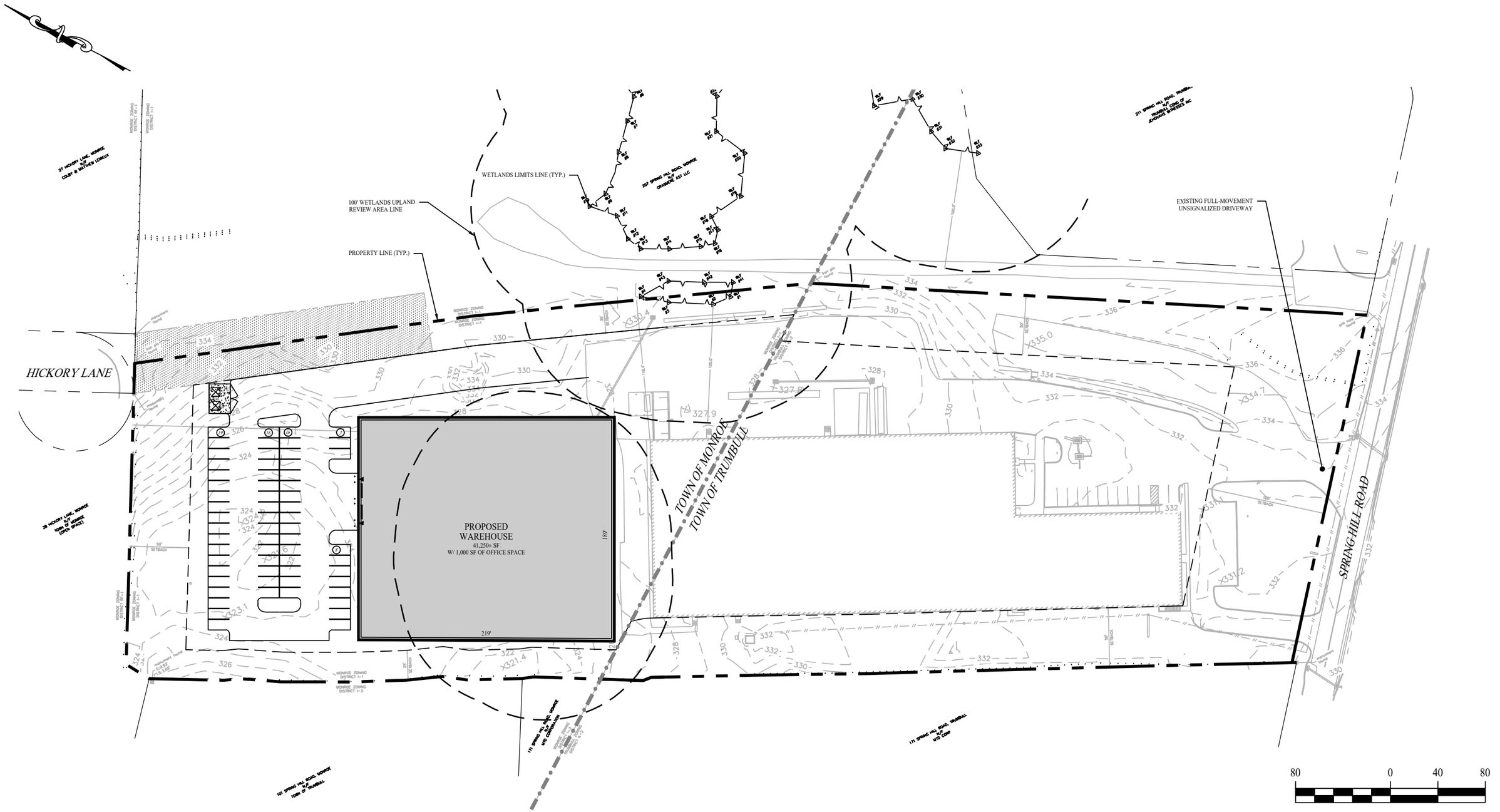
SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468
T: (203) 880-5455 | F: (203) 880-9695

Drawn By:	BPD
Checked By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 80'

Project:
PROPOSED DEVELOPMENT
205 SPRING HILL ROAD
MONROE, CONNECTICUT

Sheet Title:
TRUCK TURNING FIGURE

SHEET #:
FIG-9



Rev. #	Date	Description

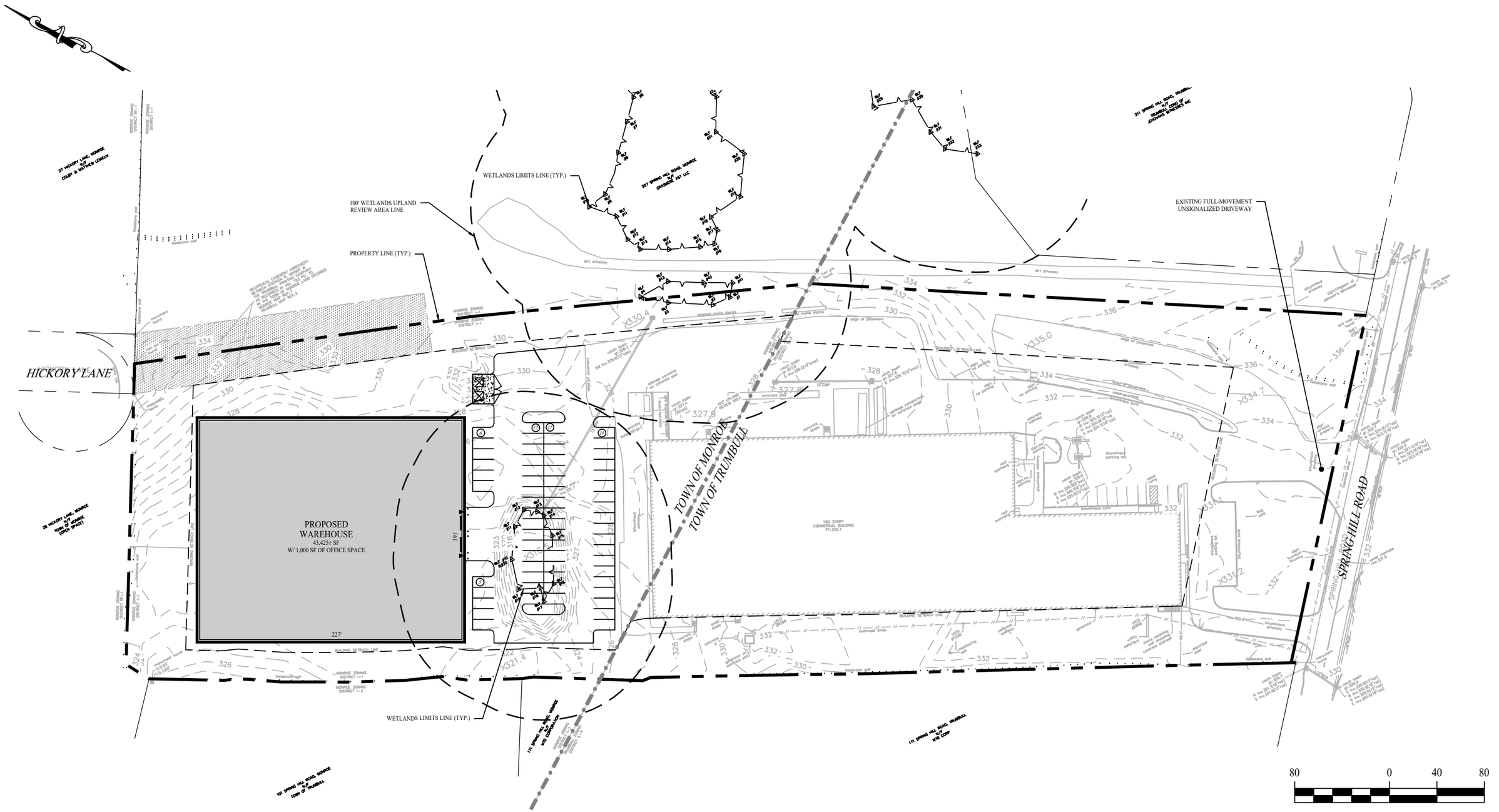
SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468
T: (203) 880-5455 | F: (203) 880-9695

Drawn By:	BPD
Checked By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 80'

Project:
PROPOSED DEVELOPMENT
205 SPRING HILL ROAD
MONROE, CONNECTICUT

Sheet Title:
ALTERNATE SITE PLAN 1

SHEET #:
FIG-10a



Rev. #:	Date	Description

SOLLI ENGINEERING
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T: (203) 880-5455 | F: (203) 880-9695

Drawn By:	BPD
Checked By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 80'

Project:

PROPOSED DEVELOPMENT

205 SPRING HILL ROAD
MONROE, CONNECTICUT

Sheet Title:

ALTERNATE
SITE PLAN 2

SHEET #:

FIG-10B

APPENDIX B
WETLAND ASSESSMENT

Soils Report Prepared by William Kenny Associates

WILLIAM KENNY ASSOCIATES
LANDSCAPE ARCHITECTURE ▪ ECOLOGICAL SERVICES

November 16, 2023

Mr. Kevin Solli
Solli Engineering, LLC
501 Main Street, Suite 2-A
Monroe, CT 06468

Re: Wetland and Watercourse Delineation
205 Spring Hill Road, Monroe/Trumbull, Connecticut

Dear Mr. Solli:

As requested, we visited the referenced property to determine the presence or absence of wetlands and/or watercourses, to demarcate (flag) the boundaries of wetlands and watercourses identified, and to identify onsite soil types. This letter includes the methods and results of our investigation, which we completed today, November 16, 2023. In summary, two inland wetland systems were identified and delineated. One system, which is located along the eastern property boundary, is a portion of a primarily off-site woodland wetland. The other system, which is located in the north-central portion of the property, is a manmade stormwater basin wetland maintained as woodland.

Regulatory Definitions

The Inland Wetlands and Watercourses Act (Connecticut General Statutes §22a-38) defines inland wetlands as "land, including submerged land...which consists of any soil types designated as poorly drained, very poorly drained, alluvial, and floodplain." Watercourses are defined in the act as "rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon the state or any portion thereof." The Act defines Intermittent Watercourses as having a defined permanent channel and bank and the occurrence of two or more of the following characteristics: A) evidence of scour or deposits of recent alluvium or detritus, B) the presence of standing or flowing water for a duration longer than a particular storm incident, and C) the presence of hydrophytic vegetation.

Methodology

A second order soil survey in accordance with the principles and practices noted in the USDA publication *Soil Survey Manual* (1993) was completed at the subject site. The classification system of the National Cooperative Soil Survey was used in this investigation. Soil map units identified at the project site generally correspond to those included in the *Soil Survey of the State of Connecticut* (USDA 2005).

1899 Bronson Road
Fairfield CT 06824
203 366 0588
www.wkassociates.net

Wetland determinations were completed based on the presence of poorly drained, very poorly drained, alluvial, or floodplain soils. Soil types were identified by observation of soil morphology (soil texture, color, structure, etc.). To observe the morphology of the property's soils, test pits and/or borings (maximum depth of two feet) were completed at the site.

Intermittent watercourse determinations were made based on the presence of a defined permanent channel and bank and the occurrence of two or more of the following characteristics: A) evidence of scour or deposits of recent alluvium or detritus, B) the presence of standing or flowing water for a duration longer than a particular storm incident, and C) the presence of hydrophytic vegetation.

Wetland boundaries were demarcated (flagged) with pink surveyor's tape (hung from vegetation) or small flags (on wire stakes) labeled "William Kenny Associates" that are generally spaced a maximum of every 50 feet. Complete boundaries are located along the lines that connect these sequentially numbered flags. The wetland boundaries are subject to change until adopted by local, state, or federal regulatory agencies.

Results

The approximate 3.3-acre commerical property is located at 205 Spring Hill Road in Monroe and Trumbull, Connecticut. Spring Hill Road borders the southern property boundary and Hickory Lane borders the northern property boundary. Property improvements include a commercial building and asphalt driveway and parking areas. The primary vegetative cover in the northern portion of the property is a broadleaved deciduous woodland. Lawn with other ornamentals and some shade trees are present in the southern portion of the property surrounding the property improvements.

Two inland wetland systems were identified and delineated. One system, which is located along the eastern property boundary, is a portion of a primarily off-site woodland wetland. The other system, which is located in the north-central portion of the property, is a manmade stormwater basin wetland maintained as woodland. Wetland soils are primarily poorly drained and formed from glacial till deposits or are forming from human altered deposits. The approximate locations of the systems are shown on the attached map. The boundaries of the systems were marked at the site with flags numbered 1 to 4 and 10 to 20.

Four soil map units were identified on the property (two wetland and two upland). Each map unit represents a specific area on the landscape and consists of one or more soils for which the unit is named. Other soils (inclusions that are generally too small to be delineated separately) may account for 10 to 15 percent of each map unit. The mapped units are identified in the following table by name and symbol and typical characteristics (parent material, drainage class, high water table, depth to bedrock, and slope). These characteristics are generally the primary characteristics to be considered in land use planning and management. A description of each characteristic and their land use implications follows the table. A complete description of each soil map unit can be found in the *Soil Survey of the State of Connecticut* (USDA 2005), and at *https://soilseries.sc.egov.usda.gov/osdname.aspx.* On the day of the review, there was no soil frost and no snow cover. The upland soil was moist and the wetland soil was wet. The sky was clear and air temperatures were in the 60's º F.

Map Unit Sym.	Map Unit Name	Parent Material	Slope (%)	Drainage Class	High Water Table Depth (ft)	High Water Table Kind	High Water Table Mos.	Depth To Bedrock (in)
Upland Soil								
29	Agawam fine sandy loam	Glacial Outwash	3-8	Well Drained	>6.0	--	--	>60
308	Udorthents, Smoothed	Excavated or Filled Soil (>2 feet)	0-45	Well Drained to Somewhat Poorly Drained	1.5->6.0	Apparent	Nov-May	>60
Wetland Soil								
1	Aquents	Disturbed Soil	0-3	Poorly Drained	0.0-1.5	Apparent	Nov-May	>60
3	Ridgebury	Compact Glacial Till	0-8	Poorly Drained	0.0-1.5	Perched	Nov-May	>60
	Leicester	Loose Glacial Till	0-3	Poorly Drained	0.0-1.5	Apparent	Nov-May	>60
	Whitman extremely stony fine sandy loam	Compact Glacial Till	0-3	Very Poorly Drained	0.0-0.5	Perched	Sep-Jun	>60

Parent material is the unconsolidated organic and mineral material in which soil forms. Soil inherits characteristics, such as mineralogy and texture, from its parent material. Glacial till is unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice. Glacial outwash consists of gravel, sand, and silt, which are commonly stratified and deposited by glacial melt water. Alluvium is material such as sand, silt, or clay, deposited on land by streams. Organic deposits consist of decomposed plant and animal parts.

A soil's texture affects the ease of digging, filling, and compacting and the permeability of a soil. Generally sand and gravel soils, such as outwash soils, have higher permeability rates than most glacial till soils. Soil permeability affects the cost to design and construct subsurface sanitary disposal facilities and, if too slow or too fast, may preclude their use. Outwash soils are generally excellent sources of natural aggregates (sand and gravel) suitable for commercial use, such as construction sub base material. Organic layers in soils can cause movement of structural footings. Compacted glacial till layers make excavating more difficult and may preclude the use of subsurface sanitary disposal systems or increase their design and construction costs if fill material is required.

Generally, soils with steeper slopes increase construction costs, increase the potential for erosion and sedimentation impacts, and reduce the feasibility of locating subsurface sanitary disposal facilities.

Drainage class refers to the frequency and duration of periods of soil saturation or partial saturation during soil formation. Seven classes of natural drainage classes exist. They range from excessively drained, where water is removed from the soil very rapidly, to very poorly drained, where water is removed so slowly that free water remains at or near the soil surface during most of the growing season. Soil drainage affects the type and growth of plants found in an area. When landscaping or gardening, drainage class information can be used to assure that proposed plants are adapted to existing drainage conditions or that necessary alterations to drainage conditions (irrigation or drainage systems) are provided to assure plant survival.

High water table is the highest level of a saturated zone in the soil in most years. The water table can affect the timing of excavations; the ease of excavating, constructing, and grading; and the supporting capacity of the soil. Shallow water tables may preclude the use of subsurface sanitary disposal systems or increase design and construction costs if fill material is required.

The depth to bedrock refers to the depth to fixed rock. Bedrock depth affects the ease and cost of construction, such as digging, filling, compacting, and planting. Shallow depth bedrock may preclude the use of subsurface sanitary disposal systems or increase design and construction costs if fill material is required.

Conclusions

Today, we investigated the property at 205 Spring Hill Road in Monroe and Trumbull, Connecticut and identified and delineated two inland wetland systems. Thank you for the opportunity to assist you. If you should have any questions or comments, please do not hesitate to contact us.

Sincerely,

William L. Kenny, PWS, PLA
Soil Scientist

Alexander Wojtkowiak
Soil Scientist

Enclosure

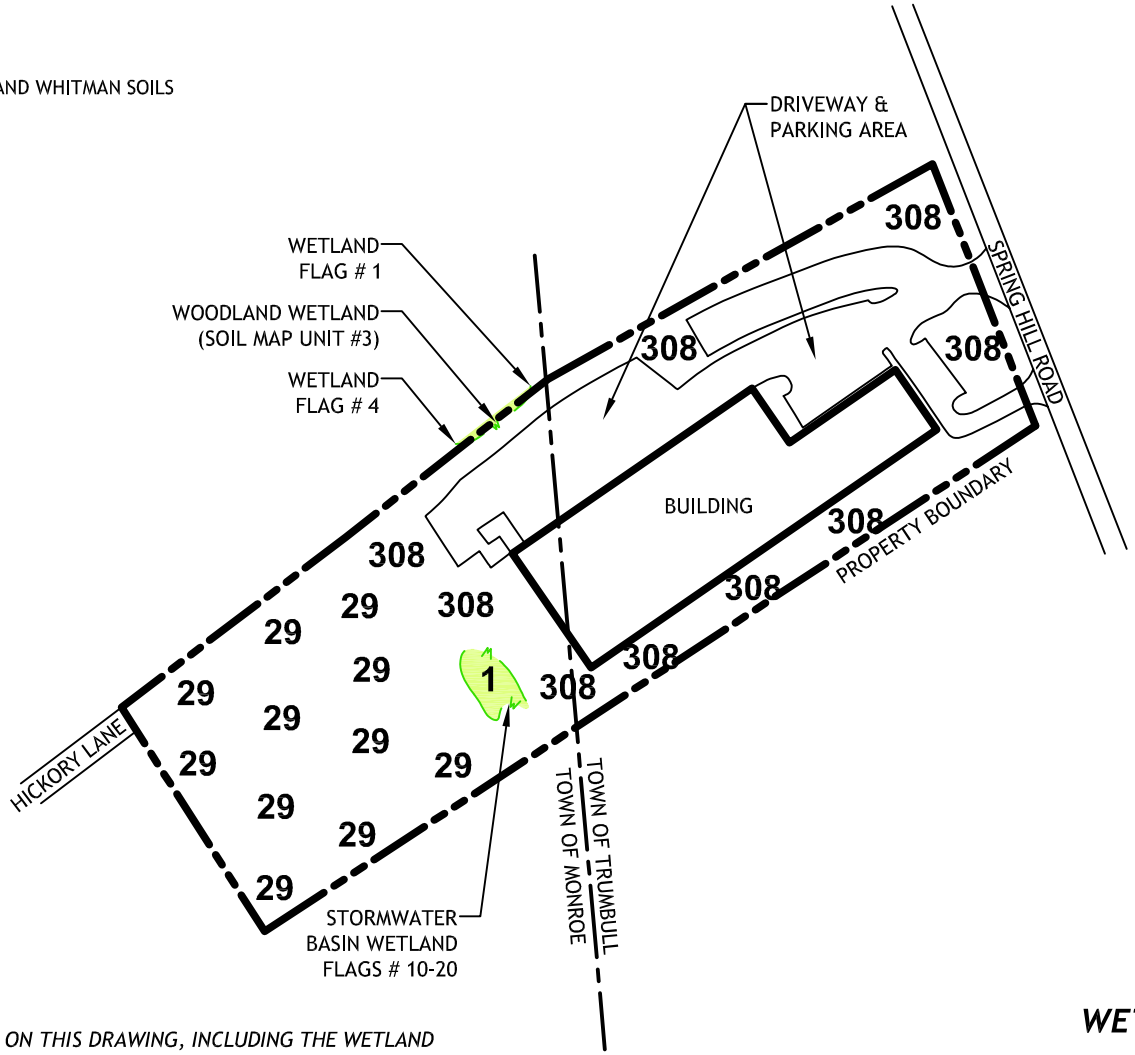
Ref. No. 5673

SOIL LEGEND

UPLAND
29 AGAWAM FINE SANDY LOAM
308 UDORTHENTS, SMOOTHED

WETLAND
1 AQUENTS
3 RIDGEBURY, LEICESTER AND WHITMAN SOILS

WILLIAM KENNY ASSOCIATES
LANDSCAPE ARCHITECTURE ▪ ECOLOGICAL SERVICES
1899 Bronson Road Fairfield CT 06824
203 366 0588 www.wkassociates.net



NOTES:
- *INFORMATION SHOWN ON THIS DRAWING, INCLUDING THE WETLAND BOUNDARY, IS APPROXIMATE. THE BOUNDARY IS NOT A SURVEYED REPRESENTATION OF WHAT WAS FIELD MARKED (FLAGGED).*
- *WETLAND AND SOIL INFORMATION PROVIDED BY WILLIAM KENNY ASSOC. OTHER INFORMATION TAKEN FROM A TOWN OF MONROE GIS MAP AND A TOWN OF TRUMBULL GIS MAP.*
- ***29, 308,1** AND **3** ARE SOIL MAPPING UNIT SYMBOLS. SEE WETLAND DELINEATION REPORT FOR THE SOIL MAP UNIT NAMES AND ADDITIONAL RELATED INFORMATION.*

I CERTIFY THAT THIS WETLAND MAP SUBSTANTIALLY REPRESENTS THE SOILS AND WETLANDS MAPPED IN THE FIELD

WILLIAM L. KENNY, SOIL SCIENTIST

WETLAND & WATERCOURSE MAP

205 SPRING HILL ROAD MONROE/TRUMBULL, CONNECTICUT

SCALE: NOT TO SCALE
DATE: NOVEMBER 16, 2023

Ref. No. 5673

NORTH

APPENDIX C
HYDROLOGY

NOAA Atlas Precipitation Data
Existing Drainage Area Map (EDA-1)
Proposed Drainage Area Map (PDA-1)
HydroCAD Report – Existing Conditions
HydroCAD Report – Proposed Conditions
Water Quality Volume & Flow Calculations

NOAA Atlas 14, Volume 10, Version 3
Location name: Monroe, Connecticut, USA*
Latitude: 41.2969°, Longitude: -73.2367°
Elevation: 328 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

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

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

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

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.362** (0.277-0.463)	**0.425** (0.325-0.544)	**0.528** (0.402-0.677)	**0.612** (0.464-0.788)	**0.729** (0.536-0.971)	**0.817** (0.590-1.11)	**0.909** (0.639-1.27)	**1.01** (0.678-1.44)	**1.16** (0.748-1.69)	**1.27** (0.806-1.89)
10-min	**0.514** (0.393-0.656)	**0.602** (0.460-0.770)	**0.746** (0.569-0.957)	**0.867** (0.657-1.12)	**1.03** (0.760-1.38)	**1.16** (0.836-1.57)	**1.29** (0.905-1.80)	**1.43** (0.959-2.03)	**1.64** (1.06-2.39)	**1.80** (1.14-2.68)
15-min	**0.604** (0.462-0.772)	**0.708** (0.541-0.906)	**0.879** (0.669-1.13)	**1.02** (0.773-1.31)	**1.22** (0.894-1.62)	**1.36** (0.984-1.84)	**1.51** (1.06-2.11)	**1.68** (1.13-2.39)	**1.92** (1.25-2.81)	**2.12** (1.34-3.15)
30-min	**0.839** (0.642-1.07)	**0.984** (0.752-1.26)	**1.22** (0.930-1.57)	**1.42** (1.08-1.83)	**1.69** (1.24-2.25)	**1.90** (1.36-2.56)	**2.11** (1.48-2.92)	**2.33** (1.56-3.31)	**2.64** (1.71-3.85)	**2.88** (1.82-4.28)
60-min	**1.07** (0.822-1.37)	**1.26** (0.963-1.61)	**1.56** (1.19-2.01)	**1.82** (1.38-2.34)	**2.16** (1.59-2.87)	**2.43** (1.75-3.27)	**2.70** (1.88-3.73)	**2.98** (2.00-4.22)	**3.35** (2.17-4.89)	**3.65** (2.31-5.41)
2-hr	**1.39** (1.07-1.77)	**1.64** (1.26-2.08)	**2.05** (1.57-2.61)	**2.38** (1.82-3.05)	**2.85** (2.11-3.77)	**3.20** (2.32-4.31)	**3.57** (2.52-4.94)	**3.97** (2.67-5.60)	**4.54** (2.95-6.58)	**5.00** (3.18-7.38)
3-hr	**1.60** (1.24-2.03)	**1.90** (1.46-2.40)	**2.38** (1.83-3.02)	**2.78** (2.13-3.55)	**3.33** (2.48-4.40)	**3.75** (2.73-5.03)	**4.18** (2.97-5.79)	**4.68** (3.15-6.57)	**5.39** (3.51-7.79)	**5.98** (3.80-8.78)
6-hr	**2.02** (1.57-2.54)	**2.41** (1.87-3.03)	**3.05** (2.36-3.85)	**3.58** (2.76-4.54)	**4.31** (3.23-5.67)	**4.86** (3.57-6.50)	**5.44** (3.90-7.52)	**6.12** (4.14-8.54)	**7.12** (4.64-10.2)	**7.96** (5.08-11.6)
12-hr	**2.48** (1.94-3.10)	**3.00** (2.34-3.74)	**3.84** (2.99-4.80)	**4.53** (3.51-5.70)	**5.49** (4.13-7.17)	**6.20** (4.58-8.25)	**6.96** (5.02-9.58)	**7.86** (5.34-10.9)	**9.20** (6.02-13.1)	**10.3** (6.60-14.9)
24-hr	**2.91** (2.29-3.61)	**3.57** (2.80-4.43)	**4.63** (3.63-5.76)	**5.52** (4.30-6.90)	**6.74** (5.10-8.76)	**7.64** (5.68-10.1)	**8.62** (6.26-11.8)	**9.80** (6.67-13.5)	**11.6** (7.61-16.4)	**13.1** (8.42-18.9)
2-day	**3.29** (2.60-4.05)	**4.08** (3.23-5.03)	**5.39** (4.25-6.66)	**6.47** (5.07-8.03)	**7.96** (6.07-10.3)	**9.05** (6.79-12.0)	**10.3** (7.53-14.1)	**11.8** (8.04-16.1)	**14.1** (9.31-19.9)	**16.2** (10.4-23.2)
3-day	**3.58** (2.84-4.38)	**4.45** (3.53-5.46)	**5.88** (4.65-7.23)	**7.06** (5.56-8.73)	**8.69** (6.66-11.2)	**9.89** (7.44-13.0)	**11.2** (8.26-15.4)	**12.9** (8.82-17.6)	**15.5** (10.2-21.7)	**17.8** (11.5-25.4)
4-day	**3.84** (3.06-4.70)	**4.77** (3.80-5.84)	**6.27** (4.98-7.70)	**7.52** (5.94-9.28)	**9.25** (7.10-11.9)	**10.5** (7.93-13.8)	**11.9** (8.78-16.2)	**13.7** (9.37-18.6)	**16.4** (10.8-23.0)	**18.8** (12.2-26.7)
7-day	**4.61** (3.70-5.61)	**5.62** (4.50-6.84)	**7.27** (5.79-8.87)	**8.63** (6.84-10.6)	**10.5** (8.09-13.4)	**11.9** (8.99-15.5)	**13.4** (9.89-18.1)	**15.3** (10.5-20.6)	**18.1** (12.0-25.2)	**20.6** (13.3-29.0)
10-day	**5.36** (4.31-6.50)	**6.42** (5.15-7.79)	**8.15** (6.52-9.91)	**9.59** (7.62-11.7)	**11.6** (8.92-14.7)	**13.0** (9.85-16.8)	**14.6** (10.7-19.5)	**16.5** (11.4-22.2)	**19.3** (12.8-26.7)	**21.7** (14.1-30.5)
20-day	**7.63** (6.17-9.18)	**8.79** (7.10-10.6)	**10.7** (8.61-12.9)	**12.3** (9.82-14.9)	**14.4** (11.2-18.1)	**16.1** (12.2-20.5)	**17.8** (13.0-23.3)	**19.7** (13.7-26.2)	**22.3** (14.9-30.6)	**24.4** (15.9-34.1)
30-day	**9.49** (7.71-11.4)	**10.7** (8.70-12.9)	**12.7** (10.3-15.3)	**14.4** (11.6-17.4)	**16.7** (12.9-20.8)	**18.5** (14.0-23.3)	**20.2** (14.8-26.2)	**22.1** (15.4-29.3)	**24.6** (16.5-33.6)	**26.6** (17.3-36.9)
45-day	**11.8** (9.61-14.1)	**13.1** (10.7-15.6)	**15.2** (12.4-18.2)	**17.0** (13.7-20.5)	**19.4** (15.1-24.0)	**21.3** (16.2-26.7)	**23.2** (16.9-29.8)	**25.0** (17.5-33.1)	**27.4** (18.4-37.3)	**29.2** (19.1-40.4)
60-day	**13.7** (11.2-16.3)	**15.1** (12.3-17.9)	**17.3** (14.1-20.6)	**19.1** (15.5-23.0)	**21.7** (16.9-26.7)	**23.7** (18.0-29.6)	**25.6** (18.7-32.7)	**27.5** (19.3-36.2)	**29.8** (20.0-40.4)	**31.5** (20.6-43.4)

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

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

Please refer to NOAA Atlas 14 document for more information.

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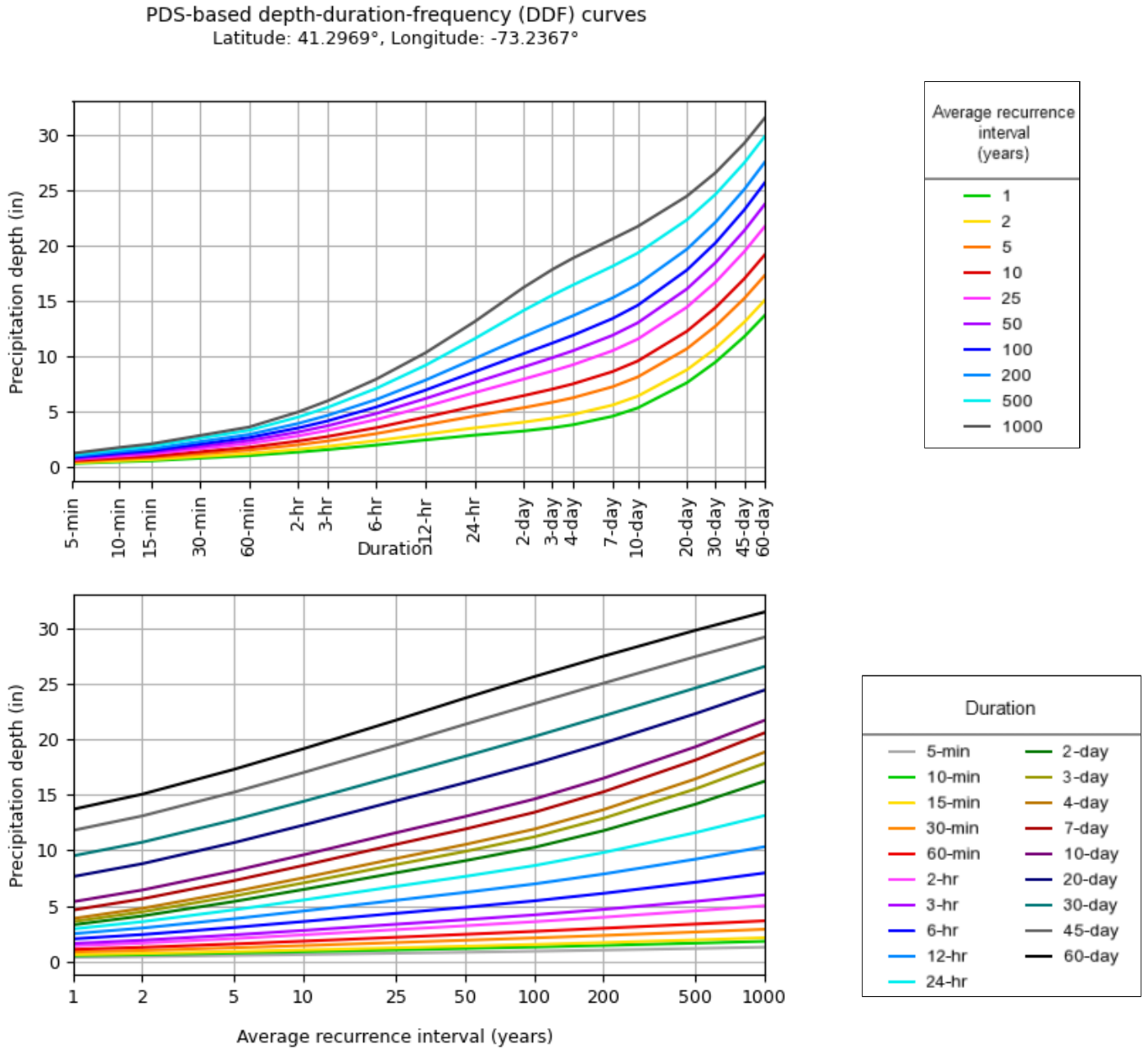
PF graphical



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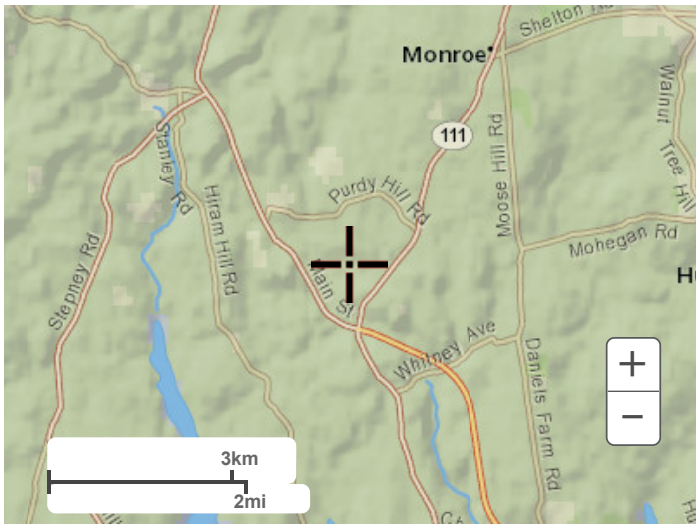
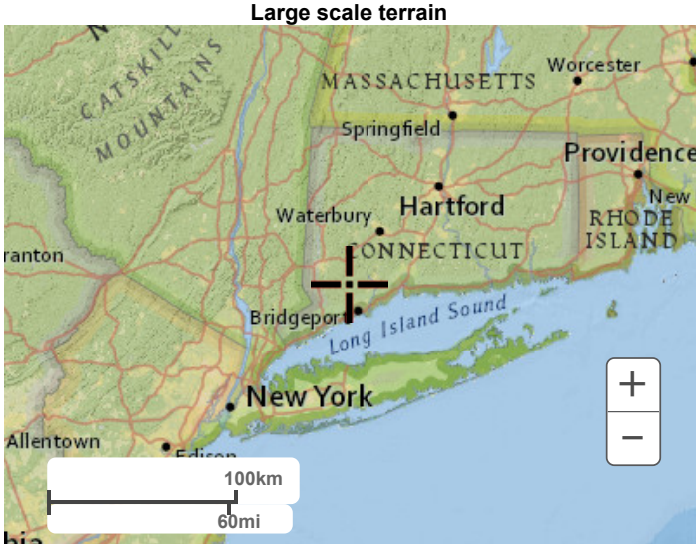
Maps & aerials

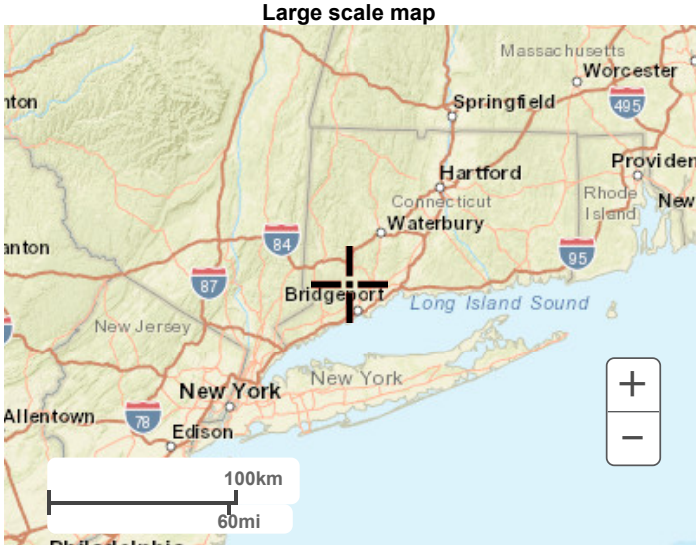
Small scale terrain



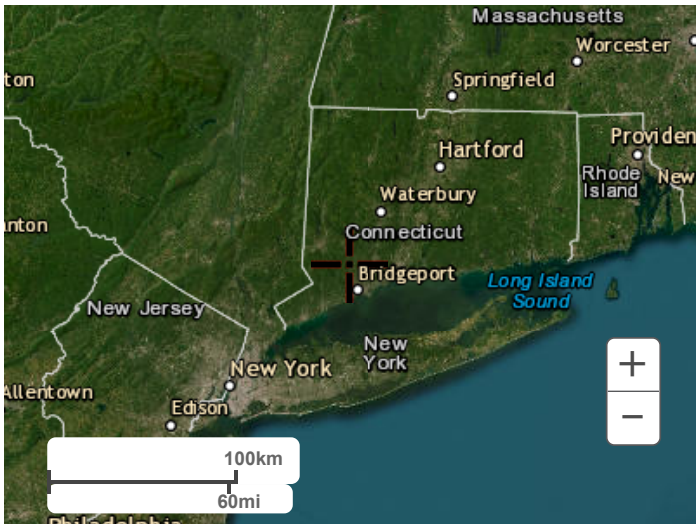
Large scale terrain



Large scale map



Large scale aerial



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

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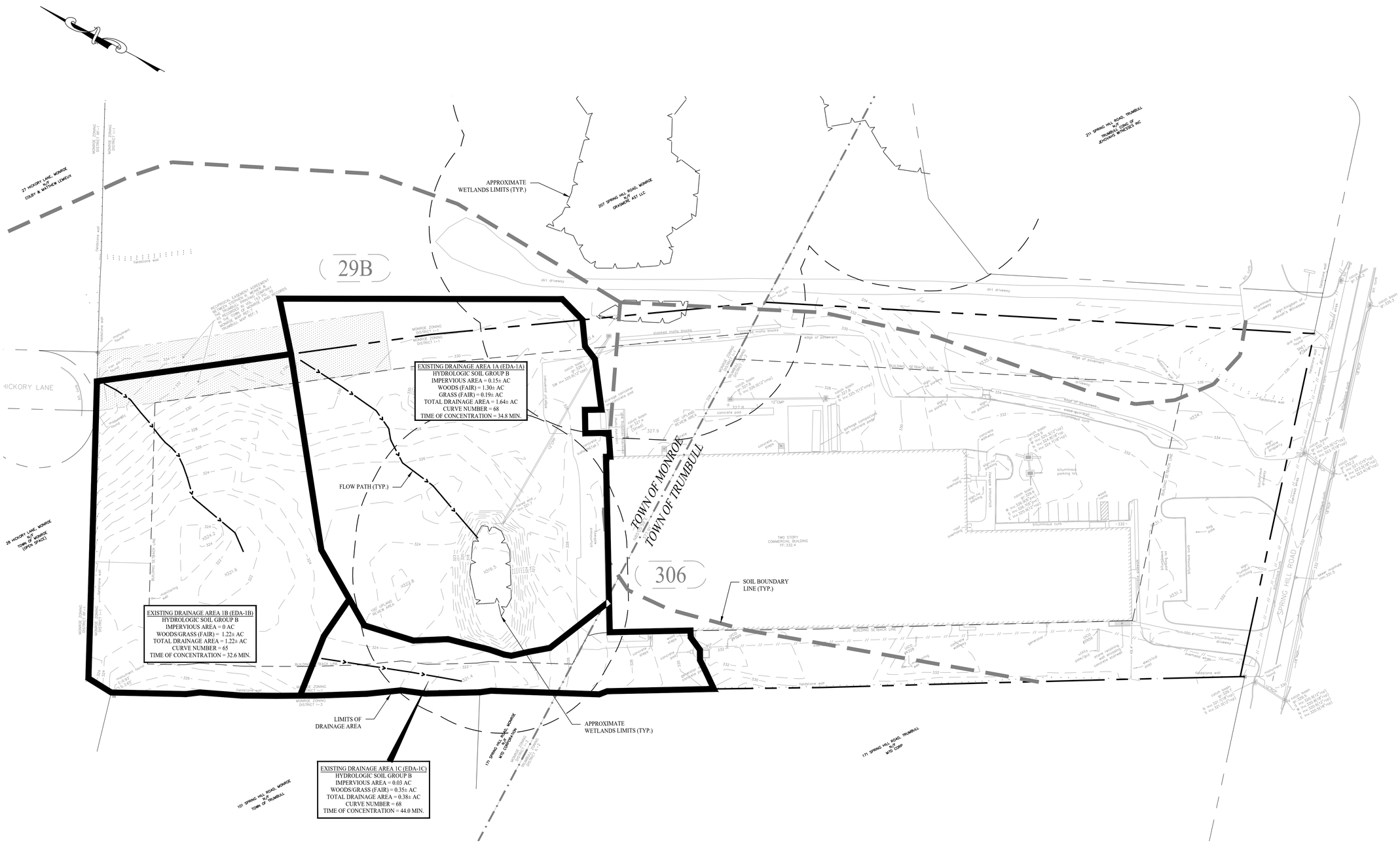

Rev. #: Date Description

Graphic Scale: 40 0 40 80

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501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695
351 Newbury Street, Boston, MA 02115 T: (617) 203-3160 F: (203) 880-9695

Drawn By:	BPD
Checked By:	VER
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 40'

Kevin Solli, P.E.
CT 25759

Project:

PROPOSED DEVELOPMENT
205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title: EXISTING DRAINAGE AREA PLAN

Sheet #: EDA-1

Jan 29, 2024 - 3:25pm omogoulos
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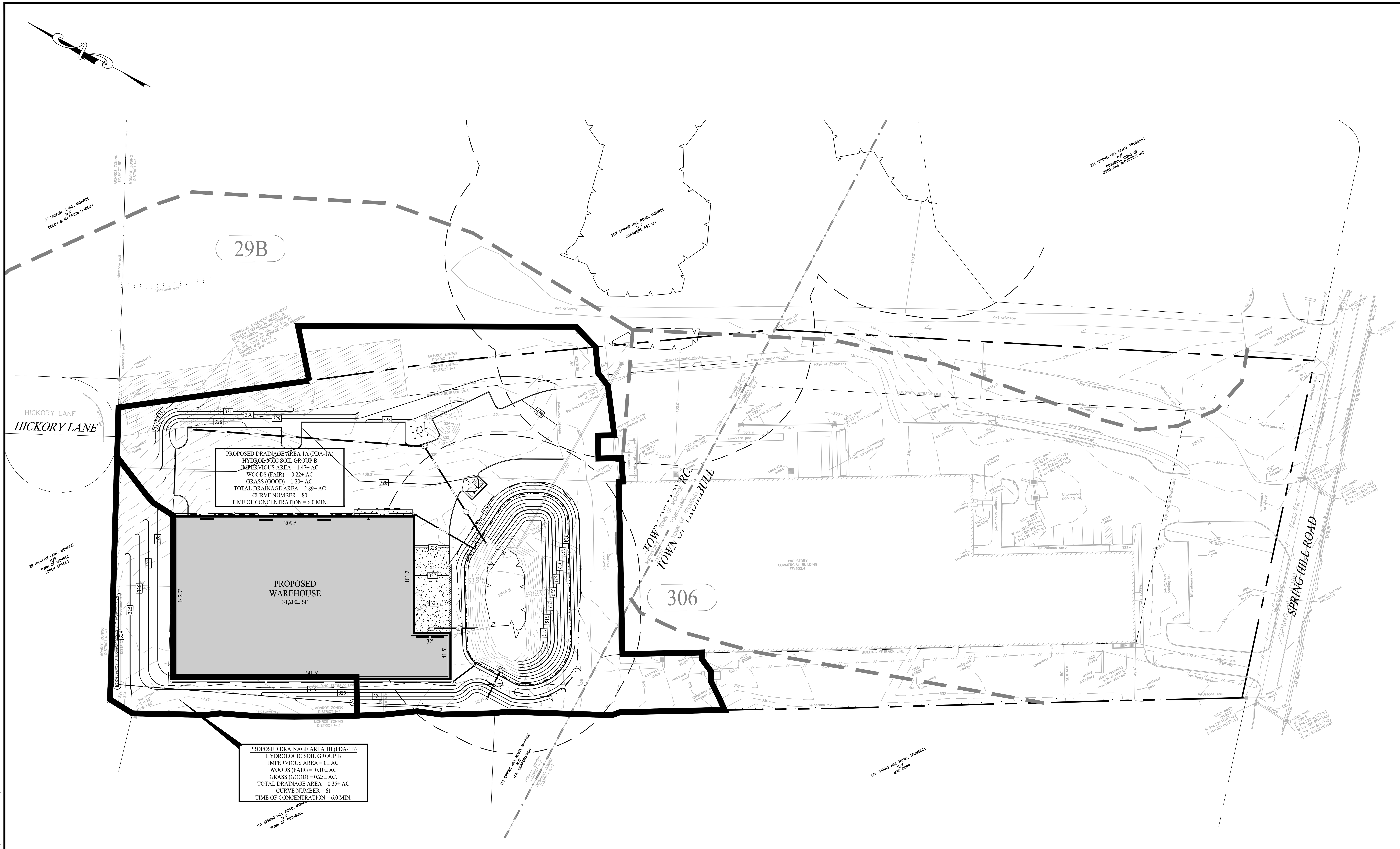

LEGEND

- PROPERTY LINE
- ADJOINING LOT LINE
- LIMIT OF DRAINAGE AREA
- FLOW PATH

Rev. #:	Date	Description

Graphic Scale: 40 0 40 80

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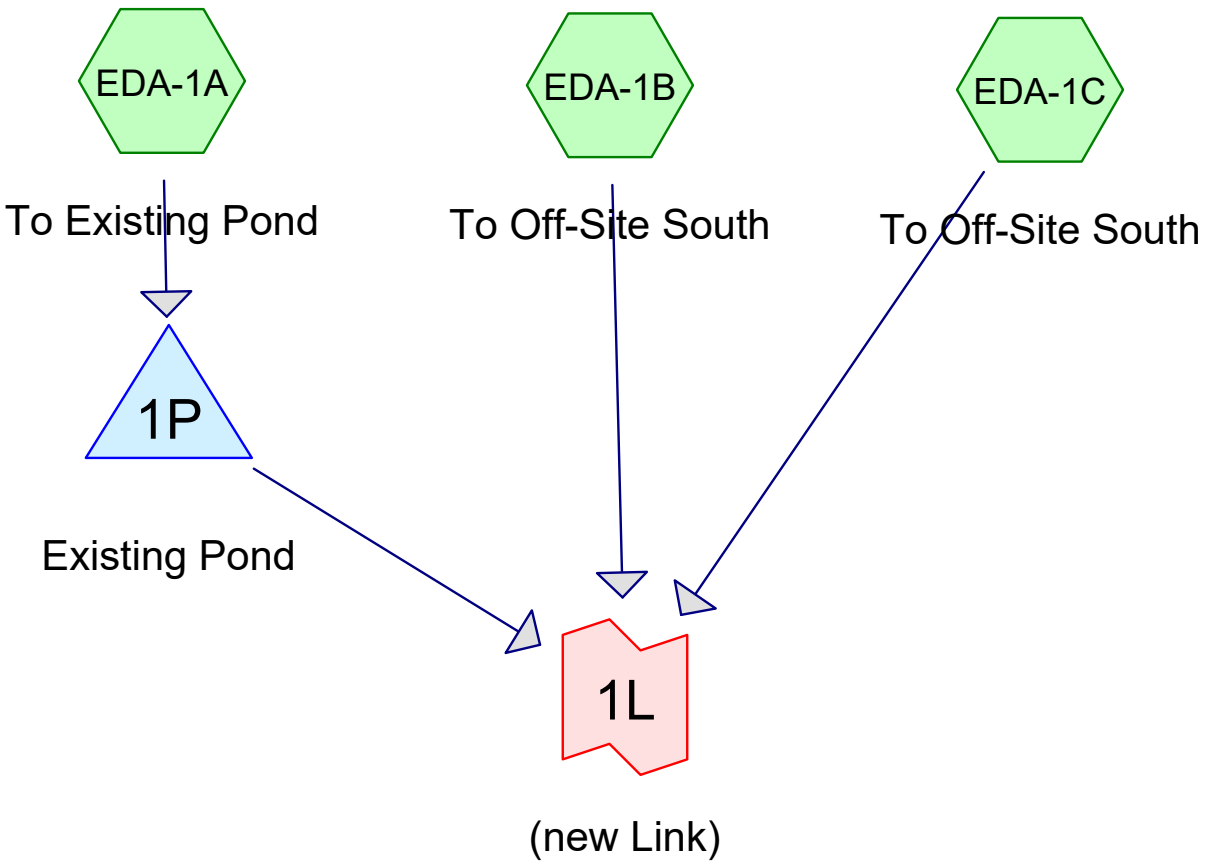
CT 25759

