



Nitsch Engineering

April 17, 2019
Revised April 19, 2019

NOTICE OF INTENT

Under the *Wetlands Protection Act* (M.G.L. c. 131, §40),
the *Rivers Protection Act* (M.G.L. c. 256, Acts of 1996)
and their Regulations (310 CMR 10.00),
and the City of Boston Wetlands Permit Requirements

For

**INNOVATION SQUARE
PHASE 2**

316-318 Northern Ave
Boston, MA 02210

Prepared for:

**RELATED BEAL
177 Milk Street
Boston, MA 02109**

Prepared by:

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

Nitsch Project #11464.1

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SECTION 1

NOTICE OF INTENT FORMS

WPA Form 3 - Notice of Intent
NOI Wetland Fee Transmittal Form
Climate Change Resiliency and Preparedness Checklist
Copy of Checks (Local and State Filing Fees)



WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

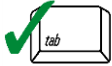
MassDEP File Number

Document Transaction Number

Boston

City/Town

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



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

A. General Information

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

<u>316-318 Northern Avenue</u>	<u>Boston</u>	<u>MA</u>
a. Street Address	b. City/Town	c. Zip Code
Latitude and Longitude:	<u>42.3457N</u>	<u>71.0321W</u>
	d. Latitude	e. Longitude
<u>06</u>	<u>06/02674065</u>	
f. Assessors Map/Plat Number	g. Parcel /Lot Number	

2. Applicant:

<u>Craig</u>	<u>Wood</u>	
a. First Name	b. Last Name	
<u>Related Beal</u>		
c. Organization		
<u>177 Milk Street</u>		
d. Street Address		
<u>Boston</u>	<u>MA</u>	<u>02109</u>
e. City/Town	f. State	g. Zip Code
<u>617-451-2100</u>	<u>cwood@relatedbeal.com</u>	
h. Phone Number	i. Fax Number	j. Email Address

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

<u>Paul</u>	<u>Osborn</u>	
a. First Name	b. Last Name	
<u>Boston Planning and Development Agency</u>		
c. Organization		
<u>22 Drydock Avenue</u>		
d. Street Address		
<u>Boston</u>	<u>MA</u>	<u>02210</u>
e. City/Town	f. State	g. Zip Code
<u>617-918-6211</u>	<u>paul.osborn@boston.gov</u>	
h. Phone Number	i. Fax Number	j. Email address

4. Representative (if any):

<u>Deborah</u>	<u>Danik</u>	
a. First Name	b. Last Name	
<u>Nitsch Engineering, Inc.</u>		
c. Company		
<u>2 Center Plaza, Suite 430</u>		
d. Street Address		
<u>Boston</u>	<u>MA</u>	<u>02108</u>
e. City/Town	f. State	g. Zip Code
<u>617-338-0063</u>	<u>ddanik@nitscheng.com</u>	
h. Phone Number	i. Fax Number	j. Email address

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

<u>1,050.00</u>	<u>512.50</u>	<u>537.50</u>
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid



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A. General Information (continued)

6. General Project Description:

The project consists of the removal of an existing bituminous concrete parking area and the construction of a laboratory building and various site improvements including landscaping, Best Management Practices (BMPs), and utility improvements.

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

55063

c. Book

b. Certificate # (if registered land)

119

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	5,000	
	1. square feet	
4. <input type="checkbox"/> Restoration/Enhancement	If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.2.b or B.3.h above, please enter the additional amount here.	
	_____	_____
	a. square feet of BVW	b. square feet of Salt Marsh
5. <input type="checkbox"/> Project Involves Stream Crossings		
	_____	_____
	a. number of new stream crossings	b. number of replacement stream crossings



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C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

- a. Yes No **If yes, include proof of mailing or hand delivery of NOI to:**

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

- b. Date of map _____

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

- c. Submit Supplemental Information for Endangered Species Review*

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

(a) within wetland Resource Area _____
percentage/acreage

(b) outside Resource Area _____
percentage/acreage

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

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

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

- (b) Photographs representative of the site

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see <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
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
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:
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C. Other Applicable Standards and Requirements (cont'd)

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

D. Additional Information

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

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

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

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



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D. Additional Information (cont'd)

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

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

Site Utility Plan, Stormwater Pollution Prevention Plan, Details Sheets, Grading Plan, Planting Plan, Existing Conditions Plans

Nitsch Engineering, Kyke Zick Landscape
Architecture, Allen & Major Assoc.

9/1/16, 9/27/16, 6/22/16

d. Final Revision Date

DMD, KZ, AJR/KJK

c. Signed and Stamped by

As Shown

e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8. Attach NOI Wetland Fee Transmittal Form

9. Attach Stormwater Report, if needed.

E. Fees

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

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

052735

2. Municipal Check Number

4/17/2019

3. Check date

052731

4. State Check Number

4/17/2019

5. Check date

Nitsch Engineering

6. Payor name on check: First Name

7. Payor name on check: Last Name



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

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Boston

City/Town

F. Signatures and Submittal Requirements

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

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


 1. Signature of Applicant _____
 BIDA
 3. Signature of Property Owner (if different) _____

 5. Signature of Representative (if any) _____

2. Date 4/16/19
 4. Date 4/17/19
 6. Date 04/17/19

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:

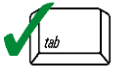
If the applicant has checked the "yes" box in any part of Section C, Item 3, above, refer to that section and the Instructions for additional submittal requirements.

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.



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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:

316-318 Northern Avenue Boston
 a. Street Address b. City/Town

 c. Check number d. Fee amount

2. Applicant Mailing Address:

Craig Wood
 a. First Name b. Last Name
 Related Beal
 c. Organization
 177 Milk Street
 d. Mailing Address
 Boston MA 02109
 e. City/Town f. State g. Zip Code
 6174512100 cwood@relatedbeal.com
 h. Phone Number i. Fax Number j. Email Address

3. Property Owner (if different):

Paul Osborn
 a. First Name b. Last Name
 EDIC, Boston Planning & Development Agency
 c. Organization
 22 Drydock Avenue, Suite 201
 d. Mailing Address
 Boston MA 02210
 e. City/Town f. State g. Zip Code
 617-918-6211 paul.osborn@boston.gov
 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).



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B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Each building (for development) including site	1	\$1,050	\$1,050
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
Step 5/Total Project Fee:			\$1,050
Step 6/Fee Payments:			
Total Project Fee:			\$1,050
			a. Total Fee from Step 5
State share of filing Fee:			\$512.50
			b. 1/2 Total Fee less \$12.50
City/Town share of filing Fee:			\$537.50
			c. 1/2 Total Fee plus \$12.50

C. Submittal Requirements

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

Department of Environmental Protection
 Box 4062
 Boston, MA 02211

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

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

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

A.1 - Project Information

Project Name:	Innovation Square – Seaport Phase II		
Project Address:	316-318 Northern Avenue, Boston, MA		
Project Address Additional:	N/A		
Filing Type (select)	Initial (PNF, EPNF, NPC or other substantial filing) Design / <i>Building Permit (prior to final design approval)</i> , or Construction / <i>Certificate of Occupancy (post construction completion)</i>		
Filing Contact	Craig Wood	Related Beal, LLC	cwood@relatedbeal.com
Is MEPA approval required	Yes/no		Date

A.3 - Project Team

Owner / Developer:	RBK II Tenant , LLC		
Architect:	HDR Architecture		
Engineer:	BR+A Consulting Engineers		
Sustainability / LEED:	WSP Parsons Brinckerhoff		
Permitting:			
Construction Management:	Related Beal Construction		

A.3 - Project Description and Design Conditions

List the principal Building Uses:	Laboratory, Office
List the First Floor Uses:	Retail, Laboratory, Office, Assembly, Moderate hazard storage, Low hazard storage, MEP, Loading Area
List any Critical Site Infrastructure and or Building Uses:	Moderate hazard storage, Low hazard storage

Site and Building:

Site Area:	98,200 SF	Building Area:	262,357 SF
Building Height:	63'	Building Height:	4 Levels
Existing Site Elevation – Low:	16.0' Ft BCB	Existing Site Elevation – High:	17.4' Ft BCB
Proposed Site Elevation – Low:	16.0' Ft BCB	Proposed Site Elevation – High:	20.5' Ft BCB
Proposed First Floor Elevation:	20.5' Elev.	Below grade levels:	1

Article 37 Green Building:

LEED Version - Rating System :	LEED 4.0 for Core and Shell	LEED Certification:	Yes
--------------------------------	-----------------------------	---------------------	-----

Proposed LEED rating: **Silver**

Proposed LEED point score: **50 Pts. - TBD**

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:	R = 26	Exposed Floor:	N/A
Foundation Wall:	R = 10	Slab Edge (at or below grade):	N/A

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

Area of Opaque Curtain Wall & Spandrel Assembly:	24.78%	Wall & Spandrel Assembly Value:	U=.05 / .03
Area of Framed & Insulated / Standard Wall:	26.73%	Wall Value	R=20.41-20.49
Area of Vision Window:	47.46%	Window Glazing Assembly Value:	U=.20-.22
		Window Glazing SHGC:	SHGC=.39
Area of Doors:	1.33%	Door Assembly Value:	U= .65

Energy Loads and Performance

For this filing – describe how energy loads & performance were determined	An energy model was performed utilizing eQUEST to determine the energy performance and savings for the project against the code baseline (ASHRAE 90.1 Appendix G) with modifications as required by the Massachusetts Building Code.		
Annual Electric:	9,000,000 (kWh)	Peak Electric:	3,000-5,000 (kW)
Annual Heating:	22,000 (MMbtu/hr)	Peak Heating:	30 (MMbtu)
Annual Cooling:	2,000,000 (Tons/hr)	Peak Cooling:	1,800 (Tons)
Energy Use - Below ASHRAE 90.1 - 2013:	11 %	Have the local utilities reviewed the building energy performance?:	Yes / no (mass save project)
Energy Use - Below Mass. Code:	11 %	Energy Use Intensity:	180-250 (kBtu/SF)

Back-up / Emergency Power System

Electrical Generation Output:	1,250 (kW)	Number of Power Units:	1
System Type:	Combustion Engine	Fuel Source:	Diesel

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

Electric:	1250 (kW)	Heating:	20(MMbtu/hr)
		Cooling:	100 (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: 5,000 (Tons)

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

The life science building is designed to efficiently provide lab quality air to building tenants with high efficiency heating and cooling systems along with an energy recovery system to pre-treat make-up air. The building is designed to be flexible and efficient with a heat pump loop for office areas. Low flow plumbing fixtures have been used to minimize water use.

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

The combination of massing and orientation provide appropriate shading strategies for the courtyard. We are incorporating a high performance envelope. A high efficiency HVAC system has been designed with high efficiency water cooled chillers, condensing hot water boilers, and energy recovery of lab exhaust air.

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

A high efficiency HVAC system has been designed with high efficiency water cooled chillers, condensing hot water boilers, and energy recovery of lab exhaust air. A heat recovery chiller will enable a significant reduction in on-site carbon fuel consumption.

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

A high efficiency energy recovery system along with heat recovery chillers will reduce the on-site carbon fuel consumption significantly. Utilizing heat pumps to condition offices will allow heat recovered from labs to be transferred to exterior office spaces enabling a significant reduction in energy consumption during the heating season.

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

The buildings efficient design will minimize impacts to the grid. Solar panels are being studied on the roof to determine if the application is viable given the rooftop equipment inherent on life science buildings.

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

The design team and owner have engaged the utility companies to participate in the custom Mass Save program for commercial buildings. A full building energy model will be utilized to optimize building efficiency and study life cycle options to improve energy performance. A LEED energy model will be performed to track the performance of the building against a baseline code model.

B.2 - GHG Reduction - Adaptation Strategies

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

The building systems utilize a modular design to allow for a phase out of combustion equipment as technology evolves. The HVAC systems are designed to recover energy from lab exhaust systems.

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:	0 Deg.	Temperature Range - High:	91 Deg.
Annual Heating Degree Days:	5512	Annual Cooling Degree Days	776

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

Days - Above 90°:	15	Days - Above 100°:	5
Number of Heatwaves / Year:	5	Average Duration of Heatwave (Days):	5

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

High reflective roof materials, Shade trees & shrubs

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:

Spaces to have expanded setpoints during extreme weather events to mitigate load increases over longer heatwave periods. Building designed with modular HVAC systems such that additional capacity can be added in the future if needed, and equipment can be upsized to match demand at the end of its useful life.

