LEC

WETLANDS WILDLIFE WATERWAYS

Notice of Intent Application
Old Colony Phase Four

Photo Courtesy Copley Wolff Design Group

June 23, 2021

Subject Property
110-72 Mercer Street
South Boston, Massachusetts

Property Owner
Boston Housing Authority
52 Chauncy Street
Boston, MA 02111

Applicant
Old Colony 4 Bonds Limited Partnership
2 Center Plaza, Suite 700
Boston, MA 02108

LEC Environmental Consultants, Inc.
380 Lowell Street, Suite 101
Wakefield, MA 01880
781-245-2500
www.lecenvironmental.com

LEC WETLANDS WILDLIFE WATERWAYS

June 23, 2021

Federal Express

Boston Conservation Commission
City of Boston Environmental Department
Boston City Hall, Room 709
Boston, MA 02201

RE: Notice of Intent Application [LEC File #: BRP\10-012.02]
Old Colony Phase Four
110-72 Mercer Street
South Boston, Massachusetts

Dear Members of the Commission:

On behalf of the Boston Housing Authority and their development partner, Beacon Communities, LEC Environmental Consultants, Inc., (LEC) is submitting this Notice of Intent Application to demolish an existing building and construct a new 104-unit apartment building with exterior landscaping/community gathering areas, and stormwater management. A portion of the landscaping/community area, stormwater management, and utility connections occur within Land Subject to Coastal Storm Flowage (LSCSF).

This proposed work will result in an improvement over existing conditions and further protect the interests of LSCSF under the *Massachusetts Wetlands Protection Act* (M.G.L., c. 131, s. 40) and its implementing *Regulations* (310 CMR 10.00) or the *Ordinance Protecting Local Wetlands and Promoting Climate Change Adaptation in the City of Boston City of Boston Code* (Chapter VII-I.IV, adopted 12/11/2019, the *Ordinance*) and the implementing *Boston Wetland Regulations* (approved 8/19/2020, the *Ordinance Regulations*).

Attached please find two checks made payable to the City of Boston for the *Act* and *Bylaw* filing fees. A check also has been sent to the Department of Environmental Protection Lock Box for the Commonwealth portion of the *Act* filing fee.

Thank you for consideration of this NOI Application. We look forward to discussing this project with the Commission at the July 7, 2021 Public Meeting. If you have any questions, I may be contacted inn our Wakefield Office at 781-245-2500 or at amarton@lecenvironmental.com.

Sincerely,

LEC Environmental Consultants, Inc.

Ann M. Marton, President
Director of Ecological Services

cc: DEP, Northeast Regional Office; Boston Housing Authority; Old Colony 4 Bonds Limited Partnership

Notice of Intent Application

NOI Application Report

Appendices

Appendix C

Old Colony Phase IV Plan Rendering
prepared by Copley Wolff Design Group dated March 30, 2021

Old Colony Phase Four and Five Landscape Plans (Sheets L1.00-L3.00)
prepared by Copley Wolff Design Group dated June 7, 2021,
stamped and signed by James A. Heroux

Appendix D

Old Colony Phase Four Civil Plans Set (Sheets C1.00-C3.03)
prepared by Nitsch Engineering, Inc. dated June 7, 2021
stamped and signed by Jonathan R. Hedlund on June 11, 2021

Attachment

Stormwater Report Old Colony Phase IV
prepared by Nitsch Engineering, Inc. dated June 11, 2021
stamped and signed by Jonathan R. Hedlund on June 11, 2021

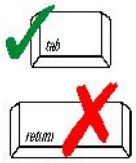
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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):

110-72 Mercer Street — a. Street Address
Boston — b. City/Town
02127 — c. Zip Code
Latitude and Longitude:
42.33086 — d. Latitude
-71.04960 — e. Longitude
0700540039 — f. Assessors Map/Plat Number
g. Parcel /Lot Number

2. Applicant:

Sarah — a. First Name
Boehs, Assistant Secretary — b. Last Name
Old Colony 4 Bonds Limited Partnership — c. Organization
2 Center Plaza, Suite 700 — d. Street Address
Boston — e. City/Town
MA — f. State
02108 — g. Zip Code
617-574-1132 — h. Phone Number
i. Fax Number
djameson@beaconcommunitiesllc.com — j. Email Address

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

Kathryn — a. First Name
Bennett, BHA Administrator — b. Last Name
Boston Housing Authority — c. Organization
52 Chauncy Street — d. Street Address
Boston — e. City/Town
MA — f. State
02111 — g. Zip Code
617-988-4000 — h. Phone Number
i. Fax Number
Kate.bennett@bostonhousing.org — j. Email address

4. Representative (if any):

Ann — a. First Name
Marton — b. Last Name
LEC Environmental Consultants, Inc. — c. Company
380 Lowell Street, Suite 101 — d. Street Address
Wakefield — e. City/Town
MA — f. State
01880 — g. Zip Code
781-245-2500 — h. Phone Number
781-245-6677 — i. Fax Number
amarton@lecenvironmental.com — j. Email address

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

$1,162.50 — a. Total Fee Paid
$487.50 — b. State Fee Paid
$675.00 (Per BCC Filing Guide) — c. City/Town Fee Paid

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Boston
City/Town

A. General Information (continued)

6. General Project Description:

The Applicant proposes to demolish an existing building and construct a new 104 unit apartment building with exterior landscaping/community gathering areas and stormwater management. A portion of the landscaping/community area, stormwater drainage, and utility connections occur within Land Subject to Coastal Storm Flowage.

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: Apartment Complex

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

1. ☐ Yes ☒ No

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

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

Suffolk	108
a. County	b. Certificate # (if registered land)
7208	
c. Book	d. Page Number

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

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

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

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

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

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

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

4. Proposed alteration of the Riverfront Area:

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Boston
City/Town

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

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	
	1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	3,900 1. square feet	

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

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

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

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

C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

a. ☐ Yes ☒ No

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

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

2017
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.

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

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).

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

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

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

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

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

   b. ACEC

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

   a. ☐ Yes ☒ No

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

   a. ☐ Yes ☒ No

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

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

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

      2. ☒ A portion of the site constitutes redevelopment

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

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

      1. ☐ Single-family house

      2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Boston
City/Town

D. Additional Information (cont'd)

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

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

See attached List
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:

5200621	6/10/2021
2. Municipal Check Number	3. Check date
5200622	6/10/2021
4. State Check Number	5. Check date
Beacon Communities Services LLC	
6. Payor name on check: First Name	7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Boston
City/Town

F. Signatures and Submittal Requirements

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

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

Old Colony 4 Bonds Limited Partnership

By: Old Colony 4 Bonds GP LLC, its General Partner

By: Beacon Communities Corp., its sole member

By: _____
Name: Sarah T. Boehs
Title: Assistant Secretary

1. Signature of Applicant

June 22, 2021
2. Date

3. Signature of Property Owner (if different)

Boston Housing Authority, Kathryn Bennett, BHA Administrator

4. Date

5. Signature of Representative (if any)

Ann M. Marton, President LEC Environmental Consultants, Inc

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

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

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

Old Colony 4 Bonds Limited Partnership,
a Massachusetts limited partnership
By: Old Colony 4 Bonds GP LLC, its General Partner
By: Beacon Communities Corp., its Managing Member
By: Sarah Boehs, Assistant Secretary

2. Date

3. Signature of Property Owner (if different)

Boston Housing Authority, Kathryn Bennett, BHA Administrator

4. Date 6-23-21

5. Signature of Representative (if any)

Ann M. Marton, President LEC Environmental Consultants, Inc

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
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

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

Old Colony 4 Bonds Limited Partnership,
a Massachusetts limited partnership
By: Old Colony 4 Bonds GP LLC, its General Partner
By: Beacon Communities Corp., its Managing Member
By: Sarah Boehs, Assistant Secretary

2. Date

3. Signature of Property Owner (if different)

Boston Housing Authority, Kathryn Bennett, BHA Administrator

4. Date

5. Signature of Representative (if any)

Ann M. Marton, President LEC Environmental Consultants, Inc

6. Date 6-22-2021

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.

BOSTON HOUSING AUTHORITY

Planning and Development
52 Chauncy Street, 2nd Floor
Boston, Massachusetts 02111

P 617.988.4317 F 617.988.4101
TTY 800.545.1833 x420
www.bostonhousing.org

~~By Hand Delivery~~ City Hall Closed to the public. Sent by mail instead.

June 23, 2021

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

Re: Old Colony Phase Four

To whom it may concern:

Boston Housing Authority is the owner of the Old Colony public housing development in South Boston. An application is being submitted to the Conservation Commission today in connection with the property. The applicant is: Old Colony 4 Bonds Limited Partnership.

Enclosed here are originals of three signature pages signed by BHA's administrator, Kathryn Bennett, as owner. Scanned copies of the enclosed signature sheets have already been provided to the applicant and will be included the in application package. To the extent that original signatures are needed by the Commission, please swap the enclosed originals into the application package.

Please give me a call at (617) 756-8401 with any questions. Thanks very much.

Sincerely,

Joe Bamberg
Director of Planning and Development

List of Plans and Documents

Exhibit Plan Old Colony-Phase Four
Prepared by Feldman Land Surveyors
Dated June 22, 2021
Signed and stamped by Timothy R. Agurkis, PLS

Old Colony Phase IV Plan Rendering
Prepared by Copley Wolff Design Group
Dated March 30, 2021

Old Colony Phase Four and Five Landscape Plan (Sheets L1.00-L3.00)
Prepared by Copley Wolff Design Group
Dated June 7, 2021
Stamped and signed by James. A. Heroux

Old Colony Phase Four Civil Plans Set (Sheets C1.00-C3.03)
Prepared by Nitsch Engineering, Inc.
Dated June 7, 2021
Stamped and signed by Jonathan R. Hedlund on June 11, 2021

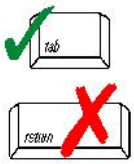
Stormwater Report Old Colony Phase IV
Prepared by Nitsch Engineering, Inc.
Dated June 11, 2021
Stamped and signed by Jonathan R. Hedlund on June 11, 2021

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:

110-72 Mercer Street	Boston
a. Street Address	b. City/Town
5200622	$487.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Sarah		Boehs	
a. First Name		b. Last Name	
Old Colony 4 Bonds Limited Partnership			
c. Organization			
2 Center Plaza, Suite 700			
d. Mailing Address			
Boston	MA	02108	
e. City/Town	f. State	g. Zip Code	
617-574-1132		djameson@beaconcommunitiesllc.com	
h. Phone Number	i. Fax Number	j. Email Address	

3. Property Owner (if different):

Kathryn		Bennett, BHA Administrator	
a. First Name		b. Last Name	
Boston Housing Authority			
c. Organization			
52 Chauncy Street			
d. Mailing Address			
Boston	MA	02111	
e. City/Town	f. State	g. Zip Code	
617-988-4000		Kate.bennett@bostonhousing.org	
h. Phone Number	i. Fax Number	j. Email Address	

B. Fees

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

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

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

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 2j: Drainage and Landscaping	2	$500.00	$1,000.00

Step 5/Total Project Fee: $1,000.00

Step 6/Fee Payments:

Total Project Fee:	$1,000.00 (a. Total Fee from Step 5)
State share of filing Fee:	$487.50 (b. 1/2 Total Fee **less $**12.50)
City/Town share of filling Fee:	$512.50 (c. 1/2 Total Fee **plus**)

C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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

City of Boston Environment

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

Boston File Number

MassDEP File Number

A. GENERAL INFORMATION

1. Project Location

a. Street Address	b. City/Town	c. Zip Code
110-72 Mercer Street	Boston	02127

f. Assessors Map/Plat Number	g. Parcel /Lot Number
0700540039	

2. Applicant

a. First Name	b. Last Name	c. Company
Sarah	Boehs, Assistant Secretary	Old Colony 4 Bonds Limited Partnership

d. Mailing Address: 2 Center Plaza, Suite 700

e. City/Town	f. State	g. Zip Code
Boston	MA	02108

h. Phone Number	i. Fax Number	j. Email address
617-574-1132		djameson@beaconcommunitiesllc.com

3. Property Owner

a. First Name	b. Last Name	c. Company
Kathryn	Bennett, BHA Administrator	Boston Housing Authority

d. Mailing Address: 52 Chauncy Street

e. City/Town	f. State	g. Zip Code
Boston	MA	02111

h. Phone Number	i. Fax Number	j. Email address
617-988-4000		kate.bennett@bostonhousing.org

❑ 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
Ann	Marton	LEC Environmental Consultants, Inc.

d. Mailing Address: 380 Lowell Street, Suite 101

e. City/Town	f. State	g. Zip Code
Wakefield	MA	01880

h. Phone Number	i. Fax Number	j. Email address
781-245-2500	781-245-6677	amarton@lecenvironmental.com

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

☒ Yes Land Subject to Coastal Storm Flowage ☐ No

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

6. General Information

The Applicant proposes to demolish an existing building and construct a new 104 unit apartment building with exterior landscaping and community gathering areas and stormwater mangement. A portion of the landscaping/community areas, stormwater management, and utility connections occur within Land Subject to Coastal Storm Flowage.

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 Apartment Complex

8. Property recorded at the Registry of Deeds

Suffolk a. County	108 b. Page Number
7208 c. Book	 d. Certificate # (if registered land)

9. Total Fee Paid

$1,162.50 a. Total Fee Paid	$487.50 b. State Fee Paid	$675.00 (Per BCC Filing Guide) 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 Not in Buffer Zone, only within Land Subject to Coastal Storm Flowage

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*	*Square feet*	*Square feet*	*Square feet*
❑ *Riverfront Area*	*Square feet*	*Square feet*	*Square feet*

C. OTHER APPLICABLE STANDARDS & REQUIREMENTS

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

See Attached Table C1.

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.

Old Colony 4 Bonds Limited Partnership

By: Old Colony 4 Bonds GP LLC, its General Partner

By: Beacon Communities Corp., its sole member

By: _____
Name: Sarah T. Boehs
Title: Assistant Secretary

Signature of Applicant — Date: June 22, 2021

Signature of Property Owner (if different) — Date

Boston Housing Authority, Kathryn Bennett, BHA Administrator

Signature of Representative (if any) — Date

Ann M. Marton, President LEC Environmental Consultants, Inc.

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

Old Colony 4 Bonds Limited Partnership,
A Massachusetts limited partnership
By: Old Colony 4 Bonds GP LLC, its General Partner
By: Beacon Communities Corp., its Managing Member
By: Sarah Boehs, Assistant Secretary

Signature of Property Owner (if different) — Date: 6-23-21

Boston Housing Authority, Kathryn Bennett, BHA Administrator

Signature of Representative (if any) — Date

Ann M. Marton, President LEC Environmental Consultants, Inc.

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

Old Colony 4 Bonds Limited Partnership,
A Massachusetts limited partnership
By: Old Colony 4 Bonds GP LLC, its General Partner
By: Beacon Communities Corp., its Managing Member
By: Sarah Boehs, Assistant Secretary

Signature of Property Owner (if different) — Date

Boston Housing Authority, Kathryn Bennett, BHA Administrator

Signature of Representative (if any) — Date: 6-22-2021

Ann M. Marton, President LEC Environmental Consultants, Inc.

Regulatory Controls and Permits – Final Phase

The table below presents a list of agencies from which permits or other actions are anticipated to be required.

Table C1 List of Anticipated Permits and Approvals

Agency Name	Permit / Approval
LOCAL	
Boston Planning and Development Agency	Chapter 121A; Article 80B - Notice of Project Change for Master Plan Large Project Review BPDA Board approved April 2021
Boston Civic Design Commission	Schematic Design Review BCDC approval March 2021
Boston Fire Department	Approvals for fire protection systems
Boston Landmarks Commission	Article 85 Demolition Delay BLC approved January 2021
Boston Transportation Department	Construction Management Plan; Transportation Access Plan Agreement
Boston Water and Sewer Commission	Sewer and Water Connection Permits
Inspectional Services Department	Demolition Permit Building and Occupancy Permits (by phase)
Parks Commission	Parks Commission approval due to proximity to Columbia Road greenway/park.

Public Improvement Commission	Minor Sidewalk Repairs Temporary Construction and Permanent Easements as may be required, including Pedestrian Easements Any licenses for utilities Curb Cut Permit

Agency Name	**Permit / Approval**
STATE	
Executive Office of Environmental Affairs – MEPA Unit	MEPA Review was completed for Master Plan – No further action required
Massachusetts Department of Environmental Protection	Asbestos Removal Notice (if required); Construction Notice; Construction Dewatering Permit (if required)
Massachusetts Department of Environmental Protection – Division of Water Pollution Control	Sewer Connection
Massachusetts Historical Commission	Determination of No Adverse Effect – No further action required
FEDERAL	
Environmental Protection Agency	National Pollutant Discharge Elimination System – Construction General Permit and Accompanying Stormwater Pollution Prevention Plan
Housing and Urban Development by its designee	NEPA/Environmental Review - Finding of No Significant Impact and Notice of Intent to Request Release of Funds and Request for Release of Funds; Removal of Grant Conditions

boston planning & development agency

Climate Resiliency Checklist

NOT FOR FILING

NOTE: Project filings should be prepared and submitted using the online Climate Resiliency Checklist.

A.1 - Project Information

Project Name:	Old Colony Phase 4			
Project Address:	110 Mercer Street, Boston, MA 02127			
Project Address Additional:				
Filing Type (*select*)	*EPNF*			
Filing Contact	*Michael Brod*	*New Ecology, Inc.*	*brod@newecology .org*	*617-557-1700 x7064*
Is MEPA approval required	No			

A.3 - Project Team

Owner / Developer:	Beacon Communities, LLC
Architect:	The Architectural Team, Inc.
Engineer:	Petersen Engineering, Inc.
Sustainability / LEED:	New Ecology, Inc.
Permitting:	
Construction Management:	Dimeo Construction

A.3 - Project Description and Design Conditions

List the principal Building Uses:	Multifamily Housing
List the First Floor Uses:	Multifamily Housing, Amenity/Office Space, Supporting Spaces
List any Critical Site Infrastructure and or Building Uses:	None

Site and Building:

Site Area:	1.35 acres	Building Area:	*132,613*
Building Height:	72'	Building Height:	*6 stories*
Existing Site Elevation – Low:	15.57'	Existing Site Elevation – High:	20.9
Proposed Site Elevation – Low:	15.79'	Proposed Site Elevation – High:	21.5'
Proposed First Floor Elevation:	21.5'	Below grade levels:	*0*

Article 37 Green Building:

LEED Version - Rating System:	Multifamily Midrise v4	LEED Certification:	*No*
Proposed LEED rating:	*Gold*	Proposed LEED point score:	*62.5*

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:	R40c.i.	Exposed Floor:	R30
Foundation Wall:	*R16c.i.*	Slab Edge (at or below grade):	*R16c.i.*

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

Area of Opaque Curtain Wall & Spandrel Assembly:	0.2%	Wall & Spandrel Assembly Value:	*0.50 Overall U Value*
Area of Framed & Insulated / Standard Wall:	73.48%	Wall Value	*R23 + R8.6 c.i.*
Area of Vision Window:	25.24%	Window Glazing Assembly Value:	*0.17 U Value*
		Window Glazing SHGC:	*0.35 SHGC*
Area of Doors:	1.07%	Door Assembly Value:	*0.40 U Value at Opaque, 0.27 U Value at Glazed Portion*

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	*Buildings have been designed to exceed the code modeling requirement Massachusetts Code 9th Ed. The average worst-case HERS score is 51. This also satisfies the HERS index Target requirement for LEED Homes v4.*		
Annual Electric:	*561,238 kWh*	Peak Electric:	*Not available*
Annual Heating:	*1607 Million Btu*	Peak Heating:	*Not available*
Annual Cooling:	111 Million Btu	Peak Cooling:	*Not available*
Energy Use - Below ASHRAE 90.1 - 2013:	*N/A*	Have the local utilities reviewed the building energy performance?:	*No*
Energy Use - Below Mass. Code:	*7.3%*	Energy Use Intensity:	*41.4 kBtu/SF*

Back-up / Emergency Power System

Electrical Generation Output:	*200 kW*	Number of Power Units:	1
System Type:	Combustion engine	Fuel Source:	Diesel

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

Electric:	*None*	Heating:	None
		Cooling:	None

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: *339 $mtCO_2$*

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

Energy efficiency will be a primary factor in building design. High performance envelope details and systems will be included. The buildings were modeled early during the design process so that the energy models could inform the team's decisions. The design exceeds the required HERS 55 threshold by an average of 4 points (average HERS score = 51).

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

The envelope will be high-performance, with continuous exterior insulation as well as a continuous air barrier around all sides of the building to significantly reduce air infiltration. Windows will be triple pane.

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

All mechanical equipment will be high performance. VRF and heat pump systems will provide heating and cooling to the units and common spaces. Outdoor air will be supplied via high-efficiency central ERV units. LED lighting will be specified, with automatic controls in common areas. All plumbing fixtures will be low-flow or low-flush.

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

A rooftop solar PV system will be planned to offset a portion of the site's electricity consumption.

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

None

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

The building has been modeled by experienced energy modelers, and design guidance has been provided by experts well-versed in high-performance building design. The team has applied for incentives through the MassSave Multifamily High-Rise program.

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 buildings will be constructed to exceed stringent stretch energy code requirements; any future renovations to the property will also meet energy code.

C - Extreme Heat Events

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

C.1 – Extreme Heat - Design Conditions

Temperature Range - Low:	7°F	Temperature Range - High:	91°F
Annual Heating Degree Days:	5512	Annual Cooling Degree Days	776

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

Days - Above 90°:	5	Days – Above 100°:	*1*
Number of Heatwaves / Year:	2	Average Duration of Heatwave (Days):	*3*

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

High-albedo roofing materials will help to mitigate the urban heat island effect.

C.2 - Extreme Heat – Adaptation Strategies

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

Cooling systems will be sized to accommodate current and future cooling loads. High-albedo roofing materials will be specified.

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:

A high-performance building envelope will retain comfortable temperatures in the building for an extended period in the event of a loss of service. A standby generator will be provided to backup power to one elevator and emergency lighting inverters.

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:	*0.83 in/24 hrs*

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

The project will include on-site storm water recharge and retention for possible site irrigation.

D.2 - Extreme Precipitation - Adaptation Strategies

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

The project will include on-site storm water recharge, waste water backflow prevention, and storm water retention and backflow prevention.

E – Sea Level Rise and Storms

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

Is any portion of the site in a FEMA SFHA?	*Yes*	What Zone:	AE
		Current FEMA SFHA Zone Base Flood Elevation:	10

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

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

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

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

Sea Level Rise - Base Flood Elevation:	*19.5 Ft BCB*		
Sea Level Rise - Design Flood Elevation:	*21.5 Ft BCB*	First Floor Elevation:	21.5 Ft BCB
Site Elevations at Building:	*21.5 Ft BCB*	Accessible Route Elevation:	21.5 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.:

The team has designed the 1st floor elevation relative to the risks associated with sea level rise and flooding by placing the first floor elevation 24" above the base floor elevation.

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

The building will be slab on grade. Beacon has included mechanical systems above the 1st floor, well above the floodplain, and have included storm water retention.

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:

The design supports evacuation of the buildings. A standby generator will be provided to backup power to one elevator and emergency lighting inverters.

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

Beacon has developed an extensive Continuity of Operations Plan (COOP) for operations at the Homes at Old Colony. This plan includes protocols to be used in response to a variety of disruptions, including natural disasters and service outages.

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.:

If deemed necessary in the future, portions of the site could be altered to mitigate the effects of flooding on the buildings.

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

Future building adaptation strategies could include redesigning building elevators, and dry- or wet-floodproofing areas on the first floors.

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

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:

a. First Name	b. Last Name	c. Company
Sarah	Boehs	Old Colony 4 Bonds Limited Partnership

2 Center Plaza, Suite 700
d. Mailing Address

e. City/Town	f. State	g. Zip Code
Boston	MA	02108

h. Phone Number	i. Fax Number	j. Email address
617-574-1132		djameson@beaconcommunitiesllc.com

Signature of Applicant — June 22, 2021 (Date)

Property Owner (if different):

a. First Name	b. Last Name	c. Company
Kathryn	Bennett	Boston Housing Authority

52 Chauncy Street
d. Mailing Address

e. City/Town	f. State	g. Zip Code
Boston	MA	02111

h. Phone Number	i. Fax Number	j. Email address
617-988-4000		kate.bennett@bostonhousing.org

Signature of Property Owner (if different) — Date

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

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:

Sarah	Boehs	Old Colony 4 Bonds Limited Partnership
a. First Name	b. Last Name	c. Company

2 Center Plaza, Suite 700
d. Mailing Address

Boston	MA	02108
e. City/Town	f. State	g. Zip Code

617-574-1132		djameson@beaconcommunitiesllc.com
h. Phone Number	i. Fax Number	j. Email address

Signature of Applicant — Date

Property Owner (if different):

Kathryn	Bennett	Boston Housing Authority
a. First Name	b. Last Name	c. Company

52 Chauncy Street
d. Mailing Address

Boston	MA	02111
e. City/Town	f. State	g. Zip Code

617-988-4000		kate.bennett@bostonhousing.org
h. Phone Number	i. Fax Number	j. Email address

Signature of Property Owner (if different) — Date: 6-23-21

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

AFFIDAVIT OF SERVICE

Under the *Massachusetts Wetlands Protection Act*

and *Boston Wetlands Ordinance, City of Boston Code, Ordinances*, Chapter 7-1.4

I, Sharon A. Sullivan, on behalf of Old Colony 4 Bonds Limited Partnership, hereby certify under the pains and penalties of perjury that on June 23, 2021 I gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40 and 310 CMR 10.05 (4) (a) and Boston Wetlands Ordinance, City of Boston Code, Ordinances, Chapter 7-1.4 in connection with the following matter:

> A Notice of Intent Application filed under the Massachusetts Wetlands Protection Act and the City of Boston Wetlands Ordinance by LEC Environmental Consultants, Inc. on behalf of the Applicant, Old Colony 4 Bonds Limited Partnership, with the City of Boston Conservation Commission on June 23, 2021 for property located at 110-72 Mercer Street (Assessor's Parcel ID: 0700540039) in Boston, Massachusetts.

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

Sharon A. Sullivan _____ 6/23/2021

Sharon A. Sullivan — Date

Permitting Technician

LEC WETLANDS WILDLIFE WATERWAYS

June 23, 2021

CERTIFICATE OF MAILING

«Name»
«Address»
«City», «State» «Zip»

Re: Notice of Intent Application [LEC File #: BRP\10-012.02]
110-72 Mercer Street
Assessor's Parcel ID: 0700540039
Boston, Massachusetts

Dear Abutter:

On behalf of the Applicant, Old Colony 4 Bonds Limited Partnership, LEC Environmental Consultants, Inc. (LEC) has filed a Notice of Intent Application with the Boston Conservation Commission to demolish existing structures and construct a new 104-unit apartment building with exterior landscaping/community gathering areas, and stormwater management. A portion of the landscaping/community area, stormwater drainage, and utility connections occurs within Land Subject to Coastal Storm Flowage.

The Notice of Intent Application and accompanying plans are available for review by the public at the Boston Conservation Commission. The remote Public Hearing will be held on July 7, 2021 beginning at 6:00 p.m., in accordance with the provisions of the *Massachusetts Wetlands Protection Act* (M.G.L. Ch. 131, s. 40, as amended) and its implementing Regulations (310 CMR 10.00), and the *Boston Wetlands Ordinance, City of Boston Code, Ordinances*, Chapter 7-14.

Further information regarding this application will be published at least five (5) days in advance in *The Boston Herald.* Notice of the Public Hearing will also be posted at the Boston City Hall at least 48 hours in advance. Confirmation of hearing date, time and agenda may be found at https://boston.gov/public-notices.

Please do not hesitate to review the materials and/or attend the public hearing should you have questions or concerns about the proposed project.

Sincerely,

LEC Environmental Consultants, Inc.

Ann M. Marton, President
Director of Ecological Services

City of Boston
Environment

City of Boston
Mayor Martin J. Walsh

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. Old Colony 4 Bonds Limited Partnership 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 **110-72 Mercer Street**.

C. The project involves demolition of an existing building and construction of a new 104-unit apartment building with exterior landscaping/community gathering areas and stormwater management. A portion of the landscaping/community area, stormwater drainage, and utility connections occur within Land Subject to Flooding.

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 **LEC Environmental Consultants, Inc.** by calling (781) 245-2500 between the hours of 8:00 a.m. and 5:00 p.m., Monday thru Friday.

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

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

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

NOTE: Notice of the public hearing, including its date, 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.

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

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

A. Old Colony 4 Bonds Limited Partnership ha presentado una solicitud ante la Comisión de Conservación de Boston pidiendo permiso para modificar una zona sujeta a protección en virtud de la Ley de Protección de los Humedales (Leyes generales, capítulo 131, sección 40) y la Ordenanza sobre los Humedales de Boston.

B. La dirección del lote donde se propone la actividad es 110-72 Mercer Street.

C. El proyecto consiste en la demolición de un edificio existente y la construcción de un nuevo edificio de apartamentos de 104 unidades con jardines, zonas para reuniones comunitarias y administración de las aguas pluviales. Una parte de los jardines y zonas para reuniones comunitarias, el drenaje de las aguas pluviales y las conexiones de los servicios públicos se encuentran dentro de terrenos sujetos a inundación.

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

E. Las copias del Aviso de Intención pueden obtenerse a través de LEC Environmental Consultants, Inc., llamando al (781) 245-2500 de lunes a viernes de 8:00 am a 5:00 pm.

F. De acuerdo con el Decreto Ejecutivo de la Mancomunidad de Massachusetts que suspende ciertas disposiciones de la Ley de Reuniones Abiertas, la audiencia pública se llevará a cabo **virtualmente** en https://zoom.us/j/6864582044. Si no tiene acceso a Internet, puede llamar al 1-929-205-6099, introducir el número de identificación de la reunión 686 458 2044 # y utilizar # como identificación 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) 635-3850** de lunes a viernes entre las **9 AM y las 5 PM.**

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

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

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

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

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

www.EmbracingCulture.com

June 25, 2021,

Cross Cultural Communication Systems, Inc., hereby certify, that this is a true translation of the document "Abutter Notification COVID-19 Form Old Colony ENGLISH" from English into Spanish under CCCS Project TSP 06242103, requested by Sharon Sullivan (SSullivan@lecenvironmental.com) on June 24, 2021.

It was prepared to the best of the company's ability, this 25 day of June 2021.

Translations of any materials into languages other than English are intended solely as a convenience to the non-English-reading public and are not legally binding. We have attempted to provide an accurate translation of the original material in English, but due to the nuances in translating to a foreign language, slight differences may exist.

Alejandra Lloveras

Cross Cultural Communication Systems, Inc.™
Embracing linguistic and cultural connections!
Providing 24/7 language solutions.
Translation Services Project Manager
CCCS, Inc. ™
PO Box 2308
Woburn, MA 01888
P: (781) 729-3736 X 112 F: (781) 729-1217
P: (888) 678-CCCS X 112 (out of state)

OBJECTID	FULL_ADDRESS	CITY	OWNER	ADDRESSEE	MAIL_ADDRESS	MAIL_CS	STATE	MAIL_ZIPCODE
125542	COLUMBIA CI	SOUTH BOSTON	CITY OF BOSTON	C/O PARKS & RECREATION	1010 MASSACHUSETTS AV 3RD FLR	BOSTON	MA	02118
84072	110 72 MERCER ST	SOUTH BOSTON	BOSTON HOUSING AUTHORITY		MERCER	SOUTH BOSTON	MA	02127
61798	6 DIXFIELD ST	SOUTH BOSTON	OOMER IMRAN		6 DIXFIELD ST	SOUTH BOSTON	MA	02127
124792	354 E EIGHTH ST	SOUTH BOSTON	JOHNSON RICHARD J JR		354 EAST EIGHTH ST	SOUTH BOSTON	MA	02127
37621	1306 COLUMBIA RD 5C	SOUTH BOSTON	HAYWOOD BENJAMIN T		1306 COLUMBIA RD #5C	SOUTH BOSTON	MA	02127
21634	48 THOMAS PK 1	SOUTH BOSTON	JAMES EMMA S		718 ALTA VISTA RD	MILL VALLEY	CA	94941
101153	102 OLD HARBOR ST 1	SOUTH BOSTON	JOSHI TRACY		102 OLD HARBOR ST, UNIT 1	SOUTH BOSTON	MA	02127
37601	1306 COLUMBIA RD 1C	SOUTH BOSTON	NARGI JOHN P		1306 COLUMBIA RD #1C	SOUTH BOSTON	MA	02127
146534	298 E EIGHTH ST 1	SOUTH BOSTON	XIAO HUI FANG	C/O HUIFANG XIAO	1093A CHESTNUT ST	NEWTON	MA	02464
46260	89 OLD HARBOR ST	SOUTH BOSTON	EIGHTY 9 OLD HARBOR ST CONDO	C/O ANDRIUS J DILBA TS	89 OLD HRBOUR ST	SOUTH BOSTON	MA	02127
37598	1306 COLUMBIA RD	SOUTH BOSTON	HARBORVIEW CONDO TRUST		1306 COLUMBIA RD	S BOSTON	MA	02127
122235	37 MERCER ST	SOUTH BOSTON	37 MERCER STREET CONDOMINIUM TRUST	C/O 37 MERCER STREET LLC	9 GLIDER RD	BOURNE	MA	02532
30576	55 GATES ST 1	SOUTH BOSTON	55 GATES STREET REALTY TRUST	C/O DAVID R HUNTLEY	55 GATES ST # 1	SOUTH BOSTON	MA	02127
128827	67 GATES ST	SOUTH BOSTON	SIXTY 7 GATES ST CONDO TR		67 GATES ST	SOUTH BOSTON	MA	02127
37615	1306 COLUMBIA RD 4B	SOUTH BOSTON	CORREIA GIULIAN J		1306 COLUMBIA RD #4B	SOUTH BOSTON	MA	02127
114257	11 DIXFIELD ST	SOUTH BOSTON	ELEVEN DIXFIELD ST CONDO TR		11 DIXFIELD ST	SOUTH BOSTON	MA	02127
156281	59 GATES ST G	SOUTH BOSTON	HERRELL GEORGE T	C/O GEORGE T HERRELL	202 W 39TH ST #B	SAVANNAH	GA	31401
139115	296 E EIGHTH ST 3	SOUTH BOSTON	CERULLO MADELIN DEE		296 E EIGHTH ST #3	BOSTON	MA	02127
70533	101 OLD HARBOR ST 3	SOUTH BOSTON	KOENIG JOSHUA		101 OLD HARBOR ST #3	SOUTH BOSTON	MA	02127
37618	1306 COLUMBIA RD 4E	SOUTH BOSTON	SACHDEVA VIPIN		1306 COLUMBIA RD, UNIT 4E	SOUTH BOSTON	MA	02127
5842	76 GATES ST	SOUTH BOSTON	WARREN MAUREEN		76 GATES ST	SOUTH BOSTON	MA	02127
115863	15 DIXFIELD ST 2	SOUTH BOSTON	VAKHARIA JANAKI		15 DIXFIELD ST, UNIT 2	SOUTH BOSTON	MA	02127
158926	57 GATES ST 2	SOUTH BOSTON	CONNORS CHRISTOPHER MICHAEL		57 GATES ST, UNIT 2	SOUTH BOSTON	MA	02127
122241	37 MERCER ST 6	SOUTH BOSTON	SPASIC DANIEL		26 TARA DRIVE	NORWELL	MA	02061
139112	296 E EIGHTH ST	SOUTH BOSTON	TWO-96 E EIGHTH ST CONDO TR	C/O SERGO JEAN	296 E EIGHTH STREET	SOUTH BOSTON	MA	02127
122238	37 MERCER ST 3	SOUTH BOSTON	EVANGELISTA MERYL A		37 MERCER ST #3	SOUTH BOSTON	MA	02127
128830	67 GATES ST 3	SOUTH BOSTON	BENNETT ERIC R		67 GATES ST #3	SOUTH BOSTON	MA	02127
37604	1306 COLUMBIA RD 2A	SOUTH BOSTON	SCHULMAN AMIRHOSSEINI TRUST	C/O JONATHAN SCHULMAN	1306 COLUMBIA RD #2A	SOUTH BOSTON	MA	02127
37612	1306 COLUMBIA RD 3D	SOUTH BOSTON	BATTISTELLI KRISTEN		1306 COLUMBIA RD #3D	S BOSTON	MA	02127
156284	59 GATES ST 301	SOUTH BOSTON	PITMAN KRISTIN NICOLE		59 GATES ST, UNIT 301	SOUTH BOSTON	MA	02127
37623	1306 COLUMBIA RD 5E	SOUTH BOSTON	PRICE ALEXANDER		1306 COLUMBIA RD #5E	SOUTH BOSTON	MA	02127
37617	1306 COLUMBIA RD 4D	SOUTH BOSTON	YACHIMSKI IRENE T		1306 COLUMBIA RD #4-D	SOUTH BOSTON	MA	02127
16069	69 GATES ST 1	SOUTH BOSTON	FALCONE ALFRED E, JR	C/O SHANE A KNOWLES	69 GATES ST #1	S BOSTON	MA	02127
125841	116 OLD HARBOR ST	SOUTH BOSTON	LASOFF BRIAN		116 OLD HARBOR ST	SOUTH BOSTON	MA	02127
125824	294 292 E EIGHTH ST	SOUTH BOSTON	ARLAUSKAS JOSEPH M TS		143 W SEVENTH ST	S BOSTON	MA	02127
158925	57 GATES ST 1	SOUTH BOSTON	HUNT RYAN C		36 JACKSON RD	WELLESLEY	MA	02481
37600	1306 COLUMBIA RD 1B	SOUTH BOSTON	KUPSTIS LINDA J		1306 COLUMBIA RD #1B	SOUTH BOSTON	MA	02127
128829	67 GATES ST 2	SOUTH BOSTON	SAKALOSKY CHRISTOPHER M		67 GATES ST #2	SOUTH BOSTON	MA	02127
37603	1306 COLUMBIA RD 1E	SOUTH BOSTON	WOLLACOTT ANDREW M		16 WOODCHESTER DR	MILTON	MA	02186
122237	37 MERCER ST 2	SOUTH BOSTON	ANCTIL RYAN		37 MERCER ST #2	BOSTON	MA	02127
46262	89 OLD HARBOR ST 2	SOUTH BOSTON	CALDEN JOSEPH J	C/O JOSEPH CALDEN	89 OLD HARBOR ST #2	SOUTH BOSTON	MA	02127
101152	102 OLD HARBOR ST	SOUTH BOSTON	ONE 02 OLD HARBOR ST CONDO	C/O ROBERT CONNOLLY TS	102 OLD HARBOR ST	SOUTH BOSTON	MA	02127
37609	1306 COLUMBIA RD 3A	SOUTH BOSTON	NASSERI SIMIN		1306 COLUMBIA RD #3A	S BOSTON	MA	02127
156283	59 GATES ST 201	SOUTH BOSTON	59 GATES STREET #2 REALTY TRUST		59 GATES ST, UNIT 201	SOUTH BOSTON	MA	02127
21633	48 THOMAS PK	SOUTH BOSTON	FORTY 8 THOMAS PARK CONDO TR		48 THOMAS PK	SOUTH BOSTON	MA	02127
126193	72 GATES ST	SOUTH BOSTON	DOOLEY MARY T		72 GATES ST	SOUTH BOSTON	MA	02127
37620	1306 COLUMBIA RD 5B	SOUTH BOSTON	SIA CHRISTOPHER WETZEL	C/O CHRISTOPHER WETZEL-SIA	1306 COLUMBIA RD #5-B	SOUTH BOSTON	MA	02127
122240	37 MERCER ST 5	SOUTH BOSTON	FARRELL HELEN M		37 MERCER ST #5	SOUTH BOSTON	MA	02127
156280	59 GATES ST	SOUTH BOSTON	GATES STREET CONDOMINIUM TR		59 GATES	SOUTH BOSTON	MA	02127
37606	1306 COLUMBIA RD 2C	SOUTH BOSTON	KORPELA MATTHEW		1306 COLUMBIA RD #2-C	SOUTH BOSTON	MA	02127
126657	4 DIXFIELD ST	SOUTH BOSTON	JANG CHELSEA H		4 DIXFIELD ST	SOUTH BOSTON	MA	02127
70530	101 OLD HARBOR ST	SOUTH BOSTON	ONE 01 OLD HARBOR ST CONDO		101 OLD HARBOR ST	SOUTH BOSTON	MA	02127
139114	296 E EIGHTH ST 2	SOUTH BOSTON	MULCAHY STEPHEN		296 E EIGHTH ST #2	SOUTH BOSTON	MA	02127
70532	101 OLD HARBOR ST 2	SOUTH BOSTON	LOPES MICHELE		101 OLD HARBOR RD #2	SOUTH BOSTON	MA	02127

16071	69 GATES ST 3	SOUTH BOSTON	MORGAN SEAN		69 GATES ST #3	S BOSTON	MA	02127
115862	15 DIXFIELD ST 1	SOUTH BOSTON	GRIFFIN MICHAEL THOMAS		15 DIXFIELD ST #1	SOUTH BOSTON	MA	02127
30578	55 GATES ST 3	SOUTH BOSTON	FLANAGAN CONOR MICHAEL	C/O CONOR M FLANAGAN	703 EAST 4TH ST	SOUTH BOSTON	MA	02127
83396	16 DIXFIELD ST	SOUTH BOSTON	KEBARTAS JOSEPH F		16 DIXFIELD ST	SOUTH BOSTON	MA	02127
122239	37 MERCER ST 4	SOUTH BOSTON	CASTILLO ALYSSA Y		37 MERCER ST #4	SOUTH BOSTON	MA	02127
119251	87 OLD HARBOR ST 1	SOUTH BOSTON	CHESTER L HARDING III	CHET HARDING	5 ARTHUR ST	WINCHESTER	MA	01890
158927	57 GATES ST 3	SOUTH BOSTON	WIGGLESWORTH NICOLE		57 GATES ST, UNIT 3	SOUTH BOSTON	MA	02127
37605	1306 COLUMBIA RD 2B	SOUTH BOSTON	LU GRACE P	C/O GRACE P LU	310 CONGRESSIONAL DR	MORGANVILLE	NJ	07751
37611	1306 COLUMBIA RD 3C	SOUTH BOSTON	FLYNN CHRISTIAN		150 LINCOLN ST #4C	BOSTON	MA	02111
82053	40 MERCER ST	SOUTH BOSTON	SCHWOLOW RACHEL		40 MERCER ST	SOUTH BOSTON	MA	02127
114259	11 DIXFIELD ST 2	SOUTH BOSTON	KURTOGLU AYCHA S		11 DIXFIELD ST # 2	SOUTH BOSTON	MA	02127
146536	298 E EIGHTH ST 3	SOUTH BOSTON	RANDOLPH REI GROUP LLC		17 BARRY ST	RANDOLPH	MA	02368
37622	1306 COLUMBIA RD 5D	SOUTH BOSTON	PETERSON ALICE		1306 COLUMBIA RD #5D	S BOSTON	MA	02127
16068	69 GATES ST	SOUTH BOSTON	SIXTY 9 GATES ST CONDO TR	C/O FINTAN MURTAGH	69 GATES ST	SOUTH BOSTON	MA	02127
37602	1306 COLUMBIA RD 1D	SOUTH BOSTON	STANTON STEPHEN P		1306 COLUMBIA RD #1D	SOUTH BOSTON	MA	02127
146533	298 E EIGHTH ST	SOUTH BOSTON	TWO-98 E EIGHTH STREET CONDO	C/O ROBERT NAKASHIAN TS	298 E EIGHTH ST	SOUTH BOSTON	MA	02127
46261	89 OLD HARBOR ST 1	SOUTH BOSTON	DILBA ANDRIUS		89 OLD HARBOR ST #1	SOUTH BOSTON	MA	02127
37608	1306 COLUMBIA RD 2E	SOUTH BOSTON	DASILVA MARIA FERNANDA	C/O MARIA FERNANDA DA SILVA	1306 COLUMBIA RD #2E	SOUTH BOSTON	MA	02127
30575	55 GATES ST	SOUTH BOSTON	FIFTY-5 GATES ST CONDO	C/O DAVID MCDERMOTT	55 GATES ST	SOUTH BOSTON	MA	02127
37614	1306 COLUMBIA RD 4A	SOUTH BOSTON	SOJA LUCYNA		1306 COLUMBIA RD #4A	SOUTH BOSTON	MA	02127
70534	101 OLD HARBOR ST 4	SOUTH BOSTON	MUMFORD ELIZABETH ANN	C/O ELIZABETH MUMFORD	101 OLD HARBOR STREET #4	SOUTH BOSTON	MA	02127
37619	1306 COLUMBIA RD 5A	SOUTH BOSTON	MCGILL GRETCHEN		1306 COLUMBIA RD #5A	S BOSTON	MA	02127
37607	1306 COLUMBIA RD 2D	SOUTH BOSTON	RUSH ROBYN L		1306 COLUMBIA RD #2D	S BOSTON	MA	02127
37613	1306 COLUMBIA RD 3E	SOUTH BOSTON	MERCIECA MICHAEL		1306 COLUMBIA RD #3E	S BOSTON	MA	02127
139113	296 E EIGHTH ST 1	SOUTH BOSTON	RILEY JAMES TERRENCE		296 E EIGHTH ST #1	SOUTH BOSTON	MA	02127
70531	101 OLD HARBOR ST 1	SOUTH BOSTON	BURKE LINDSAY		101 OLD HARBOR RD #1	SOUTH BOSTON	MA	02127
7775	344 342 E EIGHTH ST	SOUTH BOSTON	LASOFF MARK E		31 PURVIS ST	WATERTOWN	MA	02472
21635	48 THOMAS PK 2	SOUTH BOSTON	GOLDSMITH BRIAN		48 THOMAS PK #2	SOUTH BOSTON	MA	02127
115861	15 DIXFIELD ST	SOUTH BOSTON	FIFTEEN DIXFIELD ST CONDO TR		15 DIXFIELD ST	SOUTH BOSTON	MA	02127
161723	COLUMBIA RD	SOUTH BOSTON	MOY WING HON		1322 COLUMBIA RD	SOUTH BOSTON	MA	02127
137919	WILLIAM J DAY BL	SOUTH BOSTON	COMMWLTH OF MASS		WM J DAY BLVD	SOUTH BOSTON	MA	02127
146283	84 OLD HARBOR ST	SOUTH BOSTON	GOODWIN DAVID RICHARD JR	C/O DAVID RICHARD GOODWIN JR	84 OLD HARBOR ST	SOUTH BOSTON	MA	02127
30577	55 GATES ST 2	SOUTH BOSTON	GRIFFIN LACEY D		55 GATES ST # 2	SOUTH BOSTON	MA	02127
101154	102 OLD HARBOR ST 2	SOUTH BOSTON	JUHN FRANK		102 OLD HARBOR ST, UNIT 2	SOUTH BOSTON	MA	02127
16070	69 GATES ST 2	SOUTH BOSTON	AHNELL MARGARET		69 GATES ST #2	S BOSTON	MA	02127
158924	57 GATES ST	SOUTH BOSTON	FIFTY 7 STREET CONDOMINIUM TRUST	C/O RYAN HUNT	57 GATES ST	SOUTH BOSTON	MA	02127
161889	368 E EIGHTH ST	SOUTH BOSTON	GRAY JONATHAN H		368 EAST EIGHTH ST	SOUTH BOSTON	MA	02127
119250	87 OLD HARBOR ST	SOUTH BOSTON	EIGHTY7 OLD HARBOR STREET		87 OLD HARBOR ST	SOUTH BOSTON	MA	02127
37599	1306 COLUMBIA RD 1A	SOUTH BOSTON	FIELD KEVIN		1306 COLUMBIA RD	SOUTH BOSTON	MA	02127
144274	E EIGHTH ST	SOUTH BOSTON	CHARLES WHITE MANAGEMENT INC	C/O ROBERT WHITE	330 COMMONWEALTH AV	BOSTON	MA	02116
122236	37 MERCER ST 1	SOUTH BOSTON	MESSIER ERIN L		37 MERCER ST #1	SOUTH BOSTON	MA	02127
46263	89 OLD HARBOR ST 3	SOUTH BOSTON	DAVID LAURA		89 OLD HARBOR STREET	SOUTH BOSTON	MA	02127
128828	67 GATES ST 1	SOUTH BOSTON	VERMA SIDDHARTH		67 GATES ST #1	SOUTH BOSTON	MA	02127
76147	332 E EIGHTH ST	SOUTH BOSTON	332-334 EAST EIGHTH LLC		251 NEWBURY ST	BOSTON	MA	02116
37616	1306 COLUMBIA RD 4C	SOUTH BOSTON	TURNER KIMBERLY A		1306 COLUMBIA RD #4C	S BOSTON	MA	02127
37610	1306 COLUMBIA RD 3B	SOUTH BOSTON	MITCHELL COLIN		1306 COLUMBIA RD #3B	S BOSTON	MA	02127
28224	5 DIXFIELD ST	SOUTH BOSTON	MCGEARY RYAN		160 DANIEL WEBSTER HW #104	NASHUA	NH	03060
142691	75 GATES ST	SOUTH BOSTON	DROZD MONIKA		75 GATES ST	SOUTH BOSTON	MA	02127
156282	59 GATES ST 101	SOUTH BOSTON	WONG WING SUN		6 WHITE ROCK RD	ASHLAND	MA	01721
114258	11 DIXFIELD ST 1	SOUTH BOSTON	ALMEIDA MANUEL ALEJANDRO		11 DIXFIELD ST, UNIT 1	SOUTH BOSTON	MA	02127
146535	298 E EIGHTH ST 2	SOUTH BOSTON	TWO 98 E EIGHTH LLC MASS LLC		131 W THIRD ST #1	SOUTH BOSTON	MA	02127
53410	GATES ST	SOUTH BOSTON	ROONEY JAMES E TS	C/O JAMES E ROONEY TS	51 GATES ST	SOUTH BOSTON	MA	02127
76965	20 28 GEN JOZEF PILSUDSKI WY	SOUTH BOSTON	OLD COLONY REVITALIZATION CP	C/O BOSTON HOUSING AUTH	52 CHAUNCY ST	BOSTON	MA	02111
171695	100 OLD HARBOR ST 3	SOUTH BOSTON	ROMANO BRADFORD P	C/O ROBERT BURKETT	100 OLD HARBOR ST # 3	SOUTH BOSTON	MA	02127
89463	65 GATES ST 102	SOUTH BOSTON	MAO JUNYING		65 GATES ST #2	S BOSTON	MA	02127

