NORSE ENVIRONMENTAL SERVICES, INC.
92 Middlesex Road, Unit 4
Tyngsboro, MA 01879
TEL. (978) 649-9932 • FAX (978) 649-7582
Website: www.norseenvironmental.com

NOTICE OF INTENT

FOR

35 LEYDEN STREET

WARD 01 PARCEL 01801000

EAST BOSTON, MA

APPLICANT: 35 LEYDEN STREET LLC

JANUARY 2020

PROJECT: 35 LEYDEN STREET - EAST BOSTON

APPLICANT: 35 LEYDEN STREET LLC

TABLE OF CONTENTS

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

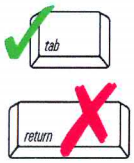
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

East Boston
City/Town

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



Note: Before completing this form consult your local Conservation Commission regarding any municipal bylaw or ordinance.

A. General Information

1. Project Location (**Note:** electronic filers will click on button to locate project site):

35 Leyden Street — a. Street Address
East Boston — b. City/Town
02128 — c. Zip Code

Latitude and Longitude:
42 23' 24.68" N — d. Latitude
71 00' 40.07" W — e. Longitude

Ward 01 — f. Assessors Map/Plat Number
Parcel 01801000 — g. Parcel /Lot Number

2. Applicant:

Fernando — a. First Name
Dalfior, Manager — b. Last Name
35 Leyden Street LLC — c. Organization
One City Hall Square - Suite 2 — d. Street Address
Medford — e. City/Town
MA — f. State
02155 — g. Zip Code
617-721-7946 — h. Phone Number
i. Fax Number
j. Email Address

3. Property owner (required if different from applicant): ☐ Check if more than one owner

a. First Name
b. Last Name
c. Organization
d. Street Address
e. City/Town
f. State
g. Zip Code
h. Phone Number
i. Fax Number
j. Email address

4. Representative (if any):

Maureen — a. First Name
Herald6 — b. Last Name
Norse Environmental Services, Inc. — c. Company
92 Middlesex Road, Unit 4 — d. Street Address
Tyngsborough — e. City/Town
MA — f. State
01879 — g. Zip Code
978-649-9932 — h. Phone Number
i. Fax Number
norseenvironmental@verizon.net — j. Email address

5. Total WPA Fee Paid (from NOI Wetland Fee Transmittal Form):

$1,050.00 — a. Total Fee Paid
$512.50 — b. State Fee Paid
$537.50 — c. City/Town Fee Paid

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

East Boston
City/Town

A. General Information (continued)

6. General Project Description:

The applicant is proposing to raze a garage, 3-story residential dwelling and walkway, to construct a new 3-story residential dwelling, walkway, driveway, parking, drainage, transformer and concrete pad, landscaped areas, associated utilities and grading within Land Subject to Coastal Storm Flowage (LSCSF).

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☒ Other

7b. Is any portion of the proposed activity eligible to be treated as a limited project (including Ecological Restoration Limited Project) subject to 310 CMR 10.24 (coastal) or 310 CMR 10.53 (inland)?

1. ☐ Yes ☒ No

If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

If the proposed activity is eligible to be treated as an Ecological Restoration Limited Project (310 CMR10.24(8), 310 CMR 10.53(4)), complete and attach Appendix A: Ecological Restoration Limited Project Checklist and Signed Certification.

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
Suffolk County District Registry of Deeds	
c. Book	d. Page Number
60819	208

B. Buffer Zone & Resource Area Impacts (temporary & permanent)

1. ☐ Buffer Zone Only – Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.
2. ☐ Inland Resource Areas (see 310 CMR 10.54-10.58; if not applicable, go to Section B.3, Coastal Resource Areas).

Check all that apply below. Attach narrative and any supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

East Boston
City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

For all projects affecting other Resource Areas, please attach a narrative explaining how the resource area was delineated.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

   ☐ 25 ft. - Designated Densely Developed Areas only

   ☐ 100 ft. - New agricultural projects only

   ☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

   a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

5. Has an alternatives analysis been done and is it attached to this NOI? ☐ Yes ☐ No

6. Was the lot where the activity is proposed created prior to August 1, 1996? ☐ Yes ☐ No

3. ☒ Coastal Resource Areas: (See 310 CMR 10.25-10.35)

Note: for coastal riverfront areas, please complete **Section B.2.f**. above.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

East Boston
City/Town

B. Buffer Zone & Resource Area Impacts (temporary & permanent) (cont'd)

Check all that apply below. Attach narrative and supporting documentation describing how the project will meet all performance standards for each of the resource areas altered, including standards requiring consideration of alternative project design or location.

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	4,705+/- s.f. 1. square feet	

4. ☐ Restoration/Enhancement

If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
MassDEP File Number
Document Transaction Number
East Boston
City/Town

C. Other Applicable Standards and Requirements

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section C and complete Appendix A: Ecological Restoration Limited Project Checklists – Required Actions (310 CMR 10.11).

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

a. ☐ Yes ☒ No

If yes, include proof of mailing or hand delivery of NOI to:

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

1/2020
b. Date of map

If *yes*, the project is also subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18). To qualify for a streamlined, 30-day, MESA/Wetlands Protection Act review, please complete Section C.1.c, and include requested materials with this Notice of Intent (NOI); *OR* complete Section C.2.f, if applicable. *If MESA supplemental information is not included with the NOI, by completing Section 1 of this form, the NHESP will require a separate MESA filing which may take up to 90 days to review (unless noted exceptions in Section 2 apply, see below).*

c. Submit Supplemental Information for Endangered Species Review*

1. ☐ Percentage/acreage of property to be altered:

(a) within wetland Resource Area _____ percentage/acreage

(b) outside Resource Area _____ percentage/acreage

2. ☐ Assessor's Map or right-of-way plan of site

2. ☐ Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **

(a) ☐ Project description (including description of impacts outside of wetland resource area & buffer zone)

(b) ☐ Photographs representative of the site

---

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

** MESA projects may not be segmented (321 CMR 10.16). The applicant must disclose full development plans even if such plans are not required as part of the Notice of Intent process.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

East Boston
City/Town

C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_fee_schedule.htm). Make check payable to "Commonwealth of Massachusetts - NHESP" and ***mail to NHESP*** at above address

*Projects altering **10 or more acres** of land, also submit:*

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing.
a. NHESP Tracking # b. Date submitted to NHESP

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?

a. ☐ Not applicable – project is in inland resource area only b. ☐ Yes ☒ No

If yes, include proof of mailing, hand delivery, or electronic delivery of NOI to either:

South Shore - Cohasset to Rhode Island border, and the Cape & Islands:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: DMF.EnvReview-North@state.ma.us

Also if yes, the project may require a Chapter 91 license. For coastal towns in the Northeast Region, please contact MassDEP's Boston Office. For coastal towns in the Southeast Region, please contact MassDEP's Southeast Regional Office.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

East Boston
City/Town

C. Other Applicable Standards and Requirements (cont'd)

Online Users: Include your document transaction number (provided on your receipt page) with all supplementary information you submit to the Department.

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?

   a. ☐ Yes ☒ No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.

   b. ACEC

5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?

   a. ☐ Yes ☒ No

6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?

   a. ☐ Yes ☒ No

7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?

   a. ☒ Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:

      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)

      2. ☐ A portion of the site constitutes redevelopment

      3. ☐ Proprietary BMPs are included in the Stormwater Management System.

   b. ☐ No. Check why the project is exempt:

      1. ☐ Single-family house

      2. ☐ Emergency road repair

      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

☐ This is a proposal for an Ecological Restoration Limited Project. Skip Section D and complete Appendix A: Ecological Restoration Notice of Intent – Minimum Required Documents (310 CMR 10.12).

Applicants must include the following with this Notice of Intent (NOI). See instructions for details.

Online Users: Attach the document transaction number (provided on your receipt page) for any of the following information you submit to the Department.

1. ☒ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)

2. ☒ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

East Boston
City/Town

D. Additional Information (cont'd)

3. ☐ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s), Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.

4. ☒ List the titles and dates for all plans and other materials submitted with this NOI.

35 Leyden Street East Boston, Massachusetts
a. Plan Title

Peter Nolan & Associates & Spruhan Eng.
b. Prepared By

Peter Nolan & Edmund Spruhan
c. Signed and Stamped by

11/24/2019
d. Final Revision Date

1"=10'
e. Scale

Existing Conditions Site Plan
f. Additional Plan or Document Title

1/15/2020
g. Date

5. ☐ If there is more than one property owner, please attach a list of these property owners not listed on this form.

6. ☐ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.

7. ☐ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

1. ☐ Fee Exempt: No filing fee shall be assessed for projects of any city, town, county, or district of the Commonwealth, federally recognized Indian tribe housing authority, municipal housing authority, or the Massachusetts Bay Transportation Authority.

Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

City of Boston Check #3094
2. Municipal Check Number

1/13/2020
3. Check date

Commonwealth of MA Check #3093
4. State Check Number

1/13/2020
5. Check date

Fernando
6. Payor name on check: First Name

Dalfior
7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 3 – Notice of Intent
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

East Boston
City/Town

F. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the wetlands regulations, 310 CMR 10.05(5)(a).

I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet of the property line of the project location.

1. Signature of Applicant	2. Date: 01/13/2020
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any): Jameen Herald	6. Date: 1/17/20

For Conservation Commission:
Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:
One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a **copy** of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

CASH ONLY IF ALL CheckLock™ SECURITY FEATURES LISTED ON BACK INDICATE NO TAMPERING OR COPYING

DALFIOR Development Inc.

Dalfior Development, Inc.
1 City Hall Mall - Lower level #2
Medford, MA 02155
617 661-2000
dalfiordevelopment.com

East Boston Savings Bank
Medford, MA 02155
5-7012/2110

3093

01/13/2020

PAY TO THE ORDER OF Commonwealth of Massachusetts

$ **512.50

Five hundred twelve and 50/100**********

DOLLARS

Commonwealth of Massachusetts

MEMO 35 Leyden NOI filing

[redacted]

CASH ONLY IF ALL CheckLock™ SECURITY FEATURES LISTED ON BACK INDICATE NO TAMPERING OR COPYING

DALFIOR Development Inc.

Dalfior Development, Inc.
1 City Hall Mall - Lower level #2
Medford, MA 02155
617 661-2000
dalfiordevelopment.com

East Boston Savings Bank
Medford, MA 02155
5-7012/2110

3094

01/13/2020

PAY TO THE ORDER OF City of Boston

$ **1,500.00

One thousand five hundred and 00/100**********

DOLLARS

City of Boston
1010 Mass Ave FL 4
Boston, MA 02118
United States

MEMO 35 Leyden NOI filing

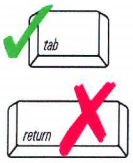
[redacted]

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A. Applicant Information

1. Location of Project:

35 Leyden Street	East Boston
a. Street Address	b. City/Town
Check #3093	$512.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Fernando		Dalfior, Manager	
a. First Name		b. Last Name	
35 Leyden Street LLC			
c. Organization			
One City Hall Mall - Suite 2			
d. Mailing Address			
Medford		MA	02155
e. City/Town		f. State	g. Zip Code
617-721-7946			
h. Phone Number	i. Fax Number	j. Email Address	

3. Property Owner (if different):

a. First Name		b. Last Name	
c. Organization			
d. Mailing Address			
e. City/Town		f. State	g. Zip Code
h. Phone Number	i. Fax Number	j. Email Address	

B. Fees

To calculate filing fees, refer to the category fee list and examples in the instructions for filling out WPA Form 3 (Notice of Intent).

Fee should be calculated using the following process & worksheet. ***Please see Instructions before filling out worksheet.***

Step 1/Type of Activity: Describe each type of activity that will occur in wetland resource area and buffer zone.

Step 2/Number of Activities: Identify the number of each type of activity.

Step 3/Individual Activity Fee: Identify each activity fee from the six project categories listed in the instructions.

Step 4/Subtotal Activity Fee: Multiply the number of activities (identified in Step 2) times the fee per category (identified in Step 3) to reach a subtotal fee amount. Note: If any of these activities are in a Riverfront Area in addition to another Resource Area or the Buffer Zone, the fee per activity should be multiplied by 1.5 and then added to the subtotal amount.

Step 5/Total Project Fee: Determine the total project fee by adding the subtotal amounts from Step 4.

Step 6/Fee Payments: To calculate the state share of the fee, divide the total fee in half and subtract $12.50. To calculate the city/town share of the fee, divide the total fee in half and add $12.50.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 3(b)	1	$1,050.00	$1,050.00

Step 5/Total Project Fee: $1,050.00

Step 6/Fee Payments:

Total Project Fee:	$1,050.00 a. Total Fee from Step 5
State share of filing Fee:	$512.50 b. 1/2 Total Fee **less** $12.50
City/Town share of filling Fee:	$537.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

a.) Complete pages 1 and 2 and send with a check or money order for the state share of the fee, payable to the Commonwealth of Massachusetts.

Department of Environmental Protection
Box 4062
Boston, MA 02211

b.) **To the Conservation Commission:** Send the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and the city/town fee payment.

To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

City of Boston Environment

NOTICE OF INTENT APPLICATION FORM
Boston Wetlands Ordinance
City of Boston Code, Ordinances, Chapter 7-1.4

Boston File Number

MassDEP File Number

A. GENERAL INFORMATION

1. Project Location

35 Leyden Street	East Boston	02128
a. Street Address	b. City/Town	c. Zip Code

Ward 01	Parcel 01801000
f. Assessors Map/Plat Number	g. Parcel /Lot Number

2. Applicant

Fernando	Dalfior, Manager	35 Leyden Street LLC
a. First Name	b. Last Name	c. Company

One City Hall Square - Suite 2
d. Mailing Address

Medford	MA	02155
e. City/Town	f. State	g. Zip Code

617-721-7946		
h. Phone Number	i. Fax Number	j. Email address

3. Property Owner

		35 Leyden Street LLC
a. First Name	b. Last Name	c. Company

d. Mailing Address

e. City/Town	f. State	g. Zip Code
h. Phone Number	i. Fax Number	j. Email address

❑ Check if more than one owner

(If there is more than one property owner, please attach a list of these property owners to this form.)

4. Representative (if any)

Maureen	Herald	Norse Environmental Services, Inc.
a. First Name	b. Last Name	c. Company

92 Middlesex Road, Unit 4
d. Mailing Address

Tyngsborough	MA	01879
e. City/Town	f. State	g. Zip Code

978-649-9932		norseenvironmental@verizon.net
h. Phone Number	i. Fax Number	j. Email address

5. Is any portion of the proposed project jurisdictional under the Massachusetts Wetlands Protection Act M.G.L. c. 131 §40?

☒ Yes ☐ No

If yes, please file the WPA Form 3 - Notice of Intent with this form

6. General Information

The applicant is proposing to raze a garage, residential dwelling and walkway to construct a new 3-story residential dwelling, walkway, driveway, parking, drainage, transformer and concrete pad, landscaped areas, associated utilities and grading within Land Subject to Coastal Storm Flowage (LSCSF).

7. Project Type Checklist

a. ☐ Single Family Home
b. ☐ Residential Subdivision
c. ☐ Limited Project Driveway Crossing
d. ☐ Commercial/Industrial
e. ☐ Dock/Pier
f. ☐ Utilities
g. ☐ Coastal Engineering Structure
h. ☐ Agriculture – cranberries, forestry
i. ☐ Transportation
j. ☒ Other

8. Property recorded at the Registry of Deeds

Suffolk County District Registry of Deeds — a. County
208 — b. Page Number
60819 — c. Book
d. Certificate # (if registered land)

B. BUFFER ZONE & RESOURCE AREA IMPACTS

Buffer Zone Only - Is the project located only in the Buffer Zone of a resource area protected by the Boston Wetlands Ordinance?

☐ Yes ☐ No

1. Coastal Resource Areas

Resource Area	Resource Area Size	Proposed Alteration*	Proposed Migitation
☐ *Coastal Flood Resilience Zone*	*Square feet*	*Square feet*	*Square feet*

❑ *25-foot Waterfront Area*	Square feet	Square feet	Square feet

2. Inland Resource Areas

Resource Area	**Resource Area Size**	**Proposed Alteration***	**Proposed Migitation**
❑ *Inland Flood Resilience Zone*	Square feet	Square feet	Square feet
❑ *Isolated Wetlands*	Square feet	Square feet	Square feet
❑ *Vernal Pool*	Square feet	Square feet	Square feet
❑ *Vernal Pool Habitat (vernal pool + 100 ft. upland area)*	Square feet	Square feet	Square feet
❑ *25-foot Waterfront Area*	Square feet	Square feet	Square feet

C. OTHER APPLICABLE STANDARDS & REQUIREMENTS

1. Is any portion of the proposed project located in Estimated Habitat of Rare Wildlife as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the Massachusetts Natural Heritage Atlas or go to http://www.mass.gov/dfwele/dfw/nhesp/nhregmap.htm.

   ❑ Yes ☒ No

   If *yes*, the project is subject to Massachusetts Endangered Species Act (MESA) review (321 CMR 10.18).

   A. Submit Supplemental Information for Endangered Species Review

   ☐ Percentage/acreage of property to be altered:

   (1) within wetland Resource Area _____ percentage/acreage

   (2) outside Resource Area _____ percentage/acreage

   ☐ Assessor's Map or right-of-way plan of site

2. Is the proposed project subject to provisions of the Massachusetts Stormwater Management Yes

3. Is any portion of the proposed project within an Area of Critical Environmental Concern?

   ❑ Yes ☒ No

4. Is the proposed project subject to provisions of the Massachusetts Stormwater Management Standards?

   ☒ *Yes. Attach a copy of the Stormwater Checklist & Stormwater Report as required.*
   - ☐ *Applying for a Low Impact Development (LID) site design credits*
   - ☒ *A portion of the site constitutes redevelopment*
   - ☒ *Proprietary BMPs are included in the Stormwater Management System*

   ☐ *No. Check below & include a narrative as to why the project is exempt*
   - ☐ *Single-family house*
   - ☐ *Emergency road repair*
   - ☐ *Small Residential Subdivision (less than or equal to 4 single family houses or less than or equal to 4 units in a multifamily housing projects) with no discharge to Critical Areas*

5. Is the proposed project subject to Boston Water and Sewer Commission Review?

   ☒ Yes ☐ No

D. SIGNATURES AND SUBMITTAL REQUIREMENTS

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the Wetlands Protection Ordinance.

Signature of Applicant — 01/13/2020 — Date

Signature of Property Owner (if different) — Date

Jameen Devaldi — 1/17/20

Signature of Representative (if any) — Date

PID	OWNER	ADDRESSEE	MLG_ADDRESS	MLG_CITYSTATE	MLG_ZIPCODE	LOC_ADDRESS	LOC_CITY	LOC_ZIPCODE
100522000	MC-EB REALTY LLC	MC-EB REALTY LLC	PO BOX 2516	FALL RIVER MA	2722	415 WM F MCCLELLAN HW	EAST BOSTON	2128
100549001	SLUMBER TIME LLC	SLUMBER TIME LLC	1000 MARKET ST BLDG #1	PORTSMOUTH NH	3801	225 WM F MCCLELLAN HW	EAST BOSTON	2128
101789000	RICHARDS JAMES M TS	RICHARDS JAMES M TS	141 ASHLEY ST	EAST BOSTON MA	2128	141 ASHLEY ST	EAST BOSTON	2128
101790000	MUNOZ STEVEN	MUNOZ STEVEN	145 ASHLEY ST	EAST BOSTON MA	2128	145 ASHLEY ST	EAST BOSTON	2128
101790001	COLANTUONI JOSEPH ETAL	COLANTUONI JOSEPH ETAL	145 ASHLEY ST	EAST BOSTON MA	2128	ASHLEY ST	EAST BOSTON	2128
101791000	MUSTACCHIO NICHOLAS R	MUSTACCHIO NICHOLAS R	93 BOARDMAN ST	EAST BOSTON MA	2128	93 BOARDMAN ST	EAST BOSTON	2128
101792000	MERULLO MICHAEL J	MERULLO MICHAEL J	95 BOARDMAN ST	EAST BOSTON MA	2128	95 BOARDMAN ST	EAST BOSTON	2128
101794010	BOARDMAN PLACE CONDO	BOARDMAN PLACE CONDO	99 BOARDMAN ST	EAST BOSTON MA	2128	37 -47 LEYDEN ST	EAST BOSTON	2128
101794012	WANG XIAOPING	WANG XIAOPING	47 LEYDEN ST #1	EAST BOSTON MA	2128	47 LEYDEN ST #1	EAST BOSTON	2128
101794014	NOWOSIADLY CHRISTIAN D	NOWOSIADLY CHRISTIAN D	45 LEYDEN ST #2	E BOSTON MA	2128	45 LEYDEN ST #2	EAST BOSTON	2128
101794016	SEBASTIAO KIMBERLY	SEBASTIAO KIMBERLY	43 LEYDEN ST #3	EAST BOSTON MA	2128	43 LEYDEN ST #3	EAST BOSTON	2128
101794018	FEALHABER SARA	FEALHABER SARA	41 LEYDEN ST #4	EAST BOSTON MA	2128	41 LEYDEN ST #4	EAST BOSTON	2128
101794020	KANTARIA DIVYESH D	KANTARIA DIVYESH D	39 LEYDEN ST #5	E BOSTON MA	2128	39 LEYDEN ST #5	EAST BOSTON	2128
101794022	TIMOTHE PEGGY	TIMOTHE PEGGY	2333 INADALE AVE	DALLAS TX	75228	37 LEYDEN ST #6	EAST BOSTON	2128
101794024	ZALDUMBIDE MICHAEL	ZALDUMBIDE MICHAEL	97 BOARDMAN ST #7	E BOSTON MA	2128	97 BOARDMAN ST #7	EAST BOSTON	2128
101794026	CASTRO MARCO JAMES	CASTRO MARCO JAMES	99 BOARDMAN ST #8	E BOSTON MA	2128	99 BOARDMAN ST #8	EAST BOSTON	2128
101794028	ZHU JIEBO	ZHU JIEBO	101 BOARDMAN ST #9	EAST BOSTON MA	2128	101 BOARDMAN ST #9	EAST BOSTON	2128
101794030	GOURENE VERONIQUE	GOURENE VERONIQUE	103 BOARDMAN ST #10	EAST BOSTON MA	2128	103 BOARDMAN ST #10	EAST BOSTON	2128
101794032	BRASIL ROGER	BRASIL ROGER	105 BOARDMAN ST #11	EAST BOSTON MA	2128	105 BOARDMAN ST #11	EAST BOSTON	2128
101794034	ZOLLA WILLIAM	ZOLLA WILLIAM	107 BOARDMAN ST #12	EAST BOSTON MA	2128	107 BOARDMAN ST #12	EAST BOSTON	2128
101796000	DONNELLY JOHN ETAL	DONNELLY JOHN ETAL	111 BOARDMAN	EAST BOSTON MA	2128	111 BOARDMAN ST	EAST BOSTON	2128
101797000	SKYVIEW CONDO TRUST	SKYVIEW CONDO TRUST	15 LEYDEN ST	EAST BOSTON MA	2128	115 BOARDMAN ST	EAST BOSTON	2128
101797002	BOSTON HOUSING AUTH	BOSTON HOUSING AUTH	52 CHAUNCY ST	BOSTON MA	2111	115 BOARDMAN ST	EAST BOSTON	2128
101797004	BOSTON HOUSING AUTH	BOSTON HOUSING AUTH	52 CHAUNCY ST	BOSTON MA	2111	115 BOARDMAN ST	EAST BOSTON	2128
101797006	BOSTON HOUSING AUTH	BOSTON HOUSING AUTH	52 CHAUNCY ST	BOSTON MA	2111	115 BOARDMAN ST	EAST BOSTON	2128
101797008	BOSTON HOUSING AUTH	BOSTON HOUSING AUTH	52 CHAUNCY ST	BOSTON MA	2111	115 BOARDMAN ST	EAST BOSTON	2128
101797010	BOSTON HOUSING AUTH	BOSTON HOUSING AUTH	52 CHAUNCY ST	BOSTON MA	2111	115 BOARDMAN ST	EAST BOSTON	2128
101797012	BOSTON HOUSING AUTH	BOSTON HOUSING AUTH	52 CHAUNCY ST	BOSTON MA	2111	115 BOARDMAN ST	EAST BOSTON	2128
101798000	OBRIEN MARK P	OBRIEN MARK P	23 LEYDEN ST	EAST BOSTON MA	2128	23 LEYDEN ST	EAST BOSTON	2128
101799000	HS LAND TRUST LLC TS	HS LAND TRUST LLC TS	404 S HUNTINGTON AV	JAMAICA PLAIN MA	2130	29 LEYDEN ST	EAST BOSTON	2128
101800000	MBC VENTURES LLC	MBC VENTURES LLC	20C DELCARMINE ST SUITE 101	WAKEFIELD MA	1880	33 LEYDEN ST	EAST BOSTON	2128
101801000	TUFO MARY ELIZABETH	TUFO MARY ELIZABETH	161 SUMMIT AVE	QUINCY MA	2170	35 LEYDEN ST	EAST BOSTON	2128
101803000	MERULLO MICHAEL J	MERULLO MICHAEL J	20 RAILROAD ST	REVERE MA	2151	49 LEYDEN ST	EAST BOSTON	2128
101804000	GAFANOVICH WOLF	GAFANOVICH WOLF	30 EASTBROOK RD SUITE 404	DEDHAM MA	2026	55 57 LEYDEN ST	EAST BOSTON	2128
101805000	LEWKOWITZ NOAH	LEWKOWITZ NOAH	59 LEYDEN ST	EAST BOSTON MA	2128	59 LEYDEN ST	EAST BOSTON	2128
101805001	WILLIAMS SETH A	WILLIAMS SETH A	61 LEYDEN ST	EAST BOSTON MA	2128	61 LEYDEN ST	EAST BOSTON	2128
101806000	WILLIAMS SETH A	WILLIAMS SETH A	63 65 LEYDEN ST	EAST BOSTON MA	2128	63 65 LEYDEN ST	EAST BOSTON	2128
101979000	LAGRO NANCY M	LAGRO NANCY M	231 GLADSTONE ST	EAST BOSTON MA	2128	231 GLADSTONE ST	EAST BOSTON	2128
101981000	CATALDO DIANE T	CATALDO DIANE T	235 GLADSTONE ST	EAST BOSTON MA	2128	235 GLADSTONE ST	EAST BOSTON	2128
101983000	GLADSTONE STREET LLC	GLADSTONE STREET LLC	1222 BENNINGTON ST	EAST BOSTON MA	2128	GLADSTONE ST	EAST BOSTON	2128
101984000	GLADSTONE STREET LLC	GLADSTONE STREET LLC	1222 BENNINGTON ST	EAST BOSTON MA	2128	GLADSTONE ST	EAST BOSTON	2128
101985000	GLADSTONE STREET LLC	GLADSTONE STREET LLC	1222 BENNINGTON ST	EAST BOSTON MA	2128	GLADSTONE ST	EAST BOSTON	2128
101986000	GLADSTONE STREET LLC	GLADSTONE STREET LLC	1222 BENNINGTON ST	EAST BOSTON MA	2128	GLADSTONE ST	EAST BOSTON	2128
101987000	GLADSTONE STREET LLC	GLADSTONE STREET LLC	1222 BENNINGTON ST	EAST BOSTON MA	2128	GLADSTONE ST	EAST BOSTON	2128
101988000	GLADSTONE STREET LLC	GLADSTONE STREET LLC	1222 BENNINGTON ST	EAST BOSTON MA	2128	GLADSTONE ST	EAST BOSTON	2128
101989000	GLADSTONE STREET LLC	GLADSTONE STREET LLC	1222 BENNINGTON ST	EAST BOSTON MA	2128	GLADSTONE ST	EAST BOSTON	2128
102038000	CONTRADA ANTONIO	CONTRADA ANTONIO	60 LEYDEN ST	EAST BOSTON MA	2128	LEYDEN ST	EAST BOSTON	2128
102039000	CONTRADA ANTONIO J	CONTRADA ANTONIO J	60 LEYDEN ST	EAST BOSTON MA	2128	60 LEYDEN ST	EAST BOSTON	2128
102040000	BREEDS HILL TOWNHOUSE	BREEDS HILL TOWNHOUSE	58 LEYDEN	EAST BOSTON MA	2128	58 38 LEYDEN ST	EAST BOSTON	2128
102040002	CORTESE SALVATORE TS	CORTESE SALVATORE TS	56 LEYDEN ST #B4	EAST BOSTON MA	2128	56 LEYDEN ST #B4	EAST BOSTON	2128
102040004	BAHLOUL ISSAM M TS	BAHLOUL ISSAM M TS	54 LEYDEN ST #B3	EAST BOSTON MA	2128	54 LEYDEN ST #B3	EAST BOSTON	2128
102040006	NUMIC SEDIN	NUMIC SEDIN	52 LEYDEN ST #B2	E BOSTON MA	2128	52 LEYDEN ST #B2	EAST BOSTON	2128

102040008	LETCH RICHARD A JR	LETCH RICHARD A JR	50 LEYDEN ST #B1	E BOSTON MA	2128	50	LEYDEN ST #B1	EAST BOSTON	2128
102040010	DONN MICHAEL A	DONN MICHAEL A	48 LEYDEN ST #A6	EAST BOSTON MA	2128	48	LEYDEN ST #A6	EAST BOSTON	2128
102040012	CHIU ELLEN	CHIU ELLEN	46 LEYDEN ST #A5	EAST BOSTON MA	2128	46	LEYDEN ST #A5	EAST BOSTON	2128
102040014	KEARNEY JAMES A	KEARNEY JAMES A	44 LEYDEN ST #A4	EAST BOSTON MA	2128	44	LEYDEN ST #A4	EAST BOSTON	2128
102040016	DEROSA HEIDI	DEROSA HEIDI	42 LEYDEN ST #A3	EAST BOSTON MA	2128	42	LEYDEN ST #A3	EAST BOSTON	2128
102040018	SIEGEL MORTON	SIEGEL MORTON	PO BOX 175	STOUGHTON MA	2072	40	LEYDEN ST #A2	EAST BOSTON	2128
102040020	MENDOZA MARYELLEN R	MENDOZA MARYELLEN R	38 LEYDON ST #A1	E BOSTON MA	2128	38	LEYDEN ST #A1	EAST BOSTON	2128
102046000	NOYES PROVIDENCE	NOYES PROVIDENCE	36 LEYDEN ST	EAST BOSTON MA	2128	36	LEYDEN ST	EAST BOSTON	2128
102047000	ABBOTT PAUL CARMEN	ABBOTT PAUL CARMEN	30 LEYDEN ST	EAST BOSTON MA	2128	30	LEYDEN ST	EAST BOSTON	2128
102048000	MAE NORMA	MAE NORMA	26 LEYDEN ST	EAST BOSTON MA	2128	26	LEYDEN ST	EAST BOSTON	2128
102049000	SUAREZ CARMEN D	SUAREZ CARMEN D	62 FLORITE DR	FRAMINGHAM MA	1701	22	LEYDEN ST	EAST BOSTON	2128
102060000	GLADSTONE STREET LLC	GLADSTONE STREET LLC	1222 BENNINGTON ST	EAST BOSTON MA	2128		GLADSTONE ST	EAST BOSTON	2128

AFFIDAVIT OF SERVICE

Under the Massachusetts Wetlands Protection Act

(to be submitted to the Massachusetts Department of Environmental Protection and the Conservation Commission when filing a Notice of Intent)

I, Steven Eriksen, hereby certify to the best of my knowledge, under the pains and penalties of perjury that on January 21, 2020 I gave notification to the abutters in compliance with the second paragraph of Massachusetts General Law Chapter 131, Section 40, and the DEP Guide to Abutter Notification dated April 8, 1994, in connection with the following matter:

A Notice of Intent filed under the Massachusetts Wetlands Protection Act by 35 Leyden Street LLC with the Boston Conservation Commission on January 21, 2020 for property located at 35 Leyden Street – East Boston Ward 01 Parcel 01801000.

The form of the notification, and a list of the abutters to whom it was given and their addressees, are attached to this Affidavit of Service.

	1-21-20
Name	Date

NORSE ENVIRONMENTAL SERVICES, INC.
92 Middlesex Road, Unit 4
Tyngsboro, MA 01879
TEL. (978) 649-9932 • FAX (978) 649-7582
Website: www.norseenvironmental.com

Revised
Notice of Intent Report

For

35 Leyden Street
East Boston, MA

Prepared For

35 Leyden Street LLC
One City Hall Mall – Suite 2
Medford, MA 02155

Prepared By

Norse Environmental Services, Inc.
92 Middlesex Road, Unit 4
Tyngsborough, MA 01879

January 2020

Narrative

The applicant is proposing to raze a (3)-story residential dwelling, garage, and walkway to construct a new (3)-story, (6)-family residential dwelling, walkway, driveway, parking, drainage, concrete pad, transformer, landscaped areas, associated utilities and grading within Land Subject to Coastal Storm Flowage (LSCSF) per 310 CMR 10.04 and the Ordinance Protecting Local Wetlands and Promoting Climate Change Adaptation in the City of Boston. The site will be serviced by city sewer and water. Erosion controls will be set and maintained for the duration of the project.

Site Description

The parcel consists of 8,125 +/- s.f. of land located between Leyden and Boardman Street in East Boston, MA. The lot is located across the street from the Hilton Garden Inn on Boardman Street. An existing (3)-story residential dwelling, balcony, porch, deck, garage, concrete walkway, driveway, retaining wall, fence and lawn area are located on the parcel. The existing dwelling sits on a high point at elevation 28.55 ft. on Leyden Street and the topography drops to elevation 14.81 ft. on Boardman Street.

Soils

The Web Soil Survey maps this site as Urban land, wet substratum. Urban land, wet substratum consists of areas where 85 percent of the land surface is covered by structures or impervious surfaces such as buildings, pavement, industrial sites, and railroad yards, and where the underlying soil is dominated by fill material overlying wet soils. The underlying wet soils may include Freetown, Saco, Scarboro, and Swansea. A water table may be present in the lower substratum.

Resource Area

Approximately 4,705 +/- s.f. of the site is located within LSCSF. 310 CMR 10.04 Land Subject to Coastal Storm Flowage means, "land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater". According to the FEMA Flood Insurance Rate Map the portion of the site in LSCSF is designated as Zone AE, elevation 10 ft., or 16.46 ft. Boston City Base (BCB).

310 CMR 10.00 The Massachusetts Wetland Protection Act presently has no performance standards for work within LSCSF. However, the Commonwealth of Massachusetts, "Applying the Massachusetts Coastal Wetlands Regulations" provides guidance for work within LSCSF.

The project proposes to disturb 4,705 +/- s.f. in LSCSF. Per the Massachusetts Building Code section 780 CMR 120G Flood-Resistant Construction and Construction in Coastal Dunes, requires construction at or above the Base Food Elevation. The first-floor elevation is proposed at 29.0 +/- ft. (BCB) and the living area will be 12.54 ft. above the base flood elevation (see enclosed Climate Resiliency Checklist).

The garage, existing dwelling, driveway and walkway or 658 +/- s.f. is located within LSCSF. Presently the site does not provide any infiltration or drainage.

The applicant is proposing a portion of the new dwelling or 1,474 +/- s.f. within LSCSF. The total proposed impervious area within LSCSF is 3,583 +/- s.f. or 18% increase in impervious area. The applicant is proposing to fill 940.95+/- c.f. (34.85 +/- c.y.) within LSCSF.

As mitigation, the applicant is proposing to improve the existing conditions by infiltrating the roof top runoff, garage under parking, exterior parking and driveway. The applicant is proposing 682 +/- s.f. or 8% of green space as lawn area.

Climate Change Resilience

The project designed has implemented and integrated climate change and adaptation planning considerations in the project design. These considerations include sea level rise, increase heat waves, extreme precipitation events, stormwaer runoff, changing precipitation patterns and costal and stormwater flooding. See the attached City of Boston Climate Change Resiliency Checklist.

Sea Level Rise

The propose (3)-story residential dwelling, first-floor elevation is proposed at 29.0 +/- ft. (BCB) and the living area will be 12.54 ft. above the base flood elevation. All electrical and mechanical systems are located well above the base flood elevation.

Increase Heat Waves

The applicant is proposing 682 +/- s.f. or 8% of green space as lawn area. The design provides for operable, large windows for increased ventilation and cooling when appropriate.

Extreme Precipitation Events

Stormwater

The project has been designed to meet the stormwater standards to the maximum extent practicable. The applicant has incorporated infiltration chambers, trench drain, catch basin and oil and gas separators and oil trap into the design. One hundred percent of the roof runoff will be captured and directed into the infiltration chambers at the rear of the dwelling. The garage under parking, exterior parking, driveway and other impervious surfaces will be collected by either a catch basin or trench drain, treated by oil and gas separator or oil trap and directed into the infiltration chambers. Larger less frequent storms will overflow to Boardman Street city drainage. Backwater valves are provided for all drainage and sewer lines.

Straw wattles for erosion controls will be installed around the perimeter of the site prior to construction. The project site will be maintained and there will be no discharge of any pollutants during construction (see enclosed Operation and Maintenance Plan).

Estimated and/or Priority Habitat

There is no Estimated and/or Priority Habitat, or Estimated Habitat for Rare or Endangered Species located at the proposed project according to MassGIS (map enclosed).

Area of Critical Environmental Concern

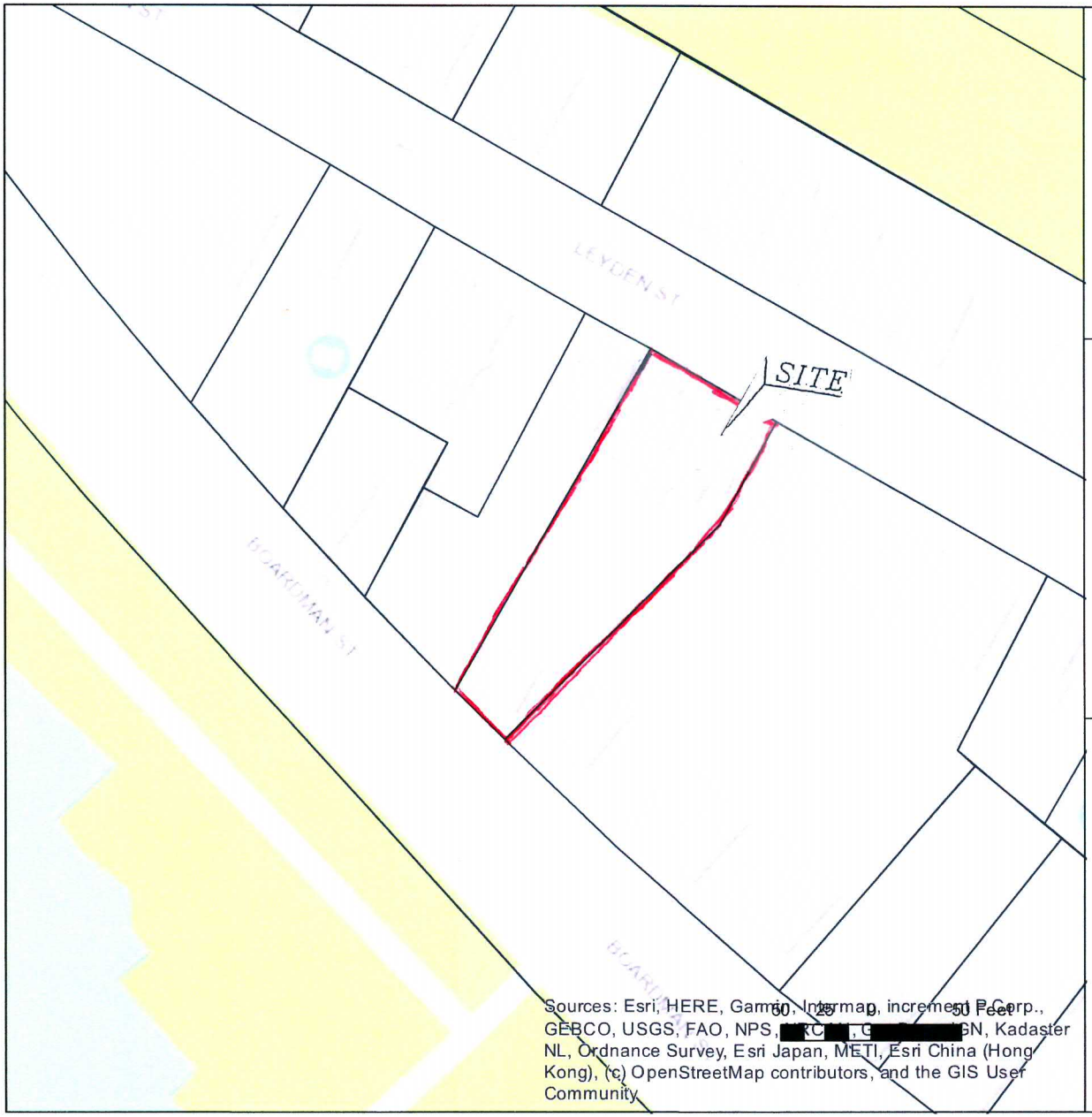
The project is not located within an Area of Critical Environmental Concern (ACEC) according to the MassGIS (map enclosed).