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:

Base building will have a generator to provide stand-by power for all life safety and code required systems and equipment. Tenants will have a 5W/sf allowance for lab spaces to maintain lab equipment and critical systems during extended outages.

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:

The existing site is 100% impervious and allows stormwater to sheet flow offsite untreated and unmitigated. The proposed design will increase impervious cover on the site and install a stormwater management system to collect, treat, detain and infiltrate stormwater runoff from the site prior to overflowing to existing storm drain mains in the street.

D.2 - Extreme Precipitation - Adaptation Strategies

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

The site has been raised and has an on-site stormwater infiltration and detention system installed to significantly reduce the stormwater volume runoff from the site.

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:	19.5' Ft BCB		
Sea Level Rise - Design Flood Elevation:	20.5'	First Floor Elevation:	20.5'
Site Elevations at Building:	20.5'	Accessible Route Elevation:	20.5' Ft BCB

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

The proposed building has been designed to a ground floor elevation of 20.5', which is 1' above the SLR - BFE of 19.5'. Critical infrastructure that is not located at the penthouse level, such as switchgear, transformers, etc is located at 21.5'. The proposed building has been designed to incorporate temporary deployable flood barriers at the loading dock and the below grade parking garage entrance.

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.:

In addition to raising the ground floor elevation to 20.5'. The proposed building has been designed to incorporate temporary deployable flood barriers, storm water back flow prevention.

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:

Related Beal to provide clarification.

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

Critical infrastructure that is not located at the penthouse level, such as switchgear, transformers, etc is located at elevation 21.5'. The proposed building has been designed to incorporate temporary deployable flood barriers, storm water back flow prevention.

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.:

Building is adjacent to existing Public Ways. As the Public Way infrastructure is modified for sea level rise, the Project will work with the City to adapt to changes. Critical infrastructure that is not located at the penthouse level, such as switchgear, transformers, etc is located at elevation 21.5'. The proposed building has been designed to incorporate temporary deployable flood barriers, storm water back flow prevention.

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

All critical building systems have been located above the SLR-DFE, and deployable flood barriers at the loading dock and below grade parking garage entrances have been incorporated.

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

Zuki Mahmulin

From: john.dalzell@boston.gov
Sent: Tuesday, April 16, 2019 10:45 AM
To: Wood, Craig
Subject: Edit link for the Climate Resiliency Report

Thank you for submitting the Climate Resiliency Report. If you would like to edit your submission, please click the link below.

https://urldefense.proofpoint.com/v2/url?u=https-3A__docs.google.com_forms_d_e_1FAIpQLSe2QkrOsN821lyzDmhjhK0LUFmz0vOjkQIKwoqPIPju9JooEw_viewform-3Fedit2-3D2-5FABaOnud-5F5eWX69uoPdnf2uCnVYoDI3EptZnxBZKB-2D74UzWxti4ezx1cPOT71dPc&d=DwIBaQ&c=PnG8RxK5kHAJiKMq2qdoyA&r=eX1j0en7B0q1l_rab0WZVvgBOgOaaJw8mOvIvQVBZ9o&m=4wyqueAHyqq4q6A3bthL3dq9V6Nuy418tGMHqluO3oU&s=g8h68IP6f6uRDasdJLOkBO0RDGLYfe8-GeX9KXzckys&e=


NITSCH ENGINEERING, INC.

2 Center Plaza • Suite 430 • 617.338.0063
Boston, MA 02108

EASTERN BANK
53-179/113

052735
CHECK DATE

April 17, 2019

 Security Check Features
Included
Details on Back.

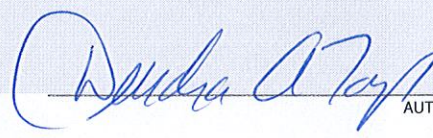
PAY One Thousand Five Hundred and 00/100 Dollars

AMOUNT

TO City of Boston
Conservation Commission

1,500.00

VOID



MP
AUTHORIZED SIGNATURE

⑈052735⑈ ⑆011301798⑆ 601597594⑈

NITSCH ENGINEERING, INC.

2 Center Plaza • Suite 430 • 617.338.0063
Boston, MA 02108

EASILY BUSINESS FORMS 800.392.6018 DELTEK VISION

052735

Check Date: 4/17/2019

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
41619-11464.1	4/16/2019	0062480	1,500.00			1,500.00
City of Boston		TOTAL	1,500.00			1,500.00
Checking Account	1	10440				


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EASTERN BANK
53-179/113

052731
CHECK DATE

April 17, 2019

 Security Check Features
Included.
Details on Back.

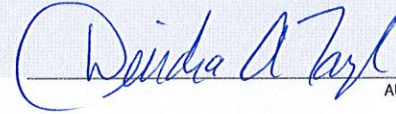
PAY Five Hundred Twelve and 50/100 Dollars

AMOUNT

TO Commonwealth Of MA
Box 4062
Boston, MA 02211

512.50

VOID



MP
AUTHORIZED SIGNATURE

⑈052731⑈ ⑆011301798⑆ 601597594⑈

NITSCH ENGINEERING, INC.

2 Center Plaza • Suite 430 • 617.338.0063
Boston, MA 02108

EMVILY BUSINESS FORMS 800.392.6018 DELTEK VISION

052731

Check Date: 4/17/2019

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
041619-11464.1-A	4/16/2019	0062475	512.50			512.50
Commonwealth Of MA		TOTAL	512.50			512.50
Checking Account	3	10500				

SECTION 2
PROJECT NARRATIVE

PROJECT NARRATIVE CONTENTS

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1.0 EXECUTIVE SUMMARY

On behalf of the Applicant, Related Beal, Nitsch Engineering, Inc. is filing the enclosed Notice of Intent (NOI) with the City of Boston Conservation Commission for the proposed improvements at Innovation Square, Phase 2 located at 316-318 Northern Avenue in Boston, Massachusetts. The proposed project includes the development of a portion of vacant parking lot with the construction of a new laboratory building and associated site and utility improvements which are partially located within Land Subject to Coastal Storm Flowage (the "Project"). The purpose of this NOI Application is to receive an Order of Conditions from the City of Boston Conservation Commission approving the proposed project under the *Wetlands Protection Act* (M.G.L. c. 131, §40) and its Regulations (310 CMR 10.00).

The Phase 1 project site is located on the northern portion of the site and comprises of roughly half the overall parcel. The Phase 1 site was granted an Order of Conditions on November 1, 2016, under MassDEP File Number 006-1484 and construction is scheduled to complete during the summer of 2019. The stormwater management system installed in Phase 1 will be shared with the Phase 2 portion of the site.

The approximately 2.25-acre Phase 2 Project site is located on the southern portion of the site and will improve the remainder of the 3.9-acre development site. The Project consists of the construction of an approximately 63,000 square foot five-story building, loading dock, and site improvements including landscaping, stormwater Best Management Practices (BMPs) and installation of utilities to support the proposed building and site improvements. The site is located within Land Subject to Coastal Storm Flowage in either the shaded Zone X or Zone AE with a flood elevation on 16.46 Boston City Base (or elevation 10.0 NAVD 88).

The project includes several mitigation measures to minimize the impacts to the Jurisdictional Resource Area. The proposed building has been designed building's first floor elevation approximately four-feet (4') above the 100-year flood plain elevation (elevation 20.5 Boston City Base). The buildings mechanical services will be located on the building roof and the electrical services on site will be located four-feet (4') above the 100-year flood plain elevation (elevation 20.5 Boston City Base).

The existing site is a 100% impervious paved lot and with the proposed improvements will be greened and reduce impervious cover at the site due to the addition of landscaped areas. Infiltration systems incorporated into the site design and installed during Phase 1 of the project were designed to comply with the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Standards. Conventional stormwater facilities including deep sump and hooded catch basins and water quality treatment structures are proposed in areas with pavement prior to infiltration. These mitigation measures are further discussed in the Stormwater Report (under separate cover). The combination of the proposed increased landscaping and the stormwater management system will improve the stormwater quality leaving the site, as well as significantly decrease the peak rate and volume of stormwater leaving the site. Given that the Phase 1 and Phase 2 portions of the site are sharing a combined stormwater management system, the impacts on the stormwater peak rates and volume runoffs were analyzed as one complete site as summarized in the chart below:

Peak Flow Rate and Runoff Volumes (Phase 1 and 2 combined)

Storm Event (24-Hour Rainfall)	Peak Flow Rate			Runoff Volume		
	Existing (cfs)	Proposed (cfs)	Change	Existing (cf)	Proposed (cf)	Change
2-year (3.19")	12.77	5.24	-59.0%	45,347	29,692	-34.5%
10-year (5.04")	20.34	16.16	-18.3%	73,644	53,389	-27.5%
25-year (6.20")	25.07	19.11	-23.8%	91,408	68,275	-25.3%
100-year (7.98")	32.31	23.43	-27.5%	118,678	91,819	-22.6%

Table Notes: 1. Calculated using HydroCAD computer modeling system, refer to Stormwater Report for detailed methodology
 2. Abbreviations: cfs = cubic feet per second, cf = cubic feet

2.0 EXISTING CONDITIONS

2.1 Existing Site Description

The Project site is located at 316-318 Northern Avenue in Boston, Massachusetts (Figure 1 – USGS Locus Map and Figure 2 – Aerial Locus Map). The Site is bounded by the Phase 2 site to the north, Tide Street to the east, Northern Avenue to the south, and a private access road to the west. The Site is approximately 2.25-acres (or 98,200 s.f.) out of the 3.9-acres total site. Currently the site is a fully impervious (bituminous asphalt or concrete), vacant, fenced in lot with sidewalks along the entire perimeter. Most recently, the lot was used for the City of Boston’s snow storage during the winter season in early 2015, and subsequently as a staging area for the Phase 2 construction.

2.2 Existing Utility Infrastructure

Sanitary Sewer

There are existing BWSC combined and sanitary sewer mains adjacent to the Project site. There is a 12-inch BWSC sanitary sewer main in the Access Road which flows southerly to a 12-inch BWSC combined sewer main in the Access Road. There is also a 12-inch sanitary sewer main in Tide Street which flows southerly to the 12-inch BWSC combined sewer main in Tide Street.

Water Supply System

There are existing BWSC water mains adjacent to the Project site and in the Project site which the proposed project will connect to.

Stormwater Drainage

Stormwater generated by the existing Site primarily sheet flows to the perimeter road drainage systems. Stormwater that sheet flows to the perimeter roads is collected by catch basins, is directed to the 12-inch storm drain mains in Fid Kennedy Avenue, and ultimately discharge to the Boston Harbor. The onsite closed drainage system connects the catch basins to the existing 8-inch storm drain main running through the site, and ultimately discharge to the Boston Harbor. The existing onsite closed drainage system does not provide stormwater storage, treatment, or infiltration. A more detailed description of the existing stormwater system of the site can be found in the Stormwater Report (under separate cover).

Natural Gas

There is an existing gas line in Tide Street.

2.3 Environmental Considerations

Jurisdictional Wetland Areas

The project is partially located in Land Subject to Coastal Storm Flowage. No compensatory storage is required for this Resource Area.

FEMA Flood Zone

The project is partially located in Land Subject to Coastal Storm Flowage, as shown on the FEMA Flood Insurance Rate Map (FIRM) numbers 25025C0081J and 25025C0082J, dated March 16, 2016 (shown in Section 3). The site is located within the shaded Zone X and Zone AE with a flood elevation of 16.46 Boston City Base (or elevation 10.0 NAVD 88). No compensatory storage is required for this Resource Area. Refer to Figure 6 for the delineation of these areas.

NHESP Priority and Estimated Habitat

Based on the MassGIS Oliver data viewer 2008 Priority and Estimated Habitat layer created by the NHESP, the Project site is not located within designated Estimated Habitat of Rare Wildlife or Priority Habitat of Rare Species and does not contain any Certified Vernal Pools (Figure 3 – Natural Heritage and Endangered Species Program Map).

Total Maximum Daily Load

The Site ultimately discharges into the Boston Inner Harbor, which is subject to a Draft Pathogen Total Maximum Daily Load (TMDL). The Project has been designed to minimize stormwater discharge and associated pathogen pollutants through extensive infiltration practices to meet the intent of the TMDL, as further discussed in Section 3.0 below.

