

NOTICE OF INTENT

Multi-Family Residential Building 181 Cowper Street Boston, Massachusetts



SUBMITTED TO:
City of Boston
Conservation Commission
City Hall Plaza, Room 709
Boston, Massachusetts 02201

PREPARED FOR:
181 Cowper LLC
320 Washington Street, Suite 3FF
Brookline, Massachusetts, 02445

PREPARED BY:
Lucas Environmental, LLC
500A Washington Street
Quincy, Massachusetts 02169

REPORT DATE: June 26, 2019





500A Washington Street, Quincy, MA 02169

June 26, 2019

Boston Conservation Commission
City Hall Plaza, Room 709
Boston, MA 02201

Re: Notice of Intent
Multi-Family Residential Building
181 Cowper Street
Boston, Massachusetts 02128

Members of the Boston Conservation Commission:

On behalf of 181 Cowper LLC (Applicant & Owner), Lucas Environmental, LLC (LE) is pleased to submit this Notice of Intent (NOI) to the Boston Conservation Commission for the redevelopment of 181 Cowper Street in the East Boston neighborhood of Boston, Massachusetts. The proposed work includes the demolition of the existing two-family dwelling to construct a multi-family residential building with eight (8) units, with additional parking, stormwater improvements, and landscaping. Portions of the proposed work will occur within the Land Subject to Coastal Storm Flowage. This NOI is submitted in accordance with the Massachusetts Wetlands Protection Act (WPA; M.G.L. Ch. 131, Section 40) and implementing regulations (310 CMR 10.00 et seq.).

Enclosed please find one original and one copy of the NOI, two (2) copies of the Stormwater Compliance Report and the Site Plans reduced to 11" x 17". The NOI application package includes the WPA Form 3, project narrative, figures, photographic documentation, abutter notification, and filing fees. Site Plans and the Stormwater Compliance Report are provided separately. A link to an electronic copy of the pdf file of the NOI application and supporting documentation will be provided concurrently with this submittal. We respectfully request that you place this matter on your agenda for the July 10, 2019 Public Hearing.

If you have any questions, please do not hesitate to contact me at 617.405.4140 or cml@lucasenvironmental.net. Thank you for your consideration in this matter.

Sincerely,
LUCAS ENVIRONMENTAL, LLC

Christopher M. Lucas, PWS, CWS
Environmental Consultant/Soil Scientist

cc: 181 Cowper LLC – Applicant & Owner (electronic copy)
MassDEP – NERO
Embarc Studios (electronic copy)
Norwood Engineering Co. Inc. (electronic copy)



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SECTION I – FORMS

WPA FORM 3 – NOTICE OF INTENT

CHECKLIST FOR FILING A NOTICE OF INTENT

CLIMATE RESILIENCY CHECKLIST (Prepared by 181 Cowper LLC)



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:

Demolition of the existing two-family dwelling and construction of a multi-family residential building with eight (8) dwelling units, a portion of which is located 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

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

- 1. Yes No If yes, describe which limited project applies to this project. (See 310 CMR 10.24 and 10.53 for a complete list and description of limited project types)

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

Suffolk	
a. County	b. Certificate # (if registered land)
57504	301
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.



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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. <input type="checkbox"/> Bank	1. linear feet	2. linear feet
b. <input type="checkbox"/> Bordering Vegetated Wetland	1. square feet	2. square feet
c. <input type="checkbox"/> Land Under Waterbodies and Waterways	1. square feet	2. square feet
	3. cubic yards dredged	

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

2. Width of Riverfront Area (check one):

- 25 ft. - Designated Densely Developed Areas only
- 100 ft. - New agricultural projects only
- 200 ft. - All other projects

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

4. Proposed alteration of the Riverfront Area:

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

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

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

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

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



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

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

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

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

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

	2. cubic yards dredged	
j. <input type="checkbox"/> Land Containing Shellfish	_____	
	1. square feet	
k. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	

	1. cubic yards dredged	
l. <input checked="" type="checkbox"/> Land Subject to Coastal Storm Flowage	_____	
	6,367	

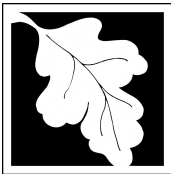
	1. square feet	

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 BWV	b. square feet of Salt Marsh

5. Project Involves Stream Crossings

_____	_____
a. number of new stream crossings	b. number of replacement stream crossings



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C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

- 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**

August 1, 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*

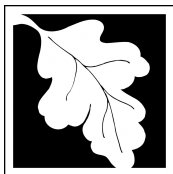
- Percentage/acreage of property to be altered:
 - (a) within wetland Resource Area _____ percentage/acreage
 - (b) outside Resource Area _____ percentage/acreage

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

- Project plans for entire project site, including wetland resource areas and areas outside of wetlands jurisdiction, showing existing and proposed conditions, existing and proposed tree/vegetation clearing line, and clearly demarcated limits of work **
 - (a) Project description (including description of impacts outside of wetland resource area & buffer zone)
 - (b) Photographs representative of the site

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

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



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

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

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

- (d) Vegetation cover type map of site
- (e) Project plans showing Priority & Estimated Habitat boundaries
- (f) OR Check One of the Following
1. Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhosp/regulatory_review/ mesa/ mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)
 2. Separate MESA review ongoing. _____ a. NHESP Tracking # _____ b. Date submitted to NHESP
 3. Separate MESA review completed.
Include copy of NHESP “no Take” determination or valid Conservation & Management Permit with approved plan.
3. For coastal projects only, is any portion of the proposed project located below the mean high water line or in a fish run?
- a. Not applicable – project is in inland resource area only b. Yes No

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

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

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

North Shore - Hull to New Hampshire border:

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

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



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

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

4. Is any portion of the proposed project within an Area of Critical Environmental Concern (ACEC)?
 a. Yes No If yes, provide name of ACEC (see instructions to WPA Form 3 or MassDEP Website for ACEC locations). **Note:** electronic filers click on Website.
 b. ACEC
5. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
 a. Yes No
6. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L. c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L. c. 130, § 105)?
 a. Yes No
7. Is this project subject to provisions of the MassDEP Stormwater Management Standards?
 a. Yes. Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q) and check if:
 1. Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol. 2, Chapter 3)
 2. A portion of the site constitutes redevelopment
 3. Proprietary BMPs are included in the Stormwater Management System.
 b. No. Check why the project is exempt:
 1. Single-family house
 2. Emergency road repair
 3. Small Residential Subdivision (less than or equal to 4 single-family houses or less than equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

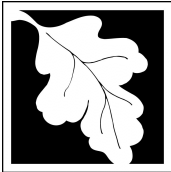
D. Additional Information

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

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

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

1. USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2. Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.



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D. Additional Information (cont'd)

- 3. Identify the method for BWV 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.

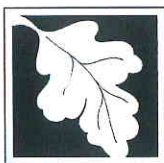
<u>Site Plans entitled "181 Cowper Street, Boston, MA," Sheets A000, C1-5, L1, A001-620</u>	
a. Plan Title	
<u>Embarc; Norwood Eng., and Verdant L.A.</u>	<u>Civil Plans - Matthew D. Smith, P.E.</u>
b. Prepared By	c. Signed and Stamped by
<u>June 13, 2019</u>	<u>Varies</u>
d. Final Revision Date	e. Scale
<u>Stormwater Compliance Report, prepared by Norwood Eng. Co., Inc.</u>	<u>June 13, 2019</u>
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:

<u>000087</u>	<u>June 19, 2019</u>
2. Municipal Check Number	3. Check date
<u>000088</u>	<u>June 19, 2019</u>
4. State Check Number	5. Check date
<u>181 Cowper LLC</u>	
6. Payor name on check: First Name	7. Payor name on check: Last Name



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F. Signatures and Submittal Requirements

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

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

181 Cowper LLC

1. Signature of Applicant

6/19/19

2. Date

3. Signature of Property Owner (if different)

5. Signature of Representative (if any)

4. Date

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.

Checklist for Filing a Notice of Intent with Boston Conservation Commission

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

To the Conservation Commission:

- Two copies (a signed original and 1 copy) of a completed Notice of Intent (WPA Form 3)
- Two copies of plans (reduced to 11" X 17") in their final form with engineer's stamp affixed supporting calculations and other documentation necessary to completely describe the proposed work and mitigating measures. Plans must include existing conditions, the proposed project, erosion controls and mitigation measures, grading and spot elevations and all wetland resource areas and associated buffer zones. Some projects may require both an aerial view of the plans along with a profile view of plans depending on the scope of work.
- Two copies of an 8 ½" x 11" section of the [USGS quadrangle map](#) of the area, containing sufficient information for the Conservation Commission and the Department to locate the site of the work.
- (If applicable) Two copies the Federal Emergency Management Agency Flood Insurance Rate Map for the project site. FEMA Flood Maps: <https://msc.fema.gov/portal>.
- Two copies of the determination regarding the Natural Heritage and Endangered Species Program: Review Section C. Other Applicable Standards and Requirements of the Notice of Intent, page 4 of 8, pertaining to wildlife habitat. The Conservation Commission and the [Natural Heritage & Endangered Species Program](#) have the maps necessary to make this determination.
- (If applicable) Two hard copies of a Stormwater Report to document compliance with the Stormwater Management Standards per 310 CMR 10.05(6)(k)-(q), including associated drainage calculations for rooftops, parking lots, driveways, etc., for the required design storm events.
- (If applicable) Two hard copies of the Checklist for Stormwater Report
- Details of the stormwater management system, including: catch basins, oil separating tanks, detention basins, outfalls, sewer connections, etc.
- Any photographs related to the project representing the wetland resource areas.
- Two copies of a detailed project narrative describing the following: an overview of the entire project, the work proposed within wetland resource areas and/or buffer zones; how the performance standards specific to the wetland resource areas will be met (listing out each performance standard); construction equipment and material involved; and measures to protect wetland resource areas and mitigate impacts.
- Two copies of an Abutters List, Affidavit of Service and Abutter Notification, filed concurrently with the Notice of Intent.
- (If applicable) Two copies of the BPDA Climate Resiliency Checklist (for new buildings). This can be completed online at <http://www.bostonplans.org/planning/planning-initiatives/article-37-green-building-guidelines>. Please print the pdf that you will receive via email after completion and include it in your submission.
- Electronic copies. Documents may be submitted via email, or via an email link to downloadable documents.**



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

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

A.1 - Project Information

Project Name:	181 Cowper Multi-family Development		
Project Address:	181 Cowper Street		
Project Address Additional:	East Boston		
Filing Type (select)	Initial (PNF, EPNF, NPC or other substantial filing) Notice of Intent Design / Building Permit (prior to final design approval), or Construction / Certificate of Occupancy (post construction completion)		
Filing Contact	Name	Company	Email
Is MEPA approval required	Yes/no	No	Date

A.3 - Project Team

Owner / Developer:	181 Cowper LLC
Architect:	Embarc Studios
Engineer:	Norwood Engineering Co., Inc.
Sustainability / LEED:	A9 Green
Permitting:	Drago + Toscano LLP
Construction Management:	City Realty Group

A.3 - Project Description and Design Conditions

List the principal Building Uses:	Multi-family Residential
List the First Floor Uses:	2 Residential Units
List any Critical Site Infrastructure and or Building Uses:	None

Site and Building:

Site Area:	13,350 SF	Building Area:	10,260 SF
Building Height:	35 Ft	Building Height:	3 Stories
Existing Site Elevation – Low:	14.87 Ft BCB	Existing Site Elevation – High:	19.05 Ft BCB
Proposed Site Elevation – Low:	15.30 Ft BCB	Proposed Site Elevation – High:	19.10 Ft BCB
Proposed First Floor Elevation:	16.5/17.5 Ft BCB	Below grade levels:	None Stories

Article 37 Green Building:

LEED Version - Rating System :	N/A	LEED Certification:	Yes / <input checked="" type="checkbox"/> No
Proposed LEED rating:	Certified/Silver/Gold/Platinum	Proposed LEED point score:	Pts.

Building Envelope

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

Roof:	R49 (R)	Exposed Floor:	N/A (R)
Foundation Wall:	R10 (R)	Slab Edge (at or below grade):	R10 (R)

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

Area of Opaque Curtain Wall & Spandrel Assembly:	0 (%)	Wall & Spandrel Assembly Value:	N/A (U)
Area of Framed & Insulated / Standard Wall:	83.6 (%)	Wall Value:	R20 (R)
Area of Vision Window:	14 %	Window Glazing Assembly Value:	.30 (U)
		Window Glazing SHGC:	.29 (SHGC)
Area of Doors:	2.4 %	Door Assembly Value:	.30 (U)

Energy Loads and Performance

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

Individual Unit REM models			
Annual Electric:	30,415.6 (kwh/yr)	Peak Electric:	10.3 (kW)
Annual Heating:	113.5 (MMbtu/yr)	Peak Heating:	94.1 (MMbtu)
Annual Cooling:	48.2 (MMbtu/yr)	Peak Cooling:	6 (Tons)
Energy Use - Below ASHRAE 90.1 - 2013:	n/a %	Have the local utilities reviewed the building energy performance?:	Yes / no
Energy Use - Below Mass. Code:	n/a %	Energy Use Intensity:	35 (kBtu/SF)

Back-up / Emergency Power System

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

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

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

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:

146	(Tons)
-----	--------

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

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

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

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

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

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

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):

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:	<input type="text" value="Deg."/>	Temperature Range - High:	<input type="text" value="Deg."/>
Annual Heating Degree Days:	<input type="text"/>	Annual Cooling Degree Days:	<input type="text"/>

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

Days - Above 90°:	<input type="text" value="#"/>	Days - Above 100°:	<input type="text" value="#"/>
Number of Heatwaves / Year:	<input type="text" value="#"/>	Average Duration of Heatwave (Days):	<input type="text" value="#"/>

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

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:

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:

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:

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

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):

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?

What Zone:

Current FEMA SFHA Zone Base Flood Elevation:

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.

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:	<input type="text" value="Ft BCB"/>	
Sea Level Rise - Design Flood Elevation:	<input type="text" value="Ft BCB"/>	First Floor Elevation: <input type="text" value="16.5-17.5 Ft BCB"/>
Site Elevations at Building:	<input type="text" value="15.6-18.0 Ft BCB"/>	Accessible Route Elevation: <input type="text" value="15.9-17.5 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.:

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

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

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

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

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

Raise height of retaining wall surrounding property to mitigate effects of rising sea level

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

Backflow preventer can be added to stormwater retention/drainage system

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



SECTION II – PROJECT NARRATIVE



1.0 INTRODUCTION

On behalf of 181 Cowper LLC (Applicant & Owner), Lucas Environmental, LLC (LE) is pleased to submit this Notice of Intent (NOI) to the Boston Conservation Commission for the redevelopment of 181 Cowper Street in the East Boston neighborhood of Boston, Massachusetts.

The proposed work includes the demolition of the existing two-family dwelling to construct a multi-family residential building with eight (8) units, with additional parking, stormwater improvements, and landscaping. Portions of the proposed work will occur within the Land Subject to Coastal Storm Flowage. This NOI is submitted in accordance with the Massachusetts Wetlands Protection Act (WPA; M.G.L. Ch. 131, Section 40) and implementing regulations (310 CMR 10.00 et seq.).

This project narrative describes the existing conditions, wetland resource areas, proposed design, project impacts, and regulatory compliance for work within jurisdictional areas on the site. The proposed project is depicted on the enclosed permitting Site Plans entitled "181 Cowper Street, Boston, MA." Sheets A000 and A001-620 were prepared by Embarc Studio, dated June 13, 2019. The civil design Sheets C1-5 were prepared by Norwood Engineering Co. Inc., dated May 30, 2019. The Landscape Plan Sheet L1 was prepared by Verdant Landscape Architecture, dated May 24, 2019.

