

NOTICE OF INTENT

**MGL Ch. 131 s. 40
and
City of Boston**

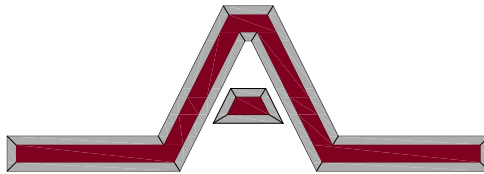
**For
Proposed Five Unit Multifamily Dwelling**

**Located at
197 Havre Street
East Boston, Massachusetts**

***Submitted to:*
City of Boston
Conservation Commission
&
DEP N.E.R.O.**

***Prepared for:*
5 Up Havre, LLC
6 Verona Street
Salem, MA 01970**

Prepared by:



Engineering Alliance, Inc.

Civil Engineering & Land Planning Consultants
194 Central Street
Saugus, MA 01906
Tel: (781) 231-1349
Fax: (781) 417-0020

1950 Lafayette Road
Portsmouth, NH 03801
Tel: (603) 610-7100
Fax: (603) 610-7101

September 1, 2021

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SECTION I

City of Boston Notice of Intent Application

WPA Form 3 Notice of Intent

Boston Climate Resiliency Checklist

Figure 1 – USGS Locus Map

Figure 2 – Ortho Photo

Figure 3 – Natural Heritage Map

Figure 4 – FEMA Flood Map

Figure 5 – Soils Map

NRCS Soils Description



A. GENERAL INFORMATION

1. Project Location

<u>197 Havre Street</u>	<u>East Boston</u>	<u>02128</u>
a. Street Address	b. City/Town	c. Zip Code
<u> </u>	<u>PID: 0106233000</u>	<u> </u>
f. Assessors Map/Plat Number	g. Parcel /Lot Number	

2. Applicant

<u>Julie</u>	<u>Dandreo</u>	<u>5 UP Havre, LLC</u>
a. First Name	b. Last Name	c. Company
<u>6 Verona Street</u>		
d. Mailing Address		
<u>Salem</u>	<u>MA</u>	<u>01970</u>
e. City/Town	f. State	g. Zip Code
<u>(781) 985-4059</u>	<u> </u>	<u>ddandreo@aol.com</u>
h. Phone Number	i. Fax Number	j. Email address

3. Property Owner

<u> </u>	<u> </u>	<u> </u>
a. First Name	b. Last Name	c. Company
<u> </u>		
d. Mailing Address		
<u> </u>	<u> </u>	<u> </u>
e. City/Town	f. State	g. Zip Code
<u> </u>	<u> </u>	<u> </u>
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)

<u>Eric</u>	<u>Bradanese</u>	<u>Engineering Alliance, Inc.</u>
a. First Name	b. Last Name	c. Company
<u>194 Central Street</u>		
d. Mailing Address		
<u>Saugus</u>	<u>MA</u>	<u>01906</u>
e. City/Town	f. State	g. Zip Code
<u>(781) 231-1349</u>	<u> </u>	<u>ebradanese@eaicivil.com</u>
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 project consists of the construction of a four story, five unit building. The project includes the building construction, storm water management facilities, and utility installation. A portion of the work will take place within the 100 year flood plain (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

a. County

65785

c. Book

259

b. Page Number

d. Certificate # (if registered land)

9. Total Fee Paid

\$512.50(\$925.00 City By Law)

a. Total Fee Paid

\$512.50

b. State Fee Paid

\$925.00 (City By-Law Fee)

c. City Fee Paid

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



<u>Resource Area</u>	<u>Resource Area Size</u>	<u>Proposed Alteration*</u>	<u>Proposed Mitigation</u>
<input type="checkbox"/> Coastal Flood Resilience Zone	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> 25-foot Waterfront Area	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> 100-foot Salt Marsh Area	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> Riverfront Area	_____ Square feet	_____ Square feet	_____ Square feet

2. Inland Resource Areas

<u>Resource Area</u>	<u>Resource Area Size</u>	<u>Proposed Alteration*</u>	<u>Proposed Mitigation</u>
<input type="checkbox"/> Inland Flood Resilience Zone	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> Isolated Wetlands	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> Vernal Pool	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> Vernal Pool Habitat (vernal pool + 100 ft. upland area)	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> 25-foot Waterfront Area	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> Riverfront Area	_____ Square feet	_____ Square feet	_____ Square feet

C. OTHER APPLICABLE STANDARDS & REQUIREMENTS

1. What other permits, variances, or approvals are required for the proposed activity described herein and what is the status of such permits, variances, or approvals?

Project has been approved by zoning board of appeals. Project is subject to Boston
 Water and Sewer Commission review. Project has been submitted to BWSC for review.



2. 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/nhosp/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

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

- Yes No

If yes, provide the name of the ACEC: _____

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.

Julio Dandreo, manager
Signature of Applicant

8/18/2021
Date

Signature of Property Owner (if different)

[Signature]
Signature of Representative (if any)

8/18/2021
Date



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

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):

<u>197 Havre Street</u>	<u>East Boston</u>	<u>02128</u>
a. Street Address	b. City/Town	c. Zip Code
Latitude and Longitude:		
	<u>42.3744209</u>	<u>-71.0363404</u>
	d. Latitude	e. Longitude
<u></u>	<u>Parcel ID:0106233000</u>	
f. Assessors Map/Plat Number	g. Parcel /Lot Number	

2. Applicant:

<u>Julie</u>	<u>Dandreo</u>	
a. First Name	b. Last Name	
<u>5 Up Havre, LLC</u>		
c. Organization		
<u>6 Verona Street</u>		
d. Street Address		
<u>Salem</u>	<u>MA</u>	<u>01970</u>
e. City/Town	f. State	g. Zip Code
<u>(781)-985-4059</u>	<u></u>	<u>ddandreo@aol.com</u>
h. Phone Number	i. Fax Number	j. Email Address

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

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

4. Representative (if any):

<u>Eric</u>	<u>Bradanesse</u>	
a. First Name	b. Last Name	
<u>Engineering Alliance, Inc.</u>		
c. Company		
<u>194 Central Street</u>		
d. Street Address		
<u>Saugus</u>	<u>MA</u>	<u>01906</u>
e. City/Town	f. State	g. Zip Code
<u>(781)-231-1349</u>	<u></u>	<u>ebradanesse@eaicivil.com</u>
h. Phone Number	i. Fax Number	j. Email address

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

<u>\$512.50 (\$875.00 City By Law)</u>	<u>\$512.50</u>	<u>\$925.00</u>
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid



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Provided by MassDEP:

MassDEP File Number

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A. General Information (continued)

6. General Project Description:

The project consists of the construction of a four story, five unit building. The project includes the building construction, stormwater management facilities, and utility installation. A portion of the work will take place within the limit of the 100 year flood plain (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:

Suffolk

a. County

65785

c. Book

b. Certificate # (if registered land)

259

d. Page Number

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.



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Provided by MassDEP:

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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. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input type="checkbox"/> Bordering Vegetated Wetland	1. square feet	2. square feet
c. <input type="checkbox"/> Land Under Waterbodies and Waterways	1. square feet	2. square feet
	3. cubic yards dredged	

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. <input type="checkbox"/> Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. <input type="checkbox"/> Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. <input type="checkbox"/> 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.
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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.



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Provided by MassDEP:

MassDEP File Number

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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.

<u>Resource Area</u>	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
a. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. <input type="checkbox"/> Land Under the Ocean	_____	
	1. square feet	

	2. cubic yards dredged	
c. <input type="checkbox"/> Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. <input type="checkbox"/> Coastal Beaches	_____	_____
	1. square feet	2. cubic yards beach nourishment
e. <input type="checkbox"/> Coastal Dunes	_____	_____
	1. square feet	2. cubic yards dune nourishment
	<u>Size of Proposed Alteration</u>	<u>Proposed Replacement (if any)</u>
f. <input type="checkbox"/> Coastal Banks	_____	
	1. linear feet	
g. <input type="checkbox"/> Rocky Intertidal Shores	_____	
	1. square feet	
h. <input type="checkbox"/> Salt Marshes	_____	_____
	1. square feet	2. sq ft restoration, rehab., creation
i. <input type="checkbox"/> Land Under Salt Ponds	_____	
	1. square feet	

	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	_____	
	1. square feet	
k. <input type="checkbox"/> 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. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	_____	
	2,268 s.f.	

	1. square feet	
4. <input type="checkbox"/> 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. <input type="checkbox"/> Project Involves Stream Crossings		
	_____	_____
	a. number of new stream crossings	b. number of replacement stream crossings



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Provided by MassDEP:

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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**

- 2018 _____
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.



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Provided by MassDEP:

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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:

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

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.



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Provided by MassDEP:

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Boston

City/Town

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

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

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.



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Provided by MassDEP:

MassDEP File Number

Document Transaction Number

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.

Plan to Accompany Notice of Intent

a. Plan Title

Engineering Alliance, Inc.

Eric Bradanese, P.E.

b. Prepared By

c. Signed and Stamped by

8/18/2021

1"=20'

d. Final Revision Date

e. Scale

f. Additional Plan or Document Title

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:

723

8/18/21

2. Municipal Check Number

3. Check date

722

8/18/21

4. State Check Number

5. Check date

Six Progress Corporation

6. Payor name on check: First Name

7. Payor name on check: Last Name



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Provided by MassDEP:

MassDEP File Number

Document Transaction Number

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.

Julio Wardner, Manager
1. Signature of Applicant

8/18/2021
2. Date

3. Signature of Property Owner (if different)

4. Date

EB
5. Signature of Representative (if any)

8/18/2021
6. Date

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.

NOTE: Project filings should be prepared and submitted using the online [Climate Resiliency Checklist](#).

A.1 - Project Information

Project Name:	Proposed 5 Unit Multifamily Dwelling		
Project Address:	197 Havre Street, East Boston, MA		
Project Address Additional:			
Filing Type (select)	<i>Initial (PNF, EPNF, NPC or other substantial filing)</i> Design / Building Permit (prior to final design approval), or Construction / Certificate of Occupancy (post construction completion)		
Filing Contact	Julie Dandreo	5 Up Havre, LLC	ddandreo@aolco.com 781-985-4059
Is MEPA approval required	No		8/18/2021

A.3 - Project Team

Owner / Developer:	5 Up Havre, LLC
Architect:	Stefanov Architects
Engineer:	Engineering Alliance, Inc.
Sustainability / LEED:	
Permitting:	
Construction Management:	

A.3 - Project Description and Design Conditions

List the principal Building Uses:	5 Unit Multifamily Residential
List the First Floor Uses:	Building Entry, trash room, on grade open air parking and second staircase.
List any Critical Site Infrastructure and or Building Uses:	N/A

Site and Building:

Site Area:	2,500 S.F.	Building Area:	5,595sf 4 floors
Building Height:	40'-10" Ft	Building Height:	4 Stories
Existing Site Elevation – Low:	12.85 Ft BCB	Existing Site Elevation – High:	17.43 Ft BCB
Proposed Site Elevation – Low:	12.85 Ft BCB	Proposed Site Elevation – High:	17.40 Ft BCB
Proposed First Floor Elevation:	17.40 Ft BCB	Below grade levels:	0 Stories

Article 37 Green Building:

LEED Version - Rating System :	N/A	LEED Certification:	No
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Proposed LEED rating:

Proposed LEED point score:

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:
 Foundation Wall:

Exposed Floor:
 Slab Edge (at or below grade):

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

Area of Opaque Curtain Wall & Spandrel Assembly:
 Area of Framed & Insulated / Standard Wall:
 Area of Vision Window:
 Area of Doors:

Wall & Spandrel Assembly Value:
 Wall Value:
 Window Glazing Assembly Value:
 Window Glazing SHGC:
 Door Assembly Value:

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined

Annual Electric:
 Annual Heating:
 Annual Cooling:
 Energy Use - Below ASHRAE 90.1 - 2013:
 Energy Use - Below Mass. Code:

Peak Electric:
 Peak Heating:
 Peak Cooling:
 Have the local utilities reviewed the building energy performance?:
 Energy Use Intensity:

Back-up / Emergency Power System

Electrical Generation Output:
 System Type:

Number of Power Units:
 Fuel Source:

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

Electric:

Heating:
 Cooling:

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

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

B.1 – GHG Emissions - Design Conditions

For this Filing - Annual Building GHG Emissions: 0 (Tons)

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

All buildings have been designed to meet or exceed values set forth under 2015 IRC Table N1102.1.2 (R402.1.2) and Massachusetts amendments. Each individual unit will be subject to a Home Energy Rating System (HERS) assessment and will include a high performing wood-framed building envelope with clad-wood thermal windows and doors and ENERGY STAR appliances. Intelligent lighting and control systems in individual units and common spaces will also be utilized to help reduce energy loads.

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

All units have been designed with operable windows for optimal natural ventilation and with building specific exterior shading devices to maximize solar shading in the summer and solar gain in the winter. Building massing and window orientation and sizing have been done with sustainable daylighting techniques in mind.

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

The project has been designed using a thermal-friendly wood-framed building envelope. Within common areas, occupancy sensors and dimming shall be incorporated. Within residential units, high-performance HVAC equipment, Energy Star Appliances, and individual smart thermostats will be utilized. Tankless on-demand style water heaters are durable, low maintenance, and water conserving plumbing fixtures will contribute to overall building comfort and efficiency.

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

Nothing planned at this time.

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

Nothing planned at this time.

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

Nothing planned at this tie.

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):

None

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: 7.4 Deg.

Temperature Range - High: 90.8 Deg.

Annual Heating Degree Days: 5400

Annual Cooling Degree Days: 750

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

Days - Above 90°: 1.5

Days - Above 100°: 0

Number of Heatwaves / Year: 1

Average Duration of Heatwave (Days): 3

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

The proposed building will incorporate a thermal friendly wood-frame. Additionally, the project site includes a minimal increase in impervious area (82 s.f.) and therefore will not have any significant impact on heat-island effect.

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:

None

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

10 Year, 24 Hour Design Storm: 5.04 (NOAA)

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

On-site stormwater management facility consisting of subsurface infiltration (Cultec 330XL HD Chambers). Designed to mitigate flows up to 100-year storm event (7.98 in., NOAA).

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):

On-site stormwater management facility consisting of subsurface infiltration (Cultec 330XL HD Chambers). Designed to mitigate flows up to 100-year storm event (7.98 in., NOAA).

E - Sea Level Rise and Storms

Under any plausible greenhouse gas emissions scenario, sea levels 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 SFHA?

Yes

What Zone:

AE

Current FEMA SFHA Zone Base Flood Elevation:

16.45 Ft BCB

Is any portion of the site in a BPDA Sea Level Rise - Flood Hazard Area? Use the online [BPDA SLR-FHA Mapping Tool](#) to assess the susceptibility of the project site.

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 on the BPDA Sea Level Rise - Flood Hazard Area (SLR-FHA) map, which depicts a modeled 1% annual chance coastal flood event with 40 inches of sea level rise (SLR). Use the online [BPDA SLR-FHA Mapping Tool](#) to identify the highest Sea Level Rise - Base Flood Elevation for the site. The Sea Level Rise - Design Flood Elevation is determined by adding either 24" of freeboard for critical facilities and infrastructure and any ground floor residential units OR 12" of freeboard for other buildings and uses.

Sea Level Rise - Base Flood Elevation:

19.5 Ft BCB

Sea Level Rise - Design Flood Elevation:

20.5 Ft BCB

Site Elevations at Building:

17.40 Ft BCB

First Floor Elevation:

17.40 Ft BCB

Accessible Route Elevation:

17.40 Ft BCB

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.:

Site grades have been designed as high as possible to provide accessibility from Havre Street. The first floor elevation is above the 100-yr flood plain elevation.

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 mechanicals will be located or installed on the building first floor which is above the 100-yr flood plain elevation.

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:

All living space is on the second floor or above, well above the 100-yr flood plain so as to provide shelter during flooding events.

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

The municipal roadway network would be utilized to provide rapid recovery.

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.:

The grade is designed to be as high as possible while accommodating the existing site elevations and urban location.

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

The grade is designed to be as high as possible while accommodating the existing site elevations and urban location.

A pdf and word version of the Climate Resiliency Checklist is provided for informational use and off-line preparation of a project submission. **NOTE: Project filings should be prepared and submitted using the [online Climate Resiliency Checklist](#).**

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



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PROJECT:

Plan of Land

197 Havre Street
 Parcel ID: 0106233000
 East Boston, MA 02128

PROJECT: 21-61505

DATE: August 18, 2021

SCALE: 1:25,000

DWG FILE NAME: Figures.dwg

DESIGNED BY: Alex Salvo

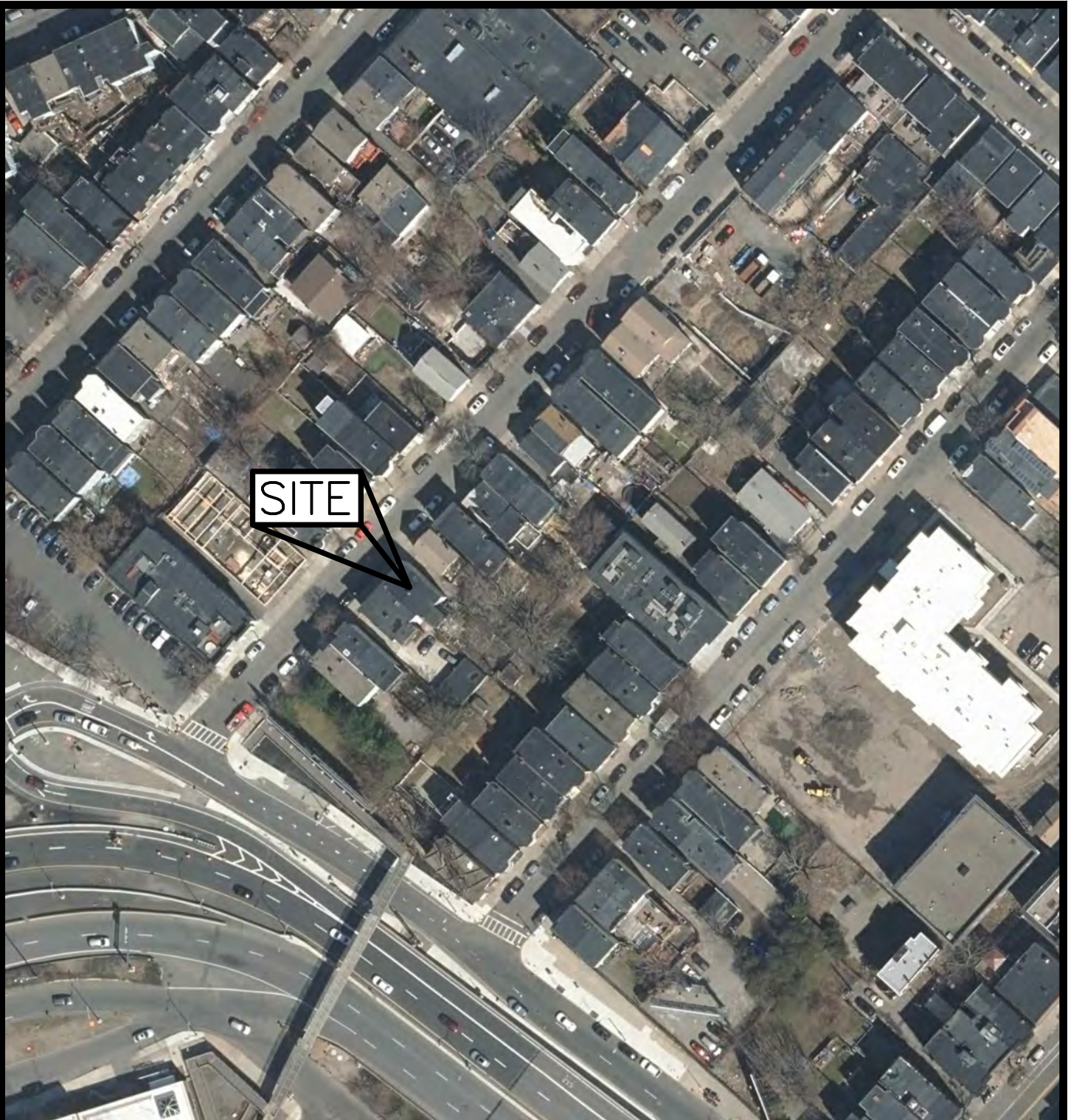
CHECKED BY: Richard A. Salvo, P.E.

DRAWING TITLE:

FIGURE 1 - USGS LOCUS MAP

Page #:

1 of 5



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PROJECT:

Plan of Land

197 Havre Street
 Parcel ID: 0106233000
 East Boston, MA 02128

PROJECT: 21-61505

DATE: August 18, 2021

SCALE: 1"=100'

DWG FILE NAME: Figures.dwg

DESIGNED BY: Alex Salvo

CHECKED BY: Richard A. Salvo, P.E.

DRAWING TITLE:

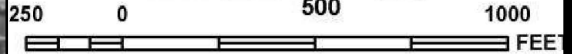
FIGURE 2 - ORTHO PHOTO

Page #:

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MAP SCALE 1" = 500'



LEGEND

- SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD**
 The 1% annual chance flood (103-year flood), also known as the "base flood," is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AI, AP, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.
- ZONE A** No Base Flood Elevations determined.
 - ZONE AE** Base Flood Elevations determined.
 - ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
 - ZONE AO** Flood depths of 1 to 3 feet (usually where flow on sloping terrain); average depths determined. For areas of shallow fan flooding, velocities also determined.
 - ZONE AR** Special Flood Hazard Areas formerly prohibited from the 1% annual chance flood by a flood control system that was subsequently decommissioned. Zone AR indicates that the former flood control system is being restored to general protection from the 1% annual chance flood.
 - ZONE ARB** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
 - ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
 - ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.
- FLOODWAY AREAS IN ZONE AE**
 The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachments so that the 1% annual chance flood can be carried without substantial increase in flood heights.
- OTHER FLOOD AREAS**
 - ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile and areas protected by levees from 1% annual chance flood.
 - OTHER AREAS**
 - ZONE X** Areas determined to be outside the 0.2% annual chance floodplain; Areas in which flood hazards are undetermined, but possible.
 - COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS**
 - OTHERWISE PROTECTED AREAS (OPAs)**
- CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.
- 1% Annual Chance Floodplain Boundary
 - 0.2% Annual Chance Floodplain Boundary
 - Floodway boundary
 - Zone D boundary
 - CBRS and OPA boundary
 - Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevation, flood depths, or flood winds.
 - Limit of Moderate Wave Action
 - Limit of Moderate Wave Action coincident with Zone lines
 - Base Flood Elevation line and value; elevation in feet*
 - Base Flood Elevation value where values within zone; elevation in feet*
- *Referenced to the North American Vertical Datum of 1988

**NATIONAL FLOOD INSURANCE PROGRAM
 SUFFOLK COUNTY**

**COMMUNITY PANEL NO: 25025C0019J
 EFFECTIVE DATE: March 16, 2016**

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PROJECT:

Plan of Land
 197 Havre Street
 Parcel ID: 0106233000
 East Boston, MA 02128

PROJECT: 21-61505

DATE: August 18, 2021

SCALE: 1"=500'

DWG FILE NAME: Figures.dwg

DESIGNED BY: Alex Salvo



CHECKED BY: Richard A. Salvo, P.E.