Project:

PROPOSED DEVELOPMENT
205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title: PROPOSED DRAINAGE AREA MAP

Sheet #: PDA-1



Subcat Reach Pond Link

Routing Diagram for Existing Conditions - 205 Spring Hill Road, Monroe
Prepared by Solli Engineering, LLC, Printed 1/29/2024

Summary for Subcatchment EDA-1A: To Existing Pond

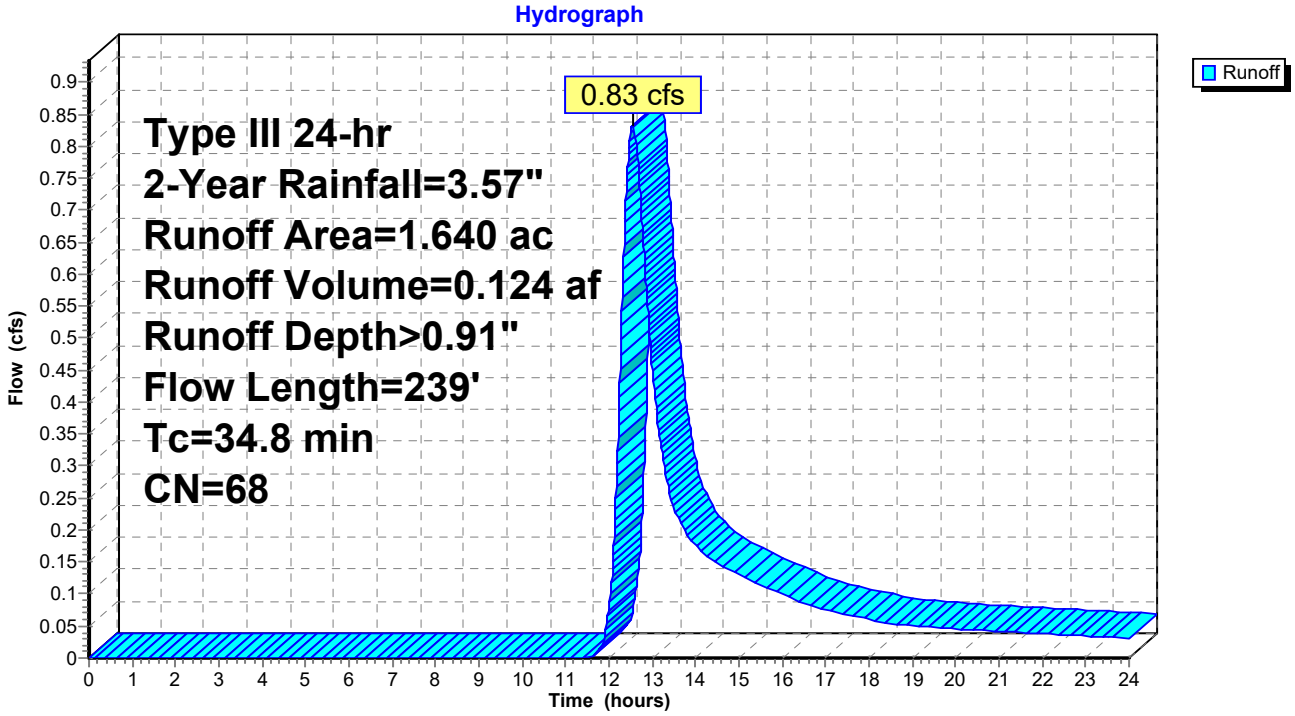
Runoff = 0.83 cfs @ 12.56 hrs, Volume= 0.124 af, Depth> 0.91"
Routed to Pond 1P : Existing Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.57"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
1.300	65	Woods/grass comb., Fair, HSG B
0.190	61	>75% Grass cover, Good, HSG B
1.640	68	Weighted Average
1.490		90.85% Pervious Area
0.150		9.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.1	117	0.0300	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.1	32	0.0600	3.94		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.6	72	0.0140	1.90		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	18	0.4400	10.68		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
34.8	239	Total			

Subcatchment EDA-1A: To Existing Pond



Summary for Subcatchment EDA-1B: To Off-Site South

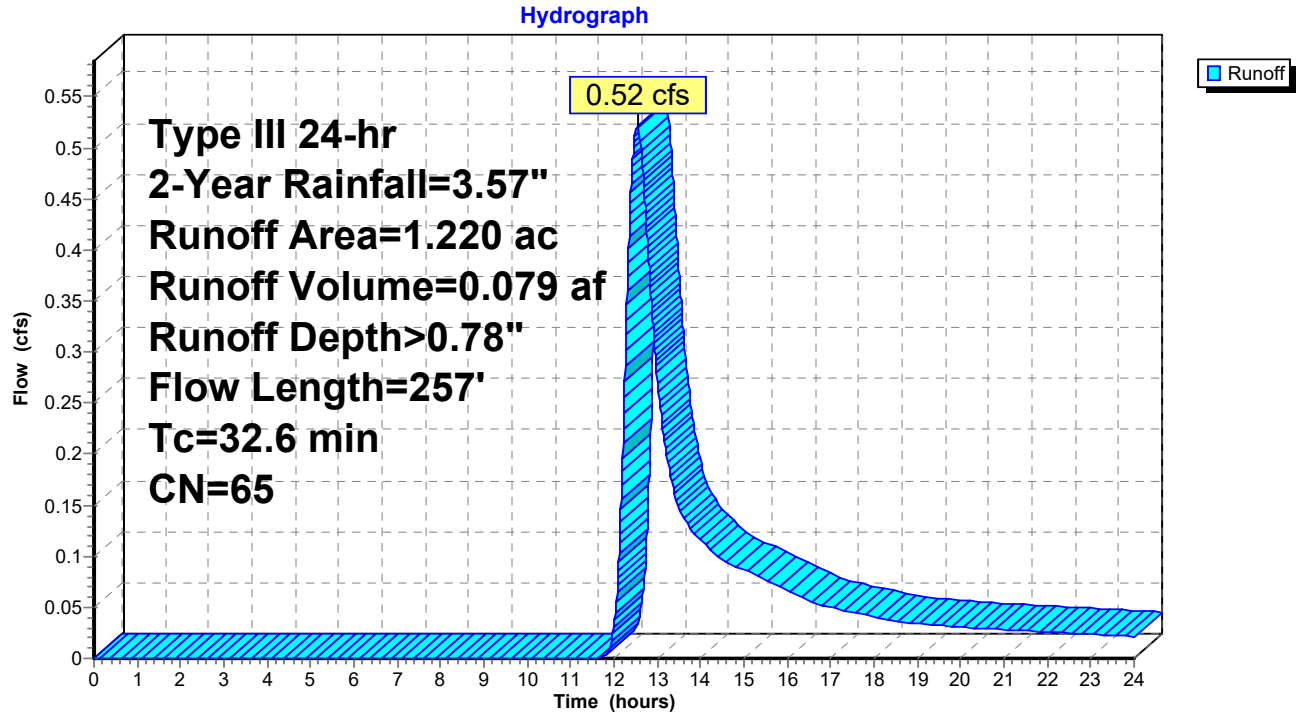
Runoff = 0.52 cfs @ 12.53 hrs, Volume= 0.079 af, Depth> 0.78"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.57"

Area (ac)	CN	Description
1.220	65	Woods/grass comb., Fair, HSG B
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.1	192	0.0940	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.5	65	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
32.6	257	Total			

Subcatchment EDA-1B: To Off-Site South



Summary for Subcatchment EDA-1C: To Off-Site South

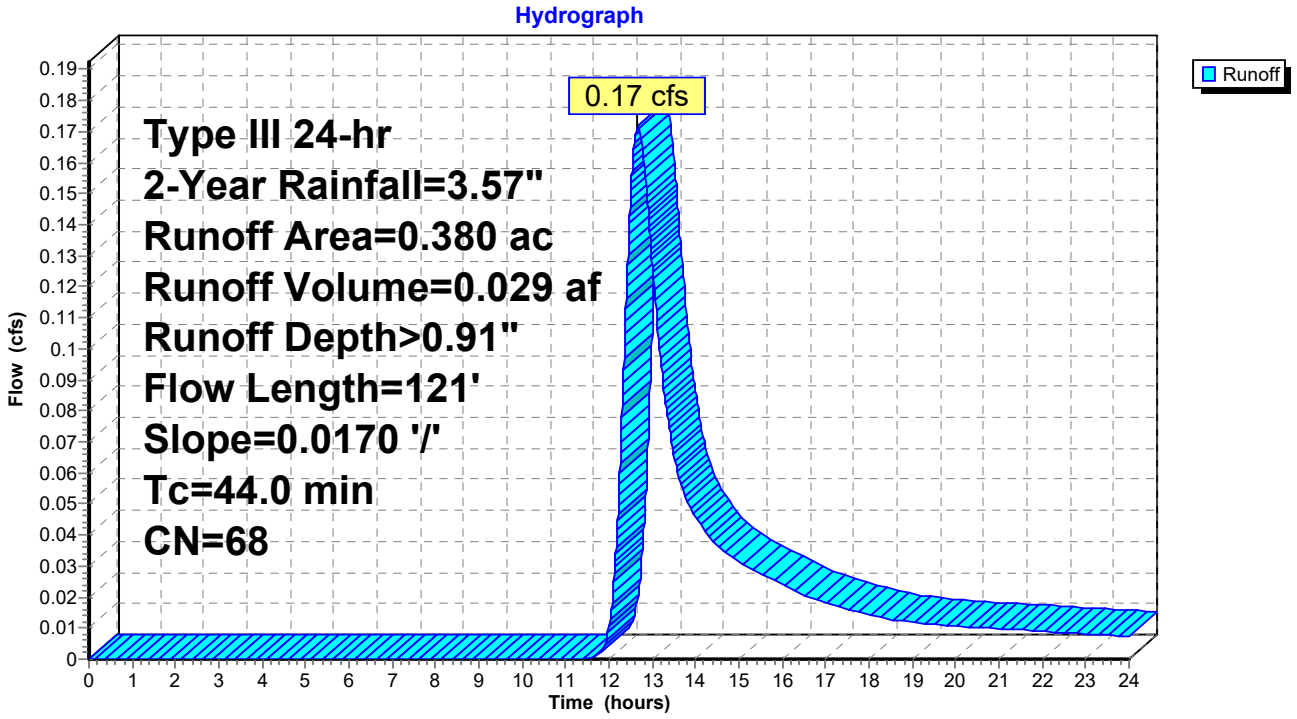
Runoff = 0.17 cfs @ 12.67 hrs, Volume= 0.029 af, Depth> 0.91"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.57"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG B
0.350	65	Woods/grass comb., Fair, HSG B
0.380	68	Weighted Average
0.350		92.11% Pervious Area
0.030		7.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.0	121	0.0170	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"

Subcatchment EDA-1C: To Off-Site South



Summary for Pond 1P: Existing Pond

Inflow Area = 1.640 ac, 9.15% Impervious, Inflow Depth > 10.35" for 2-Year event
Inflow = 1.48 cfs @ 12.56 hrs, Volume= 1.414 af, Incl. 0.65 cfs Base Flow
Outflow = 1.46 cfs @ 12.63 hrs, Volume= 1.041 af, Atten= 2%, Lag= 4.1 min
Primary = 1.46 cfs @ 12.63 hrs, Volume= 1.041 af
Routed to Link 1L : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.090 ac Storage= 0.140 af
Peak Elev= 322.44' @ 12.63 hrs Surf.Area= 0.134 ac Storage= 0.518 af (0.378 af above start)

Plug-Flow detention time= 504.9 min calculated for 0.900 af (64% of inflow)
Center-of-Mass det. time= 189.5 min (925.1 - 735.5)

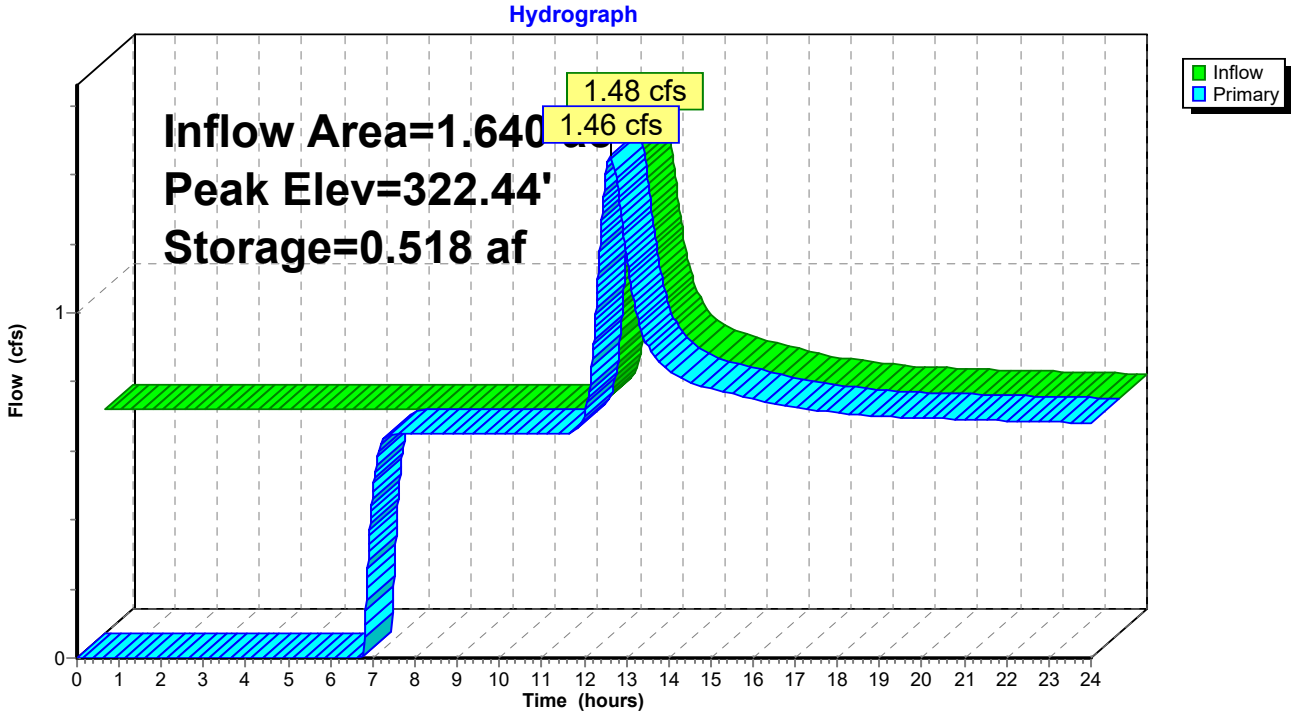
Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	0.594 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.050	201.0	0.000	0.000	0.050
318.00	0.070	240.0	0.060	0.060	0.082
319.00	0.090	252.0	0.080	0.140	0.094
320.00	0.100	268.0	0.095	0.234	0.110
321.00	0.110	285.0	0.105	0.339	0.129
322.00	0.130	297.0	0.120	0.459	0.143
323.00	0.140	310.0	0.135	0.594	0.159

Device	Routing	Invert	Outlet Devices
#1	Primary	322.35'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=1.41 cfs @ 12.63 hrs HW=322.44' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.41 cfs @ 0.76 fps)

Pond 1P: Existing Pond



Stage-Discharge for Pond 1P: Existing Pond

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
317.00	0.00	319.60	0.00	322.20	0.00
317.05	0.00	319.65	0.00	322.25	0.00
317.10	0.00	319.70	0.00	322.30	0.00
317.15	0.00	319.75	0.00	322.35	0.00
317.20	0.00	319.80	0.00	322.40	0.56
317.25	0.00	319.85	0.00	322.45	1.57
317.30	0.00	319.90	0.00	322.50	2.89
317.35	0.00	319.95	0.00	322.55	4.45
317.40	0.00	320.00	0.00	322.60	6.27
317.45	0.00	320.05	0.00	322.65	8.30
317.50	0.00	320.10	0.00	322.70	10.53
317.55	0.00	320.15	0.00	322.75	12.95
317.60	0.00	320.20	0.00	322.80	15.67
317.65	0.00	320.25	0.00	322.85	18.60
317.70	0.00	320.30	0.00	322.90	21.74
317.75	0.00	320.35	0.00	322.95	25.10
317.80	0.00	320.40	0.00	323.00	**28.27**
317.85	0.00	320.45	0.00		
317.90	0.00	320.50	0.00		
317.95	0.00	320.55	0.00		
318.00	0.00	320.60	0.00		
318.05	0.00	320.65	0.00		
318.10	0.00	320.70	0.00		
318.15	0.00	320.75	0.00		
318.20	0.00	320.80	0.00		
318.25	0.00	320.85	0.00		
318.30	0.00	320.90	0.00		
318.35	0.00	320.95	0.00		
318.40	0.00	321.00	0.00		
318.45	0.00	321.05	0.00		
318.50	0.00	321.10	0.00		
318.55	0.00	321.15	0.00		
318.60	0.00	321.20	0.00		
318.65	0.00	321.25	0.00		
318.70	0.00	321.30	0.00		
318.75	0.00	321.35	0.00		
318.80	0.00	321.40	0.00		
318.85	0.00	321.45	0.00		
318.90	0.00	321.50	0.00		
318.95	0.00	321.55	0.00		
319.00	0.00	321.60	0.00		
319.05	0.00	321.65	0.00		
319.10	0.00	321.70	0.00		
319.15	0.00	321.75	0.00		
319.20	0.00	321.80	0.00		
319.25	0.00	321.85	0.00		
319.30	0.00	321.90	0.00		
319.35	0.00	321.95	0.00		
319.40	0.00	322.00	0.00		
319.45	0.00	322.05	0.00		
319.50	0.00	322.10	0.00		
319.55	0.00	322.15	0.00		

Stage-Area-Storage for Pond 1P: Existing Pond

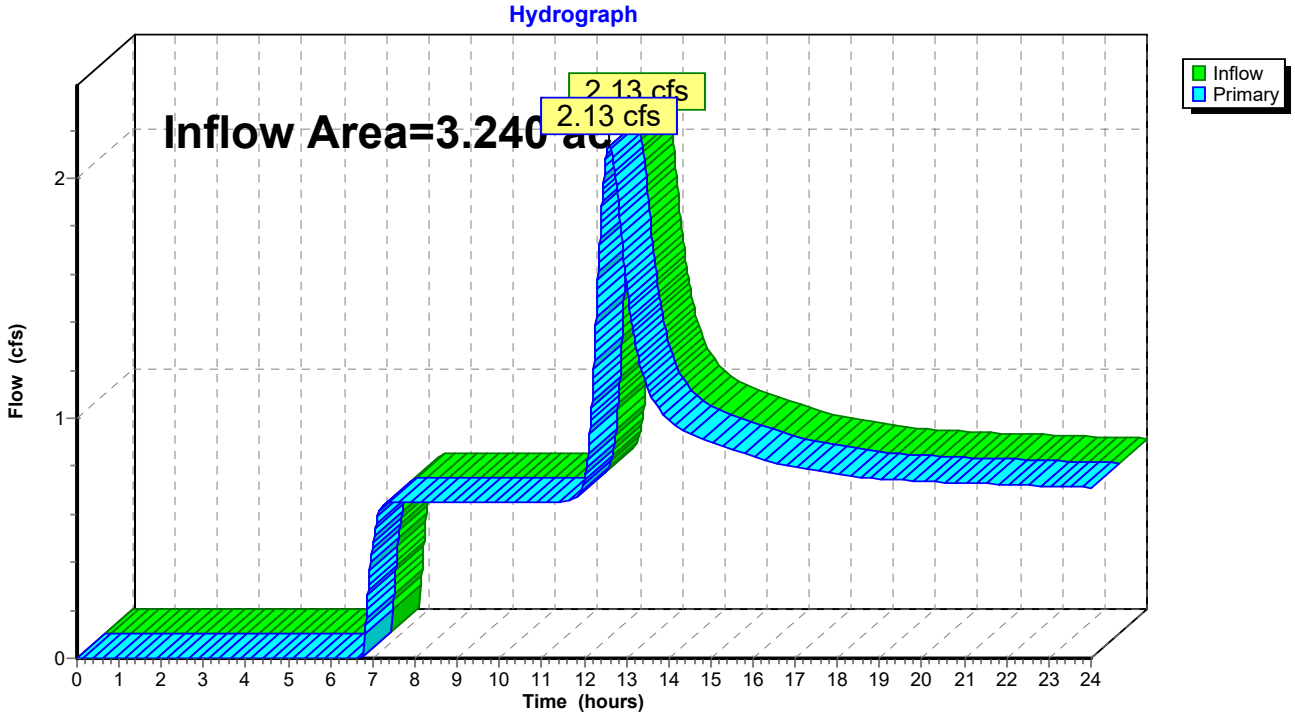
Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.050	0.000
317.10	0.052	0.005
317.20	0.054	0.010
317.30	0.056	0.016
317.40	0.058	0.022
317.50	0.060	0.027
317.60	0.062	0.033
317.70	0.064	0.040
317.80	0.066	0.046
317.90	0.068	0.053
318.00	0.070	0.060
318.10	0.072	0.067
318.20	0.074	0.074
318.30	0.076	0.082
318.40	0.078	0.089
318.50	0.080	0.097
318.60	0.082	0.105
318.70	0.084	0.113
318.80	0.086	0.122
318.90	0.088	0.131
319.00	0.090	0.140
319.10	0.091	0.149
319.20	0.092	0.158
319.30	0.093	0.167
319.40	0.094	0.176
319.50	0.095	0.186
319.60	0.096	0.195
319.70	0.097	0.205
319.80	0.098	0.215
319.90	0.099	0.225
320.00	0.100	0.234
320.10	0.101	0.245
320.20	0.102	0.255
320.30	0.103	0.265
320.40	0.104	0.275
320.50	0.105	0.286
320.60	0.106	0.296
320.70	0.107	0.307
320.80	0.108	0.318
320.90	0.109	0.328
321.00	0.110	0.339
321.10	0.112	0.351
321.20	0.114	0.362
321.30	0.116	0.373
321.40	0.118	0.385
321.50	0.120	0.397
321.60	0.122	0.409
321.70	0.124	0.421
321.80	0.126	0.434
321.90	0.128	0.446
322.00	0.130	0.459
322.10	0.131	0.472
322.20	0.132	0.485
322.30	0.133	0.499
322.40	0.134	0.512
322.50	0.135	0.526
322.60	0.136	0.539
322.70	0.137	0.553
322.80	0.138	0.566
322.90	0.139	0.580
323.00	**0.140**	**0.594**

Summary for Link 1L: (new Link)

Inflow Area = 3.240 ac, 5.56% Impervious, Inflow Depth > 4.25" for 2-Year event
Inflow = 2.13 cfs @ 12.60 hrs, Volume= 1.149 af
Primary = 2.13 cfs @ 12.60 hrs, Volume= 1.149 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: (new Link)



Summary for Subcatchment EDA-1A: To Existing Pond

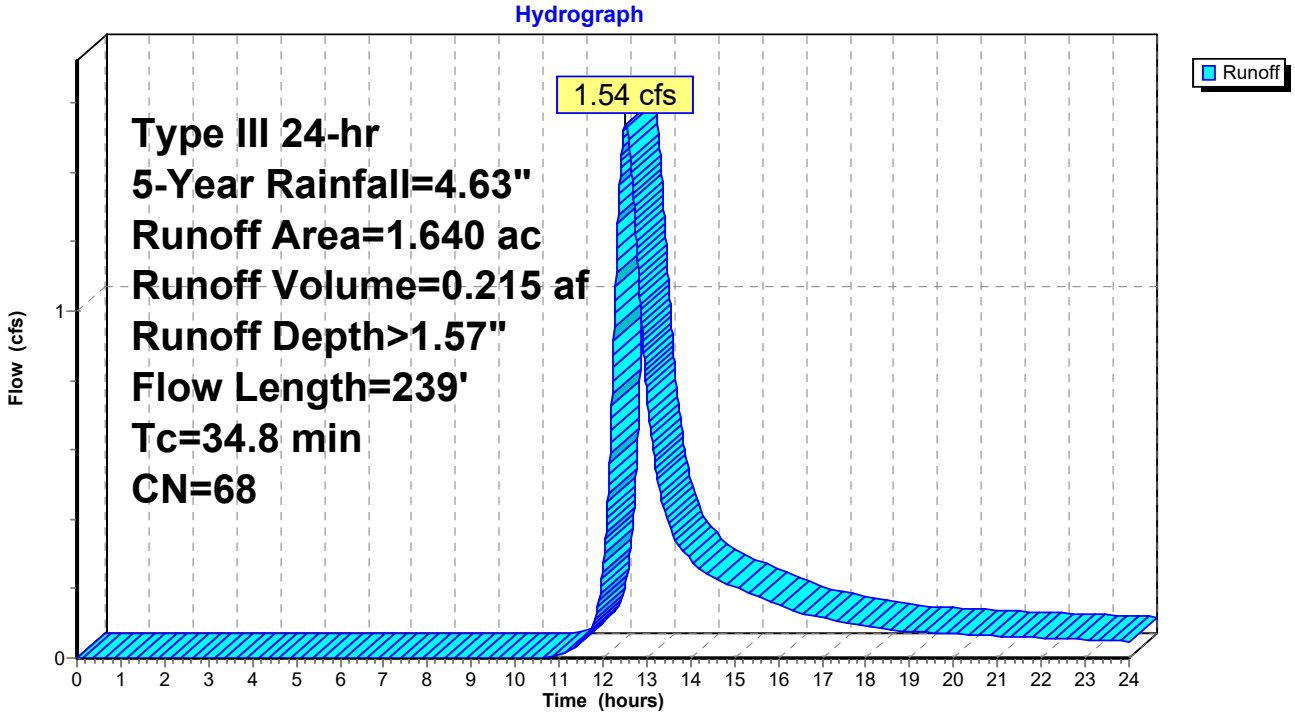
Runoff = 1.54 cfs @ 12.52 hrs, Volume= 0.215 af, Depth> 1.57"
Routed to Pond 1P : Existing Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-Year Rainfall=4.63"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
1.300	65	Woods/grass comb., Fair, HSG B
0.190	61	>75% Grass cover, Good, HSG B
1.640	68	Weighted Average
1.490		90.85% Pervious Area
0.150		9.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.1	117	0.0300	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.1	32	0.0600	3.94		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.6	72	0.0140	1.90		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	18	0.4400	10.68		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
34.8	239	Total			

Subcatchment EDA-1A: To Existing Pond



Summary for Subcatchment EDA-1B: To Off-Site South

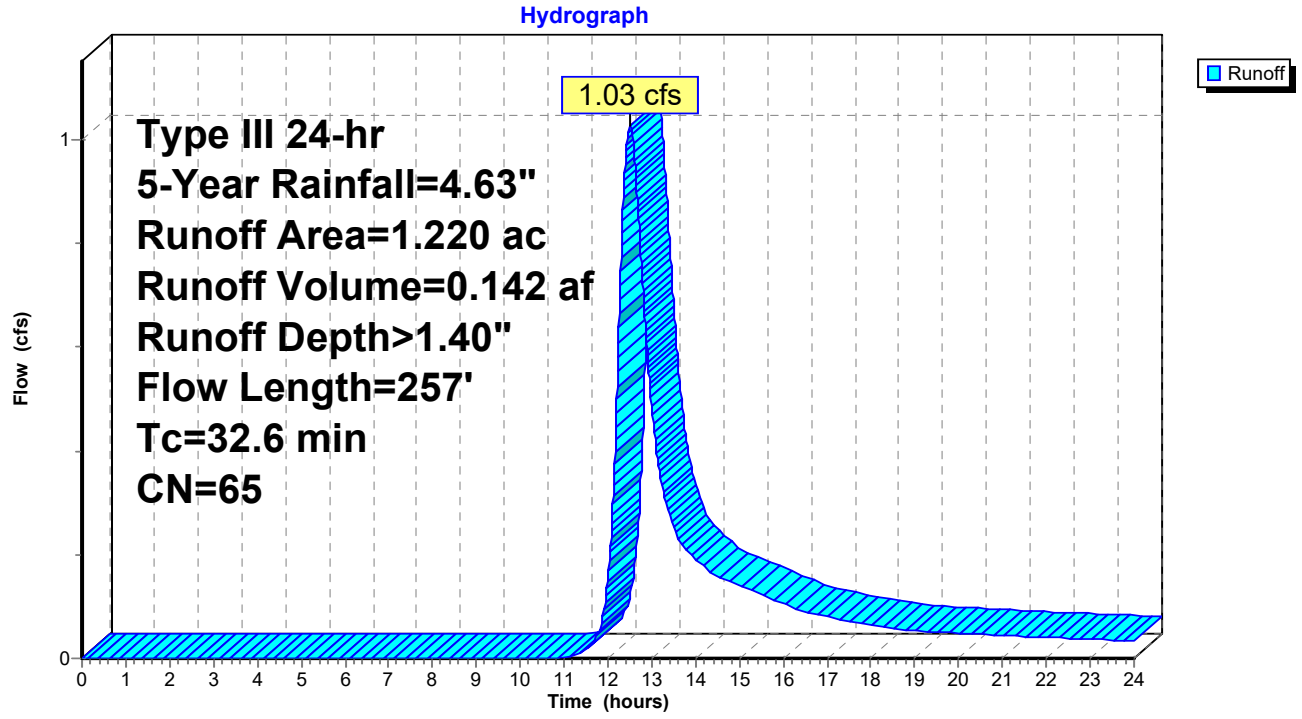
Runoff = 1.03 cfs @ 12.50 hrs, Volume= 0.142 af, Depth> 1.40"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-Year Rainfall=4.63"

Area (ac)	CN	Description
1.220	65	Woods/grass comb., Fair, HSG B
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.1	192	0.0940	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.5	65	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
32.6	257	Total			

Subcatchment EDA-1B: To Off-Site South



Summary for Subcatchment EDA-1C: To Off-Site South

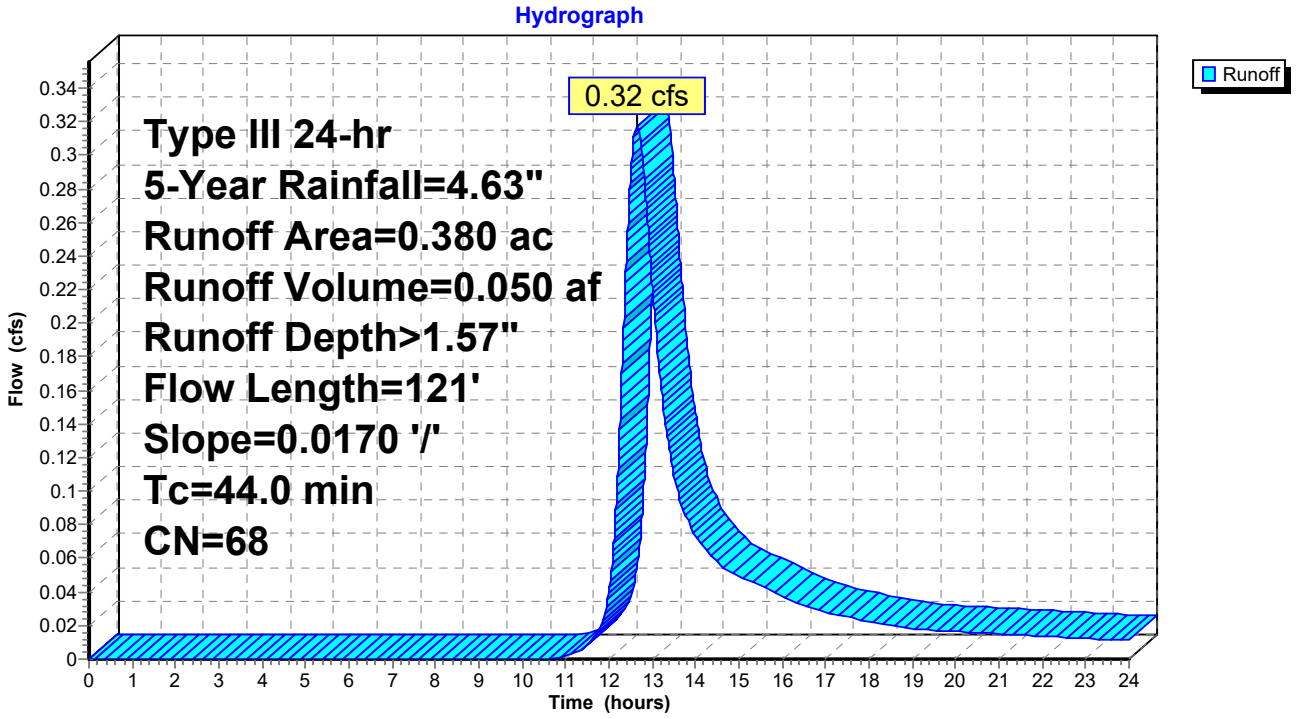
Runoff = 0.32 cfs @ 12.66 hrs, Volume= 0.050 af, Depth> 1.57"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-Year Rainfall=4.63"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG B
0.350	65	Woods/grass comb., Fair, HSG B
0.380	68	Weighted Average
0.350		92.11% Pervious Area
0.030		7.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.0	121	0.0170	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"

Subcatchment EDA-1C: To Off-Site South



Summary for Pond 1P: Existing Pond

Inflow Area = 1.640 ac, 9.15% Impervious, Inflow Depth > 11.01" for 5-Year event
Inflow = 2.19 cfs @ 12.52 hrs, Volume= 1.505 af, Incl. 0.65 cfs Base Flow
Outflow = 2.16 cfs @ 12.58 hrs, Volume= 1.132 af, Atten= 1%, Lag= 3.6 min
Primary = 2.16 cfs @ 12.58 hrs, Volume= 1.132 af
Routed to Link 1L : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.090 ac Storage= 0.140 af
Peak Elev= 322.47' @ 12.58 hrs Surf.Area= 0.135 ac Storage= 0.522 af (0.382 af above start)

Plug-Flow detention time= 463.3 min calculated for 0.992 af (66% of inflow)
Center-of-Mass det. time= 177.0 min (919.9 - 742.9)

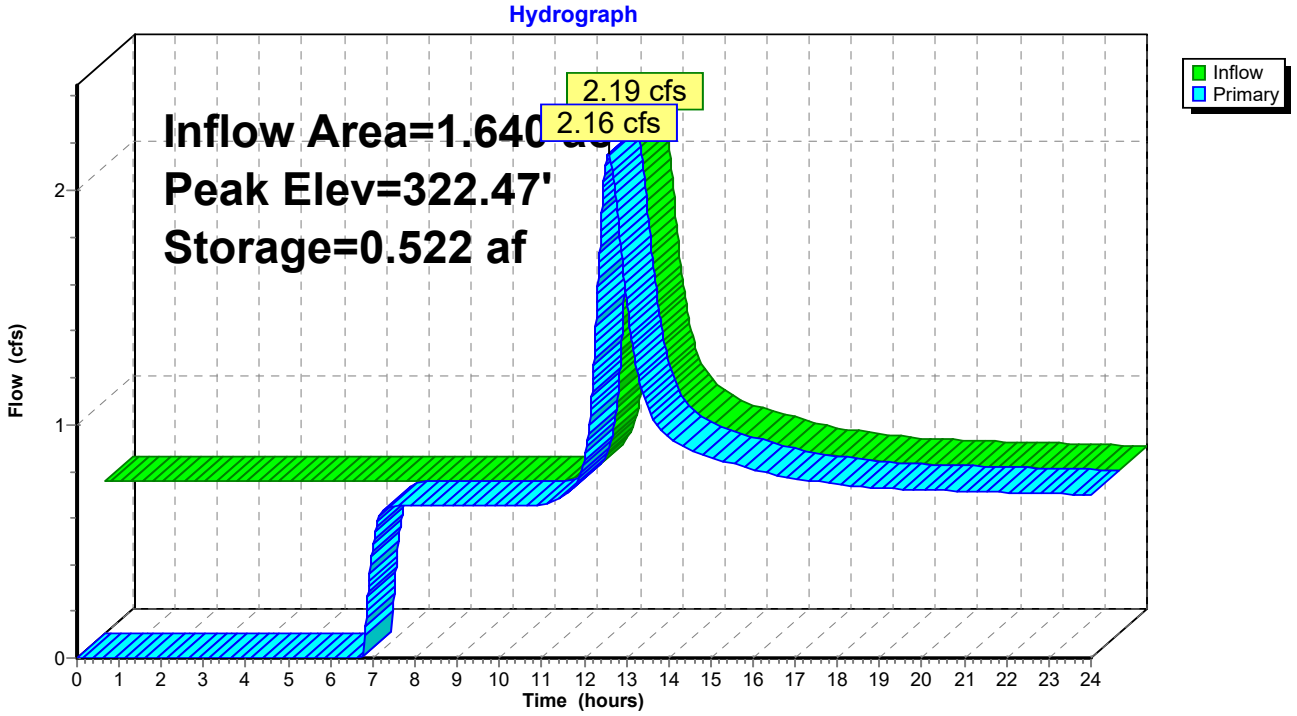
Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	0.594 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.050	201.0	0.000	0.000	0.050
318.00	0.070	240.0	0.060	0.060	0.082
319.00	0.090	252.0	0.080	0.140	0.094
320.00	0.100	268.0	0.095	0.234	0.110
321.00	0.110	285.0	0.105	0.339	0.129
322.00	0.130	297.0	0.120	0.459	0.143
323.00	0.140	310.0	0.135	0.594	0.159

Device	Routing	Invert	Outlet Devices
#1	Primary	322.35'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.13 cfs @ 12.58 hrs HW=322.47' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 2.13 cfs @ 0.87 fps)

Pond 1P: Existing Pond



Stage-Discharge for Pond 1P: Existing Pond

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
317.00	0.00	319.60	0.00	322.20	0.00
317.05	0.00	319.65	0.00	322.25	0.00
317.10	0.00	319.70	0.00	322.30	0.00
317.15	0.00	319.75	0.00	322.35	0.00
317.20	0.00	319.80	0.00	322.40	0.56
317.25	0.00	319.85	0.00	322.45	1.57
317.30	0.00	319.90	0.00	322.50	2.89
317.35	0.00	319.95	0.00	322.55	4.45
317.40	0.00	320.00	0.00	322.60	6.27
317.45	0.00	320.05	0.00	322.65	8.30
317.50	0.00	320.10	0.00	322.70	10.53
317.55	0.00	320.15	0.00	322.75	12.95
317.60	0.00	320.20	0.00	322.80	15.67
317.65	0.00	320.25	0.00	322.85	18.60
317.70	0.00	320.30	0.00	322.90	21.74
317.75	0.00	320.35	0.00	322.95	25.10
317.80	0.00	320.40	0.00	323.00	**28.27**
317.85	0.00	320.45	0.00		
317.90	0.00	320.50	0.00		
317.95	0.00	320.55	0.00		
318.00	0.00	320.60	0.00		
318.05	0.00	320.65	0.00		
318.10	0.00	320.70	0.00		
318.15	0.00	320.75	0.00		
318.20	0.00	320.80	0.00		
318.25	0.00	320.85	0.00		
318.30	0.00	320.90	0.00		
318.35	0.00	320.95	0.00		
318.40	0.00	321.00	0.00		
318.45	0.00	321.05	0.00		
318.50	0.00	321.10	0.00		
318.55	0.00	321.15	0.00		
318.60	0.00	321.20	0.00		
318.65	0.00	321.25	0.00		
318.70	0.00	321.30	0.00		
318.75	0.00	321.35	0.00		
318.80	0.00	321.40	0.00		
318.85	0.00	321.45	0.00		
318.90	0.00	321.50	0.00		
318.95	0.00	321.55	0.00		
319.00	0.00	321.60	0.00		
319.05	0.00	321.65	0.00		
319.10	0.00	321.70	0.00		
319.15	0.00	321.75	0.00		
319.20	0.00	321.80	0.00		
319.25	0.00	321.85	0.00		
319.30	0.00	321.90	0.00		
319.35	0.00	321.95	0.00		
319.40	0.00	322.00	0.00		
319.45	0.00	322.05	0.00		
319.50	0.00	322.10	0.00		
319.55	0.00	322.15	0.00		

Stage-Area-Storage for Pond 1P: Existing Pond

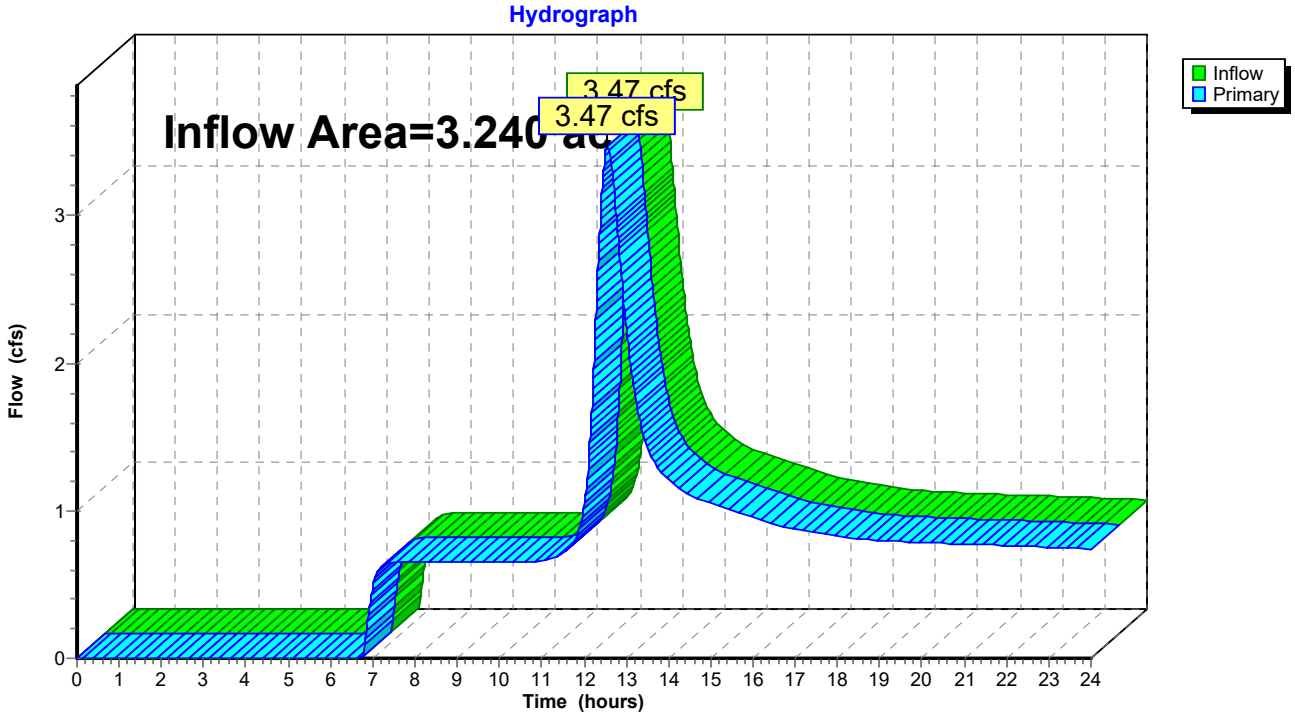
Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.050	0.000
317.10	0.052	0.005
317.20	0.054	0.010
317.30	0.056	0.016
317.40	0.058	0.022
317.50	0.060	0.027
317.60	0.062	0.033
317.70	0.064	0.040
317.80	0.066	0.046
317.90	0.068	0.053
318.00	0.070	0.060
318.10	0.072	0.067
318.20	0.074	0.074
318.30	0.076	0.082
318.40	0.078	0.089
318.50	0.080	0.097
318.60	0.082	0.105
318.70	0.084	0.113
318.80	0.086	0.122
318.90	0.088	0.131
319.00	0.090	0.140
319.10	0.091	0.149
319.20	0.092	0.158
319.30	0.093	0.167
319.40	0.094	0.176
319.50	0.095	0.186
319.60	0.096	0.195
319.70	0.097	0.205
319.80	0.098	0.215
319.90	0.099	0.225
320.00	0.100	0.234
320.10	0.101	0.245
320.20	0.102	0.255
320.30	0.103	0.265
320.40	0.104	0.275
320.50	0.105	0.286
320.60	0.106	0.296
320.70	0.107	0.307
320.80	0.108	0.318
320.90	0.109	0.328
321.00	0.110	0.339
321.10	0.112	0.351
321.20	0.114	0.362
321.30	0.116	0.373
321.40	0.118	0.385
321.50	0.120	0.397
321.60	0.122	0.409
321.70	0.124	0.421
321.80	0.126	0.434
321.90	0.128	0.446
322.00	0.130	0.459
322.10	0.131	0.472
322.20	0.132	0.485
322.30	0.133	0.499
322.40	0.134	0.512
322.50	0.135	0.526
322.60	0.136	0.539
322.70	0.137	0.553
322.80	0.138	0.566
322.90	0.139	0.580
323.00	**0.140**	**0.594**

Summary for Link 1L: (new Link)

Inflow Area = 3.240 ac, 5.56% Impervious, Inflow Depth > 4.90" for 5-Year event
Inflow = 3.47 cfs @ 12.56 hrs, Volume= 1.324 af
Primary = 3.47 cfs @ 12.56 hrs, Volume= 1.324 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: (new Link)