3.0 PROPOSED CONDITIONS

3.1 Overview of Proposed Work

The proposed project includes the development of a portion of vacant parking lot with the construction a new lab and office building and associated site and utility improvements. The proposed project will result in a net reduction in overall impervious area by approximately 0.16 acres (Table 2).

Table 1: Existing and proposed land cover type for Innovation Square – Phase 2 (in square feet)

Land Use	Existing Site (square feet)	Proposed Site (square feet)	Change
Buildings	0	63,287	+ 63,287
Site Pavement	98,200	13,967	- 84,233
Site Pervious	0	20,946	+ 20,946
Total	98,200	98,200	---

Table 2: Existing and proposed land cover type for Innovation Square – Total Site (Phase 1 + 2 in square feet)

Land Use	Existing Site (square feet)	Proposed Site (square feet)	Change
Buildings	0	63,287	+ 92,465
Site Pavement	183,992	63,106	- 120,886
Site Pervious	0.00	28,422	+ 28,422
Total	183,922	183,922	---

The proposed project also includes the installation of a new stormwater management system designed in accordance with the MassDEP Stormwater Management Standards, Boston Water and Sewer Commission requirements, and to accommodate the future stormwater management requirements for the Phase 2 development site. Best Management Practices (BMPs) will be used to mitigate changes in stormwater runoff, promote infiltration, and provide stormwater quality treatment. The Project will also implement long-term pollution prevention and source control measures, including inspections and maintenance of stormwater BMPs. Refer to the Stormwater Report, under separate cover, for additional information on the proposed stormwater management system.

4.0 WETLAND RESOURCE AREA IMPACTS

The proposed project has been designed to improve the area in the jurisdictional Wetland Resource Area to the maximum extent possible. The proposed work will result in permanent impacts to Land Subject to Coastal Storm Flowage (Table 3).

Table 3: Summary of alteration within jurisdiction wetland resource areas (Phase 2 - in acres)

Wetland Resource Area	Total Work Within Resource Area	Existing Impervious	Proposed Impervious
Land Subject to Coastal Storm Flowage	0.11	0.11	0.11

5.0 PROPOSED MITIGATION MEASURES

The proposed project includes numerous mitigation measures to reduce the impact of the project on adjacent environmentally-sensitive areas.

5.1 Construction Period Erosion and Sedimentation Controls

Erosion and sedimentation controls are proposed to reduce/minimize the construction-related impact of the proposed project on surrounding and downstream areas. Since this project will disturb more than one acre of land, a National Pollutant Discharge Elimination System (NPDES) Stormwater Construction General Permit also will be required. To apply for coverage under this General Permit, a Notice of Intent will be submitted to the U.S. Environmental Protection Agency prior to the commencement of construction.

The NPDES Notice of Intent requires the development and implementation of a Stormwater Pollution Prevention Plan (SWPPP) for construction activities, which will be submitted to the Conservation Commission and the DEP prior to construction. The SWPPP is a detailed erosion and sediment

control plan that indicates the structural and non-structural erosion and sediment controls that will be employed, as appropriate, to control erosion on the construction sites. These measures include such items as temporary seeding, mulching, silt fences, stabilized construction entrances and storm drain inlet protection. The SWPPP also includes provisions that these erosion control measures be inspected regularly to ensure that they are functioning properly. A draft of the SWPPP is included in the Stormwater Report under separate cover.

5.2 Post-Construction Stormwater Management

The proposed stormwater management system is designed in accordance with the MassDEP Stormwater Management Standards and City of Boston Rules and Regulations. Best Management Practices (BMPs) will be used to mitigate potential changes in runoff, promote infiltration, and provide water quality treatment.

Water quality treatment will be achieved using deep sump and hooded catch basins, proprietary stormwater treatment units, and underground infiltration galleys. These BMPs were selected because they efficiently remove stormwater pollutants including total suspended solids. The infiltration systems were sized to hold a minimum of 1-inch of runoff over all the impervious area on-site. The project has been designed to result in no net increase in peak runoff rates of stormwater discharging from the site consistent with MassDEP Stormwater Management Standards and the Boston Water and Sewer Commission Regulations. Refer to the Stormwater Report (under separate cover) for more detailed information regarding the proposed stormwater management system and its compliance with local and state regulations

The Stormwater Report includes an Operation and Maintenance Plan that was prepared in compliance with Standard 9 of the 2008 MassDEP Stormwater Handbook to provide best management practices for implementing maintenance activities for the stormwater management system in a manner that minimizes impacts to Jurisdictional Resource Areas.

5.3 Long-Term Pollution Prevention

A Long-Term Pollution Prevention Plan has been prepared in compliance with the Standards 4 and 9 of the 2008 Massachusetts Department of Environmental Protection (MassDEP) Stormwater Management Standards, which require provisions for the following:

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

The Long-Term Pollution prevention plan can be found in the Stormwater Report (under separate cover).

5.4 Snow Removal

Generally, snow will be moved to the edge of roads, parking lots and walkways into grass and landscaped areas. Additionally, the Owner will comply following specific requirements:

- During typical snow plowing operations, snow shall be pushed to designated snow removal areas.
- Snow shall not be stockpiled on drainage system components.
- In severe conditions where snow cannot be stockpiled on site, the snow shall be removed from the site and properly disposed of in accordance with DEP Guideline BRP601-01.
- There will be no usage of salt-based deicing chemicals within buffer areas of the wetland resources areas.
- Deicing chemicals shall be stored inside the building and shall be used at exterior stairs and walkways.
- Before winter begins, the property owner and the contractor shall review snow plowing, deicing, and stockpiling procedures. Areas designated for stockpiling should be cleaned of any debris.

6.0 INTERESTS OF THE WETLANDS PROTECTION ACT

The Wetlands Protection Act regulates wetland resource areas in order to contribute to the following interests:

- Protection of Public and Private Water Supply
- Protection of Groundwater Supply
- Flood Control
- Storm Damage Prevention
- Prevention of Pollution
- Protection of Land Containing Shellfish
- Protection of Fisheries
- Protection of Wildlife Habitat

By implementing installing stormwater best management practices on the Project site, the proposed project will protect the interests of the Wetlands Protection Act, including protection of private/public water supply, protection of groundwater supply, providing flood control, prevention of storm damage, and prevention of pollution. The Project does not currently contain wildlife habitat, however, the proposed changes will help to control pollution and site runoff to protect nearby wildlife habitat. The other interests, which pertain to the protection of fish and shellfish, are not relevant to the proposed are not relevant to the proposed Project.

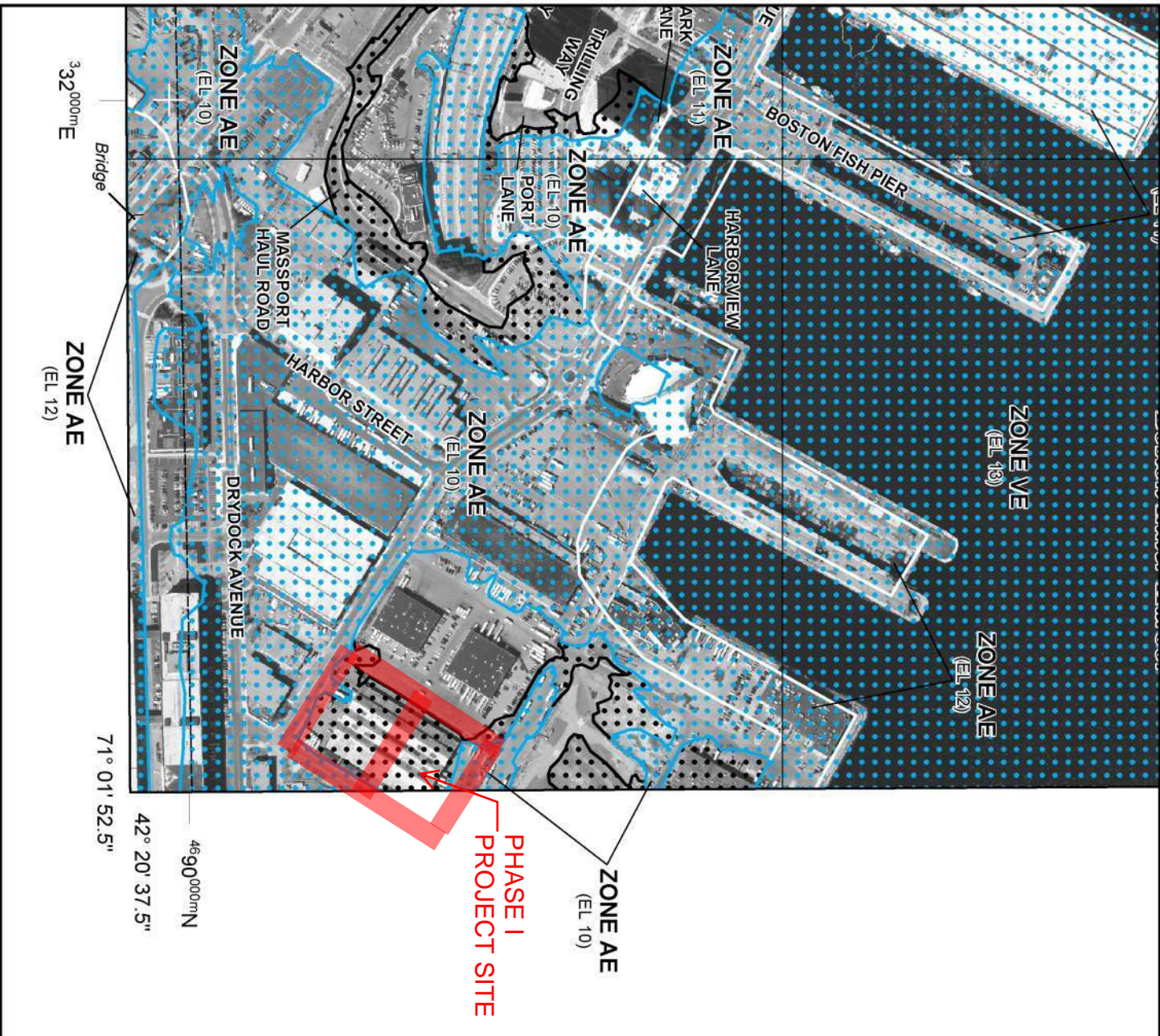
7.0 CONCLUSION

On behalf of the Applicant, Nitsch Engineering is filing the enclosed Notice of Intent (NOI) Application with the Boston Conservation Commission for the construction of the new Innovation Square, Phase 2 project, which is partially located within Land Subject to Coastal Storm Flowage. The proposed project includes construction of a stormwater management system that meets the MassDEP Stormwater Management Standards and provides construction period sediment and erosion controls, and long-term pollution prevention measures. This NOI report and associated appendices provide a description of the design details and regulatory compliance in accordance with the pertinent Wetland Statutes and Regulations. The Applicant seeks an Order of Conditions approving the Project as proposed.

SECTION 3

JURISDICTIONAL AREA INFORMATION

FEMA 2016 Flood Map



MAP SCALE 1" = 500'



NATIONAL FLOOD INSURANCE PROGRAM

FIRM
 FLOOD INSURANCE RATE MAP
 SUFFOLK COUNTY,
 MASSACHUSETTS
 (ALL JURISDICTIONS)

PANEL 81 OF 176
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:
 COMMUNITY NUMBER 2502986
 BOSTON, CITY OF

MAP NUMBER 25025C0081J
 MAP REVISED MARCH 16, 2016

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov



42° 20' 37.5"
71° 01' 52.5"

ZONE AE
(EL 12)

33,000m E



MAP SCALE 1" = 500'



NFIP

PANEL 0082J

FIRM
FLOOD INSURANCE RATE MAP
SUFFOLK COUNTY,
MASSACHUSETTS
(ALL JURISDICTIONS)

PANEL 82 OF 176
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL CODE	SUFFIX
BOSTON, CITY OF	250286	0082	J
WINTHROP, TOWN OF	250288	0082	J

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.



MAP NUMBER
25025C0082J
MAP REVISED
MARCH 16, 2016
Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

LEGEND



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

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

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

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

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

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

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

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

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

FLOODWAY AREAS IN ZONE AE

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



OTHER FLOOD AREAS

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



OTHER AREAS

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

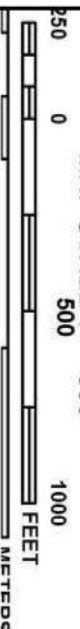
ZONE D Areas in which flood hazards are undetermined, but possible.



COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS



MAP SCALE 1" = 500'



PANEL 0082J

FIRM

**FLOOD INSURANCE RATE MAP
SUFFOLK COUNTY,
MASSACHUSETTS
(ALL JURISDICTIONS)**

**PANEL 82 OF 176
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)**

CONTAINS:

COMMUNITY	NUMBER	PANEL CODE	SUFFIX
BOSTON, CITY OF	250286	0082	J
WINTHROP, TOWN OF	250288	0082	J

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



**MAP NUMBER
25025C0082J
MAP REVISED
MARCH 16, 2016**

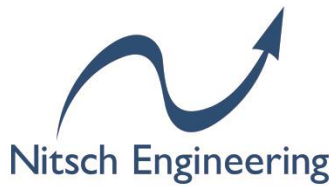
Federal Emergency Management Agency

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SECTION 4

DOCUMENTATION OF ABUTTER NOTIFICATION

Abutter Notification
Affidavit of Service
Certified Abutters List



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

April 17, 2019

Abutters to
Innovation Square – Phase 2
316-318 Northern Avenue
Boston, MA 02210

RE: Nitsch #11464.1
Innovation Square Phase 2
Boston, MA

Dear Abutter/Interested Party:

Related Beal, LLC (the owner) has filed a Notice of Intent (NOI) under the Massachusetts Wetlands Protection Act for the construction of the proposed Innovation Square, Phase 2 project at 316-318 Northern Avenue in Boston. The Massachusetts Wetlands Protection Act requires notification of abutters within 100 feet of the project site for an NOI.

Copies of the NOI can be reviewed at the City of Boston Conservation Commission office during the regular Conservation Commission office hours.

The attached enclosures contain the information required for abutter notification by the Massachusetts Wetlands Protection Act.

The Boston Conservation Commission has scheduled a public hearing for the project on May 1, 2019, at 5:00pm or 6:00pm, subject to change. Please check the Boston Conservation Commission website to confirm the hearing date, time, and agenda items at:

<http://www.cityofboston.gov/environment/Conservation/hearings.asp>

Very truly yours,

Nitsch Engineering, Inc.

Deborah M. Danik, PE, CPESC, LEED AP BD+C
Project Manager

DMD/zm

Q:\11464.1 BMIP-ISQ P2\Civil\Project Data\Permitting\Abutters\11464.1-noi_abuttercover.doc

**NOTIFICATION TO ABUTTERS
UNDER THE MASSACHUSETTS WETLANDS PROTECTION ACT**

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

- A. The name of the Applicant is the Related Beal, LLC.
- B. The Applicant has filed a Notice of Intent with the Boston Conservation Commission to remove, fill, dredge, or alter an Area Subject to Protection under the Wetlands Protection Act (General Laws Chapter 131, Section 40).

The project consists of the construction of a laboratory building and various site improvements, including new landscaping and new utility work.

- C. The location of the proposed activity is 316-318 Northern Avenue, Boston, MA.
- D. Copies of the Notice of Intent may be examined at the Boston Conservation Commission (Boston City Hall, 1 City Hall Square, Boston, MA) between the hours of 9:00 am and 4:00 pm, Monday through Friday.
- E. Copies of the Notice of Intent may be obtained from the applicant's representative: Please contact Deborah M. Danik at Nitsch Engineering, Inc. at (617) 338-0063 between 8:30 am and 5:00 pm, Monday through Friday.
- F. Information regarding the date, time, and place of the Public Hearing may be obtained from the Boston Conservation Commission by calling 617-635-3850 between the hours 9:00 am and 4:00 pm, Monday through Friday.

The Public Hearing for the proposed project will be held during the Boston Conservation Commission meeting on Wednesday, July 20th at 5:00pm or 6:00pm, subject to change. Check the Boston Conservation Commission's website to confirm hearing date, time and agenda items at:

<http://www.cityofboston.gov/environment/Conservation/hearings.asp>

- NOTE: Notice of the public hearing, including its date, time, and place, will be published at least five (5) days in advance in *Boston Herald*.
- NOTE: Notice of the public hearing, including its date, time, and place, will be posted on the Boston Conservation Commission website:
<http://www.cityofboston.gov/environment/Conservation/hearings.asp>
not less than forty-eight (48) hours in advance.
- NOTE: You may contact the nearest Department of Environmental Protection Regional office for more information about this application or the Wetlands Protection Act. To contact DEP, call:

Northeast Region: 978-661-7600

AFFIDAVIT OF SERVICE

Under the Massachusetts Wetlands Protection Act

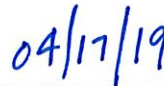
I, Deborah M. Danik, P.E., hereby certify under the pains and penalties that at least one week prior to the public hearing I gave notification to abutters in compliance with the second paragraph of Massachusetts General Laws Chapter 131, Section 40, and the DEP guide to Abutter Notification dated April 8, 1994, in connection to the following matter:

Submission of a Notice of Intent to the Boston Conservation Commission for the work associated with the proposed Innovation Square, Phase 2, Project at 316-318 Northern Avenue in Boston was filed on April 17, 2019. The project consists of the construction of a laboratory building and various site improvements, including new landscaped areas and new utility work.

The form of notification and the list of abutters to whom it was given is attached to the Affidavit of Service.



Name



Date

PID	OWNER	ADDRESSEE	MLG_ADDRESS	MLG_CITYSTATE	MLG_ZIPCODE	LOC_ADDRESS	LOC_CITY	LOC_ZIPCODE
602674230	ECONOMIC DEVELOPEMENT AND	C/O CHRISTOPHER GIULIANI	1 CITY HALL SQ 9TH FL	BOSTON MA	2201	24 DRYDOCK AV	BOSTON	2210
602674205	MASSACHUSETTS PORT	C/O CHRISTOPHER GIULIANI	1 CITY HALL SQ 9TH FL	BOSTON MA	2201	20 FID KENNEDY DR	BOSTON	2210
602674060	ECONOMIC DEVELOPMENT &	C/O CHRISTOPHER GIULIANI	1 CITY HALL SQ 9TH FL	BOSTON MA	2201	300 NORTHERN AV	BOSTON	2210
602674062	BRETT K LLC	C/O LEON WEINSTEIN	310 NORTHERN AV # 1A	BOSTON MA	2210	300 NORTHERN AV	BOSTON	2210
602674068	FBC REALTY TRUST	C/O F.J. O'HARA & SONS	5 FID KENNEDY AV #2A	BOSTON MA	2210	300 NORTHERN AV	BOSTON	2210
602674072	FBC REALTY TRUST	C/O F.J. O'HARA & SONS	7 FID KENNEDY AV #2C	BOSTON MA	2210	300 NORTHERN AV	BOSTON	2210
602674065	TS PARTNERS LLC	C/O JOHN E KAVANAGH III	99 CONIFER HILL DR SUITE 201	DANVERS MA	1923	6 TIDE ST	BOSTON	2210
602674064	E.A.O. REALTY LLC	C/O PANGEA SHELLFISH AND SEAFOOD COMPANY	312 NORTHERN AV #1B	BOSTON MA	2210	300 NORTHERN AV	BOSTON	2210
602674066	BRETT K LLC	C/O LEON WEINSTEIN	310 NORTHERN AV #1C	BOSTON MA	2210	300 NORTHERN AV	BOSTON	2210
602674130	ECONOMIC DEVELOPMENT AND	C/O CHRISTOPHER GIULIANI	1 CITY HALL SQ 9TH FL	BOSTON MA	2201	20 DRYDOCK AV	BOSTON	2210
602674135	ECONOMIC DEVELOPMENT AND	C/O CHRISTOPHER GIULIANI	1 CITY HALL SQ 9TH FL	BOSTON MA	2201	22 DRYDOCK AV	BOSTON	2210
602674125	ECONOMIC DEVELOPMENT AND	C/O CHRISTOPHER GIULIANI	1 CITY HALL SQ 9TH FL	BOSTON MA	2201	12 DRYDOCK AV	BOSTON	2210

SECTION 5

STORMWATER REPORT (UNDER SEPARATE COVER)

FIGURES

Figure 1 – USGS Locus Map

Figure 2 – Aerial Locus Map

Figure 3 – Natural Heritage and Endangered Species Program Map

Figure 4 – NRCS Soils Map

Figure 5 – AUL Sites

Figure 6 – FEMA Map

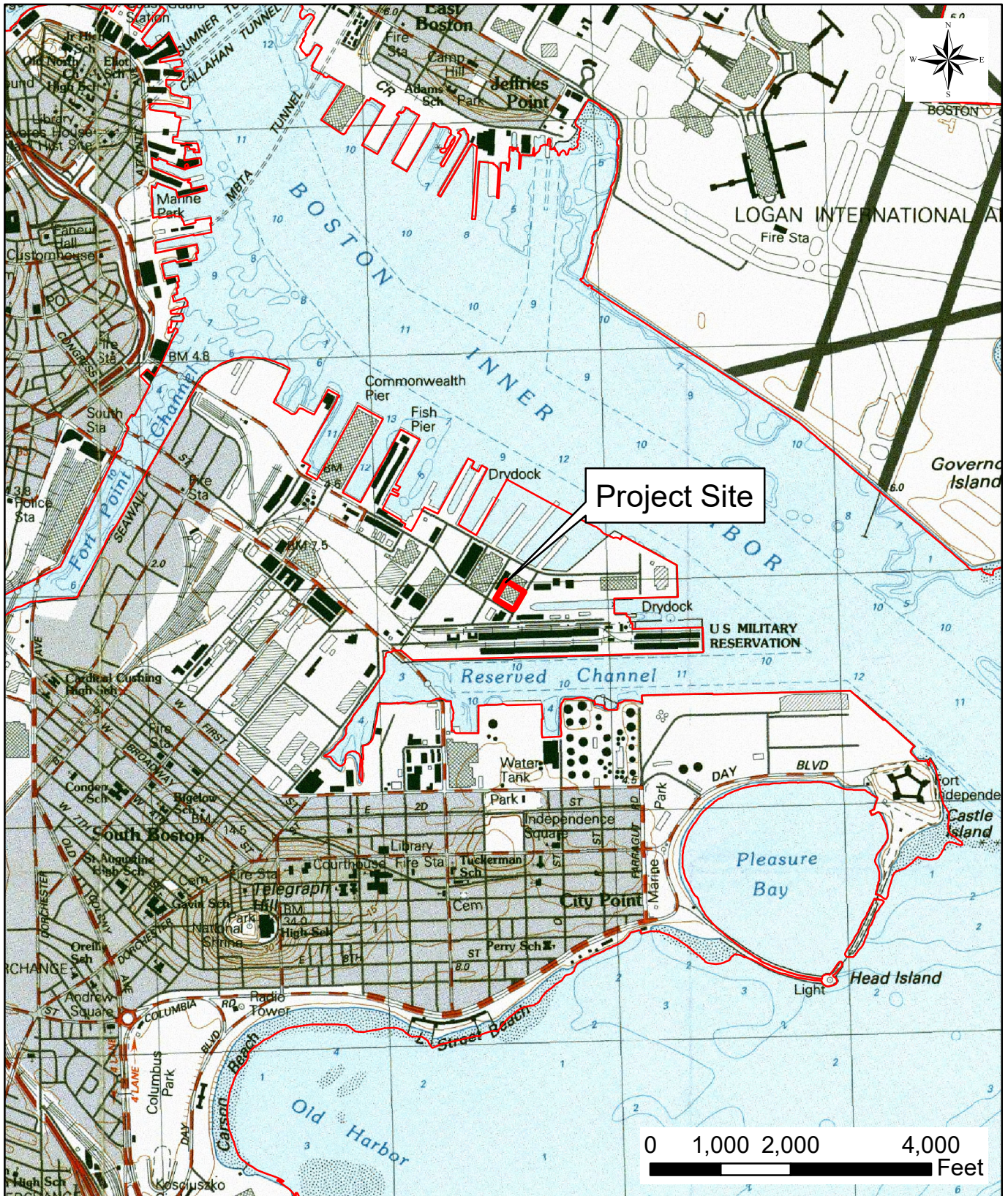


Figure 1 - USGS Locus
 Innovation Square
 Boston, MA



Figure 2 - Aerial Locus
 Innovation Square
 Boston, MA



Figure 3: Natural Heritage and Endangered Species Program Map
 Innovation Square
 Boston, MA