**DRAWING TITLE:
 FIGURE 3 - FEMA FLOOD MAP**

**Page #:
 3 of 5**



LEGEND:

-  - NHESP ESTIMATED HABITATS OF RARE SPECIES
-  - NHESP PRIORITY HABITATS OF RARE SPECIES

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PROJECT:

Plan of Land

197 Havre Street
 Parcel ID: 0106233000
 East Boston, MA 02128

PROJECT: 21-61505

DATE: August 18, 2021

SCALE: 1:25,000

DWG FILE NAME: Figures.dwg

DESIGNED BY: Alex Salvo

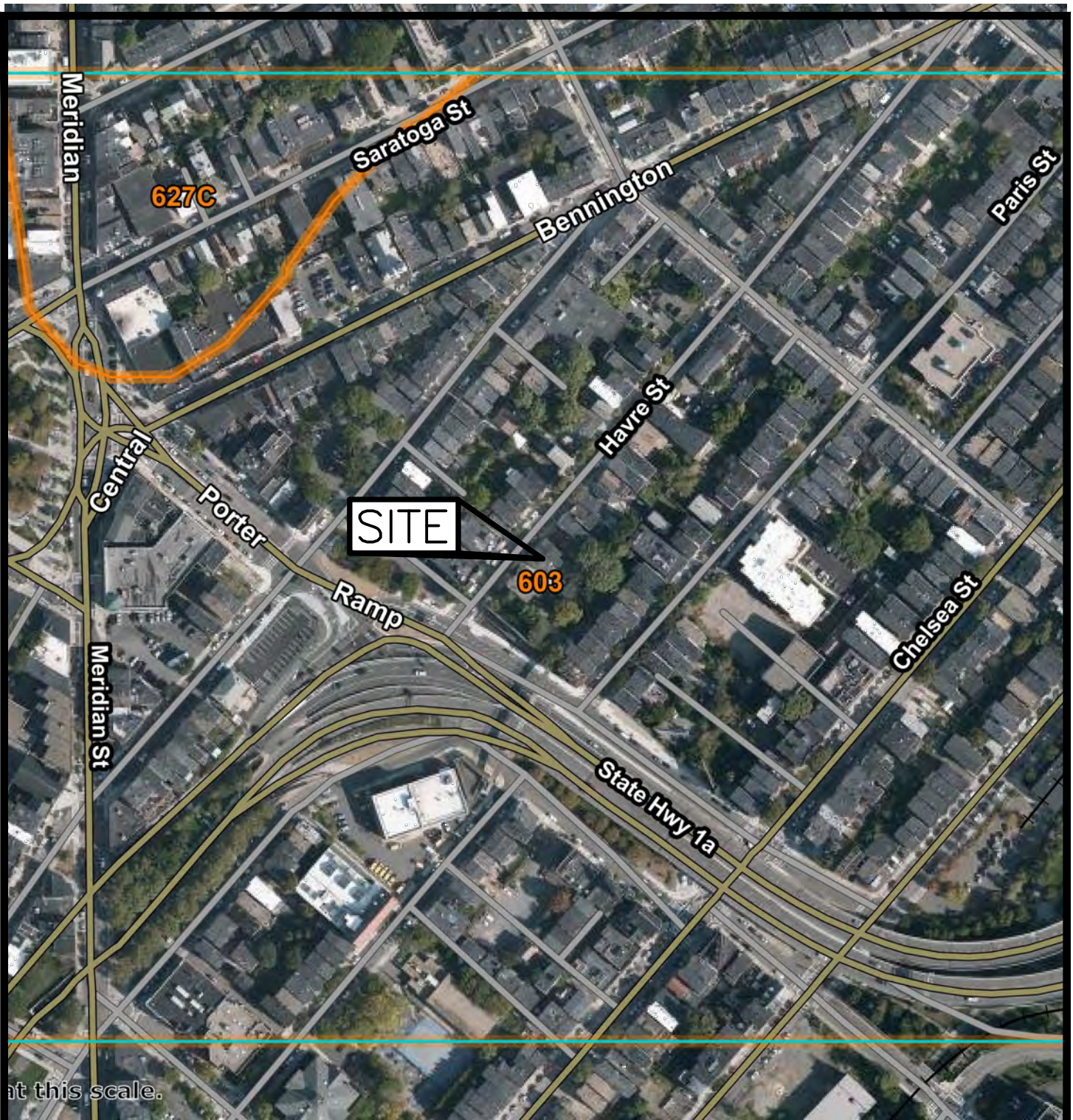
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FIGURE 4 - NATURAL HERITAGE MAP

Page #:

4 of 5



at this scale.

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PROJECT:

Plan of Land

197 Havre Street
 Parcel ID: 0106233000
 East Boston, MA 02128

PROJECT: 21-61505

DATE: August 18, 2021

SCALE: 1"=300'

DWG FILE NAME: Figures.dwg

DESIGNED BY: Alex Salvo

CHECKED BY: Richard A. Salvo, P.E.

DRAWING TITLE:

FIGURE 5 - SOILS MAP

Page #:

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Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 99 percent
Minor components: 1 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Excavated and filled land

Minor Components

Rock outcrops

Percent of map unit: 1 percent
Hydric soil rating: Unranked

603—Urban land, wet substratum, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: vkyl
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 120 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Excavated and filled land over herbaceous organic material and/or alluvium and/or marine deposits

Minor Components

Udorthents

Percent of map unit: 13 percent
Hydric soil rating: Unranked

Beaches

Percent of map unit: 2 percent
Hydric soil rating: Unranked

SECTION II

Executive Summary
Stormwater Checklist
Operation and Maintenance Plan
Illicit Discharge Statement
Supporting BMP Calculations
Existing Drainage Calculations & Existing Watershed Plan
Proposed Drainage Calculations & Proposed Watershed Plan

Executive Summary
Proposed 5 Unit Multifamily Dwelling
197 Havre Street
East Boston, Massachusetts, 02128

Project Description

The project consists of the re-development of a site comprised of approximately 0.06 acres (2,500 s.f.) of land located at 197 Havre, East Boston, MA (Parcel ID: 0106233000). The property is currently occupied by an existing three family dwelling, concrete patio, and pergola with shade canopy.

The proposed project consists of the demolition of the existing three family dwelling and the construction of a new four-story, five-unit multifamily dwelling. The project will also include a drive under parking facility, new utility services, stormwater management facilities, landscaped areas and incidental site grading. The drive under parking facility will be constructed as a structure slab on piers to maintain the existing grade beneath the building within the limits of the 100-year flood plain (Land Subject to Coastal Storm Flowage).

The site abuts Havre Street to the west, and residential land to the north, east, and south. Vehicle access will be provided via a new curb cut and driveway entrance from Havre Street. The existing curb cut abutting the property will be closed.

Site Description

The subject property is currently occupied by an existing three-family dwelling, concrete patio, a pergola with shade canopy, and landscaped areas. The topography varies throughout the property, with elevations at the entrance of the site at approximately 17.2 (Boston City Base) and a concrete walkway sloping to the rear of the site at approximately 10%. The concrete walkway varies in elevation from 17.2 to 13.5 at the concrete patio directly behind the existing building. All stormwater runoff drains via surface flow toward an offsite low point at the vacant lot offsite to the east.

In the proposed condition, the new building will occupy the majority of the subject property. The proposed structural slab for the driveway and parking area will be constructed at elevation 17.40 (+/-), approximately 0.95 ft above the 100-year flood plain elevation (16.45 BCB, 10 NAVD 88). The slab will be constructed on piers as to maintain the existing grade below (elevation varies 13.0-15.0) and allow for flood waters to move freely beneath the building. Stormwater runoff from the proposed building will drain via roof drain to a subsurface infiltration facility at the rear of the building. Stormwater management systems have been designed in accordance with the requirements of the Massachusetts Stormwater Management Standards and the requirements of the Boston Water & Sewer Commission.

The proposed groundcover of the site will be comprised of the proposed building and landscaped area at the rear.

The Flood Insurance Rate Map for the City of Boston (Community Panel 25025C018J with an effective date of March 16, 2016) describes the project site as Zone AE. Zone AE is classified as a special flood hazard area (SFHAs) subject to inundation by the 1% annual chance flood with base flood elevations determined. The base flood elevation for the subject property is elevation 16.45 (BCB, 10 NAVD88). The majority of the subject property is located within the limit of the 100-year flood plain.

All lot lines, topography, utilities, and other existing site information used has been compiled from a field survey performed by Peter Nolan & Associates LLC on February 28, 2020 and from plans of record obtained from the City of Boston where available.

Pre-Development Condition

The site is presently occupied by an three-family dwellings, concrete walkway & patio, pergola with canopy, and scattered landscaping. Stormwater in the current condition drains via surface flow toward and offsite low point on the vacant lot to the east.

Technical Release 20 (TR-20) Program for Project Formulation Hydrology developed by the SCS was employed to develop pre and post-development peak flows. Drainage calculations were prepared for the pre-development condition for the 2, 10, 25, and 100-year type III storm events. Refer to Appendix A for computer results, soil characteristics, cover descriptions and times of concentrations for all subareas.

Refer to Plan 1 of 2 in Appendix A for the delineation of pre-development drainage subareas. In both the pre-development and post-development stormwater analysis, the watershed area analyzed was the entire 9,000 s.f. of the subject property. The peak rates of runoff for the pre-development condition are as follows:

	2-Year Storm (3.18")	10-Year Storm (5.04")	25-Year Storm (6.19")	100-Year Storm (7.98")
Design Point #1 (Offsite Low-Point)	0.17 CFS	0.28 CFS	0.35 CFS	0.46 CFS

Post-Development Condition

In the post-development condition, the four-story, five-unit dwelling will be constructed with a drive under structural slab on piers parking facility, associated utility connections, stormwater management facilities, landscaped areas, and incidental site work. Refer to Plan 2 of 2 in Appendix B for proposed site grading and drainage facilities and the delineation of post-development drainage subareas. Design Points for the post-development condition correspond to that of the pre-development condition.

Drainage calculations were performed by employing the SCS TR-20 Methods for the 2, 10, 25, and 100-year Type III storm events. Refer to Appendix B for computer results.

The peak rates of runoff for this condition are as follows:

	2-Year Storm (3.18")	10-Year Storm (5.04")	25-Year Storm (6.19")	100-Year Storm (7.98")
Design Point #1 (Offsite Low-Point)	0.10 CFS	0.28 CFS	0.35 CFS	0.45 CFS

Stormwater Management Facilities

Stormwater runoff generated by proposed dwelling will via roof drain to a subsurface infiltration facility consisting of two (2) Cultec 330XL HD Chambers at the rear of the proposed dwelling. The stormwater facilities were design to attenuate peak flows generated by all storm events up to and including the 100-year storm event. An infiltration rate of 1.02 in/hr was used based on the Rawls Rate of saturated hydraulic conductivity for a sandy loam soil type. Refer to Appendix A & B for the Stage Storage Curves and TR-20 computer results for the storage characteristics of the subsurface infiltration facilities. Refer to the Site Plans (attached) for design details.

Stormwater Management Standards

The proposed project is subject to the Stormwater Management Standards established in the Massachusetts Stormwater Handbook. Below is a list of the standards and explanation of project compliance:

Standard 1: No new stormwater conveyances (e.g. outfalls) may discharge untreated storm water directly to or cause erosion in wetlands or waters of the Commonwealth.

No new stormwater outfalls are proposed as part of the project. The subject project complies with this standard.

Standard 2: Stormwater management systems shall be designed so that the post-development peak discharge rates do not exceed pre-development peak discharge rates.

As mentioned in the previous sections of this report, peak discharge rates for all storms up to and including the 100-year storm event will be mitigated by the proposed design.

Standard 3: Loss of annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures including environmentally sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from the pre-development conditions based on soil type. This standard is met when the stormwater management

system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.

The proposed stormwater management system has been sized to accommodate the required recharge volume. Refer to Section II, "Supporting BMP Calculations" for the required and provided recharge volumes.

Standard 4: Stormwater management systems shall be designed to remove 80% of the average annual post construction load of Total Suspended Solids (TSS)

The proposed stormwater management system has been designed to remove 80% of the average annual post construction load of TSS. Refer to Section II, "Supporting BMP Calculations" for the proposed treatment train and TSS removal rates.

Standard 5: For land uses with higher potential pollutant loads....

This standard is not applicable to the subject property.

Standard 6: Stormwater discharges within the Zone II or Interim Wellhead Protection Area....

This standard is not applicable to the subject property.

Standard 7: A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3 and structural best management practice requirements of Standards 4,5 and 6.

The subject property is classified as new construction and therefore this standard is not applicable to the subject property.

Standard 8: A plan to control construction –related impacts including erosion, sedimentation and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) shall be developed and implemented.

The design of the subject project will include straw wattles as a temporary erosion control measure. Given the size and scope of the proposed improvements a minimal amount of soil will be disturbed that could cause erosion and/or sedimentation.

Standard 9: A long-term operation and maintenance plan shall be developed and implemented to ensure that stormwater management systems function as designed.

A pre and post construction Best Management Practices Operations and Maintenance Plan has been prepared for this project. Refer to Section II, "Operations and Maintenance Plan."

Standard 10: All illicit discharges to the stormwater management system are prohibited

An illicit discharge statement has been provided in Section II. The project is in full compliance with this standard.

Erosion and Siltation Control

Straw wattles and silt fence will be placed at the downhill limit of work prior to the commencement of any construction activity. The integrity of the erosion control devices will be maintained by periodic inspection and replacement as necessary. The straw wattles and silt fence will remain in place until the first course of pavement has been placed and all side slopes have been loamed and seeded and vegetation has been established.

Regulatory Compliance

The resource area affected by the proposed development is Land Subject to Coastal Storm Flowage. The subject property is located within a Zone AE established by the corresponding FEMA Flood map. The base flood elevation for the subject property is elevation 16.45 (BCB). Currently, land subject to coastal storm flowage does not have any performance standards.

Adaptation, Resiliency and Sea Level Rise

Although the Site is located within the 100-year coastal flood plain, it does **not** have a history of flooding while other areas of the City have been susceptible to flooding during storms with larger intensities. Notwithstanding the fact that the subject property does **not** have a history of flooding, according to the

most recent Flood Insurance Rate Map (FIRM) no. 25025C0019J dated March 16, 2016, the subject property is located in a Zone AE with a base flood elevation of 10 (NAVD88) or 16.45 Boston City Base (BCB). The subject property is located approximately ¼ mile from the flooding source. It is likely that as flood waters enter the East Boston Neighborhood, flood waters will be deflected and re-directed before affecting the subject property. Notwithstanding that fact, the base flood elevation of 16.45 reported on the FIRM map was utilized for design purposes.

The first-floor elevation of the proposed building will be located at elevation 17.4 from direct access from Havre Street. Currently, an intervening grade existing within the Havre Street right of way that would prevent flood waters from accessing the subject property from Havre Street. The first-floor elevation has been set to maintain the intervening grade in the proposed condition. Additionally, the at grade parking facility will be constructed as a structural slab on piers in order to maintain elevation above the 100-year flood elevation within the parking facility. The site elevations below the structural parking slab will remain at existing elevation to allow for free flowing of floodwater from abutting properties at the lower elevations. A stairwell will be constructed at the rear of the building for access from the landscaped area in the rear. This portion of the building will include a flow-thru opening in the foundation that is equal to one inch (1") for every one square foot (1 s.f.) of the stairway enclosure in accordance with the NFIP.

Using the BPDA Sea Level Rise – Flood Hazard Area map, the sea level rise base flood elevation is 20.0 (BCB). The Sea Level Rise Design Flood Elevation based on this information is equal to 22.0 (SLRBF + 24"). In order to maintain accessibility from Havre Street, the proposed first floor and structure slab elevation will be constructed at elevation 17.40. This elevation is above the 100-year flood plain, but below the sea level rise flood elevation and sea level rise design flood elevation. The first floor of the building at elevation 17.40 will consist of an open parking facility and building access. All mechanical equipment will be constructed on the higher floors above the 100-year flood plain, sea level rise base flood elevation, and sea level rise design flood elevation.

The following measures will have been incorporated to address sea level rise and coastal resiliency:

- The first-floor elevation will be constructed for direct access from Havre Street. This elevation is above the 100-year floodplain elevation.
- The mechanical equipment will be located above the first floor so as to be above the 100-year flood plain, sea level rise base flood elevation and sea level rise design flood elevation.
- Parking area will be constructed on structural slab on piers to maintain free flow of flood waters from abutting properties.

Heat Island Effect

The proposed project will result in an increase of 82 s.f. of impervious area. This minimal increase in impervious area designates that the proposed project will have a negligible impact on heat island effect. As an addition offset measure, the building will be constructed using a thermal friendly wood frame construction.

Extreme Precipitation

As noted above, the project is subject to the stormwater management standards based on the number of units in the proposed dwelling. The stormwater analysis was prepared using NOAA rainfall data which accounts for extreme precipitation events in the increments of the 2, 10, 25, and 100-year storm event. The proposed stormwater management system has been sized to meet all requirements of the stormwater management standards based on this information.



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



August 23, 2021

Signature and Date

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:

- 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
- Other (describe): Subsurface Infiltration Facility

Standard 1: No New Untreated Discharges

- 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 Field¹
- 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.

BEST MANAGEMENT PRACTICES OPERATION AND MAINTENANCE PLAN

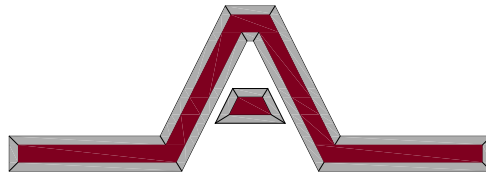
For The
Proposed Five Unit Multifamily Dwelling

Located at
**197 Havre Street
East Boston, Massachusetts**

Submitted to:
**City of Boston
Conservation Commission
&
DEP N.E.R.O.**

Prepared for:
**5 Up Havre, LLC
6 Verona Street
Salem, MA 01970**

Prepared by



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August 23, 2021

BEST MANAGEMENT PRACTICES OPERATION AND MAINTENANCE PLAN

The purpose of this Best Management Practices Operation and Maintenance plan is to provide guidance for mandatory maintenance procedures of site preparation and pre and post construction activities for the project located 197 Havre Street in East Boston, Massachusetts. The project consists of the development of a parcel of land comprised of approximately 2,500 s.f. (0.06) acres. The project proposes to demolish an existing three family dwelling and to construct a four story, five unit multifamily dwelling with drive under podium style parking, stormwater management facilities, utility connections, landscaping, and site grading.

The Best Management Practices Operation and Maintenance Plan is summarized below and will be incorporated into the construction documents for this project. This plan is broken into two major sections. The first section is construction-related erosion and sedimentation controls. The second section is devoted to a post-development operation and maintenance plan.

Basic Information

Owner/Maintenance Responsibilities:

Dan Dandreo
5 Up Havre, LLC
6 Verona Street
Salem, MA 01970
(781) 985-4059

Inspector:

Dan Dandreo
5 Up Havre, LLC
6 Verona Street
Salem, MA 01970
(781) 985-4059

In the event that the property ownership changes, this Operation and Maintenance Plan shall continue to run with the land and apply to any successors or assigns. Upon the conveyance of land, the Conservation Commission shall be notified in writing indicating the new ownership's contact information within 48 hours of the conveyance.

Prior to the conveyance of the property, an educational meeting shall be held between the current owner, the new owner and the parties responsible for the maintenance of the stormwater management facility. The purpose of the meeting will be to educate the new owner on the maintenance responsibilities for the stormwater management facility including, but not limited to:

- Description of system components
- Required maintenance of each component
- Frequency of maintenance of each component

This document shall be updated to indicate the time and date of the meeting as well as the contact information for the new property owner.

Time and Date of Educational Meeting: _____

New Owner Information

Acknowledgement of Storm Water Management Maintenance Responsibilities:

Owner Signature

Date

Acknowledgement of Storm Water Management Maintenance Responsibilities:

Management Company Representative Signature

Date

Maintenance Budget

A compounding annual budget of **\$1,500 per year** shall be set aside to maintain and/or replace the stormwater management system. This budget shall cover the cost of:

- Cleaning of Subsurface Infiltration Chambers
- Replacement of Subsurface Infiltration System Stone Bed

Training Requirements

Personnel responsible for the installation, maintenance, and/or repair of stormwater controls must be trained to understand the following (if related to the scope of their job duties):

- Permit deadlines associated with installation, maintenance, removal of stormwater controls, and stabilization
- Location of all stormwater controls required on site and how they are to be maintained
- When and how to conduct inspections, record findings, and take corrective actions
- Spill prevention response and pollution prevention measures

Training for all personnel responsibilities will be required **at a minimum of twice a year** to ensure that any and all new employees are properly educated on all specific responsibilities.

O&M Plan Updates

NOTE: All updates, BMP, or site changes must be submitted to the City of Boston Conservation Commission for approval and recertification.

Update Number: _____
Date of Update: _____
Date of Last Update to Plan: _____
Sections Out of Date:

Updates Required:

Update Number: _____
Date of Update: _____
Date of Last Update to Plan: _____
Sections Out of Date:

Updates Required:

Update Number: _____
Date of Update: _____
Date of Last Update to Plan: _____
Sections Out of Date:

Updates Required:

*Additional update sheets have been included at the end of this O&M Report.

Section 1 - Construction Activities & Erosion Controls

1. Contact the Boston Conservation Commission at least two (2) days prior to start of construction.
2. The contractor shall only disturb the minimum area necessary in order to limit the impact on the surrounding area including the bordering vegetated wetlands and abutting residential developments.
3. Install straw wattles and silt fence around the proposed work zone to prevent sediment from leaving the subject property. Straw wattles, and silt fence are to be inspected on a weekly basis Any damaged or compromised erosion control measures are to be replaced immediately.
4. Proper erosion and sediment control must be employed around all material stockpile areas. Regular provisions for dust control must be used, via a water truck or other acceptable method. Erosion and sediment controls around material stockpile areas are to be inspected on a weekly basis.. Any damaged or compromised erosion control measures are to be replaced immediately.
5. Waste material is to be stored in a dumpster on site and covered at all times. Waste material dumpster is to be maintained to ensure no overtopping or leaks will occur.
6. Construction materials are to be stored onsite and covered at all times. Upon completion of building framing, construction materials are to be stored inside building.
7. If necessary, dewatering shall include all necessary control, management, and disposal of groundwater on a 24-hour basis as appropriate during construction. Dewatering shall include the lowering of the groundwater table to relieve any hydrostatic head that could cause a decrease in the stability of the excavated subgrade. It shall also include the intercepting seepage which could otherwise emerge from the slope or sides of excavations which could cause a decrease in the stability of the excavated subgrade of the slopes or sides of the excavations.

Dewatering shall be performed during construction to temporarily protect against the following.

1. The loss of any material beneath the excavated subgrade or from the slopes or sides of the excavations or the movement of any fine particle materials from the soil.
2. Any increased vertical or lateral loads on the excavation support systems.
3. Any disturbance, rupture, instability, build, or heaving of the bottom of the excavated subgrade during excavation and trenching, placement of foundation or bedding materials, construction of slabs, footings, pipes, conduits, underdrains, and any other structures, and backfilling operations.

The dewatering systems and equipment shall be removed from the site when no longer required.

8. Slopes exceeding 3(H):1(V) shall be stabilized with temporary seeding. All slopes are to be checked periodically to see that vegetation is in good condition. Any damage from erosion or animal burrowing should be repaired immediately to prevent further damage. Areas requiring revegetation should be repaired immediately. Slopes should be limed and fertilized as necessary to keep vegetation healthy. Control undesirable vegetation such as weeds and woody growth to avoid bank stability problems in the future.
9. The entire project area shall be swept upon completion of construction and prior to removal of the erosion control devices.
10. All disturbed areas of the worksite must be stabilized during the winter months (October 15th – April 15th) by placement of approximately six (6) inches of hay mulch or straw.
11. Refueling of machinery is to occur offsite whenever possible. Any necessary onsite refueling shall occur within the designated refueling area.

