June 2, 2021

City of Boston Conservation Commission
1 City Hall Square, Room 709
Boston, MA 02201

Re: Notice of Intent Application
Proposed Residential Building
199 Gardner Street, West Roxbury, MA

Dear Members of the Commission,

We, CCR West Roxbury Apartments, LLC, completed the purchase of the above referenced property on June 1st, 2021, and are pleased to submit a Notice of Intent Application ("the Application") for the proposed redevelopment. This property was the subject of a previous application (DEP File Number 006-1773) submitted by the prior owner and was withdrawn to allow for the completion of the sale. The current Application is submitted in accordance with the Massachusetts Wetlands Protection Act, 310 CMR 10.00 and the City of Boston requirements. The proposed project includes the demolition of existing industrial buildings and associated paved areas to build a mid-rise apartment building with 70 residential units with associated paved access and parking, stormwater management systems, and proposed landscaping.

In support of the Application, we are providing the Commission with the below materials:

- Two (2) copies of the compiled Notice of Intent Application
- Two (2) copies of the completed Boston Notice of Intent
- Two (2) reduced size (11"x17") copies of plans the Site Development Plans, dated March 24, 2021
- Two (2) copies of the Stormwater Report, dated February 17, 2021
- Two (2) copies of the Checklist for Stormwater Report
- Two (2) copies of the project narrative, dated March 23, 2021
- Two (2) copies of the Abutters List and Abutter Notification
- Two (2) copies of the City of Boston Extension Form, dated June 2, 2021
- Two (2) copies of the Climate Change Resiliency Checklist

We trust that the enclosed information is sufficient to facilitate your review. Should you have any questions or require additional information, please do not hesitate to contact us at (617) 302-4473.

Sincerely,

Christopher Reale
CCR West Roxbury Apartments, LLC

Table of Contents

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

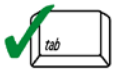
Provided by MassDEP:

MassDEP File Number

Document Transaction Number

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):

189-197 Gardner Street — a. Street Address
West Roxbury — b. City/Town
02132 — c. Zip Code

Latitude and Longitude:
42.278511 — d. Latitude
-71.174629 — e. Longitude

f. Assessors Map/Plat Number
2009220000, 2009221000 — g. Parcel /Lot Number

2. Applicant:

Christopher — a. First Name
Reale — b. Last Name
CCR West Roxbury Apartments, LLC — c. Organization
10 Commerce Boulevard — d. Street Address
Middleborough — e. City/Town
MA — f. State
02346 — g. Zip Code
(508) 823-6303 — h. Phone Number
i. Fax Number
j. Email Address

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

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

4. Representative (if any):

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

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

1,050 — a. Total Fee Paid
512.50 — b. State Fee Paid
537.50 — c. City/Town Fee Paid

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A. General Information (continued)

6. General Project Description:

The Project consists of demolishing industrial buildings and associated paved areas to build a mid-rise apartment building with 70 residential units with associated paved access and parking, stormwater management systems, and proposed landscaping. A portion of this work is proposed within the 100-foot Buffer Zone to BVW.

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

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

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

1. ☐ Yes ☒ No

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

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
Suffolk	127
c. Book	d. Page Number
65590	

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced

f. ☐ Riverfront Area

1. Name of Waterway (if available) - **specify coastal or inland**

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

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

4. Proposed alteration of the Riverfront Area:

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

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

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

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

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

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

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

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

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

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

4. ☐ Restoration/Enhancement

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

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

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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

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 https://www.mass.gov/ma-endangered-species-act-mesa-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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C. Other Applicable Standards and Requirements (cont'd)

(c) ☐ MESA filing fee (fee information available at https://www.mass.gov/how-to/how-to-file-for-a-mesa-project-review).
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, https://www.mass.gov/service-details/exemptions-from-review-for-projectsactivities-in-priority-habitat; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

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

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

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

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

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

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

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 South Rodney French Blvd.
New Bedford, MA 02744
Email: dmf.envreview-south@mass.gov

North Shore - Hull to New Hampshire border:

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930
Email: dmf.envreview-north@mass.gov

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.

c. ☐ Is this an aquaculture project? d. ☐ Yes ☐ No

If yes, include a copy of the Division of Marine Fisheries Certification Letter (M.G.L. c. 130, § 57).

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

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

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

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

   b. ACEC

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

   a. ☐ Yes ☒ No

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

   a. ☐ Yes ☒ No

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

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

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

      2. ☐ A portion of the site constitutes redevelopment

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

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

      1. ☐ Single-family house

      2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

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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.

a. Plan Title

b. Prepared By

c. Signed and Stamped by

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:

2. Municipal Check Number

3. Check date

4. State Check Number

5. Check date

6. Payor name on check: First Name

7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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F. Signatures and Submittal Requirements

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

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

1. Signature of Applicant	2. Date: 6/2/2021
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	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.

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:

a. Street Address	b. City/Town
197 & 189 Gardner Street	West Roxbury
c. Check number	d. Fee amount

2. Applicant Mailing Address:

a. First Name	b. Last Name
Christopher	Reale

c. Organization: CCR West Roxbury Apartments, LLC

d. Mailing Address: 10 Commerce Boulevard

e. City/Town	f. State	g. Zip Code
Middleborough	MA	02346

h. Phone Number	i. Fax Number	j. Email Address
(508) 823-6303		

3. Property Owner (if different):

a. First Name	b. Last Name

c. Organization

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email Address

B. Fees

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

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

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

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

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

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

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

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

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NOI Wetland Fee Transmittal Form

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B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Each Building	1	1,050	1,050

Step 5/Total Project Fee:

Step 6/Fee Payments:

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

C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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

Checklist for Filing a Notice of Intent with Boston Conservation Commission

In order for the Boston Conservation Commission to effectively process your Notice of Intent, BCC requests that you complete the checklist below and include it with your submission. If you should need assistance please contact Commission Staff: 617-635-3850 (cc@boston.gov).

Please Submit the Following to the Conservation Commission:

- [X] Two copies (a signed original and 1 copy) of a completed Notice of Intent (WPA Form 3)
- [X] Two copies (a signed original and 1 copy) of a completed Boston Notice of Intent (Local Form)
- [X] Two copies of plans (reduced to 11" X 17") in their final form with engineer's stamp affixed supporting calculations and other documentation necessary to completely describe the proposed work and mitigating measures. Plans must include existing conditions, the proposed project, erosion controls and mitigation measures, grading and spot elevations and all wetland resource areas and associated buffer zones. Some projects may require both an aerial view of the plans along with a profile view of plans depending on the scope of work.
- [X] Two copies of an 8 ½" x 11" section of the USGS quadrangle map of the area, containing sufficient information for the Conservation Commission and the Department to locate the site of the work.
- [X] (If applicable) Two copies the Federal Emergency Management Agency Flood Insurance Rate Map for the project site. FEMA Flood Maps: https://msc.fema.gov/portal.
- [X] Two copies of the determination regarding the Natural Heritage and Endangered Species Program: Review Section C. Other Applicable Standards and Requirements of the Notice of Intent, page 4 of 8, pertaining to wildlife habitat. The Conservation Commission and the Natural Heritage & Endangered Species Program have the maps necessary to make this determination.
- [X] (If applicable) Two hard copies of a Stormwater Report to document compliance with the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q), including associated drainage calculations for rooftops, parking lots, driveways, etc., for the required design storm events.
- [X] (If applicable) A narrative detailing best management practices for stormwater management as set forth in the Stormwater Management Standards of the Massachusetts Department of Environmental Protection and any separate standards and guidelines prepared by the City and the Boston Water and Sewer Commission.
- [X] (If applicable) Two hard copies of the Checklist for Stormwater Report
- [X] Details of the stormwater management system, including: catch basins, oil separating tanks, detention basins, outfalls, sewer connections, etc.
- [X] Any photographs related to the project representing the wetland resource areas.
- [X] Two copies of a detailed project narrative describing the following: an overview of the entire project, the work proposed within wetland resource areas and/or buffer zones; how the performance standards specific to the wetland resource areas will be met (listing out each performance standard); a consideration of the effect that project sea level rise, changes in storm intensity and frequency, and other consequences of climate change may have on the resource areas and proposed activities; construction equipment and material involved; and measures to protect wetland resource areas and mitigate impacts. The applicant shall also include narrative on how they plan to integrate climate change and adaptation planning considerations into their project to promote climate resilience to protect and promote Resource Area Values and functions into the future.
- [X] Two copies of an Abutters List, Affidavit of Service and Abutter Notification, filed concurrently with the Notice of Intent. All abutters within 300' of the project property line must be notified including those in a neighboring municipality. In such an instance, a copy of the filing must also be sent to the local Conservation Commission of the neighboring municipality.

Checklist for Filing a Notice of Intent with Boston Conservation Commission

- ☒ Two copies of the BPDA Climate Resiliency Checklist (for new buildings). This can be completed online at http://www.bostonplans.org/planning/planning-initiatives/article-37-green-building-guidelines. Please print the pdf that you will receive via email after completion and include it in your submission.

- ☒ **Electronic copies. Documents may be submitted via email, or via an email link to downloadable documents.**

To minimize the use of non-recyclable materials ***please do not include vinyl or plastic binders, bindings, folders or covers with the filing.*** Staples and binder clips are good choices.

INSTRUCTIONS FOR COMPLETING APPLICATION
NOTICE OF INTENT – BOSTON NOI FORM

The Boston Notice of Intent Form is intended to be a supplement to the WPA Form 3 detailing impacts to locally designated wetland resource areas and buffer zones. Please read these instructions for assistance in completing the Notice of Intent application form. These instructions cover certain items on the Notice of Intent form that are not self-explanatory.

INSTRUCTIONS TO SECTION B: BUFFER ZONE AND RESOURCE AREA IMPACTS

Item 1. Buffer Zone Only. If you check the Buffer Zone Only box in this section you are indicating that the project is entirely in the Buffer Zone to a resource area ***under both*** the Wetlands Protection Act and Boston Wetlands Ordinance. If so, skip the remainder of Section B and go directly to Section C. Do not check this box if the project is within the Waterfront Area.

Item 2. The ***boundaries of coastal resource areas*** specific to the Ordinance can be found in Section II of the Boston Wetlands Regulations. You must also include the size of the proposed alterations (and proposed replacement areas) in each resource area.

Item 3. The ***boundaries of inland resource areas*** specific to the Ordinance can be found in Section II of the Boston Wetlands Regulations. You must also include the size of the proposed alterations (and proposed replacement areas) in each resource area.

INSTRUCTIONS TO SECTION C: OTHER APPLICABLE STANDARDS AND REQUIREMENTS

Item 1. Rare Wetland Wildlife Habitat. Except for Designated Port Areas, no work (including work in the Buffer Zone) may be permitted in any resource area that would have adverse effects on the habitat of rare, "state-listed" vertebrate or invertebrate animal species.

The most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife is published by the Natural Heritage and Endangered Species Program (NHESP). See: http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm or the *Massachusetts Natural Heritage Atlas*.

If any portion of the proposed project is located within Estimated Habitat, the applicant must send the Natural Heritage Program, at the following address, a copy of the Notice of Intent by certified mail or priority mail (or otherwise sent in a manner that guarantees delivery within two days), no later than the date of the filing of the Notice of Intent with the Conservation Commission.

Evidence of mailing to the Natural Heritage Program (such as Certified Mail Receipt or Certificate of Mailing for Priority Mail) must be submitted to the Conservation Commission along with the Notice of Intent.

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581-3336
508.792.7270

City of Boston Environment

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

Boston File Number

MassDEP File Number

A. GENERAL INFORMATION

1. Project Location

189 & 197 Gardner Street	West Roxbury	02132
a. Street Address	b. City/Town	c. Zip Code

11A-11E	2009220000 / 2009221000
f. Assessors Map/Plat Number	g. Parcel /Lot Number

2. Applicant

Christopher	Reale	CCR West Roxbury Apartments, LLC
a. First Name	b. Last Name	c. Company

10 Commerce Boulevard
d. Mailing Address

Middleborough	MA	02346
e. City/Town	f. State	g. Zip Code

(508) 823-6303		
h. Phone Number	i. Fax Number	j. Email address

3. Property Owner

a. First Name	b. Last Name	c. Company

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email address

❑ Check if more than one owner

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

4. Representative (if any)

a. First Name	b. Last Name	c. Company

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email address

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 demolishing industrial buildings and associated paved areas to build a mid-rise apartment building with 70 residential units with associated paved access and parking, stormwater management systems, and proposed landscaping. A portion of this work is proposed within the 100-foot Buffer Zone to BVW.

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	127
a. County	b. Page Number
65590	
c. Book	d. Certificate # (if registered land)

9. Total Fee Paid

2,562.50	512.50	1,500 + 550 = 2,050
a. Total Fee Paid	b. State Fee Paid	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

Resource Area	Resource Area Size	Proposed Alteration*	Proposed Migitation
❑ *Coastal Flood Resilience Zone*	*Square feet*	*Square feet*	*Square feet*
❑ *25-foot Waterfront Area*	*Square feet*	*Square feet*	*Square feet*
❑ *100-foot Salt Marsh Area*	*Square feet*	*Square feet*	*Square feet*
❑ *Riverfront Area*	*Square feet*	*Square feet*	*Square feet*

2. Inland Resource Areas

Resource Area	Resource Area Size	Proposed Alteration*	Proposed Migitation
❑ *Inland Flood Resilience Zone*	*Square feet*	*Square feet*	*Square feet*
❑ *Isolated Wetlands*	*Square feet*	*Square feet*	*Square feet*
❑ *Vernal Pool*	*Square feet*	*Square feet*	*Square feet*
❑ *Vernal Pool Habitat (vernal pool + 100 ft. upland area)*	*Square feet*	*Square feet*	*Square feet*
☒ *25-foot Waterfront Area*	3,780 *Square feet*	3,780 *Square feet*	*Square feet*
☒ *Riverfront Area*	1,508 *Square feet*	1,580 *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?

BWSC Permit - Pending

TAPA - Under Review

PIC - Meeting Date TBD

Park Commission - Under 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 Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the Massachusetts Natural Heritage Atlas or go to http://www.mass.gov/dfwele/dfw/nhesp/nhregmap.htm.

❑ Yes ☒ No

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

A. Submit Supplemental Information for Endangered Species Review

☐ Percentage/acreage of property to be altered:

(1) within wetland Resource Area _____ percentage/acreage

(2) outside Resource Area _____ percentage/acreage

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

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.

Signature of Applicant — Date: 6/2/2021

Signature of Property Owner (if different) — Date

Signature of Representative (if any) — Date

Attachment A:
Project Narrative

1.0 Project Overview

This Notice of Intent (NOI) has been prepared by ***Howard Stein Hudson (HSH)*** on behalf of West Brighton Acquisitions, LLC (the "Applicant") for the 199 Gardner Street Apartments (the "Project"). The NOI has been prepared in accordance with the Massachusetts Wetlands Protection Act (the "Act") and the Boston Wetland Ordinance (the "Ordinance"). The Ordinance utilizes the Home Rule authority of the City of Boston to supplement the jurisdiction, authority, and procedures of the Conservation Commission, and to protect additional resource areas, for additional values, with additional standards and procedures stricter than those of the Act, (M.G.L. c. 131, § 40) and Regulations thereunder (310 CMR 10.00).

The Project consists of the redevelopment of 189 and 197 Gardner Street. Part of the Project Site is located within the 100-foot Buffer Zone to Bordering Vegetated Wetland (BVW). The NOI is being submitted to the City of Boston Conservation Commission to demonstrate compliance with the Act and Ordinance.

2.0 Existing Conditions

The Project Site consists of 0.83 ± acres of previously developed land located in West Roxbury, Massachusetts. The Project Site is bounded by Gardner Street to the south, residential buildings to the east and west, and a commercial property (Home Depot) to the north. The site's surface is almost entirely impervious, consisting of pavement and roofs with a limited number of trees as seen in **Figure 2** provided in **Attachment B**. The Project Site is not located within a Federal Emergency Management Agency (FEMA) flood hazard as shown in **Figure 3** in **Attachment B**. An Existing Conditions Plan is provided in **Attachment C**.

Cow Island Pond, a small pond fed by the Charles River, is located approximately 480 feet southwesterly of the site. Portion of the site falls within the 100-foot Buffer Zone to a BVW located to the north and northwest of the Project Site. This BVW receives stormwater runoff from the Home Depot parcel to the north. The current Massachusetts Natural Heritage and Endangered Species Program (NHESP) Atlas (MassGIS, August 1, 2017) does not identify Estimated Habitat (310 CMR 10.59) on or near the Project Site.

The existing Project Site contains approximately 0.83± acres of impervious surfaces. Under existing conditions, stormwater runoff from the paved areas behind the 197 Gardner Street building sheet flows untreated into the BVW to the north of the Project Site. Runoff generated by the roofs of the

existing buildings and the paved parking areas flows off site to the south and is collected in a catch basin in Gardner Street.

3.0 Proposed Development

The project will consist of redeveloping the Project Site by razing the existing commercial buildings and associated paved areas to allow for the construction of a mid-rise apartment building with 70 residential units with associated paved access and parking, stormwater improvements, and landscaping.

The proposed Project will feature two infiltration systems that will handle runoff from the Project Site and will discharge overflow into the existing city drainage system in Gardner Street.

Existing site has no landscaped areas and three trees that have grown up through the existing pavement between the Project Site buildings. Proposed site will provide 4,955± square feet of landscaped area, which represents approximately 14% of the Project Site. The proposed landscaped areas will surround the proposed building and will include 38 deciduous and 8 evergreen trees as well as 107 shrubs.

4.0 Wetland Resource Area Impacts

Part of the work associated with the project will be conducted within the 100-foot Buffer Zone of BVW. No other wetland resource areas occur on the Project Site.

An operation and maintenance plan will be employed to ensure the continued functioning of the proposed stormwater management system. Construction period controls, including a construction entrance and a perimeter erosion control barrier, will be used to prevent erosion and transport of sediment and other pollutants off-site.

5.0 Compliance with Performance Standards

The following sections describe the Project's compliance with the performance standards for each resource area as applicable under Section 310 CMR 10.00 of the Act for Activities within the Buffer Zone to BVW. Buffer Zone means that area of land extending 100 feet horizontally outward from the

boundary of any area specified in 310 CMR 10.02(1)(a). The 100-foot Buffer Zone is not a wetland resource area under the Act.

5.1 Activities Within the Buffer Zone to BVW

Activities Within the Buffer Zone: *Any activity other than minor activities identified in 310 CMR 10.02(2)(b)2. proposed or undertaken within 100 feet of an area specified in 310 CMR 10.02(1)(a) (hereinafter called the Buffer Zone) which, in the judgment of the issuing authority, will alter an Area Subject to Protection under M.G.L. c. 131, § 40 is subject to regulation under M.G.L. c. 131, § 40 and requires the filing of a Notice of Intent.*

The proposed Project will result in work within the 100-foot Buffer Zone on the Project Site. The Project Site is largely previously developed and largely consists of impervious surfaces under existing conditions. The Project design includes measures to mitigate for potential impacts to the adjacent BVW, including the use of catch basin inlets, a perimeter fence and perimeter erosion control barrier, and construction entrance, proposed stormwater management measures designed to treat and infiltrate stormwater runoff from the proposed pavement and infiltrate roof runoff. Significant landscaping has been proposed as part of the project.

6.0 Climate Resilience

The following discussion will consider the effects that climate change may have on the Project Site and adjacent resource area and will outline adaptation planning considerations and climate resiliency solutions.

6.1 Sea Level Rise and Flood Risk

The Project Site is in an area of Boston that is not projected to be affected by Sea Level Rise in the foreseeable future. Cow Island Pond, a small pond fed by the Charles River, is located southwesterly of the site. Charles River is not tidal in the vicinity of the Project Site. The Project Site is not within a FEMA flood hazard zone. The edge of the closest 100-year floodplain is approximately 210 feet southwest of the Project Site and has a base flood elevation of 90 feet (NAVD 1988). The Project Site proposed elevations range from 96.4 feet to 103 feet. Potential increase in storm intensity and frequency and increased flood risk were considered during the design process. The stormwater management system for the Project addresses stormwater runoff via infiltration. The drainage system has a bypass to overflow once system reaches its capacity.

6.2 Climate Change Adaptations and Resiliency

The lowest proposed elevation on the Project Site will be 97.4 feet, while the closest base flood elevation in the vicinity of the Project Site is 90 feet. The proposed design features garage spaces that are 8 feet higher and the proposed first floor elevation of the units is 18 feet higher than the closest 100-year floodplain elevation. The mid-rise building has pedestrian access from Gardner Street. The entrance is 4.5 feet higher than Gardner Street and 10 feet higher than the proposed garage level. Critical systems, electric, cable, and other utility services will be located at least 8 feet above the 100-year floodplain elevation. The Proponent will have an on-call response team during construction; once units are sold, a homeowner's association will handle potential disaster recovery and emergency situations.

6.3 Intense Precipitation Events

From 1958 to 2010, there was a 70% increase in the amount of precipitation that fell on the days with the heaviest precipitation. There is a significant probability that the 10-Year, 24-Hour Design Storm precipitation level will increase to six inches by the end of the century. To model such extreme precipitation events, hydrological calculations were run with a six inch, 10-year, 24-hour storm and compared to the existing condition. The post-development Project Site stormwater runoff rate calculated with the projected six-inch precipitation level was lower than the predevelopment runoff rate modeled using the current storm intensity level. The proposed design demonstrates resiliency to precipitation events potentially intensifying with climate change effects.

6.4 Heat Island Effect

Special consideration was given to building and site measures to reduce heat-island effect at the Project Site. Deck building materials will be light in color and have a higher Solar Reflectance Index than the existing black roofs and pavement. Under existing conditions, the Project Site lacks landscaped areas and includes three trees. Under proposed conditions, the proposed Project will provide 4,955± square feet (sf) of landscaped area around the building, which is approximately 14% of the Project Site. Shade trees are proposed along the east, west, and where feasible, along the south side of the building to reduce the heat island effect compared to the existing condition.

7.0 Mitigation Measures

7.1 Sediment Barriers

Catch Basin Inlet Protection will be installed as shown on the Plans prior to the initiation of proposed work. A Temporary Construction Entrance will be installed as shown on the Plans at the start of construction. Siltation barriers consisting of Compost Socks will be installed as shown on the Plans prior to the initiation of proposed work. Construction fencing will also be utilized to demarcate the limit of work in select locations. These barriers will demarcate the limit of work, form a work envelope, and provide additional assurance that construction equipment will stay within the proposed limit of work. All barriers will remain in place until disturbed areas are stabilized. An adequate stockpile of erosion control materials will be on-site at all times for emergency or routine replacement.

7.2 Extended Shutdown Stabilization

The contractor must ensure the Project Site is stabilized in the event of extended shutdown due to weather, economic conditions, or any other cause.

- Temporary stabilization will be provided through temporary seeding during growing season and chopped hay and/or tackifier during the non-growing season.
- Disturbed areas will be kept to a minimum and will be stabilized within fourteen (14) days after construction activities have temporarily or permanently stopped on any portion of the site.
- Stabilization of disturbed areas will be achieved by paving, temporary seeding, permanent seeding, mulching (blown hay or woodchips), landscaping, or an acceptable equivalent alternative.

8.0 Project Construction Sequence

Construction consists of the redevelopment of 189 and 197 Gardner Street. The Project will be considered complete upon final landscaping and ground surface stabilization. All erosion control measures will be installed prior to the start of construction and maintained throughout the construction process. General construction sequence:

- Install Catch Basin protection and sediment barrier.
- Install perimeter construction fencing and erosion control barrier.

- Provide construction entrance at point of entry for construction vehicles.
- Disconnect, remove, or abandon existing utilities as shown on plans.
- Demolish, remove, and dispose existing structures as indicated on Plans.
- Remove and dispose of existing pavement.
- Locations for material stockpiles shall be selected outside of the 100-foot Buffer Zone and shall be reviewed and approved by the general contractor and engineer.
- Surround topsoil and subsoil stockpiles to be used on site with a silt fence if stockpile is to remain more than forty-eight (48) hours.
- Rough grade driveway and parking sites.
- Roll gravel base.
- Construct proposed building.
- Implement proposed sidewalk widening and reconstruction. See Plans for locations.
- Fine grade and roll gravel base and apply binder to areas to proposed to be paved.
- Install curb. See Plans for locations.
- Final grade and plant proposed landscaped areas.
- Apply top course to paved areas.

9.0 Conclusions

The information contained in this NOI describes the site, proposed work, and the effect of said work on the interests identified in the Act and values identified in the Ordinance and further demonstrates that the Project can be constructed without adversely affecting the adjacent wetland resource area . A clear limit of work line has been provided on the included Plans and appropriate sedimentation and erosion control measures and other BMPs will be employed by the site contractor to avoid impacts to the resource area during construction. In conclusion, the proposed Project represents an improvement over the existing conditions relative to the protection of the statutory and Ordinance interests and values. The Applicant therefore respectfully requests that the commission issue an Order of Conditions approving the Project with appropriate conditions to protect the statutory interests and ordinance values.

Supplemental Resource Area Summary

199 Gardner Street
West Roxbury, MA 02132 June 4, 2021

Existing Conditions

In addition to the BVW located to the northwest of the Site, there is a drainage area located along the northern edge of the property associated with the outfall from the Home Depot stormwater system. This drainage area has not been maintained and now exhibits characteristics of an intermittent stream, as detailed in the Wetland Report. The Boston Wetland Ordinance establishes a 25-foot Riverfront Area as well as a 25-foot Waterfront Area to the Riverfront Area associated with this stream, as shown on the site plans. For additional information, refer to Section 2.0 of the Narrative.

Wetland Resource Area Impacts

Approximately 1,508 square feet (SF) of Riverfront Area is present on the site, as well as approximately 3,780 SF of Waterfront Area. These resource areas have been previously-developed and are proposed to be redeveloped with the parking areas associated with the new residential building. The project proposes to install modern drainage on the site, which will direct untreated stormwater into catch basins with deep sumps and infiltration systems rather than directly into the resource areas northwest of the Site. This will be an improvement upon existing conditions.

Impacts will include installing temporary erosion control measures, demolishing the building, installing utilities, and constructing the new building with residential uses with associated paved areas and landscaping. Reference the Site Development Plans provided for a full depiction of proposed activities. The erosion controls will protect adjacent resource areas during construction.

The project is located in a previously-developed urban area; therefore, the Regulated Areas generally do not provide the natural resource interests described in the Wetlands Protection Act Regulations. The proposed work is an improvement upon existing conditions, which are previously-degraded.

An operation and maintenance plan will be employed to ensure the continued functioning of the proposed stormwater management system. Construction period controls, including a construction entrance and a perimeter erosion control barrier, will be used to prevent erosion and transport of sediment and other pollutants off-site. For additional information, refer to Section 4.0 of the Narrative.

Boston Performance Standards

The proposed project is within the 25-foot Riverfront Area, the 25-foot Waterfront Area to the Riverfront Area, and the 100-foot buffer zone and is subject to the Performance Standards set forth in the Boston Wetland Ordinance. A summary of the project's conformance with the performance standards is presented below:

c. The Commission therefore may require that any person filing an application (hereinafter, the Applicant) restore or maintain a strip of continuous, undisturbed or restored vegetative cover or waterfront public access throughout the Waterfront Area, unless the Commission

determines, based on adequate evidence, that the area or part of it may be altered without harm to the values of the resource areas protected by the Ordinance. Such disturbed areas must be minimized to the greatest extent possible

The proposed work is an improvement over existing conditions of the capacity of the Waterfront Area to protect the interests identified in the Boston Wetland Ordinance. The majority of the Waterfront Area on the site is previously-degraded and does not provide the natural resource interests outlined in the Boston Wetland Ordinance. There is no undisturbed Waterfront Area on the site.

The Project design includes measures to mitigate for potential impacts to the Waterfront Area, including the use of deep sump catch basins; a perimeter fence, perimeter erosion control barrier and construction entrance during construction; and proposed stormwater management measures designed to treat and infiltrate stormwater runoff from the proposed pavement and roof runoff.

g. **(vii) In reviewing activities within the Buffer Zone, the Commission shall presume the buffer zone is important to the protection of other resource areas because activities undertaken in close proximity have a reasonable probability of adverse impact, either immediately, as a consequence of construction, or over time, as a consequence of daily operation or existence of the activities. These adverse impacts from construction and use can include, without limitation, erosion, siltation, loss of groundwater recharge, poor water quality, loss of wildlife habitat, degradation of wetland plant habitat, alteration of hydrology, and proliferation of invasive plants. The Commission may establish, in its regulations, design specifications, performance standards, and other measures and safeguards, including setbacks, and other work limits for protection of such lands, including without limitation strips of continuous, undisturbed vegetative cover, unless the Commission determines, based on adequate evidence, that the buffer zone or part of it may be altered without harm to the values protected by the Ordinance.**

The proposed work is an improvement over existing conditions of the capacity of the Buffer Zone to protect the interests identified in the Boston Wetland Ordinance.

The design documents include a comprehensive Operations & Maintenance Plan for operations during and post-construction to ensure water quality, wildlife habitat, wetland plant habitat, and hydrology are not negatively impacted. Additionally, the landscape plan calls out native plants that are non-invasive to ensure the project is not proliferating invasive species. The project also has an extensive recharge system to increase groundwater recharge. Together, these are significant improvements to the resource areas that will result from the proposed development.

(viii) In reviewing activities within the riverfront area, the Commission shall presume the riverfront area is important to all the Resource Area Values unless demonstrated otherwise, and no permit issued hereunder shall permit any activities unless the Commission finds by preponderance of the evidence that there is no practicable alternative to the proposed project with less adverse effects, and that such activities, including proposed mitigation measures, will have no significant adverse impact on the areas or values protected by this Ordinance. The Commission shall regard as practicable an alternative which is reasonably available and capable of being done after taking into consideration the proposed property use, overall project

purpose (e. g., residential, institutional, commercial, or industrial), logistics, existing technology, and other factors at its discretion. The Commission will also consider if the project proposes ecological enhancement of the Riverfront Area. The Commission may separately designate areas of the city, where in its discretion and by a preponderance of evidence that such areas are significant for the protection of the Resource Area Values protected by the Ordinance, the riverfront area can be extended up to a distance of 200 feet.

The proposed work is an improvement over existing conditions of the capacity of the Riverfront Area to protect the interests identified in the Boston Wetland Ordinance.

The Project design includes measures to mitigate for potential impacts to the Riverfront Area, including the use of deep sump catch basins; a perimeter fence, perimeter erosion control barrier and construction entrance during construction; and proposed stormwater management measures designed to treat and infiltrate stormwater runoff from the proposed pavement and roof runoff. See below for a description of the Project's compliance with the State Performance Standards, including an Alternatives Analysis.

Riverfront Area State Performance Standards

The proposed project is within the 25-foot Riverfront Area and is subject to the Performance Standards set forth in 310 CMR 10.58(5). A summary of the project's conformance with the performance standards for Redevelopment Within Previously Developed Riverfront Areas is presented below:

a) **At a minimum, proposed work shall result in an improvement over existing conditions of the capacity of the riverfront area to protect the interests identified in M.G.L. c. 131 § 40. When a lot is previously developed but no portion of the riverfront area is degraded, the requirements of 310 CMR 10.58(4) shall be met.**

   The proposed work is an improvement over existing conditions of the capacity of the Riverfront Area to protect the interests identified in M.G.L. c. 130 § 40. The majority of the Riverfront Area on the site is previously-degraded and does not provide the natural resource interests outlined in the Wetlands Protection Act Regulations. There is no undisturbed Riverfront Area on the site.

b) **Stormwater management is provided according to standards established by the Department.**

   Stormwater management will comply with the MassDEP Stormwater Management Standards, as described in the Drainage Report.

c) **Within 200 foot riverfront areas, proposed work shall not be located closer to the river than existing conditions or 100 feet, whichever is less, or not closer than existing conditions within 25 foot riverfront areas, except in accordance with 310 CMR 10.58(5)(f) or (g).**

   The proposed work is not located closer to the river than the previously-disturbed areas in the existing conditions.

d) Proposed work, including expansion of existing structures, shall be located outside the riverfront area or toward the riverfront area boundary and away from the river, except in accordance with 310 CMR 10.58(5)(f) or (g).

The proposed work is located entirely within previously-degraded areas.

e) The area of proposed work shall not exceed the amount of degraded area, provided that the proposed work may alter up to 10% if the degraded area is less than 10% of the riverfront area, except in accordance with 310 CMR 10.58(5)(f) or (g).

The area of proposed work does not exceed the amount of currently degraded area.

f) When an applicant proposes restoration on-site of degraded riverfront area, alteration may be allowed notwithstanding the criteria of 310 CMR 10.58(5)(c), (d), and (e) at a ratio in square feet of at least 1:1 of restored area to area of alteration not conforming to the criteria. Areas immediately along the river shall be selected for restoration. Alteration not conforming to the criteria shall begin at the riverfront area boundary. Restoration shall include:

1. removal of all debris, but retaining any trees or other mature vegetation;

2. grading to a topography which reduces runoff and increases infiltration;

3. coverage by topsoil at a depth consistent with natural conditions at the site; and

4. seeding and planting with an erosion control seed mixture, followed by plantings of herbaceous and woody species appropriate to the site;

Not applicable.

g) When an applicant proposes mitigation either on-site or in the riverfront area within the same general area of the river basin, alteration may be allowed notwithstanding the criteria of 310 CMR 10.58(5)(c), (d), or (e) at a ratio in square feet of at least 2:1 of mitigation area to area of alteration not conforming to the criteria or an equivalent level of environmental protection where square footage is not a relevant measure. Alteration not conforming to the criteria shall begin at the riverfront area boundary. Mitigation may include off-site restoration of riverfront areas, conservation restrictions under M.G.L. c. 184, §§ 31 through 33 to preserve undisturbed riverfront areas that could be otherwise altered under 310 CMR 10.00, the purchase of development rights within the riverfront area, the restoration of bordering vegetated wetland, projects to remedy an existing adverse impact on the interests identified in M.G.L. c. 131, § 40 for which the applicant is not legally responsible, or similar activities undertaken voluntarily by the applicant which will support a determination by the issuing authority of no significant adverse impact. Preference shall be given to potential mitigation projects, if any, identified in a River Basin Plan approved by the Secretary of the Executive Office of Energy and Environmental Affairs.

Not applicable.

h) The issuing authority shall include a continuing condition in the Certificate of Compliance for projects under 310 CMR 10.58(5)(f) or (g) prohibiting further alteration within the restoration or mitigation area, except as may be required to maintain the area in its restored or mitigated condition. Prior to requesting the issuance of the Certificate of Compliance, the applicant shall demonstrate the restoration or mitigation has been successfully completed for at least two growing seasons.

No restoration area is proposed, so this standard does not apply.

Alternatives Analysis

The Applicant has explored alternate designs, locations and construction methods that would have varying economic and environmental impacts in order to determine the preferred design.

Alternative 1 (no-build): Alternative 1 explored the no-build option. The Site would remain unchanged and provide no improved economic benefit, improvements to stormwater runoff quality, reduction in impervious coverage or recharge opportunities. The Site would follow the current drainage patterns.

Alternative 2 (allowed per base zoning): Alternative 2 explored redeveloping the Site as allowed per the base zoning, the Route 1 Community Commercial sub-district of the West Roxbury Neighborhood District. Allowed uses include commercial uses such as retail/service and office. The site is in a difficult location to be successful as retail/restaurant, and as such, the As-of-Right alternative would likely consist of a single story office or commercial use. While some added treatment could be incorporated into the design, much of the existing drainage patterns, would remain, impervious coverage would not be reduced, and the additional landscaping would not be realized.

Alternative 3 (preferred option): As shown on the enclosed NOI Permit Drawings, the preferred layout reimagines property and constructs a new building with residential uses, along with associated parking areas, landscaping, stormwater management components, and utilities. The proposed redevelopment is fully-compliant with the Massachusetts Stormwater Management Standards and improves existing conditions on the site. It also provides much needed housing, including affordable units in a currently transitional location between industrial and residential areas; introduces street trees, widened sidewalks and other amenities to enhance the pedestrian landscape; and will encourage alternative modes of transport such as bicycles and Zipcars. Therefore, Alternative 3 is the preferred alternative.

Attachment B:
Figures and USGS Map

Figure 1. ***USGS Topographic Map***

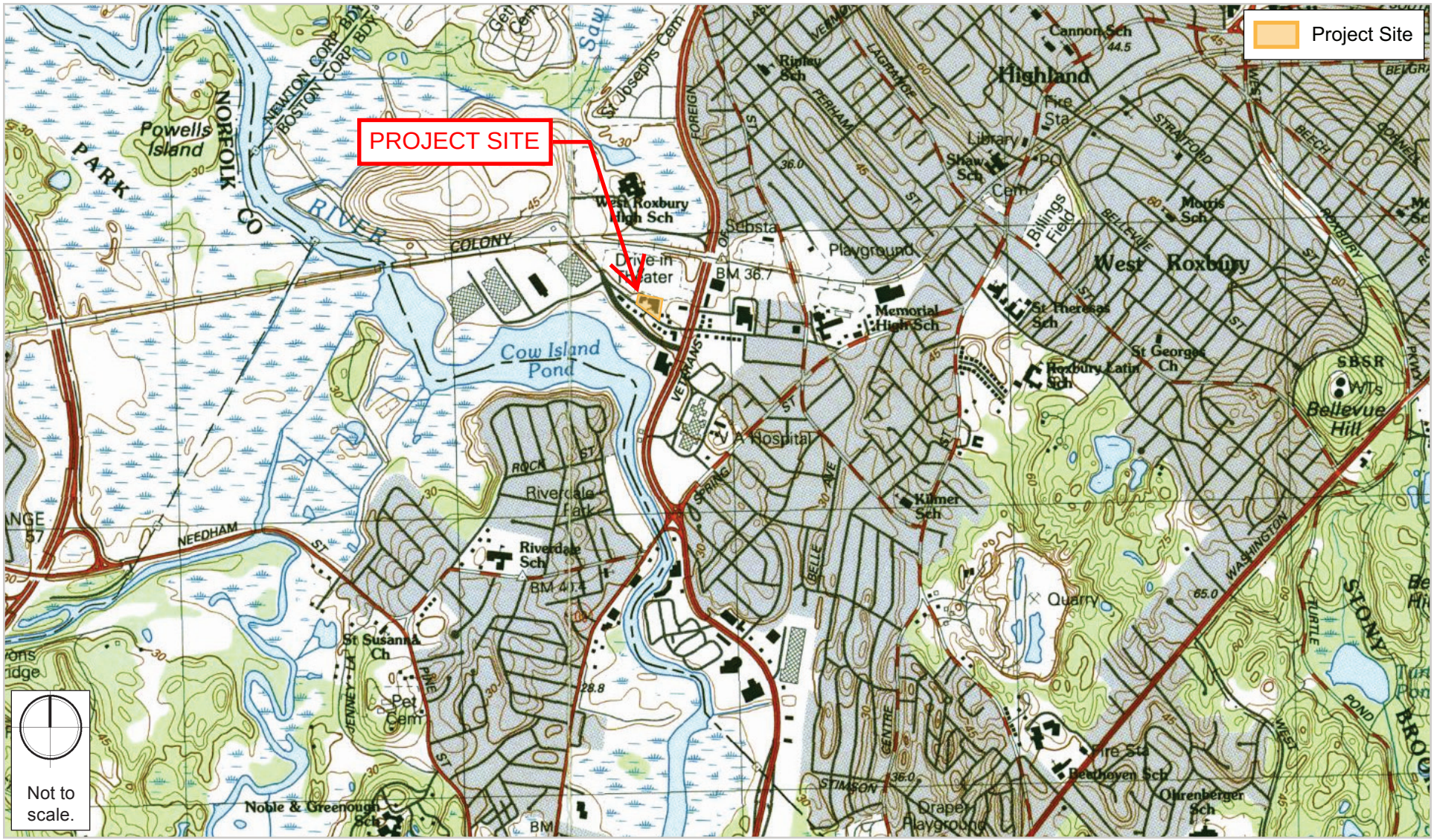


Figure 2. ***Locus Map***

Figure 3. ***FEMA Map***

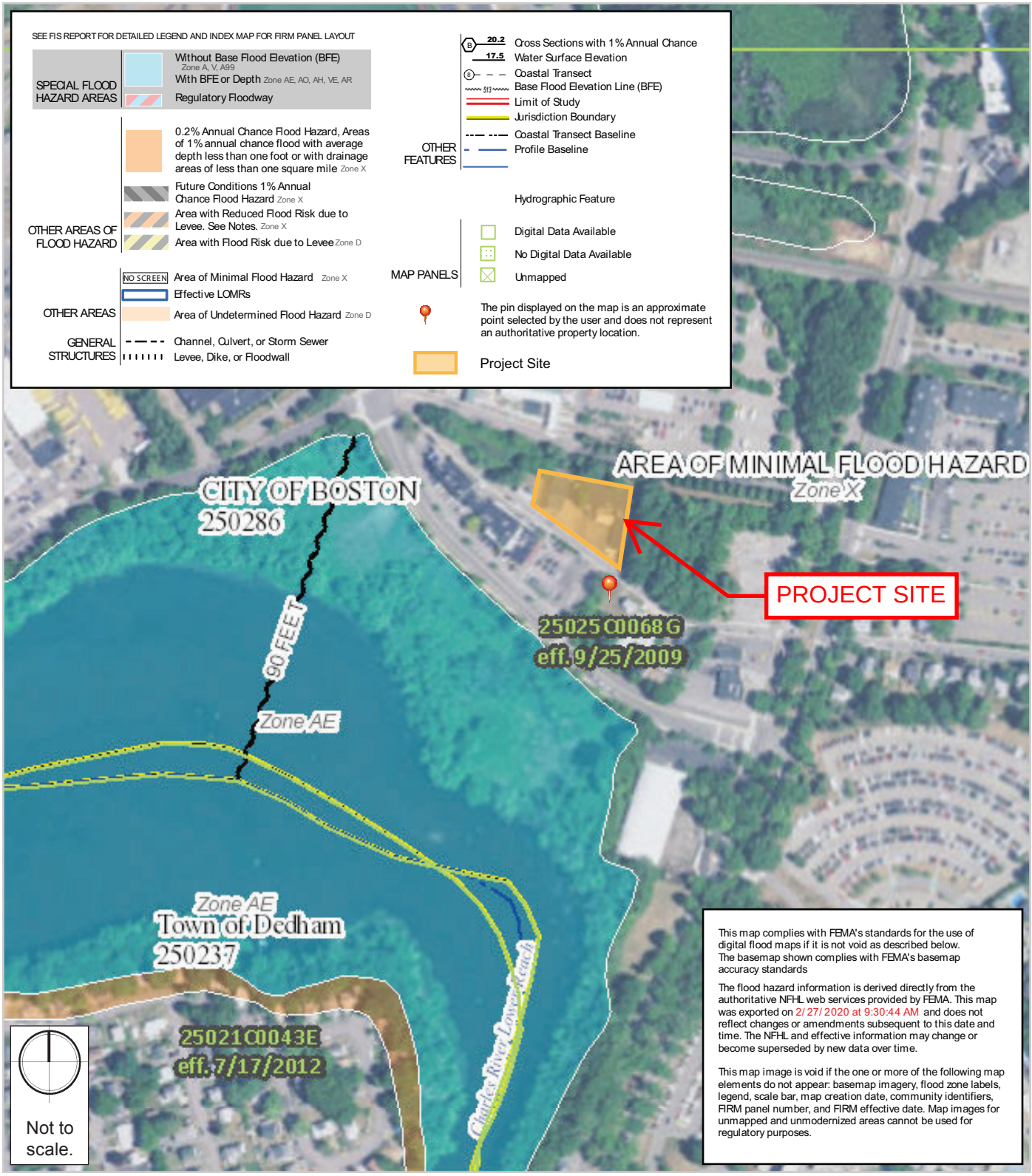
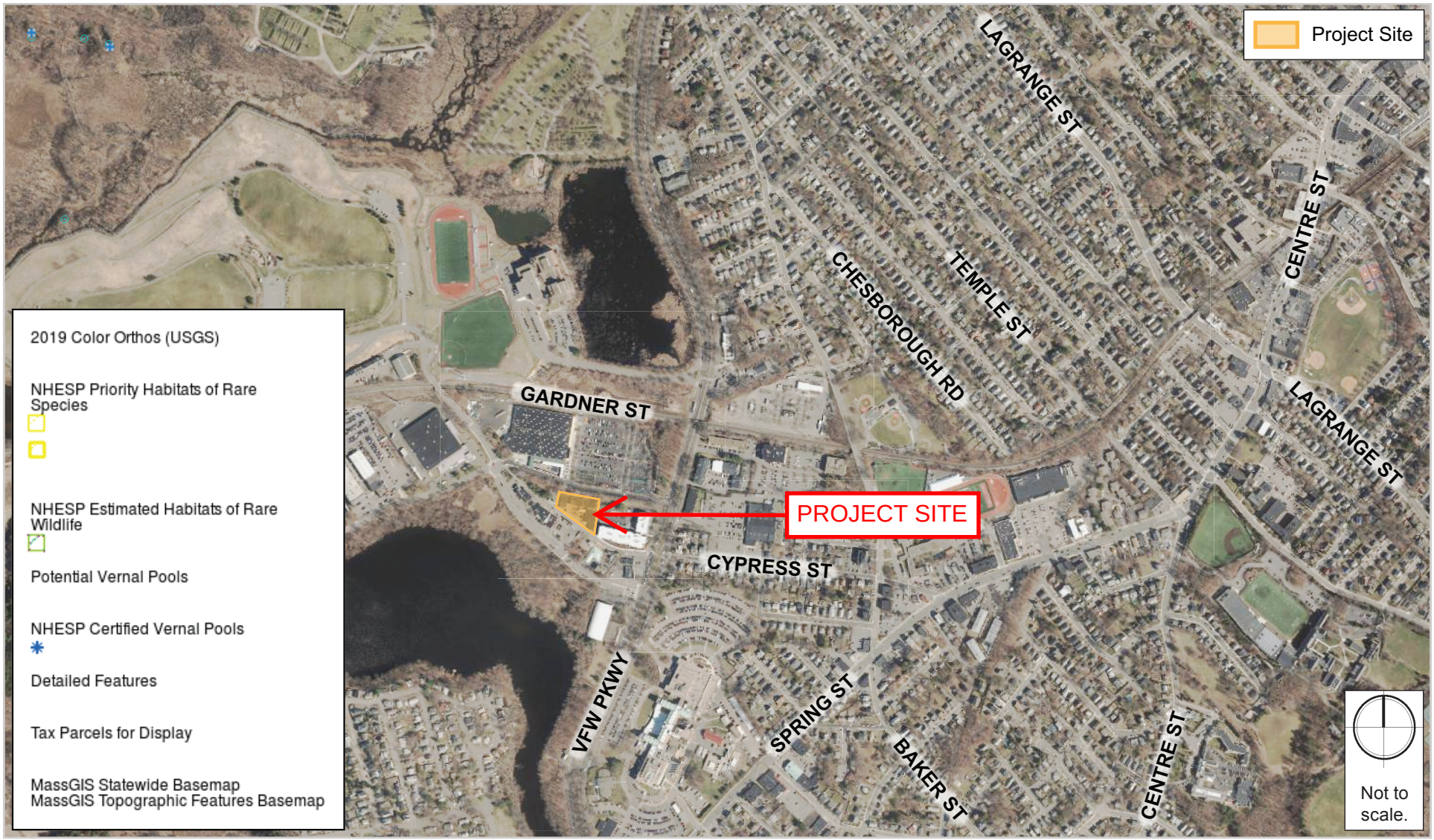


Figure 4. ***NHESP Map***



Attachment C:
Existing Site Photos

Existing Site Photos

189 Gardner Street Existing Parking Lot

197 Gardner Street Existing Building

View from Southeast Corner

View from Southwest Corner

Attachment D:
Abutter Notification Information

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. **CCR West Roxbury Apartments, 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 **189-197 Gardner Street, W. Roxbury, MA.**

C. The project involves**: demolition of the existing industrial buildings and associated paved areas to build a mid-rise apartment building with 70 residential units with associated paved access and parking, stormwater management systems, and proposed landscaping.**

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 **CCR West Roxbury Apartments, LLC,** between the hours of **9 AM and 5 PM, Monday through Friday. For more information, contact (508) 823-6303.**

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, tine, 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.