Figure 4 - NRCS Soils
 Innovation Square
 Boston, MA

Data Source: MassGIS
 Nitsch Project #11464.1

Legend

Soils MUNAME

MUNAME

- Udorthents, wet substratum
- Urban land, wet substratum
- Water





Figure 5 - AUL Sites
 Innovation Square
 Boston, MA

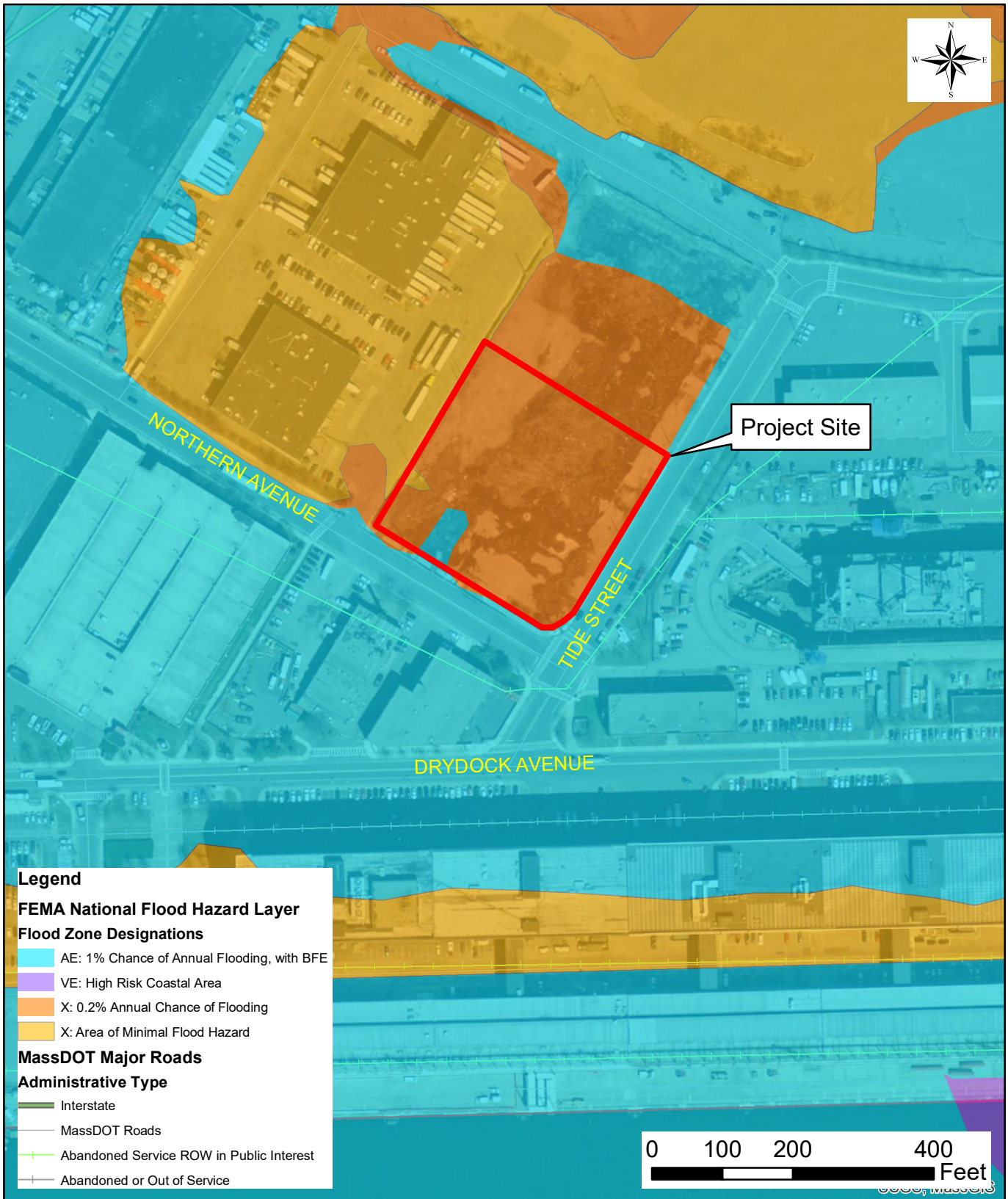


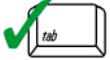
Figure 6 - FEMA Map
 Innovation Square
 Boston, MA



Checklist for Stormwater Report

A. Introduction

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



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

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.¹ This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8²
- Operation and Maintenance Plan required by Standard 9

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

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

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

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

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



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



Deborah M. Danik 04/17/19

Signature and Date

Checklist

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

- New development
- Redevelopment
- Mix of New Development and Redevelopment



Checklist for Stormwater Report

Checklist (continued)

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

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

Standard 1: No New Untreated Discharges

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



Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

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

Standard 3: Recharge

- Soil Analysis provided.
- Required Recharge Volume calculation provided.
- Required Recharge volume reduced through use of the LID site Design Credits.
- Sizing the infiltration, BMPs is based on the following method: Check the method used.
 - Static
 - Simple Dynamic
 - Dynamic 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)

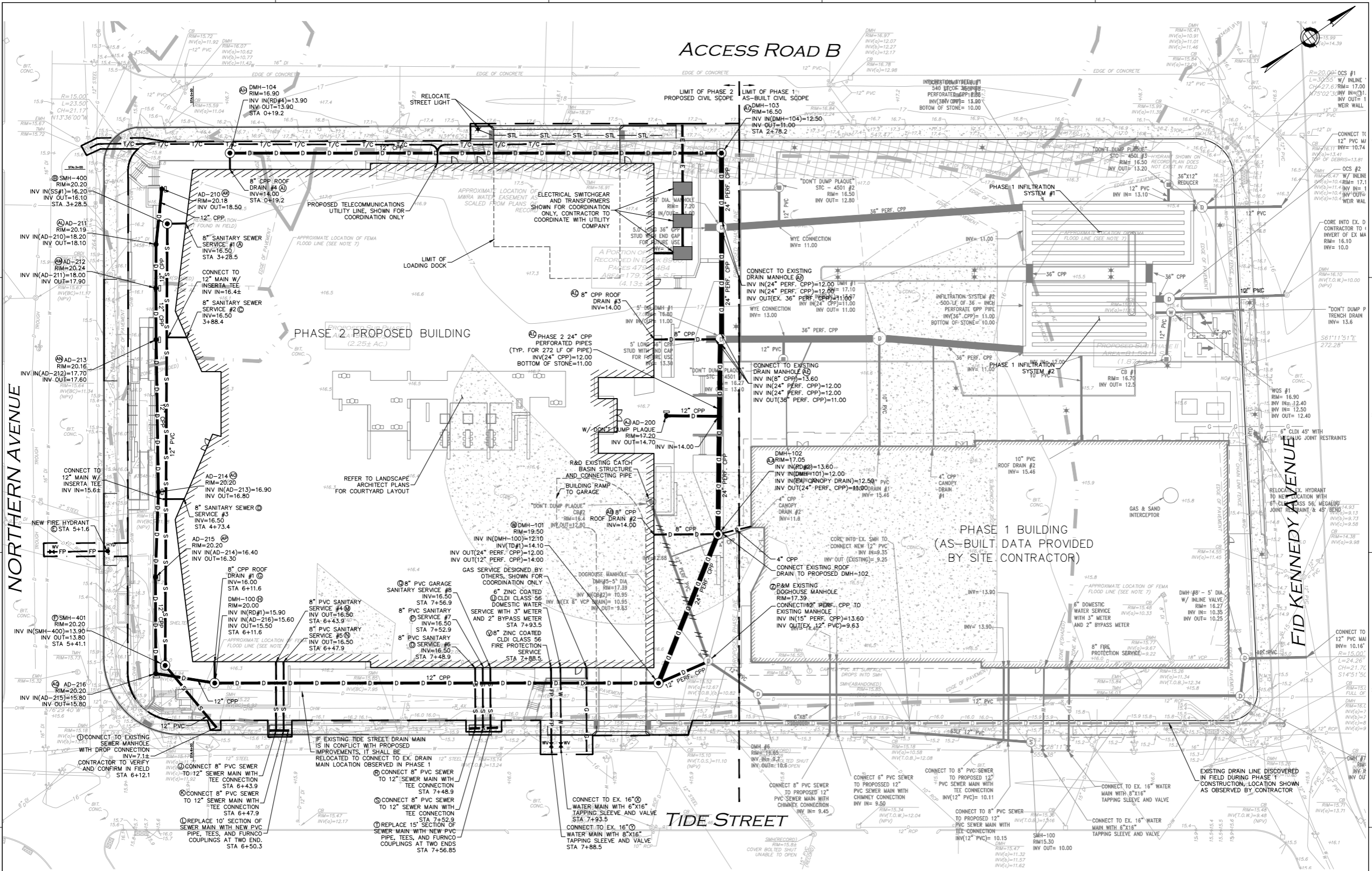
- The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and 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.



NORTHERN AVENUE

FID KENNEDY AVENUE

ACCESS ROAD B

TIDE STREET

- NOTES:**
- PHASE 1 IMPROVEMENTS WERE APPROVED AS PART OF SP#16257.
 - REFER TO SHEET C04-00 FOR NOTES, LEGEND, ABBREVIATIONS, AND BWSIC INSPECTION TABLE.

REQUIRED RECHARGE VOLUME CALCULATIONS:

Phase 1 (Approved and installed in 2018, SP#16257):
 Total Impervious Area (SF) = 78,217
 Required Storage Volume = Roof Area + Impervious Site Area x 1 inch (storm depth)
 = 78,217 x [1/12]
 = 6,518 CF

Phase 2:
 Total Impervious Area (SF) = 77,254
 Required Storage Volume = Roof Area + Impervious Site Area x 1.25 inches (storm depth)
 = 77,254 x [1.25/12]
 = 8,047 CF

Total Required Storage Volume for Project = 6,518 CF + 8,047 CF = **14,565 CF**

RECHARGE VOLUME CALCULATIONS:

Storage Available in Infiltration System #1 = 540 LF of 36" Perforated CPP Pipe + Crushed Stone
 Volume of Pipe = (πr²) x Length of Pipe
 = (π(1.5)²) x 540 LF
 = 7.07 x 540 LF = 3,818 CF
 Volume of Stone = [Volume of Stone - Volume of Pipe] x 30% Voids
 = [(540 x 4.83 x 4') - (π(1.5)² x 540 LF)] x 0.30 = 1,985 CF

Storage Available in Infiltration System #2 = 490 LF of 36" Perforated CPP Pipe + Crushed Stone
 Volume of Pipe = (πr²) x Length of Pipe
 = (π(1.5)²) x 490 LF
 = 7.07 x 490 LF = 3,464 CF
 Volume of Stone = [Volume of Stone - Volume of Pipe] x 30% Voids
 = [(490 x 4.83 x 4') - (π(1.5)² x 490 LF)] x 0.30 = 1,801 CF

Storage Available in Perforated Conveyance Pipes:
 300 LF of 36" Perforated CPP Pipe + Crushed Stone
 Volume of Pipe = (πr²) x Length of Pipe
 = (π(1.5)²) x 300 LF
 = 7.07 x 300 LF = 2,121 CF
 Volume of Stone = [Volume of Stone - Volume of Pipe] x 30% Voids
 = [(300 x 6' x 4') - (π(1.5)² x 300 LF)] x 0.30 = 1,524 CF

Storage Available in Phase 2 Perforated Conveyance Pipes = 272 LF of 24" Perforated CPP Pipe + Crushed Stone
 Volume of Pipe = (πr²) x Length of Pipe
 = (π(1)²) x 272 LF
 = 3.14 x 272 LF = 854 CF
 Volume of Stone = [Volume of Stone - Volume of Pipe] x 30% Voids
 = [(272 x 4' x 3') - (π(1)² x 272 LF)] x 0.30 = 723 CF

Total Volume = 3,818 CF + 1,985 CF + 3,464 CF + 1,801 CF + 2,121 CF + 1,524 CF + 854 CF + 723 CF
 = **16,290 CF** = 14,565 CF