162504	47 MERCER ST	SOUTH BOSTON	MAGELLAN PROPERTIES LLC		5 CAPTAIN WAY UNIT 2	DORCHESTER	MA	02125
2450	48 MERCER ST 48-1	SOUTH BOSTON	DANA MARISSA L		48 MERCER ST #48-1	SOUTH BOSTON	MA	02127
169935	83 OLD HARBOR ST 2	SOUTH BOSTON	DALEY SUSAN		83 OLD HARBOR ST #2	SOUTH BOSTON	MA	02127
169737	364 E EIGHTH ST	SOUTH BOSTON	BINDER-BRANTLEY DANIEL		364 E EIGHTH ST	SOUTH BOSTON	MA	02127
139905	66 GATES ST 1	SOUTH BOSTON	LEE MICHAEL C		66 GATES ST, UNIT 1	SOUTH BOSTON	MA	02127
45401	42 MERCER ST 2	SOUTH BOSTON	LEGOCKI CHRISTOPHER		42 MERCER ST UNIT #2	SOUTH BOSTON	MA	02127
34495	271 E EIGHTH ST	SOUTH BOSTON	BOSTON HOUSING AUTHORITY		289 E NINTH ST	BOSTON	MA	02127
161751	350 E EIGHTH ST	SOUTH BOSTON	350 EAST 8TH STREET REALTY TRUST	C/O ELIZABETH MCCARTHY	350 E EIGHTH ST	SOUTH BOSTON	MA	02127
54618	39 MERCER ST	SOUTH BOSTON	ARLAUSKAS MARK		143 WEST 7TH ST	SOUTH BOSTON	MA	02127
57080	93 OLD HARBOR ST	SOUTH BOSTON	MULLIGAN DAVID J		93 OLD HARBOR ST	SOUTH BOSTON	MA	02127
46214	61 GATES ST	SOUTH BOSTON	OSHEROW KENNETH A		61 GATES ST	SOUTH BOSTON	MA	02127
9529	348 E EIGHTH ST	SOUTH BOSTON	CARRAROE LLC		5 CASPIAN WAY	DORCHESTER	MA	02125
42856	1204 1214 COLUMBIA RD	SOUTH BOSTON	OLD COLONY REVITALIZATION CP	C/O BOSTON HOUSING AUTH	52 CHAUNCY ST	BOSTON	MA	02111
42355	53 GATES ST	SOUTH BOSTON	53 GATES STREET REALTY TRUST	C/O FINTAN MURTAGH TRUSTEE	53 GATES ST	SOUTH BOSTON	MA	02127
119899	314 A314 E EIGHTH ST	SOUTH BOSTON	HOYNIAK NICOLE		121 G STREET UNIT #1	SOUTH BOSTON	MA	02127
29603	103 OLD HARBOR ST	SOUTH BOSTON	103 OLD HARBOR LLC		251 NEWBURY ST	BOSTON	MA	02116
63778	62 GATES ST 3	SOUTH BOSTON	BRADFORD WILLIAM	C/O WILLIAM BRADFORD	62 GATES ST #3	SOUTH BOSTON	MA	02127
73124	104 OLD HARBOR ST	SOUTH BOSTON	WANG JIN FANG		104 OLD HARBOR ST	SOUTH BOSTON	MA	02127
136255	1326 COLUMBIA RD	SOUTH BOSTON	HERITAGE ON THE BAY		1326 COLUMBIA RD	SOUTH BOSTON	MA	02127
68882	17 DIXFIELD ST	SOUTH BOSTON	DELLARIPA DAERI		17 DIXFIELD ST	S BOSTON	MA	02127
119252	87 OLD HARBOR ST 2	SOUTH BOSTON	ZANETTI ANTHONY M		87 OLD HARBOR ST, UNIT 2	SOUTH BOSTON	MA	02127
136258	1326 COLUMBIA RD 3	SOUTH BOSTON	BROCK JAMES		1326 COLUMBIA RD #3	S BOSTON	MA	02127
34647	10 DIXFIELD ST	SOUTH BOSTON	KME RENTALS LLC		21 DIXFIELD ST	SOUTH BOSTON	MA	02127
51318	24 26 KNOWLTON ST	SOUTH BOSTON	KNOWLTON ST CONDO TRUST	C/O GERALD DEVLIN TS	24 KNOWLTON ST	SOUTH BOSTON	MA	02127
2447	46 MERCER ST 46-1	SOUTH BOSTON	RICHARD JENNIFER A		46 MERCER ST #46-1	SOUTH BOSTON	MA	02127
8252	36 MERCER ST 1	SOUTH BOSTON	MCALLISTER DANIEL		36 MERCER STREET UNIT 1	BOSTON	MA	02127
63775	62 GATES ST	SOUTH BOSTON	SIXTY2 GATES ST CONDO TR		62 GATES ST	S BOSTON	MA	02127
120898	60 GATES ST	SOUTH BOSTON	BROWN STEVEN J		60 GATES ST	SOUTH BOSTON	MA	02127
112414	52 MERCER ST	SOUTH BOSTON	LEVIN JOSEPH F ETAL		52 MERCER	SOUTH BOSTON	MA	02127
91538	8 COVINGTON ST 1	SOUTH BOSTON	RICHER ALEXANDER		8 COVINGTON ST, UNIT 1	SOUTH BOSTON	MA	02127
78757	21 DIXFIELD ST	SOUTH BOSTON	KME2 LLC		72 SATUIT MEADOW LN	NORWELL	MA	02061
66191	367 E EIGHTH ST	SOUTH BOSTON	BAYSIDE CLUB INC	C/O MARY T CONNOLLY	77 FARRAGUT RD	SOUTH BOSTON	MA	02127
114260	11 DIXFIELD ST 3	SOUTH BOSTON	DWYER KRISTINE M	C/O KRISTINE DWYER	PO BOX 332	BOSTON	MA	02127
131572	44 R MERCER ST	SOUTH BOSTON	HALLENBAKE ROBERT		44 R MERCER ST	SOUTH BOSTON	MA	02127
33344	114 HF112 OLD HARBOR ST	SOUTH BOSTON	KERR KEVIN P		112 OLD HARBOR	SOUTH BOSTON	MA	02127
31970	274 E EIGHTH ST	SOUTH BOSTON	ROBERT J MURPHY IRREVOCABLE TRUST		274 E EIGHTH ST	SOUTH BOSTON	MA	02127
108941	74 GATES ST	SOUTH BOSTON	ASHMONT HEIGHTS LLC		46 CHELMSFORD ST	DORCHESTER	MA	02122
48978	356 E EIGHTH ST	SOUTH BOSTON	CALLAHAN MARK P		356 E EIGHTH ST	SOUTH BOSTON	MA	02127
110507	44 MERCER ST	SOUTH BOSTON	CONNOLLY KEVIN R		44 MERCER ST	S BOSTON	MA	02127
63777	62 GATES ST 2	SOUTH BOSTON	ROGAL BRETT		53 GROVE ST	BOSTON	MA	02114
2452	48 MERCER ST 48-3	SOUTH BOSTON	ELDRIDGE ASHLEY		48 MERCER ST, UNIT 48-3	SOUTH BOSTON	MA	02127
33215	47 THOMAS PK	SOUTH BOSTON	BOHR DAVID N		47 THOMAS PARK #1	SOUTH BOSTON	MA	02127
164407	351 E EIGHTH ST	SOUTH BOSTON	QUIRK JAMES S		351 E EIGHTH ST	S BOSTON	MA	02127
139907	66 GATES ST 3	SOUTH BOSTON	DESIMONE EDWARD R		66 GATES ST, UNIT 3	SOUTH BOSTON	MA	02127
130945	370 E EIGHTH ST	SOUTH BOSTON	LODGE PETER B		370 E EIGHTH ST	SOUTH BOSTON	MA	02127
139904	66 GATES ST	SOUTH BOSTON	SIXTY-6 GATES ST CONDO TR	C/O JOHN MCGUIRE TS	66 GATES ST	S BOSTON	MA	02127
165821	51 GATES ST	SOUTH BOSTON	ROONEY JAMES TS	C/O PAUL J ROONEY	60 COUNTRYSIDE LN	MILTON	MA	02186
40981	362 E EIGHTH ST	SOUTH BOSTON	362 EAST EIGHTH STREET LLC		284 COPELAND ST	QUINCY	MA	02169
39607	30 COVINGTON ST	SOUTH BOSTON	MILLER CHRISTOPHER R		30 COVINGTON ST	SOUTH BOSTON	MA	02127
91537	8 COVINGTON ST	SOUTH BOSTON	EIGHT COVINGTON ST CONDO TR		7 WHITELAWN AV	MILTON	MA	02186
2446	46 48 MERCER ST	SOUTH BOSTON	FORTY SIX-FORTY EIGHT MERCER		46-48 MERCER ST	SOUTH BOSTON	MA	02127
93464	9 DIXFIELD ST	SOUTH BOSTON	VAUGHAN MICHAEL		9 DIXFIELD ST	SOUTH BOSTON	MA	02127
103067	1322 COLUMBIA RD	SOUTH BOSTON	MOY REVOCABLE TRUST		23 CAPPY CIR	NEWTON	MA	02465
68157	64 GATES ST 3	SOUTH BOSTON	ANGELL KYNDRA		64 GATES ST #3	SOUTH BOSTON	MA	02127
21788	19 DIXFIELD ST	SOUTH BOSTON	SKARZYNSKI ZACHARY		50 WEST BROADWAY, UNIT 602	SOUTH BOSTON	MA	02127

89462	65 GATES ST 101	SOUTH BOSTON	TASSI JEFFREY L		65 GATES ST #101	SOUTH BOSTON	MA	02127
120007	34 COVINGTON ST	SOUTH BOSTON	CONNOLLY THOMAS F III TS	C/O THOMAS F CONNOLLY III	34 COVINGTON ST	SOUTH BOSTON	MA	02127
87198	91 OLD HARBOR ST	SOUTH BOSTON	91 OLD HARBOR STREET		91 OLD HARBOR ST	SOUTH BOSTON	MA	02127
45400	42 MERCER ST 1	SOUTH BOSTON	HALLENBAKE ELIZABETH C BE	C/O ELIZABETH C HALLENBAKE	44HF MERCER ST	SOUTH BOSTON	MA	02127
146259	330 E EIGHTH ST	SOUTH BOSTON	MOY WING-AR TS	C/O GREATER BOSTON PROPERTIES	696 TREMONT ST	BOSTON	MA	02118
66989	7 DIXFIELD ST	SOUTH BOSTON	BRODERICK DAVID M		7 DIXFIELD ST	SOUTH BOSTON	MA	02127
171692	100 OLD HARBOR ST	SOUTH BOSTON	ONE HUNDRED OLD HARBOR ST	C/O ROBERT BURKETT	100 OLD HARBOR ST	SOUTH BOSTON	MA	02127
2449	46 MERCER ST 46-3	SOUTH BOSTON	KANGAS BRIAN D		46 MERCER ST #46-3	SOUTH BOSTON	MA	02127
112688	70 GATES ST	SOUTH BOSTON	BARRETT SEAN		70 GATES ST	SOUTH BOSTON	MA	02127
152502	63 GATES ST 1	SOUTH BOSTON	MCSWEENEY DAVID A		63 GATES # 1	SOUTH BOSTON	MA	02127
58419	308 E EIGHTH ST	SOUTH BOSTON	O'CONNOR ROBERT J		71 GATES ST	SOUTH BOSTON	MA	02127
169934	83 OLD HARBOR ST 1	SOUTH BOSTON	GLAZER NICOLE		83 OLD HARBOR ST, UNIT 1	SOUTH BOSTON	MA	02127
91540	8 COVINGTON ST 3	SOUTH BOSTON	OLMSTEAD ROBERT		8 COVINGTON ST #3	SOUTH BOSTON	MA	02127
68154	64 GATES ST	SOUTH BOSTON	SIXTY- 4 GATES ST CONDO TR	C/O SHEILA LEVESQUE	64 GATES ST	SOUTH BOSTON	MA	02127
167647	300 302 E EIGHTH ST	SOUTH BOSTON	S BOSTON NEIGHBORHOOD DEV CP	C/O SOUTH BOSTON NDC	273 D STREET	SOUTH BOSTON	MA	02127
76272	98 OLD HARBOR ST	SOUTH BOSTON	NINETY-8 OLD HARBOR ST CONDO	C/O MICHAEL P PHILBIN TS	388 E EIGHTH ST # 3L	SOUTH BOSTON	MA	02127
74274	71 73 GATES ST	SOUTH BOSTON	O'CONNOR ROBERT J		71 GATES ST	SOUTH BOSTON	MA	02127
8254	36 MERCER ST 3	SOUTH BOSTON	TARECO JULIE A		36 MERCER ST # 3	SOUTH BOSTON	MA	02127
87201	91 OLD HARBOR ST 3	SOUTH BOSTON	PALIZZOLO RICHARD		91 OLD HARBOR ST #3	SOUTH BOSTON	MA	02127
51320	26 KNOWLTON ST 2	SOUTH BOSTON	BOGOR MARIAN		26 KNOWLTON ST	SOUTH BOSTON	MA	02127
147154	85 OLD HARBOR ST	SOUTH BOSTON	MCDONNELL THOMAS K JR		85 OLD HARBOR ST	SOUTH BOSTON	MA	02127
89461	65 GATES ST	SOUTH BOSTON	SIXTY 5 GATES ST CONDO TR		65 GATES ST	SOUTH BOSTON	MA	02127
139437	352 E EIGHTH ST	SOUTH BOSTON	JM INVESTMENT LLC		745 BOYLSTON ST	BOSTON	MA	02116
152501	63 GATES ST	SOUTH BOSTON	SIXTY THREE GATES ST CD TRST	C/O SIXTY-3 GATES ST CONDO TRST	63 GATES ST	SOUTH BOSTON	MA	02127
482	353 E EIGHTH ST	SOUTH BOSTON	LASOFF BRIAN		353 E EIGHTH ST	SOUTH BOSTON	MA	02127
170380	349 E EIGHTH ST	SOUTH BOSTON	LASOFF BRIAN		14 NIPMUCK DR	WESTBOROUGH	MA	01581
77943	360 E EIGHTH ST	SOUTH BOSTON	GILMAN GALADRIEL		360 E EIGHT ST	S BOSTON	MA	02127
159093	347 E EIGHTH ST	SOUTH BOSTON	LASOFF BRIAN		PO BOX 181	WESTBOROUGH	MA	01581
136257	1326 COLUMBIA RD 2	SOUTH BOSTON	BLATT DAVID		1326 COLUMBIA RD #2	S BOSTON	MA	02127
50684	E EIGHTH ST	SOUTH BOSTON	CHARLES WHITE MANAGEMENT INC	C/O ROBERT WHITE	330 COMMONWEALTH AV	BOSTON	MA	02116
91253	289 E NINTH ST	SOUTH BOSTON	BOSTON HOUSING AUTHORITY		289 E NINTH ST	BOSTON	MA	02127
140433	361 E EIGHTH ST	SOUTH BOSTON	BAYSIDE CLUB INC	C/O MARY T CONNOLLY	77 FARRAGUT RD	SOUTH BOSTON	MA	02127
153383	78 GATES ST	SOUTH BOSTON	WARREN MAUREEN		78 GATES ST	SOUTH BOSTON	MA	02127
8251	36 HF36 MERCER ST	SOUTH BOSTON	THIRTY-6 MERCER ST CONDO	C/O PATRICK J MCDEVITT	36 MERCER ST	SOUTH BOSTON	MA	02127
13492	357 E EIGHTH ST	SOUTH BOSTON	CHARLES WHITE MANAGEMENT INC	C/O ROBERT WHITE	330 COMMONWEALTH AV	BOSTON	MA	02116
93698	14 DIXFIELD ST	SOUTH BOSTON	EASTON DANA E		14 DIXFIELD ST	SOUTH BOSTON	MA	02127
167406	12 DIXFIELD ST	SOUTH BOSTON	MCDERMOTT CLARE E		12 DIXFIELD ST	SOUTH BOSTON	MA	02127
51319	24 KNOWLTON ST 1	SOUTH BOSTON	HUGHES GLETTER APONTE		24 KNOWLTON ST #1	S BOSTON	MA	02127
171694	100 OLD HARBOR ST 2	SOUTH BOSTON	SCHIPANI GILBERT JOSEPH		100 OLD HARBOR ST # 2	SOUTH BOSTON	MA	02127
87200	91 OLD HARBOR ST 2	SOUTH BOSTON	MACKENZIE STEPHEN		91 OLD HARBOR ST #2	SOUTH BOSTON	MA	02127
89464	65 GATES ST 103	SOUTH BOSTON	PRUDENTE JAMES M		65 GATES ST #103	SOUTH BOSTON	MA	02127
24295	110 HF OLD HARBOR ST	SOUTH BOSTON	LUCOZZI NELLO P TS	C/O NEIL P LUCOZZI TS	22 STEVENS ST	STONEHAM	MA	02180
66785	MERCER ST	SOUTH BOSTON	SCHWOLOW RACHEL		40 MERCER ST	S BOSTON	MA	02127
94923	86 OLD HARBOR ST	SOUTH BOSTON	COCHENOUR JOHN		86 OLD HARBOR ST	SOUTH BOSTON	MA	02127
133583	32 COVINGTON ST	SOUTH BOSTON	LAFRENIERE ERICA NICOLE	C/O ERICA NICLE LAFRENIERE	32 COVINGTON ST	SOUTH BOSTON	MA	02127
76274	98 OLD HARBOR ST 2	SOUTH BOSTON	BURKE PETER J		98 OLD HARBOR ST # 2	SOUTH BOSTON	MA	02127
169936	83 OLD HARBOR ST 3	SOUTH BOSTON	BURKE KRISTINE L		83 OLD HARBOR ST #3	SOUTH BOSTON	MA	02127
14571	41 MERCER ST	SOUTH BOSTON	BARRETT W BROOKS		41 MERCER ST	S BOSTON	MA	02127
8643	120 OLD HARBOR ST	SOUTH BOSTON	NORTON MARTIN J		120 OLD HARBOR ST	SOUTH BOSTON	MA	02127
152504	63 GATES ST 3	SOUTH BOSTON	GIOVANNINI CHARLENE		63 GATES ST #3	SOUTH BOSTON	MA	02127
2451	48 MERCER ST 48-2	SOUTH BOSTON	HAMZEH HANADI		48 MERCER ST #48-2	SOUTH BOSTON	MA	02127
139906	66 GATES ST 2	SOUTH BOSTON	HAIVANIS ANTONY J		66 GATES ST #2	SOUTH BOSTON	MA	02127
6865	270 E EIGHTH ST	SOUTH BOSTON	ROBERT J MURPHY IRREVOCABLE TRUST		274 E EIGHTH ST	SOUTH BOSTON	MA	02127
47372	312 E EIGHTH ST	SOUTH BOSTON	FORMOSI ANDREA		312 EAST EIGHTH ST	SOUTH BOSTON	MA	02127
139262	106 OLD HARBOR ST	SOUTH BOSTON	LASOFF MARK E		31 PURVIS ST	WATERTOWN	MA	02472

68156	64 GATES ST 2	SOUTH BOSTON	GRASSA STEVEN A		64 GATES ST #2	SOUTH BOSTON	MA	02127
100293	45 MERCER ST	SOUTH BOSTON	MOODY HONOR M		45 MERCER ST	SOUTH BOSTON	MA	02127
42732	43 MERCER ST	SOUTH BOSTON	NORRIS MICHAEL R		64 ASHWORTH RD	QUINCY	MA	02171
48829	2 A2 DIXFIELD ST	SOUTH BOSTON	COOK BRANDON		2 A2 DIXFIELD ST	SOUTH BOSTON	MA	02127
171693	100 OLD HARBOR ST 1	SOUTH BOSTON	KLEIN JEREMY C		157 BERKELEY ST STE T19-B182	BOSTON	MA	02116
87199	91 OLD HARBOR ST 1	SOUTH BOSTON	CALLAHAN BRAHM		91 OLD HARBOR ST #1	SOUTH BOSTON	MA	02127
46575	50 REV RICHARD A BURKE	SOUTH BOSTON	CITY OF BOSTON		50 REV RICHARD A BURKE	SOUTH BOSTON	MA	02127
45399	42 MERCER ST	SOUTH BOSTON	42 MERCER STREET CONDOMINIUM TRUST	C/O LITCHFIELD PROPERTIES LLC	116 CLEVELAND ST	NORFOLK	MA	02056
76273	98 OLD HARBOR ST 1	SOUTH BOSTON	VAINSHTEIN MICHELLE A		24 GAY HEAD ST	BOSTON	MA	02130
153242	290 284 E EIGHTH ST	SOUTH BOSTON	OGRADY PATRICK F TS	C/O PATRICK OGRADY	213 CONANT RD	WESTWOOD	MA	02090
119253	87 OLD HARBOR ST 3	SOUTH BOSTON	KELLIHER PATRICIA		87 OLD HARBOR ST #3	SOUTH BOSTON	MA	02127
169933	83 OLD HARBOR ST	SOUTH BOSTON	EIGHTY 3 OLD HARBOR STREET	C/O DAVID A MARSOCCI TRUSTEE	83 OLD HARBOR ST	SOUTH BOSTON	MA	02127
152503	63 GATES ST 2	SOUTH BOSTON	PIERCE MIGUEL		63 GATES #2	SOUTH BOSTON	MA	02127
71728	E EIGHTH ST	SOUTH BOSTON	MAGELLAN PROPERTIES LLC		5 CAPTAIN WAY UNIT 2	DORCHESTER	MA	02125
136256	1326 COLUMBIA RD 1	SOUTH BOSTON	BROCK JAMES L		1326 COLUMBIA RD #3	SOUTH BOSTON	MA	02127
136259	1326 COLUMBIA RD 4	SOUTH BOSTON	MELESKI KENNETH C		2 MISS FRY DR	EAST GREENWICH	RI	02818
40012	343 345 E EIGHTH ST	SOUTH BOSTON	MEDICO VERNA L		345 E EIGHTH ST	SOUTH BOSTON	MA	02127
145158	8 DIXFIELD ST	SOUTH BOSTON	FEGREUS ELIZABETH J	C/O E FEGREUS & M BRODERICK	8 DIXFIELD ST	SOUTH BOSTON	MA	02127
113282	366 E EIGHTH ST	SOUTH BOSTON	MURPHY ROBERT N		366 EAST EIGHTH	SOUTH BOSTON	MA	02127
63776	62 GATES ST 1	SOUTH BOSTON	LEIST ERIC		62 GATES ST #1	S BOSTON	MA	02127
68155	64 GATES ST 1	SOUTH BOSTON	KENT JENNA M	C/O JENNA KENT	158 TREMONT ST	DUXBURY	MA	02332
2448	46 MERCER ST 46-2	SOUTH BOSTON	ALLISON BARRETT		63 PERRY STREET #15	NEW YORK	NY	10014
91539	8 COVINGTON ST 2	SOUTH BOSTON	INDRESANO MICHAEL		33 A ST #2	SOUTH BOSTON	MA	02127
158795	99 OLD HARBOR ST	SOUTH BOSTON	99 OLD HARBOR STREET LIMITED	C/O 99 OLD HARBOR ST LP	650 DORCHESTER ST #2	SOUTH BOSTON	MA	02127
56986	358 E EIGHTH ST	SOUTH BOSTON	BOTHWELL DANIEL		358 E EIGHTH ST	S BOSTON	MA	02127
121091	10 18 GEN JOZEF PILSUDSKI WY	SOUTH BOSTON	OLD COLONY REVITALIZATION CP	C/O BOSTON HOUSING AUTH	52 CHAUNCY ST	BOSTON	MA	02111
8253	36 MERCER ST 2	SOUTH BOSTON	BHATIA ANKUR	660 EAST 6TH STREET #3	C/O ANKUR BHATIA & JENNIFER NASH	BOSTON	MA	02127

LEC

Notice of Intent Application

Old Colony Phase Four
110-72 Mercer Street
South Boston, Massachusetts

June 23, 2021

1.0 Introduction

On behalf of the Boston Housing Authority and their development partner, Beacon Communities, LEC Environmental Consultants, Inc., (LEC) is submitting this Notice of Intent (NOI) Application to the Boston Conservation Commission (the Commission) to demolish an existing building and construct a new 104-unit apartment building with exterior landscaping/community gathering areas, and stormwater management. A portion of the landscaping/community area, stormwater management, and utility connections in the southwestern portion of the site occurs within Land Subject to Coastal Storm Flowage (LSCSF).

This proposed work will result in an improvement over existing conditions and further protect the interests of LSCSF under the *Massachusetts Wetlands Protection Act* (M.G.L., c. 131, s. 40) and its implementing *Regulations* (310 CMR 10.00) or the *Ordinance Protecting Local Wetlands and Promoting Climate Change Adaptation in the City of Boston City of Boston Code* (Chapter VII-I.IV, adopted December 11, 2019, the *Ordinance*) and the implementing *Boston Wetland Regulations* (approved August 19, 2020, the *Ordinance Regulations*).

An existing condition Exhibit Plan Old Colony-Phase Four prepared by Feldman Land Surveyors dated May 5, 2021 is contained in **Appendix B**. The proposed work and extent of LSCSF are depicted on the enclosed Landscape Plan prepared by Copley Wolff Design Group dated June 7, 2021, stamped and signed James A. Heroux (**Appendix C**) and the Old Colony Phase Four Civil Plans Set prepared by Nitsch Engineering, Inc. dated June 7, 2021, stamped and signed by Jonathan R. Hedlund on June 11, 2021 (**Appendix D**).

2.0 Project Context and General Site Description

The Old Colony development in South Boston, built in 1940, is part of the Boston Housing Authority's (BHA) federal portfolio. Old Colony encompasses 16.7±-acres, bounded by Columbia Road to the south, Old Colony Avenue to the west, Dorchester Street and East Eighth Street to the north, and Old Harbor Street to the east, included 32 three-story brick barrack-style buildings. Old Colony occurs within a densely urbanized residential community, with extensive impervious surfaces and minimal undeveloped land, except for Moakley Park located immediately to the south (**Appendix**

A, Figure 3). Prior to the phased redevelopment commencing about 10 years ago, Old Colony represented one of the oldest and most distressed properties in the BHA's federal portfolio. The existing physical condition of Old Colony is compromising the health, safety, and well-being of the residents. Yet, despite these conditions, Old Colony is a popular choice in housing assignments for its convenient location and its presence within a safe and stable neighborhood.

The Final Phase (Phases Four-Six) of the Old Colony Redevelopment Project will be comprised of 342 new affordable sustainably-designed apartments constructed in three phases at 110-72 Mercer Street in South Boston. The parcel containing Phase Four, and the subject of this NOI Application, is generally bound by Columbia Road to the south, Mercer Road to the west northwest, and East Eighth Street to the northeast (**Existing Conditions Plan, Appendix B**). Phase Four occurs within the footprint of existing, 3-story brick Buildings F-F and G-G, and a portion of Buildings A-A and E-E and associated driveways, parking, sidewalks, and lawn.

2.1 Natural Heritage and Endangered Species Program Designation

According to the 14th Edition of the *Massachusetts Natural Heritage Atlas* (August 1, 2017) published by the Natural Heritage & Endangered Species Program (NHESP) and the MassGIS data layer, no Priority Habitats or Estimated Habitats, Potential or Certified Vernal Pools, or rare species protectable under the *Act* or the *Massachusetts Endangered Species Act* (MGL c. 131 s. 23) are located on or nearby to the project site (**Appendix A**, **Figure 3**).

3.0 FEMA Floodplain Designation-Land Subject to Coastal Storm Flowage

Land Subject to Coastal Storm Flowage associated with the Dorchester Bay extends landward into the southwest corner of Phase 4.

According to the March 16, 2016 *Federal Emergency Management Agency Flood Insurance Rate Map* for Suffolk County, Massachusetts Panel 83 of 176 (Community Panel Number 25025C0083J), portions of Phase Four are located within the Zone AE Base Flood Elevation 10 NAVD 88 (Boston Survey Base Elevation 16.5), known as the 100-year floodplain, and Other Areas—Zone X (shaded) Areas determined to be within the 0.2% annual chance flood hazard, Areas of 1% annual chance flood with average

depths less than one foot or with drainage areas of less than one square mile, known as the 500-year floodplain (**Appendix A, Figure 2**).

Site survey plans prepared by Feldman Land Surveyors have mapped the 100-year floodplain on and adjacent to the Phase Four Project Site. The 100-year floodplain, protectable as Land Subject to Coastal Storm Flowage (LSCSF), extends landward from the Dorchester Bay into the footprint of Columbia Road and Mercer Street and onto the eastern corner of Phase Four (see **Appendix B**).

Under the December 11, 2019 updated *Ordinance*, portions of the 500-year floodplain, deemed protectable as the Coastal Flood Resilience Zone (CFRZ), extend onto the project site. However, the Commission has not yet established the extent of the CFRZ "as delineated on maps adopted by the Commission." Based on correspondence with Nicholas Moreno, it is our understanding that the CFRZ will not apply to projects filed with the Commission until the Commission adopts CFRZ maps.

4.0 Proposed Construction

Phase Four is part of the Final Phase (Phases Four-Six) of the Old Colony Redevelopment Project. The Final Phase program includes demolition of the existing 208 units contained within buildings A-A – G-G in one single mobilization. All three phases will be sustainably designed in full compliance with the City of Boston Climate Resiliency Guidance as demonstrated on the Climate Resiliency Checklist included herein as an attachment to the Boston NOI Form for Phase Four. Phase Four will replace 104 of the existing 208 units of affordable rental apartments within the footprint of Buildings F-F and G-G, and a portion of Buildings A-A and E-E.

A landscaped plaza with seating and gathering areas; native or naturalized street trees, shrubs, and ground cover plantings; and sidewalk and lighting improvements are proposed within the southwestern corner of the project within LSCSF (**Appendix C**). Species proposed within LSCSF include black tupelo (*Nyssa sylvatica*), pin oak (*Quercus palustris*), dense inkberry (*Ilex glabra 'densa'*), little bluestem (*Schizachyrium scoparium*), and false blue indigo (*Baptisia australis*). To the extent that floodwaters enter the southwest corner of the site during a 100-year storm event, the project has been designed to allow such water to ebb and flow unobstructed.

Stormwater generated by the existing site is collected in catch basins and area drains and piped via a closed drainage system to a Boston Water and Sewer Commission combined

sewer main. Under proposed conditions, the project will fully comply with the MassDEP stormwater management standards and incorporate LID techniques including area drains and subsurface recharge systems. While none of the recharge systems are within LSCSF, Subsurface Recharge System (SRS) #3 collects and infiltrates runoff via an area drain within the landscape plaza and LSCSF. Furthermore, the Outlet Control Structure (OCS) to SRS #3 also is located within LSCSF. See **Appendix D** for the Civil Site Plans and attached full Stormwater Report.

Sewer and gas will connect to services available in Columbia Road as depicted on the Civil Site Plans. These connections also occur within LSCSF.

5.0 Summary

On behalf of the Boston Housing Authority and their development partner, Beacon Communities, LEC Environmental Consultants, Inc., (LEC) is submitting this Notice of Intent (NOI) Application to the Boston Conservation Commission (the Commission) to demolish an existing building and construct a new 104-unit apartment building with exterior landscaping/community gathering areas, stormwater management, and sewer and gas connections. A portion of the landscaping/community area, stormwater management, and utility connections in the southwestern portion of the site occurs within Land Subject to Coastal Storm Flowage (LSCSF).

While not within jurisdiction, the proposed building will be sustainably designed in full compliance with the City of Boston Climate Resiliency Guidance as demonstrated on the Climate Resiliency Checklist. To the extent that floodwaters enter the southwest corner of the site during a 100-year storm event, the project has been designed to allow such water to ebb and flow unobstructed.

Boston Wetlands Ordinance, City of Boston Code, Ordinances, Chapter 7-1.4

Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), www.state.ma.us/dep

Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00), www.state.ma.us/dep

Massachusetts Natural Heritage Atlas, 14th Edition, 2017. Natural Heritage & Endangered Species Program, Massachusetts Division of Fisheries & Wildlife, Route 135, Westborough, MA 01581, http://maps.massgis.state.ma.us/PRI_EST_HAB/viewer.htm.

Massachusetts Department of Environmental Protection, Division of Wetlands and Waterways 1995. *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetlands Protection Act, A Handbook*. 89 pp.

National Flood Insurance Program, Federal Emergency Management Agency Flood Insurance Rate Map, City of Boston, Massachusetts, Suffolk County, September 25, 2009 (Community Panel Number 25025C0067G).

Appendix A

Locus Maps

Figure 1: USGS Topographic Quadrangle

Figure 2: FEMA Flood Insurance Rate Map

Figure 3: MassGIS Orthophoto & NHESP Map

LEC Environmental Consultants, Inc.
Wakefield, MA
781.245.2500
www.lecenvironmental.com

Figure 1: USGS Topographic Map
110 Mercer Street
Boston, MA

June 22, 2021

N

0 500 Feet

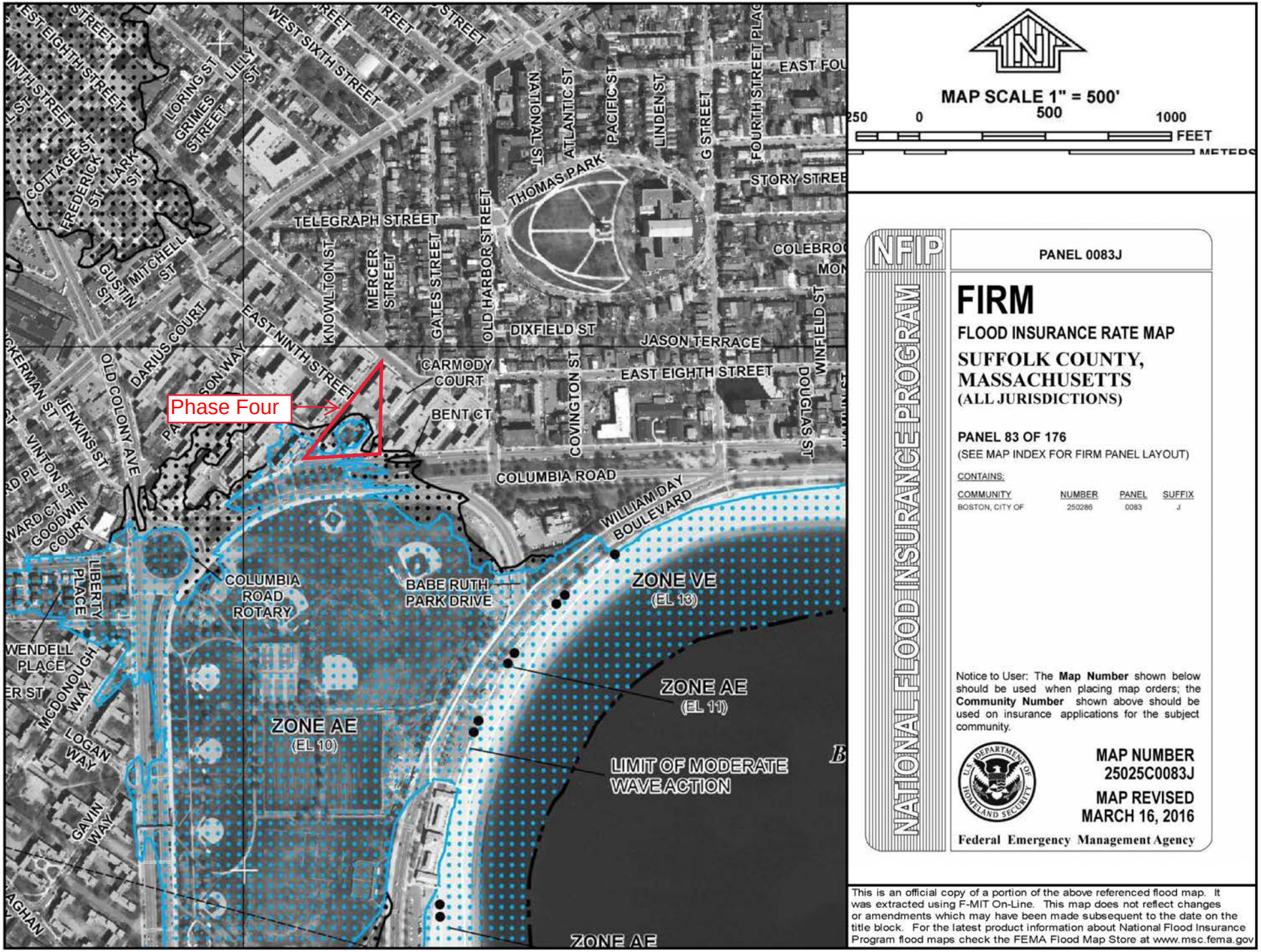


Figure 2: FEMA Flood Insurance Rate Map

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% Annual Chance Floodplain Boundary

0.2% Annual Chance Floodplain Boundary

Floodway boundary

Zone D boundary

CBRS and OPA boundary

Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.

Limit of Moderate Wave Action

Limit of Moderate Wave Action coincident with Zone Break

513 — Base Flood Elevation line and value; elevation in feet*

(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A — Cross section line

23 — 23 — Transect line

Culvert

Bridge

45° 02' 08", 93° 02' 12" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere

4989000 M — 1000-meter grid: Massachusetts State Plane Mainland Zone (FIPS Zone 2001), Lambert Conformal Conic projection

$^{49}89^{000m}$ N — 1000-meter Universal Transverse Mercator tick values, zone 19N

DX5510 × — Bench mark (see explanation in Notes to Users section of this FIRM panel)

MAP REPOSITORIES

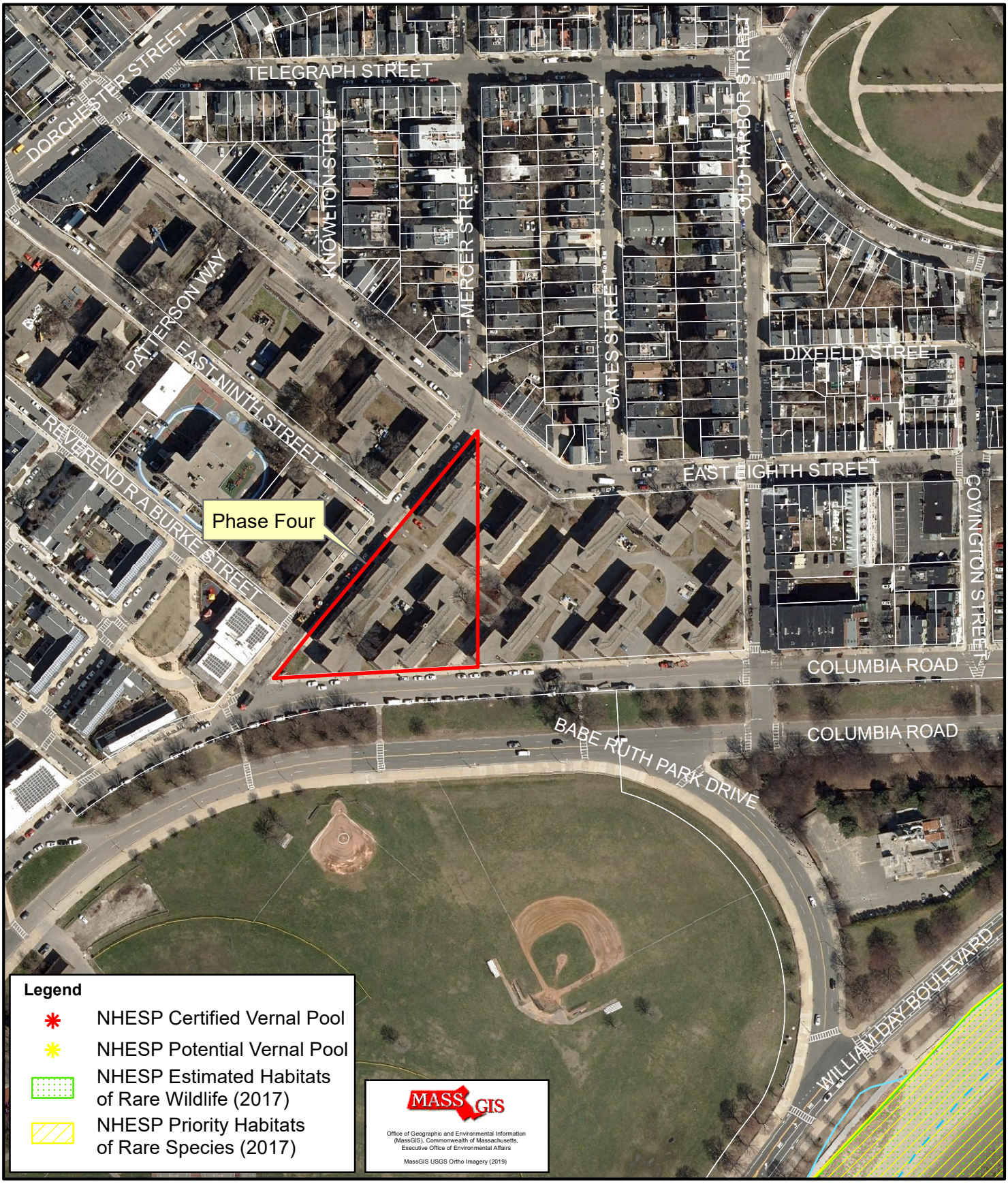
Refer to Map Repositories list on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP

September 25, 2009

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

March 16, 2016 - to change Base Flood Elevations and Special Flood Hazard Areas, to change zone designations, to update the effects of wave action, to update corporate limits, to add roads and road names, to incorporate previously issued Letters of Map Revision and to modify Coastal Barrier Resource System units.



LEC
Environmental Consultants, Inc.
Wakefield, MA
781.245.2500
www.lecenvironmental.com

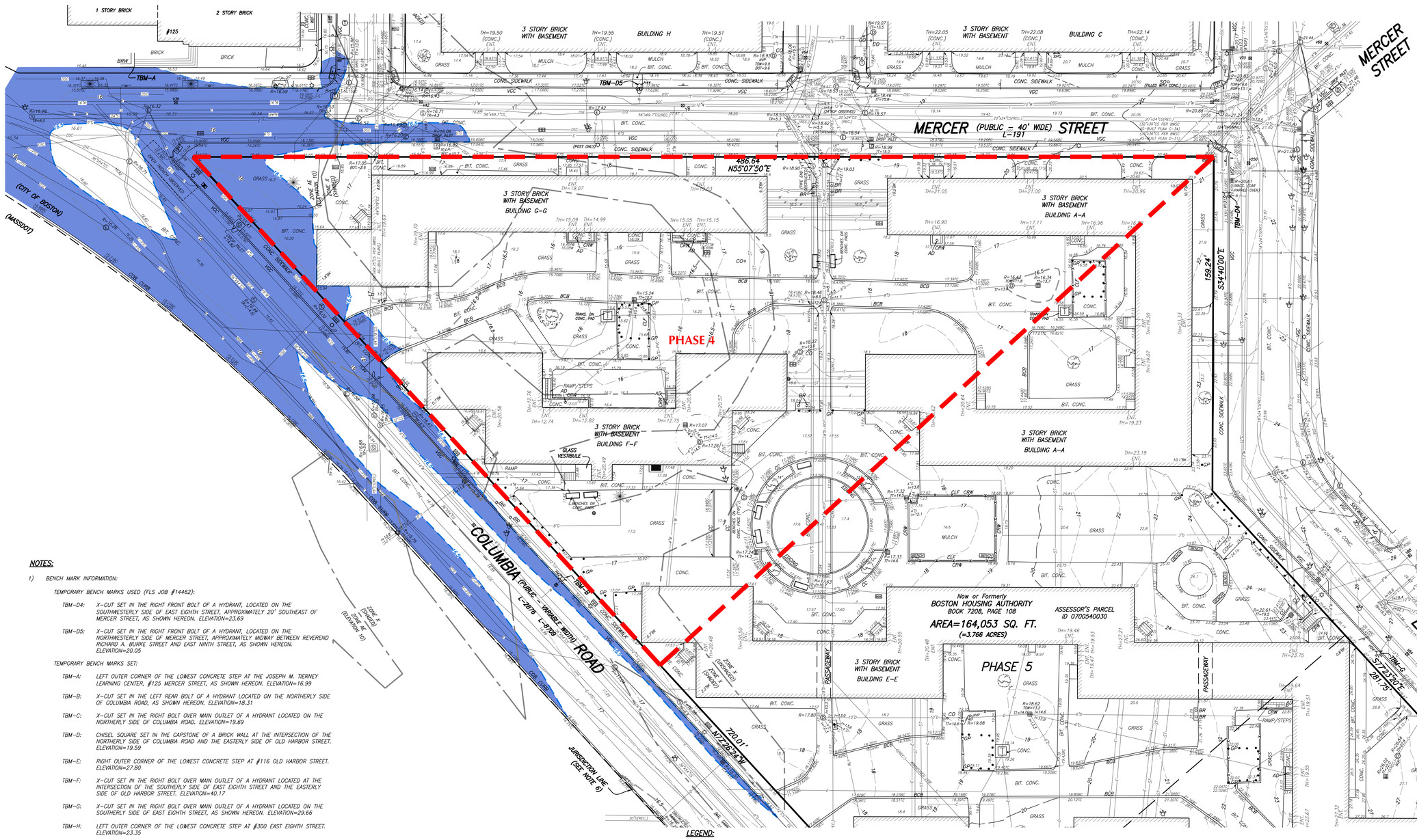
Figure 3: MassGIS Orthophoto & NHESP Map
110 Mercer Street
Boston, MA

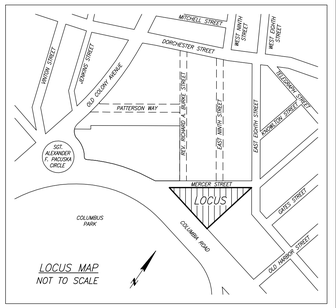
June 22, 2021

N
0 200 Feet

Appendix B

Exhibit Plan Old Colony-Phase Four
prepared by Feldman Land Surveyors dated June 22, 2021
signed and stamped by Timothy R. Agurkis, PLS





PLAN BOOK 2019, PAGE 41

NOTES:

1) BENCH MARK INFORMATION:

TEMPORARY BENCH MARKS USED (FLS JOB #14462):

TBM–D4: X–CUT SET IN THE RIGHT FRONT BOLT OF A HYDRANT, LOCATED ON THE SOUTHWESTERLY SIDE OF EAST EIGHTH STREET, APPROXIMATELY 20' SOUTHEAST OF MERCER STREET, AS SHOWN HEREON. ELEVATION=23.69

TBM–D5: X–CUT SET IN THE RIGHT FRONT BOLT OF A HYDRANT, LOCATED ON THE NORTHWESTERLY SIDE OF MERCER STREET, APPROXIMATELY MIDWAY BETWEEN REVEREND RICHARD A. BURKE STREET AND EAST NINTH STREET, AS SHOWN HEREON. ELEVATION=20.05

TEMPORARY BENCH MARKS SET:

TBM–A: LEFT OUTER CORNER OF THE LOWEST CONCRETE STEP AT THE JOSEPH M. TIERNEY LEARNING CENTER, #125 MERCER STREET, AS SHOWN HEREON. ELEVATION=16.99

TBM–B: X–CUT SET IN THE LEFT REAR BOLT OF A HYDRANT LOCATED ON THE NORTHERLY SIDE OF COLUMBIA ROAD, AS SHOWN HEREON. ELEVATION=18.31

TBM–C: X–CUT SET IN THE RIGHT BOLT OVER MAIN OUTLET OF A HYDRANT LOCATED ON THE NORTHERLY SIDE OF COLUMBIA ROAD. ELEVATION=19.69

TBM–D: CHISEL SQUARE SET IN THE CAPSTONE OF A BRICK WALL AT THE INTERSECTION OF THE NORTHERLY SIDE OF COLUMBIA ROAD AND THE EASTERLY SIDE OF OLD HARBOR STREET. ELEVATION=19.59

TBM–E: RIGHT OUTER CORNER OF THE LOWEST CONCRETE STEP AT #116 OLD HARBOR STREET. ELEVATION=27.80

TBM–F: X–CUT SET IN THE RIGHT BOLT OVER MAIN OUTLET OF A HYDRANT LOCATED AT THE INTERSECTION OF THE SOUTHERLY SIDE OF EAST EIGHTH STREET AND THE EASTERLY SIDE OF OLD HARBOR STREET. ELEVATION=40.17

TBM–G: X–CUT SET IN THE RIGHT BOLT OVER MAIN OUTLET OF A HYDRANT LOCATED ON THE SOUTHERLY SIDE OF EAST EIGHTH STREET, AS SHOWN HEREON. ELEVATION=29.66

TBM–H: LEFT OUTER CORNER OF THE LOWEST CONCRETE STEP AT #300 EAST EIGHTH STREET. ELEVATION=23.35

2) ELEVATIONS REFER TO BOSTON CITY BASE (B.C.B.)