Summary for Subcatchment EDA-1A: To Existing Pond

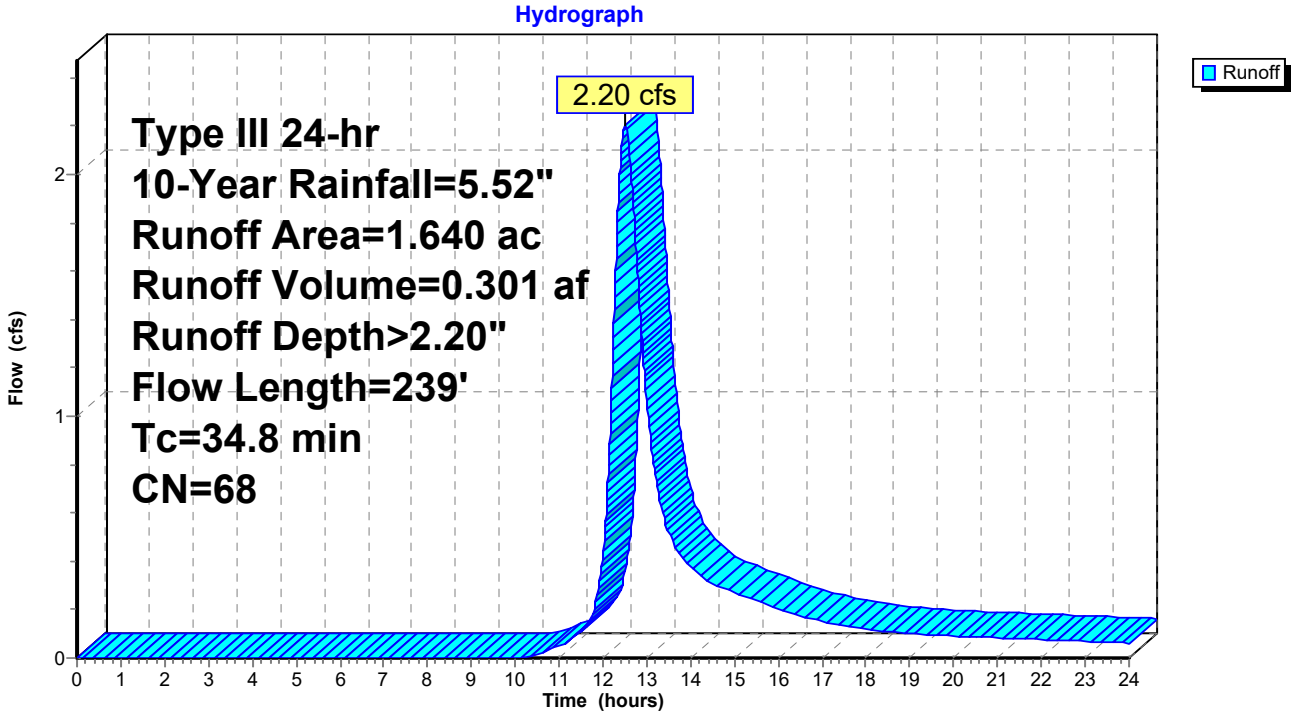
Runoff = 2.20 cfs @ 12.49 hrs, Volume= 0.301 af, Depth> 2.20"
Routed to Pond 1P : Existing Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.52"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
1.300	65	Woods/grass comb., Fair, HSG B
0.190	61	>75% Grass cover, Good, HSG B
1.640	68	Weighted Average
1.490		90.85% Pervious Area
0.150		9.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.1	117	0.0300	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.1	32	0.0600	3.94		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.6	72	0.0140	1.90		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	18	0.4400	10.68		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
34.8	239	Total			

Subcatchment EDA-1A: To Existing Pond



Summary for Subcatchment EDA-1B: To Off-Site South

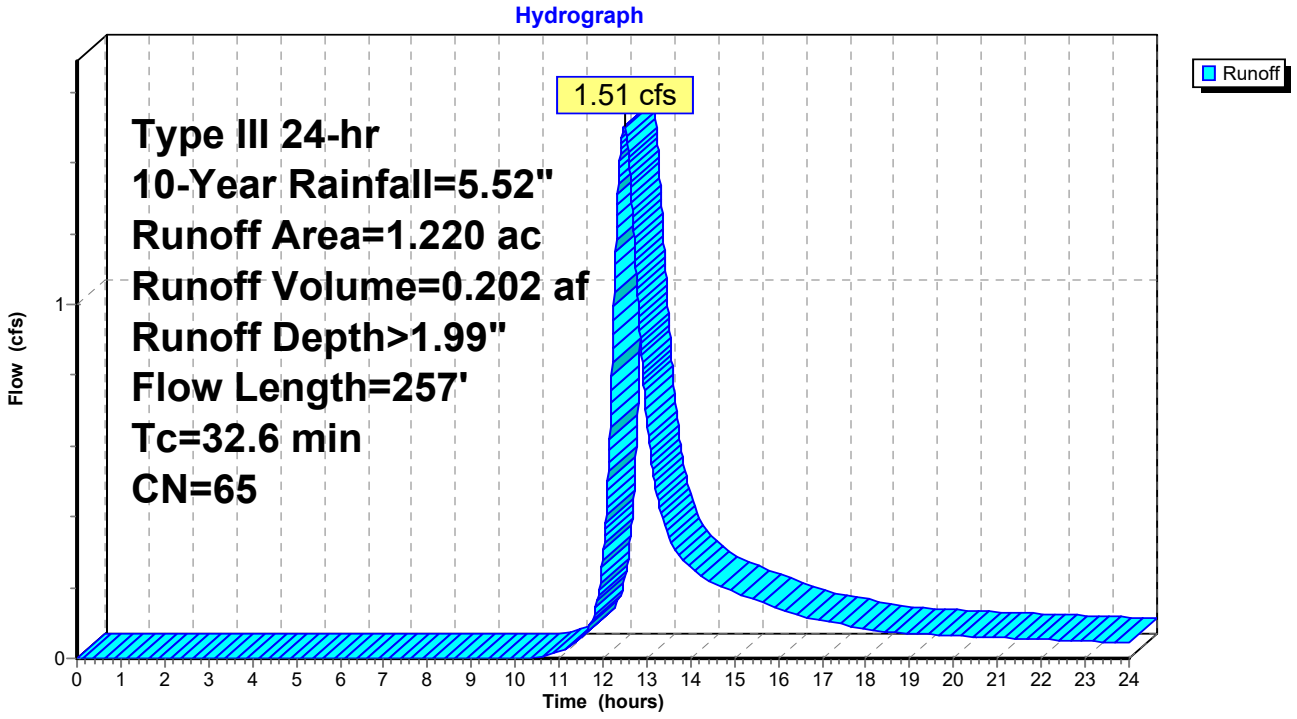
Runoff = 1.51 cfs @ 12.49 hrs, Volume= 0.202 af, Depth> 1.99"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.52"

Area (ac)	CN	Description
1.220	65	Woods/grass comb., Fair, HSG B
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.1	192	0.0940	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.5	65	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
32.6	257	Total			

Subcatchment EDA-1B: To Off-Site South



Summary for Subcatchment EDA-1C: To Off-Site South

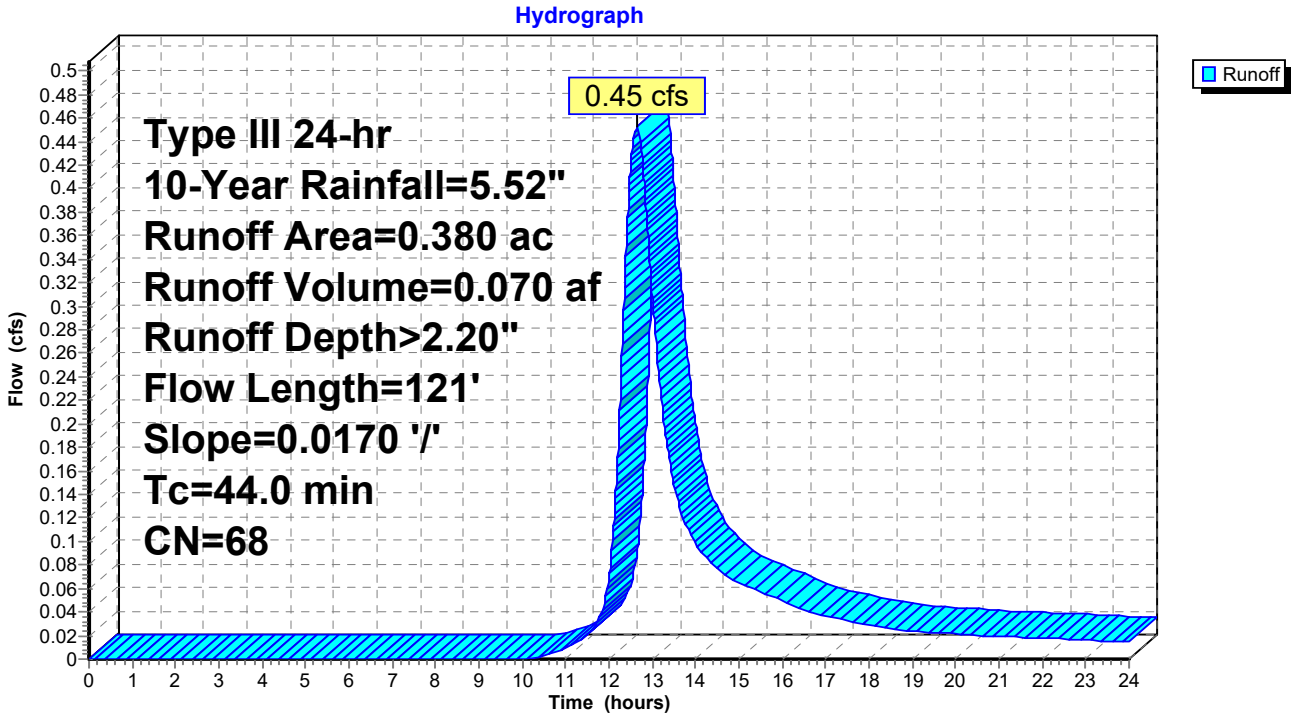
Runoff = 0.45 cfs @ 12.66 hrs, Volume= 0.070 af, Depth> 2.20"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.52"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG B
0.350	65	Woods/grass comb., Fair, HSG B
0.380	68	Weighted Average
0.350		92.11% Pervious Area
0.030		7.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.0	121	0.0170	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"

Subcatchment EDA-1C: To Off-Site South



Summary for Pond 1P: Existing Pond

Inflow Area = 1.640 ac, 9.15% Impervious, Inflow Depth > 11.64" for 10-Year event
Inflow = 2.85 cfs @ 12.49 hrs, Volume= 1.591 af, Incl. 0.65 cfs Base Flow
Outflow = 2.81 cfs @ 12.57 hrs, Volume= 1.217 af, Atten= 2%, Lag= 4.5 min
Primary = 2.81 cfs @ 12.57 hrs, Volume= 1.217 af
Routed to Link 1L : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.090 ac Storage= 0.140 af
Peak Elev= 322.50' @ 12.57 hrs Surf.Area= 0.135 ac Storage= 0.525 af (0.385 af above start)

Plug-Flow detention time= 429.9 min calculated for 1.077 af (68% of inflow)
Center-of-Mass det. time= 166.5 min (914.9 - 748.4)

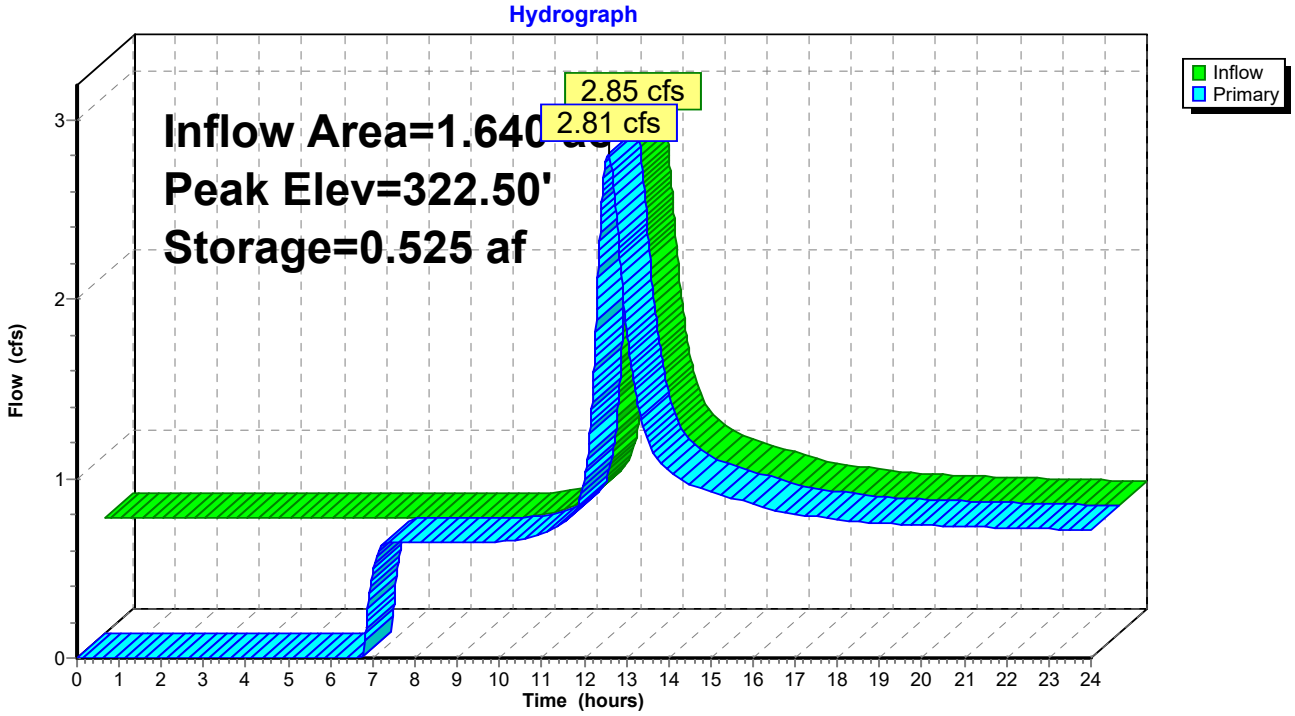
Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	0.594 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.050	201.0	0.000	0.000	0.050
318.00	0.070	240.0	0.060	0.060	0.082
319.00	0.090	252.0	0.080	0.140	0.094
320.00	0.100	268.0	0.095	0.234	0.110
321.00	0.110	285.0	0.105	0.339	0.129
322.00	0.130	297.0	0.120	0.459	0.143
323.00	0.140	310.0	0.135	0.594	0.159

Device	Routing	Invert	Outlet Devices
#1	Primary	322.35'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=2.77 cfs @ 12.57 hrs HW=322.50' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 2.77 cfs @ 0.95 fps)

Pond 1P: Existing Pond



Stage-Discharge for Pond 1P: Existing Pond

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
317.00	0.00	319.60	0.00	322.20	0.00
317.05	0.00	319.65	0.00	322.25	0.00
317.10	0.00	319.70	0.00	322.30	0.00
317.15	0.00	319.75	0.00	322.35	0.00
317.20	0.00	319.80	0.00	322.40	0.56
317.25	0.00	319.85	0.00	322.45	1.57
317.30	0.00	319.90	0.00	322.50	2.89
317.35	0.00	319.95	0.00	322.55	4.45
317.40	0.00	320.00	0.00	322.60	6.27
317.45	0.00	320.05	0.00	322.65	8.30
317.50	0.00	320.10	0.00	322.70	10.53
317.55	0.00	320.15	0.00	322.75	12.95
317.60	0.00	320.20	0.00	322.80	15.67
317.65	0.00	320.25	0.00	322.85	18.60
317.70	0.00	320.30	0.00	322.90	21.74
317.75	0.00	320.35	0.00	322.95	25.10
317.80	0.00	320.40	0.00	323.00	**28.27**
317.85	0.00	320.45	0.00		
317.90	0.00	320.50	0.00		
317.95	0.00	320.55	0.00		
318.00	0.00	320.60	0.00		
318.05	0.00	320.65	0.00		
318.10	0.00	320.70	0.00		
318.15	0.00	320.75	0.00		
318.20	0.00	320.80	0.00		
318.25	0.00	320.85	0.00		
318.30	0.00	320.90	0.00		
318.35	0.00	320.95	0.00		
318.40	0.00	321.00	0.00		
318.45	0.00	321.05	0.00		
318.50	0.00	321.10	0.00		
318.55	0.00	321.15	0.00		
318.60	0.00	321.20	0.00		
318.65	0.00	321.25	0.00		
318.70	0.00	321.30	0.00		
318.75	0.00	321.35	0.00		
318.80	0.00	321.40	0.00		
318.85	0.00	321.45	0.00		
318.90	0.00	321.50	0.00		
318.95	0.00	321.55	0.00		
319.00	0.00	321.60	0.00		
319.05	0.00	321.65	0.00		
319.10	0.00	321.70	0.00		
319.15	0.00	321.75	0.00		
319.20	0.00	321.80	0.00		
319.25	0.00	321.85	0.00		
319.30	0.00	321.90	0.00		
319.35	0.00	321.95	0.00		
319.40	0.00	322.00	0.00		
319.45	0.00	322.05	0.00		
319.50	0.00	322.10	0.00		
319.55	0.00	322.15	0.00		

Stage-Area-Storage for Pond 1P: Existing Pond

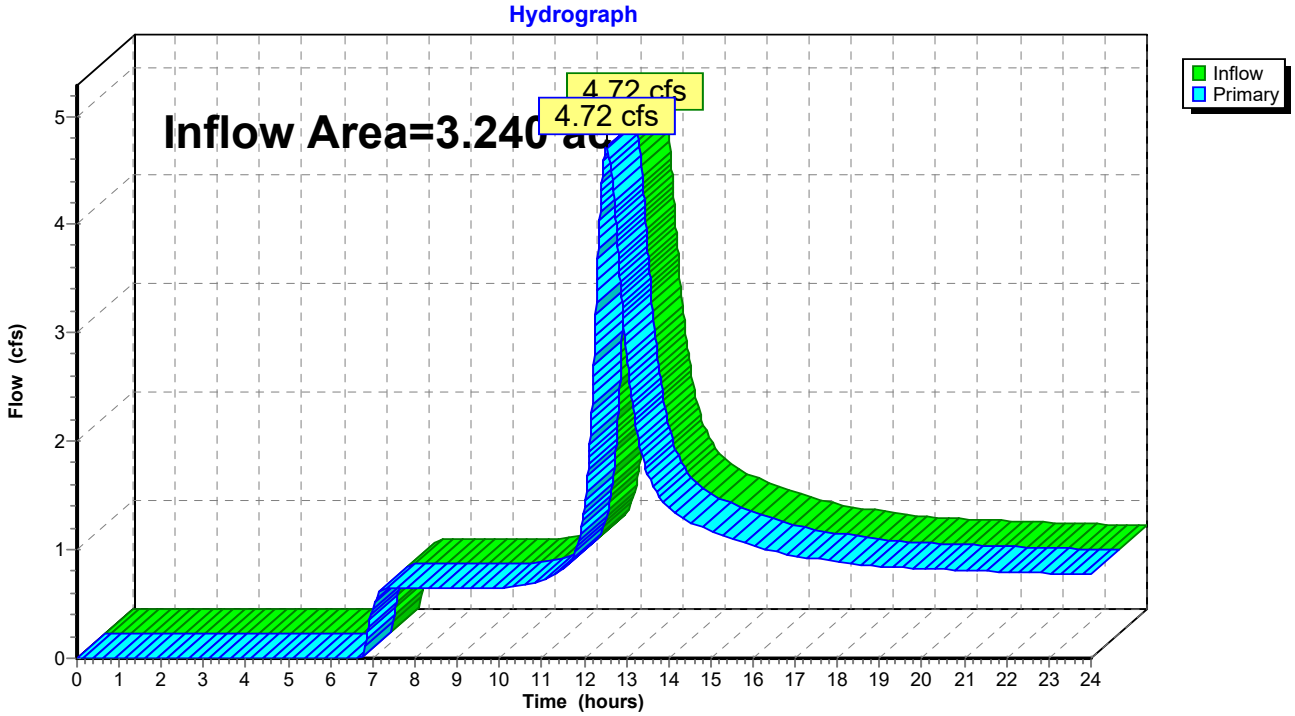
Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.050	0.000
317.10	0.052	0.005
317.20	0.054	0.010
317.30	0.056	0.016
317.40	0.058	0.022
317.50	0.060	0.027
317.60	0.062	0.033
317.70	0.064	0.040
317.80	0.066	0.046
317.90	0.068	0.053
318.00	0.070	0.060
318.10	0.072	0.067
318.20	0.074	0.074
318.30	0.076	0.082
318.40	0.078	0.089
318.50	0.080	0.097
318.60	0.082	0.105
318.70	0.084	0.113
318.80	0.086	0.122
318.90	0.088	0.131
319.00	0.090	0.140
319.10	0.091	0.149
319.20	0.092	0.158
319.30	0.093	0.167
319.40	0.094	0.176
319.50	0.095	0.186
319.60	0.096	0.195
319.70	0.097	0.205
319.80	0.098	0.215
319.90	0.099	0.225
320.00	0.100	0.234
320.10	0.101	0.245
320.20	0.102	0.255
320.30	0.103	0.265
320.40	0.104	0.275
320.50	0.105	0.286
320.60	0.106	0.296
320.70	0.107	0.307
320.80	0.108	0.318
320.90	0.109	0.328
321.00	0.110	0.339
321.10	0.112	0.351
321.20	0.114	0.362
321.30	0.116	0.373
321.40	0.118	0.385
321.50	0.120	0.397
321.60	0.122	0.409
321.70	0.124	0.421
321.80	0.126	0.434
321.90	0.128	0.446
322.00	0.130	0.459
322.10	0.131	0.472
322.20	0.132	0.485
322.30	0.133	0.499
322.40	0.134	0.512
322.50	0.135	0.526
322.60	0.136	0.539
322.70	0.137	0.553
322.80	0.138	0.566
322.90	0.139	0.580
323.00	**0.140**	**0.594**

Summary for Link 1L: (new Link)

Inflow Area = 3.240 ac, 5.56% Impervious, Inflow Depth > 5.52" for 10-Year event
Inflow = 4.72 cfs @ 12.54 hrs, Volume= 1.489 af
Primary = 4.72 cfs @ 12.54 hrs, Volume= 1.489 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: (new Link)



Summary for Subcatchment EDA-1A: To Existing Pond

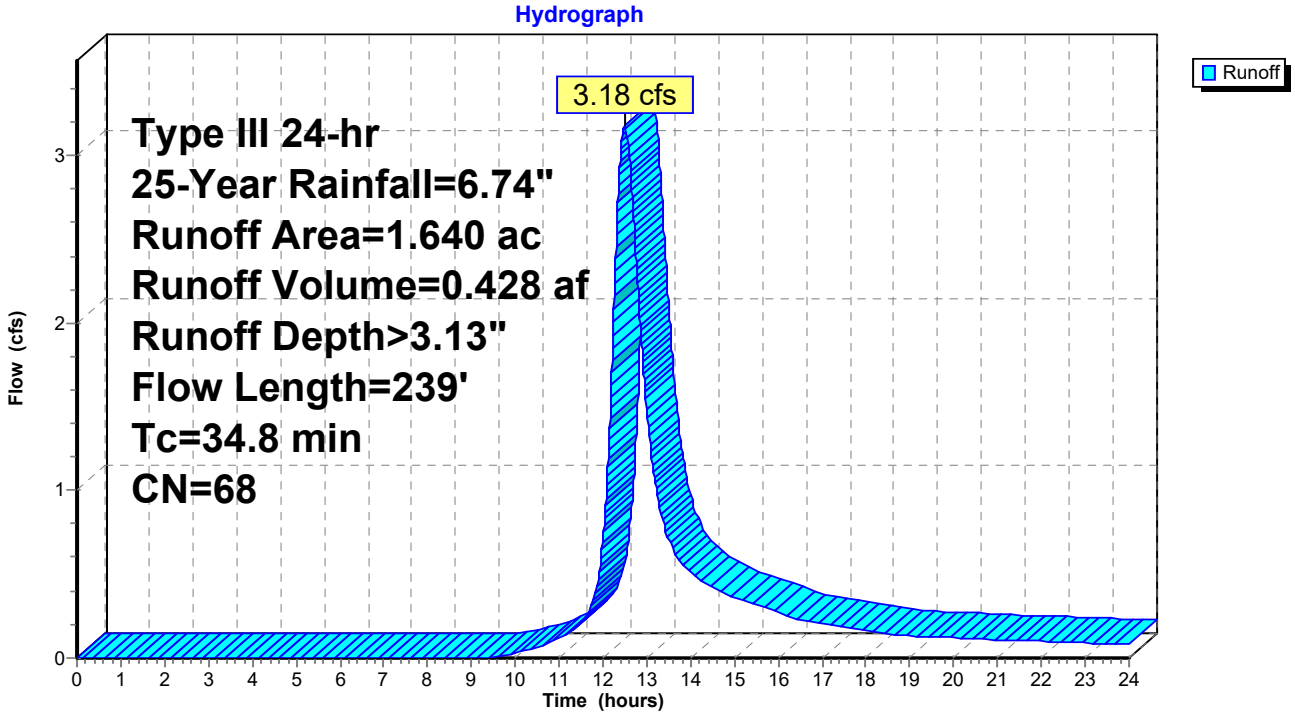
Runoff = 3.18 cfs @ 12.49 hrs, Volume= 0.428 af, Depth> 3.13"
Routed to Pond 1P : Existing Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.74"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
1.300	65	Woods/grass comb., Fair, HSG B
0.190	61	>75% Grass cover, Good, HSG B
1.640	68	Weighted Average
1.490		90.85% Pervious Area
0.150		9.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.1	117	0.0300	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.1	32	0.0600	3.94		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.6	72	0.0140	1.90		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	18	0.4400	10.68		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
34.8	239	Total			

Subcatchment EDA-1A: To Existing Pond



Summary for Subcatchment EDA-1B: To Off-Site South

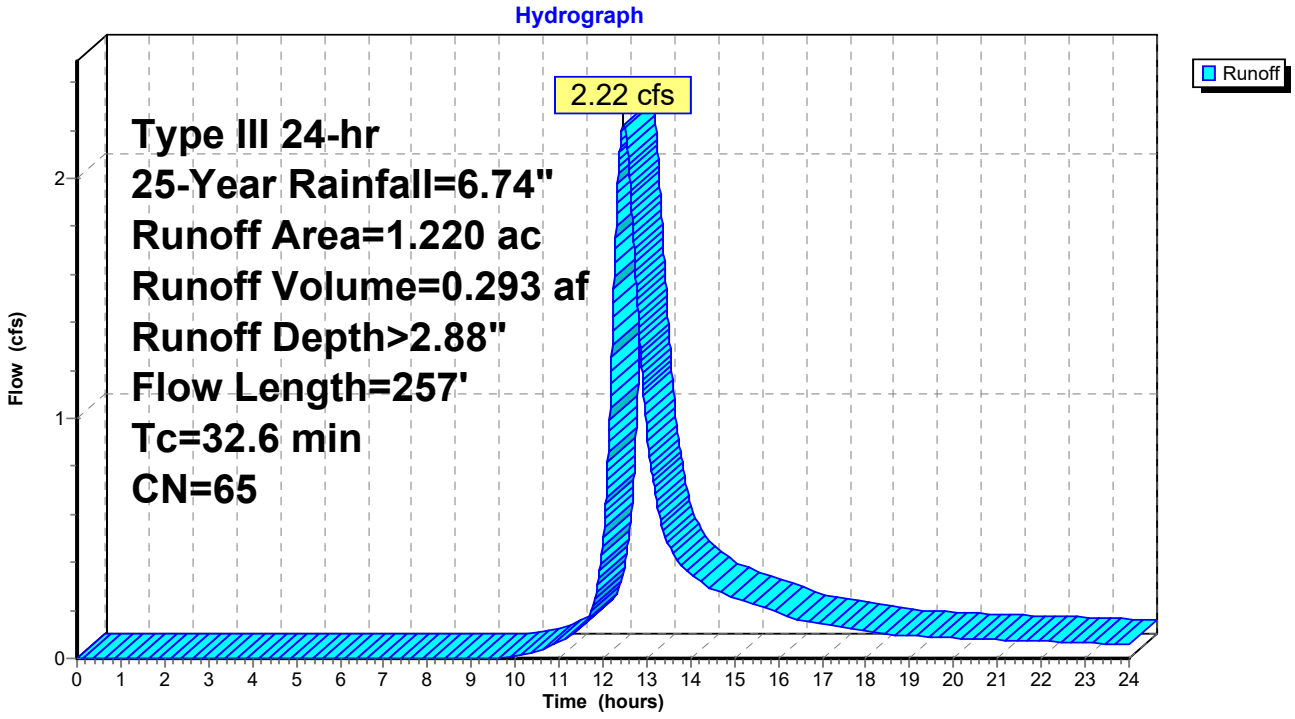
Runoff = 2.22 cfs @ 12.47 hrs, Volume= 0.293 af, Depth> 2.88"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.74"

Area (ac)	CN	Description
1.220	65	Woods/grass comb., Fair, HSG B
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.1	192	0.0940	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.5	65	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
32.6	257	Total			

Subcatchment EDA-1B: To Off-Site South



Summary for Subcatchment EDA-1C: To Off-Site South

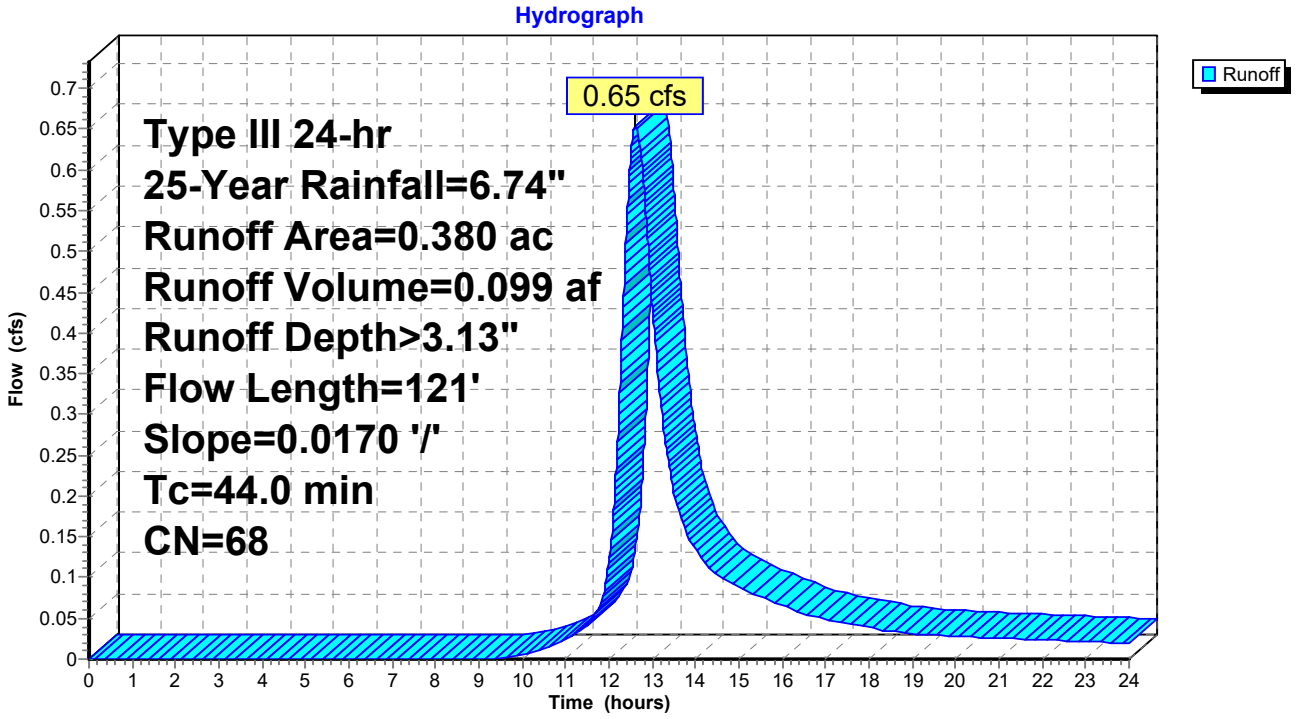
Runoff = 0.65 cfs @ 12.62 hrs, Volume= 0.099 af, Depth> 3.13"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.74"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG B
0.350	65	Woods/grass comb., Fair, HSG B
0.380	68	Weighted Average
0.350		92.11% Pervious Area
0.030		7.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.0	121	0.0170	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"

Subcatchment EDA-1C: To Off-Site South



Summary for Pond 1P: Existing Pond

Inflow Area = 1.640 ac, 9.15% Impervious, Inflow Depth > 12.57" for 25-Year event
Inflow = 3.83 cfs @ 12.49 hrs, Volume= 1.718 af, Incl. 0.65 cfs Base Flow
Outflow = 3.78 cfs @ 12.55 hrs, Volume= 1.344 af, Atten= 1%, Lag= 3.5 min
Primary = 3.78 cfs @ 12.55 hrs, Volume= 1.344 af
Routed to Link 1L : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.090 ac Storage= 0.140 af
Peak Elev= 322.53' @ 12.55 hrs Surf.Area= 0.135 ac Storage= 0.529 af (0.390 af above start)

Plug-Flow detention time= 388.6 min calculated for 1.204 af (70% of inflow)
Center-of-Mass det. time= 152.9 min (907.8 - 754.9)

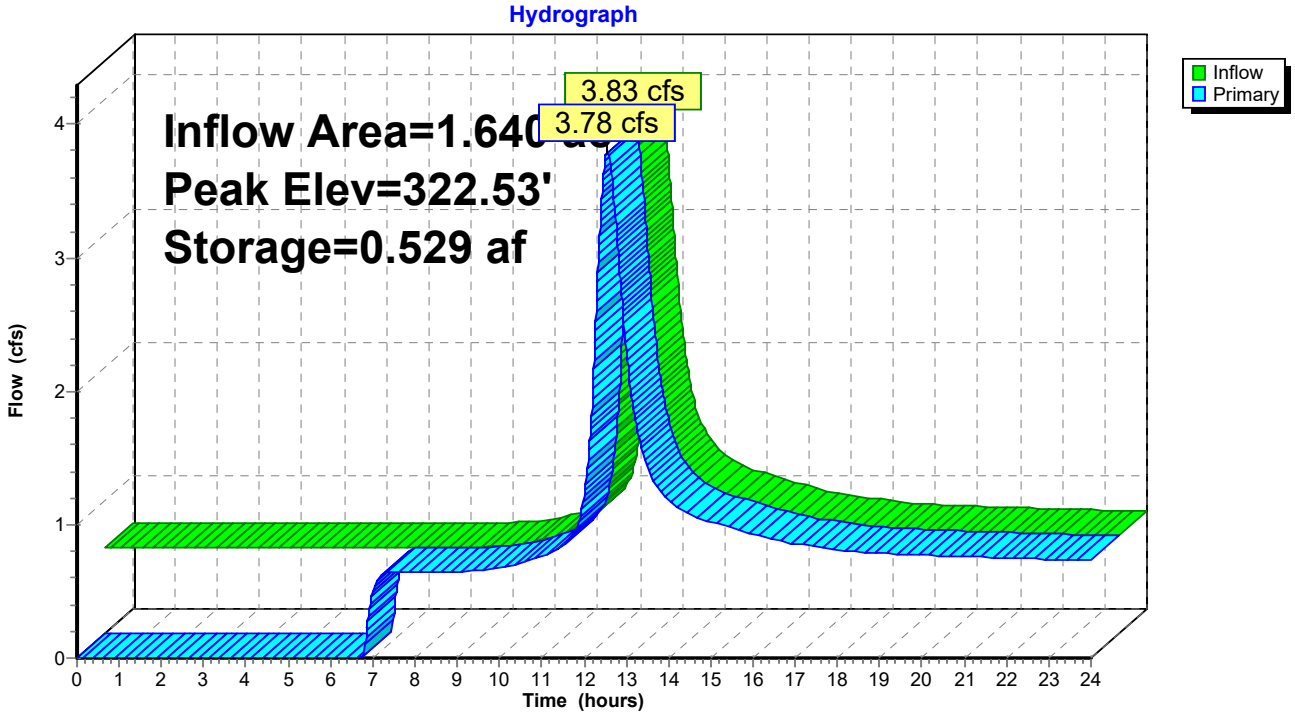
Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	0.594 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.050	201.0	0.000	0.000	0.050
318.00	0.070	240.0	0.060	0.060	0.082
319.00	0.090	252.0	0.080	0.140	0.094
320.00	0.100	268.0	0.095	0.234	0.110
321.00	0.110	285.0	0.105	0.339	0.129
322.00	0.130	297.0	0.120	0.459	0.143
323.00	0.140	310.0	0.135	0.594	0.159

Device	Routing	Invert	Outlet Devices
#1	Primary	322.35'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=3.76 cfs @ 12.55 hrs HW=322.53' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 3.76 cfs @ 1.05 fps)

Pond 1P: Existing Pond



Stage-Discharge for Pond 1P: Existing Pond

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
317.00	0.00	319.60	0.00	322.20	0.00
317.05	0.00	319.65	0.00	322.25	0.00
317.10	0.00	319.70	0.00	322.30	0.00
317.15	0.00	319.75	0.00	322.35	0.00
317.20	0.00	319.80	0.00	322.40	0.56
317.25	0.00	319.85	0.00	322.45	1.57
317.30	0.00	319.90	0.00	322.50	2.89
317.35	0.00	319.95	0.00	322.55	4.45
317.40	0.00	320.00	0.00	322.60	6.27
317.45	0.00	320.05	0.00	322.65	8.30
317.50	0.00	320.10	0.00	322.70	10.53
317.55	0.00	320.15	0.00	322.75	12.95
317.60	0.00	320.20	0.00	322.80	15.67
317.65	0.00	320.25	0.00	322.85	18.60
317.70	0.00	320.30	0.00	322.90	21.74
317.75	0.00	320.35	0.00	322.95	25.10
317.80	0.00	320.40	0.00	323.00	**28.27**
317.85	0.00	320.45	0.00		
317.90	0.00	320.50	0.00		
317.95	0.00	320.55	0.00		
318.00	0.00	320.60	0.00		
318.05	0.00	320.65	0.00		
318.10	0.00	320.70	0.00		
318.15	0.00	320.75	0.00		
318.20	0.00	320.80	0.00		
318.25	0.00	320.85	0.00		
318.30	0.00	320.90	0.00		
318.35	0.00	320.95	0.00		
318.40	0.00	321.00	0.00		
318.45	0.00	321.05	0.00		
318.50	0.00	321.10	0.00		
318.55	0.00	321.15	0.00		
318.60	0.00	321.20	0.00		
318.65	0.00	321.25	0.00		
318.70	0.00	321.30	0.00		
318.75	0.00	321.35	0.00		
318.80	0.00	321.40	0.00		
318.85	0.00	321.45	0.00		
318.90	0.00	321.50	0.00		
318.95	0.00	321.55	0.00		
319.00	0.00	321.60	0.00		
319.05	0.00	321.65	0.00		
319.10	0.00	321.70	0.00		
319.15	0.00	321.75	0.00		
319.20	0.00	321.80	0.00		
319.25	0.00	321.85	0.00		
319.30	0.00	321.90	0.00		
319.35	0.00	321.95	0.00		
319.40	0.00	322.00	0.00		
319.45	0.00	322.05	0.00		
319.50	0.00	322.10	0.00		
319.55	0.00	322.15	0.00		

Stage-Area-Storage for Pond 1P: Existing Pond

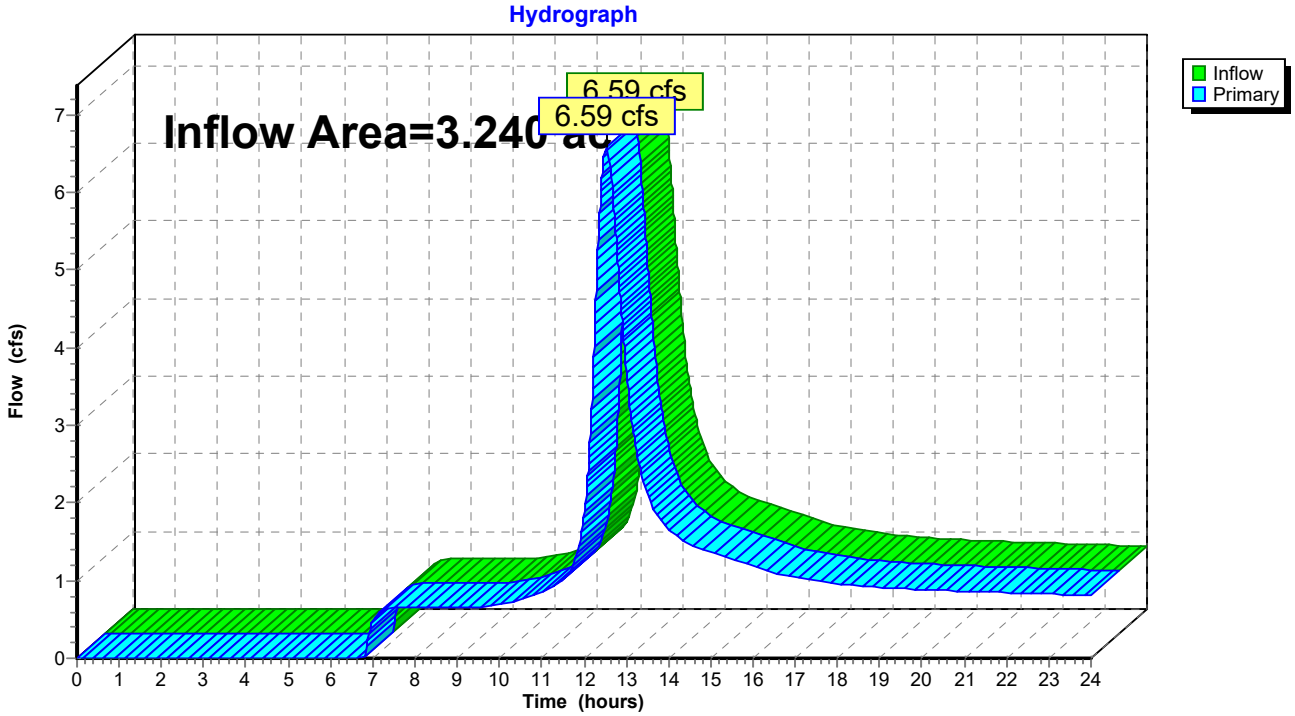
Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.050	0.000
317.10	0.052	0.005
317.20	0.054	0.010
317.30	0.056	0.016
317.40	0.058	0.022
317.50	0.060	0.027
317.60	0.062	0.033
317.70	0.064	0.040
317.80	0.066	0.046
317.90	0.068	0.053
318.00	0.070	0.060
318.10	0.072	0.067
318.20	0.074	0.074
318.30	0.076	0.082
318.40	0.078	0.089
318.50	0.080	0.097
318.60	0.082	0.105
318.70	0.084	0.113
318.80	0.086	0.122
318.90	0.088	0.131
319.00	0.090	0.140
319.10	0.091	0.149
319.20	0.092	0.158
319.30	0.093	0.167
319.40	0.094	0.176
319.50	0.095	0.186
319.60	0.096	0.195
319.70	0.097	0.205
319.80	0.098	0.215
319.90	0.099	0.225
320.00	0.100	0.234
320.10	0.101	0.245
320.20	0.102	0.255
320.30	0.103	0.265
320.40	0.104	0.275
320.50	0.105	0.286
320.60	0.106	0.296
320.70	0.107	0.307
320.80	0.108	0.318
320.90	0.109	0.328
321.00	0.110	0.339
321.10	0.112	0.351
321.20	0.114	0.362
321.30	0.116	0.373
321.40	0.118	0.385
321.50	0.120	0.397
321.60	0.122	0.409
321.70	0.124	0.421
321.80	0.126	0.434
321.90	0.128	0.446
322.00	0.130	0.459
322.10	0.131	0.472
322.20	0.132	0.485
322.30	0.133	0.499
322.40	0.134	0.512
322.50	0.135	0.526
322.60	0.136	0.539
322.70	0.137	0.553
322.80	0.138	0.566
322.90	0.139	0.580
323.00	**0.140**	**0.594**

Summary for Link 1L: (new Link)

Inflow Area = 3.240 ac, 5.56% Impervious, Inflow Depth > 6.43" for 25-Year event
Inflow = 6.59 cfs @ 12.53 hrs, Volume= 1.736 af
Primary = 6.59 cfs @ 12.53 hrs, Volume= 1.736 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: (new Link)



Summary for Subcatchment EDA-1A: To Existing Pond

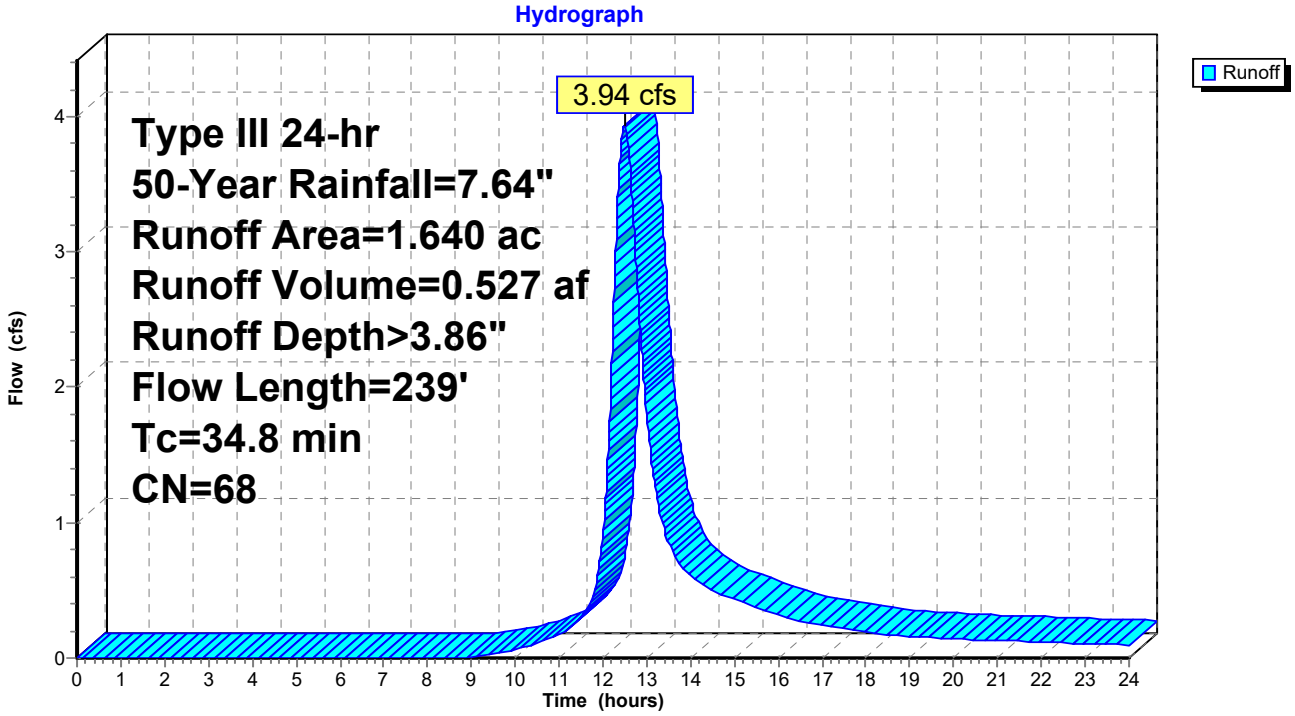
Runoff = 3.94 cfs @ 12.49 hrs, Volume= 0.527 af, Depth> 3.86"
Routed to Pond 1P : Existing Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=7.64"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
1.300	65	Woods/grass comb., Fair, HSG B
0.190	61	>75% Grass cover, Good, HSG B
1.640	68	Weighted Average
1.490		90.85% Pervious Area
0.150		9.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.1	117	0.0300	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.1	32	0.0600	3.94		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.6	72	0.0140	1.90		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	18	0.4400	10.68		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
34.8	239	Total			

Subcatchment EDA-1A: To Existing Pond



Summary for Subcatchment EDA-1B: To Off-Site South

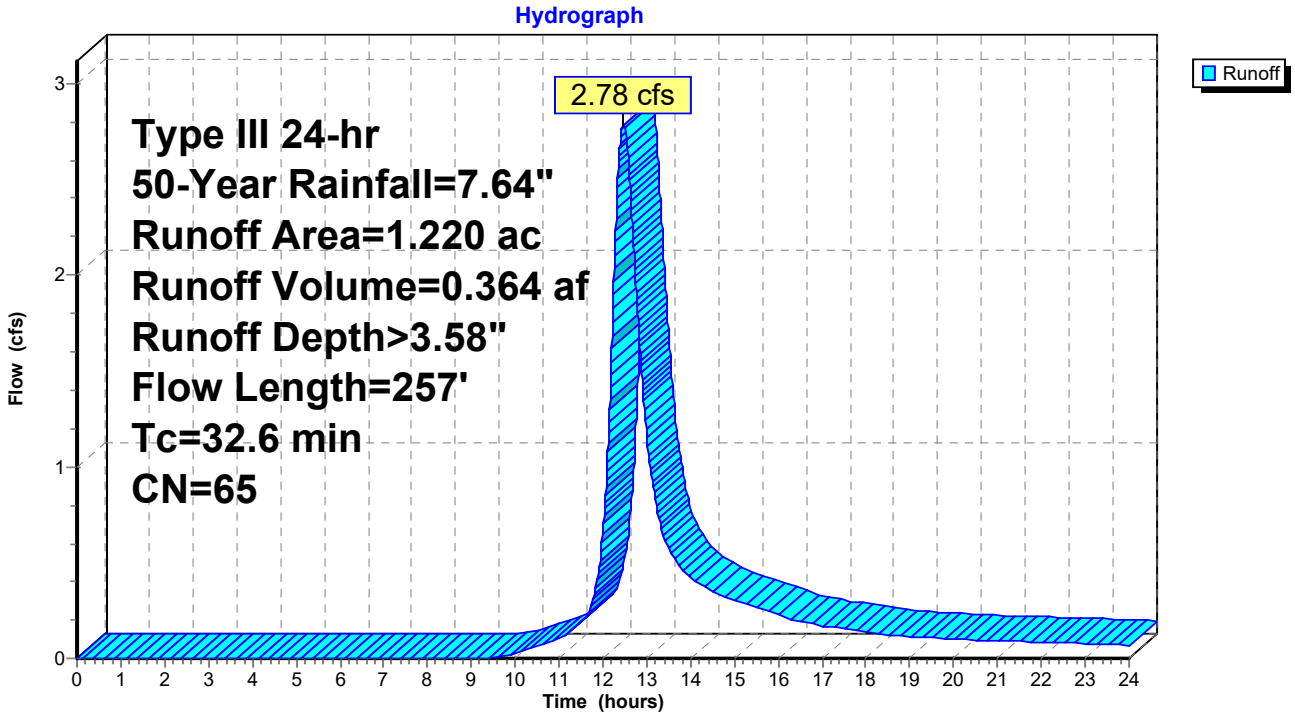
Runoff = 2.78 cfs @ 12.46 hrs, Volume= 0.364 af, Depth> 3.58"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=7.64"