City of Boston
Environment

City of Boston
Mayor Martin J. Walsh

NOTIFICACIÓN PARA PROPIETARIOS Y/O VECINOS COLINDANTES

COMISIÓN DE CONSERVACIÓN DE BOSTON

De conformidad con la Ley de Protección de los Humedales de Massachusetts, Capítulo 131, Sección 40 de las Leyes Generales de Massachusetts y con 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. **CCR West Roxbury Apartments, LLC** ha presentado una solicitud a la Comisión de Conservación de Boston pidiendo permiso para modificar una zona sujeta a protección bajo 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 **199 GARDNER STREET, W. ROXBURY, MA.**

C. **EL PROYECTO CONSISTE EN REMOVER EDIFICIOS INDUSTRIALES Y CONSTRUIR UN EDIFICIO DE DEPARTAMENTOS DE CUATRO PISOS CON 70 UNIDADES RESIDENCIALES.**

D. Las copias de la notificación de Intención se pueden examinar en el Ayuntamiento de Boston entre las **9:00 am y las 5:00 pm, de lunes a viernes**. Para más información, puede comunicarse con la Comisión de Conservación de Boston yendo a: CC@boston.gov. o llamando al (617)635-3850.

E. Las copias de la notificación de intención pueden obtenerse del representante del solicitante en: **10 Commerce Blvd, Middleboro, MA 02346** entre las **9 AM y las 5 PM, 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 por Zoom, en https://zoom.us/j/6864582044. Si no puede acceder a Internet, puede llamar al 1-929-205- 6099, ingresar el ID de la 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, incluyendo la fecha, hora y lugar, se publicará en el **Boston Herald** con por lo menos cinco (5) días de anticipación.

NOTA: La notificación de la audiencia pública, incluyendo la fecha, hora y lugar, se publicará en www.boston.gov/public-notices y en el Ayuntamiento de Boston con por lo menos cuarenta y ocho (48) horas de anticipación. Si desea hacer comentarios, puede asistir a la audiencia pública o enviarlos por escrito a CC@boston.gov o al Departamento de Medio Ambiente del Ayuntamiento de Boston, Sala 709, en 1 City Hall Square, Boston, MA 02201.

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

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

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.

CITY of BOSTON

Cape Verdean Creole:

INPURTANTI! Es dukumentu ó aplikason ten **informason inpurtanti** sobri bu direitus, rasponsabilidadis i/ó benefísius. 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 فوائدك. 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.

CITY of BOSTON

AFFIDAVIT OF SERVICE
FOR ABUTTER NOTIFICATION

Under the Massachusetts Wetlands Protection Act
and Boston Wetlands Ordinance

I, Stephen Martorano, hereby certify under pains and penalties of perjury that that at least one week prior to the public hearing, I gave notice to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, section 40, and the DEP Guide to Abutter Notification dated April 8, 1994, in connection with the following matter:

A Notice of Intent was filed under the Massachusetts Wetlands Protection Act and/or the Boston Wetlands Ordinance by CCR West Roxbury Apartments, LLC for construction of a 70-unit residential building with associated paved access and parking, stormwater management and proposed landscaping located at 189-197 Gardner Street, West Roxbury.

The Abutter Notification For, the list of abutters to whom it was given, and their addresses are attached to this Affidavit of Service.

Name

6/4/2021
Date

Abutter Mailing List Generator --- City of Boston Assessing Department

Find Addresses

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16 18 GARDNER ST, 02119
164 GARDNER ST, 02132
165 GARDNER ST, 02132
175 GARDNER ST, 02132
178 GARDNER ST, 02132
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192 GARDNER ST, 02132
197 GARDNER ST, 02132
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PID	OWNER	ADDRESSEE	MLG_ADDRESS	MLG_CITYSTATE	MLG_ZIPC	LOC_ADDRESS	LOC_CITY	LOC_ZIPCC
2009216400	HOME DEPOT USA INC	HOME DEPOT USA INC	2455 PACES FERRY RD	ATLANTA GA	30339	1213 VFW PW	WEST ROXBURY	2132
2009217000	EAFD WEST ROXBURY LLC	EAFD WEST ROXBURY LLC	60 WILLIAM ST SUITE 220	WELLESLEY MA	2481	1235 VFW PW	WEST ROXBURY	2132
2009218000	EAFD WEST ROXBURY LLC	EAFD WEST ROXBURY LLC	60 WILLIAM ST SUITE 220	WELLESLEY MA	2481	VFW PW	WEST ROXBURY	2132
2009219000	EAFD WEST ROXBURY LLC	EAFD WEST ROXBURY LLC	60 WILLIAM ST SUITE 220	WELLESLEY MA	2481	165 GARDNER ST	WEST ROXBURY	2132
2009219001	EAFD WEST ROXBURY LLC	EAFD WEST ROXBURY LLC	60 WILLIAM ST SUITE 220	WELLESLEY MA	2481	175 GARDNER ST	WEST ROXBURY	2132
2009220000	GILLIS CHESTER D	GILLIS CHESTER D	189 GARDNER ST	WEST ROXBURY MA	2132	189 GARDNER ST	WEST ROXBURY	2132
2009221000	CASBY BROS INC MASS CORP	CASBY BROS INC MASS CORP	197 GARDNER	WEST ROXBURY MA	2132	197 GARDNER ST	WEST ROXBURY	2132
2009222001	GARLAND FAMILY IRREVOCABLE	GARLAND FAMILY IRREVOCABLE	211 GARDNER ST	WEST ROXBURY MA	2132	211 GARDNER ST	WEST ROXBURY	2132
2009223000	HOME DEPOT USA INC	HOME DEPOT USA INC	2455 PACES FERRY RD	ATLANTA GA	30339	GARDNER ST	WEST ROXBURY	2132
2009230000	COMMWLTH OF MASS	COMMWLTH OF MASS	1271 VFW PKWY	WEST ROXBURY MA	2132	1271 1375 VFW PW	WEST ROXBURY	2132
2009232000	SPENCER MARK N	SPENCER MARK N	1249 BEACON ST	BROOKLINE MA	2446	49 CHARLES PARK RD	WEST ROXBURY	2132
2009233000	COHEN LISA A	COHEN LISA A	1249 BEACON ST	BROOKLINE MA	2446	206 GARDNER ST	WEST ROXBURY	2132
2009234000	COHEN LISA A	COHEN LISA A	1249 BEACON ST	BROOKLINE MA	2446	45 CHARLES PARK RD	WEST ROXBURY	2132
2009235000	COHEN LISA A	COHEN LISA A	1249 BEACON ST	BROOKLINE MA	2446	192 GARDNER ST	WEST ROXBURY	2132
2009236000	GILLIS CHESTER D	GILLIS CHESTER D	189 GARDNER ST	WEST ROXBURY MA	2132	GARDNER ST	WEST ROXBURY	2132
2009237000	MCNEIL KEVIN L	MCNEIL KEVIN L	178 GARDNER ST	WEST ROXBURY MA	2132	178 GARDNER ST	WEST ROXBURY	2132
2009238000	ALIRAFIY LLC	ALIRAFIY LLC	250 HAMMOND POND PKWY 608 SO	CHESTNUT HILL MA	2467	5 CHARLES PARK RD	WEST ROXBURY	2132
2009239000	DANGER DEBORAH M TS	DANGER DEBORAH M TS	33 ETNA ST	BRIGHTON MA	2135	164 GARDNER ST	WEST ROXBURY	2132
2009239010	FIVE A-9 CHARLES PK CONDO TR	FIVE A-9 CHARLES PK CONDO TR	5-9 CHARLES PARK RD	WEST ROXBURY MA	2132	5 -9 CHARLES PARK RD	WEST ROXBURY	2132
2009239012	GU HONG CANG	GU HONG CANG	5A CHARLES PARK RD	WEST ROXBURY MA	2132	5 A 9 CHARLES PARK RD #5A	WEST ROXBURY	2132
2009239014	LI HONG SHAN	LI HONG SHAN	7 CHARLES PARK RD	WEST ROXBURY MA	2132	5 A 9 CHARLES PARK RD #7	WEST ROXBURY	2132
2009239016	PODOLSKY STEPHEN P	PODOLSKY STEPHEN P	9 CHARLES PARK RD	WEST ROXBURY MA	2132	5 A 9 CHARLES PARK RD #9	WEST ROXBURY	2132
2009240000	WHITE PARKWAY RLTY INC	WHITE PARKWAY RLTY INC	1245 VFW PKWY	WEST ROXBURY MA	2132	GARDNER ST	WEST ROXBURY	2132
2009240001	WHITE PARKWAY RLTY INC	WHITE PARKWAY RLTY INC	330 COMMONWEALTH AV	BOSTON MA	2115	1245 VFW PW	WEST ROXBURY	2132
2009240002	WHITE PARKWAY RLTY INC	WHITE PARKWAY RLTY INC	330 COMMONWEALTH AVE	BOSTON MA	2115	1249 VFW PW	WEST ROXBURY	2132

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2009219001	EAFD WEST ROXBURY LLC	EAFD WEST ROXBURY LLC	60 WILLIAM ST SUITE 220	WELLESLEY MA	2481	175 GARDNER ST	WEST ROXBURY	2132
2009220000	GILLIS CHESTER D	GILLIS CHESTER D	189 GARDNER ST	WEST ROXBURY MA	2132	189 GARDNER ST	WEST ROXBURY	2132
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2009223000	HOME DEPOT USA INC	HOME DEPOT USA INC	2455 PACES FERRY RD	ATLANTA GA	30339	GARDNER ST	WEST ROXBURY	2132
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2009232000	SPENCER MARK N	SPENCER MARK N	1249 BEACON ST	BROOKLINE MA	2446	49 CHARLES PARK RD	WEST ROXBURY	2132
2009233000	COHEN LISA A	COHEN LISA A	1249 BEACON ST	BROOKLINE MA	2446	206 GARDNER ST	WEST ROXBURY	2132
2009234000	COHEN LISA A	COHEN LISA A	1249 BEACON ST	BROOKLINE MA	2446	45 CHARLES PARK RD	WEST ROXBURY	2132
2009235000	COHEN LISA A	COHEN LISA A	1249 BEACON ST	BROOKLINE MA	2446	192 GARDNER ST	WEST ROXBURY	2132
2009236000	GILLIS CHESTER D	GILLIS CHESTER D	189 GARDNER ST	WEST ROXBURY MA	2132	GARDNER ST	WEST ROXBURY	2132
2009237000	MCNEIL KEVIN L	MCNEIL KEVIN L	178 GARDNER ST	WEST ROXBURY MA	2132	178 GARDNER ST	WEST ROXBURY	2132
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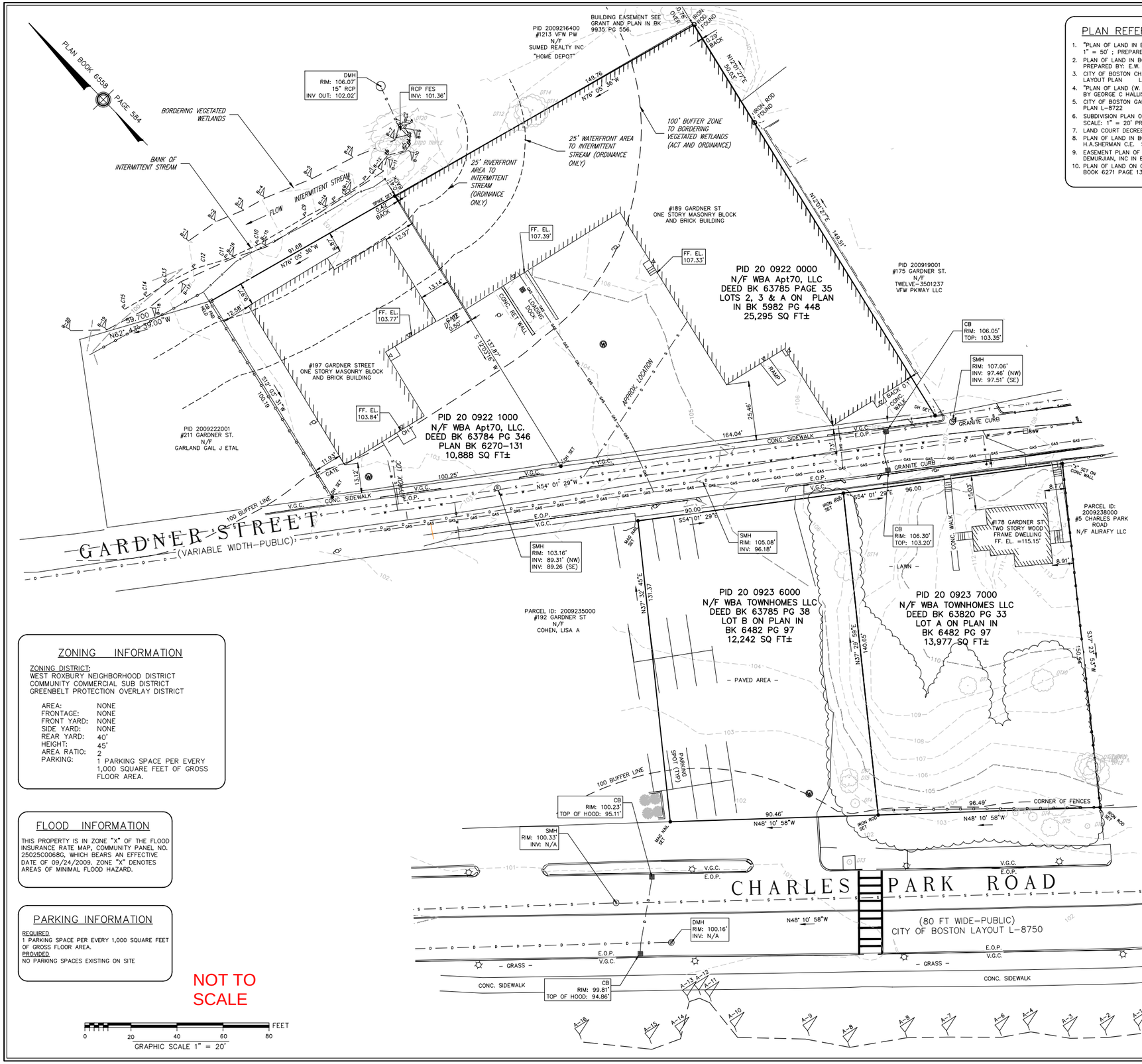
2009239000	DANGER DEBORAH M TS	DANGER DEBORAH M TS	33 ETNA ST	BRIGHTON MA	2135	164 GARDNER ST	WEST ROXBURY	2132

Attachment E:
NOI Permit Drawings



PLAN REFERENCES:

1. "PLAN OF LAND IN BOSTON, MASS (WEST ROXBURY DISTRICT)", DATED: MAY 14, 1974 SCALE: 1" = 50' ; PREPARED BY: ADES, INC.
2. PLAN OF LAND IN BOSTON, MASS WEST ROXBURY; DATED JULY 14, 1949; SCALE: 1' = 50' PREPARED BY: E.W. PILLING; LLC 27716-1, 27716-2 BK 6558 PG 584
3. CITY OF BOSTON CHARLES PARK ROAD WEST ROXBURY MAY 29, 1956 CITY OF BOSTON LAYOUT PLAN L-8750
4. "PLAN OF LAND (W. ROX) MASS", DATED FEBRUARY 15, 1947: SCALE: 1' = 15' PREPARED BY GEORGE C HALLISEY, SUR.
5. CITY OF BOSTON GARDNER STREET WEST ROXBURY APRIL 4, 1956 CITY OF BOSTON LAYOUT PLAN L-8722
6. SUBDIVISION PLAN OF LAND BOSTON, MASS WEST ROXBURY DISTRICT" DATED: JULY 30, 1966; SCALE: 1" = 20' PREPARED BY: A.A. MINICHIELLO, C.E.
7. LAND COURT DECREE PLAN NO. 22265A
8. PLAN OF LAND IN BOSTON MASS WEST ROXBURY DISTRICT SCALE 1 IN , 20 FT H.A.SHERMAN C.E. SEPT 1, 1945
9. EASEMENT PLAN OF LAND IN BOSTON, MA DATE DEC. 30, 1981, SCALE 1"=50' BY ALLEN & DEMURJIAN, INC IN BOOK 9935 PAGE 556 .
10. PLAN OF LAND ON GARDNER STREET WEST ROXBURY DATED OCT. 1946 BY E. CORSANO IN BOOK 6271 PAGE 131

ZONING INFORMATION

ZONING DISTRICT:
WEST ROXBURY NEIGHBORHOOD DISTRICT
COMMUNITY COMMERCIAL SUB DISTRICT
GREENBELT PROTECTION OVERLAY DISTRICT

AREA:	NONE
FRONTAGE:	NONE
FRONT YARD:	NONE
SIDE YARD:	NONE
REAR YARD:	40'
HEIGHT:	45'
AREA RATIO:	2
PARKING:	1 PARKING SPACE PER EVERY 1,000 SQUARE FEET OF GROSS FLOOR AREA.

FLOOD INFORMATION

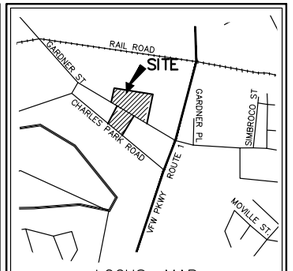
THIS PROPERTY IS IN ZONE "X" OF THE FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 25025C0068G, WHICH BEARS AN EFFECTIVE DATE OF 09/24/2009. ZONE "X" DENOTES AREAS OF MINIMAL FLOOD HAZARD.

PARKING INFORMATION

REQUIRED
1 PARKING SPACE PER EVERY 1,000 SQUARE FEET OF GROSS FLOOR AREA.
PROVIDED
NO PARKING SPACES EXISTING ON SITE

NOT TO SCALE

0 20 40 60 80 FEET
GRAPHIC SCALE 1" = 20'



LOCUS MAP
NOT TO SCALE

NOTES

1. ELEVATION BASED ON A BENCH MARK AT THE CORNER OF GARDNER ST AND VFW PARKWAY TAKEN FROM CITY OF BOSTON SURVEY BOOK 1450 PAGE 127.
2. THE UTILITIES AS SHOWN ON THIS DRAWING WERE DEVELOPED FROM THE INFORMATION AVAILABLE. THIS IS NOT IMPLIED NOR INTENDED TO BE THE COMPLETE INVENTORY OF UTILITIES IN THIS AREA. IT IS THE CLIENTS RESPONSIBILITY TO VERIFY THE LOCATION OF ALL UTILITIES (WHETHER SHOWN OR NOT) AND PROTECT SAID UTILITIES FROM ANY DAMAGE.

LEGEND

- IR fnd. — IRON ROD FOUND
- CBDH fnd. — CONCRETE BOUND/DRILL HOLE FOUND
- MONITORING WELL
- TELEPHONE MANHOLE
- ELECTRIC MANHOLE
- SEWER MANHOLE
- REMAINS MANHOLE
- BOSTON WATER WORKS HANDHOLE
- WATER GATE ROUNDED
- GAS GATE ROUNDED
- GAS GATE SQUARE
- FIRE HYDRANT
- GUY WIRE
- UTILITY POLE
- FLOOD LAMP
- CATCH BASIN
- TRAFFIC SIGN
- E — UNDER GROUND ELECTRIC LINE
- T — UNDER GROUND TELEPHONE LINE
- W — UNDER GROUND WATER LINE
- GAS — UNDER GROUND GAS LINE
- S — SEWER LINE
- WOOD/VINYL STOCKADE FENCE
- CHAIN LINK FENCE
- SPOT ELEVATION
- DOOR
- WETLAND FLAG
- STREET LIGHT
- VGC — VERTICAL GRANITE CURB
- EOP — EDGE OF PAVEMENT
- CB — CONCRETE BOUND
- DH — DRILL HOLE

THIS MAPPING IS MADE FOR THE PARTY NAMED HEREON, HIS OR HER MORTGAGEE AND GUARANTOR, EXCLUSIVELY: NO FURTHER LIABILITY IS ASSUMED.

EXISTING CONDITIONS PLAN

178, (186), 189,197
GARDNER STREET
WEST ROXBURY, MASS

PREPARED FOR
West Brighton
Acquisitions, LLC.

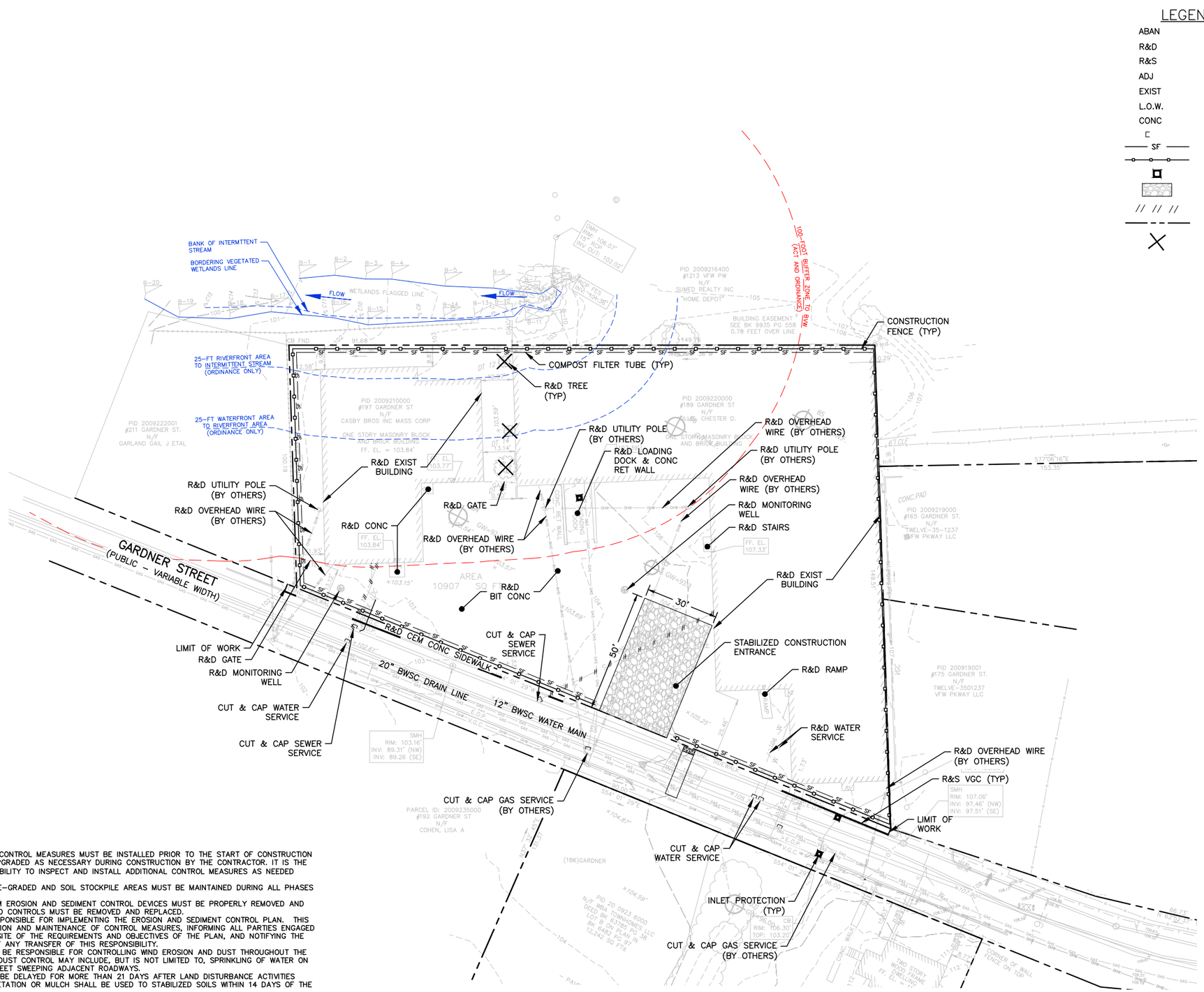
GRADY CONSULTING, L.L.C.
Civil Engineers, Land Surveyors & Landscape Architects
71 Evergreen Street, Suite 1, Kingston, MA 02364
Phone (781) 585-2300 Fax (781) 585-2378

COMMONWEALTH OF MASSACHUSETTS
TIMOTHY R. BENNETT
No.38556
REGISTERED PROFESSIONAL LAND SURVEYOR

REVISIONS	
SEPTEMBER 15, 2020	TITLE COMMENTS, PIC EASMENT
SEPTEMBER 16, 2020	PIC EASEMENTS
DECEMBER 21, 2020	UPDATE OWNERS
MARCH 19, 2021	UPDATE STREAM & BUFFERS

DRAWN BY: MRK
CHECK BY: TRB
JOB # 20-327

DATE: FEB. 11, 2021
SCALE: 1" = 20'
SHEET NO. 1 OF 1



LEGEND

ABAN	ABANDON
R&D	REMOVE & DISPOSE
R&S	REMOVE & STACK
ADJ	ADJUST
EXIST	EXISTING
L.O.W.	LIMIT OF WORK
CONC	CONCRETE
⊏	CUT & CAP UTILITY LINE
SF	COMPOST FILTER TUBE
	TEMPORARY CONSTRUCTION FENCE
	CATCH BASIN FILTER
	ROCK CONSTRUCTION ENTRANCE
// // //	ABANDON
	PROPERTY LINE
	R&D TREE & STUMP

NOTES:

1. EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO THE START OF CONSTRUCTION AND MAINTAINED AND UPGRADED AS NECESSARY DURING CONSTRUCTION BY THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND INSTALL ADDITIONAL CONTROL MEASURES AS NEEDED DURING CONSTRUCTION.
2. STABILIZATION OF ALL RE-GRADED AND SOIL STOCKPILE AREAS MUST BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION.
3. SEDIMENT REMOVED FROM EROSION AND SEDIMENT CONTROL DEVICES MUST BE PROPERLY REMOVED AND DISPOSED. ALL DAMAGED CONTROLS MUST BE REMOVED AND REPLACED.
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5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING WIND EROSION AND DUST THROUGHOUT THE LIFE OF HIS CONTRACT. DUST CONTROL MAY INCLUDE, BUT IS NOT LIMITED TO, SPRINKLING OF WATER ON EXPOSED SOILS AND STREET SWEEPING ADJACENT ROADWAYS.
6. IF FINAL GRADING IS TO BE DELAYED FOR MORE THAN 21 DAYS AFTER LAND DISTURBANCE ACTIVITIES CEASE, TEMPORARY VEGETATION OR MULCH SHALL BE USED TO STABILIZED SOILS WITHIN 14 DAYS OF THE LAST DISTURBANCE.
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8. THE CONTRACTOR MUST KEEP ON-SITE AT ALL TIMES ADDITIONAL COMPOST FILTER TUBES AND/OR SILT FENCE FOR THE INSTALLATION AT THE DIRECTION OF THE ENGINEER OR CONSERVATION COMMISSION TO MITIGATE ANY EMERGENCY CONDITION.
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10. DEMOLITION AND CONSTRUCTION DEBRIS MUST BE PROPERLY CONTAINED AND DISPOSED OF.
11. DISPOSAL OF ALL DEMOLISHED MATERIALS IS THE RESPONSIBILITY OF THE CONTRACTOR AND MUST BE HAULED OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE AND LOCAL REQUIREMENTS.

NOT TO SCALE

20 0 20 40
SCALE IN FEET

PROJECT NAME
West Roxbury Residences

PROJECT ADDRESS
199 Gardner Street West
Roxbury, MA

CLIENT
WEST BRIGHTON ACQUISITIONS LLC

ARCHITECT
DESIGN KHALSA
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143
TELEPHONE: 617-591-8682 FAX: 617-591-2086

CONSULTANTS:
HOWARD STEIN HUDSON
11 Beacon Street, Suite 1010
Boston, MA 02108
www.hshassoc.com

REGISTRATION
COMMONWEALTH OF MASSACHUSETTS — GEORGE MIHOV — CIVIL — NO. 49598 — REGISTERED PROFESSIONAL ENGINEER

Project number	18111
Date	08/18/2020
Drawn by	MGB
Checked by	REL
Scale	1"=20'

REVISIONS

No.	Description	Date
1	PROGRESS SET - DRAFT	10.02.2020
2	NOI PERMIT SET	02.17.2021
3	NOI SET REVISED	03.24.2021

199 Gardner Street - Site Preparation Plan

C-100

West Roxbury Residences

Last Saved by: GM/HOV
Printed by: George Mihov

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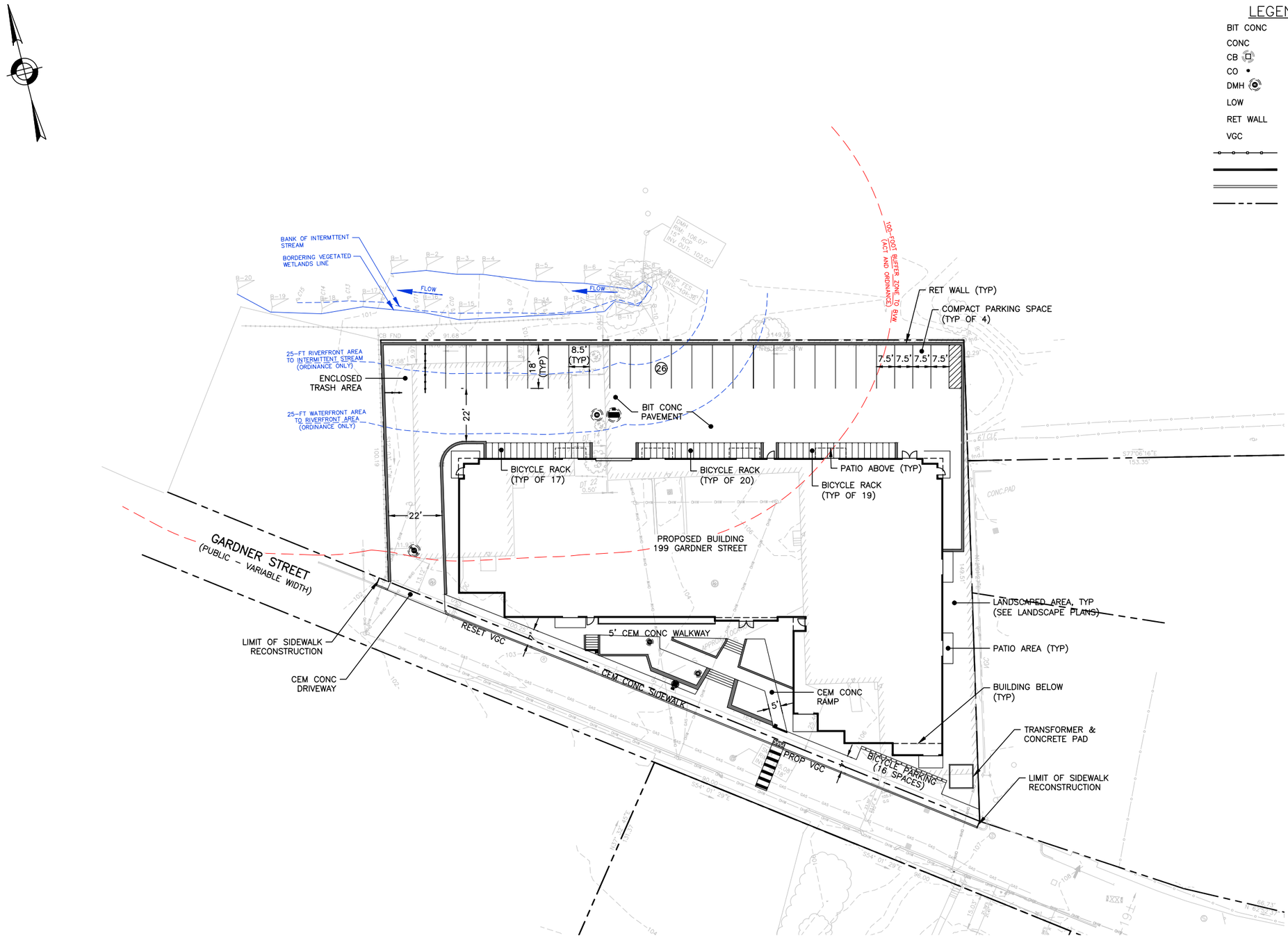

PROJECT NAME

West Roxbury Residences

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199 Gardner Street West
Roxbury, MA

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KHALSA DESIGN

17 IVALOO STREET SUITE 400
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REVISIONS

No.	Description	Date
1	PROGRESS SET - DRAFT	10.02.2020
2	NOI PERMIT SET	02.17.2021
3	NOI SET REVISED	03.24.2021

199 Gardner Street - Site Layout Plan

C-200

West Roxbury Residences

Last Saved by: GMIHOV
Printed by: George Mihov

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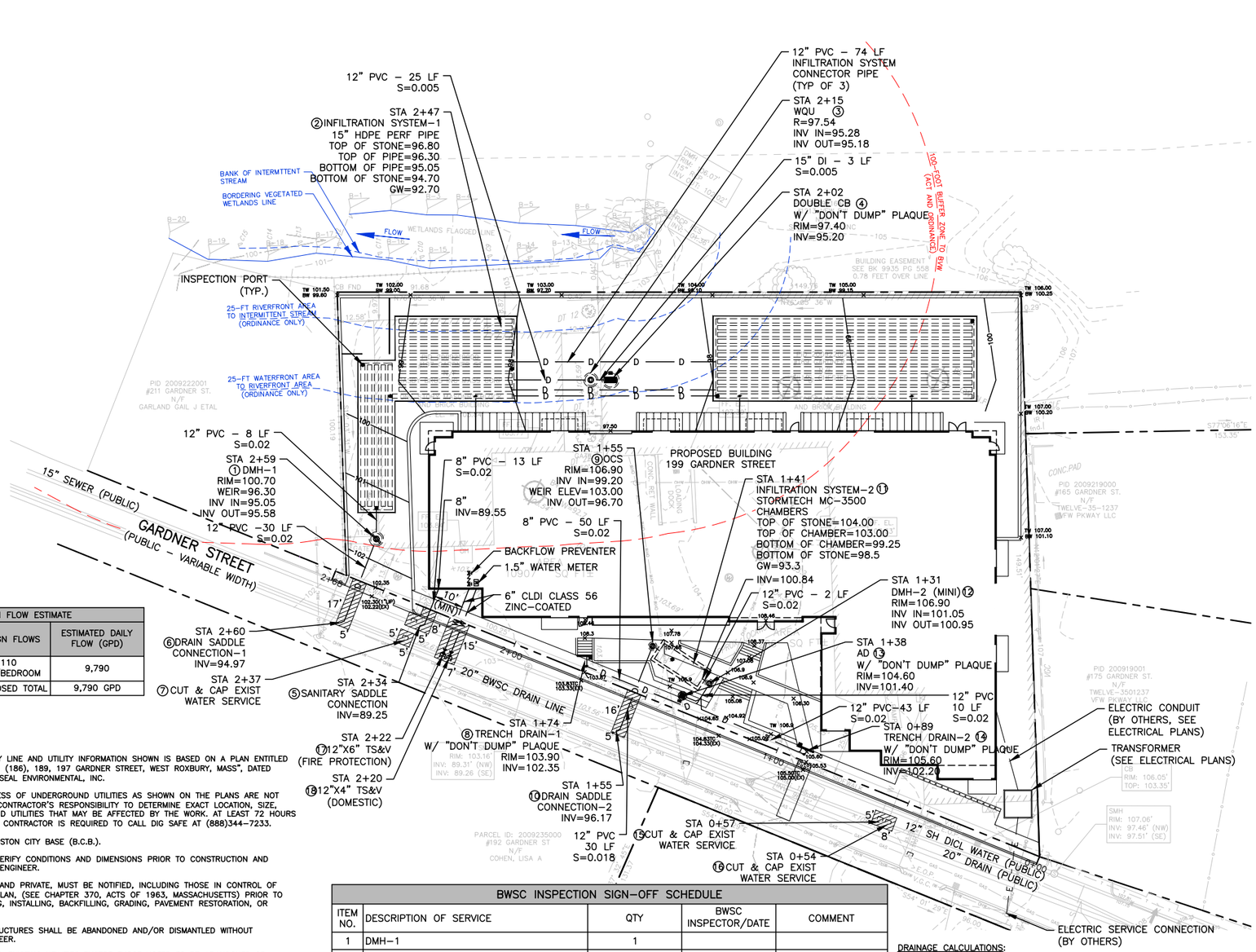

LEGEND

CLDI	CEMENT–LINED DUCTILE IRON
EXIST	EXISTING
HDPE	HIGH–DENSITY POLYETHYLENE
INV	INVERT
LF	LINEAR FEET
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN
S	SLOPE
TC/BC	TOP OF CURB/BOTTOM OF CURB
TS&V	TAPPING SLEEVE & VALVE
WQU	WATER QUALITY UNIT
AD	AREA DRAIN
CB	CATCH BASIN
CO	CLEANOUT
DMH	DRAIN MANHOLE
GV	GATE VALVE
HYD	HYDRANT
OCS	OUTLET CONTROL STRUCTURE
SMH	SEWER MANHOLE
D	STORM DRAIN
E	ELECTRIC DUCTBANK
G	GAS LINE
S	SANITARY SEWER
T	TELECOMMUNICATIONS DUCTBANK
W	WATER LINE
	PROPERTY LINE

NOT TO SCALE

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SCALE IN FEET

SEWER GENERATION FLOW ESTIMATE			
USE	QUANTITY	DESIGN FLOWS	ESTIMATED DAILY FLOW (GPD)
RESIDENTIAL	89 BEDROOMS	110 GPD/BEDROOM	9,790
		PROPOSED TOTAL	9,790 GPD

BWSC SITE PLAN#: 20479

OWNER:
WEST BRIGHTON ACQUISITIONS, LLC
C/O PETER V. DAVOS
94 GRAYFIELD AVENUE
WEST ROXBURY, MA 02109

TELEPHONE: (617) 719–8668

PROPERTY ADDRESSES:
189–197 GARDNER STREET
WEST ROXBURY, MASSACHUSETTS 02132
WARD: 20
PARCEL: 2009210000 & 2009220000

LAND USE CODE: WEST ROXBURY NEIGHBORHOOD COMMUNITY COMMERCIAL

EXISTING WATER ACCOUNTS:
189 GARDNER STREET – WATER ACCOUNT#:
WATER METER #: 03012197

197 GARDNER STREET – WATER ACCOUNT #:
WATER METER #: 03026201

ESTIMATE WASTEWATER FLOW: 9,790 GPD

PROJECT SITE AREA: 0.83 ACRES

FOR BWSC USE ONLY

GENERAL NOTES

1. EXISTING TOPOGRAPHIC, PROPERTY LINE AND UTILITY INFORMATION SHOWN IS BASED ON A PLAN ENTITLED "EXISTING CONDITIONS PLAN, 178, (186), 189, 197 GARDNER STREET, WEST ROXBURY, MASS", DATED 10/03/18 PREPARED BY GREEN SEAL ENVIRONMENTAL, INC.
2. THE ACCURACY AND COMPLETENESS OF UNDERGROUND UTILITIES AS SHOWN ON THE PLANS ARE NOT GUARANTEED. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE EXACT LOCATION, SIZE, TYPE, ETC. OF ALL UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY THE WORK. AT LEAST 72 HOURS BEFORE EXCAVATION BEGINS THE CONTRACTOR IS REQUIRED TO CALL DIG SAFE AT (888)344–7233.
3. ELEVATIONS SHOWN REFER TO BOSTON CITY BASE (B.C.B.).
4. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS AND DIMENSIONS PRIOR TO CONSTRUCTION AND REPORT ANY DISCREPANCIES TO ENGINEER.
5. ALL UTILITY COMPANIES, PUBLIC AND PRIVATE, MUST BE NOTIFIED, INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN, (SEE CHAPTER 370, ACTS OF 1963, MASSACHUSETTS) PRIOR TO DESIGNING, EXCAVATING, BLASTING, INSTALLING, BACKFILLING, GRADING, PAVEMENT RESTORATION, OR REPAVING.
6. NO EXISTING PUBLIC UTILITY STRUCTURES SHALL BE ABANDONED AND/OR DISMANTLED WITHOUT AUTHORIZATION FROM THE ENGINEER.
7. CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES EXCEPT THOSE NOTED TO BE ABANDONED OR REMOVED & DISPOSED.
8. THE CONTRACTOR SHALL DISPOSE OF ALL WASTE MATERIAL IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS AT HIS OWN EXPENSE, OUTSIDE OF THE PROJECT LIMITS.
9. ALL WATER, SEWER, AND DRAIN WORK SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS AND STANDARD DETAILS OF THE BOSTON WATER AND SEWER COMMISSION.
10. BWSC OPERATIONS (617–989–7276) MUST BE NOTIFIED 48 HOURS IN ADVANCE PRIOR TO THE INSTALLATION OF WATER AND FIRE SERVICES AND, IF NEEDED, SHUTTING DOWN OF THE MAIN.
11. A PREREQUISITE FOR FILING A GENERAL SERVICE APPLICATION WITH THE BOSTON WATER AND SEWER COMMISSION FOR NEW CONSTRUCTION IS THE ROUGH CONSTRUCTION SIGN–OFF DOCUMENT FROM THE CITY OF BOSTON'S INSPECTIONAL SERVICES DEPARTMENT.
12. IF WATER USE FROM HYDRANT IS PROPOSED THE CONTRACTOR MUST APPLY FOR A HYDRANT METER PERMIT FROM THE BWSC AND PAY ALL COSTS INCLUDING DEPOSIT, RENTAL, AND WATER USAGE FEES.
13. ALL CONSTRUCTION WORK PERFORMED ON THE BWSC'S UTILITIES MUST BE INSPECTED BY A BWSC CONSTRUCTION INSPECTOR. AS–BUILT PLANS SHALL BE SUBMITTED TO THE BWSC FOLLOWING THE COMPLETION OF THE INSTALLATIONS. THE CONTRACTOR SHALL PREPARE AS–BUILT PLAN (ELECTRONICALLY) OF THE UTILITY SYSTEM WORK FOR SUBMITTAL TO BWSC, AND IS INCIDENTAL TO THE WORK.
14. ANY CONSTRUCTION DEWATERING REQUIRES A DRAINAGE DISCHARGE PERMIT FROM THE BWSC AND A NPDES PERMIT FROM THE EPA.
15. CONTRACTOR MUST PAY ALL FEES AND PERMITS.
16. ALL METER INSTALLATIONS REQUIRE THE INSTALLATION OF A METER TRANSMISSION UNIT (MTU) AS PART OF BWSC'S AUTOMATIC READING (AMR) SYSTEM.
17. SANITARY SEWER AND STORM DRAINS MUST BE A MINIMUM OF 10 FEET APART FROM ANY NEW OR EXISTING WATER SERVICES.
18. PIPE MATERIALS (UNLESS OTHERWISE NOTED)
    STORM DRAIN: SDR–35 PVC
    SANITARY SEWER: SDR–35 PVC
    WATER PIPE: CLDI CLASS 56 (ZINC COATED)

BWSC INSPECTION SIGN–OFF SCHEDULE				
ITEM NO.	DESCRIPTION OF SERVICE	QTY	BWSC INSPECTOR/DATE	COMMENT
1	DMH–1	1		
2	INFILTRATION SYSTEM–1	1		
3	WQU	1		
4	DOUBLE INLET CB	1		
5	SANITARY SADDLE CONNECTION	1		
6	DRAIN SADDLE CONNECTION–1	1		
	DYE TEST			
7	CUT & CAP WATER SERVICE	1		
8	TRENCH DRAIN–1	1		
9	OCS	1		
10	DRAIN SADDLE CONNECTION–2	1		
	DYE TEST			
11	INFILTRATION SYSTEM–2	1		
12	DMH–2 (MINI)	1		
13	AD	1		
14	TRENCH DRAIN–2	1		
15	CUT & CAP WATER SERVICE	1		
16	CUT & CAP WATER SERVICE	1		
17	6" FIRE PROTECTION SERVICE CONNECTION	1		
18	4" DOMESTIC SERVICE CONNECTION	1		
	DYE TEST			
	"DO NOT DUMP" PLAQUE	4		
	"DO NOT DUMP" PLAQUE			

DRAINAGE CALCULATIONS:

LOT AREA=36,194 SF
POST CONSTRUCTION IMPERVIOUS AREA =31,239 SF
REQUIRED INFILTRATION VOLUME =1/12xIMPERVIOUS AREA
=1/12x31,239=2,603.0 CF

PROPOSED INFILTRATION VOLUME=3,795.4+402.6 = 4,198.0 CF > 2,603.0 CF

INFILTRATION SYSTEM–1 INFILTRATION VOLUME
=2,172.0+1,623.4=3,795.4 CF

PIPE LENGTH EAST = 12x90 =1,080 LF
PIPE LENGTH WEST = 12x40+5x50=730 LF
TOTAL PIPE LENGTH = 1,810.0 LF
UNIT PIPE VOLUME = 1.2 CF/LF
TOTAL PIPE VOLUME = 1,810.0x1.2=2,172.0 CF

STONE STORAGE
STONE STORAGE=(STONE VOLUME–PIPE VOLUME) x VOID RATIO
EAST= (93.2x30.0x1.58–1,296.0)x0.3=936.5 CF
WEST= (43.2x30.0x1.58+53.8x13.15x1.58–876)x0.3= 686.8 CF
TOTAL STONE VOLUME = 1,623.4 CF

INFILTRATION SYSTEM–2 INFILTRATION VOLUME
=249.7+152.9=402.6 CF

CHAMBER STORAGE
STORMTECH MC3500 CHAMBERS
=# OF CHAMBERS X CHAMBER VOLUME + # OF END CAPS X END CAP VOLUME
=(2X110) + (2X14.9)
=249.7 CF

STONE STORAGE
=(L X W X H) – CHAMBER VOLUME X 30% VOIDS
=[(20.04X8.42X4.50) – 249.7] x 0.30
=152.9 CF

PROJECT NAME
West Roxbury Residences

PROJECT ADDRESS
199 Gardner Street West Roxbury, MA

CLIENT
WEST BRIGHTON ACQUISITIONS LLC

ARCHITECT
KHALSA DESIGN
17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143
TELEPHONE: 617-591-8682 FAX: 617-591-2086

CONSULTANTS:
HOWARD STEIN HUDSON
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Boston, MA 02108
www.hshassoc.com

REGISTRATION
COMMONWEALTH OF MASSACHUSETTS GEORGIE MIHOV CIVIL NO. 48098 REGISTERED PROFESSIONAL ENGINEER

Project number	18111
Date	08/18/2020
Drawn by	MGB
Checked by	REL
Scale	1"=20'

REVISIONS

No.	Description	Date
1	PROGRESS SET - DRAFT	10.02.2020
2	NOI PERMIT SET	02.17.2021
3	NOI SET REVISED	03.24.2021

199 Gardner Street - Site Grading & Utilities Plan

C-300

West Roxbury Residences

Last Saved by: GMIHOV
Printed by: Georgia Mihov

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EROSION & SEDIMENT CONTROL NOTES:

1. EROSION AND SEDIMENT CONTROL MEASURES MUST BE INSTALLED PRIOR TO THE START OF CONSTRUCTION AND MAINTAINED AND UPGRADED AS NECESSARY DURING CONSTRUCTION BY THE CONTRACTOR. IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND INSTALL ADDITIONAL CONTROL MEASURES AS NEEDED DURING CONSTRUCTION.
2. ALL CATCH BASINS RECEIVING DRAINAGE FROM THE PROJECT SITE MUST BE PROVIDED WITH A CATCH BASIN FILTER.
3. STABILIZATION OF ALL RE-GRADED AND SOIL STOCKPILE AREAS MUST BE MAINTAINED DURING ALL PHASES OF CONSTRUCTION.
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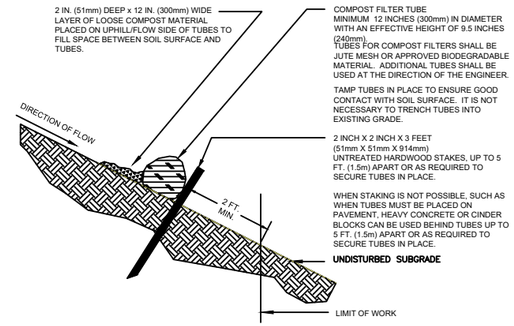
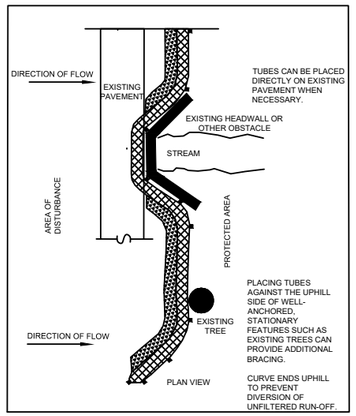
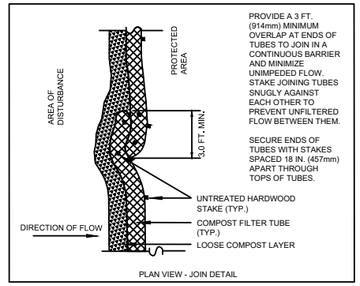


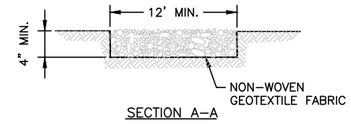


SINGLE COMPOST FILTER TUBE DETAIL
NOT TO SCALE

GENERAL NOTES:
1. PROVIDE A MINIMUM TUBE DIAMETER OF 12 INCHES (300mm) FOR SLOPES UP TO 50 FEET (15.24m) IN LENGTH WITH A SLOPE RATIO OF 3H:1V OR STEEPER. LONGER SLOPES OF 3H:1V MAY REQUIRE LARGER TUBE DIAMETER OR ADDITIONAL COURSING OF FILTER TUBES TO CREATE A FILTER BERM. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SITUATIONS WITH LONGER OR STEEPER SLOPES.
2. INSTALL TUBES ALONG CONTOURS AND PERPENDICULAR TO SHEET OR CONCENTRATED FLOW.
3. DO NOT INSTALL IN PERENNIAL, EPHEMERAL OR INTERMITTENT STREAMS.
4. CONFIGURE TUBES AROUND EXISTING SITE FEATURES TO MINIMIZE SITE DISTURBANCE AND MAXIMIZE CAPTURE AREA OF STORMWATER RUN-OFF.