3) THIS DOCUMENT IS AN INSTRUMENT OF SERVICE OF FELDMAN LAND SURVEYORS. ISSUED TO OUR CLIENT FOR PURPOSES RELATED DIRECTLY AND SOLELY TO FELDMAN LAND SURVEYORS' SCOPE OF SERVICES UNDER CONTRACT TO OUR CLIENT FOR THIS PROJECT. ANY USE OR REUSE OF THIS DOCUMENT FOR ANY REASON BY ANY PARTY FOR PURPOSES UNRELATED DIRECTLY AND SOLELY TO SAID CONTRACT SHALL BE AT THE USER'S SOLE AND EXCLUSIVE RISK AND LIABILITY, INCLUDING LIABILITY FOR VIOLATION OF COPYRIGHT LAWS, UNLESS WRITTEN CONSENT IS PROVIDED BY FELDMAN LAND SURVEYORS.

4) UTILITY INFORMATION SHOWN IS BASED ON BOTH A FIELD SURVEY AND PLANS OF RECORD. THE LOCATIONS OF UNDERGROUND PIPES AND CONDUITS HAVE BEEN DETERMINED FROM THE AFOREMENTIONED RECORD PLANS AND ARE APPROXIMATE ONLY. WE CANNOT ASSUME RESPONSIBILITY FOR DAMAGES INCURRED AS A RESULT OF UTILITIES THAT ARE OMITTED OR INACCURATELY SHOWN ON SAID RECORD PLANS, SINCE SUB–SURFACE UTILITIES CANNOT BE VISIBLY VERIFIED. BEFORE PLANNING FUTURE CONNECTIONS, THE PROPER UTILITY ENGINEERING DEPARTMENT SHOULD BE CONSULTED AND THE ACTUAL LOCATION OF SUB–SURFACE STRUCTURES SHOULD BE DETERMINED IN THE FIELD. CALL, TOLL FREE, THE DIG SAFE CALL CENTER AT 1–888–344–7233 SEVENTY–TWO HOURS PRIOR TO EXCAVATION.

5) THE PROPERTY LINES SHOWN HEREON ARE COMPILED FROM THE FOLLOWING:
–A PLAN ENTITLED "PROPERTY LINE MAP, LOW RENT HOUSING DEVELOPMENT, BOSTON, SUFFOLK COUNTY MASS., DEVELOPMENT No. MASS 2–2, PLAN No. 1" PREPARED BY HENRY F. BRYANT AND SON, DATED MAY 15, 1935, RECORDED IN THE SUFFOLK COUNTY REGISTRY OF DEEDS IN BOOK 5793, PAGE 425
–A PLAN ENTITLED "PROPERTY LINE MAP, LOW INCOME HOUSING DEVELOPMENT, BOSTON, SUFFOLK COUNTY MASS., DEVELOPMENT No. MASS 2–2, PLAN No. 1–B" PREPARED BY HENRY F. BRYANT AND SON, DATED AUGUST 17, 1939, REVISED TO NOVEMBER 1, 1939, RECORDED IN SAID REGISTRY OF DEEDS IN BOOK 5827, PAGE 353
–DEED BOOK 7208, PAGE 108 RECORDED IN SAID REGISTRY OF DEEDS
–CITY OF BOSTON ENGINEERING DEPARTMENT PLANS L–191, L–2876 & L–8709

6) JURISDICTIONAL LINE TAKEN FROM CITY OF BOSTON ENGINEERING DEPARTMENT PLAN L–8709. PLEASE ALSO REFER TO CHAPTER 570 OF THE ACTS OF 1955 AND CHAPTER 25 OF THE ACTS OF 2009.

7) BY GRAPHIC PLOTTING, THE PARCEL SHOWN HEREON LIES PARTLY WITHIN A ZONE "X" (SHADED) AND PARTLY WITHIN A ZONE "X" (UNSHADED), AN AREA OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOOD, AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (F.E.M.A) FLOOD INSURANCE RATE MAP (F.I.R.M.) FOR SUFFOLK COUNTY, MASSACHUSETTS, MAP NUMBER 25025C0083J, CITY OF BOSTON COMMUNITY NUMBER 250286, PANEL NUMBER 0083J, HAVING AN EFFECTIVE DATE OF MARCH 16, 2016. BY ELEVATION, THE PARCEL SHOWN HEREON LIES PARTLY WITHIN A ZONE AE (BASE FLOOD ELEVATION 10 NAVD88 = 16.5 BOSTON CITY BASE).

8) THIS EXHIBIT PLAN IS BASED ON A PLAN PREPARED BY FELDMAN LAND SURVEYORS ENTITLED "EXISTING CONDITIONS PLAN, OLD COLONY–PHASE FOUR, BOSTON (SOUTH BOSTON), MASS." DATED JULY 16, 2020.

LEGEND:

- DRAIN MANHOLE
- ELECTRIC MANHOLE
- CABLE TELEVISION MANHOLE
- SEWER MANHOLE
- TELEPHONE MANHOLE
- MBTA MANHOLE
- MANHOLE
- AREA DRAIN
- CATCH BASIN
- GAS SHUT OFF
- WATER SHUT OFF
- BOSTON WATER VALVE
- HYDRANT
- LIGHT POLE
- FLOOD LIGHT
- ELECTRIC HANDHOLE
- SIGN
- TRAFFIC CONTROL BOX
- TRAFFIC SIGNAL
- HANDICAP RAMP
- HANDICAP RAMP WITH TACTILE STRIP
- DECIDUOUS TREE
- TRASH RECEPTACLE
- BOLLARD
- MAIL BOX
- SIGN
- CLEAN OUT
- FUEL FILL
- IRRIGATION CONTROL VALVE
- ELECTRIC RISER
- ROOF DRAIN
- SHUT OFF
- VENT PIPE
- FIRE ALARM
- GATE POST
- POST
- SPIGOT
- OBSERVATION WELL
- BC = BOTTOM OF CURB
- BCB = BITUMINOUS CONCRETE BERM
- BIT = BITUMINOUS
- BK = BACK
- BR = BIKE RACK
- BS = BOTTOM OF STEPS
- BOT= = BOTTOM ELEVATION
- BW = BOTTOM OF WALL
- CC = CONCRETE CURB
- COP = CONCRETE DUMPSTER PAD
- CIP = CAST IRON PIPE
- CLF = CHAIN LINK FENCE
- COB = COBBLESTONE
- COL = COLUMN
- CONC = CONCRETE
- CRW = CONCRETE RETAINING WALL
- ENT = ENTRANCE
- FC = FLUSH CURB
- FOW = FULL OF WATER
- GB = GRANITE BLOCK
- GD = GARAGE DOOR
- GR. = GRASS
- I= = INVERT ELEVATION
- INACC. = INACCESSIBLE
- LCC = LAND COURT CASE
- MF = METAL FENCE
- NVP = NO VISIBLE PIPE(S)
- R= = RIM ELEVATION
- RCP = REINFORCED CONCRETE PIPE
- RECESS. = PIPES RECESSED INTO STRUCTURE
- REC. = RECORD
- POR= = POINT OF REFUSAL ELEVATION
- PVC = POLYVINYL CHLORIDE PIPE
- SB = STONE BOUND
- SQ. FT. = SQUARE FEET
- SGC = SLOPED GRANITE CURB
- TBM = TEMPORARY BENCH MARK
- TC = TOP OF CURB
- TH= = THRESHOLD ELEVATION
- TOD = TOP OF DEBRIS
- TOW = TOP OF WATER
- TR= = CENTERLINE OF TROUGH
- TR=(–#.#) = TROUGH EQUALS NEGATIVE ELEVATION
- TRANS. = TRANSFORMER
- TS = TOP OF STEPS
- TT= = TOP OF TRAP
- TW = TOP OF WALL
- VF = VINYL FENCE
- VGC = VERTICAL GRANITE CURB
- C = CABLE TELEVISION
- CS = COMBINED SEWER
- D = DRAIN
- E = ELECTRIC
- L = STREET LIGHTING
- S = SEWER
- ST = STEAM
- T = TELEPHONE
- W = WATER
- (P) = PAINT MARKED UTILITY LINE
- DSC = DIGSAFE COMMUNICATIONS/CATV
- PTC = PIPE TYPE CABLE

I CERTIFY THAT THIS PLAN IS BASED ON AN ACTUAL FIELD SURVEY AND THE LATEST PLANS AND DEEDS OF RECORD.

TIMOTHY R. AGURKIS, PLS (M.# 52782)
TRA@FELDMANSURVEYORS.COM

6/22/2021
DATE

COMMONWEALTH OF MASSACHUSETTS — TIMOTHY R. AGURKIS — No.52782 — REGISTERED PROFESSIONAL LAND SURVEYOR

EXHIBIT PLAN
OLD COLONY–PHASE FOUR
BOSTON (SOUTH BOSTON), MASS.

FELDMAN LAND SURVEYORS
152 HAMPDEN STREET
BOSTON, MASS. 02119
MAY 05, 2021
PHONE: (617)357–9740
www.feldmansurveyors.com

FELDMAN LAND SURVEYORS

20 0 10 20 40 80

SCALE: 1"=20'

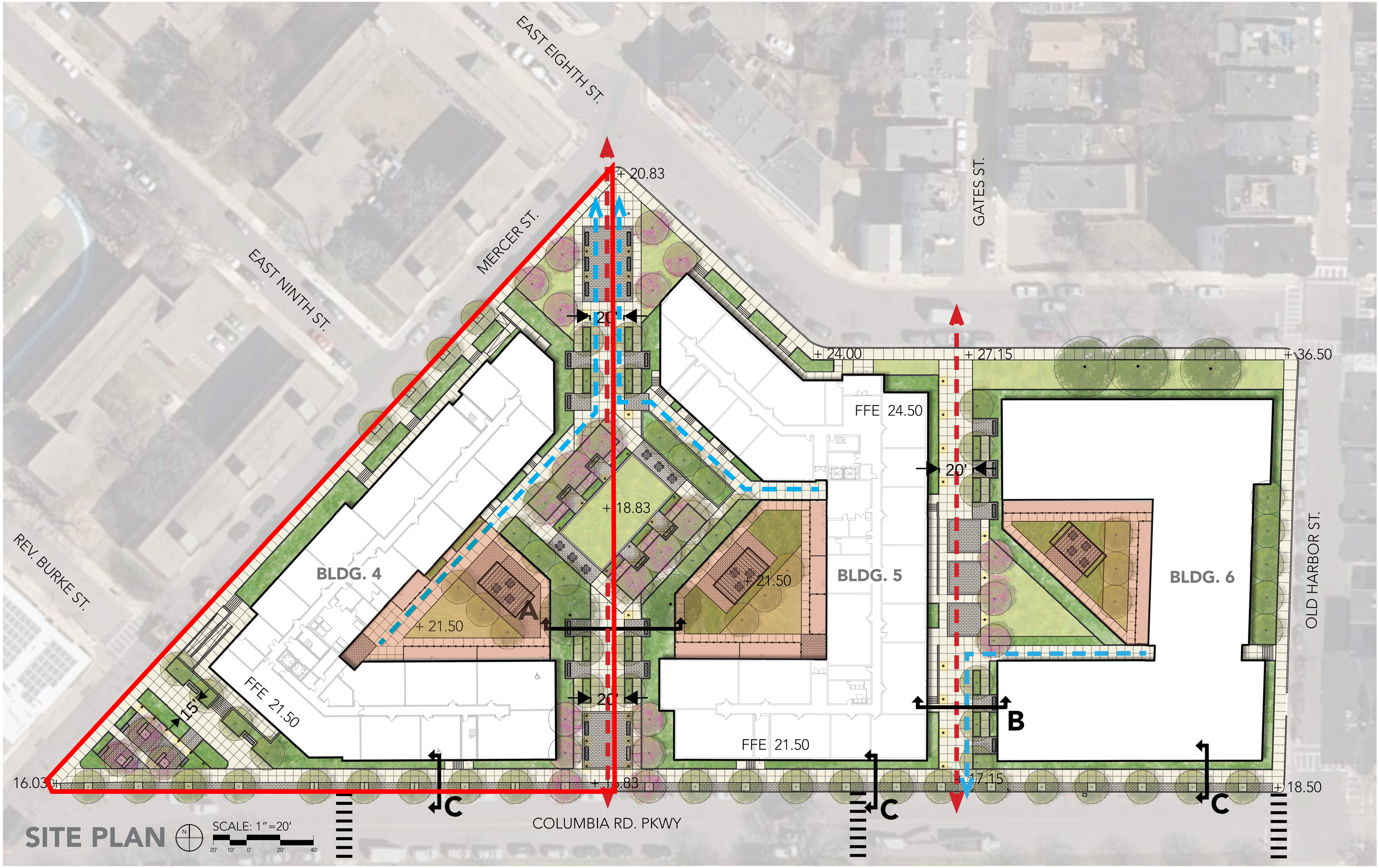
RESEARCH MJB	FIELD CHIEF CD	PROJ MGR MJB	APPROVED	SHEET No. 1 OF 1
CALC MJB	CADD MJB	FIELD CHECKED –	CRD FILE 17496	JOB NO. 17496

FILENAME: S:\PROJECTS\17400s\17496\DWG\17496–EXBT_PH4_(DRAFT_2021–05–05).dwg

Appendix C

Old Colony Phase IV Plan Rendering
prepared by Copley Wolff Design Group dated March 30, 2021

Old Colony Phase Four and Five Landscape Plan (Sheets L1.00-L3.00)
prepared by Copley Wolff Design Group dated June 7, 2021,
stamped and signed by James A. Heroux



20 FT. FIRE LANE

WASTE REMOVAL

PRIVATE TERRACE

Copley Wolff Design Group
Landscape Architects & Planners

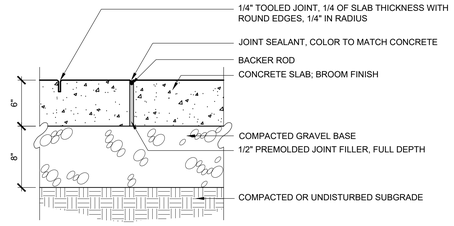
OLD COLONY PHASE IV

Beacon Communities

Boston, MA

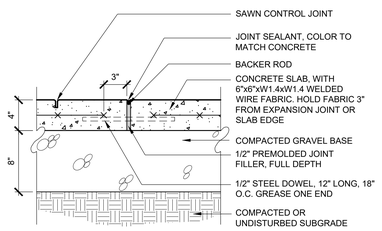
PUBLIC REALM

MARCH 30, 2021



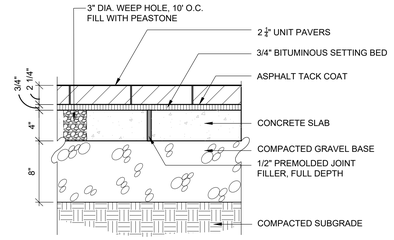
NOTE:
1. CONTROL JOINTS EVERY 5' O.C. UNLESS OTHERWISE SHOWN ON PLAN.
2. EXPANSION JOINTS EVERY 20' O.C. UNLESS OTHERWISE SHOWN ON PLAN.
3. WHERE NEW CONCRETE MEETS EXISTING CONCRETE, CORE DRILL EXISTING CONCRETE TO RECEIVE STEEL DOWEL.

2 6" CONCRETE PAVEMENT AT CITY WALK
SCALE: 1-1/2"=1'-0"



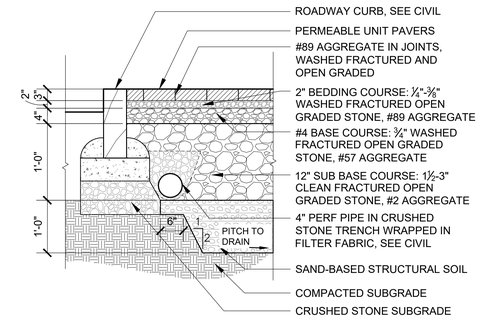
NOTES:
1. CONTROL JOINTS EVERY 5' UNLESS OTHERWISE SHOWN ON PLAN
2. EXPANSION JOINTS EVERY 20' UNLESS OTHERWISE SHOWN ON PLAN
3. WHERE NEW CONCRETE MEETS EXISTING CONCRETE, CORE DRILL EXISTING CONCRETE TO RECEIVE STEEL DOWEL.

4 4" CONCRETE PAVEMENT
SCALE: 1-1/2"=1'-0"



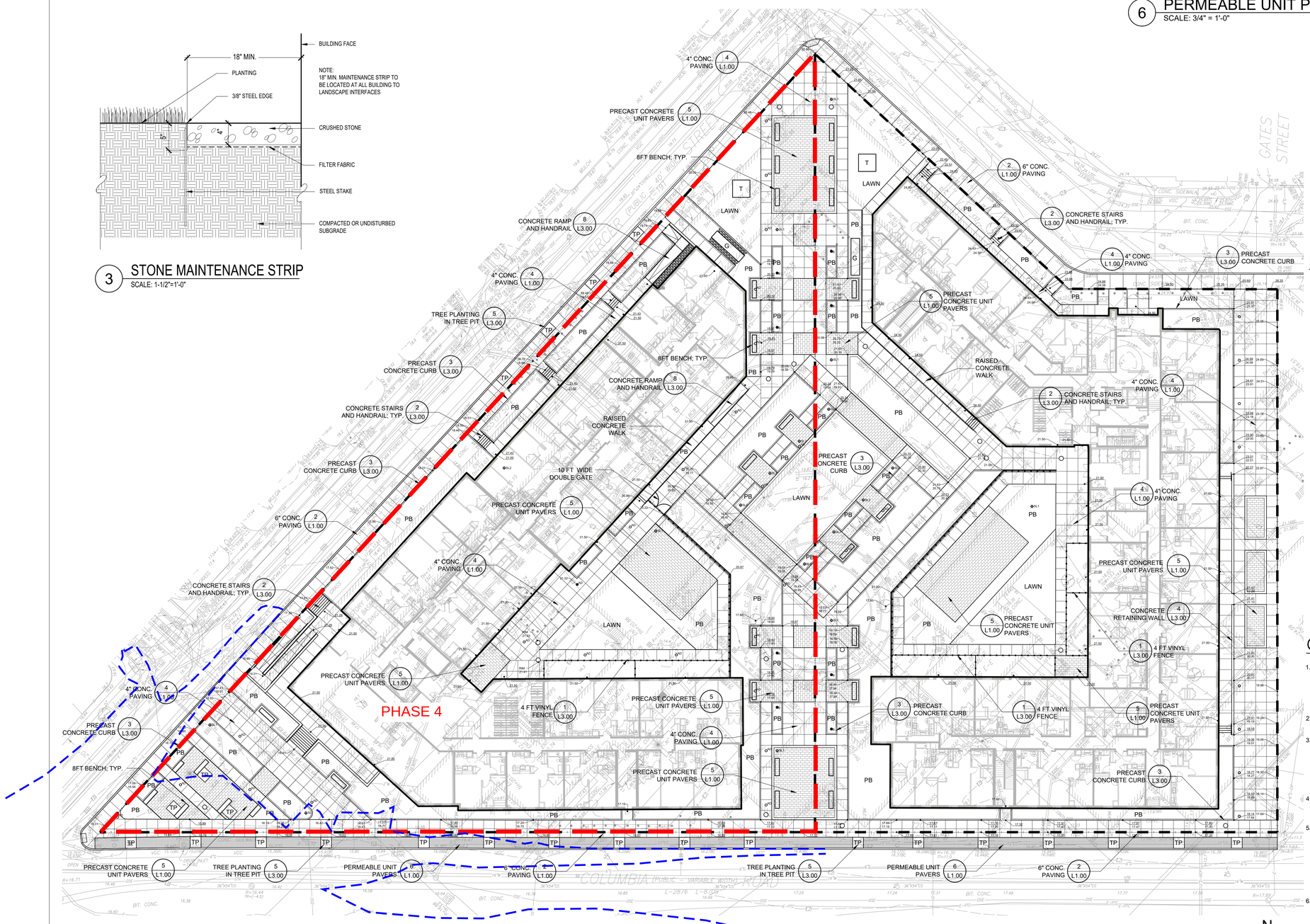
NOTE:
1. EXPANSION JOINTS IN CONCRETE SLAB EVERY 20' UNLESS OTHERWISE SHOWN ON PLAN

5 PRECAST CONCRETE UNIT PAVERS
SCALE: 1-1/2"=1'-0"



6 PERMEABLE UNIT PAVERS
SCALE: 3/4" = 1'-0"

3 STONE MAINTENANCE STRIP
SCALE: 1-1/2"=1'-0"



1 LANDSCAPE MATERIALS AND LAYOUT PLAN
Scale : 1/" = 20'-0"

MATERIALS LEGEND

PROPERTY LINE	
CIP CONCRETE PAVING	
PRECAST CONCRETE PAVERS	
PERMEABLE PAVERS	
STONE MAINTENANCE STRIP	
CONCRETE STAIRS AND HANDRAILS	
4FT VINYL FENCE	
GENERATOR	G
TRANSFORMER	T
8FT BENCHES	
3'X5' TREE PIT	TP
LIGHT BOLLARD	
LIGHT POLE	SL1
LIGHT COLUMN	SL2
PLANTING BED	PB

GENERAL NOTES

1. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS, AND NOTIFY LANDSCAPE ARCHITECT AT ONCE IN WRITING OF ANY DISCREPANCIES BETWEEN THE EXISTING CONDITIONS AS INDICATED ON THE PLAN AND ACTUAL FIELD CONDITIONS AND RECEIVE WRITTEN INSTRUCTIONS PRIOR TO PROCEEDING.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING EXISTING GRADES TO VERIFY THEIR ACCURACY.
3. CONTRACTOR SHALL VERIFY ALL UTILITY LOCATIONS AND ELEVATIONS PRIOR TO EXCAVATION. BEFORE CONSTRUCTION STARTS ALL UTILITY COMPANIES, PUBLIC AND PRIVATE MUST BE CONTACTED INCLUDING THOSE IN CONTROL OF UTILITIES NOT SHOWN ON THIS PLAN. CONTACT "LOCAL DIG SAFE" AND REPORT ANY DISCREPANCIES IN WRITING TO LANDSCAPE ARCHITECT AND RECEIVE WRITTEN INSTRUCTIONS PRIOR TO PROCEEDING.
4. THE CONTRACTOR SHALL ESTABLISH PERMANENT BENCH MARKS. MAINTAIN ALL ESTABLISHED BOUNDS AND BENCH MARKS AND REPLACE AS DIRECTED ANY WHICH ARE DESTROYED OR DISTURBED.
5. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE DUE TO OPERATIONS OUTSIDE OF THE CONSTRUCTION LIMIT LINE. CONTRACTOR SHALL MEET LINE AND GRADE OF EXISTING CONDITIONS AT THE CONSTRUCTION LIMIT LINE. SEE SPECIFICATIONS FOR REQUIREMENTS REGARDING THE MAINTENANCE AND PROTECTION OF EXISTING UTILITIES INSIDE AND OUTSIDE THE CONTRACT LIMIT LINE. CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE DUE TO OPERATIONS INSIDE AND OUTSIDE OF THE CONSTRUCTION LIMIT LINE.
6. PROVIDE EXPANSION JOINTS IN BASE SLABS, AT ALL BUILDINGS, WALLS, LIGHT POLE BASES AND/OR AS SHOWN ON THE DRAWINGS.

tat

©The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

Consultant:

CWDG Copley Wolff Design Group
Landscape Architects & Planners
www.copley-wolff.com

Revision:

Architect of Record:

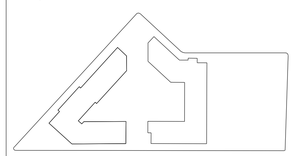
MASSACHUSETTS JAMES A. HERVOL REGISTERED LANDSCAPE ARCHITECT NO. 1201

Drawn: MCP

Checked: JH

Scale: AS NOTED

Key Plan:



Project Name:
Old Colony Phase Four & Five

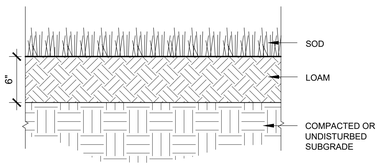
110 MERCER STREET, BOSTON MA

Sheet Name:
LANDSCAPE MATERIALS AND LAYOUT PLAN

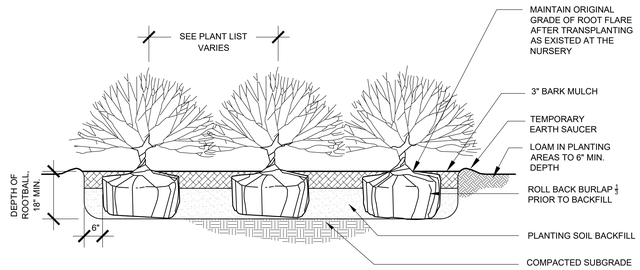
Project Number:
18177

Issue Date:
June 07, 2021

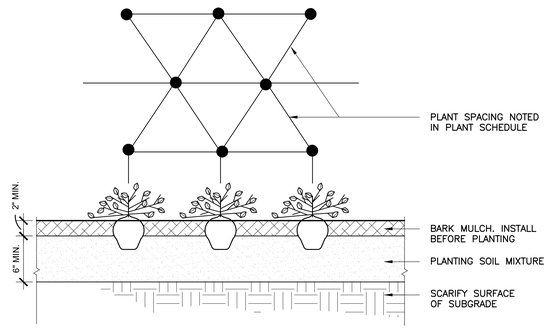
Sheet Number:
L1.00



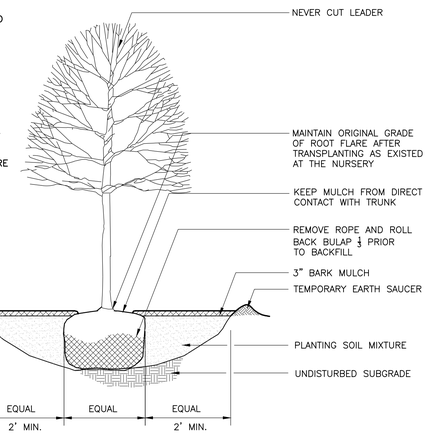
2 SOD ON LOAM
SCALE: 1-1/2"=1'-0"



3 TYPICAL SHRUB PLANTING
NOT TO SCALE



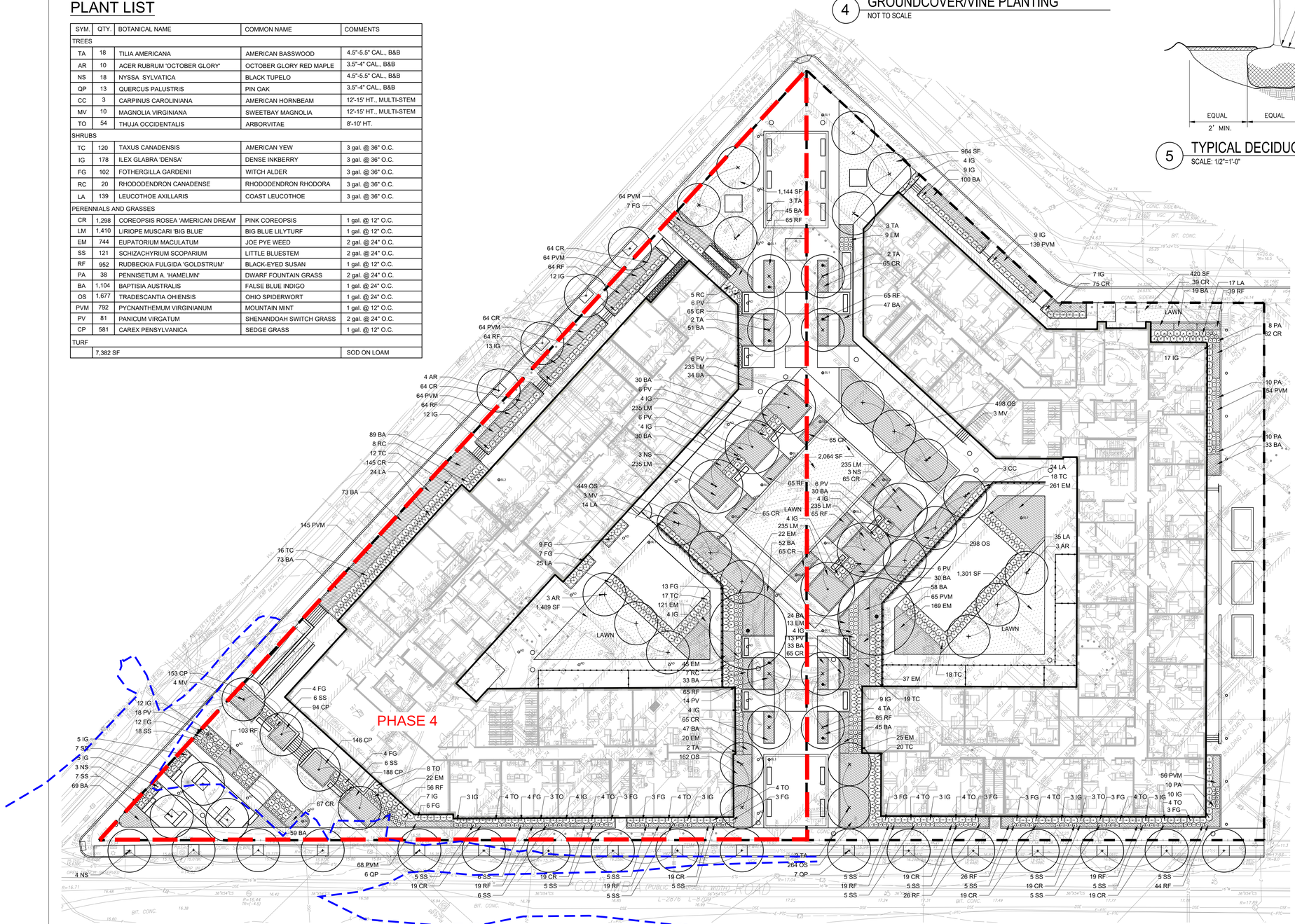
4 GROUNDCOVER/VINE PLANTING
NOT TO SCALE



5 TYPICAL DECIDUOUS TREE PLANTING
SCALE: 1/2"=1'-0"

PLANT LIST

SYM.	QTY.	BOTANICAL NAME	COMMON NAME	COMMENTS
TREES				
TA	18	TILIA AMERICANA	AMERICAN BASSWOOD	4.5"-5.5" CAL., B&B
AR	10	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	3.5"-4" CAL., B&B
NS	18	NYSSA SYLVATICA	BLACK TUPELO	4.5"-5.5" CAL., B&B
QP	13	QUERCUS PALUSTRIS	PIN OAK	3.5"-4" CAL., B&B
CC	3	CARPINUS CAROLINIANA	AMERICAN HORNBEAM	12'-15' HT., MULTI-STEM
MV	10	MAGNOLIA VIRGINIANA	SWEETBAY MAGNOLIA	12'-15' HT., MULTI-STEM
TO	54	THUJA OCCIDENTALIS	ARBORVITAE	8'-10' HT.
SHRUBS				
TC	120	TAXUS CANADENSIS	AMERICAN YEW	3 gal. @ 36" O.C.
IG	178	ILEX GLABRA 'DENSA'	DENSE INKBERRY	3 gal. @ 36" O.C.
FG	102	FOTHERGILLA GARDENII	WITCH ALDER	3 gal. @ 36" O.C.
RC	20	RHODODENDRON CANADENSE	RHODODENDRON RHODORA	3 gal. @ 36" O.C.
LA	139	LEUCOTHOE AXILLARIS	COAST LEUCOTHOE	3 gal. @ 36" O.C.
PERENNIALS AND GRASSES				
CR	1,298	COREOPSIS ROSEA 'AMERICAN DREAM'	PINK COREOPSIS	1 gal. @ 12" O.C.
LM	1,410	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LILYTURF	1 gal. @ 12" O.C.
EM	744	EUPATORIUM MACULATUM	JOE PYE WEED	2 gal. @ 24" O.C.
SS	121	SCHIZACHYRIUM SCOPARIUM	LITTLE BLUESTEM	2 gal. @ 24" O.C.
RF	952	RUDBECKIA FULGIDA 'GOLDSTRUM'	BLACK-EYED SUSAN	1 gal. @ 12" O.C.
PA	38	PENNISETUM A. 'HAMELMN'	DWARF FOUNTAIN GRASS	2 gal. @ 24" O.C.
BA	1,104	BAPTISIA AUSTRALIS	FALSE BLUE INDIGO	1 gal. @ 24" O.C.
OS	1,677	TRADESCANTIA OHIENSIS	OHIO SPIDERWORT	1 gal. @ 24" O.C.
PVM	792	PYCNANTHEMUM VIRGINIANUM	MOUNTAIN MINT	1 gal. @ 12" O.C.
PV	81	PANICUM VIRGATUM	SHENANDOAH SWITCH GRASS	2 gal. @ 24" O.C.
CP	581	CAREX PENSYLVANICA	SEDGE GRASS	1 gal. @ 12" O.C.
TURF				
	7,382 SF			SOD ON LOAM



1 LANDSCAPE PLANTING PLAN
Scale : 1/" = 20'-0"

PLANTING LEGEND

- EXISTING TREE TO REMAIN; SIZE VARIES
- PROPOSED DECIDUOUS TREE
- PROPOSED EVERGREEN TREE
- PROPOSED SHRUBS
- GROUNDCOVER
- SOD ON LOAM

PLANTING NOTES

1. ALL PLANT MATERIAL SHALL CONFORM TO THE GUIDELINES ESTABLISHED BY "THE AMERICAN STANDARD FOR NURSERY STOCK," PUBLISHED BY THE AMERICAN ASSOCIATION OF NURSERYMEN, INC.
2. ALL DECIDUOUS SHRUBS SHALL HAVE AT LEAST THE MINIMUM NUMBER OF CANES SPECIFIED IN ANSI Z60.1 (CURRENT RELEASE) FOR THE PARTICULAR NURSERY STOCK.
3. FOR SHRUB AND TREE PLANTINGS, THE DEPTH OF PLANT MIX SHALL BE EQUAL TO THE DEPTH OF THE PLANT MATERIAL'S ROOTBALL. ROOTBALL DEPTHS SHALL MEET THE ANSI Z60.1 GUIDELINES (CURRENT RELEASE) FOR NURSERY STOCK.
4. ALL PLANTS TO BE APPROVED BY THE PROJECT LANDSCAPE ARCHITECT PRIOR TO ARRIVAL AT THE SITE.
5. STAKE LOCATION OF ALL PROPOSED PLANT MATERIAL FOR THE APPROVAL OF THE PROJECT LANDSCAPE ARCHITECT PRIOR TO THE BEGINNING OF PLANTING.
6. PROVIDE DRIP IRRIGATION SYSTEM AT PLANT BEDS. PROVIDE SPRAY HEAD IRRIGATION SYSTEM AT LAWN AREAS. TIE INTO EXISTING SYSTEM; PROVIDE SHOP DRAWINGS FOR APPROVAL BY LANDSCAPE ARCHITECT AND OWNER.
7. ALL PLANT MATERIAL SHALL BE NON-INVASIVE. NO INVASIVE SPECIES TO BE PLANTED ANYWHERE ON SITE.

tat

©The Architectural Team, Inc.
50 Commandant's Way at
Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

Consultant:

CWDG Copley Wolff Design Group
Landscape Architects & Planners
www.copley-wolff.com

Revision:

Architect of Record:

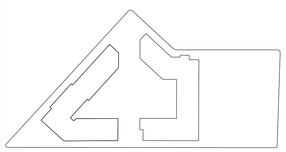
COMMONWEALTH OF MASSACHUSETTS JAMES A. HERRON REGISTERED LANDSCAPE ARCHITECT NO. 1927

Drawn: MCP

Checked: JH

Scale: AS NOTED

Key Plan:



Project Name:

Old Colony Phase Four & Five

110 MERCER STREET, BOSTON MA

Sheet Name:

LANDSCAPE PLANTING PLAN

Project Number:

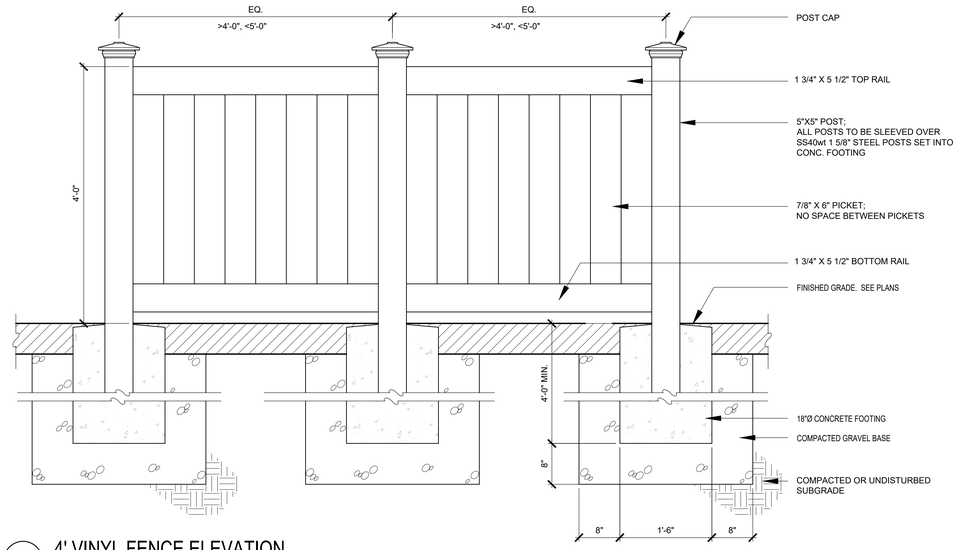
18177

Issue Date:

June 07, 2021

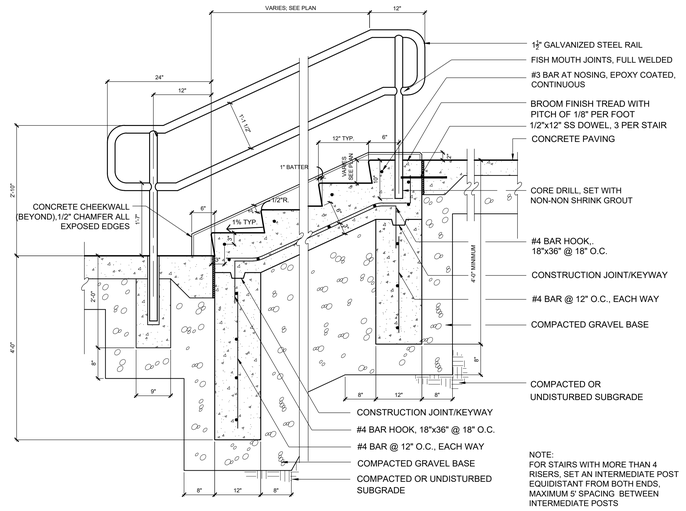
Sheet Number:

L2.00



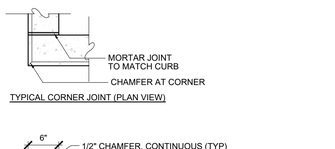
1 4' VINYL FENCE ELEVATION

SCALE: 1" = 1'-0"

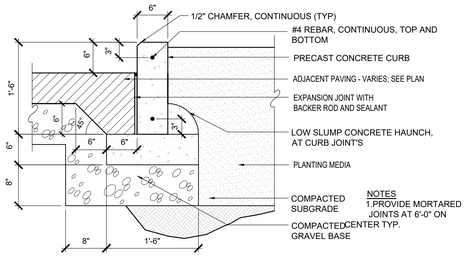


2 CONCRETE STAIRS AND HANDRAIL

SCALE: 3/4"=1'-0"

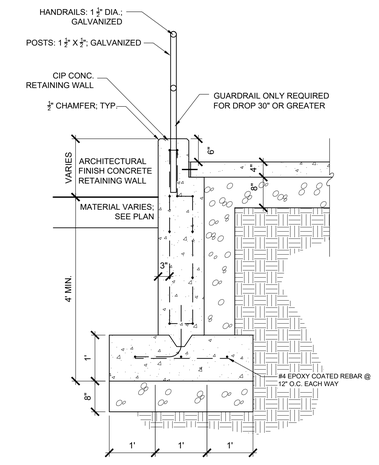


TYPICAL CORNER JOINT (PLAN VIEW)



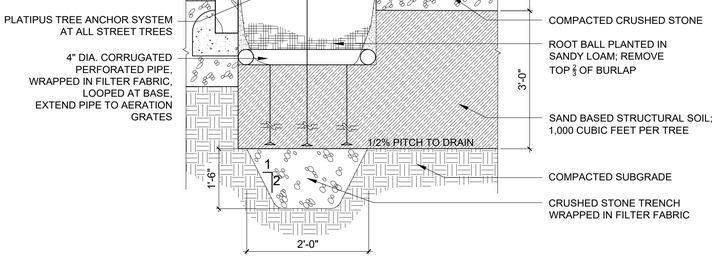
3 PRECAST CONCRETE CURB @ PLANTER

SCALE: 1"=1'-0"



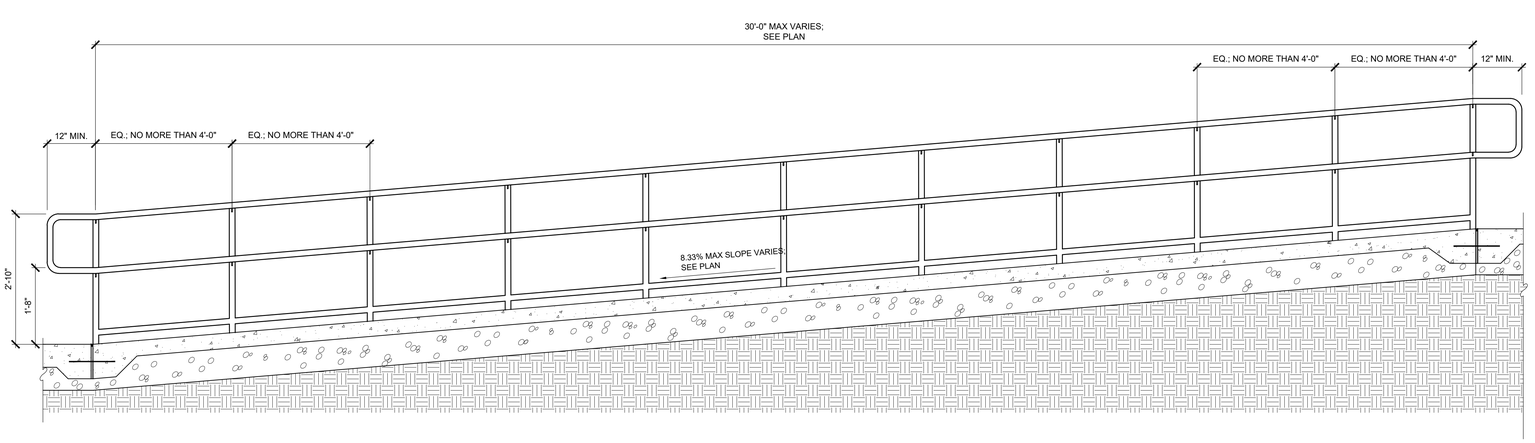
4 CONCRETE RETAINING WALL

SCALE: 3/4"=1'-0"



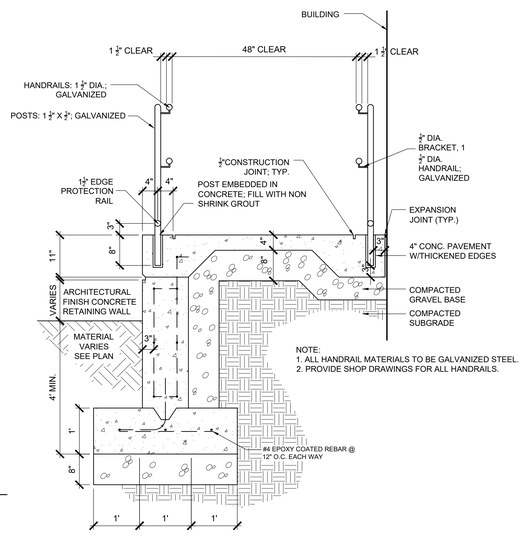
5 TREE PLANTING IN TREE PIT

SCALE: 3/4"=1'-0"



6 CONCRETE RAMP AND HANDRAIL

SCALE: 3/4"=1'-0"



tat

©The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

Consultant:

Copley Wolff Design Group
Landscape Architects & Planners
www.copley-wolff.com

Revision:

Architect of Record:

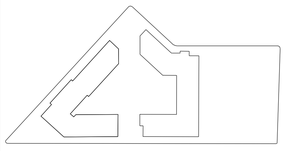
MASSACHUSETTS
JAMES A. HERVIN
NO. 1201
REGISTERED LANDSCAPE ARCHITECT

Drawn: MCP

Checked: JH

Scale: AS NOTED

Key Plan:



Project Name:

Old Colony Phase Four & Five

110 MERCER STREET, BOSTON MA

Sheet Name:

LANDSCAPE DETAILS

Project Number:

18177

Issue Date:

June 07, 2021

Sheet Number:

L3.00

Appendix D

Old Colony Phase Four Civil Plans Set (Sheets C1.00-C3.03)
prepared by Nitsch Engineering, Inc. dated June 7, 2021
stamped and signed by Jonathan R. Hedlund on June 11, 2021

GENERAL NOTES:

1. TOPOGRAPHIC DATA, PROPERTY LINE INFORMATION, AND EXISTING SITE FEATURES WERE OBTAINED FROM A PLAN ENTITLED "EXISTING CONDITIONS PLAN, OLD COLONY–PHASE FOUR", PREPARED BY FELDMAN LAND SURVEYORS, DATED AUGUST 05, 2020.
2. FLOODPLAIN INFORMATION WAS OBTAINED FROM THE FLOOD INSURANCE RATE MAP (FIRM) NO. 25025C0083J. THE SITE IS PARTIALLY LOCATED IN ZONE X (AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN) AND IN ZONE VE (COASTAL FLOOD ZONE WITH VELOCITY HAZARD, WAVE ACTION; BASE FLOOD ELEVATION DETERMINED).
3. THE CONTRACTOR SHALL COMPLY WITH MASSACHUSETTS GENERAL LAWS CHAPTER 82, SECTION 40, AS AMENDED, WHICH STATES THAT NO ONE MAY EXCAVATE IN THE COMMONWEALTH OF MASSACHUSETTS EXCEPT IN AN EMERGENCY WITHOUT 72 HOURS NOTICE, EXCLUSIVE OF SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, TO NATURAL GAS PIPELINE COMPANIES, AND MUNICIPAL UTILITY DEPARTMENTS THAT SUPPLY GAS, ELECTRICITY, TELEPHONE, OR CABLE TELEVISION SERVICE IN OR TO THE CITY OR TOWN WHERE THE EXCAVATION IS TO BE MADE. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 1–888–DIG–SAFE.
4. THE CONTRACTOR SHALL COMPLY WITH MASSACHUSETTS GENERAL LAWS CHAPTER 82A, ALSO REFERRED TO AS JACKIE'S LAW, AS DETAILED IN SECTION 520 CMR 14.00 OF THE CODE OF MASSACHUSETTS REGULATIONS.
5. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, REGULATIONS AND SAFETY CODES IN THE CONSTRUCTION OF ALL IMPROVEMENTS.
6. THE LOCATIONS AND ELEVATIONS OF ALL EXISTING UTILITIES ARE APPROXIMATE AND ALL UTILITIES MAY NOT BE SHOWN. PRESENCE AND LOCATIONS OF ALL UTILITIES WITHIN THE LIMIT OF WORK MUST BE DETERMINED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR IDENTIFYING AND CONTACTING THE CONTROLLING AUTHORITIES AND/OR UTILITY COMPANIES RELATIVE TO THE LOCATIONS AND ELEVATIONS OF THEIR LINES. THE CONTRACTOR SHALL KEEP A RECORD OF ANY DISCREPANCIES OR CHANGES IN THE LOCATIONS OF ANY UTILITIES SHOWN OR ENCOUNTERED DURING CONSTRUCTION. ANY DISCREPANCIES SHALL BE REPORTED TO THE OWNER AND NITSCH ENGINEERING. ANY DAMAGE RESULTING FROM THE FAILURE OF THE CONTRACTOR TO MAKE THESE DETERMINATIONS AND CONTACTS SHALL BE BORNE BY THE CONTRACTOR.
7. THE CONTRACTOR SHALL, THROUGHOUT CONSTRUCTION, TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS, GRADING, SIDEWALKS AND SITE DETAILS OUTSIDE OF THE LIMIT OF WORK AS DEFINED ON THE DRAWINGS AND SHALL REPAIR AND REPLACE OR OTHERWISE MAKE GOOD AS DIRECTED BY THE ENGINEER OR OWNER'S DESIGNATED REPRESENTATIVE ANY SUCH OR OTHER DAMAGE SO CAUSED.
8. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR JOB SITE SAFETY AND ALL CONSTRUCTION MEANS AND METHODS.
9. PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE SITE AND CONSTRUCTION DOCUMENTS TO DEVELOP A THOROUGH UNDERSTANDING OF THE PROJECT, INCLUDING ANY SPECIAL CONDITIONS AND CONSTRAINTS.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PROJECT SITE AND TO VERIFY ALL CONDITIONS IN THE FIELD AND REPORT DISCREPANCIES BETWEEN PLANS AND ACTUAL CONDITIONS TO THE OWNER OR OWNER'S REPRESENTATION IMMEDIATELY.
11. THE CONTRACTOR SHALL CONDUCT ALL NECESSARY CONSTRUCTION NOTIFICATIONS AND APPLY FOR AND OBTAIN ALL NECESSARY CONSTRUCTION PERMITS.
12. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR THE ESTABLISHMENT AND USE OF ALL VERTICAL AND HORIZONTAL CONSTRUCTION CONTROLS.
13. ELEVATIONS REFER TO BOSTON CITY BASE.
14. THE CONTRACTOR SHALL COMPLY WITH THE ORDER OF CONDITIONS DATED XXXX XX, XXXX AND ISSUED BY THE CITY OF BOSTON CONSERVATION COMMISSION (DEP #XXX–XXX).
15. FOR SOIL INFORMATION REFER TO GEOTECHNICAL REPORT.