Area (ac)	CN	Description
1.220	65	Woods/grass comb., Fair, HSG B
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.1	192	0.0940	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.5	65	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
32.6	257	Total			

Subcatchment EDA-1B: To Off-Site South



Summary for Subcatchment EDA-1C: To Off-Site South

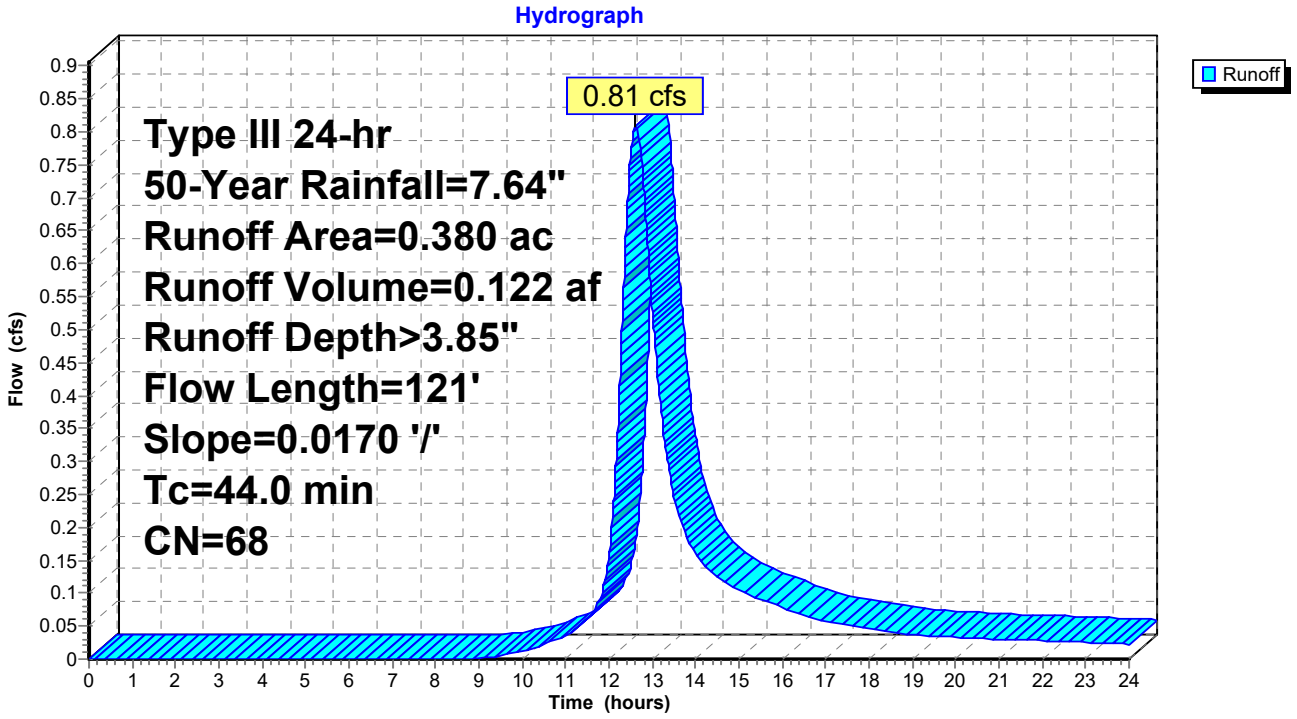
Runoff = 0.81 cfs @ 12.61 hrs, Volume= 0.122 af, Depth> 3.85"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=7.64"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG B
0.350	65	Woods/grass comb., Fair, HSG B
0.380	68	Weighted Average
0.350		92.11% Pervious Area
0.030		7.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.0	121	0.0170	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"

Subcatchment EDA-1C: To Off-Site South



Summary for Pond 1P: Existing Pond

Inflow Area = 1.640 ac, 9.15% Impervious, Inflow Depth > 13.29" for 50-Year event
Inflow = 4.59 cfs @ 12.49 hrs, Volume= 1.817 af, Incl. 0.65 cfs Base Flow
Outflow = 4.53 cfs @ 12.54 hrs, Volume= 1.443 af, Atten= 1%, Lag= 3.1 min
Primary = 4.53 cfs @ 12.54 hrs, Volume= 1.443 af
Routed to Link 1L : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.090 ac Storage= 0.140 af
Peak Elev= 322.55' @ 12.54 hrs Surf.Area= 0.135 ac Storage= 0.532 af (0.393 af above start)

Plug-Flow detention time= 361.7 min calculated for 1.303 af (72% of inflow)
Center-of-Mass det. time= 143.7 min (902.6 - 758.9)

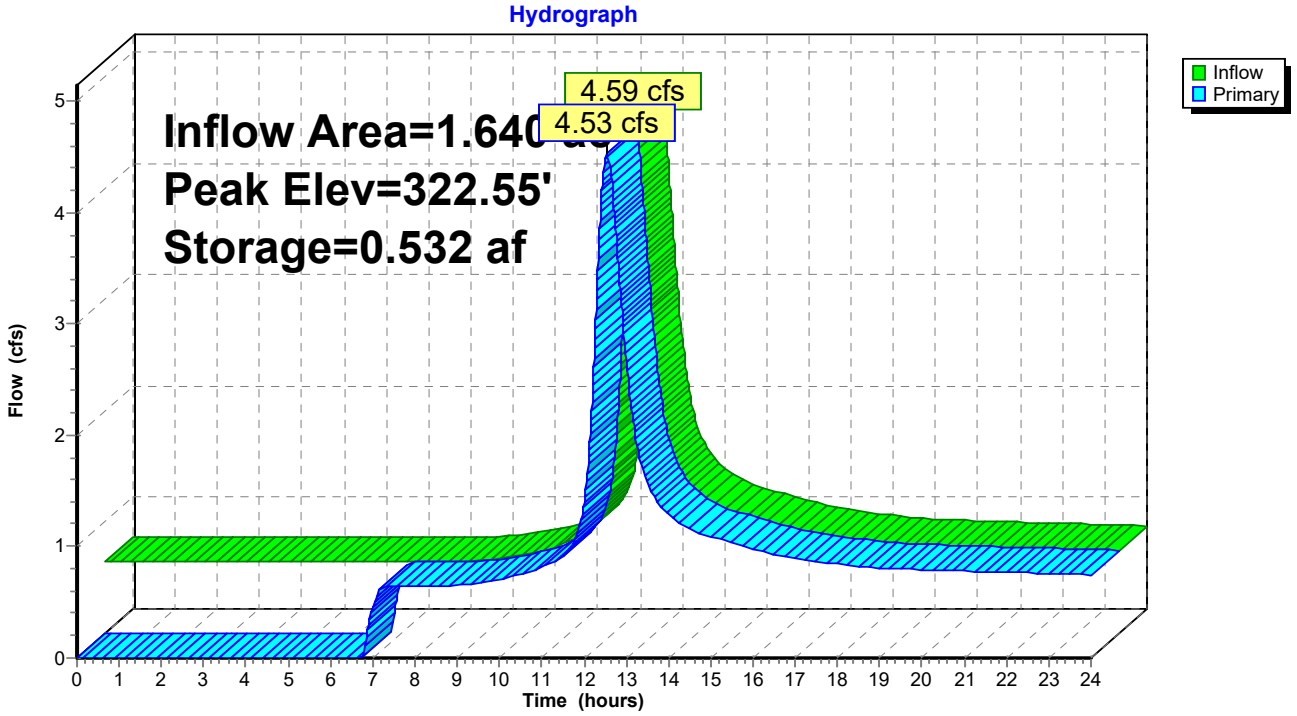
Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	0.594 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.050	201.0	0.000	0.000	0.050
318.00	0.070	240.0	0.060	0.060	0.082
319.00	0.090	252.0	0.080	0.140	0.094
320.00	0.100	268.0	0.095	0.234	0.110
321.00	0.110	285.0	0.105	0.339	0.129
322.00	0.130	297.0	0.120	0.459	0.143
323.00	0.140	310.0	0.135	0.594	0.159

Device	Routing	Invert	Outlet Devices
#1	Primary	322.35'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=4.48 cfs @ 12.54 hrs HW=322.55' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 4.48 cfs @ 1.12 fps)

Pond 1P: Existing Pond



Stage-Discharge for Pond 1P: Existing Pond

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
317.00	0.00	319.60	0.00	322.20	0.00
317.05	0.00	319.65	0.00	322.25	0.00
317.10	0.00	319.70	0.00	322.30	0.00
317.15	0.00	319.75	0.00	322.35	0.00
317.20	0.00	319.80	0.00	322.40	0.56
317.25	0.00	319.85	0.00	322.45	1.57
317.30	0.00	319.90	0.00	322.50	2.89
317.35	0.00	319.95	0.00	322.55	4.45
317.40	0.00	320.00	0.00	322.60	6.27
317.45	0.00	320.05	0.00	322.65	8.30
317.50	0.00	320.10	0.00	322.70	10.53
317.55	0.00	320.15	0.00	322.75	12.95
317.60	0.00	320.20	0.00	322.80	15.67
317.65	0.00	320.25	0.00	322.85	18.60
317.70	0.00	320.30	0.00	322.90	21.74
317.75	0.00	320.35	0.00	322.95	25.10
317.80	0.00	320.40	0.00	323.00	**28.27**
317.85	0.00	320.45	0.00		
317.90	0.00	320.50	0.00		
317.95	0.00	320.55	0.00		
318.00	0.00	320.60	0.00		
318.05	0.00	320.65	0.00		
318.10	0.00	320.70	0.00		
318.15	0.00	320.75	0.00		
318.20	0.00	320.80	0.00		
318.25	0.00	320.85	0.00		
318.30	0.00	320.90	0.00		
318.35	0.00	320.95	0.00		
318.40	0.00	321.00	0.00		
318.45	0.00	321.05	0.00		
318.50	0.00	321.10	0.00		
318.55	0.00	321.15	0.00		
318.60	0.00	321.20	0.00		
318.65	0.00	321.25	0.00		
318.70	0.00	321.30	0.00		
318.75	0.00	321.35	0.00		
318.80	0.00	321.40	0.00		
318.85	0.00	321.45	0.00		
318.90	0.00	321.50	0.00		
318.95	0.00	321.55	0.00		
319.00	0.00	321.60	0.00		
319.05	0.00	321.65	0.00		
319.10	0.00	321.70	0.00		
319.15	0.00	321.75	0.00		
319.20	0.00	321.80	0.00		
319.25	0.00	321.85	0.00		
319.30	0.00	321.90	0.00		
319.35	0.00	321.95	0.00		
319.40	0.00	322.00	0.00		
319.45	0.00	322.05	0.00		
319.50	0.00	322.10	0.00		
319.55	0.00	322.15	0.00		

Stage-Area-Storage for Pond 1P: Existing Pond

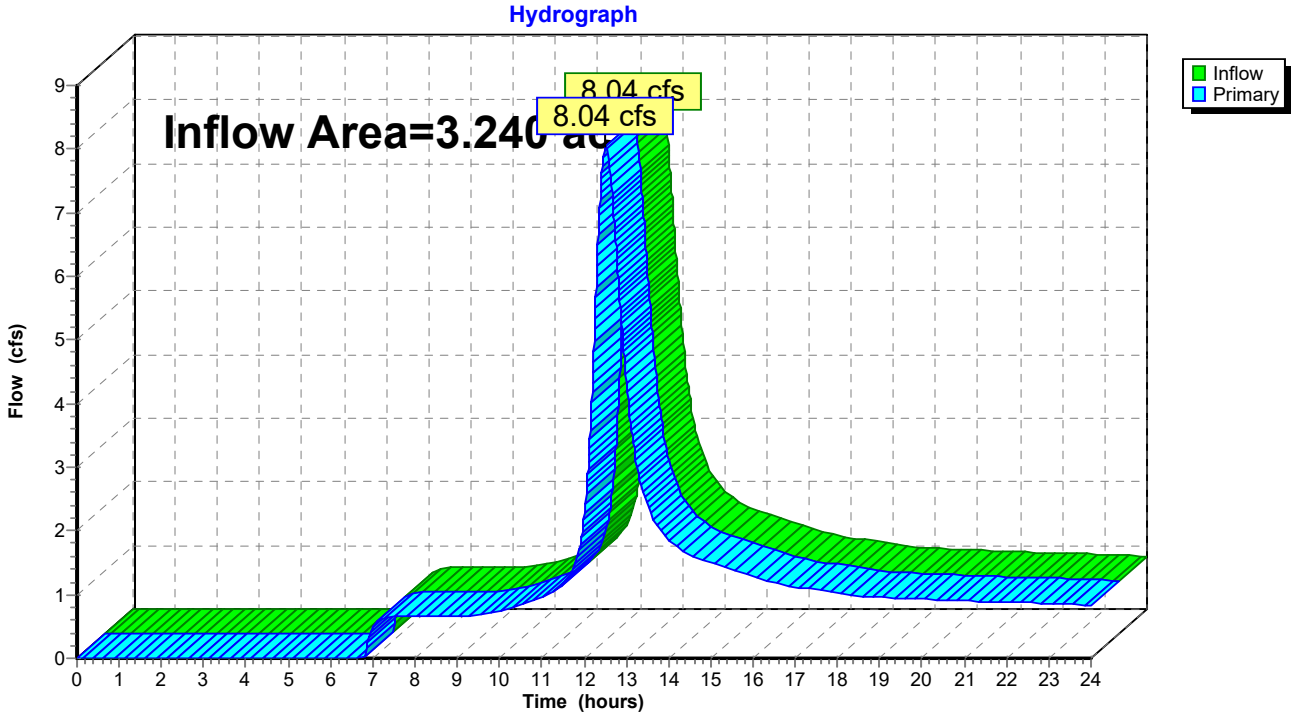
Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.050	0.000
317.10	0.052	0.005
317.20	0.054	0.010
317.30	0.056	0.016
317.40	0.058	0.022
317.50	0.060	0.027
317.60	0.062	0.033
317.70	0.064	0.040
317.80	0.066	0.046
317.90	0.068	0.053
318.00	0.070	0.060
318.10	0.072	0.067
318.20	0.074	0.074
318.30	0.076	0.082
318.40	0.078	0.089
318.50	0.080	0.097
318.60	0.082	0.105
318.70	0.084	0.113
318.80	0.086	0.122
318.90	0.088	0.131
319.00	0.090	0.140
319.10	0.091	0.149
319.20	0.092	0.158
319.30	0.093	0.167
319.40	0.094	0.176
319.50	0.095	0.186
319.60	0.096	0.195
319.70	0.097	0.205
319.80	0.098	0.215
319.90	0.099	0.225
320.00	0.100	0.234
320.10	0.101	0.245
320.20	0.102	0.255
320.30	0.103	0.265
320.40	0.104	0.275
320.50	0.105	0.286
320.60	0.106	0.296
320.70	0.107	0.307
320.80	0.108	0.318
320.90	0.109	0.328
321.00	0.110	0.339
321.10	0.112	0.351
321.20	0.114	0.362
321.30	0.116	0.373
321.40	0.118	0.385
321.50	0.120	0.397
321.60	0.122	0.409
321.70	0.124	0.421
321.80	0.126	0.434
321.90	0.128	0.446
322.00	0.130	0.459
322.10	0.131	0.472
322.20	0.132	0.485
322.30	0.133	0.499
322.40	0.134	0.512
322.50	0.135	0.526
322.60	0.136	0.539
322.70	0.137	0.553
322.80	0.138	0.566
322.90	0.139	0.580
323.00	**0.140**	**0.594**

Summary for Link 1L: (new Link)

Inflow Area = 3.240 ac, 5.56% Impervious, Inflow Depth > 7.14" for 50-Year event
Inflow = 8.04 cfs @ 12.52 hrs, Volume= 1.929 af
Primary = 8.04 cfs @ 12.52 hrs, Volume= 1.929 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: (new Link)



Summary for Subcatchment EDA-1A: To Existing Pond

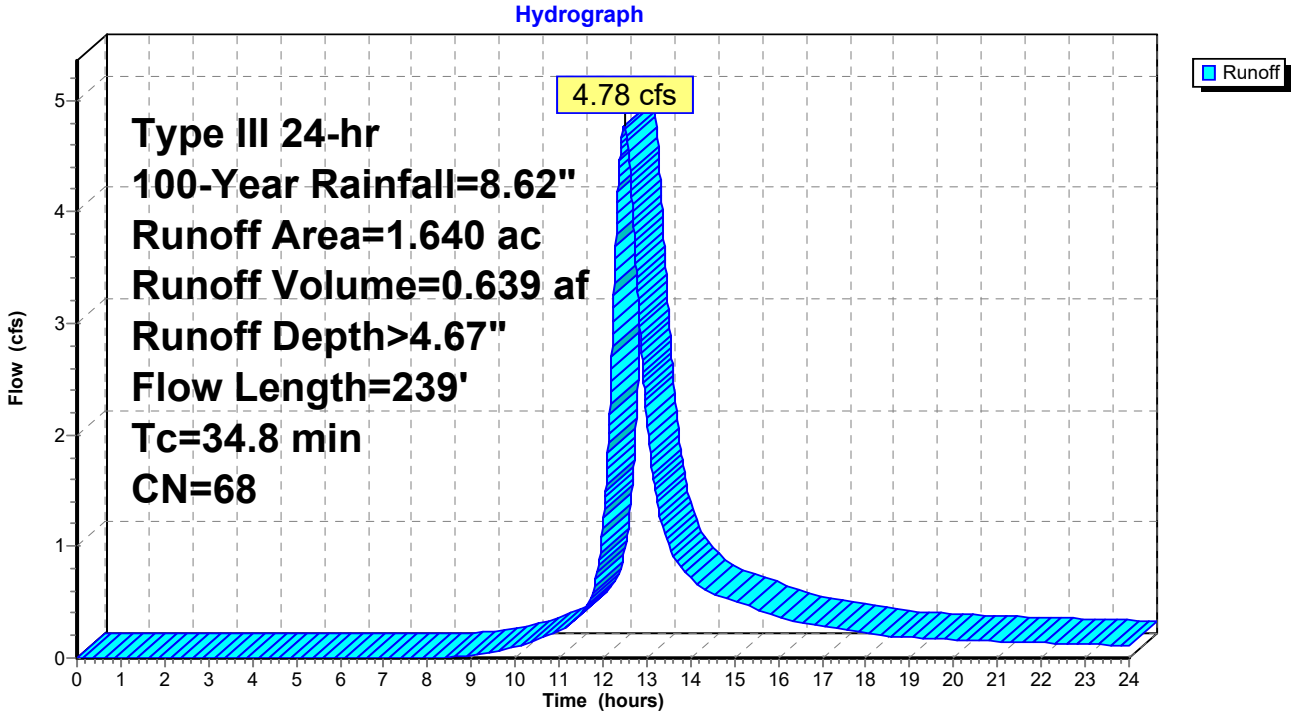
Runoff = 4.78 cfs @ 12.49 hrs, Volume= 0.639 af, Depth> 4.67"
Routed to Pond 1P : Existing Pond

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (ac)	CN	Description
0.150	98	Paved parking, HSG B
1.300	65	Woods/grass comb., Fair, HSG B
0.190	61	>75% Grass cover, Good, HSG B
1.640	68	Weighted Average
1.490		90.85% Pervious Area
0.150		9.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
34.1	117	0.0300	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.1	32	0.0600	3.94		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.6	72	0.0140	1.90		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
0.0	18	0.4400	10.68		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
34.8	239	Total			

Subcatchment EDA-1A: To Existing Pond



Summary for Subcatchment EDA-1B: To Off-Site South

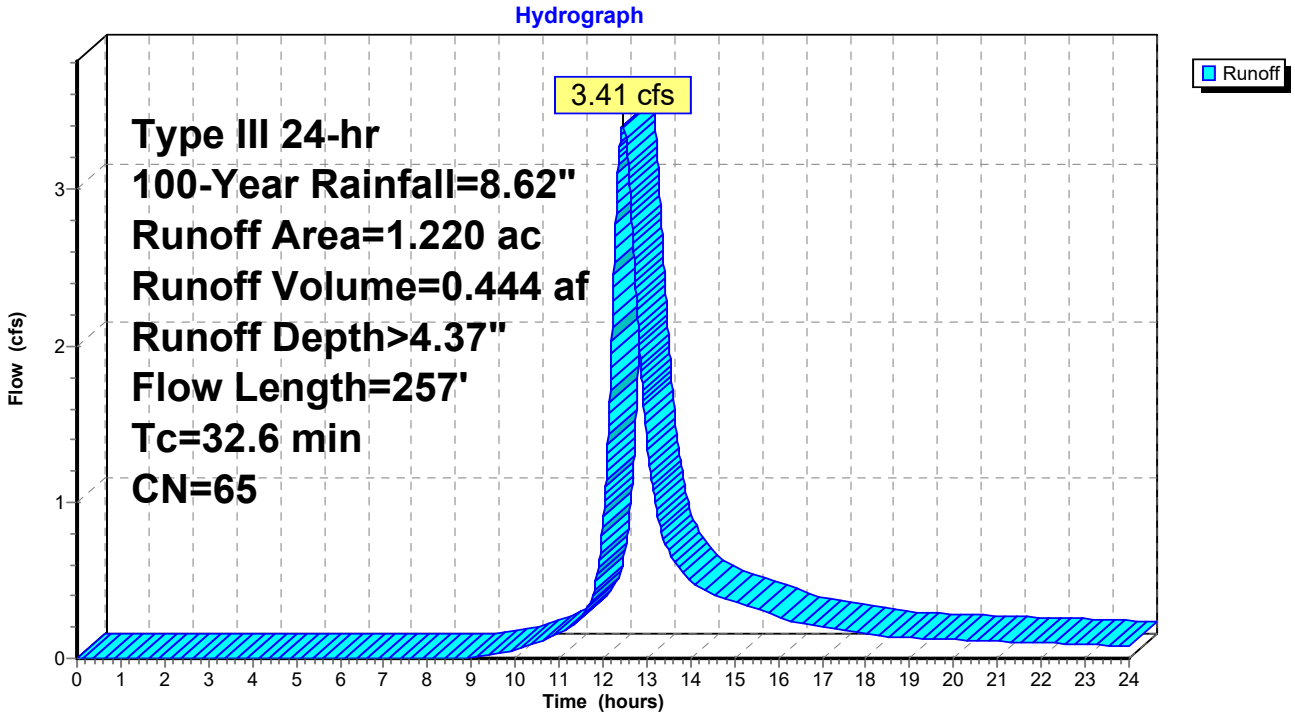
Runoff = 3.41 cfs @ 12.46 hrs, Volume= 0.444 af, Depth> 4.37"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (ac)	CN	Description
1.220	65	Woods/grass comb., Fair, HSG B
1.220		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
32.1	192	0.0940	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"
0.5	65	0.0200	2.28		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
32.6	257	Total			

Subcatchment EDA-1B: To Off-Site South



Summary for Subcatchment EDA-1C: To Off-Site South

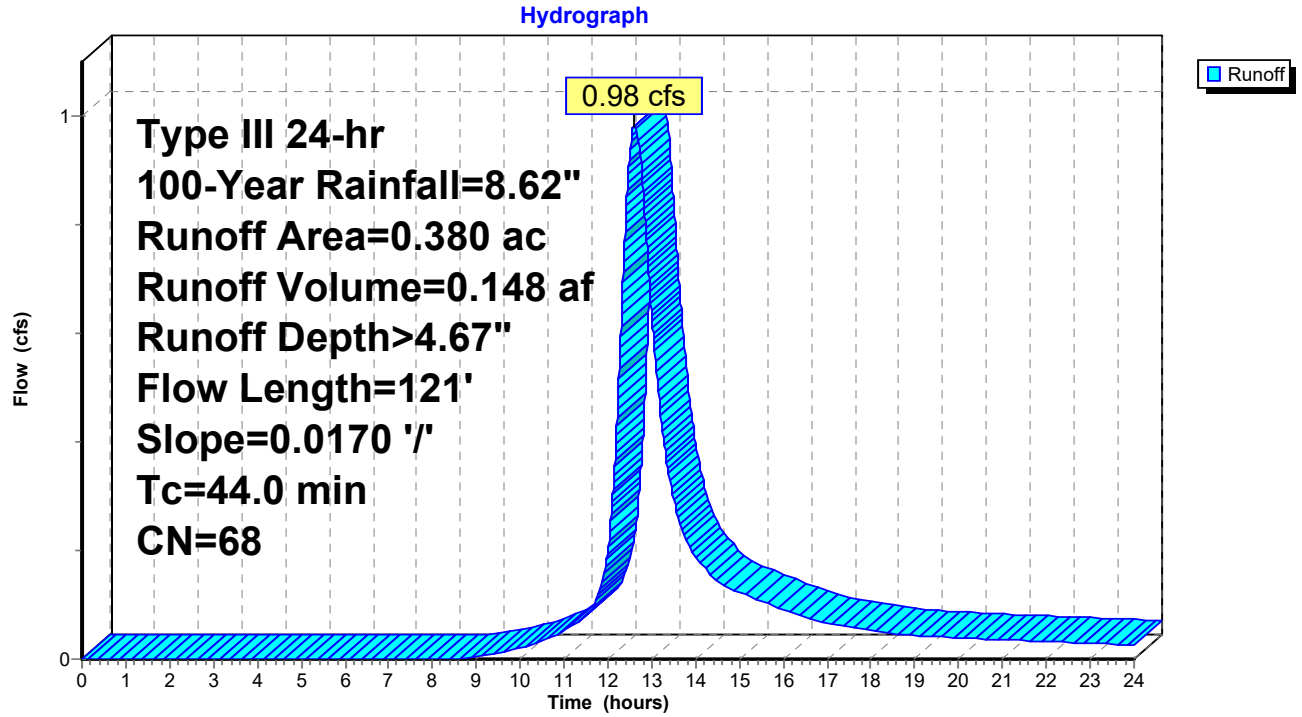
Runoff = 0.98 cfs @ 12.61 hrs, Volume= 0.148 af, Depth> 4.67"
Routed to Link 1L : (new Link)

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (ac)	CN	Description
0.030	98	Paved parking, HSG B
0.350	65	Woods/grass comb., Fair, HSG B
0.380	68	Weighted Average
0.350		92.11% Pervious Area
0.030		7.89% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
44.0	121	0.0170	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.57"

Subcatchment EDA-1C: To Off-Site South



Summary for Pond 1P: Existing Pond

Inflow Area = 1.640 ac, 9.15% Impervious, Inflow Depth > 14.11" for 100-Year event
Inflow = 5.43 cfs @ 12.49 hrs, Volume= 1.928 af, Incl. 0.65 cfs Base Flow
Outflow = 5.36 cfs @ 12.54 hrs, Volume= 1.555 af, Atten= 1%, Lag= 2.8 min
Primary = 5.36 cfs @ 12.54 hrs, Volume= 1.555 af
Routed to Link 1L : (new Link)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.090 ac Storage= 0.140 af
Peak Elev= 322.58' @ 12.54 hrs Surf.Area= 0.136 ac Storage= 0.536 af (0.396 af above start)

Plug-Flow detention time= 335.6 min calculated for 1.415 af (73% of inflow)
Center-of-Mass det. time= 134.5 min (897.2 - 762.6)

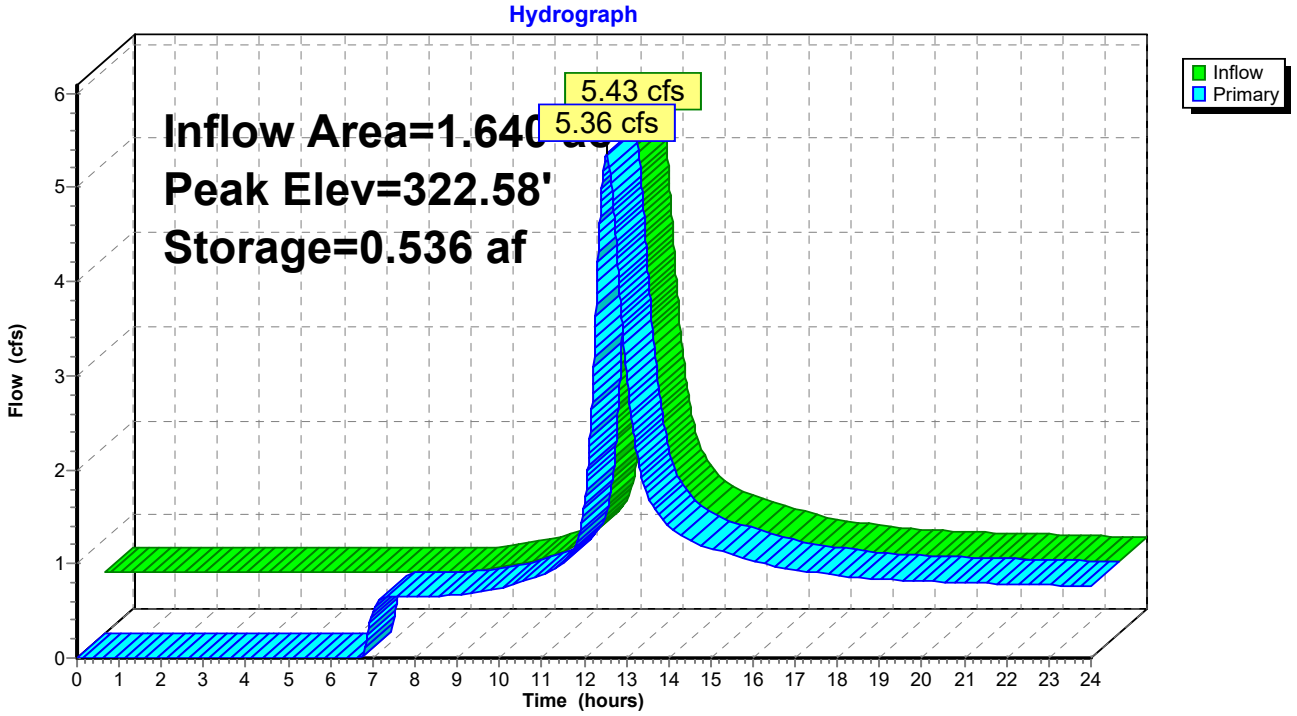
Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	0.594 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.050	201.0	0.000	0.000	0.050
318.00	0.070	240.0	0.060	0.060	0.082
319.00	0.090	252.0	0.080	0.140	0.094
320.00	0.100	268.0	0.095	0.234	0.110
321.00	0.110	285.0	0.105	0.339	0.129
322.00	0.130	297.0	0.120	0.459	0.143
323.00	0.140	310.0	0.135	0.594	0.159

Device	Routing	Invert	Outlet Devices
#1	Primary	322.35'	**20.0' long x 10.0' breadth Broad-Crested Rectangular Weir**
			Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60
			Coef. (English) 2.49 2.56 2.70 2.69 2.68 2.69 2.67 2.64

Primary OutFlow Max=5.35 cfs @ 12.54 hrs HW=322.58' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 5.35 cfs @ 1.19 fps)

Pond 1P: Existing Pond



Stage-Discharge for Pond 1P: Existing Pond

Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)	Elevation (feet)	Primary (cfs)
317.00	0.00	319.60	0.00	322.20	0.00
317.05	0.00	319.65	0.00	322.25	0.00
317.10	0.00	319.70	0.00	322.30	0.00
317.15	0.00	319.75	0.00	322.35	0.00
317.20	0.00	319.80	0.00	322.40	0.56
317.25	0.00	319.85	0.00	322.45	1.57
317.30	0.00	319.90	0.00	322.50	2.89
317.35	0.00	319.95	0.00	322.55	4.45
317.40	0.00	320.00	0.00	322.60	6.27
317.45	0.00	320.05	0.00	322.65	8.30
317.50	0.00	320.10	0.00	322.70	10.53
317.55	0.00	320.15	0.00	322.75	12.95
317.60	0.00	320.20	0.00	322.80	15.67
317.65	0.00	320.25	0.00	322.85	18.60
317.70	0.00	320.30	0.00	322.90	21.74
317.75	0.00	320.35	0.00	322.95	25.10
317.80	0.00	320.40	0.00	323.00	**28.27**
317.85	0.00	320.45	0.00		
317.90	0.00	320.50	0.00		
317.95	0.00	320.55	0.00		
318.00	0.00	320.60	0.00		
318.05	0.00	320.65	0.00		
318.10	0.00	320.70	0.00		
318.15	0.00	320.75	0.00		
318.20	0.00	320.80	0.00		
318.25	0.00	320.85	0.00		
318.30	0.00	320.90	0.00		
318.35	0.00	320.95	0.00		
318.40	0.00	321.00	0.00		
318.45	0.00	321.05	0.00		
318.50	0.00	321.10	0.00		
318.55	0.00	321.15	0.00		
318.60	0.00	321.20	0.00		
318.65	0.00	321.25	0.00		
318.70	0.00	321.30	0.00		
318.75	0.00	321.35	0.00		
318.80	0.00	321.40	0.00		
318.85	0.00	321.45	0.00		
318.90	0.00	321.50	0.00		
318.95	0.00	321.55	0.00		
319.00	0.00	321.60	0.00		
319.05	0.00	321.65	0.00		
319.10	0.00	321.70	0.00		
319.15	0.00	321.75	0.00		
319.20	0.00	321.80	0.00		
319.25	0.00	321.85	0.00		
319.30	0.00	321.90	0.00		
319.35	0.00	321.95	0.00		
319.40	0.00	322.00	0.00		
319.45	0.00	322.05	0.00		
319.50	0.00	322.10	0.00		
319.55	0.00	322.15	0.00		

Stage-Area-Storage for Pond 1P: Existing Pond

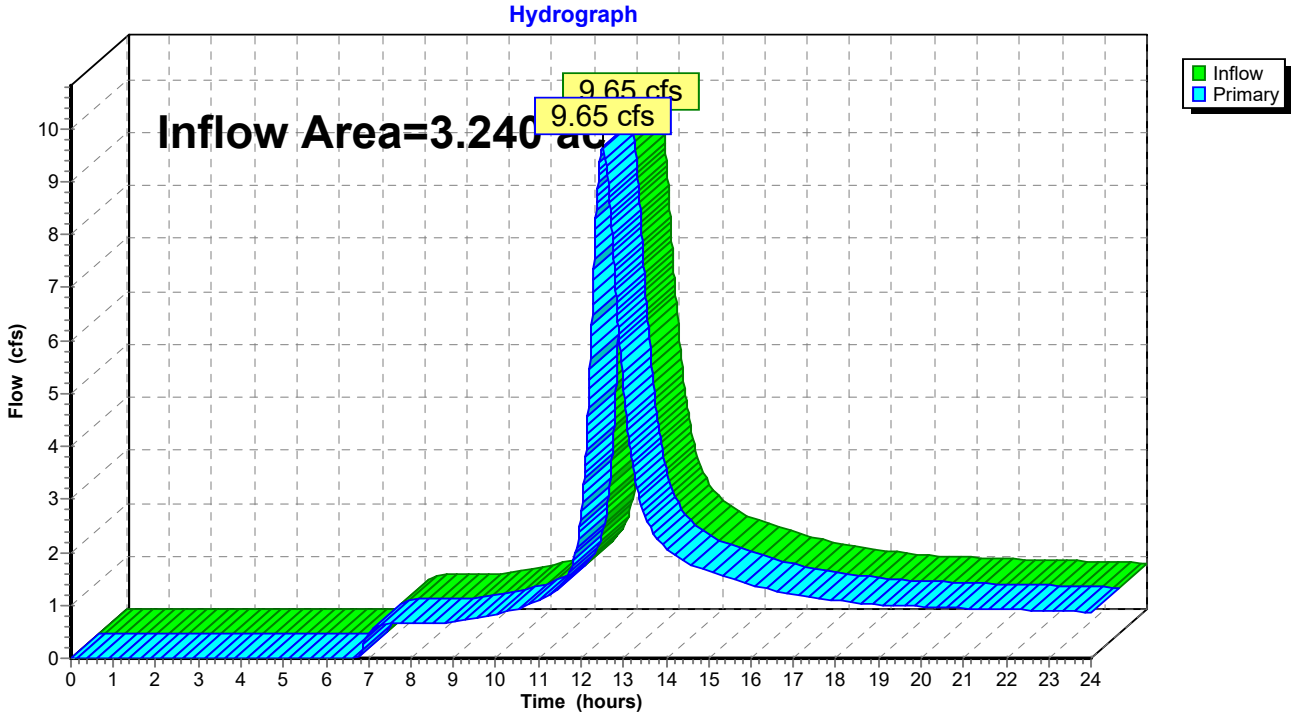
Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.050	0.000
317.10	0.052	0.005
317.20	0.054	0.010
317.30	0.056	0.016
317.40	0.058	0.022
317.50	0.060	0.027
317.60	0.062	0.033
317.70	0.064	0.040
317.80	0.066	0.046
317.90	0.068	0.053
318.00	0.070	0.060
318.10	0.072	0.067
318.20	0.074	0.074
318.30	0.076	0.082
318.40	0.078	0.089
318.50	0.080	0.097
318.60	0.082	0.105
318.70	0.084	0.113
318.80	0.086	0.122
318.90	0.088	0.131
319.00	0.090	0.140
319.10	0.091	0.149
319.20	0.092	0.158
319.30	0.093	0.167
319.40	0.094	0.176
319.50	0.095	0.186
319.60	0.096	0.195
319.70	0.097	0.205
319.80	0.098	0.215
319.90	0.099	0.225
320.00	0.100	0.234
320.10	0.101	0.245
320.20	0.102	0.255
320.30	0.103	0.265
320.40	0.104	0.275
320.50	0.105	0.286
320.60	0.106	0.296
320.70	0.107	0.307
320.80	0.108	0.318
320.90	0.109	0.328
321.00	0.110	0.339
321.10	0.112	0.351
321.20	0.114	0.362
321.30	0.116	0.373
321.40	0.118	0.385
321.50	0.120	0.397
321.60	0.122	0.409
321.70	0.124	0.421
321.80	0.126	0.434
321.90	0.128	0.446
322.00	0.130	0.459
322.10	0.131	0.472
322.20	0.132	0.485
322.30	0.133	0.499
322.40	0.134	0.512
322.50	0.135	0.526
322.60	0.136	0.539
322.70	0.137	0.553
322.80	0.138	0.566
322.90	0.139	0.580
323.00	**0.140**	**0.594**

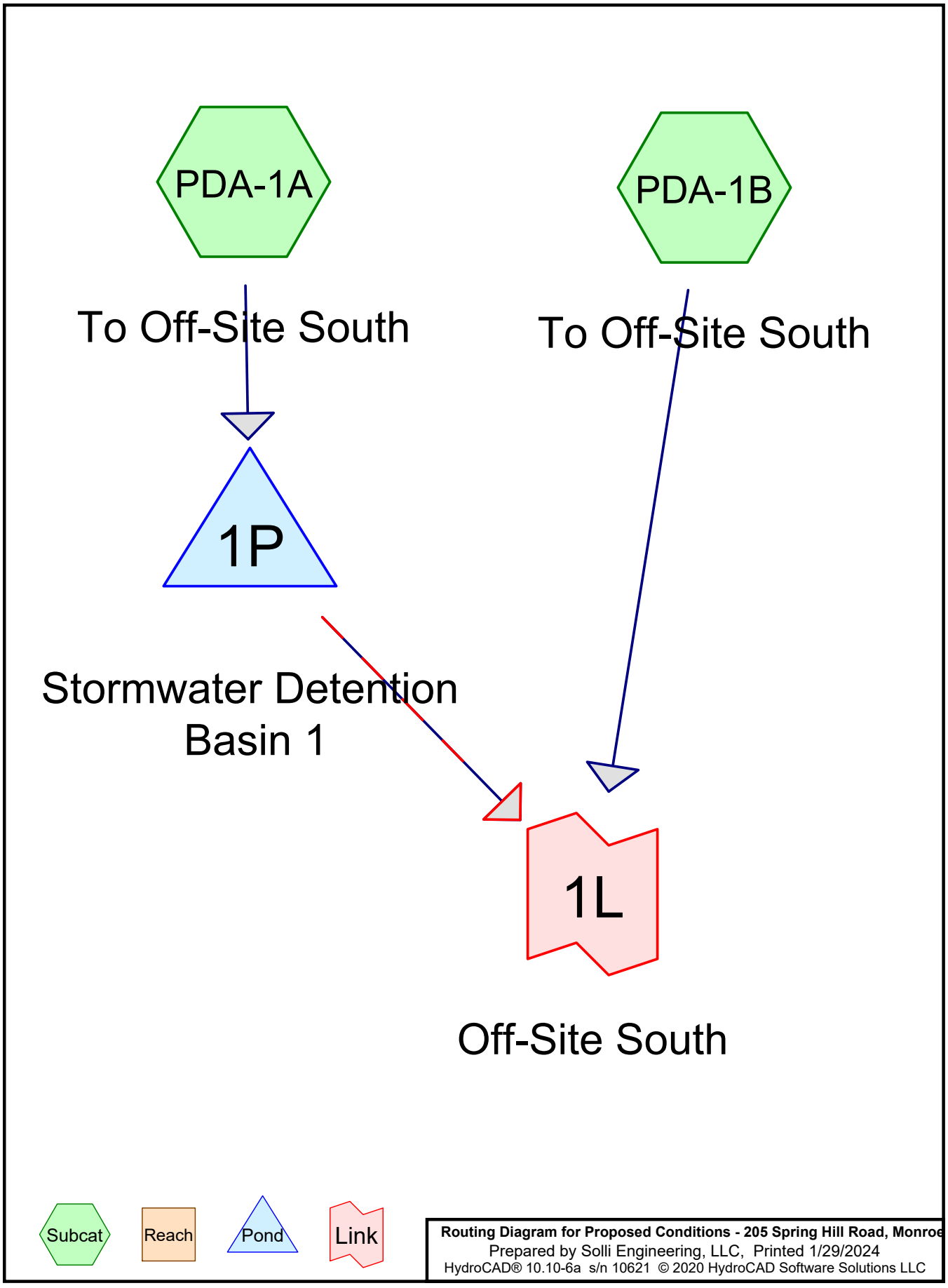
Summary for Link 1L: (new Link)

Inflow Area = 3.240 ac, 5.56% Impervious, Inflow Depth > 7.95" for 100-Year event
Inflow = 9.65 cfs @ 12.51 hrs, Volume= 2.147 af
Primary = 9.65 cfs @ 12.51 hrs, Volume= 2.147 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: (new Link)





Routing Diagram for Proposed Conditions - 205 Spring Hill Road, Monroe
Prepared by Solli Engineering, LLC, Printed 1/29/2024

Summary for Subcatchment PDA-1A: To Off-Site South

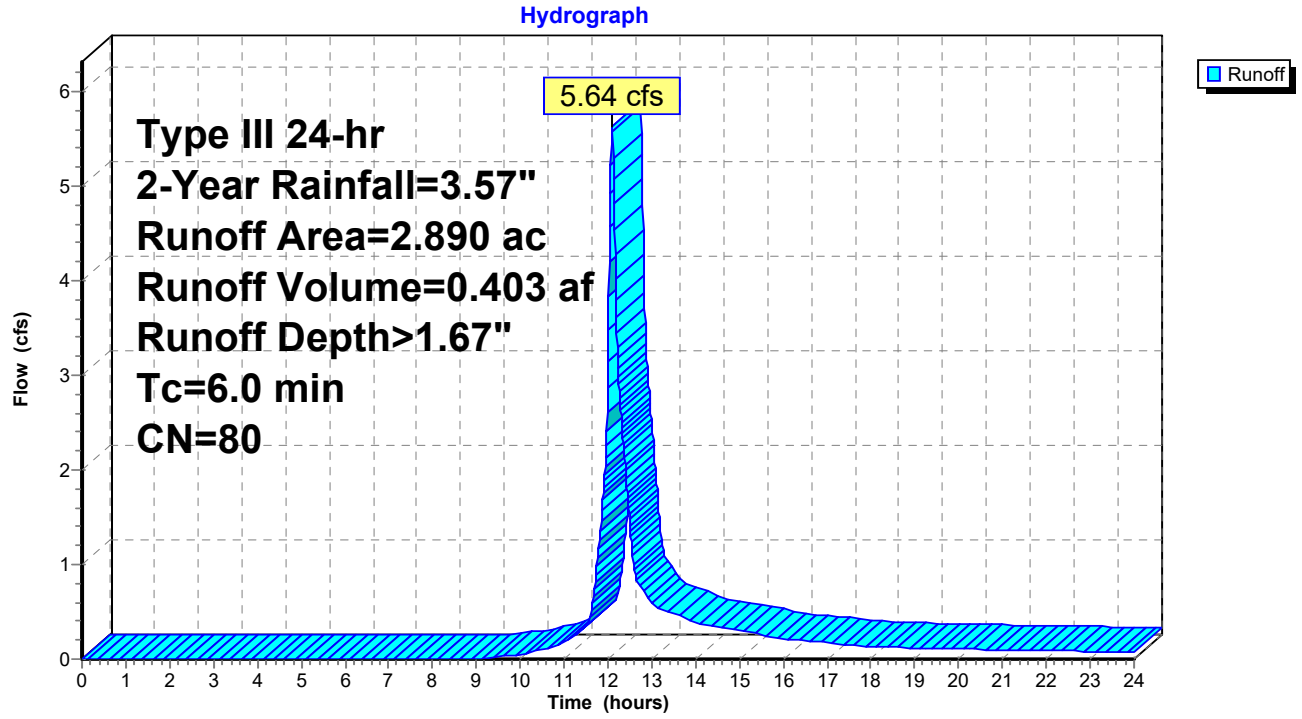
Runoff = 5.64 cfs @ 12.09 hrs, Volume= 0.403 af, Depth> 1.67"
Routed to Pond 1P : Stormwater Detention Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.57"

Area (ac)	CN	Description
1.470	98	Paved parking, HSG B
0.220	60	Woods, Fair, HSG B
1.200	61	>75% Grass cover, Good, HSG B
2.890	80	Weighted Average
1.420		49.13% Pervious Area
1.470		50.87% Impervious Area