PLAN VIEW - JOIN DETAIL



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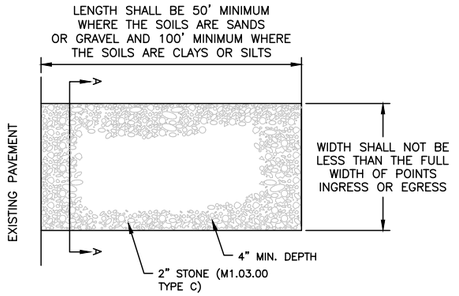
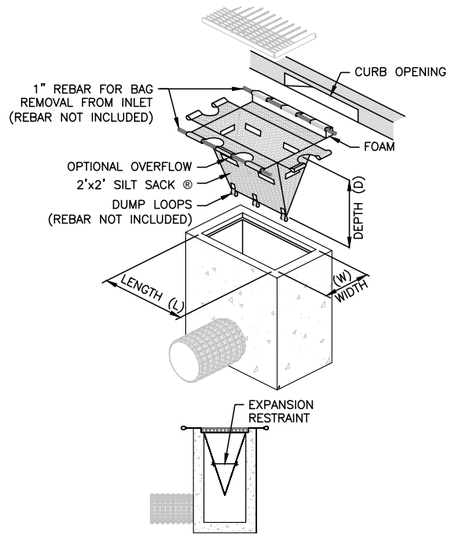


PLAN

NOTES:

1. INSTALLATION: THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIAL. THE GRAVEL SHALL BE PLACED TO THE SPECIFIED DIMENSIONS NOTED ABOVE.
2. MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENTS ONTO PUBLIC RIGHT-OF-WAYS. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE, OR ADDITIONAL LENGTH, AS CONDITIONS DEMAND, AND REPAIR, AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.
3. LOCATION: SEE C1.0 FOR LOCATION OF CONSTRUCTION ENTRANCES.

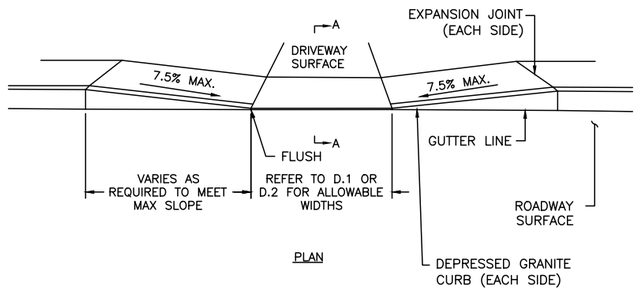
ROCK CONSTRUCTION ENTRANCE
NOT TO SCALE



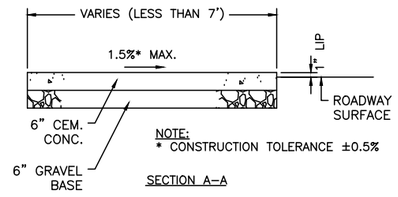
SIDE VIEW INSTALLED

CATCH BASIN FILTER

TEMPORARY INLET PROTECTION
NOT TO SCALE



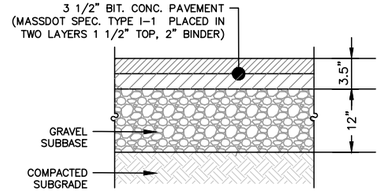
PLAN



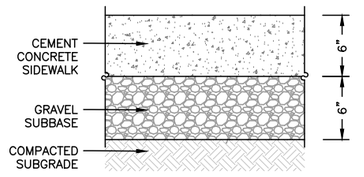
NOTE:
* CONSTRUCTION TOLERANCE ±0.5%

SECTION A-A

DRIVEWAY - SIDEWALK WIDTH LESS THAN 7'
NOT TO SCALE



BITUMINOUS CONCRETE PAVEMENT
NOT TO SCALE



NOTES:

1. CONCRETE SIDEWALK DETAIL AND NOTES APPLY TO SIDEWALK WITHIN THE RIGHT-OF-WAY.
2. CONCRETE SHALL BE 4,000 PSI.
3. SIDEWALKS ARE TO BE RAKED FINISH WITH 3/8 INCH TROWEL JOINTS.

CEM CONC SIDEWALK SECTION DETAIL
NOT TO SCALE

PROJECT NAME
West Roxbury Residences

PROJECT ADDRESS
199 Gardner Street West
Roxbury, MA

CLIENT
WEST BRIGHTON ACQUISITIONS LLC

ARCHITECT
KHALSA DESIGN
17 IVALOO STREET SUITE 400
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TELEPHONE: 617-591-8682 FAX: 617-591-2086

CONSULTANTS:
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REGISTRATION
COMMONWEALTH OF MASSACHUSETTS
RICHARD E. LATINI
CIVIL
No. 41093
REGISTERED PROFESSIONAL ENGINEER

Project number	18111
Date	08/18/2020
Drawn by	MGB
Checked by	REL
Scale	N.T.S.

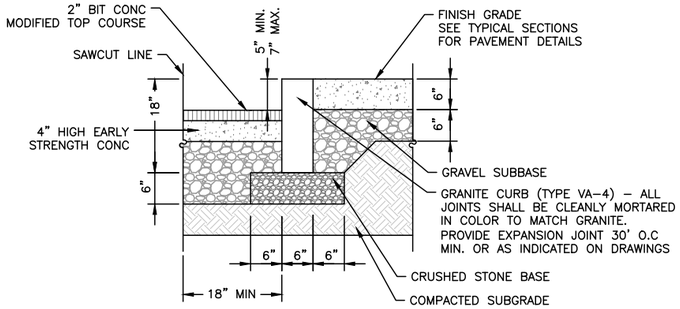
REVISIONS

No.	Description	Date
1	PROGRESS SET - DRAFT	10.02.2020
2	NOI PERMIT SET	02.17.2021

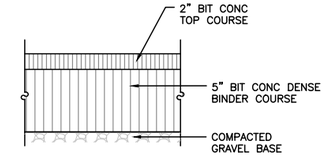
199 Gardner Street - Site Details

C-400

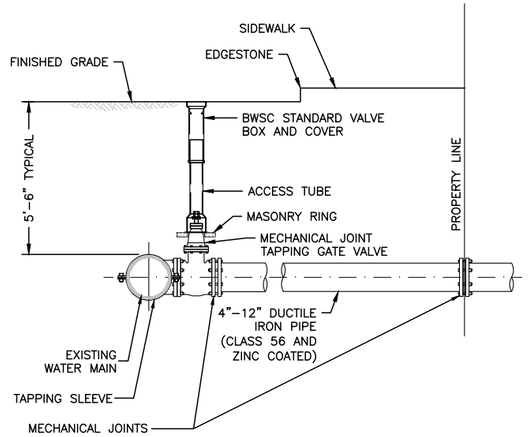
West Roxbury Residences



VERTICAL GRANITE CURB AT STREET
NOT TO SCALE



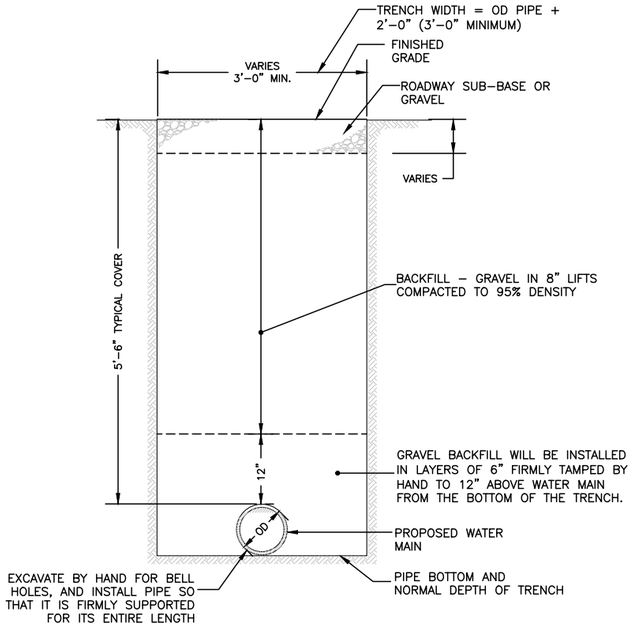
TRENCH PATCH DETAIL
NOT TO SCALE



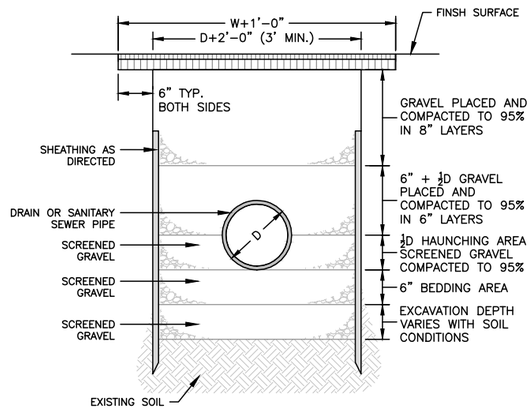
NOTES:

1. CONCRETE THRUST BLOCK TO BE USED ONLY WHERE IT WILL BEAR ON UNDISTURBED EARTH.
2. USE RESTRAINED JOINT FITTINGS OR TIE RODS WHERE CONCRETE THRUST BLOCK IS UNACCEPTABLE.
3. SIZE OF BLOCK OR MEGALUG TO BE DESIGNED FOR SPECIFIC CONDITIONS.

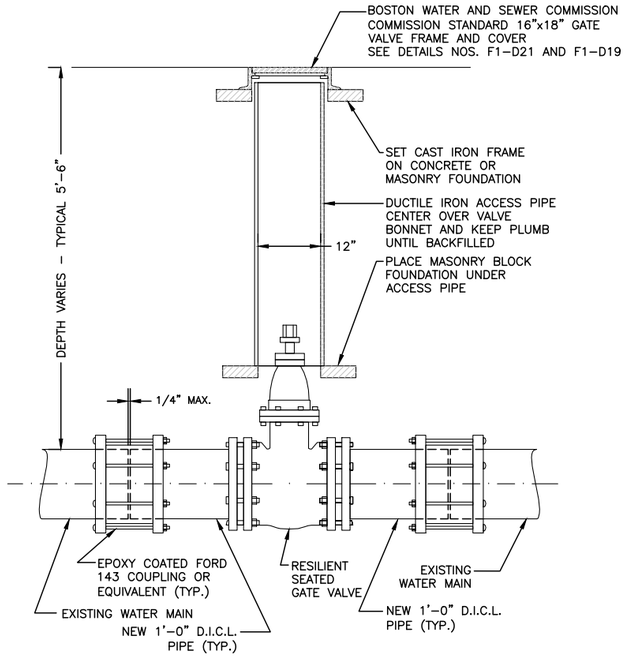
TAPPING SLEEVE & VALVE (A-09)
NOT TO SCALE



TRENCH DETAIL - WATER MAIN (A-05)
NOT TO SCALE



TRENCH DETAIL - DRAIN
& SANITARY SEWER
NOT TO SCALE



NOTE:

1. ALL EXCAVATION AND BACKFILLING AND PAVING SHALL BE IN ACCORDANCE WITH THE CITY OF BOSTON REQUIREMENTS.

TYPICAL GATE VALVE INSTALLATION
NOT TO SCALE

PROJECT NAME

West Roxbury Residences

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KHALSA DESIGN

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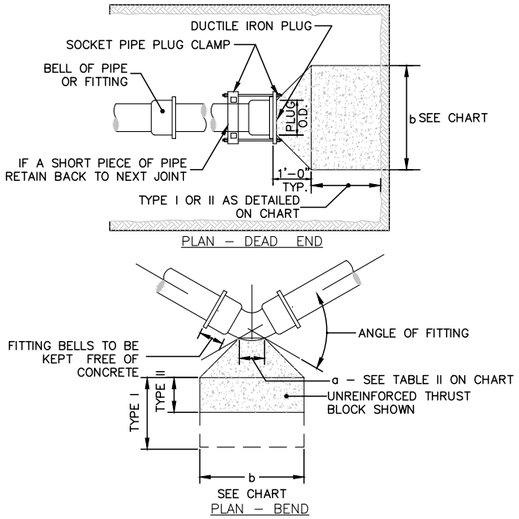
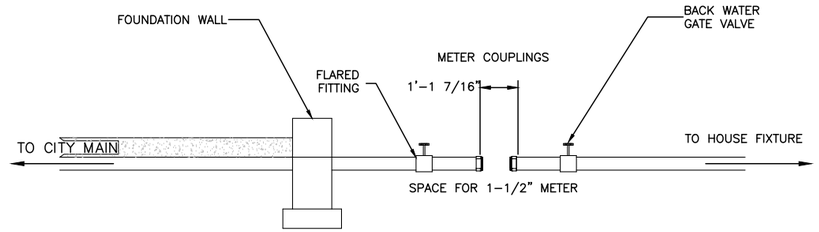
199 Gardner Street - Site Details

C-401

West Roxbury Residences



THRUST BLOCK (A-01a)
NOT TO SCALE

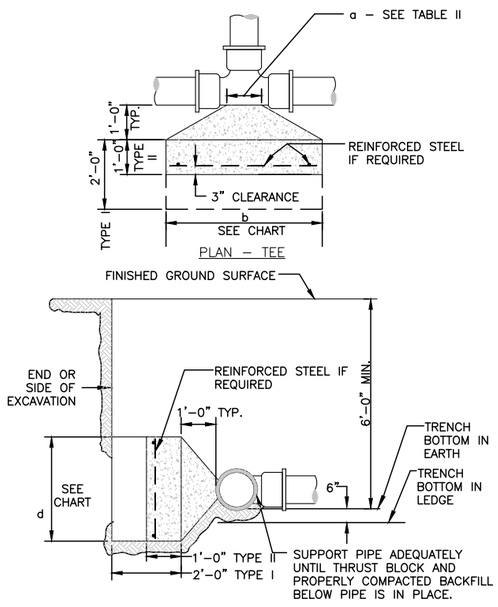


METER INSTALLATION SPACING FOR 1-1/2" METER
NOT TO SCALE

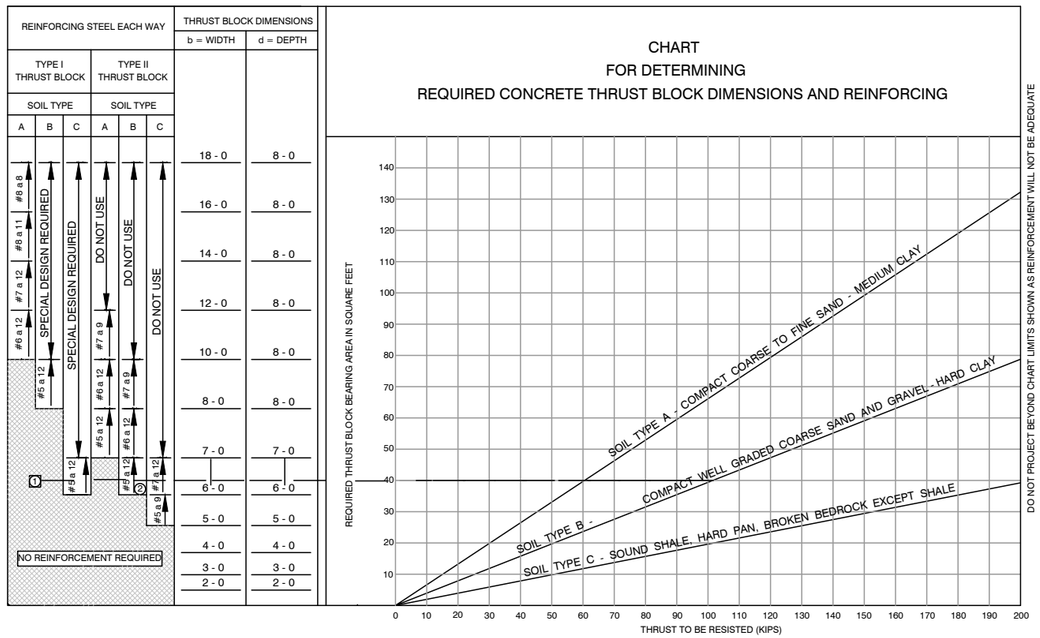
TABLE II - "a" DIMENSION - FEET		
PIPE DIAMETER - INCHES	90° FITTING	OTHERS
6, 8, 10 & 12	1 - 6	1 - 0
16 & 20	2 -0	1 - 6
24" - 30"	3 - 0	2 - 0

TABLE I - THRUST - KIPS (WATER PRESSURE = 200 P.S.I.)										
PIPE DIAMETER INCHES		6	8	10	12	16	20	24	30	36	42
DEAD ENDS AND TEES		5.6	10	15.8	22.6	40.2	62.8	90.4	141.0	203.6	277.0
ANGLE FITTINGS	90°	7.9	14.2	22.4	32.0	56.8	88.8	127.7	199.0	288.0	392.0
	67 1/2°	-	11.1	17.6	25.1	44.7	70.0	100.2	157.0	226.0	308.0
	56 1/4°	-	-	14.9	21.2	37.9	59.2	85.1	133.0	192.0	261.0
	45°	-	-	-	17.3	30.8	48.1	69.0	108.0	156.0	212.0
	33 3/4°	-	-	-	13.1	23.3	36.5	52.5	82.0	118.0	161.0
	22 1/2°	-	-	-	8.8	15.7	24.5	35.2	55.0	79.5	108.0

DESIGN THRUST BLOCKS OR OTHER SUITABLE ANCHORAGE TO SUIT ACTUAL CONDITIONS



THRUST BLOCK (A-01b)
NOT TO SCALE



THRUST BLOCK DIMENSIONS (A-01c)
NOT TO SCALE

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REVISIONS

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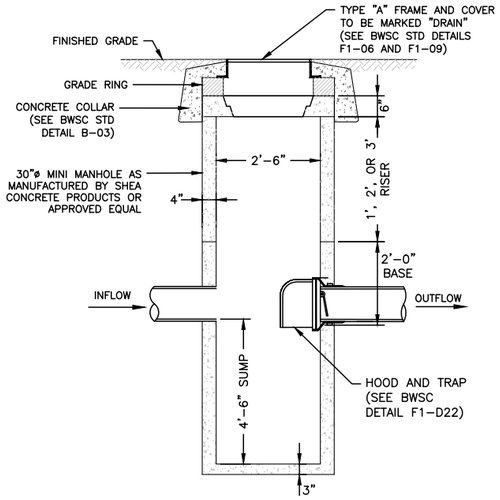
199 Gardner Street - Site Details

C-402

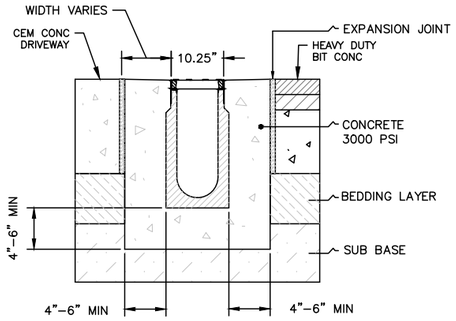
West Roxbury Residences



SECTION VIEW

NOTES:
1. CONCRETE: 5000 PSI MINIMUM AFTER 28 DAYS.
2. DESIGNED FOR H–20 LOADING.

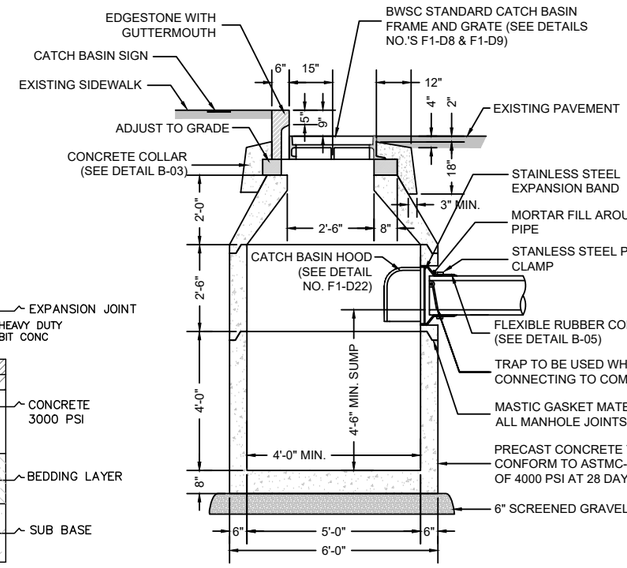
MINI MANHOLE
NOT TO SCALE



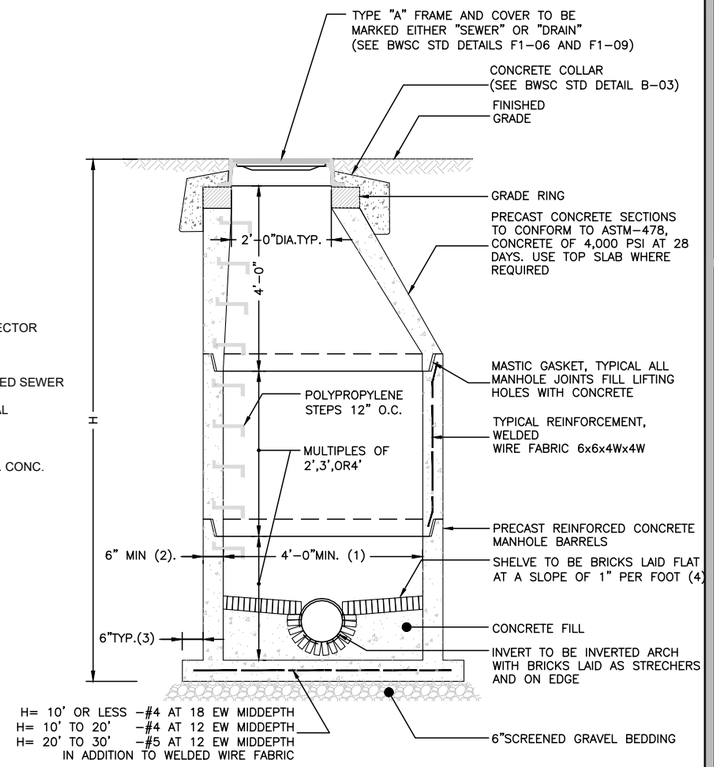
NOTES:

1. TRENCH DRAIN SHALL BE J.R. SMITH 9806, 10" WIDE HIGH CAPACITY PRE–SLOPED FIBERGLASS TRENCH DRAIN SYSTEM OR APPROVED EQUAL.
2. GRATE SHALL BE LOAD CLASS E, LONGITUDINAL DUCTILE IRON SLOTTED GRATE. 9806–ADA OR APPROVED EQUAL.
3. INSTALL PER MANUFACTURER'S INSTRUCTIONS.

TRENCH DRAIN
NOT TO SCALE



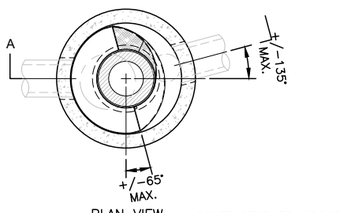
STANDARD CATCH BASIN NO.5 (B-01b)
NOT TO SCALE



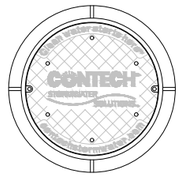
NOTES:

1. 5'–0" DIAMETER FOR ALL MANHOLE DEPTHS GREATER THAN 20 FEET OR WHEN ORDERED BY THE ENGINEER.
2. 6 INCH MIN. WALL THICKNESS AND 7 INCH MIN. BASE THICKNESS WITH 5'–0" DIAMETER MANHOLES.
3. 6 INCH LIP OPTIONAL UNLESS OTHERWISE NOTED. CONCRETE INVERT AND SHELF MAY BE SUBSTITUTED IN STORM DRAIN MANHOLES AS DIRECTED BY THE ENGINEER.

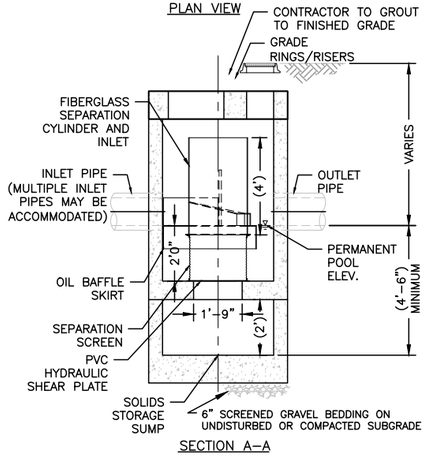
PRECAST CONCRETE MANHOLE (B–02a)
NOT TO SCALE



PLAN VIEW



FRAME AND COVER

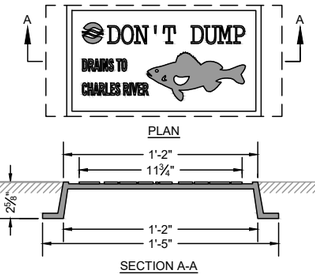


SECTION A–A

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH STORMWATER SOLUTIONS REPRESENTATIVE. www.contechstormwater.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE AND CASTINGS SHALL MEET AASHTO HS20.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
1. ANY SUB–BASE, BACKFILL DEPTH, AND/OR ANTI–FLOTATION PROVISIONS ARE SITE–SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
4. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
5. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

WATER QUALITY UNIT – CDS2015
NOT TO SCALE

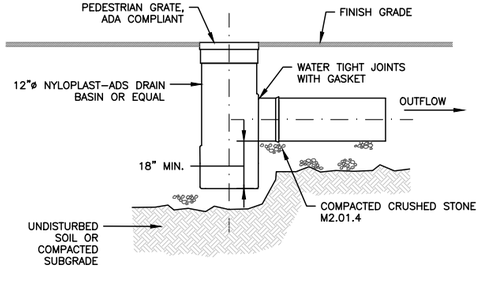


PLAN

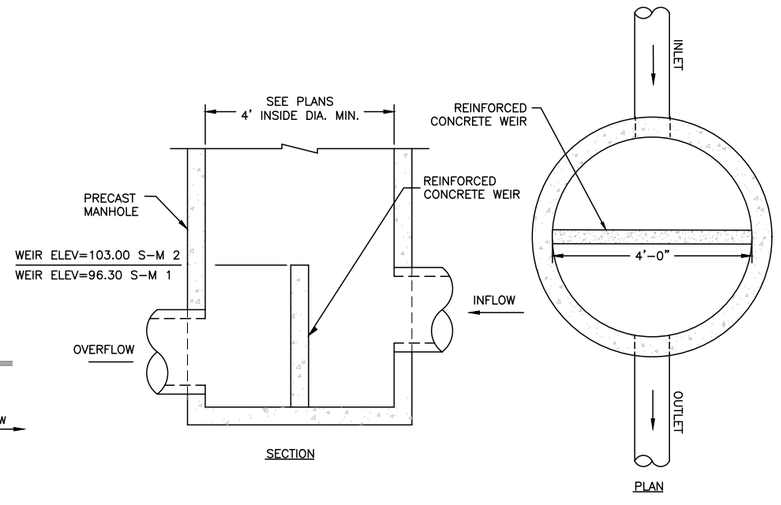
SECTION A-A

NOTE:
CATCH BASIN SIGNS TO BE PROVIDED BY THE BOSTON WATER AND SEWER COMMISSION (BWSC).

8" X 14" CATCH BASIN SIGN (F1-D23)
NOT TO SCALE



AREA DRAIN
NOT TO SCALE



SECTION

PLAN

NOTES:
1. 6 INCH MIN. WALL THICKNESS AND 7 INCH MIN. BASE THICKNESS WITH 5'–0" DIAMETER MANHOLES.
2. 6 INCH LIP OPTIONAL UNLESS OTHERWISE NOTED. CONCRETE INVERT AND SHELF MAY BE SUBSTITUTED IN STORM DRAIN MANHOLES AS DIRECTED BY THE ENGINEER.
3. CONTRACTOR TO SUBMIT METHOD OF BRACING WEIR.

OUTLET CONTROL STRUCTURE
NOT TO SCALE

PROJECT NAME
West Roxbury Residences

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REVISIONS

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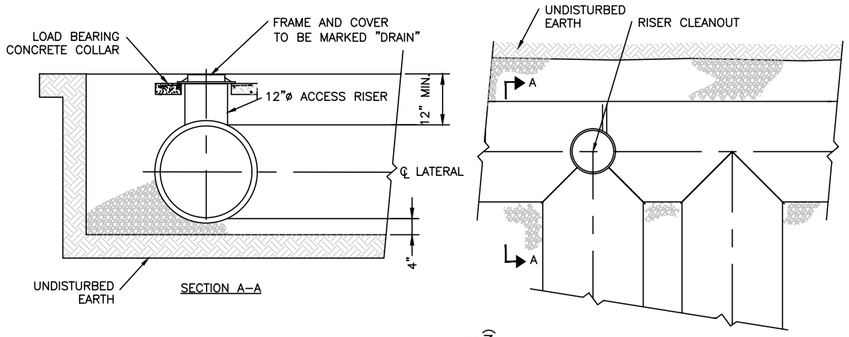
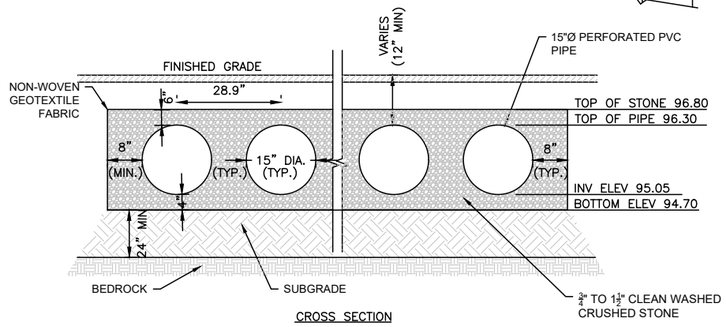
199 Gardner Street - Site Details

C-403

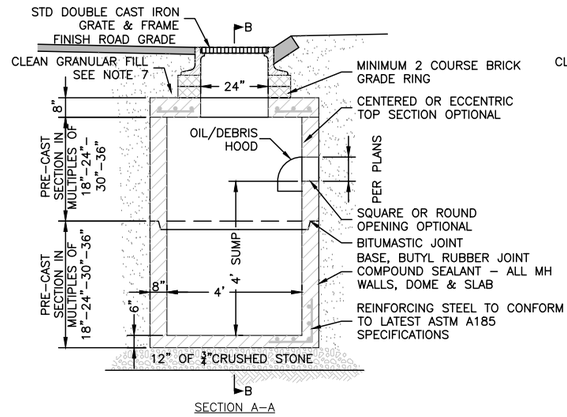
West Roxbury Residences

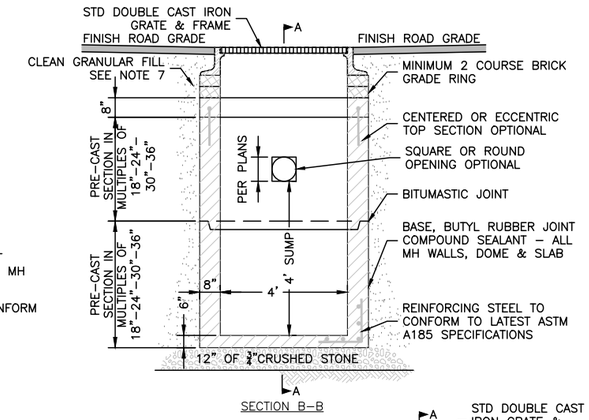




SUBSURFACE STORMWATER INFILTRATION SYSTEM–1

NOT TO SCALE



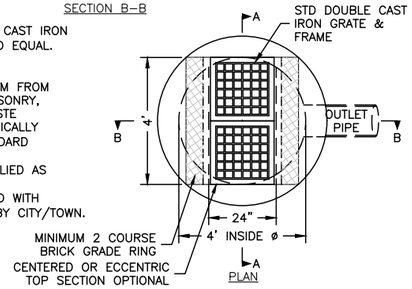


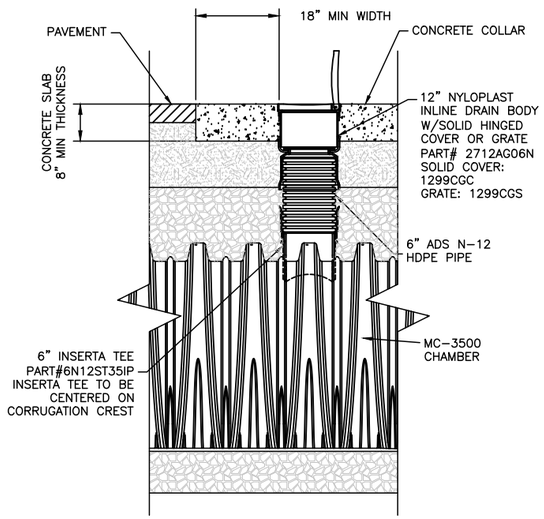
NOTES:

1) BASE SECTION SHALL BE MONOLITHIC WITH 48–INCH INSIDE DIAMETER.
2) ALL SECTIONS SHALL BE DESIGNED FOR HS–20 LOADING.
3) CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000psi TYPE II CEMENT. PRECAST REINFORCED CONCRETE SHALL BE ASTM C–478.
4) ALL EXTERIOR SURFACES SHALL BE GIVEN TWO COATS OF BITUMINOUS WATER–PROOFING MATERIAL.
5) STD. DOUBLE GRATE & FRAME SHALL BE SET IN FULL MORTAR BED. ADJUST TO GRADE WITH CLAY BRICK AND MORTAR (2 BRICK COURSES TYPICALLY, 5 COURSE MAXIMUM).
6) GRATE AND FRAME SHALL BE STD. DOUBLE CAST IRON LEBARON #LV 2448–1 OR ENGINEER APPROVED EQUAL. ALL GRATES TO BE BICYCLE SAFE.
7) CLEAN GRANULAR FILL SHALL BE FREE FROM FROM ORGANIC MATTER, LARGE STONES, STUMPS, MASONRY, FROZEN EARTH, WOOD, TREE BRANCHES & WASTE CONSTRUCTION MATERIAL. PLACE AND MECHANICALLY COMPACT IN 12" LIFTS TO 95% OF MAX. STANDARD PROCTOR COMPACTION.
8) TRENCH SHEETING & BRACING TO BE SUPPLIED AS REQUIRED.
9) ALL CATCH BASIN OUTLETS TO BE EQUIPPED WITH OIL/DEBRIS SEPARATION HOOD, AS REQUIRED BY CITY/TOWN.

DOUBLE INLET CATCH BASIN

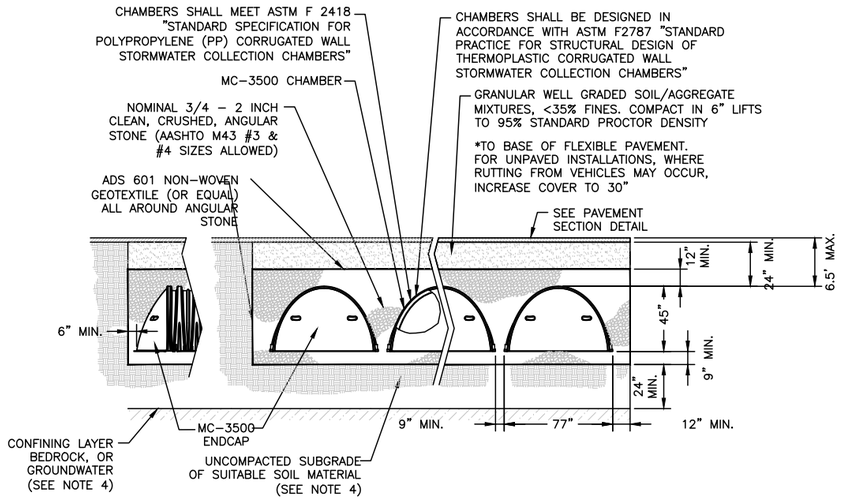
NOT TO SCALE





MC–3500 INSPECTION PORT DETAIL (6" ADS N–12)

NOT TO SCALE



NOTES:

1. DETAIL PROVIDED BY STORMTECH.
2. THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS, WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.
3. PERIMETER STONE MUST ALWAYS BE BROUGHT UP EVENLY WITH BACKFILL OF BED. PERIMETER STONE MUST EXTEND HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH STRAIGHT OR SLOPED SIDEWALLS.
4. A FIELD CIVIL OR GEOTECHNICAL ENGINEER SHALL BE PRESENT DURING THE EXCAVATION FOR THE RECHARGE SYSTEM AND PRIOR TO PLACEMENT OF THE STONE. PLACEMENT OF THE RECHARGE SYSTEM SHALL NOT OCCUR WITHOUT THEIR APPROVAL. BOTTOM OF THE STONE SHALL BE A MINIMUM OF 24–INCHES ABOVE A CONFINING LAYER SUCH AS BEDROCK OR GROUNDWATER.

MC–3500 TYPICAL CROSS–SECTION

NOT TO SCALE

SUBSURFACE INFILTRATION SYSTEM–2
STORMTECH MC–3500 CHAMBERS

NOT TO SCALE

STORMTECH GENERAL NOTES:

1. STORMTECH LLC ("STORMTECH") REQUIRES INSTALLING CONTRACTORS TO USE AND UNDERSTAND STORMTECH'S LATEST MC–3500 INSTALLATION INSTRUCTIONS PRIOR TO BEGINNING SYSTEM INSTALLATION.
2. STORMTECH OFFERS INSTALLATION CONSULTATIONS TO INSTALLING CONTRACTORS. CONTACT OUR TECHNICAL SERVICE DEPARTMENT OR LOCAL STORMTECH REPRESENTATIVE AT LEAST 30 DAYS PRIOR TO SYSTEM INSTALLATION TO ARRANGE A PRE–INSTALLATION CONSULTATION. OUR REPRESENTATIVES CAN THEN ANSWER QUESTIONS OR ADDRESS COMMENTS ON THE STORMTECH CHAMBER SYSTEM AND INFORM THE INSTALLING CONTRACTOR OF THE MINIMUM INSTALLATION REQUIREMENTS BEFORE BEGINNING THE SYSTEM'S CONSTRUCTION. CALL 860–529–8188 TO SPEAK TO A TECHNICAL SERVICE REPRESENTATIVE OR VISIT WWW.STORMTECH.COM TO RECEIVE A COPY OF OUR INSTALLATION INSTRUCTIONS.
3. STORMTECH REQUIREMENTS FOR SYSTEMS WITH PAVEMENT DESIGN (ASPHALT, CONCRETE PAVERS, ETC.): MINIMUM COVER IS 24" [610 mm] NOT INCLUDING PAVEMENT; MAXIMUM COVER IS 6.5' [1.98 m] INCLUDING PAVEMENT. FOR INSTALLATIONS THAT DO NOT INCLUDE PAVEMENT, WHERE RUTTING FROM VEHICLES MAY OCCUR, MINIMUM REQUIRED COVER IS 30" [762 mm], MAXIMUM COVER IS 6.5' [1.98 m].
4. THE CONTRACTOR MUST REPORT ANY DISCREPANCIES WITH THE BEARING CAPACITY OF THE CHAMBER FOUNDATION MATERIALS TO THE DESIGN ENGINEER.
5. AASHTO M288 CLASS 2 NON–WOVEN GEOTEXTILE (FILTER FABRIC) MUST BE USED AS INDICATED IN THE PROJECT PLANS.
6. STONE PLACEMENT BETWEEN CHAMBERS ROWS AND AROUND PERIMETER MUST FOLLOW INSTRUCTIONS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH MC–3500 CONSTRUCTION GUIDE.
7. BACKFILLING OVER THE CHAMBERS MUST FOLLOW REQUIREMENTS AS INDICATED IN THE MOST CURRENT VERSION OF STORMTECH MC–3500 INSTALLATION INSTRUCTIONS.
8. THE CONTRACTOR MUST REFER TO STORMTECH MC–3500 CONSTRUCTION GUIDE FOR A TABLE OF ACCEPTABLE VEHICLE LOADS AT VARIOUS DEPTHS OF COVER. THIS INFORMATION IS ALSO AVAILABLE ON THE STORMTECH WEBSITE: WWW.STORMTECH.COM. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING VEHICLES THAT EXCEED STORMTECH REQUIREMENTS FROM TRAVELING ACROSS OR PARKING OVER THE STORMWATER SYSTEM. TEMPORARY FENCING, WARNING TAPE AND APPROPRIATELY LOCATED SIGNS ARE COMMONLY USED TO PREVENT UNAUTHORIZED VEHICLES FROM ENTERING SENSITIVE CONSTRUCTION AREAS.
9. THE CONTRACTOR MUST APPLY EROSION AND SEDIMENT CONTROL MEASURES TO PROTECT THE STORMWATER SYSTEM DURING ALL PHASES OF SITE CONSTRUCTION PER LOCAL CODES AND DESIGN ENGINEER'S SPECIFICATIONS.
10. STORMTECH PRODUCT WARRANTY IS LIMITED. CONTACT STORMTECH FOR WARRANTY INFORMATION.

PROJECT NAME

West Roxbury Residences

PROJECT ADDRESS

199 Gardner Street West
Roxbury, MA

CLIENT

WEST BRIGHTON ACQUISITIONS LLC

ARCHITECT

KHALSA DESIGN

17 IVALOO STREET SUITE 400
SOMERVILLE, MA 02143
TELEPHONE: 617-591-8682 FAX: 617-591-2086

CONSULTANTS:

HOWARD STEIN HUDSON
11 Beacon Street, Suite 1010
Boston, MA 02108
www.hshassoc.com

REGISTRATION

COMMONWEALTH OF MASSACHUSETTS
RICHARD E. LATINI
CIVIL
No. 41023
REGISTERED PROFESSIONAL ENGINEER

Project number	18111
Date	08/18/2020
Drawn by	MGB
Checked by	REL
Scale	N.T.S.

REVISIONS

No.	Description	Date
1	PROGRESS SET - DRAFT	10.02.2020
2	NOI PERMIT SET	02.17.2021

199 Gardner Street - Site Details

C-404

West Roxbury Residences

HOME DEPOT DRIVE

25-FT RIVERFRONT AREA TO INTERMITTENT STREAM (ORDINANCE ONLY)

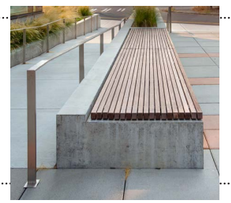
Trash Enclosure

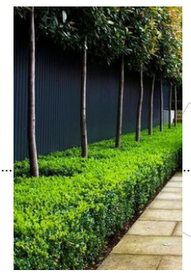
25-FT WATERFRONT AREA TO RIVERFRONT AREA (ORDINANCE ONLY)

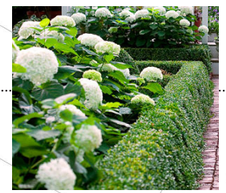
FLOWERING TREES

UPRIGHT GROWING TREES
Accent/contrast with horizontal building elements

GARDEN ENTRY COURT
Use seatwalls to protect plantings and form accessible sloped walkway and ramp to entrance







Evergreen hedging reinforces geometry and defines spaces.

RETAINING WALL
Large precast concrete block retaining wall to enclose depressed parking area

Street tree planting along Gardner Street

NOT TO SCALE

SCALE: 1" = 10'-0"
0 5' 10' 25'

VERDANT
LANDSCAPE ARCHITECTURE

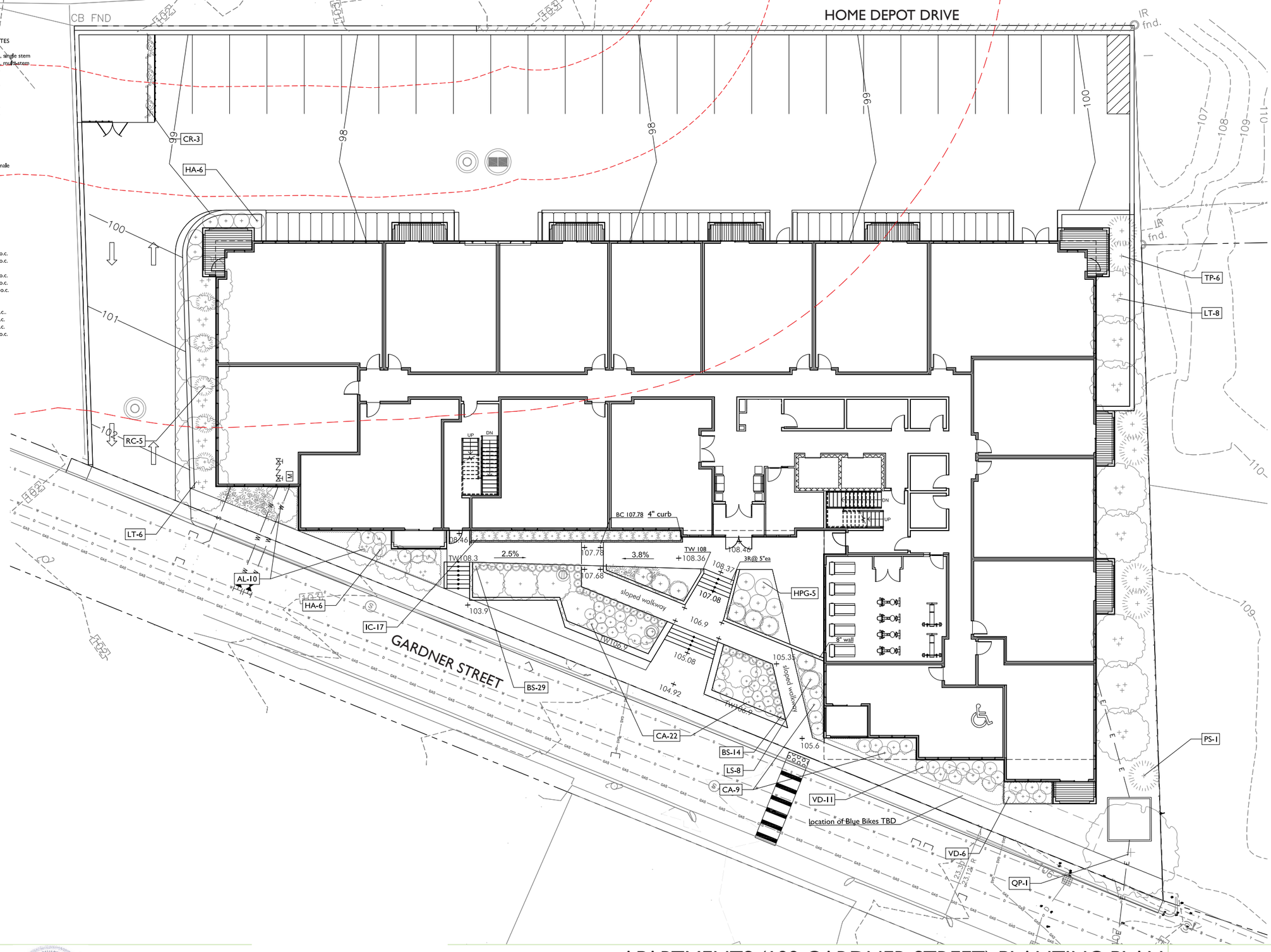
FOR PERMIT PURPOSES ONLY

APARTMENTS (199 GARDNER STREET) LANDSCAPE PLAN
RIVERS EDGE
SEPTEMBER 25, 2019
REVISED MARCH 23, 2021

3-16

PLANT LIST

KEY	QTY	LATIN NAME	COMMON NAME	MIN. SIZE	NOTES
DECIDUOUS TREES					
AL	4	Amelanchier laevis	Allegheny Serviceberry	2-2.5" cal.	b&b, single stem
AL	6	Amelanchier laevis	Allegheny Serviceberry	8'-10' ht	b&b, multi-stem
LT	14	Liriodendron tulipifera fastigiata	Upright growing Tuliptree	3-3.5" cal.	b&b
LS	8	Liquidambar styraciflua 'Slender Silhouette'	Columnar Sweet Gum		
QP	1	Quercus palustris	Pin Oak	3-3.5" cal.	b&b
EVERGREEN TREES					
PS	1	Pinus strobus	White Pine	7-8' ht.	b&b
TP	6	Thuja plicata 'Green Giant'	Green Giant Arborvitae	7-8' ht.	b&b
SHRUBS					
BS	43	Buxus sempervirens	Common Boxwood	5 gal.	
CA	31	Clethra alnifolia	Summersweet	5 gal.	
HA	12	Hydrangea arborescens 'Annabelle'	Annabelle Hydrangea	5 gal.	
HPG	5	Hydrangea paniculata grandiflora	PG Hydrangea	#3 pot	
IC	17	Ilex crenata 'Convexa'	Convex Japanese Holly	5 gal. 2 shall be male	
VD	11	Viburnum dentatum	Arrowwood Viburnum	3-4' ht.	
RC	5	Rhododendron catawbiense 'Alba	White Catawba Rhododendron	36" ht.	
VINES					
CR	3	Campsis radicans	Trumpet Creeper	#3 pot	
CV		Clematis virginiana	Virgin Bowers Vine	#2 pot	
PQ		Parthenocissus quinqufolia	Virginia Creeper	#2 pot	
PERENNIALS/GRASSES					
ah		Amsonia hubrechtii	Texas Bluestar	#2 pot	
an		Anemone hupehensis	Jap. Windflower	#1 pot	18" o.c.
cf		Calamagrostis acutiflora 'Karl Foerster'	Feather Reed Grass	#2 pot	18" o.c.
cm		Carex morrowii 'Ice Dance'	Variegated Carex	#1 pot	
cp		Carex pennsylvanica	Pennsylvania Sedge	#1 pot	12" o.c.
ep		Echinachea purpurea 'White Swan'	White flowering Coneflower	#1 pot	18" o.c.
gm		Geranium macrorrhizum 'Bevan's Variety'	Bevan's Variety Geranium	#2 pot	24" o.c.
hm		Hakonachloa macra 'Aureola'	Golden Hakone Grass	#2 pot	
hp		Heuchera x Palace Purple	Coral bells	#1 pot	
hs		Hemerocallis 'Catherine Woodbury"	Fragrant Daylily	#2 pot	2' o.c..
nw		Nepeta faasenii 'Walkers Low'	Walkers Low Catmint	#2 pot	2' o.c.
pv		Panicum 'Rotstrahlbusch'	Red Switchgrass	#2 pot	2' o.c.
vm		Vinca minor 'Ralph Shugert'	Variegated Myrtle	1 qt. pot	12" o.c.