BUILDING LOCATION NOTES:

1. THE BUILDING LOCATION INFORMATION SHOWN ON THIS PLAN PROVIDES THE POSITION AND ORIENTATION OF THE BUILDING. REFER TO THE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR BUILDING AND FOUNDATION DIMENSIONS, INCLUDING BUILDING OVERHANGS AND AREAWAYS. THE CONTRACTOR SHALL VERIFY BUILDING AND FOUNDATION DIMENSIONS WITH THE ARCHITECT AND STRUCTURAL ENGINEER PRIOR TO FOUNDATION CONSTRUCTION.
2. THE LOCATION OF THE CORNER AND OUTSIDE FACE OF THE PROPOSED BUILDING FOUNDATION WALL WAS TAKEN FROM AN AUTOCAD FILE RECEIVED FROM *CLIENT* ON *DATE*.
3. THE SURVEYOR PERFORMING BUILDING LAYOUT SHALL BE A LICENSED PROFESSIONAL LAND SURVEYOR OR UNDER THE DIRECT SUPERVISION OF A LICENSED PROFESSIONAL LAND SURVEYOR IN THE STATE OF MASSACHUSETTS WITH EXPERIENCE PREPARING BUILDING LAYOUT CALCULATIONS. THOSE CALCULATIONS SHALL BE PREPARED TO THE STANDARD OF CARE CURRENTLY ESTABLISHED FOR THE SURVEYING PROFESSION IN THE STATE OF MASSACHUSETTS.
4. THE BUILDING LAYOUT SURVEYOR SHALL CONFIRM THE FOLLOWING ITEMS:
   A. THE BUILDING LOCATION CONFORMS TO ZONING SETBACKS;
   B. THE BUILDING LOCATION IS WITHIN THE PROPERTY LINE; AND
   C. THE BUILDING CLOSES ON ITSELF BASED ON THE DIMENSIONS PROVIDED ON THE ARCHITECTURAL AND STRUCTURAL DRAWINGS.
5. THE SURVEYOR PERFORMING BUILDING LAYOUT SHALL PROVIDE A SUBMITTAL TO THE DESIGN TEAM THAT INCLUDES THEIR CALCULATIONS CONFIRMING THE ITEMS LISTED UNDER NOTE #4 ABOVE. THIS SUBMITTAL SHALL BE STAMPED AND SIGNED BY THE LICENSED PROFESSIONAL LAND SURVEYOR WHO PREPARED THE CALCULATIONS.

EARTH MOVING AND GRADING NOTES:

1. ALL TOPSOIL ENCOUNTERED WITHIN THE WORK AREA SHALL BE STRIPPED TO ITS FULL DEPTH AND STOCKPILED FOR REUSE. EXCESS TOPSOIL SHALL BE REMOVED FROM THE SITE UNLESS OTHERWISE DIRECTED BY THE OWNER. TOPSOIL PILES SHALL REMAIN SEGREGATED FROM EXCAVATED SUBSURFACE SOIL MATERIALS.
2. GRADES WITHIN HANDICAP PARKING SPACES AND ACCESS AISLES SHALL NOT EXCEED 1.5% IN ANY DIRECTION.
3. CROSS SLOPES OF ALL PEDESTRIAN WALKS SHALL NOT EXCEED 1.5%.
4. RUNNING SLOPE OF ALL PEDESTRIAN WALKS SHALL NOT EXCEED 4.5%, UNLESS OTHERWISE NOTED.
5. THE CONTRACTOR SHALL EXERCISE CAUTION IN ALL EXCAVATION ACTIVITY DUE TO POSSIBLE EXISTENCE OF UNRECORDED UTILITY LINES.
6. ALL PAVED AREAS MUST PITCH TO DRAIN AT A MINIMUM OF 1% UNLESS OTHERWISE NOTED.
7. PROVIDE POSITIVE DRAINAGE AWAY FROM FACE OF BUILDINGS AT ALL LOCATIONS.
8. PITCH EVENLY BETWEEN CONTOUR LINES AND BETWEEN SPOT GRADES. SPOT GRADE ELEVATIONS TAKE PRECEDENCE OVER CONTOUR LINES.
9. ALL PROPOSED TOP OF CURB ELEVATIONS ARE SIX INCHES (6") ABOVE BOTTOM OF CURB ELEVATIONS UNLESS OTHERWISE NOTED. ALL PROPOSED TOP OF CAPE COD BERM ELEVATIONS ARE FOUR INCHES (4") ABOVE BOTTOM OF CURB ELEVATION UNLESS OTHERWISE NOTED.
10. THE CONTRACTOR SHALL BLEND NEW GRADING SMOOTHLY INTO EXISTING GRADING AT LIMITS OF GRADING.
11. WHERE NEW PAVING MEETS EXISTING PAVING, MEET LINE AND GRADE OF EXISTING PAVING WITH SMOOTH TRANSITION BETWEEN EXISTING AND NEW SURFACES.
12. THE CONTRACTOR SHALL VERIFY EXISTING GRADES IN THE FIELD AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ARCHITECT OR OWNER'S REPRESENTATIVE PRIOR TO STARTING WORK.
13. PITCH TOPS OF ALL WALLS AT ONE–EIGHTH INCH (1/8") PER FOOT FROM BACK OF WALL TO FACE OF WALL.
14. SURPLUS MATERIALS SHALL BE REMOVED FROM THE SITE UNLESS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE. REFER TO EARTHWORK SPECIFICATIONS.
15. ANY AREAS OUTSIDE OF THE LIMIT OF WORK THAT ARE DISTURBED SHALL BE RESTORED BY THE CONTRACTOR TO THE PRE–CONSTRUCTION CONDITION/GRADE AT NO COST TO THE OWNER.
16. EXCAVATION REQUIRED WITHIN PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO ADDITIONAL COST TO OWNER.

UTILITY NOTES:

1. ALL UTILITY CONNECTIONS ARE SUBJECT TO THE APPROVAL OF, AND GRANTING OF PERMITS BY, THE LOCAL MUNICIPALITY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL PERMITS AND APPROVALS RELATED TO UTILITY WORK PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR OBTAINING ALL PERMISSIONS FOR, AND FOR CONDUCTING ALL PREPARATIONS RELATED TO, WORK AFFECTING ANY UTILITIES WITHIN THE JURISDICTION OF ANY NON–MUNICIPAL UTILITY COMPANY, INCLUDING BUT NOT LIMITED TO ELECTRIC, TELEPHONE, AND/OR GAS. THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE AGENCIES, DEPARTMENTS, AND UTILITY COMPANIES, IN WRITING, AT LEAST 7 DAYS (OR PER UTILITY COMPANY REQUIREMENT) AND NOT MORE THAN 30 DAYS PRIOR TO ANY CONSTRUCTION.
3. THE CONTRACTOR SHALL MAINTAIN UTILITIES SERVICING BUILDINGS AND FACILITIES WITHIN OR OUTSIDE THE PROJECT LIMIT UNLESS THE INTERRUPTION OF SERVICE IS COORDINATED WITH THE OWNER.
4. ALL WATER, SEWER, AND DRAIN WORK SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS AND STANDARD SPECIFICATIONS OF THE LOCAL MUNICIPALITY.
5. GAS, TELECOMMUNICATIONS AND ELECTRIC SERVICES ARE TO BE DESIGNED BY EACH UTILITY COMPANY IN COORDINATION WITH THE MECHANICAL, ELECTRIC, AND PLUMBING CONSULTANTS.
6. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES OF NEW UTILITIES WITH GAS, TELECOMMUNICATION AND ELECTRICAL SERVICES.
7. INSTALL WATER LINES WITH A MINIMUM OF FIVE FEET OF COVER AND A MAXIMUM OF SEVEN FEET COVER FROM THE FINAL DESIGN GRADES.
8. MAINTAIN 10 FEET HORIZONTAL SEPARATION AND 18 INCHES VERTICAL SEPARATION (WATER OVER SEWER) BETWEEN SEWER AND WATER LINES. WHEREVER THERE IS LESS THAN 10 FEET OF HORIZONTAL SEPARATION AND 18 INCHES OF VERTICAL SEPARATION BETWEEN A PROPOSED OR EXISTING SEWER LINE TO REMAIN AND A PROPOSED OR EXISTING WATER LINE TO REMAIN BOTH WATER MAIN AND SEWER MAIN SHALL BE CONSTRUCTED OF MECHANICAL JOINT CEMENT LINED DUCTILE IRON PIPE FOR A DISTANCE OF 10–FEET ON EITHER SIDE OF THE CROSSING. ONE (1) FULL LENGTH OF WATER PIPE SHALL BE CENTERED OVER THE SEWER AT THE CROSSING.
9. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES EXCEPT THOSE NOTED TO BE ABANDONED AND/OR REMOVED & DISPOSED.
10. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR TRENCHING, BACKFILLING, AND SURFACE RESTORATION FOR GAS UTILITY SYSTEMS.
11. ALL ONSITE UTILITIES SHALL BE INSTALLED UNDERGROUND UNLESS OTHERWISE NOTED.
12. ALL EXISTING AND PROPOSED MANHOLE FRAMES, COVERS, VALVES, CLEANOUTS, CASTINGS, ETC. SHALL BE RAISED TO FINISHED GRADE PRIOR TO FINAL GRADING AND PAVING CONSTRUCTION.
13. ALL GRATES IN WALKWAYS SHALL BE ADA COMPLIANT.

PROPOSED LEGEND

	LIMIT OF WORK
// //	EXISTING UTILITY TO BE ABANDONED, REMOVED AND DISPOSED IF IN CONFLICT WITH NEW SITE IMPROVEMENTS, OR AS INDICATED ON DRAWINGS
	EROSION CONTROL BARRIER
— x — x —	CONSTRUCTION FENCE
W	DOMESTIC WATER PIPE
FP	FIRE PROTECTION PIPE
S	SANITARY SEWER PIPE
D	STORM DRAIN PIPE
G	GAS PIPE
E	ELECTRIC DUCTBANK
T/C	TELECOM DUCTBANK
CW	CHILLED WATER PIPE
STM	STEAM PIPE
CR	CONDENSATE RETURN PIPE
HW	HOT WATER PIPE/RETURN
HHW	HEATING HOT WATER
RW	REUSE WATER PIPE
GW	GREY WATER PIPE
X	FUTURE UTILITY, SHOWN FOR INFORMATION ONLY
	INLET PROTECTION
	ELEVATION CONTOURS
	MATCH LINE
	CENTERLINE
CO	CLEANOUT
	AREA DRAIN
	ACCESS BASIN
	DRAIN MANHOLE
Q	WATER QUALITY STRUCTURE
	CATCH BASIN
	DOUBLE CATCH BASIN
	WATER QUALITY INLET
	SEWER MANHOLE
STMH	STEAM MANHOLE
TMH	TELECOM MANHOLE
EMH	ELECTRIC MANHOLE
CWV	CHILLED WATER VALVE
WV	WATER VALVE
HYD	FIRE HYDRANT

ABBREVIATIONS

AB	ACCESS BASIN
AD	AREA DRAIN
BC	BOTTOM OF CURB ELEVATION
BW	BOTTOM OF WALL ELEVATION
CB	CATCH BASIN
CCB	CAPE COD BERM
CI	CAST IRON
CJ	CONTROL JOINT
CL	CENTER LINE
CO	CLEANOUT
COP	CENTER OF PIPE
CP	CARRIER PIPE
CPP	CORRUGATED POLYETHYLENE PIPE
DCB	DOUBLE CATCH BASIN
DI	DUCTILE IRON PIPE CEMENT LINED
DMH	DRAIN MANHOLE
EHH	ELECTRIC HANDHOLE
EJ	EXPANSION JOINT
EMH	ELECTRIC MANHOLE
FD	FOUNDATION DRAIN
FFE	FINISHED FLOOR ELEVATION
HP	HIGH POINT
HYD	FIRE HYDRANT
INV	INVERT ELEVATION
LF	LINEAR FEET
LOW	LIMIT OF WORK
LP	LOW POINT
LW	LAB WASTE
M&P	MAINTAIN AND PROTECT
NIC	NOT IN CONTRACT
OC	ON CENTER
OCS	OUTLET CONTROL STRUCTURE
PD	PERIMETER DRAIN
PERF	PERFORATED
PVC	POLYVINYL CHLORIDE PIPE
R&D	REMOVE AND DISPOSE
R&S	REMOVE AND STOCKPILE
RD	ROOF DRAIN
RIM	RIM ELEVATION
SMH	SEWER MANHOLE
SS	SEWER SERVICE
TC	TOP OF CURB ELEVATION
TW	TOP OF WALL ELEVATION
THH	TELECOM HANDHOLE
TMH	TELECOM MANHOLE
TOP	TOP OF PIPE
TOD	TOP OF DUCT BANK
TYP	TYPICAL
UD	UNDERDRAIN
USD	UNDERSLAB DRAIN
VGC	VERTICAL GRANITE CURB
WQI	WATER QUALITY INLET
WQS	WATER QUALITY STRUCTURE
WV	WATER VALVE

tat

© The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

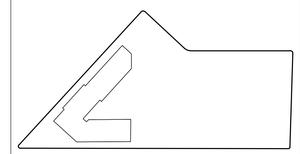
Consultant:
Nitsch Engineering
www.nitscheng.com
2 Center Plaza, Suite 430
Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472
► Civil Engineering
► Land Surveying
► Transportation Engineering
► Structural Engineering
► Green Infrastructure
► Planning
► GIS

Revision:

Architect of Record:

COMMONWEALTH OF MASSACHUSETTS
JONATHAN R. HEDLUND
CIVIL
NO. 52304
REGISTERED PROFESSIONAL ENGINEER
6/11/2021

Drawn: SB
Checked: JRH
Scale: N/A
Key Plan:



Project Name:
Old Colony
Phase Four

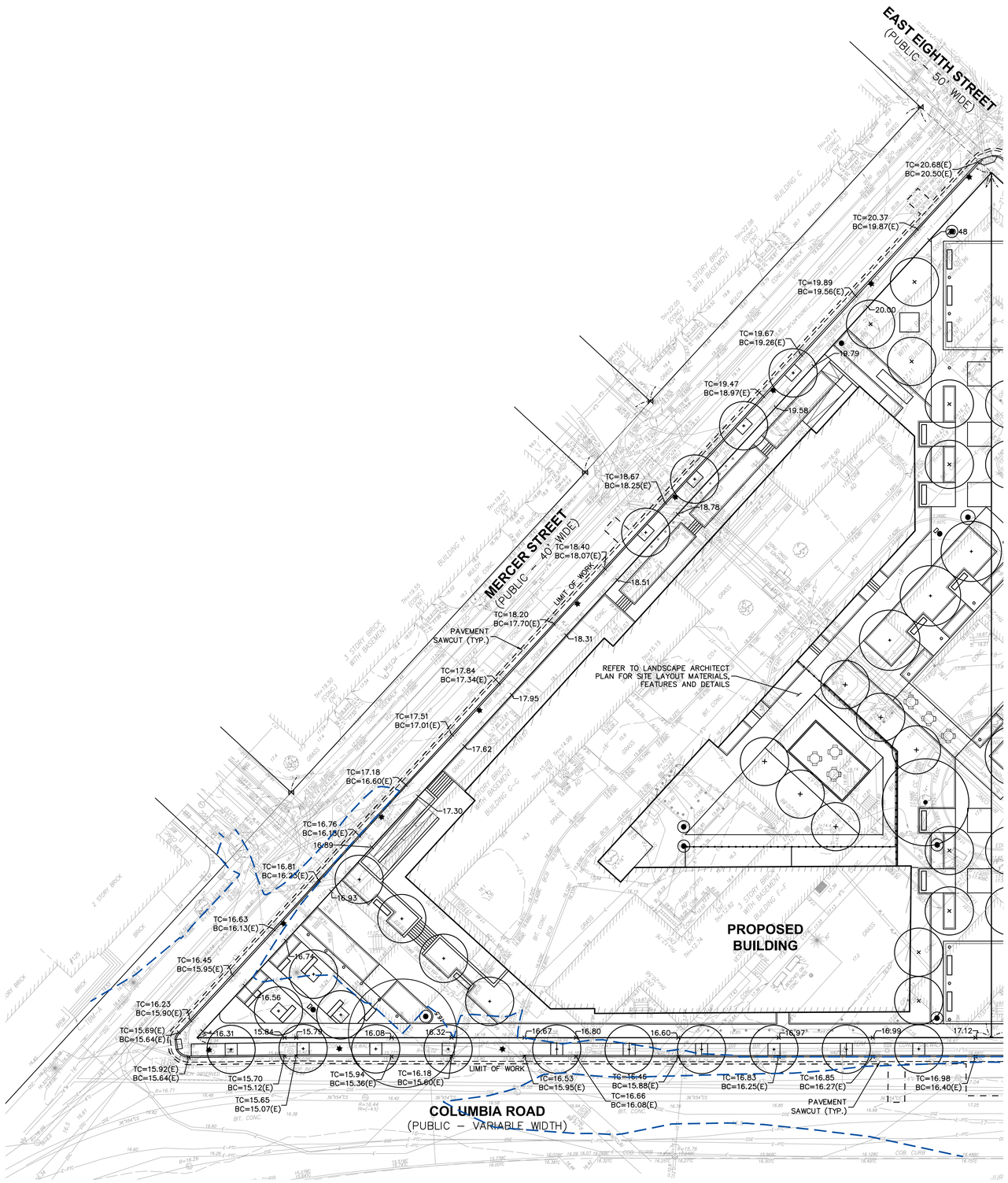
110 MERCER STREET
BOSTON, MA

Sheet Name:
SITE UTILITY PLAN

Project Number:
18177.00

Issue Date:
June 07, 2021

Sheet Number:
C0.00



NOTES:
1. REFER TO SHEET C0.00 FOR CIVIL NOTES, LEGEND AND ABBREVIATIONS.
2. REFER TO SHEET C5.01 FOR SITE DETAILS.

SCALE:
1" = 20'
20 10 0 20 40

tat

© The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

Consultant:

Nitsch Engineering
www.nitscheng.com
2 Center Plaza, Suite 430
Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472
- Civil Engineering
- Land Surveying
- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

Revision:

Architect of Record:

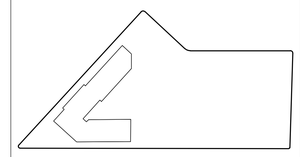
COMMONWEALTH OF MASSACHUSETTS
JONATHAN R. HEDLUND
CIVIL
NO. 52304
REGISTERED PROFESSIONAL ENGINEER
6/11/2021

Drawn: SB

Checked: JRH

Scale: 1"=20'

Key Plan:



Project Name:
Old Colony
Phase Four

110 MERCER STREET
BOSTON, MA

Sheet Name:
SITE GRADING PLAN

Project Number:
18177.00

Issue Date:
June 07, 2021

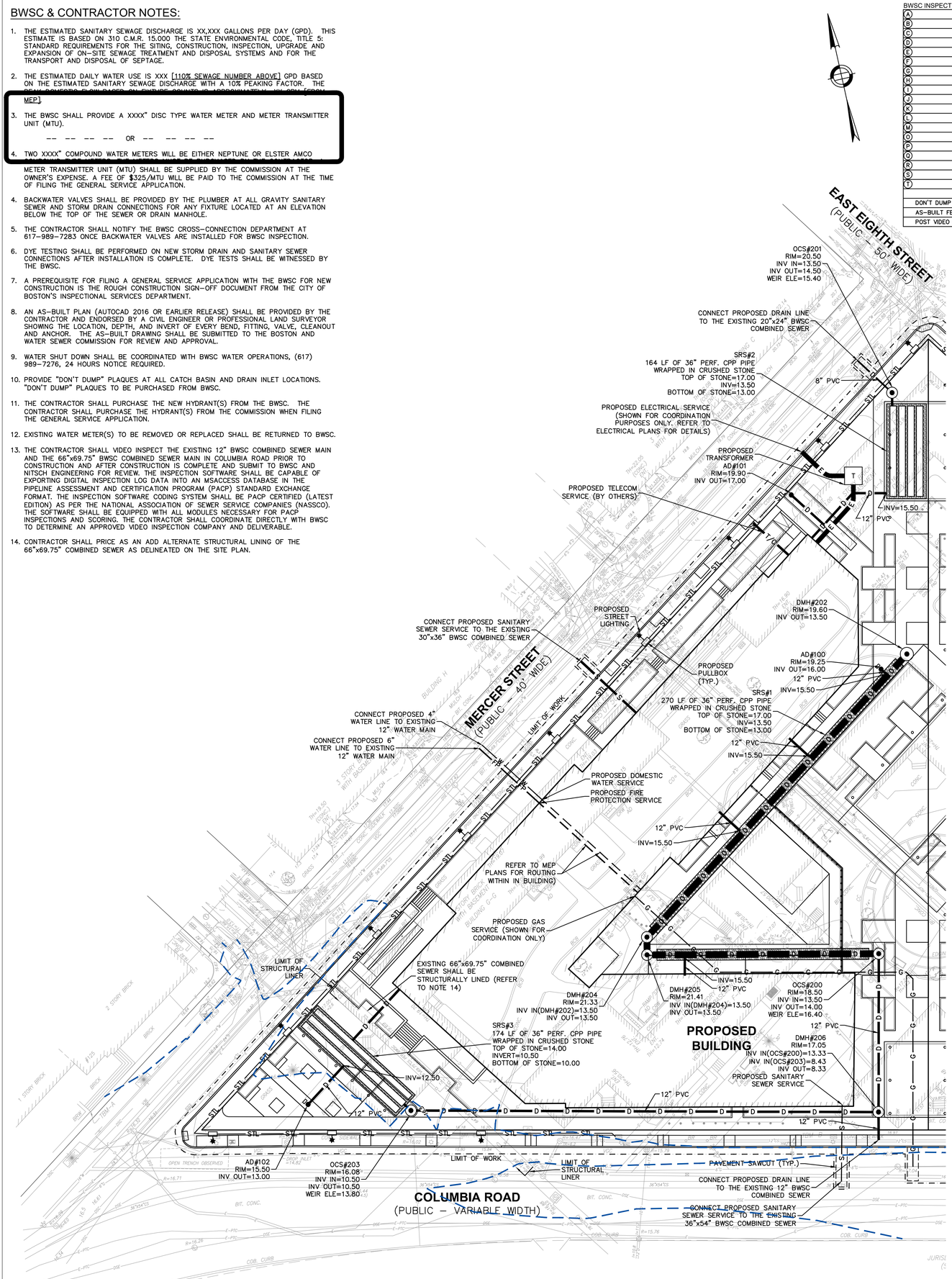
Sheet Number:
C1.00

BWSC & CONTRACTOR NOTES:

1. THE ESTIMATED SANITARY SEWAGE DISCHARGE IS XX,XXX GALLONS PER DAY (GPD). THIS ESTIMATE IS BASED ON 310 C.M.R. 15.000 THE STATE ENVIRONMENTAL CODE, TITLE 5: STANDARD REQUIREMENTS FOR THE SITING, CONSTRUCTION, INSPECTION, UPGRADE AND EXPANSION OF ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS AND FOR THE TRANSPORT AND DISPOSAL OF SEPTAGE.
2. THE ESTIMATED DAILY WATER USE IS XXX [110% SEWAGE NUMBER ABOVE] GPD BASED ON THE ESTIMATED SANITARY SEWAGE DISCHARGE WITH A 10% PEAKING FACTOR. THE PEAK CONNECTED FLOW RATE ON ENTIRE PROJECT IS APPROXIMATELY XX GPM [FROM MEP].
3. THE BWSC SHALL PROVIDE A XXXX" DISC TYPE WATER METER AND METER TRANSMITTER UNIT (MTU).

   -- -- -- -- OR -- -- -- --
4. TWO XXXX" COMPOUND WATER METERS WILL BE EITHER NEPTUNE OR ELSTER AMCO METER TRANSMITTER UNIT (MTU) SHALL BE SUPPLIED BY THE COMMISSION AT THE OWNER'S EXPENSE. A FEE OF $325/MTU WILL BE PAID TO THE COMMISSION AT THE TIME OF FILING THE GENERAL SERVICE APPLICATION.
4. BACKWATER VALVES SHALL BE PROVIDED BY THE PLUMBER AT ALL GRAVITY SANITARY SEWER AND STORM DRAIN CONNECTIONS FOR ANY FIXTURE LOCATED AT AN ELEVATION BELOW THE TOP OF THE SEWER OR DRAIN MANHOLE.
5. THE CONTRACTOR SHALL NOTIFY THE BWSC CROSS-CONNECTION DEPARTMENT AT 617-989-7283 ONCE BACKWATER VALVES ARE INSTALLED FOR BWSC INSPECTION.
6. DYE TESTING SHALL BE PERFORMED ON NEW STORM DRAIN AND SANITARY SEWER CONNECTIONS AFTER INSTALLATION IS COMPLETE. DYE TESTS SHALL BE WITNESSED BY THE BWSC.
7. A PREREQUISITE FOR FILING A GENERAL SERVICE APPLICATION WITH THE BWSC FOR NEW CONSTRUCTION IS THE ROUGH CONSTRUCTION SIGN-OFF DOCUMENT FROM THE CITY OF BOSTON'S INSPECTIONAL SERVICES DEPARTMENT.
8. AN AS-BUILT PLAN (AUTOCAD 2016 OR EARLIER RELEASE) SHALL BE PROVIDED BY THE CONTRACTOR AND ENDORSED BY A CIVIL ENGINEER OR PROFESSIONAL LAND SURVEYOR SHOWING THE LOCATION, DEPTH, AND INVERT OF EVERY BEND, FITTING, VALVE, CLEANOUT AND ANCHOR. THE AS-BUILT DRAWING SHALL BE SUBMITTED TO THE BOSTON AND WATER SEWER COMMISSION FOR REVIEW AND APPROVAL.
9. WATER SHUT DOWN SHALL BE COORDINATED WITH BWSC WATER OPERATIONS, (617) 989-7276, 24 HOURS NOTICE REQUIRED.
10. PROVIDE "DON'T DUMP" PLAQUES AT ALL CATCH BASIN AND DRAIN INLET LOCATIONS. "DON'T DUMP" PLAQUES TO BE PURCHASED FROM BWSC.
11. THE CONTRACTOR SHALL PURCHASE THE NEW HYDRANT(S) FROM THE BWSC. THE CONTRACTOR SHALL PURCHASE THE HYDRANT(S) FROM THE COMMISSION WHEN FILING THE GENERAL SERVICE APPLICATION.
12. EXISTING WATER METER(S) TO BE REMOVED OR REPLACED SHALL BE RETURNED TO BWSC.
13. THE CONTRACTOR SHALL VIDEO INSPECT THE EXISTING 12" BWSC COMBINED SEWER MAIN AND THE 66"x69.75" BWSC COMBINED SEWER MAIN IN COLUMBIA ROAD PRIOR TO CONSTRUCTION AND AFTER CONSTRUCTION IS COMPLETE AND SUBMIT TO BWSC AND NITSCH ENGINEERING FOR REVIEW. THE INSPECTION SOFTWARE SHALL BE CAPABLE OF EXPORTING DIGITAL INSPECTION LOG DATA INTO AN MSACCESS DATABASE IN THE PIPELINE ASSESSMENT AND CERTIFICATION PROGRAM (PACP) STANDARD EXCHANGE FORMAT. THE INSPECTION SOFTWARE CODING SYSTEM SHALL BE PACP CERTIFIED (LATEST EDITION) AS PER THE NATIONAL ASSOCIATION OF SEWER SERVICE COMPANIES (NASSCO). THE SOFTWARE SHALL BE EQUIPPED WITH ALL MODULES NECESSARY FOR PACP INSPECTIONS AND SCORING. THE CONTRACTOR SHALL COORDINATE DIRECTLY WITH BWSC TO DETERMINE AN APPROVED VIDEO INSPECTION COMPANY AND DELIVERABLE.
14. CONTRACTOR SHALL PRICE AS AN ADD ALTERNATE STRUCTURAL LINING OF THE 66"x69.75" COMBINED SEWER AS DELINEATED ON THE SITE PLAN.

BWSC INSPECTION SIGN OFF LIST	INSPECTOR	DATE	COMMENT	DYE TEST	SAWCUT
A					
B					
C					
D					
E					
F					
G					
H					
I					
J					
K					
L					
M					
O					
P					
Q					
R					
S					
T					
DON'T DUMP PLAQUES (4)					
AS-BUILT FEE					
POST VIDEO INSPECTION					



STORMWATER RECHARGE CALCULATIONS:
BWSC requires stormwater recharge in the volume equal to 1.25" of storage over the impervious area of the site.

REQUIRED STORAGE VOLUME

Impervious Area= 45,559 sf
1.25" of runoff (0.104 ft) over the area = 0.104' x 45,559 = 4,746 cf

PROVIDED STORAGE VOLUME

Subsurface Recharge System #1 (SRS#1):

270 of 36" pipe storage = 270 ft x (3.14 x (1.5 ft)²) x 0.99 = 1,890 cf

1,360 sf of crushed stone =
[(area stone x depth of storage) - (pipe volume)] x 30%=
[(1,360 sf x 3.4 ft) - 1,890 cf)] x 30% = 820 cf

Total Storage (36" Pipe + Crushed Stone) = (1,890 cf + 820 cf) = 2,710 cf

Subsurface Recharge System #2 (SRS#2):

123 of 36" pipe storage = 123 ft x (3.14 x (1.50 ft)²) x 0.67 = 582 cf

559 sf of crushed stone =
[(area stone x depth of storage) - (pipe volume)] x 30%=
[(559 sf x 2.4 ft) - 582)] x 30% = 227 cf

Total Storage (36" Pipe + Crushed Stone) = 582 cf + 227 cf = 809 cf

Subsurface Recharge System #3 (SRS#3):

174 of 36" pipe storage = 174 ft x 3.14 x (1.50 ft)² = 1,230 cf

780 sf of crushed stone =
[(area stone x depth of storage) - (pipe volume)] x 30%=
[(780 sf x 3.8 ft) - 1,230)] x 30% = 520 cf

Total Storage (36" Pipe + Crushed Stone) = 1,230 cf + 520 cf = 1,750 cf

Total Storage (24" Pipe + 36" Pipe) = 2,710 cf + 809 cf + 1,750 = 5,269 cf

Required Storage = 4,746 cf < 5,269 cf = Storage Provided

SCALE:
1" = 20'
20 10 0 20 40

NITSCH PROJECT NO. 8246.6
BWSC FILE #20XXX

FOR BWSC USE ONLY

SITE ADDRESS:
BOSTON, MASSACHUSETTS 02127

EXISTING ACCOUNT NUMBERS (TO BE ELIMINATED):

PROPOSED ACCOUNT NUMBERS:

WARD / PARCEL NUMBER:

TYPE OF PREMISE:
HOUSING DEVELOPMENT

OWNER CONTACT INFORMATION:
BEACON COMMUNITIES LLC
100 HIGH STREET
BOSTON, MASSACHUSETTS 02110

CONTACT:
DARCY JAMESON
617-574-1132

tat

© The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

Consultant:
Nitsch Engineering
www.nitscheng.com
2 Center Plaza, Suite 430
Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472
- Civil Engineering
- Land Surveying
- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

Revision:

Architect of Record:

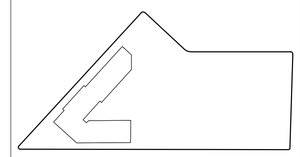
COMMONWEALTH OF MASSACHUSETTS
JONATHAN R. HEDLUND
CIVIL
NO. 52304
REGISTERED PROFESSIONAL ENGINEER
6/11/2021

Drawn: SB

Checked: JRH

Scale: 1"=20'

Key Plan:



Project Name:
Old Colony
Phase Four

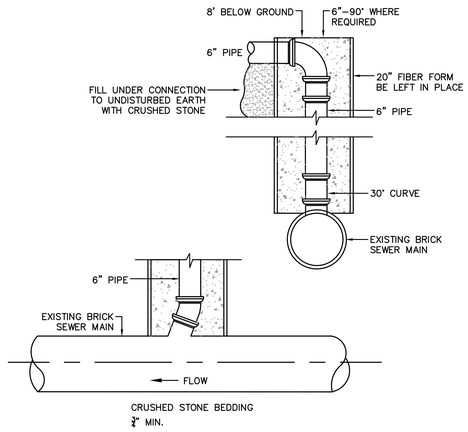
110 MERCER STREET
BOSTON, MA

Sheet Name:
SITE UTILITY PLAN

Project Number:
18177.00

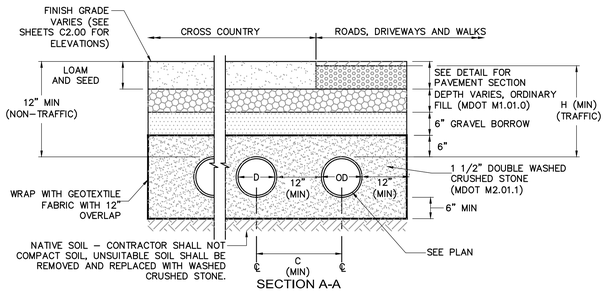
Issue Date:
June 07, 2021

Sheet Number:
C2.00



TYPICAL CHIMNEY DETAIL

NOT TO SCALE

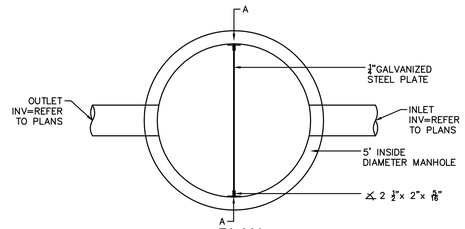


SECTION A-A

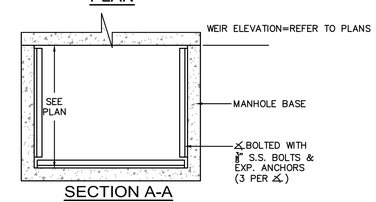
RECHARGE SYSTEM	BOTTOM OF STONE	INVERT OF PIPE	TOP OF STONE	FINISHED GRADE

RECHARGE SYSTEM SECTION

NOT TO SCALE



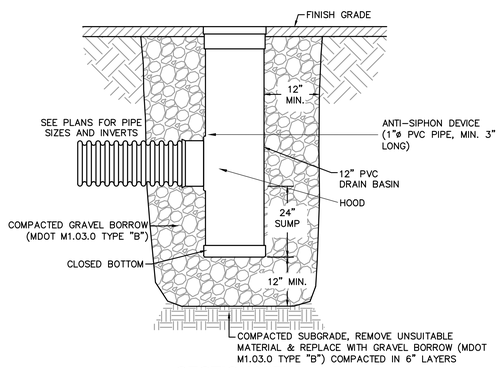
PLAN



SECTION A-A

OUTLET CONTROL STRUCTURE

NOT TO SCALE

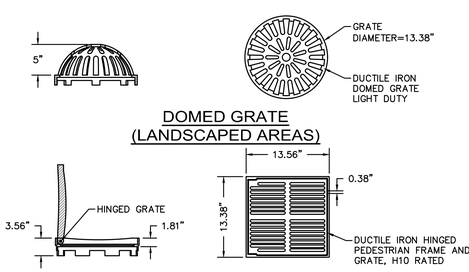


SECTION VIEW

NOTES:
1. FRAME AND GRATE SHALL BE DUCTILE IRON CONFORMING TO ASTM A536 GRADE 70-50-05.
2. 12" AREA DRAINS SHALL BE NYLOPLAST MODEL 2812 AS MANUFACTURED BY ADVANCED DRAINAGE SYSTEMS, INC., OR APPROVED EQUAL.
3. AREA DRAINS SHALL BE CUSTOM MANUFACTURED ACCORDING TO THE PLANS AND DETAIL.
4. CASTINGS SHALL BE FURNISHED WITH A BLACK PAINT.
5. SEE PLANS FOR LAYOUT AND ELEVATIONS OF DRAIN PIPES TO AREA DRAINS.

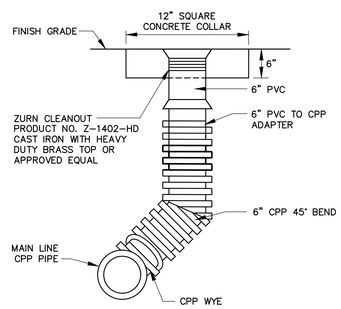
12" AREA DRAIN DETAIL

NOT TO SCALE



DOMED GRATE (LANDSCAPED AREAS)

PEDESTRIAN GRATE (ADA COMPLIANT) (WALKWAY AREAS)



TYPICAL CLEANOUT DETAIL

NOT TO SCALE

tat

© The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

Consultant:

Nitsch Engineering
www.nitscheng.com
2 Center Plaza, Suite 430
Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472
- Civil Engineering
- Land Surveying
- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

Revision:

Architect of Record:

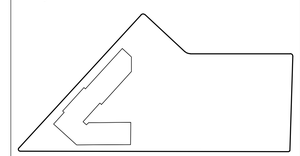
COMMONWEALTH OF MASSACHUSETTS
JONATHAN R. HEDLUND
CIVIL
NO. 52304
REGISTERED PROFESSIONAL ENGINEER
6/11/2021

Drawn: SB

Checked: JRH

Scale: N/A

Key Plan:



Project Name:

Old Colony
Phase Four

110 MERCER STREET
BOSTON, MA

Sheet Name:

CIVIL DETAILS I

Project Number:

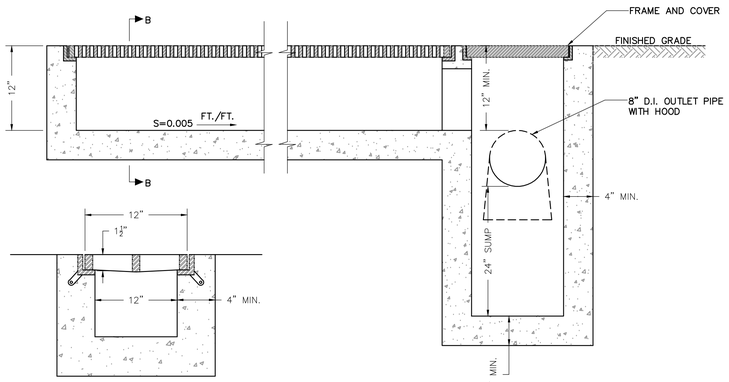
18177.00

Issue Date:

June 07, 2021

Sheet Number:

C3.00



SECTION B-B

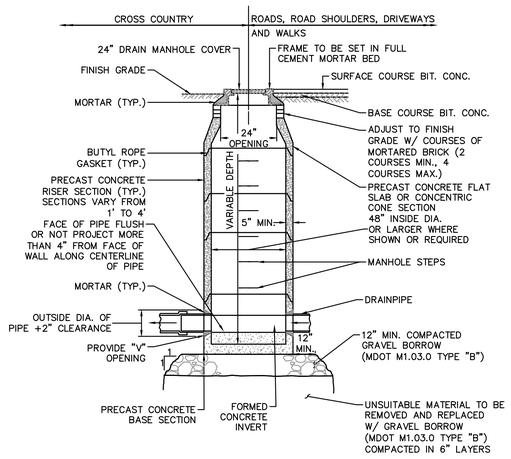
NOTES:

1. TRENCH DRAIN AND GRATE SHALL MEET HS-20 LOAD RAILING.

2. TRENCH DRAIN GRATE SHALL BE DUCTILE IRON SLOTTED, AND MEET ADA REQUIREMENTS.

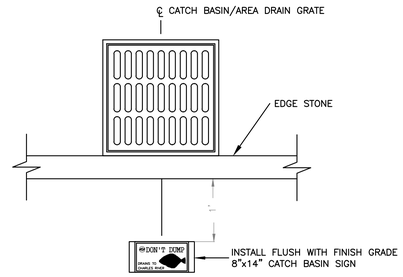
12" TRENCH DRAIN DETAIL IN CONCRETE WALK

NOT TO SCALE



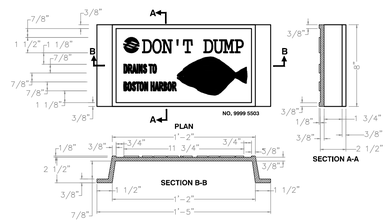
TYPICAL DRAIN MANHOLE DETAIL

NOT TO SCALE

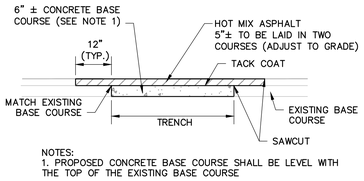


BWSC CATCH BASIN SIGN INSTALLATION

NOT TO SCALE



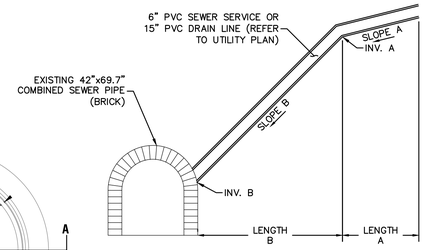
"DON'T DUMP PLAQUE"

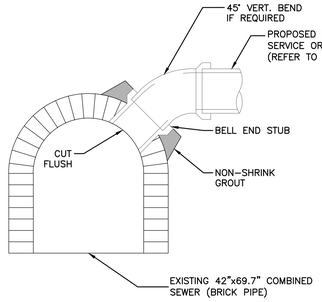


NOTES:
1. PROPOSED CONCRETE BASE COURSE SHALL BE LEVEL WITH THE TOP OF THE EXISTING BASE COURSE

PAVEMENT RESTORATION OVER TRENCH DETAIL

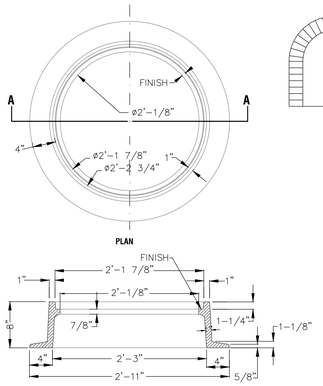
NOT TO SCALE





CONNECTION INTO EXISTING 42"x69.7" COMBINED SEWER DETAIL

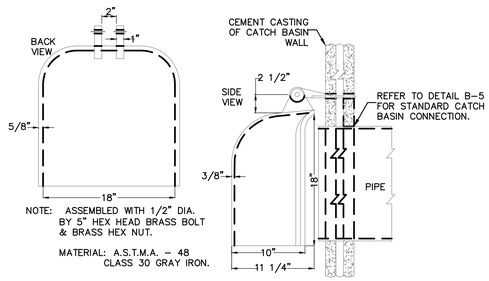
NOT TO SCALE



SECTION A-A

BWSC MANHOLE FRAME AND COVER

NOT TO SCALE

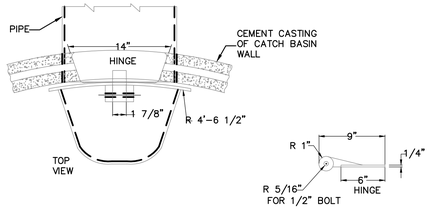


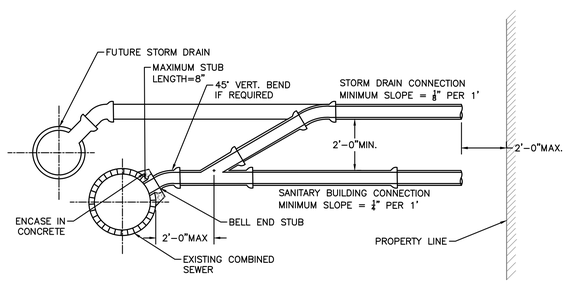
NOTE: ASSEMBLED WITH 1/2" DIA. BY 5" HEX HEAD BRASS BOLT & BRASS HEX NUT.

MATERIAL: A.S.T.M.A. - 48 CLASS 30 GRAY IRON.