Outstanding Resource Water

The project is not located within an Outstanding Resource Water (ORW).

35 Leyden Street

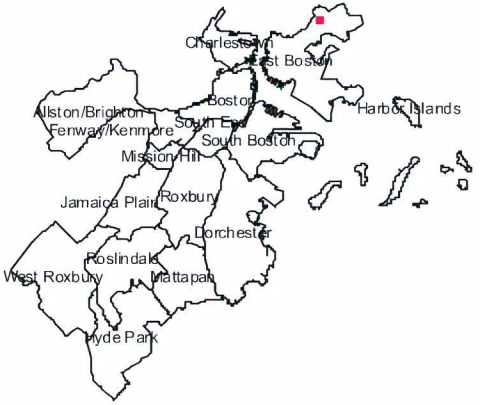
January 7, 2020

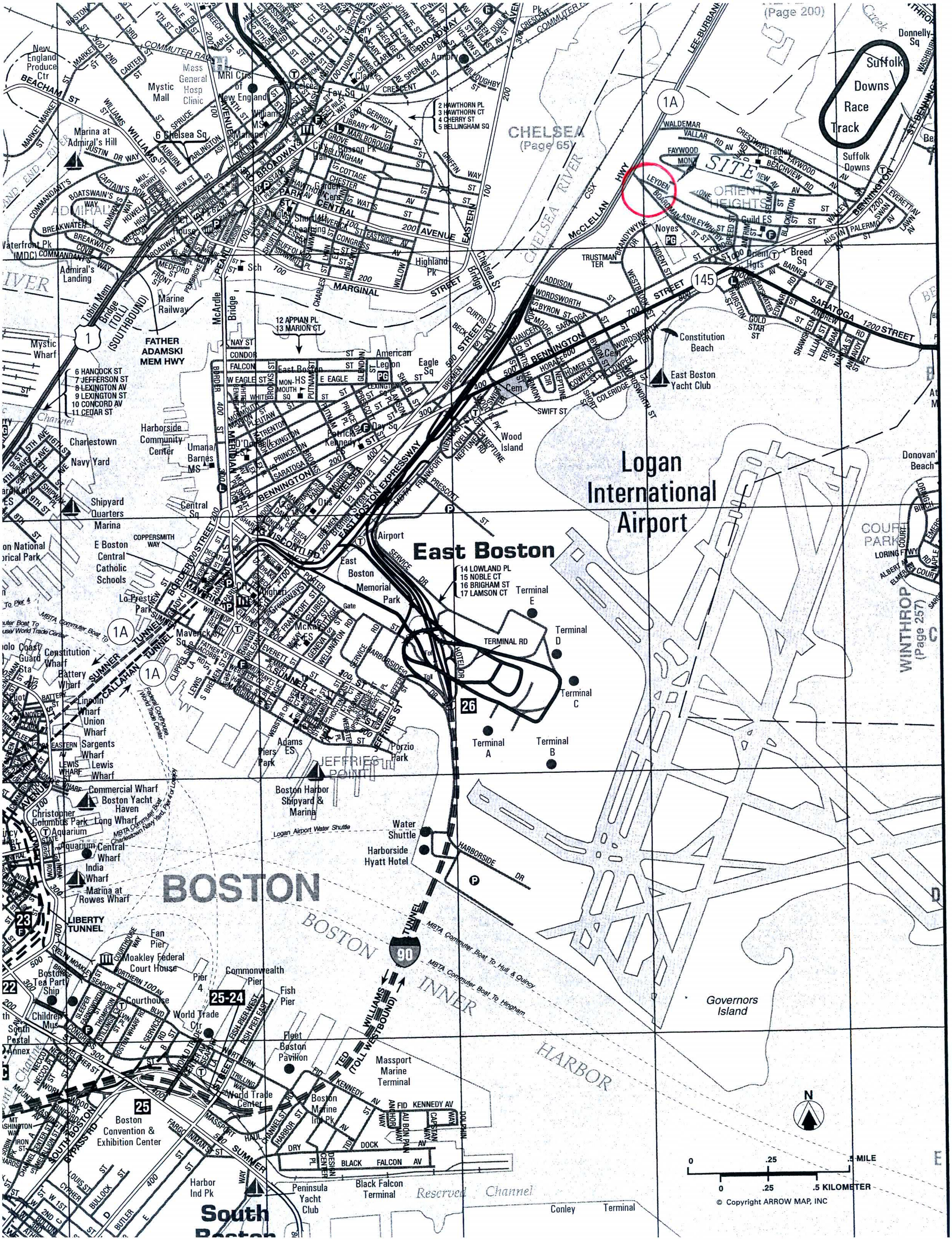


Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, [redacted], GN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

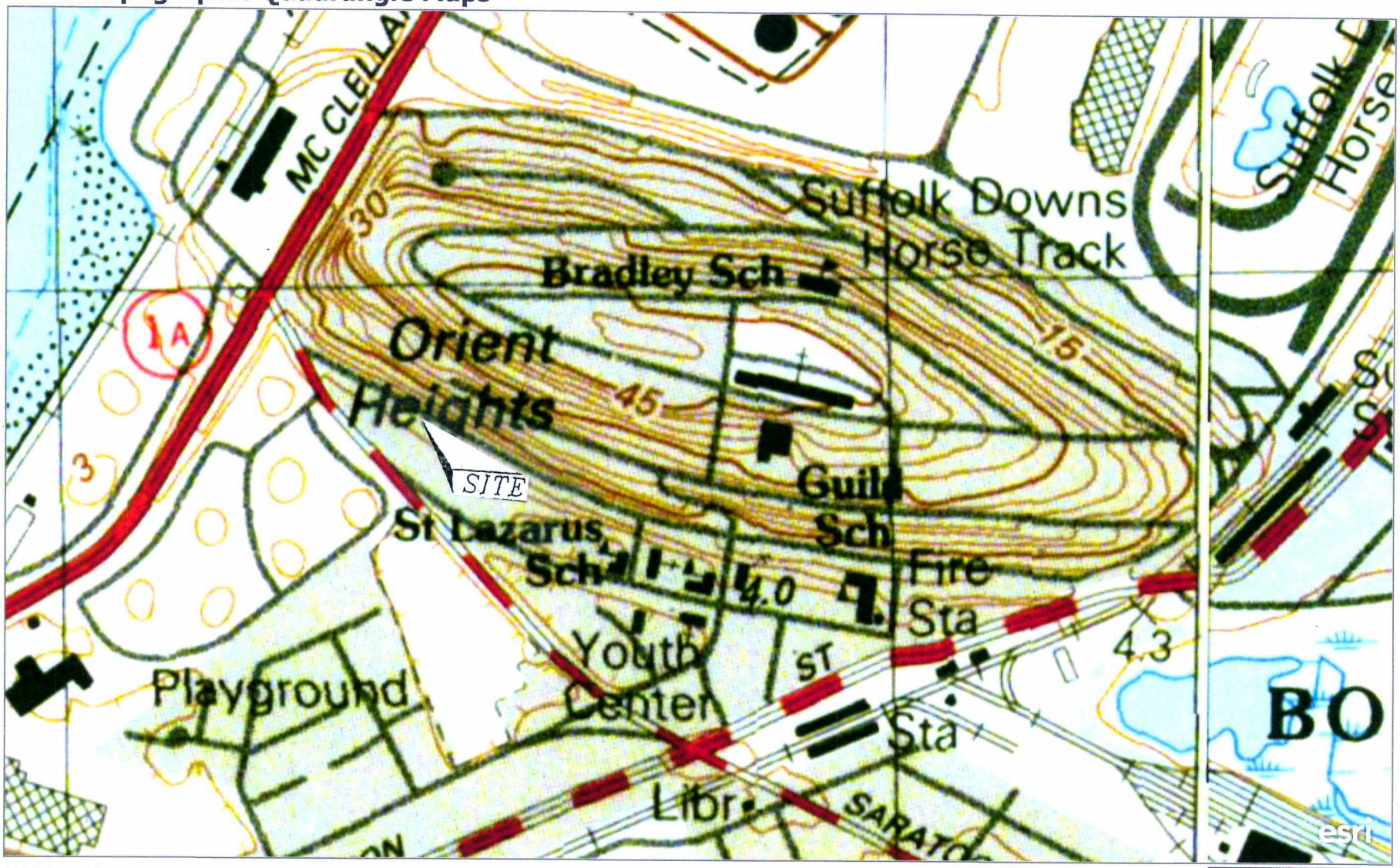
The City of Boston makes no claims, no representations, and no warranties, expressed or implied, concerning the validity (expressed or implied), the reliability, or the accuracy of the GIS data and GIS data products furnished by the City, including the implied validity of any uses of such data. The use of this data, in any such manner, shall not supercede any federal, state or local laws or regulations.





(Page 200)
Suffolk Downs Race Track
Donnelly Sq
CHELSEA (Page 65)
CHELSEA RIVER
SITE
ORIENT HEIGHTS
McCLELLAN HWY
1A
145
LEYDEN
BOARDMAN
BENNINGTON
SARATOGA
1200 STREET
Constitution Beach
East Boston Yacht Club
Wood Island
Logan International Airport
East Boston
East Boston Memorial Park
14 LOWLAND PL
15 NOBLE CT
16 BRIGHAM ST
17 LAMSON CT
Terminal E
Terminal D
Terminal C
Terminal B
Terminal A
TERMINAL RD
26
Harborside Hyatt Hotel
Water Shuttle
HARBORSIDE DR
Governors Island
BOSTON
BOSTON INNER HARBOR
90
TED WILLIAMS TUNNEL (TOLL WESTBOUND)
MBTA Commuter Boat To Hull & Quincy
MBTA Commuter Boat To Hingham
Logan Airport Water Shuttle
JEFFRIES POINT
Boston Harbor Shipyard & Marina
Piers Park
Porzio Park
Adams ES
SUMNER TUNNEL
CALLAHAN TUNNEL
Maverick Sq
Central Sq
Mystic Mall
Mass General Hosp Clinic
Marina at Admiral's Hill
ADMIRAL'S HILL
Waterfront Pk (MDC)
Admiral's Landing
Tobin Mem Bridge (TOLL) (SOUTHBOUND)
1
FATHER ADAMSKI MEM HWY
Mystic Wharf
6 HANCOCK ST
7 JEFFERSON ST
8 LEXINGTON AV
9 LEXINGTON ST
10 CONCORD AV
11 CEDAR ST
Charlestown Navy Yard
Shipyard Quarters Marina
Harborside Community Center
McArdle Bridge
Chelsea St Bridge
Marine Railway
12 APPIAN PL
13 MARION CT
EAST BOSTON EXPRESSWAY
E Boston Central Catholic Schools
Constitution Wharf
Battery Wharf
Lincoln Wharf
Union Wharf
Sargents Wharf
Lewis Wharf
Commercial Wharf
Boston Yacht Haven
Christopher Columbus Park
Long Wharf
Aquarium
Central Wharf
India Wharf
Marina at Rowes Wharf
LIBERTY TUNNEL
Moakley Federal Court House
Commonwealth Pier
Fish Pier
Boston Tea Party Ship
Children's Mus
Courthouse
World Trade Ctr
Fleet Boston Pavilion
Massport Marine Terminal
Boston Marine Ind Pk
Boston Convention & Exhibition Center
World Trade Center
Harbor Ind Pk
Peninsula Yacht Club
Black Falcon Terminal
Reserved Channel
Conley Terminal
South Boston
25-24
25
23
22
Donovan's Beach
COURT PARK
WINTHROP (Page 257)
N
0 .25 .5 MILE
0 .25 .5 KILOMETER
© Copyright ARROW MAP, INC

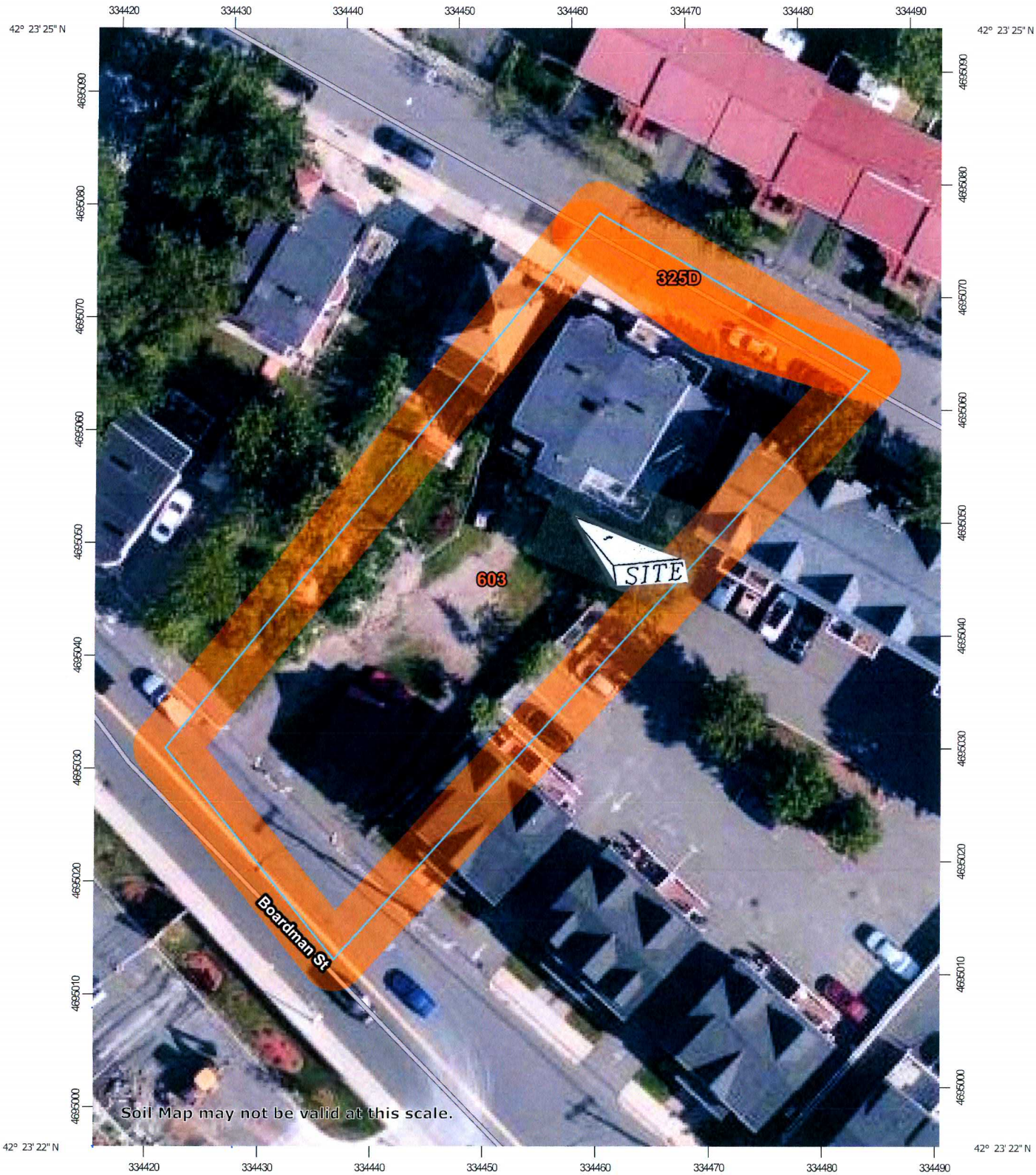
USGS Topographic Quadrangle Maps



USGS 1:25,000 Topographic Maps for Massachusetts

City of Boston, MassGIS, Esri Canada, Esri, HERE, Garmin, INCREMENT P, Intermap, USGS, METI/NASA, EPA, USDA | USGS, MassGIS

Soil Map—Norfolk and Suffolk Counties, Massachusetts
(35 Leyden Street - East Boston)



Map Scale: 1:483 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 5 10 20 30

Feet
0 20 40 80 120

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

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

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

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

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

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

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

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 15, Sep 12, 2019

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

Date(s) aerial images were photographed: Sep 11, 2019—Oct 5, 2019

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
325D	Newport silt loam, 15 to 25 percent slopes	0.0	3.7%
603	Urban land, wet substratum, 0 to 3 percent slopes	0.4	96.3%
Totals for Area of Interest		**0.4**	**100.0%**

National Flood Hazard Layer FIRMette

FEMA

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) Zone A, V, A99
- With BFE or Depth Zone AE, AO, AH, VE, AR
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
- Future Conditions 1% Annual Chance Flood Hazard Zone X
- Area with Reduced Flood Risk due to Levee. See Notes. Zone X
- Area with Flood Risk due to Levee Zone D

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard Zone X
- Effective LOMRs
- Area of Undetermined Flood Hazard Zone D

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 / 17.5 Cross Sections with 1% Annual Chance Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 1/8/2020 at 12:01:01 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.


OLIVER: MassGIS's Online Mapping Tool
OLIVER Updates
Leyden Street
Leyden Street
SITE
Boardman Street
Gladstone Street
Leyden Street
Leyden Street
10 m
50 ft
Scale = 1:1,128
240,209.07m 904,562.54m
MassGIS Topographic Features Basemap
0 m
Basemaps
Available Data Layers
Search data layers
Tiled Layers
State Facilities
Census 1990
Census 2000
Census 2010
Coastal and Marine Features
Conservation / Recreation
Areas of Critical Environmental
Community Preservation Act
Natural Heritage Data
BioMap2
NHESP Ecoregions
NHESP Certified Vernal Poc
NHESP Estimated Habitats
Active Data Layers
Check all
Uncheck all
Potential Vernal Pools
NHESP Priority Habitats of R
NHESP Estimated Habitats
NHESP Certified Vernal Poo
Tax Parcels for Query
Detailed Features
Tax Parcels for Display
Legend
Potential Vernal Pools
NHESP Priority Habitats of Rare Specie
NHESP Estimated Habitats of Rare Wil
NHESP Certified Vernal Pools
Tax Parcels for Query

Boston Planning & Development Agency
Climate Resiliency Report Summary

boston planning & development agency

Submitted: 01/16/2020 17:00:05

A.1 - Project Information

Project Name:	35 Leyden St			
Project Address:	35 Leyden St, East Boston, MA, 02128			
Filing Type:	Initial (PNF, EPNF, NPC or other substantial filing)			
Filing Contact:	ERIC EDWARD ZACHRISON	context	eric.e.zachrison@gmail.com	3127809456
Is MEPA approval required?	No	MEPA date:		

A.2 - Project Team

Owner / Developer:	Fernando Dalfior and Brad Cangiamila
Architect:	context, llc
Engineer:	Peter Nolan & Associates, LLC
Sustainability / LEED:	N/A
Permitting:	N/A
Construction Management:	N/A

A.3 - Project Description and Design Conditions

List the principal Building Uses:	Residential with Parking
List the First Floor Uses:	Parking and Storage
List any Critical Site Infrastructure and or Building Uses:	None

Site and Building:

Site Area (SF):	8125	Building Area (SF):	17200
Building Height (Ft):	42	Building Height (Stories):	3
Existing Site Elevation – Low (Ft BCB):	14.66	Existing Site Elevation – High (Ft BCB):	33.75
Proposed Site Elevation – Low (Ft BCB):	14.4	Proposed Site Elevation – High (Ft BCB):	28.9
Proposed First Floor Elevation (Ft BCB):	29	Below grade spaces/levels (#):	1

Article 37 Green Building:

Boston Planning & Development Agency

Climate Resiliency Report Summary

boston planning & development agency

LEED Version - Rating System:	N/A	LEED Certification:	No
Proposed LEED rating:		Proposed LEED point score (Pts.):	N/A

Building Envelope:

When reporting R values, differentiate between R discontinuous and R continuous. For example, use "R13" to show R13 discontinuous and use R10c.i. to show R10 continuous. When reporting U value, report total assembly U value including supports and structural elements.

Roof:	R49	Exposed Floor :	R40
Foundation Wall:	r7.5ci	Slab Edge (at or below grade):	r7.5ci

Vertical Above-grade Assemblies (%'s are of total vertical area and together should total 100%):

Area of Opaque Curtain Wall & Spandrel Assembly:	0	Wall & Spandrel Assembly Value:	N/A
Area of Framed & Insulated / Standard Wall:	83	Wall Value:	R19+7.5ci
Area of Vision Window:	26	Window Glazing Assembly Value:	U.30
		Window Glazing SHGC:	.30
Area of Doors:	1	Door Assembly Value :	0.2

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	HERS Rating		
Annual Electric (kWh):		Peak Electric (kW):	
Annual Heating (MMbtu/hr):		Peak Heating (MMbtu):	
Annual Cooling (Tons/hr):		Peak Cooling (Tons):	
Energy Use - Below ASHRAE 90.1 - 2013 (%):		Have the local utilities reviewed the building energy performance?:	
Energy Use - Below Mass. Code (%):		Energy Use Intensity (kBtu/SF):	

Back-up / Emergency Power System

Electrical Generation Output (kW):	0	Number of Power Units:	0
System Type (kW):	NA	Fuel Source:	NA

Emergency and Critical System Loads (in the event of a service interruption)

Electric (kW):	0	Heating (MMbtu/hr):	
		Cooling (Tons/hr):	

B – Greenhouse Gas Reduction and Net Zero / Net Positive Carbon Building Performance

Reducing greenhouse gas emissions is critical to avoiding more extreme climate change conditions. To achieve the City's goal of carbon-neutrality by 2050 the performance of new buildings will need to progressively improve to carbon net zero and net positive.

B.1 – GHG Emissions - Design Conditions

For this filing - Annual Building GHG Emissions (Tons):

For this filing - describe how building energy performance has been integrated into project planning, design, and engineering and any supporting analysis or modeling:

The building was designed with a thermally insulated envelope and efficient systems

Describe building specific passive energy efficiency measures including orientation, massing, building envelop, and systems:

large operable windows are used for ventilation and to enhance natural ventilation

Describe building specific active energy efficiency measures including high performance equipment, controls, fixtures, and systems:

NA

Describe building specific load reduction strategies including on-site renewable energy, clean energy, and storage systems:

NA

Describe any area or district scale emission reduction strategies including renewable energy, central energy plants, distributed energy systems, and smart grid infrastructure:

NA

Describe any energy efficiency assistance or support provided or to be provided to the project:

Hers rating and review

B.2 - GHG Reduction - Adaptation Strategies

Describe how the building and its systems will evolve to further reduce GHG emissions and achieve annual carbon net zero and net positive performance (e.g. added efficiency measures, renewable energy, energy storage, etc.) and the timeline for meeting that goal (by 2050):

no changes are anticipated

C - Extreme Heat Events

Annual average temperature in Boston increased by about 2˚F in the past hundred years and will continue to rise due to climate change. By the end of the century, the average annual temperature could be 56° (compared to 46° now) and the number of days above 90° (currently about 10 a year) could rise to 90.

C.1 – Extreme Heat - Design Conditions

Temperature Range - Low (Deg.):	9	Temperature Range - High (Deg.):	88
Annual Heating Degree Days:	5634	Annual Cooling Degree Days	899

What Extreme Heat Event characteristics will be / have been used for project planning

Days - Above 90° (#):		Days - Above 100° (#):	
Number of Heatwaves / Year (#):		Average Duration of Heatwave (Days):	

Describe all building and site measures to reduce heat-island effect at the site and in the surrounding area:

The building footprint was minimized and Leyden st. yard will be grass. fourth floor deck will use light colored

C.2 - Extreme Heat – Adaptation Strategies

Describe how the building and its systems will be adapted to efficiently manage future higher average temperatures, higher extreme temperatures, additional annual heatwaves, and longer heatwaves:

large windows will allow greater ventilation and heat release

Describe all mechanical and non-mechanical strategies that will support building functionality and use during extended interruptions of utility services and infrastructure including proposed and future adaptations:

None

D - Extreme Precipitation Events

From 1958 to 2010, there was a 70 percent increase in the amount of precipitation that fell on the days with the heaviest precipitation. Currently, the 10-Year, 24-Hour Design Storm precipitation level is 5.25”. There is a significant probability that

this will increase to at least 6" by the end of the century. Additionally, fewer, larger storms are likely to be accompanied by more frequent droughts.

D.1 – Extreme Precipitation - Design Conditions

What is the project design precipitation level? (In. / 24 Hours)	5.55

Describe all building and site measures for reducing storm water run-off:

Storm Tech System proposed, storing in crushed stone

D.2 - Extreme Precipitation - Adaptation Strategies

Describe how site and building systems will be adapted to efficiently accommodate future more significant rain events (e.g. rainwater harvesting, on-site storm water retention, bio swales, green roofs):

the Leyden setback and site setbacks are permeable

E – Sea Level Rise and Storms

Under any plausible greenhouse gas emissions scenario, the sea level in Boston will continue to rise throughout the century. This will increase the number of buildings in Boston susceptible to coastal flooding and the likely frequency of flooding for those already in the floodplain.

Is any portion of the site in a FEMA Special Flood Hazard Area?	Yes	What Zone:	AE
What is the current FEMA SFHA Zone Base Flood Elevation for the site (Ft BCB)?			10
Is any portion of the site in the BPDA Sea Level Rise Flood Hazard Area (see SLR-FHA online map)?	Yes		

If you answered YES to either of the above questions, please complete the following questions.
Otherwise you have completed the questionnaire; thank you!

E.1 – Sea Level Rise and Storms – Design Conditions

Proposed projects should identify immediate and future adaptation strategies for managing the flooding scenario represented by the Sea Level Rise Flood Hazard Area (SLR-FHA), which includes 3.2' of sea level rise above 2013 tide levels, an additional 2.5" to account for subsidence, and the 1% Annual Chance Flood. After using the SLR-FHA to identify a project's Sea Level Rise Base Flood Elevation, proponents should calculate the Sea Level Rise Design Flood Elevation by

adding 12" of freeboard for buildings, and 24" of freeboard for critical facilities and infrastructure and any ground floor residential units.

What is the Sea Level Rise - Base Flood Elevation for the site (Ft BCB)?	16.46		
What is the Sea Level Rise - Design Flood Elevation for the site (Ft BCB)?	19.5	First Floor Elevation (Ft BCB):	29.0
What are the Site Elevations at Building (Ft BCB)?	Varies 15.2-28.9	What is the Accessible Route Elevation (Ft BCB)?	16.0

Describe site design strategies for adapting to sea level rise including building access during flood events, elevated site areas, hard and soft barriers, wave / velocity breaks, storm water systems, utility services, etc.:

N/A

Describe how the proposed Building Design Flood Elevation will be achieved including dry / wet flood proofing, critical systems protection, utility service protection, temporary flood barriers, waste and drain water back flow prevention, etc.:

All finished spaces and utility equipment will be above the FEMA base flood elevation. Backflow preventers will be provided on sewer and drain lines

Describe how occupants might shelter in place during a flooding event including any emergency power, water, and waste water provisions and the expected availability of any such measures:

Residents can shelter in place inside their units, no emergency services are provided.

Describe any strategies that would support rapid recovery after a weather event:

None

E.2 – Sea Level Rise and Storms – Adaptation Strategies

Describe future site design and or infrastructure adaptation strategies for responding to sea level rise including future elevating of site areas and access routes, barriers, wave / velocity breaks, storm water systems, utility services, etc.:

No Changes Anticipated

Describe future building adaptation strategies for raising the Sea Level Rise Design Flood Elevation and further protecting critical systems, including permanent and temporary measures:

No Changes Anticipated

Thank you for completing the Boston Climate Change Checklist!

For questions or comments about this checklist or Climate Change best practices, please contact:
John.Dalzell@boston.gov

OPERATION AND MAINTENANCE PLAN
37 LEYDEN STREET
EAST BOSTON, MASSACHUSETTS

7-Nov-19

Prepared by Spruhan Engineering, P.C.

The proposed project includes stormwater runoff controls associated with the development of a three story building (6 units) that will require continued maintenance by the proponent and then homeowner(s) upon sale. The major components associated with maintenance needs are the trench drain, manhole, catch basin and infiltration system. These will need to be inspected and cleaned periodically as noted below. Cleaning of these structures shall be contracted by the proponent and then homeowner(s) upon sale via a specialty contractor with hydraulic cleaning ability. In addition to the facilities noted below, the homeowners should maintain any roof gutters/drains on a regular basis to prevent clogging and carry over of debris into the drainage systems. The property owner should also provide for the periodic cleaning of the driveway areas to remove large debris, grass cuttings, and sand particles prior to discharge through the trench drains. The following outlines the major maintenance issues associated with the project:

Maintenance Responsibilities:

The maintenance of the stormwater runoff controls is the responsibility of the proponent until the property is sold; after any sale, the responsibility shifts to the homeowner(s) or successive homeowner(s).

The actual work to inspect and clean the trench drain, catch basin, manhole sump, and infiltration systems shall be subcontracted to a company that specializes in the cleaning of storm drainage facilities.

Trench Drains, Catch basin & Manhole Sumps:

The trench drains and manhole sump shall be inspected after completion of construction to assure that all debris has been removed and construction material will not cause the system to clog. This inspection should also include the drain lines within the system.

The trench drains shall be inspected twice per year and after significant storm events and all debris removed. The manhole sump should be inspected twice per year; if depth of sediment in sumps exceeds 50% capacity, sediment must be removed. The structures should be cleaned with a hydraulic vacuum system at least once per year to remove accumulated solids and debris. At the same time, the drain lines should be inspected and cleaned, if needed. Assuming the structures and drain lines are maintained and cleaning is in accordance with normal standards, the solids removal efficiency should be as required to prevent carry over of large solids to the infiltration systems.

Infiltration System:

The storage/infiltration system should be inspected after completion of construction to assure that all debris has been removed and construction material will not cause the systems to clog.

The storage/infiltration system should be inspected two times over the first year of operation to determine the level of required maintenance. This inspection should be performed by the proponent's/homeowner's engineer. As a preliminary schedule, the system piping should be cleaned once a year to remove any accumulated sediments and sediments in the infiltration chambers should be removed when they reach two inches in depth.

Other Activities:

Pavement Sweeping: The paved areas shall be swept twice per year, once in the spring right after snowmelt, and once in the fall.

Lawn and Landscape Repairs: The lawn and landscaped areas on the site shall be inspected in the spring and fall of each year and the areas shall be restabilized as needed by seeding as lawn or mulching of landscaped areas.

OPERATION & MAINTENANCE PLAN
LOG SHEET
37 LEYDEN STREET
EAST BOSTON, MASSACHUSETTS

INSPECTION REPORT:

Inspection Firm: _____

Inspector's Name:_____Date:_____

Components Inspected:_____

_____

Signed: _____

SYSTEM MAINTENANCE:

Maintenance Firm:_____Date:_____

Trench Drain Cleaned: Yes _____No_____Comments:_____

_____

Manhole Sump Cleaned: Yes_____No_____Comments:_____

_____

Catch Basin: Yes_____No_____Comments:_____

_____

Drain Lines Inspected: Yes_____No_____Comments:_____

_____

Infiltration System Cleaned: Yes_____No_____Comments:_____

_____

Estimate of Material Removed: _____

Other Comments: _____

_____

Signed: _____

NORSE ENVIRONMENTAL SERVICES, INC.
92 Middlesex Road, Unit 4
Tyngsboro, MA 01879
TEL. (978) 649-9932 • FAX (978) 649-7582
Website: www.norseenvironmental.com

OIL SPILL PREVENTION, CONTROL & COUNTERMEASURE PLAN

35 LEYDEN STREET
EAST BOSTON, MA

35 LEYDEN Street LLC
One City Hall Mall – Suite 2
Medford, MA 02155

Prepared By:
Norse Environmental Services
92 Middlesex Road, Suite 4
Tyngsboro, MA 01879
978-649-9932

January 2020

Introduction

The purpose of the Oil Spill Prevention, Control and Countermeasure Plan is to prepare our subcontractors and employees for emergency situations which may occur. Typical emergencies for which we need to be prepared include spills and leaks, personal injuries, fires, weather-related emergencies and other situations which require operational response.

This plan has been developed because we recognize that even the safest operations can experience accidents and emergencies. We care about our employees, contractors, visitors, and the community in which we operate and aspire to be prepared to mitigate the effects of any emergency, should one arise.

The content of the Oil Spill Prevention, Control and Countermeasure Plan includes:

- Descriptions of expected emergencies, their hazards, and the recommended plan of action to combat their effects.
- Procedures for reporting employee injuries, motor vehicle accidents, spills, product contamination or any other emergencies which may occur.
- Emergency contact phone numbers.
- Decision making infrastructure with defined action steps that can be executed quickly.

Plan Maintenance and Distribution

a) The plan will be reviewed annually or more frequently as required. Copies of the Oil Spill Prevention, Control and Countermeasure Plan will be distributed as follows:

- All Management
- Field Managers
- Office Employees

b) Designated recipients of the Oil Spill Prevention, Control and Countermeasure Plan will be offered training in the plan, and their respective responsibilities, at least annually.

c) Requests for changes to the Oil Spill Prevention, Control and Countermeasure Plan should be submitted in writing to the Director of Safety & Compliance.

If there are any questions concerning changes to the plan, or if other revisions are required, contact the Director of Safety & Compliance.

Motor Vehicle Accidents

Immediate action steps:

a) Determine extent of the accident and any injuries.

b) If spill response assistance is required due to the size of the spill, location, or inability to immediately control it, or there is potential for the spill to impact the environment, immediately notify the Director of Safety & Compliance who will then make the determination to contact our Insurance and/or Environmental Response Vendor.

c) Determine if immediate assistance is required at the accident scene that has not already been initiated (e.g. ambulance, police, tow truck, agency reporting, other vehicle to transfer cargo, etc.).

d) Verbally report accident to the Director of Safety & Compliance.

e) Provide periodic feedback and/or status reports as often as required or necessary.

f) Should a motor vehicle accident result in a personal injury, fatality, or any vehicle being towed or a product release to the ground, sewer, or navigable waterway, the Director of Safety & Compliance will make an immediate verbal report to ownership. If the accident is DOT "recordable" the Director of Safety & Compliance is responsible to complete and maintain the fleet's DOT Accident File.

Hazmat Incident Reporting

A "Hazardous Material Reportable Incident" is an occurrence during transporting a hazardous material by truck, rail or air (including during loading, unloading and temporary storage) in which, as a direct result of the hazardous material:

- A person is killed;
- A person receives injuries requiring hospitalization;
- Estimated carrier or other property damage exceeds $50,000 (excluding vehicle/property damage unless caused by the material/product itself);
- An evacuation of the general public occurs lasting one or more hours;
- One or more major transportation arteries or facilities are closed or shut down for one hour or more; or
- The operation, flight pattern or routine of an aircraft is altered

Or

- A situation exists of such a nature (i.e., a continuing danger to life at the scene) that, in the judgment of the Director of Safety & Compliance, should be reported even though it does not meet the criteria above.

Or

- An unintentional release of a hazardous material from a container (i.e., tank truck) caused by failure of the container or operator.

Incidents meeting the above definition(s) must be reported to the Director of Safety. If the incident meets any of the criteria in the first two paragraphs above, reporting must be immediate by telephone to the National Response Center (800-424-8802). The Director of Safety will make the report which will include the following information:

- Name of reporter;
- Name and address of the carrier represented by the reporter;
- Phone number where the reporter can be contacted;
- Date, time and location of the incident;
- Extent of injuries if any;
- Classification, name and quantity of hazardous material involved; and
- Type of incident and whether a continuing danger to life exists at the scene.

In the case of property damage greater than $50,000, it may take some time to obtain estimates that are reliable and accurate enough to determine the total cost. If that's the only trigger for "immediate" reporting; telephonic notification, even days later, is acceptable. A telephone report must be followed within 30 days by a written report (DOT Form 5800.1). If the incident meets only the third item above, the report does not need to be immediate, but must be submitted in writing (DOT Form 5800.1) within 30 days of the incident.

Local Procedures

Field Staff must notify the Director of Safety & Compliance for the following examples but not limited to these examples. Product spills, all motor vehicle accidents involving injuries significant property damage over one thousand dollars or if either vehicle is towed or if any party is taken to the hospital or if you are issued a citation, and any personal injury.

Regardless:
All spills regardless of quantity, must be reported immediately to the Director of Safety & Compliance.

The Applicant must inform the Commission of any violation of this Order and any other project related spill or accident that may impact wetland resource areas as soon as possible and at least by the end of the business day and must take appropriate action to mitigate impacts from such spill or accident. The Applicant or site supervisor must notify the City of any emergency by calling Commission staff at 617-635-3850 from 9:00 AM - 5:00 PM, Monday - Friday and, at all other times, by calling the Mayor's Office's 24-hour Hotline at 617-635-4500. On the date of the issuance of this Order, the appropriate contact is Amelia Croteau, Conservation Agent: cc@boston.gov

EMERGENCY RESPONSE FLOW CHART

INCIDENT OCCURS

Operator controls incident,
calls
Director of Safety & Compliance
If directed, call 911

Director of Safety & Compliance
contacts Ownership if needed.

Ownership reviews all actions taken monitoring progress and corporate liability through Director of Safety & Compliance.

Director of Safety & Compliance makes determination to involve the Emergency Response Contractor, verifying all Regulatory Agencies have been notified.

Operations Manager contacts customer & dispatches additional equipment and/or personnel as warranted.

Director of Safety & Compliance collects all reports and verifies them for accuracy and completeness, submitting a copy to the customer if required.

Director of Safety & Compliance assesses cause of the incident and makes recommendation for prevention in the future.

Director of Safety & Compliance assures all reports are filed with appropriate agencies and insurance matters are handled properly.