**BWSC SITE PLAN #19067
BWSIC USE ONLY**

SITE ADDRESS:
6 TIDE STREET
BOSTON, MA 02210

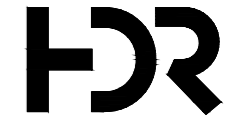
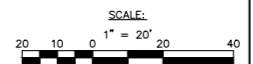
NEW ACCOUNT NUMBER:

WARD / PARCEL NUMBER:
06 / 02674-000

LAND USE CODE:
E

TYPE OF PREMISE:
LABORATORY/OFFICE

OWNER CONTACT INFORMATION:
RELATED BEAL
177 MILK STREET
BOSTON, MA 02109
ATTN: STEPHEN M. FABER
PHONE: 617-451-2100



HDR Inc.
99 High Street, Suite 2300
Boston, MA 02110-2378



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

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

RBK I, LLC
c/o Related Beal
iSQ Seaport Phase II
6 Tide Street, Boston, MA 02210



Project Manager: Joseph Marmayak
Project Designer: Joseph Marmayak
Project Architect: Joseph Marmayak
Landscape Architect: Nitech Engineering
Civil Engineer: Nitech Engineering
Structural Engineer: McNamara Salvia
Mechanical Engineer: BR-A Consulting Engineers
Electrical Engineer: BR-A Consulting Engineers
Plumbing Engineer: BR-A Consulting Engineers
Interior Designer: HDR
Equipment Planner: HDR
Wayfinding: HDR

MARK	DATE	DESCRIPTION
4/17/2019		NOI FILING

Project Number: 10113837
Original Issue: 03/01/19

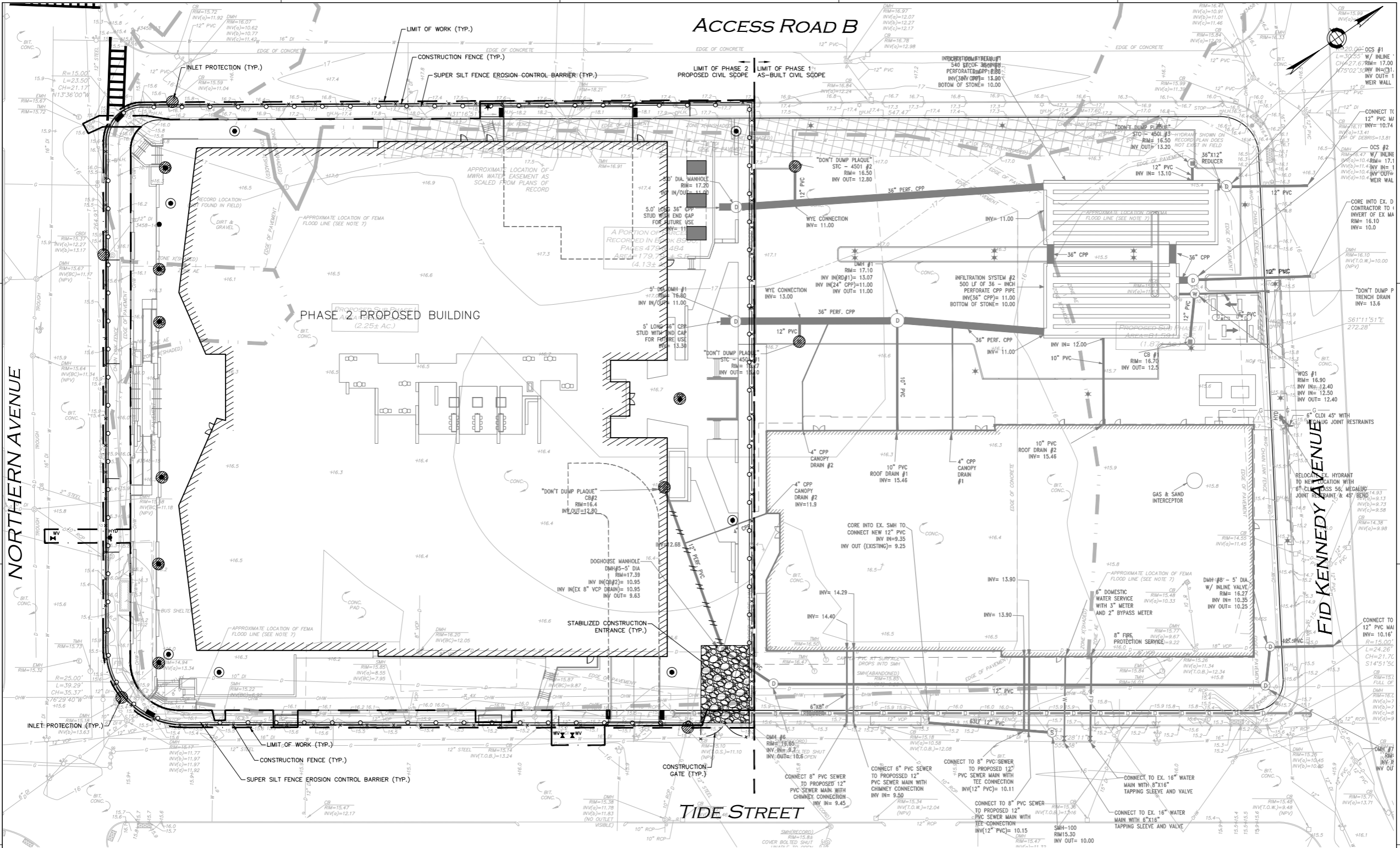


SITE UTILITY PLAN

Sheet Number: **C02-00**

Project Status: Schematic Design (In Progress)

ACCESS ROAD B



LEGEND

- EROSION CONTROL BARRIER
- × CONSTRUCTION FENCE
- INLET PROTECTION
- LIMIT OF WORK
- ▨ STABILIZED CONSTRUCTION ENTRANCE
- CONSTRUCTION GATE



HDR Inc.
99 High Street, Suite 2300
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RBK I, LLC
c/o Related Beal
iSQ Seaport Phase II
6 Tide Street, Boston, MA 02210



TRUE NORTH

Project Manager	Joseph Mamayek
Project Designer	Joseph Mamayek
Landscape Architect	Nitsch Engineering
Civil Engineer	MtNasara Salvia
Mechanical Engineer	BR-A Consulting Engineers
Electrical Engineer	BR-A Consulting Engineers
Plumbing Engineer	BR-A Consulting Engineers
Interior Designer	HDR
Equipment Planner	-
Wayfinding	-
Sheet Reviewer	Author

MARK	DATE	DESCRIPTION
4/17/2019	NOI FILING	

Project Number: 10113837
Original Issue: 030119



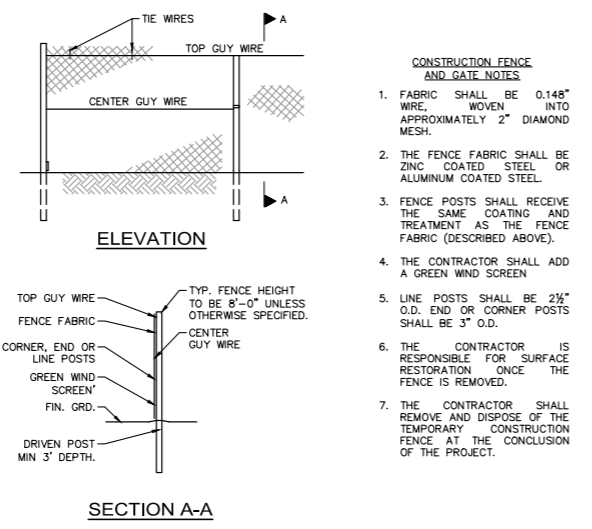
Sheet Name
STORMWATER POLLUTION PREVENTION PLAN

Sheet Number
C03-00

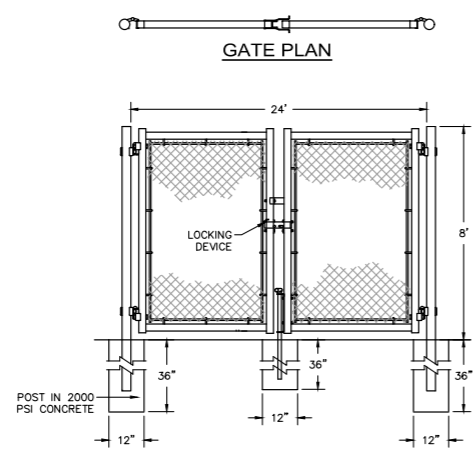
Project Status
Schematic Design (In Progress)

1/24/2019 10:28:08 AM C:\1\2019\10113837\SD\Phase 2\0219_CHEMGRUE1.dwg

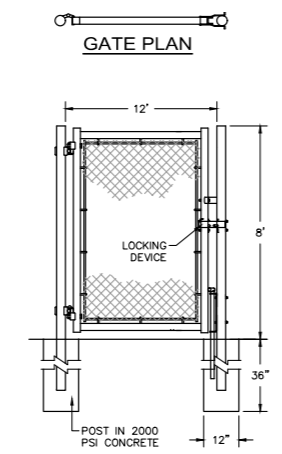
NITSCH PROJ #11464.1



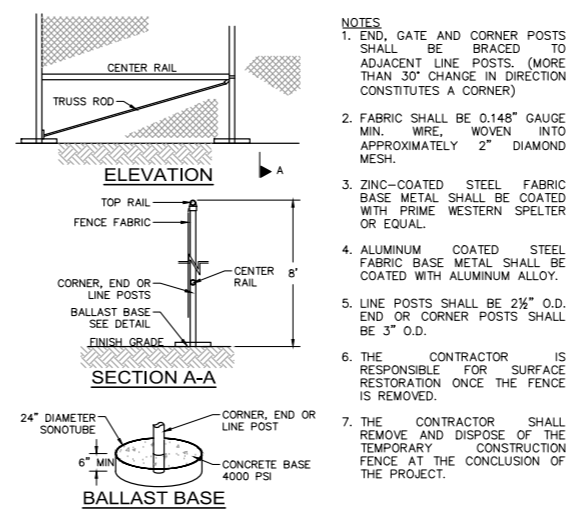
CHAIN LINK CONSTRUCTION FENCE NOT TO SCALE



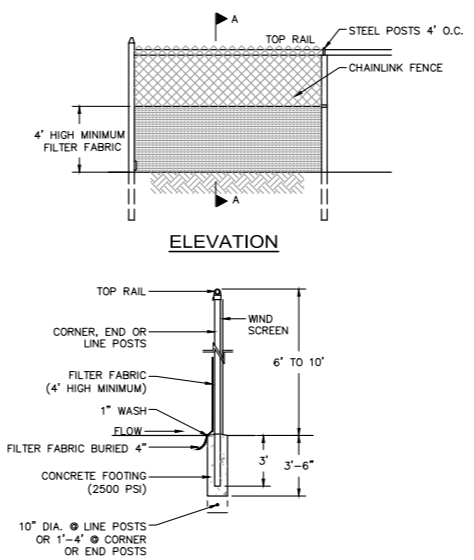
DOUBLE GATE ELEVATION
24' WIDE DOUBLE GATE
NOT TO SCALE



SINGLE GATE ELEVATION
12' WIDE EMERGENCY GATE
NOT TO SCALE



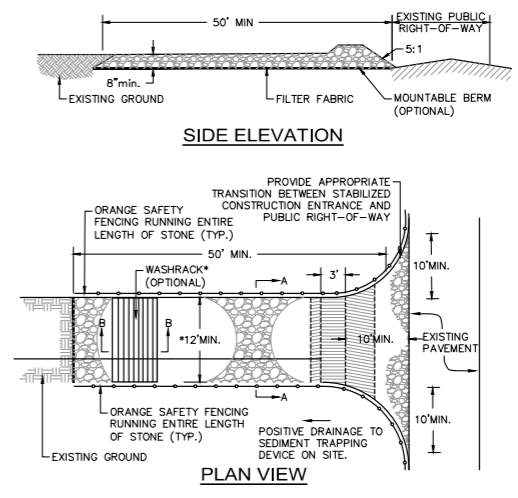
TEMPORARY CONSTRUCTION CHAIN LINK FENCE WITH BALLAST BASE NOT TO SCALE



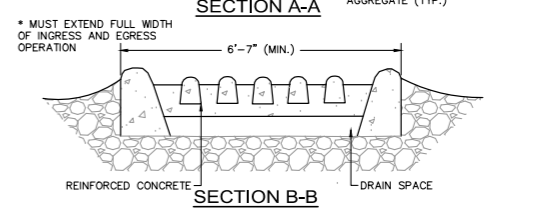
EROSION CONTROL BARRIER SUPER SILT FENCE NOT TO SCALE