CATCH BASIN HOOD

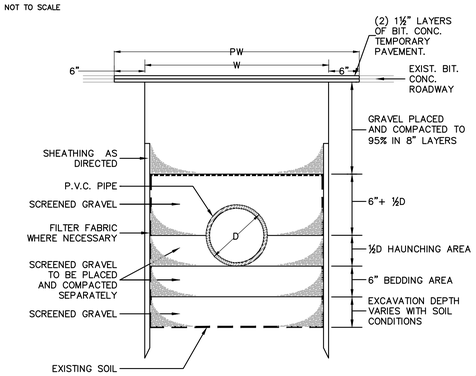
NOT TO SCALE





TYPICAL CONNECTION TO EXISTING COMBINED SEWER

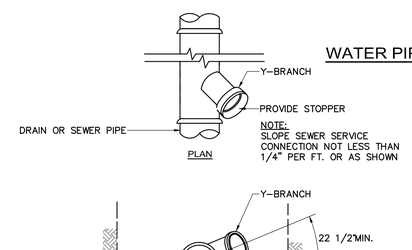
NOT TO SCALE



W = MAXIMUM TRENCH WIDTH
PW = MAXIMUM PAVING WIDTH = W+1'-0"
D = OUTSIDE DIAMETER
UNSHEATHED TRENCH: W = D+2' (3'-0"MIN.)
SHEATHED TRENCH: W = D+2'+ SHEATHING WIDTH:
4'-0"MIN. W/O WALERS
5'-0"MIN. W/WALERS
TRENCH BOX OR HYDRAULIC SHORING:
W = D+2'+ [WALL SHIELD WIDTH ± 8"] + 1' FOR TRENCH BOX

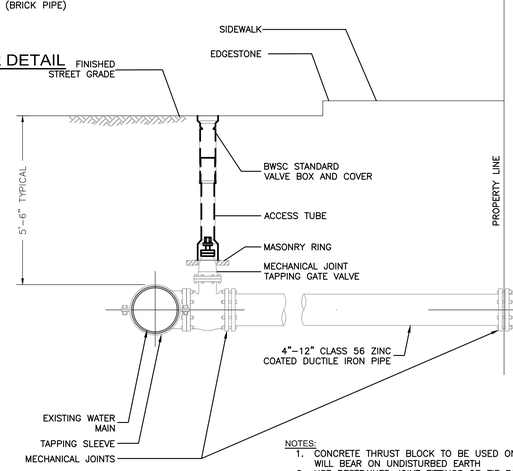
TRENCH DETAIL FOR PVC PIPE

SCALE: NOT TO SCALE



WYE BRANCH FOR PIPE SERVICE CONNECTION 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

WATER PIPE CONNECTION WITH TAPPING SLEEVE AND GATE VALVE DETAIL (SEE BWSC DETAILS)

NOT TO SCALE

tat

© The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

Consultant:

Nitsch Engineering

www.nitscheng.com
2 Center Plaza, Suite 430
Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472

- Civil Engineering
- Land Surveying
- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

Revision:

Architect of Record:

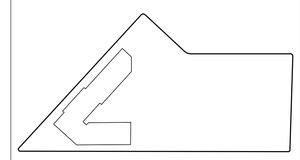
COMMONWEALTH OF MASSACHUSETTS
JONATHAN R. HEDLUND
CIVIL
NO. 52304
REGISTERED PROFESSIONAL ENGINEER
6/11/2021

Drawn: SB

Checked: JRH

Scale: N/A

Key Plan:



Project Name:

Old Colony
Phase Four

110 MERCER STREET
BOSTON, MA

Sheet Name:

CIVIL DETAILS II

Project Number:

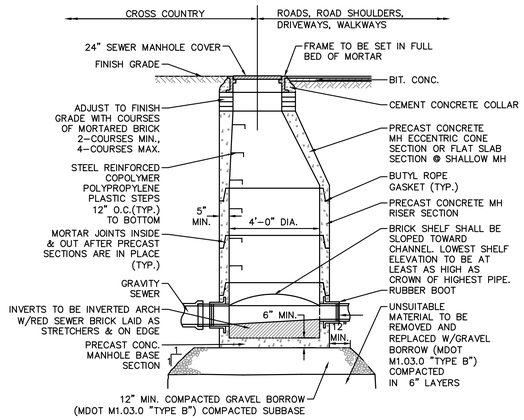
18177.00

Issue Date:

June 07, 2021

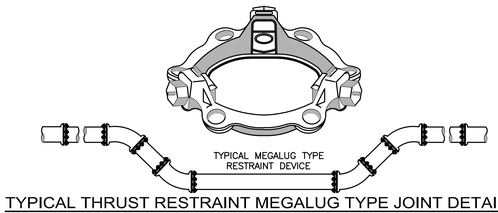
Sheet Number:

C3.01



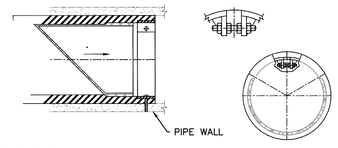
TYPICAL SEWER MANHOLE DETAIL

NOT TO SCALE



TYPICAL THRUST RESTRAINT MEGALUG TYPE JOINT DETAIL

NOT TO SCALE

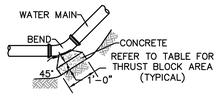


PIN PER NOTE #4
RECOMMENDED PINNING CONFIGURATION
(SUPPLIED BY CUSTOMER) (SEE I.O.M.) NOT TO SCALE

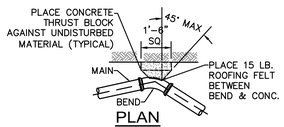
NOTES:
1. PIPE INSIDE DIAMETER – MUST BE SUPPLIED
2. CLAMP INSTALLED IN UPSTREAM OR DOWNSTREAM CUFF DEPENDING ON INSTALLATION ORIENTATION
3. MAXIMUM ALLOWABLE BACK PRESSURE – 40.0 FEET
4. IT IS RECOMMENDED TO BOLT OR PIN TIDEFLEX TO PIPE AS SHOWN, 4 PLACES 90° APART

BACKFLOW PREVENTER TIDEFLEX CHECKMATE INLINE CHECK VALVE DETAIL

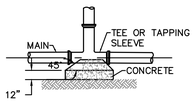
NOT TO SCALE



PLAN



PLAN



PLAN

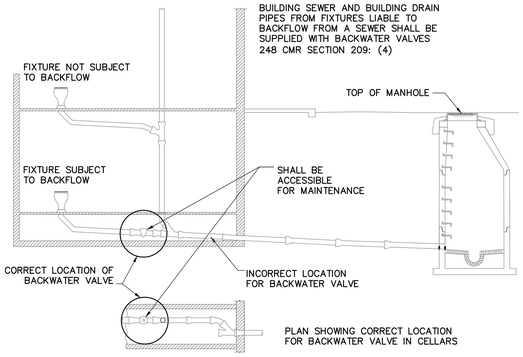
NOTES:
1. THRUST BLOCKS TO BE USED ON ALL PRESSURE PIPES AT HORIZONTAL AND VERTICAL BENDS GREATER OR EQUAL TO 45°, TEES AND DEAD ENDS.
2. FOR FITTINGS WITH LESS THAN 45° DEFLECTION USE BEARING AREAS FOR 45° BEND.
3. BEARING AREAS BASED ON HORIZONTAL PASSIVE SOIL PRESSURE OF 2000 PSF AND A MINIMUM INTERNAL WATER PRESSURE OF 175 PSIG. JOINTS SHALL NOT BE ENCASED IN CONCRETE, BEARING AREAS MAY BE DISREGARDED FOR TRENCHES IN ROCK WHERE THE TOP OF THE ROCK FACE IS AT OR ABOVE THE CROWN OF THE PIPE. HOWEVER, CONCRETE BACKING SHALL BE PLACED BETWEEN THE PIPE AND ROCK FACE.

TABLE OF BEARING AREAS IN SQUARE FEET AGAINST UNDISTURBED MATERIAL FOR FITTING. *

SIZE OF MAIN (INCHES)	90° BEND (S.F.)	45° BEND (S.F.)	DEAD END (S.F.)
4	2.3	1.3	1.6
6	4.7	2.5	3.3
8	8.0	4.5	6.0
12	17.0	9.5	12.0

THRUST BLOCK DETAILS

NOT TO SCALE

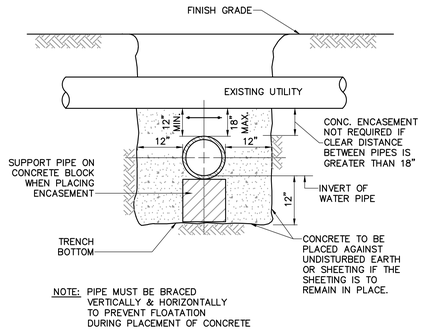


NOTE: ALL PLUMBING FIXTURES BELOW THE LEVEL OF THE TOP OF THE MANHOLE OF THE SEWER SERVICING THE FIXTURE(S) SHALL BE CONSIDERED AS BEING SUBJECT TO BACKFLOW AND SHALL BE SUPPLIED WITH BACKWATER VALVES.

BACK WATER VALVES TO BE LOCATED IN BUILDING AND DESIGNED, DETAILED, AND SPECIFIED BY THE PLUMBING ENGINEER. SHOWN FOR PERMITTING ONLY.

STANDARD BACKWATER VALVE

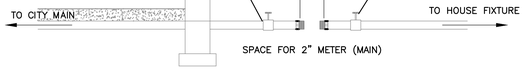
NOT TO SCALE



NOTE: PIPE MUST BE BRACED VERTICALLY & HORIZONTALLY TO PREVENT FLOATATION DURING PLACEMENT OF CONCRETE

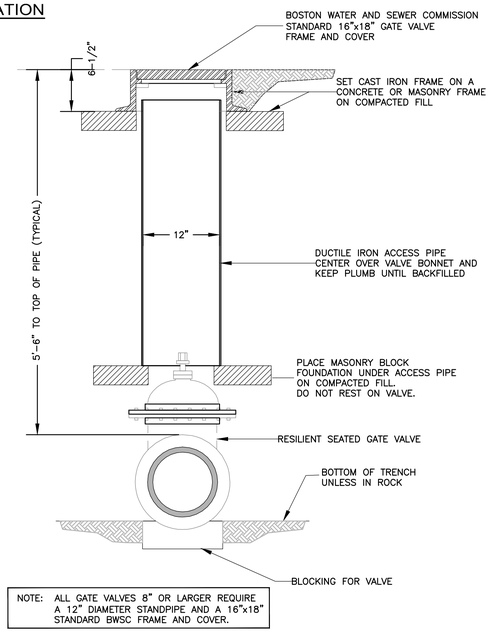
CONCRETE ENCASEMENT DETAIL AT UTILITY CROSSINGS

NOT TO SCALE



CORRECT PLUMBING FOR METER INSTALLATION (SEE BWSC DETAILS)

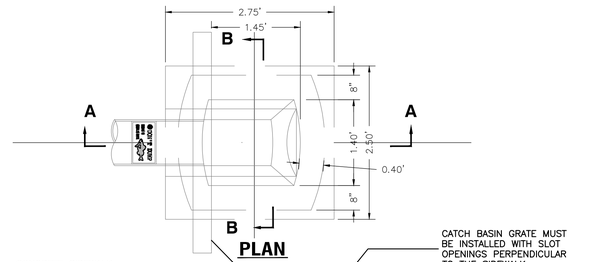
NOT TO SCALE



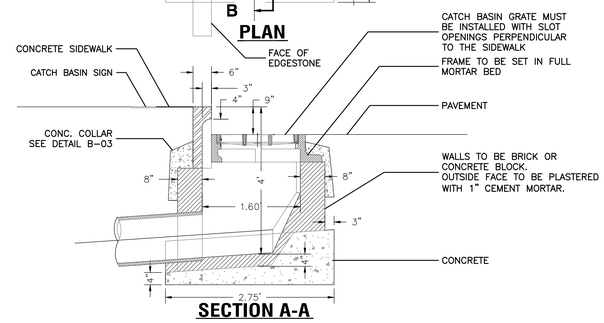
NOTE: ALL GATE VALVES 8" OR LARGER REQUIRE A 12" DIAMETER STANDPIPE AND A 16"x18" STANDARD BWSC FRAME AND COVER.

GATE VALVE DETAIL

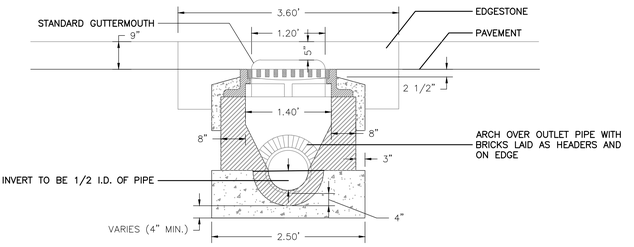
NOT TO SCALE



PLAN



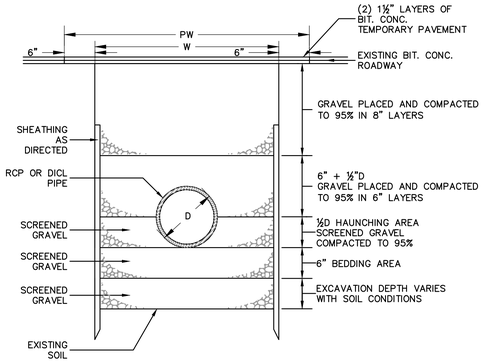
SECTION A-A



SECTION B-B

DROP INLET WITH GUTTERMOUTH DETAIL (SEE BWSC DETAILS)

NOT TO SCALE



W = MAXIMUM TRENCH WIDTH
PW = MAXIMUM PAVING WIDTH = W+1'-0"
D = OUTSIDE DIAMETER
UNSHEATHED TRENCH: W = D+2'(3'-0" MIN.)
SHEATHED TRENCH: W = D+2'+SHEATHING WIDTH:
4'-2"MIN. W/O WALERS
5'-0" MIN. W/WALERS
TRENCH BOX OR HYDRAULIC SHORING:
W = D+2' + [WALL SHIELD WIDTH ± 8"] + 1' FOR TRENCH BOX

TRENCH DETAIL FOR RCP OR DICL PIPE

NOT TO SCALE

tat

© The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

Consultant:
Nitsch Engineering
www.nitscheng.com
2 Center Plaza, Suite 430
Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472
- Civil Engineering
- Land Surveying
- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

Revision:

Architect of Record:

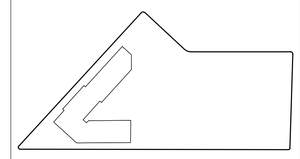
COMMONWEALTH OF MASSACHUSETTS
JONATHAN R. HEDLUND
CIVIL
NO. 52304
REGISTERED PROFESSIONAL ENGINEER
6/11/2021

Drawn: SB

Checked: JRH

Scale: N/A

Key Plan:



Project Name:
Old Colony
Phase Four

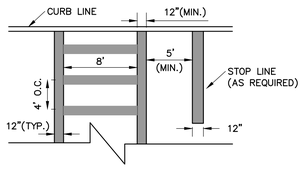
110 MERCER STREET
BOSTON, MA

Sheet Name:
CIVIL DETAILS III

Project Number:
18177.00

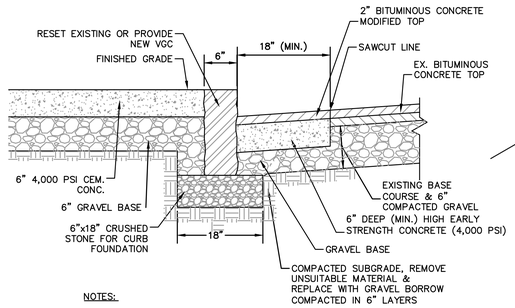
Issue Date:
June 07, 2021

Sheet Number:
C3.02



CROSSWALK DETAIL

NOT TO SCALE

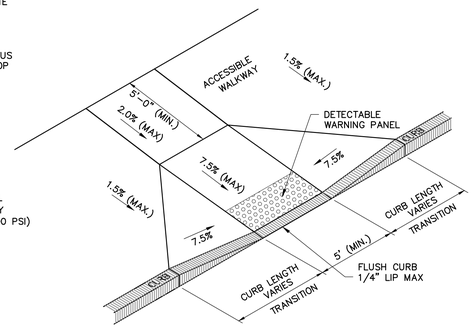


NOTES:

1. CONC. SIDEWALK WITH MEDIUM BROOM FINISH. DIRECTION OF FINISH TO BE PERPENDICULAR TO THE LONGITUDINAL DIRECTION OF PAVEMENT. CONTROL JOINTS SHALL BE PLACED AT 6' O.C., EXPANSION JOINTS 30' O.C.
2. SCORED JOINTS SHALL BE TOOLED TO MATCH EXISTING.

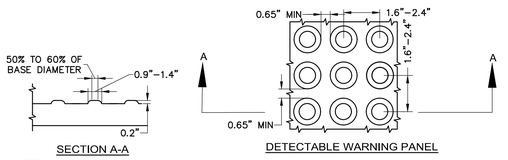
TYPICAL CURB AND SIDEWALK SECTION DETAIL

NOT TO SCALE



TYPICAL ACCESSIBLE RAMP DETAIL

NOT TO SCALE

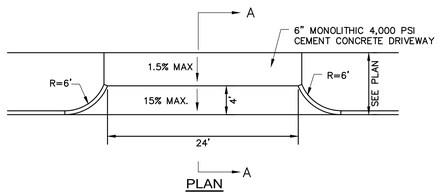


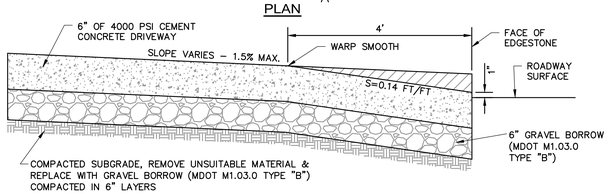
NOTES:

1. DETECTABLE WARNING PANELS SHALL BE PERMANENTLY APPLIED TO THE RAMP.
2. DETECTABLE WARNING PANELS SHALL CONTRAST VISUALLY WITH THE ADJACENT WALKWAY SURFACES PER THE FOLLOWING COLOR SCHEDULE:
   - PALE YELLOW, CONFORMING TO FEDERAL NO. 23594
3. DETECTABLE WARNING PANELS SHALL BE AS MANUFACTURED BY ADA SOLUTIONS, INC. OF NORTH BILLERICA, MA OR AN APPROVED EQUAL.
4. DETECTABLE WARNING PANELS SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS.

DETECTABLE WARNING PANEL (YELLOW) FOR PEDESTRIAN RAMPS

NOT TO SCALE

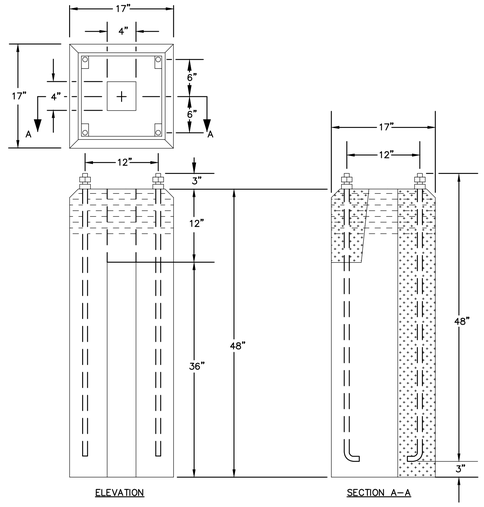




SECTION A-A CONCRETE DRIVEWAY

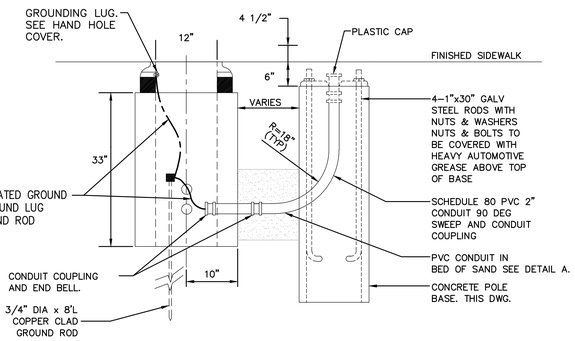
TYPICAL DRIVEWAY-BOSTON STANDARD DETAIL

NOT TO SCALE



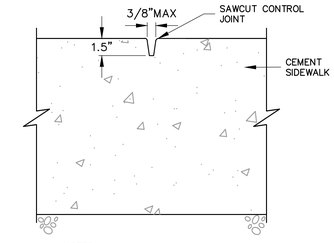
PRECAST LIGHT POLE BASE

NOT TO SCALE



STREET POLE BASE, HANDHOLE AND POLE FOUNDATION

NOT TO SCALE

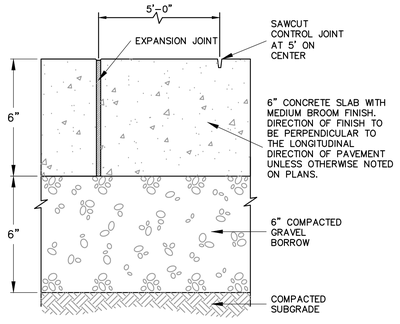


NOTES:

1. CONTROL JOINTS 5'–0" O.C. UNLESS SHOWN OTHERWISE
2. SAWCUT EDGES AND JOINTS ALL PANELS.

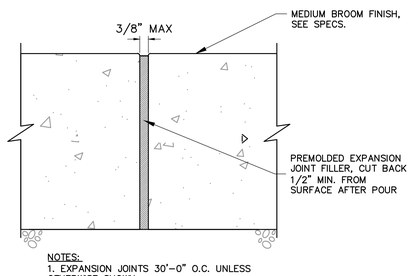
CONTROL JOINT

NTS



CEMENT CONCRETE SIDEWALK

NOT TO SCALE

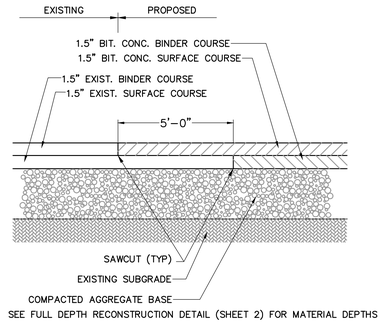


NOTES:

1. EXPANSION JOINTS 30'–0" O.C. UNLESS OTHERWISE SHOWN
2. SAWCUT EDGES AND JOINTS ALL PANELS.

EXPANSION JOINT

NOT TO SCALE



SEE FULL DEPTH RECONSTRUCTION DETAIL (SHEET 2) FOR MATERIAL DEPTHS

PAVEMENT MATCHING DETAIL

NOT TO SCALE

tat

© The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

Consultant:

Nitsch Engineering

www.nitscheng.com
2 Center Plaza, Suite 430
Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472

- Civil Engineering
- Land Surveying
- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

Revision:

Architect of Record:

COMMONWEALTH OF MASSACHUSETTS
JONATHAN R. HEDLUND
CIVIL
NO. 52304
REGISTERED PROFESSIONAL ENGINEER

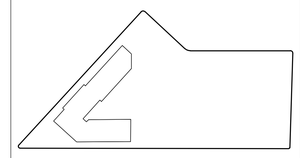
6/11/2021

Drawn: SB

Checked: JRH

Scale: N/A

Key Plan:



Project Name:

Old Colony
Phase Four

110 MERCER STREET
BOSTON, MA

Sheet Name:

CIVIL DETAILS IV

Project Number:

18177.00

Issue Date:

June 07, 2021

Sheet Number:

C3.03

Attachment

Stormwater Report Old Colony Phase IV
prepared by Nitsch Engineering, Inc. dated June 11, 2021
stamped and signed by Jonathan R. Hedlund on June 11, 2021

Nitsch Engineering

June 11, 2021

STORMWATER REPORT

For

OLD COLONY PHASE IV
Boston, Massachusetts

Prepared for:

The Architectural Team, Inc.
50 Commandant's Way
Admiral's Hill
Chelsea, MA 2150

Prepared by:

NITSCH ENGINEERING, INC.
2 Center Plaza, Suite 430
Boston, MA 02108

Nitsch Project #8246.6

Building better communities with you.

TABLE OF CONTENTS

FIGURES

APPENDICES

1.0 INTRODUCTION

Nitsch Engineering has prepared this Stormwater Report to support the Notice of Intent application (prepared by LEC Environmental Consultants, Inc.) for the proposed Old Colony Phase IV project in Boston, MA. The Project site is located at 110 Mercer Street in Boston, Massachusetts (subsequently referred to as the "Site"). The Project consists of the construction of an residential building along with associated landscape and hardscape improvements and utility services. The Project includes a stormwater management system, which has been designed to comply with and exceed the requirements of the City of Boston Rules and Regulations and the Massachusetts Department of Environmental Protection (DEP) Stormwater Management Standards.

2.0 EXISTING CONDITIONS

The Site is located at 110 Mercer Street, Boston, Massachusetts (Figures 1 through 4). The site is bounded by Columbia Road to the south, East Eighth Street to the north, Old Colony Phase V to the east and Mercer Street to the west. Currently the site is developed with existing residential buildings, landscape and hardscape features and is approximately 66% impervious in surface cover. The existing site contains 18,357± square-feet of roof area compiled of portions of existing on-site residential buildings along with associated driveways, parking, and utilities.

2.1 Existing Drainage Infrastructure

Stormwater generated by the existing site is collected using catch basins and area drains and is piped via a closed drainage system to a 66"x69.75" BWSC Combined Sewer main. The existing stormwater management system was constructed prior to the 2008 MassDEP Stormwater Management Standards, and the Site provides minimal peak flow attenuation, water quality treatment, and groundwater recharge.

2.2 NRSC Soil Designations

The Soil Classification Summary (Table 1) outlines the Natural Resources Conservation Services (NRCS) designation of the soil series at the Site. The majority of soils are classified as Udorthents with a hydrologic soil group (HSG) rating of D, indicating that the soils have a low infiltrative capacity (Figure 7).

Table 1. NRCS Soil Classification Summary

Soil Unit	Soil Series	Hydrologic Soil Group
603	Udorthents	D

2.3 On-Site Soil Investigations

McPhail Associates, LLC performed nineteen (19) boing test pits at the Site between April 8 and April 21, 2015. The site subsurface soils consists mostly of fill material ranging from 7 to 20 feet below the ground elevation and vary from loose to compact silt and sand. Natural organic deposit was also present from 1 to 6 feet below the surface. Groundwater was observed ranging from 7 to 13 feet below ground.

3.0 PROPOSED CONDITIONS

3.1 Project Description

The Project includes the construction of a 4-story residential building with associated hardscape and landscape areas and utilities. The Project is anticipated to increase the overall impervious area by 6,513 sf. Refer to Table 2 for a comparison of the existing and proposed land use for the Site.

Table 2. Proposed land use for Old Colony Phase IV (in square feet, sf)

Land Use	Existing Site (sf)	Proposed Site (sf)	Change
Buildings	18,357	24,268	+5,911
Site Impervious	20,689	21,291	+602
Site Pervious	19,945	13,432	-6,513
Total	58,991	58,991	---

3.2 Stormwater Management System

The Site will include the installation of a stormwater management system that is being designed to meet and exceed the MassDEP Stormwater Management Standards and the City of Boston Rules and Regulations. As a new development, the Project is required to provide peak flow and volume mitigation under the MassDEP Regulations and provide water quality treatment and groundwater recharge.

The Project has been designed using environmentally-sensitive site design and LID techniques. This design prevents the generation of stormwater and non-point source pollution flow paths, treating and infiltrating stormwater at its source, and protecting natural processes. Stormwater systems have been designed to model natural hydrologic features, including promoting infiltration throughout the site.

The proposed stormwater management system for the Old Colony Phase IV project will include area drains and subsurface recharge systems. Overflow from the proposed BMPs will be discharged to the existing 66”x69.75” BWSC Combined Sewer main.

Subsurface Recharge Systems

Stormwater will be collected and infiltrated using three subsurface recharge systems. Subsurface Infiltration System 1 is proposed to collect and infiltrate runoff from the proposed building and immediately adjacent impervious and landscaped site area and is located along inside perimeter of the proposed building. The system consists of a single row of 270 linear feet of 36” perforated CPP. The pipe will be enveloped within a crushed stone base that extends 6 inches above and below the pipe and 6 inches around the perimeter of the pipe. Subsurface Recharge System 1 is designed to reduce the peak rate and runoff volumes in the 2-, 10-, 25- and 100-year design storms.

Subsurface Recharge System 2 is proposed to collect and infiltrate runoff from the proposed building north of the proposed building. The system consists of four rows of 41 linear feet of 36” perforated CPP. The pipe will be enveloped within a crushed stone base that extends 6 inches above and below the pipe and 12s inches around the perimeter of the pipe. Subsurface Recharge System 2 is designed to reduce the peak rate and runoff volumes in the 2-, 10-, 25- and 100-year design storms.

Subsurface Recharge System 3 is proposed to collect and infiltrate runoff from the impervious and landscaped site area at the northern portion of the site and is located at the southern side of the site. The system consists of three rows of 58 linear feet of 36" perforated CPP. The pipe will be enveloped within a crushed stone base that extends 6 inches above and below the pipe and 6 inches around the perimeter of the pipe. Subsurface Infiltration System 2 is designed to reduce the peak rate and runoff volumes in the 2-, 10-, 25- and 100-year design storms.

Site impervious area that is tributary to these systems will be free of vehicular traffic and does not need to meet the 44% TSS removal pretreatment requirement set forth by the MassDEP Stormwater Standards for discharge to highly permeable soils.

3.3 Stormwater Management During Construction

The Site Contractor will be responsible for stormwater management of the active construction site and is required to adhere to the conditions of the 2017 Construction General Permit under the Environmental Protection. A draft SWPPP has been prepared in accordance with the MassDEP Stormwater Management Standards and the 2017 Construction General Permit (Appendix F).

4.0 STORMWATER MANAGEMENT ANALYSIS

4.1 Methodology

Nitsch Engineering completed a hydrologic analysis of the existing project site utilizing Soil Conservation Service (SCS) Runoff Curve Number (CN) methodology. The SCS method calculates the rate at which the runoff reaches the design point considering several factors: the slope and flow lengths of the subcatchment area, the soil type of the subcatchment area, and the type of surface cover in the subcatchment area. HydroCAD Version 10.00 computer modeling software was used in conjunction with the SCS method to determine the peak runoff rates and runoff volumes for the 2-, 10-, 25-, and 100-year, 24-hour storm events. The proposed project site is being analyzed with the same methodology.

The Site was divided into multiple drainage areas, or subcatchments, which drain to the design points along the property boundary and within the site. For each subcatchment area, SCS Runoff Curve Numbers (CNs) were selected by using the cover type and hydrologic soil group of each area. The peak runoff rates and runoff volumes for the 2-, 10-, 25- and 100-year 24-hour storm events were then determined by inputting the drainage areas, CNs, and time of concentration (T_c) paths into the HydroCAD model.

4.2 HydroCAD Version 10.00

The HydroCAD computer program uses SCS and TR-20 methods to model drainage systems. TR-20 (Technical Release 20) was developed by the Soil Conservation Service to estimate runoff and peak discharges in small watersheds. TR-20 is generally accepted by engineers and reviewing authorities as the standard method for estimating runoff and peak discharges.

HydroCAD Version 10.00 uses up to four types of components to analyze the hydrology of a given site: subcatchments, reaches, basins, and links. Subcatchments are areas of land that produce surface runoff. The area, weighted CN, and T_c characterize each individual subcatchment area. Reaches are generally uniform streams, channels, or pipes that convey water from one point to another. A basin is any impoundment that fills with water from one or more sources and empties via an outlet structure. Links are used to introduce hydrographs into a project from another source or to provide a junction for more than one hydrograph within a project. The time span for the model was set for 0-24 hours in order to prevent truncation of the hydrograph.

4.3 Precipitation Data

Nitsch Engineering, Inc. used NOAA Atlas 14 by the National Weather Service to estimate the rainfall for the 2-year, 10-year, 25-year and 100-year 24-hour storms. The rainfall values for Plymouth County that will be used are as follows:

Storm Event	24–hour Rainfall
2-year	3.26 in.
10-year	4.90 in.
25-year	6,19 in.
100-year	8.83 in.

4.4 Existing Hydrologic Conditions

As summarized in Table 4, Nitsch Engineering delineated the project site into one (one) on-site subcatchment (watershed) areas discharging to one (1) design point utilizing an existing conditions survey and on-site observations (See Figure DR-EX). Table 4 summarizes the design point, location and area of the watershed. The design point (DP) is defined as the existing combined sewer at the southern portion of site (DP-A). The HydroCAD model for existing conditions is provided in Appendix B.

Table 4. Existing Drainage Area Summary

Design Point	Watershed	Area (sf)	Description
DP-1	1S	58,991	Existing Building Roof, Paved Areas, Landscaped Areas
Total Area		**58,991**	

4.5 Proposed Hydrologic Conditions

The proposed project has been designed to mitigate the change in stormwater runoff at the design point as required by the DEP Stormwater Management Standards and the City of Boston Rules and Regulations. The existing watershed areas were modified to reflect the proposed topography, storm drainage structures and BMPs, and roof areas. (See Figure DR-PR and Table 5). The proposed BMPs included as ponds or reaches in the HydroCAD model are:

- Subsurface Infiltration Systems

Table 5. Proposed Drainage Area Summary

Design Point	Watershed	Area (sf)	Description	Proposed Treatment BMP(s)
	101S	36,408	Proposed Building Roof, Paved Areas, Landscaped Areas	1P
DP-1	102S	15,000	Proposed Building Roof	2P
	103S	7,583	Proposed Building Roof, Paved Areas, Landscaped Areas	2P
Total Area		**58,991**		

4.6 Peak Flow Rates

The proposed stormwater management system is expected to reduce the proposed peak runoff rates to at or below the existing rates for Design Point DP-A. Table 6 below summarizes the existing and proposed hydrologic analyses for the site at the design point.

Table 6 – Peak Rates of Runoff for Design Point DP-A (in cfs)

Storm Event	2-year	10-year	25-year	100-year
Existing	3.37	5.42	7.01	10.23
Proposed	2.95	4.91	6.04	9.95

5.0 MassDEP Stormwater Management Standards

The Project is considered a ***new development*** under the DEP Stormwater Management System. The Site will be designed to meet and exceed the MassDEP Stormwater Management Standards as summarized below:

Standard 1: No New Untreated Discharges

The Project will not discharge any untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth. Stormwater from the Site will be collected and treated in accordance with the MassDEP Stormwater Management Standards and stormwater outfalls will be stabilized to prevent erosion.

Standard 2: Peak Rate Attenuation

The proposed stormwater management system will be designed so that the post-development peak discharge rates do not exceed pre-development peak discharge rates. To prevent storm damage and downstream flooding, the proposed stormwater management practices will mitigate peak runoff rates for the 2-, 10-, 25- and 100-year, 24 hour storm events.

In addition to peak rate attenuation, the MassDEP Rules and Regulations require that the peak volume of stormwater runoff leaving the post-development site will not exceed the peak volume leaving the pre-development site for the 2-, 10-, 25-, and 100-year storm events. The proposed stormwater management system is expected to reduce or maintain the post-development volumes of runoff to at or below the pre-development volumes. Therefore, the proposed system will exceed the DEP Stormwater Management Guidelines.

Standard 3: Groundwater Recharge

The Site was designed using environmentally-sensitive site design, low impact development techniques, and stormwater BMP treatment trains to minimize the loss of annual recharge to groundwater. The annual recharge from the post-development site will approximate the annual recharge from pre-development conditions based on soil type using the guidelines provided in the MassDEP Stormwater Management Handbook.

Impervious Area = 45,559 sf
Rv (Recharge Volume) = 0.6 in. / (12 inches/ft) x 45,559 sf
= 2,278 cubic feet

The subsurface recharge systems are sized to exceed the recharge volume required under the MassDEP Stormwater Management Standards (Table 7)

Table 7 – Proposed Recharge Volumes for Stormwater BMPs

Infiltration BMP	Recharge Volume (cf)
Subsurface Infiltration System 1	2,812
Subsurface Infiltration System 2	1,443
Subsurface Infiltration System 3	1,446
Total	**5,701**

The HydroCAD reports provided in Appendix C indicate that all proposed infiltration BMPs will drain within 60 hours for the 2-, 10-, 25-, and 100-year storm events, exceeding the 72-hour MassDEP drawdown requirement.

Standard 4: Water Quality Treatment

The proposed stormwater management system will be designed to remove greater than 80% of the average annual post-construction load of Total Suspended Solids (TSS). The subsurface infiltration systems are sized to capture the required water quality volume (1.25 inches over the project site) and remove a minimum of 80% of total suspended solids.

Source control and pollution prevention measures, such as vacuum cleaning, street sweeping, proper snow management, and stabilization of eroded surfaces, are included in the Long-Term Pollution Prevention Plan and Operation and Maintenance Plan (Appendix E).

Standard 5: Land Uses with Higher Potential Pollutant Loads

For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

The project is not associated with any Land Uses with Higher Potential Pollutant Loads. Therefore, this standard is not applicable.

Standard 6: Critical Areas

The Project is not located within any critical areas. Therefore, this standard is not applicable.

Standard 7: Redevelopments

The Project is not considered a redevelopment under the MassDEP Stormwater Management Standards. Therefore, this standard is not applicable.

Standard 8: Construction Period Pollution Prevention and Sedimentation Control

A plan to control construction-related impacts, including erosion, sedimentation, and other pollutant sources during construction and land disturbance activities (construction period erosion, sedimentation, and pollution prevention plan) will be developed and implemented during the Notice of Intent permitting process.

Since the Project will disturb more than one (1) acre of land, a Notice of Intent will be submitted to the Environmental Protection Agency (EPA) for coverage under the National Pollution Discharge Elimination System (NPDES) Construction General Permit. As part of this application the Applicant is required to prepare a Stormwater Pollution Prevention Plan (SWPPP) and implement the measures in the SWPPP. The SWPPP, which is to be kept on site, includes erosion and sediment controls (stabilization practices and structural practices), temporary and permanent stormwater management measures, Contractor inspection schedules and reporting of all SWPPP features, materials management, waste disposal, off-site vehicle tracking, spill prevention and response, sanitation, and non-stormwater discharges. A draft SWPPP is provided in Appendix E.

Standard 9: Operation and Maintenance Plan

A post-construction operation and maintenance plan has been prepared and will be implemented to ensure that stormwater management systems function as designed. Source control and stormwater BMP operation requirements for the academic campus are summarized in the Long-Term Pollution Prevention Plan and Operation and Maintenance Plan provided in Appendix D.

Standard 10: Prohibition of Illicit Discharges

There will be no illicit discharges to the stormwater management system associated with the Project. An Illicit Discharge Compliance Statement is provided in Appendix A.

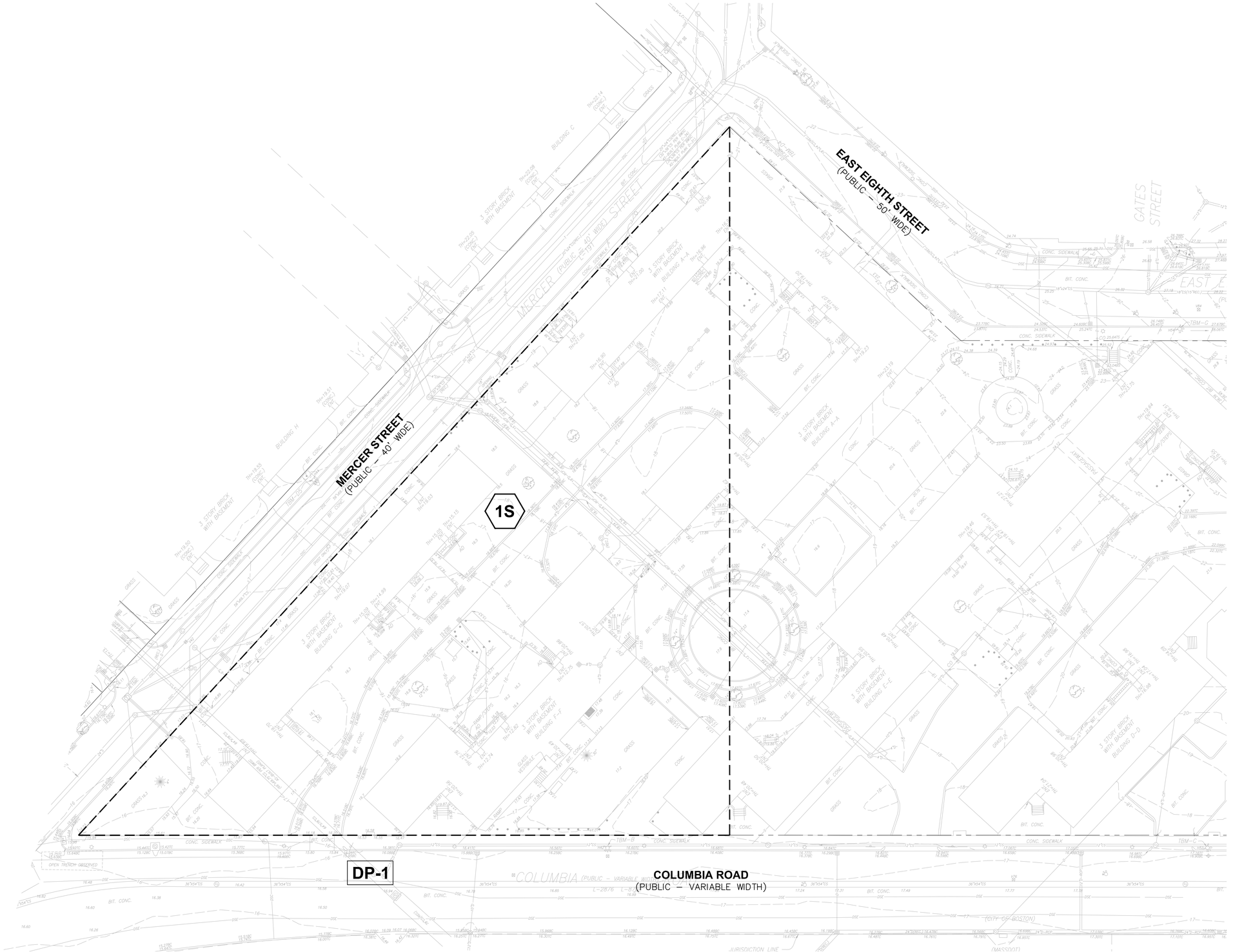
6.0 CLOSED DRAINAGE SYSTEM DESIGN

The proposed closed drainage system consists of area drains and subsurface recharge systems connected with corrugated polyethylene pipe. The closed drainage system was designed to convey the 2-, 10-, 25- and 100-year storm event using the Rational method. Refer to Appendix C for more information.

7.0 CONCLUSION

In conclusion, the Project's stormwater management system will reduce or maintain peak runoff rates and volumes through the widespread use of infiltration BMPs and improve the water quality of stormwater being discharged from the Site. Environmentally sensitive site design and low impact development techniques will be implemented throughout the Site. The Project is being designed to meet and exceed the MassDEP Stormwater Management Standards and the City of Boston Rules and Regulations.