Reports and recommendations are submitted to Ownership for review and final disposition

Injuries & Illnesses

Immediate action steps:

a) Determine extent of injuries or illness;

b) Determine if immediate assistance is required at the scene, which has not already been initiated (e.g. ambulance, police, agency reporting etc.);

c) Do Not attempt any treatment unless trained to do so;
   • Be aware of the location of the First Aid Kit (use only if trained);
   • Take appropriate precautions to avoid exposure to blood/bodily fluids

d) Verbally report incident to Director of Safety & Compliance

e) In the case of a serious injury or illness requiring hospitalization, arrangements to provide family transportation to the hospital/treating facility should be considered.

f) Provide periodic feedback and/or status reports on-line as often as required or necessary.

Fuel & Oil Spills

Immediate action steps:

a) If an oil or fuel release occurs, act quickly to ensure the following has been completed as appropriate:
   - Deactivate equipment;
   - Stop Work in area of Spill;
   - Deploy a bucket to catch oil or fuel;
   - Deploy sorbents to ground surface; and
   - Bag spent sorbents.

b) As appropriate, coordinate contractor pump-out and Emergency Response with Director of Safety & Compliance

c) Provide periodic feedback and/or status reports on-line as often as required

Fire

In the case of Fire immediate action steps:

In a fire emergency, primary concern is for the safety of all employees, followed by protection of physical assets. The role of terminal/fleet employees is:

- Extinguish minor fires;
- Promptly notify the local Fire Department;
- Assist in the orderly and safe evacuation of the facility;
- Render assistance to the Fire Department, as required; and
- Notify appropriate management personnel.

a) If an employee observes or discovers a fire, or sees visible smoke, their first action is to alert employees, evacuate the building and notify the Fire Department.

Do not attempt to fight a fire if you are alone!

If an employee has been trained in the use of hand-portable fire extinguishers, attempt to extinguish the fire, or investigate the cause of smoke. In no event should the employee put themselves in jeopardy!

If an employee has not been trained in the use of fire extinguishers, remain at a safe distance and direct the responding response team or local Fire Department to the location of the fire or smoke.

If evacuation is required, all employees should immediately leave the building via the nearest emergency exit and proceed away from the facility.

b) Verbally report incident to:

- Ownership
- Operations Manager
- Director of Safety & Compliance

c) Provide periodic feedback and/or status reports as often as required.

Weather

- During severe weather conditions, it is ultimately the Field Staff's decision whether it is safe to drive during icy and or snowy conditions.

- If the Field Staff makes a determination that it is unsafe to enter or drive into the Site, they must continue to the closest area available that they determine is safe to stop and call the Director of Safety & Compliance.

- When inclement weather conditions are forecast that may ultimately result in unsafe conditions (ice, snow, hurricane, etc.) it is the responsibility of the Operations Manager to constantly stay updated with these conditions through local weather reports.

- The Operations Manager may ultimately make different decisions pertaining to different geographical areas that we service, it will ultimately be the Operations Manager and/or Ownership determining what areas will be serviced.

Other Emergencies (Security, Bomb Threat, Civil Disturbance, Etc.)

At the Facility:

In an emergency as listed above, the primary concern is for the safety of all employees, followed by protection of physical assets. The role of the employees is to:

- Secure the premises immediately;
- Promptly notify the local Fire and/or Police Departments;
- Assist in the orderly and safe evacuation of the facility/premises;
- Render assistance to the Civil Departments responding; and
- Notify appropriate management personnel.

In no event should the employee put himself or herself at jeopardy!

In the Field:

In an emergency as listed above, the primary concern is for the safety of all employees, subcontractors and protection of physical assets. The role of the employee is:

- Avoid situations that have a potential to become an emergency;
- Contact dispatch using your cellphone providing them with your location and description of your emergency;
- Contact the local authorities; and
- Once you have located a safe haven, call the Operations Manager, Ownership and/or Director of Safety & Compliance.

Employee Responsibilities

In the event of an emergency, immediately (or as soon as practical and necessary) notify management who will assist employees handling the incident. Management will be responsible for directing corrective actions, coordinating clean-up operations and/or monitoring the use of emergency equipment by outside services, as required. Additional Responsibilities:

1. Assure that local police, fire, ambulance, National Response Center, EPA and Coast Guard, if dictated by the emergency, have been notified of the following:

    - Exact location of the incident
    - Nature and extent of injuries, if any
    - Specific products on board
    - Apparent condition of the vehicle
    - Need to apply foam (if volatile products have been released)
    - Any other real or potential hazards that are known at that time

2. Contact the Director of Safety & Compliance for emergency information/assistance regarding Federal/State reporting requirements, environmental remediation and/or employee safety and health issues.

Training

Training on the Emergency Response Plan, including a review of potential emergency situations, individual roles/responsibilities, reporting requirements and appropriate sections of this Plan should be conducted for all employees immediately upon assignment. Refresher training will be required on an annual basis, or whenever changes or updates to the Plan are made.

Emergency Telephone Numbers

Director of Safety & Compliance: (617) 721-7946 Dalfior Development, Fernando Dalfior
Owner: (617) 721-7946
Operations: (617) 721-7946
Fire & Police: 911
National Response Center: (800) 424-8802

City of Boston Notification Procedure

The Applicant must inform the Commission of any violation of this Order and any other project related spill or accident that may impact wetland resource areas as soon as possible and at least by the end of the business day and must take appropriate action to mitigate impacts from such spill or accident. The Applicant or site supervisor must notify the City of any emergency by calling Commission staff at 617-635-3850 from 9:00 AM - 5:00 PM, Monday - Friday and, at all other times, by calling the Mayor's Office's 24-hour Hotline at 617-635-4500. On the date of the issuance of this Order, the appropriate contact is Amelia Croteau, Conservation Agent: cc@boston.gov

Accident, Spill and Containment Reporting Form

Purpose

To provide managers and field staff with a procedure to properly report an accident, spill/contamination and safety incident and eliminate the need for personal decisions regarding the reporting procedures. This procedure helps ensure uniformity throughout the organization regarding accurate, timely and complete safety incident reporting. The procedure is written to maximize safety response and minimize injury.

Scope

The safety incident report must be completed each time an/accident, spill/contamination or work injury occurs within the organization. This includes the reporting requirements from initial notification to the completion of the report.

Responsibility

The field staff is responsible to call the Director of Safety's 24-hour cell phone number immediately to accurately report information regarding all aspects of the safety incident. The

field staff must also complete the written incident report form and other documents, as necessary, provided in the accident report kit.

The Director of Safety & Compliance will assist and administrate the field staff to handle the safety incident and in preparation of the written accident report. The Director of Safety & Compliance will also complete the Contamination/Spill Report and Manager's Report of Injury to Employee when necessary.

Procedure

Every safety incident must be reported immediately to the Director of Safety & Compliance by calling the 24/7 emergency number: (617) 721-7946. An emergency phone list is provided in the Emergency Response Procedure section of this manual in case the emergency number is out of service. Field Staff must call unless injury or safety precautions prevent him from doing so.

- An accident is defined as any unplanned event that may result in injury or interrupt the completion of an activity, and which may (or may not) include property damage.
- A spill is defined as a release of fluids from tanks, containers or vessels accidentally or unintentionally.
- Contamination is defined as any substance or reaction that causes the original product to be altered from its original state or purity.

The field staff involved in the safety incident is responsible for documenting pertinent facts and information relating to the cause and disposition of the incident. The field staff must properly complete the accident report kit provided. This includes:

- Taking photographs of the accident site, specific damage and for evidence of cause. Use your best judgment and when in doubt, take the photograph.
- Two witness cards are provided to be completed by up to two individuals who witness the incident.
- One courtesy card is included for use if the field staff cannot leave the accident site. The card may be given to an individual on site to call and report the safety incident.
- A note card is included to write down any facts or statements that provide evidence pertinent to the safety incident.
- The completed documentation in the accident report kit must be turned into the office before completion of scheduled shift. If not able to do so other arrangements will be made.
- In the event of injury to the field staff, the Director of Safety & Compliance is responsible to see that the accident report is completed to the best of his/her ability. This may include going to the site or authorizing company personnel on site to obtain necessary disposition.
- The Director of Safety & Compliance will administer the reporting and claims processes and maintain required files.

Emergency Response Procedures

In the event of an accident, equipment breakdown, malfunction or human error, which results in the release of any oil, fuel, hazardous or non-hazardous product, the field staff should attempt to implement the following procedures.

APPROACH THE SCENE CAUTIOUSLY - Do not rush in to assist, or you may be added to the list of casualties. Prevent others from doing the same. DO NOT attempt any action beyond your level of training. DO call for help.

IDENTIFY THE HAZARDS - Consult placards, container labels, MSDS, shipping papers, Emergency Response Guidebook and/or knowledgeable persons at the scene. Evaluate all available information before concluding on a course of action. Do not assume the material is harmless because it lacks a color or odor. If limited information is available, err on the side of caution; as more specific information becomes available, the response can be tailored to the hazard.

SECURE THE AREA - Establish an exclusion zone that will keep non-emergency personnel well out of danger. It may be necessary to patrol the area to keep spectators at a safe distance.

OBTAIN HELP- Contact the appropriate local emergency services and your Director of Safety & Compliance as soon as possible. Be prepared to provide as much of the following information as possible:

- Location of release - a physical site address, town/city and state/providence, mile marker along a highway, direction of travel, or any other information, which will direct a responding emergency response cleanup crew.
- Details of release - what was released, what time it occurred, cause of the release, how much has been released, measures taken to prevent the release, and what media or mediums have been impacted by the release (i.e., storm drains, streams, roads, or soils.)
- Communications - provide the following if available: names and phone numbers of authorities contacted or at the scene, contact person and phone number if at a client's facility, and ensure that the MSDS is available to responding authorities. In a hazardous material incident, the transmittal of TIMELY and ACCURATE information is essential. This is especially true when determining the identity of the material(s) involved.

EMERGENCY RESPONSE PRIORITIES

Prevent or reduce the loss of lives or injury to responders and the public. Prevent or reduce the loss of property or damage to property. Prevent or reduce the effects of the release upon the environment. Restore the area to normal (operational) conditions.

EMERGENCY SPILL RESPONSE TELEPHONE NOTIFICATION PROCEDURE

Field Staff reports the incident to the Director of Safety & Compliance at (617) 721-7946 and to the local police and fire departments by dialing 911.

The Director of Safety & Compliance will coordinate with an emergency responder when required.

CITY OF BOSTION NOTIFICATION PROCEDURE

The Applicant must inform the Commission of any violation of this Order and any other project related spill or accident that may impact wetland resource areas as soon as possible and at least by the end of the business day and must take appropriate action to mitigate impacts from such spill or accident. The Applicant or site supervisor must notify the City of any emergency by calling Commission staff at 617-635-3850 from 9:00 AM - 5:00 PM, Monday - Friday and, at all other times, by calling the Mayor's Office's 24-hour Hotline at 617-635-4500. On the date of the issuance of this Order, the appropriate contact is Amelia Croteau, Conservation Agent: cc@boston.gov

Management Phone Numbers

Director of Safety & Compliance: (617) 721-7946 Dalfior Development, Fernando Dalfior
Owner: (617) 721-7946
Operations: (617) 721-7946
Fire & Police: 911
National Response Center: (800) 424-8802

Depending on the nature of the release; the Director of Safety & Compliance will report the incident to all appropriate authorities including the PHMSA's National Response Center and will need the following information:

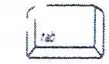
1. Name, address and telephone number of the company and call back number.
2. Location of spill (physical address, country and state).
3. Time and duration of release.
4. Cause of release.
5. Chemical identity of material released/ DOT identification number.
6. Estimated amount of release (gallons, pounds).
7. Medium or media into which the release occurred.
8. Hazard classification of released material.
9. Containment efforts.
10. Distance to nearest water body or storm drain.
11. Name of cleanup contractor called and estimated time of arrival.
12. Shipper and consignee information.
13. Manufacturer, if known.
14. Bill of lading number/waybill number.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certificatcn must be submitted with the Stormwater Report.

[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

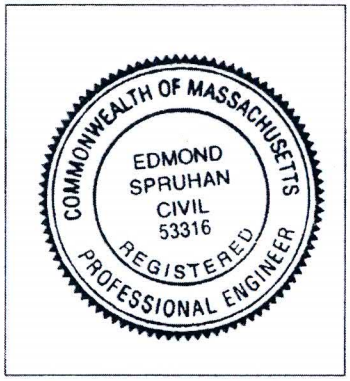
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



Signature and Date 11/7/19

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☒ New development

☐ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- [x] No disturbance to any Wetland Resource Areas
- [ ] Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- [ ] Reduced Impervious Area (Redevelopment Only)
- [ ] Minimizing disturbance to existing trees and shrubs
- [ ] LID Site Design Credit Requested:
  - [ ] Credit 1
  - [ ] Credit 2
  - [ ] Credit 3
- [ ] Use of "country drainage" versus curb and gutter conveyance and pipe
- [ ] Bioretention Cells (includes Rain Gardens)
- [ ] Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- [ ] Treebox Filter
- [ ] Water Quality Swale
- [ ] Grass Channel
- [ ] Green Roof
- [x] Other (describe): Storm-Tech units with crushed stone bed

Standard 1: No New Untreated Discharges

- [x] No new untreated discharges
- [ ] Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- [ ] Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☒ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☐ Soil Analysis provided.

☐ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☒ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

☐ Site is comprised solely of C and D soils and/or bedrock at the land surface

☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000

☐ Solid Waste Landfill pursuant to 310 CMR 19.000

☒ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☐ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☒ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☐ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☒ The BMP is sized (and calculations provided) based on:

- ☒ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs)

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☒ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☒ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☐ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☐ Name of the stormwater management system owners;
- ☐ Party responsible for operation and maintenance;
- ☐ Schedule for implementation of routine and non-routine maintenance tasks;
- ☐ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☐ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☒ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

ILLICIT DISCHARGE COMPLIANCE STATEMENT

I verify that no illicit discharges exist from the 35 Leyden Street - East Boston residential building. Through the implementation of the Operation and Maintenance Plan, measures are set forth to prevent illicit discharges from entering the stormwater management drainage system.

Signature	Fernando Dalfior	11/07/2019
	Print Name	Date

President/owner	Dalfior Development, Inc.
Title	Company

Signature	Print Name	Date

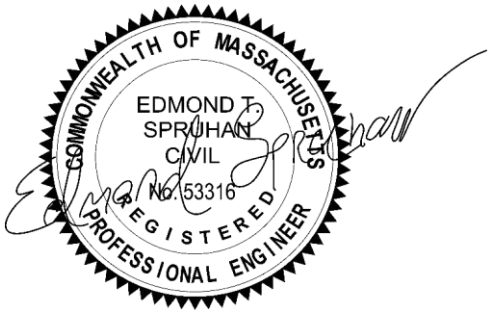
Title	Company

Note: This certification must be signed before stormwater is conveyed to the proposed stormwater drainage system in accordance with Standard 10 of the Massachusetts Stormwater Management Standards.

SPRUHAN ENGINEERING, P.C.

STORMWATER REPORT

35 Leyden St, East Boston, MA



Prepared By: Spruhan Engineering, P.C.

1/15/2020

1.0 Introduction

Spruhan Engineering, P.C. has prepared this Storm water Report for the proposed redevelopment project located at 35 Leyden St, East Boston, Massachusetts.

The proposed development consists of a 6 unit-multifamily building with eleven parking spaces and paved driveway. The report shows that the volume capacity of the proposed infiltration system is greater than the water volume generated as a result a 1" storm event. The runoff has to be collected and diverted to the infiltration system as specied in the BWSC plans prepared by Spruhan Engineering P.C.

The proposed infiltration system consists of 8 stormtech chambers and is sized for a 1 inch storm event for all the proposed impervious area per BWSC requirements.

2.0 Existing Conditions

The existing property is located at 35 Leyden Street, East Boston, Massachusetts. The site is bounded by residential dwellings on both sides, by Leyden Street at the front and by Boardman Street at the rear. The existing roof area on the lot is 2,011 S.F. The existing garage area is 433 S.F. and its driveway 170 S.F. The existing walkway / patio area is 1,037 S.F.

2.1 Existing Topography and Drainage Infrastructure.

The lot has a steep slope from north to south, it slopes from north to south side approximately at 8.1.%. As there is no drainage system currently installed, all storm water scours across the surface at grade.

The rain collected on the roof will be diverted directly to the infiltration system via downspouts and 4" PVC pipes. The runoff collected on the driveway and other impervious surfaces will be collected by catch basin or trench drain connected to the infiltration system with 4" PVC pipes.

3.0 Project Description

The proposed development consists of a 6-family new multi-residential dwelling 3 story height and a garage at the lower level. The total proposed area of the roof will have an area of 4,051 S.F. The proposed landscaped areas, driveway and walkways will have an area of 4,161 S.F.

3.1 Storm Water Runoff

HydroCAD was used to model the site for the existing and proposed conditions for the 2-year, 10-year, 25-year, and 100-year type III storm events based on Atlas-14 Rain information for Middlesex County Central Area. HydroCAD calculations can be seen in Appendix A. The following table shows a summary of the existing and proposed conditions on the site as they relate to flowrate and volume of storm water runoff for each of the storm events.

3.2 Infiltration System

An infiltration system was proposed to control the runoff rate from the post construction site. This system consists in 8 Stormtech Units on a bed of crushed stone two feet deep.

	Summary Table			
	Runoff Flow Rate		Volume of Runoff	
	EXISTING	PROPOSED	EXISTING	PROPOSED
2 Year Storm	0.34 cfs	0.04 cfs	1,173 cf	123 cf
10 Year Storm	0.66 cfs	0.60 cfs	2,187 cf	1,065 cf
25 Year Storm	0.87 cfs	0.85 cfs	2,868 cf	1,711 cf
100 Year Storm	1.21 cfs	1.16 cfs	3,958 cf	2,754 cf

3.3 Storm Water Management

Calculations by: HM
Date: January 24th, 2020

STORMWATER MANAGEMENT CALCULATIONS

Design Criteria:

Roof Area= 4,051 SF
Proposed Driveway Area =1,609 SF
Proposed Walk way Area=586 SF
Concrete Pad= 196 SF
Total Proposed Impervious Area = 6,442 SF

Design For **1"** Rainstorm

Storage Volume Required:

V_R = (1"/12) (6,442 SF) = 536.83 CF

CAPACITY OF PROPOSED STORM TECH SYSTEM

Storage Capacity of single Storm Tech UNIT = 49 CF

Void Ratio =0.3

Total Volume= (11'x 7' x 5'$_{\text{depth (2.5ft for Storm Tech unit)}}$ x 8 unit) =3,080 CF

Capacity for 8 UNIT = 392 CF

Storage Capacity in Crushed Stone = (Total Volume – Capacity of Units) x Void Ratio = (3,080 - 392) x 0.3 = 2,962.4 CF

Total Storage Provided = Capacity in Crushed Stone + Total Capacity in Units = 2,962.5 CF + 392 CF = 633.5 CF

Since Total Storage Provided (2,962.50 CF) > Total Storage Required (536.83 CF/D) **Therefore, utilize 8-Storm-Tech Chamber with 2 ft. of Crushed Stone Beneath to Contain 1" Storm Event**

4.0 Soil Information

The NRCS Web Soil Survey provides one Map Unit on the area of the project. This is listed next:

- Map unit symbol: 603; Name: Urban land, wet substratum, 0 to 3 percent slopes.
- Map unit symbol: 655; Name: Udorthents, wet substratum.
- Map unit symbol: 325 D; Name: Newport silt loam, 15 to 25 percent slopes

The NRCS Web Soil Survey does not show any Hydrologic Soil Group in this case. Therefore, a geological report was used to establish the Hydrologic soil group, showing silty clay which has the NRCS "D" properties and these properties were applied to the HydroCAD software calcs.

Further detailed information is described in Appendix B.

5.0 NOAA's Atlas Precipitation Data

The NOAA's National Weather Service contains in its website rainfall depth information necessary for the hydrological calculations performed in the chosen software for this report in its section called Precipitation Frequency Data Server.

The results for a 2 year,10 year, 25 year and 100 year, 24-hr storm are shown in the next table.

NOAA Atlas 14, Volume 10, Version 3
Location name: East Boston, Massachusetts, USA*
Latitude: 42.3902°, Longitude: -71.0111°
Elevation: 21.26 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	0.298 (0.240-0.368)	0.366 (0.295-0.453)	0.478 (0.384-0.594)	0.571 (0.455-0.714)	0.699 (0.537-0.922)	0.794 (0.597-1.08)	0.896 (0.653-1.27)	1.02 (0.691-1.47)	1.20 (0.782-1.80)	1.36 (0.862-2.08)
10-min	0.422 (0.340-0.521)	0.519 (0.419-0.642)	0.678 (0.543-0.842)	0.809 (0.645-1.01)	0.990 (0.761-1.31)	1.12 (0.846-1.52)	1.27 (0.926-1.80)	1.44 (0.979-2.08)	1.71 (1.11-2.55)	1.93 (1.22-2.95)
15-min	0.496 (0.400-0.613)	0.610 (0.492-0.755)	0.796 (0.639-0.989)	0.951 (0.758-1.19)	1.16 (0.895-1.54)	1.32 (0.994-1.79)	1.49 (1.09-2.12)	1.70 (1.15-2.45)	2.01 (1.30-3.00)	2.27 (1.44-3.47)
30-min	0.665 (0.536-0.822)	0.819 (0.659-1.01)	1.07 (0.858-1.33)	1.28 (1.02-1.60)	1.57 (1.20-2.07)	1.78 (1.34-2.41)	2.01 (1.47-2.85)	2.29 (1.55-3.29)	2.70 (1.76-4.05)	3.06 (1.94-4.68)
60-min	0.834 (0.672-1.03)	1.03 (0.827-1.27)	1.34 (1.08-1.67)	1.61 (1.28-2.01)	1.97 (1.51-2.60)	2.23 (1.68-3.03)	2.52 (1.84-3.58)	2.87 (1.95-4.14)	3.40 (2.21-5.10)	3.86 (2.44-5.90)
2-hr	1.08 (0.875-1.32)	1.34 (1.09-1.66)	1.78 (1.44-2.19)	2.14 (1.72-2.66)	2.64 (2.04-3.46)	3.00 (2.29-4.05)	3.40 (2.50-4.81)	3.90 (2.66-5.57)	4.67 (3.04-6.93)	5.34 (3.39-8.09)
3-hr	1.26 (1.02-1.54)	1.57 (1.28-1.92)	2.08 (1.69-2.56)	2.51 (2.02-3.11)	3.10 (2.41-4.05)	3.53 (2.68-4.74)	4.00 (2.96-5.64)	4.59 (3.13-6.52)	5.52 (3.60-8.14)	6.33 (4.02-9.52)
6-hr	1.64 (1.35-2.00)	2.04 (1.67-2.48)	2.69 (2.20-3.29)	3.24 (2.62-3.98)	3.98 (3.11-5.17)	4.53 (3.47-6.04)	5.13 (3.81-7.16)	5.88 (4.03-8.28)	7.06 (4.62-10.3)	8.07 (5.15-12.0)
12-hr	2.11 (1.74-2.55)	2.60 (2.15-3.15)	3.41 (2.80-4.13)	4.07 (3.32-4.97)	4.99 (3.92-6.41)	5.66 (4.35-7.47)	6.40 (4.76-8.82)	7.30 (5.03-10.2)	8.70 (5.72-12.6)	9.91 (6.34-14.6)
24-hr	2.64 (2.11-3.05)	3.16 (2.62-3.79)	4.16 (3.44-5.01)	4.99 (4.10-6.05)	6.14 (4.98-7.85)	6.98 (5.40-9.15)	7.91 (5.93-10.8)	9.07 (6.27-12.5)	10.9 (7.18-15.6)	12.6 (8.00-18.2)
2-day	2.87 (2.40-3.41)	3.64 (3.04-4.34)	4.90 (4.07-5.86)	5.94 (4.91-7.15)	7.38 (5.89-9.40)	8.43 (6.58-11.0)	9.60 (7.28-13.2)	11.1 (7.71-15.2)	13.6 (8.99-19.2)	15.8 (10.2-22.7)
3-day	3.13 (2.63-3.72)	3.96 (3.32-4.71)	5.32 (4.44-6.34)	6.44 (5.34-7.72)	7.99 (6.40-10.1)	9.12 (7.14-11.9)	10.4 (7.91-14.2)	12.0 (8.36-16.4)	14.8 (9.77-20.7)	17.2 (11.1-24.6)
4-day	3.39 (2.85-4.01)	4.24 (3.57-5.03)	5.64 (4.72-6.70)	6.80 (5.65-8.12)	8.39 (6.73-10.6)	9.55 (7.50-12.4)	10.8 (8.28-14.8)	12.6 (8.74-17.0)	15.4 (10.2-21.5)	17.9 (11.6-25.5)
7-day	4.10 (3.47-4.82)	4.98 (4.21-5.86)	6.42 (5.40-7.58)	7.61 (6.38-9.04)	9.26 (7.46-11.6)	10.5 (8.24-13.4)	11.8 (9.02-15.9)	13.6 (9.47-18.2)	16.5 (11.0-22.8)	19.0 (12.3-26.9)
10-day	4.75 (4.04-5.57)	5.65 (4.80-6.63)	7.13 (6.02-8.39)	8.35 (7.00-9.89)	10.0 (8.11-12.5)	11.3 (8.89-14.4)	12.6 (9.66-16.8)	14.4 (10.1-19.2)	17.3 (11.5-23.8)	19.8 (12.8-27.8)
20-day	6.64 (5.67-7.73)	7.63 (6.51-8.89)	9.25 (7.86-10.8)	10.6 (8.94-12.5)	12.4 (10.1-15.2)	13.8 (10.9-17.3)	15.3 (11.6-19.8)	17.0 (12.0-22.4)	19.6 (13.1-26.6)	21.7 (14.1-30.1)
30-day	8.20 (7.04-9.51)	9.27 (7.94-10.8)	11.0 (9.39-12.8)	12.4 (10.5-14.6)	14.4 (11.7-17.5)	15.9 (12.5-19.7)	17.5 (13.2-22.3)	19.1 (13.6-25.0)	21.4 (14.4-28.9)	23.2 (15.1-32.0)
45-day	10.2 (8.77-11.8)	11.3 (9.74-13.1)	13.2 (11.3-15.3)	14.7 (12.5-17.2)	16.9 (13.7-20.3)	18.5 (14.6-22.6)	20.1 (15.1-25.3)	21.7 (15.5-28.2)	23.8 (16.1-31.9)	25.2 (16.5-34.5)
60-day	11.8 (10.2-13.6)	13.0 (11.3-15.0)	15.0 (12.9-17.3)	16.6 (14.2-19.3)	18.8 (15.3-22.5)	20.6 (16.2-25.0)	22.3 (16.7-27.7)	23.8 (17.0-30.8)	25.7 (17.4-34.3)	27.0 (17.6-36.8)

[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.

Back to Top

PF graphical

6.0 DEP Stormwater Management Standards

-

Standard 1: No New Untreated Discharges

There are no new untreated discharges for this project.

Standard 2: Peak Rate Attenuation

As can be seen from the summary table, there is no increase in the theoretical peak rate of runoff from the site for any of the design storms.

Standard 3: Recharge

The attached calculations show that the required volume of runoff is recharged through the use of surface and subsurface recharge systems. The design provides for the recharge of runoff from 100% of the new impervious areas on site.

Standard 4: Water Quality

Stormwater runoff from the new impervious areas is treated for sediment through the use of deep sump catch basins and stormtech units.

Standard 5: Land Uses with Higher Potential Pollutant Loads

Not applicable

Standard 6: Critical Areas

Stormwater runoff from the new impervious areas within the Zone II wellhead protection boundary is treated for water quality volume of 1 inch through the use of deep sump catch basins and stormtech units. Runoff from the new roof areas and driveways located within the Zone II are provided with infiltration areas designed to infiltrate 1 inch of runoff over the total impervious surface.

Standard 7: Redevelopment and Other Projects Subjects to the Standards only to the maximum extent practicable

Not applicable

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

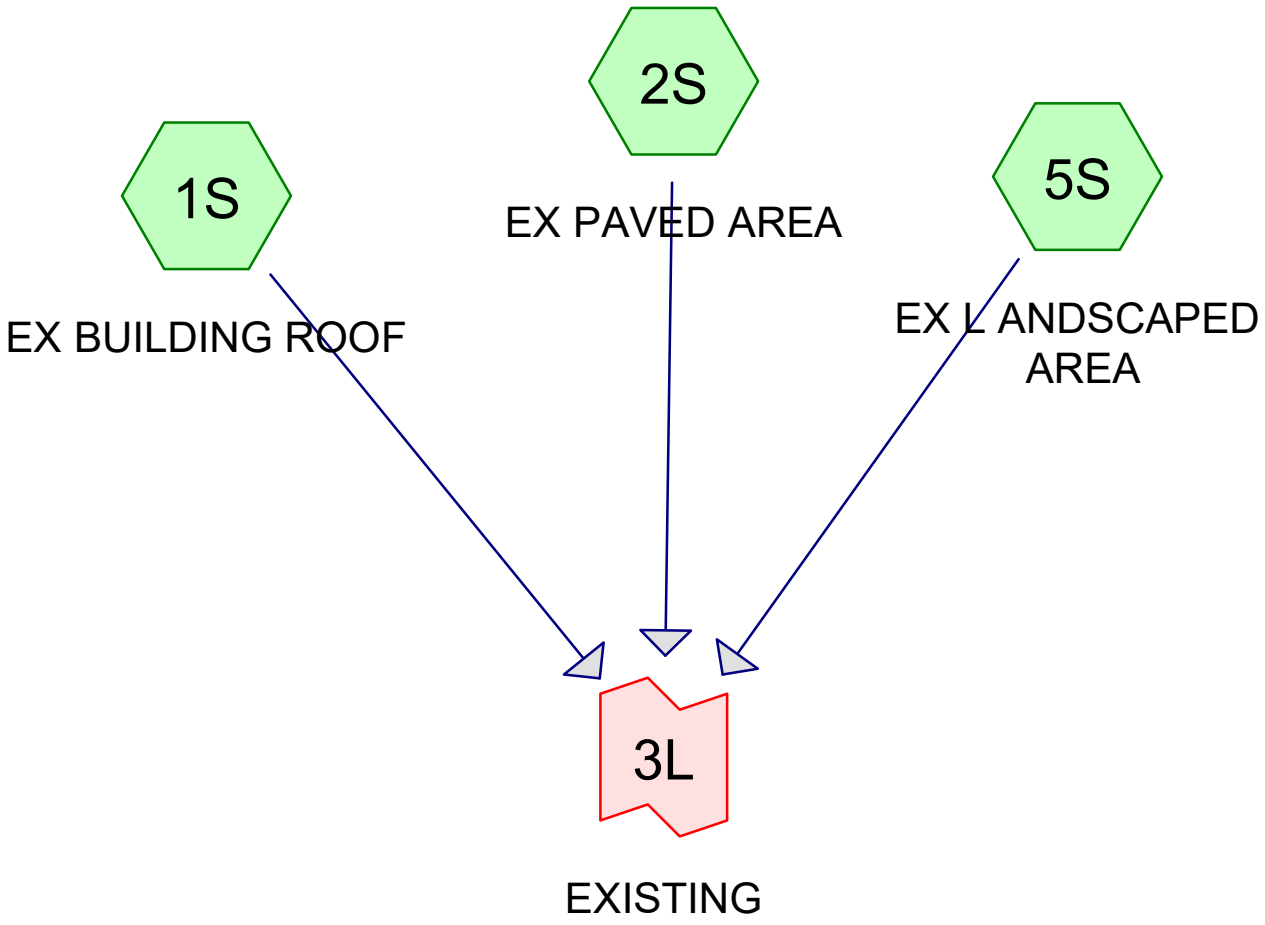
Not applicable

Standard 9: Operation and Maintenance Plan

An Operation and Maintenance Plan is contained herein

Standard 10: Prohibition of Illicit Discharges

There are no illicit discharges associated with the project



Subcat Reach Pond Link

Routing Diagram for EXISTING
Prepared by SPRUHAN ENGINEERING, P.C., Printed 1/24/2020

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
4,561	69	50-75% Grass cover, Fair, HSG B (5S)
1,207	98	Paved parking, HSG B (2S)
2,444	98	Roofs, HSG B (1S)
8,212	**82**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
8,212	HSG B	1S, 2S, 5S
0	HSG C	
0	HSG D	
0	Other	
8,212		**TOTAL AREA**

Summary for Subcatchment 1S: EX BUILDING ROOF

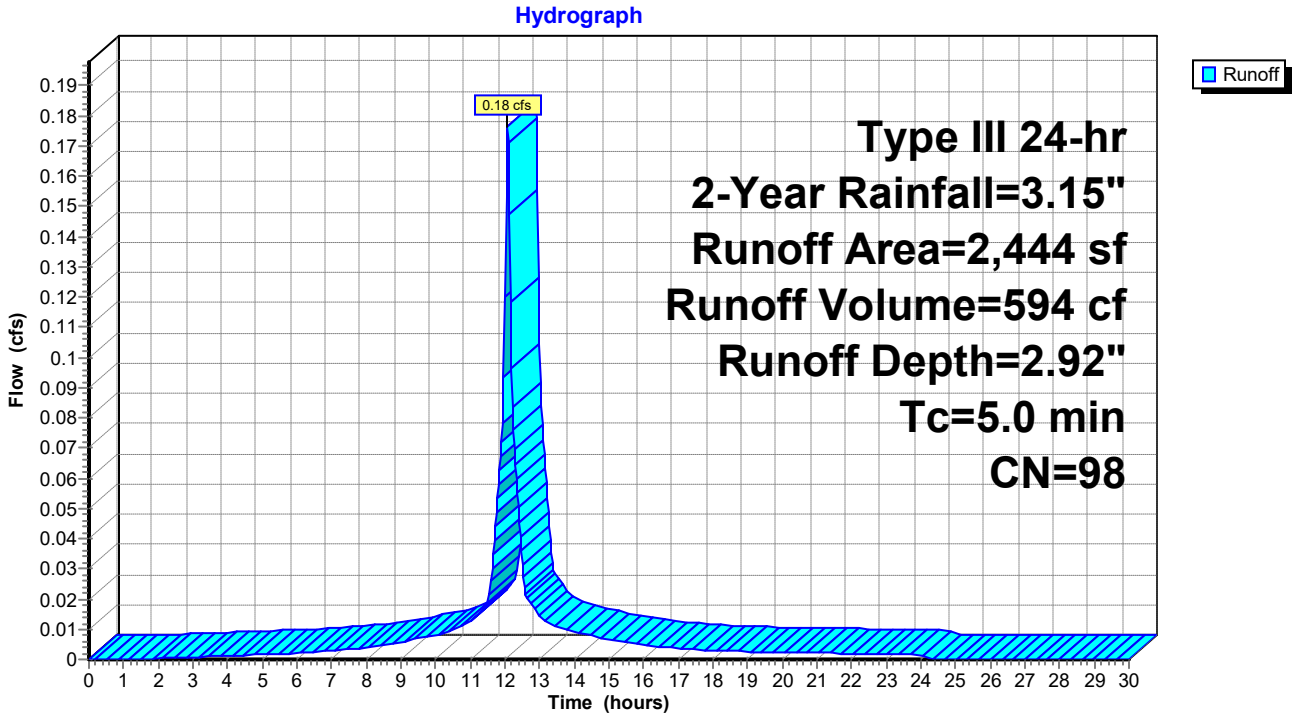
Runoff = 0.18 cfs @ 12.07 hrs, Volume= 594 cf, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Year Rainfall=3.15"

Area (sf)	CN	Description
2,444	98	Roofs, HSG B
2,444		100.00% Impervious Area

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

Subcatchment 1S: EX BUILDING ROOF



Summary for Subcatchment 2S: EX PAVED AREA

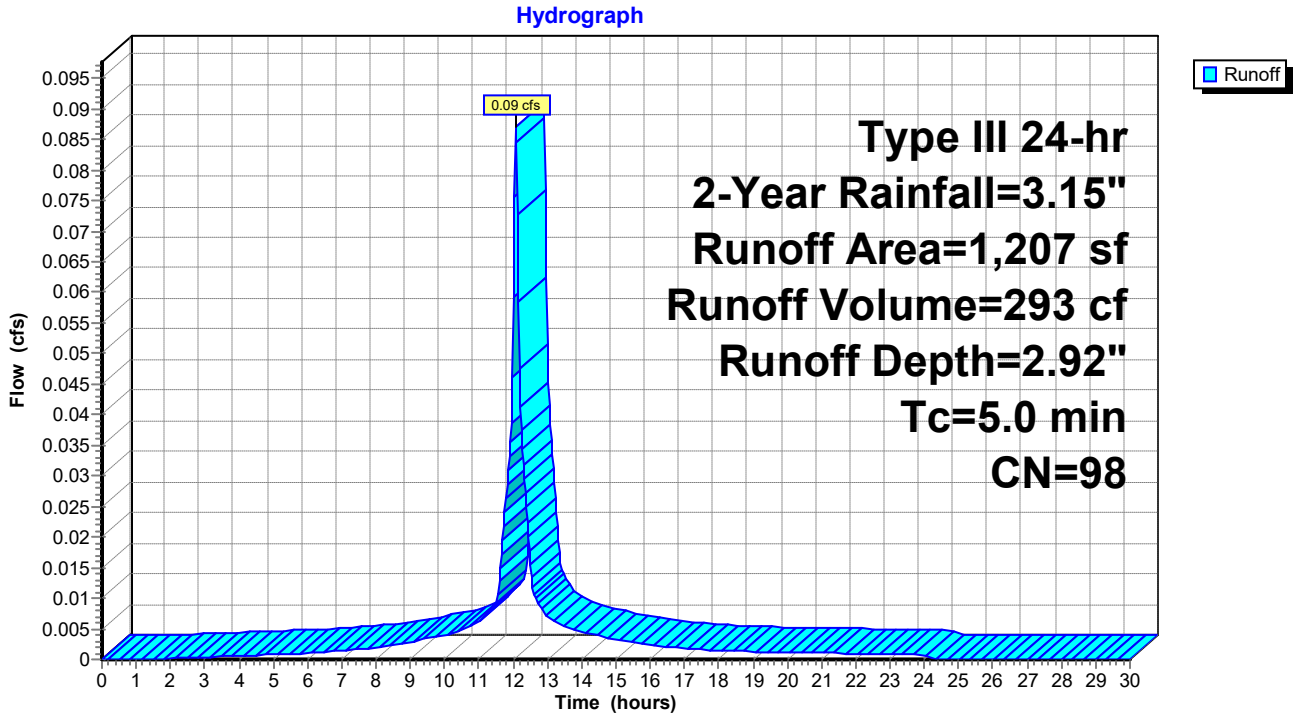
Runoff = 0.09 cfs @ 12.07 hrs, Volume= 293 cf, Depth= 2.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Year Rainfall=3.15"

Area (sf)	CN	Description
1,207	98	Paved parking, HSG B
1,207		100.00% Impervious Area