SCALE: 1" = 10'-0"
0 5' 10' 25'

NOT TO SCALE

VERDANT
LANDSCAPE ARCHITECTURE

FOR PERMIT PURPOSES ONLY

APARTMENTS (199 GARDNER STREET) PLANTING PLAN

RIVERS EDGE

SEPTEMBER 25, 2019

REVISED MARCH 23, 2021

3-17

Attachment F:
Stormwater Management Report & Checklist

PROVIDED UNDER SEPARATE COVER

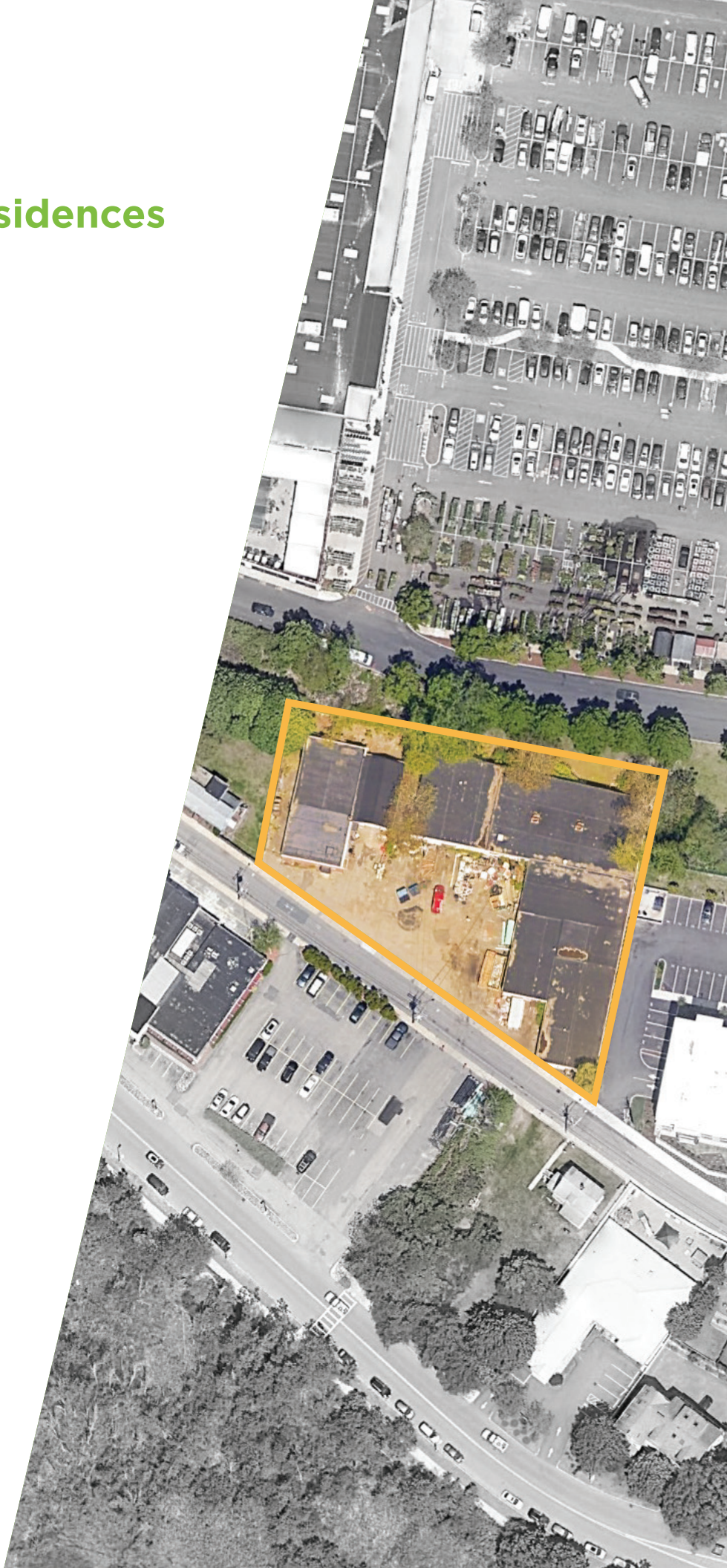
West Roxbury Residences at 199 Gardner St

Stormwater Report

Prepared for
WBA Acquisitions, LLC

Prepared by
Howard Stein Hudson

February 17, 2021



HOWARD STEIN HUDSON

Engineers + Planners

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Appendices

Introduction

This Stormwater Management Report describes the existing drainage conditions and proposed stormwater best management practices (BMPs) designed to treat and control runoff for the 199 Gardner Street Apartments (the "Project").

The Project site is 0.83 ± acres located in West Roxbury, Massachusetts. The Project site is bounded by Gardner Street to the south, residential buildings to the east and west, and a commercial property (Home Depot) to the north. The site's surface is almost entirely impervious, consisting of pavement and roofs with a small number of trees that have grown through cracked pavement on site.

The existing site has no landscaped areas. The Project will provide 4,955 square feet (sf) of landscaped area around the proposed building, which is approximately 14% of the total site area.

The Project will consist of redeveloping a previously disturbed site in the West Roxbury Neighborhood of Boston. Existing industrial buildings will be razed and associated paved areas will be removed to allow for the construction of a mid-rise apartment building with 70 residential units and associated parking.

The proposed Project site at 199 Gardner street will feature two infiltration systems that will handle runoff from the Project Site. During larger storm events, the infiltration systems will discharge to the existing city-owned drainage system in Gardner Street.

Existing Conditions

Pre- and post-construction hydrology were analyzed with HydroCAD v 10.0, model using TR-20 methodology. The rainfall data was obtained from the NOAA Atlas 14 Precipitation Frequency Data Server. The result of this analysis shows that the proposed development will not increase the overall peak discharge rates from existing conditions for the 2, 10, and 100-year storm events analyzed.

Soils at the site are mapped as Urban land. The Natural Resource Conservation Service (NRCS) does not have Hydrologic Soil Group (HSG) data within the project site. Based on on-site geotechnical information, HSG B is assigned to the 199 Gardner Street site as a basis for the design. The NRCS soil map is included in Appendix A.

The runoff from the site ultimately discharges to Cow Island Pond. The hydrology calculations analyze one design point.

Hydrology

Pre-construction Hydrology

Stormwater runoff from the existing paved areas behind the 199 Gardner Street building sheet flows untreated into the wetland areas north west of the site. Runoff generated on the existing rooftops on-site and paved areas in front of the existing buildings flows off-site and is captured by the city-owned drainage system in Gardner Street.

Post-construction Hydrology

The existing industrial buildings and associated parking areas will be razed to allow for the construction of a mid-rise apartment building with 70 residential units. The proposed project site at 199 Gardner street will feature two infiltration systems that will handle runoff from the Project Site and will discharge overflow into the existing city-owned drainage system in Gardner Street.

Stormwater Management Standards

Standard 1: No New Untreated Discharges

The Massachusetts Stormwater Handbook requires that the project demonstrates that there are no new untreated discharges and that new discharges will not cause erosion or scour to downstream wetlands.

Runoff from the impervious areas will be treated and filtered through low impact development techniques such as deep sump catch basins, water quality units, and infiltration chambers. There will be no new untreated discharges from the site.

Standard 2: Post-Development Peak Discharge Rates Not to Exceed Pre-Development Peak Discharge Rates

The proposed stormwater management system is designed so that the post-development peak discharge rates will not exceed the off-site pre-development peak discharge rates. The peak discharge rates from the 2, 10, and 100-year storm events were analyzed with the result summarized in Table 1.

Table 1. *Pre- vs. Post-Development Peak Discharge Rates*

Design Point	Pre-Development Rate (cfs)	Post-Development Rate (cfs)
2-Year Storm Event		
199 Gardner – Cow Island Pond	**3.35**	**0.85**
10-Year Storm Event		
199 Gardner – Cow Island Pond	**4.66**	**1.27**
100-Year Storm Event		
199 Gardner – Cow Island Pond	**6.96**	**3.57**

Standard 3: Minimize or Eliminate Loss of Annual Recharge to Groundwater

The project is a redevelopment and is required to meet Standard 3 to the maximum extent practicable. The stormwater infiltration practices for the development include underground chambers and perforated pipe. The proposed stormwater management system exceeds the required recharge volume as determined by the Massachusetts Stormwater Handbook.

Underlaying soils are mapped as Urban Land by the Natural Resource Conservation Service (NRCS). Hydrologic Soil Group B is assigned based on four borings performed as part of a geotechnical study conducted on-site. The maps and boring logs are included in Appendix A.

Recharge Volume Target calculations are provided in Appendix C and are summarized in Table 2.

Table 2. *Recharge Volume Target*

Inches of Runoff x Total Impervious Area / 12 = Recharge Volume Target [cf]			
Hydrologic Group	Inches of Runoff	Impervious Area 199 Garden	Recharge Volume Target
A	**0.60 in**		
B	**0.35 in**	**31,239 SF**	**911 CF**
C	**0.25 in**		
D	**0.10 in**		
Recharge Volume Target			**911 CF**

The volume of recharge provided for post-development conditions was calculated based on the "Static" method as follows. Stormwater stored below the lowest outlet of an infiltration system is available for recharge into the aquifer via exfiltration (Calculations included in Appendix C).

199 Gardner Street:

- Storage volume below outlet elevation Infiltration S-m 1 = 3,795.4 CF
- Storage volume below outlet elevation Infiltration S-m 2 = 402.6 CF

Total Recharge Volume Provided = 4,198.0 CF > 911 CF (recharge volume target)

BMPs on-site provide sufficient groundwater recharge to meet the requirements of Standard 3. Calculations show that during a 100-year storm event the infiltration structures will completely dewater in the following time frame:

- 199 Gardner Infiltration S-m 1 dewaters within 30 hours
- 199 Gardner Infiltration S-m 2 dewaters within 54 hours

Drawdown will happen faster than the maximum 72-hour window prescribed by the Stormwater Regulations. Drawdown calculations are included in Appendix D.

Standard 4: Stormwater Management System to Remove 80% of Average Annual Load of Total Suspended Solids (TSS)

The Massachusetts Stormwater Handbook requires that: "Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS)." If the site discharges runoff into a critical area Zone I or II, the runoff would also have to be pre-treated to a level where 44% of the TSS have been removed prior to reaching the infiltration structure.

The Site is not discharging into a critical area. The project site features two treatment trains:

At 199 Gardner Street, the roof runoff generated by the apartment building reaches the infiltration system via downspouts that are connected to collector pipes flowing into the Infiltration System. The roof runoff will not contain TSS and will not need to be treated prior to reaching the infiltration structure.

The runoff generated by the paved areas will be collected in a double catch basin will flow through a Water Quality Unit (WQU) connected to the infiltration system. The WQU will provide pre-treatment to a level where 44% of the TSS will be removed prior to reaching the infiltration system.

The two proposed infiltration systems are furnished with Outflow Control Structures (OCS) that regulate the outflow and discharge into the existing drainage system in Gardner Street.

The required Water Quality Volume (WQV), the volume of water requiring 80% TSS removal, is calculated as follows:

The required water quality volume equals 0.5 inch of runoff times the total impervious area of the post-development site. The analysis is conducted based on 0.5-inch runoff over the proposed impervious surfaces based on the absence of a critical areas downstream from the site.

- Impervious at 199 Gardner Street = 31,239 SF

WQV Required (80% TSS Removal):

- WQV at 199 Gardner Street = 0.5 in x 31,200 SF ÷ 12 in. =1,300 CF

TSS calculations for the treatment train described included in Appendix D.

Standard 5: Land Uses with Higher Potential Pollutant Loads

The development is not considered a land use that produces higher potential pollutant loads.

Standard 6: Stormwater Discharges to Critical Areas

This standard is not applicable. The stormwater discharges are not located within or near a critical area.

Standard 7: Redevelopment Projects

The Project Site has been previously developed. The property located at 199 Gardner Street consists of industrial buildings and paved areas. The existing site has no landscaped areas. The Project will provide 4,955 square feet (sf) of landscaped area which is approximately 14% of the total site area. Proposed project meets or exceeds each of the applicable stormwater management standards.

Standard 8: Control Construction-Related Impacts

The project will install erosion and sediment controls prior to any major earthwork activity.

Sheet entitled “Site Preparation Plan” included in the project plans shows the location and BMPs that will be used during the construction process to protect neighboring properties and receiving drainage structures.

Standard 9: Long-Term Operation and Maintenance Plan

See Appendix D for the operation and maintenance requirements to be implemented for the stormwater management systems.

Standard 10: No Illicit Discharges

Illicit discharges will be prohibited from entering the stormwater management system serving the site.

A signed Illicit Discharge Compliance Statement is provided in Appendix F.

Appendix A:
Soil Information

Map Scale: 1:1,120 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

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

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

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

Special Point Features

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

Water Features

- Streams and Canals

Transportation

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

Background

- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 16, Jun 11, 2020

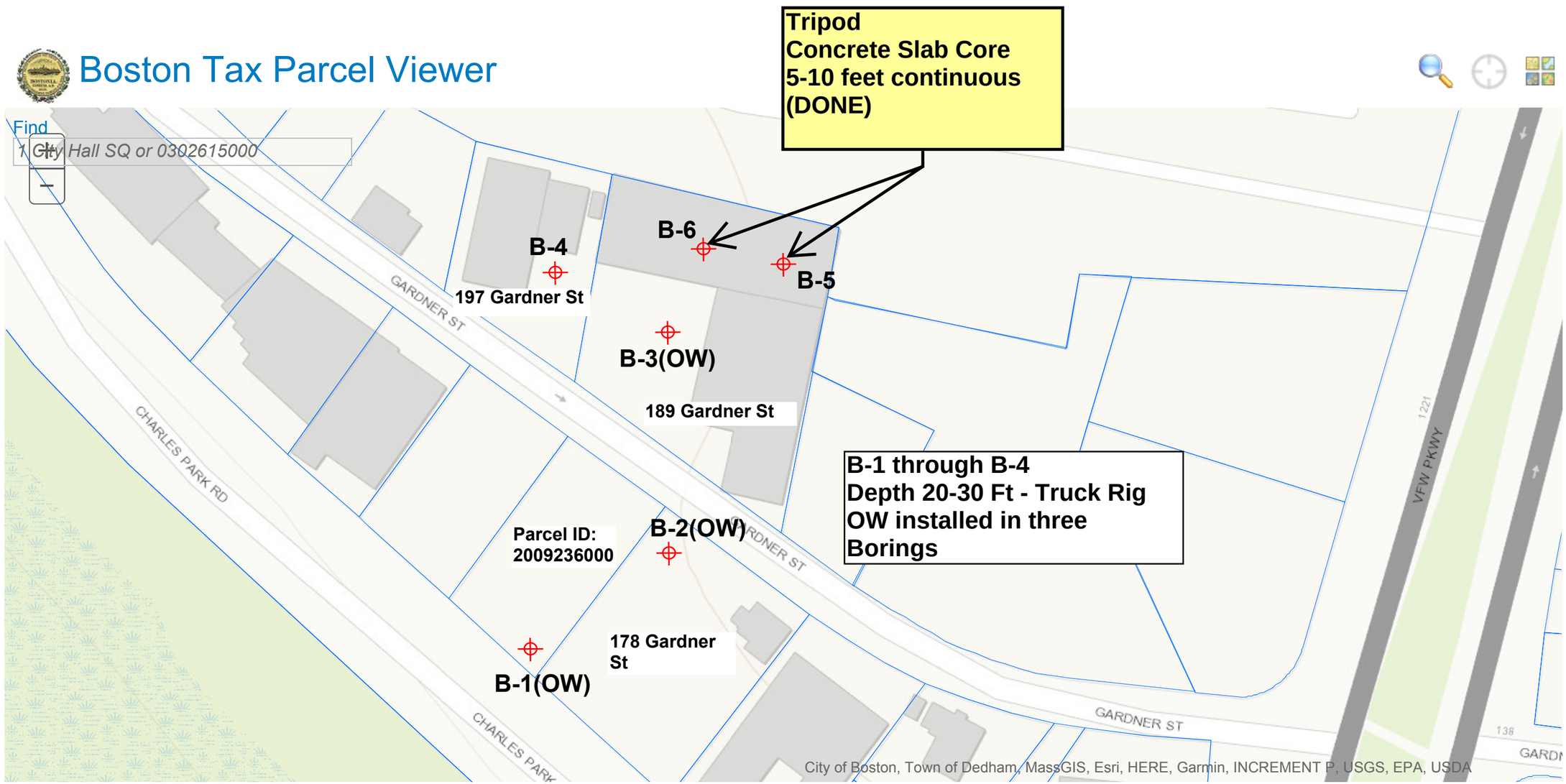
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5	Saco silt loam, 0 to 3 percent slopes	0.3	5.9%
602	Urban land, 0 to 15 percent slopes	3.9	85.3%
654	Udorthents, loamy	0.4	8.8%
Totals for Area of Interest		**4.5**	**100.0%**

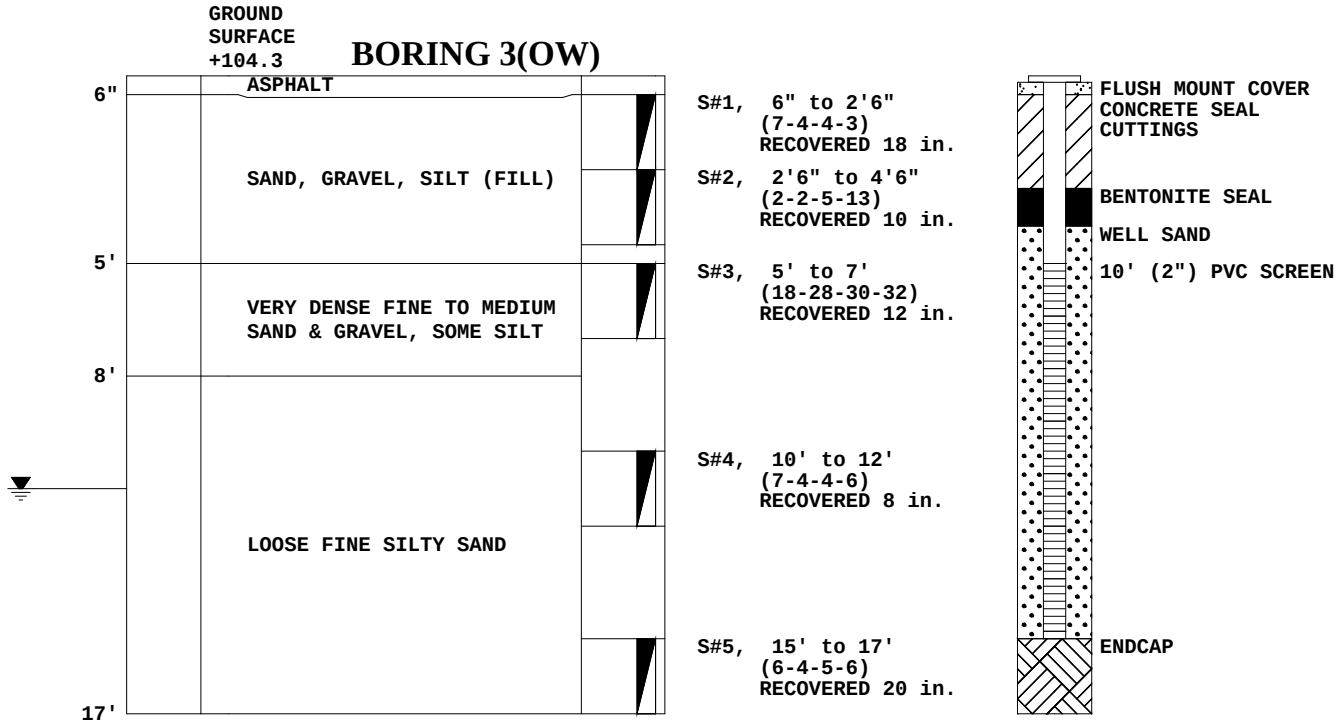

Boston Tax Parcel Viewer
Tripod
Concrete Slab Core
5-10 feet continuous
(DONE)
Find
1 City Hall SQ or 0302615000
B-4
B-6
B-5
197 Gardner St
B-3(OW)
189 Gardner St
B-1 through B-4
Depth 20-30 Ft - Truck Rig
OW installed in three
Borings
Parcel ID:
2009236000
B-2(OW)
178 Gardner
St
B-1(OW)
GARDNER ST
CHARLES PARK RD
VFW PKWY
1221
138
City of Boston, Town of Dedham, MassGIS, Esri, HERE, Garmin, INCREMENT P, USGS, EPA, USDA

CARR-DEE CORP.

37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: MCPHAIL ASSOC., LLC, 2269 MASS. AVE., CAMBRIDGE, MA Date: 6-22-2018 Job No.: 2018-110

Location: 178, 189, 197 GARDNER STREET, WEST ROXBURY, MA Scale: 1 in.= 5 ft.



WATER LEVEL 11'
SIZE OF CASING: NW, LENGTH: 10'0"
DRILLER: G. SMITH, INSPECTOR: C. CONNORS
DATE STARTED & COMPLETED: 6-22-2018

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

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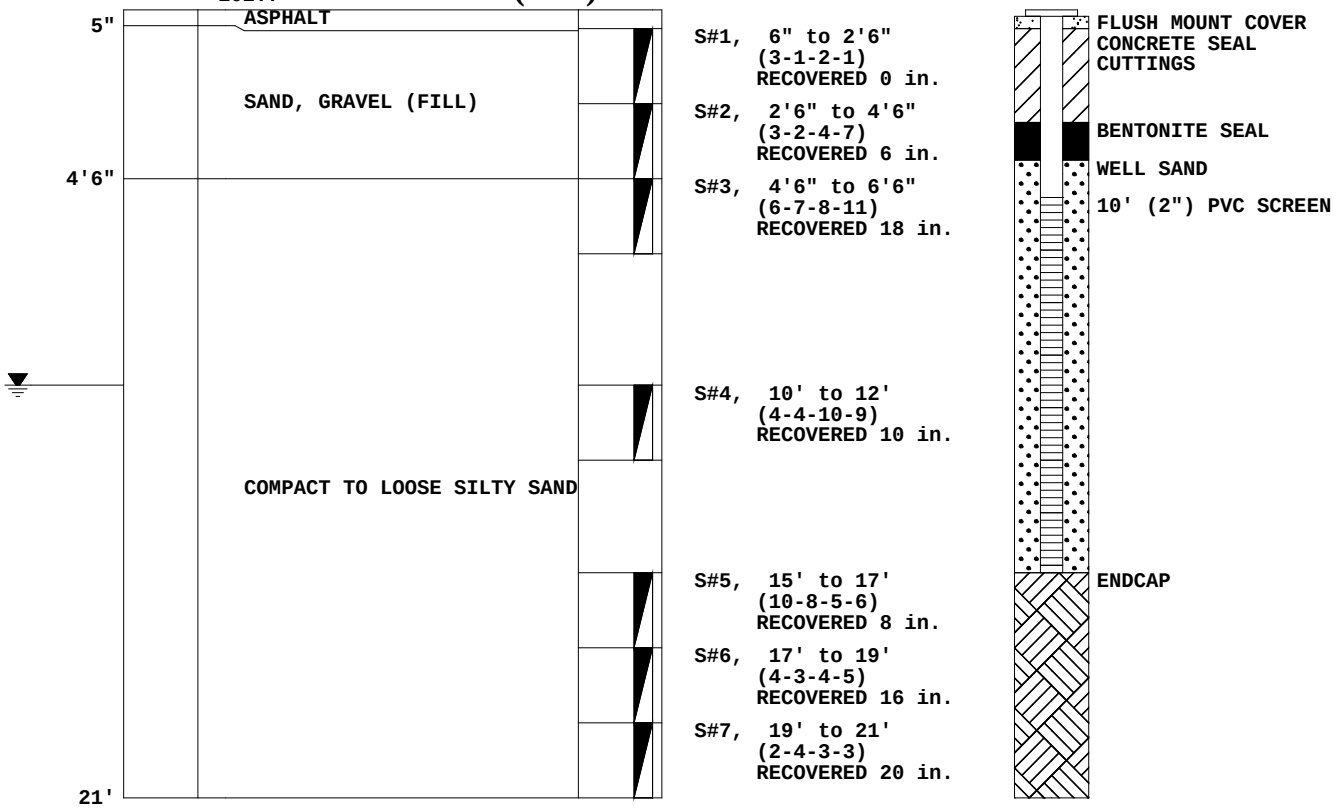
Location: 178, 189, 197 GARDNER STREET, WEST ROXBURY, MA Scale: 1 in.= 5 ft.

BORING 4(OW)



WATER LEVEL 10'
SIZE OF CASING: NW, LENGTH: 10'0"
DRILLER: G. SMITH, INSPECTOR: C. CONNORS
DATE STARTED & COMPLETED: 6-22-2018

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

CARR-DEE CORP.

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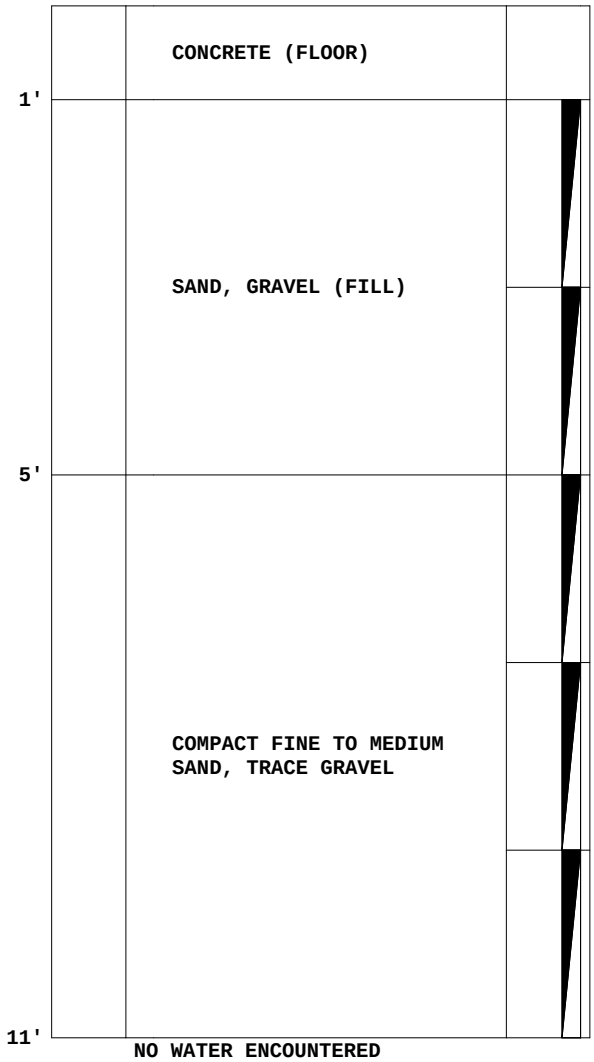
To: MCPHAIL ASSOC., LLC, 2269 MASS. AVE., CAMBRIDGE, MA Date: 6-18-2018 Job No.: 2018-110

Location: 178, 189, 197 GARDNER STREET, WEST ROXBURY, MA Scale: 1 in.= 2 ft.

BORING 5



s#1, 1' to 3'
(11-14-12-12)
RECOVERED 16 in.

S#2, 3' to 5'
(11-15-11-13)
RECOVERED 8 in.

S#3, 5' to 7'
(9-10-10-11)
RECOVERED 12 in.

S#4, 7' to 9'
(8-10-13-16)
RECOVERED 12 in.

S#5, 9' to 11'
(15-14-13-17)
RECOVERED 12 in.

NO WATER ENCOUNTERED
DRILLER: J.A. DESIMONE, INSPECTOR: B. CARLSON
DATE STARTED & COMPLETED: 6-16-2018
NOTE: USED PORTABLE RIG.

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

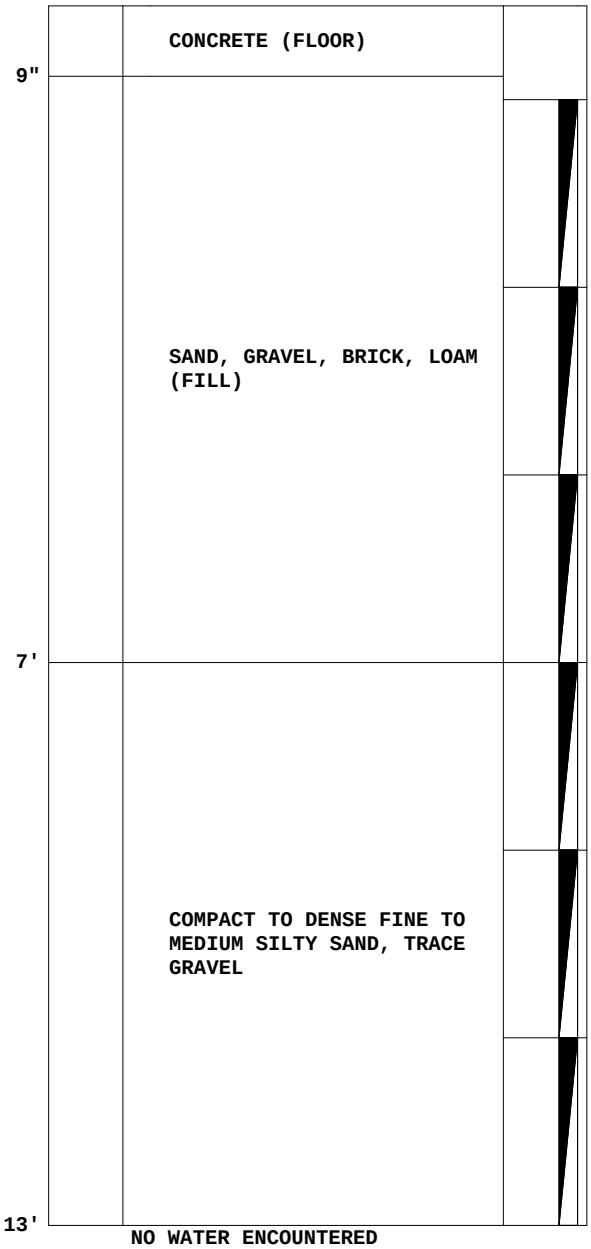
CARR-DEE CORP.

37 LINDEN STREET MEDFORD, MA 02155-0001 Telephone (781) 391-4500

To: MCPHAIL ASSOC., LLC, 2269 MASS. AVE., CAMBRIDGE, MA Date: 6-18-2018 Job No.: 2018-110

Location: 178, 189, 197 GARDNER STREET, WEST ROXBURY, MA Scale: 1 in.= 2 ft.

BORING 6



NO WATER ENCOUNTERED
DRILLER: J.A. DESIMONE, INSPECTOR: B. CARLSON
DATE STARTED & COMPLETED: 6-16-2018
NOTE: USED PORTABLE RIG.

All samples have been visually classified by . Unless otherwise specified, water levels noted were observed at completion of borings, and do not necessarily represent permanent ground water levels. Figures in parenthesis indicate the number of blows required to drive Two-inch Split Sampler 6 inches using 140 lb. weight falling 30 inches(±). Figures in column to left (if noted) indicate number of blows to drive casing one foot, using 300 lb. weight falling 24 inches (±).

Norfolk and Suffolk Counties, Massachusetts

602—Urban land, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: vkyj
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: 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

Data Source Information

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts
Survey Area Data: Version 16, Jun 11, 2020

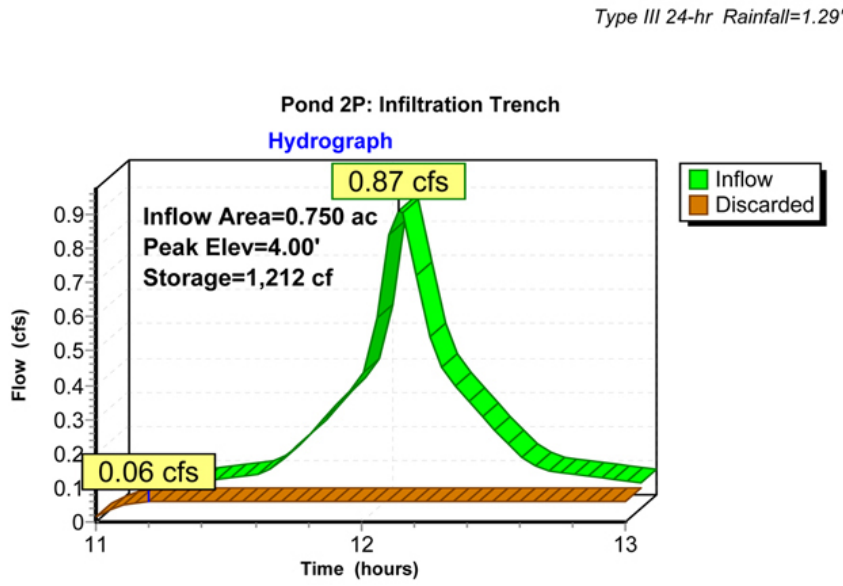


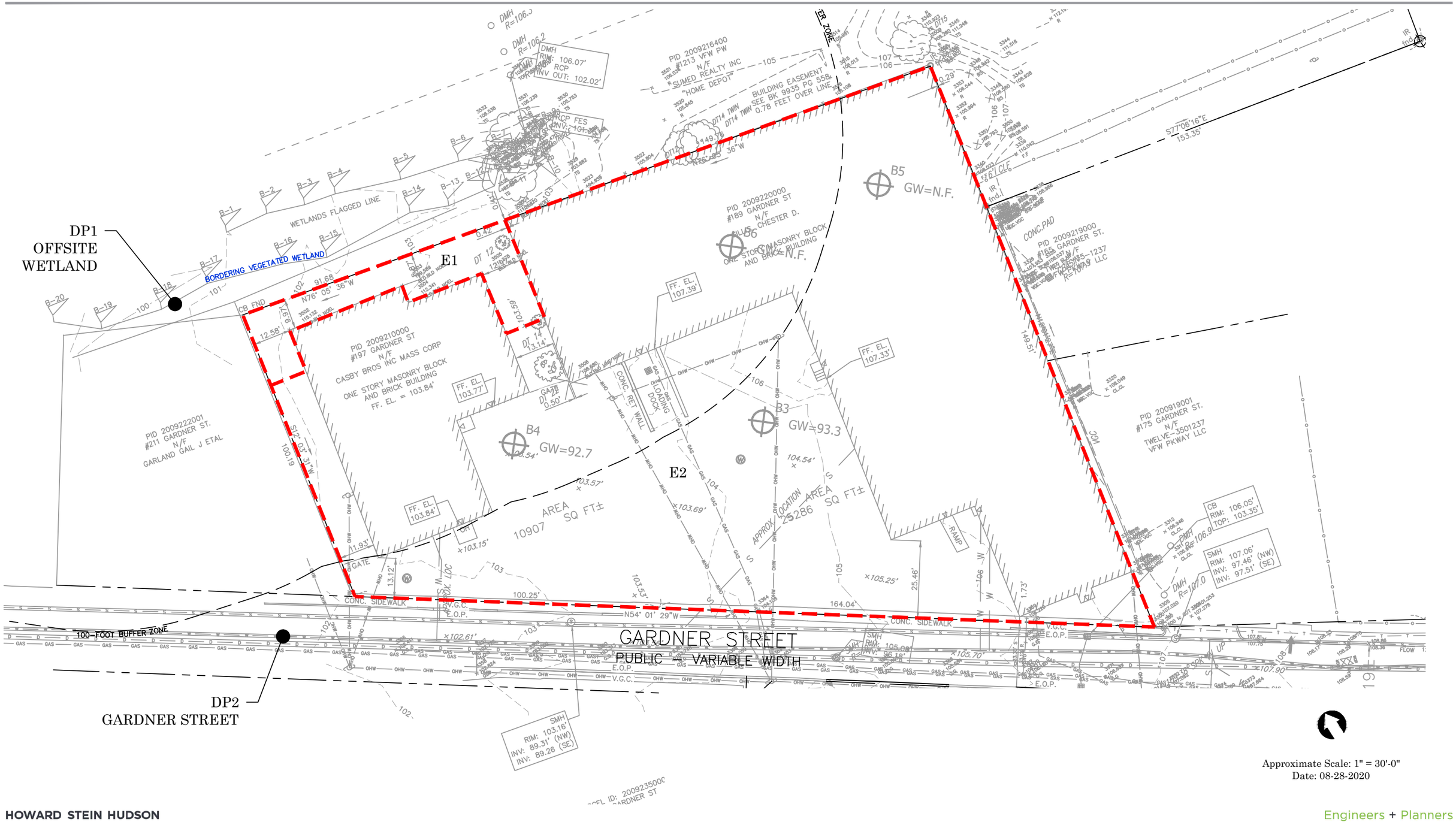
Table 2.3.3. 1982 Rawls Rates[18]

Texture Class	NRCS Hydrologic Soil Group (HSG)	Infiltration Rate Inches/Hour
Sand	A	8.27
Loamy Sand	A	2.41
Sandy Loam	B	1.02
Loam	B	0.52
Silt Loam	C	0.27
Sandy Clay Loam	C	0.17
Clay Loam	D	0.09
Silty Clay Loam	D	0.06
Sandy Clay	D	0.05
Silty Clay	D	0.04
Clay	D	0.02

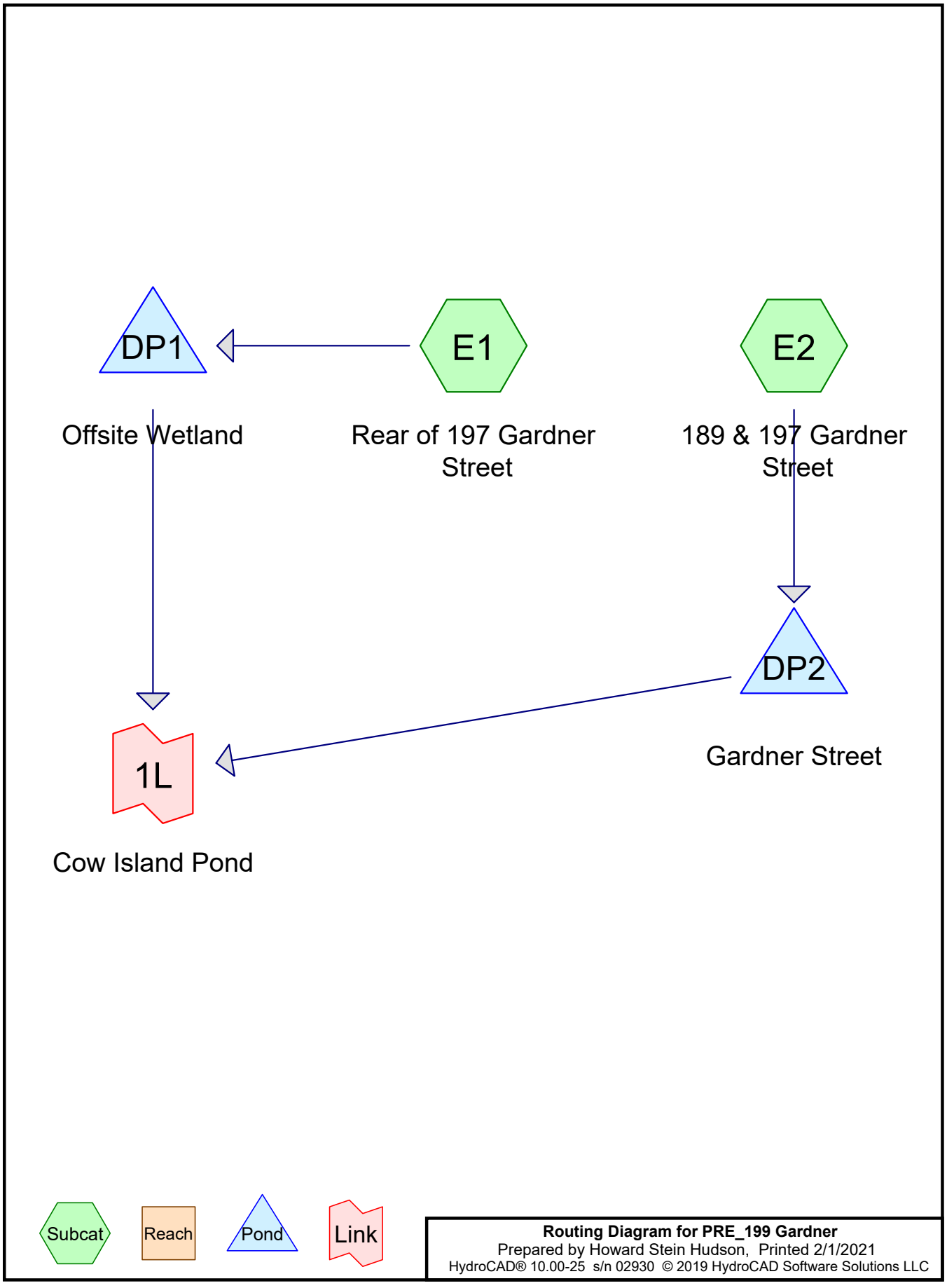
[18] Rawls, Brakensiek and Saxton, 1982

Appendix B:
Stormwater Calculations

Figure 1. ***PRE-DEVELOPEMENT HYDROLOGY***



Approximate Scale: 1" = 30'-0"
Date: 08-28-2020



Routing Diagram for PRE_199 Gardner
Prepared by Howard Stein Hudson, Printed 2/1/2021

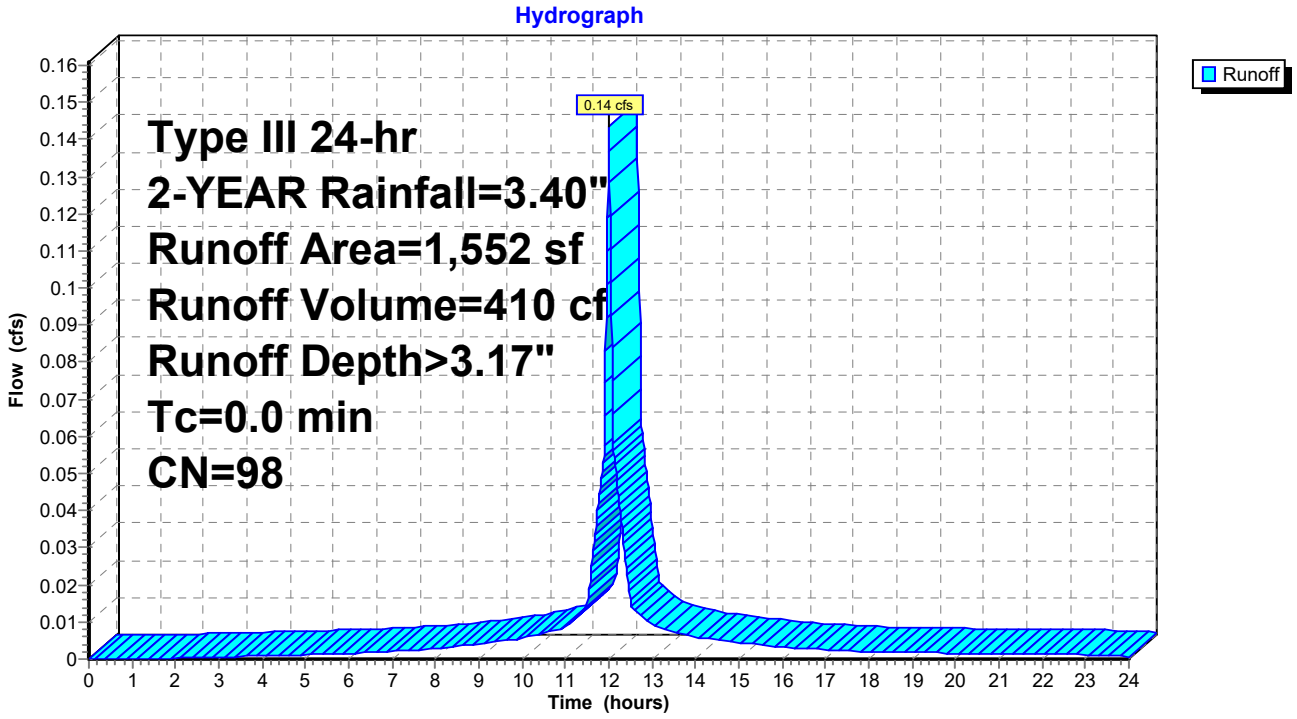
Summary for Subcatchment E1: Rear of 197 Gardner Street

Runoff = 0.14 cfs @ 12.00 hrs, Volume= 410 cf, Depth> 3.17"

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=3.40"

Area (sf)	CN	Description
1,552	98	Paved parking, HSG D
1,552		100.00% Impervious Area