FIGURES



SCALE:
1" = 20'
20 10 0 20 40

tat

© The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

Consultant:
Nitsch Engineering
www.nitscheng.com
2 Center Plaza, Suite 430
Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472
- Civil Engineering
- Land Surveying
- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

Revision:

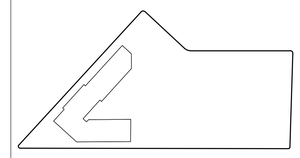
Architect of Record:

Drawn: SB

Checked: JRH

Scale: 1"=20'

Key Plan:



Project Name:
Old Colony
Phase Four

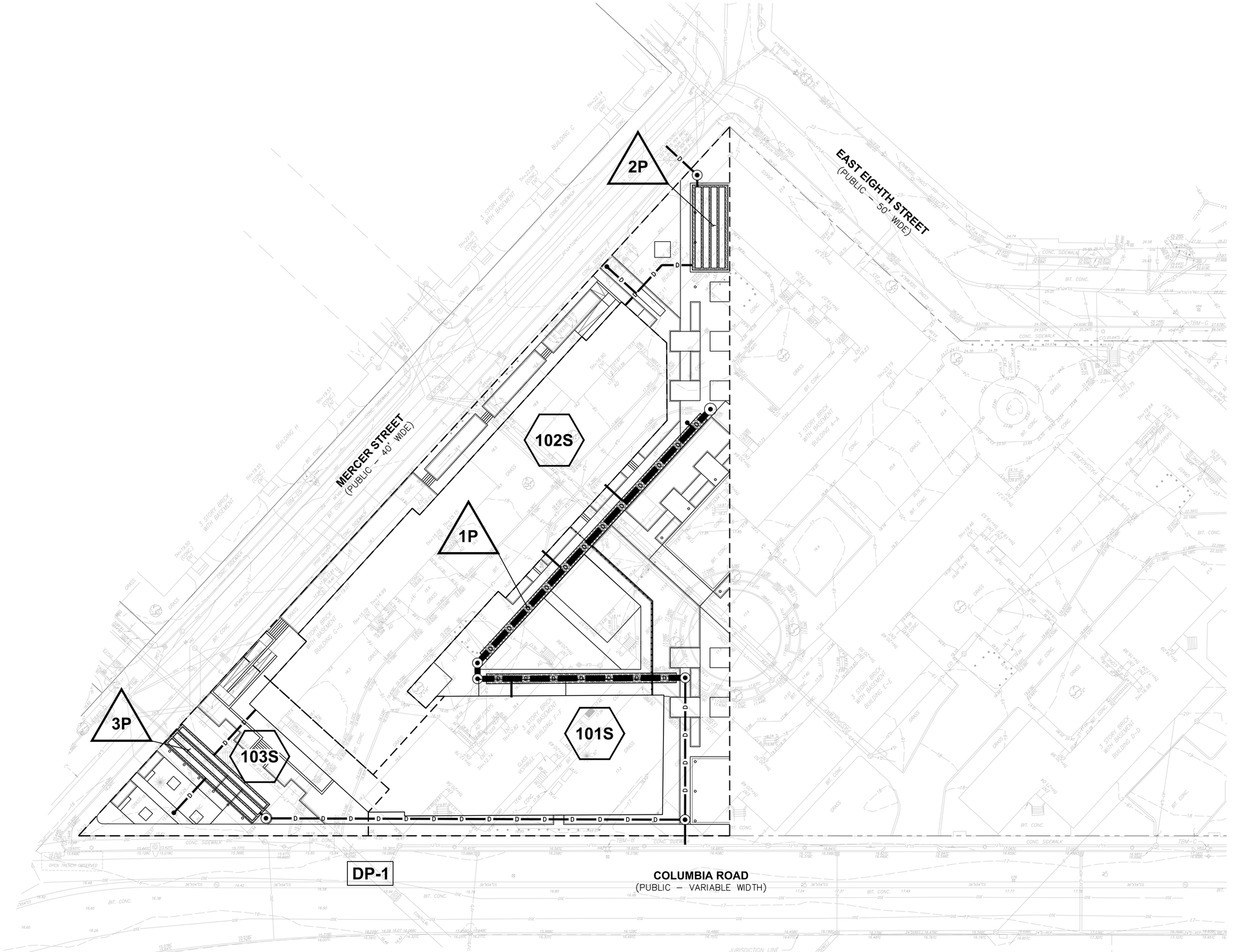
110 MERCER STREET
BOSTON, MA

Sheet Name:
PREDEVELOPMENT
SUBCATCHMENT
PLAN

Project Number:
18177.00

Issue Date:
June 07, 2021

Sheet Number:
DR-EX



SCALE:
1" = 20'
20 10 0 20 40

tat

© The Architectural Team, Inc.
50 Commandant's Way at Admiral's Hill
Chelsea MA 02150
O 617.889.4402
F 617.884.4329
architecturalteam.com

Consultant:

Nitsch Engineering
www.nitscheng.com
2 Center Plaza, Suite 430
Boston, MA 02108
T: (617) 338-0063
F: (617) 338-6472
- Civil Engineering
- Land Surveying
- Transportation Engineering
- Structural Engineering
- Green Infrastructure
- Planning
- GIS

Revision:

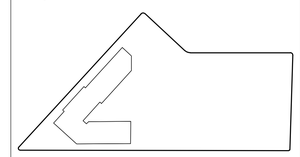
Architect of Record:

Drawn: SB

Checked: JRH

Scale: 1"=20'

Key Plan:



Project Name:
Old Colony
Phase Four

110 MERCER STREET
BOSTON, MA

Sheet Name:
POSTDEVELOPMENT
SUBCATCHMENT
PLAN

Project Number:
18177.00

Issue Date:
June 07, 2021

Sheet Number:
DR-PR

Figure 1 - Aerial Locus Map
Old Colony Phase IV
110 Mercer Street
South Boston, MA

Data Source: MassGIS
Nitsch Project #8246.6

Nitsch Engineering

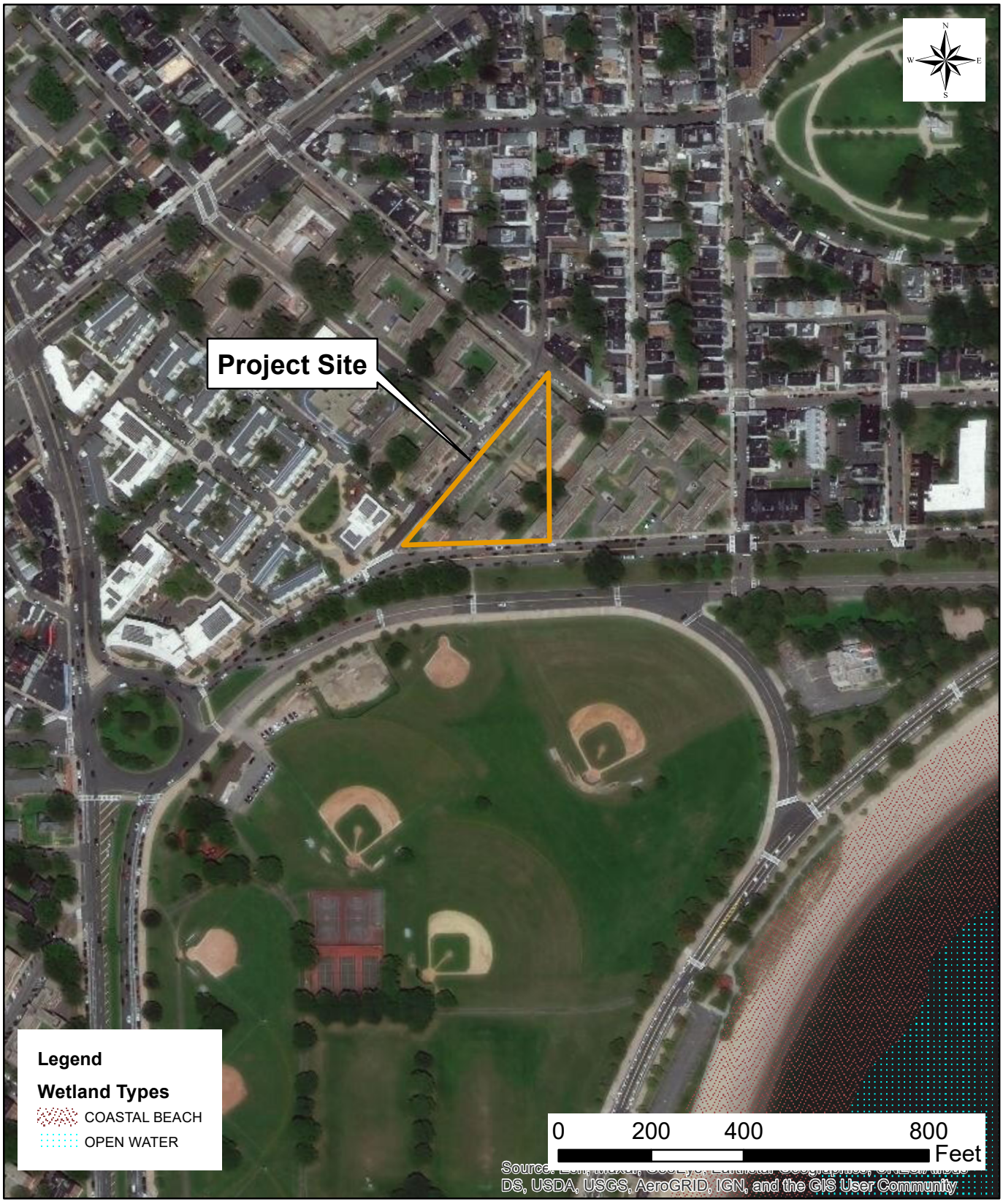


Figure 3 - DEP Wetlands Map

Old Colony Phase IV
110 Mercer Street
South Boston, MA

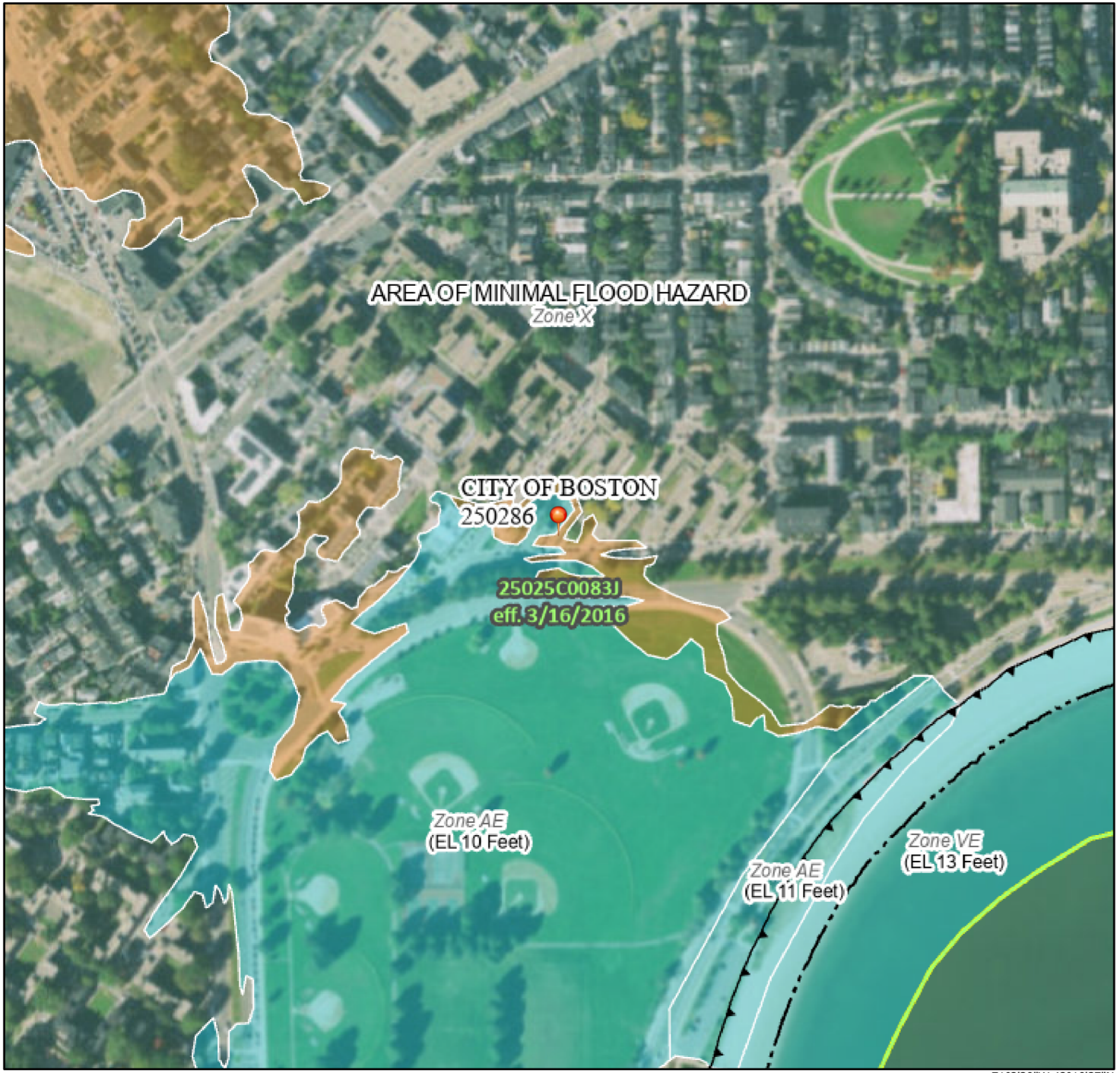
Data Source: MassGIS
Nitsch Project #8246.6

Nitsch Engineering

National Flood Hazard Layer FIRMette

FEMA

71°3'16"W 42°20'3"N



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

1:6,000

Figure 4 - FEMA Floodplain Map

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 Cross Sections with 1% Annual Chance
- 17.5 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 5/8/2021 at 7:27 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

APPENDIX A

Stormwater Management Standards Documentation

MassDEP Checklist for Stormwater Report

Standard 4: TSS Removal Calculations

Standard 10: Illicit Discharge Compliance Statement

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.

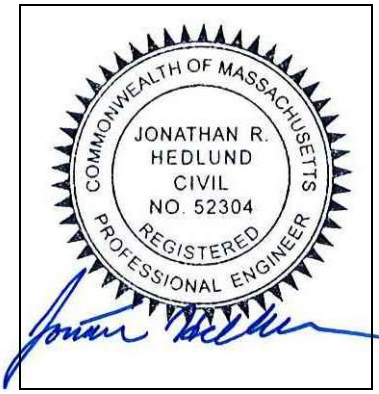
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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



Signature and Date

Checklist

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

☒ New development

☐ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

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

☒ No disturbance to any Wetland Resource Areas

☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)

☐ Reduced Impervious Area (Redevelopment Only)

☐ Minimizing disturbance to existing trees and shrubs

☐ LID Site Design Credit Requested:

- ☐ Credit 1
- ☐ Credit 2
- ☐ Credit 3

☐ Use of "country drainage" versus curb and gutter conveyance and pipe

☐ Bioretention Cells (includes Rain Gardens)

☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)

☐ Treebox Filter

☐ Water Quality Swale

☐ Grass Channel

☐ Green Roof

☒ Other (describe): Subsurface Recharge System

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.

Nitsch Engineering

2 Center Plaza, Suite 430
Boston, MA 02108-1928
T: 617-338-0063
F: 617-338-6472
www.nitscheng.com

Form S3-G: Standard 3 – Recharge – Subsurface Recharge System #1
72-Hour Drawdown Calculation

Project Name: Old Colony Phase IV	Nitsch Project #: 8246.6
Location: Boston, MA	Checked by: **JRH**
Prepared by: SB	Sheet No. 1 of 3
Date: **06/04/2021**	

INSTRUCTIONS:
1. In 'Method' Column, Click on Blue Cell to Activate Drop Down Menu
2. Enter the "Required recharge Volume" (in cubic feet) in Blue Cell for the appropriate chosen Method
3. Enter the "Bottom Area" (in square feet) in the blue cell as the maximum infiltration surface area. Do not use sidewalls.
4. **For "Dynamic: In-Situ Method" ONLY** (if other go to 4b) Enter hydraulic Conductivity Rate in Blue Cell
5. In 'Texture Class' Column, Click on Blue Cell to Activate Drop Down Menu

Step No.				
1	Method:	Static		
2	Required Recharge Volume (in cubic feet):	*1229*	as determined by the	Static Method
3	Bottom Area (in Sq.Ft.)	*1350*		

Step No.		Hydraulic Conductivity Rate:	In-Situ Saturated Hydraulic Conductivity Rate
4a	ONLY - If using Dynamic: In-Situ Method --> Enter Hydraulic Conductivity Rate		0

Step No.	Texture Class	NRCS Hydrologic Soil Group (HSG)	Infiltration Rate (Inches/Hour)	
4b	Sandy Clay Loam	C	0.17	Hours

$Time_{drawdown}$ = 64.26

72-Hour Drawdown Requirement Check: ***OK***

Nitsch Engineering

2 Center Plaza, Suite 430
Boston, MA 02108-1928
T: 617-338-0063
F: 617-338-6472
www.nitscheng.com

Form S3-G: Standard 3 – Recharge – Subsurface Recharge System #2
72-Hour Drawdown Calculation

Project Name: Old Colony Phase IV	Nitsch Project #: 8246.6
Location: Boston, MA	Checked by: **JRH**
Prepared by: SB	Sheet No. 2 of 3
Date: **06/04/2021**	

INSTRUCTIONS:
1. In 'Method' Column, Click on Blue Cell to Activate Drop Down Menu
2. Enter the "Required recharge Volume" (in cubic feet) in Blue Cell for the appropriate chosen Method
3. Enter the "Bottom Area" (in square feet) in the blue cell as the maximum infiltration surface area. Do not use sidewalls.
4. **For "Dynamic: In-Situ Method" ONLY** (if other go to 4b) Enter hydraulic Conductivity Rate in Blue Cell
5. In 'Texture Class' Column, Click on Blue Cell to Activate Drop Down Menu

Step No.				
1	Method:	Static		
2	Required Recharge Volume (in cubic feet):	*750*	as determined by the	Static Method
3	Bottom Area (in Sq.Ft.)	*774*		

Step No.		Hydraulic Conductivity Rate:	In-Situ Saturated Hydraulic Conductivity Rate
4a	ONLY - If using Dynamic: In-Situ Method --> Enter Hydraulic Conductivity Rate		0

Step No.	Texture Class	NRCS Hydrologic Soil Group (HSG)	Infiltration Rate (Inches/Hour)	
4b	Sandy Clay Loam	C	0.17	**Hours**

$Time_{drawdown}$ = 68.40

72-Hour Drawdown Requirement Check: ***OK***

Nitsch Engineering

2 Center Plaza, Suite 430
Boston, MA 02108-1928
T: 617-338-0063
F: 617-338-6472
www.nitscheng.com

Form S3-G: Standard 3 – Recharge – Subsurface Recharge System #3
72-Hour Drawdown Calculation

Project Name: Old Colony Phase IV	Nitsch Project #: 8246.6
Location: Boston, MA	Checked by: **JRH**
Prepared by: SB	Sheet No. 3 of 3
Date: **06/04/2021**	

INSTRUCTIONS:
1. In 'Method' Column, Click on Blue Cell to Activate Drop Down Menu
2. Enter the "Required recharge Volume" (in cubic feet) in Blue Cell for the appropriate chosen Method
3. Enter the "Bottom Area" (in square feet) in the blue cell as the maximum infiltration surface area. Do not use sidewalls.
4. **For "Dynamic: In-Situ Method" ONLY** (if other go to 4b) Enter hydraulic Conductivity Rate in Blue Cell
5. In 'Texture Class' Column, Click on Blue Cell to Activate Drop Down Menu

Step No.				
1	Method:	Static		
2	Required Recharge Volume (in cubic feet):	*299*	as determined by the	Static Method
3	Bottom Area (in Sq.Ft.)	*780*		

Step No.		Hydraulic Conductivity Rate:	In-Situ Saturated Hydraulic Conductivity Rate
4a	ONLY - If using Dynamic: In-Situ Method --> Enter Hydraulic Conductivity Rate		0

Step No.	Texture Class	NRCS Hydrologic Soil Group (HSG)	Infiltration Rate (Inches/Hour)	
4b	Sandy Clay Loam	C	0.17	**Hours**

$Time_{drawdown}$ = 27.06

72-Hour Drawdown Requirement Check: ***OK***

Nitsch Engineering

2 Center Plaza, Suite 430
Boston, MA 02108-1928
T: 617-338-0063
F: 617-338-6472
www.nitscheng.com

Old Colony Phase IV
WATER QUALITY TREATMENT SUMMARY (06/04/2021)

Nitsch Engineering has prepared this Water Quality Treatment Summary for the proposed Old Colony Phase IV project in Boston, MA. In compliance with MassDEP Stormwater Management Standard #4, the proposed stormwater management system is designed to remove at least 80% of the average annual post-construction load of TSS prior to discharge. The stormwater management system is designed to remove at least 44% of the average annual post-construction TSS load prior to discharge to the infiltration systems because the infiltration systems are located within areas where soils with rapid infiltration rates were observed.

A summary of treatment trains proposed to provide water quantity control and water quality improvement at the proposed project site is provided below.

Treatment Train A
Catchment Areas: 101S, 102S, 103S
Area Drain → Subsurface Recharge System → Discharge

Old Colony Phase IV
Boston, MA
June 4, 2021

Nitsch Project No. 8246.6

Nitsch Engineering

Treatment Train A :
Area Drain → Subsurface Infiltration System → Discharge

Treatment Spreadsheet

B	C	D	E	F
BMP	TSS Removal Rate	Starting TSS Load	Amount Removed (C*D)	Remaining Load (D-E)
Subsurface Recharge System	**0.80**	**1.00**	**0.80**	**0.20**

Total TSS Removal = **80%**

Meets 80% TSS removal requirement

Nitsch Engineering

2 Center Plaza, Suite 430
Boston, MA 02108-1928
T: 617-338-0063
F: 617-338-6472
www.nitscheng.com

STANDARD 10: Illicit Discharge Compliance Statement

Project Name: Old Colony Phase IV	Nitsch Project #: 8246.6
Location: Boston, MA	Checked by: JRH
Prepared by: SB	Sheet No. 1 of 1
Date: 06/04/2021	

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

This is to verify:

1. Based on the information available there are no known or suspected illicit discharges to the stormwater management system at the Old Colony Phase IV site as defined in the MassDEP Stormwater Handbook.

2. The design of the stormwater system includes no proposed illicit discharges.

NAME, PE

6/11/2021
Date

APPENDIX B

Pre-Development Conditions – HydroCAD Calculations

Existing Site

Existing Combined Sewer

Subcat Reach Pond Link

Routing Diagram for 8246.6 - HydroCAD-Pre
Prepared by Nitsch Engineering, Printed 4/15/2021

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
19,945	80	>75% Grass cover, Good, HSG D (1S)
20,689	98	Paved parking, HSG D (1S)
18,357	98	Roofs, HSG D (1S)
58,991	**92**	**TOTAL AREA**

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=58,991 sf 66.19% Impervious Runoff Depth>2.20"
Tc=6.0 min CN=92 Runoff=3.37 cfs 10,796 cf

Reach DP-1: Existing Combined Sewer Inflow=3.37 cfs 10,796 cf
Outflow=3.37 cfs 10,796 cf

Total Runoff Area = 58,991 sf Runoff Volume = 10,796 cf Average Runoff Depth = 2.20"
33.81% Pervious = 19,945 sf 66.19% Impervious = 39,046 sf

Summary for Subcatchment 1S: Existing Site

Runoff = 3.37 cfs @ 12.13 hrs, Volume= 10,796 cf, Depth> 2.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 2-Year Rainfall=3.26"

Area (sf)	CN	Description
18,357	98	Roofs, HSG D
20,689	98	Paved parking, HSG D
19,945	80	>75% Grass cover, Good, HSG D
58,991	92	Weighted Average
19,945		33.81% Pervious Area
39,046		66.19% Impervious Area

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

Summary for Reach DP-1: Existing Combined Sewer

Inflow Area = 58,991 sf, 66.19% Impervious, Inflow Depth > 2.20" for 2-Year event
Inflow = 3.37 cfs @ 12.13 hrs, Volume= 10,796 cf
Outflow = 3.37 cfs @ 12.13 hrs, Volume= 10,796 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=58,991 sf 66.19% Impervious Runoff Depth>3.63"
Tc=6.0 min CN=92 Runoff=5.42 cfs 17,858 cf

Reach DP-1: Existing Combined Sewer Inflow=5.42 cfs 17,858 cf
Outflow=5.42 cfs 17,858 cf

Total Runoff Area = 58,991 sf Runoff Volume = 17,858 cf Average Runoff Depth = 3.63"
33.81% Pervious = 19,945 sf 66.19% Impervious = 39,046 sf

Summary for Subcatchment 1S: Existing Site

Runoff = 5.42 cfs @ 12.13 hrs, Volume= 17,858 cf, Depth> 3.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 10-Year Rainfall=4.90"

Area (sf)	CN	Description
18,357	98	Roofs, HSG D
20,689	98	Paved parking, HSG D
19,945	80	>75% Grass cover, Good, HSG D
58,991	92	Weighted Average
19,945		33.81% Pervious Area
39,046		66.19% Impervious Area

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

Summary for Reach DP-1: Existing Combined Sewer

Inflow Area = 58,991 sf, 66.19% Impervious, Inflow Depth > 3.63" for 10-Year event
Inflow = 5.42 cfs @ 12.13 hrs, Volume= 17,858 cf
Outflow = 5.42 cfs @ 12.13 hrs, Volume= 17,858 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=58,991 sf 66.19% Impervious Runoff Depth>4.77"
Tc=6.0 min CN=92 Runoff=7.01 cfs 23,435 cf

Reach DP-1: Existing Combined Sewer Inflow=7.01 cfs 23,435 cf
Outflow=7.01 cfs 23,435 cf

Total Runoff Area = 58,991 sf Runoff Volume = 23,435 cf Average Runoff Depth = 4.77"
33.81% Pervious = 19,945 sf 66.19% Impervious = 39,046 sf

Summary for Subcatchment 1S: Existing Site

Runoff = 7.01 cfs @ 12.13 hrs, Volume= 23,435 cf, Depth> 4.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 25-Year Rainfall=6.19"

Area (sf)	CN	Description
18,357	98	Roofs, HSG D
20,689	98	Paved parking, HSG D
19,945	80	>75% Grass cover, Good, HSG D
58,991	92	Weighted Average
19,945		33.81% Pervious Area
39,046		66.19% Impervious Area

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

Summary for Reach DP-1: Existing Combined Sewer

Inflow Area = 58,991 sf, 66.19% Impervious, Inflow Depth > 4.77" for 25-Year event
Inflow = 7.01 cfs @ 12.13 hrs, Volume= 23,435 cf
Outflow = 7.01 cfs @ 12.13 hrs, Volume= 23,435 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: Existing Site Runoff Area=58,991 sf 66.19% Impervious Runoff Depth>7.08"
Tc=6.0 min CN=92 Runoff=10.23 cfs 34,823 cf

Reach DP-1: Existing Combined Sewer Inflow=10.23 cfs 34,823 cf
Outflow=10.23 cfs 34,823 cf

Total Runoff Area = 58,991 sf Runoff Volume = 34,823 cf Average Runoff Depth = 7.08"
33.81% Pervious = 19,945 sf 66.19% Impervious = 39,046 sf

Summary for Subcatchment 1S: Existing Site

Runoff = 10.23 cfs @ 12.13 hrs, Volume= 34,823 cf, Depth> 7.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NRCC 24-hr D 100-Year Rainfall=8.83"

Area (sf)	CN	Description
18,357	98	Roofs, HSG D
20,689	98	Paved parking, HSG D
19,945	80	>75% Grass cover, Good, HSG D
58,991	92	Weighted Average
19,945		33.81% Pervious Area
39,046		66.19% Impervious Area

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

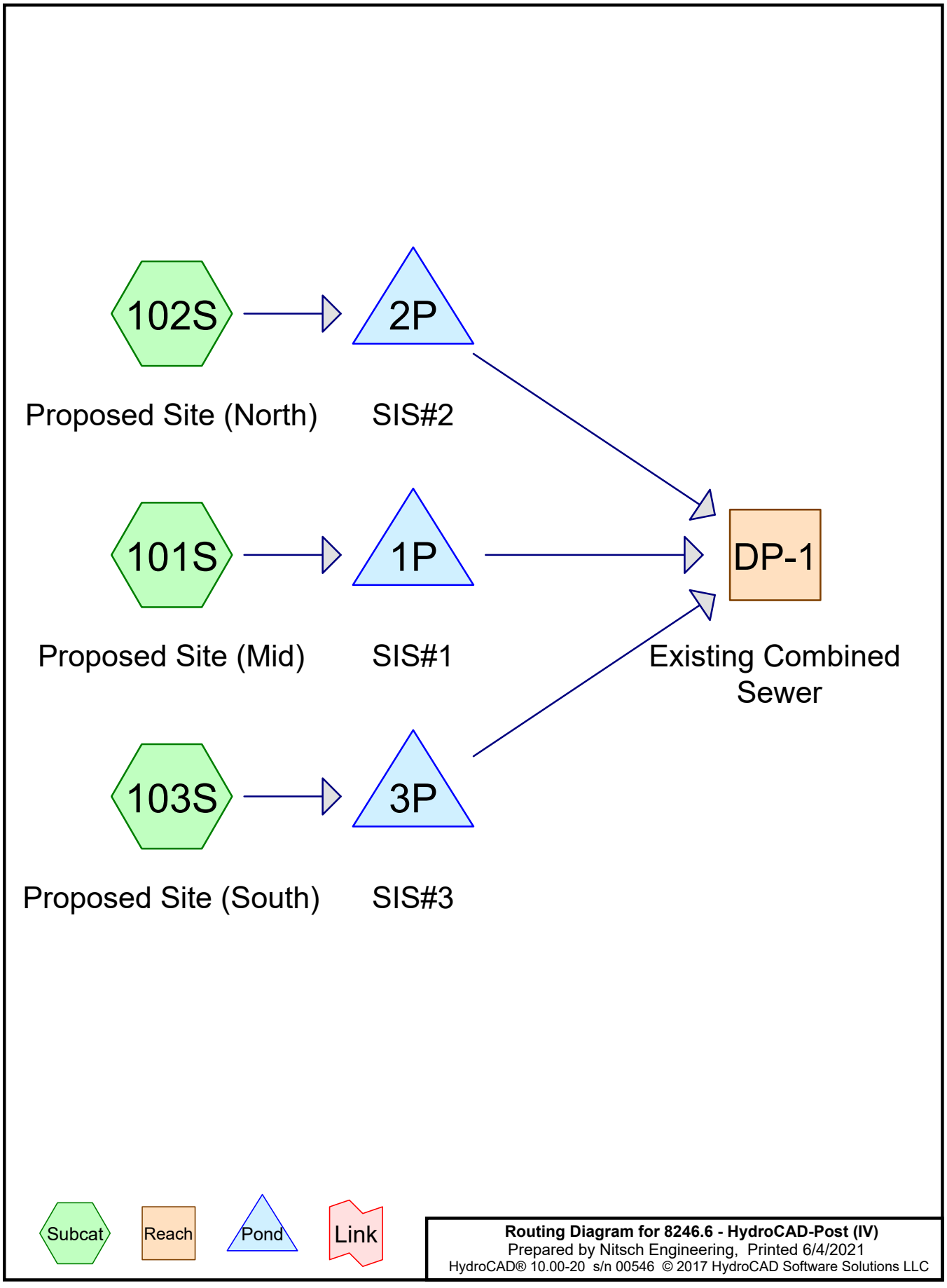
Summary for Reach DP-1: Existing Combined Sewer

Inflow Area = 58,991 sf, 66.19% Impervious, Inflow Depth > 7.08" for 100-Year event
Inflow = 10.23 cfs @ 12.13 hrs, Volume= 34,823 cf
Outflow = 10.23 cfs @ 12.13 hrs, Volume= 34,823 cf, Atten= 0%, Lag= 0.0 min

Routing by Stor-Ind+Trans method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

APPENDIX C

Post-Development Conditions – HydroCAD Calculations



Routing Diagram for 8246.6 - HydroCAD-Post (IV)
Prepared by Nitsch Engineering, Printed 6/4/2021

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
13,432	80	>75% Grass cover, Good, HSG D (101S, 103S)
21,291	98	Paved parking, HSG D (101S, 103S)
24,268	98	Roofs, HSG D (101S, 102S, 103S)
58,991	**94**	**TOTAL AREA**

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

Subcatchment101S: Proposed Site (Mid) Runoff Area=36,408 sf 67.53% Impervious Runoff Depth>2.40"
Tc=6.0 min CN=92 Runoff=2.15 cfs 7,293 cf

Subcatchment102S: Proposed Site Runoff Area=15,000 sf 100.00% Impervious Runoff Depth>3.02"
Tc=6.0 min CN=98 Runoff=1.01 cfs 3,779 cf

Subcatchment103S: Proposed Site (South) Runoff Area=7,583 sf 78.78% Impervious Runoff Depth>2.60"
Tc=6.0 min CN=94 Runoff=0.47 cfs 1,642 cf

Reach DP-1: Existing Combined Sewer Inflow=2.95 cfs 6,767 cf
Outflow=2.95 cfs 6,767 cf

Pond 1P: SIS#1 Peak Elev=16.64' Storage=2,812 cf Inflow=2.15 cfs 7,293 cf
Discarded=0.01 cfs 374 cf Primary=1.98 cfs 4,214 cf Outflow=1.98 cfs 4,588 cf

Pond 2P: SIS#2 Peak Elev=15.55' Storage=1,094 cf Inflow=1.01 cfs 3,779 cf
Discarded=0.00 cfs 209 cf Primary=0.99 cfs 2,554 cf Outflow=0.99 cfs 2,763 cf

Pond 3P: SIS#3 Peak Elev=13.11' Storage=1,446 cf Inflow=0.47 cfs 1,642 cf
Discarded=0.00 cfs 195 cf Primary=0.00 cfs 0 cf Outflow=0.00 cfs 195 cf

Total Runoff Area = 58,991 sf Runoff Volume = 12,714 cf Average Runoff Depth = 2.59"
22.77% Pervious = 13,432 sf 77.23% Impervious = 45,559 sf

Summary for Subcatchment 101S: Proposed Site (Mid)

Runoff = 2.15 cfs @ 12.13 hrs, Volume= 7,293 cf, Depth> 2.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.26"

Area (sf)	CN	Description
8,000	98	Roofs, HSG D
16,585	98	Paved parking, HSG D
11,823	80	>75% Grass cover, Good, HSG D
36,408	92	Weighted Average
11,823		32.47% Pervious Area
24,585		67.53% Impervious Area

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

Summary for Subcatchment 102S: Proposed Site (North)

Runoff = 1.01 cfs @ 12.13 hrs, Volume= 3,779 cf, Depth> 3.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.26"

Area (sf)	CN	Description
15,000	98	Roofs, HSG D
15,000		100.00% Impervious Area

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

Summary for Subcatchment 103S: Proposed Site (South)

Runoff = 0.47 cfs @ 12.13 hrs, Volume= 1,642 cf, Depth> 2.60"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 2-Year Rainfall=3.26"

Area (sf)	CN	Description
4,706	98	Paved parking, HSG D
1,609	80	>75% Grass cover, Good, HSG D
1,268	98	Roofs, HSG D
7,583	94	Weighted Average
1,609		21.22% Pervious Area
5,974		78.78% Impervious Area

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

Summary for Reach DP-1: Existing Combined Sewer

Inflow Area = 58,991 sf, 77.23% Impervious, Inflow Depth > 1.38" for 2-Year event
Inflow = 2.95 cfs @ 12.16 hrs, Volume= 6,767 cf
Outflow = 2.95 cfs @ 12.16 hrs, Volume= 6,767 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: SIS#1

Inflow Area = 36,408 sf, 67.53% Impervious, Inflow Depth > 2.40" for 2-Year event
Inflow = 2.15 cfs @ 12.13 hrs, Volume= 7,293 cf
Outflow = 1.98 cfs @ 12.16 hrs, Volume= 4,588 cf, Atten= 8%, Lag= 1.7 min
Discarded = 0.01 cfs @ 5.04 hrs, Volume= 374 cf
Primary = 1.98 cfs @ 12.16 hrs, Volume= 4,214 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 16.64' @ 12.16 hrs Surf.Area= 1,350 sf Storage= 2,812 cf

Plug-Flow detention time= 217.1 min calculated for 4,586 cf (63% of inflow)
Center-of-Mass det. time= 91.5 min (902.0 - 810.5)

Volume	Invert	Avail.Storage	Storage Description
#1	13.50'	1,909 cf	**36.0" Round Pipe Storage** Inside #2 L= 270.0'
#2	13.00'	1,047 cf	**5.00'W x 270.00'L x 4.00'H Prismatoid** 5,400 cf Overall - 1,909 cf Embedded = 3,491 cf x 30.0% Voids
		2,956 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	14.00'	**12.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	16.40'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.01 cfs @ 5.04 hrs HW=13.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=1.97 cfs @ 12.16 hrs HW=16.64' (Free Discharge)
└**2=Orifice/Grate** (Passes 1.97 cfs of 5.54 cfs potential flow)
└**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 1.97 cfs @ 1.62 fps)

Summary for Pond 2P: SIS#2

Inflow Area = 15,000 sf,100.00% Impervious, Inflow Depth > 3.02" for 2-Year event
Inflow = 1.01 cfs @ 12.13 hrs, Volume= 3,779 cf
Outflow = 0.99 cfs @ 12.14 hrs, Volume= 2,763 cf, Atten= 2%, Lag= 0.8 min
Discarded = 0.00 cfs @ 1.91 hrs, Volume= 209 cf
Primary = 0.99 cfs @ 12.14 hrs, Volume= 2,554 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 15.55' @ 12.14 hrs Surf.Area= 656 sf Storage= 1,094 cf

Plug-Flow detention time= 197.3 min calculated for 2,763 cf (73% of inflow)
Center-of-Mass det. time= 86.7 min (845.7 - 759.0)

Volume	Invert	Avail.Storage	Storage Description
#1	13.50'	1,159 cf	**36.0" Round Pipe Storage** Inside #2 L= 164.0'
#2	13.00'	439 cf	**4.00'W x 164.00'L x 4.00'H Prismatoid** 2,624 cf Overall - 1,159 cf Embedded = 1,465 cf x 30.0% Voids
		1,599 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	14.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	15.40'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.00 cfs @ 1.91 hrs HW=13.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.98 cfs @ 12.14 hrs HW=15.55' (Free Discharge)
└**2=Orifice/Grate** (Passes 0.98 cfs of 1.43 cfs potential flow)
└**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.98 cfs @ 1.28 fps)

Summary for Pond 3P: SIS#3

Inflow Area = 7,583 sf, 78.78% Impervious, Inflow Depth > 2.60" for 2-Year event
Inflow = 0.47 cfs @ 12.13 hrs, Volume= 1,642 cf
Outflow = 0.00 cfs @ 5.26 hrs, Volume= 195 cf, Atten= 99%, Lag= 0.0 min
Discarded = 0.00 cfs @ 5.26 hrs, Volume= 195 cf
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 13.11' @ 24.00 hrs Surf.Area= 696 sf Storage= 1,446 cf

Plug-Flow detention time= 364.7 min calculated for 195 cf (12% of inflow)
Center-of-Mass det. time= 48.2 min (845.1 - 796.9)

Volume	Invert	Avail.Storage	Storage Description
#1	10.50'	1,230 cf	**36.0" Round Pipe Storage** Inside #2 L= 174.0'
#2	10.00'	466 cf	**4.00'W x 174.00'L x 4.00'H Prismatoid** 2,784 cf Overall - 1,230 cf Embedded = 1,554 cf x 30.0% Voids
		1,696 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	10.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	10.50'	**12.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	13.80'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.00 cfs @ 5.26 hrs HW=10.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=10.00' (Free Discharge)
↑—**2=Orifice/Grate** (Controls 0.00 cfs)
↑—**3=Sharp-Crested Vee/Trap Weir** (Controls 0.00 cfs)

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

Subcatchment101S: Proposed Site (Mid) Runoff Area=36,408 sf 67.53% Impervious Runoff Depth>3.99"
Tc=6.0 min CN=92 Runoff=3.46 cfs 12,092 cf

Subcatchment102S: Proposed Site Runoff Area=15,000 sf 100.00% Impervious Runoff Depth>4.66"
Tc=6.0 min CN=98 Runoff=1.53 cfs 5,821 cf

Subcatchment103S: Proposed Site (South) Runoff Area=7,583 sf 78.78% Impervious Runoff Depth>4.20"
Tc=6.0 min CN=94 Runoff=0.74 cfs 2,656 cf

Reach DP-1: Existing Combined Sewer Inflow=4.91 cfs 14,366 cf
Outflow=4.91 cfs 14,366 cf

Pond 1P: SIS#1 Peak Elev=16.75' Storage=2,856 cf Inflow=3.46 cfs 12,092 cf
Discarded=0.01 cfs 400 cf Primary=3.44 cfs 8,983 cf Outflow=3.44 cfs 9,384 cf

Pond 2P: SIS#2 Peak Elev=15.61' Storage=1,122 cf Inflow=1.53 cfs 5,821 cf
Discarded=0.00 cfs 213 cf Primary=1.47 cfs 4,590 cf Outflow=1.47 cfs 4,804 cf

Pond 3P: SIS#3 Peak Elev=13.82' Storage=1,659 cf Inflow=0.74 cfs 2,656 cf
Discarded=0.00 cfs 209 cf Primary=0.07 cfs 792 cf Outflow=0.07 cfs 1,001 cf

Total Runoff Area = 58,991 sf Runoff Volume = 20,570 cf Average Runoff Depth = 4.18"
22.77% Pervious = 13,432 sf 77.23% Impervious = 45,559 sf

Summary for Subcatchment 101S: Proposed Site (Mid)

Runoff = 3.46 cfs @ 12.13 hrs, Volume= 12,092 cf, Depth> 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.90"

Area (sf)	CN	Description
8,000	98	Roofs, HSG D
16,585	98	Paved parking, HSG D
11,823	80	>75% Grass cover, Good, HSG D
36,408	92	Weighted Average
11,823		32.47% Pervious Area
24,585		67.53% Impervious Area

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

Summary for Subcatchment 102S: Proposed Site (North)

Runoff = 1.53 cfs @ 12.13 hrs, Volume= 5,821 cf, Depth> 4.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.90"

Area (sf)	CN	Description
15,000	98	Roofs, HSG D
15,000		100.00% Impervious Area

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

Summary for Subcatchment 103S: Proposed Site (South)

Runoff = 0.74 cfs @ 12.13 hrs, Volume= 2,656 cf, Depth> 4.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 10-Year Rainfall=4.90"

Area (sf)	CN	Description
4,706	98	Paved parking, HSG D
1,609	80	>75% Grass cover, Good, HSG D
1,268	98	Roofs, HSG D
7,583	94	Weighted Average
1,609		21.22% Pervious Area
5,974		78.78% Impervious Area

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

Summary for Reach DP-1: Existing Combined Sewer

Inflow Area = 58,991 sf, 77.23% Impervious, Inflow Depth > 2.92" for 10-Year event
Inflow = 4.91 cfs @ 12.14 hrs, Volume= 14,366 cf
Outflow = 4.91 cfs @ 12.14 hrs, Volume= 14,366 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: SIS#1

Inflow Area = 36,408 sf, 67.53% Impervious, Inflow Depth > 3.99" for 10-Year event
Inflow = 3.46 cfs @ 12.13 hrs, Volume= 12,092 cf
Outflow = 3.44 cfs @ 12.14 hrs, Volume= 9,384 cf, Atten= 1%, Lag= 0.4 min
Discarded = 0.01 cfs @ 3.46 hrs, Volume= 400 cf
Primary = 3.44 cfs @ 12.14 hrs, Volume= 8,983 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 16.75' @ 12.14 hrs Surf.Area= 1,350 sf Storage= 2,856 cf

Plug-Flow detention time= 162.1 min calculated for 9,380 cf (78% of inflow)
Center-of-Mass det. time= 65.1 min (858.0 - 792.9)

Volume	Invert	Avail.Storage	Storage Description
#1	13.50'	1,909 cf	**36.0" Round Pipe Storage** Inside #2 L= 270.0'
#2	13.00'	1,047 cf	**5.00'W x 270.00'L x 4.00'H Prismatoid** 5,400 cf Overall - 1,909 cf Embedded = 3,491 cf x 30.0% Voids
		2,956 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	14.00'	**12.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	16.40'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.01 cfs @ 3.46 hrs HW=13.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=3.43 cfs @ 12.14 hrs HW=16.75' (Free Discharge)
↑**2=Orifice/Grate** (Passes 3.43 cfs of 5.68 cfs potential flow)
↑**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 3.43 cfs @ 1.94 fps)

Summary for Pond 2P: SIS#2

Inflow Area = 15,000 sf,100.00% Impervious, Inflow Depth > 4.66" for 10-Year event
Inflow = 1.53 cfs @ 12.13 hrs, Volume= 5,821 cf
Outflow = 1.47 cfs @ 12.15 hrs, Volume= 4,804 cf, Atten= 4%, Lag= 1.0 min
Discarded = 0.00 cfs @ 1.28 hrs, Volume= 213 cf
Primary = 1.47 cfs @ 12.15 hrs, Volume= 4,590 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 15.61' @ 12.15 hrs Surf.Area= 656 sf Storage= 1,122 cf

Plug-Flow detention time= 159.2 min calculated for 4,804 cf (83% of inflow)
Center-of-Mass det. time= 73.2 min (823.1 - 750.0)

Volume	Invert	Avail.Storage	Storage Description
#1	13.50'	1,159 cf	**36.0" Round Pipe Storage** Inside #2 L= 164.0'
#2	13.00'	439 cf	**4.00'W x 164.00'L x 4.00'H Prismatoid** 2,624 cf Overall - 1,159 cf Embedded = 1,465 cf x 30.0% Voids
		1,599 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	14.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	15.40'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.00 cfs @ 1.28 hrs HW=13.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=1.48 cfs @ 12.15 hrs HW=15.61' (Free Discharge)
└**2=Orifice/Grate** (Orifice Controls 1.48 cfs @ 4.23 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Passes 1.48 cfs of 1.53 cfs potential flow)

Summary for Pond 3P: SIS#3

Inflow Area = 7,583 sf, 78.78% Impervious, Inflow Depth > 4.20" for 10-Year event
Inflow = 0.74 cfs @ 12.13 hrs, Volume= 2,656 cf
Outflow = 0.07 cfs @ 13.01 hrs, Volume= 1,001 cf, Atten= 90%, Lag= 52.7 min
Discarded = 0.00 cfs @ 3.48 hrs, Volume= 209 cf
Primary = 0.07 cfs @ 13.01 hrs, Volume= 792 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 13.82' @ 13.01 hrs Surf.Area= 696 sf Storage= 1,659 cf

Plug-Flow detention time= 364.9 min calculated for 1,001 cf (38% of inflow)
Center-of-Mass det. time= 183.5 min (964.7 - 781.2)

Volume	Invert	Avail.Storage	Storage Description
#1	10.50'	1,230 cf	**36.0" Round Pipe Storage** Inside #2 L= 174.0'
#2	10.00'	466 cf	**4.00'W x 174.00'L x 4.00'H Prismatoid** 2,784 cf Overall - 1,230 cf Embedded = 1,554 cf x 30.0% Voids
		1,696 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	10.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	10.50'	**12.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	13.80'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.00 cfs @ 3.48 hrs HW=10.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.05 cfs @ 13.01 hrs HW=13.82' (Free Discharge)
↑—**2=Orifice/Grate** (Passes 0.05 cfs of 6.35 cfs potential flow)
↑—**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.05 cfs @ 0.48 fps)

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

Subcatchment101S: Proposed Site (Mid) Runoff Area=36,408 sf 67.53% Impervious Runoff Depth>5.25"
Tc=6.0 min CN=92 Runoff=4.48 cfs 15,924 cf

Subcatchment102S: Proposed Site Runoff Area=15,000 sf 100.00% Impervious Runoff Depth>5.94"
Tc=6.0 min CN=98 Runoff=1.93 cfs 7,430 cf

Subcatchment103S: Proposed Site (South) Runoff Area=7,583 sf 78.78% Impervious Runoff Depth>5.48"
Tc=6.0 min CN=94 Runoff=0.95 cfs 3,461 cf

Reach DP-1: Existing Combined Sewer Inflow=6.04 cfs 20,588 cf
Outflow=6.04 cfs 20,588 cf

Pond 1P: SIS#1 Peak Elev=16.82' Storage=2,883 cf Inflow=4.48 cfs 15,924 cf
Discarded=0.01 cfs 412 cf Primary=4.45 cfs 12,801 cf Outflow=4.46 cfs 13,213 cf

Pond 2P: SIS#2 Peak Elev=15.77' Storage=1,201 cf Inflow=1.93 cfs 7,430 cf
Discarded=0.00 cfs 215 cf Primary=1.62 cfs 6,196 cf Outflow=1.62 cfs 6,411 cf

Pond 3P: SIS#3 Peak Elev=13.91' Storage=1,677 cf Inflow=0.95 cfs 3,461 cf
Discarded=0.00 cfs 214 cf Primary=0.60 cfs 1,592 cf Outflow=0.60 cfs 1,806 cf

Total Runoff Area = 58,991 sf Runoff Volume = 26,815 cf Average Runoff Depth = 5.45"
22.77% Pervious = 13,432 sf 77.23% Impervious = 45,559 sf

Summary for Subcatchment 101S: Proposed Site (Mid)

Runoff = 4.48 cfs @ 12.13 hrs, Volume= 15,924 cf, Depth> 5.25"

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

Area (sf)	CN	Description
8,000	98	Roofs, HSG D
16,585	98	Paved parking, HSG D
11,823	80	>75% Grass cover, Good, HSG D
36,408	92	Weighted Average
11,823		32.47% Pervious Area
24,585		67.53% Impervious Area

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

Summary for Subcatchment 102S: Proposed Site (North)

Runoff = 1.93 cfs @ 12.13 hrs, Volume= 7,430 cf, Depth> 5.94"

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

Area (sf)	CN	Description
15,000	98	Roofs, HSG D
15,000		100.00% Impervious Area

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

Summary for Subcatchment 103S: Proposed Site (South)

Runoff = 0.95 cfs @ 12.13 hrs, Volume= 3,461 cf, Depth> 5.48"

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

Area (sf)	CN	Description
4,706	98	Paved parking, HSG D
1,609	80	>75% Grass cover, Good, HSG D
1,268	98	Roofs, HSG D
7,583	94	Weighted Average
1,609		21.22% Pervious Area
5,974		78.78% Impervious Area

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

Summary for Reach DP-1: Existing Combined Sewer

Inflow Area = 58,991 sf, 77.23% Impervious, Inflow Depth > 4.19" for 25-Year event
Inflow = 6.04 cfs @ 12.14 hrs, Volume= 20,588 cf
Outflow = 6.04 cfs @ 12.14 hrs, Volume= 20,588 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: SIS#1

Inflow Area = 36,408 sf, 67.53% Impervious, Inflow Depth > 5.25" for 25-Year event
Inflow = 4.48 cfs @ 12.13 hrs, Volume= 15,924 cf
Outflow = 4.46 cfs @ 12.14 hrs, Volume= 13,213 cf, Atten= 0%, Lag= 0.4 min
Discarded = 0.01 cfs @ 2.79 hrs, Volume= 412 cf
Primary = 4.45 cfs @ 12.14 hrs, Volume= 12,801 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 16.82' @ 12.14 hrs Surf.Area= 1,350 sf Storage= 2,883 cf

Plug-Flow detention time= 139.9 min calculated for 13,213 cf (83% of inflow)
Center-of-Mass det. time= 58.0 min (841.9 - 783.9)

Volume	Invert	Avail.Storage	Storage Description
#1	13.50'	1,909 cf	**36.0" Round Pipe Storage** Inside #2 L= 270.0'
#2	13.00'	1,047 cf	**5.00'W x 270.00'L x 4.00'H Prismatoid** 5,400 cf Overall - 1,909 cf Embedded = 3,491 cf x 30.0% Voids
		2,956 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	14.00'	**12.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	16.40'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.01 cfs @ 2.79 hrs HW=13.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=4.44 cfs @ 12.14 hrs HW=16.82' (Free Discharge)
└**2=Orifice/Grate** (Passes 4.44 cfs of 5.76 cfs potential flow)
└**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 4.44 cfs @ 2.12 fps)

Summary for Pond 2P: SIS#2

Inflow Area = 15,000 sf,100.00% Impervious, Inflow Depth > 5.94" for 25-Year event
Inflow = 1.93 cfs @ 12.13 hrs, Volume= 7,430 cf
Outflow = 1.62 cfs @ 12.17 hrs, Volume= 6,411 cf, Atten= 16%, Lag= 2.3 min
Discarded = 0.00 cfs @ 1.03 hrs, Volume= 215 cf
Primary = 1.62 cfs @ 12.17 hrs, Volume= 6,196 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 15.77' @ 12.17 hrs Surf.Area= 656 sf Storage= 1,201 cf

Plug-Flow detention time= 137.8 min calculated for 6,408 cf (86% of inflow)
Center-of-Mass det. time= 65.0 min (810.7 - 745.7)

Volume	Invert	Avail.Storage	Storage Description
#1	13.50'	1,159 cf	**36.0" Round Pipe Storage** Inside #2 L= 164.0'
#2	13.00'	439 cf	**4.00'W x 164.00'L x 4.00'H Prismatoid** 2,624 cf Overall - 1,159 cf Embedded = 1,465 cf x 30.0% Voids
		1,599 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	14.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	15.40'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.00 cfs @ 1.03 hrs HW=13.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=1.62 cfs @ 12.17 hrs HW=15.76' (Free Discharge)
└**2=Orifice/Grate** (Orifice Controls 1.62 cfs @ 4.65 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Passes 1.62 cfs of 3.60 cfs potential flow)

Summary for Pond 3P: SIS#3

Inflow Area = 7,583 sf, 78.78% Impervious, Inflow Depth > 5.48" for 25-Year event
Inflow = 0.95 cfs @ 12.13 hrs, Volume= 3,461 cf
Outflow = 0.60 cfs @ 12.20 hrs, Volume= 1,806 cf, Atten= 37%, Lag= 4.2 min
Discarded = 0.00 cfs @ 2.75 hrs, Volume= 214 cf
Primary = 0.60 cfs @ 12.20 hrs, Volume= 1,592 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 13.91' @ 12.20 hrs Surf.Area= 696 sf Storage= 1,677 cf