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

Subcatchment 2S: EX PAVED AREA



Summary for Subcatchment 5S: EX L ANDSCAPED AREA

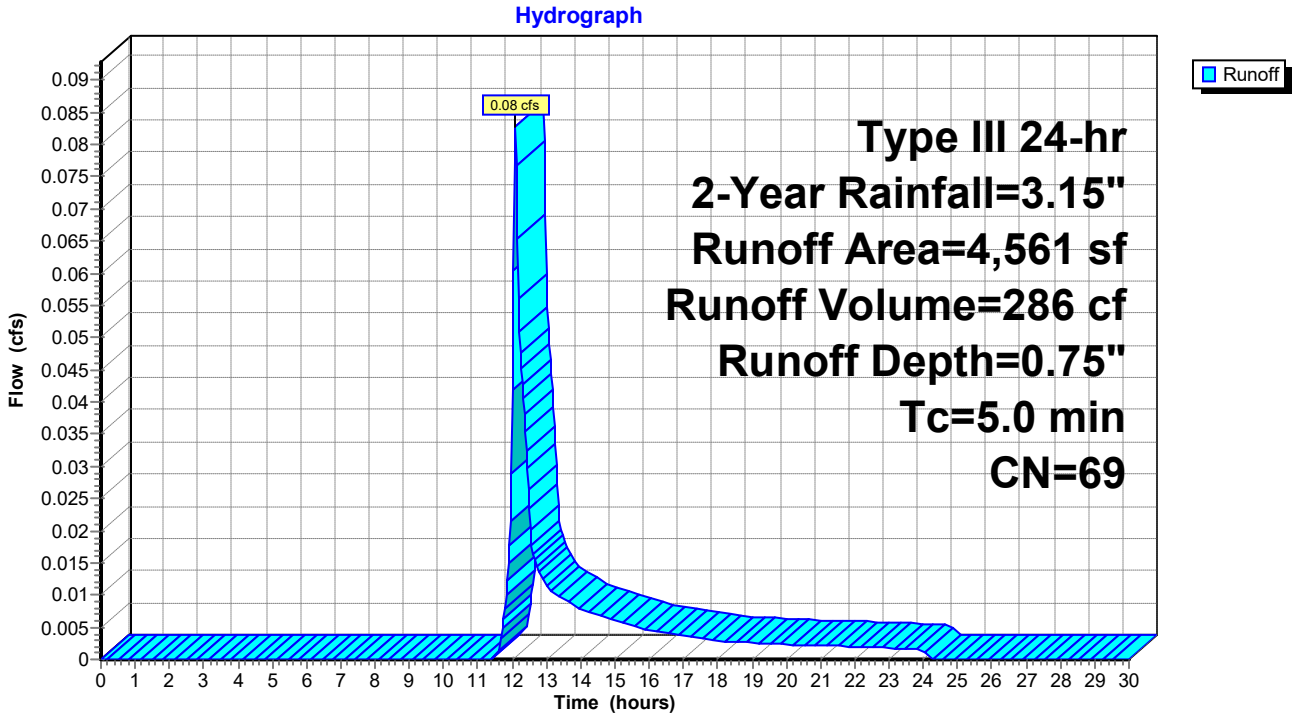
Runoff = 0.08 cfs @ 12.09 hrs, Volume= 286 cf, Depth= 0.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 2-Year Rainfall=3.15"

Area (sf)	CN	Description
4,561	69	50-75% Grass cover, Fair, HSG B
4,561		100.00% Pervious Area

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

Subcatchment 5S: EX L ANDSCAPED AREA

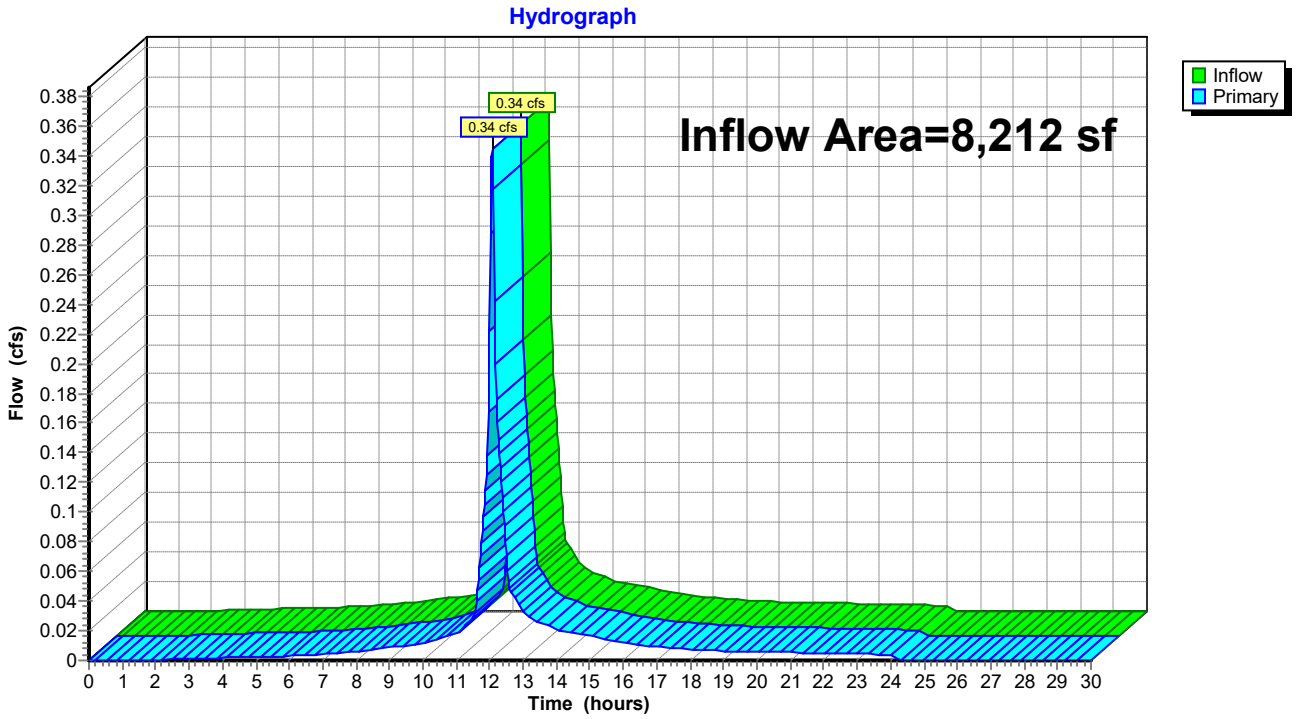


Summary for Link 3L: EXISTING

Inflow Area = 8,212 sf, 44.46% Impervious, Inflow Depth = 1.71" for 2-Year event
Inflow = 0.34 cfs @ 12.07 hrs, Volume= 1,173 cf
Primary = 0.34 cfs @ 12.07 hrs, Volume= 1,173 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: EXISTING



Summary for Subcatchment 1S: EX BUILDING ROOF

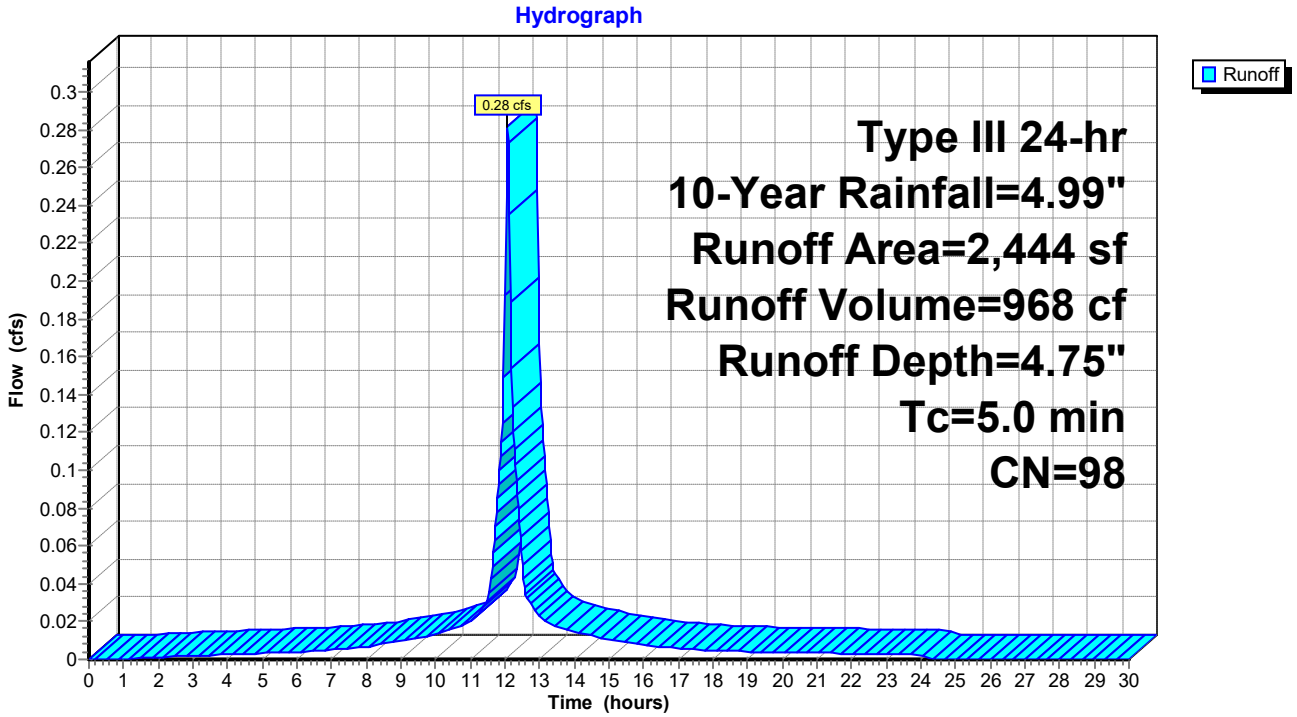
Runoff = 0.28 cfs @ 12.07 hrs, Volume= 968 cf, Depth= 4.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=4.99"

Area (sf)	CN	Description
2,444	98	Roofs, HSG B
2,444		100.00% Impervious Area

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

Subcatchment 1S: EX BUILDING ROOF



Summary for Subcatchment 2S: EX PAVED AREA

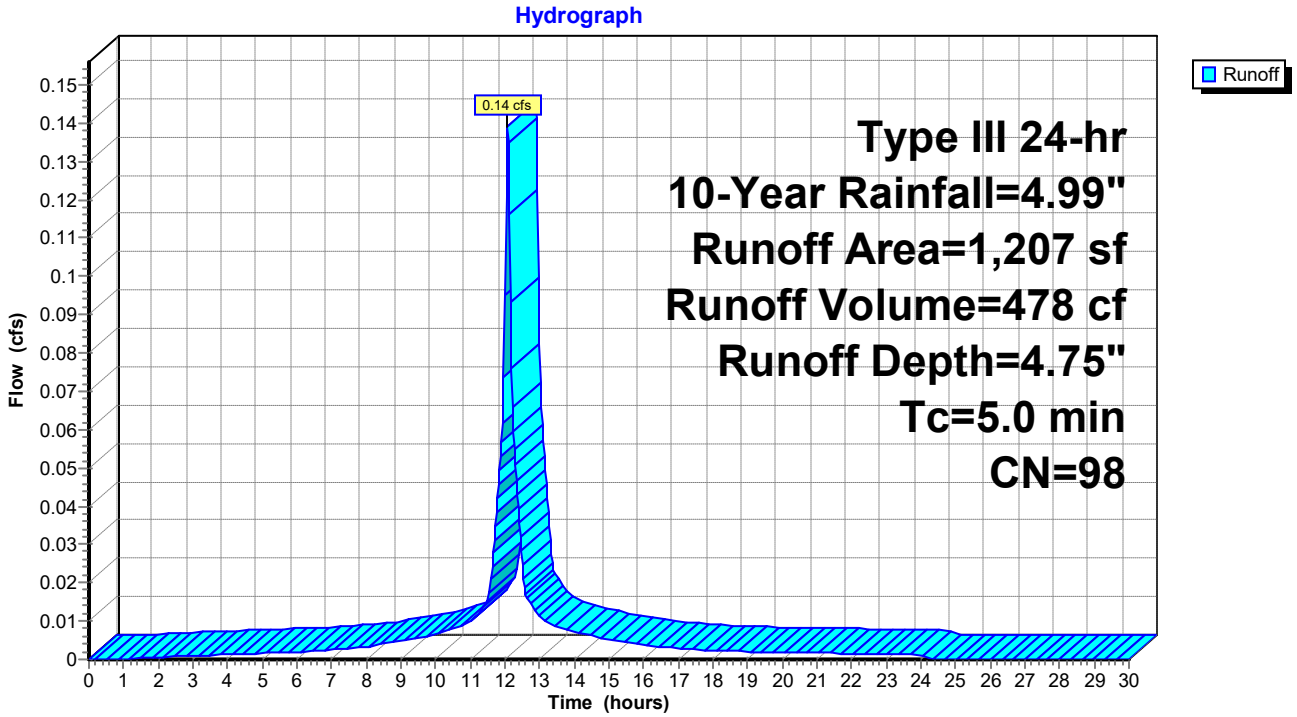
Runoff = 0.14 cfs @ 12.07 hrs, Volume= 478 cf, Depth= 4.75"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=4.99"

Area (sf)	CN	Description
1,207	98	Paved parking, HSG B
1,207		100.00% Impervious Area

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

Subcatchment 2S: EX PAVED AREA



Summary for Subcatchment 5S: EX L ANDSCAPED AREA

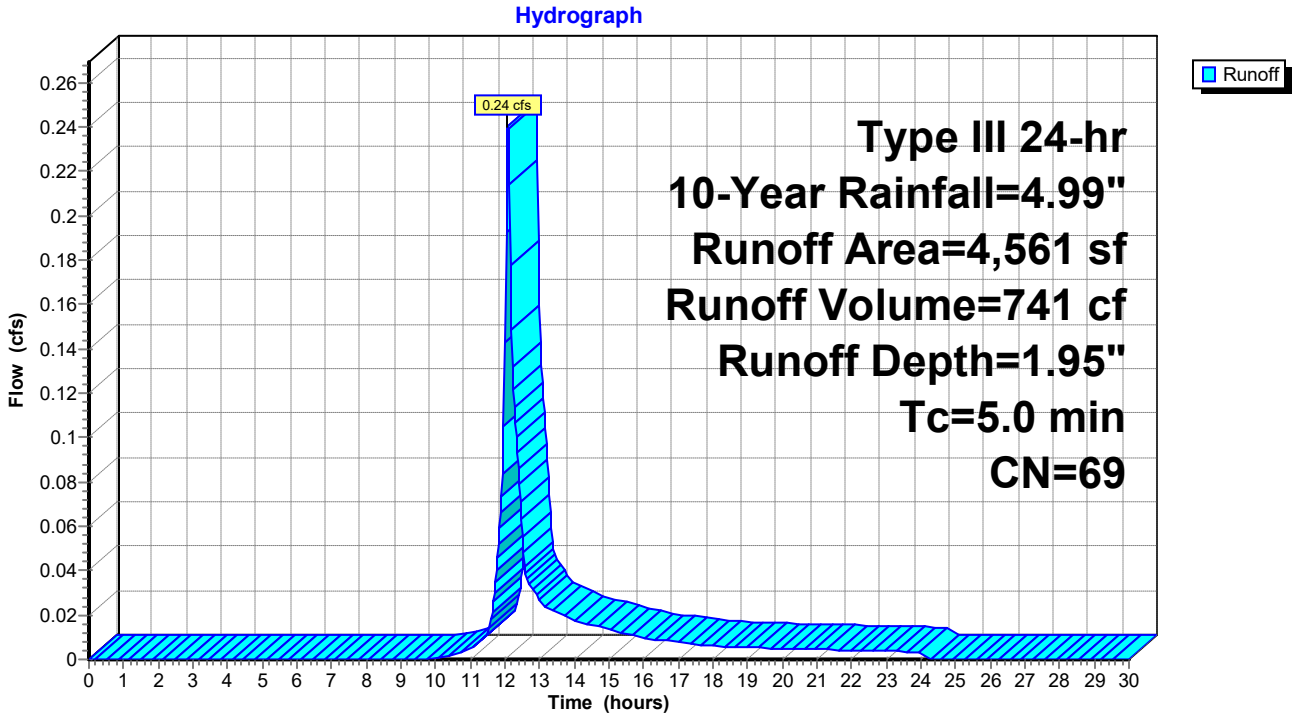
Runoff = 0.24 cfs @ 12.08 hrs, Volume= 741 cf, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 10-Year Rainfall=4.99"

Area (sf)	CN	Description
4,561	69	50-75% Grass cover, Fair, HSG B
4,561		100.00% Pervious Area

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

Subcatchment 5S: EX L ANDSCAPED AREA

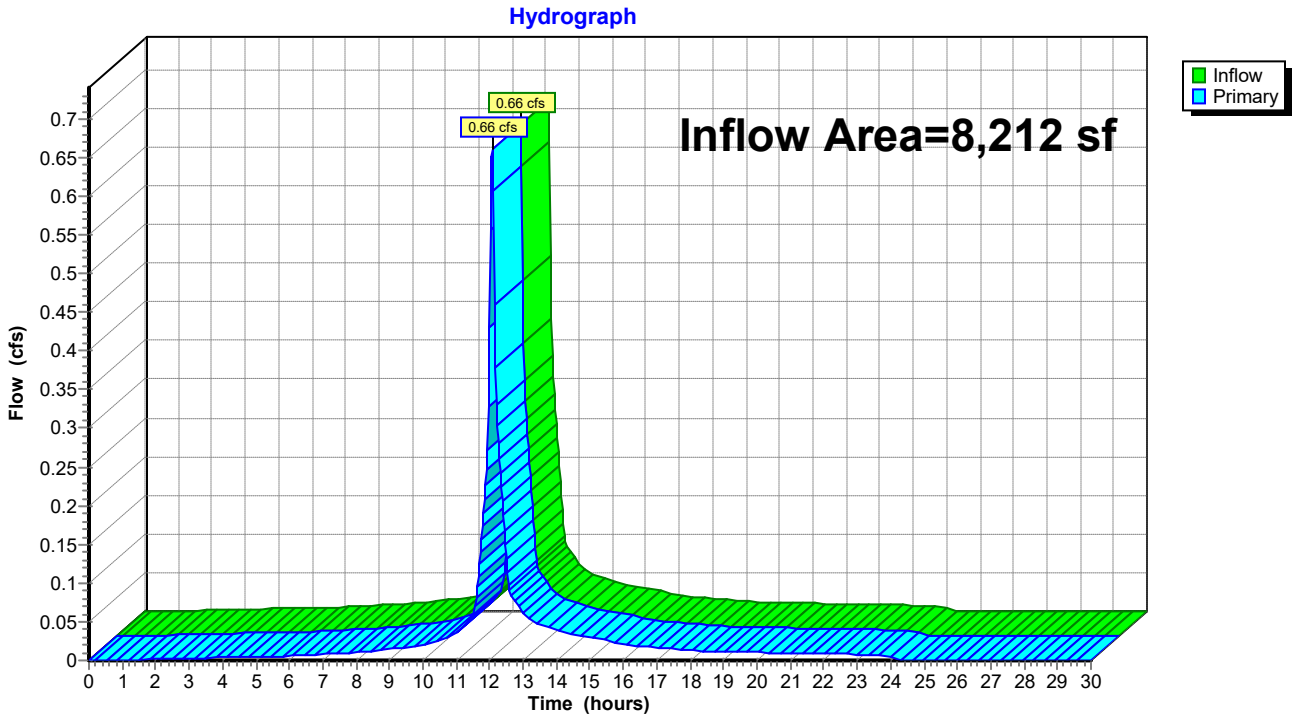


Summary for Link 3L: EXISTING

Inflow Area = 8,212 sf, 44.46% Impervious, Inflow Depth = 3.20" for 10-Year event
Inflow = 0.66 cfs @ 12.07 hrs, Volume= 2,187 cf
Primary = 0.66 cfs @ 12.07 hrs, Volume= 2,187 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: EXISTING



Summary for Subcatchment 1S: EX BUILDING ROOF

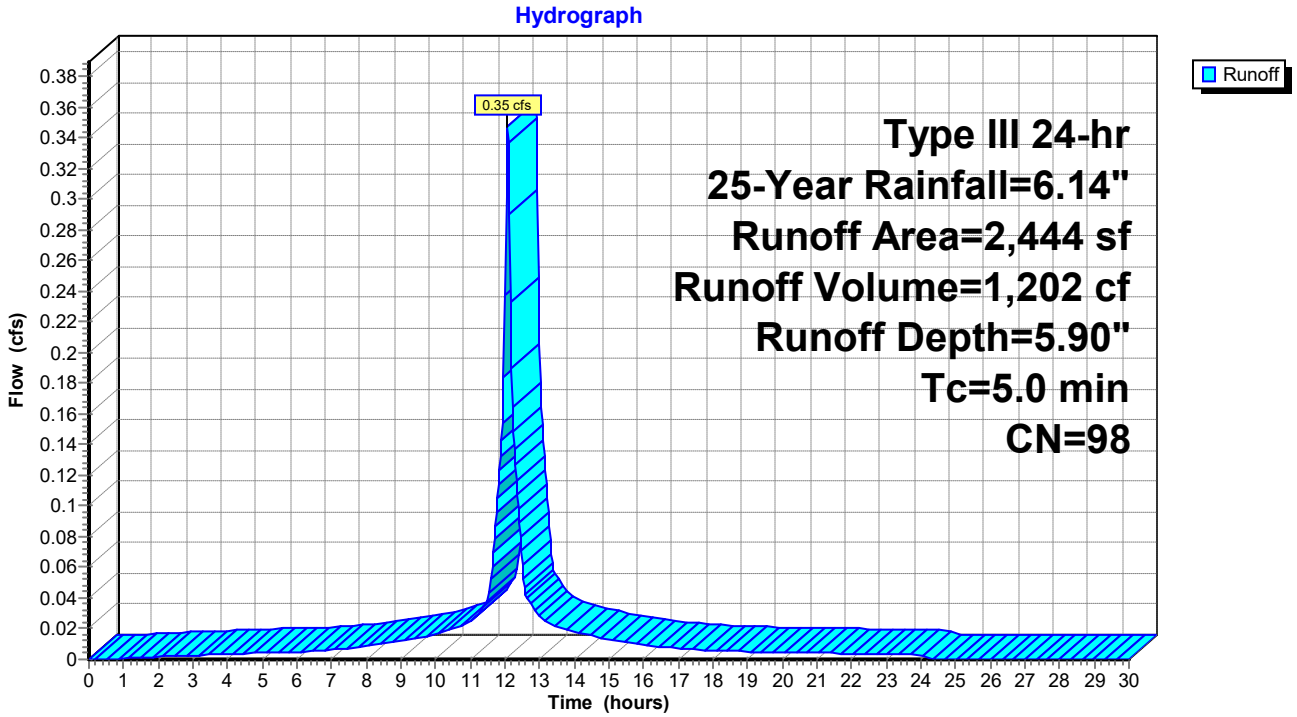
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,202 cf, Depth= 5.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Year Rainfall=6.14"

Area (sf)	CN	Description
2,444	98	Roofs, HSG B
2,444		100.00% Impervious Area

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

Subcatchment 1S: EX BUILDING ROOF



Summary for Subcatchment 2S: EX PAVED AREA

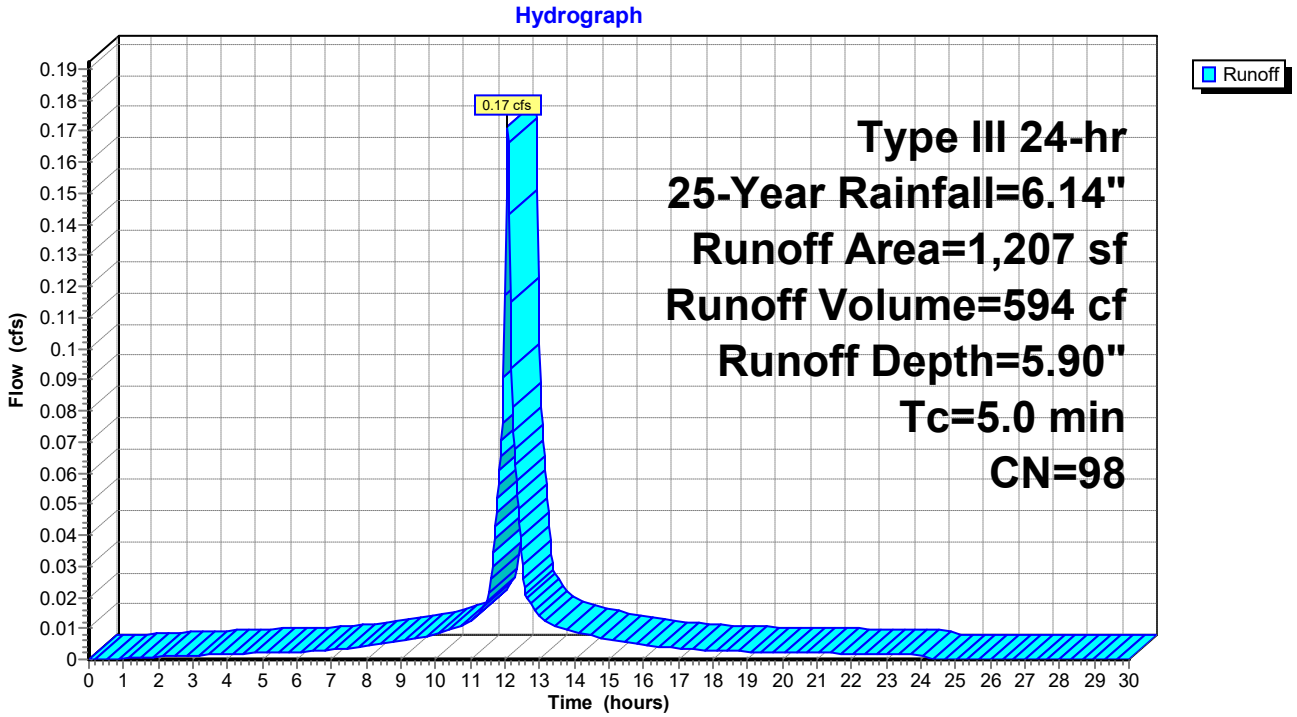
Runoff = 0.17 cfs @ 12.07 hrs, Volume= 594 cf, Depth= 5.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Year Rainfall=6.14"

Area (sf)	CN	Description
1,207	98	Paved parking, HSG B
1,207		100.00% Impervious Area

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

Subcatchment 2S: EX PAVED AREA



Summary for Subcatchment 5S: EX L ANDSCAPED AREA

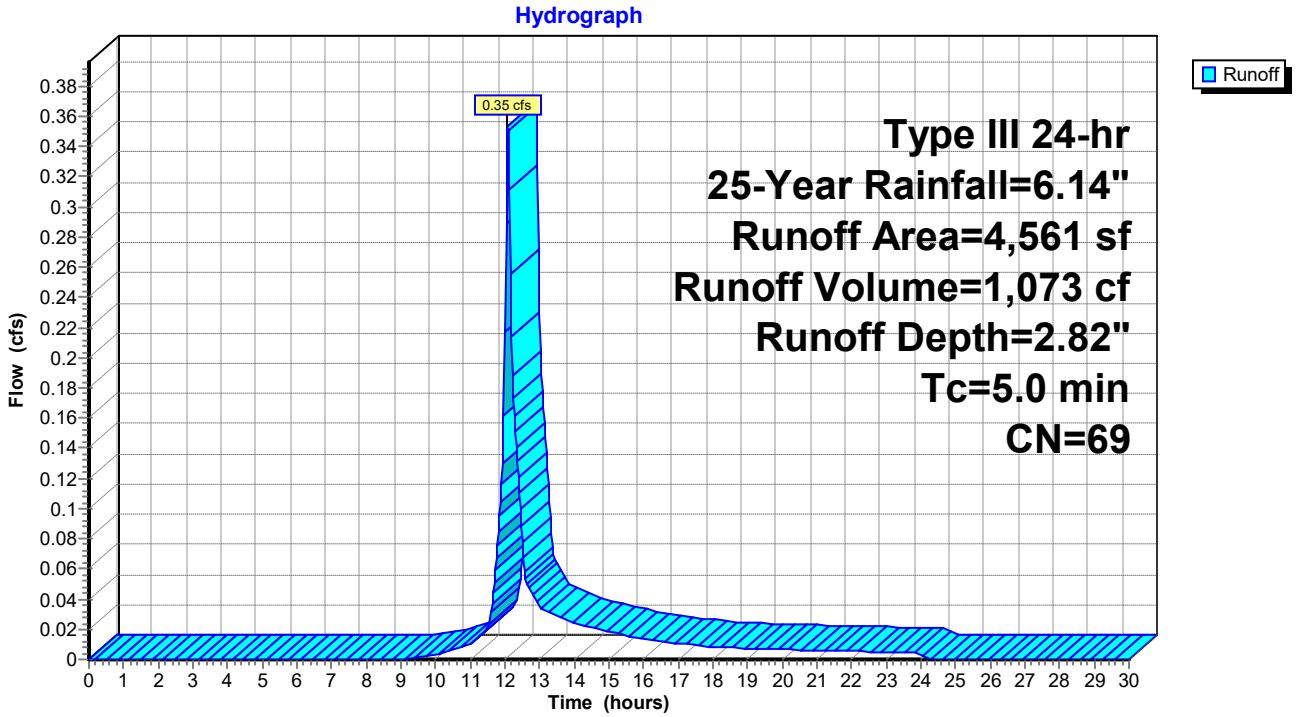
Runoff = 0.35 cfs @ 12.08 hrs, Volume= 1,073 cf, Depth= 2.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 25-Year Rainfall=6.14"

Area (sf)	CN	Description
4,561	69	50-75% Grass cover, Fair, HSG B
4,561		100.00% Pervious Area

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

Subcatchment 5S: EX L ANDSCAPED AREA

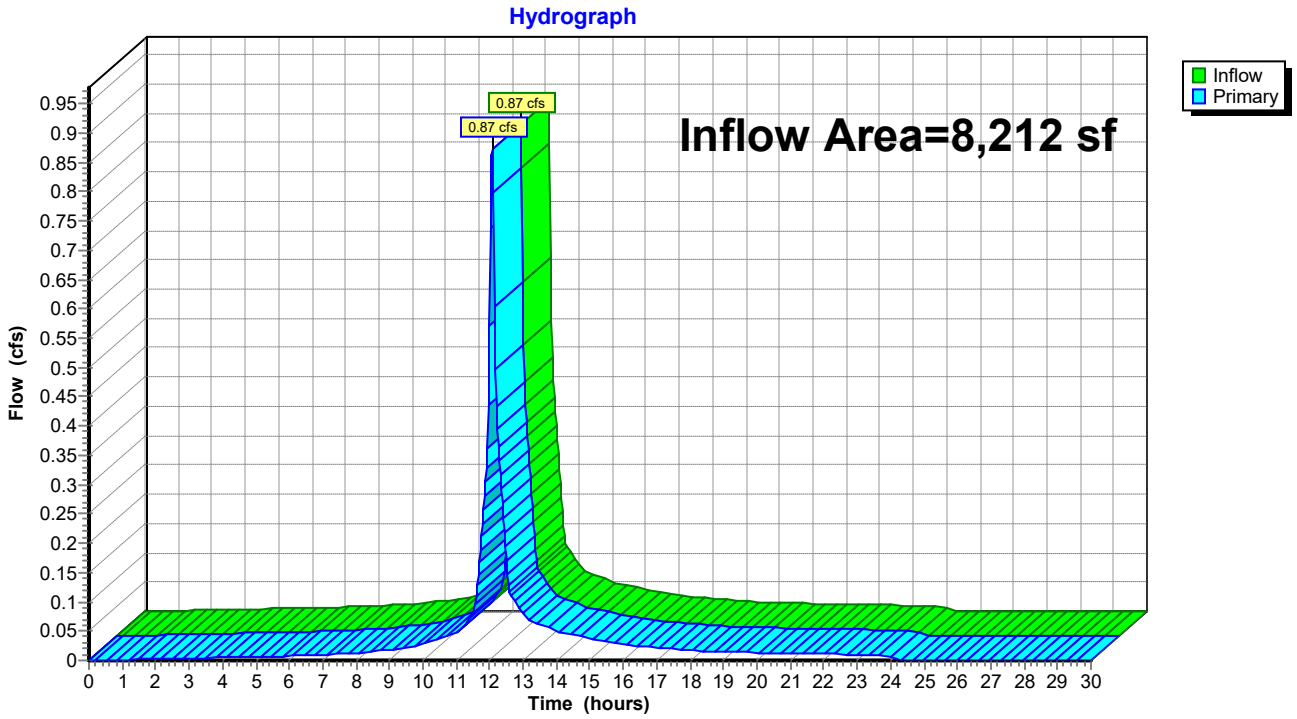


Summary for Link 3L: EXISTING

Inflow Area = 8,212 sf, 44.46% Impervious, Inflow Depth = 4.19" for 25-Year event
Inflow = 0.87 cfs @ 12.07 hrs, Volume= 2,868 cf
Primary = 0.87 cfs @ 12.07 hrs, Volume= 2,868 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: EXISTING



Summary for Subcatchment 1S: EX BUILDING ROOF

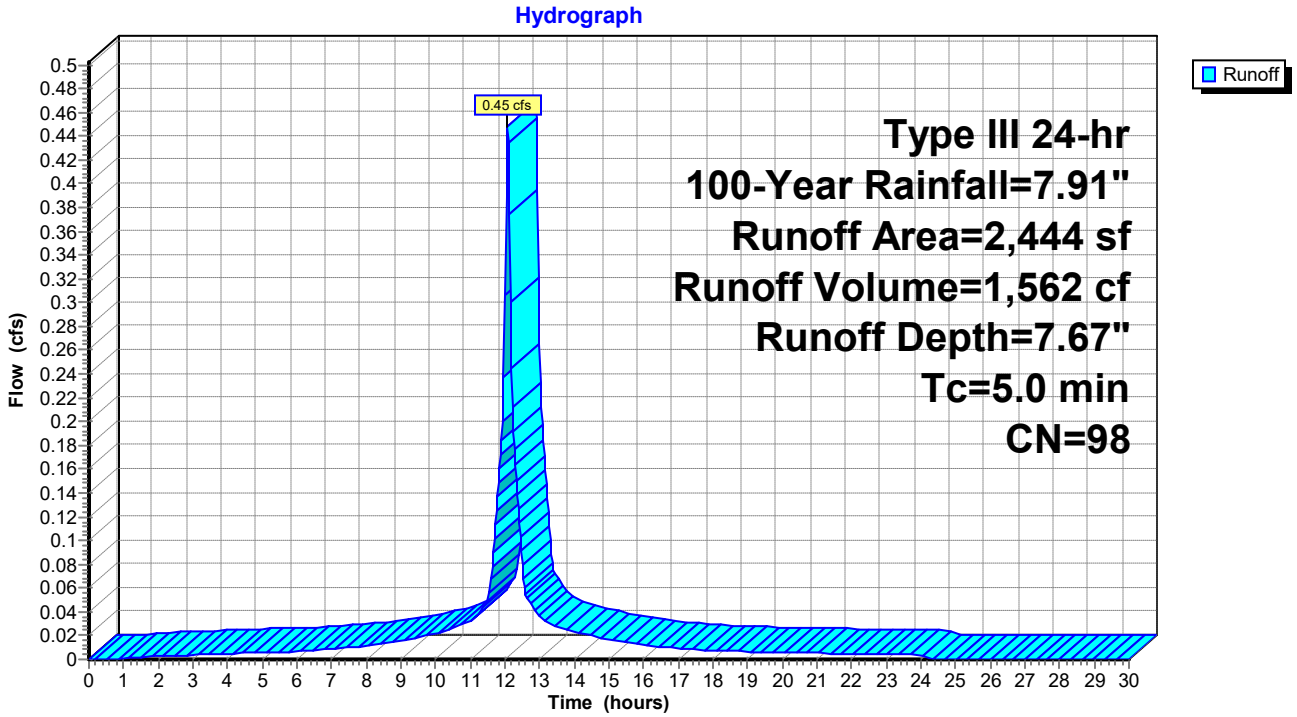
Runoff = 0.45 cfs @ 12.07 hrs, Volume= 1,562 cf, Depth= 7.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Year Rainfall=7.91"

Area (sf)	CN	Description
2,444	98	Roofs, HSG B
2,444		100.00% Impervious Area

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

Subcatchment 1S: EX BUILDING ROOF



Summary for Subcatchment 2S: EX PAVED AREA

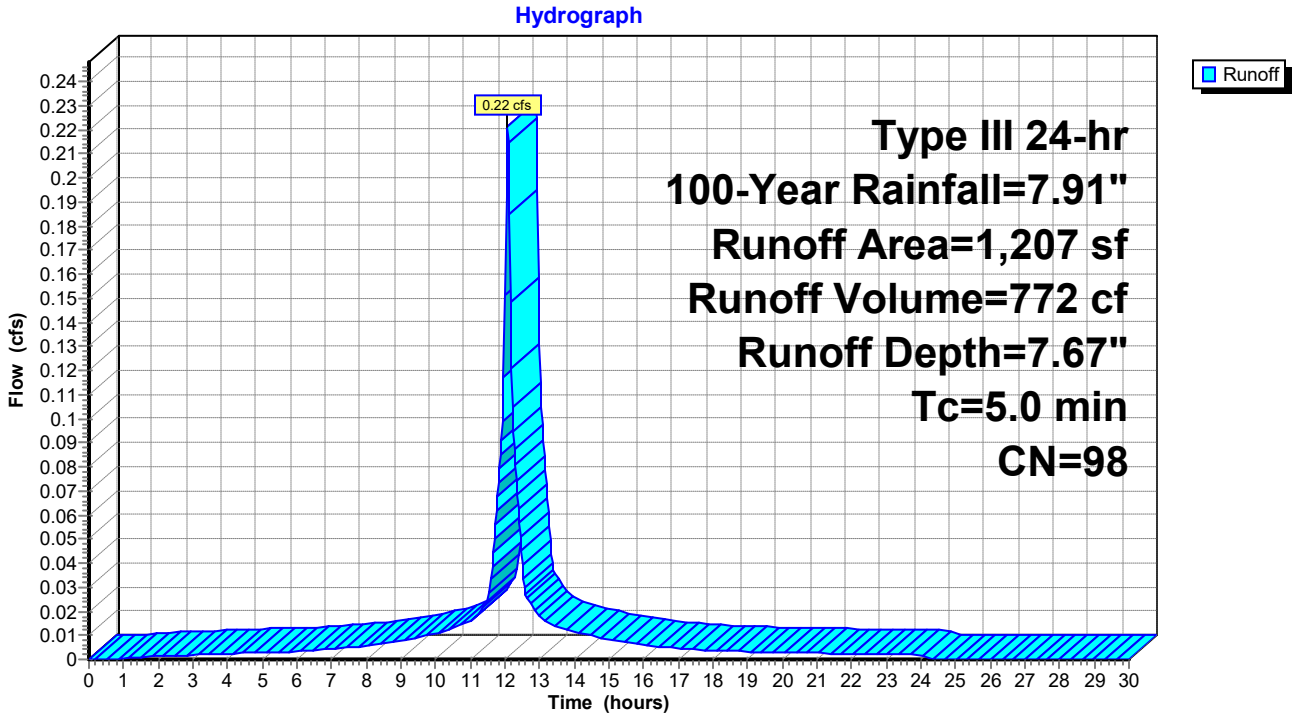
Runoff = 0.22 cfs @ 12.07 hrs, Volume= 772 cf, Depth= 7.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Year Rainfall=7.91"

Area (sf)	CN	Description
1,207	98	Paved parking, HSG B
1,207		100.00% Impervious Area