Subcatchment E1: Rear of 197 Gardner Street



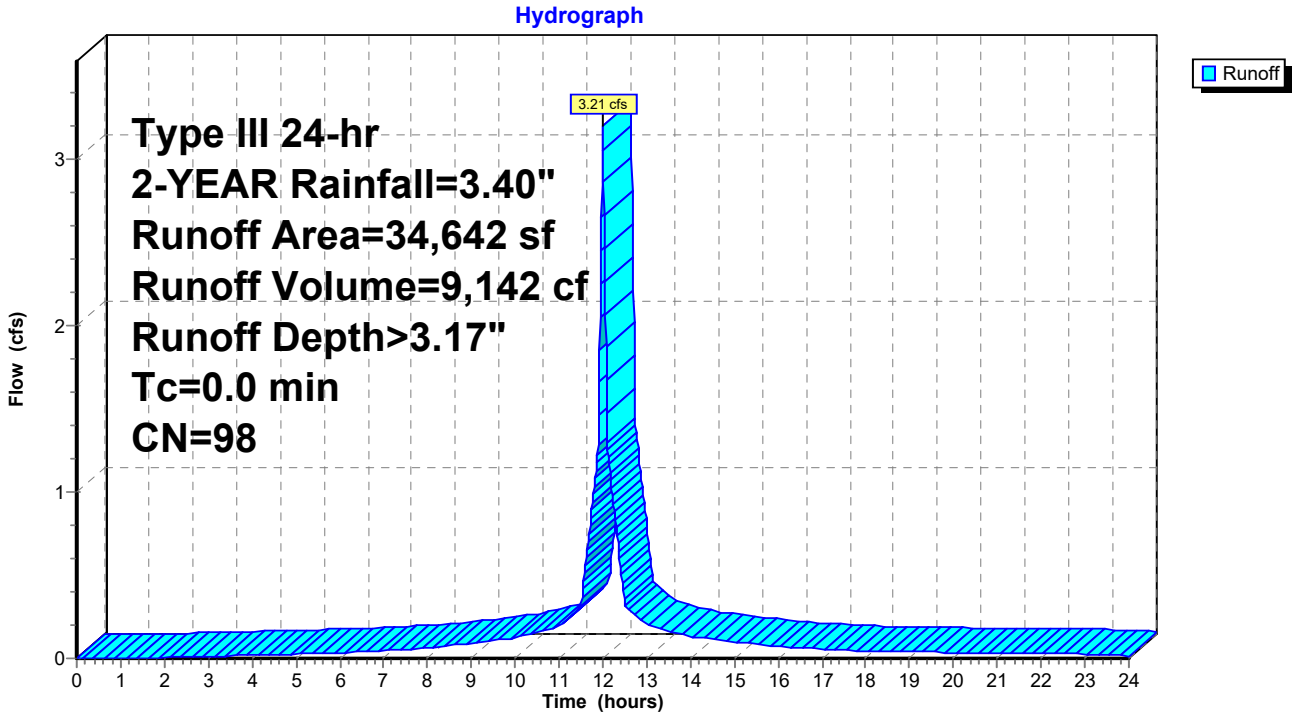
Summary for Subcatchment E2: 189 & 197 Gardner Street

Runoff = 3.21 cfs @ 12.00 hrs, Volume= 9,142 cf, Depth> 3.17"

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=3.40"

Area (sf)	CN	Description
20,306	98	Unconnected roofs, HSG D
14,336	98	Paved parking, HSG D
34,642	98	Weighted Average
34,642		100.00% Impervious Area
20,306		58.62% Unconnected

Subcatchment E2: 189 & 197 Gardner Street

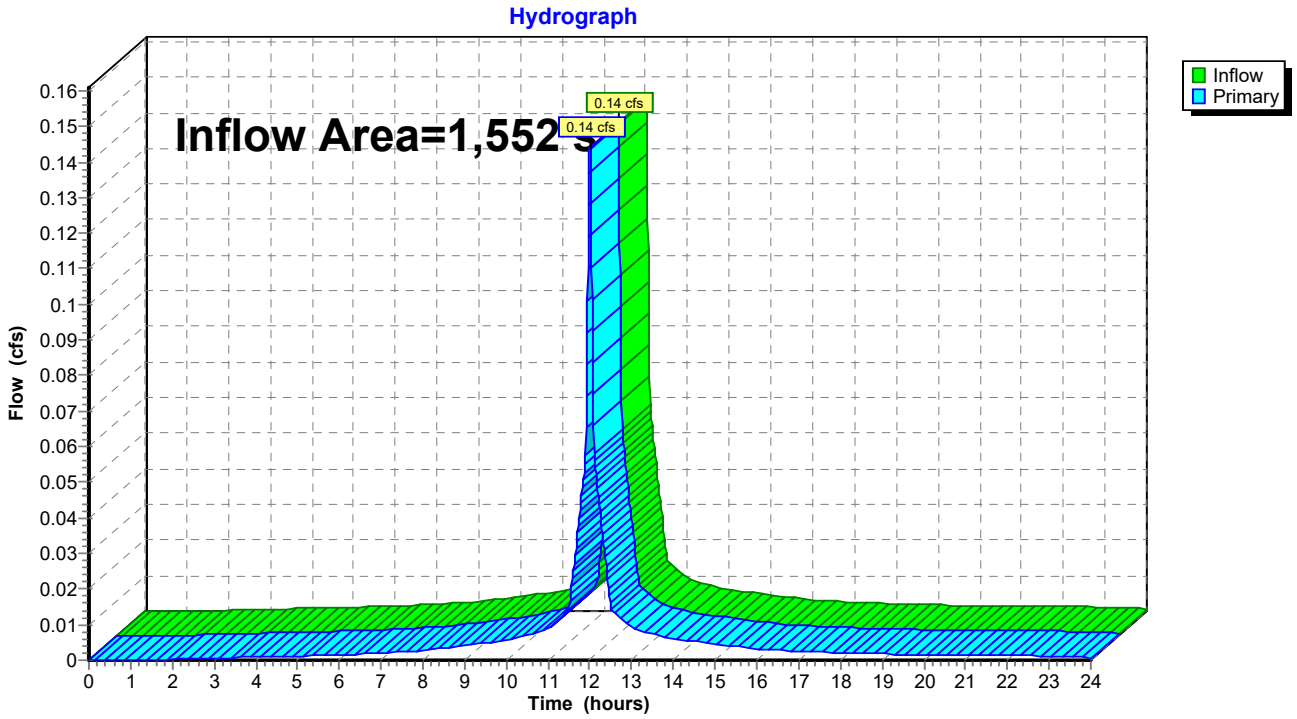


Summary for Pond DP1: Offsite Wetland

Inflow Area = 1,552 sf,100.00% Impervious, Inflow Depth > 3.17" for 2-YEAR event
Inflow = 0.14 cfs @ 12.00 hrs, Volume= 410 cf
Primary = 0.14 cfs @ 12.00 hrs, Volume= 410 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP1: Offsite Wetland

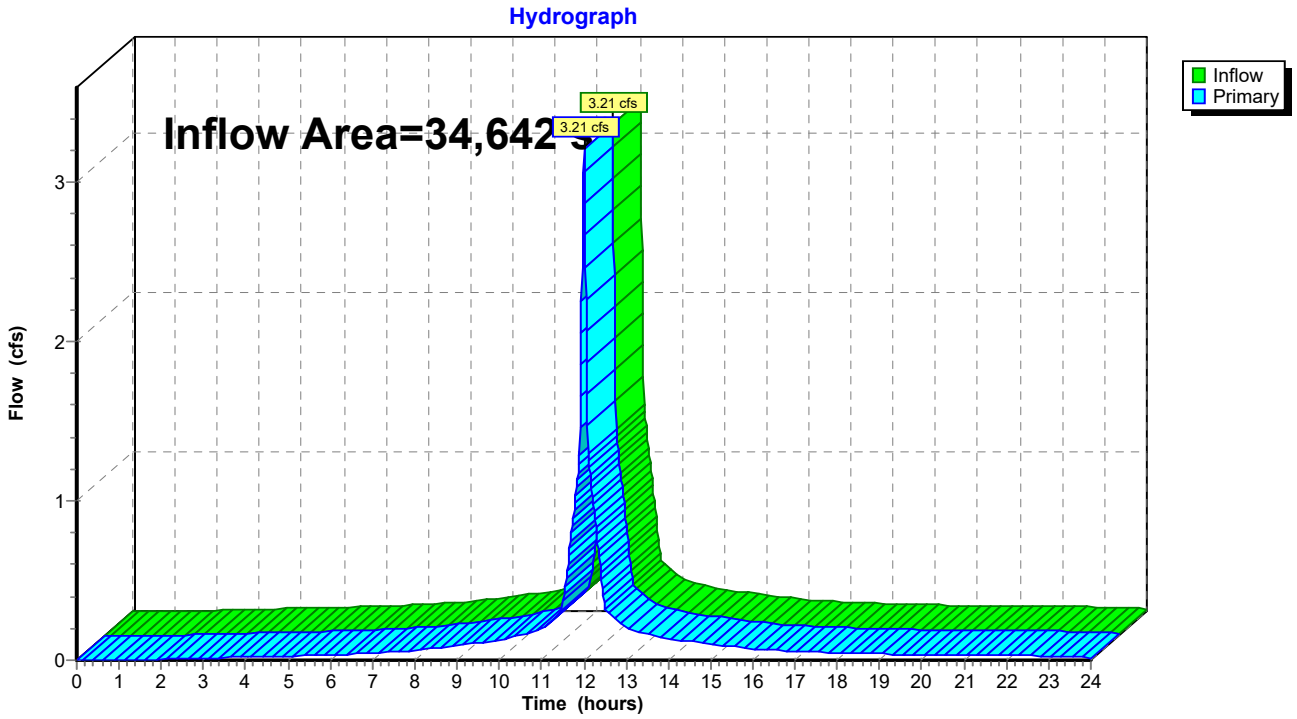


Summary for Pond DP2: Gardner Street

Inflow Area = 34,642 sf,100.00% Impervious, Inflow Depth > 3.17" for 2-YEAR event
Inflow = 3.21 cfs @ 12.00 hrs, Volume= 9,142 cf
Primary = 3.21 cfs @ 12.00 hrs, Volume= 9,142 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP2: Gardner Street

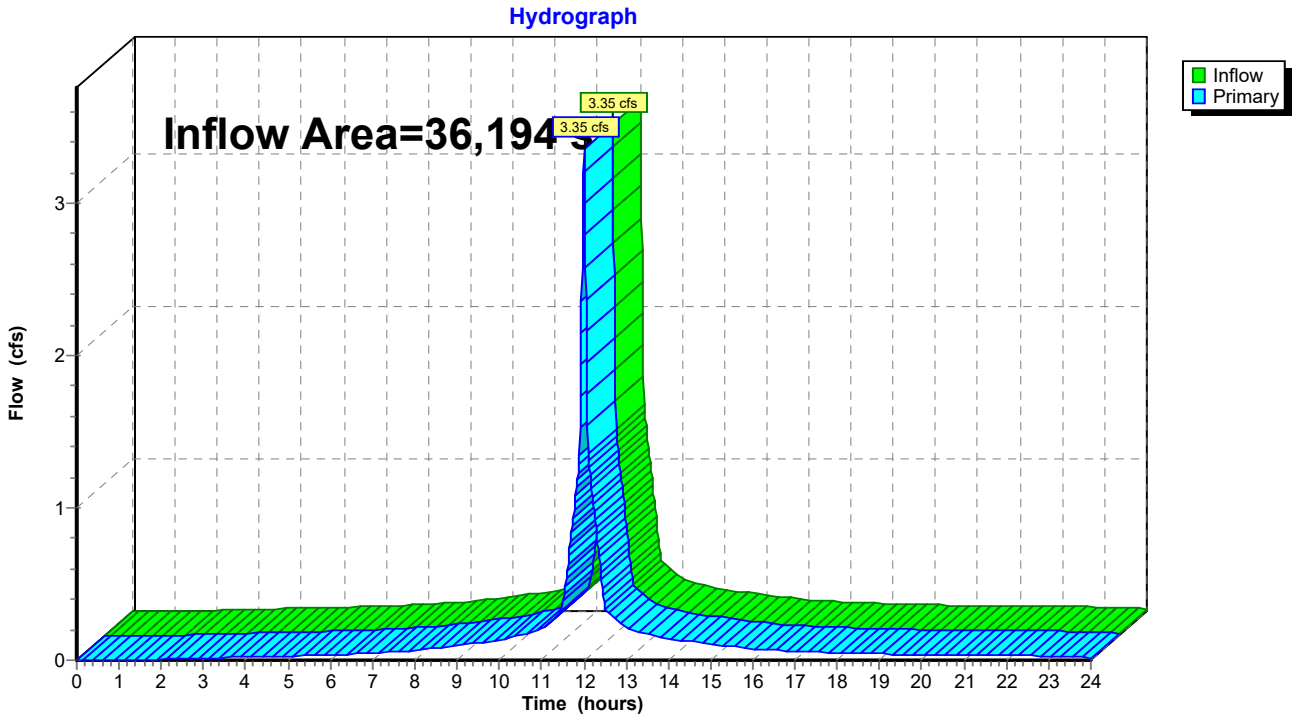


Summary for Link 1L: Cow Island Pond

Inflow Area = 36,194 sf,100.00% Impervious, Inflow Depth > 3.17" for 2-YEAR event
Inflow = 3.35 cfs @ 12.00 hrs, Volume= 9,552 cf
Primary = 3.35 cfs @ 12.00 hrs, Volume= 9,552 cf, Atten= 0%, Lag= 0.0 min

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

Link 1L: Cow Island Pond



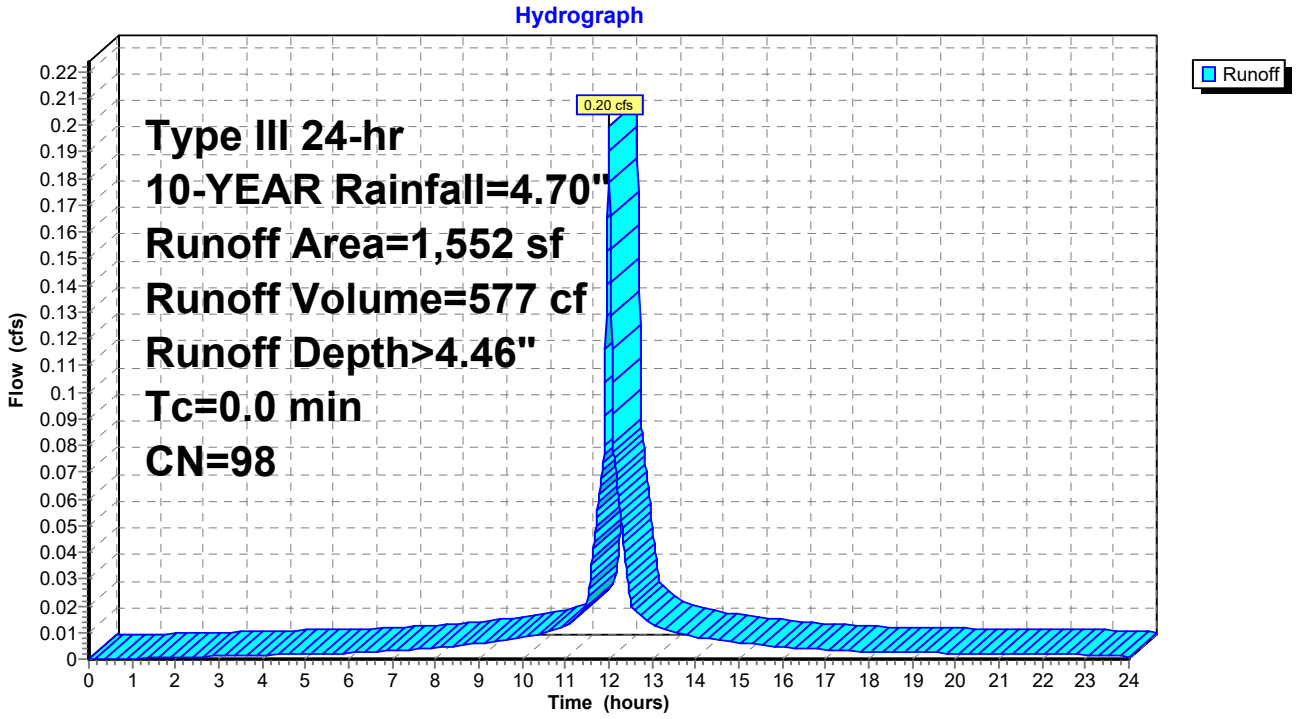
Summary for Subcatchment E1: Rear of 197 Gardner Street

Runoff = 0.20 cfs @ 12.00 hrs, Volume= 577 cf, Depth> 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=4.70"

Area (sf)	CN	Description
1,552	98	Paved parking, HSG D
1,552		100.00% Impervious Area

Subcatchment E1: Rear of 197 Gardner Street



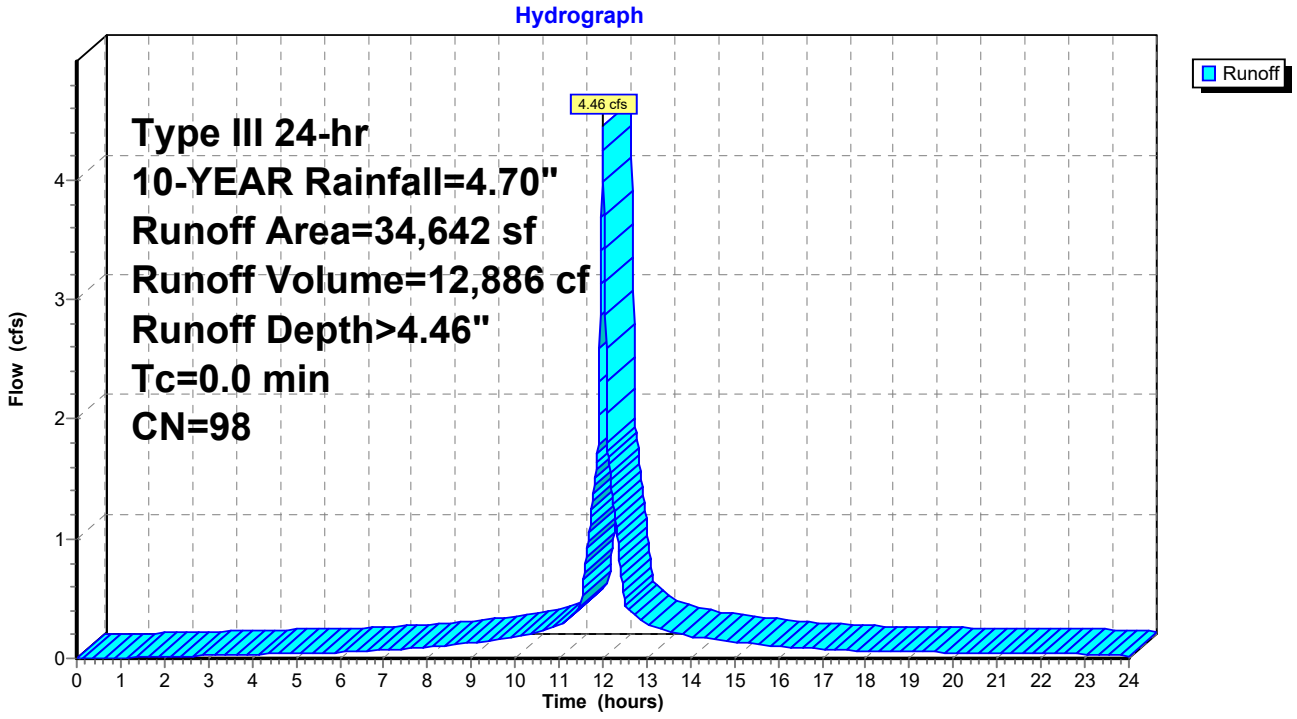
Summary for Subcatchment E2: 189 & 197 Gardner Street

Runoff = 4.46 cfs @ 12.00 hrs, Volume= 12,886 cf, Depth> 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=4.70"

Area (sf)	CN	Description
20,306	98	Unconnected roofs, HSG D
14,336	98	Paved parking, HSG D
34,642	98	Weighted Average
34,642		100.00% Impervious Area
20,306		58.62% Unconnected

Subcatchment E2: 189 & 197 Gardner Street

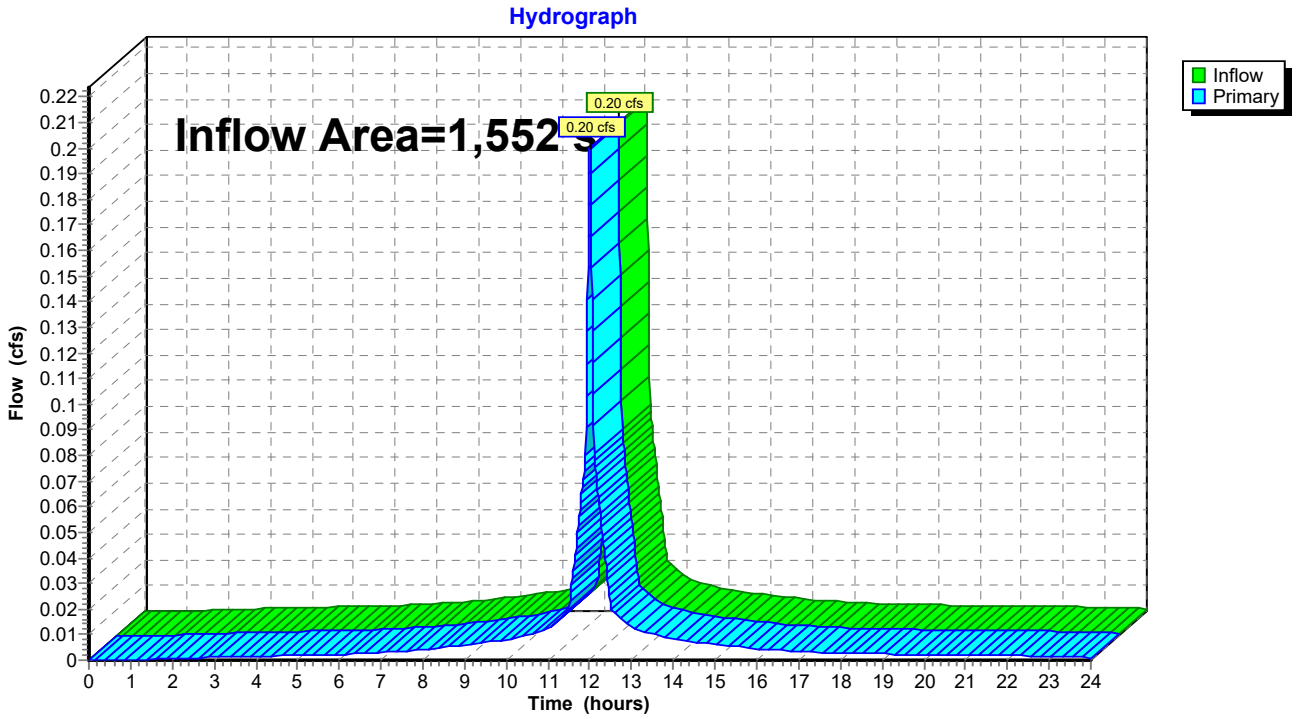


Summary for Pond DP1: Offsite Wetland

Inflow Area = 1,552 sf,100.00% Impervious, Inflow Depth > 4.46" for 10-YEAR event
Inflow = 0.20 cfs @ 12.00 hrs, Volume= 577 cf
Primary = 0.20 cfs @ 12.00 hrs, Volume= 577 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP1: Offsite Wetland

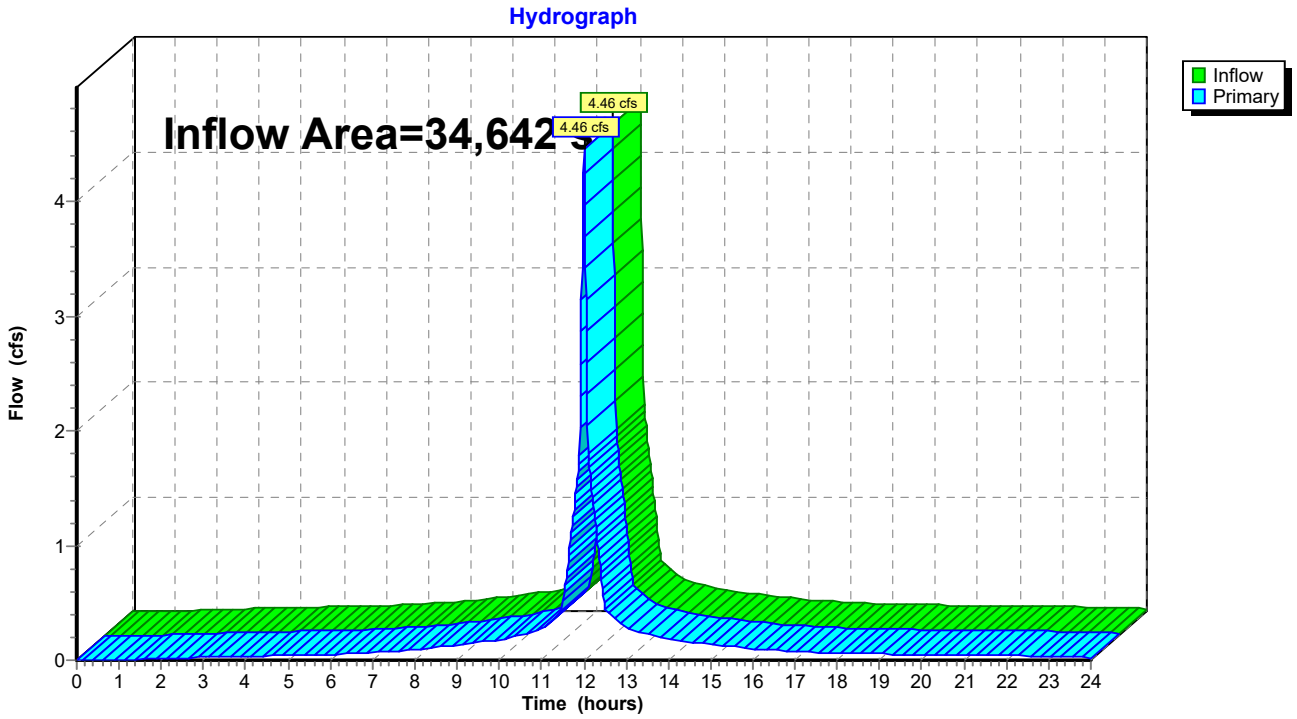


Summary for Pond DP2: Gardner Street

Inflow Area = 34,642 sf,100.00% Impervious, Inflow Depth > 4.46" for 10-YEAR event
Inflow = 4.46 cfs @ 12.00 hrs, Volume= 12,886 cf
Primary = 4.46 cfs @ 12.00 hrs, Volume= 12,886 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP2: Gardner Street

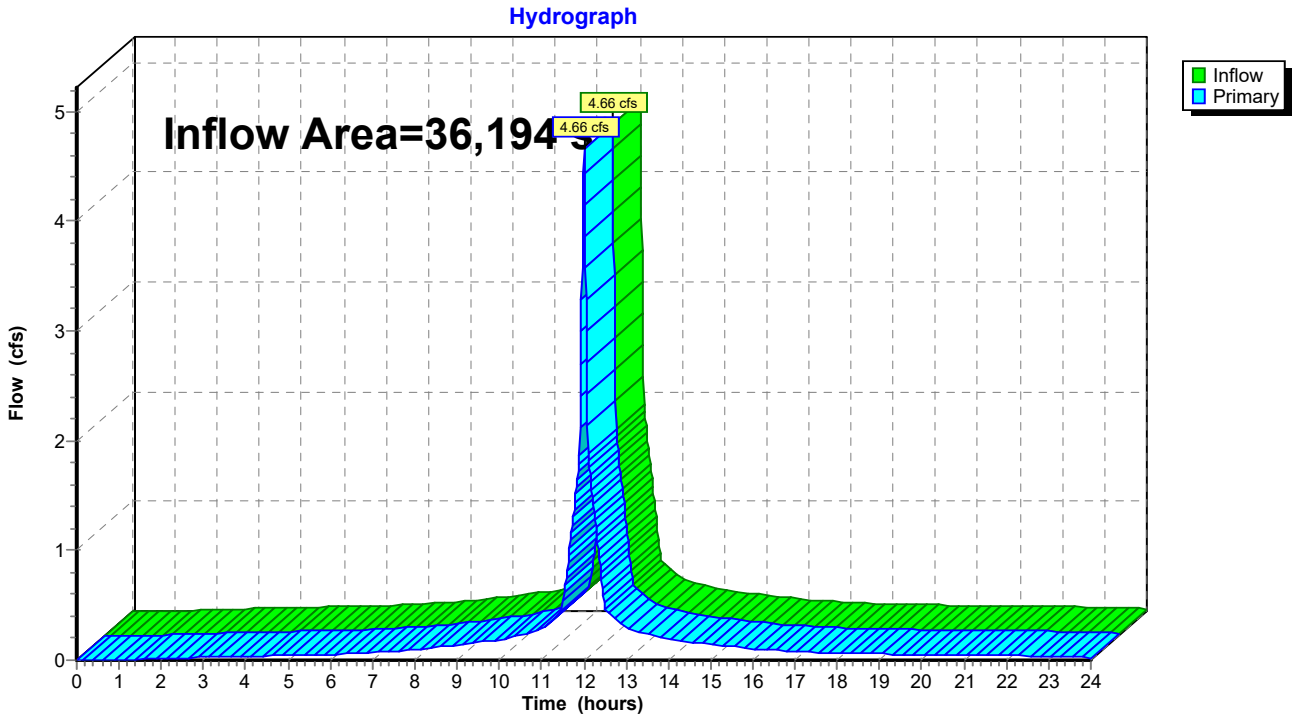


Summary for Link 1L: Cow Island Pond

Inflow Area = 36,194 sf,100.00% Impervious, Inflow Depth > 4.46" for 10-YEAR event
Inflow = 4.66 cfs @ 12.00 hrs, Volume= 13,463 cf
Primary = 4.66 cfs @ 12.00 hrs, Volume= 13,463 cf, Atten= 0%, Lag= 0.0 min

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

Link 1L: Cow Island Pond



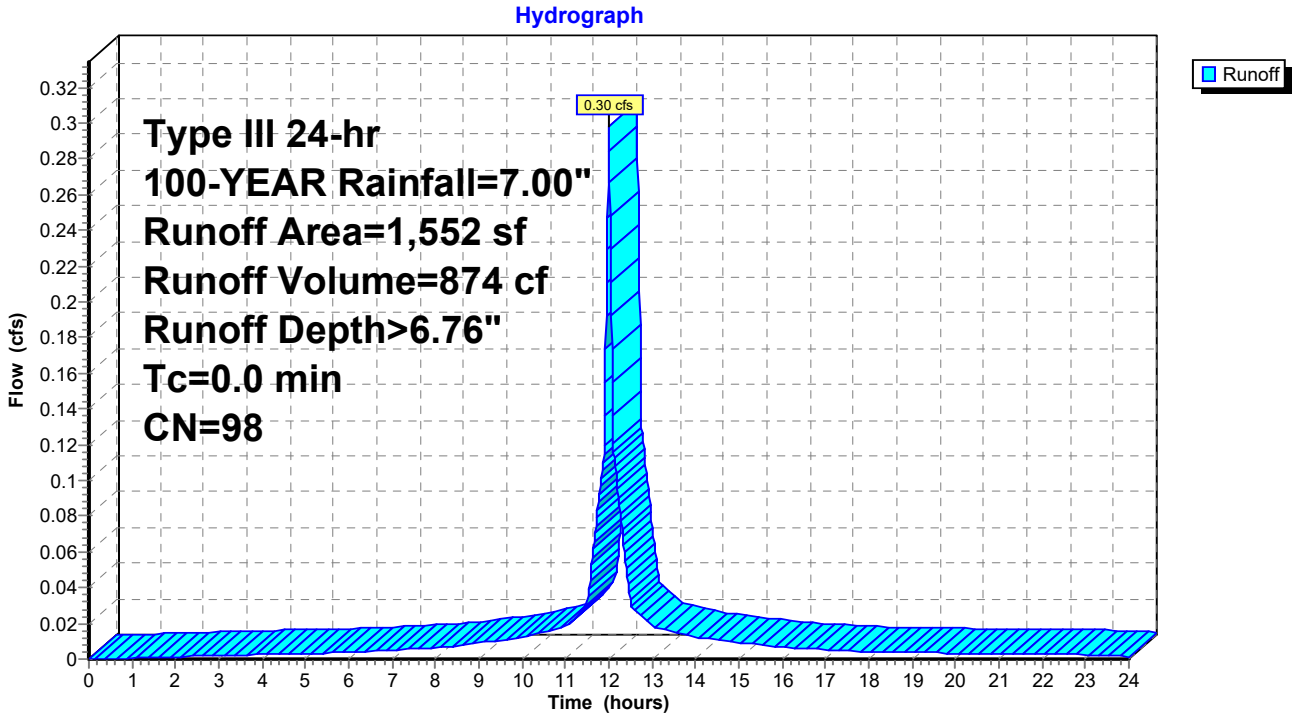
Summary for Subcatchment E1: Rear of 197 Gardner Street

Runoff = 0.30 cfs @ 12.00 hrs, Volume= 874 cf, Depth> 6.76"

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=7.00"

Area (sf)	CN	Description
1,552	98	Paved parking, HSG D
1,552		100.00% Impervious Area

Subcatchment E1: Rear of 197 Gardner Street



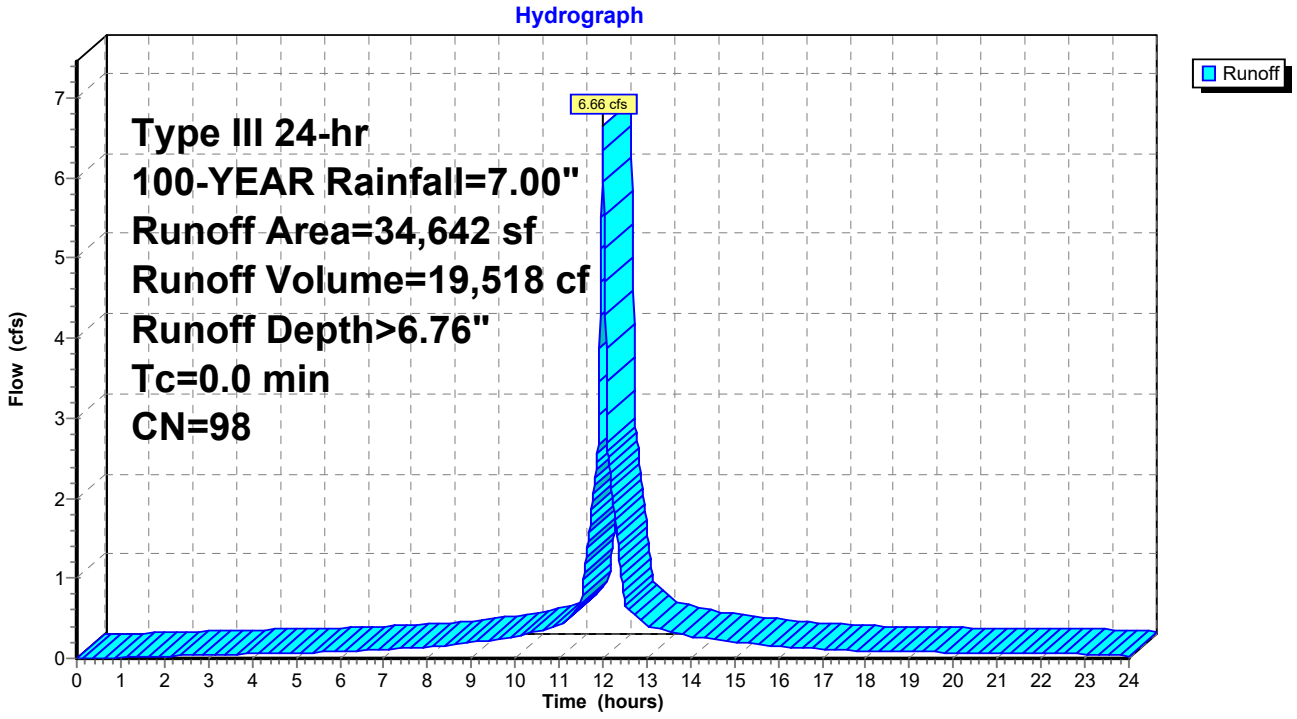
Summary for Subcatchment E2: 189 & 197 Gardner Street

Runoff = 6.66 cfs @ 12.00 hrs, Volume= 19,518 cf, Depth> 6.76"

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=7.00"

Area (sf)	CN	Description
20,306	98	Unconnected roofs, HSG D
14,336	98	Paved parking, HSG D
34,642	98	Weighted Average
34,642		100.00% Impervious Area
20,306		58.62% Unconnected

Subcatchment E2: 189 & 197 Gardner Street

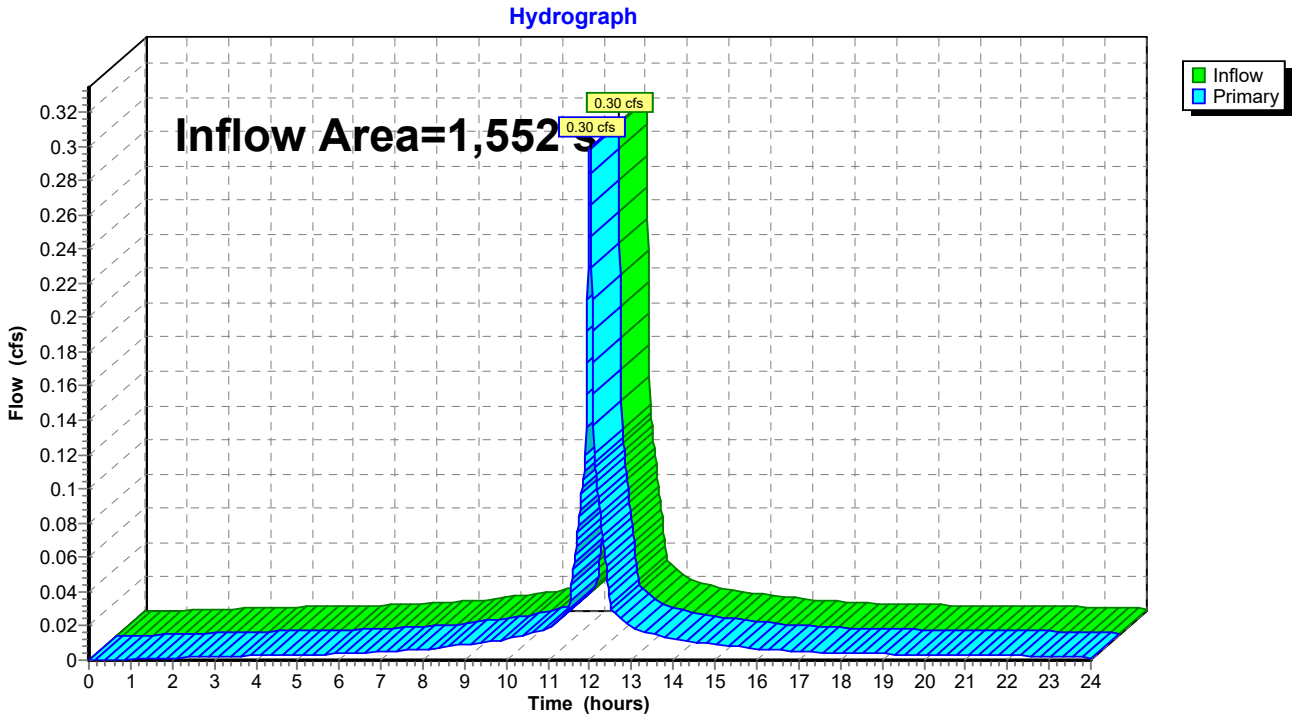


Summary for Pond DP1: Offsite Wetland

Inflow Area = 1,552 sf,100.00% Impervious, Inflow Depth > 6.76" for 100-YEAR event
Inflow = 0.30 cfs @ 12.00 hrs, Volume= 874 cf
Primary = 0.30 cfs @ 12.00 hrs, Volume= 874 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP1: Offsite Wetland

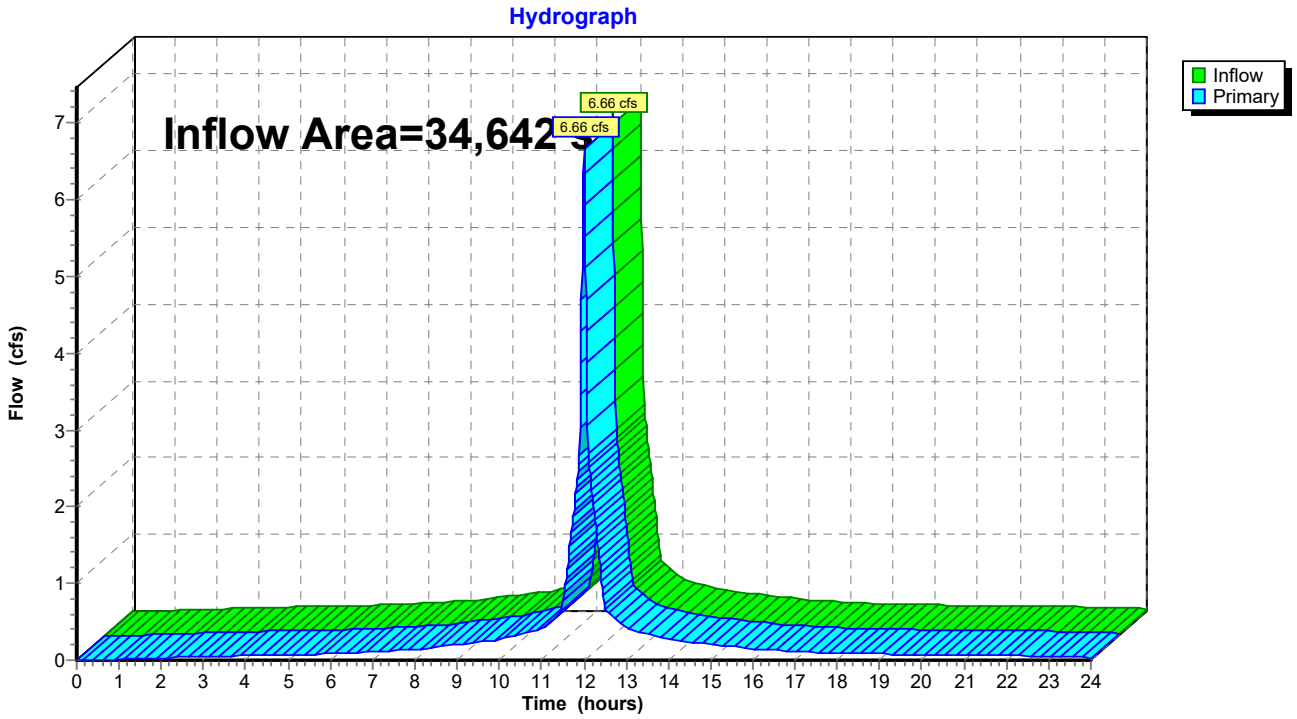


Summary for Pond DP2: Gardner Street

Inflow Area = 34,642 sf,100.00% Impervious, Inflow Depth > 6.76" for 100-YEAR event
Inflow = 6.66 cfs @ 12.00 hrs, Volume= 19,518 cf
Primary = 6.66 cfs @ 12.00 hrs, Volume= 19,518 cf, Atten= 0%, Lag= 0.0 min

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

Pond DP2: Gardner Street



Summary for Link 1L: Cow Island Pond

Inflow Area = 36,194 sf,100.00% Impervious, Inflow Depth > 6.76" for 100-YEAR event
Inflow = 6.96 cfs @ 12.00 hrs, Volume= 20,392 cf
Primary = 6.96 cfs @ 12.00 hrs, Volume= 20,392 cf, Atten= 0%, Lag= 0.0 min