- CHAINLINK FENCE SHALL BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES.
- FILTER FABRIC SHALL BE FASTENED SECURELY TO CHAINLINK FENCE WITH TIES SPACED HORIZONTALLY 24" AS THE TOP AND MIDSECTION.
- WHEN TWO SECTIONS OF FILTER FABRIC ADJOIN EACH OTHER, THEY SHALL BE OVERLAPPED BY 6"
- MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL SHALL BE REMOVED WHEN SEDIMENT BUILD-UP REACHES 50% OF THE HEIGHT OF THE FILTER FABRIC.
- MAINTENANCE OF SILT FENCE SHALL BE RECORDED TO IN THE SWPPP

- NOTES
- END, GATE AND CORNER POSTS SHALL BE BRACED TO ADJACENT LINE POSTS. (MORE THAN 30" CHANGE IN DIRECTION CONSTITUTES A CORNER)
 - FABRIC SHALL BE 0.148" GAUGE MIN. WIRE, WOVEN INTO APPROXIMATELY 2" DIAMOND MESH.
 - ZINC-COATED STEEL FABRIC BASE METAL SHALL BE COATED WITH PRIME WESTERN SPELTER OR EQUAL.
 - ALUMINUM COATED STEEL FABRIC BASE METAL SHALL BE COATED WITH ALUMINUM ALLOY.
 - LINE POSTS SHALL BE 2 1/2" O.D. END OR CORNER POSTS SHALL BE 3" O.D.
 - THE CONTRACTOR IS RESPONSIBLE FOR SURFACE RESTORATION ONCE THE FENCE IS REMOVED.
 - THE CONTRACTOR SHALL REMOVE AND DISPOSE OF THE TEMPORARY CONSTRUCTION FENCE AT THE CONCLUSION OF THE PROJECT.



STABILIZED CONSTRUCTION ENTRANCE



CONSTRUCTION SPECIFICATIONS

CONSTRUCTION SPECIFICATIONS

LENGTH - GREATER THAN OR EQUAL TO 50 FEET

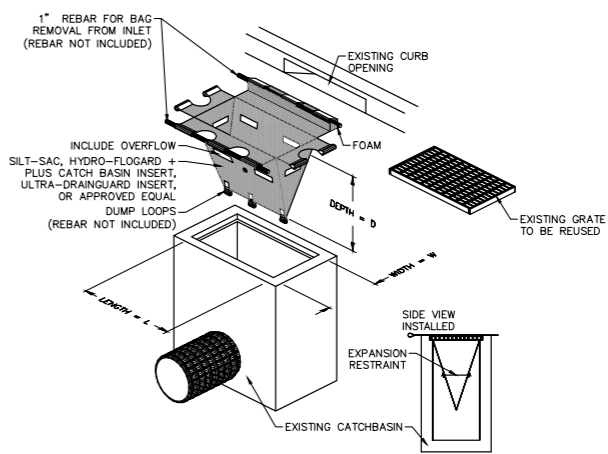
WIDTH - TWELVE FOOT MINIMUM (ONE WAY), TWENTY FOUR FOOT MINIMUM (TWO WAY), BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.

SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM SHALL BE PERMITTED.

THICKNESS - 8"

MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH SHALL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.

PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED.



INLET PROTECTION (2)
CATCH BASIN W/ SILTATION SACK
NOT TO SCALE

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE THE INLET DRAINS SHEET, OVERLAND OR CONCENTRATED FLOWS (NOT GREATER THAN 1 CFS). THE METHOD CAN DRAIN FLAT AREA TO STEEP SLOPES. INLET CAPACITY WILL BE DECREASED WITH THIS METHOD AND THE CONTRACTOR SHALL EXPECT PONDING DURING HIGH FLOW EVENTS.

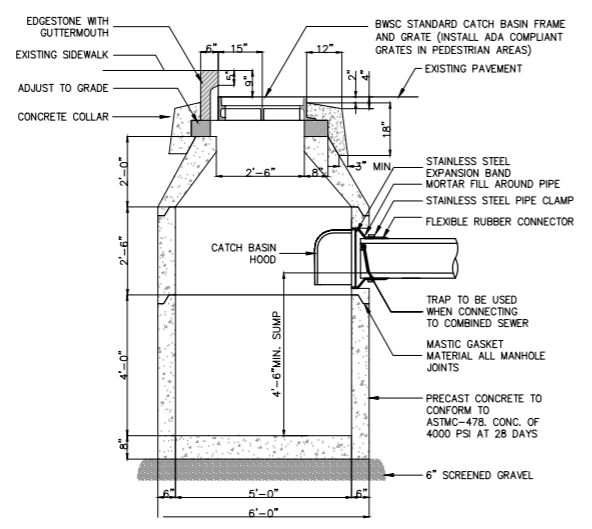
TRUE NORTH	
Project Manager	Joseph Mamayek
Project Designer	Project Architect
Landscape Architect	Nitsch Engineering
Civil Engineer	Molhamatah Salvia
Structural Engineer	BR-A Consulting Engineers
Mechanical Engineer	BR-A Consulting Engineers
Electrical Engineer	BR-A Consulting Engineers
Plumbing Engineer	HR
Interior Designer	
Equipment Planner	
Wayfinding	

MARK	DATE	DESCRIPTION
	4/17/2019	NOI FILING

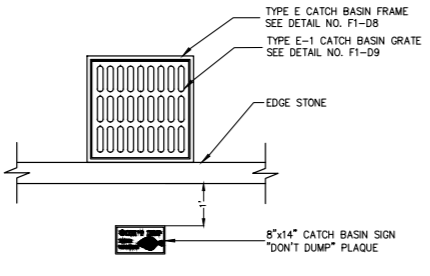
Project Number	10113307
Original Issue	03/01/19



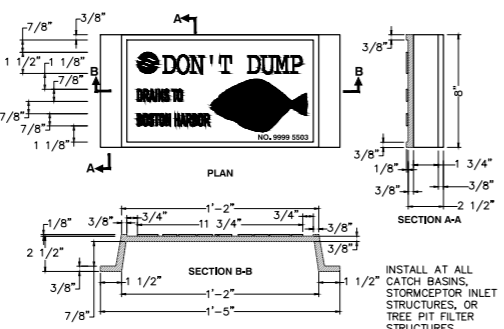
MARK	DATE	DESCRIPTION
	4/17/2019	NOI FILING



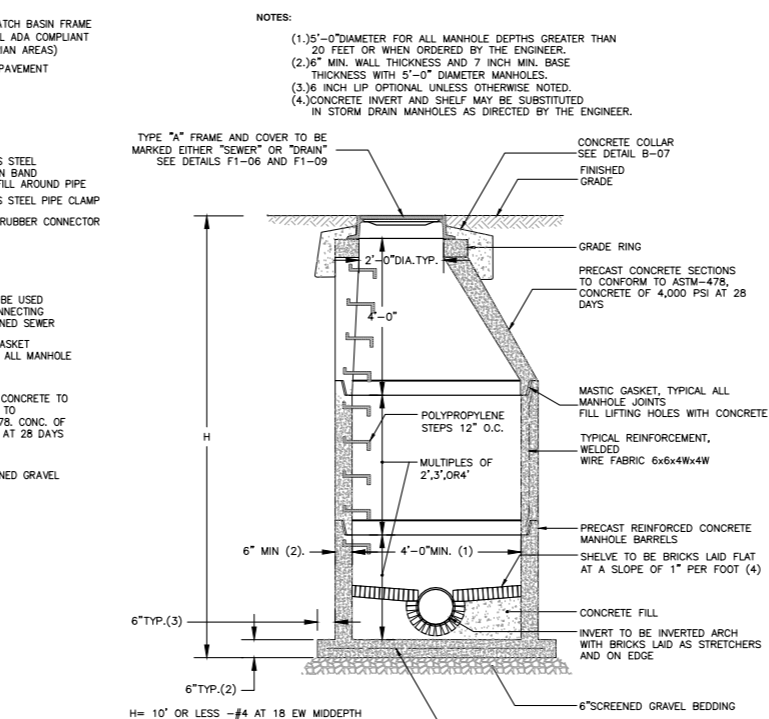
BWSC STANDARD CATCH BASIN
NOT TO SCALE



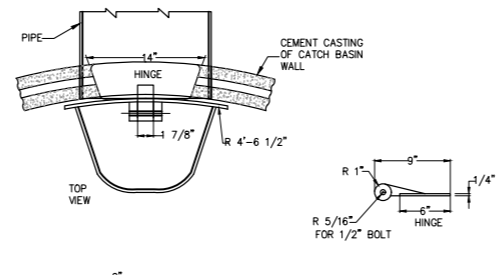
CATCH BASIN SIGN INSTALLATION
NOT TO SCALE



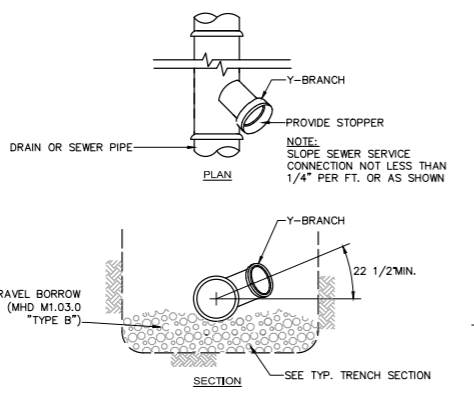
BWSC "DON'T DUMP" PLAQUE DETAIL
NOT TO SCALE



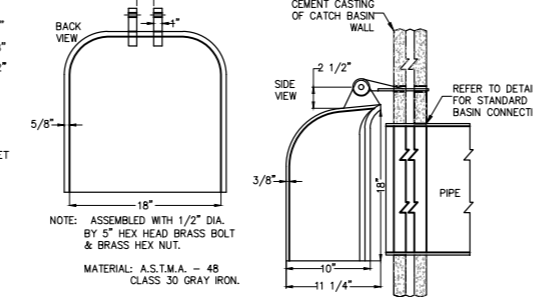
BWSC MANHOLE DETAIL
NOT TO SCALE



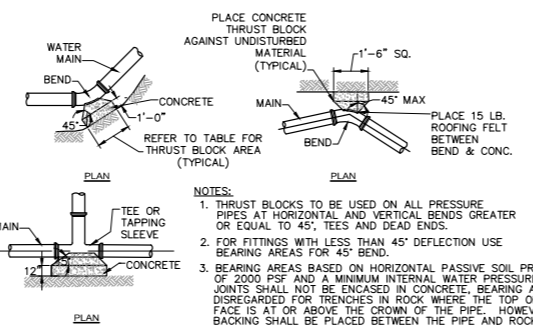
CATCH BASIN HOOD
NOT TO SCALE



WYE BRANCH FOR PIPE SERVICE CONNECTION DETAIL
NOT TO SCALE



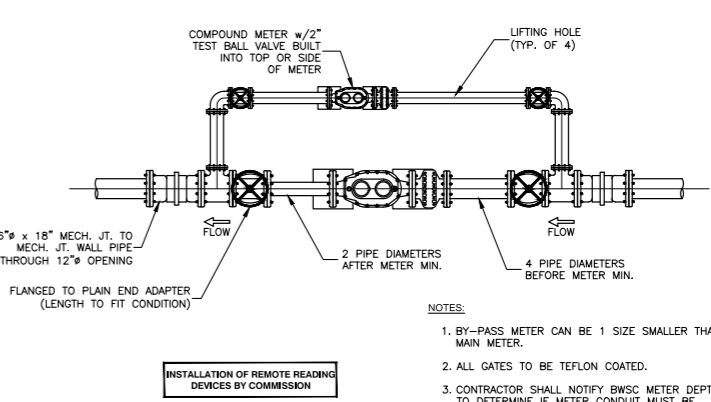
CATCH BASIN HOOD
NOT TO SCALE



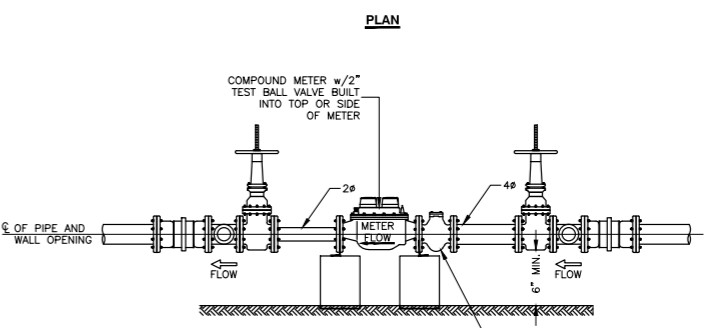
THRUST BLOCK DETAILS
NOT TO SCALE

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

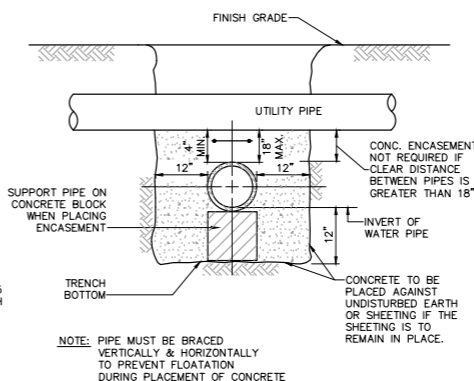
THRUST BLOCK DETAILS
NOT TO SCALE



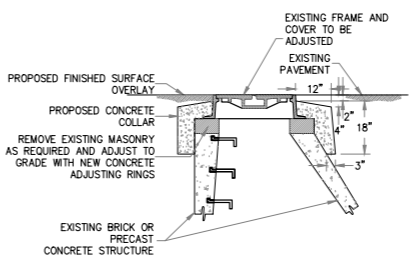
INSTALLATION OF REMOTE READING DEVICES BY COMMISSION