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

Subcatchment 2S: EX PAVED AREA



Summary for Subcatchment 5S: EX L ANDSCAPED AREA

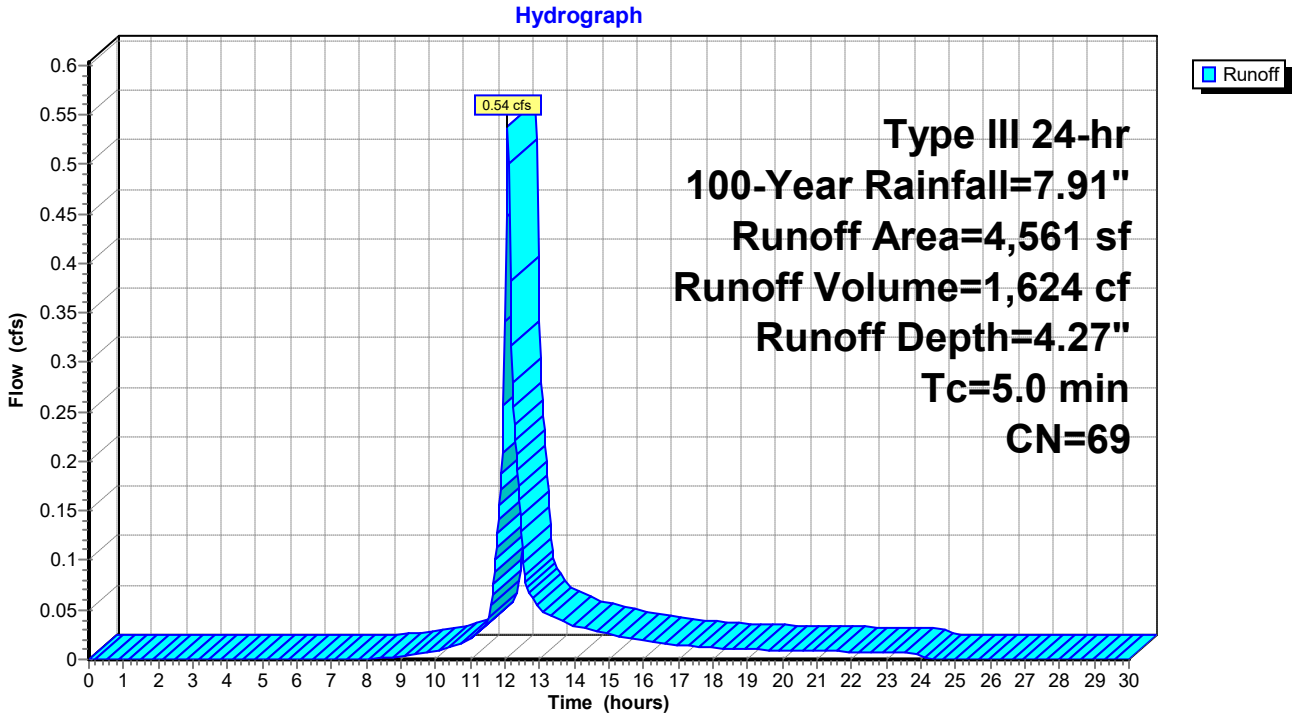
Runoff = 0.54 cfs @ 12.08 hrs, Volume= 1,624 cf, Depth= 4.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr 100-Year Rainfall=7.91"

Area (sf)	CN	Description
4,561	69	50-75% Grass cover, Fair, HSG B
4,561		100.00% Pervious Area

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

Subcatchment 5S: EX L ANDSCAPED AREA

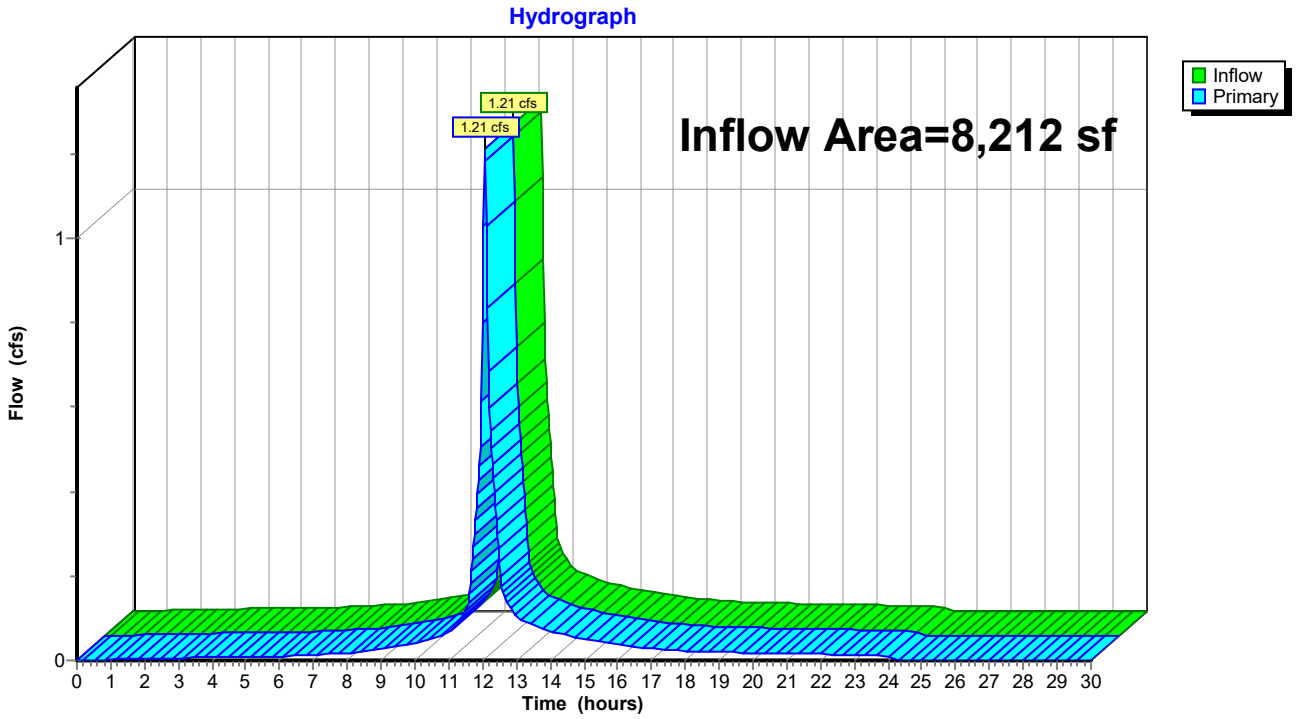


Summary for Link 3L: EXISTING

Inflow Area = 8,212 sf, 44.46% Impervious, Inflow Depth = 5.78" for 100-Year event
Inflow = 1.21 cfs @ 12.07 hrs, Volume= 3,958 cf
Primary = 1.21 cfs @ 12.07 hrs, Volume= 3,958 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: EXISTING



Summary for Subcatchment 1S: EX BUILDING ROOF

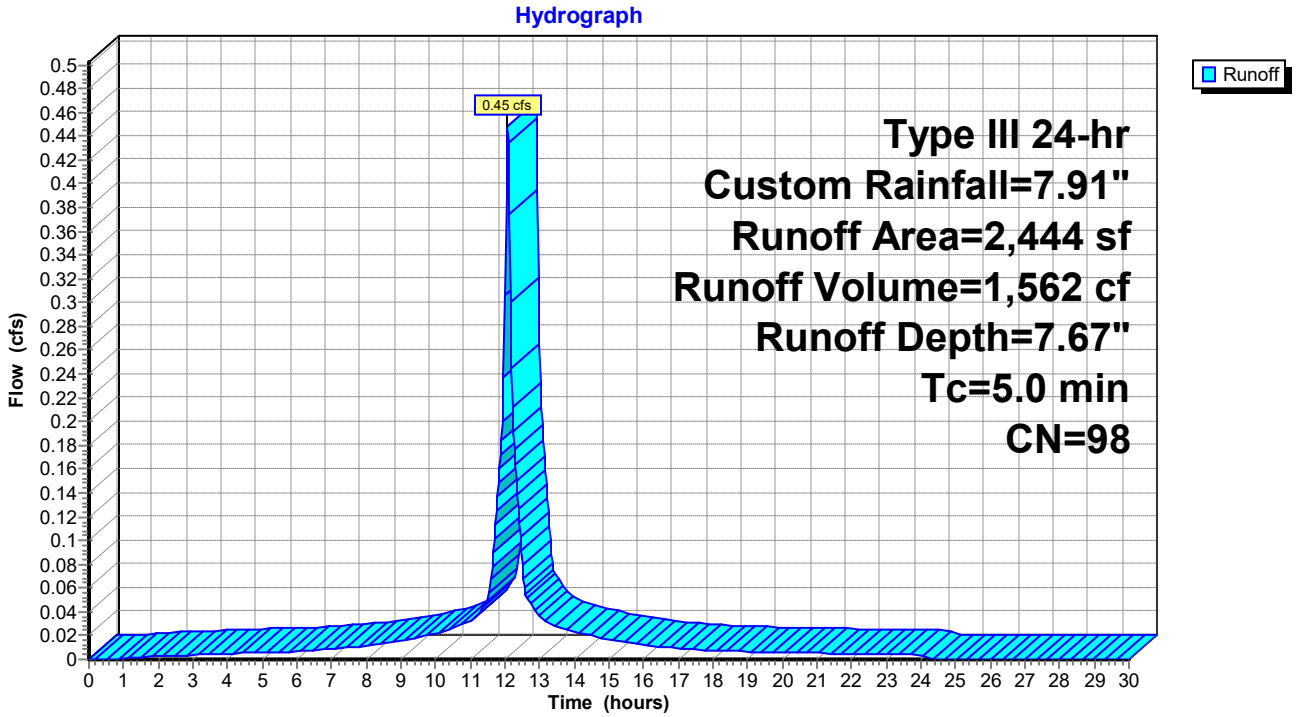
Runoff = 0.45 cfs @ 12.07 hrs, Volume= 1,562 cf, Depth= 7.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr Custom Rainfall=7.91"

Area (sf)	CN	Description
2,444	98	Roofs, HSG B
2,444		100.00% Impervious Area

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

Subcatchment 1S: EX BUILDING ROOF



Summary for Subcatchment 2S: EX PAVED AREA

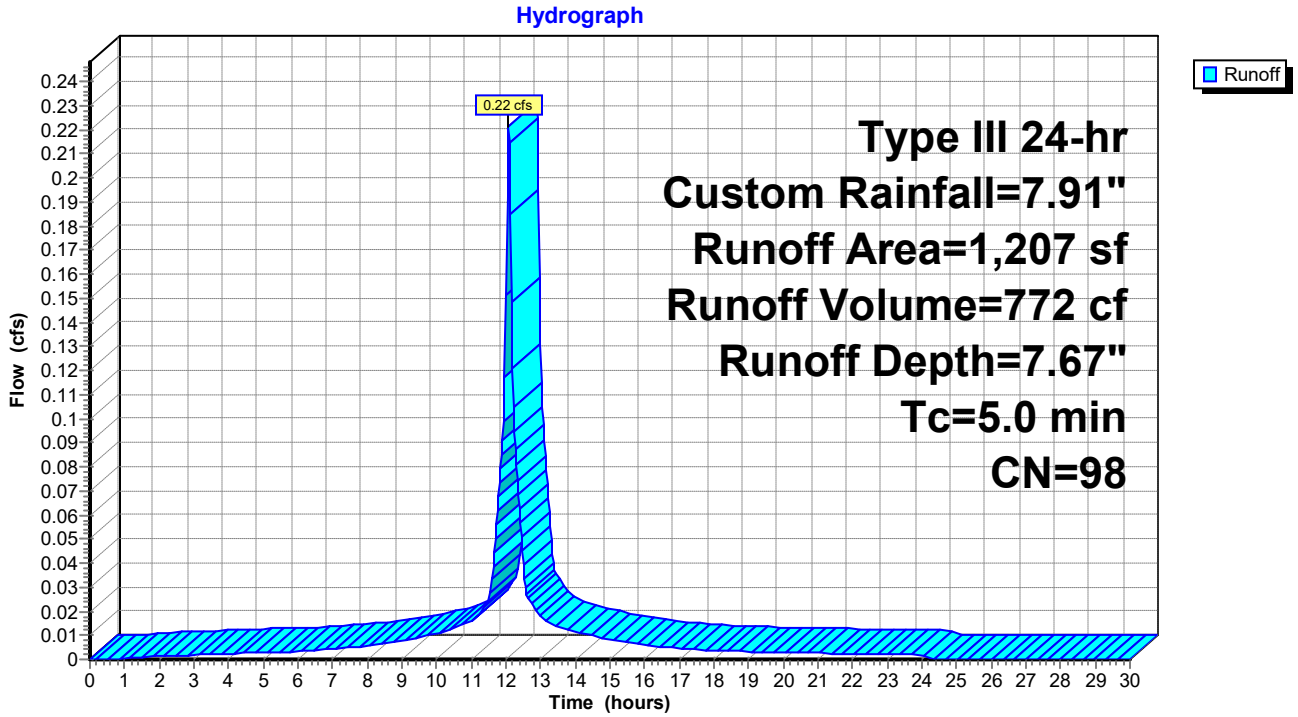
Runoff = 0.22 cfs @ 12.07 hrs, Volume= 772 cf, Depth= 7.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr Custom Rainfall=7.91"

Area (sf)	CN	Description
1,207	98	Paved parking, HSG B
1,207		100.00% Impervious Area

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

Subcatchment 2S: EX PAVED AREA



Summary for Subcatchment 5S: EX L ANDSCAPED AREA

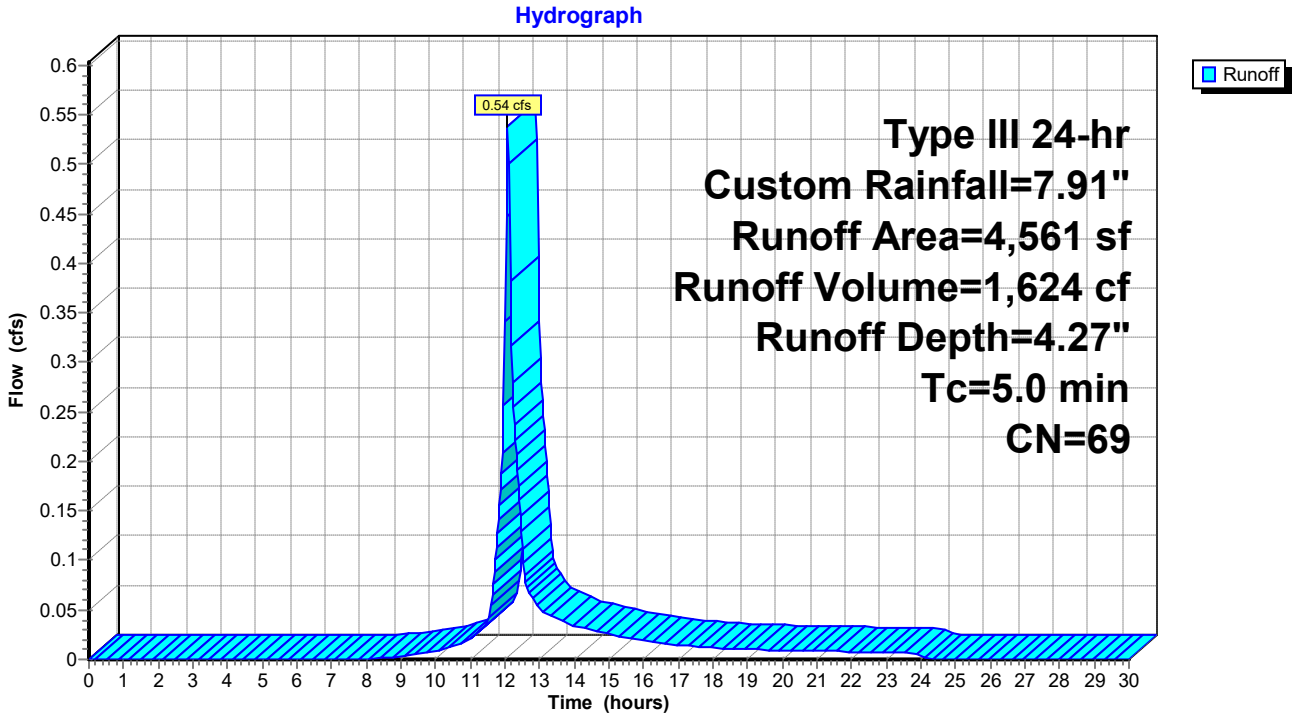
Runoff = 0.54 cfs @ 12.08 hrs, Volume= 1,624 cf, Depth= 4.27"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs
Type III 24-hr Custom Rainfall=7.91"

Area (sf)	CN	Description
4,561	69	50-75% Grass cover, Fair, HSG B
4,561		100.00% Pervious Area

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

Subcatchment 5S: EX L ANDSCAPED AREA

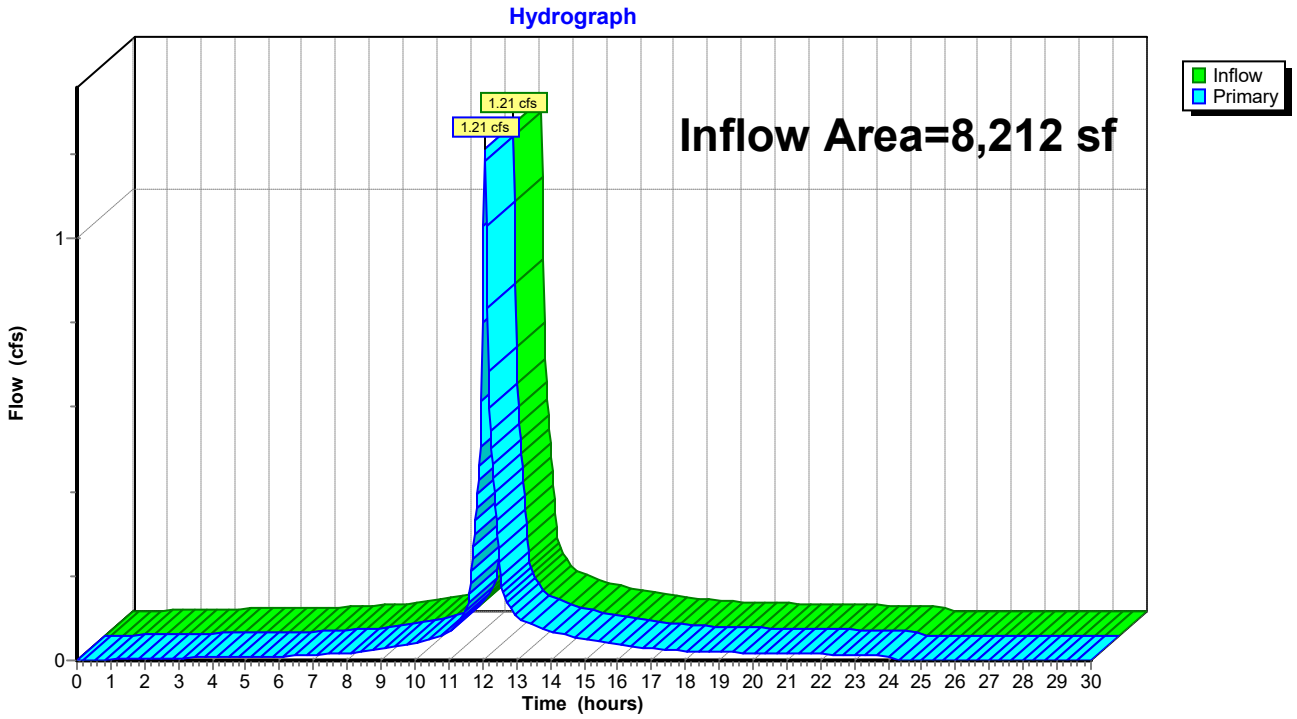


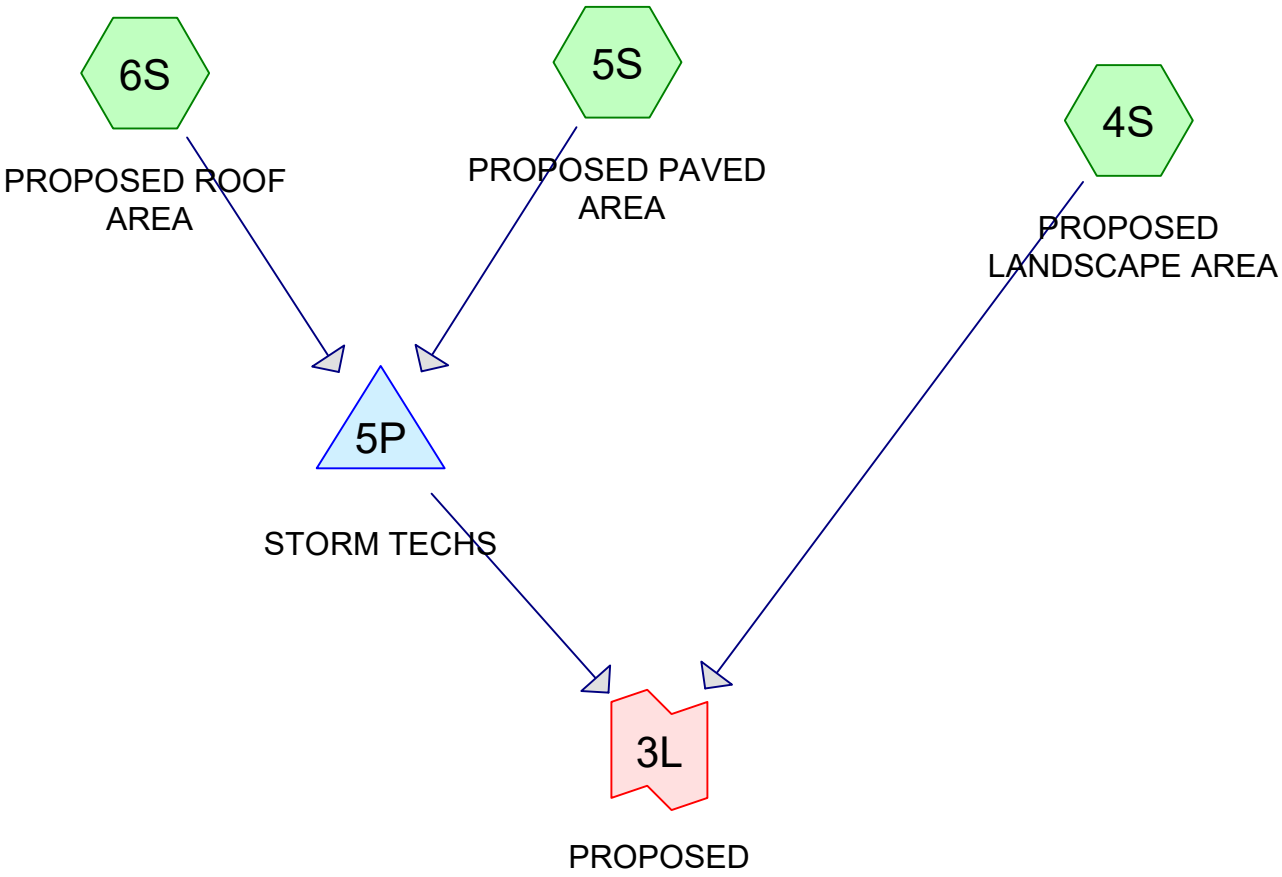
Summary for Link 3L: EXISTING

Inflow Area = 8,212 sf, 44.46% Impervious, Inflow Depth = 5.78" for Custom event
Inflow = 1.21 cfs @ 12.07 hrs, Volume= 3,958 cf
Primary = 1.21 cfs @ 12.07 hrs, Volume= 3,958 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.03 hrs

Link 3L: EXISTING





Subcat Reach Pond Link

Routing Diagram for PROPOSED
Prepared by SPRUHAN ENGINEERING, P.C., Printed 1/24/2020

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
1,966	69	50-75% Grass cover, Fair, HSG B (4S)
2,195	98	Paved parking, HSG B (5S)
4,051	98	Roofs, HSG B (6S)
8,212	**91**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
8,212	HSG B	4S, 5S, 6S
0	HSG C	
0	HSG D	
0	Other	
8,212		**TOTAL AREA**

Summary for Subcatchment 4S: PROPOSED LANDSCAPE AREA

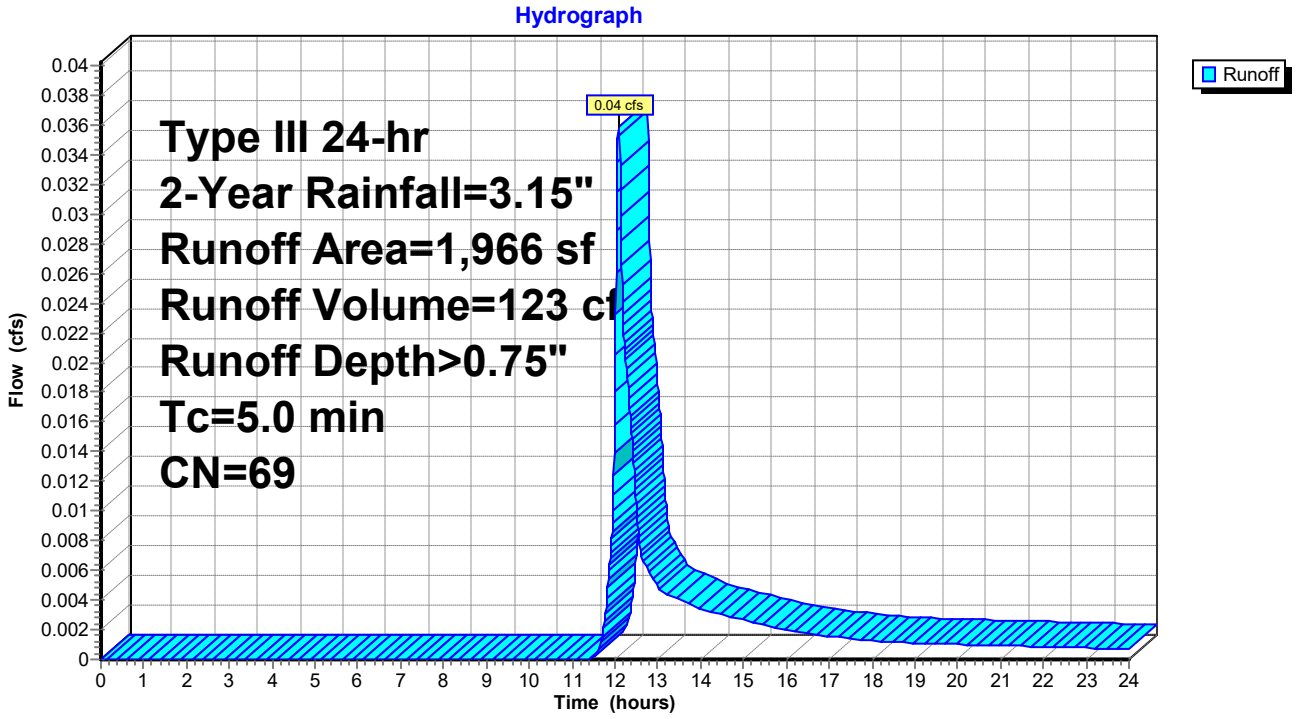
Runoff = 0.04 cfs @ 12.09 hrs, Volume= 123 cf, Depth> 0.75"

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=3.15"

Area (sf)	CN	Description
1,966	69	50-75% Grass cover, Fair, HSG B
1,966		100.00% Pervious Area

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

Subcatchment 4S: PROPOSED LANDSCAPE AREA



Summary for Subcatchment 5S: PROPOSED PAVED AREA

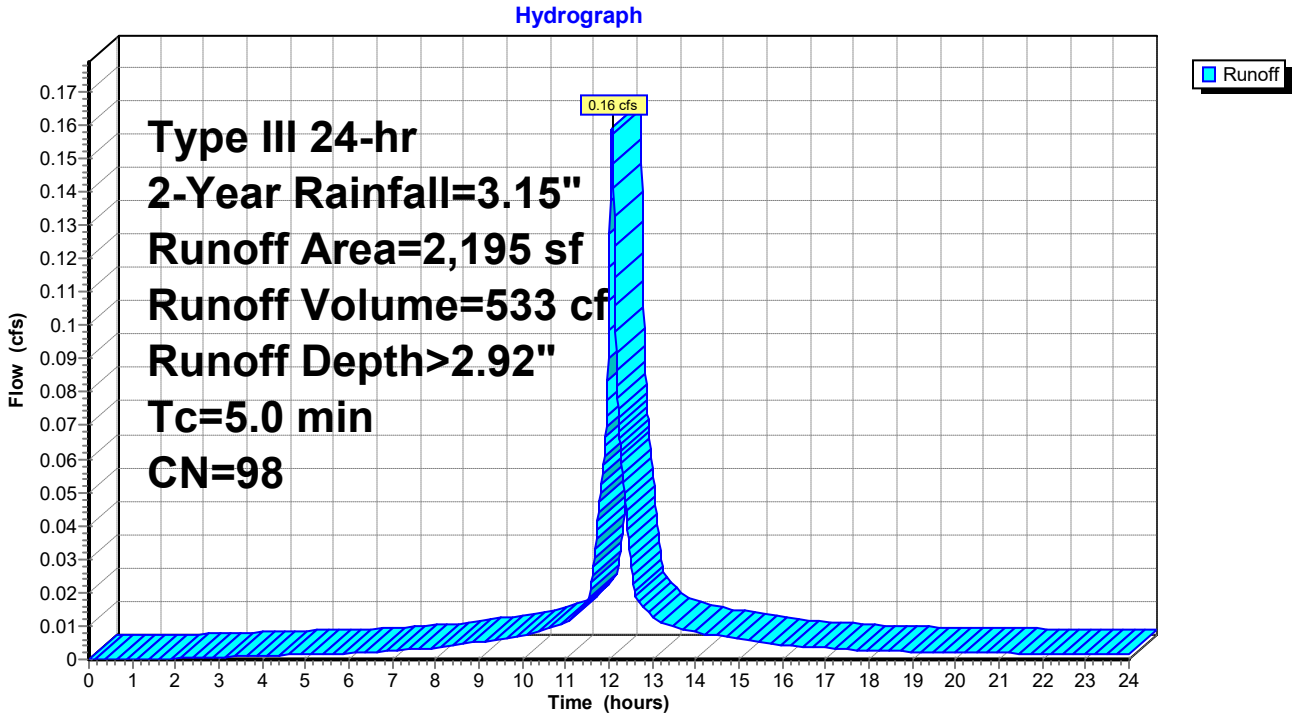
Runoff = 0.16 cfs @ 12.07 hrs, Volume= 533 cf, Depth> 2.92"

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=3.15"

Area (sf)	CN	Description
2,195	98	Paved parking, HSG B
2,195		100.00% Impervious Area

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

Subcatchment 5S: PROPOSED PAVED AREA



Summary for Subcatchment 6S: PROPOSED ROOF AREA

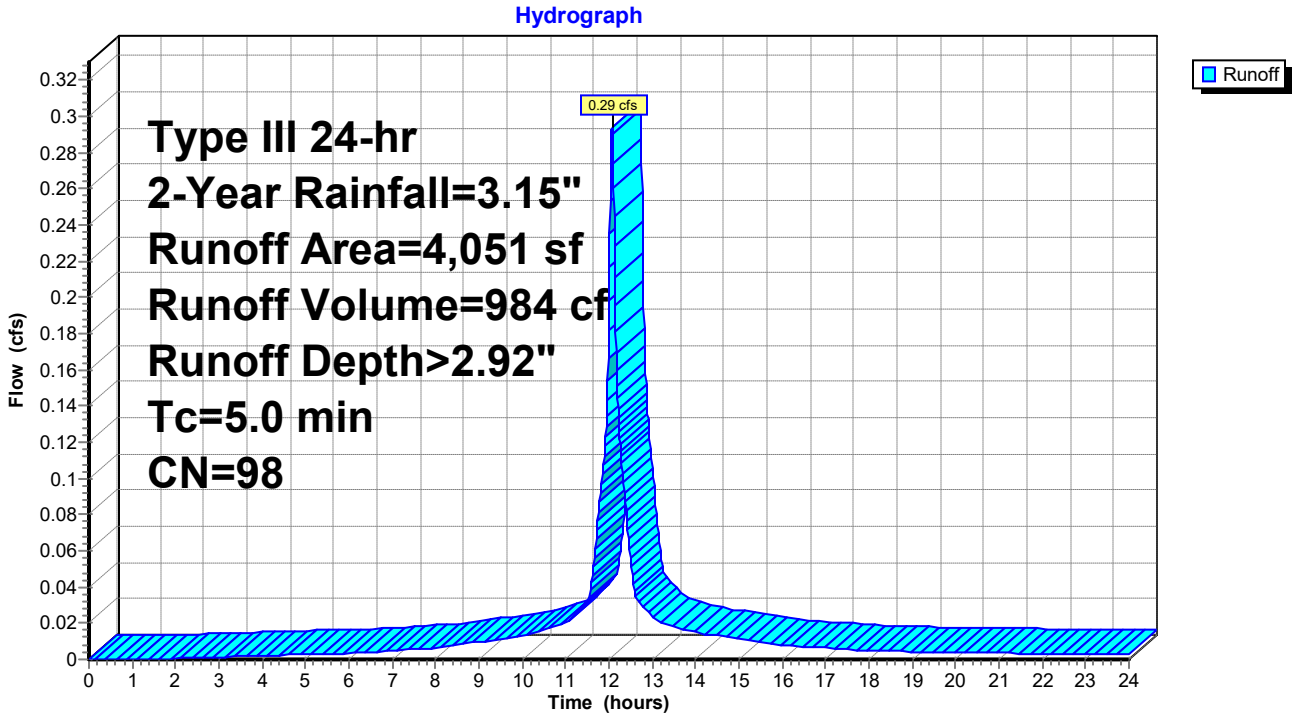
Runoff = 0.29 cfs @ 12.07 hrs, Volume= 984 cf, Depth> 2.92"

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=3.15"

Area (sf)	CN	Description
4,051	98	Roofs, HSG B
4,051		100.00% Impervious Area

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

Subcatchment 6S: PROPOSED ROOF AREA



Summary for Pond 5P: STORM TECHS

Inflow Area = 6,246 sf,100.00% Impervious, Inflow Depth > 2.92" for 2-Year event
Inflow = 0.45 cfs @ 12.07 hrs, Volume= 1,518 cf
Outflow = 0.02 cfs @ 15.12 hrs, Volume= 909 cf, Atten= 96%, Lag= 183.1 min
Discarded = 0.02 cfs @ 15.12 hrs, Volume= 909 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 4
Peak Elev= 12.98' @ 15.12 hrs Surf.Area= 366 sf Storage= 876 cf

Plug-Flow detention time= 286.1 min calculated for 909 cf (60% of inflow)
Center-of-Mass det. time= 178.3 min (933.6 - 755.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	8.50'	658 cf	**20.50'W x 17.86'L x 5.50'H Field A** 2,013 cf Overall - 368 cf Embedded = 1,646 cf x 40.0% Voids
#2A	10.50'	368 cf	**ADS_StormTech SC-740 +Cap** x 8 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 8 Chambers in 4 Rows
#3	13.00'	10 cf	**Ponding** Listed below -Impervious
		1,036 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Cum.Store (cubic-feet)
13.00	0
15.50	5
15.80	10

Device	Routing	Invert	Outlet Devices
#1	Discarded	8.50'	**1.020 in/hr Exfiltration over Wetted area**
#2	Primary	13.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 15.12 hrs HW=12.98' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=8.50' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)

Pond 5P: STORM TECHS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

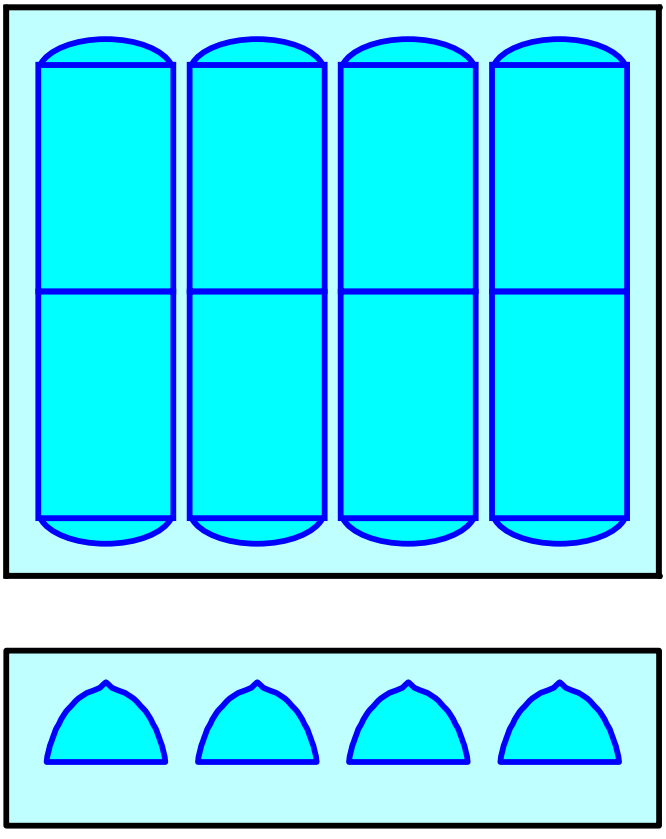
2 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 15.86' Row Length +12.0" End Stone x 2 = 17.86' Base Length
4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width
24.0" Base + 30.0" Chamber Height + 12.0" Cover = 5.50' Field Height

8 Chambers x 45.9 cf = 367.5 cf Chamber Storage

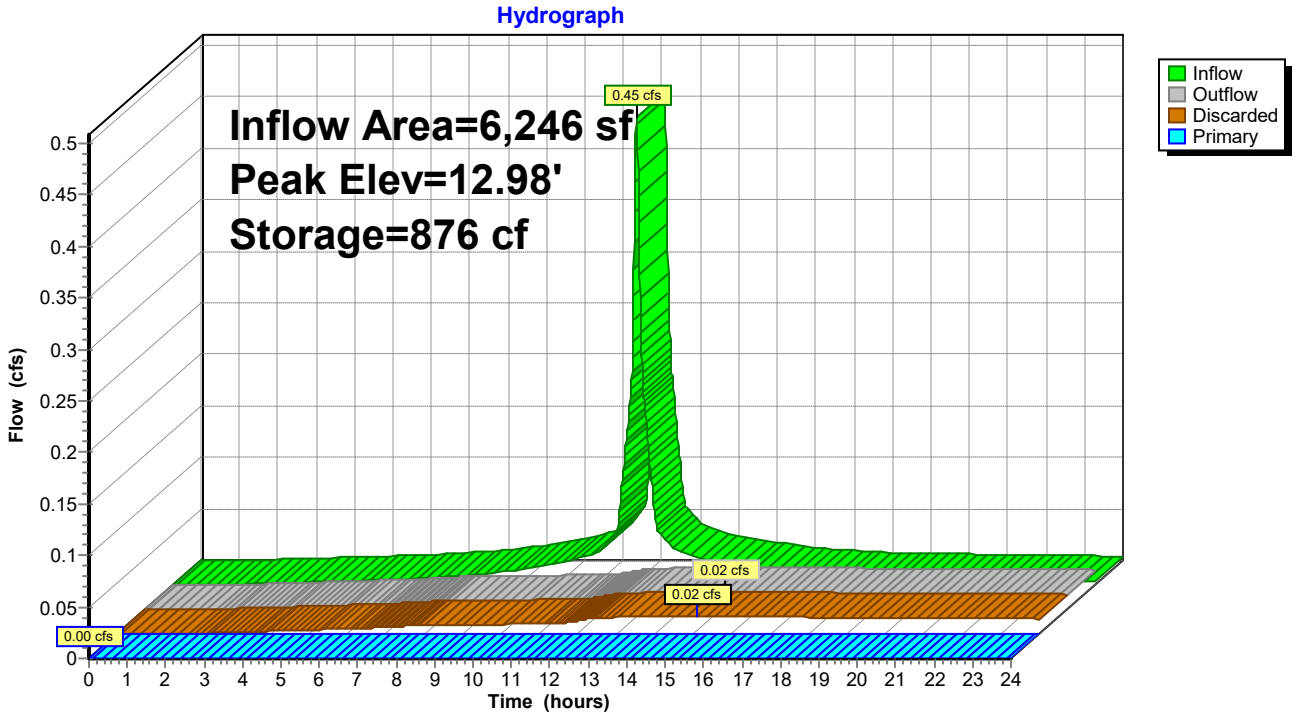
2,013.3 cf Field - 367.5 cf Chambers = 1,645.8 cf Stone x 40.0% Voids = 658.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,025.8 cf = 0.024 af
Overall Storage Efficiency = 51.0%
Overall System Size = 17.86' x 20.50' x 5.50'