2.0 EXISTING CONDITIONS

The subject property is located at 181 Cowper Street in the East Boston neighborhood of Boston, Massachusetts (See Figure 1 – USGS Map and Figure 2 – Aerial Map). The site consists of two parcels of land identified as Assessor's Parcels 0104312009 & 0104312010, 0.16 and 0.14 acres in size, respectively, totaling approximately 0.30 acres (13,350 square feet). Parcel 0104312009 consists of the existing 2.5 story, two-family dwelling with a one-story addition, landscaped areas, and lawn. Parcel 0104312010 consists of landscaped areas and lawn. The site is bound by residences, Cowper Street, and the MBTA Blue Line rail to the north; residences and Wordsworth Street to the west; residences and Coleridge Street to the south; and the Porrazzo Skating Rink, fields, and Constitution Beach to the east.

A review of the current MassGIS data layer for the Massachusetts Natural Heritage Atlas (effective August 1, 2017) under the Natural Heritage & Endangered Species Program (NHESP) indicates that no portion of the Study Area is located within Estimated Habitat of Rare Wildlife or Priority Habitat of Rare Species (See Figure 3 – NHESP Map). No Certified or Potential Vernal Pools under the jurisdiction of the Wetlands Protection Act Regulations (310 CMR 10.00 et seq.) or the Massachusetts Endangered Species Act (321 CMR 10.00 et seq.) are mapped by NHESP in the Study Area.

The Study Area is not located within an Area of Critical Environmental Concern (ACEC), Outstanding Resource Water (ORW), or Wellhead Protection Zone.

3.0 WETLAND RESOURCE AREAS

A Professional Wetland Scientist (PWS) from LE conducted a wetland site investigation at the project site and adjacent areas on June 14, 2019. The wetland investigation was performed in accordance with the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131, § 40) and regulations (310 CMR 10.00 et seq.); Section 404 of the Clean Water Act (33 U.S.C. 1344); Massachusetts Department of Environmental Protection (MassDEP) publication “Delineating Bordering Vegetated Wetlands” under the Massachusetts Wetlands Protection Act (1995); the U.S. Army Corp of Engineers (USACE) Wetland Delineation Manual (1987); and the Northcentral and Northeast Regional Supplement (2012).

The following data sources were examined prior to the site investigation:

- Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps;
- United States Geological Survey Topographic Quadrangle;
- MassGIS MassDEP Wetland and Hydrography Datalayers;
- MassGIS Natural Heritage Atlas Datalayers; and
- United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS) Soil Survey.

No wetland resource areas were observed on or immediately near the project site; however, Land Subject to Coastal Storm Flowage (LSCSF) has been identified based upon elevation. Under the Massachusetts Wetlands Protection Act, the wetlands near the site are regulated as follows.

3.1 Land Subject to Coastal Storm Flowage – 310 CMR 10.04

Land Subject to Coastal Storm Flowage is defined under Section 310 CMR 10.04 of the WPA as *land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater.*

According to the March 16, 2016 FEMA Flood Insurance Rate Map for Suffolk County, Map Number 25025C0019JK the site is partially located within Zone AE. Zone AE is designated as an area within the 100-year floodplain where the base flood elevations and flood hazard factors have been determined. The flood base elevations are identified on the effective FEMA map for the area at Elevation 9 NAVD 88; 15.44 Boston City Base (BCB; per Norwood Engineering). The 100-year floodplain is the limit of LSCSF (See Figure 4 – FEMA National Flood Hazard Layer FIRMette).

4.0 PROPOSED WORK

The proposed work includes the demolition of the existing two-family dwelling to construct a multi-family residential building with eight (8) units, with additional parking, stormwater improvements, and landscaping on a 13,350 square foot (0.30-acre) site. Portions of the proposed work will occur within the Land Subject to Coastal Storm Flowage. Proposed work includes regrading the site.

The project proposes 14 new parking spaces, patios, landscaped areas, lawn, and a stormwater management system. Overall, the project will result in an increase of impervious services by approximately 8,251 square feet.

The proposed stormwater management system has been designed utilizing three underground infiltration systems and an outlet control structure in order to meet the requirements as set forth by the standards of MassDEP and the Boston Water and Sewer Commission (BWSC). The proposed stormwater system will remove 85% of total suspended solids (TSS). The project will not result in new untreated discharges, with final discharge to the existing City of Boston municipal stormwater system. A waiver for Stand 2 for Peak Attenuation Rate is requested as the project is located in LSCSF and any stormwater discharge is to a wetland subject to coastal flooding. See the Stormwater Management Report, prepared by Norwood Engineering Co. Inc., dated June 13, 2019 for additional details on the stormwater design.

Runoff control, water quality improvement and groundwater recharge will be accomplished by implementing the following drainage improvements:

- Collect storm runoff in deep sump hooded catch basins with discharge to three underground infiltration systems for treatment of Total Suspended Solids (TSS).
- Implement a Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan to control erosion, sedimentation and other construction related impacts during construction.
- Implement a Post Construction Operation and Maintenance (O&M) Plan for the proposed stormwater management system that describes the various components of the system, identifies inspection and maintenance tasks, and provides a schedule to follow which will ensure the proper, long-term, post-construction performance of the system.
- Implement a Long Term Pollution Prevention Plan (LTPPP) as part of the O&M Plan to prevent illicit discharges to the stormwater management system.

The proposed Post Construction Operation and Maintenance (O&M) Plan included in the Stormwater Management Report outlines procedures and time tables for the long term operation and maintenance of the proposed site stormwater management system, including initial inspections upon completion of construction, and periodic monitoring of the system components in accordance with established practices and manufacturer's recommendations. The O&M Plan includes a list of responsible parties associated with inspections and maintenance.

Erosion and sedimentation control BMPs have been incorporated into the project design in order to control runoff and prevent siltation to the wetland resource area and adjacent properties during construction (See Site Plans). This will consist primarily of straw wattles. At the outset of the construction, the site limit of work will be staked and erosion controls will be installed.

5.0 REGULATORY COMPLIANCE

The following section details the project's compliance with the performance standards for each resource area under the Wetlands Protection Act; however, there are no performance standards or buffer zones associated with LSCSF.

6.0 SUMMARY

The proposed project consists of the demolition of the existing two-family dwelling to construct a multi-family residential building with eight (8) units, with additional parking, stormwater improvements, and landscaping. Portions of the proposed work will occur within the Land Subject to Coastal Storm Flowage.

The project proposes the following:

- Additional units available for the Boston community.
- The proposed work area is previously altered and developed, providing little value to existing resource areas.
- The proposed project includes the installation of a stormwater management system designed in accordance with the MassDEP and BWSC standards.
- Erosion controls will be installed and consist of straw wattles.

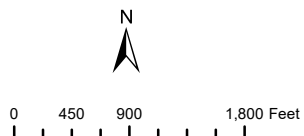
The proposed design achieves the goals of the Applicant, while being sensitive to adjacent regulated resource areas. Accordingly, the Applicant respectfully requests that the Conservation Commission consider a finding that the proposed design is adequately protective of the interests identified in the Wetlands Protection Act and issue an Order of Conditions approving the project as described in this Notice of Intent and as shown on the attached Site Plans.



SECTION III – FIGURES



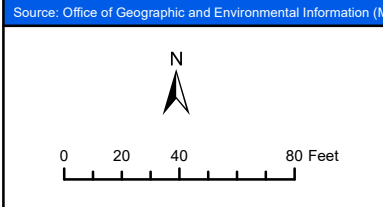
Source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs; USGS Topographic Quadrangle Images



USGS Map
 Notice of Intent
 181 Cowper Street
 Boston, MA



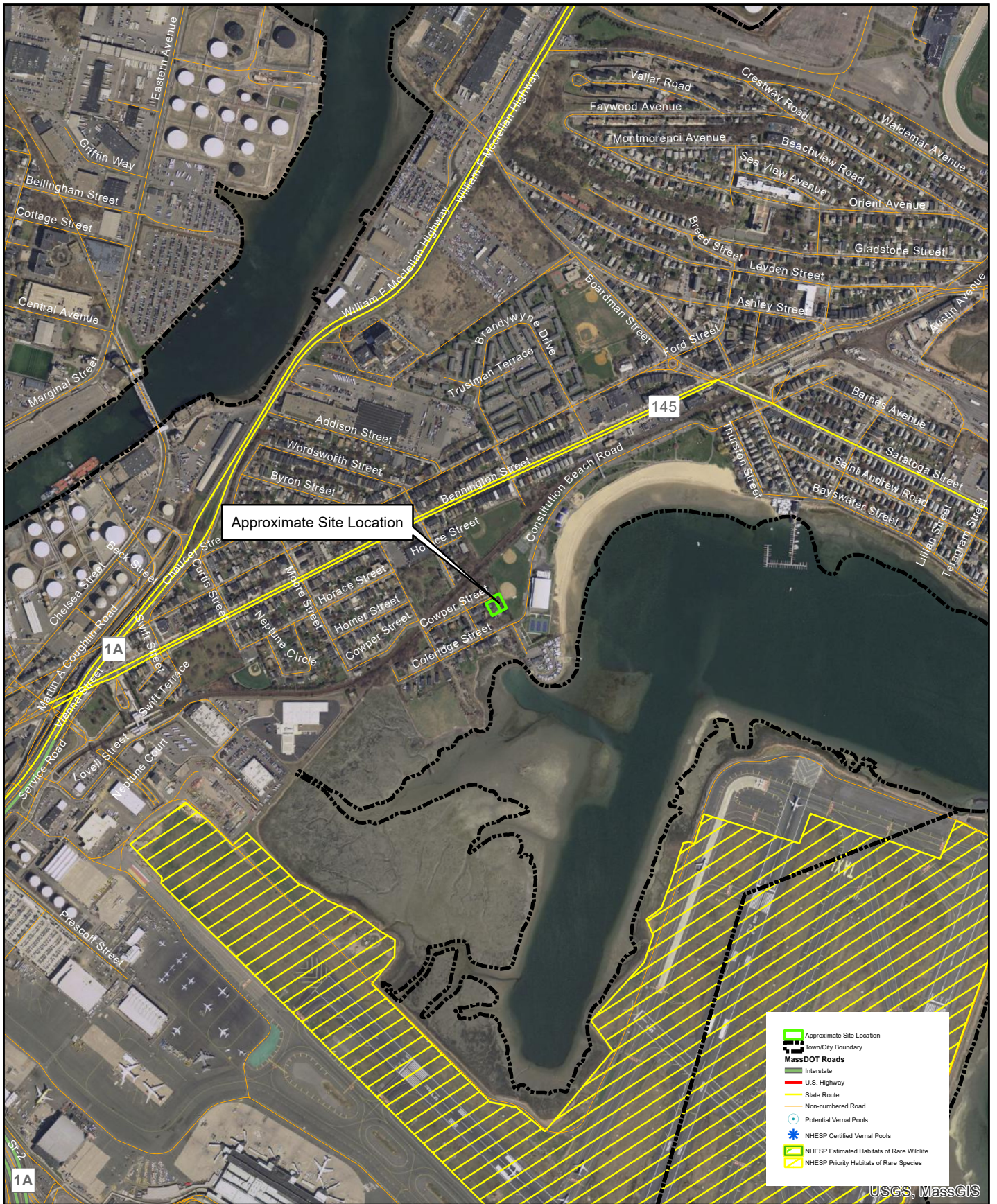
FIGURE 1



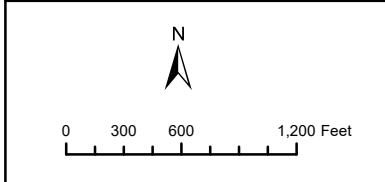
Aerial Map
Notice of Intent
181 Cowper Street
Boston, MA

FIGURE 2

LUCAS
 ENVIRONMENTAL, LLC



Source: Office of Geographic and Environmental Information (MassGIS), Commonwealth of Massachusetts Executive Office of Environmental Affairs; USGS Color Ortho Imagery - 30cm (2013/2014)



NHESP Map
Notice of Intent
181 Cowper Street
Boston, MA

FIGURE 3

LUCAS
 ENVIRONMENTAL, LLC

National Flood Hazard Layer FIRMette



42°23'8.98"N



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

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

OTHER FEATURES	Cross Sections with 1% Annual Chance Water Surface Elevation
	20.2
	17.5
	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

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 **6/20/2019 at 11:59:34 AM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

FIGURE 4



SECTION IV – APPENDICES



APPENDIX A

PHOTOGRAPHIC DOCUMENTATION

PHOTOGRAPHIC DOCUMENTATION

DATE: June 14, 2019



Photograph 1: View of existing two-family dwelling from Cowper Street, facing south.



Photograph 2: View of existing two-family dwelling, facing west.

PHOTOGRAPHIC DOCUMENTATION

DATE: June 14, 2019



Photograph 3: View of existing two-family dwelling and lawn, facing north, northwest toward Cowper Street.



Photograph 4: View of existing two-family dwelling and lawn, facing west.

PHOTOGRAPHIC DOCUMENTATION

DATE: June 14, 2019



Photograph 5: View of lawn and landscaping along southeast corner of the site.



Photograph 6: View of lawn and landscaping facing the southeast corner of the site.

ABUTTER INFORMATION



ABUTTER NOTIFICATION

Notification to Abutters Under the Massachusetts Wetlands Protection Act

In accordance with the second paragraph of the Massachusetts General Laws Chapter 131, Section 40, you are hereby notified of the following.

- A. The name of the applicant is 181 Cowper LLC
- B. The applicant has filed a Notice of Intent with the Conservation Commission for the Municipality Boston seeking to remove, fill, dredge or alter an Area Subject to Protection Under the Wetlands Protection Act (General Laws Chapter 131, Section 40).

Activities Proposed: The Applicant proposes a redevelopment project at 181 Cowper Street in the East Boston neighborhood of Boston, Massachusetts. The proposed work includes the demolition of the existing two-family dwelling to construct a multi-family residential building with eight (8) units, with additional parking, stormwater improvements, and landscaping. Portions of the proposed work will occur within the Land Subject to Coastal Storm Flowage.

- C. The Address of the Lot where the activity is proposed is 181 Cowper Street, Boston, MA
- D. Copies of the Notice of Intent may be examined at the Boston Conservation Commission Office
For more information, call: 617.635.3850
between the hours of 9:00 AM And 4:00 PM on the following days of the week: Mon–Friday
This is the applicant , representative , or other (specify): Boston Conservation Commission
- E. Electronic copies of the Notice of Intent may be obtained from either (check one) the applicant or the applicant's representative by calling this telephone number 617.405.4140
between the hours of 8:00 AM And 5:00 PM on the following days of the week: Mon–Friday
Name of Representative: Christopher M. Lucas, Lucas Environmental, LLC
Copies will be provided for the cost of copying and postage. Electronic copies will be provided at no cost.
- F. Information regarding the date, time, and place of the public hearing may be obtained from:
Boston Conservation Commission
by calling this telephone number 617.635.3850
This is the applicant , representative , or other (specify): Boston Conservation Commission

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

NOTE: Please see the following link to the Public Notices' page <https://www.boston.gov/public-notices> to confirm hearing date and agenda items.

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

NOTE: You also may contact your local Conservation Commission or the nearest Department of Environmental Protection (MassDEP) Regional Office for more information about this application or the Wetlands Protection Act. To contact MassDEP, call: Northeast Region: 978.694.3200

NOTE: To preserve your appeal rights you must submit comments/concerns in writing.