Construction Sequencing

1. Install erosion control measures per plan.
2. Demolish existing building.
3. Clear and grub only where necessary.
4. Install building foundations.
5. Begin vertical building construction.

6. Install utilities, including stormwater management systems.
7. Fine grade site.
8. Install structural slab and piers.
9. Install landscaping.
10. Remove erosion control devices.

Spill Prevention and Response

Prevention:

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff:

1. An effort will be made to store only the amount of material required to do the job.
2. All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
3. Products will be kept in their original containers with the original manufacturer's label.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of a product will be used up before disposing of the container.
6. Manufacturer's recommendations for proper use and disposal will be followed.
7. The site superintendent will inspect daily to ensure proper use and disposal of materials onsite.
8. Products will be kept in the original containers unless they are not re-sealable.
9. Original labels and material safety data will be retained; they contain important product information.
10. If surplus product must be disposed of, manufacturers or local and State recommended methods for proper disposal will be followed.
11. Petroleum Products – All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers that are clearly labeled. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.
12. Paints – All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be properly disposed of according to the manufacturer's instructions or State and local regulations.
13. Concrete Trucks - Concrete Trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site.

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and clean-up:

1. Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
2. Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but not be limited to brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
3. All spills will be cleaned up immediately upon discovery.
4. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
5. Spills of toxic or hazardous substances will be reported to the appropriate State or local government agency, regardless of the size.
6. The spill prevention plan will be adjusted to include measure to prevent this type of spill from reoccurring and how to clean up the spill if there should be another. A description of the spill, what caused it, and the cleanup measure will also be included.
7. The Site Superintendent responsible for the day-to-day site operation will be the spill prevention and cleanup coordinator.

Fueling and Maintenance of Equipment or Vehicles

General:

Vehicle and equipment fueling procedures are designed to prevent fuel spills and leaks in order to minimize the discharge of such pollutants into storm drains and waterways.

Implementation:

Offsite fueling stations should be used as much as possible. • When fueling offsite is not practicable, a designated fueling area away from drainage ways must be used. • Locate designated fueling areas a minimum

of 50 feet away from concentrated flows of stormwater, drainage ways, and inlets. • An impermeable surface should be used at the designated fueling area. • Containment should be built around the designated fueling areas to prevent the release of spills, as well as runoff and runoff. • Absorbent spill cleanup materials should be available at all designated fueling areas. If absorbent materials are used on spills, the material is to be removed immediately and disposed of properly. • Fueling nozzles should be equipped with an automatic shutoff to control drips. • Topping off of fuel tanks should be discouraged. • A sign is to be installed adjacent to each fueling facility to inform equipment operators of the designated fueling location. • For larger equipment, such as cranes and excavators that are not able to travel to a designated fueling area, mobile fueling may be necessary. Absorbent spill cleanup materials and spill kits should be available on all fueling trucks. Drip pans or absorbent pads should be used in mobile fueling operations. • The contractor shall train his/her employees and subcontractors in proper fueling and cleanup procedures. These procedures must be documented.

Inspection/Maintenance:

The contractor should inspect vehicles and equipment for leaks each day they are used. Leaks are to be repaired immediately or the piece of equipment should be removed from the project site. • Designated fueling areas should be inspected for leaks and spills each day they are used. Any leaks or spills are to be cleaned up immediately. • Any leaks or spills discharged through a drainage system will require the preparation of an Incidence of Non-Compliance. • Update the SWPPP anytime a designated fueling location has been removed, relocated, added, modified, or required maintenance.

Washing of Equipment and Vehicles

Wash water from vehicle and equipment cleaning is not to be discharged from construction sites because the rinse water may contain contaminants such as sediment, petroleum/lubricant residues, soaps, or solvents that could enter storm drain systems or receiving waters.

Equipment/vehicle cleaning should be conducted offsite. All vehicles that regularly enter and leave the construction site must be cleaned offsite.

For equipment that must be cleaned on site, the cleaning operations must be fully contained and disposed of offsite. The vehicle wash area must be properly identified by sign and located away from storm drain inlets, drainage facilities, and watercourses. It must be paved with concrete or asphalt and have a berm to contain runoff and prevent run-on. It must be equipped with a sump for the collection and disposal of wash water.

Response:

Upon discovery of a spill or leak, personnel are instructed to stop the discharge to the extent possible (considering health and safety issues). They are instructed to take immediate measures (such as deploying spill containment pillows) to contain the spill in the immediate area and prevent the oil from reaching a floor drain or storm drain, or navigable waters. Call 911 immediately in response to any possible injuries or imminent danger.

No equipment shall be moved until spill area precautions have been taken. Any equipment required for spill clean up shall be removed immediately upon completion of required tasks. Only personnel necessary for cleanup shall be permitted to enter spill areas.

Spills will be contained to the smallest possible area using berms or designated barriers.

The closest hospital to contact is as follows:

Massachusetts General Hospital

55 Fruit Street

Boston, MA 02144

Emergency Department Phone Number: **(617) 724-4100**

After taking initial containment measures, the person discovering the spill must call (617) 509-9906 (Property Owner) or _____ (Property Manager) to provide the following information:

- Location, date, and time of release
- An assessment of the potential for the release reaching a catch basin, floor drain, or release to the sewer, or discharge over land to a navigable waterway, wetland or other sensitive areas
- Type of oil released
- Approximate quantity of oil released
- Source of release
- Description of release

- Name and telephone number of the responsible person in the area where the release occurred
- Description of immediate response actions taken
- Any other information, including potential environmental impacts, that is relevant to assessing the degree of the hazard posed by the release.

A record of all calls pertaining to spills must be kept by the Property Manager for compliance notification.

In the event of a spill of any oil or other hazardous substance that exceeds the quantities specified in Table 1 below, or that is released into abutting wetlands, the Property Manager is required by state and federal regulations to immediately inform the United States Environmental Protection Agency (USEPA) and the Massachusetts Department of Environmental Protection (MADEP) of the location of the spill and as much as is known of the extent of the situation. If any spill occurs which has the potential of reaching the abutting wetlands, the decision to notify the agencies will be the responsibility of the Property Manager or a designated Facilities Manager. If they cannot be reached within 2 hours of the spill, one person from the property management company will verify the need to contact the MADEP and USEPA.

If it is determined that a spill has reached the abutting wetlands or has the potential to reach the abutting wetlands, and notification is required, calls must be made to the following numbers, with a responsible person at each location acknowledging receipt of the information. This person's name should be recorded:

1. **Emergency Spill Response Contractor:** _____

Name: _____

Address: _____

Spill Response Capabilities:

The property manager is responsible for determining a spill response contractor prior to the start of construction.

2. **Federal EPA National Response Center:** (800) 424-8802

If no answer, call the alternative number, (202) 267-2675, or call EPA Region 1 Headquarters at (617) 233-6700. The Nation Response Center should be informed of the location of the spill, and the quantity and type of oil spilled. If appropriate, the caller should also identify the potential for discharge to the sewer system or the abutting wetlands.

3. **Massachusetts Department of Environmental Protection Emergency Response:** (888)-304-1133

During normal work hours call the MA DEP regional office at (978) 694-3200. In the evening call the emergency spill response line listed above.

4. **City of Boston Fire Department:** (617) 343-2880

5. **City of Boston Police Department:** (617) 343-4240

6. **City of Boston Conservation Commission:** (617) 635-3850 from 9:00 am to 5:00 pm Monday through Friday; 617-635-4500 at all other times.

The personnel providing the notification should be prepared to offer the following information:

- Exact address and location
- Name and phone number of:
 - Owner's Name/Location
 - Owner's Contact Person
 - Person reporting spill or incident
- Date and time of discharge
- Type of material released
- Estimated quantity of discharge
- Source of discharge
- Cause of the discharge
- How close to surface water does the discharge occur
- Description of all affected media
- Any damages or injuries caused by the discharge
- Actions being taken to stop, remove or mitigate the discharge
- If an evacuation may be necessary
- Names of emergency response contractors or other organizations that have been contacted
- Names of other federal, state or local agencies that have been notified
- Any other information including potential environmental impacts relevant to assessing the degree of the hazard

Following the completion of initial response and notification activities, property management will be responsible for restocking emergency equipment, restoring the impacted area, and properly managing contaminated debris.

Massachusetts DEP Release Reporting Requirements (Per Massachusetts Contingency Plan)

TABLE 1 RELEASE REPORTING CRITERIA		
2 HOUR REPORTING CONDITIONS	72 HOUR REPORTING CONDITIONS	120 DAY REPORTING CONDITIONS
Sudden release (equal to or greater than the Reportable Quantity(RQ), or unknown)	Subsurface, non-aqueous phase liquid (NAPL) equal to or greater than ½ inch	Release of hazardous materials to soil or groundwater exceeding reportable concentration
Threat of sudden release (likely to occur in quantities equal to or greater than the RQ)	Underground storage tank (UST) release	Release of oil to soil exceeding reportable concentration and affecting more than 2 cubic yards
Oil sheen on surface Water	Threat of UST release	Release of oil to groundwater exceeding reportable concentration
"Poses" Imminent Hazard	Release to groundwater near water supply	Subsurface NAPL equal to or greater than 1/8 inch and less than ½ inch
Could "pose" Imminent Hazard	¹ Refer to 310 CMR 40.03 et seq. for detailed reporting criteria.	
Release detected in private well		
Release to storm drain		
Sanitary sewer release (Imminent Hazard only)		

Section 2 – Post Development Operation & Maintenance

1. Subsurface Infiltration Facility – The sub-surface infiltration system shall be inspected immediately following heavy rain events for the initial twelve-month period following the completion of construction. Should the system or stone surrounding the system become clogged, then the system must be vacuumed and stone must be replaced with washed stone. **After the initial twelve-month period following completion of construction, the subsurface infiltration facilities shall be inspected twice per year (once in the spring and once in the fall).**
2. Snow removal and storage - Plowed snow shall be placed in pervious areas adjacent to the parking lots where it can slowly infiltrate. Sediments shall be removed from this area every spring. When the amount of snow exceeds the capacity of the snow storage areas, it shall be removed from the site at the owner's expense.
3. Maintenance Responsibilities - All post construction maintenance activities shall be documented and kept on file and made available to the City of Boston annually, or upon request. All post construction maintenance activities shall run with the title of the property in perpetuity.

ILLICIT DISCHARGE COMPLIANCE STATEMENT

In accordance with the Wetland Regulations found in 310 CMR 10.05(6) and the *Massachusetts Stormwater Handbook* published by the Massachusetts Department of Environmental Protection, the stormwater management system for the proposed project located at 197 Havre Street in East Boston, Massachusetts shall accept no illicit discharges. Illicit discharges are defined as discharges not entirely comprised of stormwater and include, but are not limited to, wastewater discharges and discharges of stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, oil, or grease.

Engineering Alliance, Inc. has performed an investigation of the existing site conditions and did not find any illicit discharges. Prior to construction, additional investigations will take place to identify and remove any and all illicit discharges currently onsite. These actions include, without limitation, visual screening, dye or smoke testing, and the removal of any sources of illicit discharges to the stormwater management system.

Should any illicit discharges enter the stormwater management system after construction has been completed, immediate steps to remove the discharges and their source shall be taken to return the system to its proper working state.



Eric Bradanese, P.E.
for Engineering Alliance, Inc.

8/23/2021

Date

Project: Proposed 5 Unit Multifamily
Client: 5 Up Havre, LLC
Project Number: 21-61505

Prepared By: EJB
Checked By: RAS
Date: 08/18/21



STANDARD 3: REQUIRED RECHARGE VOLUME - Cultec 330 XL HD Chambers

$$R_v = F \times \text{impervious area}$$

R_v = Required Recharge Volume

F = Target Depth associated with each Hydrologic Soil Group

Impervious Area = total impervious area

Impervious Area: **1,960** sf = **0.04** acres

Hydrologic Group	Volume to Recharge
A	0.60
B	0.35
C	0.25
D	0.10

$$R_v = 0.04 \times 0.25 \times \frac{1 \text{ ft}}{12 \text{ in.}} \times \frac{43,560 \text{ sf}}{1 \text{ ac.}} = \mathbf{41 \text{ CF}}$$

NOTES:

1. Total storage capacity of the of subsurface infiltration facility (Cultec 330XL HD Chambers). These value were taken from a HydroCAD model generated for the proposed subsurface system.

219 CF > 41 CF

DRAWDOWN WITHIN 72 HOURS

$$\text{Time}_{\text{drawdown}} = \frac{\text{Recharge Volume}}{K(\text{Bottom Area})} \quad K = \text{Saturated Hydraulic Conductivity}$$

Subsurface Infiltration Facility

$$\text{Time}_{\text{drawdown}} = \frac{219}{(1.02 \text{ in/hr})(1/12 \text{ ft/in})(122 \text{ sf})} = 21.12 < 72 \text{ HRS}$$

NOTES:

1. K value is for Sandy Loam as shown in Table 2.3.3, entitled "1982 Rawls Rates," in the MADEP Stormwater Management Standards.

2. Bottom Area is equal to the total area stone envelope surrounding subsurface system.



Project: Proposed 5 Unit Multifamily
Client: 5 Up Havre, LLC
Project Number: 21-61505

Prepared By: EJB
Checked By: RAS
Date: 08/18/21

STANDARD 4: WATER QUALITY - Cultec 330XL HD Chambers

WATER QUALITY TREATMENT VOLUME

$$V_{WQ} = (D_{WQ} \text{ in.} / 12 \text{ inches/foot}) \times (A_{IMP} \times 43,560 \text{ square feet/acre})$$

- V_{WQ} = Required Water Quality Volume (in cubic feet)
- D_{WQ} = Water Quality Depth
- A_{IMP} = Impervious Area (in acres)

$$V_{WQ} = (0.5 \text{ in.} / 12 \text{ inches/foot}) \times (0.04 \times 43,560 \text{ square feet/acre}) = \boxed{73 \text{ CF}}$$

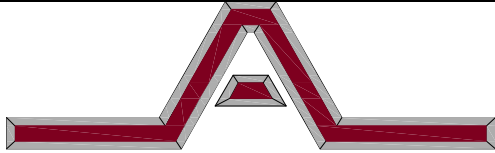
<u>Stormwater BMP</u>	<u>Volume</u>
Stone Bed & Underdrain	219
Total	219

NOTES:

1. Storage volume for the stormwater BMPs obtained from the hydrologic model created in HydroCAD

CONCLUSION:

1. The storage volume provided by the proposed BMPs is greater than the required water quality treatment volume. 219 CF > 73 CF

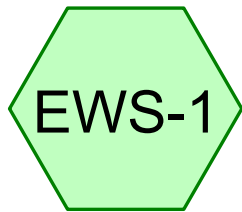


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 Civil Engineering & Land Planning Consultants
 194 Central Street 1950 Lafayette Road
 Saugus, MA 01906 Portsmouth, NH 03801
 Tel: (781) 231-1349 Tel: (603) 610-7100
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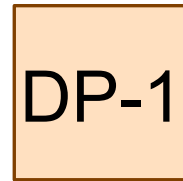
TSS Removal Calculations

Name:	197 Havre Street East Boston, MA	Proj. No.:	21-61505
Client:	5 Up Havre, LLC	Date:	8/18/2021
County:	Suffolk	Computed by:	EJB
Systems:	Permeable Paver Driveway	Checked by:	RAS

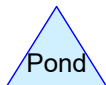
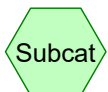
A	B	C	D	E
BMP	TSS Removal Rate	Starting TSS Load*	Amount Removed (BxC)	Remaining Load (C-D)
Subsurface Infiltration Facility (Roof)	80	1.00	0.8	0.20
Total TSS Removal=			80%	
Notes:				
*Starting TSS Load for first BMP= 1.00. TSS load for subsequent BMP's is equal to the Remaining Load (E) from the previous BMP.				



EWS-1



Existing Closed
Drainage System



Existing Conditions

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type III 24-hr		Default	24.00	1	3.18	2
2	10-year	Type III 24-hr		Default	24.00	1	5.04	2
3	25-year	Type III 24-hr		Default	24.00	1	6.19	2
4	100-year	Type III 24-hr		Default	24.00	1	7.98	2

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
484	79	50-75% Grass cover, Fair, HSG C (EWS-1)
800	98	Roofs, HSG C (EWS-1)
1,216	98	Unconnected pavement, HSG C (EWS-1)
2,500	94	TOTAL AREA

Existing Conditions

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Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
2,500	HSG C	EWS-1
0	HSG D	
0	Other	
2,500		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Nun
0	0	484	0	0	484	50-75% Grass cover, Fair	
0	0	800	0	0	800	Roofs	
0	0	1,216	0	0	1,216	Unconnected pavement	
0	0	2,500	0	0	2,500	TOTAL AREA	

Existing Conditions

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Type III 24-hr 2-year Rainfall=3.18"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EWS-1: EWS-1

Runoff Area=2,500 sf 80.64% Impervious Runoff Depth>2.52"
Tc=5.0 min CN=94 Runoff=0.17 cfs 526 cf

Reach DP-1: Existing Closed Drainage System

Inflow=0.17 cfs 526 cf
Outflow=0.17 cfs 526 cf

Total Runoff Area = 2,500 sf Runoff Volume = 526 cf Average Runoff Depth = 2.52"
19.36% Pervious = 484 sf 80.64% Impervious = 2,016 sf

Existing Conditions

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Type III 24-hr 2-year Rainfall=3.18"

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Summary for Subcatchment EWS-1: EWS-1

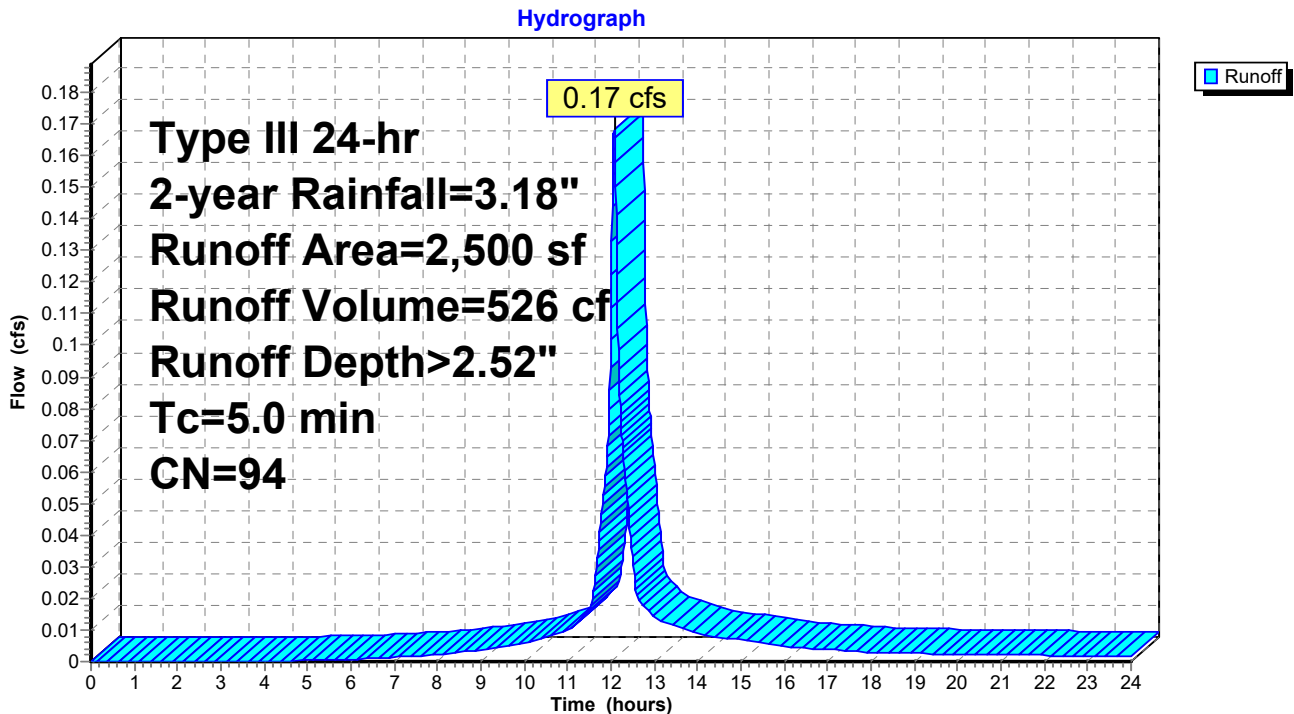
Runoff = 0.17 cfs @ 12.07 hrs, Volume= 526 cf, Depth> 2.52"

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=3.18"

Area (sf)	CN	Description
800	98	Roofs, HSG C
1,216	98	Unconnected pavement, HSG C
484	79	50-75% Grass cover, Fair, HSG C
2,500	94	Weighted Average
484		19.36% Pervious Area
2,016		80.64% Impervious Area
1,216		60.32% Unconnected

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

Subcatchment EWS-1: EWS-1



Existing Conditions

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Type III 24-hr 2-year Rainfall=3.18"

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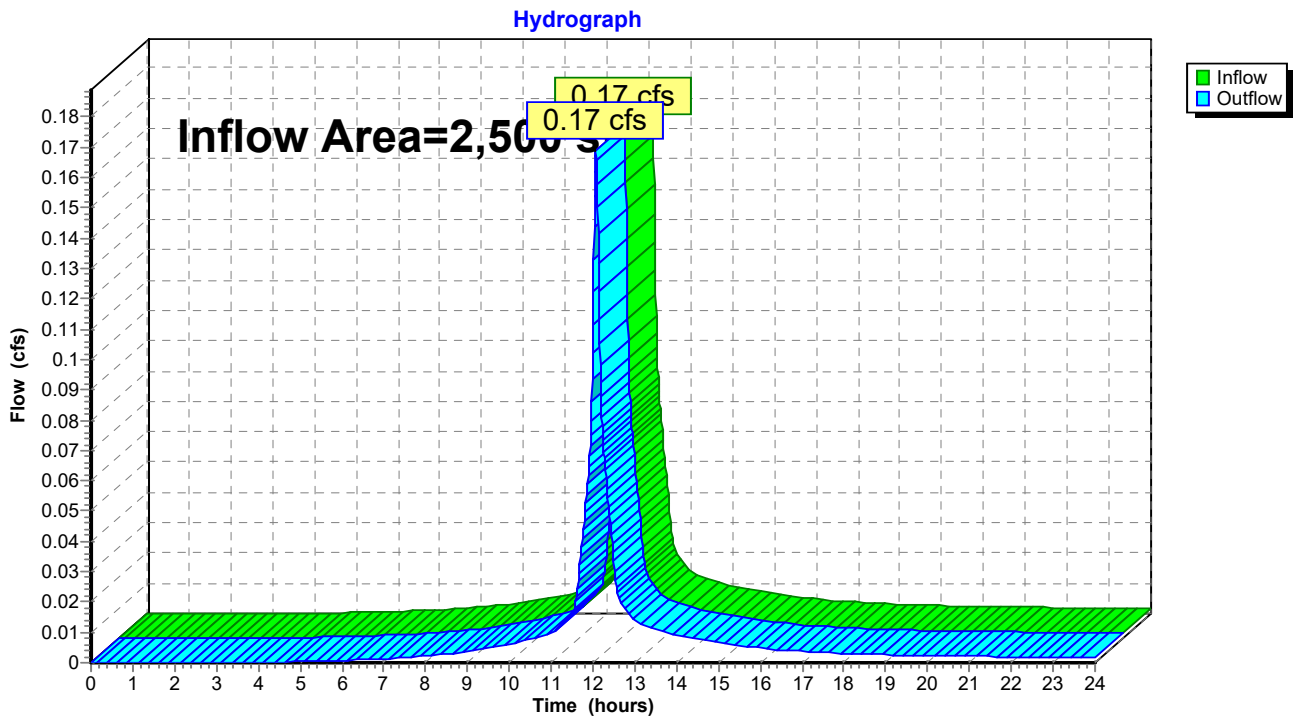
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Summary for Reach DP-1: Existing Closed Drainage System