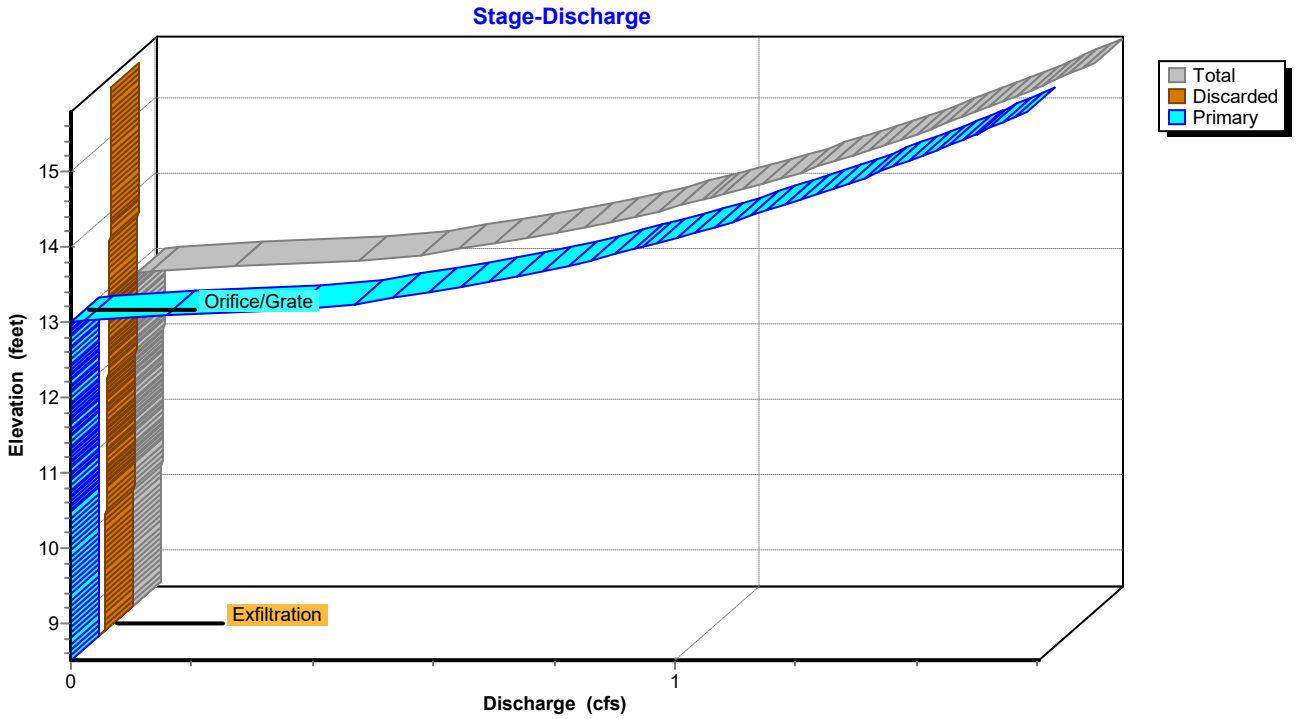
8 Chambers
74.6 cy Field
61.0 cy Stone



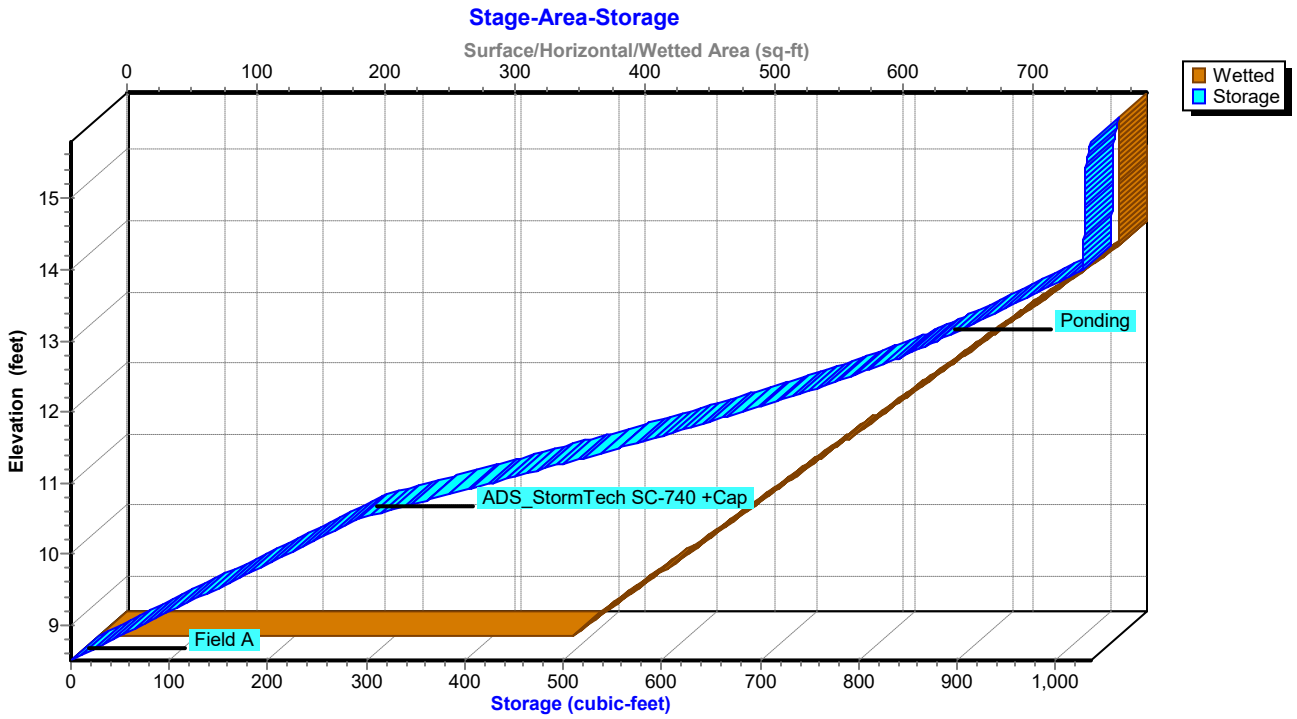
Pond 5P: STORM TECHS



Pond 5P: STORM TECHS



Pond 5P: STORM TECHS

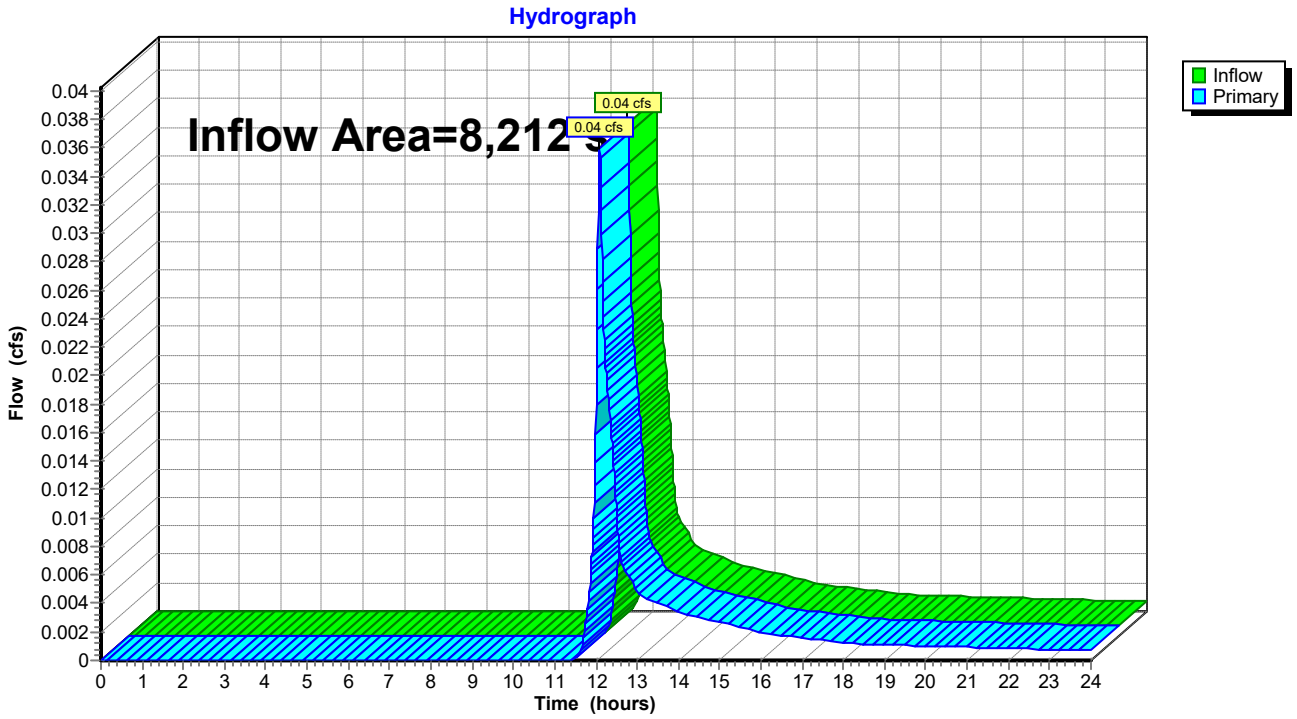


Summary for Link 3L: PROPOSED

Inflow Area = 8,212 sf, 76.06% Impervious, Inflow Depth > 0.18" for 2-Year event
Inflow = 0.04 cfs @ 12.09 hrs, Volume= 123 cf
Primary = 0.04 cfs @ 12.09 hrs, Volume= 123 cf, Atten= 0%, Lag= 0.0 min

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

Link 3L: PROPOSED



Summary for Subcatchment 4S: PROPOSED LANDSCAPE AREA

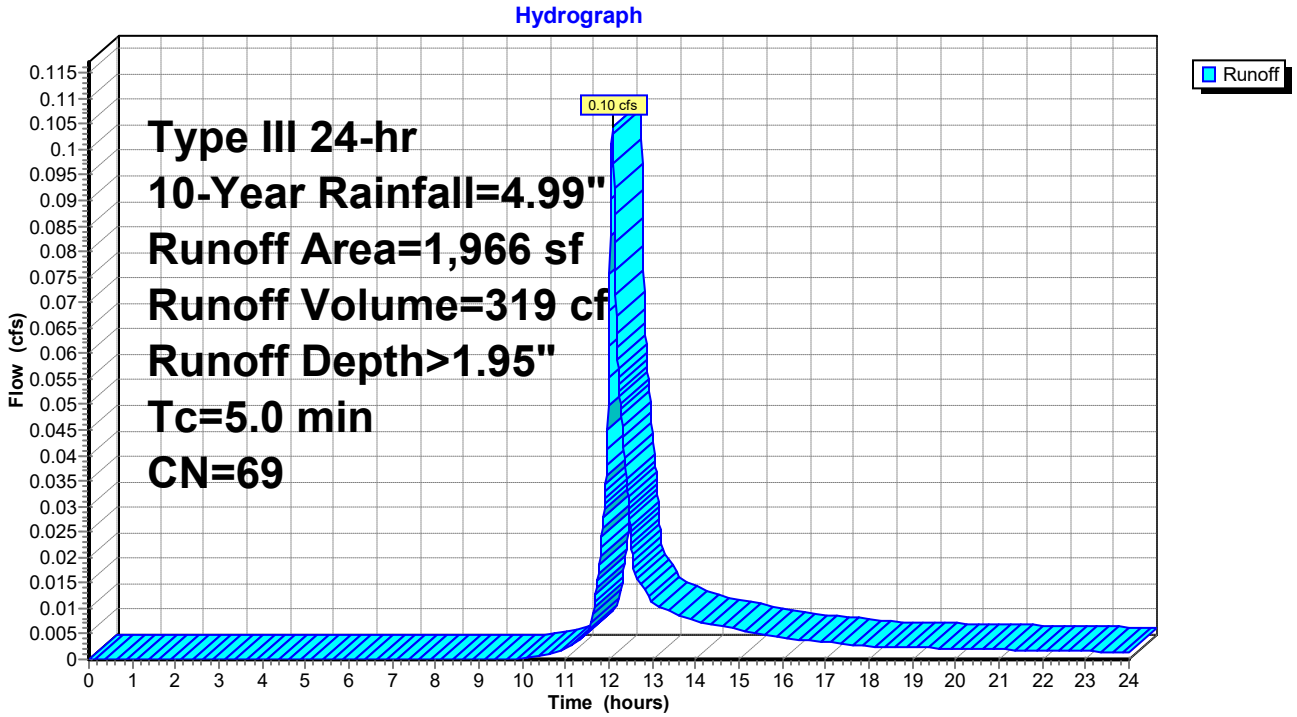
Runoff = 0.10 cfs @ 12.08 hrs, Volume= 319 cf, Depth> 1.95"

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=4.99"

Area (sf)	CN	Description
1,966	69	50-75% Grass cover, Fair, HSG B
1,966		100.00% Pervious Area

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

Subcatchment 4S: PROPOSED LANDSCAPE AREA



Summary for Subcatchment 5S: PROPOSED PAVED AREA

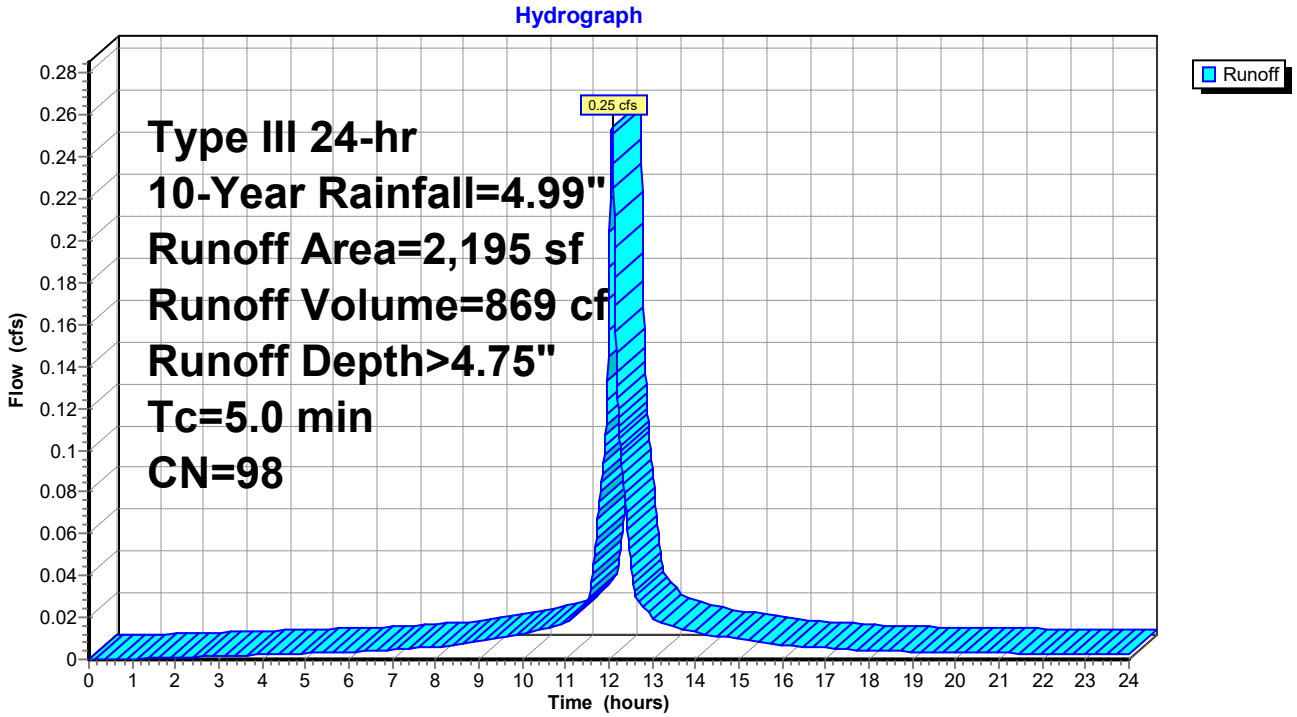
Runoff = 0.25 cfs @ 12.07 hrs, Volume= 869 cf, Depth> 4.75"

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=4.99"

Area (sf)	CN	Description
2,195	98	Paved parking, HSG B
2,195		100.00% Impervious Area

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

Subcatchment 5S: PROPOSED PAVED AREA



Summary for Subcatchment 6S: PROPOSED ROOF AREA

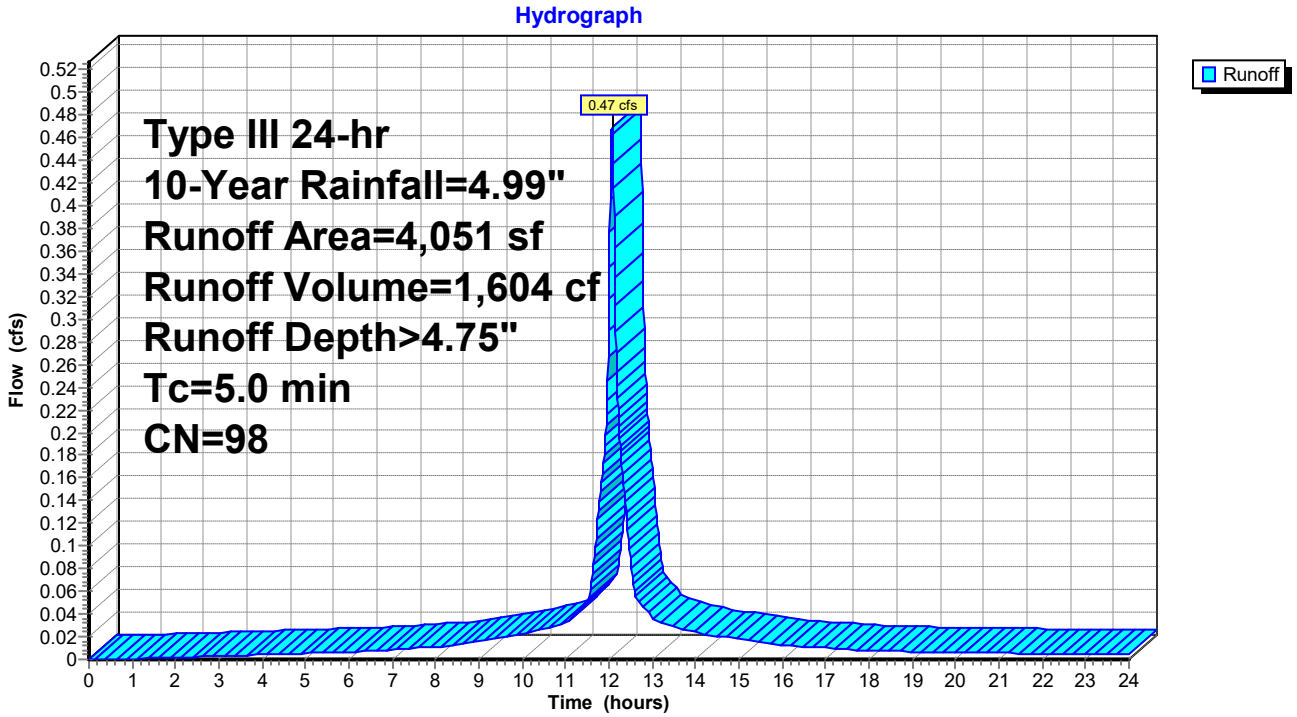
Runoff = 0.47 cfs @ 12.07 hrs, Volume= 1,604 cf, Depth> 4.75"

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=4.99"

Area (sf)	CN	Description
4,051	98	Roofs, HSG B
4,051		100.00% Impervious Area

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

Subcatchment 6S: PROPOSED ROOF AREA



Summary for Pond 5P: STORM TECHS

Inflow Area = 6,246 sf,100.00% Impervious, Inflow Depth > 4.75" for 10-Year event
Inflow = 0.73 cfs @ 12.07 hrs, Volume= 2,472 cf
Outflow = 0.53 cfs @ 12.14 hrs, Volume= 1,761 cf, Atten= 27%, Lag= 4.0 min
Discarded = 0.02 cfs @ 12.14 hrs, Volume= 1,016 cf
Primary = 0.51 cfs @ 12.14 hrs, Volume= 746 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 4
Peak Elev= 13.30' @ 12.14 hrs Surf.Area= 366 sf Storage= 924 cf

Plug-Flow detention time= 184.4 min calculated for 1,761 cf (71% of inflow)
Center-of-Mass det. time= 91.6 min (838.3 - 746.7)

Volume	Invert	Avail.Storage	Storage Description
#1A	8.50'	658 cf	**20.50'W x 17.86'L x 5.50'H Field A** 2,013 cf Overall - 368 cf Embedded = 1,646 cf x 40.0% Voids
#2A	10.50'	368 cf	**ADS_StormTech SC-740 +Cap** x 8 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 8 Chambers in 4 Rows
#3	13.00'	10 cf	**Ponding** Listed below -Impervious
		1,036 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Cum.Store (cubic-feet)
13.00	0
15.50	5
15.80	10

Device	Routing	Invert	Outlet Devices
#1	Discarded	8.50'	**1.020 in/hr Exfiltration over Wetted area**
#2	Primary	13.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.14 hrs HW=13.30' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.51 cfs @ 12.14 hrs HW=13.30' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.51 cfs @ 2.62 fps)

Pond 5P: STORM TECHS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

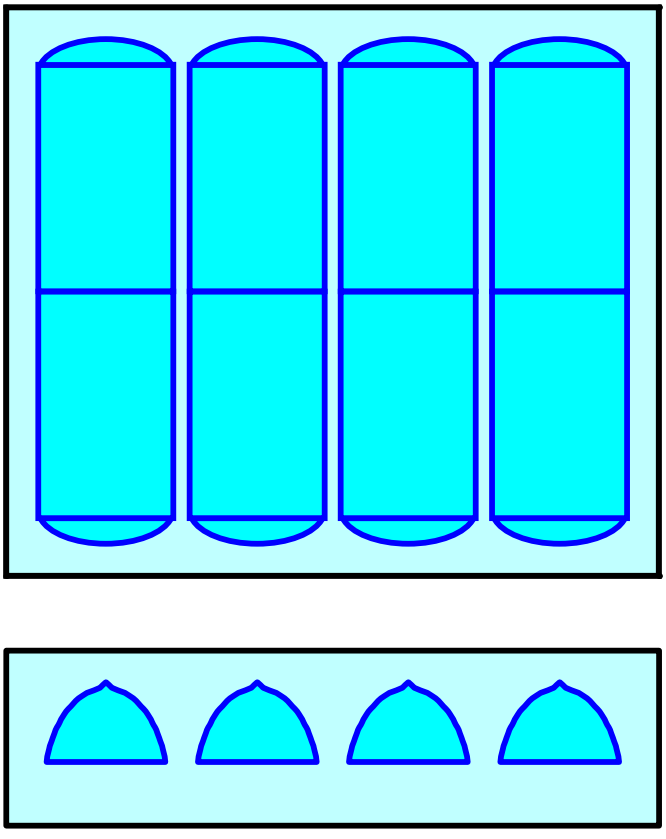
2 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 15.86' Row Length +12.0" End Stone x 2 = 17.86' Base Length
4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width
24.0" Base + 30.0" Chamber Height + 12.0" Cover = 5.50' Field Height

8 Chambers x 45.9 cf = 367.5 cf Chamber Storage

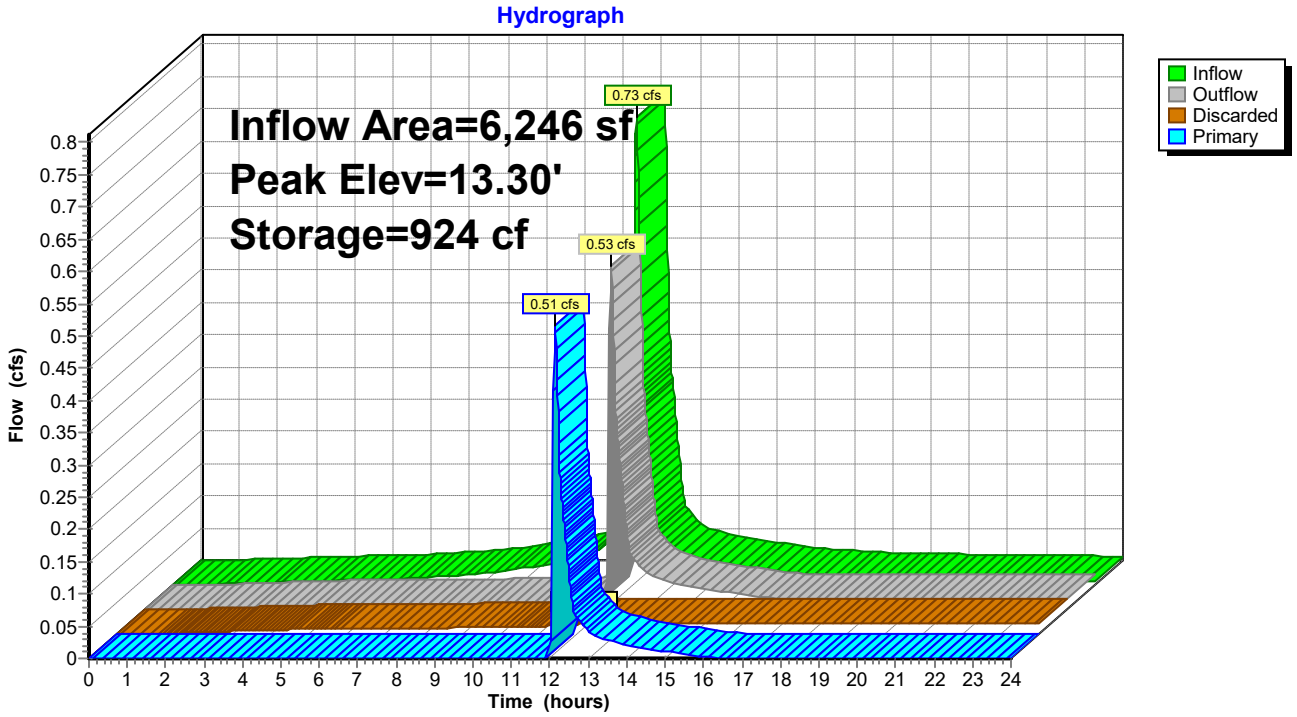
2,013.3 cf Field - 367.5 cf Chambers = 1,645.8 cf Stone x 40.0% Voids = 658.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,025.8 cf = 0.024 af
Overall Storage Efficiency = 51.0%
Overall System Size = 17.86' x 20.50' x 5.50'

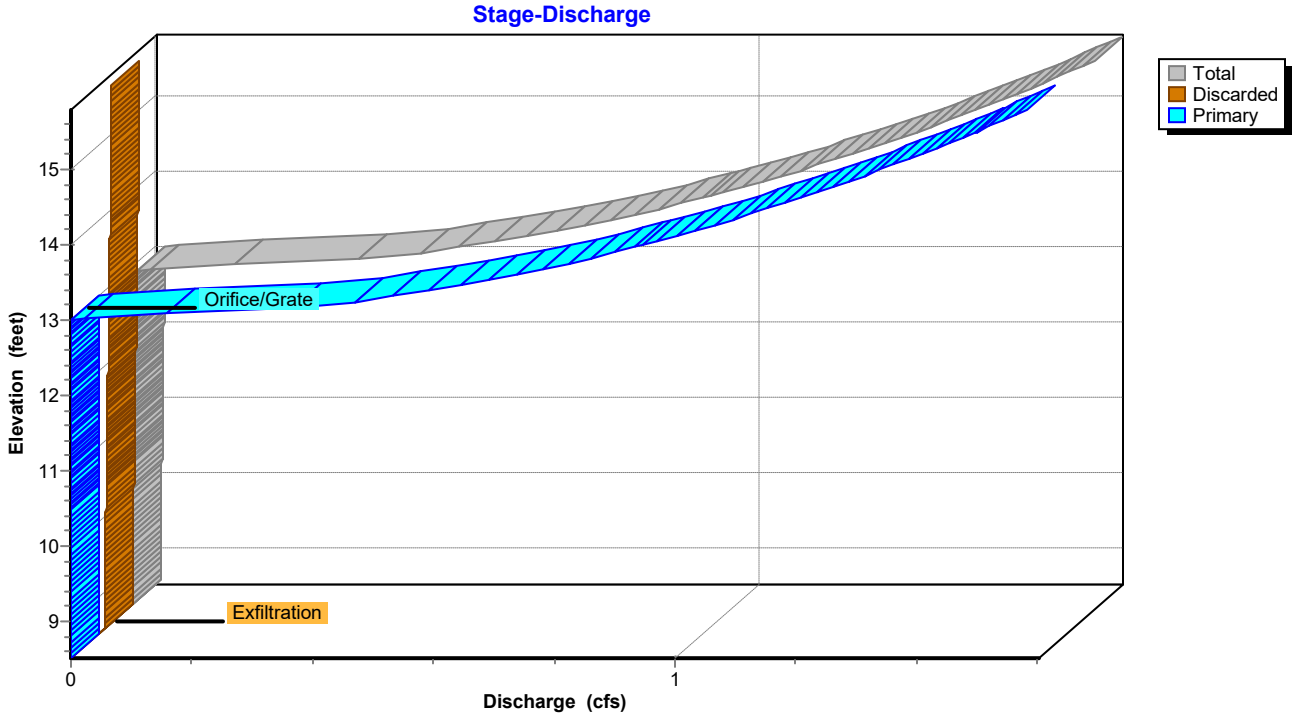
8 Chambers
74.6 cy Field
61.0 cy Stone



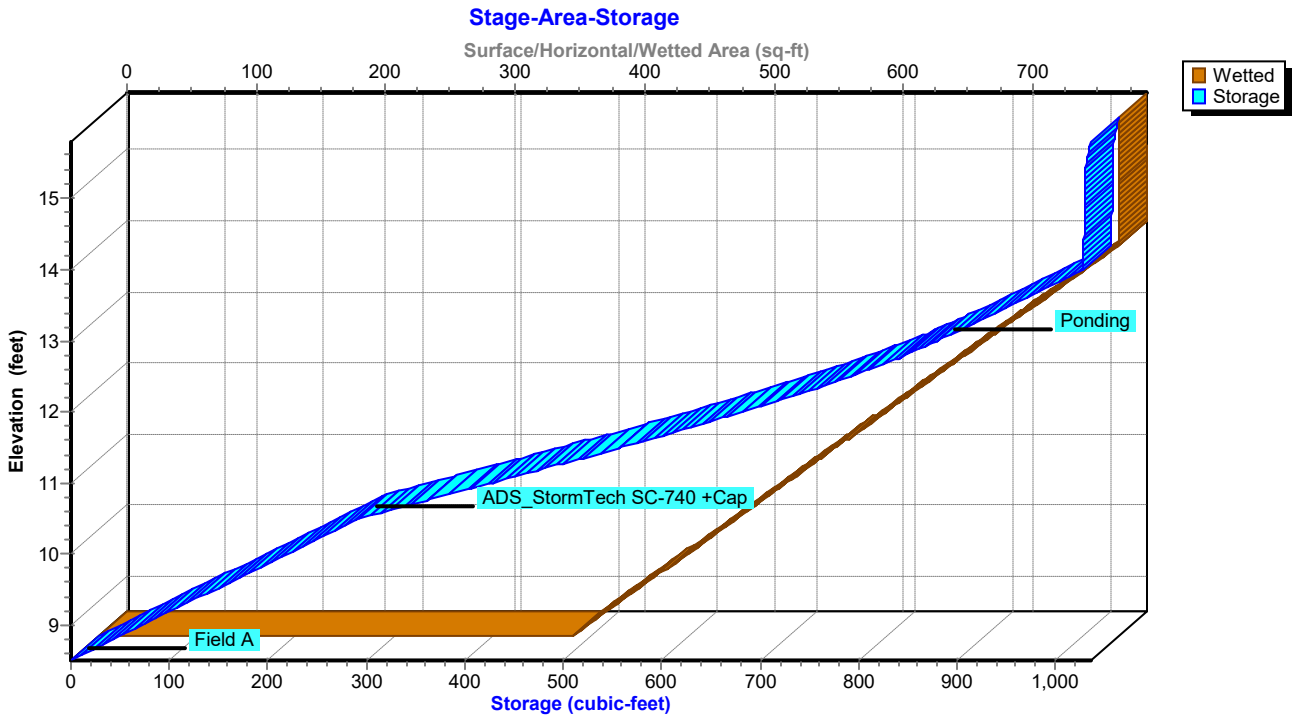
Pond 5P: STORM TECHS



Pond 5P: STORM TECHS



Pond 5P: STORM TECHS

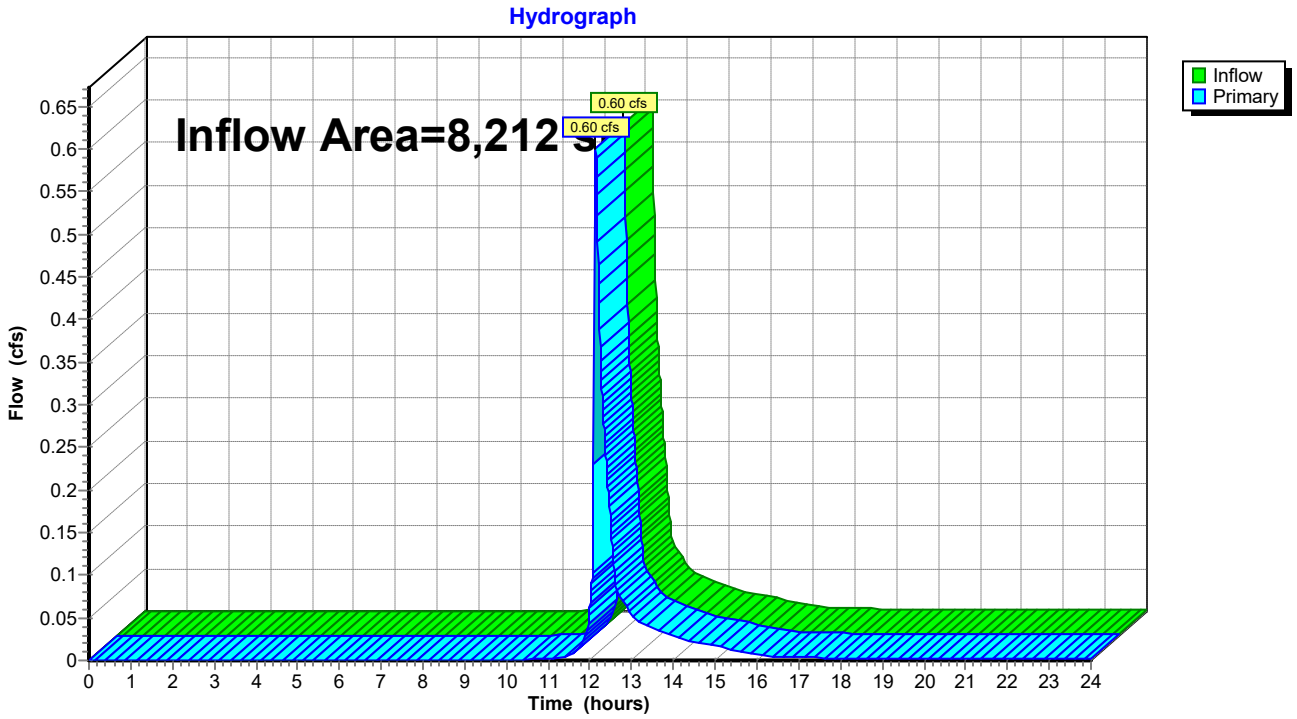


Summary for Link 3L: PROPOSED

Inflow Area = 8,212 sf, 76.06% Impervious, Inflow Depth > 1.56" for 10-Year event
Inflow = 0.60 cfs @ 12.13 hrs, Volume= 1,065 cf
Primary = 0.60 cfs @ 12.13 hrs, Volume= 1,065 cf, Atten= 0%, Lag= 0.0 min

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

Link 3L: PROPOSED



Summary for Subcatchment 4S: PROPOSED LANDSCAPE AREA

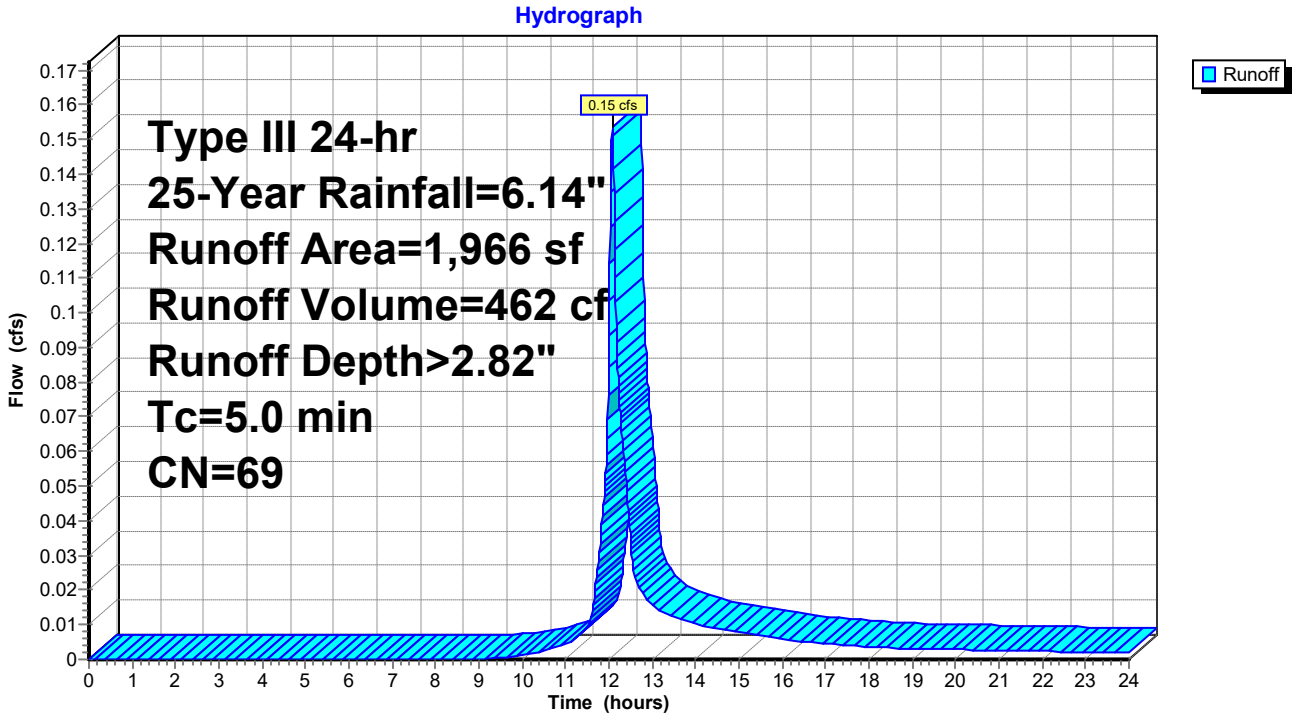
Runoff = 0.15 cfs @ 12.08 hrs, Volume= 462 cf, Depth> 2.82"