181 Cowper Road 100-Foot Abutters List

PID	OWNER	ADDRESSEE	MAILING ADDRESS	CITYSTATE	ZIPCODE	LOCATION ADDRESS	CITY	ZIPCODE
104312001	NUGENT RICHARD I	NUGENT RICHARD I	176 COLERIDGE ST	E BOSTON MA	2128	COLERIDGE ST	EAST BOSTON	2128
104312002	NUGENT RICHARD I	NUGENT RICHARD I	176 COLERIDGE ST	E BOSTON MA	2128	COLERIDGE ST	EAST BOSTON	2128
104312003	NUGENT RICHARD I	NUGENT RICHARD I	176 COLERIDGE ST	E BOSTON MA	2128	176 COLERIDGE ST	EAST BOSTON	2128
104312004	CAVICCHI JOHN	CAVICCHI JOHN	2001 SE 16TH ST	CAPE CORAL FL	33990	186 WORDSWORTH ST	EAST BOSTON	2128
104312005	IANNELLI RALPH J JR	IANNELLI RALPH J JR	182 WORDSWORTH	EAST BOSTON MA	2128	182 WORDSWORTH ST	EAST BOSTON	2128
104312006	MARCELLA CHARLES	MARCELLA CHARLES	178 WORDSWORTH ST	E BOSTON MA	2128	178 WORDSWORTH ST	EAST BOSTON	2128
104312007	HAGEMEISTER ROBERT E	HAGEMEISTER ROBERT E	177 COWPER	EAST BOSTON MA	2128	177 COWPER ST	EAST BOSTON	2128
104312008	BRANGIFORTE PHILLIP R	BRANGIFORTE PHILLIP R	179 COWPER ST	EAST BOSTON MA	2128	179 COWPER ST	EAST BOSTON	2128
104312009	181 COWPER LLC	181 COWPER LLC	320 WASHINGTON ST STE 3FF	BROOKLINE MA	2445	181 COWPER ST	EAST BOSTON	2128
104312010	181 COWPER LLC	181 COWPER LLC	320 WASHINGTON ST STE 3FF	BROOKLINE MA	2445	COWPER ST	EAST BOSTON	2128
104313000	184 COWPER NOMINEE TRUST	184 COWPER NOMINEE TRUST	184 COWPER ST	EAST BOSTON MA	2128	COWPER ST	EAST BOSTON	2128
104315000	184 COWPER NOMINEE TRUST	184 COWPER NOMINEE TRUST	184 COWPER ST	EAST BOSTON MA	2128	184 COWPER ST	EAST BOSTON	2128
104316000	BRANGIFORTE PHILLIP R	BRANGIFORTE PHILLIP R	178 COWPER ST	E BOSTON MA	2128	178 COWPER ST	EAST BOSTON	2128
104318000	PEREZ JESSICA MARIA	PEREZ JESSICA MARIA	7 BARNES AVE	EAST BOSTON MA	2128	176 COWPER ST	EAST BOSTON	2128
104319000	PEREZ JOSE A	PEREZ JOSE A	174 COWPER ST	EAST BOSTON MA	2128	174 COWPER ST	EAST BOSTON	2128
104387002	COMMONWEALTH OF MASS	COMMONWEALTH OF MASS	BARNES AV	EAST BOSTON MA	2128	BARNES AV	EAST BOSTON	2128

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

Enter/Select a Street Name:

COWPER

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Click an Address to find a Parcel:

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- 177 COWPER ST, 02128
- 178 COWPER ST, 02128
- 179 COWPER ST, 02128
- 181 COWPER ST, 02128
- 184 COWPER ST, 02128
- 93 COWPER ST, 02128
- 94 COWPER ST, 02128
- 98 COWPER ST, 02128
- 99 COWPER ST, 02128

Enter a Parcel ID:

0104312009

[Find a Parcel](#)

When you can see Parcels:

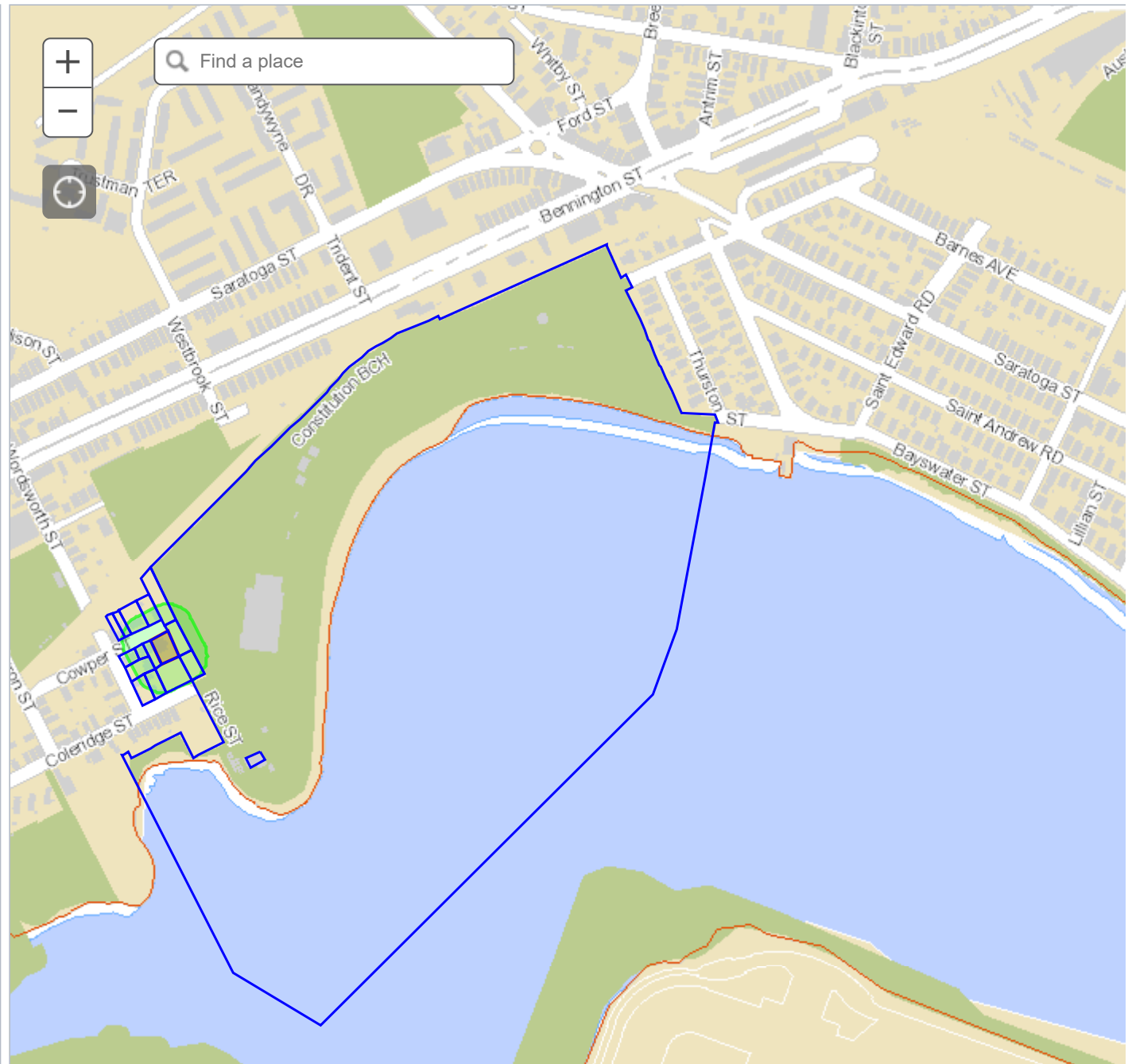
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93 COWPER ST, 02128
94 COWPER ST, 02128
98 COWPER ST, 02128
99 COWPER ST, 02128

Enter a Parcel ID:

0104312010

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[Click Here to Select a Parcel](#)

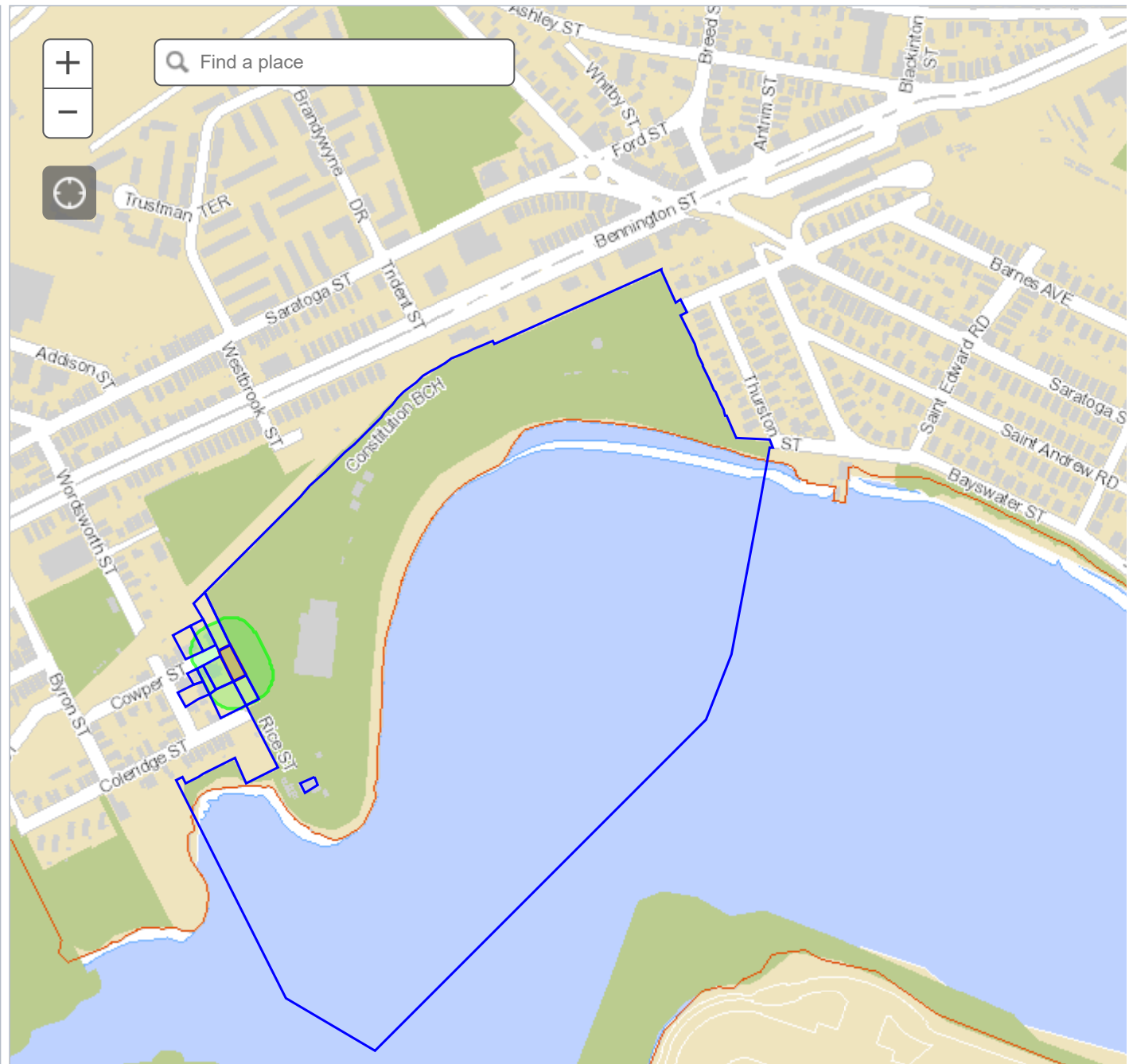
Buffer Parameters:

Distance:

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Click [here](#) to download a CSV file (Open in Notepad, not in Excel) for Mailing list.

Click [here](#) for an instruction to



FILING FEE INFORMATION



CALCULATED FILING FEE STATEMENT

The proposed project is located at 181 Cowper Street in Boston, Massachusetts. Proposed activities are included under Category 3(b) under the Wetlands Filing Fee Calculation Worksheet.

Category 3(b): *Construction of each building for any commercial, industrial, institutional, or apartment/condominium/townhouse-type development, any part of which is in a buffer zone or resource area. Any activities associated with the construction of said building, including associated site preparation, and construction of retention/detention basins, septic systems, parking lots, utilities, point source discharges, package sewage treatment plants, and roadways and driveways other than those roadways and driveways reviewable under 310 CMR 10.53(3)(e), shall not be subject to additional fees if all said activities are reviewed under a single Notice of Intent.* The fee is \$1,050.00 per activity under the WPA.

Wetlands Protection Act Fees:

Category 3(b) = 1 x \$1,050.00 = \$1,050.00

State Share of WPA Filing Fee: $(\$1,050.00/2) - \$12.50 = \$512.50$

Town Share of WPA Filing Fee: Included in Local Fees per Boston Conservation Commission

Local Fees:

Maximum Fee = \$1,500.00 per local requirement

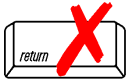
Check Payable to: City of Boston for \$1,500.00

Check Payable to: Commonwealth of Massachusetts for \$512.50



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

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



A. Applicant Information

1. Location of Project:

<u>181 Cowper Street</u>	<u>Boston</u>
a. Street Address	b. City/Town
<u>000088</u>	<u>\$512.50</u>
c. Check number	d. Fee amount

2. Applicant Mailing Address:

<u>Jacobs</u>	<u>Simmons</u>	
a. First Name	b. Last Name	
<u>181 Cowper LLC</u>		
c. Organization		
<u>320 Washington Street, Suite 3FF</u>		
d. Mailing Address		
<u>Brookline</u>	<u>MA</u>	<u>02445</u>
e. City/Town	f. State	g. Zip Code
<u>857.207.1664</u>	<u>617.751.5123</u>	<u>jacob.simmons@cityrealtyboston.com</u>
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

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

B. Fees

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

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

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

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

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

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

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

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



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
NOI Wetland Fee Transmittal Form
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Fees (continued)

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

Step 5/Total Project Fee: _____

Step 6/Fee Payments:

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

C. Submittal Requirements

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

Department of Environmental Protection
 Box 4062
 Boston, MA 02211

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

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

**Stormwater Compliance
181 Cowper Street
East Boston, Massachusetts**

Prepared For
181 Cowper LLC
Suite 3FF
320 Washington Street
Brookline, MA 02445



Prepared By
Norwood Engineering Co., Inc.
1410 Route One
Norwood, Ma 02062

**Norwood
Engineering**

June 13, 2019



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.