Inflow Area = 2,500 sf, 80.64% Impervious, Inflow Depth > 2.52" for 2-year event
Inflow = 0.17 cfs @ 12.07 hrs, Volume= 526 cf
Outflow = 0.17 cfs @ 12.07 hrs, Volume= 526 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP-1: Existing Closed Drainage System



Existing Conditions

Type III 24-hr 10-year Rainfall=5.04"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EWS-1: EWS-1

Runoff Area=2,500 sf 80.64% Impervious Runoff Depth>4.34"
Tc=5.0 min CN=94 Runoff=0.28 cfs 905 cf

Reach DP-1: Existing Closed Drainage System

Inflow=0.28 cfs 905 cf
Outflow=0.28 cfs 905 cf

Total Runoff Area = 2,500 sf Runoff Volume = 905 cf Average Runoff Depth = 4.34"
19.36% Pervious = 484 sf 80.64% Impervious = 2,016 sf

Existing Conditions

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Type III 24-hr 10-year Rainfall=5.04"

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Summary for Subcatchment EWS-1: EWS-1

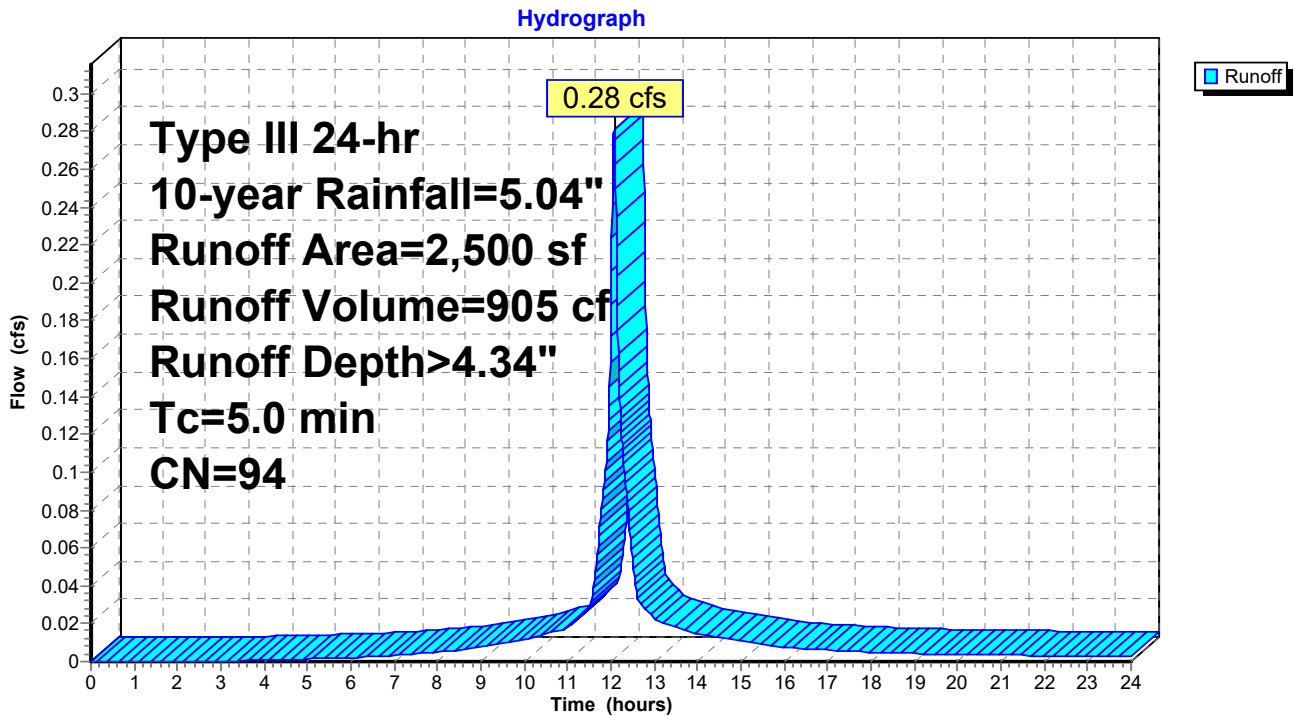
Runoff = 0.28 cfs @ 12.07 hrs, Volume= 905 cf, Depth> 4.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.04"

Area (sf)	CN	Description
800	98	Roofs, HSG C
1,216	98	Unconnected pavement, HSG C
484	79	50-75% Grass cover, Fair, HSG C
2,500	94	Weighted Average
484		19.36% Pervious Area
2,016		80.64% Impervious Area
1,216		60.32% Unconnected

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

Subcatchment EWS-1: EWS-1



Existing Conditions

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Type III 24-hr 10-year Rainfall=5.04"

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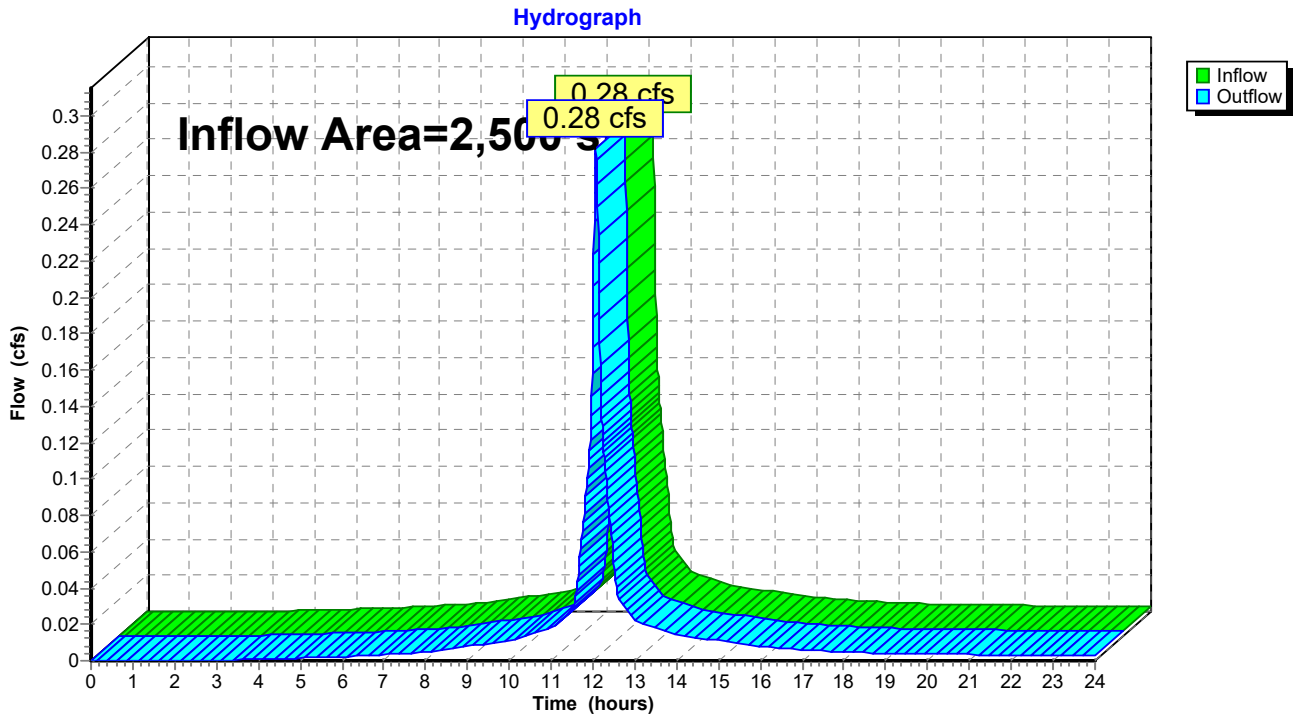
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Summary for Reach DP-1: Existing Closed Drainage System

Inflow Area = 2,500 sf, 80.64% Impervious, Inflow Depth > 4.34" for 10-year event
Inflow = 0.28 cfs @ 12.07 hrs, Volume= 905 cf
Outflow = 0.28 cfs @ 12.07 hrs, Volume= 905 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP-1: Existing Closed Drainage System



Existing Conditions

Type III 24-hr 25-year Rainfall=6.19"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EWS-1: EWS-1

Runoff Area=2,500 sf 80.64% Impervious Runoff Depth>5.48"
Tc=5.0 min CN=94 Runoff=0.35 cfs 1,142 cf

Reach DP-1: Existing Closed Drainage System

Inflow=0.35 cfs 1,142 cf
Outflow=0.35 cfs 1,142 cf

Total Runoff Area = 2,500 sf Runoff Volume = 1,142 cf Average Runoff Depth = 5.48"
19.36% Pervious = 484 sf 80.64% Impervious = 2,016 sf

Existing Conditions

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Type III 24-hr 25-year Rainfall=6.19"

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Summary for Subcatchment EWS-1: EWS-1

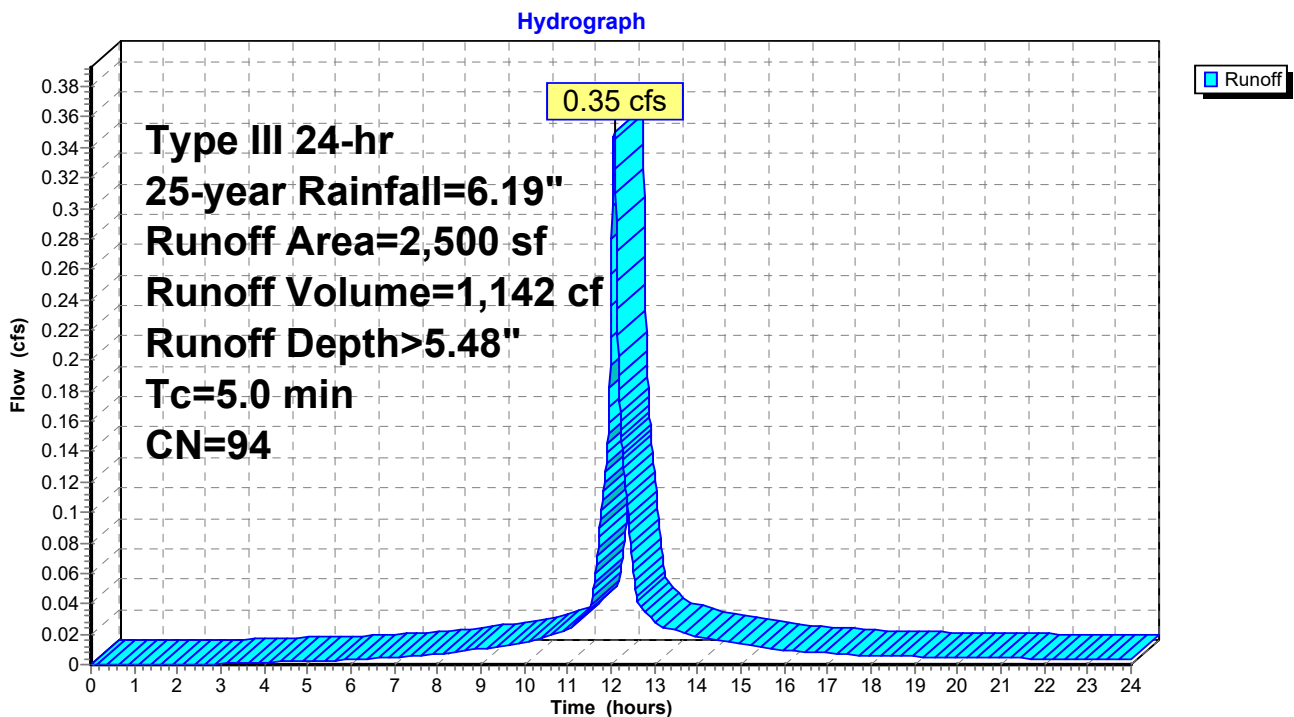
Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,142 cf, Depth> 5.48"

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=6.19"

Area (sf)	CN	Description
800	98	Roofs, HSG C
1,216	98	Unconnected pavement, HSG C
484	79	50-75% Grass cover, Fair, HSG C
2,500	94	Weighted Average
484		19.36% Pervious Area
2,016		80.64% Impervious Area
1,216		60.32% Unconnected

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

Subcatchment EWS-1: EWS-1



Existing Conditions

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Type III 24-hr 25-year Rainfall=6.19"

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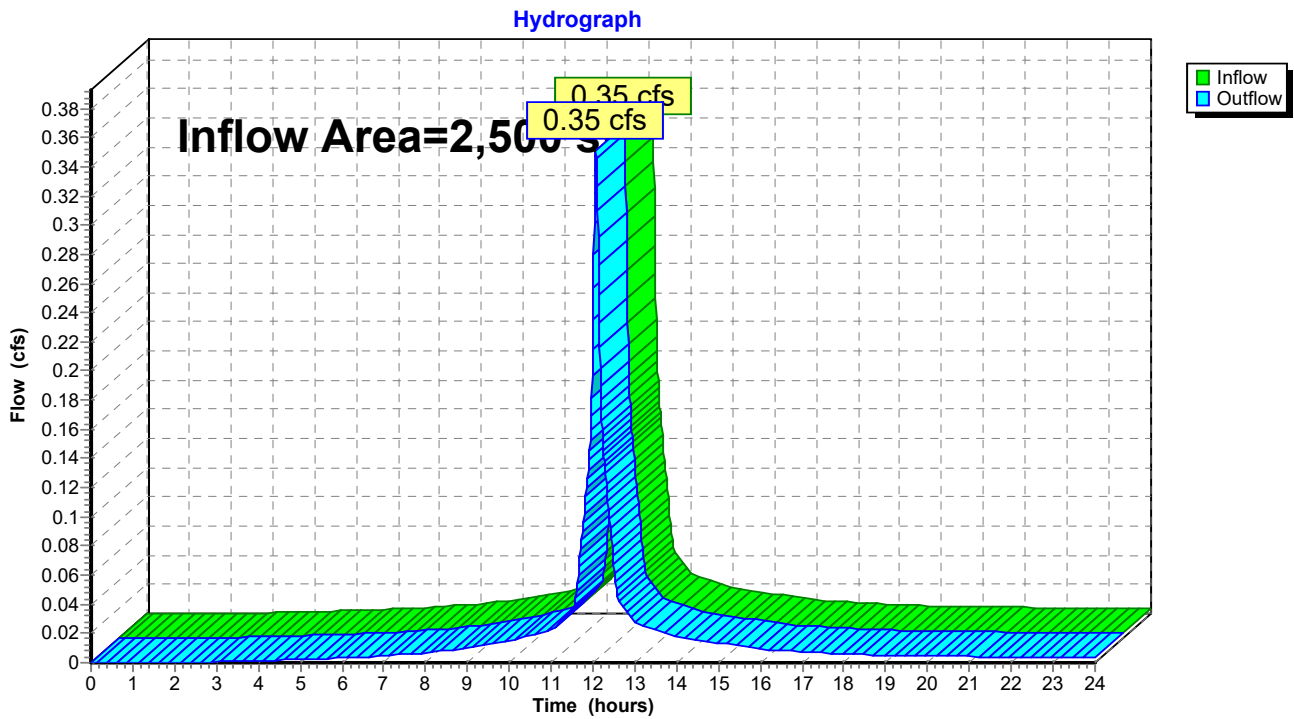
Page 14

Summary for Reach DP-1: Existing Closed Drainage System

Inflow Area = 2,500 sf, 80.64% Impervious, Inflow Depth > 5.48" for 25-year event
Inflow = 0.35 cfs @ 12.07 hrs, Volume= 1,142 cf
Outflow = 0.35 cfs @ 12.07 hrs, Volume= 1,142 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP-1: Existing Closed Drainage System



Existing Conditions

Type III 24-hr 100-year Rainfall=7.98"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment EWS-1: EWS-1

Runoff Area=2,500 sf 80.64% Impervious Runoff Depth>7.26"
Tc=5.0 min CN=94 Runoff=0.46 cfs 1,512 cf

Reach DP-1: Existing Closed Drainage System

Inflow=0.46 cfs 1,512 cf
Outflow=0.46 cfs 1,512 cf

Total Runoff Area = 2,500 sf Runoff Volume = 1,512 cf Average Runoff Depth = 7.26"
19.36% Pervious = 484 sf 80.64% Impervious = 2,016 sf

Existing Conditions

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Type III 24-hr 100-year Rainfall=7.98"

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Summary for Subcatchment EWS-1: EWS-1

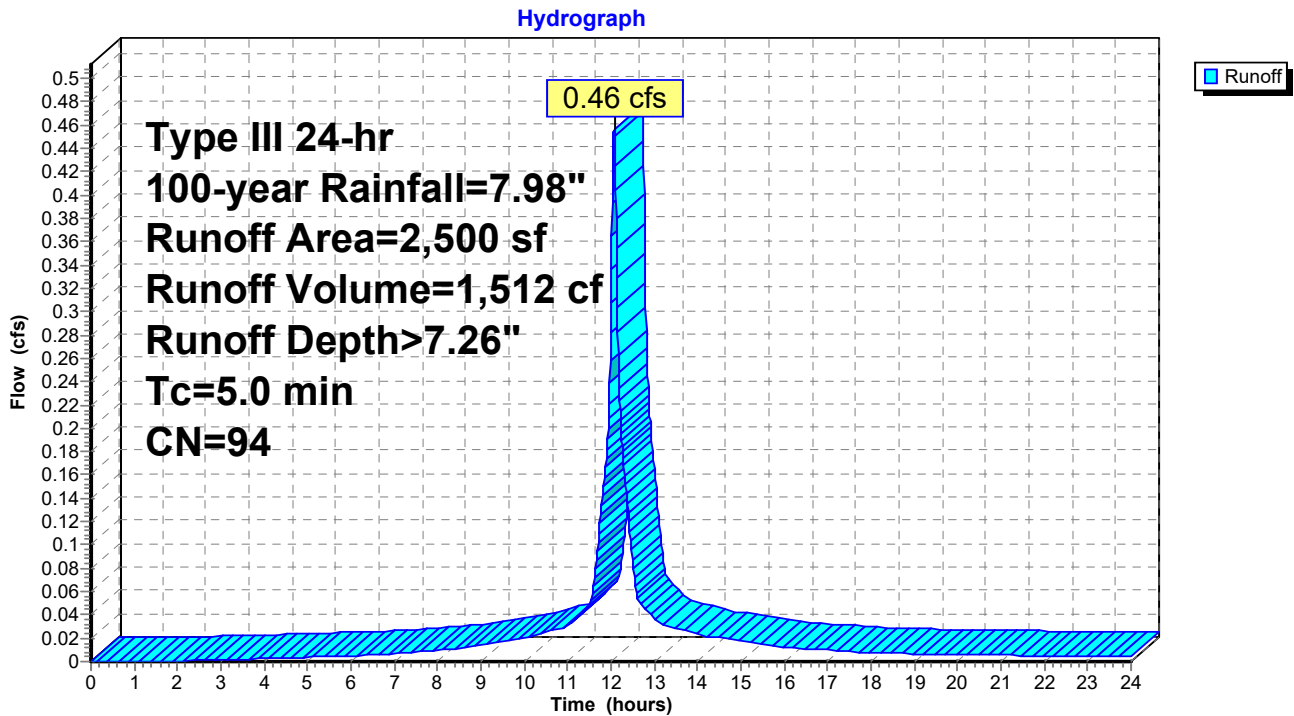
Runoff = 0.46 cfs @ 12.07 hrs, Volume= 1,512 cf, Depth> 7.26"

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=7.98"

Area (sf)	CN	Description
800	98	Roofs, HSG C
1,216	98	Unconnected pavement, HSG C
484	79	50-75% Grass cover, Fair, HSG C
2,500	94	Weighted Average
484		19.36% Pervious Area
2,016		80.64% Impervious Area
1,216		60.32% Unconnected

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

Subcatchment EWS-1: EWS-1



Existing Conditions

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Type III 24-hr 100-year Rainfall=7.98"

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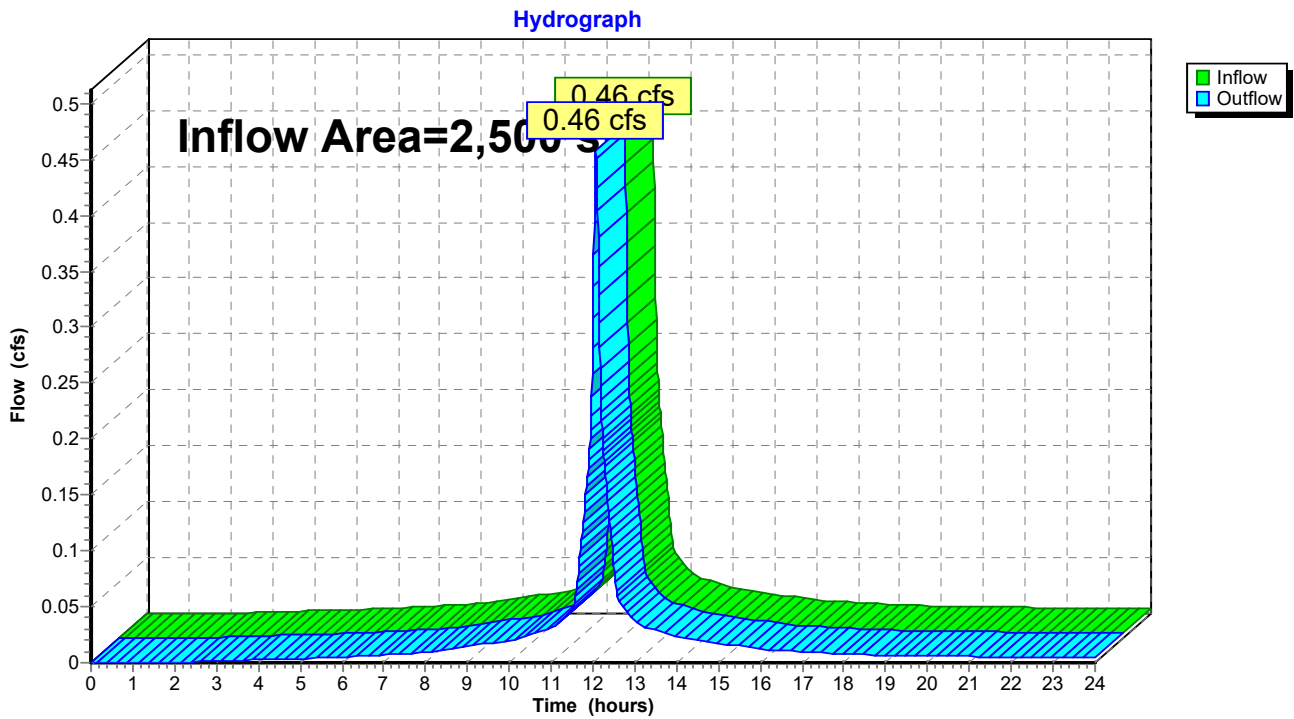
Page 17

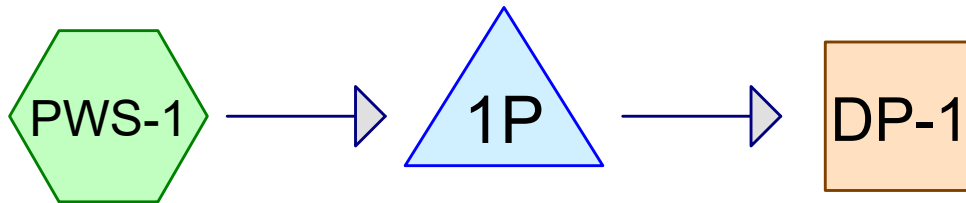
Summary for Reach DP-1: Existing Closed Drainage System