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

Subcatchment PDA-1A: To Off-Site South



Summary for Subcatchment PDA-1B: To Off-Site South

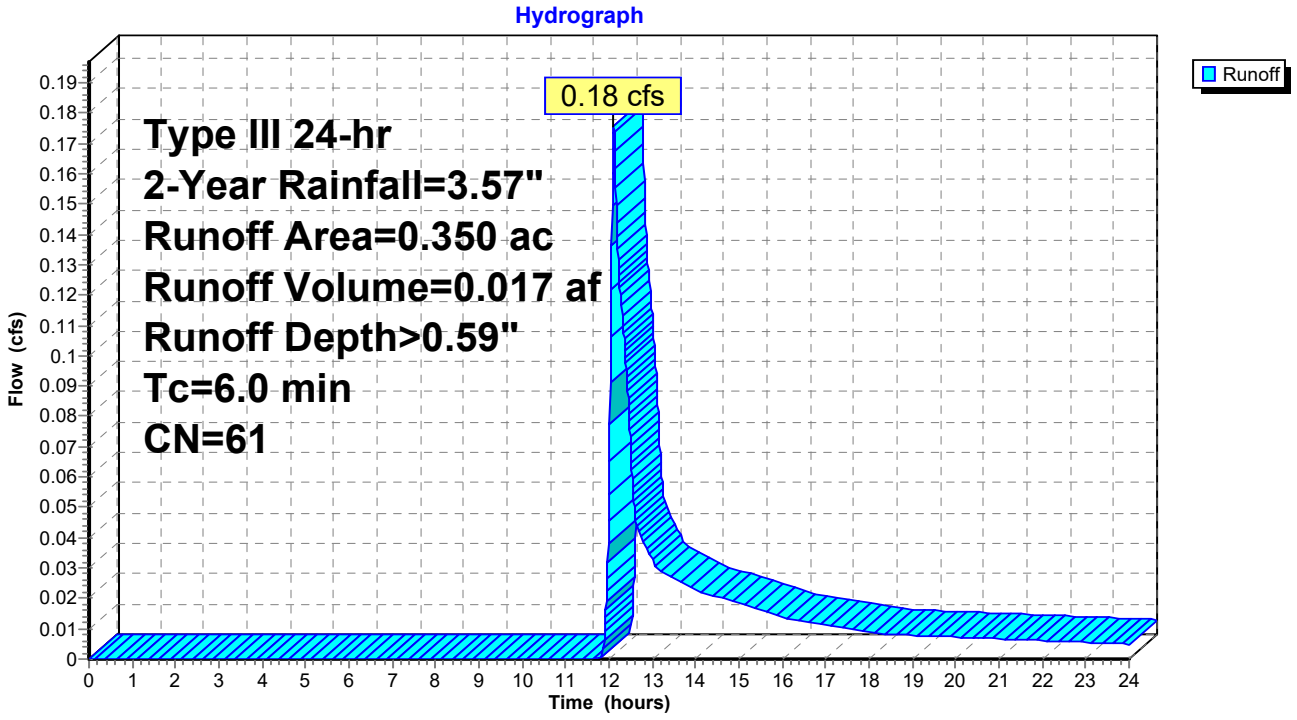
Runoff = 0.18 cfs @ 12.11 hrs, Volume= 0.017 af, Depth> 0.59"
Routed to Link 1L : Off-Site South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-Year Rainfall=3.57"

Area (ac)	CN	Description
0.100	60	Woods, Fair, HSG B
0.250	61	>75% Grass cover, Good, HSG B
0.350	61	Weighted Average
0.350		100.00% Pervious Area

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

Subcatchment PDA-1B: To Off-Site South



Summary for Pond 1P: Stormwater Detention Basin 1

Inflow Area = 2.890 ac, 50.87% Impervious, Inflow Depth > 7.03" for 2-Year event
Inflow = 6.29 cfs @ 12.09 hrs, Volume= 1.692 af, Incl. 0.65 cfs Base Flow
Outflow = 1.70 cfs @ 12.56 hrs, Volume= 1.052 af, Atten= 73%, Lag= 28.4 min
Primary = 1.70 cfs @ 12.56 hrs, Volume= 1.052 af
Routed to Link 1L : Off-Site South
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 1L : Off-Site South

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.140 ac Storage= 0.240 af
Peak Elev= 323.02' @ 12.56 hrs Surf.Area= 0.240 ac Storage= 1.003 af (0.763 af above start)

Plug-Flow detention time= 650.8 min calculated for 0.812 af (48% of inflow)
Center-of-Mass det. time= 258.7 min (1,006.6 - 747.9)

Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	2.024 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

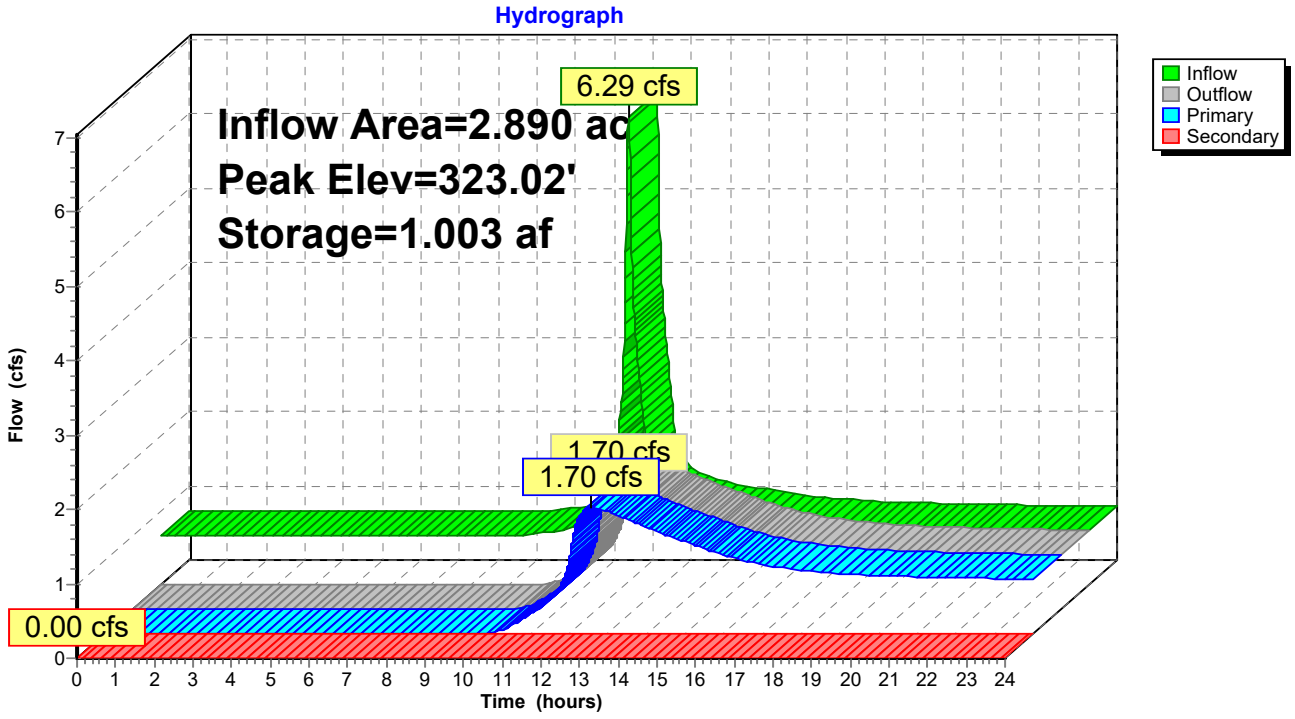
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.100	286.0	0.000	0.000	0.100
318.00	0.120	305.0	0.110	0.110	0.122
319.00	0.140	324.0	0.130	0.240	0.145
320.00	0.160	343.0	0.150	0.390	0.169
321.00	0.190	362.0	0.175	0.564	0.195
322.00	0.220	381.0	0.205	0.769	0.222
323.00	0.240	400.0	0.230	0.999	0.250
324.00	0.270	419.0	0.255	1.254	0.280
325.00	0.300	438.0	0.285	1.539	0.312
326.00	0.330	458.0	0.315	1.854	0.346
326.50	0.350	467.0	0.170	2.024	0.362

Device	Routing	Invert	Outlet Devices
#1	Primary	322.00'	**12.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 322.00' / 321.50' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	325.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#3	Device 1	324.25'	**24.0" x 30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	322.00'	**9.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=1.70 cfs @ 12.56 hrs HW=323.02' (Free Discharge)
└─**1=Culvert** (Passes 1.70 cfs of 2.14 cfs potential flow)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Orifice Controls 1.70 cfs @ 3.85 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=319.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Stormwater Detention Basin 1



Stage-Discharge for Pond 1P: Stormwater Detention Basin 1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
317.00	0.00	0.00	0.00
317.10	0.00	0.00	0.00
317.20	0.00	0.00	0.00
317.30	0.00	0.00	0.00
317.40	0.00	0.00	0.00
317.50	0.00	0.00	0.00
317.60	0.00	0.00	0.00
317.70	0.00	0.00	0.00
317.80	0.00	0.00	0.00
317.90	0.00	0.00	0.00
318.00	0.00	0.00	0.00
318.10	0.00	0.00	0.00
318.20	0.00	0.00	0.00
318.30	0.00	0.00	0.00
318.40	0.00	0.00	0.00
318.50	0.00	0.00	0.00
318.60	0.00	0.00	0.00
318.70	0.00	0.00	0.00
318.80	0.00	0.00	0.00
318.90	0.00	0.00	0.00
319.00	0.00	0.00	0.00
319.10	0.00	0.00	0.00
319.20	0.00	0.00	0.00
319.30	0.00	0.00	0.00
319.40	0.00	0.00	0.00
319.50	0.00	0.00	0.00
319.60	0.00	0.00	0.00
319.70	0.00	0.00	0.00
319.80	0.00	0.00	0.00
319.90	0.00	0.00	0.00
320.00	0.00	0.00	0.00
320.10	0.00	0.00	0.00
320.20	0.00	0.00	0.00
320.30	0.00	0.00	0.00
320.40	0.00	0.00	0.00
320.50	0.00	0.00	0.00
320.60	0.00	0.00	0.00
320.70	0.00	0.00	0.00
320.80	0.00	0.00	0.00
320.90	0.00	0.00	0.00
321.00	0.00	0.00	0.00
321.10	0.00	0.00	0.00
321.20	0.00	0.00	0.00
321.30	0.00	0.00	0.00
321.40	0.00	0.00	0.00
321.50	0.00	0.00	0.00
321.60	0.00	0.00	0.00
321.70	0.00	0.00	0.00
321.80	0.00	0.00	0.00
321.90	0.00	0.00	0.00
322.00	0.00	0.00	0.00
322.10	0.03	0.03	0.00
322.20	0.13	0.13	0.00
322.30	0.29	0.29	0.00
322.40	0.50	0.50	0.00
322.50	0.75	0.75	0.00
322.60	1.00	1.00	0.00
322.70	1.22	1.22	0.00
322.80	1.39	1.39	0.00
322.90	1.54	1.54	0.00
323.00	1.68	1.68	0.00
323.10	1.81	1.81	0.00
323.20	1.93	1.93	0.00
323.30	2.05	2.05	0.00
323.40	2.15	2.15	0.00
323.50	2.26	2.26	0.00
323.60	2.35	2.35	0.00
323.70	2.45	2.45	0.00
323.80	2.54	2.54	0.00
323.90	2.63	2.63	0.00
324.00	2.71	2.71	0.00
324.10	2.79	2.79	0.00
324.20	2.87	2.87	0.00
324.30	3.28	3.28	0.00
324.40	4.12	4.12	0.00
324.50	4.22	4.22	0.00
324.60	4.33	4.33	0.00
324.70	4.43	4.43	0.00
324.80	4.53	4.53	0.00
324.90	4.63	4.63	0.00
325.00	4.72	4.72	0.00
325.10	4.81	4.81	0.00
325.20	4.91	4.91	0.00
325.30	5.00	5.00	0.00
325.40	5.08	5.08	0.00
325.50	5.17	5.17	0.00
325.60	6.16	5.26	0.90
325.70	7.88	5.34	2.54
325.80	10.23	5.42	4.81
325.90	13.12	5.51	7.62
326.00	16.64	5.59	11.05
326.10	20.72	5.66	15.06
326.20	24.65	5.74	18.91
326.30	28.83	5.82	23.01
326.40	33.35	5.90	27.46
326.50	**38.13**	**5.97**	**32.16**

Stage-Area-Storage for Pond 1P: Stormwater Detention Basin 1

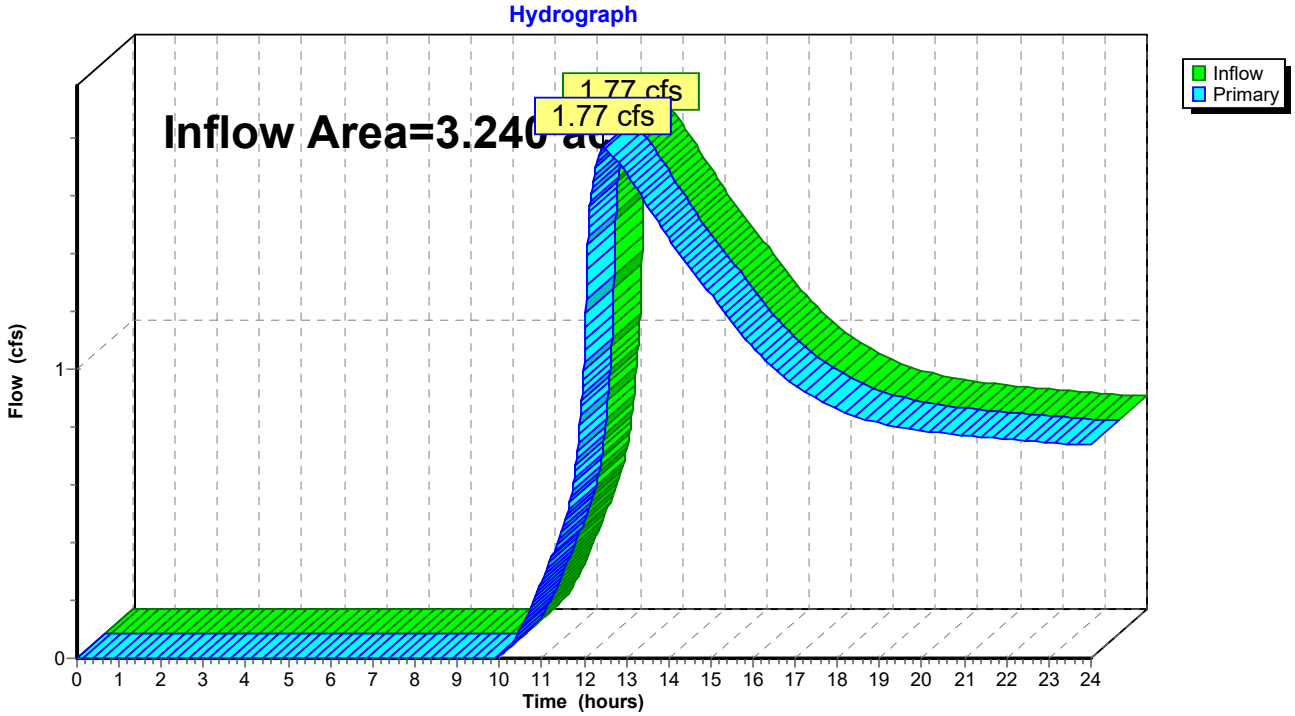
Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.100	0.000
317.10	0.102	0.010
317.20	0.104	0.020
317.30	0.106	0.031
317.40	0.108	0.042
317.50	0.110	0.052
317.60	0.112	0.064
317.70	0.114	0.075
317.80	0.116	0.086
317.90	0.118	0.098
318.00	0.120	0.110
318.10	0.122	0.122
318.20	0.124	0.134
318.30	0.126	0.147
318.40	0.128	0.159
318.50	0.130	0.172
318.60	0.132	0.185
318.70	0.134	0.199
318.80	0.136	0.212
318.90	0.138	0.226
319.00	0.140	0.240
319.10	0.142	0.254
319.20	0.144	0.268
319.30	0.146	0.283
319.40	0.148	0.297
319.50	0.150	0.312
319.60	0.152	0.327
319.70	0.154	0.343
319.80	0.156	0.358
319.90	0.158	0.374
320.00	0.160	0.390
320.10	0.163	0.406
320.20	0.166	0.422
320.30	0.169	0.439
320.40	0.172	0.456
320.50	0.175	0.473
320.60	0.178	0.491
320.70	0.181	0.509
320.80	0.184	0.527
320.90	0.187	0.546
321.00	0.190	0.564
321.10	0.193	0.584
321.20	0.196	0.603
321.30	0.199	0.623
321.40	0.202	0.643
321.50	0.205	0.663
321.60	0.208	0.684
321.70	0.211	0.705
321.80	0.214	0.726
321.90	0.217	0.747
322.00	0.220	0.769
322.10	0.222	0.791
322.20	0.224	0.814
322.30	0.226	0.836
322.40	0.228	0.859
322.50	0.230	0.882
322.60	0.232	0.905
322.70	0.234	0.928
322.80	0.236	0.952
322.90	0.238	0.975
323.00	0.240	0.999
323.10	0.243	1.023
323.20	0.246	1.048
323.30	0.249	1.072
323.40	0.252	1.097
323.50	0.255	1.123
323.60	0.258	1.148
323.70	0.261	1.174
323.80	0.264	1.201
323.90	0.267	1.227
324.00	0.270	1.254
324.10	0.273	1.281
324.20	0.276	1.309
324.30	0.279	1.336
324.40	0.282	1.364
324.50	0.285	1.393
324.60	0.288	1.421
324.70	0.291	1.450
324.80	0.294	1.479
324.90	0.297	1.509
325.00	0.300	1.539
325.10	0.303	1.569
325.20	0.306	1.599
325.30	0.309	1.630
325.40	0.312	1.661
325.50	0.315	1.693
325.60	0.318	1.724
325.70	0.321	1.756
325.80	0.324	1.788
325.90	0.327	1.821
326.00	0.330	1.854
326.10	0.334	1.887
326.20	0.338	1.921
326.30	0.342	1.955
326.40	0.346	1.989
326.50	**0.350**	**2.024**

Summary for Link 1L: Off-Site South

Inflow Area = 3.240 ac, 45.37% Impervious, Inflow Depth > 3.96" for 2-Year event
Inflow = 1.77 cfs @ 12.47 hrs, Volume= 1.069 af
Primary = 1.77 cfs @ 12.47 hrs, Volume= 1.069 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: Off-Site South



Summary for Subcatchment PDA-1A: To Off-Site South

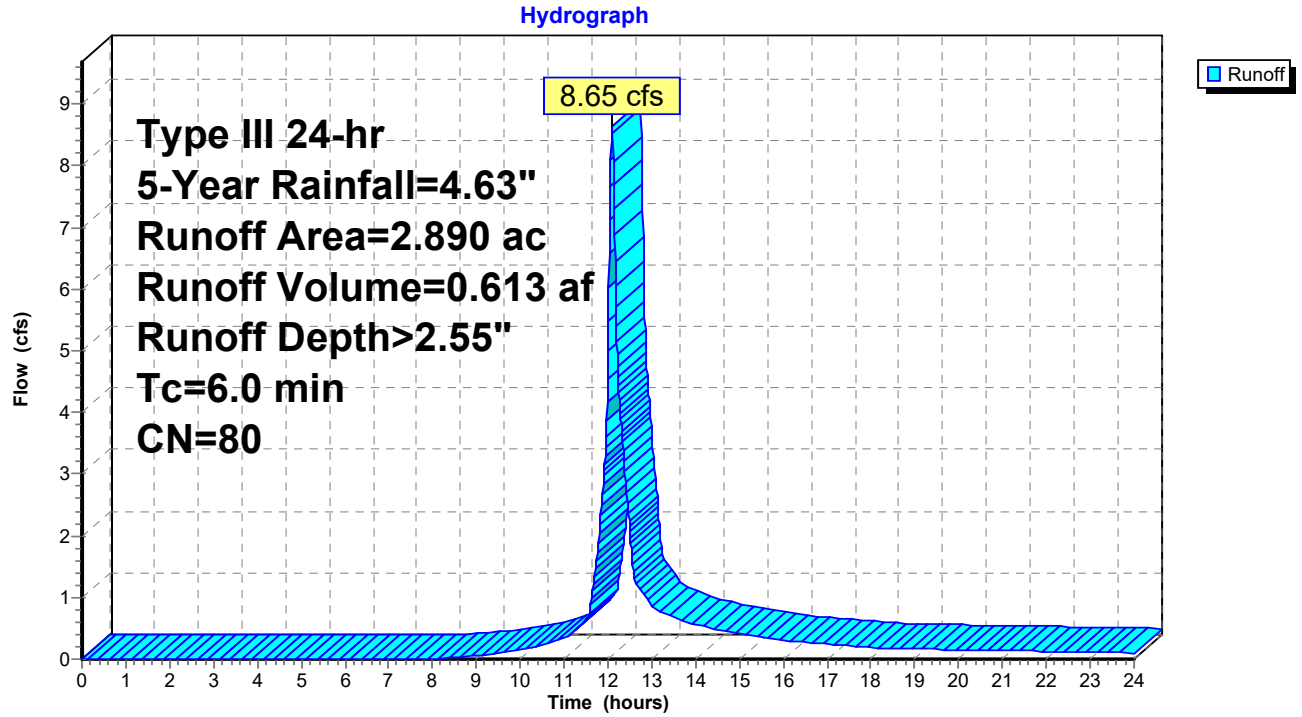
Runoff = 8.65 cfs @ 12.09 hrs, Volume= 0.613 af, Depth> 2.55"
Routed to Pond 1P : Stormwater Detention Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-Year Rainfall=4.63"

Area (ac)	CN	Description
1.470	98	Paved parking, HSG B
0.220	60	Woods, Fair, HSG B
1.200	61	>75% Grass cover, Good, HSG B
2.890	80	Weighted Average
1.420		49.13% Pervious Area
1.470		50.87% Impervious Area

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

Subcatchment PDA-1A: To Off-Site South



Summary for Subcatchment PDA-1B: To Off-Site South

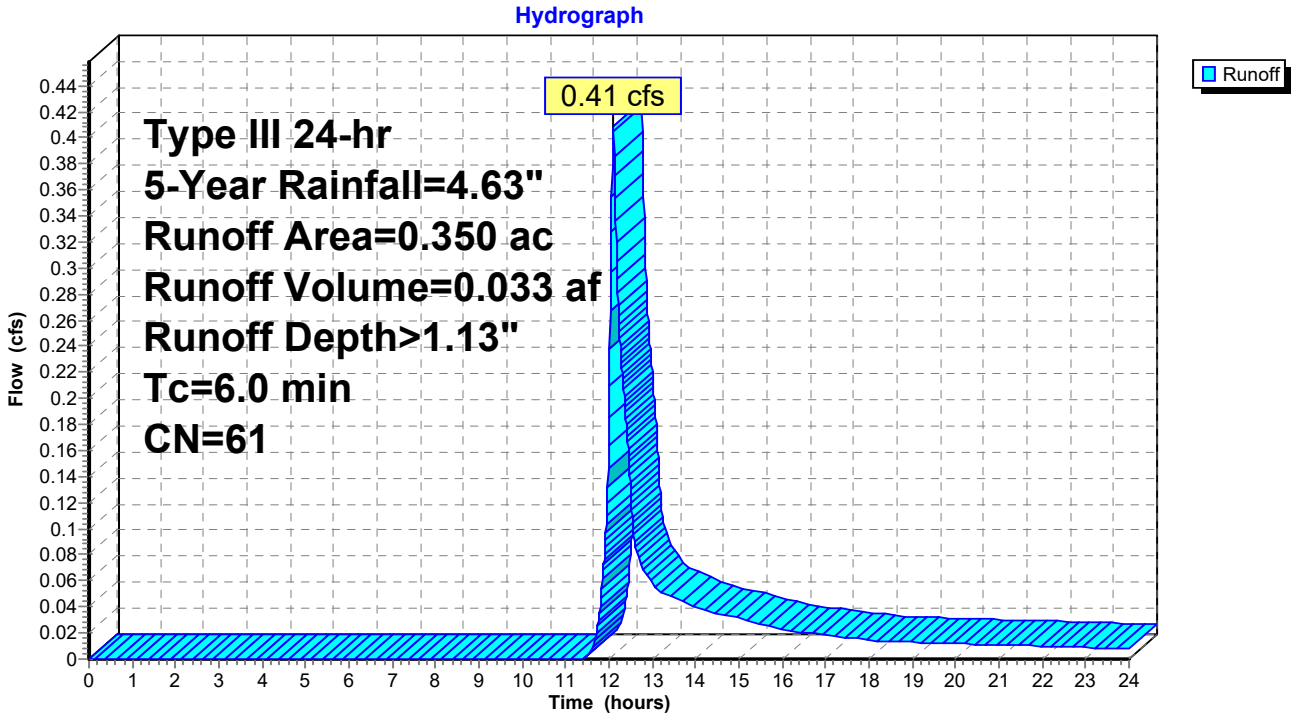
Runoff = 0.41 cfs @ 12.10 hrs, Volume= 0.033 af, Depth> 1.13"
Routed to Link 1L : Off-Site South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 5-Year Rainfall=4.63"

Area (ac)	CN	Description
0.100	60	Woods, Fair, HSG B
0.250	61	>75% Grass cover, Good, HSG B
0.350	61	Weighted Average
0.350		100.00% Pervious Area

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

Subcatchment PDA-1B: To Off-Site South



Summary for Pond 1P: Stormwater Detention Basin 1

Inflow Area = 2.890 ac, 50.87% Impervious, Inflow Depth > 7.90" for 5-Year event
Inflow = 9.30 cfs @ 12.09 hrs, Volume= 1.903 af, Incl. 0.65 cfs Base Flow
Outflow = 2.13 cfs @ 12.57 hrs, Volume= 1.260 af, Atten= 77%, Lag= 28.9 min
Primary = 2.13 cfs @ 12.57 hrs, Volume= 1.260 af
Routed to Link 1L : Off-Site South
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 1L : Off-Site South

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.140 ac Storage= 0.240 af
Peak Elev= 323.38' @ 12.57 hrs Surf.Area= 0.251 ac Storage= 1.093 af (0.853 af above start)

Plug-Flow detention time= 558.6 min calculated for 1.020 af (54% of inflow)
Center-of-Mass det. time= 235.0 min (988.8 - 753.9)

Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	2.024 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

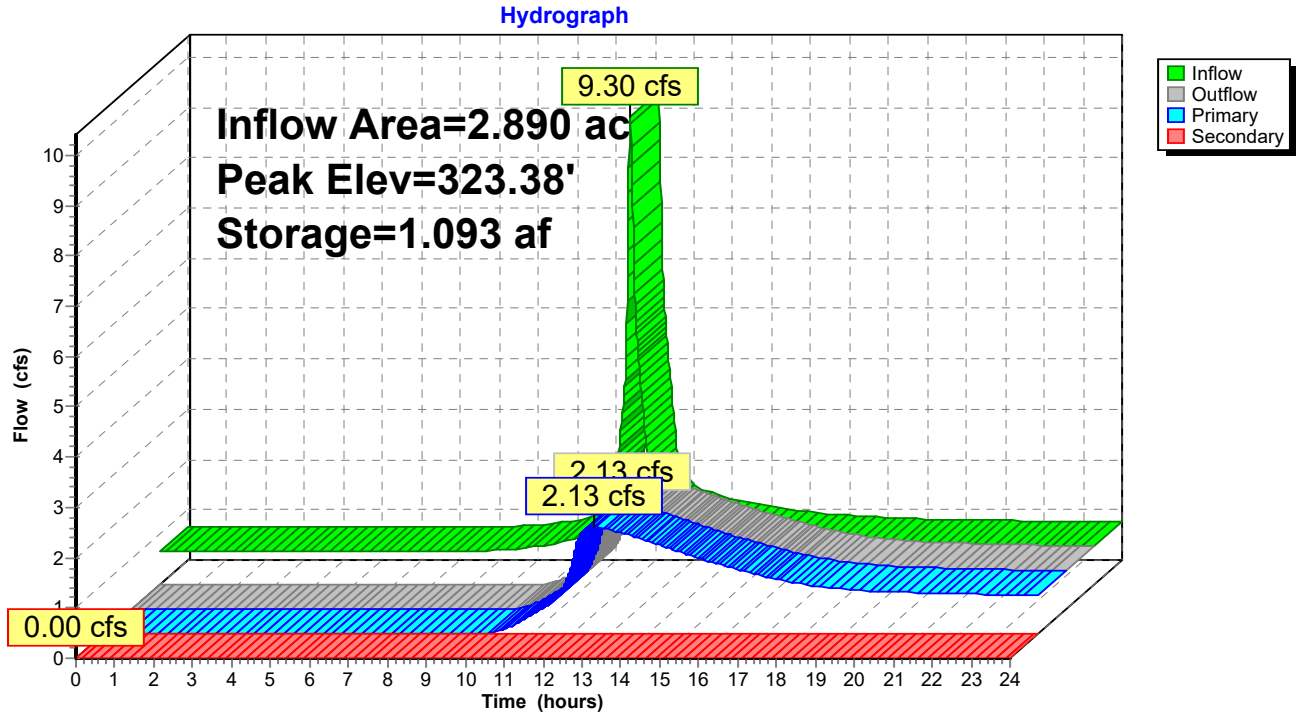
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.100	286.0	0.000	0.000	0.100
318.00	0.120	305.0	0.110	0.110	0.122
319.00	0.140	324.0	0.130	0.240	0.145
320.00	0.160	343.0	0.150	0.390	0.169
321.00	0.190	362.0	0.175	0.564	0.195
322.00	0.220	381.0	0.205	0.769	0.222
323.00	0.240	400.0	0.230	0.999	0.250
324.00	0.270	419.0	0.255	1.254	0.280
325.00	0.300	438.0	0.285	1.539	0.312
326.00	0.330	458.0	0.315	1.854	0.346
326.50	0.350	467.0	0.170	2.024	0.362

Device	Routing	Invert	Outlet Devices
#1	Primary	322.00'	**12.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 322.00' / 321.50' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	325.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#3	Device 1	324.25'	**24.0" x 30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	322.00'	**9.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.13 cfs @ 12.57 hrs HW=323.38' (Free Discharge)
└─**1=Culvert** (Passes 2.13 cfs of 2.80 cfs potential flow)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Orifice Controls 2.13 cfs @ 4.83 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=319.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Stormwater Detention Basin 1



Stage-Discharge for Pond 1P: Stormwater Detention Basin 1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
317.00	0.00	0.00	0.00
317.10	0.00	0.00	0.00
317.20	0.00	0.00	0.00
317.30	0.00	0.00	0.00
317.40	0.00	0.00	0.00
317.50	0.00	0.00	0.00
317.60	0.00	0.00	0.00
317.70	0.00	0.00	0.00
317.80	0.00	0.00	0.00
317.90	0.00	0.00	0.00
318.00	0.00	0.00	0.00
318.10	0.00	0.00	0.00
318.20	0.00	0.00	0.00
318.30	0.00	0.00	0.00
318.40	0.00	0.00	0.00
318.50	0.00	0.00	0.00
318.60	0.00	0.00	0.00
318.70	0.00	0.00	0.00
318.80	0.00	0.00	0.00
318.90	0.00	0.00	0.00
319.00	0.00	0.00	0.00
319.10	0.00	0.00	0.00
319.20	0.00	0.00	0.00
319.30	0.00	0.00	0.00
319.40	0.00	0.00	0.00
319.50	0.00	0.00	0.00
319.60	0.00	0.00	0.00
319.70	0.00	0.00	0.00
319.80	0.00	0.00	0.00
319.90	0.00	0.00	0.00
320.00	0.00	0.00	0.00
320.10	0.00	0.00	0.00
320.20	0.00	0.00	0.00
320.30	0.00	0.00	0.00
320.40	0.00	0.00	0.00
320.50	0.00	0.00	0.00
320.60	0.00	0.00	0.00
320.70	0.00	0.00	0.00
320.80	0.00	0.00	0.00
320.90	0.00	0.00	0.00
321.00	0.00	0.00	0.00
321.10	0.00	0.00	0.00
321.20	0.00	0.00	0.00
321.30	0.00	0.00	0.00
321.40	0.00	0.00	0.00
321.50	0.00	0.00	0.00
321.60	0.00	0.00	0.00
321.70	0.00	0.00	0.00
321.80	0.00	0.00	0.00
321.90	0.00	0.00	0.00
322.00	0.00	0.00	0.00
322.10	0.03	0.03	0.00
322.20	0.13	0.13	0.00
322.30	0.29	0.29	0.00
322.40	0.50	0.50	0.00
322.50	0.75	0.75	0.00
322.60	1.00	1.00	0.00
322.70	1.22	1.22	0.00
322.80	1.39	1.39	0.00
322.90	1.54	1.54	0.00
323.00	1.68	1.68	0.00
323.10	1.81	1.81	0.00
323.20	1.93	1.93	0.00
323.30	2.05	2.05	0.00
323.40	2.15	2.15	0.00
323.50	2.26	2.26	0.00
323.60	2.35	2.35	0.00
323.70	2.45	2.45	0.00
323.80	2.54	2.54	0.00
323.90	2.63	2.63	0.00
324.00	2.71	2.71	0.00
324.10	2.79	2.79	0.00
324.20	2.87	2.87	0.00
324.30	3.28	3.28	0.00
324.40	4.12	4.12	0.00
324.50	4.22	4.22	0.00
324.60	4.33	4.33	0.00
324.70	4.43	4.43	0.00
324.80	4.53	4.53	0.00
324.90	4.63	4.63	0.00
325.00	4.72	4.72	0.00
325.10	4.81	4.81	0.00
325.20	4.91	4.91	0.00
325.30	5.00	5.00	0.00
325.40	5.08	5.08	0.00
325.50	5.17	5.17	0.00
325.60	6.16	5.26	0.90
325.70	7.88	5.34	2.54
325.80	10.23	5.42	4.81
325.90	13.12	5.51	7.62
326.00	16.64	5.59	11.05
326.10	20.72	5.66	15.06
326.20	24.65	5.74	18.91
326.30	28.83	5.82	23.01
326.40	33.35	5.90	27.46
326.50	**38.13**	**5.97**	**32.16**

Stage-Area-Storage for Pond 1P: Stormwater Detention Basin 1

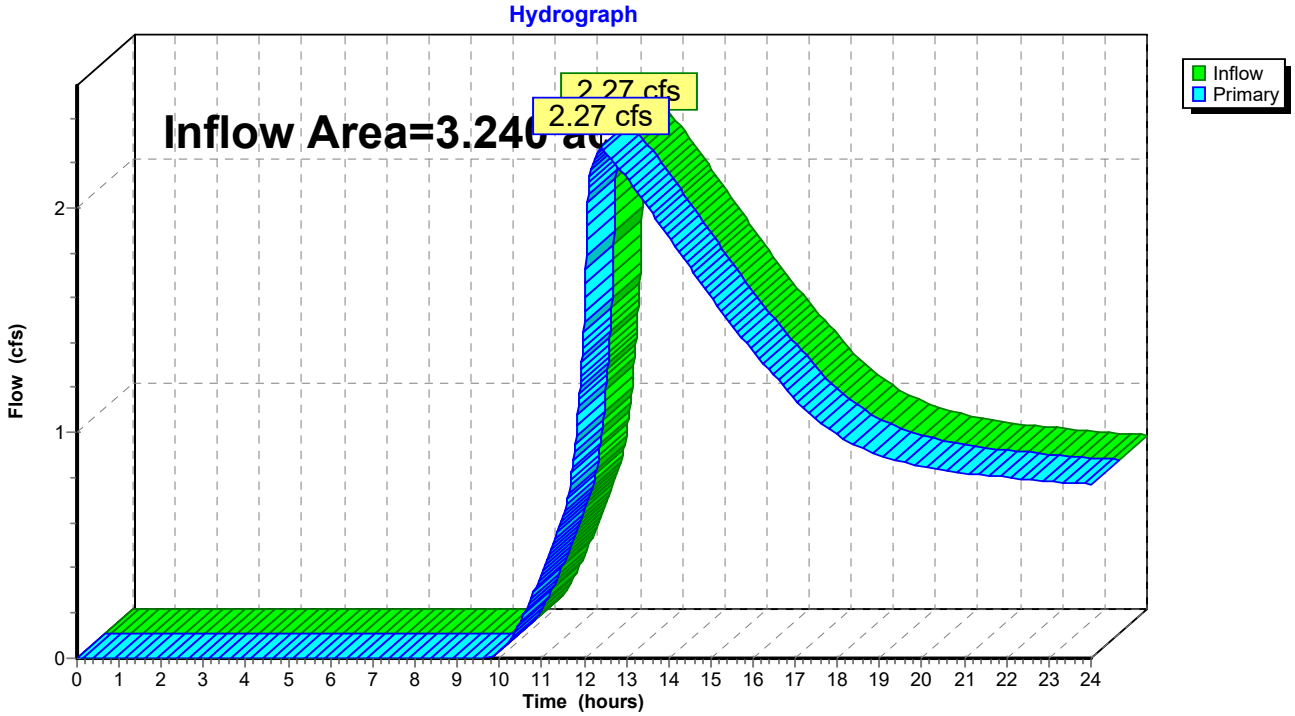
Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.100	0.000
317.10	0.102	0.010
317.20	0.104	0.020
317.30	0.106	0.031
317.40	0.108	0.042
317.50	0.110	0.052
317.60	0.112	0.064
317.70	0.114	0.075
317.80	0.116	0.086
317.90	0.118	0.098
318.00	0.120	0.110
318.10	0.122	0.122
318.20	0.124	0.134
318.30	0.126	0.147
318.40	0.128	0.159
318.50	0.130	0.172
318.60	0.132	0.185
318.70	0.134	0.199
318.80	0.136	0.212
318.90	0.138	0.226
319.00	0.140	0.240
319.10	0.142	0.254
319.20	0.144	0.268
319.30	0.146	0.283
319.40	0.148	0.297
319.50	0.150	0.312
319.60	0.152	0.327
319.70	0.154	0.343
319.80	0.156	0.358
319.90	0.158	0.374
320.00	0.160	0.390
320.10	0.163	0.406
320.20	0.166	0.422
320.30	0.169	0.439
320.40	0.172	0.456
320.50	0.175	0.473
320.60	0.178	0.491
320.70	0.181	0.509
320.80	0.184	0.527
320.90	0.187	0.546
321.00	0.190	0.564
321.10	0.193	0.584
321.20	0.196	0.603
321.30	0.199	0.623
321.40	0.202	0.643
321.50	0.205	0.663
321.60	0.208	0.684
321.70	0.211	0.705
321.80	0.214	0.726
321.90	0.217	0.747
322.00	0.220	0.769
322.10	0.222	0.791
322.20	0.224	0.814
322.30	0.226	0.836
322.40	0.228	0.859
322.50	0.230	0.882
322.60	0.232	0.905
322.70	0.234	0.928
322.80	0.236	0.952
322.90	0.238	0.975
323.00	0.240	0.999
323.10	0.243	1.023
323.20	0.246	1.048
323.30	0.249	1.072
323.40	0.252	1.097
323.50	0.255	1.123
323.60	0.258	1.148
323.70	0.261	1.174
323.80	0.264	1.201
323.90	0.267	1.227
324.00	0.270	1.254
324.10	0.273	1.281
324.20	0.276	1.309
324.30	0.279	1.336
324.40	0.282	1.364
324.50	0.285	1.393
324.60	0.288	1.421
324.70	0.291	1.450
324.80	0.294	1.479
324.90	0.297	1.509
325.00	0.300	1.539
325.10	0.303	1.569
325.20	0.306	1.599
325.30	0.309	1.630
325.40	0.312	1.661
325.50	0.315	1.693
325.60	0.318	1.724
325.70	0.321	1.756
325.80	0.324	1.788
325.90	0.327	1.821
326.00	0.330	1.854
326.10	0.334	1.887
326.20	0.338	1.921
326.30	0.342	1.955
326.40	0.346	1.989
326.50	**0.350**	**2.024**

Summary for Link 1L: Off-Site South

Inflow Area = 3.240 ac, 45.37% Impervious, Inflow Depth > 4.79" for 5-Year event
Inflow = 2.27 cfs @ 12.42 hrs, Volume= 1.293 af
Primary = 2.27 cfs @ 12.42 hrs, Volume= 1.293 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: Off-Site South



Summary for Subcatchment PDA-1A: To Off-Site South

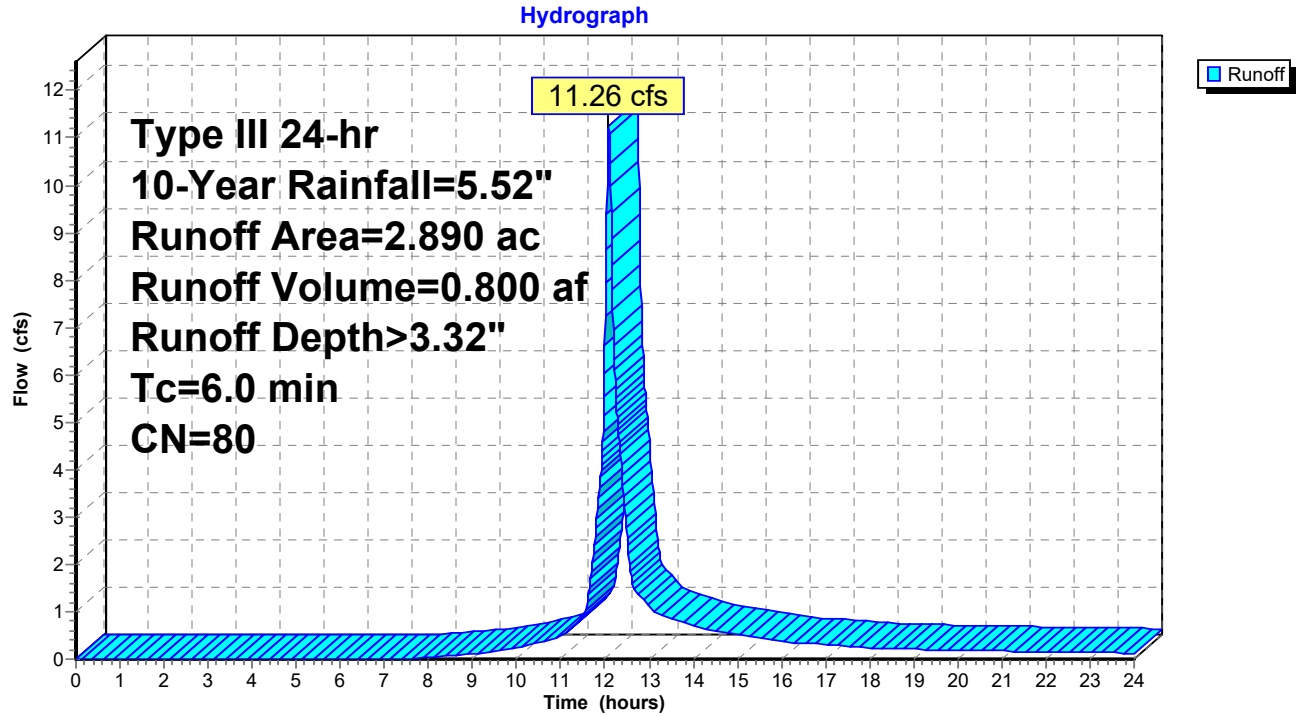
Runoff = 11.26 cfs @ 12.09 hrs, Volume= 0.800 af, Depth> 3.32"
Routed to Pond 1P : Stormwater Detention Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.52"

Area (ac)	CN	Description
1.470	98	Paved parking, HSG B
0.220	60	Woods, Fair, HSG B
1.200	61	>75% Grass cover, Good, HSG B
2.890	80	Weighted Average
1.420		49.13% Pervious Area
1.470		50.87% Impervious Area

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

Subcatchment PDA-1A: To Off-Site South



Summary for Subcatchment PDA-1B: To Off-Site South

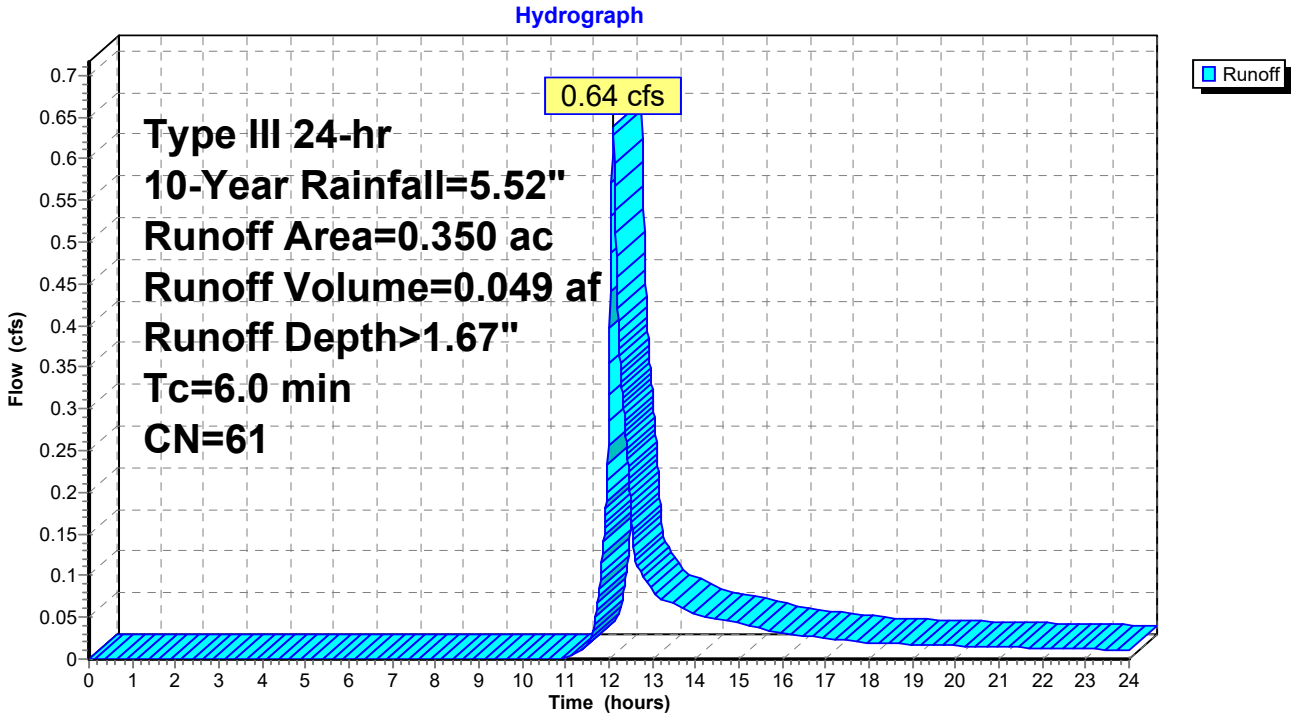
Runoff = 0.64 cfs @ 12.10 hrs, Volume= 0.049 af, Depth> 1.67"
Routed to Link 1L : Off-Site South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-Year Rainfall=5.52"

Area (ac)	CN	Description
0.100	60	Woods, Fair, HSG B
0.250	61	>75% Grass cover, Good, HSG B
0.350	61	Weighted Average
0.350		100.00% Pervious Area

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

Subcatchment PDA-1B: To Off-Site South



Summary for Pond 1P: Stormwater Detention Basin 1

Inflow Area = 2.890 ac, 50.87% Impervious, Inflow Depth > 8.68" for 10-Year event
Inflow = 11.91 cfs @ 12.09 hrs, Volume= 2.090 af, Incl. 0.65 cfs Base Flow
Outflow = 2.45 cfs @ 12.58 hrs, Volume= 1.444 af, Atten= 79%, Lag= 29.6 min
Primary = 2.45 cfs @ 12.58 hrs, Volume= 1.444 af
Routed to Link 1L : Off-Site South
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 1L : Off-Site South

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.140 ac Storage= 0.240 af
Peak Elev= 323.70' @ 12.58 hrs Surf.Area= 0.261 ac Storage= 1.176 af (0.936 af above start)

Plug-Flow detention time= 503.9 min calculated for 1.204 af (58% of inflow)
Center-of-Mass det. time= 221.2 min (978.6 - 757.4)

Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	2.024 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