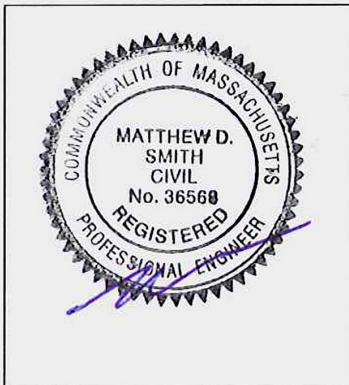
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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



06-13-2019

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): _____

Standard 1: No New Untreated Discharges

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



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

- Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.
- Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.
- Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - Static
 - Simple Dynamic
 - Dynamic Field¹
- Runoff from all impervious areas at the site discharging to the infiltration BMP.
- Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume.
- Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:
 - Site is comprised solely of C and D soils and/or bedrock at the land surface
 - M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
 - Solid Waste Landfill pursuant to 310 CMR 19.000
 - Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.
- Calculations showing that the infiltration BMPs will drain in 72 hours are provided.
- Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

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



Checklist for Stormwater Report

Checklist (continued)

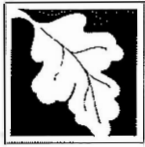
Standard 3: Recharge (continued)

- The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.
- Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

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

- Good housekeeping practices;
 - Provisions for storing materials and waste products inside or under cover;
 - Vehicle washing controls;
 - Requirements for routine inspections and maintenance of stormwater BMPs;
 - Spill prevention and response plans;
 - Provisions for maintenance of lawns, gardens, and other landscaped areas;
 - Requirements for storage and use of fertilizers, herbicides, and pesticides;
 - Pet waste management provisions;
 - Provisions for operation and management of septic systems;
 - Provisions for solid waste management;
 - Snow disposal and plowing plans relative to Wetland Resource Areas;
 - Winter Road Salt and/or Sand Use and Storage restrictions;
 - Street sweeping schedules;
 - Provisions for prevention of illicit discharges to the stormwater management system;
 - Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
 - Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
 - List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.
- A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.
 - Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:
 - is within the Zone II or Interim Wellhead Protection Area
 - is near or to other critical areas
 - is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
 - involves runoff from land uses with higher potential pollutant loads.
 - The Required Water Quality Volume is reduced through use of the LID site Design Credits.
 - Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.



Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

- The BMP is sized (and calculations provided) based on:
 - The ½" or 1" Water Quality Volume or
 - The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.
- The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.
- A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

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

- The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.
- The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted *prior* to the discharge of stormwater to the post-construction stormwater BMPs.
- The NPDES Multi-Sector General Permit does *not* cover the land use.
- LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.
- All exposure has been eliminated.
- All exposure has *not* been eliminated and all BMPs selected are on MassDEP LUHPPL list.
- The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

- The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.
- Critical areas and BMPs are identified in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

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

- The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:
- Limited Project
 - Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
 - Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
 - Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
 - Bike Path and/or Foot Path
 - Redevelopment Project
 - Redevelopment portion of mix of new and redevelopment.
- Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.
- The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

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

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

- Narrative;
 - Construction Period Operation and Maintenance Plan;
 - Names of Persons or Entity Responsible for Plan Compliance;
 - Construction Period Pollution Prevention Measures;
 - Erosion and Sedimentation Control Plan Drawings;
 - Detail drawings and specifications for erosion control BMPs, including sizing calculations;
 - Vegetation Planning;
 - Site Development Plan;
 - Construction Sequencing Plan;
 - Sequencing of Erosion and Sedimentation Controls;
 - Operation and Maintenance of Erosion and Sedimentation Controls;
 - Inspection Schedule;
 - Maintenance Schedule;
 - Inspection and Maintenance Log Form.
- A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.



Checklist for Stormwater Report

Checklist (continued)

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

- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has *not* been included in the Stormwater Report but will be submitted *before* land disturbance begins.
- The project is *not* covered by a NPDES Construction General Permit.
- The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.
- The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

- The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:
 - Name of the stormwater management system owners;
 - Party responsible for operation and maintenance;
 - Schedule for implementation of routine and non-routine maintenance tasks;
 - Plan showing the location of all stormwater BMPs maintenance access areas;
 - Description and delineation of public safety features;
 - Estimated operation and maintenance budget; and
 - Operation and Maintenance Log Form.
- The responsible party is *not* the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:
 - A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
 - A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

- The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;
- An Illicit Discharge Compliance Statement is attached;
- NO Illicit Discharge Compliance Statement is attached but will be submitted *prior to* the discharge of any stormwater to post-construction BMPs.

INSTRUCTIONS:

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

Version 1, Automated: Mar. 4, 2008

Location:

TSS Removal Calculation Worksheet

B	C	D	E	F
BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
Deep Sump and Hooded Catch Basin	0.25	1.00	0.25	0.75
Infiltration Basin	0.80	0.75	0.60	0.15
	0.00	0.15	0.00	0.15
	0.00	0.15	0.00	0.15
	0.00	0.15	0.00	0.15

Total TSS Removal =

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

Project:
 Prepared By:
 Date:

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

Non-automated TSS Calculation Sheet must be used if Proprietary BMP Proposed
 1. From MassDEP Stormwater Handbook Vol. 1

TEST BORING LOG

SHEET 1

Soil Exploration Corp.
Geotechnical Drilling
Groundwater Monitor Well
148 Pioneer Drive
Leominster, MA 01453
978 840-0391

Proposed Building
Site: 11 Cowper Street
East Boston, MA.

BORING B-1

PROJECT NO. 18-1108

DATE: November 12, 2018

Ground Elevation:
Date Started: November 8, 2018
Date Finished: November 8, 2018
Driller: DI

GROUNDWATER OBSERVATIONS

DATE	DEPTH	CASING	STABILIZATION
11/8/18	6 ft	n/a	

Soil Engineer/Geologist:

Depth Ft.	Casing bl/ft	Sample				Strata	Visual Identification of Soil and / or Rock Sample
		No.	Pen/Rec	Depth	Blows/6"		
1		1	16"	0'0" - 2'0"	2-2-2-2		Dark Brown, loamy Sand, little silt, little gravel
		2	14"	2'0" - 4'0"	2-2-1-2		Dark Brown, loamy, silty Sand, trace gravel, roots (FILL)
5		3	16"	5'0" - 7'0"	4-5-5-4	7'	Brown, Sand & Gravel, little silt, wet
		4	17"	7'0" - 9'0"	7-12-12-14		
10		5	20"	10'0" - 12'0"	7-12-15-15		Olive, Fine Sand & Silt, trace gravel, trace clay
15		6	12"	15'0" - 16'2"	16-22-60/2"		
20						18'	Refusal at 18 ft Water encountered at 6 ft upon completion
25							
30							
35							

Notes: Geoprobe

Cohesionless: 0 - 4 V. Loose, 4 - 10 Loose,	Trace 0 to 10%	CASING	SAMPLE	CORE TYPE
Cohesive: 0 - 2 V Soft, 2 - 4 Soft, 4 - 8 M	Some 20 to 35%	HAMMER WGT (LB)	140 lb.	
8 - 15 Stiff, 15 - 30 V. Stiff, 30 + Hard.	And 35% to 50%	HAMMER FALL (IN)	30"	

TEST BORING LOG

SHEET 2

Soil Exploration Corp.
 Geotechnical Drilling
 Groundwater Monitor Well
 148 Pioneer Drive
 Lenminster, MA 01453
 978 840-0391

Proposed Building
Site: 11 Cowper Street
East Boston, MA.

BORING B-2

PROJECT NO. 18-1108

DATE: November 12, 2018

Ground Elevation:

Date Started: November 8, 2018

Date Finished: November 8, 2018

Driller: DL

Soil Engineer/Geologist:

GROUNDWATER OBSERVATIONS

DATE	DEPTH	CASING	STABILIZATION
11/8/18	6 ft	n/a	

Depth Ft.	Casing bl/ft	Sample				Strata	Visual Identification of Soil and / or Rock Sample
		No.	Pen/Rec	Depth	Blows/6"		
1		1	6"	0'0" - 2'0"	2-3-3-2		Dark Brown, loamy Sand & Gravel, little silt
		2	6"	2'0" - 4'0"	2-3-2-3		Dark Brown, loamy Sand, little gravel, little silt (FILL)
5		3	16"	5'0" - 7'0"	3-4-5-4	6'	
		4	18"	7'0" - 9'0"	6-12-17-17		Brown-Grey, mottled, Fine Sand & Silt, little clay
10		5	18"	10'0" - 12'0"	7-9-12-15		Olive, Fine Sand & Silt, some clay
15		6	8"	15'0" - 16'3"	15-21-60/3"	15'	Brown, fine to coarse Sand & Gravel, little silt
20						18'6"	Refusal at 18'6" Water encountered at 6 ft
25							
30							
35							

Notes: Geoprobe

Cohesionless: 0 - 4 V. Loose, 4 - 10 Loose, 10 - 30 M Dense, 30 - 50 Dense, 50+ V	Trace 0 to 10% Little 10 to 20% Some 20 to 35% And 35% to 50%		CASING	SAMPLE	CORE TYPE
Cohesive: 0 - 2 V Soft, 2 - 4 Soft, 4 - 8 M 8 - 15 Stiff. 15 - 30 V. Stiff. 30 + Hard.		ID SIZE (IN)		SS	
		HAMMER WGT (LB)		140 lb.	
		HAMMER FALL (IN)		30"	

TEST BORING LOG

SHEET 3

Soil Exploration Corp.
Geotechnical Drilling
Groundwater Monitor Well
148 Pioneer Drive
Leominster, MA 01453
978 840-0391

Proposed Building
Site: 11 Cowper Street
East Boston, MA.

BORING B-3

PROJECT NO. 18-1108

DATE: November 12, 2018

Ground Elevation:
Date Started: November 8, 2018
Date Finished: November 8, 2018
Driller: DL

GROUNDWATER OBSERVATIONS

DATE	DEPTH	CASING	STABILIZATION
11/8/18	6 ft	n/a	

Soil Engineer/Geologist:

Depth Ft.	Casing bl/ft	Sample			Blows/6"	Strata	Visual Identification of Soil and / or Rock Sample
		No.	Pen/Rec	Depth			
1		1	14"	0'0" - 2'0"	1-1-1-1	5'	Dark Brown, loamy, silty Sand, little gravel, roots (FILL)
		2	6"	2'0" - 4'0"	1-2-3-3		
5		3	5"	5'0" - 7'0"	7-13-13-17	19'6"	Brown, Fine Sand & Silt, some clay, trace gravel, cobbles
		4	17"	7'0" - 9'0"	22-28-14-10		
10		5	13"	10'0" - 12'0"	11-16-16-18		
15		6	8"	15'0" - 15'10"	14-50/4"		Brown, silty Sand & Gravel w/ fractured rock
20							Refusal at 19'6" Water encountered at 6 ft
25							
30							
35							

Notes: NW Casing

Cohesionless: 0 - 4 V. Loose, 4 - 10 Loose, 10 - 30 M Dense, 30 - 50 Dense, 50+ V	Trace 0 to 10% Little 10 to 20%	ID SIZE (IN)	CASING	SAMPLE	CORE TYPE
Cohesive: 0 - 2 V Soft, 2 - 4 Soft, 4 - 8 M 8 - 15 Stiff, 15 - 30 V. Stiff, 30 + Hard.	Some 20 to 35% And 35% to 50%	HAMMER WGT (LB) HAMMER FALL (IN)		140 lb. 30"	

Stormwater Compliance
181 Cowper Street
East Boston, MA

Proposed Project

The proposed project is the removal of any existing 2-unit structure and the construction of an 8-unit building along with associated site and utility work on the existing 13,350 sf lot. The site is currently located in an AE flood zone with a flood elevation of 15.44 - Boston City Base (BCB). Refer to the attached Flood Certificate. The proposed site will be regraded to an elevation above the flood level. Refer to the attached site plan for proposed grading. The site is not located within or adjacent to any other wetland resource areas.

The project has been designed to be consistent with both state and local stormwater management requirements. Documentation of compliance is provided herein.

Stormwater Design

Infiltration systems must have a combined stormwater storage volume no less than 1.0 inches across the proposed impervious area on the lot to comply with the requirements of the Boston Water and Sewer Commission (BWSC).

The proposed post-construction impervious area is 10,690 square feet, an increase of 8,251± square feet from the existing impervious area of 2,439 square feet. The post-construction area includes 5,435 square feet of driveway and parking areas. Accordingly, to comply with the minimum recharge requirements, the recharge systems must have a minimum stormwater storage capacity of 887.27 cubic feet or 6,637 gallons.

There are no existing infiltration systems on the property. To meet the BWSC requirements for stormwater storage three infiltration systems are proposed for the site. Infiltration System 1 has ten Cultec Contractor 100 HD chambers and will collect storm water from the driveway area and provide 262.5 cubic feet (2,270.4 gallons) of storage. Infiltration System 2 with eight (8) Cultec Contractor 100 HD chambers will collect stormwater from the driveway area and will provide 242.0 cubic feet (1,810.1 gallons) of storage. Infiltration System 3 with six (6) Cultec Recharger 280 HD chambers will collect stormwater from the roof area and will provide 430.6 cubic feet (3,221.4 gallons) of storage. The three systems have a total stormwater storage capacity of 935.1 cubic feet or 6,995 gallons (887.27 cf or 6637.2 gal required).

The proposed infiltration systems will provide up to 1.05 inches (1.0 inches required) of stormwater storage per square foot of post-construction impervious area on the site. The storage volumes were calculated using the Cultec 'Stormgenie' program and do not include any potential storage in the drain lines connecting the systems or the outlet control structure.

Infiltration System 3 is located in the rear yard lawn area. When System 3 reaches full storage capacity the system will overflow into infiltration system 2, found in the rear section of the parking area. System 2 is connected to Infiltration System 1, located under the side yard driveway. Systems 1 and 2 are connected with an 8" equalizer pipe allowing the systems to fill at the same rate. The systems connect to a drain manhole with outlet control structure within by an 8" PVC SDR 35 drain line.

The elevation of the top of stone required for Systems 1 and 2 to reach full capacity is elevation 14.14. When the stormwater outlet control structure in the DMH rises above this elevation it will overtop the control structure wall to an 8" PVC SDR 35 drain line connected to an existing BWSC 12" drain in Cowper Street. Discharge from the existing system terminates in Boston Harbor. Refer to the attached plan of the system.

The groundwater elevation used for the design of the infiltration systems was based on KMM Geotechnical Consultant's technical summary report, Proposed Multi-unit Residential Building, 181 Cowper street, East Boston, Massachusetts dated November 18, 2018. KMM completed 3 test borings across the proposed building area of the site. The report indicates test boring 'B3' as having the highest groundwater elevation at 10.1 - Boston City Base (BCB) and was used to establish a minimum bottom elevation for the infiltration systems at elevation 12.1 – BCB. See Sheet C2 for test boring locations and additional information on the proposed infiltration systems.

Stormwater Management Standards

Standard 1: No New Untreated Discharges

No new untreated discharges are proposed. All stormwater from impervious areas are routed through a treatment train consisting of deep sump hooded catch basins directed to an infiltration system consisting of stormwater chambers. Final discharge is to the existing City of Boston municipal stormwater system.

Standard 2: Peak Rate Attenuation

A waiver of Standard 2 is warranted as the site discharges to a land of coastal storm flowage.

Standard 3: Recharge

Refer to the description of stormwater recharge compliance above.

Standard 4: Water Quality

The proposed treatment train removes in excess of 80% (85% proposed) of TSS. Refer to the Post Construction Operations and Maintenance plan herein.

Standard 5: Land Uses With Higher Potential Pollutant Loads

The site and proposed use do not have the potential for higher pollutant loads.

Standard 6: Critical Areas

The site is not believed to be within or discharging to a critical area.

Standard 7: Projects Subject to the Standards Only To The Maximum Extent Practicable

The project is an 8 unit multi-family development that does not affect a critical area. Accordingly, the project must only meet the standards to the maximum extent practicable. However, the project is in substantial compliance with all of the standards as noted herein.

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

Refer to the attached Plan.

Standard 9: Operation And Maintenance Plan

Refer to the attached Plan

Standard 10: Prohibition of Illicit Discharges

The existing building will be demolished, and waste materials properly removed from the site and disposed of. Any illicit discharges found to exist will be removed. Attached is a plan that identifies the location of the proposed systems for conveying stormwater on the site as part of the proposed development. There is currently no known existing stormwater management system on the site. However, a comprehensive stormwater management system has been designed in accordance with the Stormwater Management Regulations to service the proposed development. The design of the proposed system is detailed on the attached plan set. Furthermore, the site will be connected to the municipal sewer system. The plan identifies the location of the proposed sewer system for conveying and disposal of wastewater on the site. The Operation and Management Plan specifically addresses the prohibition of discharges other than stormwater into the system.