Plug-Flow detention time= 277.6 min calculated for 1,805 cf (52% of inflow)
Center-of-Mass det. time= 129.4 min (902.6 - 773.2)

Volume	Invert	Avail.Storage	Storage Description
#1	10.50'	1,230 cf	**36.0" Round Pipe Storage** Inside #2 L= 174.0'
#2	10.00'	466 cf	**4.00'W x 174.00'L x 4.00'H Prismatoid** 2,784 cf Overall - 1,230 cf Embedded = 1,554 cf x 30.0% Voids
		1,696 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	10.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	10.50'	**12.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	13.80'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.00 cfs @ 2.75 hrs HW=10.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=0.59 cfs @ 12.20 hrs HW=13.91' (Free Discharge)
↑—**2=Orifice/Grate** (Passes 0.59 cfs of 6.45 cfs potential flow)
↑—**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 0.59 cfs @ 1.08 fps)

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

Subcatchment101S: Proposed Site (Mid) Runoff Area=36,408 sf 67.53% Impervious Runoff Depth>7.85"
Tc=6.0 min CN=92 Runoff=6.54 cfs 23,831 cf

Subcatchment102S: Proposed Site Runoff Area=15,000 sf 100.00% Impervious Runoff Depth>8.58"
Tc=6.0 min CN=98 Runoff=2.77 cfs 10,723 cf

Subcatchment103S: Proposed Site (South) Runoff Area=7,583 sf 78.78% Impervious Runoff Depth>8.10"
Tc=6.0 min CN=94 Runoff=1.38 cfs 5,116 cf

Reach DP-1: Existing Combined Sewer Inflow=9.95 cfs 33,414 cf
Outflow=9.95 cfs 33,414 cf

Pond 1P: SIS#1 Peak Elev=17.63' Storage=2,956 cf Inflow=6.54 cfs 23,831 cf
Discarded=0.01 cfs 425 cf Primary=6.69 cfs 20,689 cf Outflow=6.70 cfs 21,114 cf

Pond 2P: SIS#2 Peak Elev=16.32' Storage=1,443 cf Inflow=2.77 cfs 10,723 cf
Discarded=0.00 cfs 217 cf Primary=2.05 cfs 9,485 cf Outflow=2.05 cfs 9,702 cf

Pond 3P: SIS#3 Peak Elev=13.99' Storage=1,694 cf Inflow=1.38 cfs 5,116 cf
Discarded=0.00 cfs 221 cf Primary=1.37 cfs 3,240 cf Outflow=1.37 cfs 3,461 cf

Total Runoff Area = 58,991 sf Runoff Volume = 39,671 cf Average Runoff Depth = 8.07"
22.77% Pervious = 13,432 sf 77.23% Impervious = 45,559 sf

Summary for Subcatchment 101S: Proposed Site (Mid)

Runoff = 6.54 cfs @ 12.13 hrs, Volume= 23,831 cf, Depth> 7.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.83"

Area (sf)	CN	Description
8,000	98	Roofs, HSG D
16,585	98	Paved parking, HSG D
11,823	80	>75% Grass cover, Good, HSG D
36,408	92	Weighted Average
11,823		32.47% Pervious Area
24,585		67.53% Impervious Area

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

Summary for Subcatchment 102S: Proposed Site (North)

Runoff = 2.77 cfs @ 12.13 hrs, Volume= 10,723 cf, Depth> 8.58"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.83"

Area (sf)	CN	Description
15,000	98	Roofs, HSG D
15,000		100.00% Impervious Area

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

Summary for Subcatchment 103S: Proposed Site (South)

Runoff = 1.38 cfs @ 12.13 hrs, Volume= 5,116 cf, Depth> 8.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
NRCC 24-hr D 100-Year Rainfall=8.83"

Area (sf)	CN	Description
4,706	98	Paved parking, HSG D
1,609	80	>75% Grass cover, Good, HSG D
1,268	98	Roofs, HSG D
7,583	94	Weighted Average
1,609		21.22% Pervious Area
5,974		78.78% Impervious Area

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

Summary for Reach DP-1: Existing Combined Sewer

Inflow Area = 58,991 sf, 77.23% Impervious, Inflow Depth > 6.80" for 100-Year event
Inflow = 9.95 cfs @ 12.13 hrs, Volume= 33,414 cf
Outflow = 9.95 cfs @ 12.13 hrs, Volume= 33,414 cf, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: SIS#1

Inflow Area = 36,408 sf, 67.53% Impervious, Inflow Depth > 7.85" for 100-Year event
Inflow = 6.54 cfs @ 12.13 hrs, Volume= 23,831 cf
Outflow = 6.70 cfs @ 12.13 hrs, Volume= 21,114 cf, Atten= 0%, Lag= 0.2 min
Discarded = 0.01 cfs @ 2.01 hrs, Volume= 425 cf
Primary = 6.69 cfs @ 12.13 hrs, Volume= 20,689 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 17.63' @ 12.13 hrs Surf.Area= 1,350 sf Storage= 2,956 cf

Plug-Flow detention time= 110.2 min calculated for 21,105 cf (89% of inflow)
Center-of-Mass det. time= 48.6 min (820.4 - 771.8)

Volume	Invert	Avail.Storage	Storage Description
#1	13.50'	1,909 cf	**36.0" Round Pipe Storage** Inside #2 L= 270.0'
#2	13.00'	1,047 cf	**5.00'W x 270.00'L x 4.00'H Prismatoid** 5,400 cf Overall - 1,909 cf Embedded = 3,491 cf x 30.0% Voids
		2,956 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	14.00'	**12.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	16.40'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.01 cfs @ 2.01 hrs HW=13.04' (Free Discharge)
↑**1=Exfiltration** (Exfiltration Controls 0.01 cfs)

Primary OutFlow Max=6.62 cfs @ 12.13 hrs HW=17.57' (Free Discharge)
↑**2=Orifice/Grate** (Orifice Controls 6.62 cfs @ 8.43 fps)
↑**3=Sharp-Crested Vee/Trap Weir** (Passes 6.62 cfs of 20.60 cfs potential flow)

Summary for Pond 2P: SIS#2

Inflow Area = 15,000 sf,100.00% Impervious, Inflow Depth > 8.58" for 100-Year event
Inflow = 2.77 cfs @ 12.13 hrs, Volume= 10,723 cf
Outflow = 2.05 cfs @ 12.18 hrs, Volume= 9,702 cf, Atten= 26%, Lag= 3.1 min
Discarded = 0.00 cfs @ 0.75 hrs, Volume= 217 cf
Primary = 2.05 cfs @ 12.18 hrs, Volume= 9,485 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 16.32' @ 12.18 hrs Surf.Area= 656 sf Storage= 1,443 cf

Plug-Flow detention time= 107.7 min calculated for 9,702 cf (90% of inflow)
Center-of-Mass det. time= 52.3 min (792.7 - 740.4)

Volume	Invert	Avail.Storage	Storage Description
#1	13.50'	1,159 cf	**36.0" Round Pipe Storage** Inside #2 L= 164.0'
#2	13.00'	439 cf	**4.00'W x 164.00'L x 4.00'H Prismatoid** 2,624 cf Overall - 1,159 cf Embedded = 1,465 cf x 30.0% Voids
		1,599 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	13.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	14.50'	**8.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	15.40'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.00 cfs @ 0.75 hrs HW=13.04' (Free Discharge)
└**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=2.05 cfs @ 12.18 hrs HW=16.31' (Free Discharge)
└**2=Orifice/Grate** (Orifice Controls 2.05 cfs @ 5.86 fps)
└**3=Sharp-Crested Vee/Trap Weir** (Passes 2.05 cfs of 14.32 cfs potential flow)

Summary for Pond 3P: SIS#3

Inflow Area = 7,583 sf, 78.78% Impervious, Inflow Depth > 8.10" for 100-Year event
Inflow = 1.38 cfs @ 12.13 hrs, Volume= 5,116 cf
Outflow = 1.37 cfs @ 12.13 hrs, Volume= 3,461 cf, Atten= 0%, Lag= 0.3 min
Discarded = 0.00 cfs @ 1.95 hrs, Volume= 221 cf
Primary = 1.37 cfs @ 12.13 hrs, Volume= 3,240 cf

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.01 hrs
Peak Elev= 13.99' @ 12.13 hrs Surf.Area= 696 sf Storage= 1,694 cf

Plug-Flow detention time= 218.9 min calculated for 3,461 cf (68% of inflow)
Center-of-Mass det. time= 97.4 min (860.2 - 762.8)

Volume	Invert	Avail.Storage	Storage Description
#1	10.50'	1,230 cf	**36.0" Round Pipe Storage** Inside #2 L= 174.0'
#2	10.00'	466 cf	**4.00'W x 174.00'L x 4.00'H Prismatoid** 2,784 cf Overall - 1,230 cf Embedded = 1,554 cf x 30.0% Voids
		1,696 cf	Total Available Storage

Device	Routing	Invert	Outlet Devices
#1	Discarded	10.00'	**0.170 in/hr Exfiltration over Surface area**
#2	Primary	10.50'	**12.0" Vert. Orifice/Grate** C= 0.600
#3	Device 2	13.80'	**5.0' long Sharp-Crested Vee/Trap Weir** Cv= 2.62 (C= 3.28)

Discarded OutFlow Max=0.00 cfs @ 1.95 hrs HW=10.04' (Free Discharge)
↑—**1=Exfiltration** (Exfiltration Controls 0.00 cfs)

Primary OutFlow Max=1.36 cfs @ 12.13 hrs HW=13.99' (Free Discharge)
↑—**2=Orifice/Grate** (Passes 1.36 cfs of 6.54 cfs potential flow)
↑—**3=Sharp-Crested Vee/Trap Weir** (Weir Controls 1.36 cfs @ 1.43 fps)

APPENDIX D

Long-Term Pollution Prevention and Stormwater Operation and Maintenance Plan

Nitsch Engineering

2 Center Plaza, Suite 430
Boston, MA 02108-1928
T: 617-338-0063
F: 617-338-6472
www.nitscheng.com

LONG-TERM POLLUTION PREVENTION PLAN AND STORMWATER OPERATION AND MAINTENANCE PLAN

Old Colony Phase IV, Boston, MA

TABLE OF CONTENTS

FIGURES

1.0 INTRODUCTION

The purpose of this document is to specify the pollution prevention measures and stormwater management system operation and maintenance for the Old Colony Phase IV site. The Responsible Party indicated below shall implement the management practices outlined in this document and proactively conduct operations at the project site in an environmentally responsible manner. Compliance with this Manual does not in any way dismiss the responsible party, owner, property manager, or occupants from compliance with other applicable federal, state or local laws.

Responsible Party: Name
Contact, Title
Address
Phone

This Document has been prepared in compliance with Standards 4 and 9 of the 2008 Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Standards, which state:

Standard 4:
The Long Term Pollution Prevention Plan shall include the proper procedures for the following:

- Good housekeeping
- Storing materials and waste products inside or under cover
- Vehicle washing
- Routine inspections of stormwater best management practices
- Spill prevention and response
- Maintenance of lawns, gardens, and other landscaped areas
- Storage and use of fertilizers, herbicides, and pesticides
- Pet waste management
- Operation and management of septic systems
- Proper management of deicing chemicals and snow

Standard 9:
The Long-Term Operation and Maintenance Plan shall at a minimum include:

- Stormwater management system(s) owner(s)
- The party or parties responsible for operation and maintenance, including how future property owners shall be notified of the presence of the stormwater management system and the requirement for operation and maintenance
- The routine and non-routine maintenance tasks to be undertaken after construction is complete and a schedule for implementing those tasks
- A plan that is drawn to scale and shows the location of all stormwater BMPs in each treatment train along with the discharge point
- A description and delineation of public safety features

2.0 LONG-TERM POLLUTION PREVENTION PLAN

The Responsible Party shall implement the following good housekeeping procedures at the project site to reduce the possibility of accidental releases and to reduce safety hazards.

2.1 Storage of Hazardous Materials

To prevent leaks and spills, keep hazardous materials and waste products under cover or inside. Use drip pans or spill containment systems to prevent chemicals from entering the drainage system. Inspect storage areas for materials and waste products at least once per year to determine amount and type of the material on site, and if the material requires disposal.

Securely store liquid petroleum products and other liquid chemicals in federally- and state-approved containers. Restrict access to maintenance personnel and administrators.

2.2 Storage of Waste Products

Collect and store all waste materials in securely lidded dumpster(s) or other secure containers as applicable to the material. Keep dumpster lids closed and the areas around them clean. Do not fill the dumpsters with liquid waste or hose them out. Sweep areas around the dumpster regularly and put the debris in the garbage, instead of sweeping or hosing it into the parking lot. Legally dispose of collected waste on a regular basis.

Segregate liquid wastes, including motor oil, antifreeze, solvents, and lubricants, from solid waste and recycle through hazardous waste disposal companies, whenever possible. Separate oil filters, batteries, tires, and metal filings from grinding and polishing metal parts from common trash items and recycle. These items are not trash and are illegal to dump. Contact a hazardous waste hauler for proper disposal to a hazardous waste collection center.

2.3 Spill Prevention and Response

Implement spill response procedures for releases of significant materials such as fuels, oils, or chemical materials onto the ground or other area that could reasonably be expected to discharge to surface or groundwater.

- For minor spills, keep fifty (50) gallon spill control kits and Speedy Dry at all shop and work areas.
- Immediately contact applicable Federal, State, and local agencies for reportable quantities as required by law.
- Immediately perform applicable containment and cleanup procedures following a spill release.
- Promptly remove and dispose of all material collected during the response in accordance with Federal, State and local requirements. A licensed emergency response contractor may be required to assist in cleanup of releases depending on the amount of the release, and the ability of the Contractor to perform the required response.
- Reportable quantities of chemicals, fuels, or oils are established under the Clean Water Act and enforced through Massachusetts Department of Environmental Protection (DEP).

2.4 Minimize Soil Erosion

Soil erosion facilitates mechanical transport of nutrients, pathogens, and organic matter to surface water bodies. Repair all areas where erosion is occurring throughout the project site. Stabilize bare soil with riprap, seed, mulch, or vegetation.

2.5 Vehicle Washing

Vehicle washing will occur within the covered service area. The car wash will be a state-of-the art system that will reclaim and reuse water for the car wash operation. Eventual discharge of the wash water will be directed to the sanitary sewer.

2.6 Maintenance of Lawns, Gardens, and other Landscaped Areas

Pesticides and fertilizers shall not be used in the landscaped areas associated with the project site and shall not be stored on-site. Dumping of lawn wastes, brush or leaves or other materials or debris is not permitted in any Resource Area. Grass clippings, pruned branches and any other landscaped waste should be disposed of or composted in an appropriate location. No irrigation shall be used in the landscaped areas for this project.

2.7 Management of Deicing Chemicals and Snow

The qualified contractor selected for snow plowing and deicing shall be made fully aware of the requirements of this section.

No road salt (sodium chloride) shall be stored on-site. The use of magnesium chloride de-icing product with a 0.5 to 1.0 percent sodium chloride mix for snow and ice treatment is permitted. The product shall be stored in a locked room inside the building and shall be used at exterior stairs and walkways. The snow plow contractor shall adhere to these magnesium chloride use and storage requirements.

During typical snow plowing operations, snow shall be pushed to the designated snow removal areas noted on the Snow Storage Plan (Figure 2). Snow shall not be stockpiled in wetland resource areas or the 100-foot Buffer Zone, catch basins, or bioretention basins, . In severe conditions where snow cannot be stockpiled on site, the snow shall be removed from the site and properly disposed of in accordance with DEP Guideline BRP601-01.

Use of sand is permitted only for impervious roadways and parking areas. If sand is applied, the snow plowed from impervious areas shall not be stored on porous asphalt.

Before winter begins, the property owner and the contractor shall review snow plowing, deicing, and stockpiling procedures. Areas designated for stockpiling should be cleaned of any debris. Street and parking lot sweeping should be followed in accordance with the Operation and Maintenance Plan.

2.8 Coordination with other Permits and Requirements

Certain conditions of other approvals affecting the long term management of the property shall be considered part of this Long Term Pollution Prevention Plan. The Owner shall become familiar with those documents and comply with the guidelines set forth in those documents.

3.0 STORMWATER MANAGEMENT SYSTEM OPERATION AND MAINTENANCE PLAN

3.1 Introduction

This Operation and Maintenance Plan (O&M Plan) for the Old Colony Phase V site is required under Standard 9 of the 2008 MassDEP Stormwater Handbook to provide best management practices for implementing maintenance activities for the stormwater management system in a manner that minimizes impacts to wetland resource areas.

The Owner shall implement this O&M Plan and proactively conduct operations at the site in an environmentally responsible manner. Compliance with this O&M Plan does not in any way dismiss the Owner from compliance with other applicable Federal, State or local laws.

Routine maintenance during construction and post-development phases of the project, as defined in the Operation and Maintenance Plan, shall be permitted without amendment to the Order of Conditions. A continuing condition in the Certificate of Compliance shall ensure that maintenance can be performed without triggering further filings under the Wetlands Protection Act.

All stormwater best management practices (BMPs) shall be operated and maintained in accordance with the design plans and the Operation and Maintenance Plan approved by the issuing authority. The Owner shall:

a. Maintain an operation and maintenance log for the last three years, including inspections, repairs, replacement and disposal (for disposal the log shall indicate the type of material and the disposal location). This is a rolling log in which the responsible party records all operation and maintenance activities for the past three years.

b. Make this log available to MassDEP and the Conservation Commission upon request; and

c. Allow members and agents of the MassDEP and the Conservation Commission to enter and inspect the premises to evaluate and ensure that the Owner complies with the Operation and Maintenance requirements for each BMP.

3.2 Stormwater Operation and Maintenance Requirements

Inspect and maintain the stormwater management system as directed below. Refer to the Stormwater Management System Location Map (Figure 1) for the location of each component of the system. Repairs to any component of the system shall be made as soon as possible to prevent any potential pollutants (including silt) from entering the resource areas.

Area Drains

Inspect area drains at least once per month and remove debris from the grate. Clean out accumulated sediments at least once per year and more frequently as necessary.

Subsurface Recharge Structures

- Inspect subsurface recharge structures twice per year. Inspect the inlets and observation ports to determine if there is accumulated sediment within the system. Remove all debris and accumulated sediment that may clog the system.

3.3 Street Sweeping

Perform street sweeping at least twice per year, whenever there is significant debris present on roads and parking lots. Street sweeping shall occur in the spring and fall. Sweepings must be handled and disposed of properly according to the Boston Conservation Commission.

3.4 Repair of the Stormwater Management System

The stormwater management system shall be maintained. The repair of any component of the system shall be made as soon as possible to prevent any potential pollutants including silt from entering the resource areas or the existing closed drainage system.

3.5 Reporting

The Owner shall maintain a record of drainage system inspections and maintenance (per this Plan) and submit a yearly report to the Boston Conservation Commission.

STORMWATER MANAGEMENT SYSTEM INSPECTION FORM

OLD COLONY PHASE IV
BOSTON, MA

Inspected by:_____
Date:_____

Component	Status/Inspection	Action Taken
Area Drains and Drain Manholes		
Subsurface Recharge System		

SUBMIT COPIES OF STORMWATER MANAGEMENT SYSTEM INSPECTION FORM TO THE BOSTON CONSERVATION COMMISSION WITH THE YEARLY REPORT.

APPENDIX E

DRAFT Stormwater Pollution Prevention Plan (SWPPP)

APPENDIX F

Soil Investigations

NRCS Soil Maps and Descriptions
Geotechnical Report

PRELIMINARY FOUNDATION ENGINEERING REPORT

OLD COLONY PHASE 4

SOUTH BOSTON, MASSACHUSETTS

JUNE 26, 2020

Prepared For:

Beacon Communities Services LLC
Two Center Plaza, Suite 700
Boston, MA 02108

2269 Massachusetts Avenue
Cambridge, MA 02140
www.mcphailgeo.com
(617) 868-1420

PROJECT NO. 5060.2.04

June 26, 2020

Beacon Communities Services LLC
Two Center Plaza, Suite 700
Boston, MA 02108

Attention: Ms. Darcy L. Jameson

Reference: Old Colony Phase 4; South Boston, Massachusetts
Preliminary Foundation Engineering Report

Ladies and Gentlemen:

This report documents the results of our subsurface exploration programs and preliminary foundation design study for the proposed Phase 4 redevelopment of the Old Colony Housing development located on East 8th Street and Columbia Road in South Boston, Massachusetts. Refer to the Project Location Plan, **Figure 1**, for the general site location.

This report was prepared in accordance with our proposal dated January 9, 2020 and the subsequent authorizations of Beacon Communities Services LLC (Beacon). These services are subject to the limitations contained in **Appendix A**.

Available Information

Information provided to McPhail Associates, LLC (McPhail) by Beacon and/or the Project Architect, The Architectural Team (TAT), included the following:

- A preliminary schematic drawing dated October 31, 2019 and prepared by TAT;
- A 20-scale drawing entitled "Existing Conditions Plan" dated May 18, 2015 and prepared by Harry R. Feldman, Inc. (Feldman);

In addition, McPhail was provided with Boston Housing Authority (BHA) plans prepared for the original design and construction of the Old Colony Housing Development which were typically entitled "Project MASS 2-2, South Boston District, Boston, Massachusetts" and dated September 25, 1939.

Elevations as noted herein are in feet and are referenced to the Boston City Base Datum (BCB) which is 5.65 feet below the National Geodetic Vertical Datum (NGVD).

Existing and Proposed Conditions

The approximate 16-acre Old Colony Housing development is bounded by Old Colony Avenue to the west, Dorchester Avenue to the northwest, East 8th Street to the northeast and Columbia Road to the south. The Phase 4 area is located at the eastern portion of the housing development and is bounded by East 8th Street to the north, Old Harbor Street to

the east, Columbia Road to the south and Mercer Street to the northwest. It is our current understanding that the Phase 4 development site includes existing Buildings A-A through G-G. The Michael J. Perkins School which is generally located in the central portion of the 16-acre Old Colony Housing property, is not part of the Phase 4 development site.

Within the western third of the site, existing grades slope gradually up from south to north (to the inside south-facing wall of existing Building A-A) from about Elevation +16 to Elevation +18. On the north side of Building A-A along Mercer Street existing grades slope up from west to east from about Elevation +21 to Elevation +24. Within the central third of the site, existing grades slope gradually up from south to north from about Elevation +17.5 to Elevation +24. Within the eastern third of the site, existing grades slope gradually up from south to north (to the inside south-facing wall of existing Building B-B) from about Elevation +18 to Elevation +24. On the north side of Building B-B along Mercer Street and east side of Building B-B along the Old Harbor Street, existing grades slope up from south to north from about Elevation +24 to Elevation +30 and at the far northeast corner of the site near the intersection of Mercer and Old Harbor Streets, existing grades continue to slope up from south to north from Elevation +30 to Elevation+34.

It is understood that the current plans for proposed redevelopment of the Phase 4 site are in the preliminary stages of planning. Our current understanding of the proposed development is based upon information provided to McPhail by TAT. Based on the current plans, the current redevelopment includes the complete demolition and removal of the existing BHA Buildings A-A through G-G and construction of three (3) new residential buildings identified as Buildings 1 through 3 to be located at the western, central, and eastern thirds of the site, respectively. It is currently understood that the new buildings will contain no below-grade space and have lowest level slabs that are a minimum of 2 feet above the current flood elevation which is Elevation +20. Accordingly, based on information provided by TAT, the new buildings are assumed to have lowest level slabs at Elevation +22 to Elevation +23. We note that Building 3 may require the use of a split ground floor level to accommodate the significant grade change across the eastern third of the site.

The proposed building configurations and construction are as follows:

Building No.	Plan Area (sf)	No. of Stories	Framing Type
1	28,600	4	Wood-framed
2	32,000	4	Wood-framed
3	28,000	5	Wood-framed

The approximate location of the proposed buildings is shown on **Figure 2**.

Subsurface Explorations

As part of McPhail geoenvironmental engineering assessment of the subject site, a subsurface exploration program consisting of 19 borings identified as B-330 through B-349

was performed during the period of April 8 to 21, 2015. Borings B-346 (OW) and B-349 (OW) were completed as groundwater monitoring wells. The approximate locations of the explorations are shown in the enclosed Subsurface Exploration Plan, **Figure 2**. Logs of the borings are included in **Appendix B**.

The borings were performed utilizing truck-or track-mounted drilling equipment and advanced using NW casing and the wet rotary drilling method and/or hollow stem augers. Standard 2-inch O.D. split-spoon samples and standard penetration tests (SPT) were obtained at minimum 5-foot intervals of depth in accordance with the standard procedures in ASTM D1586. The borings were generally terminated at depths between 15 and 22 feet below the existing ground surface within marine sand or clay deposit, except boring B-339 which was terminated at a depth of 8 feet below ground surface due to refusal in the fill deposit.

The explorations were monitored by a McPhail representative who prepared field logs, monitored groundwater conditions in the completed explorations and monitoring wells, and determined the required exploration depths based upon the actual subsurface conditions encountered.

Field locations of the borings were determined by taping from existing site features indicated on the available plans. The existing ground surface elevation at each exploration location was determined by a level survey performed by our field staff utilizing vertical control information indicated on the plan.

Previous Subsurface Explorations

The information gathered from the subsurface exploration performed at the site by McPhail at the site was supplemented by the logs of previous borings 179 through 185 performed at the site by others in 1939 which are contained in **Appendix C**.

Subsurface Conditions

A detailed description of the subsurface conditions encountered within the explorations completed in the Phase 4 development site is documented on the boring logs contained in **Appendix B** and logs contained in **Appendix C**. Based on the subsurface explorations performed at the site, the following is a description of the generalized subsurface conditions across the site encountered from ground surface downward.

Below the bituminous pavement or topsoil surface treatments, the explorations typically encountered fill material to depths ranging from 7 to 20 feet below existing ground surface. The fill typically varies from a very loose to compact, brown to gray to black, silt and sand with a trace gravel to silty sand, also containing varying amounts of clay, organics, cobbles, brick, concrete, wood, ash and cinders. Please note that obstructions halting advancement of the drilling equipment were encountered within the fill deposit in the vicinity of borings

B-336 and B-339. Additionally, what was believed to be concrete debris was encountered between the depths of about 5 feet to 6.5 feet below-grade at boring B-336. Boring B-339 was terminated at a depth of 8 feet below ground surface on what is believed to be concrete debris. The obstructions are anticipated to be the result of construction debris within the fill deposit or remnants of buried former foundations/structures.

A natural organic deposit, representative of the former tidal flats, was observed within borings (B-330, B-331, B-333, B-334, B-335, B-336, B-337, B-339, B-340, B-341 and B-343) directly underlying the fill deposit within the western and central portions of the site coincident with the locations of proposed Building 1 and Building 2. The organic deposit was observed to range from about 1 to 6 feet in thickness and generally consists of a soft to stiff, brown to black organic silt to a fibrous peat.

Underlying the fill and/or organic deposit, except within boring B-343, a marine deposit consisting of sand, clay and/or interbedded clay/sand was encountered at depths of 8 to 18 feet below the existing grade. The marine sand deposit, where it was encountered, generally consists of a compact to very dense, gray to brown, stratified silty sand, varying to a sand with trace to some silt and trace gravel. The marine clay deposit, known locally as Boston Blue Clay, generally consists of a hard to very soft, yellow to gray, silty clay with occasional fine sand seams and partings and trace to some gravel. Except boring B-339, the borings were terminated with marine deposit.

A glaciomarine deposit was encountered in boring B-343 below the fill and organic deposits at a depth of 12 feet below ground surface corresponding to Elevation +6.3. In addition, within boring B-332, the glaciomarine deposit was encountered below marine deposit at a depth of 11 feet below ground surface corresponding to Elevation +10.7. The glaciomarine deposit was observed to consist of a compact to dense, gray to green mixture of silt, sand and clay with some gravel.

Fifteen (15) original borings 174 through 189 were performed on the Phase IV site in 1939, and advanced to depths ranging between 20 and 84 feet below ground surface. The borings that were advanced through the natural marine deposit, indicate that the glacial deposits are generally encountered at depths of 38 to 65 feet below ground surface. The eight (8) of fifteen (15) borings indicate refusal on possible bedrock or bolder at depths ranging from approximately 40 to 84 feet below ground surface.

Groundwater was observed in the borings at the time of drilling at depths ranging from 7 to 13 feet below the existing ground surface corresponding to Elevation +6 to Elevation +13. In addition, the groundwater level at the site was observed within the observation wells installed in completed borings B-346 (OW) and B-349 (OW) to range from depths of 5.9 to 9.5 and varying from Elevation +11.6 to Elevation +10. Groundwater observation well monitoring reports are included in **Appendix D**. It is anticipated that future groundwater levels across the project site may vary from those reported herein based on such factors such as normal seasonal changes, runoff during or following periods of heavy precipitation, and alterations to existing drainage patterns.

Existing Foundation Conditions

Based upon our review of foundation plans contained in the above-referenced historic September 1939 BHA plans, the existing buildings are generally supported on a system of straight shaft or belled caissons or spread footings. Information contained on the above-referenced BHA plans indicate the 1st floor slab elevations and foundation types of the existing buildings to be as follows:

Existing Building ID	*1st Floor Slab Elevations*	*Foundation Type*
Block A - A	El. +24.9, El. +27.08 and El.+20.75	Caissons and Footings
Block B - B	El. +27.53 and El.+34.3	Caissons and Footings
Block C - C	El. +21.84 and El.+26.87	Caissons
Block D - D	El. +21.19 and El.+24.9	Caissons
Block E - E	El. +20.75	Caissons
Block F - F	El. +20.75	Caissons
Block G - G	El. +19.88	Caissons

Preliminary Foundation Design Recommendations

Based on our understanding of the proposed development and the anticipated subsurface conditions, it is recommended that foundation support for the proposed buildings transfer the structural load through the existing fill and compressible organic deposit to the underlying undisturbed natural marine clay/sand or glaciomarine deposit. It is therefore recommended that foundation support for the proposed buildings be provided by spread footing foundations in conjunction with a soil supported slab-on-grade bearing on the existing soil that is improved by aggregate piers and rigid inclusions.

Footings supported on aggregate piers and/or rigid inclusion-improved soil should be proportioned utilizing a design bearing pressure of two (2) tons per square-foot (tsf). Recommended minimum footing widths for continuous and isolated spread footings are 24 and 30 inches, respectively.

It is recommended that below footing subgrades where the organic soil is present at the site, the existing soils be improved by rigid inclusions. Rigid inclusions are constructed by advancing a hollow mandrel to the design depth, densifying the surrounding soils by displacement. Once reaching the design depth, concrete is pumped through the mandrel, which opens as it is raised. If required, the mandrel can be raised and lowered several times, vertically ramming lifts of concrete to create an expanded base.

It is recommended that below the slab-on-grade and below the footings in the areas where the organic soil is not present, the existing soils be improved by aggregate piers. Aggregate

piers are a ground improvement technique that involves ramming aggregate stone into a predrilled hole or by vertical displacement to reinforce unsuitable soils. The completed aggregate piers are typically about 20 inches in diameter.

The aggregate piers and rigid inclusion elements are typically installed in a grid pattern and are used in conjunction with an engineered granular pad to produce an intermediate foundation system for support of foundation loads.

General Foundation Recommendations

The lowest level slabs should be designed as conventional slabs-on-grade underlain by a polyethylene vapor barrier. A 6 to 12-inch thickness of off-site gravel fill or ¾" crushed stone over a thickness of filter fabric will be required below the proposed slabs.

For the lowest-level slabs of the proposed buildings that are planned to be at or above the exterior finished grades, perimeter and underslab drainage systems are not considered necessary. The proposed lowest level slabs that will be designed below-grade, perimeter and underslab drainage systems may be required to protect the lowest level slab from groundwater intrusion. The proposed grading plan should be provided to McPhail for review to determine if foundation drainage is required. Recommendations for foundation drainage, if required, would be contained in the Final Foundation Engineering Report (FFER).

It is recommended that all localized depressions in the building slabs (such as elevator pits, etc.) be provided with properly tied continuous waterstops in all construction joints and cementitious waterproofing applied to properly prepared interior surfaces.

Seismic Design Considerations

For the purposes of determining parameters for structural seismic design, this site is considered to be a Site Class D as defined in Chapter 20 of American Society of Civil Engineers (ASCE) Standard 7-10 "Minimum Design Loads for Buildings and Other Structures". Further, the bearing stratum on the proposed site is not considered to be subject to liquefaction during an earthquake based on the criterion of Section 1806.4 of the Code.

Foundation Construction Considerations

The primary foundation construction considerations include preparation of the foundation bearing surfaces and the slabs-on-grade, installation of the aggregate piers and rigid inclusions, vibrations associated with installation of the aggregate piers, rigid inclusions, temporary earth support, construction dewatering, and off-site disposal of excess excavated soil. These construction considerations are considered by McPhail to be critical to proper foundation performance of the completed structures and to mitigate potential adverse foundation construction impacts on the surrounding area.

Based on the existing grades at the site and the proposed lowest level slab at Elevation +22 to Elevation +23 for the proposed Building 3, it is anticipated that excavation of up to 17 feet below the existing ground surface along East Eight Street and Old Harbor Street will be required to reach the bottom of footing elevation. It is recommended that a trench box and/or open cutting and sloping the sides of the excavation be utilized as much as possible. However, it is understood that due to the constraints of the property line, adjacent streets and utility easements, temporary excavation support may be required.

If required, temporary earth support is recommended to consist of a cantilevered steel soldier pile and timber lagging system. It is anticipated that conventional driving of the soldier piles will be sufficient to advance through the soils present at the site.

Final Comments

The subsurface information obtained from the 2015 and 1939 borings is considered sufficient for preliminary foundation design purposes. However, it is recommended that a supplemental subsurface exploration program be performed once the building design is finalized. The supplemental subsurface exploration program would be building-specific and would further delineate the subsurface conditions within the building footprints for final foundation design purposes. Final foundation design recommendations will be prepared based on the specific design elements of the proposed building and the results of the final subsurface exploration program.

We trust that the above is sufficient for your present requirements. Should you have any questions concerning the recommendations presented herein, please do not hesitate to call us.

Very truly yours,

McPHAIL ASSOCIATES, LLC

Fatima Babic-Konjic, P.E.

Ambrose J. Donovan, P.E., L.S.P.

N:\Working Documents\Reports\5060 OC Ph 4_PFER_062620.docx

FBK/ajd

McPHAIL ASSOCIATES, LLC

Geotechnical and
Geoenvironmental Engineers

2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)
www.mcphailgeo.com

N

SCALE 1:25,000

PROJECT LOCATION PLAN

OLD COLONY PHASE FOUR

SOUTH BOSTON MASSACHUSETTS

NORTH

MERCER STREET

MERCER (PUBLIC - 40' WIDE) STREET

EAST EIGHTH STREET

COLUMBIA ROAD (PUBLIC - VARIABLE WIDTH)

OLD HARBOR STREET

JURISDICTION LINE (SEE NOTE 7)

APPROXIMATE LIMITS OF PROPOSED BUILDING 1
LOWEST LEVEL SLAB EL.+22 TO +23

APPROXIMATE LIMITS OF PROPOSED BUILDING 2
LOWEST LEVEL SLAB EL.+22 TO +23

APPROXIMATE LIMITS OF PROPOSED BUILDING 3
LOWEST LEVEL SLAB EL.+22 TO +23

APPROXIMATE LIMITS OF SUBJECT SITE

B-330	+15.6	-0.4 / -6.4
B-331	+18.9	+5.9 / +1.9
B-332	+21.7	+11.7 / +4.7
B-333	+16.5	+0.5 / -5.5
B-334	+17.8	+7.8 / +0.8
B-335	+16.5	-1.5 / -5.5
B-336	+16.6	+3.6 / -0.4
B-337	+17.3	+9.3 / +0.3
B-338	+21.7	+10.7 / +4.7
B-339A	+17.4	NE / +9.4*
B-339B	+17.0	+2.0 / 0.0
B-340	+17.4	+3.4 / +0.4
B-341	+19.3	+8.8 / +2.3
B-342	+27.8	+7.8 / +3.2
B-343	+18.8	+6.8 / +1.8
B-344	+21.5	+5.0 / +2.5
B-345	+22.6	+7.6 / +0.6
B-346 (OW)	+17.5	+5.5 / +0.5
B-347	+21.0	+9.0 / +4.0
B-348	+31.2	+18.2 / +9.2
B-349 (OW)	+19.5	+7.5 / +4.5

LEGEND

- — APPROXIMATE LOCATION OF BORING PERFORMED BY CARR-DEE CORP. FROM APRIL 8, 2015 TO APRIL 21, 2015 FOR McPHAIL ASSOCIATES, LLC
- (OW) — INDICATES OBSERVATION WELL INSTALLED WITHIN COMPLETED BOREHOLE
- +15.6 — ELEVATION OF EXISTING GROUND SURFACE
- -0.4 — ELEVATION OF TOP OF NATURAL MARINE CLAY / SAND DEPOSIT OR GLACIOMARINE DEPOSIT
- -6.4 — ELEVATION OF BOTTOM OF EXPLORATION
- NE — NOT ENCOUNTERED

REFERENCE: THIS PLAN WAS PREPARED FROM A 20-SCALE DRAWING ENTITLED, "EXISTING CONDITIONS PLAN" DATED MAY 18, 2015 PREPARED BY FELDMAN LAND SURVEYORS

GRAPHIC SCALE
30 0 30 60 120

McPHAIL ASSOCIATES, LLC
Geotechnical and Geoenvironmental Engineers
2269 Massachusetts Avenue
Cambridge, MA 02140
617/868-1420
617/868-1423 (Fax)
www.mcphailgeo.com

OLD COLONY PHASE FOUR

SOUTH BOSTON MASSACHUSETTS

SUBSURFACE EXPLORATION PLAN

FOR

BEACON COMMUNITIES DEVELOPMENT, LLC
BY
McPHAIL ASSOCIATES, LLC

Date: JUNE 2020	Dwn: M.B.S.	Chkd: F.B.K.	Scale: 1" = 30'
Project No: 5060			FIGURE 2

FILE NAME: \\McPhail-fs2\McPhail\Acad\JOBS\5060\PHASE 4\TER5060-F02.dwg

APPENDIX A:

LIMITATIONS

LIMITATIONS

This preliminary report has been prepared on behalf of and for the exclusive use of Beacon Communities Services LLC for specific application to the proposed Old Colony Phase 4 development to be located in South Boston, Massachusetts in accordance with generally accepted soil and geotechnical engineering practices. No other warranty, expressed or implied, is made.

In the event that any changes in nature or design of the proposed construction are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report modified or verified in writing by McPhail Associates, LLC.

The analyses and recommendations presented in this report are based upon the data obtained from the subsurface explorations performed at the approximate locations indicated on the enclosed plan. If variations in the nature and extent of subsurface conditions between the widely spaced explorations become evident during the course of construction, it will be necessary for a re-evaluation of the recommendations of this report to be made after performing on-site observations during the construction period and noting the characteristics of any variations.

APPENDIX B:

BORING LOGS B-330 THROUGH B-349 (OW)
PREPARED BY MCPHAIL ASSOCIATES, LLC

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-8-15
City/State:	Dorchester, MA	**Date Finished:**	7-8-15

Boring No. B-330

Contractor: Carr-Dee Corp.
Driller/Helper: J. DeSimone and J. DeSimone
Logged By/Reviewed By: TMC
Surface Elevation (ft): 15.6

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-8-15	7	8.6	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
	15		0.7 / 14.9	(TOPSOIL)	4	0.2	S1	24/16	0.0-2.0	1 1 3 4	Very loose to loose, black SILT and SAND, with ash and cinder (Fill)
1	14				5	0.1	S2	24/12	2.0-4.0	2 1 4 5	Loose, dark gray-brown SILT and SAND, with ash and cinder (Fill)
2	13										
3	12				5	0.4	S3	24/4	5.0-7.0	1 2 3 8	Loose, gray-brown silty SAND, with ash and cinder (Fill)
4	11			(FILL)	5	0.6	S4	24/4	7.0-9.0	6 3 2 2	Loose, gray-brown silty SAND (Fill)
5	10										
6	9				2	4.1	S5	24/22	10.0-12.0	2 1 1 2	Very soft to soft, brown FIBROUS PEAT (Organics)
7	8				8	31.3	S6	24/24	12.0-14.0	3 4 4 5	Firm to stiff, gray-brown ORGANIC SILT, with peat fibers (Organics)
8	7										
9	6		10.0 / 5.6		15	1.3	S7	12/10	15.0-16.0	4 6	Stiff, gray-brown sandy ORGANIC SILT (Organics)
10	5			(ORGANIC)	-	66.6	S7A	12/10	16.0-17.0	9 12	Compact, gray-brown SAND, trace silt, with organics (Marine Sand)
11	4				9	45.8	S8	12/10	17.0-18.0	4 4	Loose, gray-brown SAND, trace silt (Marine Sand)
12	3				-	4.4	S8A	12/8	18.0-19.0	5 8	Stiff, mottled blue-gray and yellow-gray silty CLAY (Marine Clay)
13	2										
14	1				14	0.5	S9	24/24	20.0-22.0	4 7 7 9	Stiff, mottled blue-gray and yellow-gray silty CLAY (Marine Clay)
15	0		16.0 / -0.4								
16	-1			(MARINE SAND)							
17	-2		18.0 / -2.4								
18	-3										
19	-4			(MARINE CLAY)							
20	-5										
21	-6		22.0 / -6.4								
22	-7			Bottom of Exploration							
23	-8										
24	-9										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-6-15
City/State:	Dorchester, MA	**Date Finished:**	7-6-15

Boring No.