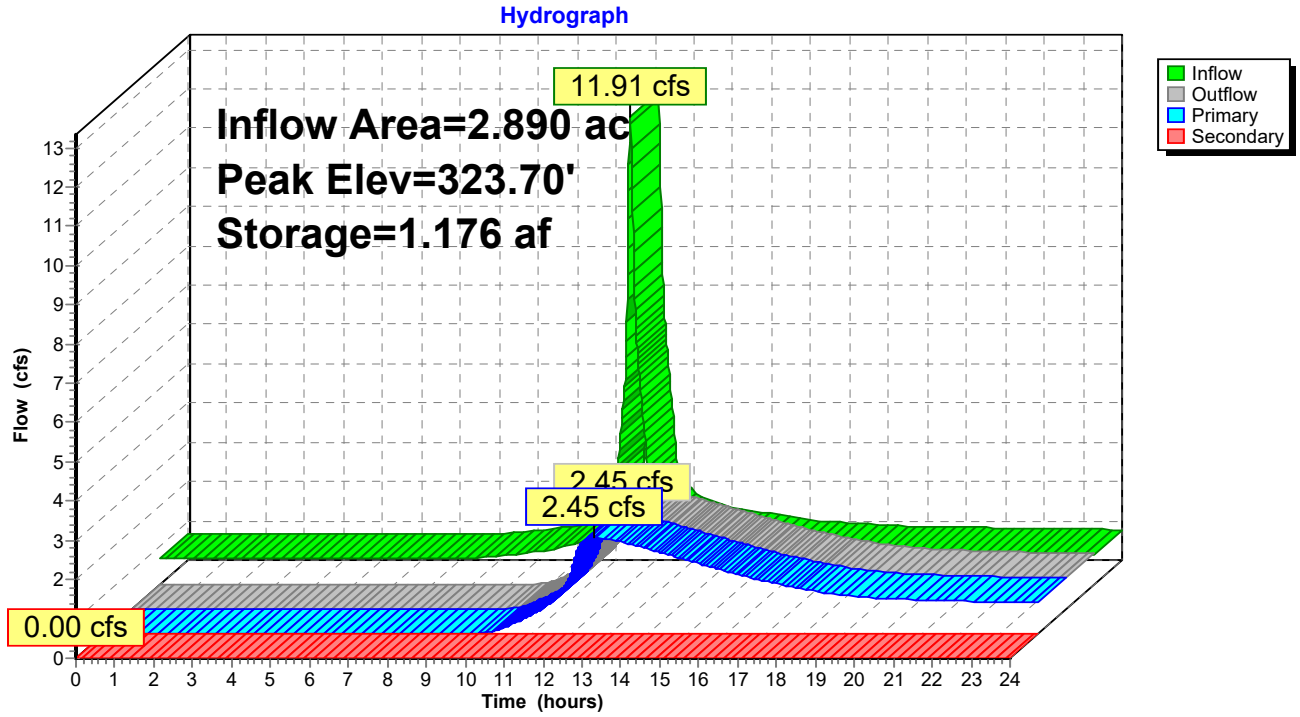
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.100	286.0	0.000	0.000	0.100
318.00	0.120	305.0	0.110	0.110	0.122
319.00	0.140	324.0	0.130	0.240	0.145
320.00	0.160	343.0	0.150	0.390	0.169
321.00	0.190	362.0	0.175	0.564	0.195
322.00	0.220	381.0	0.205	0.769	0.222
323.00	0.240	400.0	0.230	0.999	0.250
324.00	0.270	419.0	0.255	1.254	0.280
325.00	0.300	438.0	0.285	1.539	0.312
326.00	0.330	458.0	0.315	1.854	0.346
326.50	0.350	467.0	0.170	2.024	0.362

Device	Routing	Invert	Outlet Devices
#1	Primary	322.00'	**12.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 322.00' / 321.50' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	325.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#3	Device 1	324.25'	**24.0" x 30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	322.00'	**9.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.45 cfs @ 12.58 hrs HW=323.70' (Free Discharge)
└─**1=Culvert** (Passes 2.45 cfs of 3.28 cfs potential flow)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Orifice Controls 2.45 cfs @ 5.55 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=319.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Stormwater Detention Basin 1



Stage-Discharge for Pond 1P: Stormwater Detention Basin 1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
317.00	0.00	0.00	0.00
317.10	0.00	0.00	0.00
317.20	0.00	0.00	0.00
317.30	0.00	0.00	0.00
317.40	0.00	0.00	0.00
317.50	0.00	0.00	0.00
317.60	0.00	0.00	0.00
317.70	0.00	0.00	0.00
317.80	0.00	0.00	0.00
317.90	0.00	0.00	0.00
318.00	0.00	0.00	0.00
318.10	0.00	0.00	0.00
318.20	0.00	0.00	0.00
318.30	0.00	0.00	0.00
318.40	0.00	0.00	0.00
318.50	0.00	0.00	0.00
318.60	0.00	0.00	0.00
318.70	0.00	0.00	0.00
318.80	0.00	0.00	0.00
318.90	0.00	0.00	0.00
319.00	0.00	0.00	0.00
319.10	0.00	0.00	0.00
319.20	0.00	0.00	0.00
319.30	0.00	0.00	0.00
319.40	0.00	0.00	0.00
319.50	0.00	0.00	0.00
319.60	0.00	0.00	0.00
319.70	0.00	0.00	0.00
319.80	0.00	0.00	0.00
319.90	0.00	0.00	0.00
320.00	0.00	0.00	0.00
320.10	0.00	0.00	0.00
320.20	0.00	0.00	0.00
320.30	0.00	0.00	0.00
320.40	0.00	0.00	0.00
320.50	0.00	0.00	0.00
320.60	0.00	0.00	0.00
320.70	0.00	0.00	0.00
320.80	0.00	0.00	0.00
320.90	0.00	0.00	0.00
321.00	0.00	0.00	0.00
321.10	0.00	0.00	0.00
321.20	0.00	0.00	0.00
321.30	0.00	0.00	0.00
321.40	0.00	0.00	0.00
321.50	0.00	0.00	0.00
321.60	0.00	0.00	0.00
321.70	0.00	0.00	0.00
321.80	0.00	0.00	0.00
321.90	0.00	0.00	0.00
322.00	0.00	0.00	0.00
322.10	0.03	0.03	0.00
322.20	0.13	0.13	0.00
322.30	0.29	0.29	0.00
322.40	0.50	0.50	0.00
322.50	0.75	0.75	0.00
322.60	1.00	1.00	0.00
322.70	1.22	1.22	0.00
322.80	1.39	1.39	0.00
322.90	1.54	1.54	0.00
323.00	1.68	1.68	0.00
323.10	1.81	1.81	0.00
323.20	1.93	1.93	0.00
323.30	2.05	2.05	0.00
323.40	2.15	2.15	0.00
323.50	2.26	2.26	0.00
323.60	2.35	2.35	0.00
323.70	2.45	2.45	0.00
323.80	2.54	2.54	0.00
323.90	2.63	2.63	0.00
324.00	2.71	2.71	0.00
324.10	2.79	2.79	0.00
324.20	2.87	2.87	0.00
324.30	3.28	3.28	0.00
324.40	4.12	4.12	0.00
324.50	4.22	4.22	0.00
324.60	4.33	4.33	0.00
324.70	4.43	4.43	0.00
324.80	4.53	4.53	0.00
324.90	4.63	4.63	0.00
325.00	4.72	4.72	0.00
325.10	4.81	4.81	0.00
325.20	4.91	4.91	0.00
325.30	5.00	5.00	0.00
325.40	5.08	5.08	0.00
325.50	5.17	5.17	0.00
325.60	6.16	5.26	0.90
325.70	7.88	5.34	2.54
325.80	10.23	5.42	4.81
325.90	13.12	5.51	7.62
326.00	16.64	5.59	11.05
326.10	20.72	5.66	15.06
326.20	24.65	5.74	18.91
326.30	28.83	5.82	23.01
326.40	33.35	5.90	27.46
326.50	**38.13**	**5.97**	**32.16**

Stage-Area-Storage for Pond 1P: Stormwater Detention Basin 1

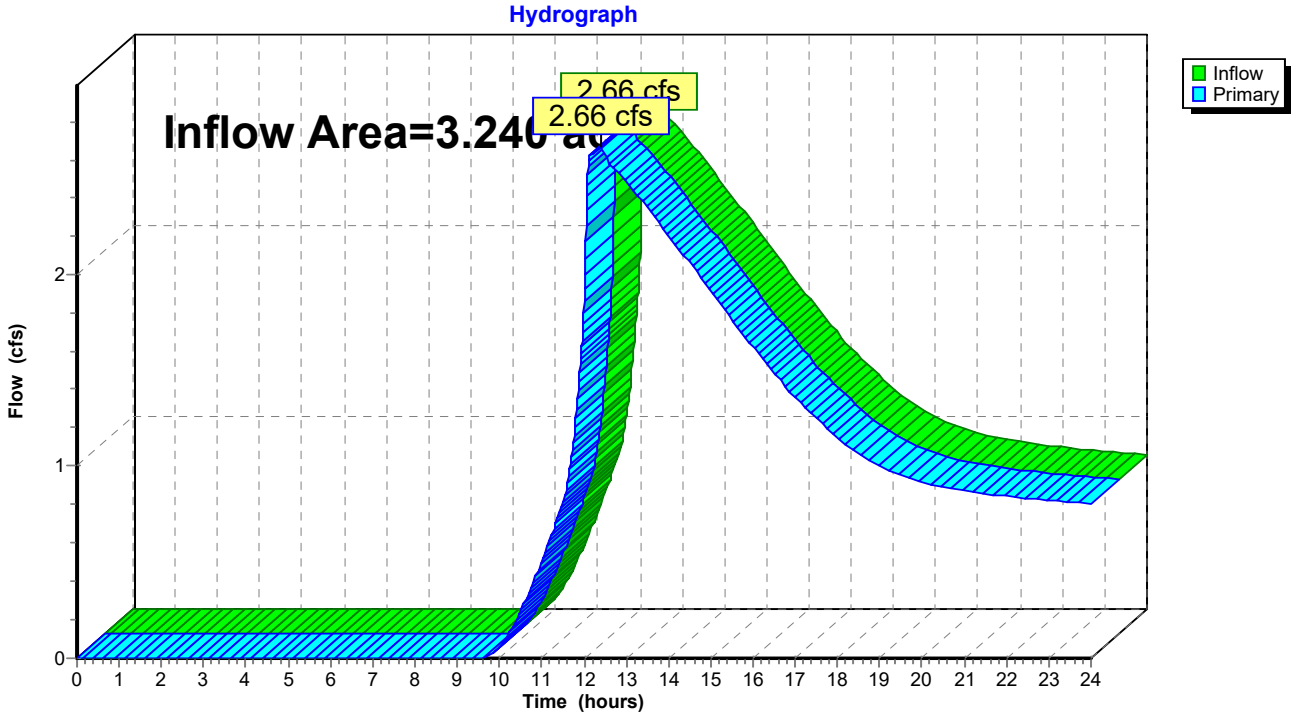
Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.100	0.000	322.20	0.224	0.814
317.10	0.102	0.010	322.30	0.226	0.836
317.20	0.104	0.020	322.40	0.228	0.859
317.30	0.106	0.031	322.50	0.230	0.882
317.40	0.108	0.042	322.60	0.232	0.905
317.50	0.110	0.052	322.70	0.234	0.928
317.60	0.112	0.064	322.80	0.236	0.952
317.70	0.114	0.075	322.90	0.238	0.975
317.80	0.116	0.086	323.00	0.240	0.999
317.90	0.118	0.098	323.10	0.243	1.023
318.00	0.120	0.110	323.20	0.246	1.048
318.10	0.122	0.122	323.30	0.249	1.072
318.20	0.124	0.134	323.40	0.252	1.097
318.30	0.126	0.147	323.50	0.255	1.123
318.40	0.128	0.159	323.60	0.258	1.148
318.50	0.130	0.172	323.70	0.261	1.174
318.60	0.132	0.185	323.80	0.264	1.201
318.70	0.134	0.199	323.90	0.267	1.227
318.80	0.136	0.212	324.00	0.270	1.254
318.90	0.138	0.226	324.10	0.273	1.281
319.00	0.140	0.240	324.20	0.276	1.309
319.10	0.142	0.254	324.30	0.279	1.336
319.20	0.144	0.268	324.40	0.282	1.364
319.30	0.146	0.283	324.50	0.285	1.393
319.40	0.148	0.297	324.60	0.288	1.421
319.50	0.150	0.312	324.70	0.291	1.450
319.60	0.152	0.327	324.80	0.294	1.479
319.70	0.154	0.343	324.90	0.297	1.509
319.80	0.156	0.358	325.00	0.300	1.539
319.90	0.158	0.374	325.10	0.303	1.569
320.00	0.160	0.390	325.20	0.306	1.599
320.10	0.163	0.406	325.30	0.309	1.630
320.20	0.166	0.422	325.40	0.312	1.661
320.30	0.169	0.439	325.50	0.315	1.693
320.40	0.172	0.456	325.60	0.318	1.724
320.50	0.175	0.473	325.70	0.321	1.756
320.60	0.178	0.491	325.80	0.324	1.788
320.70	0.181	0.509	325.90	0.327	1.821
320.80	0.184	0.527	326.00	0.330	1.854
320.90	0.187	0.546	326.10	0.334	1.887
321.00	0.190	0.564	326.20	0.338	1.921
321.10	0.193	0.584	326.30	0.342	1.955
321.20	0.196	0.603	326.40	0.346	1.989
321.30	0.199	0.623	326.50	**0.350**	**2.024**
321.40	0.202	0.643			
321.50	0.205	0.663			
321.60	0.208	0.684			
321.70	0.211	0.705			
321.80	0.214	0.726			
321.90	0.217	0.747			
322.00	0.220	0.769			
322.10	0.222	0.791			

Summary for Link 1L: Off-Site South

Inflow Area = 3.240 ac, 45.37% Impervious, Inflow Depth > 5.53" for 10-Year event
Inflow = 2.66 cfs @ 12.38 hrs, Volume= 1.493 af
Primary = 2.66 cfs @ 12.38 hrs, Volume= 1.493 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: Off-Site South



Summary for Subcatchment PDA-1A: To Off-Site South

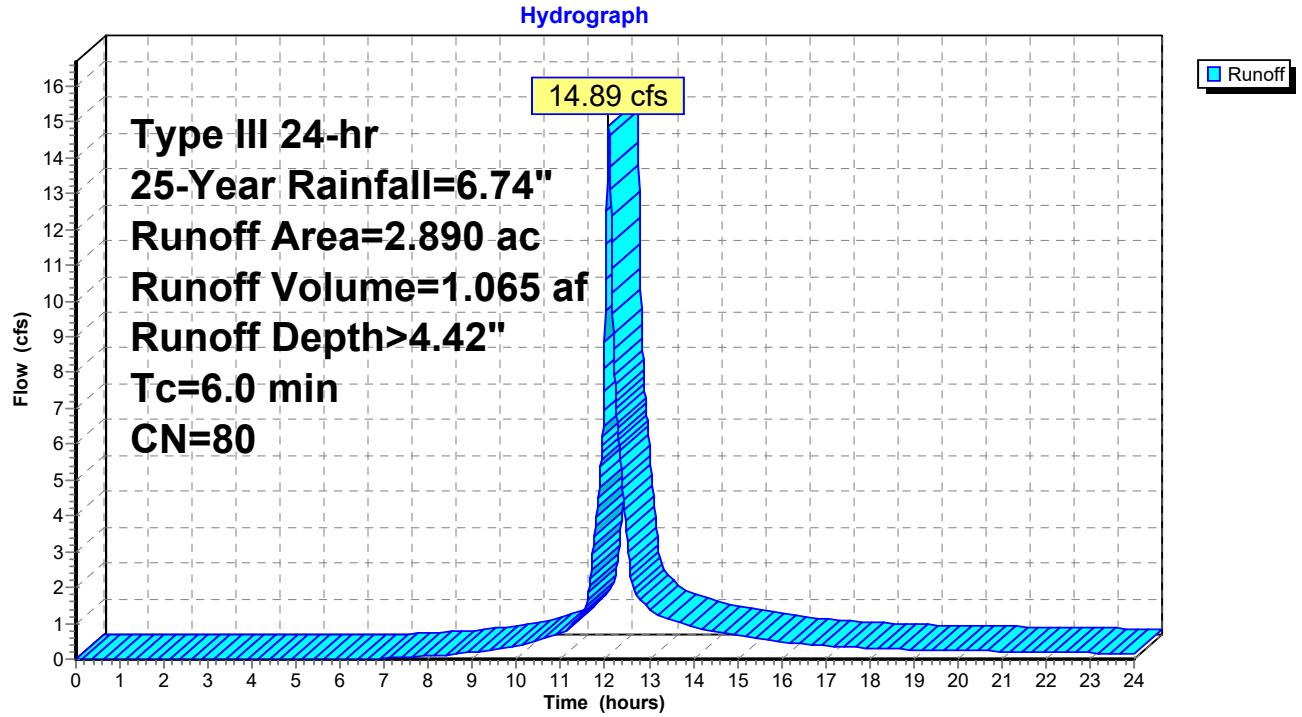
Runoff = 14.89 cfs @ 12.09 hrs, Volume= 1.065 af, Depth> 4.42"
Routed to Pond 1P : Stormwater Detention Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.74"

Area (ac)	CN	Description
1.470	98	Paved parking, HSG B
0.220	60	Woods, Fair, HSG B
1.200	61	>75% Grass cover, Good, HSG B
2.890	80	Weighted Average
1.420		49.13% Pervious Area
1.470		50.87% Impervious Area

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

Subcatchment PDA-1A: To Off-Site South



Summary for Subcatchment PDA-1B: To Off-Site South

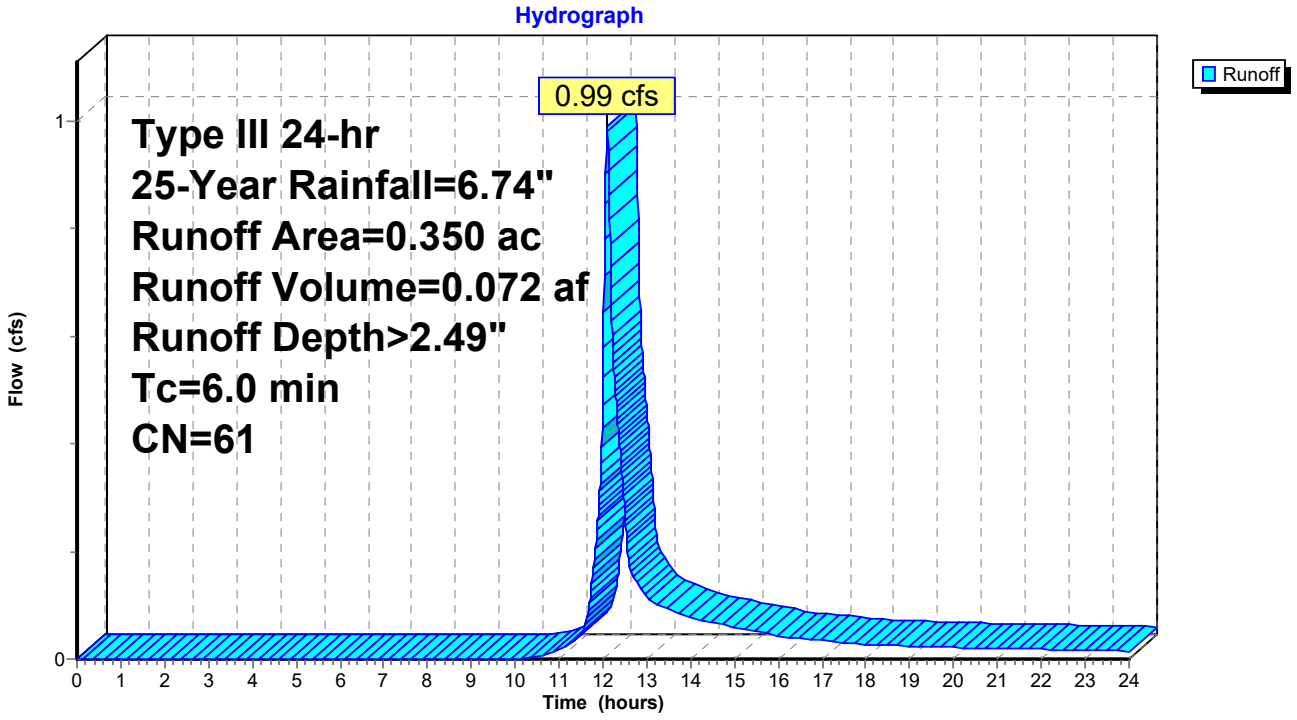
Runoff = 0.99 cfs @ 12.09 hrs, Volume= 0.072 af, Depth> 2.49"
Routed to Link 1L : Off-Site South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-Year Rainfall=6.74"

Area (ac)	CN	Description
0.100	60	Woods, Fair, HSG B
0.250	61	>75% Grass cover, Good, HSG B
0.350	61	Weighted Average
0.350		100.00% Pervious Area

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

Subcatchment PDA-1B: To Off-Site South



Summary for Pond 1P: Stormwater Detention Basin 1

Inflow Area = 2.890 ac, 50.87% Impervious, Inflow Depth > 9.78" for 25-Year event
Inflow = 15.54 cfs @ 12.09 hrs, Volume= 2.355 af, Incl. 0.65 cfs Base Flow
Outflow = 2.84 cfs @ 12.60 hrs, Volume= 1.705 af, Atten= 82%, Lag= 30.7 min
Primary = 2.84 cfs @ 12.60 hrs, Volume= 1.705 af
Routed to Link 1L : Off-Site South
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 1L : Off-Site South

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.140 ac Storage= 0.240 af
Peak Elev= 324.16' @ 12.60 hrs Surf.Area= 0.275 ac Storage= 1.296 af (1.057 af above start)

Plug-Flow detention time= 451.2 min calculated for 1.465 af (62% of inflow)
Center-of-Mass det. time= 209.1 min (969.5 - 760.5)

Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	2.024 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

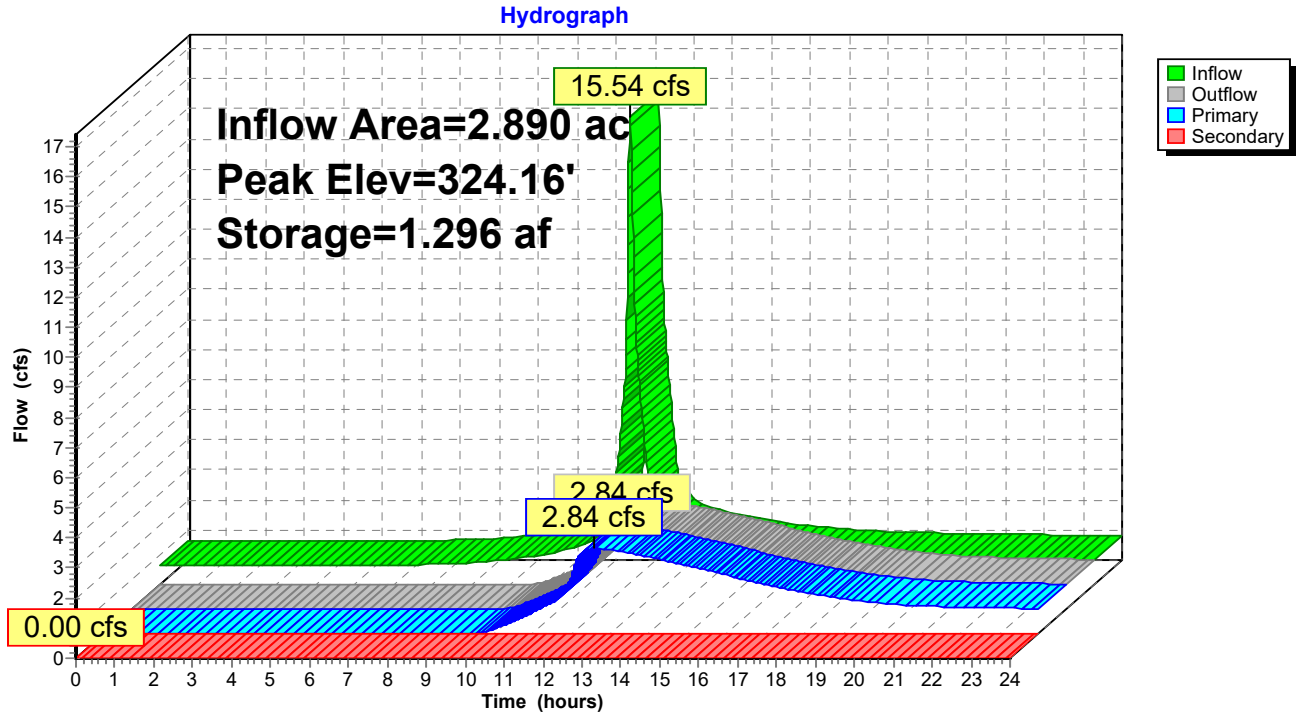
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.100	286.0	0.000	0.000	0.100
318.00	0.120	305.0	0.110	0.110	0.122
319.00	0.140	324.0	0.130	0.240	0.145
320.00	0.160	343.0	0.150	0.390	0.169
321.00	0.190	362.0	0.175	0.564	0.195
322.00	0.220	381.0	0.205	0.769	0.222
323.00	0.240	400.0	0.230	0.999	0.250
324.00	0.270	419.0	0.255	1.254	0.280
325.00	0.300	438.0	0.285	1.539	0.312
326.00	0.330	458.0	0.315	1.854	0.346
326.50	0.350	467.0	0.170	2.024	0.362

Device	Routing	Invert	Outlet Devices
#1	Primary	322.00'	**12.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 322.00' / 321.50' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	325.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#3	Device 1	324.25'	**24.0" x 30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	322.00'	**9.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=2.84 cfs @ 12.60 hrs HW=324.16' (Free Discharge)
└─**1=Culvert** (Passes 2.84 cfs of 3.84 cfs potential flow)
  └─**3=Orifice/Grate** (Controls 0.00 cfs)
  └─**4=Orifice/Grate** (Orifice Controls 2.84 cfs @ 6.42 fps)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=319.00' (Free Discharge)
└─**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Stormwater Detention Basin 1



Stage-Discharge for Pond 1P: Stormwater Detention Basin 1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
317.00	0.00	0.00	0.00
317.10	0.00	0.00	0.00
317.20	0.00	0.00	0.00
317.30	0.00	0.00	0.00
317.40	0.00	0.00	0.00
317.50	0.00	0.00	0.00
317.60	0.00	0.00	0.00
317.70	0.00	0.00	0.00
317.80	0.00	0.00	0.00
317.90	0.00	0.00	0.00
318.00	0.00	0.00	0.00
318.10	0.00	0.00	0.00
318.20	0.00	0.00	0.00
318.30	0.00	0.00	0.00
318.40	0.00	0.00	0.00
318.50	0.00	0.00	0.00
318.60	0.00	0.00	0.00
318.70	0.00	0.00	0.00
318.80	0.00	0.00	0.00
318.90	0.00	0.00	0.00
319.00	0.00	0.00	0.00
319.10	0.00	0.00	0.00
319.20	0.00	0.00	0.00
319.30	0.00	0.00	0.00
319.40	0.00	0.00	0.00
319.50	0.00	0.00	0.00
319.60	0.00	0.00	0.00
319.70	0.00	0.00	0.00
319.80	0.00	0.00	0.00
319.90	0.00	0.00	0.00
320.00	0.00	0.00	0.00
320.10	0.00	0.00	0.00
320.20	0.00	0.00	0.00
320.30	0.00	0.00	0.00
320.40	0.00	0.00	0.00
320.50	0.00	0.00	0.00
320.60	0.00	0.00	0.00
320.70	0.00	0.00	0.00
320.80	0.00	0.00	0.00
320.90	0.00	0.00	0.00
321.00	0.00	0.00	0.00
321.10	0.00	0.00	0.00
321.20	0.00	0.00	0.00
321.30	0.00	0.00	0.00
321.40	0.00	0.00	0.00
321.50	0.00	0.00	0.00
321.60	0.00	0.00	0.00
321.70	0.00	0.00	0.00
321.80	0.00	0.00	0.00
321.90	0.00	0.00	0.00
322.00	0.00	0.00	0.00
322.10	0.03	0.03	0.00
322.20	0.13	0.13	0.00
322.30	0.29	0.29	0.00
322.40	0.50	0.50	0.00
322.50	0.75	0.75	0.00
322.60	1.00	1.00	0.00
322.70	1.22	1.22	0.00
322.80	1.39	1.39	0.00
322.90	1.54	1.54	0.00
323.00	1.68	1.68	0.00
323.10	1.81	1.81	0.00
323.20	1.93	1.93	0.00
323.30	2.05	2.05	0.00
323.40	2.15	2.15	0.00
323.50	2.26	2.26	0.00
323.60	2.35	2.35	0.00
323.70	2.45	2.45	0.00
323.80	2.54	2.54	0.00
323.90	2.63	2.63	0.00
324.00	2.71	2.71	0.00
324.10	2.79	2.79	0.00
324.20	2.87	2.87	0.00
324.30	3.28	3.28	0.00
324.40	4.12	4.12	0.00
324.50	4.22	4.22	0.00
324.60	4.33	4.33	0.00
324.70	4.43	4.43	0.00
324.80	4.53	4.53	0.00
324.90	4.63	4.63	0.00
325.00	4.72	4.72	0.00
325.10	4.81	4.81	0.00
325.20	4.91	4.91	0.00
325.30	5.00	5.00	0.00
325.40	5.08	5.08	0.00
325.50	5.17	5.17	0.00
325.60	6.16	5.26	0.90
325.70	7.88	5.34	2.54
325.80	10.23	5.42	4.81
325.90	13.12	5.51	7.62
326.00	16.64	5.59	11.05
326.10	20.72	5.66	15.06
326.20	24.65	5.74	18.91
326.30	28.83	5.82	23.01
326.40	33.35	5.90	27.46
326.50	**38.13**	**5.97**	**32.16**

Stage-Area-Storage for Pond 1P: Stormwater Detention Basin 1

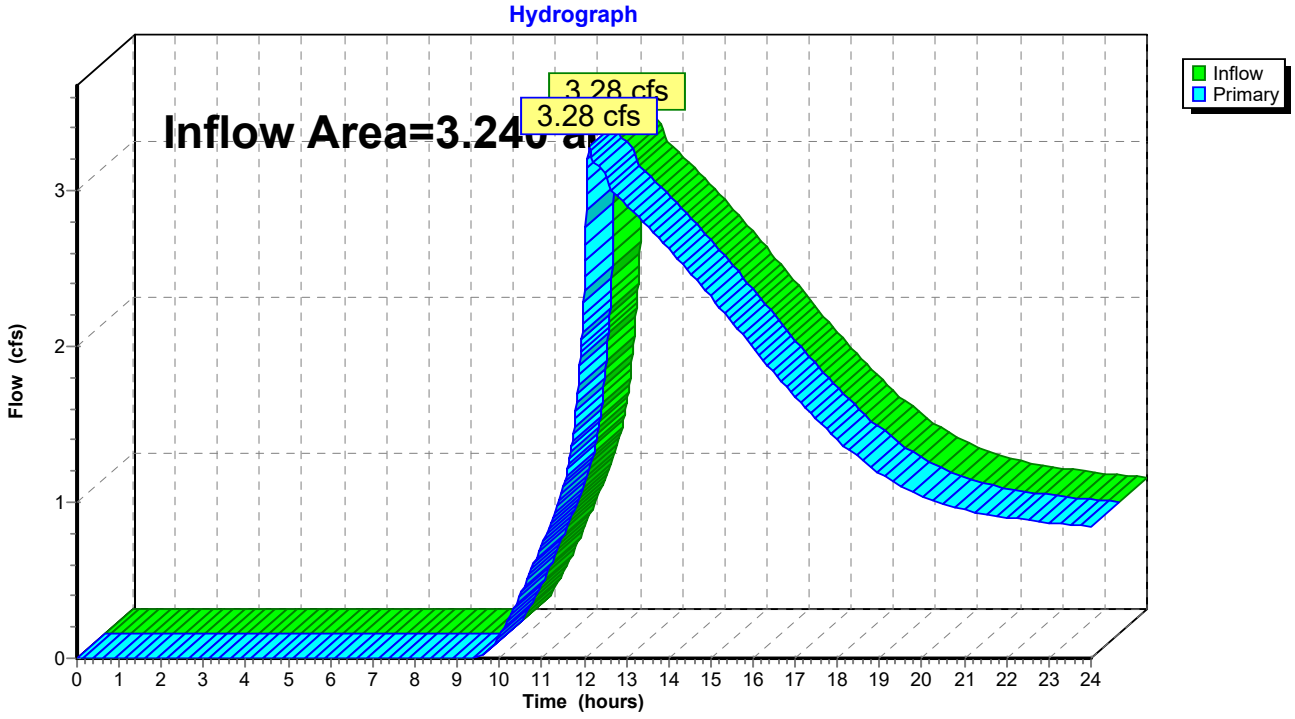
Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.100	0.000	322.20	0.224	0.814
317.10	0.102	0.010	322.30	0.226	0.836
317.20	0.104	0.020	322.40	0.228	0.859
317.30	0.106	0.031	322.50	0.230	0.882
317.40	0.108	0.042	322.60	0.232	0.905
317.50	0.110	0.052	322.70	0.234	0.928
317.60	0.112	0.064	322.80	0.236	0.952
317.70	0.114	0.075	322.90	0.238	0.975
317.80	0.116	0.086	323.00	0.240	0.999
317.90	0.118	0.098	323.10	0.243	1.023
318.00	0.120	0.110	323.20	0.246	1.048
318.10	0.122	0.122	323.30	0.249	1.072
318.20	0.124	0.134	323.40	0.252	1.097
318.30	0.126	0.147	323.50	0.255	1.123
318.40	0.128	0.159	323.60	0.258	1.148
318.50	0.130	0.172	323.70	0.261	1.174
318.60	0.132	0.185	323.80	0.264	1.201
318.70	0.134	0.199	323.90	0.267	1.227
318.80	0.136	0.212	324.00	0.270	1.254
318.90	0.138	0.226	324.10	0.273	1.281
319.00	0.140	0.240	324.20	0.276	1.309
319.10	0.142	0.254	324.30	0.279	1.336
319.20	0.144	0.268	324.40	0.282	1.364
319.30	0.146	0.283	324.50	0.285	1.393
319.40	0.148	0.297	324.60	0.288	1.421
319.50	0.150	0.312	324.70	0.291	1.450
319.60	0.152	0.327	324.80	0.294	1.479
319.70	0.154	0.343	324.90	0.297	1.509
319.80	0.156	0.358	325.00	0.300	1.539
319.90	0.158	0.374	325.10	0.303	1.569
320.00	0.160	0.390	325.20	0.306	1.599
320.10	0.163	0.406	325.30	0.309	1.630
320.20	0.166	0.422	325.40	0.312	1.661
320.30	0.169	0.439	325.50	0.315	1.693
320.40	0.172	0.456	325.60	0.318	1.724
320.50	0.175	0.473	325.70	0.321	1.756
320.60	0.178	0.491	325.80	0.324	1.788
320.70	0.181	0.509	325.90	0.327	1.821
320.80	0.184	0.527	326.00	0.330	1.854
320.90	0.187	0.546	326.10	0.334	1.887
321.00	0.190	0.564	326.20	0.338	1.921
321.10	0.193	0.584	326.30	0.342	1.955
321.20	0.196	0.603	326.40	0.346	1.989
321.30	0.199	0.623	326.50	**0.350**	**2.024**
321.40	0.202	0.643			
321.50	0.205	0.663			
321.60	0.208	0.684			
321.70	0.211	0.705			
321.80	0.214	0.726			
321.90	0.217	0.747			
322.00	0.220	0.769			
322.10	0.222	0.791			

Summary for Link 1L: Off-Site South

Inflow Area = 3.240 ac, 45.37% Impervious, Inflow Depth > 6.58" for 25-Year event
Inflow = 3.28 cfs @ 12.12 hrs, Volume= 1.778 af
Primary = 3.28 cfs @ 12.12 hrs, Volume= 1.778 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: Off-Site South



Summary for Subcatchment PDA-1A: To Off-Site South

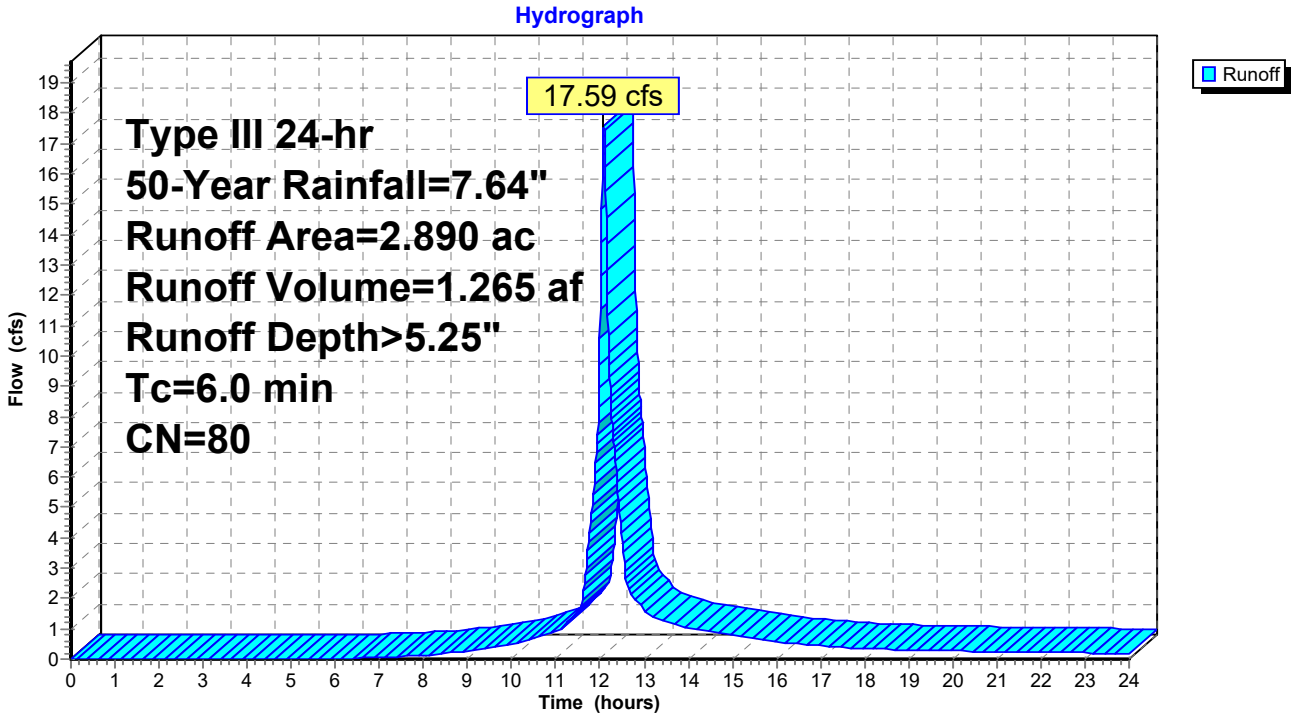
Runoff = 17.59 cfs @ 12.09 hrs, Volume= 1.265 af, Depth> 5.25"
Routed to Pond 1P : Stormwater Detention Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=7.64"

Area (ac)	CN	Description
1.470	98	Paved parking, HSG B
0.220	60	Woods, Fair, HSG B
1.200	61	>75% Grass cover, Good, HSG B
2.890	80	Weighted Average
1.420		49.13% Pervious Area
1.470		50.87% Impervious Area

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

Subcatchment PDA-1A: To Off-Site South



Summary for Subcatchment PDA-1B: To Off-Site South

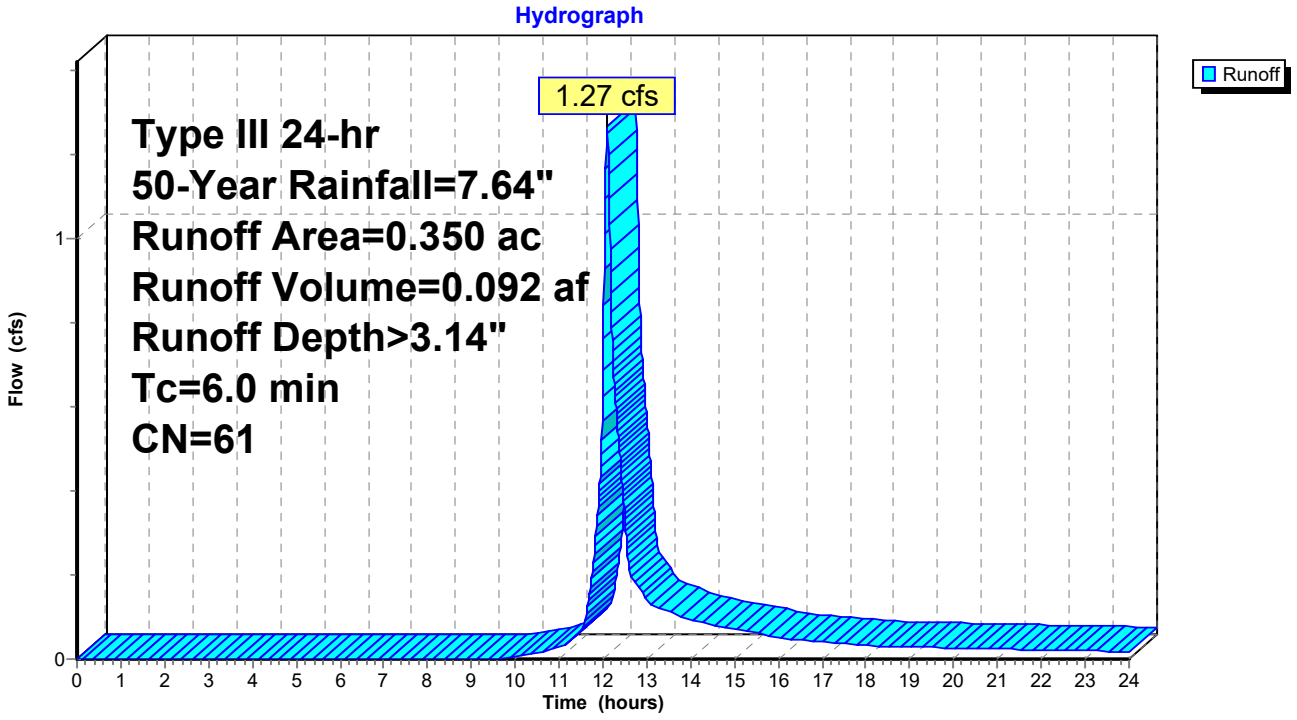
Runoff = 1.27 cfs @ 12.09 hrs, Volume= 0.092 af, Depth> 3.14"
Routed to Link 1L : Off-Site South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 50-Year Rainfall=7.64"

Area (ac)	CN	Description
0.100	60	Woods, Fair, HSG B
0.250	61	>75% Grass cover, Good, HSG B
0.350	61	Weighted Average
0.350		100.00% Pervious Area

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

Subcatchment PDA-1B: To Off-Site South



Summary for Pond 1P: Stormwater Detention Basin 1

Inflow Area = 2.890 ac, 50.87% Impervious, Inflow Depth > 10.61" for 50-Year event
Inflow = 18.24 cfs @ 12.09 hrs, Volume= 2.555 af, Incl. 0.65 cfs Base Flow
Outflow = 4.14 cfs @ 12.53 hrs, Volume= 1.903 af, Atten= 77%, Lag= 26.3 min
Primary = 4.14 cfs @ 12.53 hrs, Volume= 1.903 af
Routed to Link 1L : Off-Site South
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 1L : Off-Site South

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.140 ac Storage= 0.240 af
Peak Elev= 324.42' @ 12.53 hrs Surf.Area= 0.282 ac Storage= 1.370 af (1.131 af above start)

Plug-Flow detention time= 418.2 min calculated for 1.663 af (65% of inflow)
Center-of-Mass det. time= 198.9 min (960.8 - 761.9)

Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	2.024 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

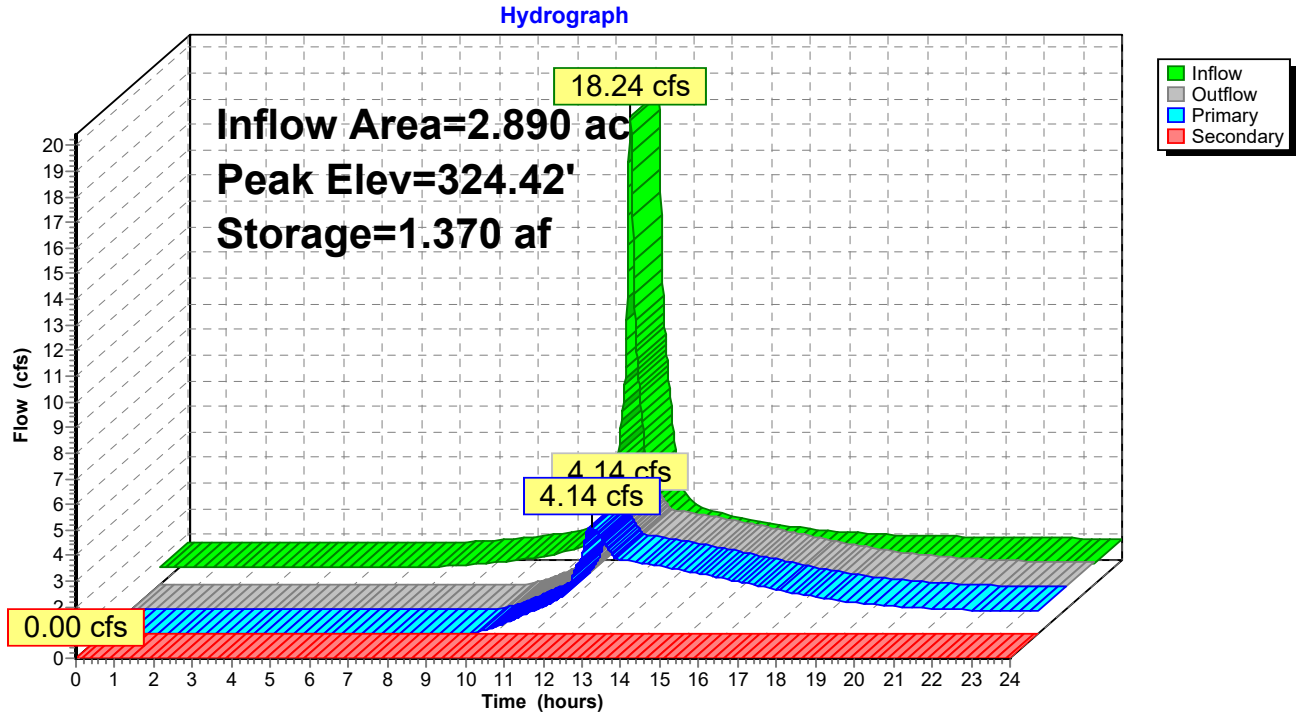
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.100	286.0	0.000	0.000	0.100
318.00	0.120	305.0	0.110	0.110	0.122
319.00	0.140	324.0	0.130	0.240	0.145
320.00	0.160	343.0	0.150	0.390	0.169
321.00	0.190	362.0	0.175	0.564	0.195
322.00	0.220	381.0	0.205	0.769	0.222
323.00	0.240	400.0	0.230	0.999	0.250
324.00	0.270	419.0	0.255	1.254	0.280
325.00	0.300	438.0	0.285	1.539	0.312
326.00	0.330	458.0	0.315	1.854	0.346
326.50	0.350	467.0	0.170	2.024	0.362

Device	Routing	Invert	Outlet Devices
#1	Primary	322.00'	**12.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 322.00' / 321.50' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	325.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#3	Device 1	324.25'	**24.0" x 30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	322.00'	**9.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.14 cfs @ 12.53 hrs HW=324.42' (Free Discharge)
└**1=Culvert** (Inlet Controls 4.14 cfs @ 5.27 fps)
└**3=Orifice/Grate** (Passes < 2.09 cfs potential flow)
└**4=Orifice/Grate** (Passes < 3.04 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=319.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Stormwater Detention Basin 1