Inflow Area = 2,500 sf, 80.64% Impervious, Inflow Depth > 7.26" for 100-year event
Inflow = 0.46 cfs @ 12.07 hrs, Volume= 1,512 cf
Outflow = 0.46 cfs @ 12.07 hrs, Volume= 1,512 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP-1: Existing Closed Drainage System

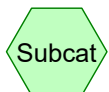




PWS-1

Cultec 330XL HD

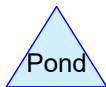
Existing Closed
Drainage System



Subcat



Reach



Pond



Link

Routing Diagram for Proposed Conditions

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Rainfall Events Listing

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	2-year	Type III 24-hr		Default	24.00	1	3.18	2
2	10-year	Type III 24-hr		Default	24.00	1	5.04	2
3	25-year	Type III 24-hr		Default	24.00	1	6.19	2
4	100-year	Type III 24-hr		Default	24.00	1	7.98	2

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Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
402	74	>75% Grass cover, Good, HSG C (PWS-1)
1,840	98	Roofs, HSG C (PWS-1)
258	98	Unconnected pavement, HSG C (PWS-1)
2,500	94	TOTAL AREA

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Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
0	HSG A	
0	HSG B	
2,500	HSG C	PWS-1
0	HSG D	
0	Other	
2,500		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
0	0	402	0	0	402	>75% Grass cover, Good	
0	0	1,840	0	0	1,840	Roofs	
0	0	258	0	0	258	Unconnected pavement	
0	0	2,500	0	0	2,500	TOTAL AREA	

Proposed Conditions

Type III 24-hr 2-year Rainfall=3.18"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PWS-1: PWS-1

Runoff Area=2,500 sf 83.92% Impervious Runoff Depth>2.52"
Tc=5.0 min CN=94 Runoff=0.17 cfs 526 cf

Reach DP-1: Existing Closed Drainage System

Inflow=0.10 cfs 155 cf
Outflow=0.10 cfs 155 cf

Pond 1P: Cultec 330XL HD

Peak Elev=13.18' Storage=214 cf Inflow=0.17 cfs 526 cf
Discarded=0.00 cfs 170 cf Primary=0.10 cfs 155 cf Outflow=0.10 cfs 325 cf

Total Runoff Area = 2,500 sf Runoff Volume = 526 cf Average Runoff Depth = 2.52"
16.08% Pervious = 402 sf 83.92% Impervious = 2,098 sf

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Type III 24-hr 2-year Rainfall=3.18"

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Summary for Subcatchment PWS-1: PWS-1

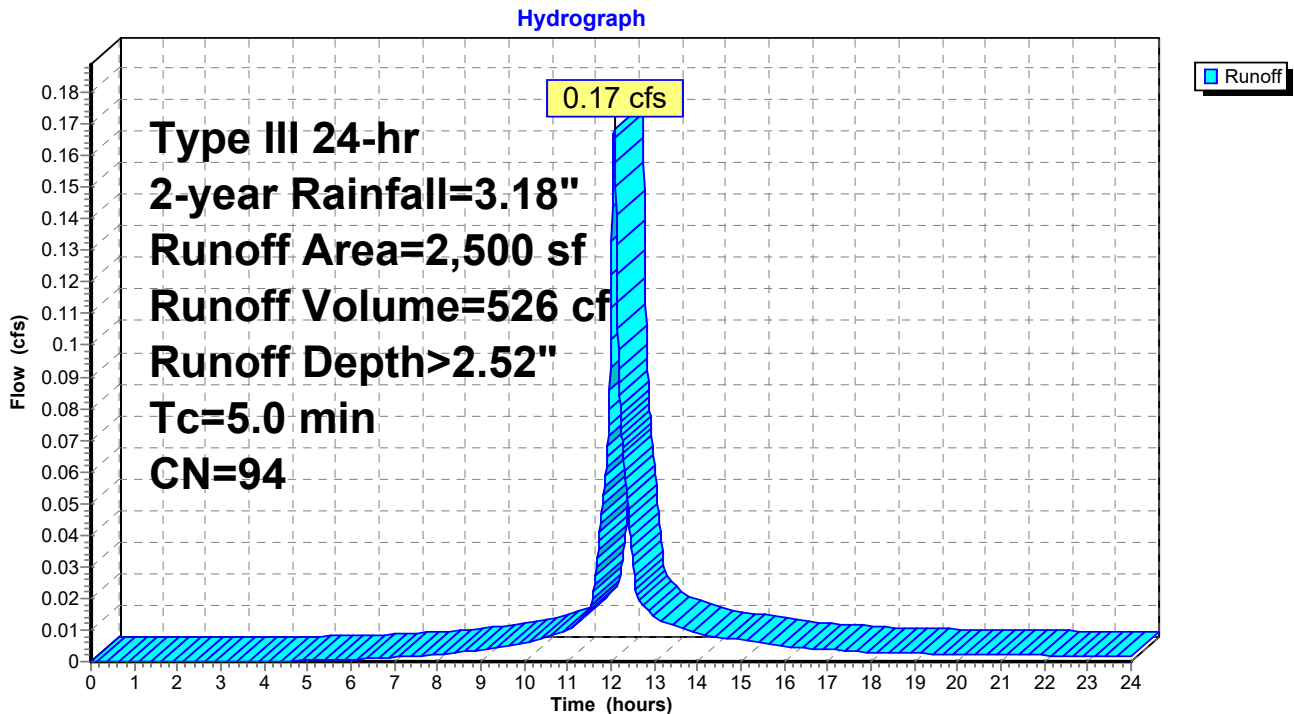
Runoff = 0.17 cfs @ 12.07 hrs, Volume= 526 cf, Depth> 2.52"

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=3.18"

Area (sf)	CN	Description
1,840	98	Roofs, HSG C
402	74	>75% Grass cover, Good, HSG C
258	98	Unconnected pavement, HSG C
2,500	94	Weighted Average
402		16.08% Pervious Area
2,098		83.92% Impervious Area
258		12.30% Unconnected

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

Subcatchment PWS-1: PWS-1



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Type III 24-hr 2-year Rainfall=3.18"

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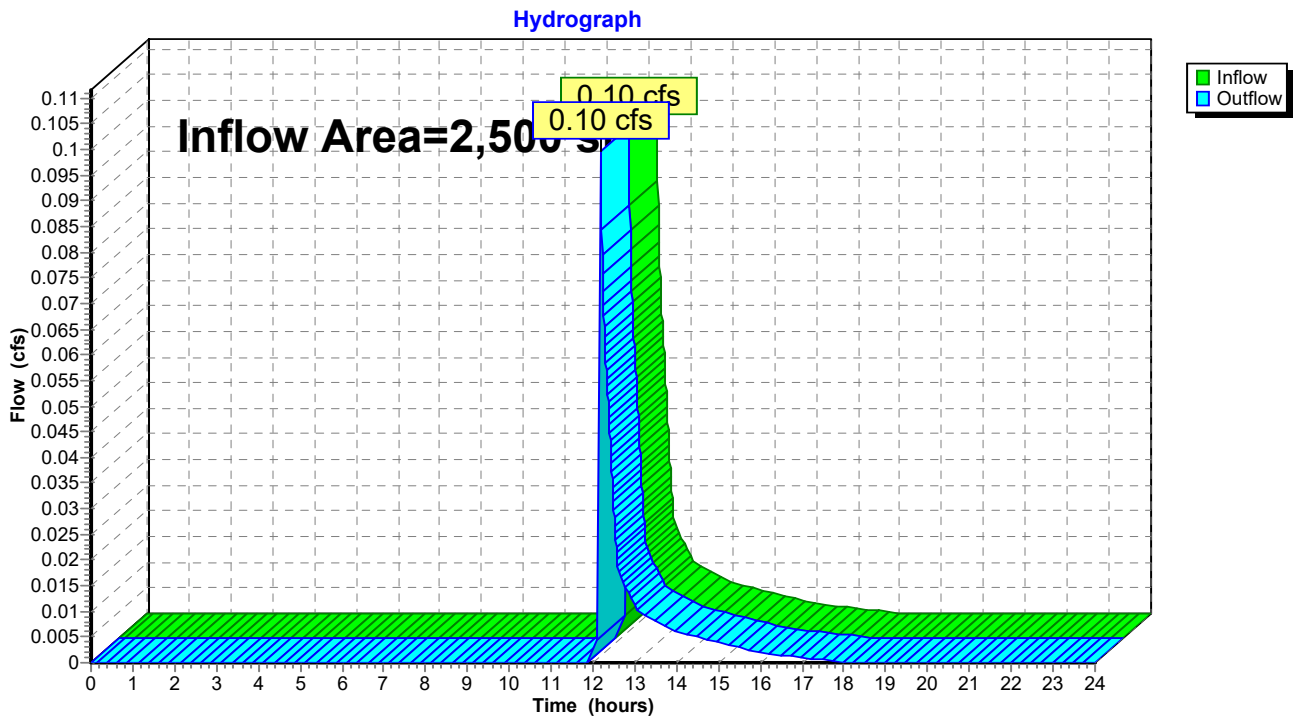
Page 8

Summary for Reach DP-1: Existing Closed Drainage System

Inflow Area = 2,500 sf, 83.92% Impervious, Inflow Depth = 0.75" for 2-year event
Inflow = 0.10 cfs @ 12.20 hrs, Volume= 155 cf
Outflow = 0.10 cfs @ 12.20 hrs, Volume= 155 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP-1: Existing Closed Drainage System



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Type III 24-hr 2-year Rainfall=3.18"

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Summary for Pond 1P: Cultec 330XL HD

Inflow Area = 2,500 sf, 83.92% Impervious, Inflow Depth > 2.52" for 2-year event
Inflow = 0.17 cfs @ 12.07 hrs, Volume= 526 cf
Outflow = 0.10 cfs @ 12.20 hrs, Volume= 325 cf, Atten= 39%, Lag= 8.0 min
Discarded = 0.00 cfs @ 8.59 hrs, Volume= 170 cf
Primary = 0.10 cfs @ 12.20 hrs, Volume= 155 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 4
Peak Elev= 13.18' @ 12.20 hrs Surf.Area= 117 sf Storage= 214 cf

Plug-Flow detention time= 179.6 min calculated for 325 cf (62% of inflow)
Center-of-Mass det. time= 78.8 min (864.7 - 785.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	8.67'	87 cf	11.17'W x 10.50'L x 3.54'H Field A 415 cf Overall - 127 cf Embedded = 289 cf x 30.0% Voids
#2A	9.17'	127 cf	Cultec R-330XLHD x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3	11.50'	0 cf	0.50'D x 2.00'H Roof Drain-Impervious
		214 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	8.67'	1.020 in/hr Exfiltration over Surface area
#2	Primary	13.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 8.59 hrs HW=8.72' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.09 cfs @ 12.20 hrs HW=13.17' (Free Discharge)
↑**2=Orifice/Grate** (Orifice Controls 0.09 cfs @ 1.42 fps)

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Type III 24-hr 2-year Rainfall=3.18"

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Pond 1P: Cultec 330XL HD - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)

Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf

Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap

Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

1 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 8.50' Row Length +12.0" End Stone x 2 = 10.50' Base Length

2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width

6.0" Stone Base + 30.5" Chamber Height + 6.0" Stone Cover = 3.54' Field Height

2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 126.7 cf Chamber Storage

415.3 cf Field - 126.7 cf Chambers = 288.6 cf Stone x 30.0% Voids = 86.6 cf Stone Storage

Chamber Storage + Stone Storage = 213.2 cf = 0.005 af

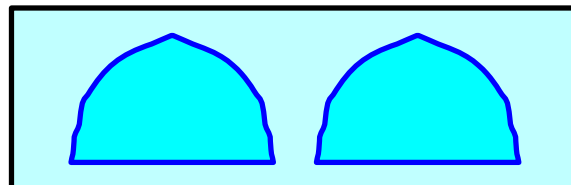
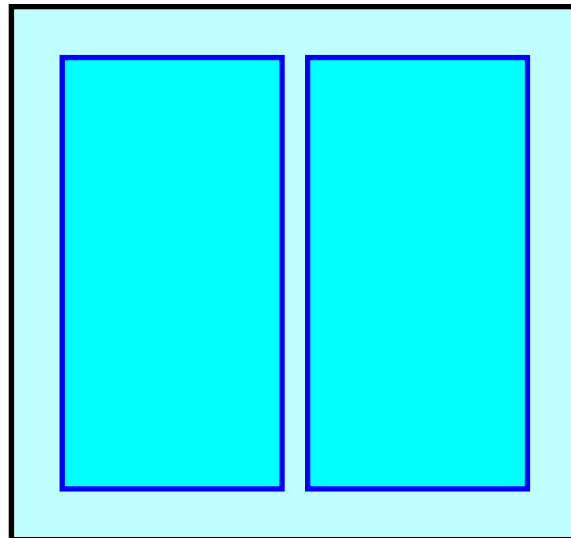
Overall Storage Efficiency = 51.4%

Overall System Size = 10.50' x 11.17' x 3.54'

2 Chambers

15.4 cy Field

10.7 cy Stone



Proposed Conditions

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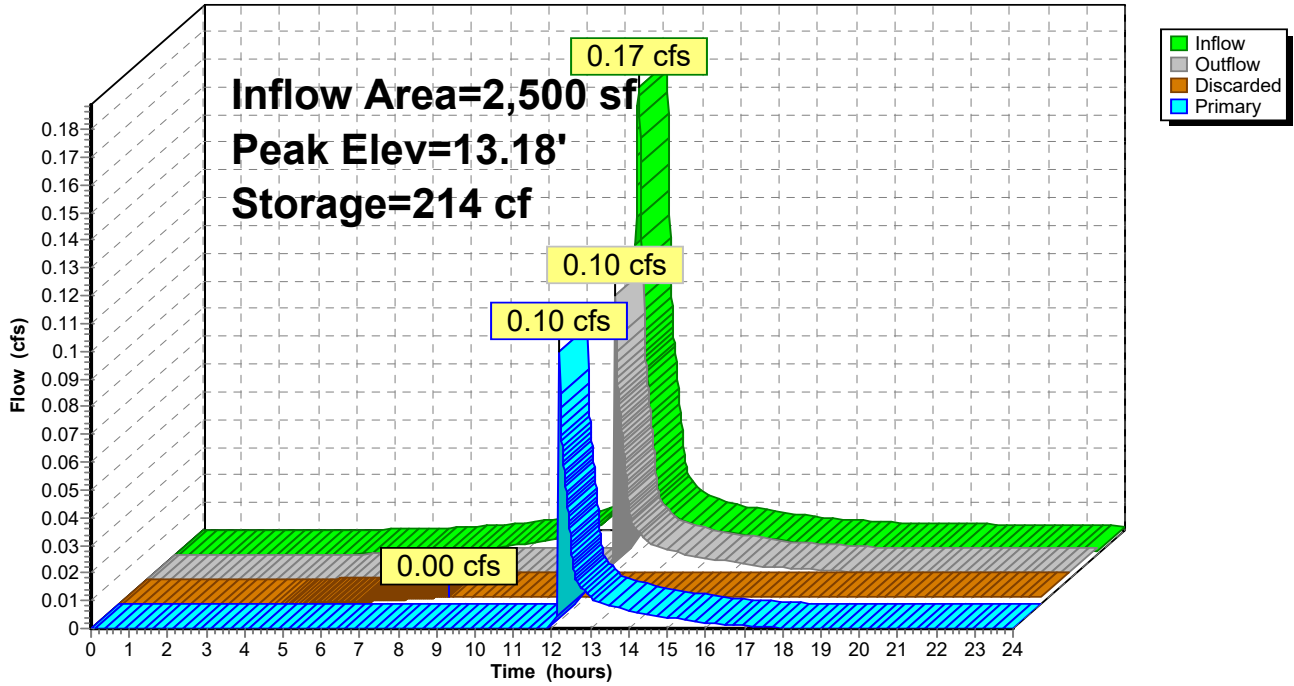
Type III 24-hr 2-year Rainfall=3.18"

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Pond 1P: Cultec 330XL HD

Hydrograph



Proposed Conditions

Type III 24-hr 10-year Rainfall=5.04"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PWS-1: PWS-1

Runoff Area=2,500 sf 83.92% Impervious Runoff Depth>4.34"
Tc=5.0 min CN=94 Runoff=0.28 cfs 905 cf

Reach DP-1: Existing Closed Drainage System

Inflow=0.28 cfs 501 cf
Outflow=0.28 cfs 501 cf

Pond 1P: Cultec 330XL HD

Peak Elev=13.34' Storage=214 cf Inflow=0.28 cfs 905 cf
Discarded=0.00 cfs 190 cf Primary=0.28 cfs 501 cf Outflow=0.28 cfs 691 cf

Total Runoff Area = 2,500 sf Runoff Volume = 905 cf Average Runoff Depth = 4.34"
16.08% Pervious = 402 sf 83.92% Impervious = 2,098 sf

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Type III 24-hr 10-year Rainfall=5.04"

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Summary for Subcatchment PWS-1: PWS-1

Runoff = 0.28 cfs @ 12.07 hrs, Volume= 905 cf, Depth> 4.34"

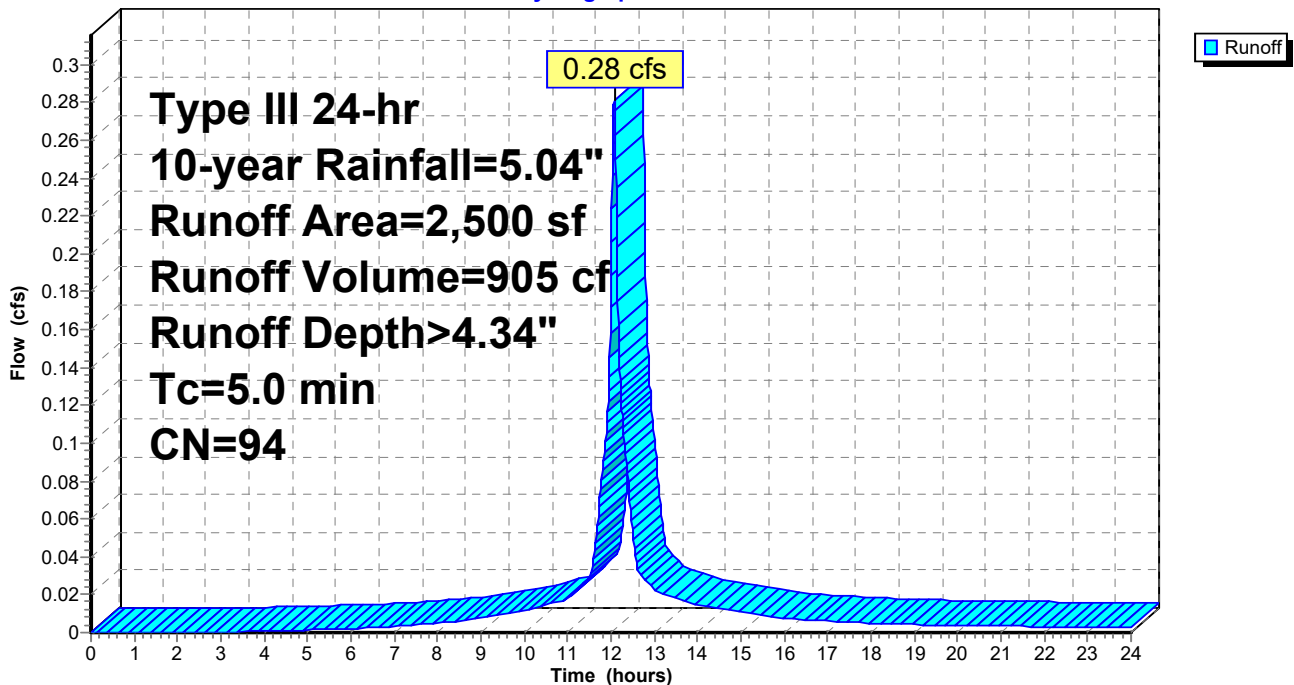
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.04"

Area (sf)	CN	Description
1,840	98	Roofs, HSG C
402	74	>75% Grass cover, Good, HSG C
258	98	Unconnected pavement, HSG C
2,500	94	Weighted Average
402		16.08% Pervious Area
2,098		83.92% Impervious Area
258		12.30% Unconnected

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

Subcatchment PWS-1: PWS-1

Hydrograph



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Type III 24-hr 10-year Rainfall=5.04"

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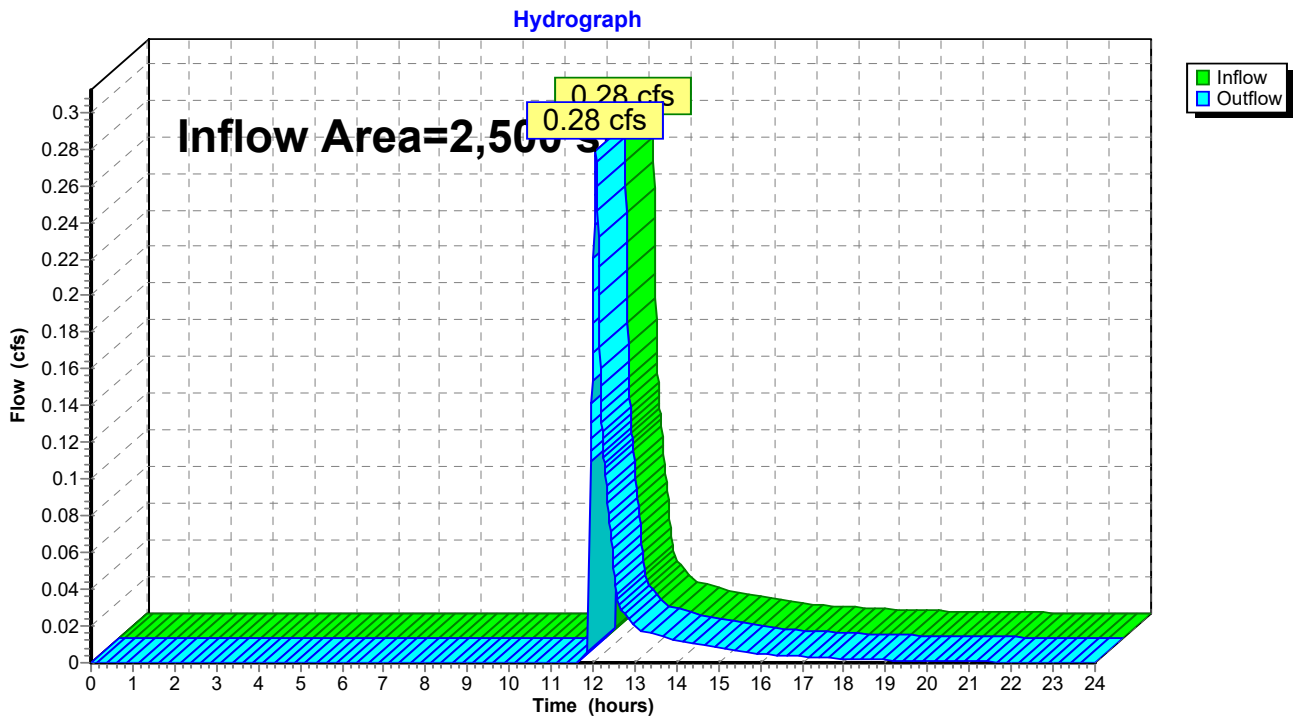
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Summary for Reach DP-1: Existing Closed Drainage System