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=6.14"

Area (sf)	CN	Description
1,966	69	50-75% Grass cover, Fair, HSG B
1,966		100.00% Pervious Area

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

Subcatchment 4S: PROPOSED LANDSCAPE AREA



Summary for Subcatchment 5S: PROPOSED PAVED AREA

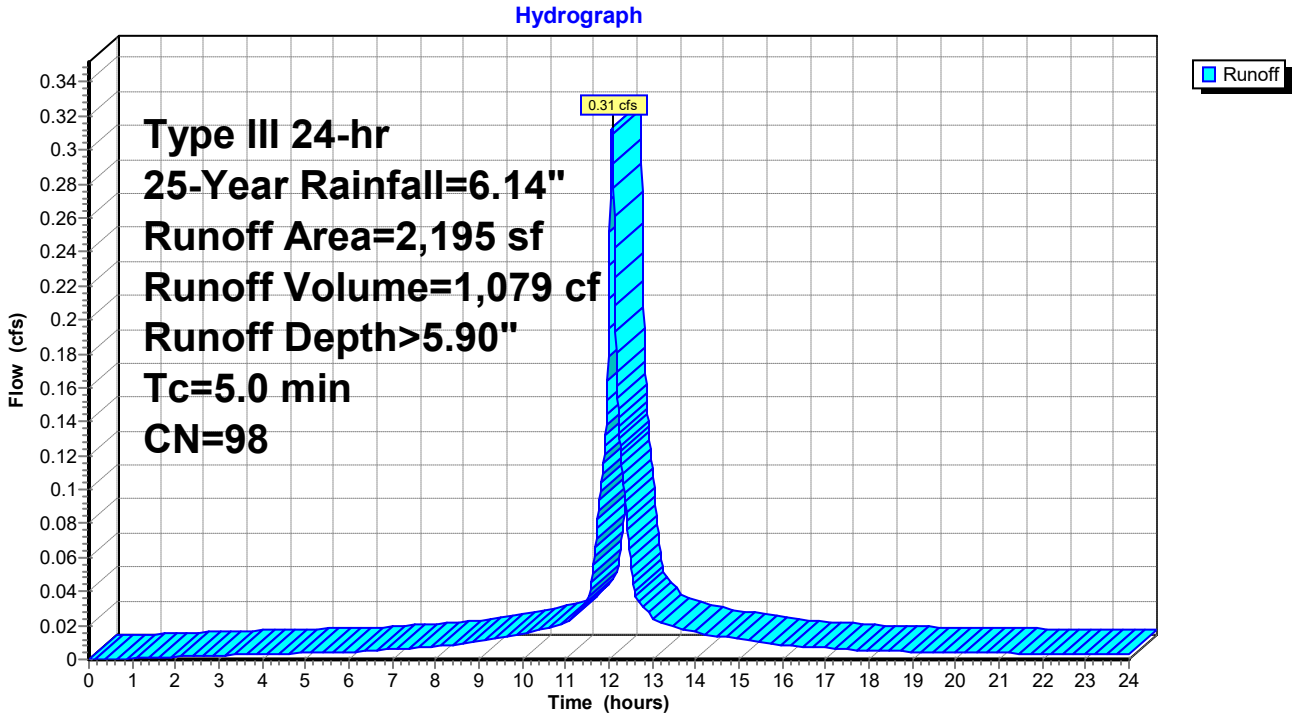
Runoff = 0.31 cfs @ 12.07 hrs, Volume= 1,079 cf, Depth> 5.90"

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=6.14"

Area (sf)	CN	Description
2,195	98	Paved parking, HSG B
2,195		100.00% Impervious Area

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

Subcatchment 5S: PROPOSED PAVED AREA



Summary for Subcatchment 6S: PROPOSED ROOF AREA

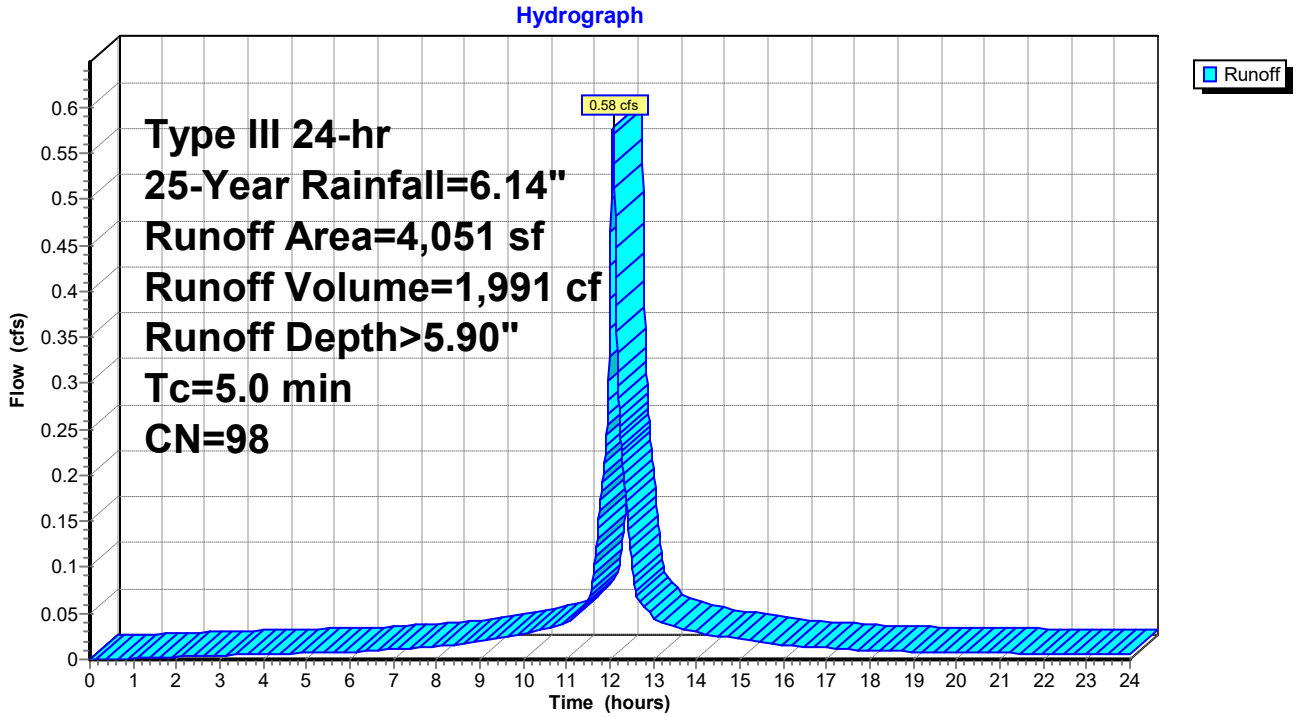
Runoff = 0.58 cfs @ 12.07 hrs, Volume= 1,991 cf, Depth> 5.90"

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=6.14"

Area (sf)	CN	Description
4,051	98	Roofs, HSG B
4,051		100.00% Impervious Area

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

Subcatchment 6S: PROPOSED ROOF AREA



Summary for Pond 5P: STORM TECHS

Inflow Area = 6,246 sf,100.00% Impervious, Inflow Depth > 5.90" for 25-Year event
Inflow = 0.89 cfs @ 12.07 hrs, Volume= 3,070 cf
Outflow = 0.77 cfs @ 12.11 hrs, Volume= 2,312 cf, Atten= 14%, Lag= 2.6 min
Discarded = 0.02 cfs @ 12.11 hrs, Volume= 1,062 cf
Primary = 0.75 cfs @ 12.11 hrs, Volume= 1,250 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 4
Peak Elev= 13.64' @ 12.11 hrs Surf.Area= 366 sf Storage= 974 cf

Plug-Flow detention time= 157.1 min calculated for 2,311 cf (75% of inflow)
Center-of-Mass det. time= 70.7 min (814.1 - 743.4)

Volume	Invert	Avail.Storage	Storage Description
#1A	8.50'	658 cf	**20.50'W x 17.86'L x 5.50'H Field A** 2,013 cf Overall - 368 cf Embedded = 1,646 cf x 40.0% Voids
#2A	10.50'	368 cf	**ADS_StormTech SC-740 +Cap** x 8 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 8 Chambers in 4 Rows
#3	13.00'	10 cf	**Ponding** Listed below -Impervious
		1,036 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Cum.Store (cubic-feet)
13.00	0
15.50	5
15.80	10

Device	Routing	Invert	Outlet Devices
#1	Discarded	8.50'	**1.020 in/hr Exfiltration over Wetted area**
#2	Primary	13.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.11 hrs HW=13.63' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.75 cfs @ 12.11 hrs HW=13.63' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.75 cfs @ 3.84 fps)

Pond 5P: STORM TECHS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

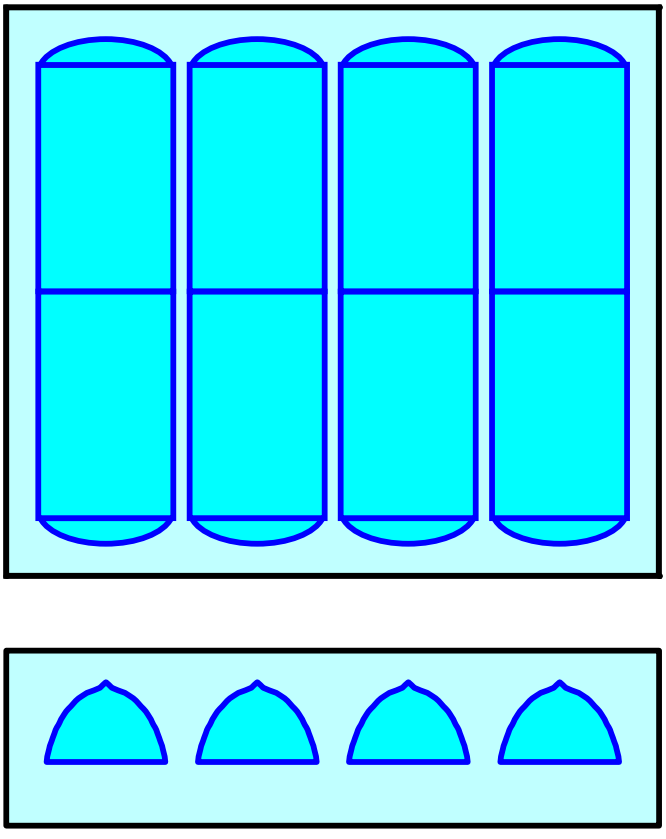
2 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 15.86' Row Length +12.0" End Stone x 2 = 17.86' Base Length
4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width
24.0" Base + 30.0" Chamber Height + 12.0" Cover = 5.50' Field Height

8 Chambers x 45.9 cf = 367.5 cf Chamber Storage

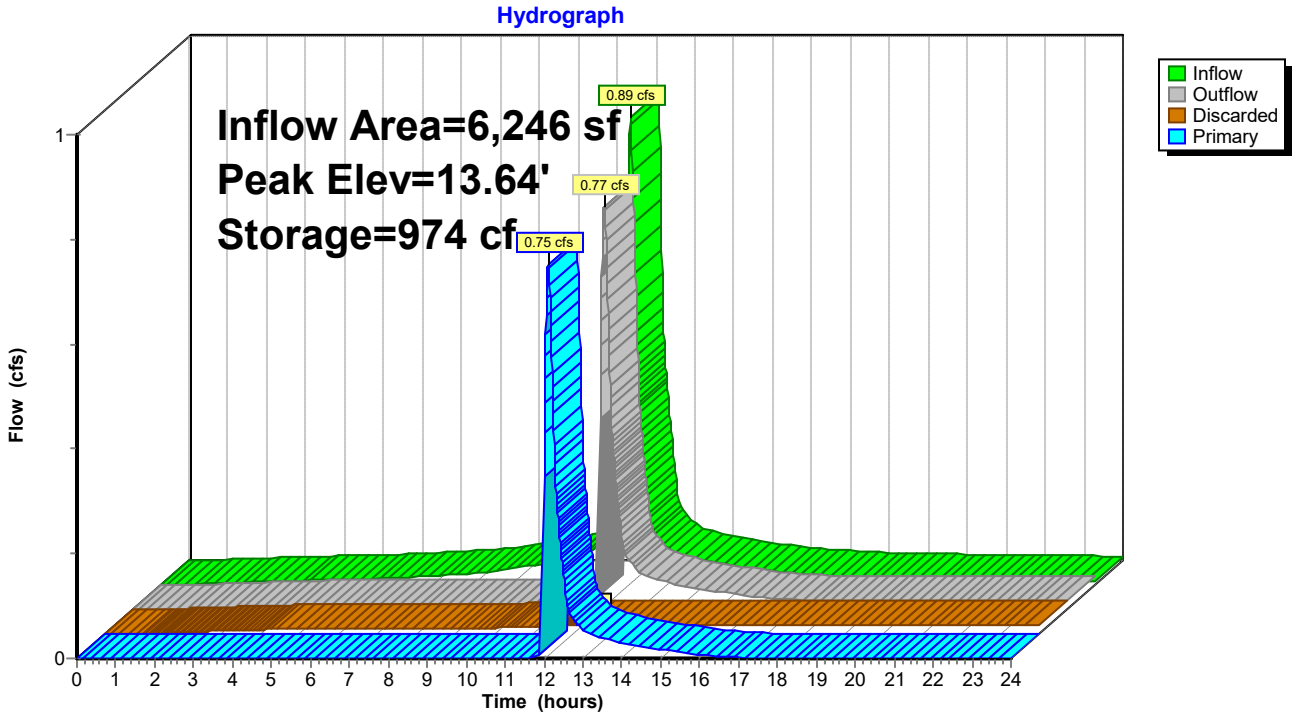
2,013.3 cf Field - 367.5 cf Chambers = 1,645.8 cf Stone x 40.0% Voids = 658.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,025.8 cf = 0.024 af
Overall Storage Efficiency = 51.0%
Overall System Size = 17.86' x 20.50' x 5.50'

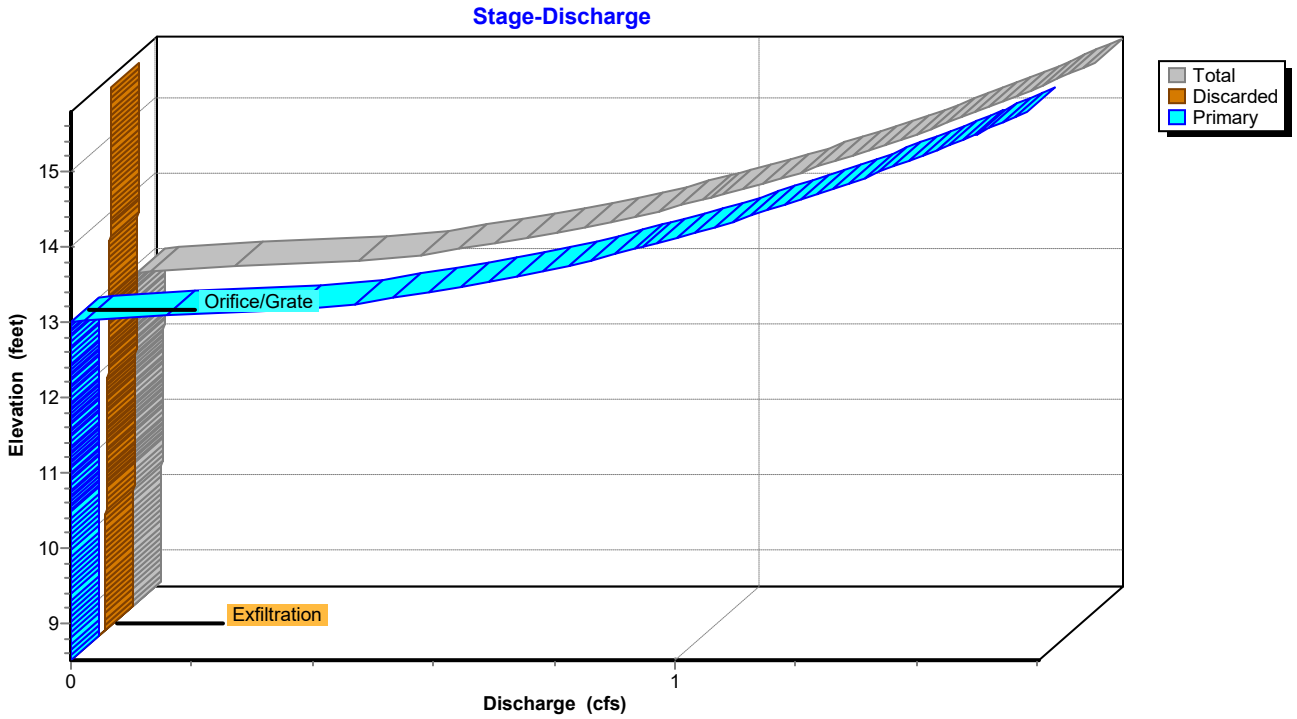
8 Chambers
74.6 cy Field
61.0 cy Stone



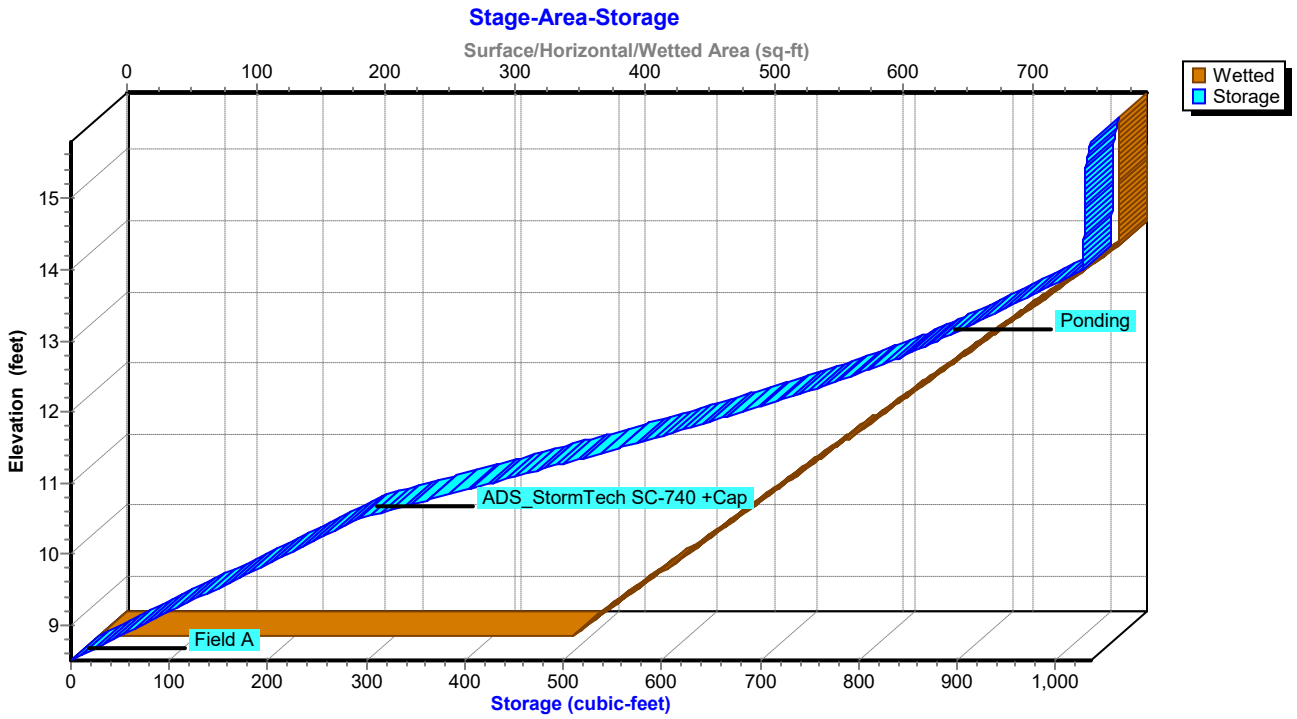
Pond 5P: STORM TECHS



Pond 5P: STORM TECHS



Pond 5P: STORM TECHS

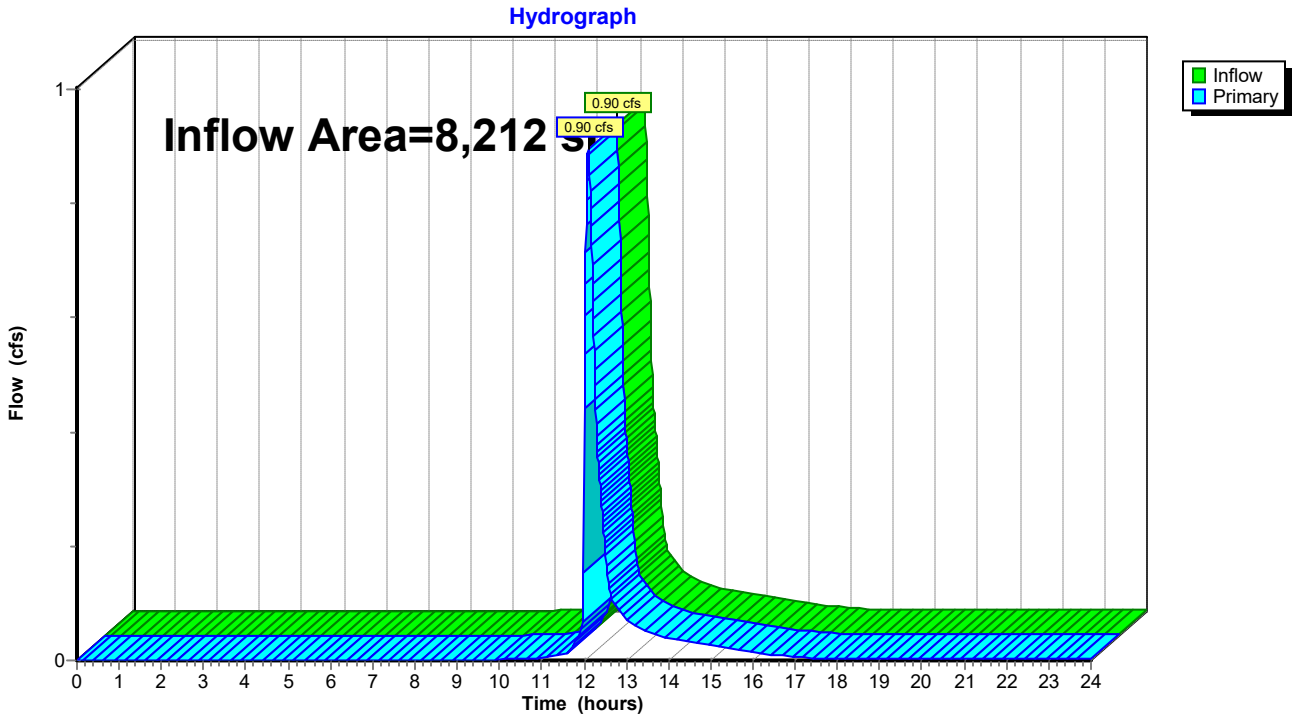


Summary for Link 3L: PROPOSED

Inflow Area = 8,212 sf, 76.06% Impervious, Inflow Depth > 2.50" for 25-Year event
Inflow = 0.90 cfs @ 12.10 hrs, Volume= 1,711 cf
Primary = 0.90 cfs @ 12.10 hrs, Volume= 1,711 cf, Atten= 0%, Lag= 0.0 min

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

Link 3L: PROPOSED



Summary for Subcatchment 4S: PROPOSED LANDSCAPE AREA

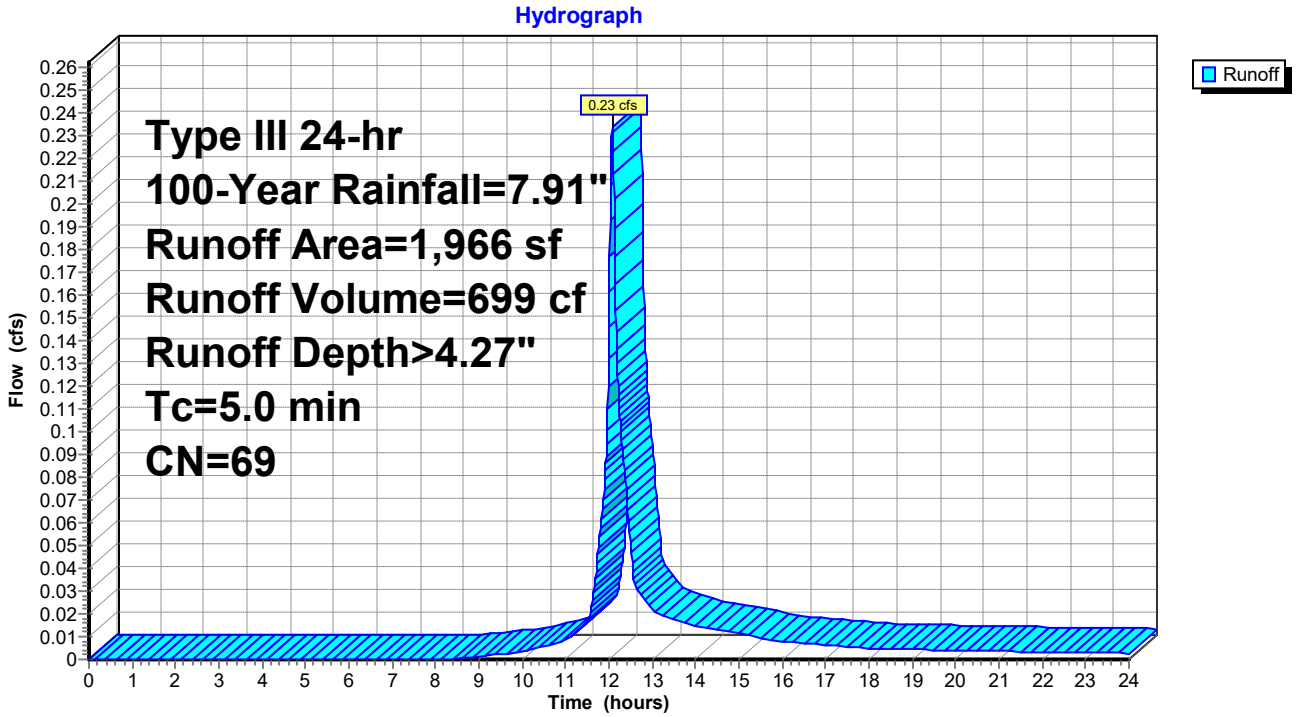
Runoff = 0.23 cfs @ 12.08 hrs, Volume= 699 cf, Depth> 4.27"

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=7.91"

Area (sf)	CN	Description
1,966	69	50-75% Grass cover, Fair, HSG B
1,966		100.00% Pervious Area

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

Subcatchment 4S: PROPOSED LANDSCAPE AREA



Summary for Subcatchment 5S: PROPOSED PAVED AREA

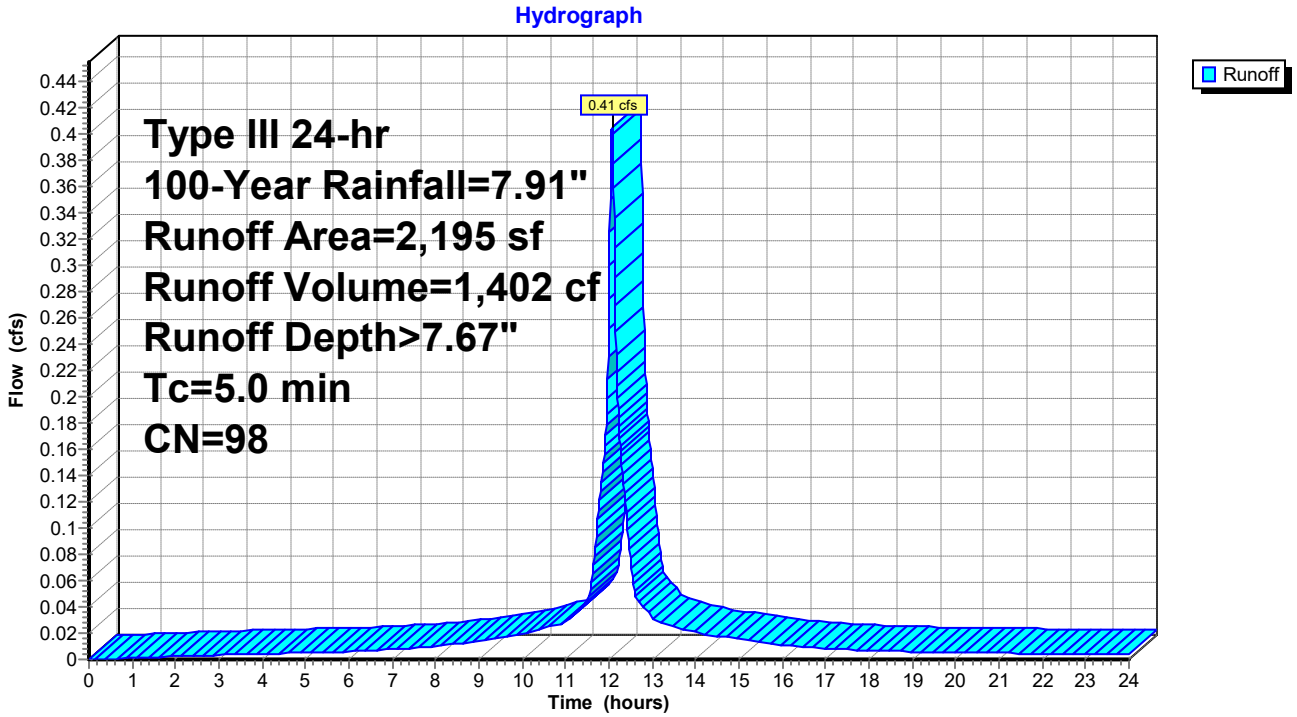
Runoff = 0.41 cfs @ 12.07 hrs, Volume= 1,402 cf, Depth> 7.67"

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=7.91"

Area (sf)	CN	Description
2,195	98	Paved parking, HSG B
2,195		100.00% Impervious Area

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

Subcatchment 5S: PROPOSED PAVED AREA



Summary for Subcatchment 6S: PROPOSED ROOF AREA

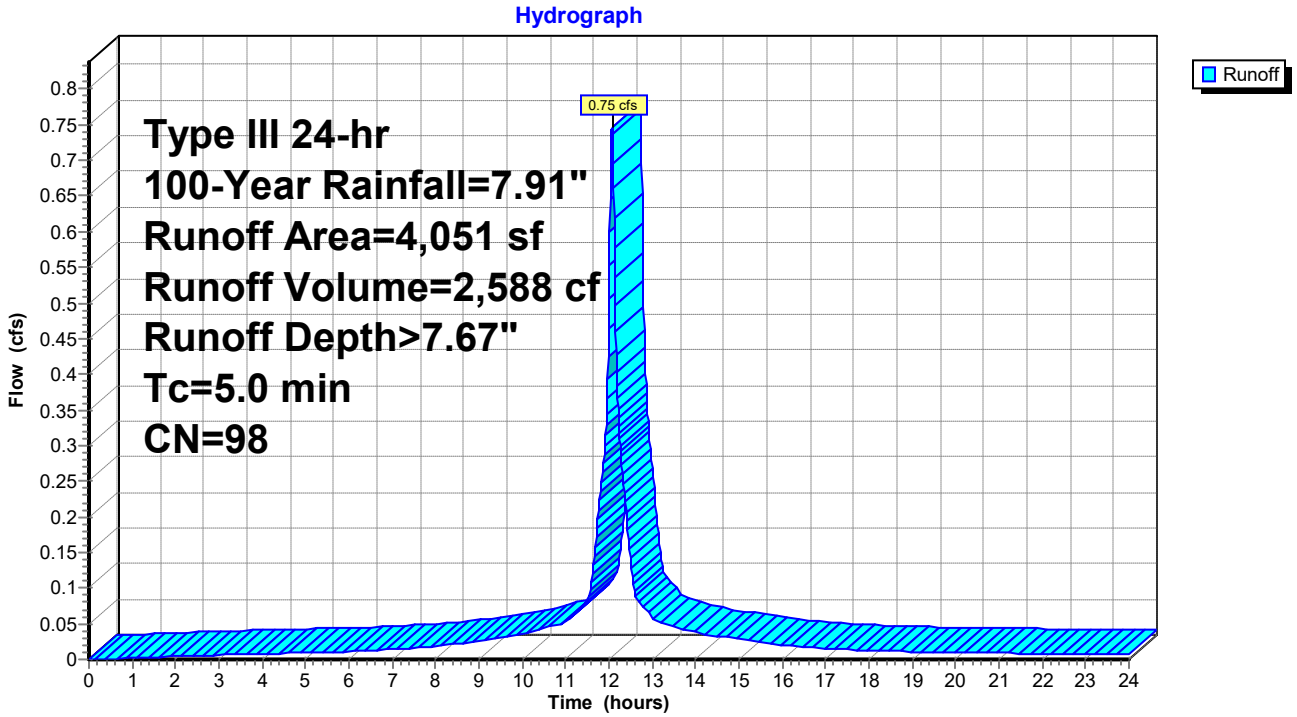
Runoff = 0.75 cfs @ 12.07 hrs, Volume= 2,588 cf, Depth> 7.67"

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=7.91"

Area (sf)	CN	Description
4,051	98	Roofs, HSG B
4,051		100.00% Impervious Area

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

Subcatchment 6S: PROPOSED ROOF AREA



Summary for Pond 5P: STORM TECHS

Inflow Area = 6,246 sf,100.00% Impervious, Inflow Depth > 7.67" for 100-Year event
Inflow = 1.15 cfs @ 12.07 hrs, Volume= 3,990 cf
Outflow = 0.96 cfs @ 12.12 hrs, Volume= 3,172 cf, Atten= 16%, Lag= 2.7 min
Discarded = 0.02 cfs @ 12.12 hrs, Volume= 1,118 cf
Primary = 0.95 cfs @ 12.12 hrs, Volume= 2,054 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 4
Peak Elev= 14.00' @ 12.12 hrs Surf.Area= 366 sf Storage= 1,028 cf

Plug-Flow detention time= 133.6 min calculated for 3,171 cf (79% of inflow)
Center-of-Mass det. time= 55.1 min (795.1 - 740.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	8.50'	658 cf	**20.50'W x 17.86'L x 5.50'H Field A** 2,013 cf Overall - 368 cf Embedded = 1,646 cf x 40.0% Voids
#2A	10.50'	368 cf	**ADS_StormTech SC-740 +Cap** x 8 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap 8 Chambers in 4 Rows
#3	13.00'	10 cf	**Ponding** Listed below -Impervious
		1,036 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Elevation (feet)	Cum.Store (cubic-feet)
13.00	0
15.50	5
15.80	10

Device	Routing	Invert	Outlet Devices
#1	Discarded	8.50'	**1.020 in/hr Exfiltration over Wetted area**
#2	Primary	13.00'	**6.0" Horiz. Orifice/Grate** C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.02 cfs @ 12.12 hrs HW=14.00' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.02 cfs)

Primary OutFlow Max=0.95 cfs @ 12.12 hrs HW=14.00' (Free Discharge)
↑—**2=Orifice/Grate** (Orifice Controls 0.95 cfs @ 4.81 fps)

Pond 5P: STORM TECHS - Chamber Wizard Field A

Chamber Model = ADS_StormTech SC-740 +Cap (ADS StormTech® SC-740 with cap length)
Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf
Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap

51.0" Wide + 6.0" Spacing = 57.0" C-C Row Spacing

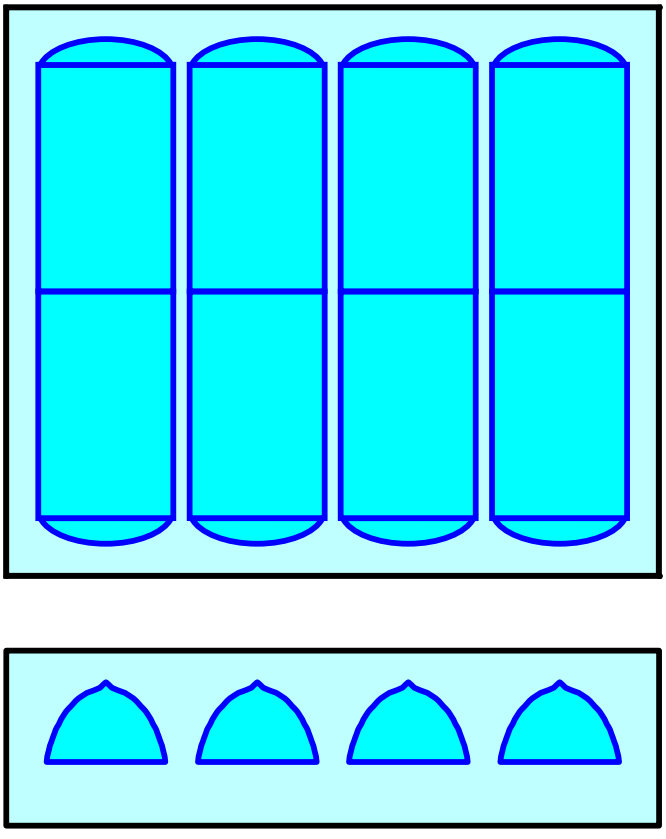
2 Chambers/Row x 7.12' Long +0.81' Cap Length x 2 = 15.86' Row Length +12.0" End Stone x 2 = 17.86' Base Length
4 Rows x 51.0" Wide + 6.0" Spacing x 3 + 12.0" Side Stone x 2 = 20.50' Base Width
24.0" Base + 30.0" Chamber Height + 12.0" Cover = 5.50' Field Height