Stage-Discharge for Pond 1P: Stormwater Detention Basin 1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
317.00	0.00	0.00	0.00
317.10	0.00	0.00	0.00
317.20	0.00	0.00	0.00
317.30	0.00	0.00	0.00
317.40	0.00	0.00	0.00
317.50	0.00	0.00	0.00
317.60	0.00	0.00	0.00
317.70	0.00	0.00	0.00
317.80	0.00	0.00	0.00
317.90	0.00	0.00	0.00
318.00	0.00	0.00	0.00
318.10	0.00	0.00	0.00
318.20	0.00	0.00	0.00
318.30	0.00	0.00	0.00
318.40	0.00	0.00	0.00
318.50	0.00	0.00	0.00
318.60	0.00	0.00	0.00
318.70	0.00	0.00	0.00
318.80	0.00	0.00	0.00
318.90	0.00	0.00	0.00
319.00	0.00	0.00	0.00
319.10	0.00	0.00	0.00
319.20	0.00	0.00	0.00
319.30	0.00	0.00	0.00
319.40	0.00	0.00	0.00
319.50	0.00	0.00	0.00
319.60	0.00	0.00	0.00
319.70	0.00	0.00	0.00
319.80	0.00	0.00	0.00
319.90	0.00	0.00	0.00
320.00	0.00	0.00	0.00
320.10	0.00	0.00	0.00
320.20	0.00	0.00	0.00
320.30	0.00	0.00	0.00
320.40	0.00	0.00	0.00
320.50	0.00	0.00	0.00
320.60	0.00	0.00	0.00
320.70	0.00	0.00	0.00
320.80	0.00	0.00	0.00
320.90	0.00	0.00	0.00
321.00	0.00	0.00	0.00
321.10	0.00	0.00	0.00
321.20	0.00	0.00	0.00
321.30	0.00	0.00	0.00
321.40	0.00	0.00	0.00
321.50	0.00	0.00	0.00
321.60	0.00	0.00	0.00
321.70	0.00	0.00	0.00
321.80	0.00	0.00	0.00
321.90	0.00	0.00	0.00
322.00	0.00	0.00	0.00
322.10	0.03	0.03	0.00
322.20	0.13	0.13	0.00
322.30	0.29	0.29	0.00
322.40	0.50	0.50	0.00
322.50	0.75	0.75	0.00
322.60	1.00	1.00	0.00
322.70	1.22	1.22	0.00
322.80	1.39	1.39	0.00
322.90	1.54	1.54	0.00
323.00	1.68	1.68	0.00
323.10	1.81	1.81	0.00
323.20	1.93	1.93	0.00
323.30	2.05	2.05	0.00
323.40	2.15	2.15	0.00
323.50	2.26	2.26	0.00
323.60	2.35	2.35	0.00
323.70	2.45	2.45	0.00
323.80	2.54	2.54	0.00
323.90	2.63	2.63	0.00
324.00	2.71	2.71	0.00
324.10	2.79	2.79	0.00
324.20	2.87	2.87	0.00
324.30	3.28	3.28	0.00
324.40	4.12	4.12	0.00
324.50	4.22	4.22	0.00
324.60	4.33	4.33	0.00
324.70	4.43	4.43	0.00
324.80	4.53	4.53	0.00
324.90	4.63	4.63	0.00
325.00	4.72	4.72	0.00
325.10	4.81	4.81	0.00
325.20	4.91	4.91	0.00
325.30	5.00	5.00	0.00
325.40	5.08	5.08	0.00
325.50	5.17	5.17	0.00
325.60	6.16	5.26	0.90
325.70	7.88	5.34	2.54
325.80	10.23	5.42	4.81
325.90	13.12	5.51	7.62
326.00	16.64	5.59	11.05
326.10	20.72	5.66	15.06
326.20	24.65	5.74	18.91
326.30	28.83	5.82	23.01
326.40	33.35	5.90	27.46
326.50	**38.13**	**5.97**	**32.16**

Stage-Area-Storage for Pond 1P: Stormwater Detention Basin 1

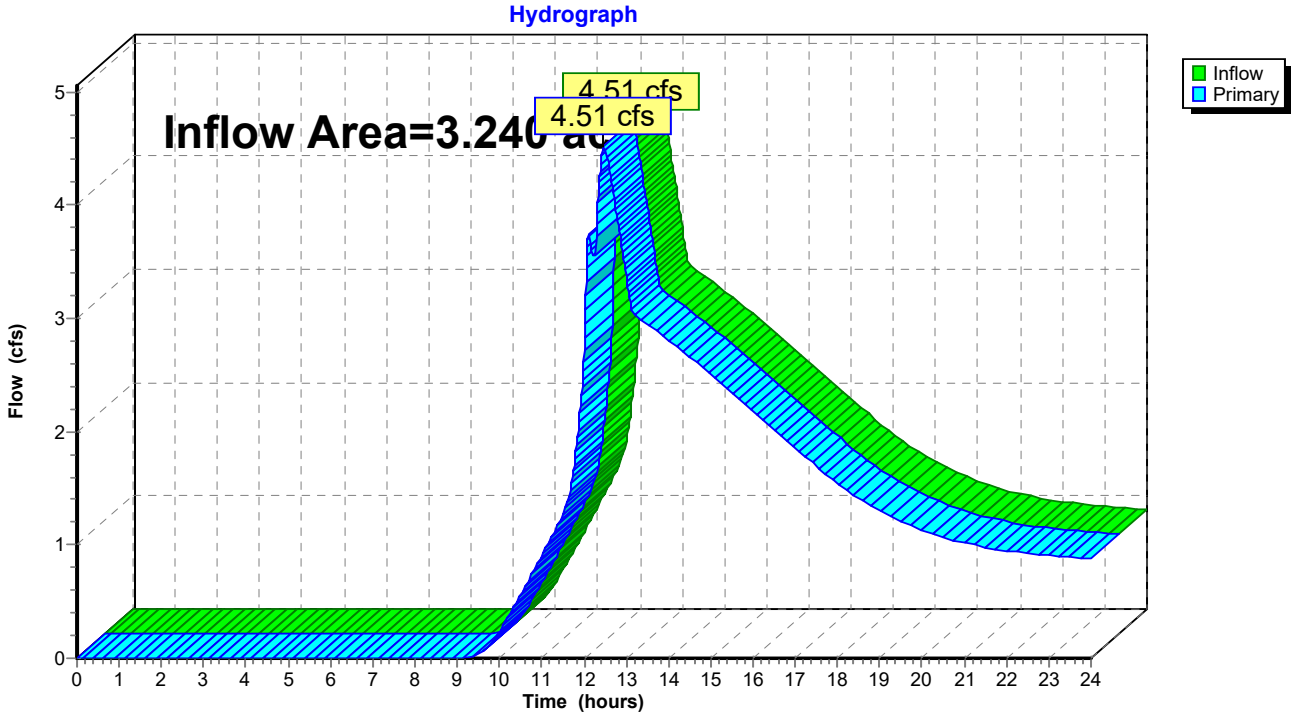
Elevation (feet)	Surface (acres)	Storage (acre-feet)	Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.100	0.000	322.20	0.224	0.814
317.10	0.102	0.010	322.30	0.226	0.836
317.20	0.104	0.020	322.40	0.228	0.859
317.30	0.106	0.031	322.50	0.230	0.882
317.40	0.108	0.042	322.60	0.232	0.905
317.50	0.110	0.052	322.70	0.234	0.928
317.60	0.112	0.064	322.80	0.236	0.952
317.70	0.114	0.075	322.90	0.238	0.975
317.80	0.116	0.086	323.00	0.240	0.999
317.90	0.118	0.098	323.10	0.243	1.023
318.00	0.120	0.110	323.20	0.246	1.048
318.10	0.122	0.122	323.30	0.249	1.072
318.20	0.124	0.134	323.40	0.252	1.097
318.30	0.126	0.147	323.50	0.255	1.123
318.40	0.128	0.159	323.60	0.258	1.148
318.50	0.130	0.172	323.70	0.261	1.174
318.60	0.132	0.185	323.80	0.264	1.201
318.70	0.134	0.199	323.90	0.267	1.227
318.80	0.136	0.212	324.00	0.270	1.254
318.90	0.138	0.226	324.10	0.273	1.281
319.00	0.140	0.240	324.20	0.276	1.309
319.10	0.142	0.254	324.30	0.279	1.336
319.20	0.144	0.268	324.40	0.282	1.364
319.30	0.146	0.283	324.50	0.285	1.393
319.40	0.148	0.297	324.60	0.288	1.421
319.50	0.150	0.312	324.70	0.291	1.450
319.60	0.152	0.327	324.80	0.294	1.479
319.70	0.154	0.343	324.90	0.297	1.509
319.80	0.156	0.358	325.00	0.300	1.539
319.90	0.158	0.374	325.10	0.303	1.569
320.00	0.160	0.390	325.20	0.306	1.599
320.10	0.163	0.406	325.30	0.309	1.630
320.20	0.166	0.422	325.40	0.312	1.661
320.30	0.169	0.439	325.50	0.315	1.693
320.40	0.172	0.456	325.60	0.318	1.724
320.50	0.175	0.473	325.70	0.321	1.756
320.60	0.178	0.491	325.80	0.324	1.788
320.70	0.181	0.509	325.90	0.327	1.821
320.80	0.184	0.527	326.00	0.330	1.854
320.90	0.187	0.546	326.10	0.334	1.887
321.00	0.190	0.564	326.20	0.338	1.921
321.10	0.193	0.584	326.30	0.342	1.955
321.20	0.196	0.603	326.40	0.346	1.989
321.30	0.199	0.623	326.50	**0.350**	**2.024**
321.40	0.202	0.643			
321.50	0.205	0.663			
321.60	0.208	0.684			
321.70	0.211	0.705			
321.80	0.214	0.726			
321.90	0.217	0.747			
322.00	0.220	0.769			
322.10	0.222	0.791			

Summary for Link 1L: Off-Site South

Inflow Area = 3.240 ac, 45.37% Impervious, Inflow Depth > 7.39" for 50-Year event
Inflow = 4.51 cfs @ 12.46 hrs, Volume= 1.994 af
Primary = 4.51 cfs @ 12.46 hrs, Volume= 1.994 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: Off-Site South



Summary for Subcatchment PDA-1A: To Off-Site South

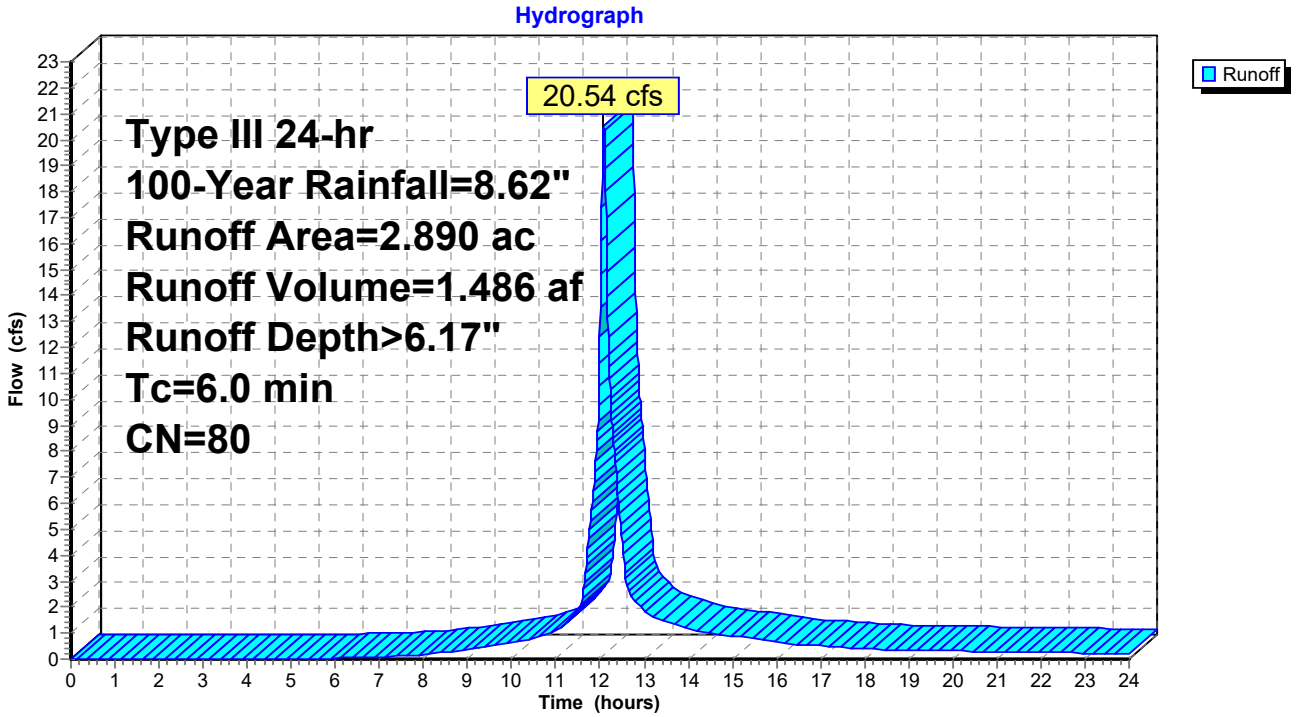
Runoff = 20.54 cfs @ 12.09 hrs, Volume= 1.486 af, Depth> 6.17"
Routed to Pond 1P : Stormwater Detention Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (ac)	CN	Description
1.470	98	Paved parking, HSG B
0.220	60	Woods, Fair, HSG B
1.200	61	>75% Grass cover, Good, HSG B
2.890	80	Weighted Average
1.420		49.13% Pervious Area
1.470		50.87% Impervious Area

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

Subcatchment PDA-1A: To Off-Site South



Summary for Subcatchment PDA-1B: To Off-Site South

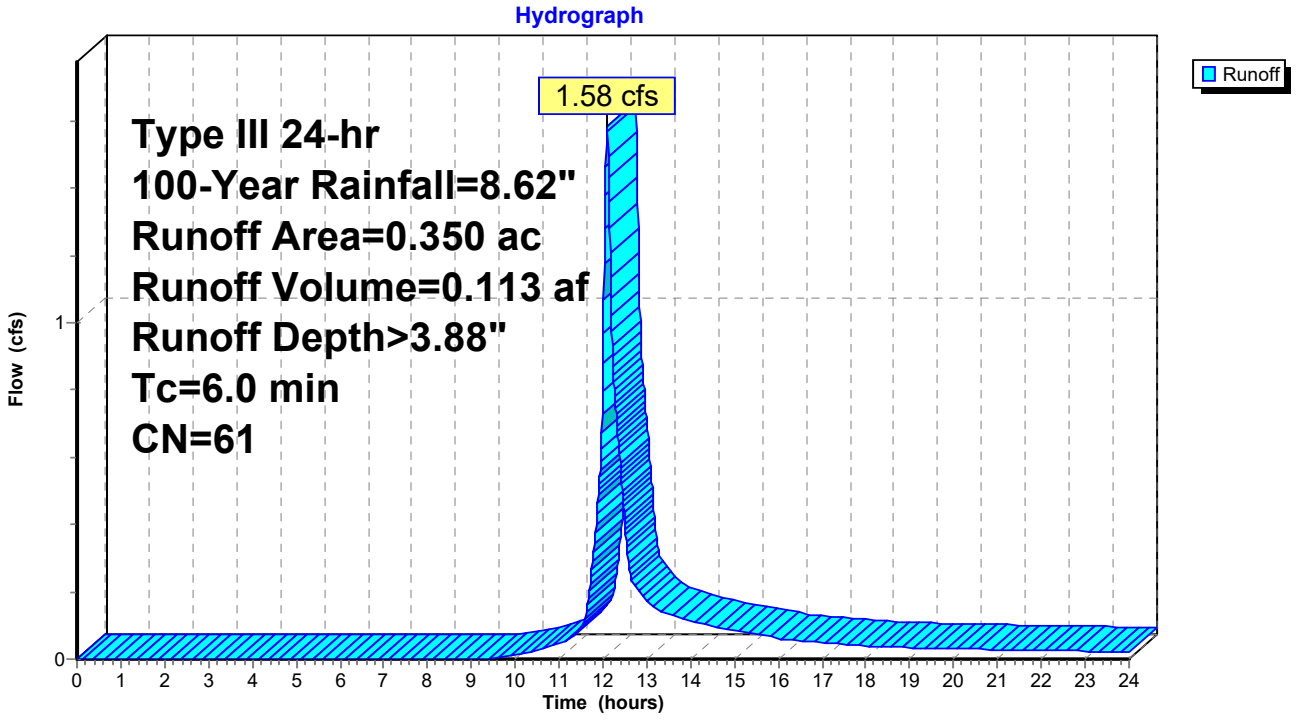
Runoff = 1.58 cfs @ 12.09 hrs, Volume= 0.113 af, Depth> 3.88"
Routed to Link 1L : Off-Site South

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-Year Rainfall=8.62"

Area (ac)	CN	Description
0.100	60	Woods, Fair, HSG B
0.250	61	>75% Grass cover, Good, HSG B
0.350	61	Weighted Average
0.350		100.00% Pervious Area

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

Subcatchment PDA-1B: To Off-Site South



Summary for Pond 1P: Stormwater Detention Basin 1

Inflow Area = 2.890 ac, 50.87% Impervious, Inflow Depth > 11.53" for 100-Year event
Inflow = 21.19 cfs @ 12.09 hrs, Volume= 2.776 af, Incl. 0.65 cfs Base Flow
Outflow = 4.45 cfs @ 12.54 hrs, Volume= 2.121 af, Atten= 79%, Lag= 27.1 min
Primary = 4.45 cfs @ 12.54 hrs, Volume= 2.121 af
Routed to Link 1L : Off-Site South
Secondary = 0.00 cfs @ 0.00 hrs, Volume= 0.000 af
Routed to Link 1L : Off-Site South

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Starting Elev= 319.00' Surf.Area= 0.140 ac Storage= 0.240 af
Peak Elev= 324.73' @ 12.54 hrs Surf.Area= 0.292 ac Storage= 1.458 af (1.218 af above start)

Plug-Flow detention time= 388.2 min calculated for 1.881 af (68% of inflow)
Center-of-Mass det. time= 189.0 min (951.8 - 762.9)

Volume	Invert	Avail.Storage	Storage Description
#1	317.00'	2.024 af	**Custom Stage Data (Irregular)** Listed below (Recalc)

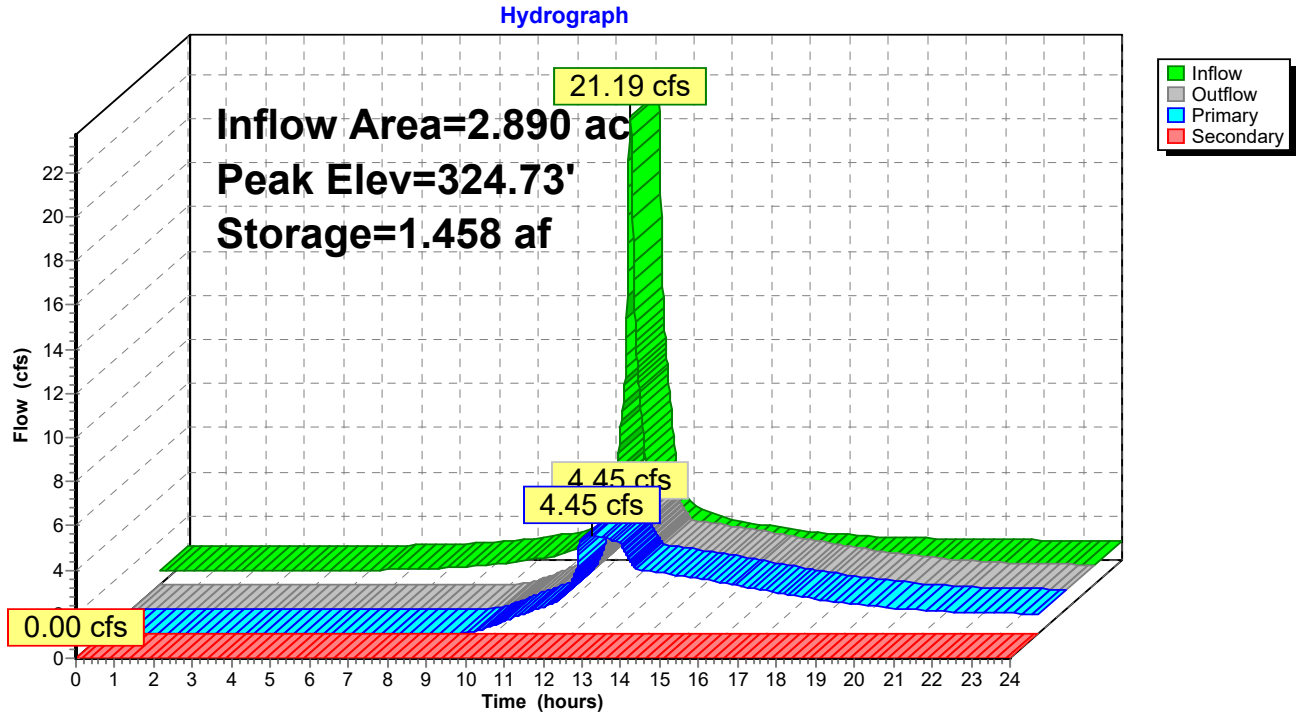
Elevation (feet)	Surf.Area (acres)	Perim. (feet)	Inc.Store (acre-feet)	Cum.Store (acre-feet)	Wet.Area (acres)
317.00	0.100	286.0	0.000	0.000	0.100
318.00	0.120	305.0	0.110	0.110	0.122
319.00	0.140	324.0	0.130	0.240	0.145
320.00	0.160	343.0	0.150	0.390	0.169
321.00	0.190	362.0	0.175	0.564	0.195
322.00	0.220	381.0	0.205	0.769	0.222
323.00	0.240	400.0	0.230	0.999	0.250
324.00	0.270	419.0	0.255	1.254	0.280
325.00	0.300	438.0	0.285	1.539	0.312
326.00	0.330	458.0	0.315	1.854	0.346
326.50	0.350	467.0	0.170	2.024	0.362

Device	Routing	Invert	Outlet Devices
#1	Primary	322.00'	**12.0" Round Culvert** L= 25.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 322.00' / 321.50' S= 0.0200 '/' Cc= 0.900 n= 0.013 Corrugated PE, smooth interior, Flow Area= 0.79 sf
#2	Secondary	325.50'	**12.0' long x 6.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.37 2.51 2.70 2.68 2.68 2.67 2.65 2.65 2.65 2.65 2.66 2.66 2.67 2.69 2.72 2.76 2.83
#3	Device 1	324.25'	**24.0" x 30.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	322.00'	**9.0" Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Primary OutFlow Max=4.45 cfs @ 12.54 hrs HW=324.73' (Free Discharge)
└**1=Culvert** (Inlet Controls 4.45 cfs @ 5.67 fps)
└**3=Orifice/Grate** (Passes < 9.66 cfs potential flow)
└**4=Orifice/Grate** (Passes < 3.26 cfs potential flow)

Secondary OutFlow Max=0.00 cfs @ 0.00 hrs HW=319.00' (Free Discharge)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 1P: Stormwater Detention Basin 1



Stage-Discharge for Pond 1P: Stormwater Detention Basin 1

Elevation (feet)	Discharge (cfs)	Primary (cfs)	Secondary (cfs)
317.00	0.00	0.00	0.00
317.10	0.00	0.00	0.00
317.20	0.00	0.00	0.00
317.30	0.00	0.00	0.00
317.40	0.00	0.00	0.00
317.50	0.00	0.00	0.00
317.60	0.00	0.00	0.00
317.70	0.00	0.00	0.00
317.80	0.00	0.00	0.00
317.90	0.00	0.00	0.00
318.00	0.00	0.00	0.00
318.10	0.00	0.00	0.00
318.20	0.00	0.00	0.00
318.30	0.00	0.00	0.00
318.40	0.00	0.00	0.00
318.50	0.00	0.00	0.00
318.60	0.00	0.00	0.00
318.70	0.00	0.00	0.00
318.80	0.00	0.00	0.00
318.90	0.00	0.00	0.00
319.00	0.00	0.00	0.00
319.10	0.00	0.00	0.00
319.20	0.00	0.00	0.00
319.30	0.00	0.00	0.00
319.40	0.00	0.00	0.00
319.50	0.00	0.00	0.00
319.60	0.00	0.00	0.00
319.70	0.00	0.00	0.00
319.80	0.00	0.00	0.00
319.90	0.00	0.00	0.00
320.00	0.00	0.00	0.00
320.10	0.00	0.00	0.00
320.20	0.00	0.00	0.00
320.30	0.00	0.00	0.00
320.40	0.00	0.00	0.00
320.50	0.00	0.00	0.00
320.60	0.00	0.00	0.00
320.70	0.00	0.00	0.00
320.80	0.00	0.00	0.00
320.90	0.00	0.00	0.00
321.00	0.00	0.00	0.00
321.10	0.00	0.00	0.00
321.20	0.00	0.00	0.00
321.30	0.00	0.00	0.00
321.40	0.00	0.00	0.00
321.50	0.00	0.00	0.00
321.60	0.00	0.00	0.00
321.70	0.00	0.00	0.00
321.80	0.00	0.00	0.00
321.90	0.00	0.00	0.00
322.00	0.00	0.00	0.00
322.10	0.03	0.03	0.00
322.20	0.13	0.13	0.00
322.30	0.29	0.29	0.00
322.40	0.50	0.50	0.00
322.50	0.75	0.75	0.00
322.60	1.00	1.00	0.00
322.70	1.22	1.22	0.00
322.80	1.39	1.39	0.00
322.90	1.54	1.54	0.00
323.00	1.68	1.68	0.00
323.10	1.81	1.81	0.00
323.20	1.93	1.93	0.00
323.30	2.05	2.05	0.00
323.40	2.15	2.15	0.00
323.50	2.26	2.26	0.00
323.60	2.35	2.35	0.00
323.70	2.45	2.45	0.00
323.80	2.54	2.54	0.00
323.90	2.63	2.63	0.00
324.00	2.71	2.71	0.00
324.10	2.79	2.79	0.00
324.20	2.87	2.87	0.00
324.30	3.28	3.28	0.00
324.40	4.12	4.12	0.00
324.50	4.22	4.22	0.00
324.60	4.33	4.33	0.00
324.70	4.43	4.43	0.00
324.80	4.53	4.53	0.00
324.90	4.63	4.63	0.00
325.00	4.72	4.72	0.00
325.10	4.81	4.81	0.00
325.20	4.91	4.91	0.00
325.30	5.00	5.00	0.00
325.40	5.08	5.08	0.00
325.50	5.17	5.17	0.00
325.60	6.16	5.26	0.90
325.70	7.88	5.34	2.54
325.80	10.23	5.42	4.81
325.90	13.12	5.51	7.62
326.00	16.64	5.59	11.05
326.10	20.72	5.66	15.06
326.20	24.65	5.74	18.91
326.30	28.83	5.82	23.01
326.40	33.35	5.90	27.46
326.50	**38.13**	**5.97**	**32.16**

Stage-Area-Storage for Pond 1P: Stormwater Detention Basin 1

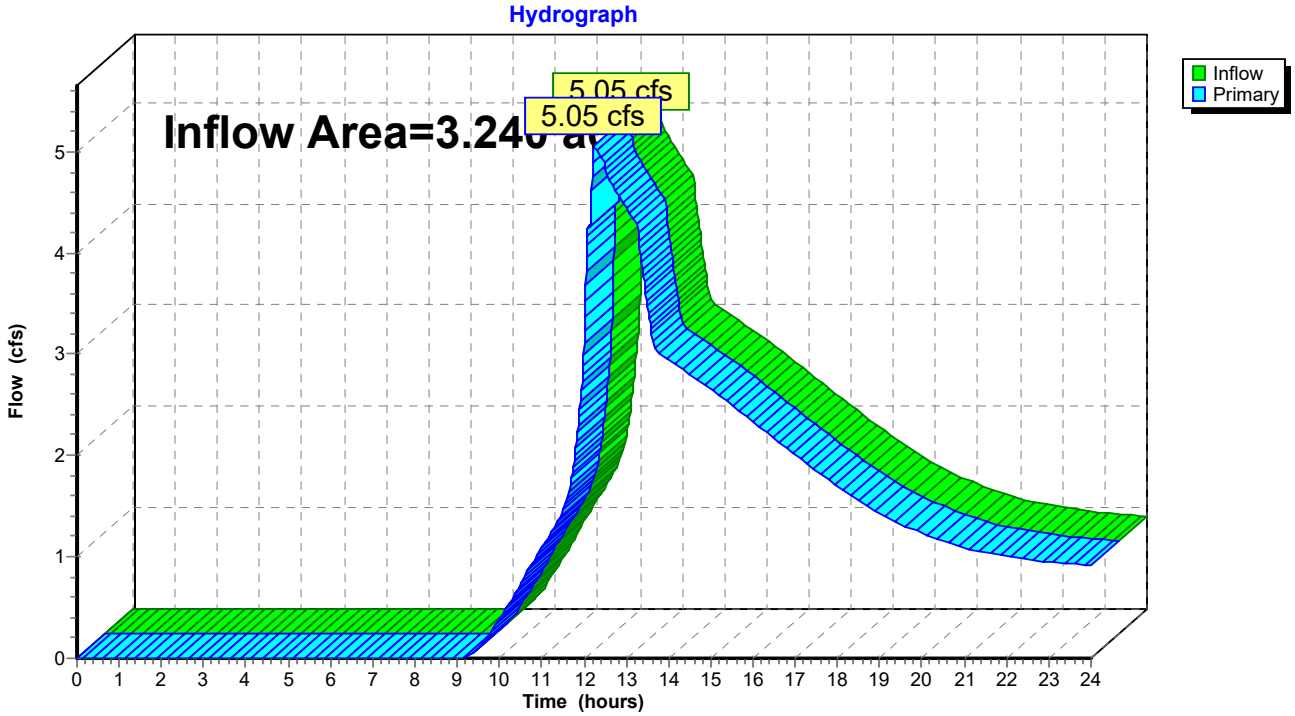
Elevation (feet)	Surface (acres)	Storage (acre-feet)
317.00	0.100	0.000
317.10	0.102	0.010
317.20	0.104	0.020
317.30	0.106	0.031
317.40	0.108	0.042
317.50	0.110	0.052
317.60	0.112	0.064
317.70	0.114	0.075
317.80	0.116	0.086
317.90	0.118	0.098
318.00	0.120	0.110
318.10	0.122	0.122
318.20	0.124	0.134
318.30	0.126	0.147
318.40	0.128	0.159
318.50	0.130	0.172
318.60	0.132	0.185
318.70	0.134	0.199
318.80	0.136	0.212
318.90	0.138	0.226
319.00	0.140	0.240
319.10	0.142	0.254
319.20	0.144	0.268
319.30	0.146	0.283
319.40	0.148	0.297
319.50	0.150	0.312
319.60	0.152	0.327
319.70	0.154	0.343
319.80	0.156	0.358
319.90	0.158	0.374
320.00	0.160	0.390
320.10	0.163	0.406
320.20	0.166	0.422
320.30	0.169	0.439
320.40	0.172	0.456
320.50	0.175	0.473
320.60	0.178	0.491
320.70	0.181	0.509
320.80	0.184	0.527
320.90	0.187	0.546
321.00	0.190	0.564
321.10	0.193	0.584
321.20	0.196	0.603
321.30	0.199	0.623
321.40	0.202	0.643
321.50	0.205	0.663
321.60	0.208	0.684
321.70	0.211	0.705
321.80	0.214	0.726
321.90	0.217	0.747
322.00	0.220	0.769
322.10	0.222	0.791
322.20	0.224	0.814
322.30	0.226	0.836
322.40	0.228	0.859
322.50	0.230	0.882
322.60	0.232	0.905
322.70	0.234	0.928
322.80	0.236	0.952
322.90	0.238	0.975
323.00	0.240	0.999
323.10	0.243	1.023
323.20	0.246	1.048
323.30	0.249	1.072
323.40	0.252	1.097
323.50	0.255	1.123
323.60	0.258	1.148
323.70	0.261	1.174
323.80	0.264	1.201
323.90	0.267	1.227
324.00	0.270	1.254
324.10	0.273	1.281
324.20	0.276	1.309
324.30	0.279	1.336
324.40	0.282	1.364
324.50	0.285	1.393
324.60	0.288	1.421
324.70	0.291	1.450
324.80	0.294	1.479
324.90	0.297	1.509
325.00	0.300	1.539
325.10	0.303	1.569
325.20	0.306	1.599
325.30	0.309	1.630
325.40	0.312	1.661
325.50	0.315	1.693
325.60	0.318	1.724
325.70	0.321	1.756
325.80	0.324	1.788
325.90	0.327	1.821
326.00	0.330	1.854
326.10	0.334	1.887
326.20	0.338	1.921
326.30	0.342	1.955
326.40	0.346	1.989
326.50	**0.350**	**2.024**

Summary for Link 1L: Off-Site South

Inflow Area = 3.240 ac, 45.37% Impervious, Inflow Depth > 8.28" for 100-Year event
Inflow = 5.05 cfs @ 12.22 hrs, Volume= 2.234 af
Primary = 5.05 cfs @ 12.22 hrs, Volume= 2.234 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Link 1L: Off-Site South



WATER QUALITY VOLUME (WQV) COMPUTATIONS FOR HYD-1

Project: Proposed Development
Location: 205 Spring Hill Road, Monroe, Connecticut
Date: 02/06/24

Water Quality Volume Calculations:

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

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

$$I = \frac{A_{IMP}}{A_{TOT}} \times 100$$

Where:
I = percent impervious cover
A_{IMP} = area of impervious cover
A_{TOT} = total area of watershed

Watershed Description:	HYD-1		
Area of impervious coverage, A_{IMP}	0.54	Acres	
Total area of watershed, A_{TOT}	0.95	Acres	
Percent impverious cover, I	56.84	%	
Volumentric runoff coefficient, R	0.56		
Water Quality Volume, WQV	0.044	ac-ft	1,937 cf

Water Quality Flow Calculations:

WQf = (qu)(A)(Q)
WQf = Peak Discharge for water quality event (cfs)
qu = unit peak discharge (cfs/mi^2 /in)
A = drainage area (square miles)
Q = runoff volume (WQv/A) (watershed inches)

$CN = 1000 /[10 + 5*P +10*Q - 10*(Q^2 +1.25*Q*P)^{1/2}]$ *Chapter 7 of 2004 Connecticut Stormwater Quality Manual*

P=	1	inches
Q=	0.562	inches
WQv =	0.044	acre-ft
Total Drainage Area =	0.95	acre
CN =	80	

Ia = 200/CN -2

Ia = 0.500

Compute Ia/P

P=	1	inches
Ia / P =	0.50	

Tc= 6 min
0.100 hr

Exhibit 4-III

Tc=	0.100
Ia / P =	0.50
q_u =	290

WQf = (qu)(A)(Q)

qu =	290	csm/in
A =	0.001	mi^2 (acre/640)
Q =	0.562	inches
WQf =	0.24	cfs

WQF Provided:
FD-3HC Peak Flow Rate = 0.84 cfs

WATER QUALITY VOLUME (WQV) COMPUTATIONS FOR HYD-2

Project: Proposed Development
Location: 205 Spring Hill Road, Monroe, Connecticut
Date: 02/06/24

Water Quality Volume Calculations:

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

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

$$I = \frac{A_{IMP}}{A_{TOT}} \times 100$$

Where:
I = percent impervious cover
A_{IMP} = area of impervious cover
A_{TOT} = total area of watershed

Watershed Description:	HYD-2		
Area of impervious coverage, A_{IMP}	0.07	Acres	
Total area of watershed, A_{TOT}	0.07	Acres	
Percent impverious cover, I	100.00	%	
Volumentric runoff coefficient, R	0.95		
Water Quality Volume, WQV	0.006	ac-ft	241 cf

Water Quality Flow Calculations:

WQf = (qu)(A)(Q)
WQf = Peak Discharge for water quality event (cfs)
qu = unit peak discharge (cfs/mi^2 /in)
A = drainage area (square miles)
Q = runoff volume (WQv/A) (watershed inches)

$CN = 1000 /[10 + 5*P +10*Q - 10*(Q^2 +1.25*Q*P)^{1/2}]$ *Chapter 7 of 2004 Connecticut Stormwater Quality Manual*

P=	1	inches
Q=	0.950	inches
WQv =	0.006	acre-ft
Total Drainage Area =	0.07	acre
CN =	98	

Ia = 200/CN -2

Ia = 0.041

Compute Ia/P

P=	1	inches
Ia / P =	0.04	

Tc= 6 min
0.100 hr

Exhibit 4-III

Tc=	0.100
Ia / P =	0.04
q_u =	700

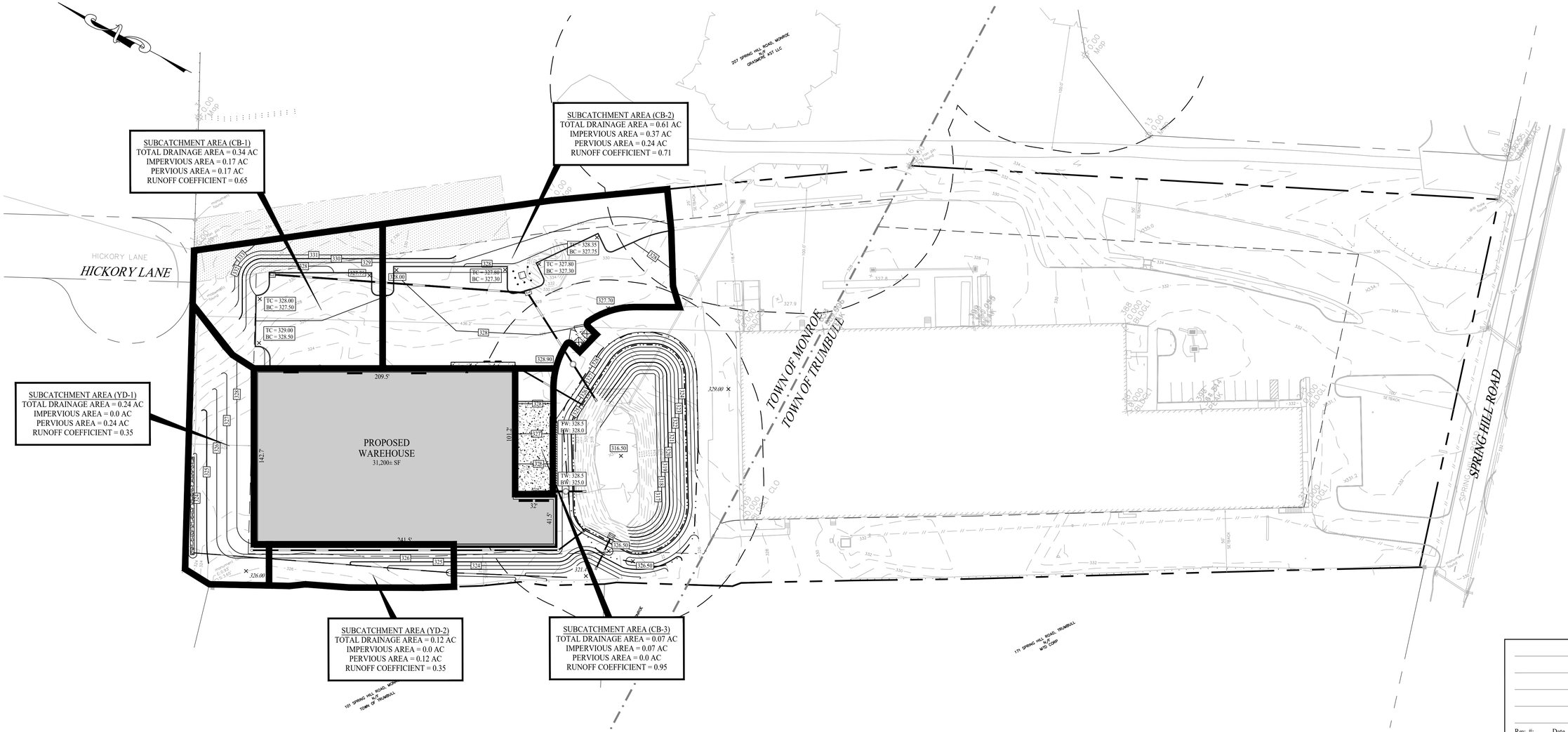
WQf = (qu)(A)(Q)

qu =	700	csm/in
A =	0.000	mi^2 (acre/640)
Q =	0.950	inches
WQf =	0.07	cfs

WQF Provided:
FD-3HC Peak Flow Rate = 0.84 cfs

APPENDIX D
STORM DRAINAGE SYSTEM CALCULATIONS

Subcatchment Drainage Area Map (DA-CB)
Storm Sewer Schematic
Hydraflow Storm Sewer Tabular Reports
Hydraflow Storm Sewer Profiles
Runoff Coefficient Calculations
Hydrodynamic Separator Information



LEGEND

PROPERTY LINE
ADJOINING LOT LINE
LIMIT OF DRAINAGE AREA

Rev. #:	Date	Description

Graphic Scale: 40 0 40 80

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695
351 Newbury Street, Boston, MA 02115 T: (617) 203-3160 F: (203) 880-9695

Drawn By:	VER
Checked By:	LAM
Approved By:	KMS
Project #:	21109501
Plan Date:	02/06/24
Scale:	1" = 40'

Kevin Solli, P.E.
CT 25759

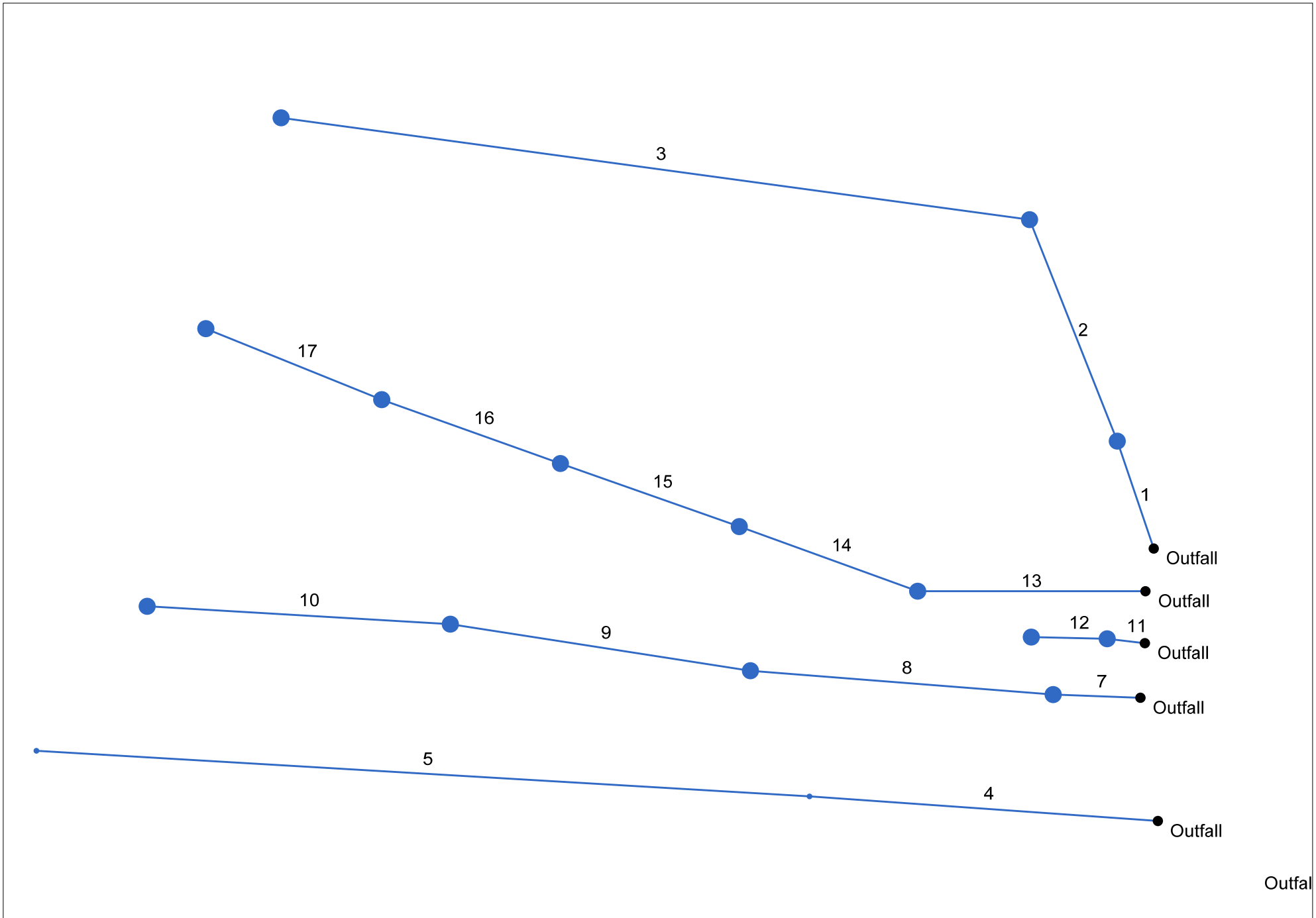
Project:

PROPOSED DEVELOPMENT
205 SPRING HILL ROAD
MONROE & TRUMBULL, CONNECTICUT

Sheet Title: CATCH BASIN DRAINAGE AREA MAP

Sheet #: CB-DA

Hydraflow Storm Sewers Extension for Autodesk® Civil 3D® Plan



Project File: 21109501 - Stormsewers New.stm	Number of lines: 17	Date: 1/31/2024

Storm Sewer Inventory Report

Line No.	Alignment				Flow Data				Physical Data								Line ID
	Dnstr Line No.	Line Length (ft)	Defl angle (deg)	Junc Type	Known Q (cfs)	Drng Area (ac)	Runoff Coeff (C)	Inlet Time (min)	Invert El Dn (ft)	Line Slope (%)	Invert El Up (ft)	Line Size (in)	Line Shape	N Value (n)	J-Loss Coeff (K)	Inlet/ Rim El (ft)	
1	End	30.000	2.326	MH	0.00	0.00	0.00	0.0	322.85	0.50	323.00	18	Cir	0.013	0.15	328.50	HYD-1
2	1	63.000	-2.843	Comb	0.00	0.61	0.71	6.0	323.10	0.48	323.40	18	Cir	0.013	1.34	327.00	CB-2
3	2	199.000	-60.705	Comb	0.00	0.34	0.65	6.0	323.50	0.50	324.50	18	Cir	0.013	1.00	327.00	CB-1
4	End	92.000	2.326	Genr	0.00	0.12	0.35	6.0	321.50	0.50	321.96	8	Cir	0.013	0.50	323.00	yd 2
5	4	204.000	-0.657	Genr	0.00	0.24	0.35	6.0	321.96	0.50	322.98	8	Cir	0.013	1.00	324.00	yd 1
6	End	25.000	-76.228	DrGrt	2.84	0.00	0.00	0.0	321.50	2.00	322.00	12	Cir	0.013	1.00	324.25	OCS
7	End	23.000	-177.866	DrGrt	0.00	0.08	0.95	6.0	324.00	1.00	324.23	12	Cir	0.013	0.50	329.00	rf 4
8	7	80.000	2.378	DrGrt	0.00	0.08	0.95	6.0	324.23	1.00	325.03	12	Cir	0.013	0.50	329.00	rf 3
9	8	80.000	4.353	DrGrt	0.00	0.08	0.95	6.0	325.03	1.00	325.83	12	Cir	0.013	0.50	329.00	rf 2
10	9	80.000	-5.475	DrGrt	0.00	0.08	0.95	6.0	325.83	1.00	326.63	12	Cir	0.013	1.00	329.00	rf 1
11	End	10.000	-173.290	MH	0.00	0.00	0.00	0.0	321.70	1.00	321.80	15	Cir	0.013	0.15	326.50	hyd
12	11	20.000	-5.416	DrGrt	0.00	0.07	0.95	6.0	321.90	0.50	322.00	15	Cir	0.013	1.00	325.00	cb 3
13	End	60.000	-180.000	DrGrt	0.00	0.08	0.95	6.0	324.00	1.00	324.60	12	Cir	0.013	0.59	0.00	rf 9
14	13	50.000	20.000	DrGrt	0.00	0.08	0.95	6.0	324.60	1.00	325.10	12	Cir	0.013	0.50	0.00	rf 8
15	14	50.000	-0.498	DrGrt	0.00	0.08	0.95	6.0	325.10	1.00	325.60	12	Cir	0.013	0.50	0.00	rf 7
16	15	50.000	0.244	DrGrt	0.00	0.08	0.95	6.0	325.60	1.00	326.10	12	Cir	0.013	0.50	0.00	rf 6
17	16	50.000	2.326	DrGrt	0.00	0.08	0.95	6.0	326.10	1.00	326.60	12	Cir	0.013	1.00	0.00	rf 5