Inflow Area = 2,500 sf, 83.92% Impervious, Inflow Depth = 2.40" for 10-year event
Inflow = 0.28 cfs @ 12.07 hrs, Volume= 501 cf
Outflow = 0.28 cfs @ 12.07 hrs, Volume= 501 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP-1: Existing Closed Drainage System



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Type III 24-hr 10-year Rainfall=5.04"

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Summary for Pond 1P: Cultec 330XL HD

Inflow Area = 2,500 sf, 83.92% Impervious, Inflow Depth > 4.34" for 10-year event
 Inflow = 0.28 cfs @ 12.07 hrs, Volume= 905 cf
 Outflow = 0.28 cfs @ 12.07 hrs, Volume= 691 cf, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 6.74 hrs, Volume= 190 cf
 Primary = 0.28 cfs @ 12.07 hrs, Volume= 501 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 4
 Peak Elev= 13.34' @ 12.07 hrs Surf.Area= 117 sf Storage= 214 cf

Plug-Flow detention time= 120.0 min calculated for 690 cf (76% of inflow)
 Center-of-Mass det. time= 38.1 min (809.9 - 771.9)

Volume	Invert	Avail.Storage	Storage Description
#1A	8.67'	87 cf	11.17'W x 10.50'L x 3.54'H Field A 415 cf Overall - 127 cf Embedded = 289 cf x 30.0% Voids
#2A	9.17'	127 cf	Cultec R-330XLHD x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3	11.50'	0 cf	0.50'D x 2.00'H Roof Drain-Impervious
		214 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	8.67'	1.020 in/hr Exfiltration over Surface area
#2	Primary	13.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 6.74 hrs HW=8.72' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.28 cfs @ 12.07 hrs HW=13.34' (Free Discharge)
 ↑2=Orifice/Grate (Orifice Controls 0.28 cfs @ 1.98 fps)

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Type III 24-hr 10-year Rainfall=5.04"

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Pond 1P: Cultec 330XL HD - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)

Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf

Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap

Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

1 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 8.50' Row Length +12.0" End Stone x 2 = 10.50' Base Length

2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width

6.0" Stone Base + 30.5" Chamber Height + 6.0" Stone Cover = 3.54' Field Height

2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 126.7 cf Chamber Storage

415.3 cf Field - 126.7 cf Chambers = 288.6 cf Stone x 30.0% Voids = 86.6 cf Stone Storage

Chamber Storage + Stone Storage = 213.2 cf = 0.005 af

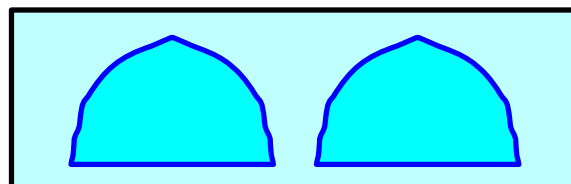
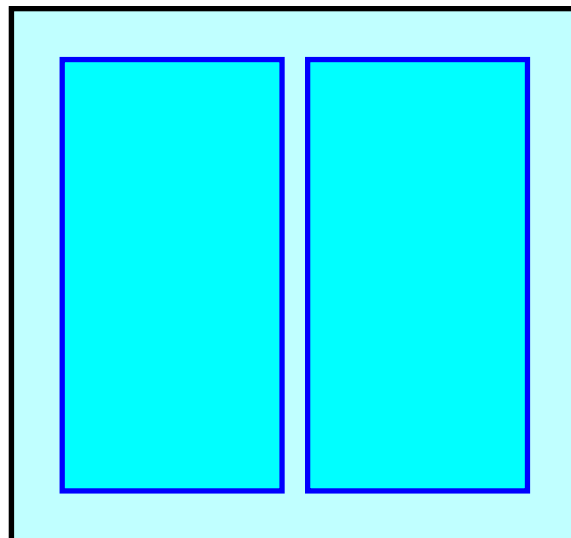
Overall Storage Efficiency = 51.4%

Overall System Size = 10.50' x 11.17' x 3.54'

2 Chambers

15.4 cy Field

10.7 cy Stone



Proposed Conditions

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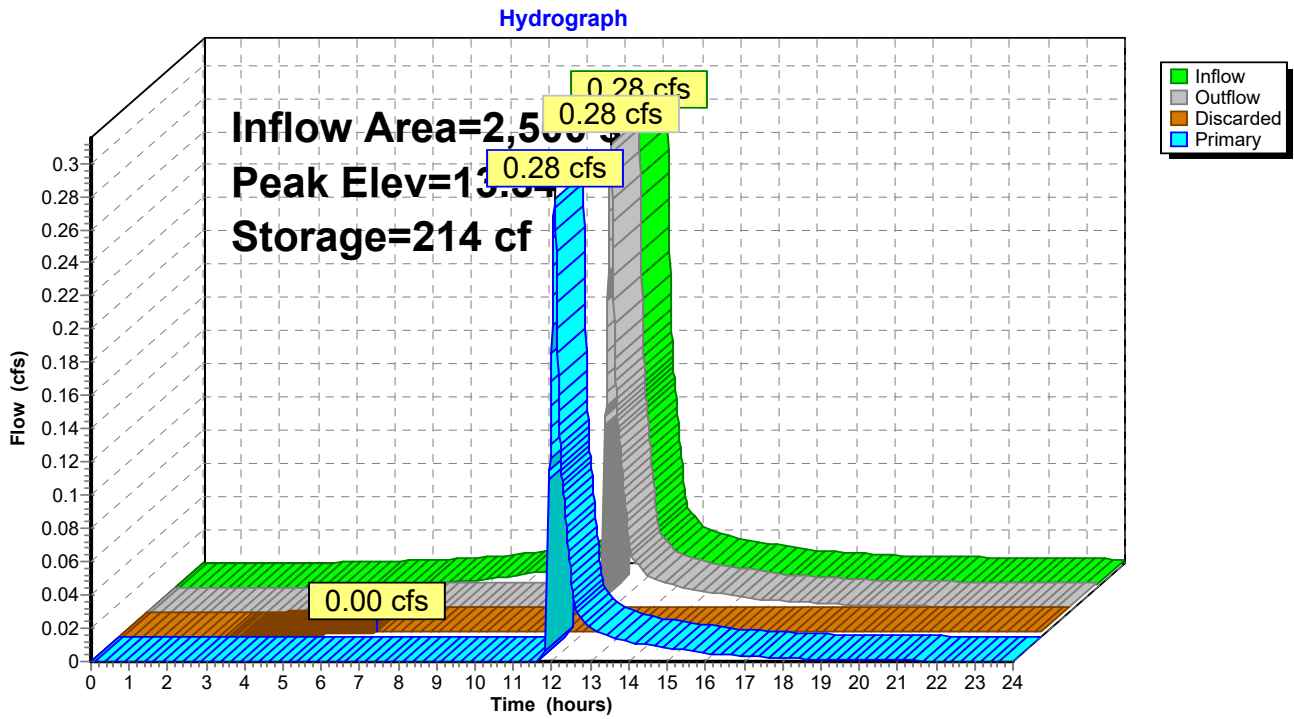
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Type III 24-hr 10-year Rainfall=5.04"

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Pond 1P: Cultec 330XL HD



Proposed Conditions

Type III 24-hr 25-year Rainfall=6.19"

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PWS-1: PWS-1

Runoff Area=2,500 sf 83.92% Impervious Runoff Depth>5.48"
Tc=5.0 min CN=94 Runoff=0.35 cfs 1,142 cf

Reach DP-1: Existing Closed Drainage System

Inflow=0.35 cfs 724 cf
Outflow=0.35 cfs 724 cf

Pond 1P: Cultec 330XL HD

Peak Elev=13.39' Storage=214 cf Inflow=0.35 cfs 1,142 cf
Discarded=0.00 cfs 199 cf Primary=0.35 cfs 724 cf Outflow=0.35 cfs 923 cf

Total Runoff Area = 2,500 sf Runoff Volume = 1,142 cf Average Runoff Depth = 5.48"
16.08% Pervious = 402 sf 83.92% Impervious = 2,098 sf

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Type III 24-hr 25-year Rainfall=6.19"

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Summary for Subcatchment PWS-1: PWS-1

Runoff = 0.35 cfs @ 12.07 hrs, Volume= 1,142 cf, Depth> 5.48"

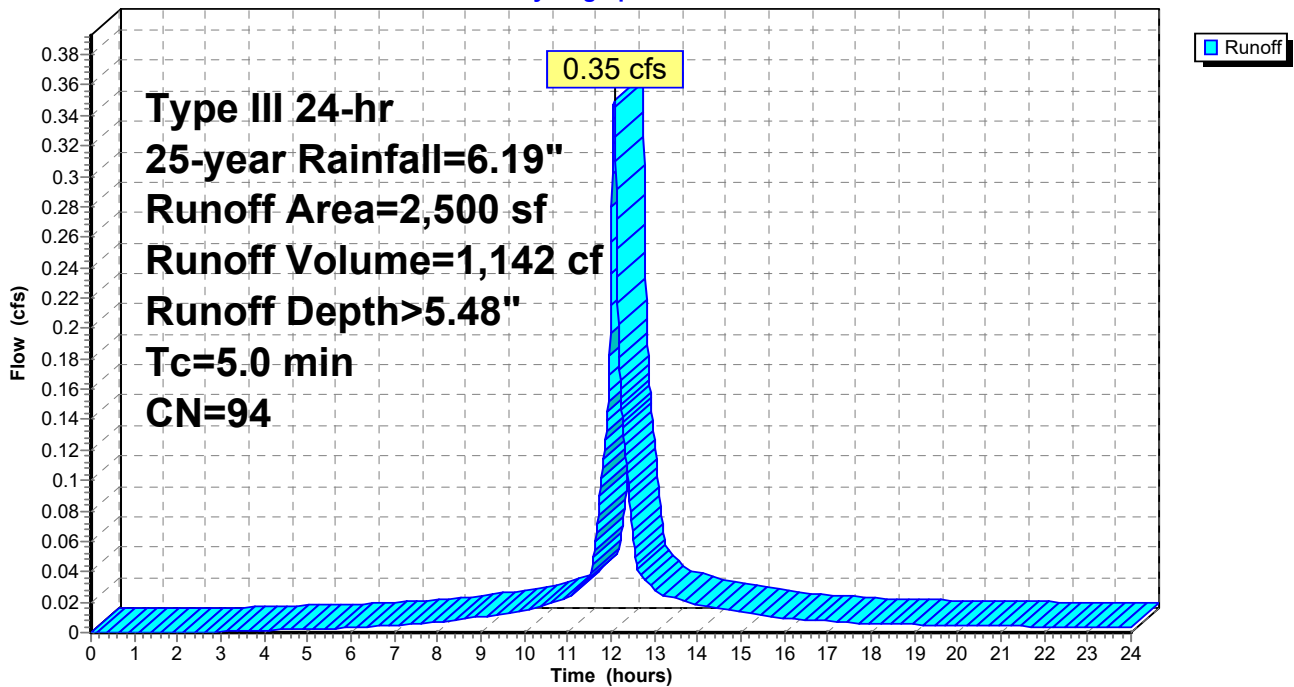
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.19"

Area (sf)	CN	Description
1,840	98	Roofs, HSG C
402	74	>75% Grass cover, Good, HSG C
258	98	Unconnected pavement, HSG C
2,500	94	Weighted Average
402		16.08% Pervious Area
2,098		83.92% Impervious Area
258		12.30% Unconnected

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

Subcatchment PWS-1: PWS-1

Hydrograph



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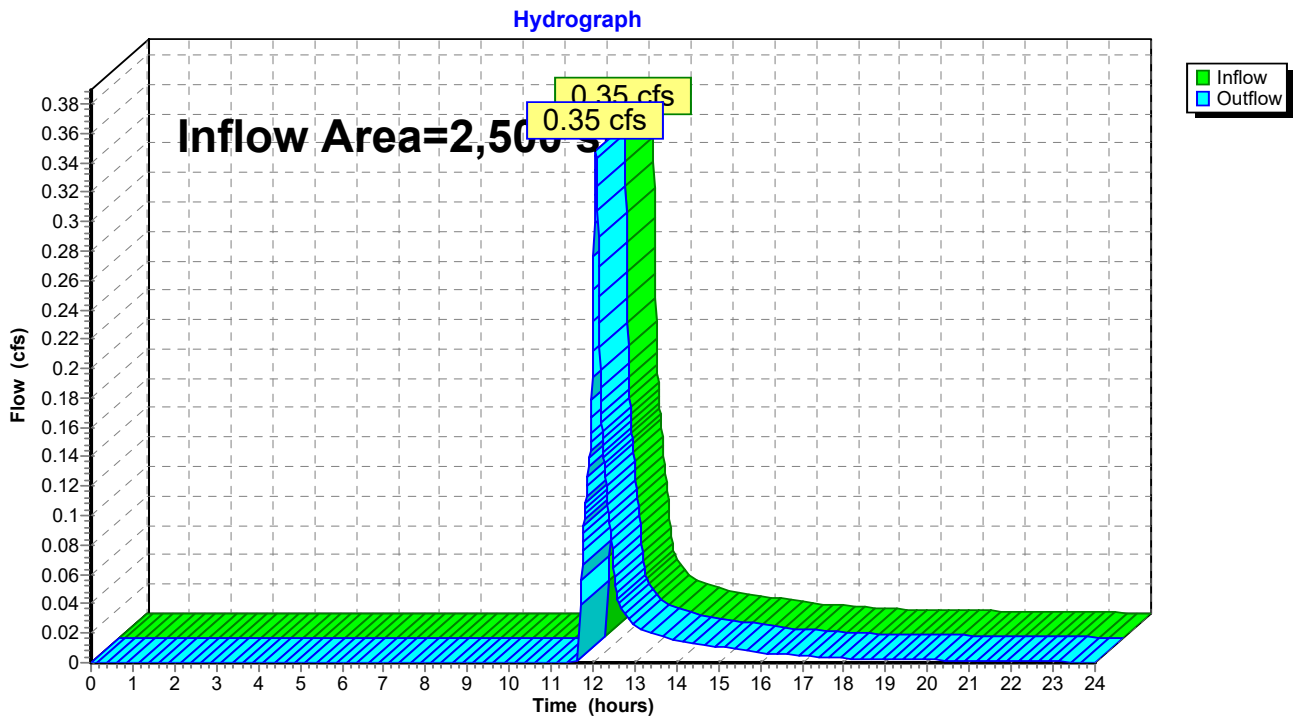
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Summary for Reach DP-1: Existing Closed Drainage System

Inflow Area = 2,500 sf, 83.92% Impervious, Inflow Depth > 3.48" for 25-year event
Inflow = 0.35 cfs @ 12.07 hrs, Volume= 724 cf
Outflow = 0.35 cfs @ 12.07 hrs, Volume= 724 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP-1: Existing Closed Drainage System



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Type III 24-hr 25-year Rainfall=6.19"

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Summary for Pond 1P: Cultec 330XL HD

Inflow Area = 2,500 sf, 83.92% Impervious, Inflow Depth > 5.48" for 25-year event
Inflow = 0.35 cfs @ 12.07 hrs, Volume= 1,142 cf
Outflow = 0.35 cfs @ 12.07 hrs, Volume= 923 cf, Atten= 0%, Lag= 0.0 min
Discarded = 0.00 cfs @ 5.76 hrs, Volume= 199 cf
Primary = 0.35 cfs @ 12.07 hrs, Volume= 724 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 4
Peak Elev= 13.39' @ 12.07 hrs Surf.Area= 117 sf Storage= 214 cf

Plug-Flow detention time= 108.5 min calculated for 923 cf (81% of inflow)
Center-of-Mass det. time= 35.1 min (801.4 - 766.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	8.67'	87 cf	11.17'W x 10.50'L x 3.54'H Field A 415 cf Overall - 127 cf Embedded = 289 cf x 30.0% Voids
#2A	9.17'	127 cf	Cultec R-330XLHD x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3	11.50'	0 cf	0.50'D x 2.00'H Roof Drain-Impervious
		214 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	8.67'	1.020 in/hr Exfiltration over Surface area
#2	Primary	13.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 5.76 hrs HW=8.72' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.35 cfs @ 12.07 hrs HW=13.39' (Free Discharge)
↑**2=Orifice/Grate** (Orifice Controls 0.35 cfs @ 2.12 fps)

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Type III 24-hr 25-year Rainfall=6.19"

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Pond 1P: Cultec 330XL HD - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)

Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf

Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap

Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

1 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 8.50' Row Length +12.0" End Stone x 2 = 10.50' Base Length

2 Rows x 52.0" Wide + 6.0" Spacing x 1 + 12.0" Side Stone x 2 = 11.17' Base Width

6.0" Stone Base + 30.5" Chamber Height + 6.0" Stone Cover = 3.54' Field Height

2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 126.7 cf Chamber Storage

415.3 cf Field - 126.7 cf Chambers = 288.6 cf Stone x 30.0% Voids = 86.6 cf Stone Storage

Chamber Storage + Stone Storage = 213.2 cf = 0.005 af

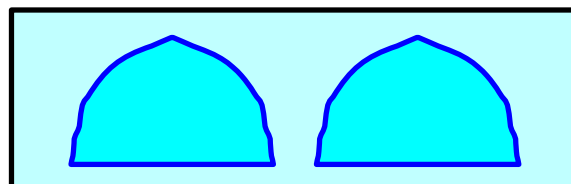
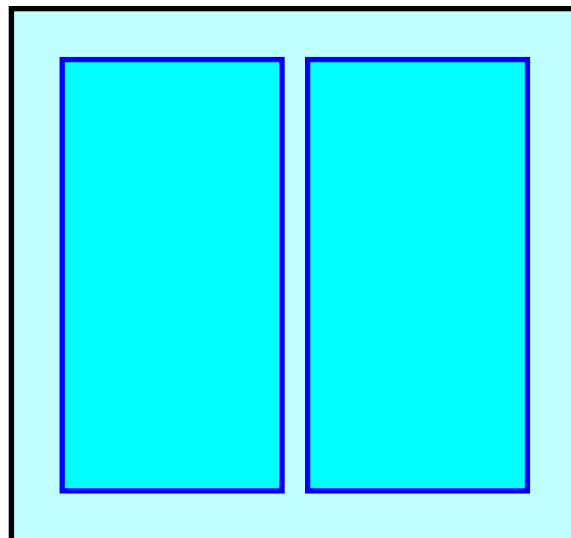
Overall Storage Efficiency = 51.4%

Overall System Size = 10.50' x 11.17' x 3.54'

2 Chambers

15.4 cy Field

10.7 cy Stone



Proposed Conditions

Prepared by Engineering Alliance, Inc.

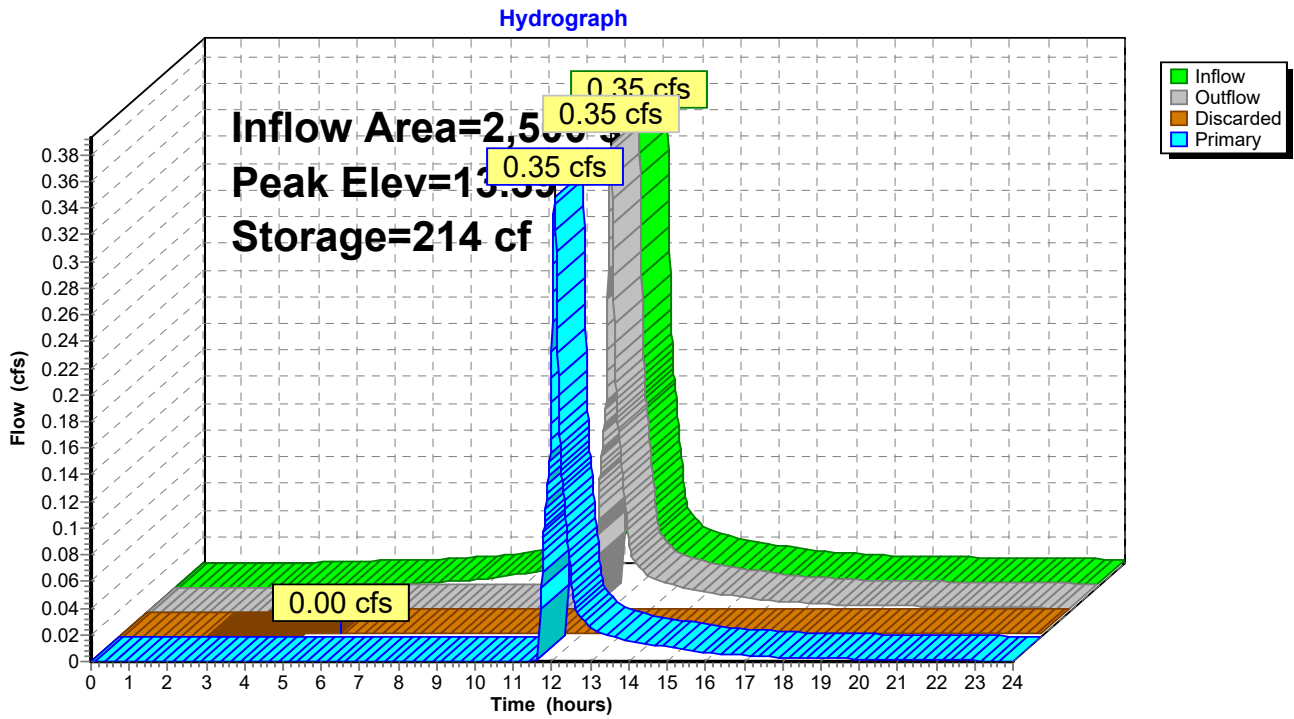
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Type III 24-hr 25-year Rainfall=6.19"

Printed 8/18/2021

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Pond 1P: Cultec 330XL HD



Proposed Conditions

Type III 24-hr 100-year Rainfall=7.98"

Prepared by Engineering Alliance, Inc.

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Time span=0.00-24.00 hrs, dt=0.01 hrs, 2401 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PWS-1: PWS-1

Runoff Area=2,500 sf 83.92% Impervious Runoff Depth>7.26"
Tc=5.0 min CN=94 Runoff=0.46 cfs 1,512 cf

Reach DP-1: Existing Closed Drainage System

Inflow=0.45 cfs 1,089 cf
Outflow=0.45 cfs 1,089 cf

Pond 1P: Cultec 330XL HD

Peak Elev=13.48' Storage=214 cf Inflow=0.46 cfs 1,512 cf
Discarded=0.00 cfs 208 cf Primary=0.45 cfs 1,089 cf Outflow=0.46 cfs 1,297 cf

Total Runoff Area = 2,500 sf Runoff Volume = 1,512 cf Average Runoff Depth = 7.26"
16.08% Pervious = 402 sf 83.92% Impervious = 2,098 sf

Proposed Conditions

Prepared by Engineering Alliance, Inc.