Furthermore, I certify that to the best of my knowledge and belief there are no known or proposed illicit discharges into the stormwater management system, including wastewater discharges and discharges of stormwater contaminated by contact with process wastes, raw materials, toxic pollutants, hazardous substances, oil, or grease.

Jacob Simmons, as Project Manager
on behalf of CRM Property Corp.

Date

Construction Period
Pollution Prevention
and
Erosion and Sedimentation Control Plan

181 Cowper Street
East Boston, MA

Plan Compliance during the construction period shall be the responsibility of the site Contractor without limit or reservation. The Contractor shall follow this plan.

During the construction phase of the project, it is necessary to control, contain and treat stormwater runoff from the site to prevent sediments and pollutants from leaving the site. This will be accomplished by the following:

Prior to commencement of site work, the existing site shall be inspected and any remedial work, such as removal of accumulated debris at the low point of the site shall be completed. Existing low points are the primary location of potential offsite pollution.

1. Prior to any earthwork on the site, the perimeter of the site shall be inspected, and refuse or dumped materials shall be removed and disposed of at an approved location. A continuous siltation barrier shall be placed on site as shown on BWSC Site plan No.19___ Plan 181 Cowper Street Boston, Mass., prepared by Norwood Engineering Co., Inc. dated May 30, 2019. A stone tracking pad shall also be installed.

During the period of construction, any build-up of silt shall be removed before it has accumulated to one-half of the above ground height of any perimeter sediment control barrier. Any sedimentation barriers broken or with the possibility of letting contaminants bypass shall be reinforced. The barrier shall be inspected every workday and at the end of each storm event.

Stockpiles of earth materials, if not trucked off-site, shall be at least 10 feet from the edge of property lines and away from any catch basin inlets, swales, or low points that may convey stormwater runoff where possible. They must be surrounded with adequate sediment barriers and stabilized in accordance with local regulations.

If warranted, truck wash pads of crushed stone shall be installed at the construction entrance into the project site. Adjacent roadways shall be swept clean daily.

2. All catch basins on or adjacent to the site shall have silt containment sacks under the grates to prevent sediments from entering the system, while permitting stormwater to flow into the system after deposition of solids around the basin. The sacks shall be inspected periodically and replaced if necessary.

3. As soon as possible in the operation, pavement shall be placed to minimize erosion, and landscaped areas shall be provided with topsoil and seeded.

4. At the end of the construction of the site, a final cleaning of the stormwater system shall be completed. All structures and piping shall be cleaned of debris.

5. The Contractor shall exercise every reasonable precaution to protect the site and surrounding areas from stormwater runoff pollution that may contain fuels, oils, bitumen, calcium chloride, and other harmful materials. Fueling of construction equipment shall take place only in a specifically designated hard paved or impervious surface.

6. Record Keeping

The following records must be maintained by the Contractor as part of his responsibilities

- a. Dates when major grading activities occur
- b. Dates when construction activities temporarily or permanently cease
- c. Dates when stabilization measures are initiated, inspected, and repaired/reinforced
- d. Dates and description of any off-site movement of sediment and remedial actions.

It is the responsibility of the Contractor to prepare the forms, complete them as necessary, and keep on file.

7. Inspections

Inspections along the perimeter of the site, and at all interior overflow inlets and drain manholes must be conducted at the beginning of every work day and within 24 hours of a storm event.

For each inspection, an inspection report shall be signed, filed and available for review. Each report shall include:

- a. Inspection date
- b. Names, titles and qualifications of personnel making the inspection and signature
- c. Weather information for the period since the last inspection
- d. Locations of discharges of sediment or other pollutants from the site
- e. Locations of BMP's that need to be maintained or repaired.
- f. Corrective action required

Records must be maintained until the project is completed and the area restored with healthy vegetated growth of landscaping. Copies of the inspection reports shall be sent, upon request to any regulatory agency, such as the Conservation Commission.

In the event that any of the discharges from the site have an appearance of turbidity, testing shall be conducted to determine if further erosion control techniques may be required. It shall be the responsibility of the Contractor to take any action necessary that may be required to avoid any off-site transport of sediment.

Document Preservation: At the end of the project, the Contractor shall make available to the Owner, Inspection Summaries and all monitoring reports and history of remedial actions.

Post Construction Operation and Maintenance Plan
181 Cowper Street
East Boston, MA

1. The name of the original Owner/Developer (Responsible Party) of the private system located at 181 Cowper Street is:

181 Cowper LLC
Jacob Simmons, as Project Manager
320 Washington Street Suite 3FF
Brookline, MA 02445
857-207-1664
jacob.simmons@cityrealtyboston.com

The private system will initially be operated and maintained by the Responsible Party until ownership of the project is transferred to another entity or a condominium association established. At such time the new owner(s) and any successor(s) in title shall be responsible for the operation and maintenance of the system which consists of a deep sump hooded catch basin infiltration chambers and drain manhole.

This Operation and Maintenance Plan will be attached as an exhibit to any conveyance of the property to ensure the responsibility for the Post Construction Operation and Maintenance Plan is understood and adhered to by future landowner(s). The Owner and future owners shall notify the Conservation Commission of any changes in ownership or the assignment of financial responsibility. The requirements of this plan shall be considered to run with the land.

2. Refer to the attached BMP Exhibit Plan dated June 13, 2019 indicating the location of the system components.

3. **Long Term Operation and Maintenance Plan for the Stormwater BMP and Pollution Prevention**

To ensure the long term optimal operation of the system, a strict program of maintenance will be implemented as noted herein.

1. **BMPs – Good Housekeeping**

- a. Storing of materials and waste products (trash) inside or under cover.
- b. Routine inspections and maintenance of all stormwater BMP's.
- c. Maintenance of lawns, gardens, and other landscape areas.
- d. Proper storage (if used) of fertilizers, herbicides and pesticides.
- e. Proper management and storage of deicing chemicals and snow disposal.

2. BMPs - Operation and Maintenance Plan

a. Sweeping of parking areas

As part of this phase of maintenance, the paved parking area will be swept on a scheduled, periodic basis to remove sand from de-icing operations, leaves, sticks, and foreign material left on the pavement. The more frequently the paved areas are swept, the less material will enter the basins and must be removed from the sumps of catch basins. This non-structural source control will be completed at least two times per year, or when sand is noticeable. It is critical to remove the accumulated sediment from the winter months (Nov.-March) as soon as possible, especially before heavy and frequent spring (April-June) precipitation.

Any catch basin inlet blocked by ice, snow, leaves or other debris will be cleaned as soon as it is noticed at inspection.

b. Snow and Snowmelt Management

Proper placement of plowed snow and minimization of chemicals for de-icing will be completed. Snow will not be piled over catch basins, and the snow will be kept as from the inlets as possible. Plows will concentrate on clearing the inlet covers first, then working away to allow any runoff to get off the paved areas. Snow from paved areas will not be placed on pervious/grass surfaces that might allow oils to permeate the ground during a thaw or sand to damage any landscaping. De-icing compounds will not contain any sodium but may be calcium or magnesium based.

Prior to the first snowfall of each year, a meeting of all the hired snowplow contractors and the Responsible Party will be held on the site. This Operations and Maintenance Plan for snow removal will be reviewed and copies distributed.

c. Catch Basins

The catch basins shall be inspected once per year by the Responsible Party or designee for damage and maintenance.

The catch basins shall be maintained and kept clear of any debris (e.g. leaves, sticks, stones, and wind-blown litter), that would hinder its function to collect and drain surface water runoff from the parking area. Furthermore, the surrounding area shall not be altered by re-grading or the placement of fill materials. The catch basins shall be protected from sedimentation if any surrounding soil is to be exposed for any period of time by the placement of a silt collection sack or similar device. The sump shall be cleaned whenever the accumulated sediment within the sump is measured to be within 2 feet of the outlet elevation as determined by the inspection. The removal of accumulated sediments shall be completed as required to maintain the proper functioning of the system. Nothing shall be dumped into the catch basin. Anything that is purposely put in the drain other than the

stormwater runoff it is designed to collect will be considered illegal dumping and can result in fines.

d. Recharge Chambers System

The recharge chambers shall be maintained by the Owner/Responsible Party or its designee. The inspection ports shall be opened and the condition of the chambers observed every two (2) years to determine that infiltration is provided. The system shall be cleaned when sediment exceeds 2" in depth in the infiltration chambers. Appropriate remedial action is required if the system is found not to be operating as designed.

e. Drain Manhole

The drain manhole sump shall also be cleaned whenever the accumulated sediment within the sump is measured to be within 2 feet of the outlet elevation as determined by inspection.

f. Gutters and Roof Drains

Gutters shall be cleaned once per year usually in the late fall after leaves have stopped falling or when blockage is observed. Alternatively, if gutter guards of the covered type are installed the gutters shall be inspected for debris every 5 years or when blockage is observed. Downspouts and subsurface lines shall be flushed every year or when blockage is observed, if sooner.

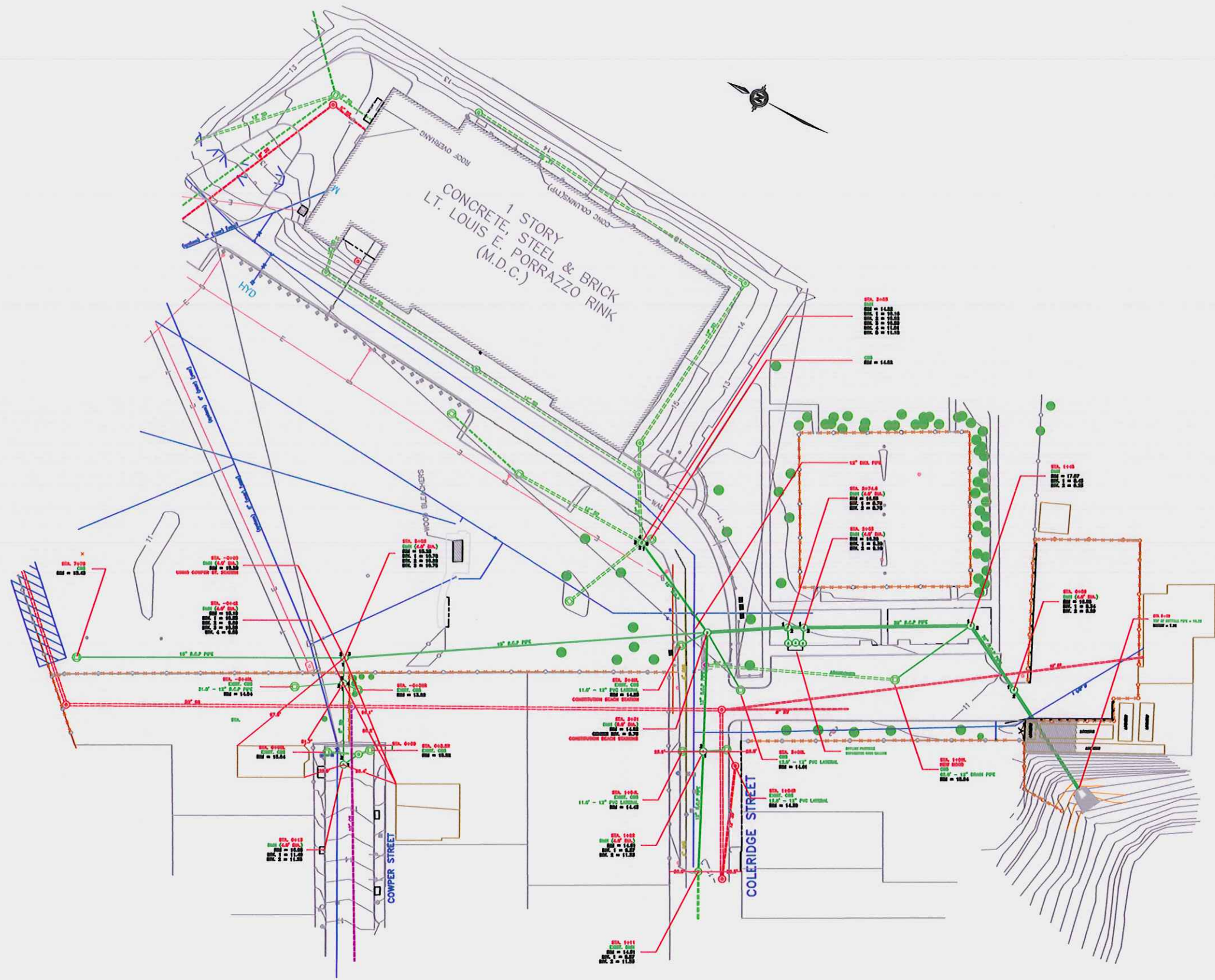
The above schedule shall be adhered to unless an alternate schedule is approved by the Conservation Commission.

Date

181 Cowper Street
East Boston Mass.

Stormwater BMP Inspection and Maintenance Checklist

BMP	Frequency	Dated Performed
<u>Sanding</u>	Twice per year Fall and Spring	
<u>Snow Plowing</u>	Pre-season meeting with contractors As required; no sodium chloride	
<u>Catch Basins</u> - Inspection and Repair - Cleaning	Once per year Once per year or when sediment is within 2 feet of the outlets	
<u>Drain Manhole</u> - Inspection and Repair - Cleaning	Once per year At least yearly or whenever sediment is within 2' of either inverts	
<u>Infiltration Chambers</u> - Inspection and Repair - Cleaning - Remedial action	Every two years Whenever sediment exceeds 2" in depth Whenever not functioning as designed	
<u>Gutters</u> - Inspect and Clean	Yearly in the fall Every five years for covered gutters	
<u>Roof drains</u> - Inspect and Clean	Every year or when blocked	
Estimated Annual Cost: \$1000.00		Actual Cost:
Comments:		
Signature: _____		Date:



NOTE: WORK ADDED TO CONTRACT PER AGREEMENT WITH M.D.C.