Project File: 21109501 - Stormsewers New.stm

Number of lines: 17

Date: 1/31/2024

Structure Report

Struct No.	Structure ID	Junction Type	Rim Elev (ft)	Structure			Line Out			Line In		
				Shape	Length (ft)	Width (ft)	Size (in)	Shape	Invert (ft)	Size (in)	Shape	Invert (ft)
1		Manhole	328.50	Cir	4.00	4.00	18	Cir	323.00	18	Cir	323.10
2		Combination	327.00	Cir	4.00	4.00	18	Cir	323.40	18	Cir	323.50
3		Combination	327.00	Cir	4.00	4.00	18	Cir	324.50			
4		Generic	323.00	Cir	1.00	1.00	8	Cir	321.96	8	Cir	321.96
5		Generic	324.00	Cir	1.00	1.00	8	Cir	322.98			
6		DropGrate	324.25	Cir	4.00	4.00	12	Cir	322.00			
7	rf 2	DropGrate	329.00	Cir	4.00	4.00	12	Cir	324.23	12	Cir	324.23
8		DropGrate	329.00	Cir	4.00	4.00	12	Cir	325.03	12	Cir	325.03
9		DropGrate	329.00	Cir	4.00	4.00	12	Cir	325.83	12	Cir	325.83
10		DropGrate	329.00	Cir	4.00	4.00	12	Cir	326.63			
11		Manhole	326.50	Cir	4.00	4.00	15	Cir	321.80	15	Cir	321.90
12		DropGrate	325.00	Cir	4.00	4.00	15	Cir	322.00			
13		DropGrate	0.00	Cir	4.00	4.00	12	Cir	324.60	12	Cir	324.60
14		DropGrate	0.00	Cir	4.00	4.00	12	Cir	325.10	12	Cir	325.10
15		DropGrate	0.00	Cir	4.00	4.00	12	Cir	325.60	12	Cir	325.60
16		DropGrate	0.00	Cir	4.00	4.00	12	Cir	326.10	12	Cir	326.10
17		DropGrate	0.00	Cir	4.00	4.00	12	Cir	326.60			

Storm Sewer Tabulation

Station		Len	Drng Area		Rnoff coeff	Area x C		Tc		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Elev		HGL Elev		Grnd / Rim Elev		Line ID
Line	To Line	(ft)	Incr (ac)	Total (ac)	(C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	Size (in)	Slope (%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	
1	End	30.000	0.00	0.95	0.00	0.00	0.65	0.0	9.7	7.0	4.58	7.43	2.92	18	0.50	322.85	323.00	324.16	324.20	324.00	328.50	HYD-1
2	1	63.000	0.61	0.95	0.71	0.43	0.65	6.0	9.3	7.1	4.64	7.25	3.66	18	0.48	323.10	323.40	324.22	324.33	328.50	327.00	CB-2
3	2	199.000	0.34	0.34	0.65	0.22	0.22	6.0	6.0	7.9	1.76	7.44	2.31	18	0.50	323.50	324.50	324.67	325.00	327.00	327.00	CB-1
4	End	92.000	0.12	0.36	0.35	0.04	0.13	6.0	7.8	7.5	0.94	0.85	3.06	8	0.50	321.50	321.96	321.99	322.61	322.17	323.00	yd 2
5	4	204.000	0.24	0.24	0.35	0.08	0.08	6.0	6.0	7.9	0.67	0.85	2.30	8	0.50	321.96	322.98	322.67	323.43	323.00	324.00	yd 1
6	End	25.000	0.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	2.84	5.04	4.69	12	2.00	321.50	322.00	322.22	322.72	322.50	324.25	OCS
7	End	23.000	0.08	0.32	0.95	0.08	0.30	6.0	9.2	7.1	2.16	3.56	3.47	12	1.00	324.00	324.23	324.98	324.86	325.00	329.00	rf 4
8	7	80.000	0.08	0.24	0.95	0.08	0.23	6.0	8.6	7.3	1.65	3.56	3.48	12	1.00	324.23	325.03	324.86	325.58	329.00	329.00	rf 3
9	8	80.000	0.08	0.16	0.95	0.08	0.15	6.0	7.7	7.5	1.14	3.56	2.96	12	1.00	325.03	325.83	325.58	326.28	329.00	329.00	rf 2
10	9	80.000	0.08	0.08	0.95	0.08	0.08	6.0	6.0	7.9	0.60	3.56	2.26	12	1.00	325.83	326.63	326.28	326.95	329.00	329.00	rf 1
11	End	10.000	0.00	0.07	0.00	0.00	0.07	0.0	6.8	7.7	0.51	6.46	0.42	15	1.00	321.70	321.80	324.27	324.27	322.95	326.50	hyd
12	11	20.000	0.07	0.07	0.95	0.07	0.07	6.0	6.0	7.9	0.53	4.57	0.43	15	0.50	321.90	322.00	324.27	324.27	326.50	325.00	cb 3
13	End	60.000	0.08	0.40	0.95	0.08	0.38	6.0	8.3	7.3	2.79	3.56	4.62	12	1.00	324.00	324.60	324.72	325.32	0.00	0.00	rf 9
14	13	50.000	0.08	0.32	0.95	0.08	0.30	6.0	8.0	7.4	2.25	3.56	3.99	12	1.00	324.60	325.10	325.32	325.74	0.00	0.00	rf 8
15	14	50.000	0.08	0.24	0.95	0.08	0.23	6.0	7.6	7.5	1.71	3.56	3.52	12	1.00	325.10	325.60	325.74	326.16	0.00	0.00	rf 7
16	15	50.000	0.08	0.16	0.95	0.08	0.15	6.0	7.1	7.6	1.16	3.56	2.97	12	1.00	325.60	326.10	326.16	326.55	0.00	0.00	rf 6
17	16	50.000	0.08	0.08	0.95	0.08	0.08	6.0	6.0	7.9	0.60	3.56	2.25	12	1.00	326.10	326.60	326.55	326.92	0.00	0.00	rf 5

Project File: 21109501 - Stormsewers New.stm

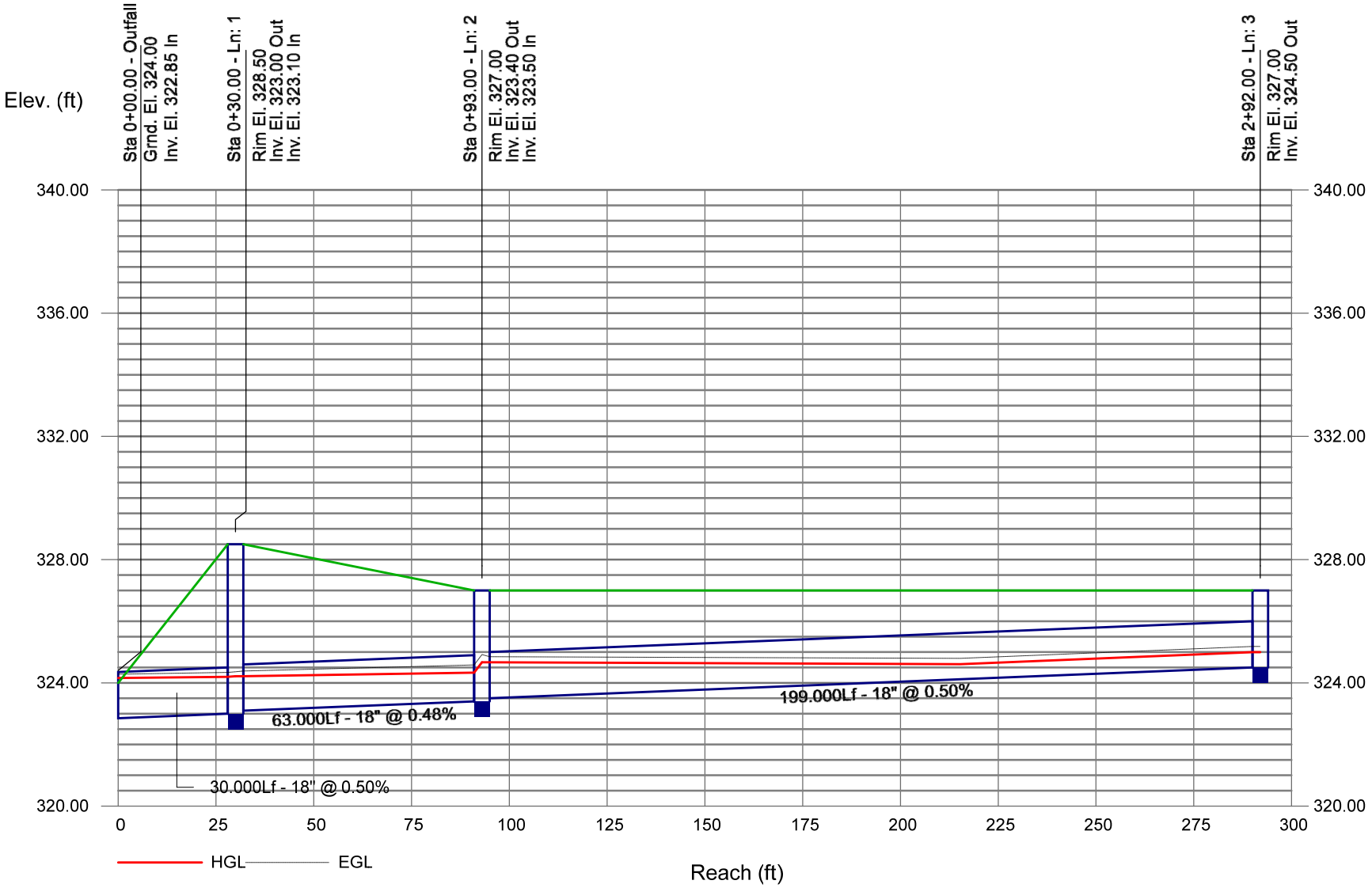
Number of lines: 17

Run Date: 1/31/2024

NOTES:Intensity = 102.61 / (Inlet time + 16.50) ^ 0.82; Return period =Yrs. 25 ; c = cir e = ellip b = box

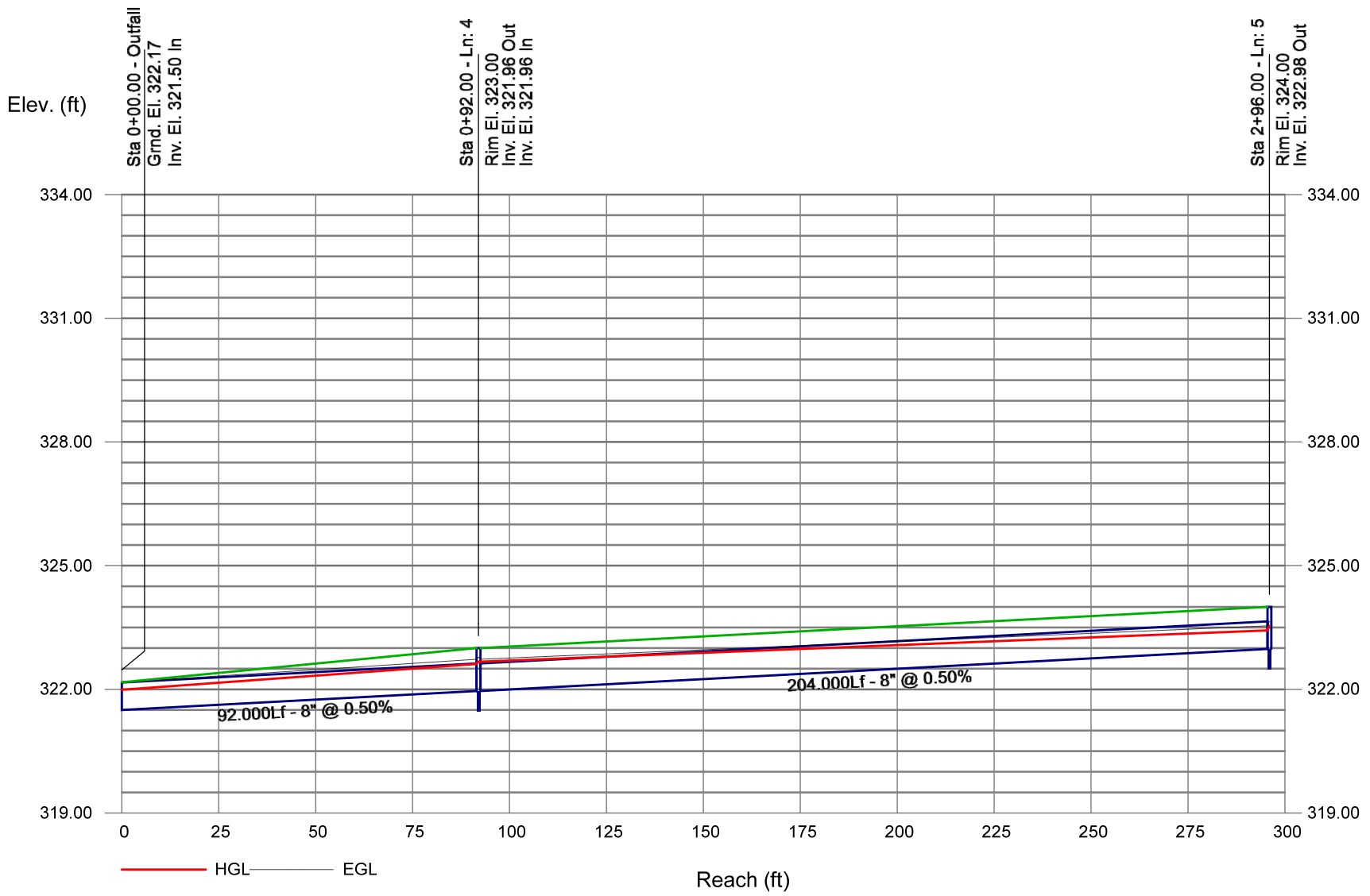
Storm Sewer Profile

Proj. file: 21109501 - Stormsewers New.stm



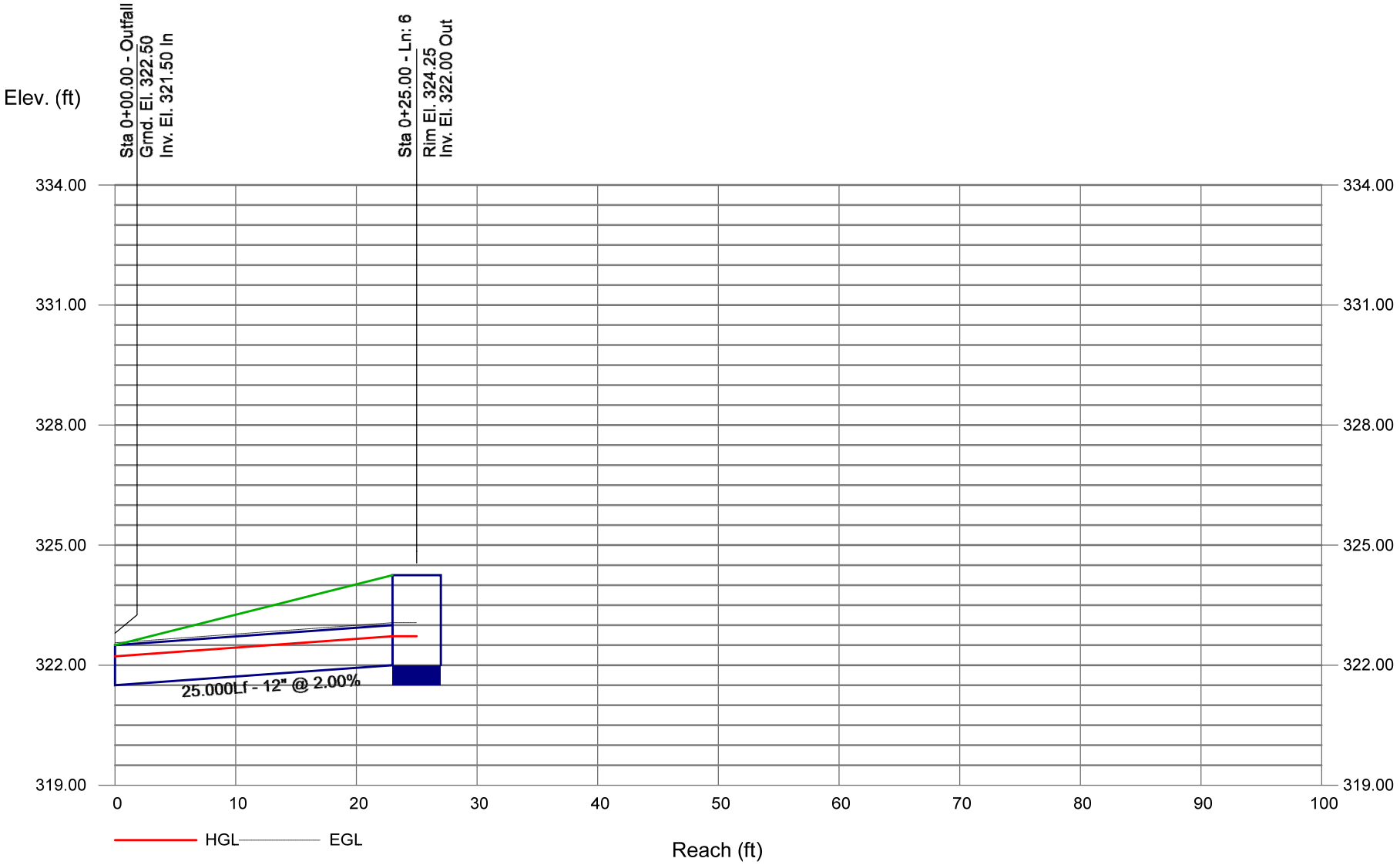
Storm Sewer Profile

Proj. file: 21109501 - Stormsewers New.stm



Storm Sewer Profile

Proj. file: 21109501 - Stormsewers New.stm



Storm Sewer Profile

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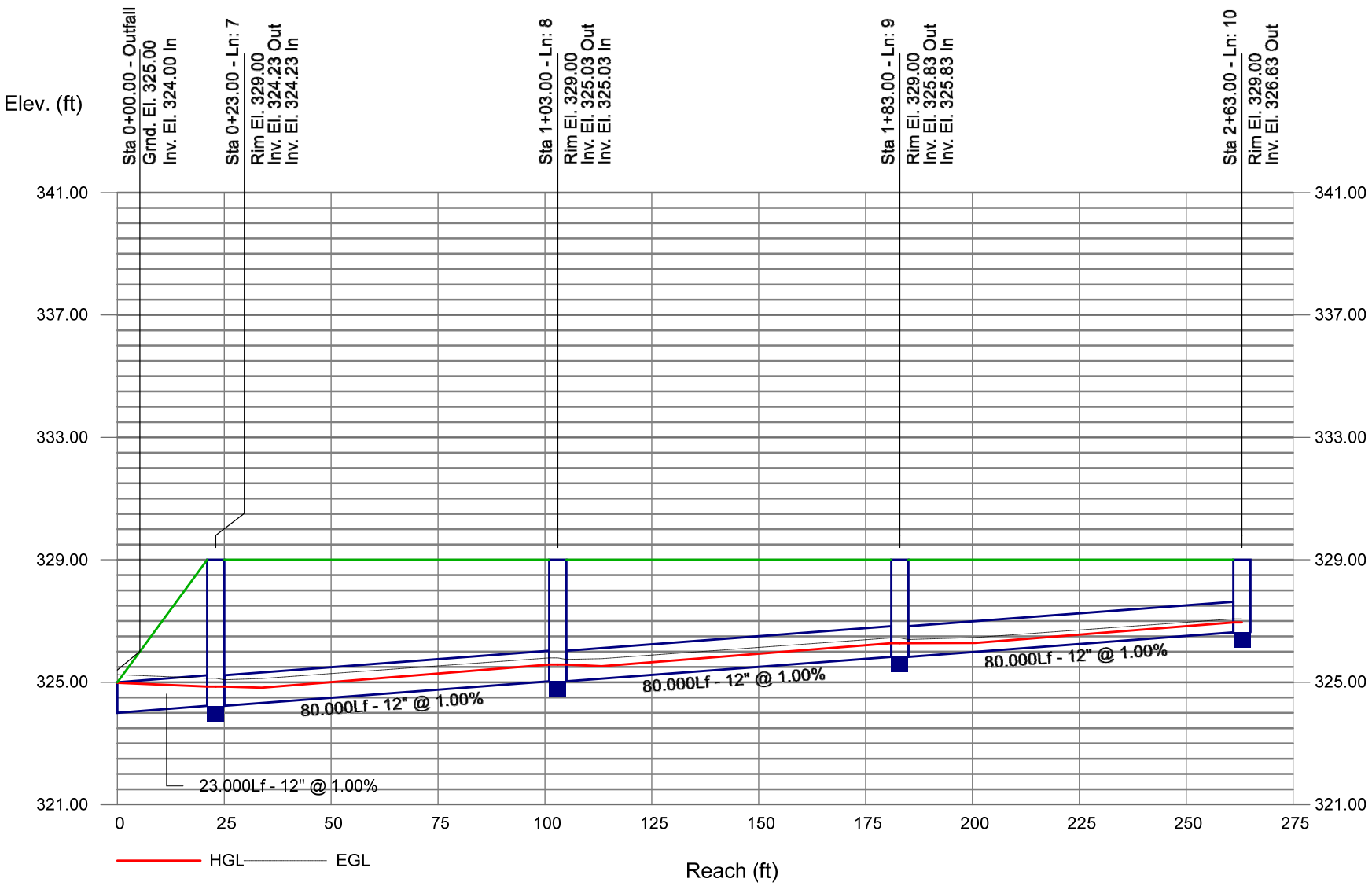

Storm Sewer Profile

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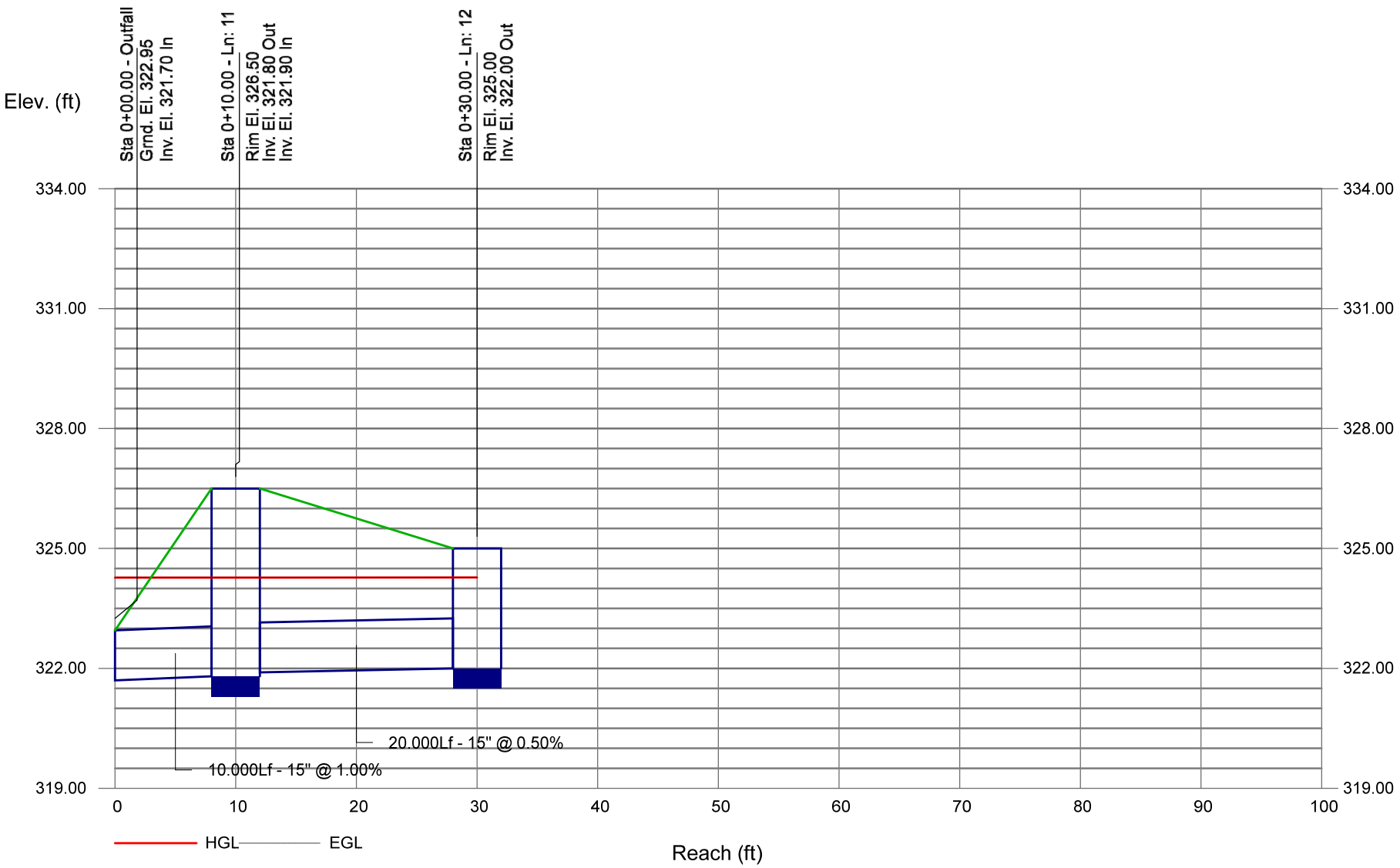
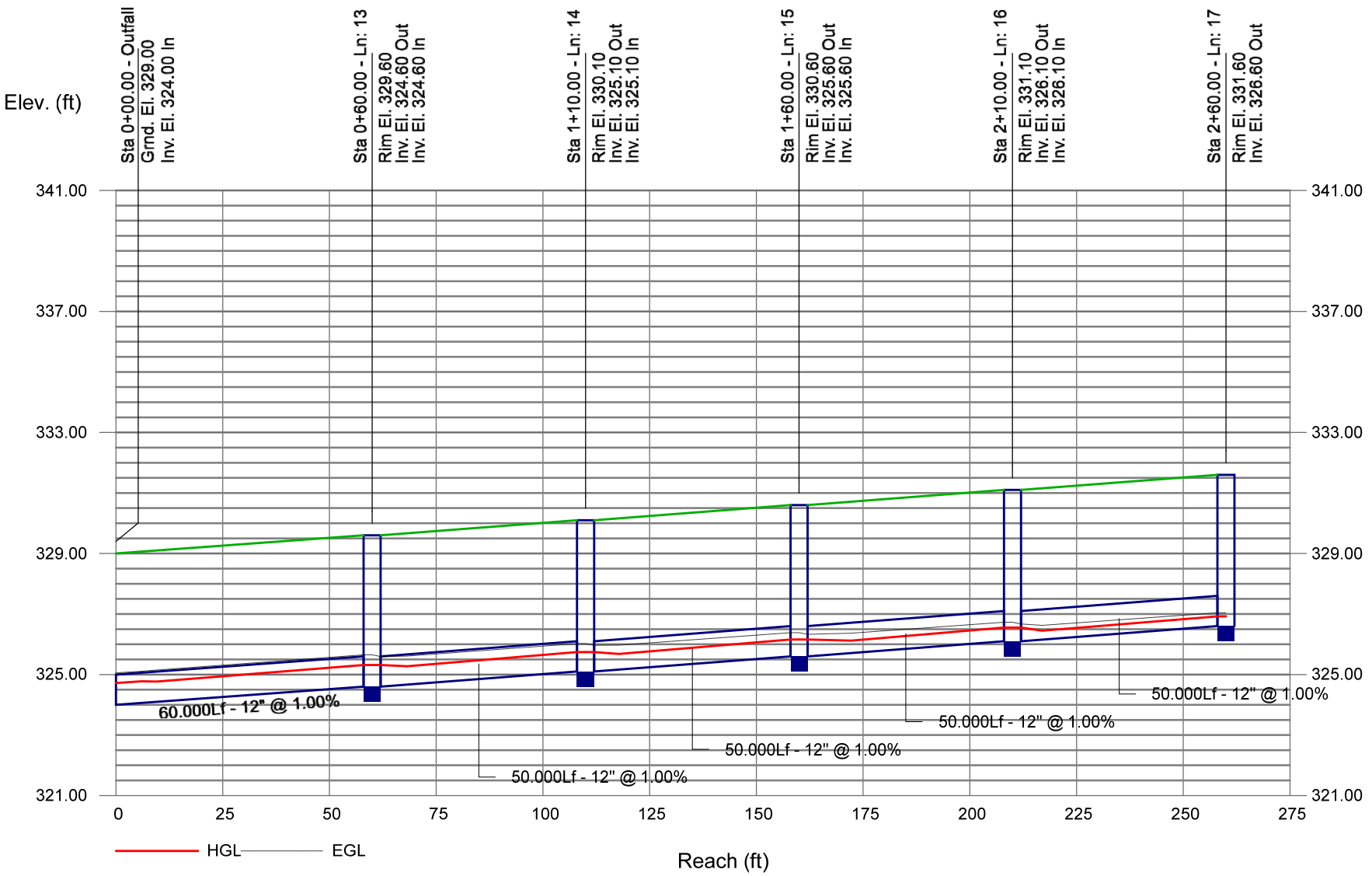


Storm Sewer Profile

Proj. file: 21109501 - Stormsewers New.stm



Project **Proposed Development** By **VER** Date **02/06/24**

Location **205 Spring Hill Road, Monroe, CT** Checked **LAM** Date **02/06/24**

Bold one: Present **Developed** **Subcatchment Area CB-1**

1. Runoff Coefficient ©

Soil Name and hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	C [1]			Area [x] acres [ ] mi^2 [ ] %	Product of C x area
	Impervious Area	**0.95**			**0.170**	**0.16**
	Pervious Area	**0.35**			**0.170**	**0.06**
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
1 Use only one C source per line				Totals =	**0.340**	**0.22**

C (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{0.22}{0.34} =$ 0.65 Use C = **0.65**

Project **Proposed Development** By **VER** Date **02/06/24**

Location **205 Spring Hill Road, Monroe, CT** Checked **LAM** Date **02/06/24**

Bold one: Present **Developed** **Subcatchment Area CB-2**

1. Runoff Coefficient ©

Soil Name and hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	C [1]			Area [x] acres [ ] mi^2 [ ] %	Product of C x area
	Impervious Area	**0.95**			**0.370**	**0.35**
	Pervious Area	**0.35**			**0.240**	**0.08**
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
1 Use only one C source per line				Totals =	**0.610**	**0.44**

C (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{0.44}{0.61} =$ 0.71 Use C = **0.71**

Project **Proposed Development** By **VER** Date **02/06/24**

Location **205 Spring Hill Road, Monroe, CT** Checked **LAM** Date **02/06/24**

Bold one: Present **Developed** **Subcatchment Area CB-3**

1. Runoff Coefficient ©

Soil Name and hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	C [1]			Area [x] acres [ ] mi^2 [ ] %	Product of C x area
	Impervious Area	**0.95**			**0.070**	**0.07**
	Pervious Area	**0.35**			**0.000**	**0.00**
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
1 Use only one C source per line				Totals =	**0.070**	**0.07**

C (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{0.07}{0.07} =$ 0.95 Use C = **0.95**

Project **Proposed Development** By **VER** Date **02/06/24**

Location **205 Spring Hill Road, Monroe, CT** Checked **LAM** Date **02/06/24**

Bold one: Present **Developed** **Yard Drain 1**

1. Runoff Coefficient ©

Soil Name and hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	C [1]			Area [x] acres [ ] mi^2 [ ] %	Product of C x area
	Impervious Area	**0.95**			**0.000**	**0.00**
	Pervious Area	**0.35**			**0.240**	**0.08**
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
Totals =					**0.240**	**0.08**

1 Use only one C source per line

C (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{0.08}{0.24} =$ 0.35 Use C = **0.35**

Project **Proposed Development** By **VER** Date **02/06/24**

Location **205 Spring Hill Road, Monroe, CT** Checked **LAM** Date **02/06/24**

Bold one: Present **Developed** **Yard Drain 2**

1. Runoff Coefficient ©

Soil Name and hydrologic group (Appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	C [1]			Area [x] acres [ ] mi^2 [ ] %	Product of C x area
	Impervious Area	**0.95**			**0.000**	**0.00**
	Pervious Area	**0.35**			**0.120**	**0.04**
						0.00
						0.00
						0.00
						0.00
						0.00
						0.00
Totals =					**0.120**	**0.04**

1 Use only one C source per line

C (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{0.04}{0.12} =$ 0.35 Use C = **0.35**

First Defense® High Capacity

A Simple Solution for your Trickiest Sites

Product Profile

The First Defense® High Capacity is an enhanced vortex separator that combines an effective stormwater treatment chamber with an integral peak flow bypass. It efficiently removes sediment total suspended solids (TSS), trash and hydrocarbons from stormwater runoff without washing out previously captured pollutants. The First Defense® High Capacity is available in several model configurations to accommodate a wide range of pipe sizes, peak flows and depth constraints (**Table 1**, next page).

Applications

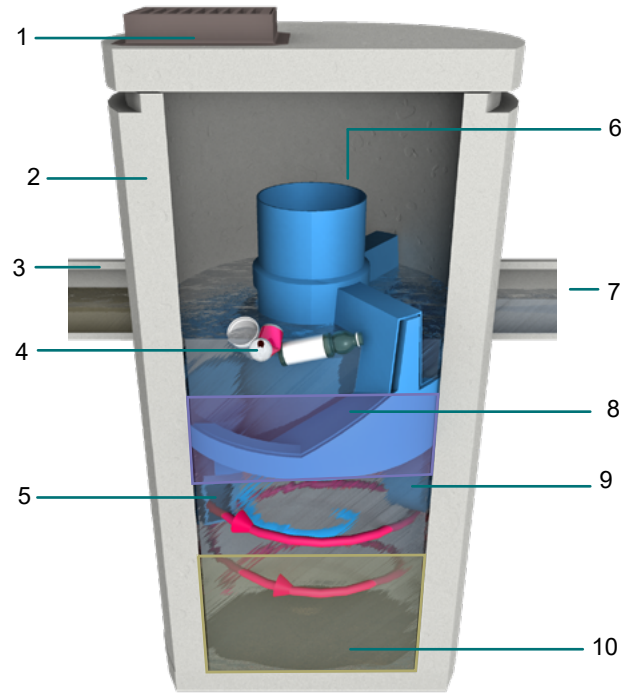
- Stormwater treatment at the point of entry into the drainage line
- Sites constrained by space, topography or drainage profiles with limited slope and depth of cover
- Retrofit installations where stormwater treatment is placed on or tied into an existing storm drain line
- Pretreatment for filters, infiltration and storage

Advantages

- Inlet options include surface grate or multiple inlet pipes
- Integral high capacity bypass conveys large peak flows without the need for "offline" arrangements using separate junction manholes
- Proven to prevent pollutant washout at up to 450% of its treatment flow
- Long flow path through the device ensures a long residence time within the treatment chamber, enhancing pollutant settling
- Delivered to site pre-assembled and ready for installation

Verified by NJCAT and NJDEP

Fig.1 The First Defense® High Capacity has internal components designed to efficiently capture pollutants and prevent washout at peak flows.



Components

1. Inlet Grate (optional)
2. Precast chamber
3. Inlet Pipe (optional)
4. Floatables Draw Off Slot (not pictured)
5. Inlet Chute
6. Internal Bypass
7. Outlet pipe
8. Oil and Floatables Storage
9. Outlet chute
10. Sediment Storage Sump

How it Works

The First Defense® High Capacity has internal components designed to remove and retain gross debris, total suspended solids (TSS) and hydrocarbons (**Fig.1**).

Contaminated stormwater runoff enters the inlet chute from a surface grate and/or inlet pipe. The inlet chute introduces flow into the chamber tangentially to create a low energy vortex flow regime (magenta arrow) that directs sediment into the sump while oils, floating trash and debris rise to the surface.

Treated stormwater exits through a submerged outlet chute located opposite to the direction of the rotating flow (blue arrow). Enhanced vortex separation is provided by forcing the rotating flow within the vessel to follow the longest path possible rather than directly from inlet to outlet.

Higher flows bypass the treatment chamber to prevent turbulence and washout of captured pollutants. An internal bypass conveys infrequent peak flows directly to the outlet eliminating the need for, and expense of, external bypass control structures. A floatables draw off slot functions to convey floatables into the treatment chamber prior to bypass.

Hydro International, 94 Hutchins Drive, Portland, ME 04102
Tel: (207) 756-6200 Fax: (207) 756-6212
Email: stormwaterinquiry@hydro-int.com Web: www.hydro-int.com

First Defense® High Capacity

Sizing & Design

This adaptable online treatment system works easily with large pipes, multiple inlet pipes, inlet grates and now, contains a high capacity bypass for the conveyance of large peak flows. Designed with site flexibility in mind, the First Defense® High Capacity allows engineers to maximize available site space without compromising treatment level.

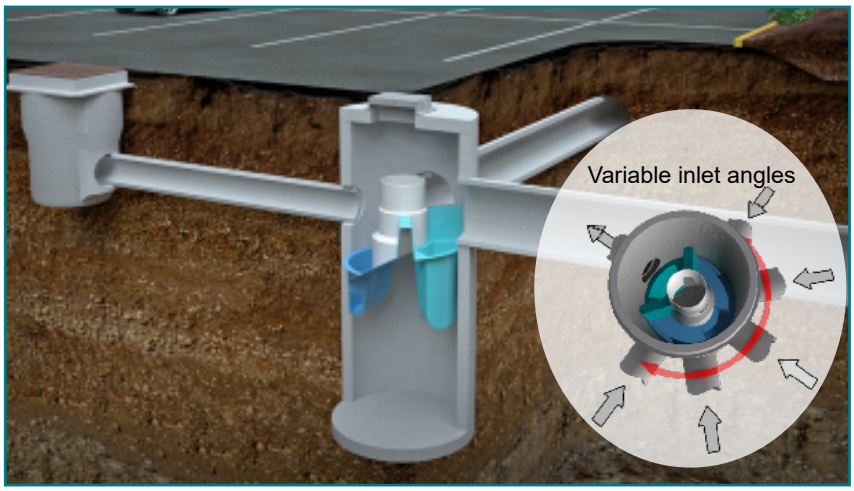


Fig 2. Works with multiple inlet pipes and grates

Inspection and Maintenance

Nobody maintains our systems better than we do. To ensure optimal, ongoing device performance, be sure to recommend Hydro International as a preferred service and maintenance provider to your clients.

Call **1 (800) 848-2706** to schedule an inspection and cleanout or learn more at **hydro-int.com/service**

Sizing Calculator for Engineers

This simple online tool will recommend the best separator, model size and online/offline arrangement based on site-specific data entered by the user.

Go to hydro-int.com/sizing to access the tool.

Fig 3. Maintenance is done with a vactor truck

Table 1. First Defense® High Capacity Design Criteria.

First Defense® High Capacity Model Number	Diameter	Typical TSS Treatment Flow Rates		Peak Online Flow Rate	Maximum Pipe Diameter[1]	Oil Storage Capacity	Typical Sediment Storage Capacity[2]	Minimum Distance from Outlet Invert to Top of Rim[3]	Standard Distance from Outlet Invert to Sump Floor
		NJDEP Certified	110µm						
	(ft / m)	(cfs / L/s)	(cfs / L/s)	(cfs / L/s)	(in / mm)	(gal / L)	(yd^3 / m^3)	(ft / m)	(ft / m)
FD-3HC	3 / 0.9	0.84 / 23.7	1.06 / 30.0	15 / 424	18 / 457	125 / 473	0.4 / 0.3	2.0 - 3.5 / 0.6 - 1.0	3.71 / 1.13
FD-4HC	4 / 1.2	1.50 / 42.4	1.88 / 53.2	18 / 510	24 / 600	191 / 723	0.7 / 0.5	2.3 - 3.9 / 0.7 - 1.2	4.97 / 1.5
FD-5HC	5 / 1.5	2.35 / 66.2	2.94 / 83.2	20 / 566	24 / 600	300 / 1135	1.1 / .84	2.5 - 4.5 / 0.7 - 1.3	5.19 / 1.5
FD-6HC	6 / 1.8	3.38 / 95.7	4.23 / 119.8	32 / 906	30 / 750	496 / 1,878	1.6 / 1.2	3.0 - 5.1 / 0.9 - 1.6	5.97 / 1.8
FD-8HC	8 / 2.4	6.00 / 169.9	7.52 / 212.9	50 / 1,415	48 / 1219	1120 / 4239	2.8 / 2.1	3.0 - 6.0 / 0.9 -1.8	7.40 / 2.2

[1]Contact Hydro International when larger pipe sizes are required.
[2]Contact Hydro International when custom sediment storage capacity is required.
[3]Minimum distance for models depends on pipe diameter.

Hydro International, 94 Hutchins Drive, Portland, ME 04102
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Email: stormwaterinquiry@hydro-int.com Web: www.hydro-int.com

APPENDIX E
SEPTIC DESIGN

Test Pit Observation Logs
Percolation Test Observation Logs

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695

Proposed Development
205 Spring Hill Road, Monroe, CT

TP-1
Project # 2109501
January 23, 2024

TEST PIT FIELD LOG

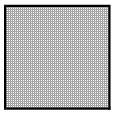
PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Amy Lehaney - MHD	Contractor	Tim Kraus Excavating			Assumed Ground Surface El.	
Tim Kraus - Tim Kraus Excavating	Operator	Tim Kraus			Datum	
Alex Magoulas - Solli Engineering	Make		Model		Temperature	37
	Bucket Capacity		Reach		Weather	Cloudy

Depth	Soil Description	Excav. Effort	Cobble and Boulder Data	Remark No.
0" - 4"	Topsoil			
4" - 17"	Orange-Brown Sand & Gravel			
17" - 50"	Tan Sand & Gravel			
50" - 82"	Tan Sand			

REMARKS:

1. No Ledge
2. Ground water at 72"
3. Restrictive Layer at 72"
4. Roots to 22"

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24"	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695

Proposed Development
205 Spring Hill Road, Monroe, CT

TP-2
Project # 2109501
January 23, 2024

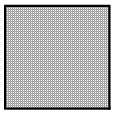
TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Amy Lehaney - MHD	Contractor	Tim Kraus Excavating			Assumed Ground Surface El.	
Tim Kraus - Tim Kraus Excavating	Operator	Tim Kraus			Datum	
Alex Magoulas - Solli Engineering	Make		Model		Temperature	37
	Bucket Capacity		Reach		Weather	Cloudy

Depth	Soil Description	Excav. Effort	Cobble and Boulder Data	Remark No.
0" - 73"	Miscellaneous Fill			

REMARKS:

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24"	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

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LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

SOLLI ENGINEERING
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Proposed Development
205 Spring Hill Road, Monroe, CT

TP-3
Project # 2109501
January 23, 2024

TEST PIT FIELD LOG

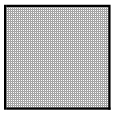
PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Amy Lehaney - MHD	Contractor	Tim Kraus Excavating		Assumed Ground Surface El.		
Tim Kraus - Tim Kraus Excavating	Operator	Tim Kraus		Datum		
Alex Magoulas - Solli Engineering	Make		Model	Temperature	37	
	Bucket Capacity		Reach	Weather	Cloudy	

Depth	Soil Description	Excav. Effort	Cobble and Boulder Data	Remark No.
0" - 5"	Topsoil			
5" - 20"	Brown Sandy Loam			
20" - 72"	Tan Sand & Gravel w/ Rocks			

REMARKS:

1. No Ledge
2. No Water
3. No Restrictive Layer Encountered
4. Roots to 46"

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24"	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695

Proposed Development
205 Spring Hill Road, Monroe, CT

TP-4
Project # 2109501
January 23, 2024

TEST PIT FIELD LOG

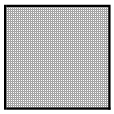
PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Amy Lehaney - MHD	Contractor	Tim Kraus Excavating			Assumed Ground Surface El.	
Tim Kraus - Tim Kraus Excavating	Operator	Tim Kraus			Datum	
Alex Magoulas - Solli Engineering	Make		Model		Temperature	37
	Bucket Capacity		Reach		Weather	Cloudy

Depth	Soil Description	Excav. Effort	Cobble and Boulder Data	Remark No.
0" - 14"	Topsoil			
14" - 20"	Orange-Brown Sand & Gravel			
20" - 35"	Tan Sand & Gravel			
35" - 75"	Tan Sand & Gravel w/ Rocks			

REMARKS:

1. No Ledge
2. No Water
3. No Restrictive Layer Encountered
4. Roots to 46"

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24"	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

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M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695

Proposed Development
205 Spring Hill Road, Monroe, CT

PT-1
Project # 2109501
January 23, 2024

PERC TEST FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Alex Magoulas - Solli Engineering	Contractor				Assumed Ground Surface El.	
	Operator				Datum	
	Make		Model		Temperature	37°F
	Bucket Capacity		Reach		Weather	Cloudy

Time	Description		Water Elevation (Inches)	Elevation Difference (Inches)	Remark No.
	Bottom of perc hole below grade = 21"				
	Diameter of perc hole = 10"				
	Measured From	16 inches			
10:34 AM	Pre-soak				
12:32 PM	First soak	5	11		
12:37 PM	First soak	6 3/4	9 1/4	1 3/4	
12:42 PM	First soak	8 1/4	7 3/4	1 1/2	
12:47 PM	First soak	9 1/2	6 1/2	1 1/4	
12:52 PM	First soak	10 1/2	5 1/2	1	
12:57 PM	First soak	11 1/2	4 1/2	1	
1:02 PM	First soak	12 3/4	3 1/4	1 1/4	
1:07 PM	First soak	13 1/2	2 1/2		
1:12 PM	First soak	14 1/4	1 3/4		
1:17 PM	First soak	15	1		
1:22 PM	First soak	15 3/4	1/4		
1:27 PM	First soak	dry			
			Uniform Rate	1 1/4 Inch / 5 Min	

REMARKS:

1"/10 Min. Rate

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695

Proposed Development
205 Spring Hill Road, Monroe, CT

PT-3
Project # 2109501
January 23, 2024

PERC TEST FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Alex Magoulas - Solli Engineering	Contractor				Assumed Ground Surface El.	
	Operator				Datum	
	Make		Model		Temperature	37°F
	Bucket Capacity		Reach		Weather	Cloudy

Time	Description		Water Elevation (Inches)	Elevation Difference (Inches)	Remark No.
	Bottom of perc hole below grade = 19"				
	Diameter of perc hole = 9"				
	Measured From	15 1/2 inches			
10:03 AM	Pre-soak				
12:34 PM	First soak	3 1/2	12		
12:39 PM	First soak	5 1/4	10 1/4	1 3/4	
12:44 PM	First soak	7	8 1/2	1 3/4	
12:49 PM	First soak	8 1/2	7	1 1/2	
12:54 PM	First soak	10	5 1/2	1 1/2	
12:59 PM	First soak	11 1/4	4 1/4	1 1/4	
1:04 PM	First soak	12 1/4	3 1/4	1	
1:09 PM	First soak	13	2 1/2		
1:14 PM	First soak	13 3/4	1 3/4		
1:19 PM	First soak	14 1/2	1		
1:24 PM	First soak	15	1/2		
1:29 PM	First soak	15 1/2	0		
1:34 PM	First soak	dry			
			Uniform Rate	1 1/2 Inch / 5 Min	

REMARKS:

1"/10 Min. Rate

SOLLI ENGINEERING
501 Main Street, Monroe, CT 06468 T: (203) 880-5455 F: (203) 880-9695

Proposed Development
205 Spring Hill Road, Monroe, CT

PT-4
Project # 2109501
January 23, 2024

PERC TEST FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Alex Magoulas - Solli Engineering	Contractor				Assumed Ground Surface El.	
	Operator				Datum	
	Make		Model		Temperature	37°F
	Bucket Capacity		Reach		Weather	Cloudy

Time	Description		Water Elevation (Inches)	Elevation Difference (Inches)	Remark No.
	Bottom of perc hole below grade = 22"				
	Diameter of perc hole = 10"				
	Measured From	17 1/2 inches			
10:18 AM	Pre-soak				
12:30 PM	First soak	4 1/2	13		
12:35 PM	First soak	6 1/2	11	2	
12:40 PM	First soak	7 3/4	9 3/4	1 1/4	
12:45 PM	First soak	9	8 1/2	1 1/4	
12:50 PM	First soak	10	7 1/2	1	
12:55 PM	First soak	10 3/4	6 3/4	3/4	
1:00 PM	First soak	11 1/2	6	3/4	
1:05 PM	First soak	12 1/4	5 1/4		
1:10 PM	First soak	12 3/4	4 3/4		
1:15 PM	First soak	13 1/4	4 1/4		
1:20 PM	First soak	13 3/4	3 3/4		
1:25 PM	First soak	14 1/4	3 1/4		
1:30 PM	First soak	14 3/4	2 3/4		
			Uniform Rate	2 1/4 Inch / 10 Min	

REMARKS:

1"/10 Min. Rate

APPENDIX F
DESIGN PLANS

Under Separate Cover

Grading & Drainage Plan (2.21)
Soil Erosion & Sediment Control Plans (2.31 & 2.32)
Soil Erosion & Sediment Control Notes & Details (2.41)
Utility Plan (2.51)
Landscaping Plan (2.61)
Lighting Plan (2.71)