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Type III 24-hr 100-year Rainfall=7.98"

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Summary for Subcatchment PWS-1: PWS-1

Runoff = 0.46 cfs @ 12.07 hrs, Volume= 1,512 cf, Depth> 7.26"

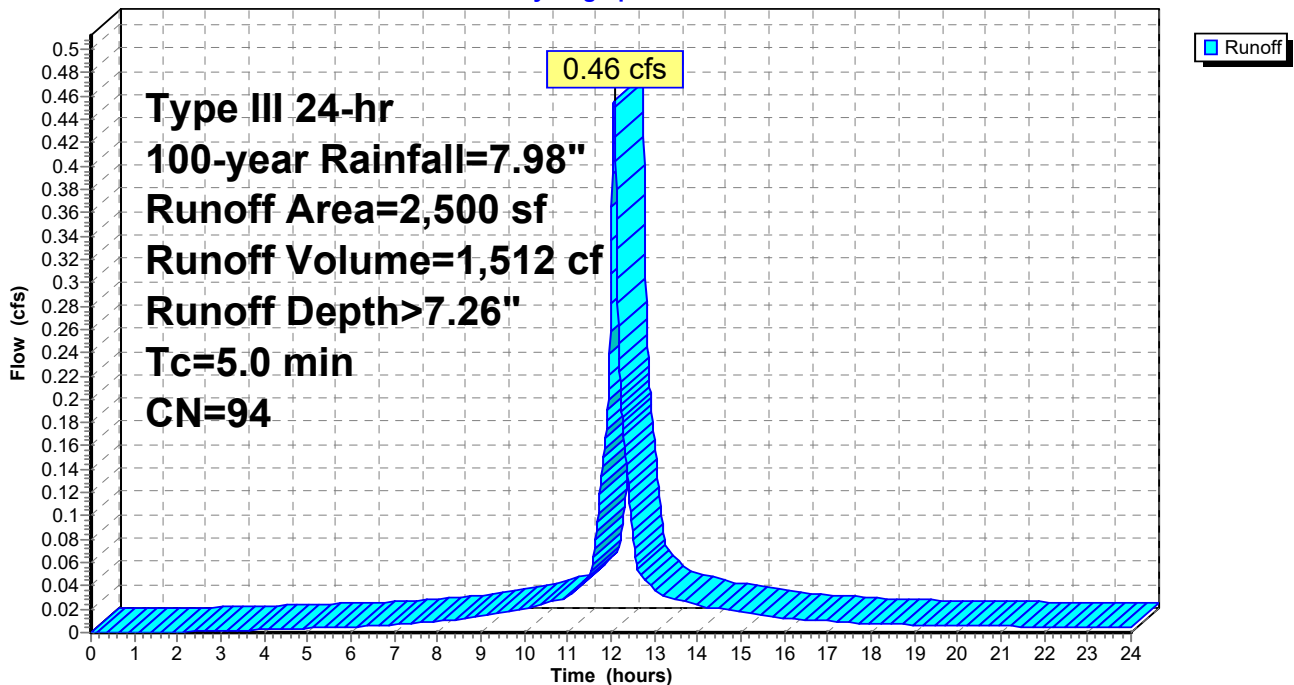
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=7.98"

Area (sf)	CN	Description
1,840	98	Roofs, HSG C
402	74	>75% Grass cover, Good, HSG C
258	98	Unconnected pavement, HSG C
2,500	94	Weighted Average
402		16.08% Pervious Area
2,098		83.92% Impervious Area
258		12.30% Unconnected

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

Subcatchment PWS-1: PWS-1

Hydrograph



Proposed Conditions

Prepared by Engineering Alliance, Inc.

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Type III 24-hr 100-year Rainfall=7.98"

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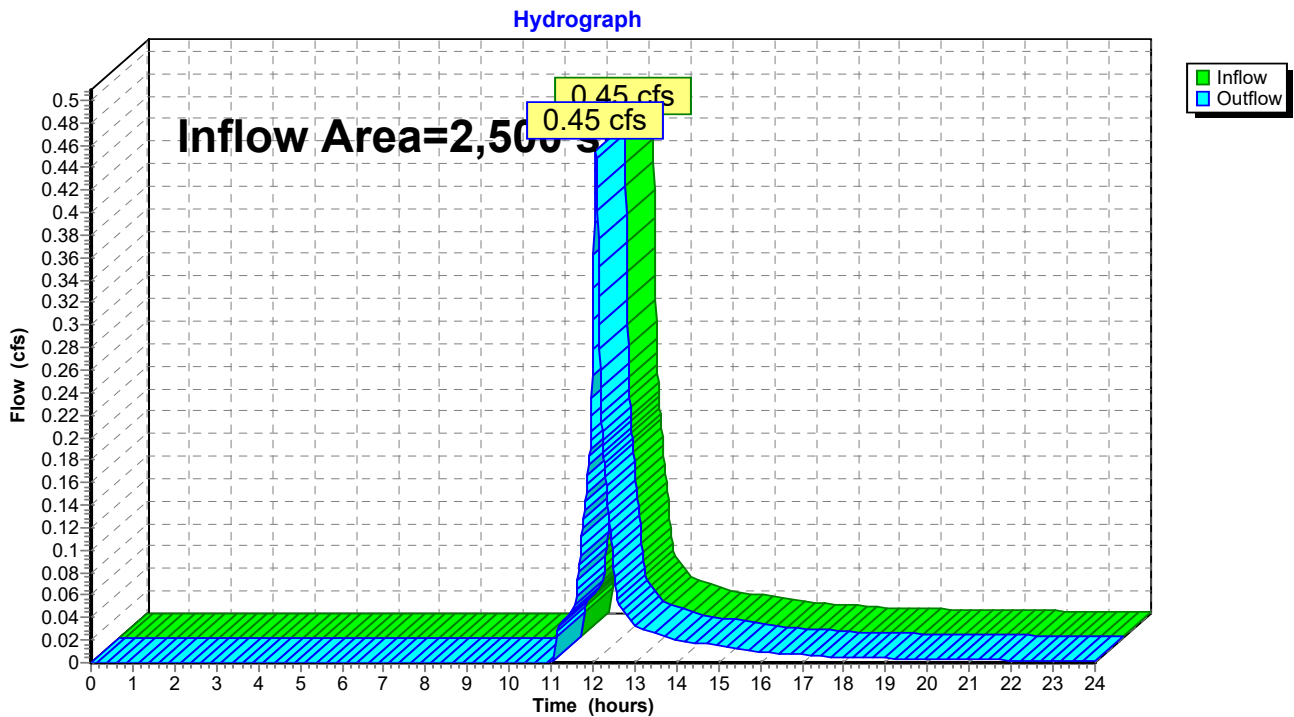
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Summary for Reach DP-1: Existing Closed Drainage System

Inflow Area = 2,500 sf, 83.92% Impervious, Inflow Depth > 5.23" for 100-year event
Inflow = 0.45 cfs @ 12.07 hrs, Volume= 1,089 cf
Outflow = 0.45 cfs @ 12.07 hrs, Volume= 1,089 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs

Reach DP-1: Existing Closed Drainage System



Proposed Conditions

Prepared by Engineering Alliance, Inc.

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Type III 24-hr 100-year Rainfall=7.98"

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Summary for Pond 1P: Cultec 330XL HD

Inflow Area = 2,500 sf, 83.92% Impervious, Inflow Depth > 7.26" for 100-year event
 Inflow = 0.46 cfs @ 12.07 hrs, Volume= 1,512 cf
 Outflow = 0.46 cfs @ 12.07 hrs, Volume= 1,297 cf, Atten= 0%, Lag= 0.0 min
 Discarded = 0.00 cfs @ 4.36 hrs, Volume= 208 cf
 Primary = 0.45 cfs @ 12.07 hrs, Volume= 1,089 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs / 4
 Peak Elev= 13.48' @ 12.07 hrs Surf.Area= 117 sf Storage= 214 cf

Plug-Flow detention time= 94.9 min calculated for 1,297 cf (86% of inflow)
 Center-of-Mass det. time= 33.0 min (793.0 - 760.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	8.67'	87 cf	11.17'W x 10.50'L x 3.54'H Field A 415 cf Overall - 127 cf Embedded = 289 cf x 30.0% Voids
#2A	9.17'	127 cf	Cultec R-330XLHD x 2 Inside #1 Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap Row Length Adjustment= +1.50' x 7.45 sf x 2 rows
#3	11.50'	0 cf	0.50'D x 2.00'H Roof Drain-Impervious
		214 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Discarded	8.67'	1.020 in/hr Exfiltration over Surface area
#2	Primary	13.00'	6.0" Vert. Orifice/Grate C= 0.600 Limited to weir flow at low heads

Discarded OutFlow Max=0.00 cfs @ 4.36 hrs HW=8.72' (Free Discharge)
 ↑1=Exfiltration (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.46 cfs @ 12.07 hrs HW=13.48' (Free Discharge)
 ↑2=Orifice/Grate (Orifice Controls 0.46 cfs @ 2.36 fps)

Proposed Conditions

Prepared by Engineering Alliance, Inc.

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Type III 24-hr 100-year Rainfall=7.98"

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Pond 1P: Cultec 330XL HD - Chamber Wizard Field A

Chamber Model = Cultec R-330XLHD (Cultec Recharger® 330XLHD)

Effective Size= 47.8"W x 30.0"H => 7.45 sf x 7.00'L = 52.2 cf

Overall Size= 52.0"W x 30.5"H x 8.50'L with 1.50' Overlap

Row Length Adjustment= +1.50' x 7.45 sf x 2 rows

52.0" Wide + 6.0" Spacing = 58.0" C-C Row Spacing

1 Chambers/Row x 7.00' Long +1.50' Row Adjustment = 8.50' Row Length +12.0" End Stone x 2 = 10.50' Base Length

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6.0" Stone Base + 30.5" Chamber Height + 6.0" Stone Cover = 3.54' Field Height

2 Chambers x 52.2 cf +1.50' Row Adjustment x 7.45 sf x 2 Rows = 126.7 cf Chamber Storage

415.3 cf Field - 126.7 cf Chambers = 288.6 cf Stone x 30.0% Voids = 86.6 cf Stone Storage

Chamber Storage + Stone Storage = 213.2 cf = 0.005 af

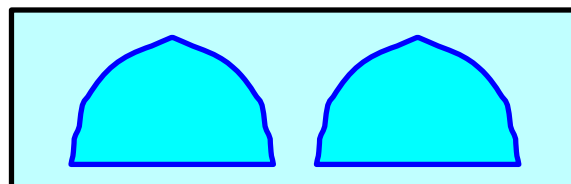
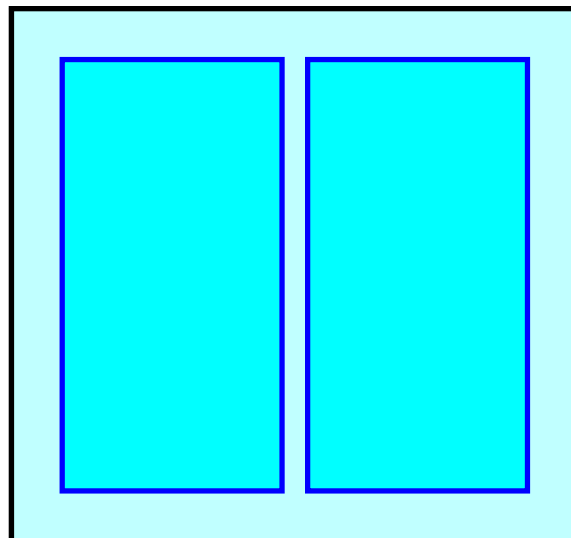
Overall Storage Efficiency = 51.4%

Overall System Size = 10.50' x 11.17' x 3.54'

2 Chambers

15.4 cy Field

10.7 cy Stone



Proposed Conditions

Prepared by Engineering Alliance, Inc.

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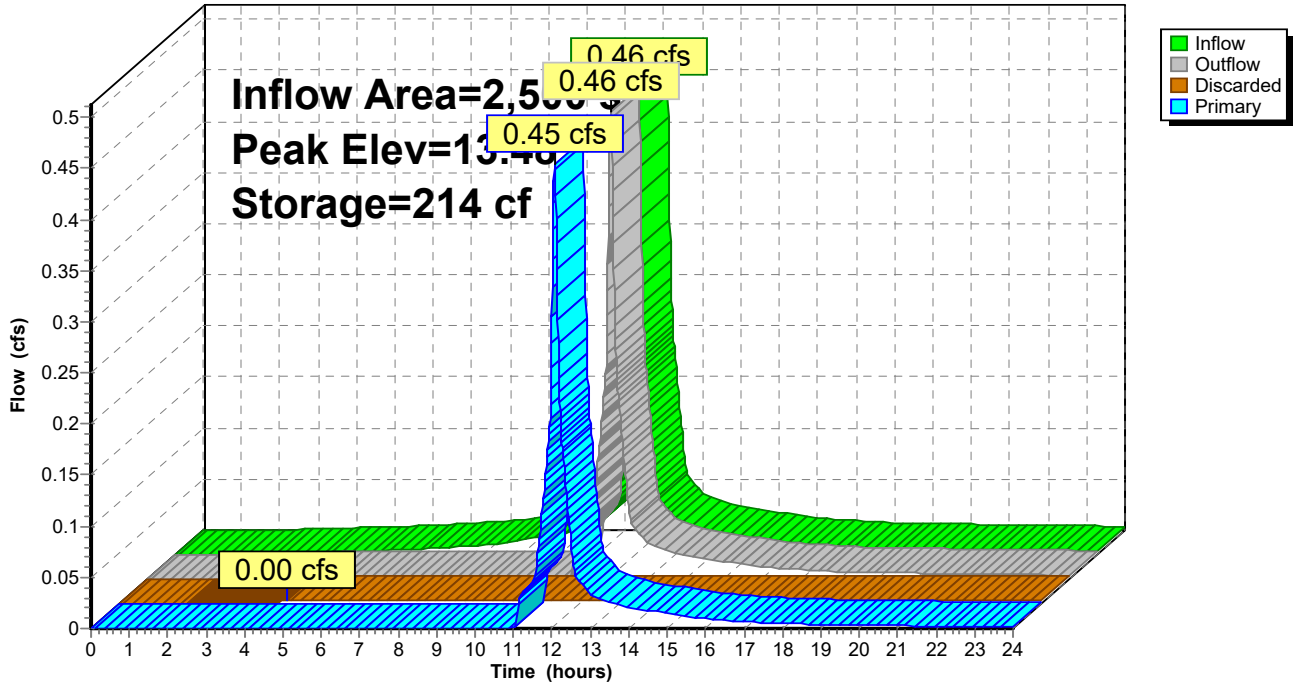
Type III 24-hr 100-year Rainfall=7.98"

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Pond 1P: Cultec 330XL HD

Hydrograph



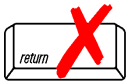
SECTION III

**Wetland Fee Transmittal Form
Copy of Checks**



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:

<u>197 Havre Street</u>	<u>East Boston</u>
a. Street Address	b. City/Town
<u>722</u>	<u>\$512.50</u>
c. Check number	d. Fee amount

2. Applicant Mailing Address:

<u>Dan</u>	<u>Dandreo</u>	
a. First Name	b. Last Name	
<u>5 Up Havre, LLC</u>		
c. Organization		
<u>6 Verona Street</u>		
d. Mailing Address		
<u>Salem</u>	<u>MA</u>	<u>01970</u>
e. City/Town	f. State	g. Zip Code
<u>(781)-985-4059</u>	<u>ddandreo@aol.com</u>	
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

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

B. Fees

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.

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



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: Each building (for development) including site	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 filing Fee:			N/A
			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.)

SECTION IV

Affidavit of Service

Babel Notice

Abutter Notification Form (English & Spanish)

Translation Certification

Certified Abutters List

AFFIDAVIT OF SERVICE

I, Eric Bradanese, hereby certify under the pains and penalties of perjury that I gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws, Chapter 1, Section 40, and the DEP Guide to Abutter Notification dated April 8, 1994, in connection with the following: **Construction of a four story, five unit multifamily dwelling within Land Subject to Coastal Storm Flowage.**

A Notice of Intent has been filed under the Massachusetts Wetland Protection Act by **5 Up Havre, LLC** with the **City of Boston Conservation Commission** on August 18, 2021 for the property located at **197 Havre Street East Boston, MA.**

The Notification to Abutters (English & Spanish), a list of the abutters to whom it was sent, and a list of their addresses are included in the Notice of Intent application.



Eric Bradanese, P.E.
for Engineering Alliance, Inc.

8/23/2021

Date



BABEL NOTICE

English:

IMPORTANT! This document or application contains **important information** about your rights, responsibilities and/or benefits. It is crucial that you understand the information in this document and/or application, and we will provide the information in your preferred language at no cost to you. If you need them, please contact us at cc@boston.gov or 617-635-3850.

Spanish:

¡IMPORTANTE! Este documento o solicitud contiene **información importante** sobre sus derechos, responsabilidades y/o beneficios. Es fundamental que usted entienda la información contenida en este documento y/o solicitud, y le proporcionaremos la información en su idioma preferido sin costo alguno para usted. Si los necesita, póngase en contacto con nosotros en el correo electrónico cc@boston.gov o llamando al 617-635-3850.

Haitian Creole:

AVI ENPÒTAN! Dokiman oubyen aplikasyon sa genyen **enfòmasyon ki enpòtan** konsènan dwa, responsablite, ak/oswa benefis ou yo. Li enpòtan ke ou konprann enfòmasyon ki nan dokiman ak/oubyen aplikasyon sa, e n ap bay enfòmasyon an nan lang ou prefere a, san ou pa peye anyen. Si w bezwen yo, tanpri kontakte nou nan cc@boston.gov oswa 617-635-3850.

Traditional Chinese:

非常重要！這份文件或是申請表格包含關於您的權利，責任，和／或福利的重要信息。請您務必完全理解這份文件或申請表格的全部信息，這對我們來說十分重要。我們會免費給您提供翻譯服務。如果您有需要請聯系我們的郵箱 cc@boston.gov 電話# 617-635-3850..

Vietnamese:

QUAN TRỌNG! Tài liệu hoặc đơn yêu cầu này chứa **thông tin quan trọng** về các quyền, trách nhiệm và/hoặc lợi ích của bạn. Việc bạn hiểu rõ thông tin trong tài liệu và/hoặc đơn yêu cầu này rất quan trọng, và chúng tôi sẽ cung cấp thông tin bằng ngôn ngữ bạn muốn mà không tính phí. Nếu quý vị cần những dịch vụ này, vui lòng liên lạc với chúng tôi theo địa chỉ cc@boston.gov hoặc số điện thoại 617-635-3850.

Simplified Chinese:

非常重要！这份文件或是申请表格包含关于您的权利，责任，和／或福利的重要信息。请您务必完全理解这份文件或申请表格的全部信息，这对我们来说十分重要。我们会免费给您提供翻译服务。如果您有需要请联系我们的邮箱 cc@boston.gov 电话# 617-635-3850.

Cape Verdean Creole:

INPURTANTI! Es dukumentu ó aplikason ten **informason inpurtanti** sobri bu direitus, rasponsabilidadi i/ó benefisius. Ê krusial ki bu intendi informason na es dukumentu i/ó aplikason ó nu ta da informason na língua di bu preferênsia sen ninhun kustu pa bó. Si bu prisiza del, kontata-nu na cc@boston.gov ó 617-635-3850.

Arabic:

مهم! يحتوي هذا المستند أو التطبيق على معلومات مهمة حول حقوقك ومسؤولياتك أو فوائدها. من الأهمية أن تفهم المعلومات الواردة في هذا المستند أو التطبيق. سوف نقدم المعلومات بلغتك المفضلة دون أي تكلفة عليك. إذا كنت في حاجة إليها، يرجى الاتصال بنا على cc@boston.gov أو 617-635-3850.

Russian:

ВАЖНО! В этом документе или заявлении содержится **важная информация** о ваших правах, обязанностях и/или льготах. Для нас очень важно, чтобы вы понимали приведенную в этом документе и/или заявлении информацию, и мы готовы бесплатно предоставить вам информацию на предпочитаемом вами языке. Если Вам они нужны, просьба связаться с нами по адресу электронной почты cc@boston.gov, либо по телефону 617-635-3850.

Portuguese:

IMPORTANTE! Este documento ou aplicativo contém **Informações importantes** sobre os seus direitos, responsabilidades e/ou benefícios. É importante que você compreenda as informações contidas neste documento e/ou aplicativo, e nós iremos fornecer as informações em seu idioma de preferência sem nenhum custo para você. Se precisar deles, fale conosco: cc@boston.gov ou 617-635-3850.

French:

IMPORTANT ! Ce document ou cette demande contient des **informations importantes** concernant vos droits, responsabilités et/ou avantages. Il est essentiel que vous compreniez les informations contenues dans ce document et/ou cette demande, que nous pouvons vous communiquer gratuitement dans la langue de votre choix. Si vous en avez besoin, veuillez nous contacter à cc@boston.gov ou au 617-635-3850.





**NOTIFICATION TO ABUTTERS
BOSTON CONSERVATION COMMISSION**

In accordance with the Massachusetts Wetlands Protection Act, Massachusetts General Laws Chapter 131, Section 40, and the Boston Wetlands Ordinance, you are hereby notified as an abutter to a project filed with the Boston Conservation Commission.

A. **5 Up Havre, LLC** has filed a Notice of Intent with the Boston Conservation Commission seeking permission to alter an Area Subject to Protection under the Wetlands Protection Act (General Laws Chapter 131, section 40) and Boston Wetlands Ordinance.

B. The address of the lot where the activity is proposed is **197 Havre Street, East Boston, MA.**

C. The project involves **the construction of a new four story, five-unit multifamily dwelling with drive under parking facility, utility installation, and site grading. The majority of the work will occur within Land Subject to Coastal Storm Flowage (LSCSF).**

D. Copies of the Notice of Intent may be obtained by contacting the Boston Conservation Commission at CC@boston.gov.

E. Copies of the Notice of Intent may be obtained from **Engineering Alliance, Inc at 781-231-1349** between the hours of **9 AM and 5 PM, Monday to Friday.**

F. In accordance with the Commonwealth of Massachusetts Executive Order Suspending Certain Provisions of the Open Meeting Law, the public hearing will take place **virtually** at <https://zoom.us/j/6864582044>. If you are unable to access the internet, you can call 1-929-205-6099, enter Meeting ID 686 458 2044 # and use # as your participant ID.

G. Information regarding the date and time of the public hearing may be obtained from the **Boston Conservation Commission** by emailing CC@boston.gov or calling **(617) 635-3850** between the hours of **9 AM to 5 PM, Monday through Friday.**

NOTE: Notice of the public hearing, including its date, time, and place, will be published at least five (5) days in advance in the **Boston Herald.**

NOTE: Notice of the public hearing, including its date, time, and place, will be posted on www.boston.gov/public-notices and in Boston City Hall not less than forty-eight (48) hours in advance.

NOTE: If you would like to provide comments, you may attend the public hearing or send written comments to CC@boston.gov or Boston City Hall, Environment Department, Room 709, 1 City Hall Square, Boston, MA 02201

NOTE: You also may contact the Boston Conservation Commission or the Department of Environmental Protection Northeast Regional Office for more information about this application or the Wetlands Protection Act. To contact DEP, call: the Northeast Region: (978) 694-3200.



NOTIFICACIÓN PARA PROPIETARIOS Y/O VECINOS COLINDANTES COMISIÓN DE CONSERVACIÓN DE BOSTON

De conformidad con la Ley de protección de los humedales de Massachusetts, el Capítulo 131, Sección 40 de las Leyes Generales de Massachusetts y la Ordenanza sobre los humedales de Boston, por la presente queda usted notificado como propietario o vecino colindante de un proyecto presentado ante la Comisión de Conservación de Boston.

A. 5 Up Havre, LLC ha presentado una solicitud a la Comisión de Conservación de Boston pidiendo permiso para modificar una zona sujeta a protección en virtud de la Ley de protección de los humedales (Leyes generales, capítulo 131, sección 40) y la Ordenanza sobre los humedales de Boston.

B. La dirección del lote donde se propone la actividad es 197 Havre Street, East Boston, MA.

C. El proyecto consiste en la construcción de una nueva residencia multifamiliar de cuatro pisos y cinco unidades con estacionamiento subterráneo, instalación de servicios públicos y nivelación de sitio. La mayor parte del trabajo se realizará en terrenos sujetos a tormentas costeras (LSCSF).