GIS BASE MAP USED FOR ROADWAY AND HOUSE LAYOUT,
 BWSC FACILITIES TOTAL STATION SURVEYED.
 Fieldbook Filename: COLERIDGE1
 Date of Survey: 1/10/01 Benchmark:
 Survey Crew: E. Arroyo, E. Etheart, R. Gessler

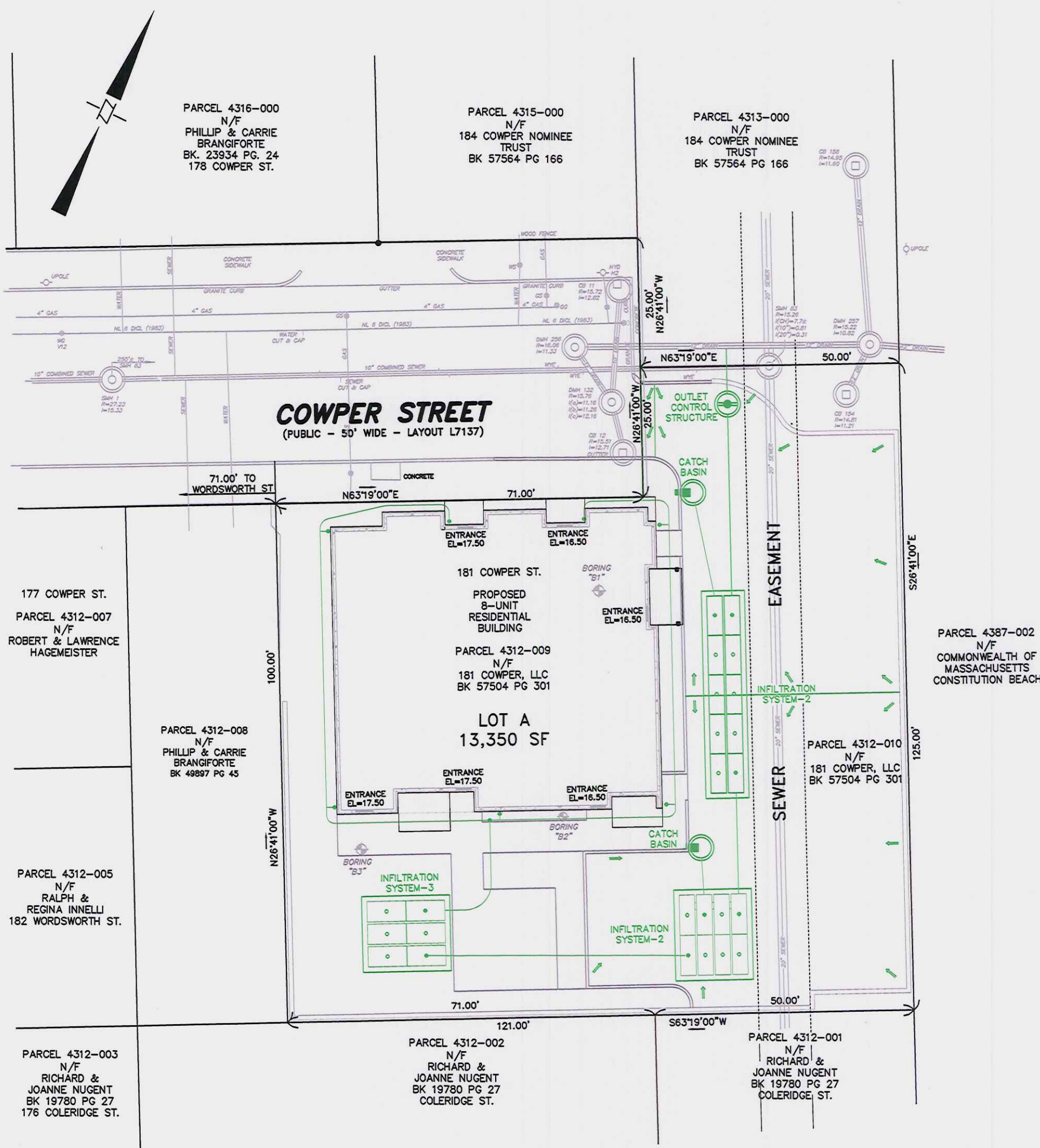
Inspector: Jack O'Halloran / James Dooley
 Engineer: Richard Leitch
 Drawn By: Emmanuel Arroyo
 Contractor: Umbro & Sons Construction

CONSTITUTION BEACH EAST BOSTON
 COWPER ST. TO RICE ST.
 Date: 6/8/00
 COLERIDGE STREET EAST BOSTON
 WORDSWORTH ST. TO RICE ST.
 Date: 6/8/00

Date: 6/8/00
 Date: 6/8/00

INSTALLATION of DRAIN PIPES IN EAST BOSTON
 Date: 4/10/01 Scale: 1"=30'

 BOSTON WATER AND SEWER COMMISSION
 CONTRACT NO. 99-309-010
 AS-BUILT PLAN #:
 ENGINEERING: CONSTRUCTION DIVISION WATER WORKS IMPROVEMENTS
 DATE:
 SHEET NO. 1 of 1



PARCEL 4316-000
N/F
PHILLIP & CARRIE
BRANGIFORTE
BK. 23934 PG. 24
178 COWPER ST.

PARCEL 4315-000
N/F
184 COWPER NOMINEE
TRUST
BK 57564 PG 166

PARCEL 4313-000
N/F
184 COWPER NOMINEE
TRUST
BK 57564 PG 166

COWPER STREET
(PUBLIC - 50' WIDE - LAYOUT L7137)

181 COWPER ST.
PROPOSED
8-UNIT
RESIDENTIAL
BUILDING
PARCEL 4312-009
N/F
181 COWPER, LLC
BK 57504 PG 301

LOT A
13,350 SF

PARCEL 4312-008
N/F
PHILLIP & CARRIE
BRANGIFORTE
BK 49897 PG 45

PARCEL 4312-005
N/F
RALPH &
REGINA INNELLI
182 WORDSWORTH ST.

PARCEL 4312-003
N/F
RICHARD &
JOANNE NUGENT
BK 19780 PG 27
176 COLERIDGE ST.

PARCEL 4312-002
N/F
RICHARD &
JOANNE NUGENT
BK 19780 PG 27
COLERIDGE ST.

PARCEL 4312-001
N/F
RICHARD &
JOANNE NUGENT
BK 19780 PG 27
COLERIDGE ST.

PARCEL 4387-002
N/F
COMMONWEALTH OF
MASSACHUSETTS
CONSTITUTION BEACH

PARCEL 4312-010
N/F
181 COWPER, LLC
BK 57504 PG 301

PLAN NOTES

THE PROPERTY LINE AND TOPOGRAPHIC INFORMATION IS BASED ON AN ACTUAL ON THE GROUND INSTRUMENT SURVEYS PERFORMED BY NORWOOD ENGINEERING COMPANY BETWEEN NOVEMBER, 2018 AND FEBRUARY, 2019 ALONG WITH RECORD INFORMATION OBTAINED FROM THE CITY OF BOSTON ASSESSING AND ENGINEERING DEPARTMENTS, THE SUFFOLK AND NORFOLK COUNTY REGISTRY OF DEEDS, THE MASSACHUSETTS LAND COURT AND THE BOSTON WATER AND SEWER COMMISSION.

LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY, AND ARE NOT WARRANTED TO BE CORRECT. UNDERGROUND UTILITIES ARE SHOWN BASED ON RECORD DATA PROVIDED BY THE OPERATING AUTHORITIES, AND HAVE BEEN FIELD INSPECTED WHERE POSSIBLE. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT INDICATED ON THESE PLANS. ALL EXISTING UTILITIES SHALL BE VERIFIED FOR SERVICE, SIZE, INVERT ELEVATION, LOCATIONS, ETC. PRIOR TO NEW CONNECTIONS TO OR RELOCATION OF SAME. CONTRACTOR MUST NOTIFY DIG-SAFE AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION. NOTIFY THIS FIRM IN WRITING OF ANY AND ALL DISCREPANCIES PRIOR TO COMMENCING ANY WORK. THE BOSTON WATER AND SEWER COMMISSION IS NOT PART OF DIG SAFE THEREFORE, FIELD LOCATIONS OF WATER AND SEWER LINES MUST BE MARKED BY THE COMMISSION. CALL 1-617-330-9400 FORTY EIGHT HOURS IN ADVANCE OF ANY EXCAVATION.

PARCEL 4312-009 (7,100 SF) AND PARCEL 4312-010 (6,250 SF) ARE TO BE CONSOLIDATED INTO ONE LOT, LOT "A" (13,350 SF).

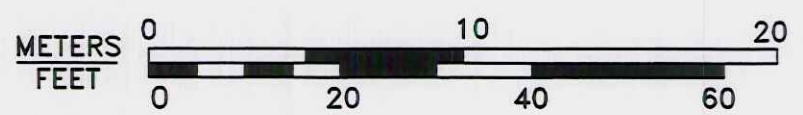
THE PROJECT WAS SUBMITTED TO THE CITY OF BOSTON 'COBUCS' PROGRAM ON FEBRUARY 12, 2019. 'COBUCS' HAS COWPER STREET SCHEDULED FOR AN ASPHALT RESURFACING BETWEEN JANUARY 30, 2018 AND JANUARY 31, 2022.

SEE BWSC GENERAL SERVICE AGREEMENT No. 14980 OF 2019 TO CUT AND CAP THE WATER AND SEWER SERVICES FOR 181 COWPER STREET. THE SERVICES WERE CUT AND CAPPED AT THE WATER AND SEWER MAINS IN COWPER STREET SO THE EXISTING BUILDING CAN BE RAZED.

BMP EXHIBIT PLAN
181 COWPER STREET
BOSTON, MASS.
(EAST BOSTON - 02128-1558)

SCALE: 1"=10' JUNE 13, 2019

NORWOOD ENGINEERING CO., INC.
CIVIL ENGINEERS & LAND SURVEYORS
1410 ROUTE ONE, NORWOOD, MA 02062
PHONE: 781-762-0143 FAX 781-762-8595



LEGEND

- DRAIN MANHOLE (DMH)
- CATCH BASIN (CB)
- ▭ FLARED END SECTION (FES)
- SEWER MANHOLE (SMH)
- ELECTRIC MANHOLE (EMH)
- TELEPHONE MANHOLE (TMH)
- GAS GATE (GG)
- GAS SERVICE (GS)
- WATER GATE (WG)
- WATER SERVICE (WS)
- HYDRANT (HYD)
- ▭ SPLASH BLOCK
- ☆ LIGHT POLE (LP)
- ☆ PROPOSED LAMP POST (LAMP)
- UTILITY POLE (UP)
- UTILITY POLE w/ LIGHT (UP/LP)
- HAND HOLE (HH)
- VERTICAL GRANITE CURB (GC)
- SLOPED GRANITE EDGING (SGE)
- BITUMINOUS CONCRETE BERM (BB)
- CAPE COD BERM (CCB)
- PRECAST CONCRETE CURB (CC)
- EDGE OF PAVEMENT (EP)
- ▲ SIGN



PLAN NOTES

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THE PROJECT WAS SUBMITTED TO THE CITY OF BOSTON 'COBUCS' PROGRAM ON FEBRUARY 12, 2019. 'COBUCS' HAS COWPER STREET SCHEDULED FOR AN ASPHALT RESURFACING BETWEEN JANUARY 30, 2018 AND JANUARY 31, 2022.

THE WATER AND SEWER LINES SHOWN THAT ARE TO BE CUT AND CAPPED HAVE BEEN LOCATED BY AN ON THE GROUND INSTRUMENT SURVEY AND BY A VIDEO AND TRACING OF THE EXISTING SEWER SERVICE. THE SEWER LINE WAS LOCATED BY EAST COAST PIPELINES ON FEBRUARY 9, 2019.

THE GROUNDWATER ELEVATION WAS DETERMINED BY KMM GEOTECHNICAL CONSULTANTS IN THEIR "GEOLOGICAL SUMMARY REPORT, PROPOSED MULTI-UNIT RESIDENTIAL BUILDING, 181 COWPER STREET, EAST BOSTON, MASSACHUSETTS" DATED NOVEMBER 18, 2018. KMM COMPLETED 3 TEST BORINGS ON THE SITE. THE REPORT SHOWS TEST BORING "B3" HAVING THE HIGHEST GROUNDWATER ELEVATION AT 10.1 (BCB) AND WAS USED TO ESTABLISH THE MINIMUM BOTTOM ELEVATION OF ANY PROPOSED INFILTRATION SYSTEMS AT 12.1 (BCB).

THE CUTTING AND CAPPING OF THE EXISTING WATER SERVICE AT THE WATER MAIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE SPECIFICATIONS OF THE BOSTON WATER AND SEWER COMMISSION.

ANY GAS, ELECTRIC, CABLE OR TELEPHONE LINES SERVICING THE BUILDING WILL BE CUT AND CAPPED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITY.

THE PROJECT WAS SUBMITTED TO THE CITY OF BOSTON 'COBUCS' PROGRAM ON FEBRUARY 12, 2019. 'COBUCS' HAS COWPER STREET SCHEDULED FOR AN ASPHALT RESURFACING BETWEEN JANUARY 30, 2018 AND JANUARY 31, 2022.

THE EXISTING WATER AND SEWER SERVICE LOCATIONS SHOWN ARE FROM AVAILABLE BWSC RECORD DATA AND ARE APPROXIMATE ONLY. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ACCURATELY LOCATE THE EXISTING WATER AND SEWER LINES. IF THE EXISTING SEWER SERVICE IS TO BE USED THE CONTRACTOR SHALL VISUALLY INSPECT THE LINE BY EXCAVATION AND OR BY VIDEO OF THE PIPE AS REQUIRED BY THE COMMISSION.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO TAKE FIELD NOTES WITH TIES TO THE LOCATION AND ELEVATIONS OF ALL UTILITIES INSTALLED WHEN SURVEYORS ARE NOT AVAILABLE TO RECORD THIS INFORMATION. THE CONTRACTOR SHALL PROVIDE THE FIELD NOTES TO THE PROJECT ENGINEER OR LAND SURVEYOR TO BE USED FOR THE PREPARATION OF ANY REQUIRED ASBUILT PLANS.

IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE HIS WORK WITH THE APPROPRIATE HIGHWAY AND UTILITY DEPARTMENTS. THE CONTRACTOR SHALL MAINTAIN ALL EXISTING AND NEWLY INSTALLED UTILITIES IN GOOD WORKING ORDER AND SHALL PROTECT THEM FROM DAMAGE AT ALL TIMES UNTIL THE WORK IS COMPLETED AND APPROVED BY THE CONTROLLING AUTHORITY.

ANY PROPOSED GAS, ELECTRIC, STEAM, TELEPHONE, CABLE OR OTHER UTILITY LINES ARE TO BE LOCATED AND SIZED BY OTHERS. ALL SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITY.

IT IS RECOMMENDED THAT DIGGING WITHIN ONE FOOT OF THE MAIN BE DONE WITH HAND TOOLS ONLY.