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

Link 1L: Cow Island Pond

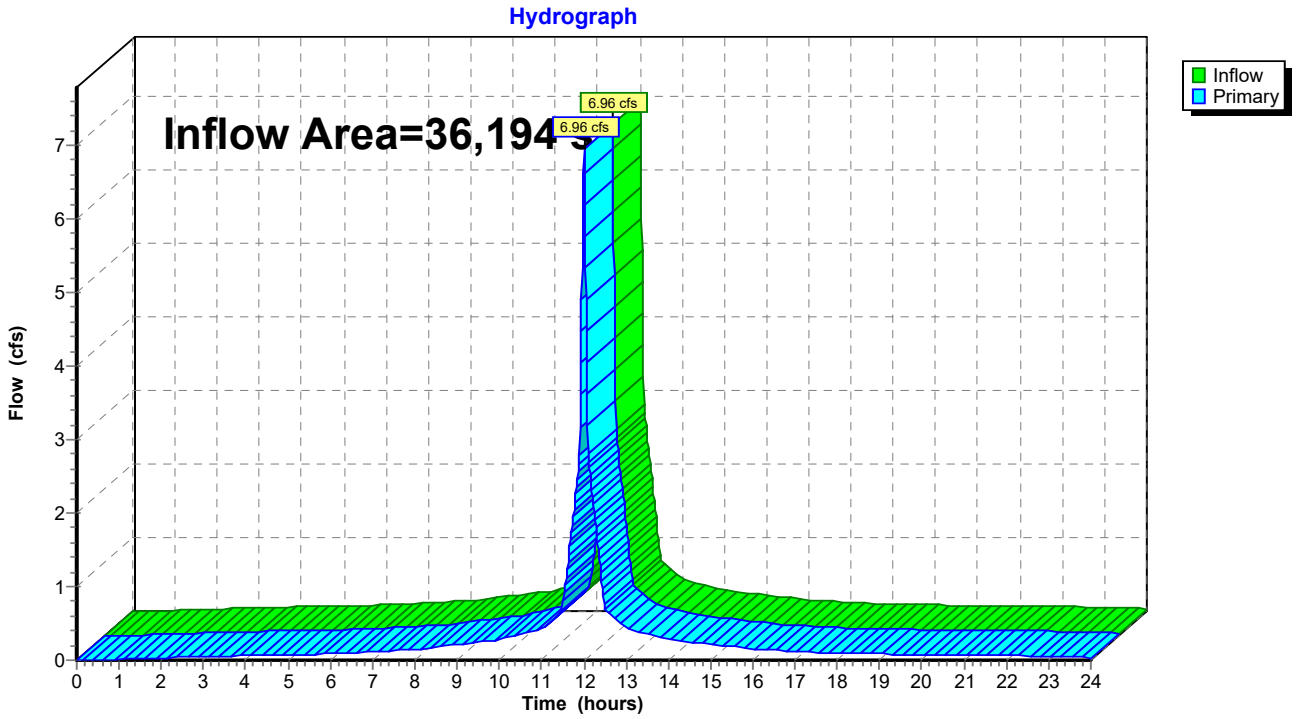
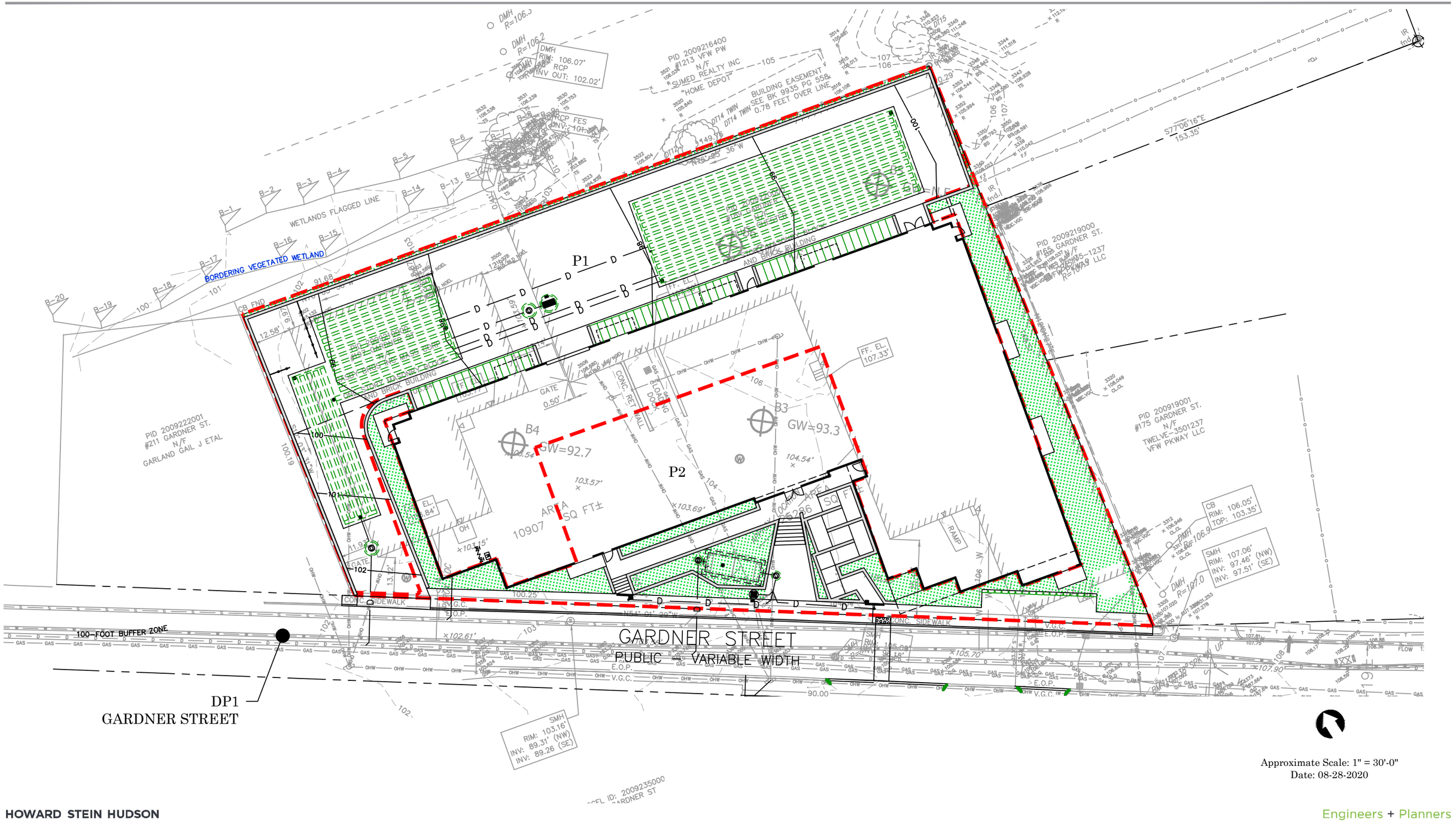
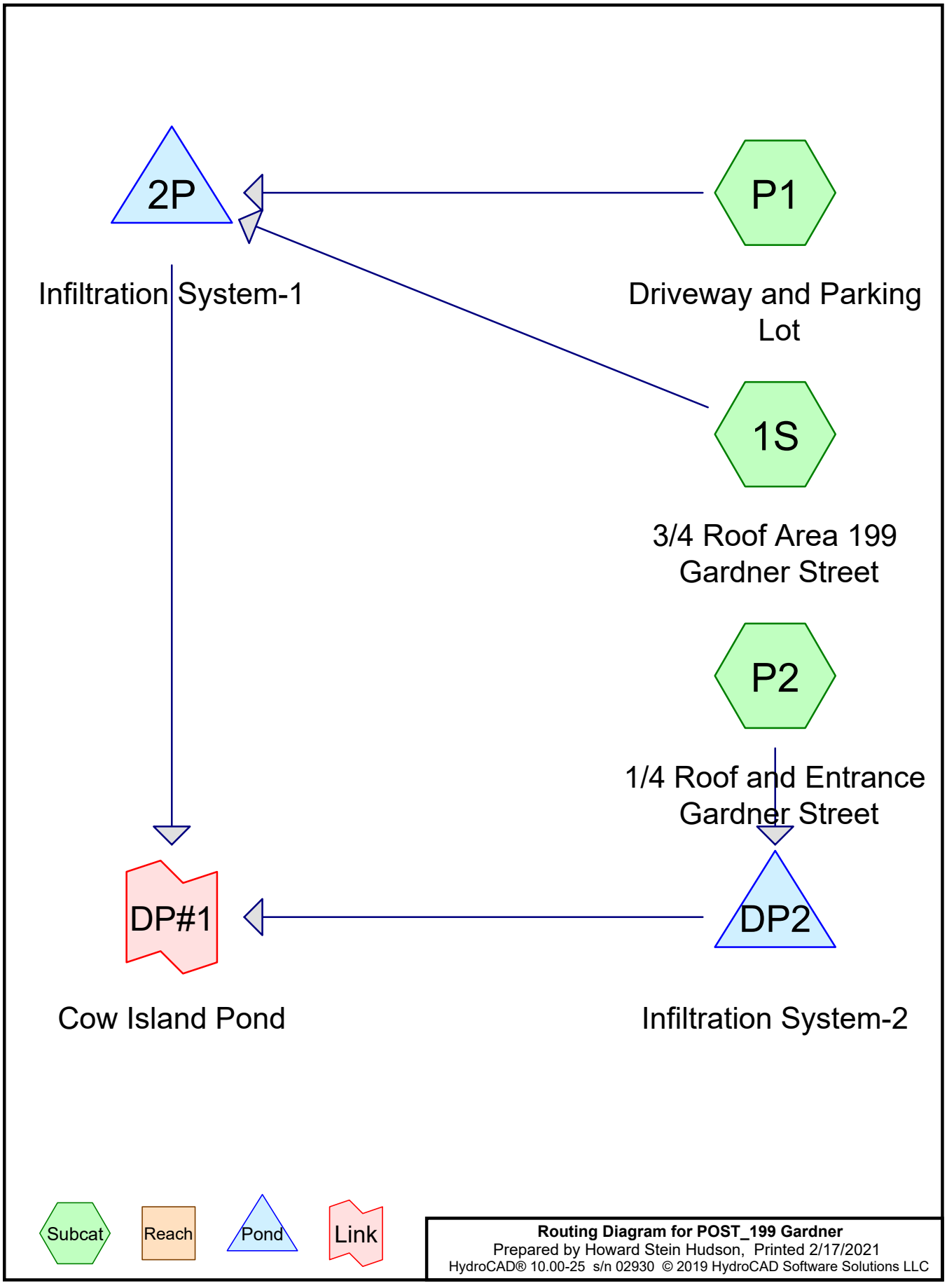


Figure 2. ***POST-DEVELOPEMENT HYDROLOGY***



Approximate Scale: 1" = 30'-0"
Date: 08-28-2020



Routing Diagram for POST_199 Gardner
Prepared by Howard Stein Hudson, Printed 2/17/2021

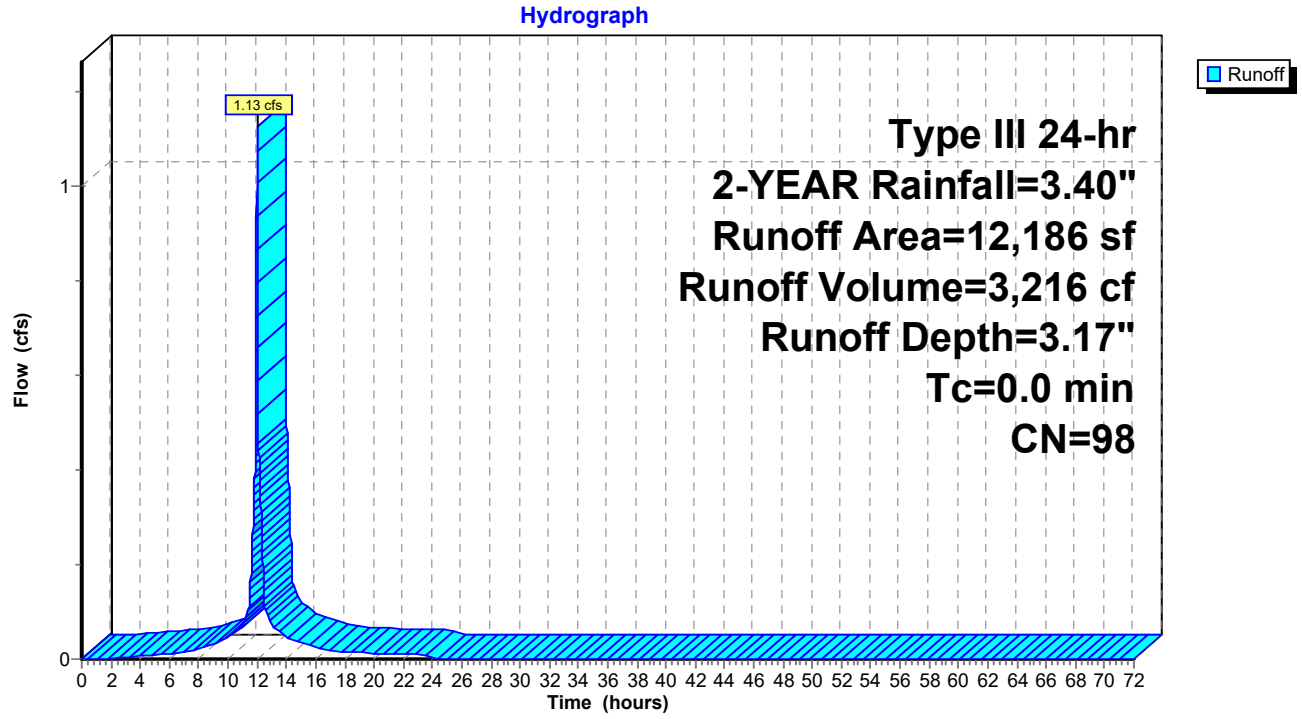
Summary for Subcatchment 1S: 3/4 Roof Area 199 Gardner Street

Runoff = 1.13 cfs @ 12.00 hrs, Volume= 3,216 cf, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.40"

	Area (sf)	CN	Description
*	12,186	98	3/4 Building, HSG D
	12,186		100.00% Impervious Area

Subcatchment 1S: 3/4 Roof Area 199 Gardner Street



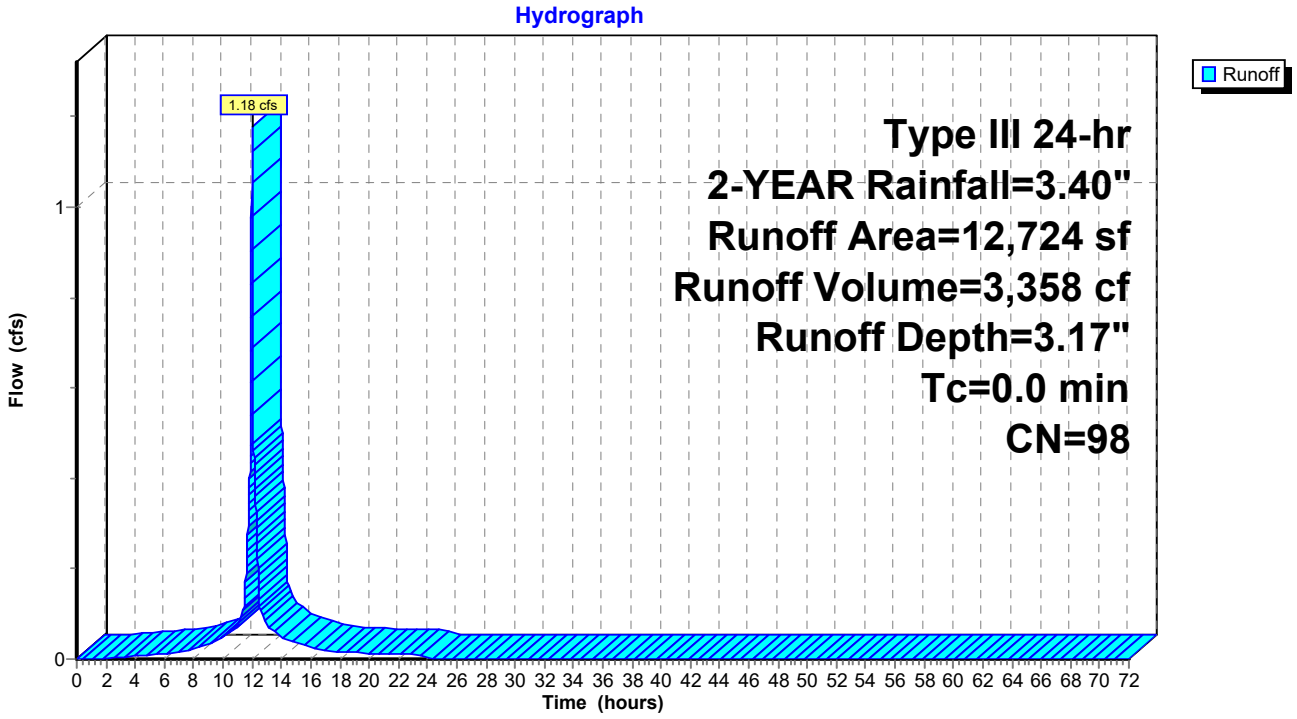
Summary for Subcatchment P1: Driveway and Parking Lot

Runoff = 1.18 cfs @ 12.00 hrs, Volume= 3,358 cf, Depth= 3.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.40"

Area (sf)	CN	Description
12,724	98	Paved parking, HSG D
12,724		100.00% Impervious Area

Subcatchment P1: Driveway and Parking Lot



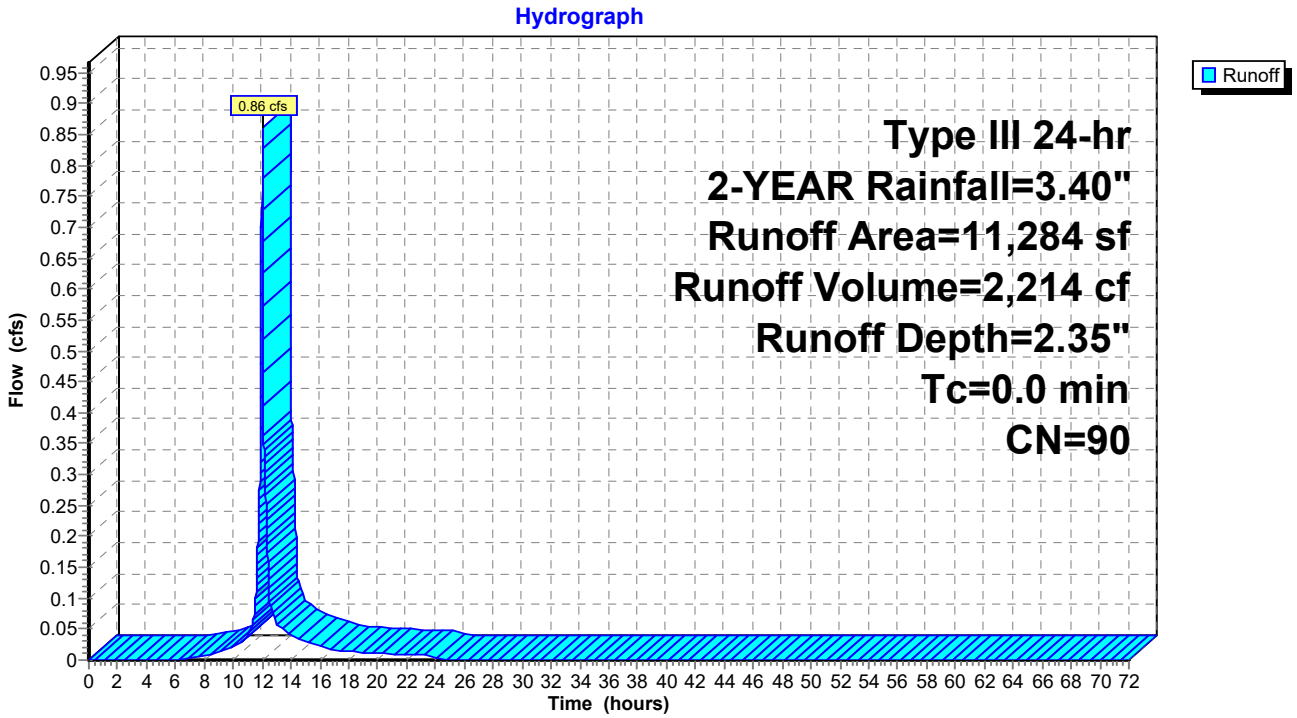
Summary for Subcatchment P2: 1/4 Roof and Entrance Gardner Street

Runoff = 0.86 cfs @ 12.00 hrs, Volume= 2,214 cf, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-YEAR Rainfall=3.40"

	Area (sf)	CN	Description
*	4,062	98	1/4 Building, HSG D
*	2,267	98	Paved Areas near entrance, HSG D
	4,955	80	>75% Grass cover, Good, HSG D
	11,284	90	Weighted Average
	4,955		43.91% Pervious Area
	6,329		56.09% Impervious Area

Subcatchment P2: 1/4 Roof and Entrance Gardner Street



Summary for Pond 2P: Infiltration System-1

Inflow Area = 24,910 sf,100.00% Impervious, Inflow Depth = 3.17" for 2-YEAR event
Inflow = 2.31 cfs @ 12.00 hrs, Volume= 6,574 cf
Outflow = 0.11 cfs @ 10.58 hrs, Volume= 6,574 cf, Atten= 95%, Lag= 0.0 min
Discarded = 0.11 cfs @ 10.58 hrs, Volume= 6,574 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 95.86' @ 13.62 hrs Surf.Area= 4,799 sf Storage= 2,747 cf

Plug-Flow detention time= 192.7 min calculated for 6,574 cf (100% of inflow)
Center-of-Mass det. time= 192.7 min (942.3 - 749.6)

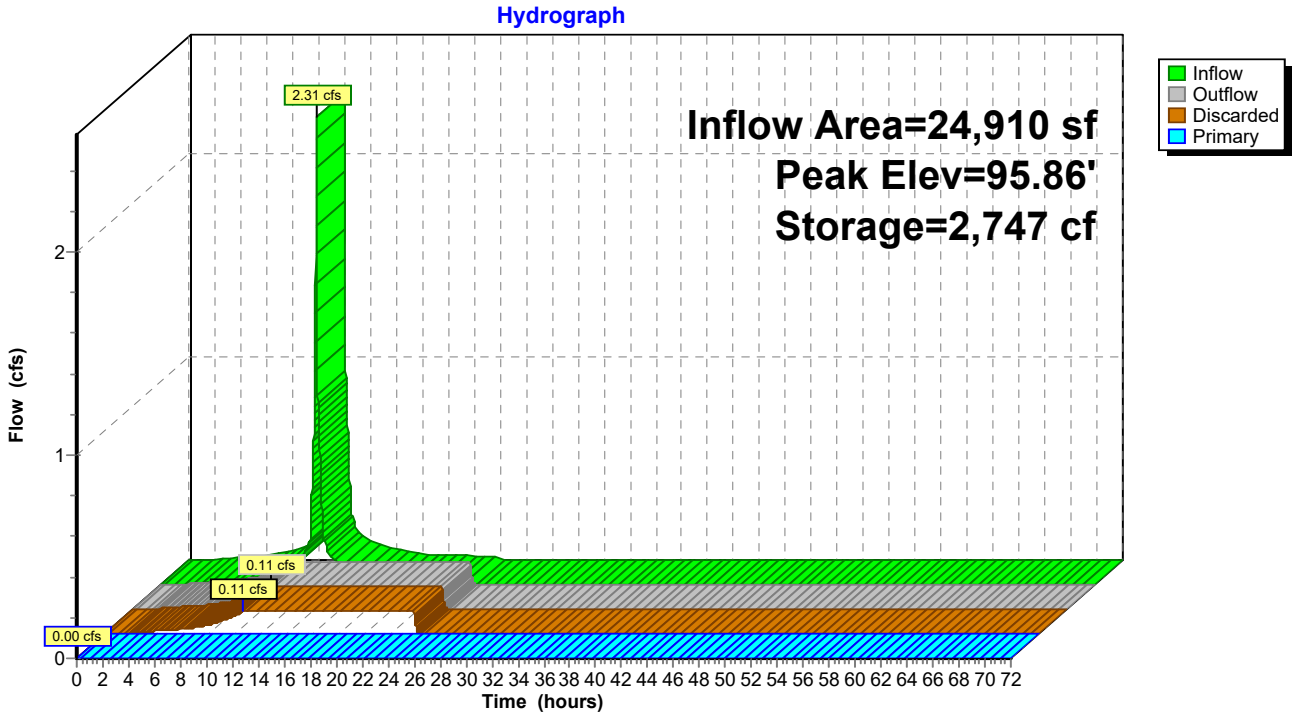
Volume	Invert	Avail.Storage	Storage Description
#1	94.70'	1,557 cf	**30.00'W x 93.20'L x 2.33'H Prismatoid - East Field** 6,515 cf Overall - 1,325 cf Embedded = 5,189 cf x 30.0% Voids
#2	94.70'	729 cf	**30.00'W x 43.20'L x 2.33'H Prismatoid - Nort West Field** 3,020 cf Overall - 589 cf Embedded = 2,431 cf x 30.0% Voids
#3	94.70'	402 cf	**13.15'W x 53.80'L x 2.33'H Prismatoid - South West Field** 1,648 cf Overall - 307 cf Embedded = 1,342 cf x 30.0% Voids
#4	95.05'	1,325 cf	**15.0" Round Pipe Storage - East Field** x 12 Inside #1 L= 90.0'
#5	95.05'	589 cf	**15.0" Round Pipe Storage - North West Field** x 12 Inside #2 L= 40.0'
#6	95.05'	307 cf	**15.0" Round Pipe Storage - South West Field** x 5 Inside #3 L= 50.0'
		4,910 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	95.58'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.58' / 94.97' S= 0.0203 '/' Cc= 0.900 n= 0.009 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	96.30'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Discarded	94.70'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.11 cfs @ 10.58 hrs HW=94.72' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=94.70' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)
└**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond 2P: Infiltration System-1



Summary for Pond DP2: Infiltration System-2

Inflow Area = 11,284 sf, 56.09% Impervious, Inflow Depth = 2.35" for 2-YEAR event
Inflow = 0.86 cfs @ 12.00 hrs, Volume= 2,214 cf
Outflow = 0.85 cfs @ 12.00 hrs, Volume= 2,214 cf, Atten= 1%, Lag= 0.1 min
Discarded = 0.00 cfs @ 7.70 hrs, Volume= 648 cf
Primary = 0.85 cfs @ 12.00 hrs, Volume= 1,566 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 103.24' @ 12.00 hrs Surf.Area= 169 sf Storage= 415 cf

Plug-Flow detention time= 295.5 min calculated for 2,214 cf (100% of inflow)
Center-of-Mass det. time= 296.0 min (1,095.0 - 799.0)

Volume	Invert	Avail.Storage	Storage Description
#1A	98.50'	203 cf	**8.42'W x 20.04'L x 5.50'H Field A** 928 cf Overall - 250 cf Embedded = 678 cf x 30.0% Voids
#2A	99.25'	250 cf	**ADS_StormTech MC-3500 d +Cap**x 2 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap Cap Storage= +14.9 cf x 2 x 1 rows = 29.8 cf
		453 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	95.70'	**12.0" Round Culvert** L= 24.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.70' / 95.47' S= 0.0094 '/' Cc= 0.900 n= 0.009 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	103.00'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Discarded	98.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 7.70 hrs HW=98.56' (Free Discharge)
↑—**3=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.84 cfs @ 12.00 hrs HW=103.24' (Free Discharge)
↑—**1=Culvert** (Passes 0.84 cfs of 7.92 cfs potential flow)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 0.84 cfs @ 1.39 fps)

Pond DP2: Infiltration System-2 - Chamber Wizard Field A

Chamber Model = ADS_StormTechMC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= +14.9 cf x 2 x 1 rows = 29.8 cf

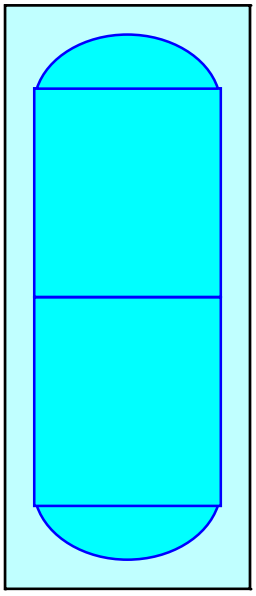
2 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 18.04' Row Length +12.0" End Stone x 2 = 20.04' Base Length
1 Rows x 77.0" Wide + 12.0" Side Stone x 2 = 8.42' Base Width
9.0" Base + 45.0" Chamber Height + 12.0" Cover = 5.50' Field Height

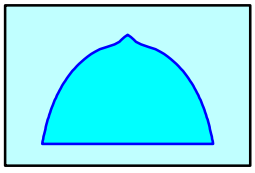
2 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 1 Rows = 249.7 cf Chamber Storage

927.7 cf Field - 249.7 cf Chambers = 678.0 cf Stone x 30.0% Voids = 203.4 cf Stone Storage

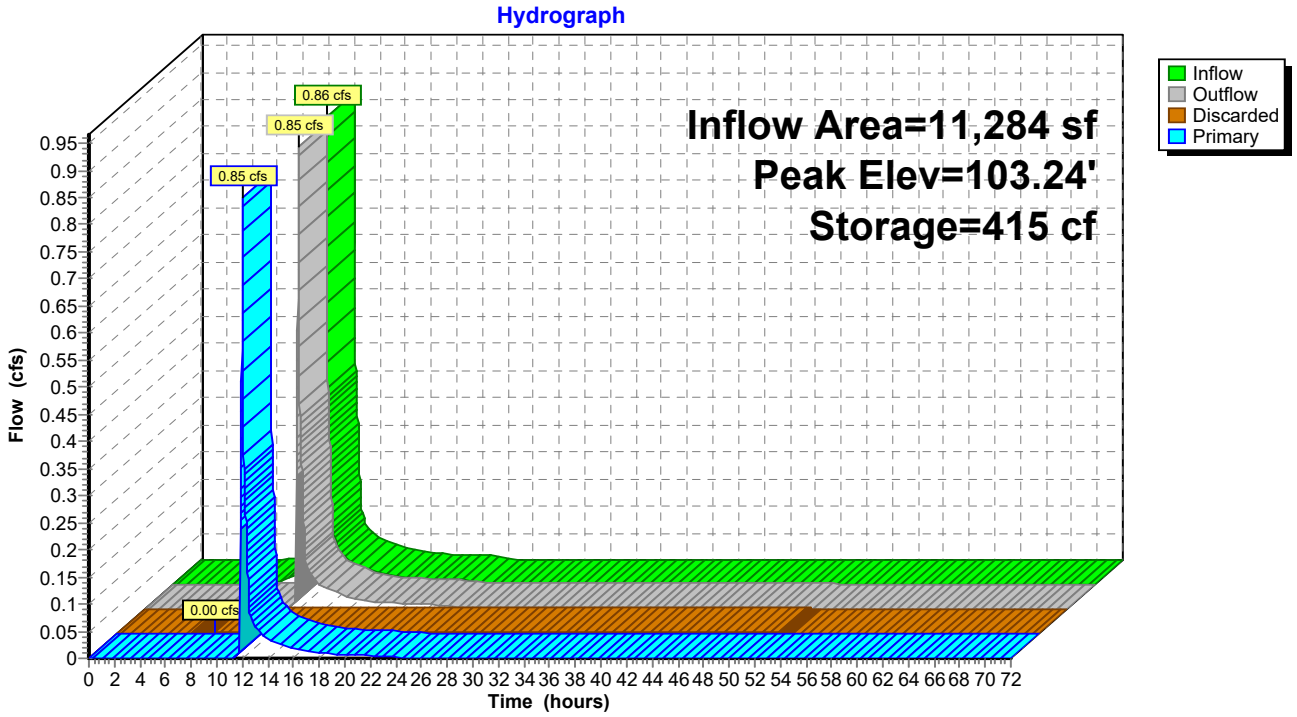
Chamber Storage + Stone Storage = 453.1 cf = 0.010 af
Overall Storage Efficiency = 48.8%
Overall System Size = 20.04' x 8.42' x 5.50'

2 Chambers
34.4 cy Field
25.1 cy Stone





Pond DP2: Infiltration System-2

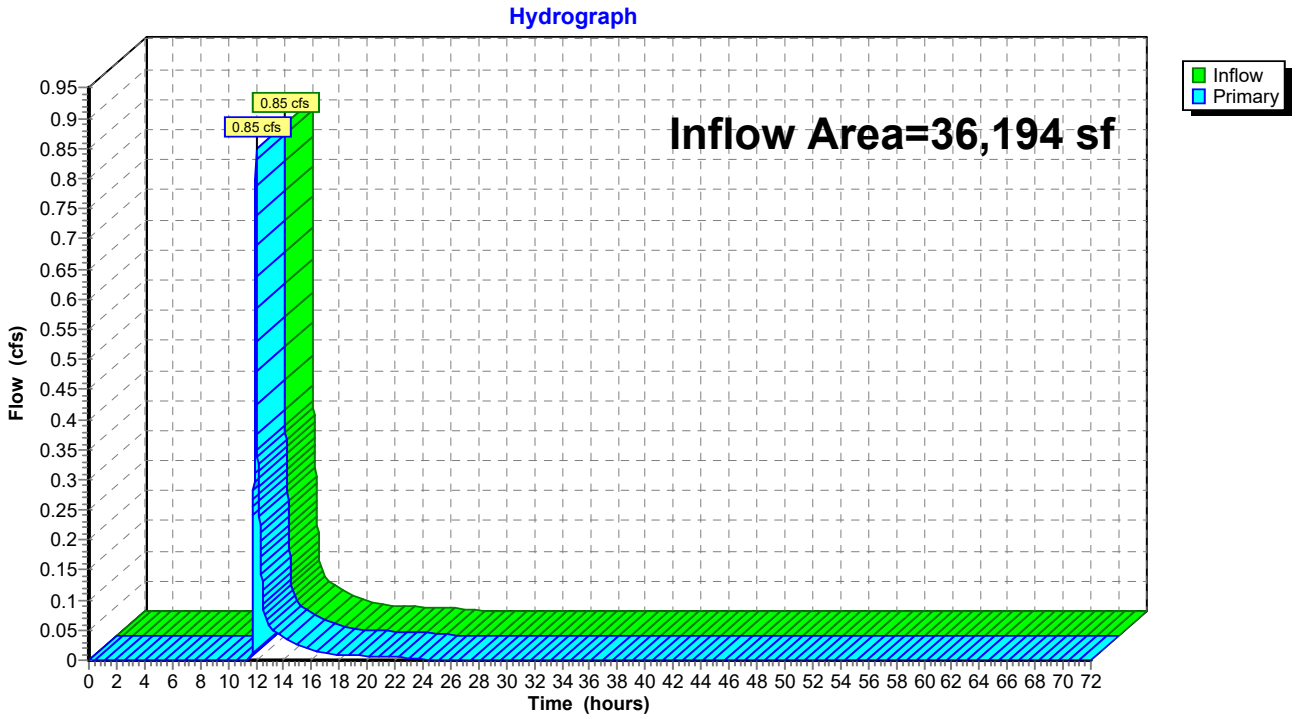


Summary for Link DP#1: Cow Island Pond

Inflow Area = 36,194 sf, 86.31% Impervious, Inflow Depth = 0.52" for 2-YEAR event
Inflow = 0.85 cfs @ 12.00 hrs, Volume= 1,566 cf
Primary = 0.85 cfs @ 12.00 hrs, Volume= 1,566 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link DP#1: Cow Island Pond



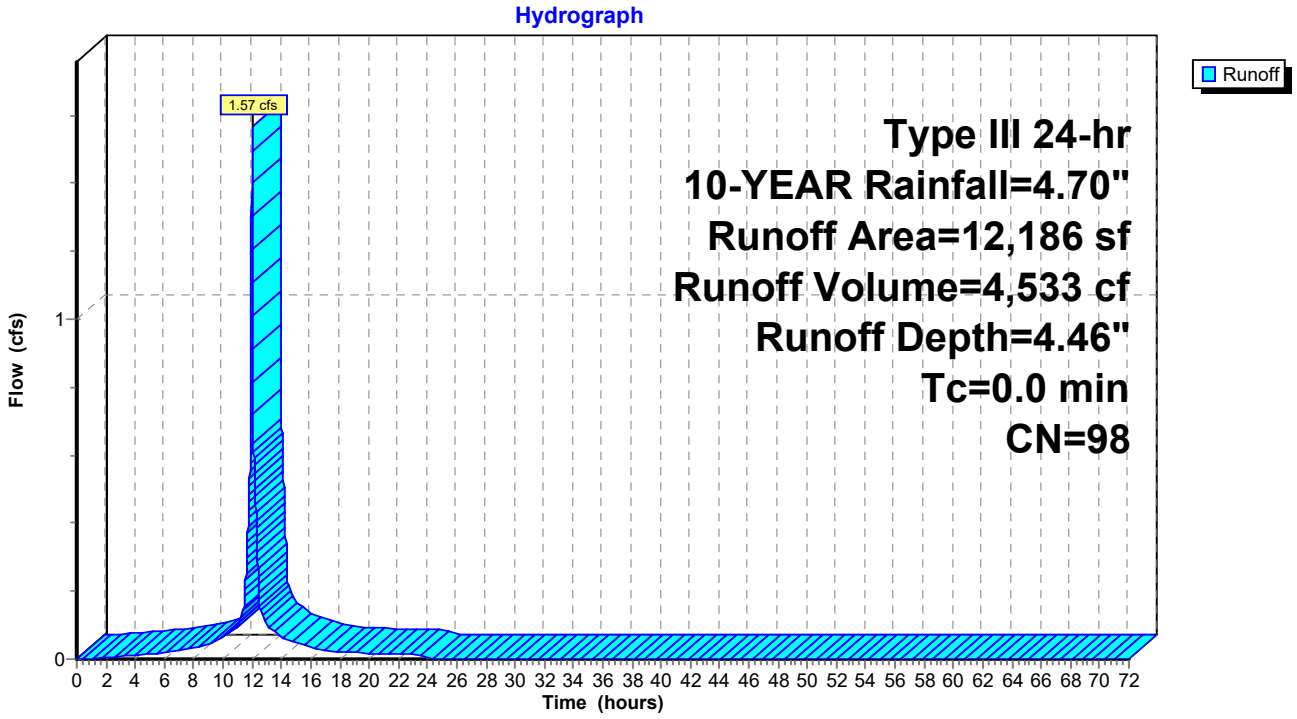
Summary for Subcatchment 1S: 3/4 Roof Area 199 Gardner Street

Runoff = 1.57 cfs @ 12.00 hrs, Volume= 4,533 cf, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	12,186	98	3/4 Building, HSG D
	12,186		100.00% Impervious Area

Subcatchment 1S: 3/4 Roof Area 199 Gardner Street



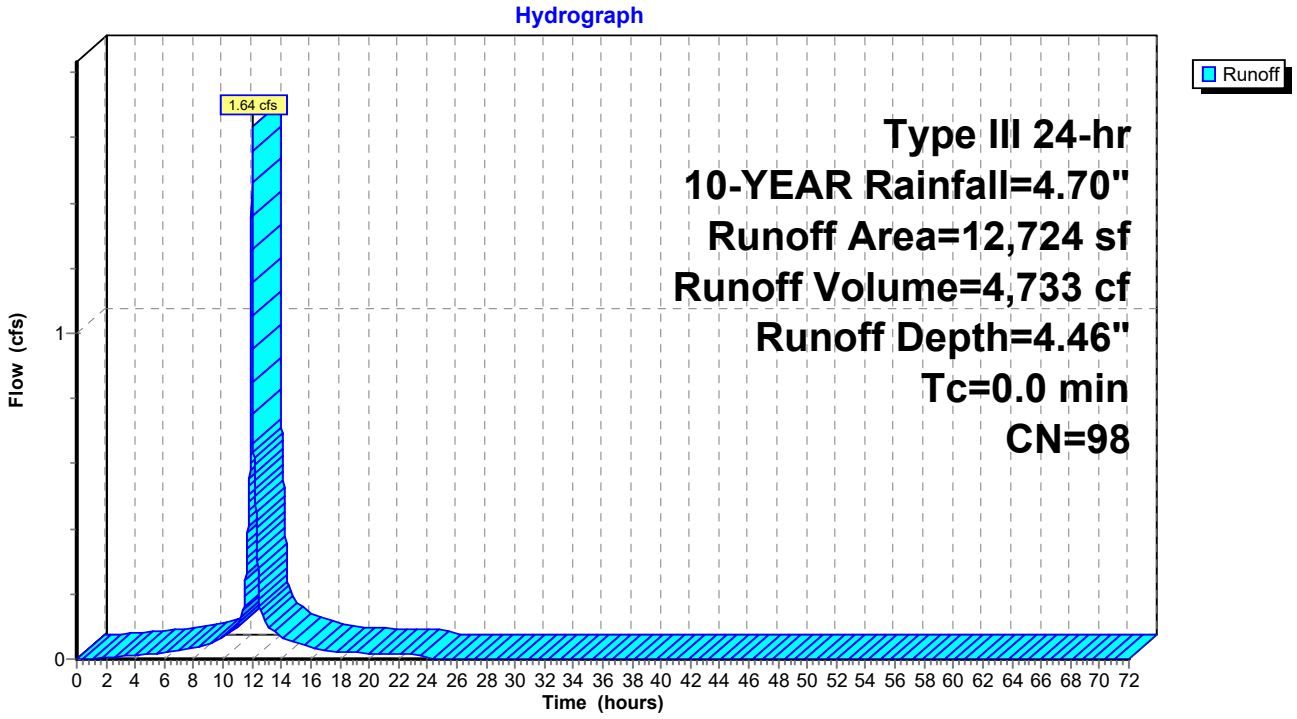
Summary for Subcatchment P1: Driveway and Parking Lot

Runoff = 1.64 cfs @ 12.00 hrs, Volume= 4,733 cf, Depth= 4.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=4.70"

Area (sf)	CN	Description
12,724	98	Paved parking, HSG D
12,724		100.00% Impervious Area

Subcatchment P1: Driveway and Parking Lot



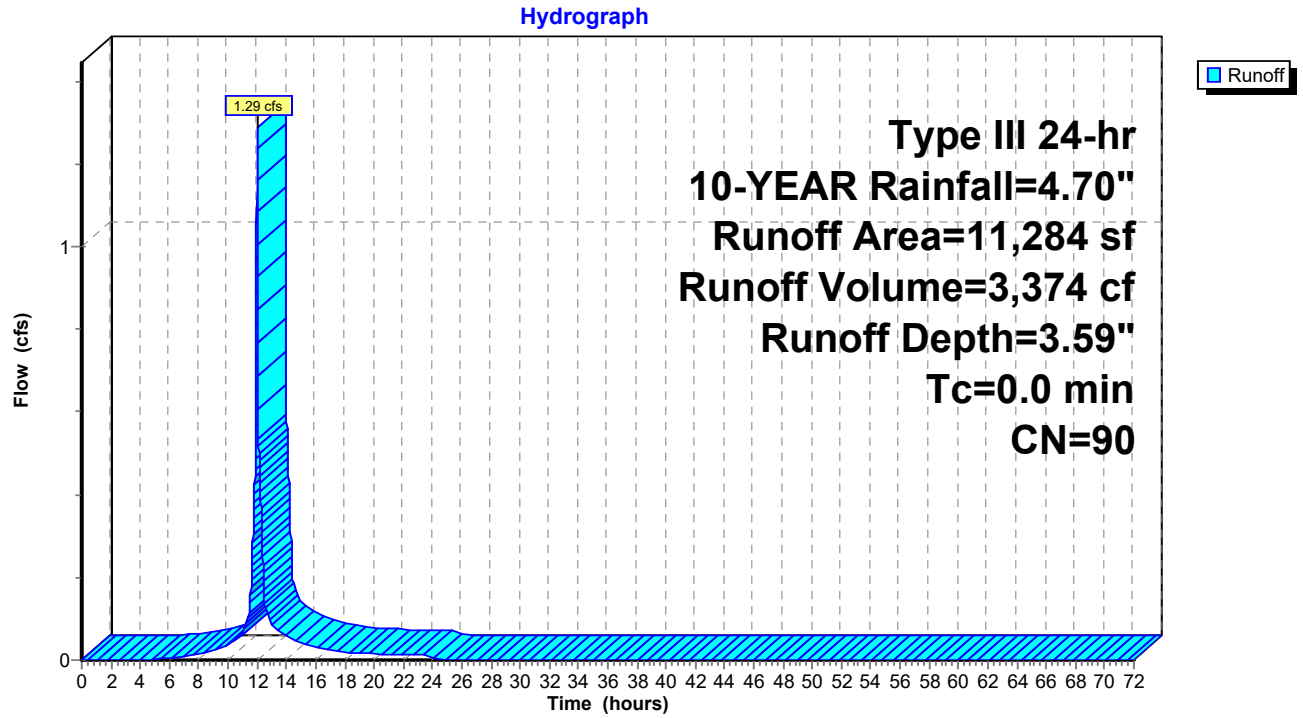
Summary for Subcatchment P2: 1/4 Roof and Entrance Gardner Street

Runoff = 1.29 cfs @ 12.00 hrs, Volume= 3,374 cf, Depth= 3.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-YEAR Rainfall=4.70"

	Area (sf)	CN	Description
*	4,062	98	1/4 Building, HSG D
*	2,267	98	Paved Areas near entrance, HSG D
	4,955	80	>75% Grass cover, Good, HSG D
	11,284	90	Weighted Average
	4,955		43.91% Pervious Area
	6,329		56.09% Impervious Area

Subcatchment P2: 1/4 Roof and Entrance Gardner Street



Summary for Pond 2P: Infiltration System-1

Inflow Area = 24,910 sf,100.00% Impervious, Inflow Depth = 4.46" for 10-YEAR event
Inflow = 3.21 cfs @ 12.00 hrs, Volume= 9,266 cf
Outflow = 0.28 cfs @ 12.68 hrs, Volume= 9,266 cf, Atten= 91%, Lag= 40.9 min
Discarded = 0.11 cfs @ 9.64 hrs, Volume= 8,692 cf
Primary = 0.16 cfs @ 12.68 hrs, Volume= 574 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 96.38' @ 12.68 hrs Surf.Area= 4,799 sf Storage= 3,976 cf

Plug-Flow detention time= 269.5 min calculated for 9,265 cf (100% of inflow)
Center-of-Mass det. time= 269.5 min (1,013.0 - 743.5)

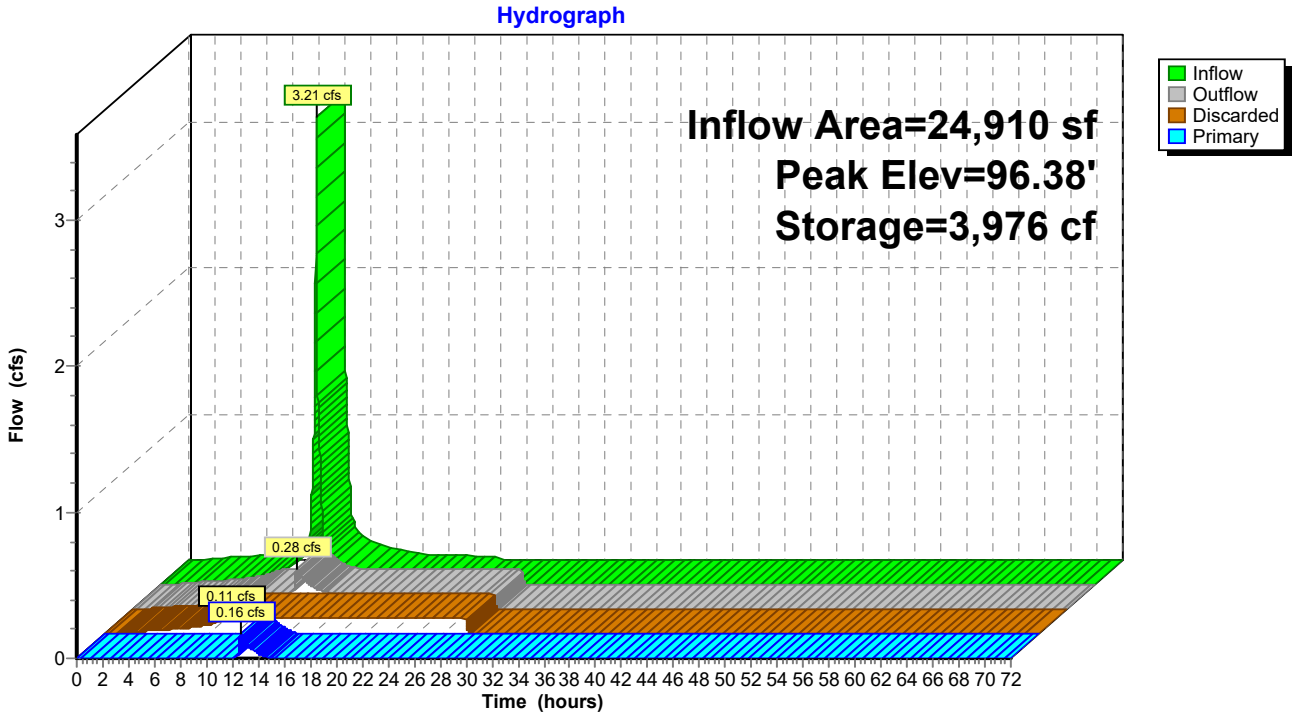
Volume	Invert	Avail.Storage	Storage Description
#1	94.70'	1,557 cf	**30.00'W x 93.20'L x 2.33'H Prismatoid - East Field** 6,515 cf Overall - 1,325 cf Embedded = 5,189 cf x 30.0% Voids
#2	94.70'	729 cf	**30.00'W x 43.20'L x 2.33'H Prismatoid - Nort West Field** 3,020 cf Overall - 589 cf Embedded = 2,431 cf x 30.0% Voids
#3	94.70'	402 cf	**13.15'W x 53.80'L x 2.33'H Prismatoid - South West Field** 1,648 cf Overall - 307 cf Embedded = 1,342 cf x 30.0% Voids
#4	95.05'	1,325 cf	**15.0" Round Pipe Storage - East Field** x 12 Inside #1 L= 90.0'
#5	95.05'	589 cf	**15.0" Round Pipe Storage - North West Field** x 12 Inside #2 L= 40.0'
#6	95.05'	307 cf	**15.0" Round Pipe Storage - South West Field** x 5 Inside #3 L= 50.0'
		4,910 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	95.58'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.58' / 94.97' S= 0.0203 '/' Cc= 0.900 n= 0.009 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	96.30'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Discarded	94.70'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.11 cfs @ 9.64 hrs HW=94.72' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=0.16 cfs @ 12.68 hrs HW=96.38' (Free Discharge)
└**1=Culvert** (Passes 0.16 cfs of 1.62 cfs potential flow)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 0.16 cfs @ 0.80 fps)

Pond 2P: Infiltration System-1



Summary for Pond DP2: Infiltration System-2

Inflow Area = 11,284 sf, 56.09% Impervious, Inflow Depth = 3.59" for 10-YEAR event
Inflow = 1.29 cfs @ 12.00 hrs, Volume= 3,374 cf
Outflow = 1.28 cfs @ 12.00 hrs, Volume= 3,374 cf, Atten= 1%, Lag= 0.1 min
Discarded = 0.00 cfs @ 6.32 hrs, Volume= 668 cf
Primary = 1.27 cfs @ 12.00 hrs, Volume= 2,705 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 103.32' @ 12.00 hrs Surf.Area= 169 sf Storage= 418 cf

Plug-Flow detention time= 201.4 min calculated for 3,373 cf (100% of inflow)
Center-of-Mass det. time= 201.6 min (988.9 - 787.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	98.50'	203 cf	**8.42'W x 20.04'L x 5.50'H Field A** 928 cf Overall - 250 cf Embedded = 678 cf x 30.0% Voids
#2A	99.25'	250 cf	**ADS_StormTech MC-3500 d +Cap**x 2 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap Cap Storage= +14.9 cf x 2 x 1 rows = 29.8 cf
		453 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	95.70'	**12.0" Round Culvert** L= 24.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.70' / 95.47' S= 0.0094 '/' Cc= 0.900 n= 0.009 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	103.00'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Discarded	98.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 6.32 hrs HW=98.56' (Free Discharge)
↑—**3=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=1.26 cfs @ 12.00 hrs HW=103.31' (Free Discharge)
↑—**1=Culvert** (Passes 1.26 cfs of 7.96 cfs potential flow)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 1.26 cfs @ 1.61 fps)

Pond DP2: Infiltration System-2 - Chamber Wizard Field A

Chamber Model = ADS_StormTechMC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= +14.9 cf x 2 x 1 rows = 29.8 cf

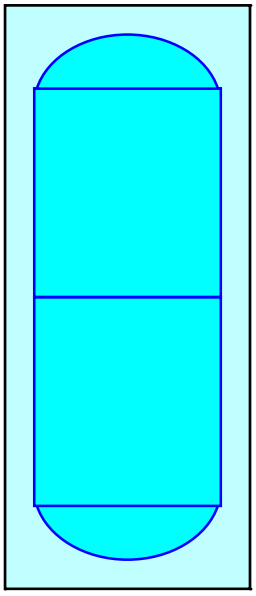
2 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 18.04' Row Length +12.0" End Stone x 2 = 20.04' Base Length
1 Rows x 77.0" Wide + 12.0" Side Stone x 2 = 8.42' Base Width
9.0" Base + 45.0" Chamber Height + 12.0" Cover = 5.50' Field Height