8 Chambers x 45.9 cf = 367.5 cf Chamber Storage

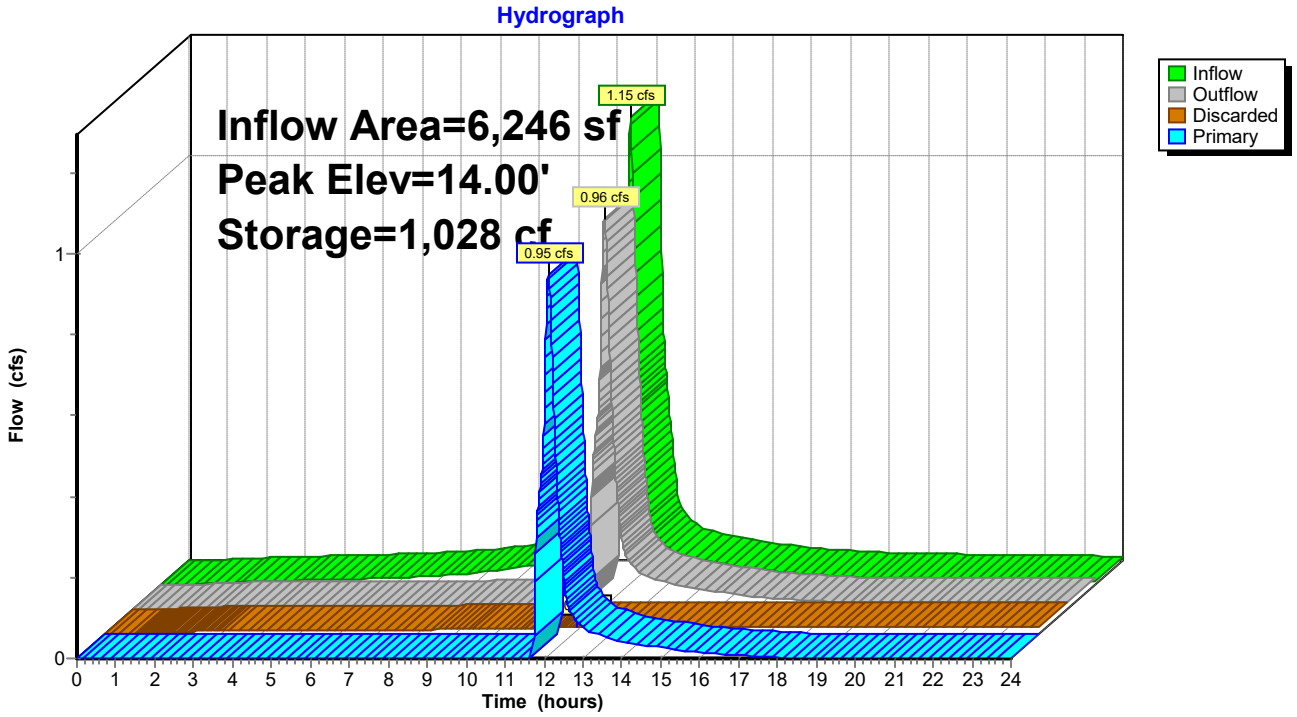
2,013.3 cf Field - 367.5 cf Chambers = 1,645.8 cf Stone x 40.0% Voids = 658.3 cf Stone Storage

Chamber Storage + Stone Storage = 1,025.8 cf = 0.024 af
Overall Storage Efficiency = 51.0%
Overall System Size = 17.86' x 20.50' x 5.50'

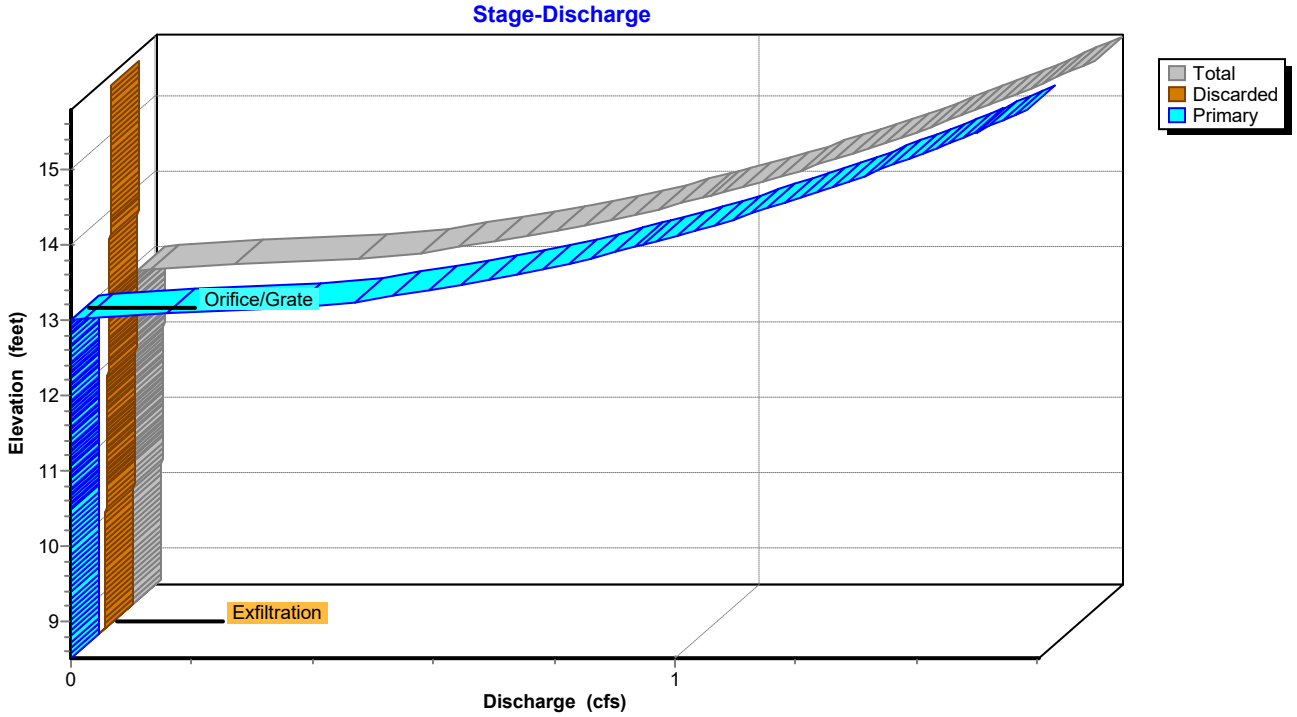
8 Chambers
74.6 cy Field
61.0 cy Stone



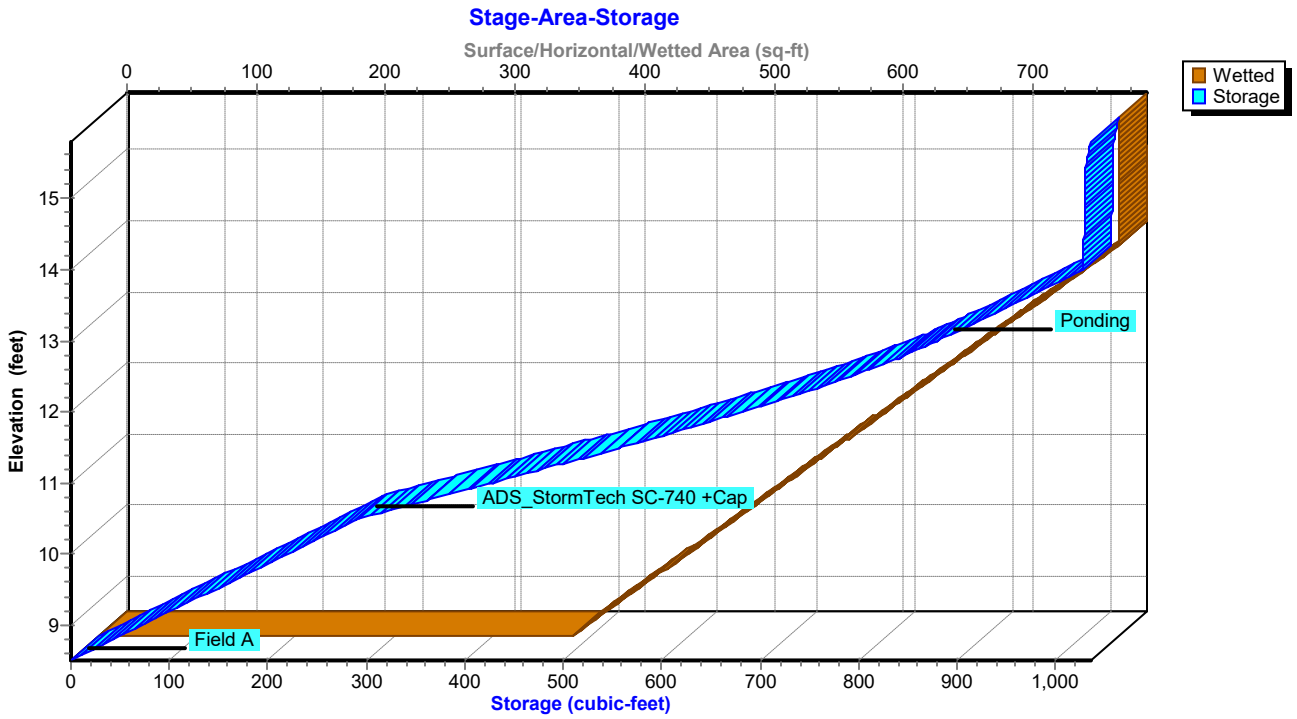
Pond 5P: STORM TECHS



Pond 5P: STORM TECHS



Pond 5P: STORM TECHS

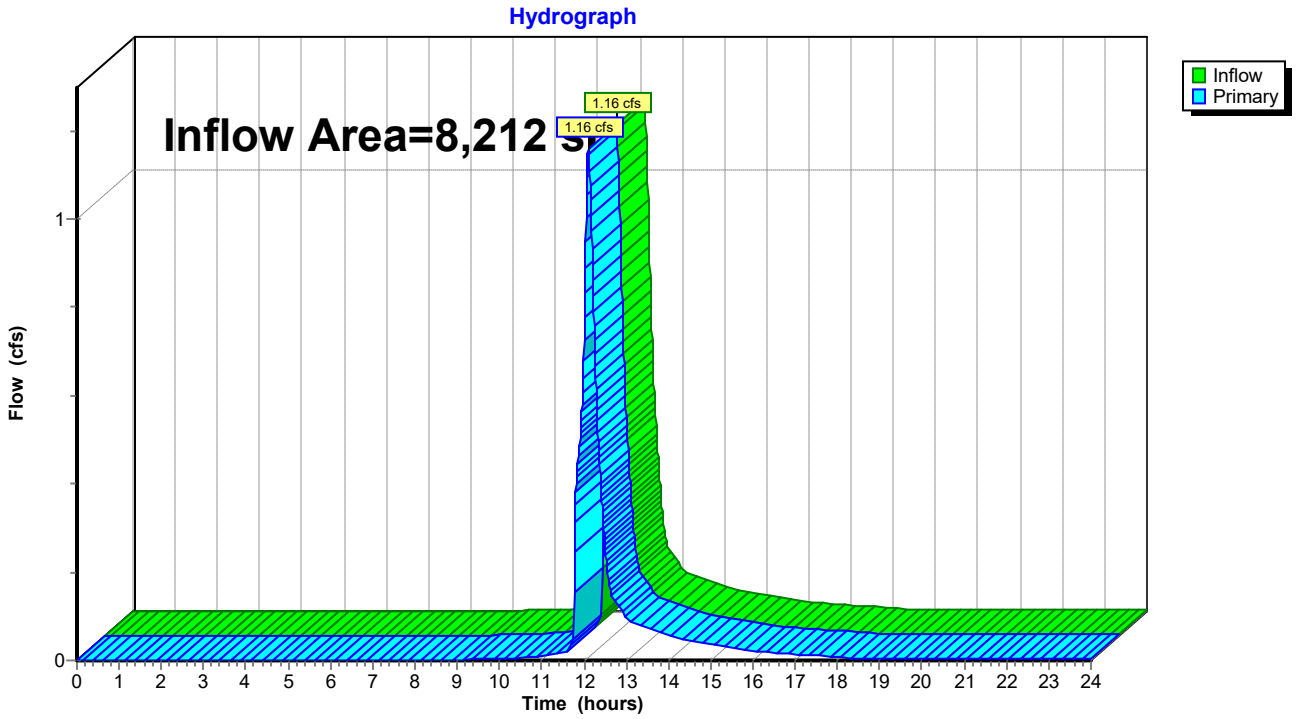


Summary for Link 3L: PROPOSED

Inflow Area = 8,212 sf, 76.06% Impervious, Inflow Depth > 4.02" for 100-Year event
Inflow = 1.16 cfs @ 12.11 hrs, Volume= 2,754 cf
Primary = 1.16 cfs @ 12.11 hrs, Volume= 2,754 cf, Atten= 0%, Lag= 0.0 min

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

Link 3L: PROPOSED



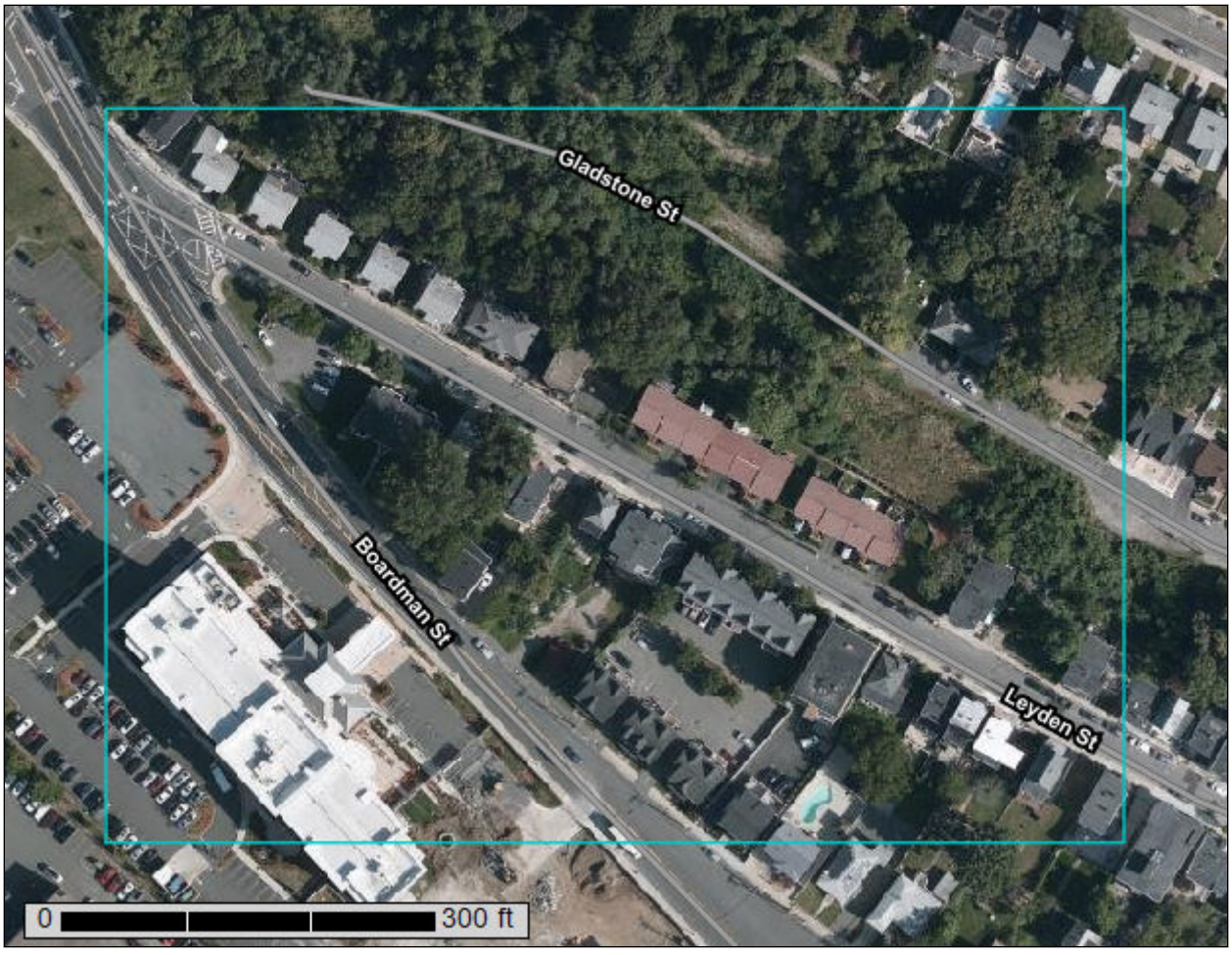
United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Norfolk and Suffolk Counties, Massachusetts



January 13, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map (35 Leydan St)

Map Scale: 1:1,520 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 20 40 80 120

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

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

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

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

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

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

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

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 15, Sep 12, 2019

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

Date(s) aerial images were photographed: Sep 11, 2019—Oct 5, 2019

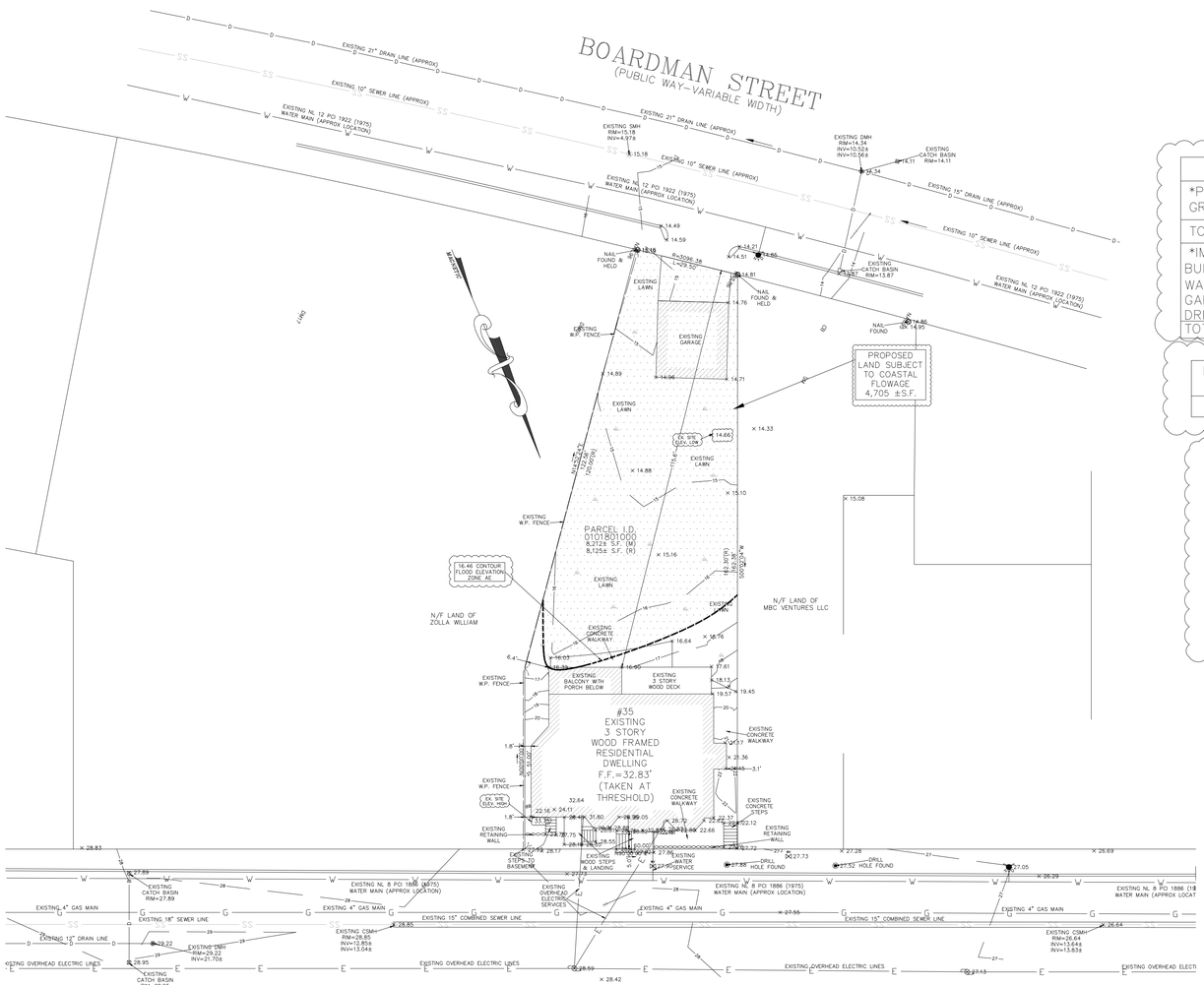
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend (35 Leydan St)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
325D	Newport silt loam, 15 to 25 percent slopes	5.4	49.1%
603	Urban land, wet substratum, 0 to 3 percent slopes	4.1	36.9%
655	Udorthents, wet substratum	1.6	14.0%
Totals for Area of Interest		**11.1**	**100.0%**

EXISTING LEGEND

SS	SEWER LINE
S	SEWER MANHOLE
W	WATER LINE
G	GAS LINE
	UTILITY POLE
GV	GAS VALVE
E	OVERHEAD ELECTRIC SERVICE
WV	WATER VALVE
	CATCH BASIN
	FENCE
205	CONTOUR LINE (MJR)
195	CONTOUR LINE (MNR)
X	SPOT GRADE
D	DRAIN MANHOLE
	HYDRANT
	TREE



EXISTING LOT COVERAGE	
*PERVIOUS	
GRASS= 4,561± S.F.	
TOTAL PERVIOUS= 4,561± S.F.	
*IMPERVIOUS	
BUILDING=	2,011± S.F.
WALKWAY/PATIO=	1,037± S.F.
GARAGE=	433± S.F.
DRIVEWAY=	170± S.F.
TOTAL IMPERVIOUS= 3,651±S.F.	

EXISTING LAND SUBJECT TO COASTAL FLOWAGE
4,705± S.F.

PERVIOUS & IMPERVIOUS LAND SUBJECT TO COASTAL FLOWAGE	
*PERVIOUS	
GRASS= 4,047 ± S.F.	
TOTAL PERVIOUS= 4,047± S.F.	
*IMPERVIOUS	
GARAGE= 433± S.F.	
DRIVEWAY= 170± S.F.	
WALKWAY= 52± S.F.	
BUILDING= 3± S.F.	
TOTAL IMPERVIOUS= 658 ±S.F.	
TOTAL=4,705 ± S.F.	

NOTES:

1. INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF A FIELD SURVEY PERFORMED BY PETER NOLAN & ASSOCIATES LLC AS OF 7/6/2018.

2. DEED REFERENCE BOOK 13806 PAGE 135
PLAN REFERENCE END OF BOOK 1286
SUFFOLK COUNTY REGISTRY OF DEEDS.

3. THIS PLAN IS NOT INTENDED TO BE RECORDED.

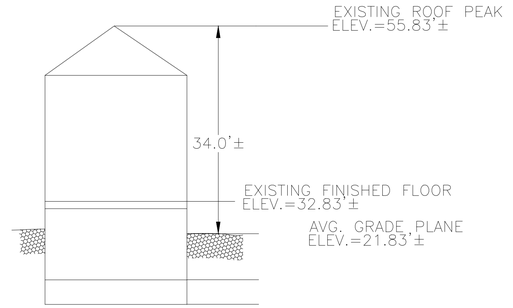
4. I CERTIFY THAT THE DWELLING SHOWN IS LOCATED WITHIN A SPECIAL FLOOD HAZARD ZONE. IT IS LOCATED IN ZONE AE. ON FLOOD HAZARD BOUNDARY MAP NUMBER 25025C0019J, PANEL NUMBER 0019J, COMMUNITY NUMBER: 250286, DATED MARCH 16, 2016.

5. THIS PLAN DOES NOT SHOW ANY UNRECORDED OR UNWRITTEN EASEMENTS WHICH MAY EXIST. A REASONABLE AND DILIGENT ATTEMPT HAS BEEN MADE TO OBSERVE ANY APPARENT USES OF THE LAND; HOWEVER THIS NOT CONSTITUTE A GUARANTEE THAN NO SUCH EASEMENTS EXIST.

6. FIRST FLOOR ELEVATIONS ARE TAKEN AT THRESHOLD.

7. NO RESPONSIBILITY IS TAKEN FOR ZONING TABLE AS PETER NOLAN & ASSOCIATES LLC ARE NOT ZONING EXPERTS. TABLE IS TAKEN FROM TABLE PROVIDED BY LOCAL ZONING ORDINANCE. CLIENT AND/OR ARCHITECT TO VERIFY THE ACCURACY OF ZONING ANALYSIS.

8. ZONING DISTRICT = 2F–4000 EAST BOSTON NEIGHBORHOOD



EXISTING PROFILE
NOT TO SCALE

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

SCALE 1"=20'					
DATE 1/15/2020	REV	DATE	REVISION	BY	
SHEET 1	35 LEYDEN STREET EAST BOSTON MASSACHUSETTS				
PLAN NO. 1 OF 1					
CLIENT:	EXISTING CONDITIONS SITE PLAN				
DRAWN BY					
CHKD BY PJN	PETER NOLAN & ASSOCIATES LLC LAND SURVEYORS/CIVIL ENGINEERING CONSULTANTS 697 CAMBRIDGE STREET, SUITE 103 BRIGHTON MA 02135 PHONE: 857 891 7478/617 782 1533 FAX: 617 202 5691 EMAIL: pnolan@pnasurveyors.com				
APPD BY PJN					

COMMONWEALTH OF MASSACHUSETTS
PETER J. NOLAN No. 49185
REGISTERED PROFESSIONAL LAND SURVEYOR

SHEET NO.
1

RESERVED FOR BWSC USE ONLY

EXISTING LEGEND

	SEWER LINE
(S)	SEWER MANHOLE
	WATER LINE
	GAS LINE
	UTILITY POLE
	GAS VALVE
	OVERHEAD ELECTRIC SERVICE
	WATER VALVE
	CATCH BASIN
	FENCE
205	CONTOUR LINE (MJR)
195	CONTOUR LINE (MNR)
×	SPOT GRADE
(D)	DRAIN MANHOLE
	HYDRANT
	TREE

NOTES:

1. INFORMATION SHOWN ON THIS PLAN IS THE RESULT OF A FIELD SURVEY PERFORMED BY PETER NOLAN & ASSOCIATES LLC AS OF 7/6/2018.

2. DEED REFERENCE BOOK 60819 PAGE 208
PLAN REFERENCE END OF BOOK 1286
SUFFOLK COUNTY REGISTRY OF DEEDS.

3. THIS PLAN IS NOT INTENDED TO BE RECORDED.

4. I CERTIFY THAT THE DWELLING SHOWN IS LOCATED WITHIN A SPECIAL FLOOD HAZARD ZONE. IT IS LOCATED IN ZONE AE. ON FLOOD HAZARD BOUNDARY MAP NUMBER 25025C0019J, PANEL NUMBER 0019J, COMMUNITY NUMBER: 250286, DATED MARCH 16, 2016.

5. THIS PLAN DOES NOT SHOW ANY UNRECORDED OR UNWRITTEN EASEMENTS WHICH MAY EXIST. A REASONABLE AND DILIGENT ATTEMPT HAS BEEN MADE TO OBSERVE ANY APPARENT USES OF THE LAND; HOWEVER THIS NOT CONSTITUTE A GUARANTEE THAN NO SUCH EASEMENTS EXIST.

6. FIRST FLOOR ELEVATIONS ARE TAKEN AT THRESHOLD.

7. NO RESPONSIBILITY IS TAKEN FOR ZONING TABLE AS PETER NOLAN & ASSOCIATES LLC ARE NOT ZONING EXPERTS. TABLE IS TAKEN FROM TABLE PROVIDED BY LOCAL ZONING ORDINANCE. CLIENT AND/OR ARCHITECT TO VERIFY THE ACCURACY OF ZONING ANALYSIS.

8. ZONING DISTRICT = 2F-4000 EAST BOSTON NEIGHBORHOOD

CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL REPORT TO THE OWNER AND ENGINEER OF ANY SIGNIFICANT VARIATIONS IN EXISTING SITE CONDITIONS FROM THOSE SHOWN ON THESE PLANS. ANY PROPOSED REVISIONS TO THE WORK, IF REQUIRED BY THESE SITE CONDITIONS, SHALL NOT BE UNDERTAKEN UNTIL REVIEWED AND APPROVED BY THE OWNER AND THE ENGINEER.

2. IN ORDER TO PROTECT THE PUBLIC SAFETY DURING CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND MAINTAINING AT ALL TIMES ALL NECESSARY SAFETY DEVICES AND PERSONNEL, WARNING LIGHTS, BARRICADES, AND POLICE OFFICERS.

3. ALL WORK SHALL CONFORM TO CITY OF BOSTON GENERAL CONSTRUCTION STANDARDS.

4. THE CONTRACTOR SHALL REGULARLY INSPECT THE PERIMETER OF THE PROPERTY TO CLEAN UP AND REMOVE LOOSE CONSTRUCTION DEBRIS BEFORE IT LEAVES THE SITE. ALL DEMOLITION DEBRIS SHALL BE PROMPTLY REMOVED FROM THE SITE TO A LEGAL DUMP SITE. ALL TRUCKS LEAVING THE SITE SHALL BE COVERED.

5. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSTITUTE EROSION CONTROL MEASURES ON AN AS NECESSARY BASIS, SUCH THAT EXCESSIVE SOIL EROSION DOES NOT OCCUR.

6. THE LOCATION OF UNDERGROUND UTILITIES AS REPRESENTED ON THESE PLANS IS BASED UPON PLANS AND INFORMATION PROVIDED BY THE RESPECTIVE UTILITY COMPANIES OR MUNICIPAL DEPARTMENTS SUPPLEMENTED BY FIELD IDENTIFICATION WHEREVER POSSIBLE. NO WARRANTY IS MADE AS TO THE ACCURACY OF THESE LOCATIONS OR THAT ALL UNDERGROUND UTILITIES ARE SHOWN. THE CONTRACTOR SHALL CONTRACT DIG SAFE AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION. DIG SAFE TELEPHONE NUMBER IS 1-800-322-4844.

7. THE CONTRACTOR SHALL VERIFY THE LOCATION, SIZE AND DEPTH OF EXISTING UTILITIES PRIOR TO TAPPING INTO, CROSSING OR EXTENDING THEM. IF THE NEW WORK POSES A CONFLICT WITH EXISTING UTILITIES, THE ENGINEER SHALL BE NOTIFIED PRIOR TO THE CONTRACTOR CONTINUING.

8. NO LEDGE, BOULDERS, OR OTHER UNYIELDING MATERIALS ARE TO BE LEFT WITHIN 6" OF THE WATER IN THE TRENCH, NOR ARE THEY TO BE USED FOR BACKFILL FOR THE FIRST 12" ABOVE THE PIPES.

9. PAVEMENT AREA SHALL BE PAVED TO A THICKNESS AS SHOWN ON THE PLANS MEASURED AFTER COMPACTION, WITH A BINDER COURSE AND TOP COURSE OF CLASS I BITUMINOUS CONCRETE PAVEMENT, TYPE I-1.

10. BASE MATERIAL SHALL BE CLEAN BANK RUN GRAVEL, CONFORMING TO M.D.P.W. M1.03.1, WITH NO STONES LARGER THAN THREE (3) INCHES IN DIAMETER AND SHALL BE PLACED AND ROLLED WITH AT LEAST A TEN TON ROLLER. THE SURFACES SHALL BE WET DURING ROLLING TO BIND THE MATERIAL. ALL STONES OF 4" DIAMETER OR LARGER SHALL BE REMOVED FROM THE SUB-BASE PRIOR TO PLACING BASE MATERIAL.

11. ALL EXISTING PAVING TO BE DISTURBED SHALL BE CUT ALONG A STRAIGHT LINE THROUGH ITS ENTIRE THICKNESS. BUTT THE NEW PAVING INTO THE EXISTING PAVEMENT TO REMAIN.

12. ANY PAVEMENT REMOVED FOR UTILITY TRENCH EXCAVATION OR OTHERWISE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH A PAVEMENT SECTION CONSISTING OF 1 1/2" WEAR COURSE OVERLYING A 1/2" BINDER COURSE OVERLYING A 12" COMPACTED GRAVEL BASE COURSE.

13. THE CONTRACTOR SHALL APPLY FOR A STREET OPENING AND UTILITY CONNECTION PERMITS AND SIDEWALK CROSSING PERMIT WITH THE CITY OF BOSTON DPW.

14. A PREREQUISITE FOR FILING A GENERAL SERVICE APPLICATION WITH THE BOSTON WATER AND SEWER COMMISSION FOR NEW CONSTRUCTION IS THE ROUGH CONSTRUCTION SIGN-OFF DOCUMENT FROM THE CITY OF BOSTON'S INSPECTIONAL SERVICES DEPARTMENT.

15. THE OWNER IS RESPONSIBLE TO MAINTAIN THE DRAINAGE SYSTEM FOR PROPER OPERATION INCLUDING KEEPING THE DRAIN FREE FROM DEBRIS AND ICE BLOCKAGE.

INSPECTIONS

(1) CUT AND CAP WATER LINE (LEYDEN STREET)
DATE: _____
INSPECTOR: _____

(2) CUT AND CAP SEWER LINE (LEYDEN STREET)
DATE: _____
INSPECTOR: _____

(3) 2.0" WATER SERVICE
DATE: _____
INSPECTOR: _____

(4) 4.0" FIRE SERVICE
DATE: _____
INSPECTOR: _____

(5) 6.0" SEWER PIPE
DATE: _____
INSPECTOR: _____

(6) 1" METER
DATE: _____
INSPECTOR: _____

(7) INFILTRATION SYSTEM
DATE: _____
INSPECTOR: _____

(8) AS-BUILT PREPARATION FEE
DATE: _____
INSPECTOR: _____

(9) DYE TEST DRAIN
DATE: _____
INSPECTOR: _____

(10) DRAIN OVERFLOW CONNECTION
DATE: _____
INSPECTOR: _____

(11) DOWNSPOUT OVERFLOW
DATE: _____
INSPECTOR: _____

(12) OIL & GAS SEPARATOR
DATE: _____
INSPECTOR: _____

(13) CATCH BASIN W/OIL TRAP
DATE: _____
INSPECTOR: _____

(14) CLEAN OUT (2)
DATE: _____
INSPECTOR: _____

(15) DYE TEST SEWER
DATE: _____
INSPECTOR: _____

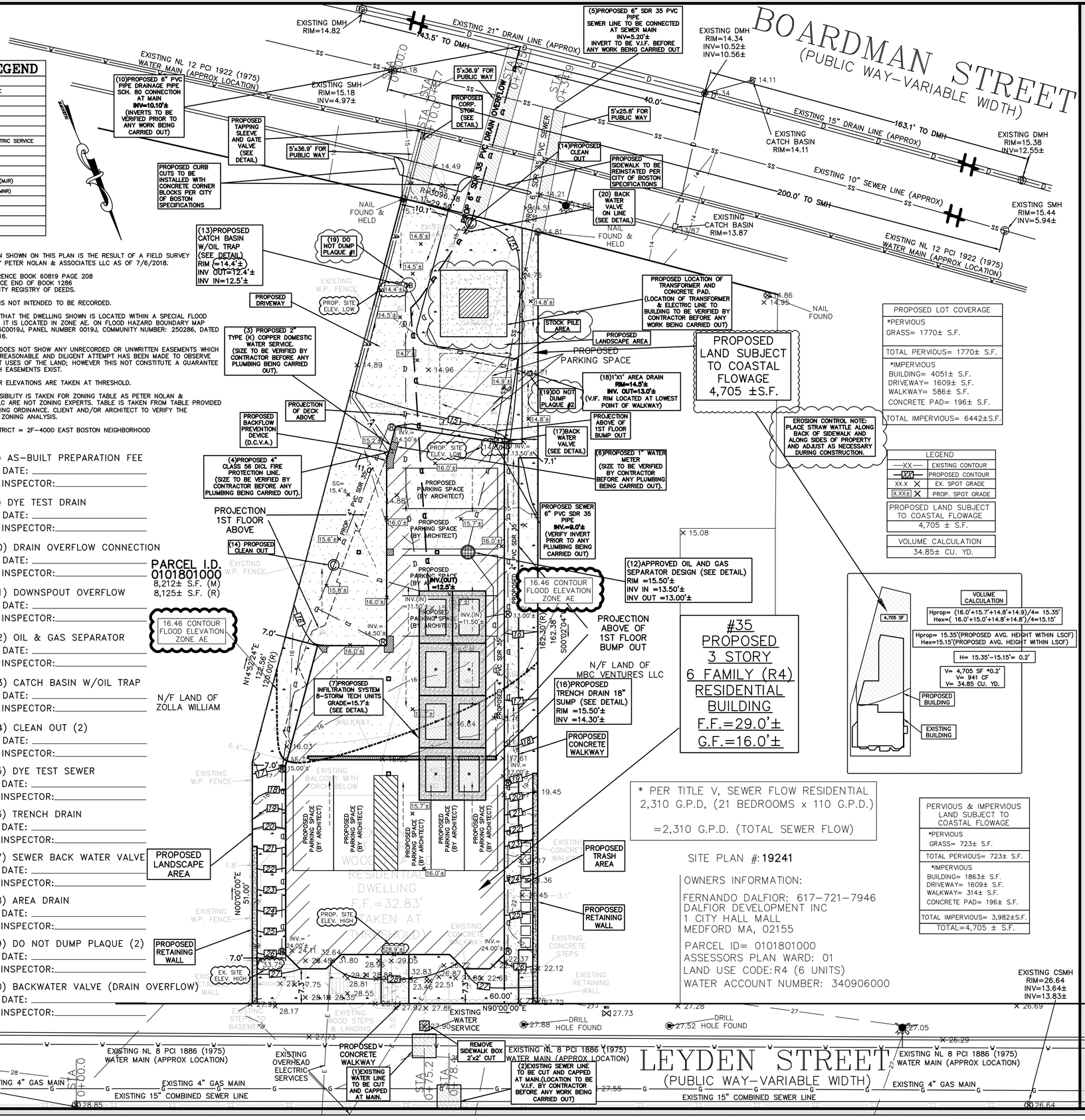
(16) TRENCH DRAIN
DATE: _____
INSPECTOR: _____

(17) SEWER BACK WATER VALVE
DATE: _____
INSPECTOR: _____

(18) AREA DRAIN
DATE: _____
INSPECTOR: _____

(19) DO NOT DUMP PLAQUE (2)
DATE: _____
INSPECTOR: _____

(20) BACKWATER VALVE (DRAIN OVERFLOW)
DATE: _____
INSPECTOR: _____



PETER NOLAN & ASSOCIATES, LLC
LAND SURVEYORS/CIVIL ENGINEERING CONSULTANTS
697 CAMBRIDGE STREET, (SUITT03),
BRIGHTON, MA 02135
Tel: 857-891-7478
617-782-1533
Fax: 617-2025691

SPRUHAN ENGINEERING, P.C.
80 JEWETT ST, (SUITE 1)
NEWTON, MA 02458
Tel: 617-816-0722
Email: edmond@spruhaneng.com

COMMONWEALTH OF MASSACHUSETTS PETER J. NOLAN NO. 49185 REGISTERED PROFESSIONAL LAND SURVEYOR

COMMONWEALTH OF MASSACHUSETTS EDMOND D. SPRUHAN NO. 53311 REGISTERED PROFESSIONAL ENGINEER

35 LEYDEN STREET, EASTBOSTON, MASSACHUSETTS

REVISION BLOCK

DESCRIPTION	DATE
REVISED AS PER BWSC COMMENTS	6/19/19
REVISED AS PER BWSC COMMENTS	7/3/19
REV. LOCATION OF DRAINAGE SYS	11/24/19
REV. LOCATION OF DRAINAGE SYS	1/30/20

PLAN TO ACCOMPANY BWSC APPLICATION

PLAN:	1 OF 3
SCALE:	1" = 10'
DATE:	05-17-19
DRAWN BY:	HM
CHECKED BY:	PN
APPROVED BY:	ES

SHEET: 001