BENCHMARK

CONSTRUCTION BENCHMARK: HYDRANT H2
TOP OF FRONT BONNET NUT ON BWSC HYDRANT H2 AT THE END
OF COWPER STREET - ELEVATION=16.06 (BOSTON CITY BASE)

ASSESSOR'S REFERENCE:
PARCEL 01-04312-009
PARCEL 01-04312-010
MAPS No. 1039 & 1042

OWNER/APPLICANT:
181 COWPER, LLC
320 WASHINGTON STREET
SUITE 3FF
BROOKLINE, MA 02445

CITY STREET LAYOUTS:
COWPER STREET L-7137
COWPER STREET L-8783
WORDSWORTH ST L-4860
WORDSWORTH ST L-5322

CONTACT:
JACOB SIMMONS
PROJECT MANAGER
(857-207-1664)

CITY FIELD NOTES:
BOOK 1053 PAGES 38-51
BOOK 621 PAGES 100-103

DEED REFERENCE:
SUFFOLK COUNTY REGISTRY
BOOK 57507 - PAGE 301

BWSC PLANS:
WATER & SEWER G.I.S. MAPS
WATER SERVICE TIE CARD
BWSC PLAN No. A49-85b
BWSC PLAN No. B-294
BWSC PLAN No. B-260b
BWSC PLAN No. Z75-25

PLAN REFERENCE:
SUFFOLK COUNTY REGISTRY
BOOK 11758 - PAGE 82
BOOK 7448 - PAGE 584
BOOK 6979 - PAGE 416
BOOK 6601 - PAGE 50
BOOK 5525 - PAGE 270
BOOK 494 - PAGE END

ARCHITECT

40 K STREET, THIRD FLOOR
BOSTON, MA 02210
617.766.8330
www.embarcstudio.com

OWNER

CITY REALTY
320 WASHINGTON ST,
SUITE 3FF
BROOKLINE, MA 02445

CIVIL ENGINEER

NORWOOD ENGINEERING CO., INC.
1410 ROUTE ONE
NORWOOD, MA 02062

MEP ENGINEER

ZADE ASSOCIATES
140 BEACH STREET,
BOSTON, MA 02111

FP ENGINEER

JFP SOLUTIONS INC
P.O. BOX 1234,
LYNNFIELD, MA 01940

STRUCTURAL ENGINEER

HAYES & O'NEILL STRUCTURAL
ENGINEERING
51 MELCHER ST, FLR 1
BOSTON, MA 02210

LANDSCAPE ARCHITECT

VERDANT LANDSCAPE
ARCHITECTURE
318 HARVARD STREET, SUITE 25
BROOKLINE MA, 02446

181 COWPER STREET
EAST BOSTON, MA 02128

ISSUED FOR CONSTRUCTION

REVISIONS

NO.	DATE	DESCRIPTION

DRAWING INFORMATION

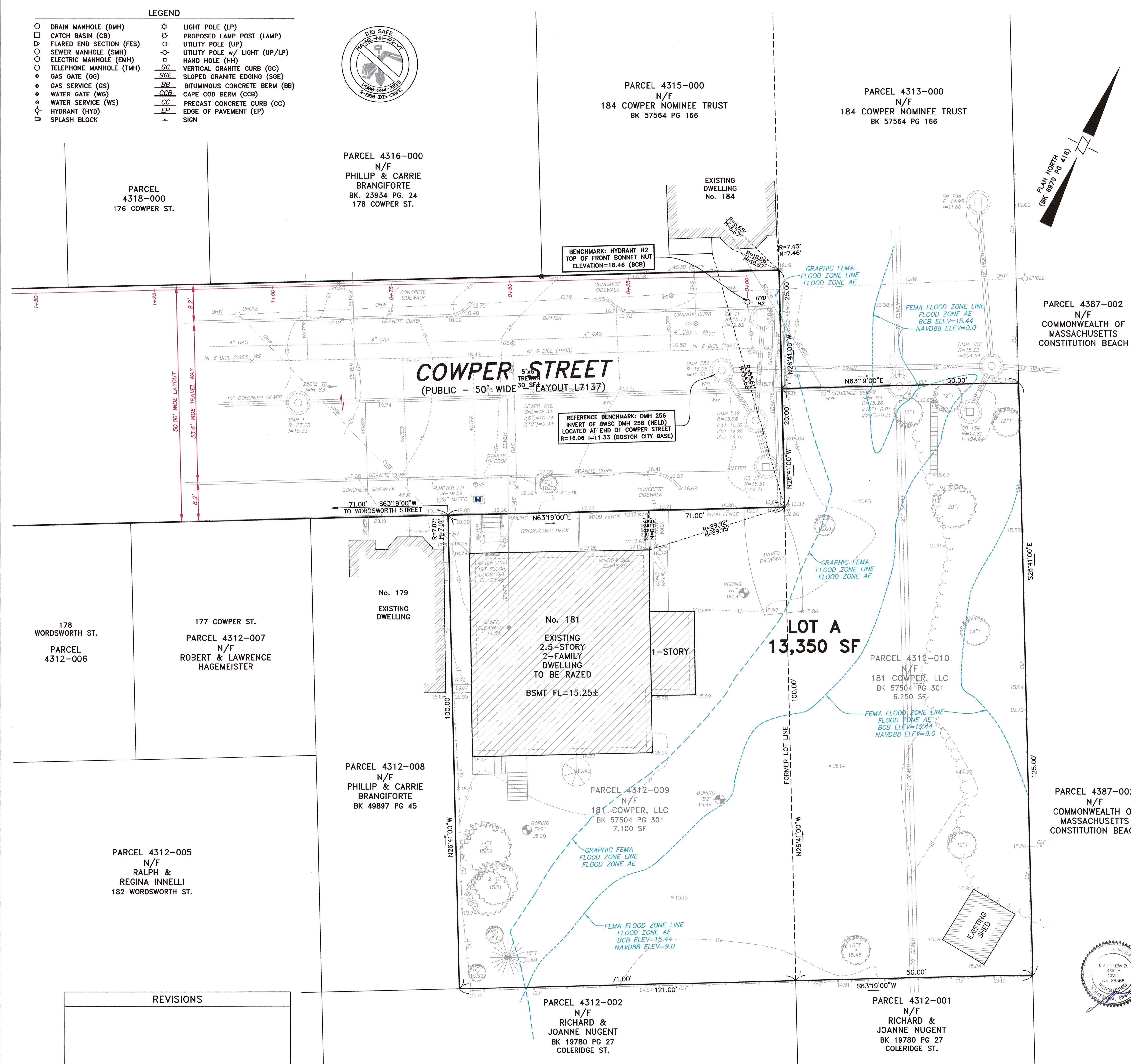
ISSUE: ISSUED FOR CONSTRUCTION
DATE: MAY 30, 2019
PROJECT: #16024
SCALE: 1"=10'

DRAWING TITLE

EXISTING CONDITIONS

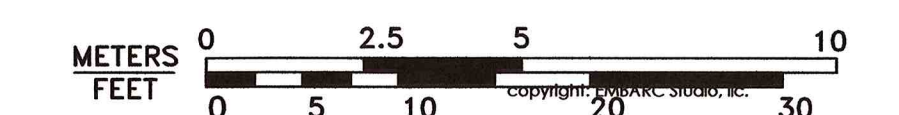
DRAWING NUMBER

C1

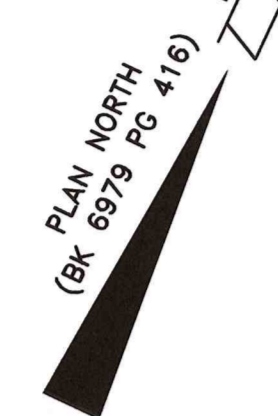


EXISTING CONDITIONS PLAN
181 COWPER STREET
BOSTON, MASS.
(EAST BOSTON - 02128-1558)

SCALE: 1"=10' MAY 30, 2019
NORWOOD ENGINEERING CO., INC.
CIVIL ENGINEERS & LAND SURVEYORS
1410 ROUTE ONE, NORWOOD, MA 02062
PHONE: 781-762-0143 FAX 781-762-8595



- LEGEND**
- DRAIN MANHOLE (DMH)
 - CATCH BASIN (CB)
 - ▷ FLARED END SECTION (FES)
 - SEWER MANHOLE (SMH)
 - ELECTRIC MANHOLE (EMH)
 - TELEPHONE MANHOLE (TMH)
 - GAS GATE (GG)
 - GAS SERVICE (GS)
 - WATER GATE (WG)
 - WATER SERVICE (WS)
 - HYDRANT (HYD)
 - SPLASH BLOCK
 - ☆ LIGHT POLE (LP)
 - ☆ PROPOSED LAMP POST (LAMP)
 - ☆ UTILITY POLE (UP)
 - UTILITY POLE w/ LIGHT (UP/LP)
 - HAND HOLE (HH)
 - VERTICAL GRANITE CURB (GC)
 - SLOPED GRANITE EDGING (SGE)
 - BITUMINOUS CONCRETE BERM (BB)
 - CAPE COD BERM (CCB)
 - PRECAST CONCRETE CURB (CC)
 - EDGE OF PAVEMENT (EP)
 - SIGN



PARCEL 4319-000
174 COWPER ST.

PARCEL 4318-000
176 COWPER ST.

PARCEL 4316-000
N/F
PHILLIP & CARRIE
BRANGIFORTE
BK. 23934 PG. 24
178 COWPER ST.

PARCEL 4315-000
N/F
184 COWPER NOMINEE TRUST
BK 57564 PG 166

PARCEL 4313-000
N/F
184 COWPER NOMINEE TRUST
BK 57564 PG 166

PARCEL 4387-002
N/F
COMMONWEALTH OF
MASSACHUSETTS
CONSTITUTION BEACH

COWPER STREET

(PUBLIC - 50' WIDE - LAYOUT L7137)

178 WORDSWORTH ST.
PARCEL 4312-006

177 COWPER ST.
PARCEL 4312-007
N/F
ROBERT & LAWRENCE
HAGEMESTER

PARCEL 4312-008
N/F
PHILLIP & CARRIE
BRANGIFORTE
BK 49897 PG 45

PARCEL 4312-009
N/F
181 COWPER, LLC
BK 57504 PG 301

OWNER/APPLICANT:
181 COWPER, LLC
320 WASHINGTON STREET
SUITE 3FF
BROOKLINE, MA 02445

CONTACT:
JACOB SIMMONS
PROJECT MANAGER
(857-207-1664)

PARCEL 4312-010
N/F
181 COWPER, LLC
BK 57504 PG 301

PARCEL 4312-002
N/F
RICHARD &
JOANNE NUGENT
BK 19780 PG 27
COLERIDGE ST.

PARCEL 4312-001
N/F
RICHARD &
JOANNE NUGENT
BK 19780 PG 27
COLERIDGE ST.

PLAN NOTES

THE PROPERTY LINE AND TOPOGRAPHIC INFORMATION IS BASED ON AN ACTUAL ON THE GROUND INSTRUMENT SURVEYS PERFORMED BY NORWOOD ENGINEERING COMPANY BETWEEN NOVEMBER, 2018 AND FEBRUARY, 2019 ALONG WITH RECORD INFORMATION OBTAINED FROM THE CITY OF BOSTON ASSESSING AND ENGINEERING DEPARTMENTS, THE SUFFOLK AND NORFOLK COUNTY REGISTRY OF DEEDS, THE MASSACHUSETTS LAND COURT AND THE BOSTON WATER AND SEWER COMMISSION.

LOCATION OF UNDERGROUND UTILITIES ARE APPROXIMATE ONLY, AND ARE NOT WARRANTED TO BE CORRECT. UNDERGROUND UTILITIES ARE SHOWN BASED ON RECORD DATA PROVIDED BY THE OPERATING AUTHORITIES, AND HAVE BEEN FIELD INSPECTED WHERE POSSIBLE. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT INDICATED ON THESE PLANS. ALL EXISTING UTILITIES SHALL BE VERIFIED FOR SERVICE, SIZE, INVERT ELEVATION, LOCATIONS, ETC. PRIOR TO NEW CONNECTIONS TO OR RELOCATION OF SAME. CONTRACTOR MUST NOTIFY DIG-SAFE AT 1-888-344-7233 AT LEAST 72 HOURS PRIOR TO ANY CONSTRUCTION. NOTIFY THIS FIRM IN WRITING OF ANY AND ALL DISCREPANCIES PRIOR TO COMMENCING ANY WORK. THE BOSTON WATER AND SEWER COMMISSION IS NOT PART OF DIG SAFE THEREFORE, FIELD LOCATIONS OF WATER AND SEWER LINES MUST BE MARKED BY THE COMMISSION. CALL 1-617-330-9400 FORTY EIGHT HOURS IN ADVANCE OF ANY EXCAVATION.

PARCEL 4312-009 (7,100 SF) AND PARCEL 4312-010 (6,250 SF) ARE TO BE CONSOLIDATED INTO ONE LOT, LOT "A" (13,350 SF).

THE PROJECT WAS SUBMITTED TO THE CITY OF BOSTON 'COBUCS' PROGRAM ON FEBRUARY 12, 2019. 'COBUCS' HAS COWPER STREET SCHEDULED FOR AN ASPHALT RESURFACING BETWEEN JANUARY 30, 2018 AND JANUARY 31, 2022.

SEE BWSW GENERAL SERVICE AGREEMENT No. 14980 OF 2019 TO CUT AND CAP THE WATER AND SEWER SERVICES FOR 181 COWPER STREET. THE SERVICES WERE CUT AND CAPPED AT THE WATER AND SEWER MAINS IN COWPER STREET SO THE EXISTING BUILDING CAN BE RAZED.

THE WATER LOAD CALCULATIONS FOR THE EIGHT UNIT RESIDENTIAL BUILDING AND THE PROPOSED 2" TYPE K COPPER WATER SERVICE AND 1" MASTER METER WERE SIZED BY ZADE ASSOCIATES, LLC, CONSULTING ENGINEERS, 140 BEACH STREET, BOSTON, MA 02111 (PHONE) 617-338-4406 (EMAIL) zade@zadeengineering.com

THE PROPOSED RESIDENTIAL SPRINKLER AND FIRE ALARM SYSTEMS WERE DESIGNED BY JFP SOLUTIONS, INC, FIRE PROTECTION CONSULTING SERVICES, P.O. BOX 1234, LYNNFIELD, MA 01940, (PHONE) 781-289-7999 (EMAIL) TDJFP1@YAHOO.COM. SEE PLANS PREPARED BY JFP SOLUTIONS ENTITLED "NEW FIRE ALARM SYSTEM, PROPOSED RESIDENTIAL BUILDING, 181 COWPER STREET, EAST BOSTON, MA 02128, FIRE ALARM DRAWING FA1 OF 1" DATED APRIL 1, 2018 AND PLAN ENTITLED "NEW AUTOMATIC 13R SPRINKLER SYSTEM, PROPOSED RESIDENTIAL BUILDING, 181 COWPER STREET, EAST BOSTON, MA 02128, SPRINKLER SYSTEM PERMIT SET FP1 OF 1" DATED APRIL 1, 2018. THE BOSTON WATER AND SEWER BACKFLOW PREVENTER DESIGN DATA SHEET WAS PREPARED BY ZADE ASSOCIATES, LLC. THE SPRINKLER SYSTEM WILL BE SERVICED BY A 2" TYPE K COPPER FIRE PIPE THAT RUNS TO 2" WATTS 009 BACKFLOW PREVENTER LOCATED INSIDE THE PROPOSED BUILDING.

THE WATER ROOM IS LOCATED IN THE CENTER OF THE BUILDING AND THE BOSTON WATER AND SEWER COMMISSION WILL REQUIRE BOTH THE DOMESTIC AND FIRE SERVICE BE INSTALLED BELOW THE CONCRETE SLAB ON THE FIRST FLOOR TO THE WATER ROOM.

ANY PROPOSED GAS, ELECTRIC, STEAM, TELEPHONE, CABLE OR OTHER UTILITY LINES ARE TO BE LOCATED AND SIZED BY OTHERS. ALL SERVICES SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITY.

THE GROUNDWATER ELEVATION USED FOR DESIGN OF THE INFILTRATION SYSTEMS WAS BASED ON KMM GEOTECHNICAL CONSULTANTS' GEOTECHNICAL SUMMARY REPORT, PROPOSED MULTI-UNIT RESIDENTIAL BUILDING, 181 COWPER STREET, EAST BOSTON, MASSACHUSETTS DATED NOVEMBER 18, 2018. KMM COMPLETED 3 TEST BORINGS ON THE SITE. THE REPORT SHOWS TEST BORING 'B3' HAVING THE HIGHEST GROUNDWATER ELEVATION AT 10.1 (BCB) AND WAS USED TO ESTABLISH THE MINIMUM BOTTOM ELEVATION OF THE INFILTRATION SYSTEMS AT 12.1 (BOB). SEE DETAIL SHEET C4 FOR PROPOSED INFILTRATION SYSTEM DETAILS, CALCULATIONS AND NOTES.

SEE LANDSCAPING PLAN PREPARED BY VERDANT LANDSCAPE ARCHITECTURE ENTITLED, "LANDSCAPE PLAN, 1891 COWPER STREET, BOSTON, MA" DATED MAY 24, 2019.

SEE STRAW WATTLES DETAIL ON SHEET C3 OF 5 AND EROSION CONTROL NOTES ON SHEET C5 OF 5.