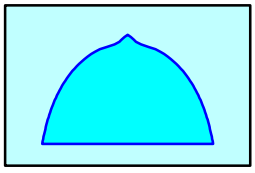
2 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 1 Rows = 249.7 cf Chamber Storage

927.7 cf Field - 249.7 cf Chambers = 678.0 cf Stone x 30.0% Voids = 203.4 cf Stone Storage

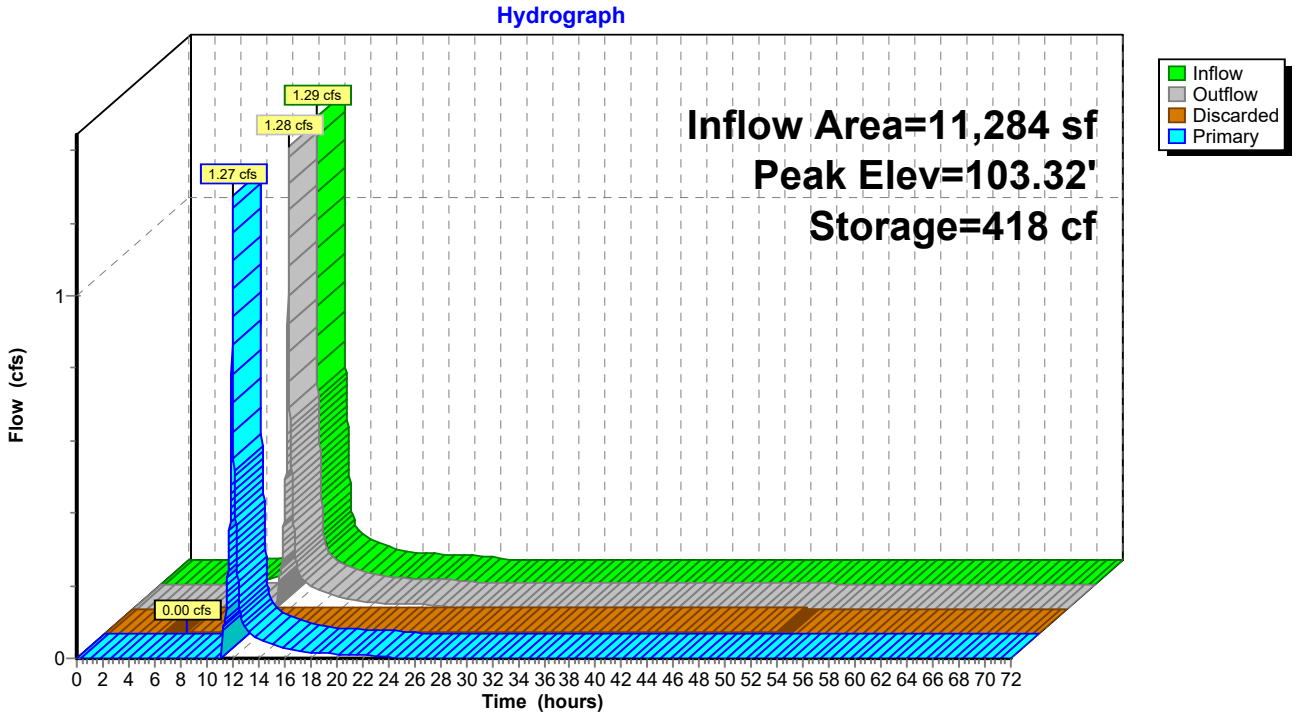
Chamber Storage + Stone Storage = 453.1 cf = 0.010 af
Overall Storage Efficiency = 48.8%
Overall System Size = 20.04' x 8.42' x 5.50'

2 Chambers
34.4 cy Field
25.1 cy Stone





Pond DP2: Infiltration System-2

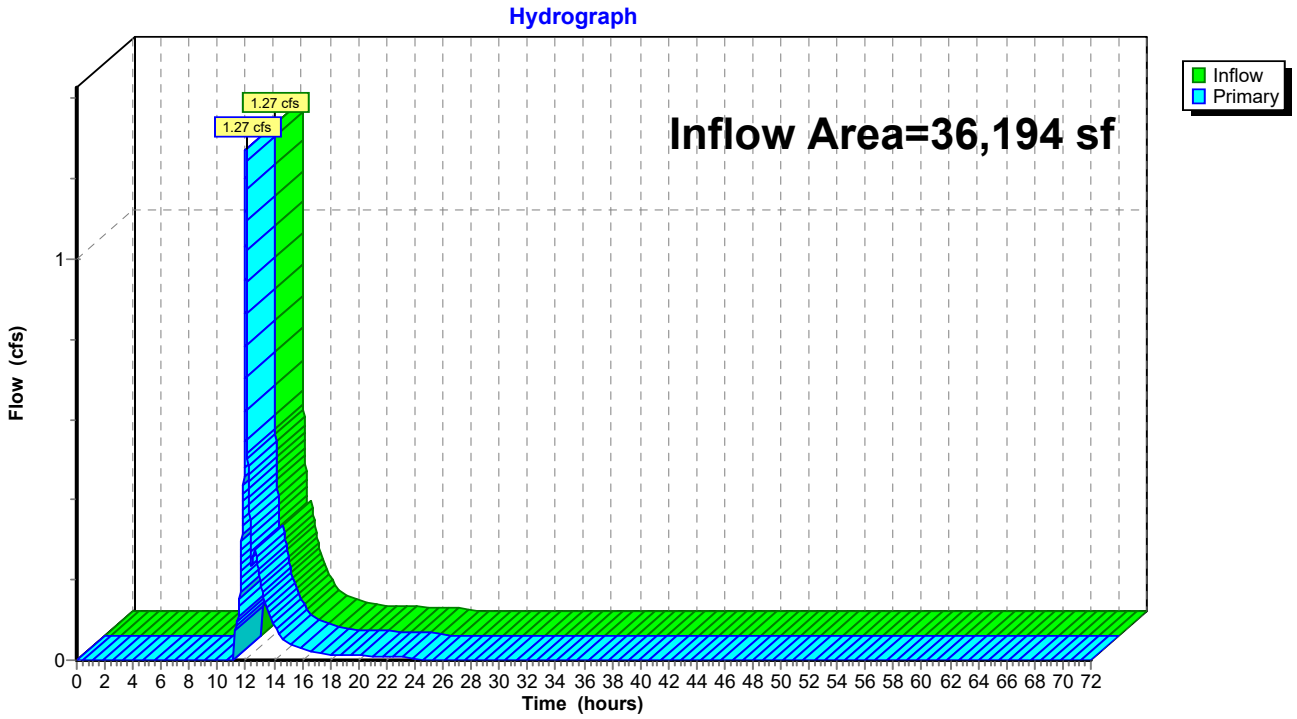


Summary for Link DP#1: Cow Island Pond

Inflow Area = 36,194 sf, 86.31% Impervious, Inflow Depth = 1.09" for 10-YEAR event
Inflow = 1.27 cfs @ 12.00 hrs, Volume= 3,279 cf
Primary = 1.27 cfs @ 12.00 hrs, Volume= 3,279 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link DP#1: Cow Island Pond



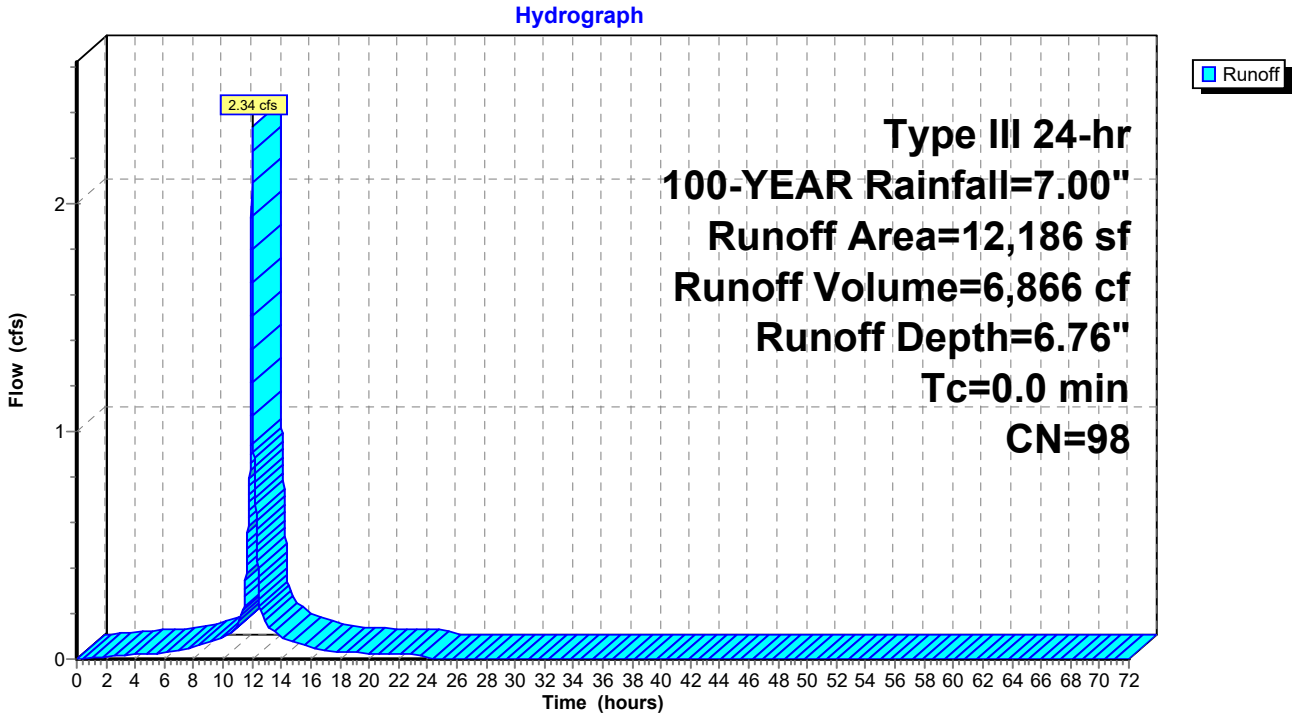
Summary for Subcatchment 1S: 3/4 Roof Area 199 Gardner Street

Runoff = 2.34 cfs @ 12.00 hrs, Volume= 6,866 cf, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=7.00"

	Area (sf)	CN	Description
*	12,186	98	3/4 Building, HSG D
	12,186		100.00% Impervious Area

Subcatchment 1S: 3/4 Roof Area 199 Gardner Street



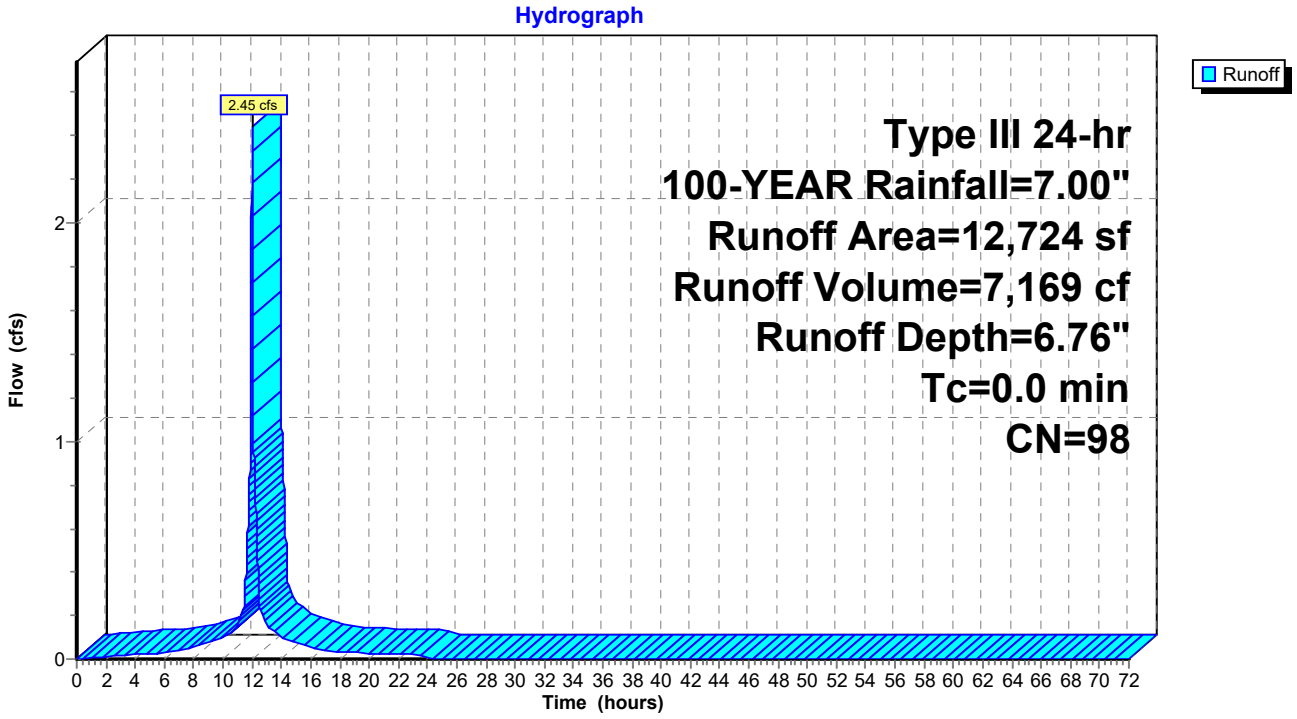
Summary for Subcatchment P1: Driveway and Parking Lot

Runoff = 2.45 cfs @ 12.00 hrs, Volume= 7,169 cf, Depth= 6.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=7.00"

Area (sf)	CN	Description
12,724	98	Paved parking, HSG D
12,724		100.00% Impervious Area

Subcatchment P1: Driveway and Parking Lot



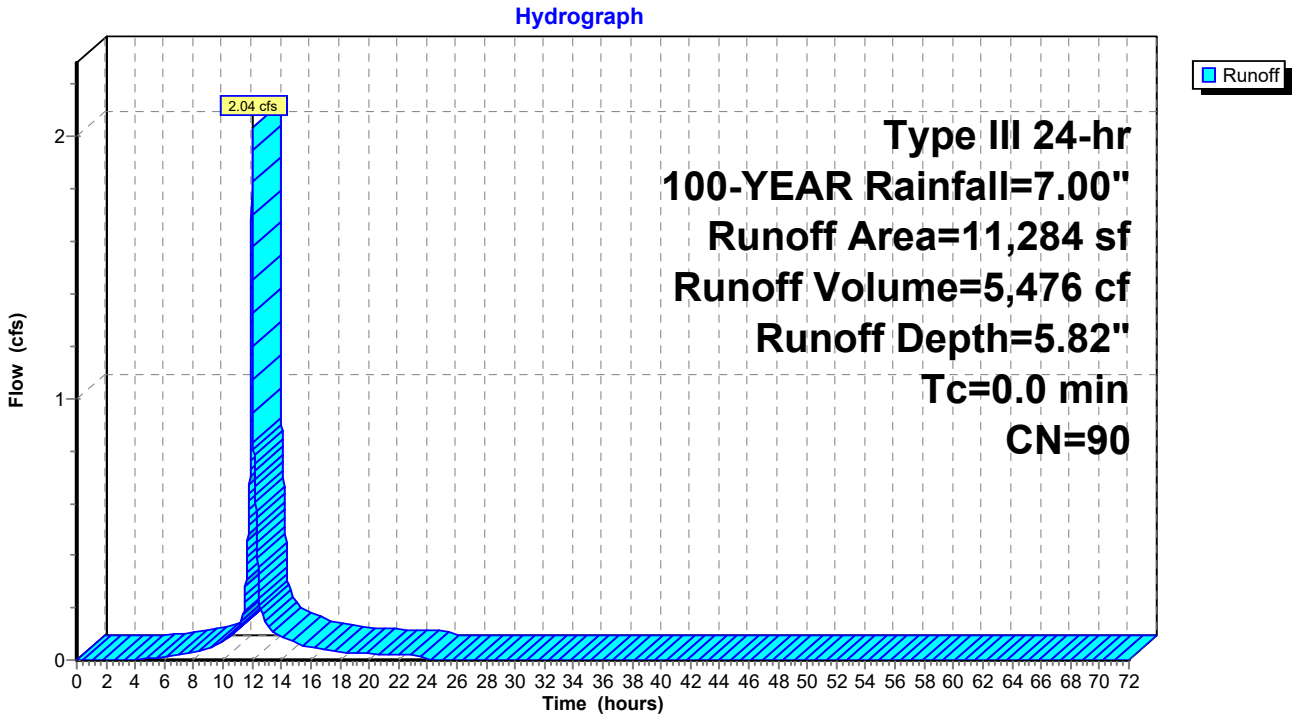
Summary for Subcatchment P2: 1/4 Roof and Entrance Gardner Street

Runoff = 2.04 cfs @ 12.00 hrs, Volume= 5,476 cf, Depth= 5.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-YEAR Rainfall=7.00"

	Area (sf)	CN	Description
*	4,062	98	1/4 Building, HSG D
*	2,267	98	Paved Areas near entrance, HSG D
	4,955	80	>75% Grass cover, Good, HSG D
	11,284	90	Weighted Average
	4,955		43.91% Pervious Area
	6,329		56.09% Impervious Area

Subcatchment P2: 1/4 Roof and Entrance Gardner Street



Summary for Pond 2P: Infiltration System-1

Inflow Area = 24,910 sf,100.00% Impervious, Inflow Depth = 6.76" for 100-YEAR event
Inflow = 4.79 cfs @ 12.00 hrs, Volume= 14,035 cf
Outflow = 2.48 cfs @ 12.08 hrs, Volume= 14,035 cf, Atten= 48%, Lag= 4.8 min
Discarded = 0.11 cfs @ 8.37 hrs, Volume= 9,984 cf
Primary = 2.37 cfs @ 12.08 hrs, Volume= 4,050 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 96.77' @ 12.08 hrs Surf.Area= 4,799 sf Storage= 4,530 cf

Plug-Flow detention time= 214.7 min calculated for 14,033 cf (100% of inflow)
Center-of-Mass det. time= 214.7 min (952.1 - 737.4)

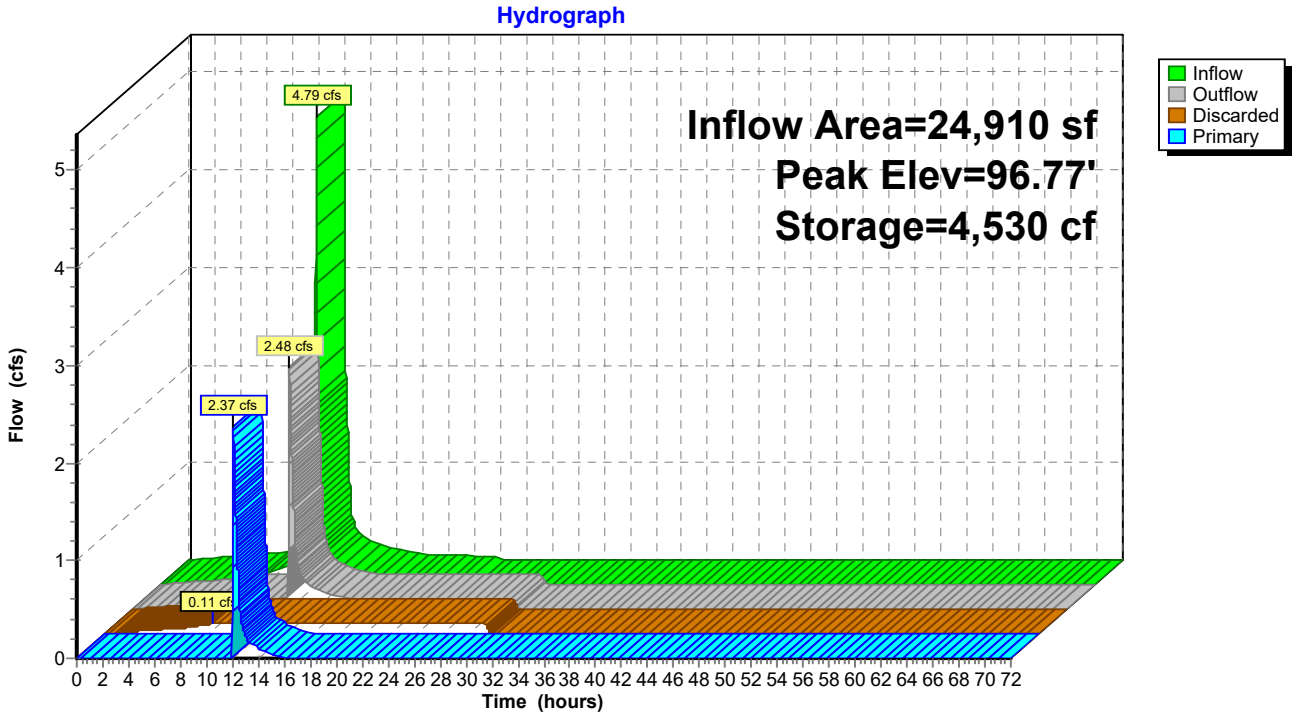
Volume	Invert	Avail.Storage	Storage Description
#1	94.70'	1,557 cf	**30.00'W x 93.20'L x 2.33'H Prismatoid - East Field** 6,515 cf Overall - 1,325 cf Embedded = 5,189 cf x 30.0% Voids
#2	94.70'	729 cf	**30.00'W x 43.20'L x 2.33'H Prismatoid - Nort West Field** 3,020 cf Overall - 589 cf Embedded = 2,431 cf x 30.0% Voids
#3	94.70'	402 cf	**13.15'W x 53.80'L x 2.33'H Prismatoid - South West Field** 1,648 cf Overall - 307 cf Embedded = 1,342 cf x 30.0% Voids
#4	95.05'	1,325 cf	**15.0" Round Pipe Storage - East Field** x 12 Inside #1 L= 90.0'
#5	95.05'	589 cf	**15.0" Round Pipe Storage - North West Field** x 12 Inside #2 L= 40.0'
#6	95.05'	307 cf	**15.0" Round Pipe Storage - South West Field** x 5 Inside #3 L= 50.0'
		4,910 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Primary	95.58'	**12.0" Round Culvert** L= 30.0' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.58' / 94.97' S= 0.0203 '/' Cc= 0.900 n= 0.009 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	96.30'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Discarded	94.70'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.11 cfs @ 8.37 hrs HW=94.72' (Free Discharge)
└**3=Exfiltration** (Exfiltration Controls 0.11 cfs)

Primary OutFlow Max=2.36 cfs @ 12.08 hrs HW=96.77' (Free Discharge)
└**1=Culvert** (Passes 2.36 cfs of 2.47 cfs potential flow)
└**2=Broad-Crested Rectangular Weir** (Weir Controls 2.36 cfs @ 2.03 fps)

Pond 2P: Infiltration System-1



Summary for Pond DP2: Infiltration System-2

Inflow Area = 11,284 sf, 56.09% Impervious, Inflow Depth = 5.82" for 100-YEAR event
Inflow = 2.04 cfs @ 12.00 hrs, Volume= 5,476 cf
Outflow = 2.02 cfs @ 12.00 hrs, Volume= 5,476 cf, Atten= 1%, Lag= 0.1 min
Discarded = 0.00 cfs @ 4.46 hrs, Volume= 692 cf
Primary = 2.02 cfs @ 12.00 hrs, Volume= 4,784 cf

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs / 2
Peak Elev= 103.42' @ 12.00 hrs Surf.Area= 169 sf Storage= 424 cf

Plug-Flow detention time= 131.0 min calculated for 5,475 cf (100% of inflow)
Center-of-Mass det. time= 131.2 min (905.5 - 774.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	98.50'	203 cf	**8.42'W x 20.04'L x 5.50'H Field A** 928 cf Overall - 250 cf Embedded = 678 cf x 30.0% Voids
#2A	99.25'	250 cf	**ADS_StormTech MC-3500 d +Cap**x 2 Inside #1 Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap Cap Storage= +14.9 cf x 2 x 1 rows = 29.8 cf
		453 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	95.70'	**12.0" Round Culvert** L= 24.5' CPP, projecting, no headwall, Ke= 0.900 Inlet / Outlet Invert= 95.70' / 95.47' S= 0.0094 '/' Cc= 0.900 n= 0.009 PVC, smooth interior, Flow Area= 0.79 sf
#2	Device 1	103.00'	**2.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Discarded	98.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.00 cfs @ 4.46 hrs HW=98.56' (Free Discharge)
↑—**3=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=2.00 cfs @ 12.00 hrs HW=103.42' (Free Discharge)
↑—**1=Culvert** (Passes 2.00 cfs of 8.02 cfs potential flow)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 2.00 cfs @ 1.90 fps)

Pond DP2: Infiltration System-2 - Chamber Wizard Field A

Chamber Model = ADS_StormTechMC-3500 d +Cap (ADS StormTech® MC-3500 d rev 03/14 with Cap volume)
Effective Size= 70.4"W x 45.0"H => 15.33 sf x 7.17'L = 110.0 cf
Overall Size= 77.0"W x 45.0"H x 7.50'L with 0.33' Overlap
Cap Storage= +14.9 cf x 2 x 1 rows = 29.8 cf

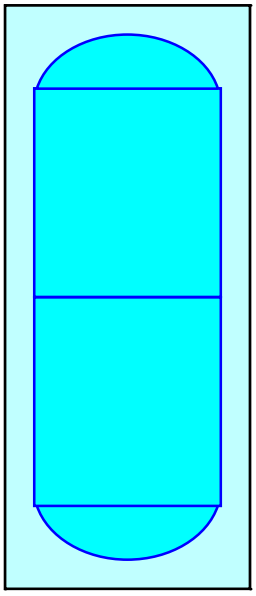
2 Chambers/Row x 7.17' Long +1.85' Cap Length x 2 = 18.04' Row Length +12.0" End Stone x 2 = 20.04' Base Length
1 Rows x 77.0" Wide + 12.0" Side Stone x 2 = 8.42' Base Width
9.0" Base + 45.0" Chamber Height + 12.0" Cover = 5.50' Field Height

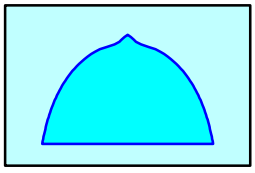
2 Chambers x 110.0 cf + 14.9 cf Cap Volume x 2 x 1 Rows = 249.7 cf Chamber Storage

927.7 cf Field - 249.7 cf Chambers = 678.0 cf Stone x 30.0% Voids = 203.4 cf Stone Storage

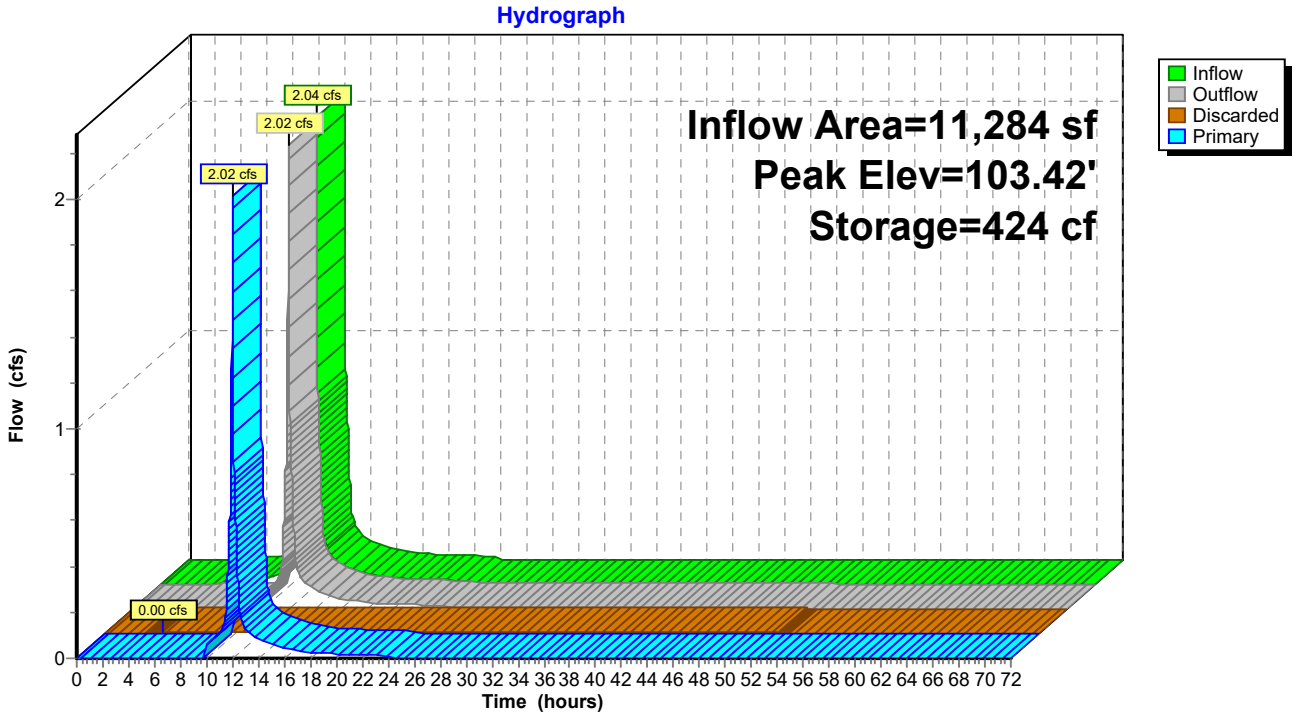
Chamber Storage + Stone Storage = 453.1 cf = 0.010 af
Overall Storage Efficiency = 48.8%
Overall System Size = 20.04' x 8.42' x 5.50'

2 Chambers
34.4 cy Field
25.1 cy Stone





Pond DP2: Infiltration System-2

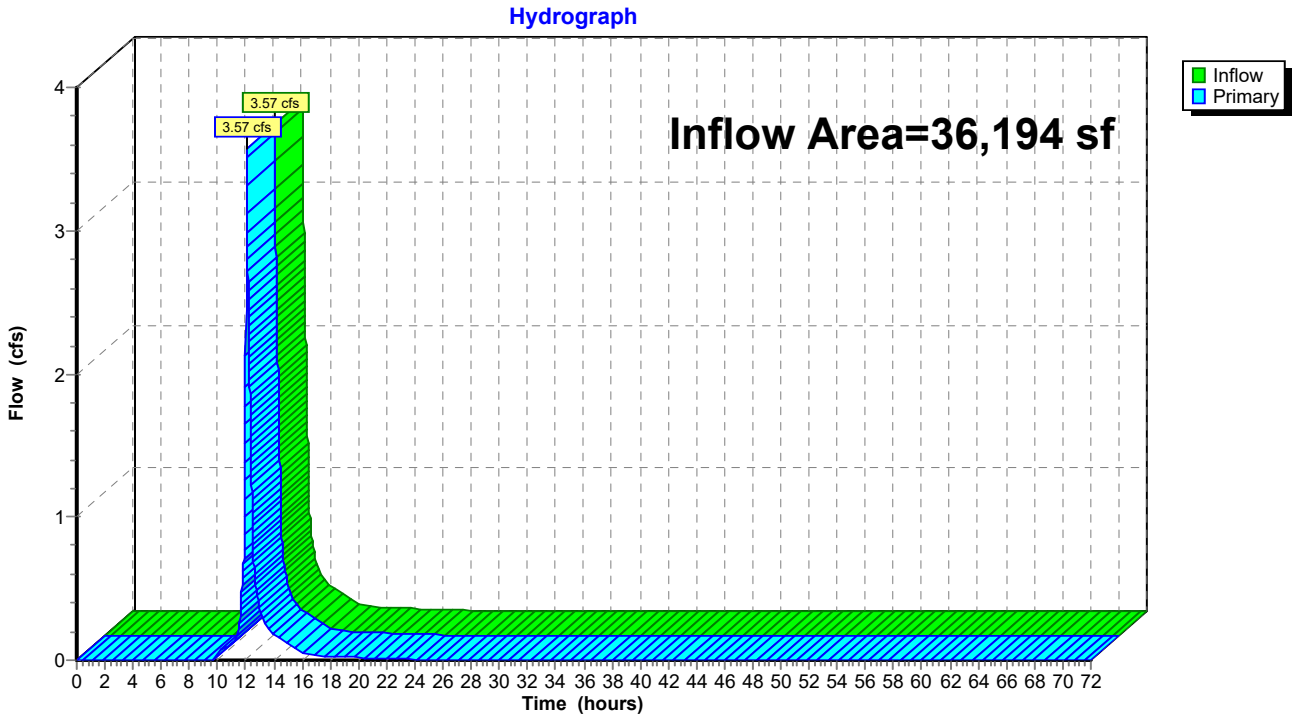


Summary for Link DP#1: Cow Island Pond

Inflow Area = 36,194 sf, 86.31% Impervious, Inflow Depth = 2.93" for 100-YEAR event
Inflow = 3.57 cfs @ 12.06 hrs, Volume= 8,835 cf
Primary = 3.57 cfs @ 12.06 hrs, Volume= 8,835 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Link DP#1: Cow Island Pond



Appendix C:
Water Quality Calculations

Pond 2P: Infiltration System-1 - POST_199 Gardner

Summary | Hydrograph | Discharge | Storage | Events | Sizing

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	94.70	0.00	0.00	0.00
2.00	0.02	6	94.70	0.02	0.02	0.00
4.00	0.04	12	94.71	0.04	0.04	0.00
6.00	0.06	17	94.71	0.06	0.06	0.00
8.00	0.10	29	94.72	0.10	**0.10**	0.00
10.00	0.19	282	94.90	0.11	**0.11**	0.00
12.00	**4.79**	**3,949**	**96.36**	**0.23**	0.11	**0.11**
14.00	0.20	**3,942**	**96.36**	**0.21**		
16.00	0.10	3,869	96.31	0.12		
18.00	0.06	3,661	96.20	0.11		
20.00	0.05	3,266	96.05	0.11	0.11	0.00
22.00	0.04	2,795	95.88	0.11	0.11	0.00
24.00	0.02	2,258	95.70	0.11	0.11	0.00
26.00	0.00	1,443	95.43	0.11	0.11	0.00
28.00	0.00	627	95.11			
30.00	0.00	0	94.70			
32.00	0.00	0	94.70			
34.00	0.00	0	94.70	0.00	0.00	0.00
36.00	0.00	0	94.70	0.00	0.00	0.00
38.00	0.00	0	94.70	0.00	0.00	0.00
40.00	0.00	0	94.70	0.00	0.00	0.00
42.00	0.00	0	94.70	0.00	0.00	0.00
44.00	0.00	0	94.70	0.00	0.00	0.00
46.00	0.00	0	94.70	0.00	0.00	0.00
48.00	0.00	0	94.70	0.00	0.00	0.00
50.00	0.00	0	94.70	0.00	0.00	0.00
52.00	0.00	0	94.70	0.00	0.00	0.00
54.00	0.00	0	94.70	0.00	0.00	0.00
56.00	0.00	0	94.70	0.00	0.00	0.00
58.00	0.00	0	94.70	0.00	0.00	0.00
60.00	0.00	0	94.70	0.00	0.00	0.00
62.00	0.00	0	94.70	0.00	0.00	0.00
64.00	0.00	0	94.70	0.00	0.00	0.00
66.00	0.00	0	94.70	0.00	0.00	0.00
68.00	0.00	0	94.70	0.00	0.00	0.00
70.00	0.00	0	94.70	0.00	0.00	0.00
72.00	0.00	0	94.70	0.00	0.00	0.00

RECHARGE VOLUME

S-M COMPLETELY DEWATERED

Pond DP2: Infiltration System-2 - POST_199 Gardner

Summary | Wizards | Hydrograph | Discharge | Storage | Events | Sizing

Time (hours)	Inflow (cfs)	Storage (cubic-feet)	Elevation (feet)	Outflow (cfs)	Discarded (cfs)	Primary (cfs)
0.00	0.00	0	98.50	0.00	0.00	0.00
2.00	0.00	0	98.51	0.00	**0.00**	0.00
4.00	0.02	47	99.33	0.00	**0.00**	0.00
6.00	0.04	219	100.85	0.00		)0
8.00	0.08	405	103.04	0.08		)7
10.00	0.16	406	103.08	0.16		16
12.00	**4.41**	**437**	**103.67**	**4.39**	0.00	**4.38**
14.00	0.18	407	103.09	0.18	0.00	0.18
16.00	0.10	405	103.05	0.10	0.00	0.09
18.00	0.06	404	103.03	0.06	0.00	0.06
20.00	0.05	404	103.03	0.05	0.00	0.05
22.00	0.04	404	103.02	0.04	0.00	0.04
24.00	0.02	403	103.02	0.02	0.00	0.02
26.00	0.00	374	102.52	0.00	0.00	0.00
28.00	0.00	346	102.15	0.00	0.00	0.00
30.00	0.00	317	101.83	0.00	0.00	0.00
32.00	0.00	288	101.53	0.00	0.00	0.00
34.00	0.00	260	101.24	0.00	0.00	0.00
36.00	0.00	231	100.97	0.00	0.00	0.00
38.00	0.00	202	100.70	0.00	0.00	0.00
40.00	0.00	174	100.44	0.00	0.00	0.00
42.00	0.00	145	100.18	0.00	0.00	0.00
44.00	0.00	116	99.93	0.00	0.00	0.00
46.00	0.00	88	99.68	0.00	0.00	0.00
48.00	0.00	59	99.43	0.00	0.00	0.00
50.00	0.00	30	99.10	0.00	0.00	0.00
52.00	0.00	2	98.53			)
54.00	0.00	0	98.50			)
56.00	0.00	0	98.50			)
58.00	0.00	0	98.50	0.00	0.00	0.00
60.00	0.00	0	98.50	0.00	0.00	0.00
62.00	0.00	0	98.50	0.00	0.00	0.00
64.00	0.00	0	98.50	0.00	0.00	0.00
66.00	0.00	0	98.50	0.00	0.00	0.00
68.00	0.00	0	98.50	0.00	0.00	0.00
70.00	0.00	0	98.50	0.00	0.00	0.00
72.00	0.00	0	98.50	0.00	0.00	0.00

RECHARGE VOLUME

S-M COMPLETELY DEWATERED

INSTRUCTIONS:
1. In BMP Column, click on Blue Cell to Activate Drop Down Menu
2. Select BMP from Drop Down Menu
3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Version 1, Automated: Mar. 4, 2008

Location: 199 Gardner Street, W. Roxbury

TSS Removal Calculation Worksheet

B BMP[1]	C TSS Removal Rate[1]	D Starting TSS Load*	E Amount Removed (C*D)	F Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	**0.25**	**1.00**	**0.25**	**0.75**
Oil Grit Separator	**0.25**	**0.75**	**0.19**	**0.56**
Subsurface Infiltration Structure	**0.80**	**0.56**	**0.45**	**0.11**
	0.00	**0.11**	**0.00**	**0.11**
	0.00	**0.11**	**0.00**	**0.11**

Total TSS Removal = **89%**

Separate Form Needs to be Completed for Each Outlet or BMP Train

Project: HSH
Prepared By: **George N. Mihov, PE**
Date: **2/1/2021**

*Equals remaining load from previous BMP (E) which enters the BMP

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed

1. From MassDEP Stormwater Handbook Vol. 1

Appendix D:
Operation and Maintenance Plan

Long–Term Operation and Maintenance (O&M) Plan

Standard 9

A Long–Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed. The following shall serve as the (O&M) Plan required by Standard 9, as well as the Long-Term Pollution Prevention Plan required by Standard 4:

NAMES OF PERSONS / ENTITY RESPONSIBLE FOR PLAN COMPLIANCE:

WB Acquisitions, LLC will be responsible for the operation and maintenance of the stormwater management facilities and associated stormwater management features.

Peter Davos
WB Acquisitions, LLC
94 Grayfield Ave
West Roxbury, MA 02132
Phone: (617) 719-8668

- Good housekeeping practices:
  - Maintain site, landscaping, and vegetation.
  - Sweep and pick-up litter on pavements and grounds.
  - Deliveries shall be monitored by owners or representative to ensure that if any spillage occurs, it shall be contained and cleaned up immediately.
  - Maintain pavement and curbing in good repair.

REQUIREMENTS FOR ROUTINE INSPECTIONS AND MAINTENANCE OF STORMWATER BMPS

- Plans: the stormwater Operation and Maintenance Plan shall consist of all Plans, documents, and all local state and federal approvals as required for the subject property.
- Record Keeping:

  - Maintain a log of all operation and maintenance activities for at least three years following construction, including inspections, repairs, replacement, and disposal (for disposal, the log shall indicate the type of material and the disposal location);
  - Make this log available to Massachusetts Department of Environmental Protection (MassDEP) and the Conservation Commission upon request; and
  - Allow MassDEP and the Conservation Commission to inspect each Best Management Practices (BMP) to determine whether the responsible party is implementing the Operation and Maintenance Plan.

- Descriptions and Designs: the BMPs incorporated into the design include the following:
  - Street Sweeping – Stipulated within the Construction Period Pollution Prevention Plan, the Long-Term Pollution Prevention Plan, and the Operation and Maintenance Plan. As the amount of Total Suspended Solids (TSS) removal is discretionary, no credit was taken within the calculations for this BMP.
  - Deep sump catch basins with hoods installed to promote TSS Removal of solids and control floatable pollutants. This BMP has a design rate of 25% TSS Removal.
  - Water Quality Units installed to promote TSS Removal of solids and control floatable pollutants. This BMP has manufacturers specifications proving a much higher design rate of TSS removal than the 25% design rate assigned for this project. The design rate of 25% TSS Removal used corresponds to "Oil Grit Separator" and is a conservative assumption.
  - Isolator Row, serving as a sediment forebay for the underground detention/infiltration systems, to promote TSS Removal of solids and control floatable pollutants. This BMP has a design rate of 80% TSS Removal in combination with an underground basin.
  - Refer to TSS Removal Worksheet in Appendices for treatment train.
- Access Provisions: All of the components of the storm water system will be accessible by the Owner.

SPILL PREVENTION AND RESPONSE PLANS

- Inventory materials to be present on-site during construction.
- Train employees and subcontractors in prevention and clean up procedures.
- All materials stored on-site will be stored in their appropriate containers under a roof.
- Follow manufacturer's recommendation for disposal of used containers.

- Store only enough products on-site to do the job.
- On-site equipment, fueling, and maintenance measures:
  - Inspect on-site vehicles and equipment daily for leaks.
  - Conduct all vehicle and equipment maintenance and refueling in one location, away from storm drains.
  - Perform major repairs and maintenance off site.
  - Use drip pans, drip cloths or absorbent pads when replacing spent fuels.
  - Collect spent fuels and remove from site.
- Clean up spills:
  - Never hose down "dirty" pavement or impermeable surfaces where fluids have spilled. Use dry cleanup methods (sawdust, cat litter, and/or rags and absorbent pads).
  - Sweep up dry materials immediately. Never wash them away or bury them.
  - Clean up spills on dirt areas by digging up and properly disposing of contaminated soil.
  - Report significant spills to the Fire Department, Conservation Commission, and Board of Health.

PROVISIONS FOR MAINTENANCE OF LAWNS, GARDENS, AND OTHER LANDSCAPED AREAS

Use only organic fertilizer. Dispose of clippings outside of the 100-foot buffer zone to the adjacent wetland.

REQUIREMENTS FOR STORAGE AND USE OF HERBICIDES AND PESTICIDES

The application of herbicides or pesticides will be done by professional certified contractor.

PROVISIONS FOR SOLID WASTE MANAGEMENT

- Waste Management Plan:
  - Dumpster for trash and bulk waste collection shall be stored inside or under a roof.
  - Recycle materials whenever possible (paper, plaster cardboard, metal cans). Separate containers for materials are recommended.
  - Do not bury waste and debris on-site.
  - Certified haulers will be hired to remove the dumpster container waste as needed. Recycling products will also be removed off site weekly.

SNOW DISPOSAL AND PLOWING PLANS RELATIVE TO WETLAND RESOURCE AREAS

Snow storage is adequate around the site for small storm events. Snow will be removed and disposed off site for larger snow events.

WINTER ROAD SALT AND/OR SAND USE AND STORAGE RESTRICTIONS

No sand, salt, or chemicals for de-icing will be stored outside.

STREET SWEEPING SCHEDULES

Sweeping, the act of cleaning pavement, can be done by mechanical sweepers, vacuum sweeper, or hand sweeper. The quantity of sand is a direct correlation with the treatment of ice and snow, and the types of chemicals and spreaders that are being used on-site to manage snow. If a liquid deicer such as calcium chloride is used as a pretreatment to new events, the amount of sand is minimized. Sweeping for this site should be done semi-annually at a minimum. Collecting the particulate before it enters the catch basins is cheaper and more environmentally friendly than in a catch basin mixing with oils and greases in the surface water runoff in catch basins.

PROVISIONS FOR PREVENTION OF ILLICIT DISCHARGES TO THE STORMWATER MANAGEMENT SYSTEM

The discharge into the stormwater system is not being violated; see attachment for illicit discharges compliance.

TRAINING THE STAFF OR PERSONNEL INVOLVED WITH IMPLEMENTING LONG-TERM POLLUTION PREVENTION PLAN

The owner shall develop policies and procedures for containing the illicit spilling of oils, soda, beer, paper, and litter. These wastes provide a degrading of the water quality. The placement of signs and trash barrels with lids around the site would contribute to a clean water quality site conditions.

ESTIMATED BMP MAINTENANCE COSTS

The following prices are estimates of the costs associated with maintenance of the proposed site BMPs. Costs provided are only estimates and may not reflect actual costs to perform the work. Actual costs may vary depending on company/personnel performing the work. Actual costs may increase over time.

BMP	Estimated Maintenance Cost
Pavement sweeping	$ 800 per year
Deep Sump CBs	$ 50 per cleaning
Water Quality Units	$ 100 per cleaning
Isolator Rows	$ 300 per cleaning
Underground Infiltration System	$ 600 per cleaning

LIST OF EMERGENCY CONTACTS FOR IMPLEMENTING LONG-TERM POLLUTION PREVENTION PLAN

Peter Davos
WB Acquisitions, LLC
94 Grayfield Ave
West Roxbury, MA 02132
Phone: (617) 719-8668

2018126.01 Appendix D - Construction Perod Pollution Prevention Plan
(Use this inspection log weekly and after 0.5” rain event)

PROPERTY ADDRESS: 199 Gardner Street, West Roxbury MA
DATE:
INSPECTED BY:

Component: **Date:**

Erosion Control - Weekly	
Comments During Inspection	
Note Corrective Measures	
On Site Pavement Sweeping - as Needed	
Comments During Inspection	
Note Corrective Measures	
Catch Basin Cleanup – Monthly	
Comments During Inspection	
Note Corrective Measures	
Outlet Control Structure Cleaning - as Needed	
Comments During Inspection	
Note Corrective Measures	
Water Quality Unit Cleaning - as Needed	
Comments During Inspection	
Note Corrective Measures	
Construction Entrance - as Needed	
Comments During Inspection	
Note Corrective Measures	

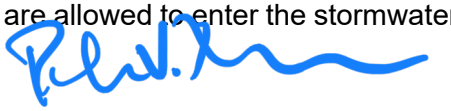
Clean Silt off Public Streets - Daily	
Comments During Inspection	
Note Corrective Measures	
Stockpile Materials erosion protection - Weekly	
Comments During Inspection	
Note Corrective Measures	
Any fuel or chemical spills - Daily	
Comments During Inspection	
Note Corrective Measures	
Temporary Ground Cover - Weekly	
Comments During Inspection	
Note Corrective Measures	
Lawn Area / Mulch Area/ Erosion, Washouts - Weekly	
Comments During Inspection	
Note Corrective Measures	
Illicit Drainage Discharge - as Needed	
Comments During Inspection	
Note Corrective Measures	

Appendix F:
Illicit Discharge Compliance Statement

Illicit Discharge Compliance Statement

Project Name: West Roxbury Residences, 199 Gardner Street, West Roxbury, MA

By signing this statement, I confirm that no illicit discharges (as defined in Section 40 CFR 122.34(b)(3) of the Phase II Stormwater Regulations under the Clean Water Act) are proposed to enter the stormwater system at 199 Gardner Street. Illicit discharge detection and elimination procedures will be implemented routinely by visual inspections to prevent illicit discharges into the stormwater system. All personnel working at 199 Gardner Street will be informed of the illicit discharge detection and elimination procedures and that no illicit discharges are allowed to enter the stormwater system.

Signature: 

Title: MANAGER

Date: 2/1/21

Company: West Brighton Acquisitions, LLC

Address: 94 Grayfield Avenue, West Roxbury, MA 02132

Telephone Number: 617-719-8668

EcoTec, Inc.