B-331

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: TMC
Surface Elevation (ft): 18.9

Casing Type/Depth (ft): 3-3/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-6-15	9.5	9.4	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
			0.3 / 18.6	(TOPSOIL)							
1	18				80	0.5	S1	24/9	0.0-2.0	5 35 45 5	Very dense, dark brown silty SAND, wtih concrete (Fill)
2	17										
3	16				8	0.1	S2	24/10	2.0-4.0	5 5 3 3	Loose, brown silty SAND, some gravel (Fill)
4	15										
5	14			(FILL)							
6	13				3	0.2	S3	24/10	5.0-7.0	6 2 1 1	Very loose, gray-brown silty SAND, with ash, cinder and brick (Fill)
7	12										
8	11				3	0.2	S4	24/12	7.0-9.0	2 1 2 2	Very loose, dark brown SILT adn SAND, with wood, ash and cinder (Fill)
9	10		9.5 / 9.4								
10	9										
11	8			(ORGANICS)	3	0.4	S5	24/16	10.0-12.0	1 1 2 1	Soft, dark brown FIBROUS PEAT to sandy ORGANIC SILT (Organics)
12	7				33	1.5	S6	12/8	12.0-13.0	6 11	Compact, gray peaty SAND (Organics)
13	6		13.0 / 5.9								
14	5				-	0.3	S6A	12/12	13.0-14.0	22 24	Dense, gray fine to medium SAND, some silt (Marine Sand)
15	4			(MARINE SAND)							
16	3		16.0 / 2.9		27	0.5	S7	12/10	15.0-16.0	14 9	Compact, gray-green silty SAND, trace gravel (Marine Sand)
17	2		17.0 / 1.9	(MARINE CLAY)	-	0.3	S7A	12/10	16.0-17.0	18 13	Very stiff to hard, mottled yellow-gray silty CLAY, with occasional sand seams (Marine Clay)
18	1			Bottom of Exploration							
19	0										
20	-1										
21	-2										
22	-3										
23	-4										
24	-5										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-7-15
City/State:	Dorchester, MA	**Date Finished:**	7-7-15

Boring No. B-332

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: TMC
Surface Elevation (ft): 21.7

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-7-15	10	11.7	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
			0.5 / 21.2	(TOPSOIL)							
1	21				18	0.5	S1	24/14	0.0-2.0	3 7 11 7	Compact, dark gray-brown SILT and SAND, trace gravel, with ash and cinder (Fill)
2	20										
3	19				4	0.2	S2	24/22	2.0-4.0	3 2 2 4	Very loose to loose, dark gray-brown SILT and SAND, trace gravel, with ash and cinder (Fill)
4	18										
5	17			(FILL)							
6	16				4	0.5	S3	24/14	5.0-7.0	2 2 2 4	Very loose to loose, yellow-brown silty CLAY, with ash and cinder (Fill)
7	15										
8	14				9	0.2	S4	24/14	7.0-9.0	2 2 7 5	Loose, gray-brown silty CLAY, some sand, with ash and cinder (Fill)
9	13										
10	12		10.0 / 11.7								
11	11		11.0 / 10.7	(MARINE CLAY)	15	0.0	S5	12/9	10.0-11.0	6 9	Compact, gray-green silty CLAY, trace gravel (Marine Sand)
12	10			(GLACIO-MARINE)	30	0.1	S5A	12/9	11.0-12.0	12 18	Compact to dense, gray-green mixture of CLAY, SILT and SAND, some gravel (Glacio-Marine)
13	9		13.5 / 8.2								
14	8										
15	7			(MARINE CLAY)							
16	6				21	0.1	S6	24/24	15.0-17.0	5 8 13 15	Very stiff, mottled blue-gray and yellow-gray silty CLAY (Marine Clay)
17	5		17.0 / 4.7								
18	4			Bottom of Exploration							
19	3										
20	2										
21	1										
22	0										
23	-1										
24	-2										
	-3										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-7-15
City/State:	Dorchester, MA	**Date Finished:**	7-7-15

Boring No. B-333

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: TMC
Surface Elevation (ft): 16.5

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-7-15	8.5	8.0	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
1	16		0.4 / 16.1	(TOPSOIL)	9	0.5	S1	24/21	0.0-2.0	4 4 5 5	Loose, dark brown SILT and SAND, trace gravel, with ash and cinder (Fill)
2	15										
3	14				21	1.0	S2	24/16	2.0-4.0	11 10 11 15	Compact, black SILT and SAND, with ash, cinder, brick, mortar and concrete (Fill)
4	13										
5	12			(FILL)							
6	11				43	0.5	S3	24/8	5.0-7.0	67 29 14 10	Dense, black SILT and SAND, with ash, cinder and concrete (Fill)
7	10										
8	9				7	0.2	S4	24/12	7.0-9.0	7 4 3 2	Loose, gray-black SILT and SAND, with ash and cinder (Fill)
9	8										
10	7		10.0 / 6.5								
11	6				1	15.4	S5	24/18	10.0-12.0	1/12" 1 1	Very soft, brown FIBROUS PEAT (Organics)
12	5										
13	4			(ORGANICS)	1	41.4	S6	24/24	12.0-14.0	1/12" 1/12"	Very soft, brown FIBROUS PEAT (Organics)
14	3										
15	2										
16	1		16.0 / 0.5		17	0.3	S7	12/10	15.0-16.0	2 6	Firm, blue-gray sandy ORGANIC SILT (Organics)
17	0				-	0.2	S7A	12/10	16.0-17.0	11 20	Very stiff to hard, mottled yellow-gray silty CLAY (Marine Clay)
18	-1										
19	-2			(MARINE CLAY)							
20	-3										
21	-4				30	0.0	S8	24/24	20.0-22.0	11 12 18 13	Very stiff to hard, mottled yellow-gray silty CLAY (Marine Clay)
22	-5		22.0 / -5.5								
23	-6			Bottom of Exploration							
24	-7										
	-8										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-6-15
City/State:	Dorchester, MA	**Date Finished:**	7-6-15

Boring No. B-334

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: TMC
Surface Elevation (ft): 17.8

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-6-15	7.5	10.3	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
1	17		0.3 / 17.5	(TOPSOIL)	15	0.0	S1	24/15	0.0-2.0	9 10 5 3	Compact, black SILT and SAND, some gravel, with ash, cinder and mortar (Fill)
2	16										
3	15				11	0.3	S2	24/12	2.0-4.0	1 5 6 7	Compact, gray-black SILT and SAND, with ash, cinder and mortar (Fill)
4	14			(FILL)							
5	13										
6	12				3	0.0	S3	24/18	5.0-7.0	2 2 1 2	Very loose, gray-black ASH and CINDER (Fill)
7	11		7.0 / 10.8								
8	10				3	0.4	S4	24/12	7.0-9.0	2 2 1 2	Soft, dark brown FIBROUS PEAT (Organics)
9	9			(ORGANICS)							
10	8		10.0 / 7.8								
11	7				16	0.1	S5	24/18	10.0-12.0	6 8 8 7	Compact, gray-green silty SAND, trace gravel (Marine Sand)
12	6			(MARINE SAND)							
13	5		13.5 / 4.3								
14	4										
15	3			(MARINE CLAY)							
16	2				20	0.2	S6	24/18	15.0-17.0	6 9 11 16	Very stiff, mottled blue-gray and yellow-gray silty CLAY (Marine Clay)
17	1		17.0 / 0.8								
18	0			Bottom of Exploration							
19	-1										
20	-2										
21	-3										
22	-4										
23	-5										
24	-6										
	-7										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-8-15
City/State:	Dorchester, MA	**Date Finished:**	7-8-15

Boring No. B-335

Contractor: Carr-Dee Corp.
Driller/Helper: J. DeSimone and J. DeSimone
Logged By/Reviewed By: TMC
Surface Elevation (ft): 16.5

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-8-15	10	6.5	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
1	16		0.2 / 16.3	(TOPSOIL)	8	0.1	S1	24/6	0.0-2.0	4 4 4 4	Loose, dark gray-brown SILT and SAND, trace gravel (Fill)
2	15										
3	14				4	0.5	S2	24/8	2.0-4.0	5 2 2 5	Very loose to loose, yellow-gray silty CLAY, some sand, trace gravel, with brick (Fill)
4	13										
5	12										
6	11			(FILL)	5	0.3	S3	24/9	5.0-7.0	4 2 3 3	Loose, yellow-gray mixture of CLAY, SILT, SAND and GRAVEL (Fill)
7	10										
8	9				8	0.3	S4	24/18	7.0-9.0	6 4 4 4	Loose, yellow-gray mixture of CLAY, SILT, and SAND, trace gravel (Fill)
9	8										
10	7										
11	6				4	0.7	S5	24/10	10.0-12.0	2 1 3 5	Very loose to loose, blue-gray mixture of CLAY, SILT, SAND and GRAVEL (Fill)
12	5		12.0 / 4.5								
13	4				7	0.5	S6	24/18	12.0-14.0	4 3 4 3	Firm, gray-black to gray-brown ORGANIC SILT, with peat fibers (Organics)
14	3										
15	2			(ORGANICS)							
16	1				6	1.1	S7	24/24	15.0-17.0	2 3 3 4	Firm, gray-brown ORGANIC SILT to brown FIBROUS PEAT (Organics)
17	0										
18	-1		18.0 / -1.5		15	2.7	S8	12/8	17.0-18.0	5 6	Stiff, dark brown FIBROUS PEAT (Organics)
19	-2				-	0.3	S8A	12/8	18.0-19.0	9 11	Very stiff, blue-gray silty CLAY, wtih peat fibers (Marine Clay)
20	-3										
21	-4			(MARINE CLAY)							
22	-5		22.0 / -5.5		30	0.5	S9	24/24	20.0-22.0	10 14 16 16	Very stiff to hard, mottled yellow-gray silty CLAY (Marine Clay)
23	-6			Bottom of Exploration							
24	-7										
	-8										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-6-15
City/State:	Dorchester, MA	**Date Finished:**	7-6-15

Boring No. B-336

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: TMC
Surface Elevation (ft): 16.6

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-6-15	8	8.6	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
			0.5 / 16.1	(ASPHALT)							
1	16				24	0.4	S1	18/13	0.5-2.0	18 14 10	Compact, dark brown SILT and SAND, with ash, cinder, and brick (Fill)
2	15										
3	14			(FILL)	11	0.8	S2	24/16	2.0-4.0	8 5 6 5	Compact, black SILT and SAND, trace gravel, with ash and cinder (Fill)
4	13										
5	12		5.0 / 11.6								
6	11		6.5 / 10.1	(CONCRETE W/ REBAR)							
7	10				6	2.8	S3	18/12	6.5-8.0	2 3 3	Loose, black SILT and SAND, with ash and cinder (Fill)
8	9		8.0 / 8.6	(FILL)							
9	8				3	7.4	S4	24/12	8.0-10.0	1 2 1 2	Soft, dark brown FIBROUS PEAT (Organics)
10	7										
11	6			(ORGANICS)	1	2.2	S5	24/18	10.0-12.0	1/12" 1 1	Very soft, dark brown FIBROUS PEAT to gray-brown ORGANIC SILT (Organics)
12	5										
13	4		13.0 / 3.6		10	2.3	S6	12/10	12.0-13.0	4 3	Firm, blue-gray sandy ORGANIC SILT, wtih peat fibers (Organics)
14	3				-	0.5	S6A	12/10	13.0-14.0	7 11	Very stiff, mottled blue-gray and yellow-gray silty CLAY (Marine Clay)
15	2			(MARINE CLAY)							
16	1				46	0.2	S7	24/24	15.0-17.0	15 18 28 28	Hard, mottled blue-gray and yellow-gray silty CLAY (Marine Clay)
17	0		17.0 / -0.4								
18	-1			Bottom of Exploration							
19	-2										
20	-3										
21	-4										
22	-5										
23	-6										
24	-7										
	-8										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-6-15
City/State:	Dorchester, MA	**Date Finished:**	7-6-15

Boring No. B-337

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: TMC
Surface Elevation (ft): 17.3

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-6-15	8	9.3	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
	17		0.5 / 16.8	(ASPHALT)							
1	16				26	0.4	S1	18/14	0.5-2.0	7 14 12	Compact, black SILT and SAND, with ash and cinder (Fill)
2	15										
3	14				24	0.1	S2	24/18	2.0-4.0	13 16 8 5	Compact, gray-black ASH and CINDER (Fill)
4	13			(FILL)							
5	12										
6	11				4	0.2	S3	24/17	5.0-7.0	2 1 3 2	Very loose, black ORGANIC SILT, some sand, with ash and cinder (Fill)
7	10		7.0 / 10.3								
8	9		8.0 / 9.3	(ORGANICS)	11	0.2	S4	12/4	7.0-8.0	1 2	Soft, dark brown ORGANIC SILT (Organics)
9	8			(MARINE SAND)	-	0.7	S4A	12/12	8.0-9.0	9 12	Compact, gray gravelly SAND, trace silt (Marine Sand)
10	7		10.0 / 7.3		42	0.3	S5	24/24	10.0-12.0	10 14 28 24	Hard, mottled blue-gray and yellow-gray silty CLAY (Marine Clay)
11	6										
12	5										
13	4			(MARINE CLAY)							
14	3										
15	2				10	0.3	S6	24/24	15.0-17.0	7 5 5 7	Stiff, gray silty CLAY (Marine Clay)
16	1		17.0 / 0.3								
17	0			Bottom of Exploration							
18	-1										
19	-2										
20	-3										
21	-4										
22	-5										
23	-6										
24	-7										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-3-15
City/State:	Dorchester, MA	**Date Finished:**	7-3-15

Boring No. B-338

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: TMC
Surface Elevation (ft): 21.7

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-3-15	11	10.7	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
			0.5 / 21.2	(TOPSOIL)							
1	21				22	0.0	S1	24/12	0.0-2.0	7 7 15 55	Compact, brown silty SAND and GRAVEL, with brick (Fill)
2	20										
3	19				27	1.1	S2	24/20	2.0-4.0	70 15 12 7	Compact, brown silty SAND and GRAVEL, with brick, ash and cinder (Fill)
4	18										
5	17										
6	16			(FILL)	12	0.4	S3	24/10	5.0-7.0	5 2 10 12	Compact, brown silty SAND and GRAVEL, with brick, ash and cinder (Fill)
7	15										
8	14				4	0.2	S4	24/20	7.0-9.0	3 2 2 1	Very loose, brown sandy SILT and GRAVEL, with brick, ash and cinder (Fill)
9	13										
10	12										
11	11		11.0 / 10.7		17	0.2	S5	12/10	10.0-11.0	5 8	Compact, gray-brown silty SAND, some organics (Fill)
12	10				-	0.0	S5A	12/10	11.0-12.0	9 14	Very stiff, mottled yellow-gray and blue-gray silty CLAY, trace organic fibers (Marine Clay)
13	9			(MARINE CLAY)	44	0.0	S6	24/24	12.0-14.0	23 23 21 19	Hard, mottled yellow-gray and blue-gray silty CLAY, trace organic fibers (Marine Clay)
14	8										
15	7		15.5 / 6.2		-	0.0	S7	6/6	15.0-15.5	8	Hard, mottled yellow-gray and blue-gray silty CLAY, trace organic fibers (Marine Clay)
16	6			(MARINE SAND)	43	27	S7A	18/18	15.5-17.0	12 15 28	Dense, brown well-grade SAND, trace silt and gravel (Marine Sand)
17	5		17.0 / 4.7	Bottom of Exploration							
18	4										
19	3										
20	2										
21	1										
22	0										
23	-1										
24	-2										
	-3										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-3-15
City/State:	Dorchester, MA	**Date Finished:**	7-3-15

Boring No. B-339

Contractor: Carr-Dee Corp.
Driller/Helper: J. DeSimone and F. Landen
Logged By/Reviewed By: S. Hilfiker
Surface Elevation (ft): 17.4

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
0	17		0.5 / 16.9	(TOPSOIL)							
1	16				9	0.1	S1	24/14	0.0-2.0	2 3 6 6	Compact, brown silty SAND, some gravel, with brick, ash and cinder (Fill)
2	15										
3	14				28	0.1	S2	24/6	2.0-4.0	10 17 11 9	Compact, light brown silty SAND and GRAVEL, with brick (Fill)
4	13			(FILL)							
5	12				116/10"	0.1	S3	16/7	5.0-6.3	12 16 100/4"	Compact, light brown silty SAND and GRAVEL, with concrete, brick, ash and cinder (Fill)
6	11										
7	10				100/4"	0.0	S4	10/4	7.0-7.8	40 100/4"	Very dense, light brown silty SAND and GRAVEL, with bricks and cobbles (Fill)
8	9		8.0 / 9.4	Refusal							Auger refusal at 8 feet
9	8										
10	7										
11	6										
12	5										
13	4										
14	3										
15	2										
16	1										
17	0										
18	-1										
19	-2										
20	-3										
21	-4										
22	-5										
23	-6										
24	-7										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-8-15
City/State:	Dorchester, MA	**Date Finished:**	7-8-15

Boring No.

B-339 A/B

Contractor: Carr-Dee Corp.
Driller/Helper: J. DeSimone and J. DeSimone
Logged By/Reviewed By: TMC
Surface Elevation (ft): 17.0

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-8-15	10	7.0	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
			0.5 / 16.5	(TOPSOIL)							
1	16				8	0.6	S1	24/14	0.0-2.0	3 4 4 3	Loose, brown SAND, some silt, trace gravel (Fill)
2	15										
3	14				27	1.5	S2	24/13	2.0-4.0	19 18 9 18	Compact, dark brown SILT and SAND, with ash, cinder, brick and mortar (Fill)
4	13										
5	12			(FILL)							
6	11				10	0.3	S3	24/4	5.0-7.0	3 5 5 7	Loose to compact, gray-black SILT and SAND, with ash, cinder, brick and mortar (Fill)
7	10										
8	9				9	0.5	S4	24/4	7.0-9.0	6 5 4 3	Loose, gray-black SILT and SAND, with ash, cinder, brick and mortar (Fill)
9	8										
10	7		10.0 / 7.0								
11	6				1	0.4	S5	24/4	10.0-12.0	1/12" 1/12"	Very soft, dark brown FIBROUS PEAT (Organics)
12	5			(ORGANICS)							
13	4				1	0.8	S6	24/6	12.0-14.0	1/12" 1/12"	Very soft, dark brown FIBROUS PEAT (Organics)
14	3										
15	2		15.0 / 2.0								
16	1			(MARINE CLAY)	36	0.1	S7	24/16	15.0-17.0	10 16 20 21	Hard, mottled blue-gray and yellow-gray silty CLAY (Marine Clay)
17	0		17.0 / 0.0								
18	-1			Bottom of Exploration							
19	-2										
20	-3										
21	-4										
22	-5										
23	-6										
24	-7										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-3-15
City/State:	Dorchester, MA	**Date Finished:**	7-3-15

Boring No. B-340

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: S. Hilfiker
Surface Elevation (ft): 17.4

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-3-15	8	9.4	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
0	17		0.5 / 16.9	(TOPSOIL)							
1	16				23	0.0	S1	24/10	0.0-2.0	7 12 11 5	Compact, brown well-graded SAND and GRAVEL, trace silt, with ash and cinder (Fill)
2	15										
3	14				7	0.2	S2	24/10	2.0-4.0	5 4 3 3	Loose, brown silty SAND, some gravel, with brick (Fill)
4	13										
5	12			(FILL)	120/6"	0.0	S3	6/5	5.0-5.5	120/6"	BRICK and MORTAR
6	11										Augered through brick, mortar, and cobbles from 5 to 6.5 feet
7	10				33	0.3	S4	18/18	6.5-8.0	8 23 10	Dense, brown to black silty SAND, some gravel, with brick, slag, ash and cinder (Fill)
8	9										
9	8				3	0.3	S5	24/4	8.0-10.0	3 1 2 5	Very loose, gray gravelly CLAY and SILT, some sand, with ash and cinder (Fill)
10	7		10.0 / 7.4								
11	6				3	66.4	S6	24/20	10.0-12.0	2 1 2 1	Soft, brown FIBROUS PEAT (Organics)
12	5			(ORGANICS)							
13	4				6	81.5	S7	24/24	12.0-14.0	3 3 3 4	Firm, brown FIBROUS PEAT (Organics)
14	3		14.0 / 3.4								
15	2			(MARINE SAND)	18	0.6	S8	12/10	15.0-16.0	9 6	Compact, gray well-graded silty SAND, some gravel (Marine Sand)
16	1		16.0 / 1.4								
17	0		17.0 / 0.4	(MARINE CLAY)	-	0.0	S8A	12/10	16.0-17.0	12 20	Hard, mottled yellow-gray silty CLAY, trace organics (Marine Clay)
18	-1			Bottom of Exploration							
19	-2										
20	-3										
21	-4										
22	-5										
23	-6										
24	-7										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-3-15
City/State:	Dorchester, MA	**Date Finished:**	7-3-15

Boring No. B-341

Contractor: Carr-Dee Corp.
Driller/Helper: J. DeSimone and F. Landen
Logged By/Reviewed By: S. Hilfiker
Surface Elevation (ft): 19.3

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-3-15	8	11.3	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
0	19		0.5 / 18.8	(TOPSOIL)							
					16	0.1	S1	24/14	0.0-2.0	3 6 10 8	Compact, brown silty SAND and GRAVEL, with ash and cinder (Fill)
1	18										
2	17				9	0.1	S2	24/12	2.0-4.0	4 5 4 6	Loose, brown silty SAND, some gravel, with ash and cinder (Fill)
3	16										
4	15										
5	14			(FILL)	5	0.1	S3	24/18	5.0-7.0	2 2 3 3	Loose, gray-brown silty SAND and GRAVEL, with ash and cinder (Fill)
6	13										
7	12				4	0.1	S4	24/8	7.0-9.0	3 2 2 2	Loose, gray silty SAND, some gravel, with organics (Fill)
8	11										
9	10		9.0 / 10.3								
10	9		10.5 / 8.8	(ORGANICS)	-	0.2	S5	6/6	10.0-10.5	2	Soft, brown ORGANIC SILT (Organics)
11	8				21	0.1	S5A	18/12	10.5-12.0	7 14 11	Compact, gray well-graded SILT, SAND and GRAVEL (Marine Sand)
12	7			(MARINE SAND)	49	0.1	S6	12/12	12.0-13.0	9 17	Compact, gray-green well-graded SAND, some silt (Marine Sand)
13	6		13.0 / 6.3								
14	5		14.0 / 5.3	(MARINE CLAY)	-	0.7	S6A	12/12	13.0-14.0	32 41	Hard, mottled yellow-gray and blue-gray silty CLAY, some sand, trace gravel, with organic fibers (Marine Clay)
15	4										
16	3			(MARINE SAND)	16	0.1	S7	24/14	15.0-17.0	3 6 10 11	Compact, yellow-brown well-graded SAND, some silt and gravel (Marine Sand)
17	2		17.0 / 2.3								
18	1			Bottom of Exploration							
19	0										
20	-1										
21	-2										
22	-3										
23	-4										
24	-5										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-2-15
City/State:	Dorchester, MA	**Date Finished:**	7-2-15

Boring No.

B-342

Contractor: Carr-Dee Corp.
Driller/Helper: J. DeSimone and J. DeSimone
Logged By/Reviewed By: TMC
Surface Elevation (ft): 27.8

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-2-15	13	14.8	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
			0.5 / 27.3	(TOPSOIL)							
1	27				10	3.5	S1	24/14	0.0-2.0	2 4 6 4	Loose to compact, dark gray-brown SILT and SAND, with ash and cinder (Fill)
2	26										
3	25				3	0.4	S2	24/5	2.0-4.0	2 2 1 3	Very loose, brown SILT and SAND (Fill)
4	24										
5	23										
6	22				31	0.1	S3	24/8	5.0-7.0	1 26 5 7	Dense to compact, gray-brown silty SAND and GRAVEL, with concrete and brick (Fill)
7	21										
8	20				1	0.1	S4	24/4	7.0-9.0	2 1/18"	Very loose, yellow-gray mixture of CLAY, SILT and SAND (Fill)
9	19										
10	18			(FILL)							
11	17				3	0.1	S5	24/3	10.0-12.0	1 2 1 2	Very loose, yellow-gray mixture of CLAY, SILT and SAND (Fill)
12	16										
13	15				3	0.1	S6	24/10	12.0-14.0	1 2 1 4	Very loose, yellow-gray mixture of CLAY, SILT and SAND (Fill)
14	14										
15	13										
16	12				4	5.0	S7	24/4	15.0-17.0	2 2 2 3	Very loose to loose, yellow-gray mixture of CLAY, SILT and SAND (Fill)
17	11										
18	10				3	0.1	S8	24/16	17.0-19.0	1 1 2 2	Very loose, black ORGANIC SILT and blue-gray silty CLAY (Fill)
19	9										
20	8		20.0 / 7.8								
21	7			(MARINE CLAY)	2	0.0	S9	24/8	20.0-22.0	1 1 1 1	Very soft to soft, gray silty CLAY (Marine Clay)
22	6									1 2	Soft to firm, gray silty CLAY, with occasional fine sand partings (Marine Clay)
	5									3	

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-2-15
City/State:	Dorchester, MA	**Date Finished:**	7-2-15

Boring No.

B-342

Contractor: Carr-Dee Corp.
Driller/Helper: J. DeSimone and J. DeSimone
Logged By/Reviewed By: TMC
Surface Elevation (ft): 27.8

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-2-15	13	14.8	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
24	4		24.0 / 3.8	(MARINE CLAY)	4	0.0	S10	24/24	22.0-24.0		
				Bottom of Exploration							
25	3										
26	2										
27	1										
28	0										
29	-1										
30	-2										
31	-3										
32	-4										
33	-5										
34	-6										
35	-7										
36	-8										
37	-9										
38	-10										
39	-11										
40	-12										
41	-13										
42	-14										
43	-15										
44	-16										
45	-17										
	-18										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-3-15
City/State:	Dorchester, MA	**Date Finished:**	7-3-15

Boring No. B-343

Contractor: Carr-Dee Corp.
Driller/Helper: J. DeSimone and F. Landen
Logged By/Reviewed By: S. Hilfiker
Surface Elevation (ft): 18.8

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
			0.5 / 18.3	(ASPHALT)							
1	18				53	0.1	S1	18/9	0.5-2.0	8 12 41	Very dense, brown silty SAND and GRAVEL, some cobbles, with ash and cinder (Fill)
2	17										
3	16				38	0.5	S2	24/8	2.0-4.0	12 24 14 15	Compact, tan-brown SILT and SAND, some gravel, with ash and cinder (Fill)
4	15			(FILL)							
5	14										
6	13				9	0.2	S3	24/8	5.0-7.0	10 5 4 2	Loose, brown SILT and SAND, some gravel, with ash and cinder (Fill)
7	12		7.0 / 11.8								
8	11				4	0.5	S4	24/7	7.0-9.0	1 2 2 2	Soft, dark brown ORGANIC SILT, with peat fibers (Organics)
9	10										
10	9			(ORGANICS)							
11	8				4	0.7	S5	24/16	10.0-12.0	3 2 2 3	Firm, dark brown FIBROUS PEAT (Organics)
12	7		12.0 / 6.8								
13	6				12	0.4	S6	24/20	12.0-14.0	4 5 7 11	Compact, gray sandy SILT, some clay and gravel, with organic fibers (Glacio-Marine)
14	5										
15	4			(GLACIO-MARINE)							
16	3				59	0.0	S7	24/18	15.0-17.0	10 29 30 40	Very dense, light brown to gray, silty SAND and GRAVEL, trace clay, with organic fibers (Glacio-Marine)
17	2		17.0 / 1.8								
18	1			Bottom of Exploration							
19	0										
20	-1										
21	-2										
22	-3										
23	-4										
24	-5										
	-6										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-3-15
City/State:	Dorchester, MA	**Date Finished:**	7-3-15

Boring No. B-344

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: S. Hilfiker
Surface Elevation (ft): 21.5

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-3-15	8	13.5	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
	21		0.5 / 21.0	(ASPHALT)							
1	20				20	0.1	S1	18/18	0.5-2.0	21 12 8	Compact, brown silty SAND, some gravel, with ash and cinder (Fill)
2	19				9	0.2	S2	24/24	2.0-4.0	5 5 4 8	Compact, black silty SAND, some gravel, with ash and cinder (Fill)
3	18										
4	17				30	0.2	S3	24/7	5.0-7.0	17 10 20 30	Compact to dense, brown silty SAND and GRAVEL (Fill)
5	16				10	0.2	S4	24/3	7.0-9.0	4 4 6 8	Loose to compact, black well-graded SAND and GRAVEL, some silt, with ash and cinder (Fill)
6	15										
7	14				7	0.1	S5	24/24	10.0-12.0	3 3 4 6	Loose, gray-brown silty SAND and GRAVEL, with ash and cinder (Fill)
8	13			(FILL)	7	0.4	S6	24/24	12.0-14.0	2 3 4 2	Loose, gray-brown silty SAND, some gravel, with organic fibers (Fill)
9	12										
10	11				7	0.1	S7	18/18	15.0-16.5	1 3 4	Loose, gray silty SAND, some gravel, with brick (Fill)
11	10		16.5 / 5.0		-	0.0	S7A	6/5	16.5-17.0	7	Stiff, mottled yellow-gray silty CLAY (Marine Clay)
12	9				26	0.0	S8	24/24	17.0-19.0	9 12 14 14	Very stiff, yellow-gray silty CLAY (Marine Clay)
13	8			(MARINE CLAY)							
14	7		19.0 / 2.5								
15	6			Bottom of Exploration							
16	5										
17	4										
18	3										
19	2										
20	1										
21	0										
22	-1										
23	-2										
24	-3										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-2-15
City/State:	Dorchester, MA	**Date Finished:**	7-2-15

Boring No. B-345

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: TMC
Surface Elevation (ft): 22.6

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
1	22		0.5 / 22.1	(TOPSOIL)	14	0.1	S1	24/16	0.0-2.0	9 10 4 8	Compact, black silty SAND, some gravel, with ash, cinder and brick (Fill)
2	21										
3	20				10	1.2	S2	24/19	2.0-4.0	7 5 5 9	Loose to compact, black SILT and SAND, with ash, cinder and brick (Fill)
4	19										
5	18										
6	17				3	0.1	S3	24/20	5.0-7.0	3 2 1 2	Very loose, black SILT and SAND, with ash, cinder and brick (Fill)
7	16										
8	15			(FILL)	11	1.7	S4	24/24	7.0-9.0	3 4 7 7	Compact, black SILT and SAND, with ash and cinder (Fill)
9	14										
10	13										
11	12				12	0.1	S5	24/18	10.0-12.0	6 5 7 8	Compact, mottled light gray SAND and ORGANIC SILT, with brick (Fill)
12	11										
13	10				6	2.1	S6	24/8	12.0-14.0	3 3 3 2	Loose, black SAND, some organic silt (Fill)
14	9										
15	8		15.0 / 7.6								
16	7				16	0.4	S7	24/18	15.0-17.0	6 6 10 16	Very stiff, blue-gray to yellow-gray silty CLAY (Marine Clay)
17	6										
18	5										
19	4			(MARINE CLAY)							
20	3										
21	2				18	0.8	S8	24/20	20.0-22.0	5 7 11 12	Very stiff, yellow-gray silty CLAY (Marine Clay)
22	1		22.0 / 0.6								
23	0			Bottom of Exploration							
24	-1										
	-2										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-2-15
City/State:	Dorchester, MA	**Date Finished:**	7-2-15

Boring No. B-346 (OW)

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: TMC
Surface Elevation (ft): 17.5

Casing Type/Depth (ft): 3-3/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-2-15	7	10.5	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
0	17		0.5 / 17.0	(TOPSOIL)							
1	16				10	0.1	S1	24/19	0.0-2.0	2 4 6 3	Loose to compact, dark gray-brown SILT and SAND, with ash and cinder (Fill)
2	15				10	18.8	S2	24/24	2.0-4.0	5 5 5 3	Loose to compact, gray-brown mixture of CLAY, SILT and SAND (Fill)
3	14										
4	13				10	88.8	S3	24/8	5.0-7.0	3 6 4 3	Loose to compact, gray mixture of CLAY, SILT, and SAND. Strong hydrocarbon odor (Fill)
5	12			(FILL)							
6	11				8	44.8	S4	24/12	7.0-9.0	5 5 3 3	Loose, gray mixture of CLAY, SILT and SAND. Hydrocarbon odor (Fill)
7	10										
8	9				8	14.1	S5	24/10	10.0-12.0	2 2 6 6	Loose, gray mixture of CLAY, SILT and SAND (Fill)
9	8										
10	7				33	0.4	S6	24/12	12.0-14.0	12 12 21 17	Hard, mottled blue-gray silty CLAY, some sand, trace gravel (Marine Clay)
11	6		12.0 / 5.5								
12	5										
13	4			(MARINE CLAY)							
14	3				29	0.5	S7	24/13	15.0-17.0	13 16 13 9	Very stiff, yellow-gray silty CLAY, some sand (Marine Clay)
15	2										
16	1		17.0 / 0.5								
17	0			Bottom of Exploration							
18	-1										
19	-2										
20	-3										
21	-4										
22	-5										
23	-6										
24	-7										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-2-15
City/State:	Dorchester, MA	**Date Finished:**	7-2-15

Boring No.

B-347

Contractor: Carr-Dee Corp.
Driller/Helper: G. Smith and C. Smith
Logged By/Reviewed By: TMC
Surface Elevation (ft): 21.0

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-2-15	8	13.0	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
			0.5 / 20.5	(TOPSOIL)	41	0.1	S1	24/18	0.0-2.0	2 17 24 13	Dense, black SILT and SAND, some gravel, with ash and cinder (Fill)
1	20				14	0.8	S2	24/20	2.0-4.0	12 8 6 5	Compact, yellow-gray SILT and SAND, some clay and gravel (Fill)
2	19										
3	18				8	0.0	S3	24/10	5.0-7.0	5 4 4 7	Loose, yellow-gray SILT and SAND, some clay and gravel (Fill)
4	17				11	0.0	S4	24/12	7.0-9.0	4 4 7 6	Compact, yellow-gray mixture of CLAY, SILT and SAND, some gravel (Fill)
5	16										
6	15			(FILL)	24	0.0	S5	24/20	10.0-12.0	8 11 13 9	Compact, dark gray mixture of CLAY, SILT and SAND, some organic silt and peat (Fill)
7	14										
8	13				17	0.8	S6	24/12	12.0-14.0	16 9 8 11	Very stiff, mottled yellow-gray silty CLAY (Marine Clay)
9	12										
10	11				37	0.0	S7	24/24	15.0-17.0	10 15 22 22	Hard, mottled yellow-gray silty CLAY (Marine Clay)
11	10										
12	9		12.0 / 9.0								
13	8										
14	7			(MARINE CLAY)							
15	6										
16	5										
17	4		17.0 / 4.0								
				Bottom of Exploration							
18	3										
19	2										
20	1										
21	0										
22	-1										
23	-2										
24	-3										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-2-15
City/State:	Dorchester, MA	**Date Finished:**	7-2-15

Boring No. B-348

Contractor: Carr-Dee Corp.
Driller/Helper: J. DeSimone and J. DeSimone
Logged By/Reviewed By: TMC
Surface Elevation (ft): 31.2

Casing Type/Depth (ft): 2-1/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-2-15	13	18.2	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
	31		0.5 / 30.7	(TOPSOIL)							
1	30				6	0.2	S1	24/20	0.0-2.0	3 3 3 4	Loose, brown SAND, trace silt, with ash and cinder (Fill)
2	29				7	0.0	S2	24/4	2.0-4.0	4 5 2 2	Loose, yellow-gray mixture of CLAY, SILT and SAND (Fill)
3	28										
4	27										
5	26				4	0.0	S3	24/18	5.0-7.0	2 2 2 3	Very loose to loose, yellow-gray mixture of CLAY, SILT and SAND (Fill)
6	25										
7	24			(FILL)	7	0.0	S4	24/16	7.0-9.0	2 4 3 3	Loose, yellow-gray mixture of CLAY, SILT, and SAND (Fill)
8	23										
9	22										
10	21				5	0.0	S5	24/16	10.0-12.0	2 2 3 3	Loose, yellow-gray mixture of CLAY, SILT, and SAND (Fill)
11	20										
12	19				9	0.0	S6	12/5	12.0-13.0	2 3	Loose, yellow-gray mixture of CLAY, SILT, and SAND (Fill)
13	18		13.0 / 18.2		-	0.0	S6A	12/4	13.0-14.0	6 7	Compact, orange-brown SAND, some gravel, trace to some silt (Marine Sand)
14	17			(MARINE SAND)							
15	16				18	0.0	S7	12/10	15.0-16.0	9 8	Compact, gray silty SAND, trace gravel (Marine Sand)
16	15		16.0 / 15.2		-	0.0	S7A	12/10	16.0-17.0	10 15	Very stiff, gray silty CLAY (Marine Clay)
17	14										
18	13										
19	12			(MARINE CLAY)							
20	11										
21	10				24	0.0	S8	24/24	20.0-22.0	6 11 13 16	Very stiff, mottled yellow-gray silty CLAY (Marine Clay)
22	9		22.0 / 9.2	Bottom of Exploration							

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

Project:	Old Colony Housing - Phase Three	**Job #:**	5060.9.06
Location:	Columbia Road	**Date Started:**	7-2-15
City/State:	Dorchester, MA	**Date Finished:**	7-2-15

Boring No. B-349 (OW)

Contractor: Carr-Dee Corp.
Driller/Helper: J. DeSimone and J. DeSimone
Logged By/Reviewed By: TMC
Surface Elevation (ft): 19.5

Casing Type/Depth (ft): 3-3/4" HSA
Casing Hammer (lbs)/Drop (in): -
Sampler Size/Type: 1-3/8" ID Split Spoon
Sampler Hammer (lbs)/Drop (in): 140/30

Groundwater Observations

Date	Depth	Elev.	Notes
7-2-15	9.1	10.4	

Depth (ft)	Elev. (ft)	Symbol	Depth/EL to Strata Change (ft)	Stratum	Sample N-Value	Sample TVOC (ppm)	Sample No.	Sample Pen./Rec. (in)	Sample Depth (ft)	Sample Blows Per 6"	Sample Description and Boring Notes
1	19		0.5 / 19.0	(TOPSOIL)	5	0.1	S1	24/10	0.0-2.0	4 2 3 10	Loose, black SILT and SAND, trace gravel, with ash and cinder (Fill)
2	18										
3	17				129	0.6	S2	24/16	2.0-4.0	10 67 62 14	Very dense, gray-brown silty SAND and GRAVEL, with concrete (Fill)
4	16										
5	15										
6	14				11	0.0	S3	24/3	5.0-7.0	6 2 9 12	Compact, gray-brown SILT and SAND, with concrete (Fill)
7	13			(FILL)							
8	12				19	0.0	S4	24/7	7.0-9.0	21 8 11 11	Compact, gray-brown mixture of CLAY, SILT, and SAND, some gravel, with brick (Fill)
9	11										
10	10										
11	9				12	0.1	S5	24/12	10.0-12.0	6 7 5 4	Compact, dark gray silty SAND, some gravel (Fill)
12	8		12.0 / 7.5								
13	7				46	0.0	S6	24/15	12.0-14.0	14 16 30 27	Dense, gray gravelly SAND, some silt (Marine Sand)
14	6			(MARINE SAND)							
15	5		15.0 / 4.5								
16	4			Bottom of Exploration							
17	3										
18	2										
19	1										
20	0										
21	-1										
22	-2										
23	-3										
24	-4										
	-5										

GRANULAR SOILS	
BLOWS/FT.	DENSITY
0-4	V.LOOSE
4-10	LOOSE
10-30	COMPACT
30-50	DENSE
>50	V.DENSE

COHESIVE SOILS	
BLOWS/FT.	CONSISTENCY
<2	V.SOFT
2-4	SOFT
4-8	FIRM
8-15	STIFF
15-30	V.STIFF
>30	HARD

SOIL COMPONENT

DESCRIPTIVE TERM	PROPORTION OF TOTAL
"TRACE"	0-10%
"SOME"	10-20%
"ADJECTIVE" (eg SANDY, SILTY)	20-35%
"AND"	35-50%

SOIL CONTAINING THREE COMPONENTS EACH OF WHICH COMPRISE AT LEAST 25% OF THE TOTAL ARE CLASSIFIED AS "A WELL-GRADED MIXTURE OF"

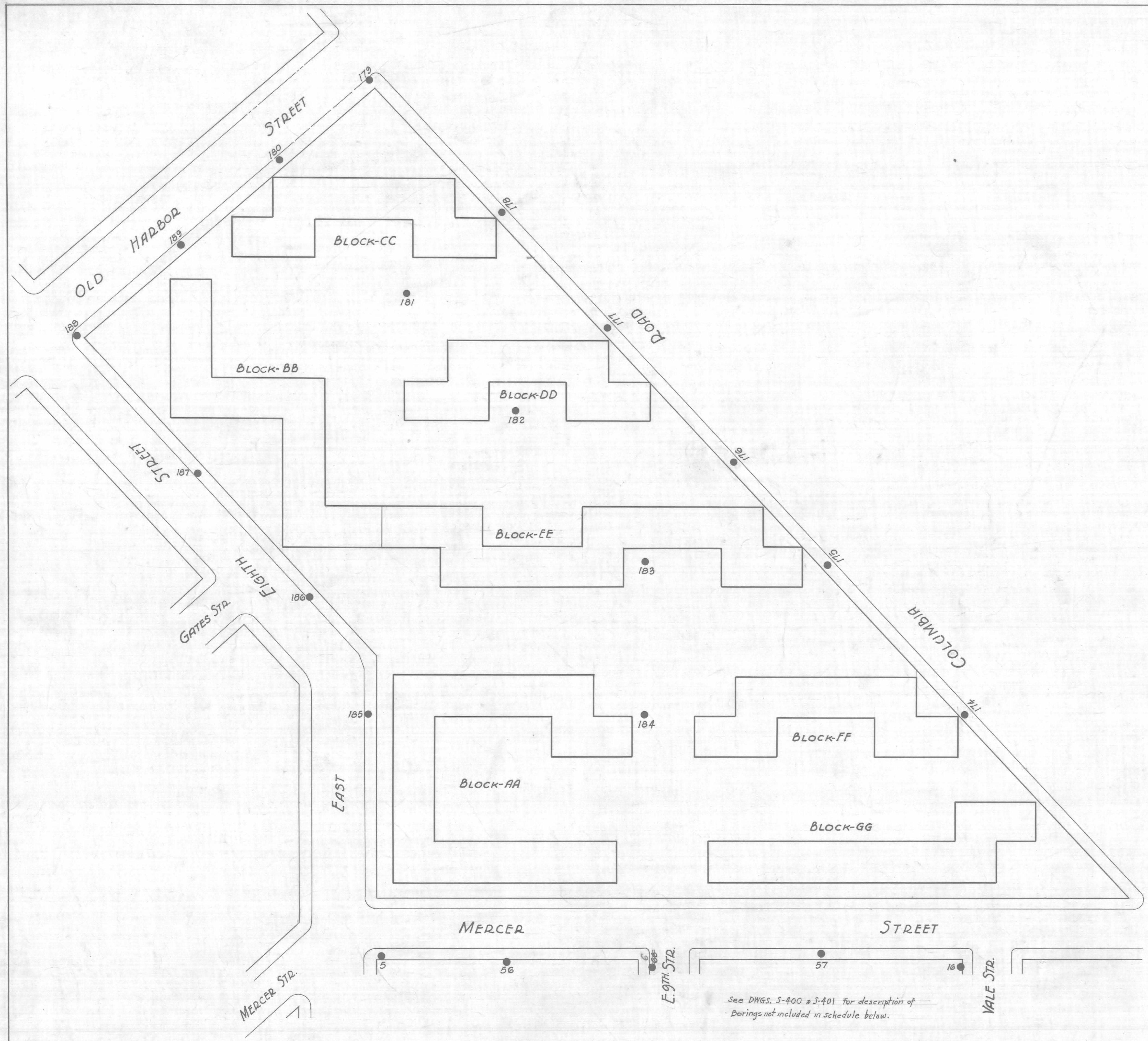
Notes:

Total Volatile Organic Compounds (TVOC) measured w/ PID Model:
TVOC Background: ppm
Weather:
Temperature:

McPHAIL ASSOCIATES, LLC
2269 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
TEL: 617-868-1420
FAX: 617-868-1423

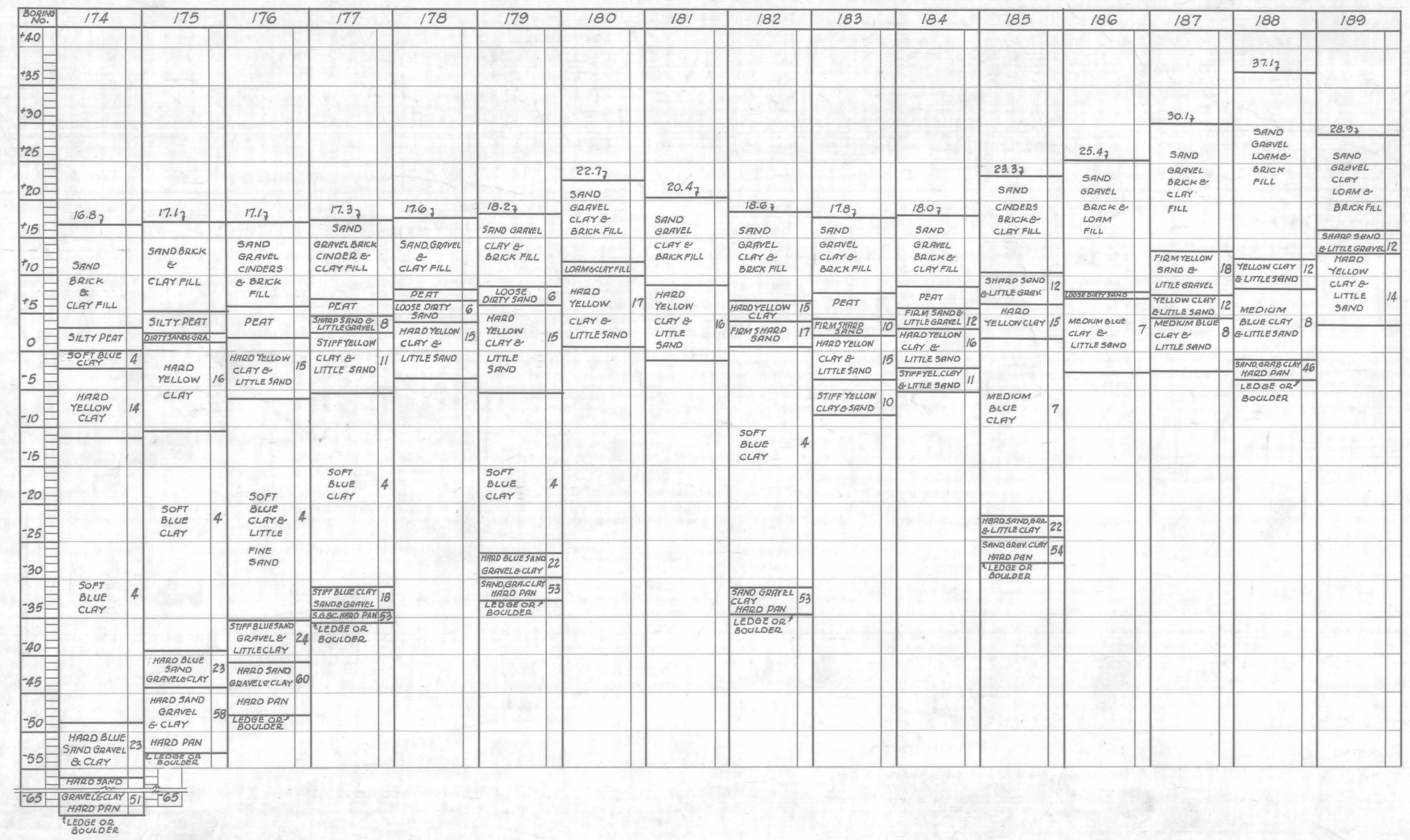
APPENDIX C:

PLANS ENTITLED "BORING PLAN AND SCHEDULE – DRAWING S-450" DATED SEPTEMBER 25, 1939



See DWGS. S-400 & S-401 for description of Borings not included in schedule below.

~BORING SCHEDULE~



NOTE:

This is a copy of the results of test borings made by Chas. A. Leary Co., Boston, Mass. (August 1939)

Figures in right hand column represent the number of blows required to penetrate the driving spoon 1'-0"

SHEET TITLE: BORING PLAN AND SCHEDULE		
ISSUE DATE 9-25-39	PROJECT MASS. 2-2 SOUTH BOSTON DISTRICT BOSTON - MASSACHUSETTS	SERIES LETTER S
DRAWN BY M.A.R.		DRAWING NO. 450
CHECKED BY M.A.R.	HENRY AND RICHMOND ARCHITECTS 177 STATE ST. BOSTON, MASS.	SCALE 1" = 30'-0"
BOSTON HOUSING AUTHORITY IN CO-OPERATION WITH UNITED STATES HOUSING AUTHORITY		
MAURICE A. REIDY CONSULTING ENGINEER	HUBBARD RICKERD AND BLAKELEY CONSULTING ENGINEERS	HERBERT J. KELLAWAY LANDSCAPE ARCHITECT

APPENDIX D:

GROUNDWATER MONITORING REPORTS PREPARED BY MCPHAIL ASSOCIATES, LLC

GROUNDWATER MONITORING REPORT

Well I.D.	B-346 (OW)	**Elevation Subtrahend (feet)**	+17.5	**Job. No.** **Job Name**	5060.2.04 Old Colony Phase III	
Date	**Time**	**Elapsed Time (days)**	**Depth of Water from R-Box Top (feet)**	**Elevation of Water (feet)**	**Remarks**	**Read By**
7/1/2015	11:00	Initial	7.0	+10.5	Installed at 14.9 ft. and developed today	TMC
7/2/2015		1	6.0	+11.5		TMC
7/6/2015		5	6.0	+11.5		TMC
7/7/2015		6	6.0	+11.5		TMC
7/8/2015		7	6.0	+11.5		TMC
7/10/2015		9	5.9	+11.6		TMC
6/23/2020		1819	6.4	+11.1		MG

GROUNDWATER MONITORING REPORT

Well I.D.	B-349 (OW)	**Elevation Subtrahend (feet)**	+19.5	**Job. No.** **Job Name**	5060.2.04 Old Colony Phase III	
Date	**Time**	**Elapsed Time (days)**	**Depth of Water from R-Box Top (feet)**	**Elevation of Water (feet)**	**Remarks**	**Read By**
7/1/2015	9.;00	Initial	9.1	+10.4	Installed at 15.3 ft. and developed today	TMC
7/2/2015		1	9.0	+10.5		TMC
7/6/2015		5	9.0	+10.5		TMC
7/7/2015		6	9.0	+10.5		TMC
7/8/2015		7	9.0	+10.5		TMC
7/10/2015		9	8.9	+10.6		TMC
6/23/2020		1819	9.5	+10.0		MG

LEC WETLANDS WILDLIFE WATERWAYS

June 25, 2021

Email (CC@Boston.org; nicholas.moreno@boston.gov)

Boston Conservation Commission
City of Boston Environmental Department
Boston City Hall, Room 709
Boston, MA 02201

RE: Supplemental Information [LEC File #: BRP\10-012.02]
Climate Change
Old Colony Phase Four
110-72 Mercer Street
South Boston, Massachusetts

Dear Members of the Commission:

In response to the request of Nicholas Moreno, Executive Director, Boston Conservation Commission, we are providing supplemental information relative to climate change, coastal resiliency, and the project's overall effort towards sustainable design. The Old Colony development, built in 1940, is part of the Boston Housing Authority's (BHA) federal portfolio encompassing 16.7±-acres within a densely urbanized residential community, with extensive impervious surfaces and minimal undeveloped land, except for Moakley Park located immediately to the south. Prior to commencement of the phased redevelopment, Old Colony represented one of the oldest and most distressed properties in the BHA's federal portfolio.

The Final Phase of Old Colony, which includes Phase Four, will continue with the design of larger 4+ story buildings creating three new multi-family buildings, built as a model in sustainability. The buildings have been designed and will be built using modern construction materials to better integrate the building into the surrounding neighborhood and to achieve high energy efficiency, water savings, and healthy indoor air quality. Residents will have improved access to an extensive public transportation system with new pedestrian walkways and new bicycle storage to encourage pedal transportation. The Final Phase will meet LEED criteria and will be designed to Passive House standards. Based on prior phases of the Old Colony redevelopment, we anticipate achieving a higher level of sustainability and carbon foot-print reduction. The buildings will be designed in accordance with the climate resiliency and coastal floodplain requirements with residential living spaces and mechanical systems well above the FEMA 100-year flood elevation. This includes compliance with the City of Boston's Article 37 Green Building and Climate Resiliency Guidelines and completion of the Boston Planning and Development Agency Climate Resiliency Checklist, and the Carbon Neutral Building Assessment.

LEC

Portions of the project site are located in a 100-year and 500-year floodplain as mapped by the current FEMA FIRM Map. More specifically and based on site surveyed topography, portions of Phase Four are located in the 100-year and 500-year flood plain. The project is not located within a floodway or wetland.

Based on the City of Boston's Article 37 Green Building and Climate Resiliency Guidelines, the "Sea Level Rise – Base Flood Elevation" (SLR-BFE) for the parcel of land encompassing Phase Four is elevation 13.0 (NAVD88) or elevation 19.5 feet (Boston City Base, BCB). The SLR-BFE is the 1% annual coastal flood event after 40 inches of sea level rise have occurred. The "Sea Level Rise – Design Flood Elevation" (SLR-DFE), according to the Boston Planning and Development Agency, is 24" *above* the SLR-BFE. Therefore, based on the SLR-BFE, the ground floor elevation must be at or above elevation 15.0 (NAVD88) or elevation 21.5 BCB.

The ground floor elevation of Building Four is at 21.5 BCB, well above the existing FEMA Floodplain elevation and in compliance with the SLR-BFE. The buildings will have no below grade space. All mechanical equipment will be at 21.5 BCB or higher, including the top floor Domestic Hot Water room. The site has been graded to provide building access at elevations above the FEMA floodplain elevation allowing for safe ingress and egress during a 100-year storm event. The project design exceeds the existing FEMA floodplain requirements for building within the floodplain, and accounts for climate change and sea level rise by incorporating BMPs for coastal resilience, and allows for safe ingress/egress up to the 100-year storm event.

Potential direct and indirect impacts associated with constructing the project in the outer limits of the coastal floodplain include changes in drainage patterns or flow characteristics. The site has been graded to limit flooding on the site and enable waters to rise and recede from the site to prevent changes in drainage patterns or flow characteristics. The landscaped open spaces also will improve stormwater runoff conditions through groundwater infiltration.

Thank you for the opportunity to supplement the NOI Filing.

Sincerely,

LEC Environmental Consultants, Inc.

Ann M. Marton, President
Director of Ecological Services

cc: Boston Housing Authority; Old Colony 4 Bonds Limited Partnership