DEED REFERENCE:
SUFFOLK COUNTY REGISTRY
BOOK 57507 - PAGE 301

PLAN REFERENCE:
SUFFOLK COUNTY REGISTRY
BOOK 11738 - PAGE 82
BOOK 7448 - PAGE 584
BOOK 6979 - PAGE 416
BOOK 6601 - PAGE 50
BOOK 5525 - PAGE 270
BOOK 494 - PAGE END

ASSESSOR'S REFERENCE:
PARCEL 01-04312-009
PARCEL 01-04312-010
MAPS No. 1039 & 1042

CITY STREET LAYOUTS:
COWPER STREET L-7137
COWPER STREET L-8783
WORDSWORTH ST L-4860
WORDSWORTH ST L-5322

CITY FIELD NOTES:
BOOK 1053 PAGES 38-51
BOOK 621 PAGES 100-103

BWSW PLANS:
WATER & SEWER G.I.S. MAPS
WATER SERVICE TIE CARD
BWSW PLAN No. A49-85b
BWSW PLAN No. B-294
BWSW PLAN No. B-260b
BWSW PLAN No. Z75-25

BENCHMARK
CONSTRUCTION BENCHMARK: HYDRANT H2
TOP OF FRONT BONNET NUT ON BWSW HYDRANT H2 AT THE END
OF COWPER STREET - ELEVATION=18.46 (BOSTON CITY BASE)

MATERIAL SPECIFICATIONS

WATER LINE - 2" TYPE K COPPER PIPES AND FITTINGS
FIRE PIPE - 2" TYPE K COPPER PIPES AND FITTINGS
SEWER LINE - 6" SDR 35 PVC PIPE AND FITTINGS
OVERFLOW DRAIN - 8" SDR 35 PVC PIPE AND FITTINGS
ROOF DRAINS - 6" ADS PIPE AND FITTINGS
RECHARGE SYSTEM 1 - (10) CULTEC 100HD CHAMBERS
RECHARGE SYSTEM 2 - (8) CULTEC 100HD CHAMBERS
RECHARGE SYSTEM 3 - (6) CULTEC 280HD CHAMBERS

BWSW USE ONLY

BOSTON WATER AND SEWER COMMISSION
LOCATION APPROVED UNDER THE FOLLOWING CONDITIONS
Reviewed and approved as to proposed connection(s) to existing Water and Sewer facilities as shown, for issue of Building Permit Only. Additional Permits must be obtained from B.W.S.C. prior to connection to B.W.S.C. facilities. Site Plans are valid for a period of one (1) year from date of approval.

JOHN P. SULLIVAN, JR. P.E., Chief Engineer DATE _____

BACKWATER VALVE INSTALLATION
APPROVAL: _____ DATE: _____

CROSS CONNECTION
APPROVAL: _____ DATE: _____

DISCHARGE ENFORCEMENT
APPROVAL: _____ DATE: _____

All water, sewer and drain service connections to Boston Water and Sewer Commission facilities must be performed by a bonded drain layer licensed by the Boston Water and Sewer Commission.

BWSW INSPECTIONS

181 COWPER STREET (EXIST.) BWSW ACCOUNT No. 360415000

G.S.A. No. 14980 OF 2019 WATER METER No. 3010306 (1")

ASSESSORS PARCEL WARD 1 PARCELS 4312-009 & 4312-010

EXISTING LAND USE CODE R2 - TWO-FAMILY DWELLING

(A) RETURN WATER METER AND MTU TO BWSW (IN METER PIT)
INSPECTOR B. PETITIK DATE 04-05-19

(A) FILL METER PIT WITH COMPACTED GRAVEL
INSPECTOR _____ DATE _____

(B) CUT AND CAP EXISTING WATER SERVICE AT MAIN
INSPECTOR R. PERRY DATE 04-10-19

(C) CUT & CAP EXISTING SEWER LATERAL AT MAIN
INSPECTOR R. PERRY DATE 04-10-19

181 COWPER STREET (EXIST.) BWSW ACCOUNT No. _____

G.S.A. No. _____ WATER METER No. _____

ASSESSORS PARCEL WARD 1 PARCELS 4312-009 & 4312-010

EXISTING LAND USE CODE A - EIGHT-FAMILY DWELLING

- 1 38"± OF 2" TYPE K COPPER WATER SERVICE
INSPECTOR _____ DATE _____
- 2 1" WATER METER & MTU (INSIDE)
INSPECTOR _____ DATE _____
- 3 38"± OF 2" TYPE K COPPER FIRE PIPE
INSPECTOR _____ DATE _____
- 4 2" AMES MODEL 200B BACKFLOW PREVENTER (INSIDE)
INSPECTOR _____ DATE _____
- 5 32"± OF 6" PVC SDR-35 SEWER w/CONNECTION TO EXISTING WYE
INSPECTOR _____ DATE _____
- 6 SEWER CLEANOUT
INSPECTOR _____ DATE _____
- 6 SEWER DYE TEST
INSPECTOR _____ DATE _____
- 7 8"± OF 8" PVC SDR-35 DRAIN w/SADDLE CONNECTION
INSPECTOR _____ DATE _____
- 8 DRAIN OUTLET CONTROL STRUCTURE w/CHECK VALVE (ON SITE)
INSPECTOR _____ DATE _____
- 8 DRAIN DYE TEST
INSPECTOR _____ DATE _____
- 9 INFILTRATION SYSTEM 1 - (10) CONTRACTOR 100HD CHAMBERS
INSPECTOR _____ DATE _____
- 10 FRONT CATCH BASIN w/"DON'T DUMP" PLAQUE (ON SITE)
INSPECTOR _____ DATE _____
- 11 REAR CATCH BASIN w/BWSW "DON'T DUMP" PLAQUE (ON SITE)
INSPECTOR _____ DATE _____
- 12 INFILTRATION SYSTEM 2 - (8) CONTRACTOR 100HD CHAMBERS
INSPECTOR _____ DATE _____
- 13 INFILTRATION SYSTEM 3 - (6) RECHARGER 280HD CHAMBERS
INSPECTOR _____ DATE _____
- 14 ROOF DOWNSPOUT LOCATIONS
INSPECTOR _____ DATE _____
- 15 BWSW ASBUILT PLANS
INSPECTOR _____ DATE _____

BWSW SITE PLAN No. 19
181 COWPER STREET
BOSTON, MASS.
(EAST BOSTON - 02128-1558)
SCALE: 1"=10' MAY 30, 2019

NORWOOD ENGINEERING CO., INC.
CIVIL ENGINEERS & LAND SURVEYORS
1410 ROUTE ONE, NORWOOD, MA 02062
PHONE: 781-762-0143 FAX 781-762-8595

METERS 0 2.5 5 10
FEET 0 5 10 20 30

SHEET No. 2 OF 5 10109-07

ARCHITECT
EMBARC
40 K STREET, THIRD FLOOR
BOSTON, MA 02210
617.766.8330
www.embarcstudio.com

OWNER
CITY REALTY
320 WASHINGTON ST,
SUITE 3FF
BROOKLINE, MA 02445

CIVIL ENGINEER
NORWOOD ENGINEERING CO., INC
1410 ROUTE ONE
NORWOOD, MA 02062

MEP ENGINEER
ZADE ASSOCIATES
140 BEACH STREET,
BOSTON, MA 02111

FP ENGINEER
JFP SOLUTIONS INC
P.O. BOX 1234,
LYNNFIELD, MA 01940

STRUCTURAL ENGINEER
HAYES & O'NEILL STRUCTURAL
ENGINEERING
51 MELCHER ST, FLR 1
BOSTON, MA 02210

LANDSCAPE ARCHITECT
VERDANT LANDSCAPE
ARCHITECTURE
318 HARVARD STREET, SUITE 25
BROOKLINE MA, 02446

REVISIONS

NO.	DESCRIPTION	DATE

DRAWING INFORMATION

ISSUE: ISSUED FOR CONSTRUCTION

DATE: MAY 30, 2019

PROJECT # 16024

SCALE: 1"=10'

DRAWING TITLE
BWSW SITE
PLAN No.
19

DRAWING NUMBER
C2

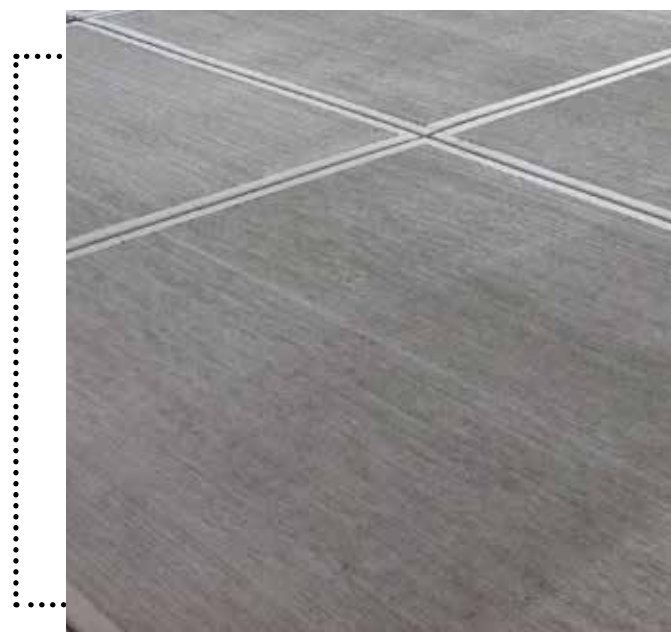
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181 COWPER STREET
EAST BOSTON, MA 02128
ISSUED FOR CONSTRUCTION

181 COWPER STREET PROBABLE PLANT SCHEDULE

SYM	LATIN NAME	COMMON NAME	SIZE	NOTES	
DECIDUOUS TREES					
CCF 7	<i>Carpinus caroliniana</i> 'Firespire'	Firespire American Hornbeam	2-2.5" cal	B+B	Native Cultivar
PO 2	<i>Platanus occidentalis</i>	American Sycamore	2-2.5" cal	B+B	
ORNAMENTAL TREES					
CC 3	<i>Cercis canadensis</i> 'Hearts of Gold'	Hearts of Gold Redbud	7-8'	B&B	Native
EVERGREEN TREES					
JVt 6	<i>Juniperus virginiana</i> 'Taylor'	Taylor Eastern Red Cedar	2-3'Ht.		Native Cultivar
PSf 6	<i>Pinus strobus</i> 'Fastigiata'	Upright Eastern White Pine	6-7'Ht.		Native Cultivar
DECIDUOUS SHRUBS					
CS	<i>Cornus alba</i> 'Sibirica'	Red Twig Dogwood	3 gal.		Native MA
RA	<i>Rhus aromatica</i> 'Gro-Low'	Fragrant Sumac	2-3'Ht.		Native
RC	<i>Rhus copallinum</i>	Winged Sumac	2-3'Ht.		Native
RF	<i>Rosa The Faire</i>	Pink Shrub Rose	3 gal.		
EVERGREEN SHRUBS					
MP	<i>Myrica pensylvanica</i>	Bayberry	24-30"Ht.		Native
VINE					
PQv	<i>Parthenocissus quinquefolia</i>	Virginia Creeper	2 gal		Native
RN	<i>Rosa</i> 'New Dawn' Climber	New Dawn Climber	2 gal		
PERENNIALS					
ab	<i>Agastache</i> 'Black Adder'	Giant Hyssop	2 gal		Native
af	<i>Athyrium filix-femina</i>	Lady Fern	2 gal	24" o.c.	Native
cp	<i>Carex dolichostachya</i> 'Kaga Nishiki'	Pennsylvania Sedge	plugs	12" o.c.	Native
ls	<i>Liatris spicata</i>	Blazing Star	2 gal	18" o.c.	Native
pv	<i>Panicum virgatum</i> 'Northwind'	Northwind Switch Grass	2 gal	30" o.c.	Native
pvr	<i>Panicum virgatum</i> 'Rubby Ribbons'	Rubby Ribbons Switch Grass	2 gal	30" o.c.	Native
ps	<i>Phlox stolonifera</i> 'Sherwood Purple'	Creeping Wood Phlox	1 gal	12 o.c.	Native
pr	<i>Polemonium reptans</i>	Spreading Jacob's-ladder	2 gal	18" o.c.	Native
tc	<i>Tiarella cordifolia</i> 'Pink Skyrocket'	Pink Foamflower	1 gal	18" o.c.	Native
za	<i>Zizia alberta</i>	Heart-leaved golden Alexanders	2 gal	18" o.c.	Native

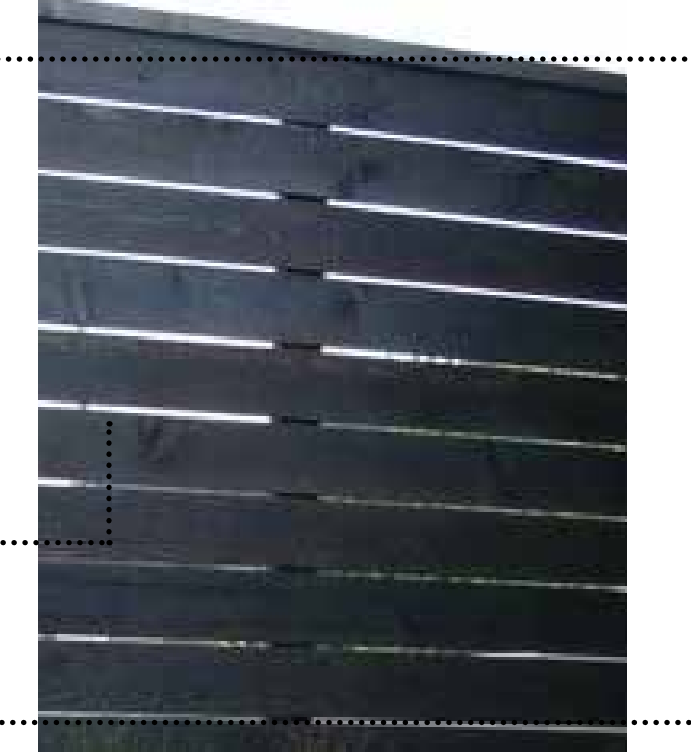
CONSTITUTION BEACH
BALL FIELD



Concrete Sidewalk, Simple and well maintained.



Blended Brick Paving at Patios and Street Level Entries



SITE FENCE
Horizontal board fence for screening and at Patios



Evergreen trees form hedge row; block sight lines, absorb noise.

NATIVE PLANT COMMUNITIES

WHOLE SITE | Native, wildlife friendly plantings & practices with a range of trees, shrubs, perennials and groundcovers, helps support biodiversity in the neighborhood



Virginia Creeper



Redbud



Hornbeam



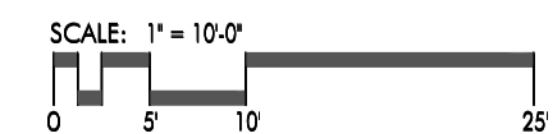
Agastache



Bayberry



Sycamore



ARCHITECT
EMBARC

60 K STREET, 3RD FLOOR
BOSTON, MA 02127
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OWNER
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BROOKLINE, MA

CONSULTANTS
VERDANT LANDSCAPE ARCHITECTURE
318 HARVARD ST, SUITE 25
BROOKLINE, MA 02446
617.735.1180

181 COWPER STREET
BOSTON, MA

REVISIONS

MARK	ISSUE	DATE



DRAWING INFORMATION
ISSUE: _____
DATE: MAY 24, 2019
PROJECT #: 16124
SCALE: _____

DRAWING TITLE
LANDSCAPE PLAN

DRAWING NUMBER
L1