D. Se pueden obtener copias del Aviso de Intención comunicándose con la Comisión de Conservación de Boston en CC@boston.gov.

E. Las copias de la notificación de intención pueden obtenerse en Engineering Alliance, Inc al 781-231-1349 entre las 09:00 a.m. y las 05:00 p.m., de lunes a viernes.

F. De acuerdo con el Decreto Ejecutivo de la Mancomunidad de Massachusetts que suspende ciertas disposiciones de la Ley de reuniones abiertas, la audiencia pública se llevará a cabo virtualmente en <https://zoom.us/j/6864582044>. Si no puede acceder a Internet, puede llamar al 1-929-205-6099, ingresar ID de reunión 686 458 2044 # y usar # como su ID de participante.

G. La información relativa a la fecha y hora de la audiencia pública puede solicitarse a la **Comisión de Conservación de Boston** por correo electrónico a CC@boston.gov o llamando al (617) 635-4416 entre las 9 AM y las 5 PM, de lunes a viernes.

NOTA: La notificación de la audiencia pública, incluida su fecha, hora y lugar, se publicará en el **Boston Herald** con al menos cinco (5) días de antelación.

NOTA: La notificación de la audiencia pública, incluida su fecha, hora y lugar, se publicará en www.boston.gov/public-notices y en el Ayuntamiento de Boston con no menos de cuarenta y ocho (48) horas de antelación. Si desea formular comentarios, puede asistir a la audiencia pública o enviarlos por escrito a CC@boston.gov o al Ayuntamiento de Boston, Departamento de Medio Ambiente, Sala 709, 1 City Hall Square, Boston, MA 02201.

NOTA: También puede comunicarse con la Comisión de Conservación de Boston o con la Oficina Regional del Noreste del Departamento de Protección Ambiental para obtener más información sobre esta solicitud o la Ley de Protección de Humedales. Para comunicarse con el DEP, llame a la Región Noreste: (978) 694-3200.

NOTA: si tiene previsto asistir a la audiencia pública y necesita servicios de interpretación, sírvase informar al personal en CC@boston.gov antes de las 12 PM del día anterior a la audiencia.

STATE OF: *Massachusetts*

COUNTY OF: *Suffolk*

CERTIFICATE OF ACCURACY

Leo Galperin, on behalf of Language Connections, certifies:

1. That our translator(s) are familiar with both the **English** and the **Spanish** languages.
2. That we have made the attached translation of the below mentioned original document(s) from **English** into **Spanish** and hereby certify that the same is a true and complete translation to the best of our translator(s) knowledge, ability and belief.

3. Document name:

- Abutter Notification Form, filed by **5 Up Havre, LLC, 197 Havre Street, East Boston, MA**

Signature:



On this August 30, 2021, before me, the undersigned notary public, personally appeared Leo Galperin, proved to me through satisfactory evidence of identification, which were driver's license, to be the person whose name is signed on the preceding or attached document in my presence.

Rosa Maria Tempesta
Notary Public

My commission expires: 7/20/2023



ROSA MARIA TEMPESTA
Notary Public
Commonwealth of Massachusetts
My Commission Expires
July 20, 2023

PID	FULL_ADDRESS	CITY	ZIPCODE	OWNER	ADDRESSEE	MAIL_ADDRESS	MAIL_CS	STATE	MAIL_ZIPCODE
106140000	186 HAVRE ST PS-5	EAST BOSTON	2128	HSEB LLC		75 PAUL GORE ST	JAMAICA PLAIN	MA	2130
106232000	195 HAVRE ST	EAST BOSTON	2128	195 HAVRE STREET IRREVOCABLE TRUST		195 HAVRE ST	EAST BOSTON	MA	2128
106140000	186 HAVRE ST PS-6	EAST BOSTON	2128	HSEB LLC		75 PAUL GORE ST	JAMAICA PLAIN	MA	2130
106207000	186 188 PARIS ST 9	EAST BOSTON	2128	GRIGG MICHAEL TAYLOR		186-188 PARIS ST #9	EAST BOSTON	MA	2128
106207000	186 188 PARIS ST 1	EAST BOSTON	2128	BUTTERFIELD MICHAEL		186-188 PARIS ST #1	EAST BOSTON	MA	2128
106140000	186 HAVRE ST 8	EAST BOSTON	2128	CROCKER ERIC		186 HAVRE ST #8	EAST BOSTON	MA	2128
106213000	174 PARIS ST	EAST BOSTON	2128	CINTOLO JOSPEH P		174 PARIS ST	EAST BOSTON	MA	2128
106140000	186 HAVRE ST PS-9	EAST BOSTON	2128	ROBB W JOHNSON 2015 LIVING TRUST		20 FAIRMONT AVE	CAMBRIDGE	MA	2139
106140000	186 HAVRE ST PS-3	EAST BOSTON	2128	MERCHANT TASNEEM		186 HAVRE ST #3 (PS-3)	EAST BOSTON	MA	2128
106140000	186 HAVRE ST 5	EAST BOSTON	2128	HAVRE STREET REALTY TRUST	C/O IAGL LLC	675 VFW PARKWAY SUITE 195	CHESTNUT HILL	MA	2467
106207000	186 188 PARIS ST 7	EAST BOSTON	2128	BLISS DJANGO		188 186 PARIS ST, UNIT 7	EAST BOSTON	MA	2128
106140000	186 HAVRE ST	EAST BOSTON	2128	FARETRA CONDOMINIUM TRUST		186 HAVRE ST	EAST BOSTON	MA	2128
106140000	186 HAVRE ST PS-4	EAST BOSTON	2128	COFFEY JESSIE		186 HAVRE ST #2 (PS-4)	EAST BOSTON	MA	2128
106140000	186 HAVRE ST 6	EAST BOSTON	2128	HAVRE STREET REALTY TRUST	C/O IAGL LLC	675 VFW PARKWAY SUITE 195	CHESTNUT HILL	MA	2467
106233000	197 HAVRE ST	EAST BOSTON	2128	81-83 ATWOOD STREET LLC		81 ATWOOD ST	REVERE	MA	2151
106207000	186 188 PARIS ST 4	EAST BOSTON	2128	PHILLIPS ALEXANDRA LEAH		186-188 PARIS ST #4	EAST BOSTON	MA	2128
106140000	186 HAVRE ST 9	EAST BOSTON	2128	ROBB W JOHNSON 2015 LIVING TRUST		20 FAIRMONT AVE	CAMBRIDGE	MA	2139
106140000	186 HAVRE ST 3	EAST BOSTON	2128	MERCHANT TASNEEM		186 HAVRE ST #3	EAST BOSTON	MA	2128
106207000	186 188 PARIS ST 5	EAST BOSTON	2128	BARRETT DYLAN		186-188 PARIS ST #5	EAST BOSTON	MA	2128
106140000	186 HAVRE ST 4	EAST BOSTON	2128	GYURKOVICS JEDLOVSKY FAMILY TRUST	VERONICA JEDLOVSKY	176 TOMAHAWK PATH	NEWPORT	VT	5855
106140000	186 HAVRE ST PS-7	EAST BOSTON	2128	MORIN MATTHEW		186 HAVRE #7 (PS-7)	EAST BOSTON	MA	2128
106207000	186 188 PARIS ST 8	EAST BOSTON	2128	WHELAN SEAN		188 186 PARIS ST, UNIT 8	EAST BOSTON	MA	2128
106207000	186 188 PARIS ST 2	EAST BOSTON	2128	HEBDA STEPHANIE		186-188 PARIS ST #2	EAST BOSTON	MA	2128
106234000	199 HAVRE ST	EAST BOSTON	2128	SGIA REESIENTIAL BRIDGE LOAN VENTURE V LP	6900 JPMORGAN CHASE TOWER	600 TRAVIS ST	HOUSTON	TX	77002
106140000	186 HAVRE ST 1	EAST BOSTON	2128	NWANKWO OBINNA		186 HAVRE ST #1	EAST BOSTON	MA	2128
106140000	186 HAVRE ST 7	EAST BOSTON	2128	MORIN MATTHEW		186 HAVRE ST #7	EAST BOSTON	MA	2128
106207000	186 188 PARIS ST	EAST BOSTON	2128	186-188 PARIS STREET		186-188 PARIS ST	EAST BOSTON	MA	2128
106158000	183 LONDON ST	EAST BOSTON	2128	FIRST LONDON LLC		66 CRAGMORE RD	NEWTON	MA	2464
106122000	230 HAVRE ST	EAST BOSTON	2128	VELASQUEZ JAIME		230 HAVRE ST	EAST BOSTON	MA	2128
106207000	186 188 PARIS ST 6	EAST BOSTON	2128	KAISER BRIAN		186-188 PARIS ST #6	EAST BOSTON	MA	2128
106176000	209 LONDON ST	EAST BOSTON	2128	MIRANDA ARISTIDES A		209 LONDON ST	EAST BOSTON	MA	2128
106245000	229 HAVRE ST	EAST BOSTON	2128	BRUNO PAUL		218 PARIS ST	BOSTON	MA	2128
106140000	186 HAVRE ST 2	EAST BOSTON	2128	COFFEY JESSIE		186 HAVRE ST #2	EAST BOSTON	MA	2128
106157000	181 LONDON ST	EAST BOSTON	2128	MARTORANA ROSE MARIE	C/O ROSE M MARTORANA	181 LONDON ST	EAST BOSTON	MA	2128
106140000	186 HAVRE ST PS-2	EAST BOSTON	2128	GYURKOVICA JEDLOVSKY FAMILY TRUST	VERONIKA JEDLOVSKY	176 TOMAHAWK PATH	NEWPORT	VT	5855
106207000	186 188 PARIS ST 3	EAST BOSTON	2128	DEANGELO ANTHONY MICHAEL	C/O ANTHONY M DEANGELO	186-188 PARIS ST #3	EAST BOSTON	MA	2128
106140000	186 HAVRE ST PS-8	EAST BOSTON	2128	CROCKER ERIC		186 HAVRE ST #8 (PS-8)	EAST BOSTON	MA	2128
106169000	203 LONDON ST	EAST BOSTON	2128	MMH LLC		101 TREMONT ST STE 800J	BOSTON	MA	2108
106206000	190 R190 PARIS ST	EAST BOSTON	2128	FULL CIRCLE PROPERTIES RE LLC		6 CORNELL RD	DANVERS	MA	1923
106205000	192 PARIS ST	EAST BOSTON	2128	PIRRELLO MARIE LT	C/O MARIE PIRRELLO	192 PARIS ST	EAST BOSTON	MA	2128
106215000	170 PARIS ST 1	EAST BOSTON	2128	NESHE ALYSSA		170 PARIS ST, UNIT 1	EAST BOSTON	MA	2128
106312000	185 PARIS ST	EAST BOSTON	2128	SCARPA MICHAEL		40 FRANKFORT ST	E BOSTON	MA	2128
106204001	PARIS ST	EAST BOSTON	2128	AMAYA MARIA E		194 PARIS ST	EAST BOSTON	MA	2128
106125000	222 R224R HAVRE ST	EAST BOSTON	2128	CUTILLO CARMELA	C/O CARMELA CUTILLO	3 DAVIS COURT	E BOSTON	MA	2128
106215000	170 PARIS ST	EAST BOSTON	2128	170 PARIS STREET CONDOMINIUM TRUST	CLAUDIO M. ARAUJO, MANAGER	553 BROADWAY	EVERETT	MA	2149
106126000	216 HAVRE ST	EAST BOSTON	2128	216 HAVRE STREET LLC	216 HAVRE STREET LLC	1 CREST RD	WELLESLEY	MA	2482
106305000	175 PARIS ST	EAST BOSTON	2128	JAIMES FRANCISCO D		175 PARIS ST	EAST BOSTON	MA	2128
106215000	170 PARIS ST 3	EAST BOSTON	2128	MCLAUGHLIN GEOFFREY		170 PARIS ST, UNIT 3	EAST BOSTON	MA	2128
106291000	CHELSEA ST	EAST BOSTON	2128	COMMWLTH OF MASS		CHELSEA	EAST BOSTON	MA	2128
106304000	173 PARIS ST	EAST BOSTON	2128	FRONDUTO MICHAEL A	C/O MICHEAL A FRONDUTO	173 PARIS ST	E BOSTON	MA	2128
106167000	197 LONDON ST	EAST BOSTON	2128	CASTRO JESUS A		197 LONDON ST	EAST BOSTON	MA	2128
106210000	180 PARIS ST	EAST BOSTON	2128	CRISOSTO ROBERTO		180 PARIS ST	EAST BOSTON	MA	2128
106144000	HAVRE ST	EAST BOSTON	2128	COMMWLTH OF MASS		HAVRE	EAST BOSTON	MA	2128
106215000	170 PARIS ST 2	EAST BOSTON	2128	NGUYEN NGUYEN D		170 PARIS ST, UNIT 2	EAST BOSTON	MA	2128

106163000	193 LONDON ST	EAST BOSTON	2128 MANCUSI MICHAEL		193 LONDON ST	EAST BOSTON	MA	2128
106171000	207 LONDON ST	EAST BOSTON	2128 RODRIGUEZ SONIA A	C/O SONIA RODRIGUEZ	207 LONDON ST	EAST BOSTON	MA	2128
106246030	227 R HAVRE ST	EAST BOSTON	2128 227 HAVRE STREET LLC		17 MILL RUN ROAD	BOXFORD	MA	1921
106159000	185 LONDON ST	EAST BOSTON	2128 185 LONDON STREET LLC		185 LONDON ST	EAST BOSTON	MA	2128
106121000	232 HAVRE ST	EAST BOSTON	2128 COREAS PEDRO A	ANA COREAS	37 FALCON ST	E BOSTON	MA	2128
106178000	217 LONDON ST	EAST BOSTON	2128 LONDON STREET REALTY LLC		215 LONDON ST	EAST BOSTON	MA	2128
106162000	191 LONDON ST	EAST BOSTON	2128 191 LONDON LLC		2 LIME ST #50	BOSTON	MA	2108
106201000	210 PARIS ST	EAST BOSTON	2128 ESCOBAR MAURICIO		210 PARIS ST	EAST BOSTON	MA	2128
106209000	182 PARIS ST	EAST BOSTON	2128 YE MICHAEL TS	C/O PARIS LIVING TRUST	6 BENNETT ST	CAMBRIDGE	MA	2138
106161000	189 LONDON ST	EAST BOSTON	2128 MADRID ELVIS	C/O ELVIS A MADRID	1112 BENNINGTON ST	EAST BOSTON	MA	2128
106239000	213 HAVRE ST	EAST BOSTON	2128 RAMOS MARLENY GARAY		814 SARATOGA ST #1	EAST BOSTON	MA	2128
106203000	202 204 PARIS ST	EAST BOSTON	2128 BURNS BROTHERS LLC		2 CARLSON CI	WEST ROXBURY	MA	2132
106306000	177 PARIS ST	EAST BOSTON	2128 LEOCHA ANTHONY		177 PARIS ST	EAST BOSTON	MA	2128
106244000	225 227 HAVRE ST	EAST BOSTON	2128 227 HAVRE STREET LLC		17 MILL RUN RD	BOXFORD	MA	1921
106133000	196 R196 HAVRE ST	EAST BOSTON	2128 CASTILLO BYRON		196 HAVRE STREET	E BOSTON	MA	2128
106173000	3 DAVIS CT	EAST BOSTON	2128 CARMELA CUTILLO		3 DAVIS CT	EAST BOSTON	MA	2128
106244010	HAVRE ST	EAST BOSTON	2128 PIAZZA SANTO		1 AMANDA DR	DANVERS	MA	1923
106237000	209 HAVRE ST	EAST BOSTON	2128 GREEN BRIAN S		138 COUNTRY CLUB WAY	KINGSTON	MA	2364
106240000	215 HAVRE ST	EAST BOSTON	2128 215 HAVRE STREET TRUST		215 HAVRE ST	EAST BOSTON	MA	2128
106241000	217 HAVRE ST	EAST BOSTON	2128 MORAN CARLOS		217 HAVRE ST	EAST BOSTON	MA	2128
106246020	237 -237A HAVRE ST	EAST BOSTON	2128 BRUNO PAUL		218 PARIS STREET	BOSTON	MA	2128
106156000	179 LONDON ST	EAST BOSTON	2128 179 LONDON STREET REALTY TRUST	C/O JASON DEEB	33 CIRCUIT RD	WINTHROP	MA	2152
106164030	2 LONDON CT	EAST BOSTON	2128 CALMON JOSE L		2 LONDON CT	E BOSTON	MA	2128
106128000	210 HAVRE ST	EAST BOSTON	2128 RYAN D LLC		259 MILTON ST	DEDHAM	MA	2026
106284000	6 CHELSEA TE	EAST BOSTON	2128 CITY OF BOSTON		53 STANLEY AV	MEDFORD	MA	2155
106313100	189 PARIS ST	EAST BOSTON	2128 CITY OF BOSTON		ONE CITY HALL SQ	BOSTON	MA	2201
106309000	181 PARIS ST	EAST BOSTON	2128 VIALE RAYMOND	RAYMOND/SUE VIALE	181 PARIS ST APT#2	EAST BOSTON	MA	2128
106288001	CHELSEA ST	EAST BOSTON	2128 CITY OF BOSTON		CHELSEA	EAST BOSTON	MA	2128
106238000	211 211R HAVRE ST	EAST BOSTON	2128 HERNANDEZ ADOLFO		8 EVERETT AVENUE	EAST BOSTON	MA	2128
106212000	176 PARIS ST	EAST BOSTON	2128 PASCUCCI MARC		176 PARIS	EAST BOSTON	MA	2128
106310000	183 PARIS ST	EAST BOSTON	2128 CATINO ANTONIO		183 PARIS ST	EAST BOSTON	MA	2128
106204000	194 PARIS ST	EAST BOSTON	2128 AMAYA MARIA E	C/O MARIA AMAYA	194 PARIS ST	EAST BOSTON	MA	2128
106313000	191 PARIS ST	EAST BOSTON	2128 PARIS VILLAGE LLC	C/O EBCDC INC	72 MARGINAL ST	EAST BOSTON	MA	2128
106202000	206 PARIS ST	EAST BOSTON	2128 AMORE TONE B		206 PARIS ST	EAST BOSTON	MA	2128
106236000	207 HAVRE ST	EAST BOSTON	2128 PIZARRO RAMIRO		32 WHITBY ST	EAST BOSTON	MA	2128
106172000	1 DAVIS CT	EAST BOSTON	2128 YANES JOSE		1 DAVIS CT	EAST BOSTON	MA	2128
106175000	DAVIS CT	EAST BOSTON	2128 LONDON STREET REALTY LLC		215 LONDON ST	EAST BOSTON	MA	2128
106123000	228 HAVRE ST	EAST BOSTON	2128 SMITH MICHAEL RYAN		228 HAVRE ST	EAST BOSTON	MA	2128
106131000	202 HAVRE ST	EAST BOSTON	2128 CONSTANTINO ROBERT A TS	C/O MICHAEL ALESSI	14 VISTA AV	SALEM	MA	1970
106231000	189 HAVRE ST	EAST BOSTON	2128 BUDA ELIJAH TS		189 HAVRE ST	E BOSTON	MA	2128
106211000	178 PARIS ST	EAST BOSTON	2128 ADAMU ABYOT T		31 LODGEN CT #1H	MALDEN	MA	2148
106214000	172 PARIS ST	EAST BOSTON	2128 FLORES JOSE A		172 PARIS ST	EAST BOSTON	MA	2128
106132000	198 HAVRE ST	EAST BOSTON	2128 QUIROZ ROSA A	C/O ROSA QUIROZ	31 UNION ST	REVERE	MA	2151
106242000	221 HAVRE ST	EAST BOSTON	2128 PIAZZA SANTO TS	C/O FRANCESCA PIAZZA	1 AMANDA DR	DANVERS	MA	1923
106230000	187 HAVRE ST	EAST BOSTON	2128 D&S HAVRE STREET LLC		328 POND ST	JAMAICA PLAIN	MA	2130
106229000	183 185 HAVRE ST	EAST BOSTON	2128 SOZIO LOUIS A TS		61 SQUIRE RD	REVERE	MA	2151
106127000	214 HAVRE ST	EAST BOSTON	2128 214 HAVRE STREET LLC		1 CITY HALL MALL, UNIT STE 2	MEDFORD	MA	
106154000	LONDON ST	EAST BOSTON	2128 CITY OF BOSTON		LONDON	EAST BOSTON	MA	2128
106125001	218 220 HAVRE ST	EAST BOSTON	2128 218-220 HAVRE STREET LLC		1281 WALNUT ST #1	NEWTON	MA	2461
106174000	DAVIS CT	EAST BOSTON	2128 LONDON STREET REALTY LLC		215 LONDON ST	EAST BOSTON	MA	2128
106155000	177 LONDON ST	EAST BOSTON	2128 FLAHERTY BRIAN A		177 LONDON ST	EAST BOSTON	MA	2128
106235000	201 HAVRE ST	EAST BOSTON	2128 MANCIA JOSE		82 BROOK ST	EAST BOSTON	MA	2128
106308000	179 PARIS ST	EAST BOSTON	2128 BONILLA JOSE A		179 PARIS ST	EAST BOSTON	MA	2128
106216000	166 168 PARIS ST	EAST BOSTON	2128 PARIS STREET LLC		129 BORDER ST	EAST BOSTON	MA	2128
106164020	3 LONDON CT	EAST BOSTON	2128 RYAN JOAN		3 LONDON COURT	E BOSTON	MA	2128

106170000	205 LONDON ST	EAST BOSTON	2128 MCCARTHY EDWARD		205 LONDON ST	EAST BOSTON	MA	2128
106129000	208 HAVRE ST	EAST BOSTON	2128 ALVES ISMAEL A		208 HAVRE ST	EAST BOSTON	MA	2128
105896000	149 LONDON ST	EAST BOSTON	2128 CITY OF BOSTON		149 LONDON	EAST BOSTON	MA	2128
106208000	184 PARIS ST	EAST BOSTON	2128 BELMONTE ANGELA		184 PARIS ST	EAST BOSTON	MA	2128
106134000	194 HAVRE ST	EAST BOSTON	2128 194 HAVRE LLC		675 VFW PW STE 195	CHESTNUT HILL	MA	2467
106217000	GOVE ST	EAST BOSTON	2128 COMMWLTH OF MASS		GOVE	EAST BOSTON	MA	2128
106168000	199 LONDON ST	EAST BOSTON	2128 SANTOS JESUS		199 LONDON ST	E BOSTON	MA	2128
106243000	223 HAVRE ST	EAST BOSTON	2128 PIAZZA SEBASTIANO TS	C/O SANTO PIAZZA	1 AMANDA DR	DANVERS	MA	1923
106246040	R HAVRE ST	EAST BOSTON	2128 PIAZZA SANTO		1 AMANDA DR	DANVERS	MA	1923
106130000	206 HAVRE ST	EAST BOSTON	2128 SARMIENTO REYNERIO		206 HAVRE ST	EAST BOSTON	MA	2128
106124000	226 HAVRE ST	EAST BOSTON	2128 A LIMITED LIABILITY COMPANY LLC		320 WASHINGTON ST SUITE 3FF	BROOKLINE	MA	2445
106160000	187 LONDON ST	EAST BOSTON	2128 CMSS DEVELOPMENT LLC		32 STARLIGHT DRIVE	WALPOLE	MA	2081
106307000	PARIS ST	EAST BOSTON	2128 171-177 PARIS STREET LLC	C/O JAMIE MABARDY	355 MAIN ST SUITE 25	WOBURN	MA	1801