ENVIRONMENTAL CONSULTING SERVICES
102 Grove Street
Worcester, MA 01605-2629
508-752-9666 – Fax: 508-752-9494

March 23, 2021

Mr. George N. Mihov, P.E.
Howard Stein Hudson
11 Beacon Street, Suite 1010
Boston, MA 02108

RE: Updated Wetland Resource Evaluation and Resource Area Analysis, 199 Gardner Street, West Roxbury, Massachusetts

Dear Mr. Mihov:

On June 22, 2018, EcoTec, Inc. inspected the site for the presence of wetland resources as defined by: (1) the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, § 40; the "Act") and its implementing regulations (310 CMR 10.00 *et seq.*; the "Regulations"); and (2) the U.S. Clean Water Act. On February 25, 2021, EcoTec inspected the site for the presence of wetland resources defined by the City of Boston Wetlands Protection and Climate Adaptation Ordinance (Chapter VII, Section 7-1.4; the "Ordinance") and Boston Wetlands Regulations (the "Ordinance Regulations"). John P. Rockwood, Ph.D., SPWS conducted both inspections.

The subject site consists of two parcels totaling 36,183± square feet (0.83± acres) located to the north of Gardner Street: (1) 189 Gardner Street (20 0922 0000; 25,295± square feet); and (2) 197 Gardner Street (20-0922 1000; 10,888± square feet). The property at 189 Gardner Street is developed with a one-story masonry block and brick building with associated paved access and parking. The property at 197 Gardner Street is developed with a one-story masonry block and brick building with associated paved access and parking. The entire site consists of building and pavement. Three trees that have grown up through the pavement are located in the northeastern portion of the 197 Gardner Street parcel in the area located between the two site buildings. A chain-link fence located on The Home Depot, U.S.A., Inc. ("Home Depot") property to the north 197 Gardner Street separates the site from the adjacent Bordering Vegetated Wetlands. The wetland resources observed on and/or near the site are described below.

Methodology:

The site was inspected, and areas suspected to qualify as wetland resources were identified. The boundaries of Bordering Vegetated Wetlands and Bank were delineated in the field in accordance with the definitions set forth in the regulations at 310 CMR 10.55(2)(c) and 310 CMR 10.54(2). Section 10.55(2)(c) states that "The boundary of Bordering Vegetated Wetlands is the line within which 50% or more of the vegetational community consists of wetland indicator plants and saturated or inundated conditions exist." Section 10.54(2)(c) states that "The upper

boundary of Bank is the first observable break in the slope or the mean annual flood level, whichever is lower." The methodology used to delineate Bordering Vegetated Wetlands is further described in: (1) the BVW Policy "*BVW: Bordering Vegetated Wetlands Delineation Criteria and Methodology*," issued March 1, 1995; and (2) "*Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act: A Handbook*," produced by the Massachusetts Department of Environmental Protection, dated March 1995. The plant taxonomy used in this report is based on the *National List of Plant Species that Occur in Wetlands: Massachusetts* (Fish and Wildlife Service, U.S. Department of the Interior, 1988). Ordinance and federal wetlands were presumed to have boundaries conterminous with the delineated Bordering Vegetated Wetlands. The flag numbers and types and the wetland types and locations are described in Table 1 below.

Table 1: Wetland Resources and Flagging

Flag Numbers	Flag Type	Wetland Types and Locations
Start B1 to B20 Stop Culvert Outfall at B8 Placed 6/22/2018	Blue Flags	Boundary of Bordering Vegetated Wetlands located near the northern boundary of the site that is associated with a small intermittent drainage.
Start C1 to C15 Stop Culvert Outfall at C1 Placed 2/25/2021	Orange Flags	Upper boundary of Bank of an intermittent stream that originates at a culvert outfall associated with the Home Depot stormwater system.

Findings:

Wetland B (i.e., B-series flags and C-series flags) currently consists of a pocket of marsh fringed by swamp located to the north and west of the site that is associated with an internal intermittent stream that originates at a culvert outfall from the Home Depot stormwater system. A 1991 Illustrative Site Plan for the Home Depot property by Beals and Thomas, Inc. (attached), labels the area to the north of the site as a "Grass Swale" and the downgradient western portion of this wetland system as a "Detention Basin." The delineated wetland and surrounding area contain significant manmade materials including fencing, concrete, asphalt, tires, furniture, and trash/litter as well as displaced rip-rap from the outfall, accumulated sediment, and vegetative debris. There is no evidence that this area, which is part of an apparently constructed stormwater system, has been maintained or has been subject to upkeep by Home Depot. Photographs that show this area on February 25, 2021 are attached to this letter.

Plant species observed within the delineated area include American elm (*Ulmus americana*) trees, saplings, and/or shrubs; poison ivy (*Toxicodendron radicans*) and grape (*Vitis sp.*) climbing woody vines and/or ground cover; silky dogwood (*Cornus amomum*) and glossy buckthorn (*Rhamnus frangula*) shrubs; and grasses (Gramineae sp.), sedges (Cyperaceae sp.), rushes (Juncaceae sp.), broad-leaf cattail (*Typha latifolia*), common reed (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), spotted touch-me-not (*Impatiens capensis*), golden-rods (*Solidago sp*.), sensitive fern (*Onoclea sensibilis*), and smartweed (*Polygonum sp*.) ground cover. Evidence of wetland hydrology, including hydric soils, high groundwater, saturated soils, pore linings,

evidence of flooding, and drainage patterns, was observed within the delineated wetland. This vegetated wetland borders an intermittent stream; accordingly, the vegetated wetlands would be regulated as Bordering Vegetated Wetlands and the intermittent stream would be regulated as Bank and Land Under Water Bodies and Waterways under the Regulations and Ordinance. A 100-foot Buffer Zone extends horizontally outward from the edge of Bordering Vegetated Wetlands and Bank under the Regulations and Ordinance. The 100-foot Buffer Zone is not a resource area under the Regulations; the 100-foot Buffer Zone is a resource area under the Ordinance.

Bordering Land Subject to Flooding is an area that floods due to a rise in floodwaters from a bordering waterway or water body. Where flood studies have been completed, the boundary of Bordering Land Subject to Flooding is based upon flood profile data prepared by the National Flood Insurance Program. Section 10.57(2)(a)3. states that "The boundary of Bordering Land Subject to Flooding is the estimated maximum lateral extent of flood water which will theoretically result from the statistical 100-year frequency storm." Based upon a review of the Flood Insurance Rate Map, Map Number 25025C0068G, Effective Date September 25, 2009 (Dynamic FIRMette attached), the site is mapped as Other Areas: Zone X, which is defined as areas of minimal flooding. There is a mapped Zone AE (i.e., 100-year floodplain) located to the southwest of Charles Park Road with a 100-year flood elevation around 90 feet NAVD 1988 (i.e., 96.5 feet City of Boston Datum) which is associated with the Charles River. When present, Bordering Land Subject to Flooding would occur in areas where the 100-year floodplain is located outside of or upgradient of the delineated Bordering Vegetated Wetlands (or in the absence of Bordering Vegetated Wetlands, Bank) boundary. Bordering Land Subject to Flooding does not have a 100-foot Buffer Zone under the Regulations or Ordinance.

The Massachusetts Rivers Protection Act amended the Act to establish an additional wetland resource area: Riverfront Area. Based upon a review of the current USGS Map (i.e., Boston South Quadrangle, dated 1987, attached), the Charles River is located to the south of Charles Park Road well over 25 feet to the south of the site. Based upon observations made during the site inspection, there are no significant streams located on or within 25 feet of the site. As such, Riverfront Area under the Act and Regulations would not occur on the site. Riverfront Area does not have 100-foot Buffer Zone under the Act and Regulations.

The Ordinance establishes a 25-foot Riverfront Area associated with all streams regardless of stream status. As such, the intermittent stream associated with the stormwater outfall from the Home Depot would have a 25-foot Riverfront Area extending outward from the orange C-series flags. The Ordinance also establishes a 25-foot Waterfront Area that extends horizontally outward from the 25-foot Riverfront Area under the Ordinance. Riverfront Area and Waterfront Area under the Ordinance do not have a 100-foot Buffer Zone under the Ordinance.

The Regulations require that no project may be permitted that will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures set forth at 310 CMR 10.59. Based upon a review of the *Massachusetts Natural Heritage Atlas*, 14th

edition, Priority Habitats and Estimated Habitats from the NHESP Interactive Viewer, valid from August 1, 2017, and Certified Vernal Pools from MassGIS (attached), there are no Estimated Habitats [for use with the Act and Regulations (310 CMR 10.00 *et seq*.)], Priority Habitats [for use with Massachusetts Endangered Species Act (M.G.L. Ch. 131A; "MESA") and MESA Regulations (321 CMR 10.00 *et seq*.)], or Certified Vernal Pools on or in the immediate vicinity of the site.

Resource Area Analysis:

The 100-foot Buffer Zone is not a resource area under the Act. As the 100-foot Buffer Zone is not a resource area, the Regulations do not provide general performance standards for work in this area. Section 10.53(1) of the Regulations provides a narrative standard which addresses erosion controls, limit of work, slopes, existing conditions, and vegetation. The project has been designed to address this narrative standard as follows. Prior to the start of earth moving activities, an erosion control barrier will be located as shown on the site plan and will serve as the limit of work. This erosion control barrier will be maintained until the site has been stabilized. The proposed work area consists of existing buildings and pavement. The proposed work area is relatively flat and slopes gradually to the south away from the adjacent wetlands. The proposed project includes a retaining wall located near the western, northern, and northeastern limit of work on the site. This up to three-foot-high wall will prevent construction activities proximate to the off-site wetland, serve as a permanent demarcation of the limit of development on the site, prevent surface water runoff to the north, and prevent post-development creep toward the off-site wetland to the north. The proposed project includes stormwater management features that will treat and infiltrate parking lot runoff and infiltrate roof runoff. Three trees are proposed to be removed as part of this project; forty trees consisting of thirty-three deciduous trees and seven conifers, including four deciduous trees in the Buffer Zone, are proposed to be planted on the site as part of this project. All soils that are exposed as part of the project will be stabilized by structure, pavement, and vegetation.

The City of Boston enacted an "Ordinance Protecting Local Wetlands and Promoting Climate Change Adaptation in the City of Boston" on December 11, 2019. The Ordinance identifies and defines various areas subject to protection under the Ordinance and identifies various values and interests that are protected by Ordinance. On August 19, 2020, the Boston Conservation Commission promulgated the Boston Wetlands Regulations. These Ordinance Regulations are presently incomplete and include Part I: Purpose and Procedures but lack Part II: Performance Standards for Resource Areas. As such, the Ordinance establishes and defines resource areas subject to protection under the Ordinance and identifies and defines the resource areas values protected by the Ordinance. The Ordinance and Ordinance Regulations as currently constituted do not provide a link between the protected resource areas and the specific values that are presumed to be protected by the individual resource areas. Furthermore, the Ordinance and Ordinance Regulations do not provide performance standards for the individual resource areas that may be uniformly and neutrally applied by the Commission and the applicant in the evaluation of a proposed project.

Under Section 7-1.4 c) of the Ordinance which addresses jurisdiction, Section ii. identifies lands adjoining certain resource areas out to a distance of 100 feet as the Buffer Zone and Section iii. identifies riparian lands adjoining all rivers, streams, brooks, and creeks out to a distance of 25 feet as Riverfront Area. Sections c) i. to viii. of the Ordinance are silent to Waterfront Area. The Ordinance Regulations address jurisdiction at Section II.A. Section II.A. 1. to 10. are silent to Waterfront Area. Waterfront Area is defined in Section b) of the Ordinance as the portion of the buffer zone which extends 25 feet horizontally from the edge of certain resources, including riverfront area. Section c) does include unnumbered paragraphs related to Buffer Zone and Waterfront Area. With regard to the Buffer Zone: "The Buffer Zone is presumed to be important to the protection of the resource areas because activities undertaken in close proximity to resource areas have a reasonable probability of adverse impact upon the wetland or other resource, either immediately, as a consequence of construction, or over time, as a consequence of daily operation or existence of the activities. These adverse impacts from construction and use can include, without limitation, erosion, siltation, loss of groundwater recharge, degraded water quality, loss of wildlife habitat, degradation of wetland plant habitat, alteration of hydrology, soil contamination, and proliferation of invasive species." With regard to the Waterfront Area: "The Commission therefore may require that any person filing an application (hereinafter, the Applicant) restore or maintain a strip of continuous, undisturbed or restored vegetative cover or waterfront public access throughout the Waterfront Area, unless the Commission determines, based on adequate evidence, that the area or part of it may be altered without harm to the values of the resource areas protected by the Ordinance. Such disturbed areas must be minimized to the greatest extent possible." Neither of the two above-quoted paragraphs provide a performance standard that may be uniformly and neutrally applied to assess a project with regard to these resource areas under the Ordinance.

As detailed above and as shown on the revised site plans, there is a wetland system associated with an outfall from the Home Depot stormwater system located to the north of the project site. The wetland system consists of an intermittent stream regulated as Bank and Land Under Water Bodies and Waterways under the Regulations and Ordinance with an associated forested swamp and marsh that would be regulated as Bordering Vegetated Wetlands under the Regulations and Ordinance. Again, these resource areas are located off-site to the north and are separated from the site by a chain-link fence located on the Home Depot property. The intermittent stream would not have an associated Riverfront Area under the Regulations; however, the intermittent stream would have an associated 25-foot Riverfront Area under the Ordinance and the 25-foot Riverfront Area under the Ordinance would have an associated 25-foot Waterfront Area under the Ordinance. Lastly, a 100-foot Buffer Zone would be associated with the Bordering Vegetated Wetlands under the Regulations and Ordinance; the 100-foot Buffer Zone is not a resource area under the Regulations but is a resource area under the Ordinance. The 25-foot Riverfront Area to the intermittent stream under the Ordinance, 25-foot Waterfront Area to the 25-foot Riverfront Area under the Ordinance, and the 100-foot Buffer Zone to Bordering Vegetated Wetlands under the Act and Ordinance all project to the south onto the subject site.

As detailed above and in Table 2 below, the site consists of 36,193± square feet including 16,000± square feet of 100-foot Buffer Zone under the Regulations and Ordinance which includes 1,508± square feet of Riverfront Area under the Ordinance only and 3,780± square feet of Waterfront Area under the Ordinance. The existing and proposed conditions within these areas are provided in Table 2 below.

Table 2: Resource Areas under Existing and Proposed Conditions

	Existing Conditions			Proposed Conditions		
Surface	**25' Riverfront Area**	**25' Waterfront Area**	**100' Buffer Zone**	**25' Riverfront Area**	**25' Waterfront Area**	**100' Buffer Zone**
Building	444	3,109	10,217	0	0	5,020
Pavement	1,064	671	5,783	1,115	3,643	10,060
Retaining Walls	-	-	-	268	108	376
Total Impervious	**1,508**	**3,780**	**16,000**	**1,383**	**3,751**	**15,456**
Landscaped Areas	-	-	-	125	29	544
Total Area	**1,508**	**3,780**	**16,000**	**1,508**	**3,780**	**16,000**

Note: The Buffer Zone includes the Riverfront Area and the Waterfront Area.

As detailed in Table 2 above, under existing conditions, the entire portion of the site that is subject to geographical jurisdiction under the Act and Ordinance consists of impervious surfaces, including building and pavement. Specifically, the entire 16,000± square feet of Buffer Zone on the site, including 1,508± square feet of Riverfront Area and 3,780± square feet of Waterfront Area, consists of building and pavement. There is little to no stormwater treatment on the site; stormwater runoff from the buildings and pavement is uncontrolled under the existing condition with limited flow off-site to the north and the majority of flow to Gardner Street to the south. Three trees, which have grown up through the pavement between the site buildings, were surveyed on the site; a 12" deciduous in the Riverfront Area, a 14" deciduous in the Waterfront Area, and a 22" deciduous in the Buffer Zone are proposed to be removed as part of this project. In summary, under existing conditions, the site subject to jurisdiction under the Act and Ordinance consists entirely of impervious surfaces, with three trees located between the two site buildings, and no stormwater controls.

As detailed in Table 2 above, under proposed conditions, the portion of the site that is subject to geographical jurisdiction under the Act and Ordinance is proposed to be redeveloped as building, pavement, retaining walls, and landscaped areas. A total of 15,456± square feet of the Buffer Zone including 1,383± square feet of Riverfront Area and 3,751± square feet of Waterfront Area will be redeveloped as building, pavement, and retaining walls and a total of 544± square feet of Buffer Zone including 125± of Riverfront Area and 29± square feet of Waterfront Area will be converted to landscaping. The proposed building has been located away from the off-site wetland. A retaining wall is proposed to separate the site from the wetland resources to the north. Stormwater runoff from the pavement will be pretreated and infiltrated and stormwater runoff from the proposed building will be infiltrated as detailed in the Stormwater Report provided as part of the Notice of Intent. The proposed landscape plan includes a total of forty

trees consisting of a total of thirty-three deciduous trees of three sizes (i.e., 8-10' tall multi-stem, 2-2.5-inch caliper, and 3-3.5-inch caliper) and seven 7-8' tall conifers; four of the proposed 3-3.5-inch caliper deciduous trees will be located within the Buffer Zone. In summary, under proposed conditions, the site subject to jurisdiction consists of a new building with paved access and parking, a retaining wall which will serve to separate the site from the off-site resources to the north, significant stormwater treatment and controls to address roof and pavement runoff, and proposed landscaping which includes four new trees within jurisdiction and thirty-six additional trees on the subject site. The project as proposed represents an improvement over the existing condition; the proposed project will result in a slight reduction in impervious surfaces, implement a stormwater management system to address roof and parking lot runoff, and include a significant landscape plan. With regard to project impacts from construction and use, the proposed project will address erosion and siltation through the proposed erosion control barrier and retaining wall, will improve groundwater infiltration, water quality, alteration of hydrology, and soil contamination compared to the existing condition as a result of the proposed erosion controls and stormwater management system, and limit the loss of wildlife habitat, degradation of wetland plant habitat, and proliferation of invasive species as a result of the proposed landscaping and stormwater management system.

EcoTec hopes that you find this information useful. The reader should be aware that the regulatory authority for determining wetland jurisdiction rests with local, state, and federal authorities. A brief description of my experience and qualifications is attached. If you have any questions, please feel free to contact me at any time.

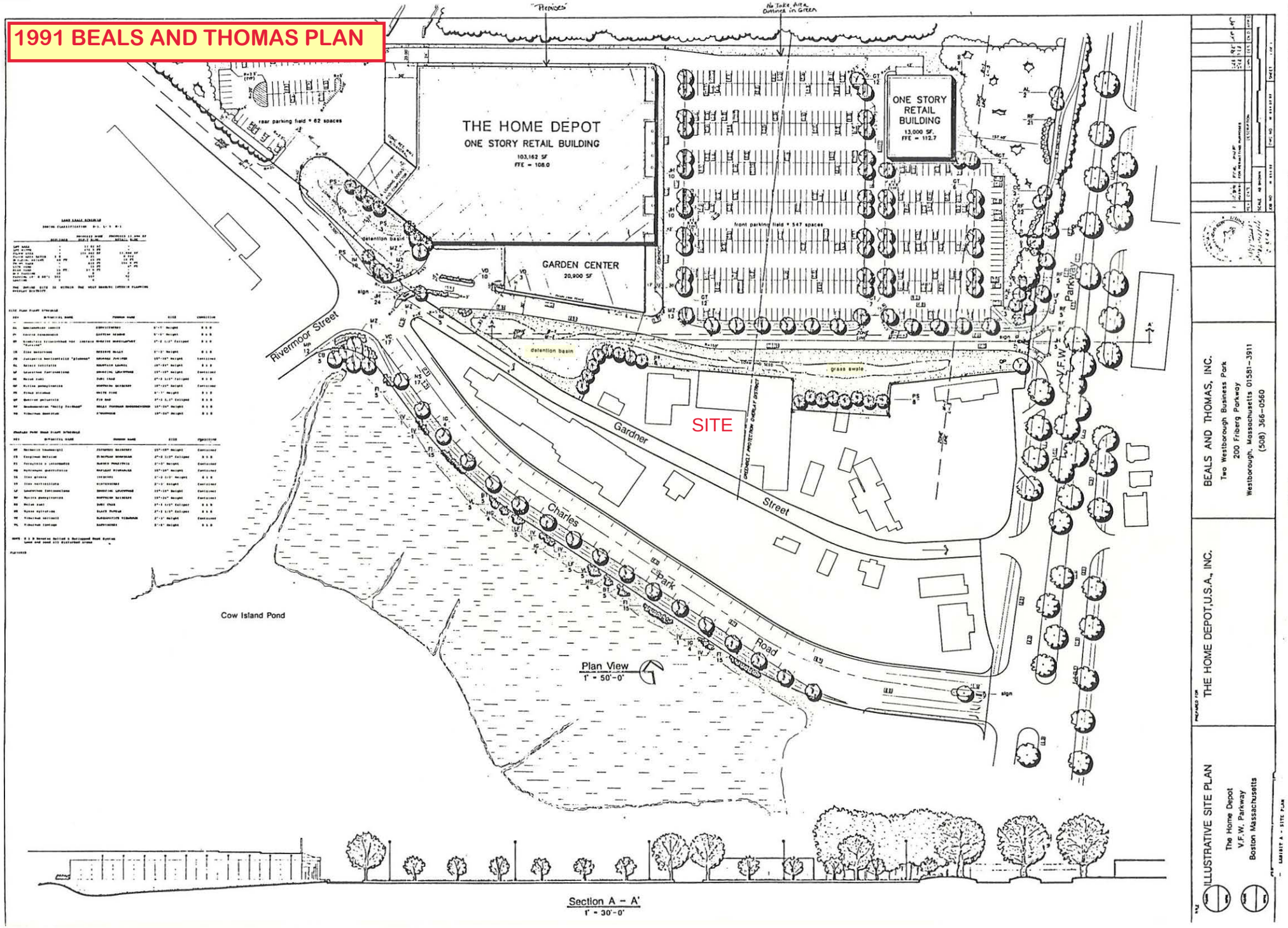
Cordially,
ECOTEC, INC.

John P. Rockwood, Ph.D., SPWS
Chief Environmental Scientist

Attachments (6, 7 pages)

18/wr/WESTROXBURYGARDNERWRERAA2021F

1991 BEALS AND THOMAS PLAN



View to North of RCP Outfall at Head of Drainage from Home Depot

View to West of Upper Drainage Showing Tire, Chair, and Other Debris

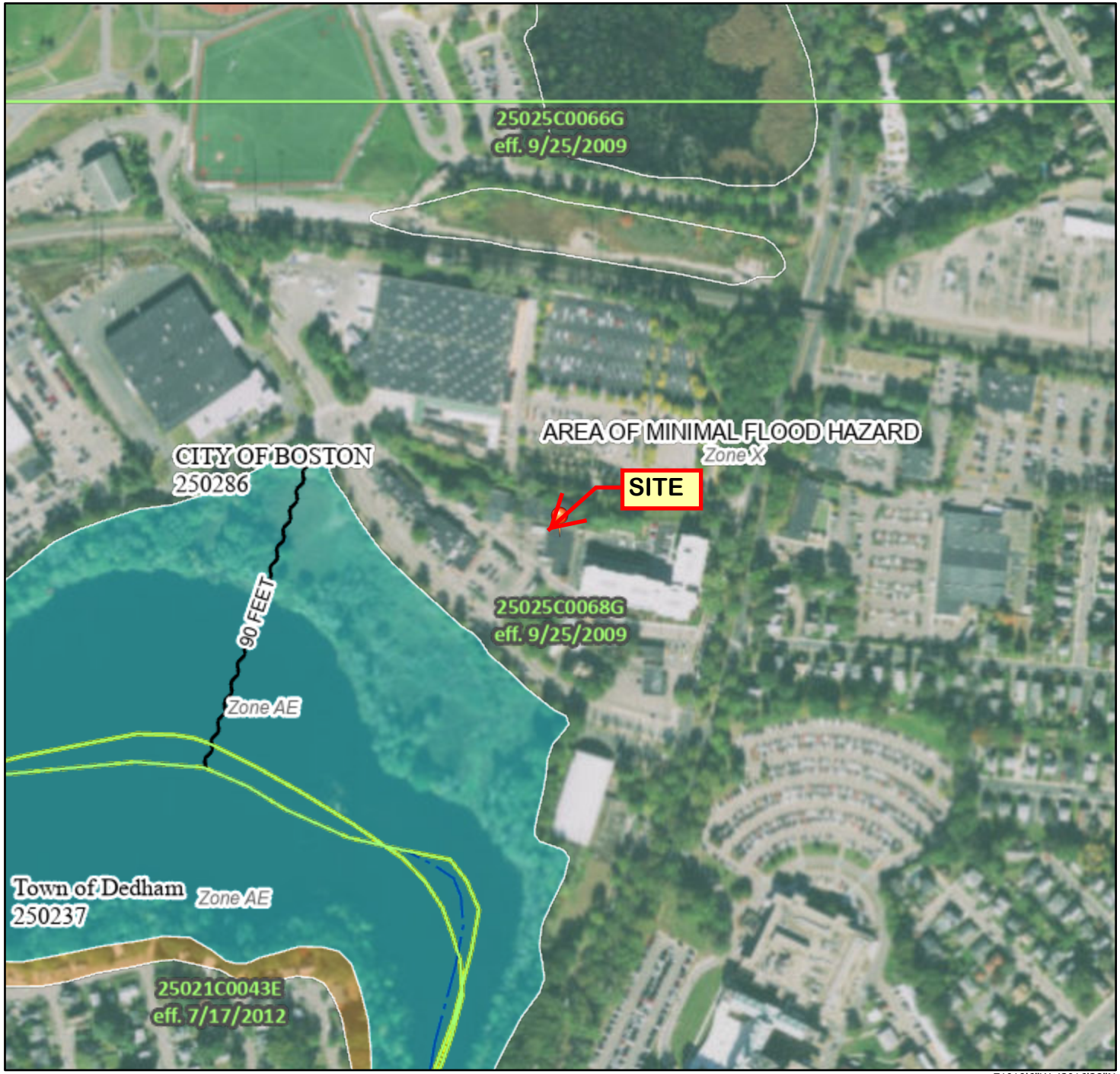
View to West Along Drainage Showing Home Depot Fence and Vegetation Overgrowth

View to East up the Drainage Showing Fence, Various Debris, and Vegetation Overgrowth

National Flood Hazard Layer FIRMette

FEMA

71°10'43"W 42°16'55"N



71°10'6"W 42°16'28"N

Feet 1:6,000

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

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

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

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

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

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

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

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

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

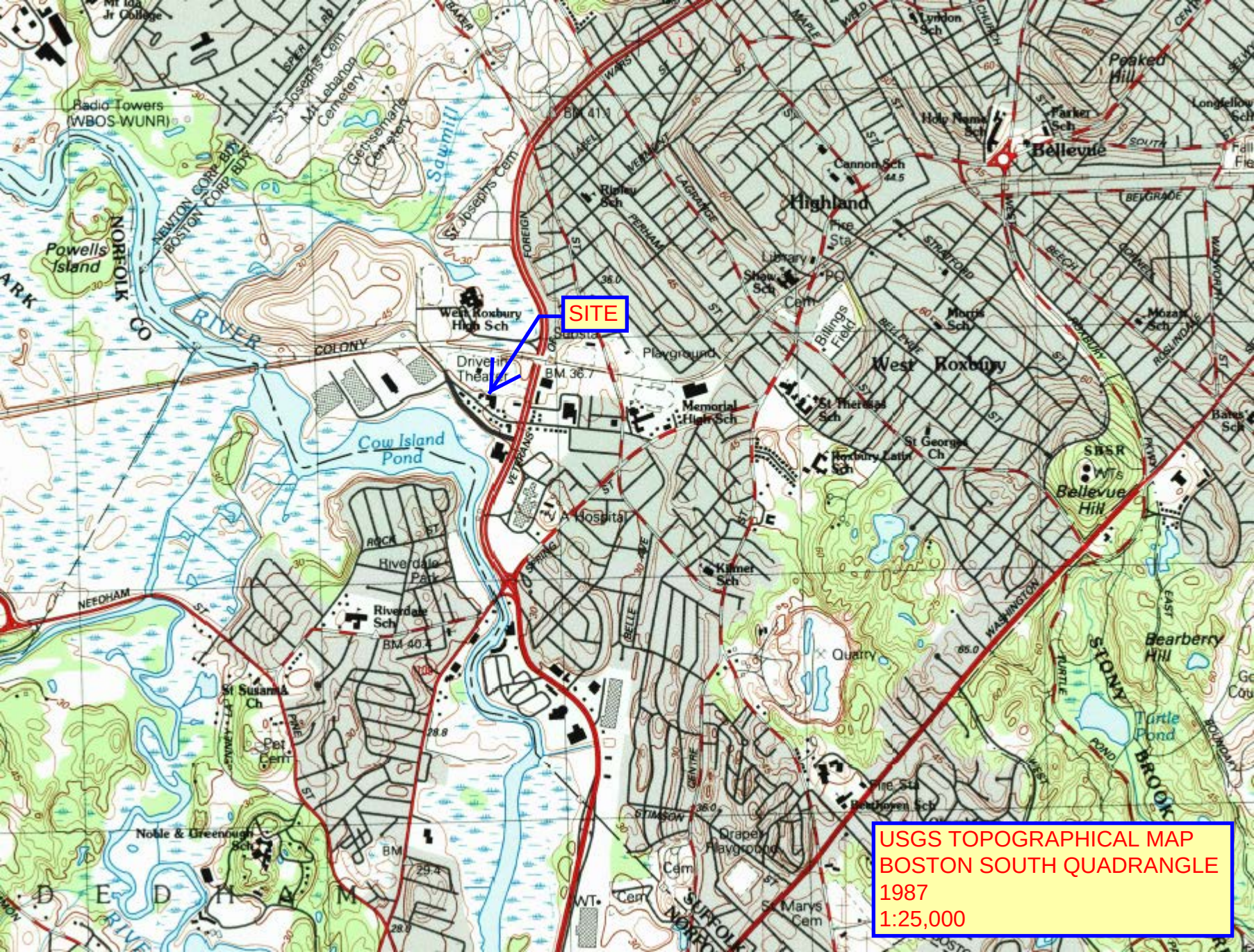
N

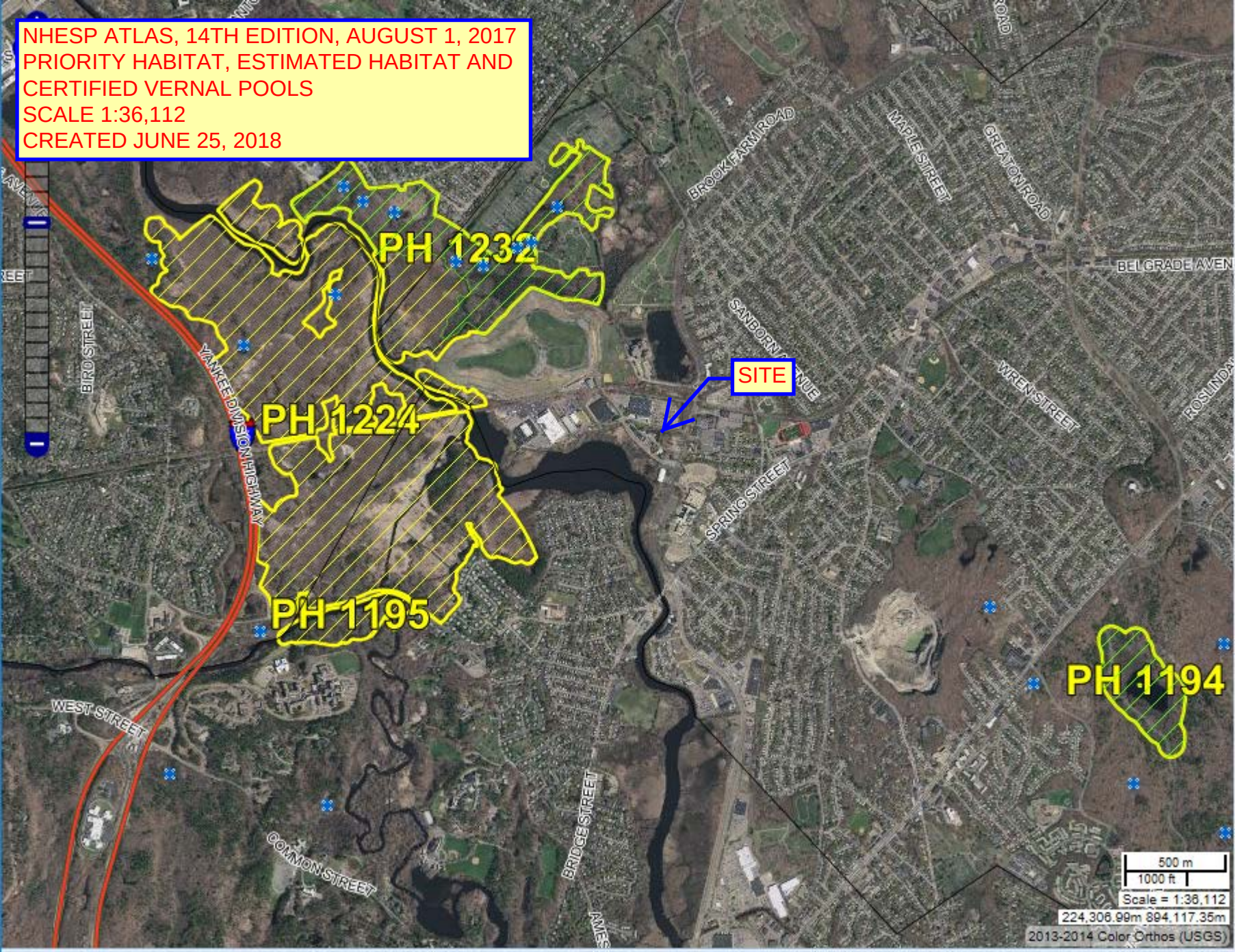
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 3/16/2021 at 8:53 AM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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


SITE
USGS TOPOGRAPHICAL MAP
BOSTON SOUTH QUADRANGLE
1987
1:25,000


NHESP ATLAS, 14TH EDITION, AUGUST 1, 2017
PRIORITY HABITAT, ESTIMATED HABITAT AND CERTIFIED VERNAL POOLS
SCALE 1:36,112
CREATED JUNE 25, 2018
PH 1232
PH 1224
PH 1195
PH 1194
SITE
BROOK FARM ROAD
MAPLE STREET
CRESTON ROAD
BELGRADE AVEN
SANBORN AVENUE
WREN STREET
SPRING STREET
BIRD STREET
YANKEE DIVISION HIGHWAY
WEST STREET
COMMON STREET
BRIDGE STREET
500 m
1000 ft
Scale = 1:36,112
224,306.99m 894,117.35m
2013-2014 Color Orthos (USGS)

EcoTec, Inc.

ENVIRONMENTAL CONSULTING SERVICES

102 Grove Street
Worcester, MA 01605-2629
508-752-9666 – Fax: 508-752-9494

John P. Rockwood, Ph.D., SPWS
Chief Environmental Scientist

Dr. John P. Rockwood has been a Staff Scientist with EcoTec, Inc. since October 1999. He was previously a Chief Environmental Scientist at Sanford Ecological Services, Inc. of Southborough, Massachusetts from September 1990 to October 1999. Dr. Rockwood was certified in August 2002 and recertified in March 2008, January 2013, and June 2018 as a Professional Wetland Scientist (PWS) by the Society of Wetland Scientists Professional Certification Program (SWSPCP), and in April 2020, he was made a Senior Professional Wetland Scientist (SPWS) by the SWSPCP. His project experience includes wetland resource evaluation, delineation, and permitting at the local, state, and federal levels; wildlife habitat evaluation; pond and stream evaluation; vernal pool evaluation, certification, construction/replication, and monitoring; rare species habitat and impact assessment; wetland replacement, replication, and restoration area design, construction, and monitoring; invasive species removal and treatment protocols and monitoring; and expert testimony preparation. He has served as a consultant to municipalities, conservation commissions, the development community, engineering and survey firms, industry, and citizen's groups. He has managed and participated in a wide variety of wetlands-related projects ranging in scope from single-family house lots to subdivisions, commercial developments, mixed use developments, golf courses, a water park, MBTA commuter train station, and a regional mall. He has assessed the potential impacts of stormwater runoff, landfill leachate, and/or hazardous waste disposal sites on rare vertebrate and/or invertebrate species, and has conducted and/or directed surveys, delineated actual habitat, conducted habitat evaluations, and/or developed mitigation strategies necessary to protect rare vertebrate, invertebrate, and plant species and their habitats from proposed development-related impacts. He has designed and conducted drift fence studies for rare vertebrates. He has conducted and led preconstruction sweeps for the spotted turtle, wood turtle, and eastern box turtle. He has filed MESA Project Review Checklists and has prepared applications for Conservation and Management Permits and Amendments under MESA. He has submitted rare animal and plant observation forms to NHESP for several vertebrate, invertebrate, and plant species. He has conducted environmental impact assessments and has prepared MEPA documentation related to an office park, an MBTA commuter train station, water park, residential subdivisions, skating rink facility, landfill, and regional mall. Dr. Rockwood also has extensive experience in environmental site assessment related to possible oil and/or hazardous material contamination. He has conducted numerous environmental assessments, several including subsurface investigations, for sites located in Massachusetts, and has conducted preliminary environmental assessments for properties located in New York, New Hampshire, and Rhode Island. He has conducted ecological risk assessments (i.e., Stage I Environmental Screenings and Stage II Environmental Risk Characterizations) for a number of disposal sites in Massachusetts, including several disposal sites that had the potential to affect state-listed vertebrate and invertebrate species, and has utilized the EPA Rapid Bioassessment Protocol for macroinvertebrates to assess potential impacts of disposal sites and hazardous material releases on streams and rivers in Massachusetts and New York. He has served as the environmental contractor to the Franklin Consolidated Office of the Federal Deposit Insurance Corporation (FDIC-FCO) for 16 months, where he reviewed environmental reports, prepared scopes-of-work for site assessments, and provided technical advice to FDIC employees related to environmentally compromised assets. Dr. Rockwood has designed, conducted, and evaluated numerous surface water and groundwater monitoring programs. His prior research includes laboratory studies of the effects of low pH and aluminum on dragonfly nymphs and a field survey of the impact of chlorinated sewerage effluent on algal periphyton community dynamics. Dr. Rockwood is the co-author of a textbook on aquatic biology and is the principal author of three peer-reviewed research publications in the field of aquatic toxicology that address the effect of low pH and aluminum on nymphs of the dragonfly *Libellula julia*. Dr. Rockwood served as the as the Editor of the AMWS Newsletter from November 2004 to October 2010 and as Assistant Editor from May 2003 to November 2004 and October 2010 to January 2012. He served as President of the Association of Massachusetts Wetland Scientists from November 2013 to December 2015 and as Immediate Past President from December 2015 to December 2017. He was twice awarded by AMWS with their President's Award.

Education:
Doctor of Philosophy (Ph.D.): Aquatic Pollution Biology – Plant and Soil Sciences
University of Massachusetts at Amherst, 1989
Bachelor of Science (B.S.): Environmental Sciences, *Summa Cum Laude*
University of Massachusetts at Amherst, 1984

Professional Affiliations:
Society for Freshwater Science
Sigma Xi, Full Member
Association of Massachusetts Wetland Scientists, Voting Member
Society of Wetland Scientists
Massachusetts Association of Conservation Commissions

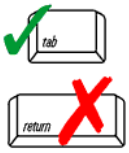
Certifications:
Society of Wetlands Scientists Senior Professional Wetland Scientist, Certification Number 1349
OSHA Health and Safety Training, 40-Hour Training, 29 CFR 1910.120
OSHA Health and Safety Training, 8-Hour Supervisor Training
OSHA Health and Safety Training, 8-Hour Refresher Training

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

Checklist for Stormwater Report

A. Introduction

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



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

The Stormwater Report must include:

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

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

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

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

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

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

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

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

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

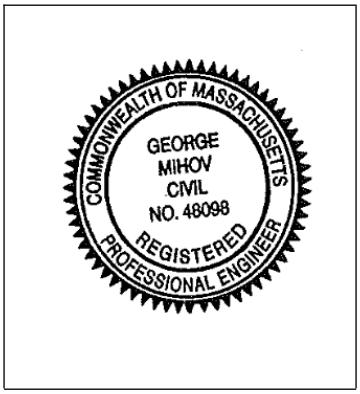
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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

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

Registered Professional Engineer's Certification

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

Registered Professional Engineer Block and Signature



03/18/2021

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): Suburface Infiltration Systems

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 Field[1]

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

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

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

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

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

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

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

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

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

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

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

Standard 4: Water Quality

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

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

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

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

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

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

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

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

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

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

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

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

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

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

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

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

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

☒ All exposure has been eliminated.

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

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

Standard 6: Critical Areas

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

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

Checklist for Stormwater Report

Checklist (continued)

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

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

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

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

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

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

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

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

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

Checklist for Stormwater Report

Checklist (continued)

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

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

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

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

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

Standard 9: Operation and Maintenance Plan

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

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

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

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

Standard 10: Prohibition of Illicit Discharges

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

☒ An Illicit Discharge Compliance Statement is attached;

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

City of Boston
Environment

City of Boston
Mayor Martin J. Walsh

EXTENSION FORM

The undersigned hereby allows the **Boston Conservation Commission** an extension of time, beyond the statutory limit, to review an application or issue a final decision under the Massachusetts Wetlands Protection Act, M.G.L. Chapter 131, Section 40, and the Boston Wetlands Ordinance, Boston City Code, Ordinances, Chapter 7-1.4d during the state of emergency declared by the Governor on March 10, 2020.

Applicant:

Christopher	Reale	Column Capital Realty
a. First Name	b. Last Name	c. Company

10 Commerce Boulevard
d. Mailing Address

Middleborough	MA	
e. City/Town	f. State	g. Zip Code

617-834-3005		chris@columncapitalrealty.com
h. Phone Number	i. Fax Number	j. Email address

Signature of Applicant — 6/2/2021 Date

Property Owner (if different):

a. First Name	b. Last Name	c. Company

d. Mailing Address

e. City/Town	f. State	g. Zip Code

h. Phone Number	i. Fax Number	j. Email address

Signature of Property Owner (if different) — Date

Applications will only be accepted when submitted with a properly executed Extension Form.

boston planning & development agency

Appendix E1. Climate Resiliency Checklist 189-197 Gardner Street (Apartments) West Roxbury

A.1 - Project Information

Project Name:	**West Roxbury Residences – 189 - 197 Gardner Street**			
Project Address:	189 - 197 Gardner Street, West Roxbury			
Project Address Additional:				
Filing Type (*select*)	*Initial (**PNF**, EPNF, NPC or other substantial filing)* *Design / Building Permit (prior to final design approval), or* *Construction / Certificate of Occupancy (post construction completion)*			
Filing Contact	Colleen Soden	Soden Sustainability	*colleen@sodensustainability.com*	*617-372-7857*
Is MEPA approval required	*Yes/**no***		*Date*	

A.3 - Project Team

Owner / Developer:	West Brighton Acquisitions, LLC
Architect:	Khalsa Design
Engineer:	Vincent A. Dilorio, Inc
Sustainability / LEED:	Soden Sustainability
Permitting:	Mitchell L. Fischman (MLF) Consulting LLC
Construction Management:	TBD

A.3 - Project Description and Design Conditions

List the principal Building Uses:	Residential Apartments
List the First Floor Uses:	Residential
List any Critical Site Infrastructure and or Building Uses:	N/A

Site and Building:

Site Area:	*36,194 SF*	Building Area:	*81,844 SF*
Building Height:	*44 Ft*	Building Height:	*4-Stories*
Existing Site Elevation – Low:	*101.8 Ft BCB*	Existing Site Elevation – High:	*107.4 Ft BCB*
Proposed Site Elevation – Low:	*101.8 Ft BCB*	Proposed Site Elevation – High:	*107.4 Ft BCB*
Proposed First Floor Elevation:	*107.5 Ft BCB*	Below grade levels:	*1 Story*

Article 37 Green Building:

LEED Version - Rating System :	LEED- BD&C	LEED Certification:	*Yes / No*
Proposed LEED rating:	*Certified/Silver/ Gold/Platinum*	Proposed LEED point score:	*Pts.*

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:	*49ci (R)*	Exposed Floor:	*10ci wood frame(R)*
Foundation Wall:	*7.5ci (R)*	Slab Edge (at or below grade):	*R15 for 24" (R)*

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

Area of Opaque Curtain Wall & Spandrel Assembly:	*0 (%)*	Wall & Spandrel Assembly Value:	*NA (U)*
Area of Framed & Insulated / Standard Wall:	*72 (%)*	Wall Value	*R20+R5ci wood frame*
Area of Vision Window:	*23 %*	Window Glazing Assembly Value:	*0.45 (U)*
		Window Glazing SHGC:	*0.4 (SHGC)*
Area of Doors:	*5 %*	Door Assembly Value:	*0.45 (U)*

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	*Energy loads and performance were estimated using an eQuest 3.65 energy model based on the March 20, 2019 schematic drawings*		
Annual Electric:	*610,864 (kWh)*	Peak Electric:	*155.6 (kW)*
Annual Heating:	*1,420 (MMbtu)*	Peak Heating:	*1.1 (MMbtu/hr)*
Annual Cooling:	*14,848 (Tons-hr)*	Peak Cooling:	*14.25 (Tons)*
Energy Use - Below ASHRAE 90.1 - 2013:	*29.3 %*	Have the local utilities reviewed the building energy performance?:	*Yes / no*
Energy Use - Below Mass. Code:	*26.1 %*	Energy Use Intensity:	*60 (no garage) (kBtu/SF)*

Back-up / Emergency Power System

Electrical Generation Output:	*125 (kW)*	Number of Power Units:	1
System Type:	*Ground*	Fuel Source:	Natural Gas

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

Electric:	*45 (kW)*	Heating:	*0.5 (MMbtu/hr)*
		Cooling:	*10 /(Tons)*

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: *582 (Tons)*

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

High energy performance of the building has been incorporated in the project via condensing boilers, condensing DHW heaters, improved envelope, low flow hot water fixtures, and energy star appliances.

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

There is passive energy savings in the orientation and shading of the glazing with recessed balconies as well as operable windows and sliders at the balconies.

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

The high efficiency equipment includes: low flow plumbing fixtures, high efficiency condensing boilers, high efficiency condensing domestic hot water heaters, as well as variable speed hot water pumps.

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

The variable speed hot water loop, condensing boilers (reduced hot water temp) and low flow hot water plumbing fixtures will reduce the loads on both the boiler and the domestic hot water heaters. LED light fixtures will reduce the cooling load in the building as well as reduce the lighting energy.

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

There are not any district scale emission reduction strategies incorporated at this time. Project will consider strategies where feasible as they arise.

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

There will not be any energy efficiency assistance offered except that tenants will pay for their own utilities which will encourage individuals to be energy efficient.

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):

The building has space on the roof that could house both a solar PV array to offset electrical use as well as solar hot water heaters to reduce natural gas use in the building.

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:	*3 Deg.*	Temperature Range - High:	*103 Deg.*
Annual Heating Degree Days:	5,596	Annual Cooling Degree Days	900

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

Days - Above 90°:	*25 #*	Days – Above 100°:	*10 #*
Number of Heatwaves / Year:	*5 #*	Average Duration of Heatwave (Days):	*4 #*

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

Heat island effect is reduced by incorporating reflective building materials as well as covered parking.

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:

The building is cooled by many individual heat pumps that can operate independently to maintain indoor conditions at higher outdoor average temperatures.

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:

Interruptions of power can be mitigated in the short term by the emergency generator. Longer power outages could require operable windows to provide ventilation and natural cooling.

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:	*6.0 In.*

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

Subsurface infiltration is expected to be used to retain stormwater runoff on-site

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):

Subsurface infiltration is anticipated to be sized to infiltrate at least the equivalent of 1.25 inches times the impervious area of the site as prescribed in BPDA's Smart Utilities Policy for projects at or above 100,000 square feet of floor area

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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* / (*No*)	What Zone:	A, AE, AH, AO, AR, A99, V, VE
		Current FEMA SFHA Zone Base Flood Elevation:	*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* / (*No*)

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:	*Ft BCB*		
Sea Level Rise - Design Flood Elevation:	*Ft BCB*	First Floor Elevation:	*Ft BCB*
Site Elevations at Building:	*Ft BCB*	Accessible Route Elevation:	*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.:

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.:

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:

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

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.:

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

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