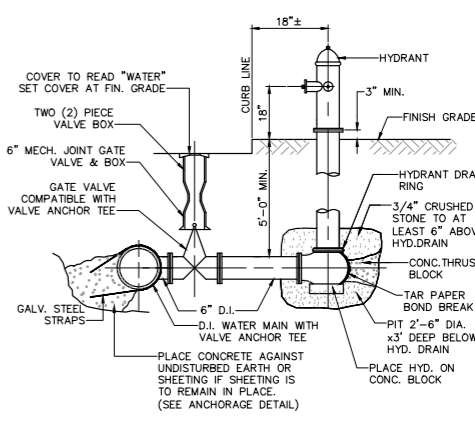
3" DOMESTIC WATER METER DETAIL
NOT TO SCALE



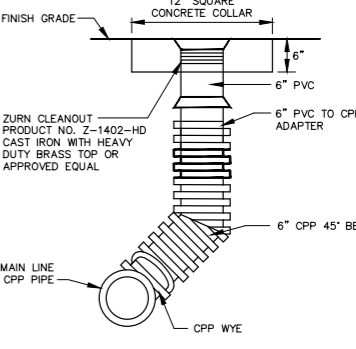
CONCRETE ENCASEMENT DETAIL AT UTILITY CROSSINGS
NOT TO SCALE



MANHOLE ADJUSTMENT TO GRADE DETAIL
NOT TO SCALE



FIRE HYDRANT DETAIL
NOT TO SCALE

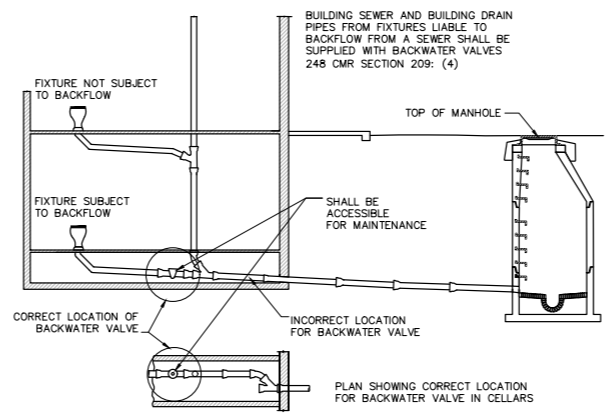
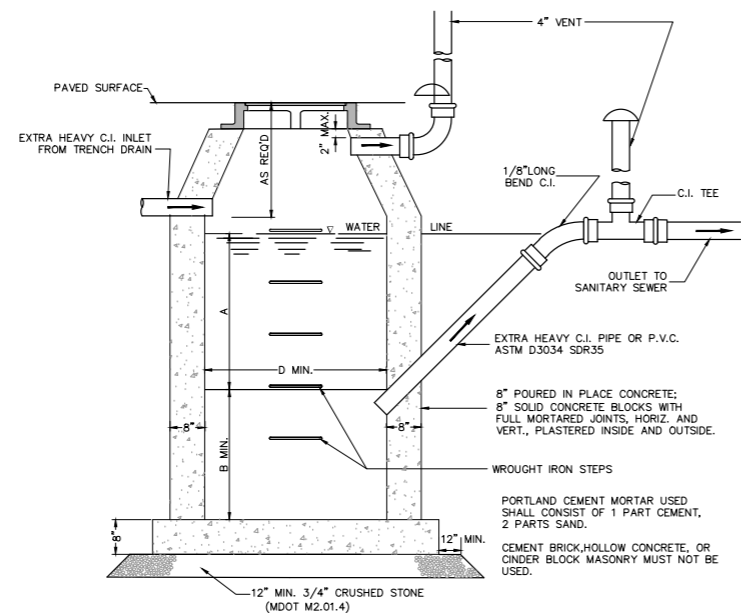


TYPICAL CLEANOUT DETAIL
NOT TO SCALE

Project Manager	Joseph Mamayek
Project Designer	Project Architect
Landscape Architect	Nitsch Engineering
Civil Engineer	Molnara Salvia
Structural Engineer	BR-A Consulting Engineers
Mechanical Engineer	BR-A Consulting Engineers
Electrical Engineer	BR-A Consulting Engineers
Plumbing Engineer	HDR
Interior Designer	
Equipment Planner	
Wayfinding	

MARK	DATE	DESCRIPTION
	4/17/2019	NOI FILING

Project Number	10113337
Original Issue	03/01/19



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

STANDARD BACKWATER VALVE
NOT TO SCALE

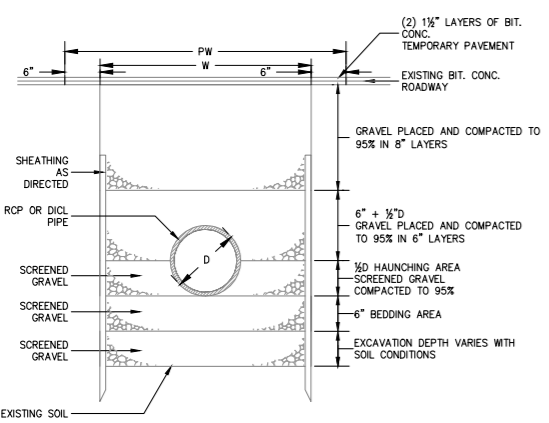
BACK WATER VALVES TO BE LOCATED IN BUILDING AND DESIGNED, DETAILED, AND SPECIFIED BY THE PLUMBING ENGINEER. SHOWN FOR PERMITTING ONLY.

INLET	D	A	B	INLET	D	A	B
4"	3'-6"	3'-0"	2'-6"	8"	5'-0"	6'-0"	5'-0"
5"	3'-6"	3'-0"	4'-0"	5'-6"	5'-6"	4'-0"	3'-0"
	3'-6"	3'-0"	3'-0"	5'-6"	6'-0"	3'-0"	2'-6"
	3'-6"	3'-0"	2'-6"	6'-6"	6'-6"	3'-0"	3'-0"
	3'-6"	3'-0"	2'-6"	6'-6"	6'-6"	3'-0"	2'-6"
6"	4'-0"	5'-0"	4'-6"	10"	5'-6"	7'-6"	6'-6"
	4'-0"	4'-0"	3'-6"		6'-0"	5'-6"	4'-6"
	4'-6"	4'-6"	3'-6"		6'-0"	6'-6"	5'-6"
	5'-0"	3'-6"	3'-0"		6'-6"	6'-6"	5'-6"
	5'-0"	3'-0"	2'-6"		6'-6"	6'-6"	4'-0"

NOTE:
FOR INLETS LARGER THAN 10" THE DESIGN AND DIMENSIONS WILL BE DETERMINED FOR EACH PARTICULAR CASE PRE-CAST SEPARATORS ARE TO HAVE ALL SPECIFIED HOLES EITHER CORE-BORED OR CAST IN PLACE.

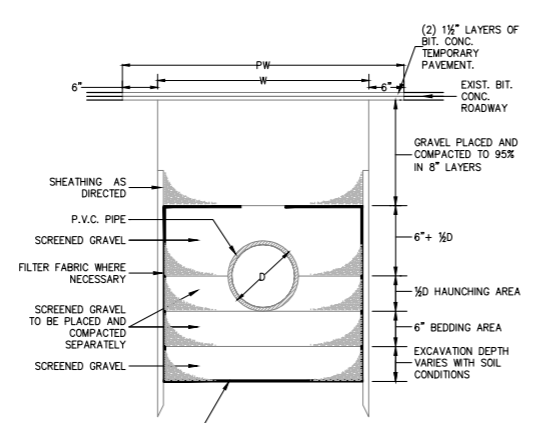
OIL/GAS SEPARATOR
NOT TO SCALE

OIL/GAS SEPARATOR TO BE LOCATED IN BUILDING AND DESIGNED, DETAILED, AND SPECIFIED BY THE PLUMBING ENGINEER. SHOWN FOR PERMITTING ONLY.



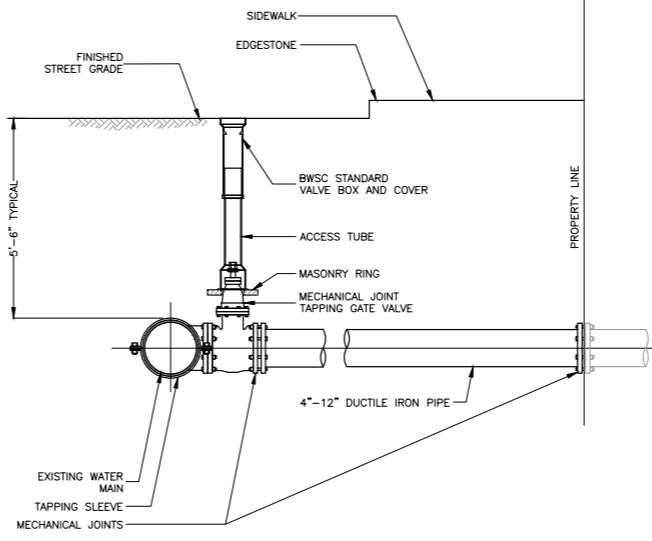
W = MAXIMUM TRENCH WIDTH
PW = MAXIMUM PAVING WIDTH = W+1'-0"
D = OUTSIDE DIAMETER
UNSHEATHED TRENCH: W = D+2' (3'-0" MIN.)
SHEATHED TRENCH: W = D+2'+SHEATHING WIDTH:
4'-2" MIN. W/O WALERS
5'-0" MIN. W/WALERS
TRENCH BOX OR HYDRAULIC SHORING:
W = D+2' + [WALL SHIELD WIDTH ± 8"] + 1' FOR TRENCH BOX

TRENCH DETAIL FOR RCP OR DCL PIPE
NOT TO SCALE

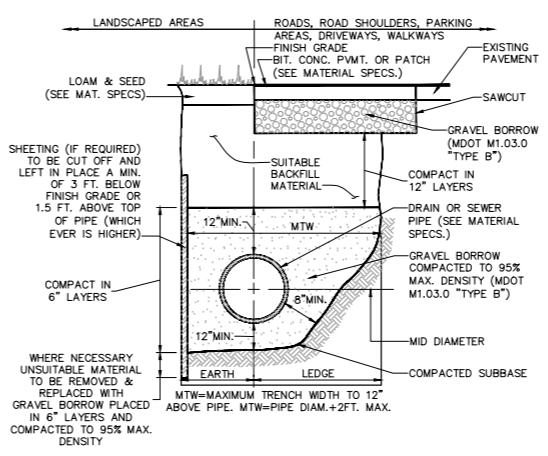


W = MAXIMUM TRENCH WIDTH
PW = MAXIMUM PAVING WIDTH = W+1'-0"
D = OUTSIDE DIAMETER
UNSHEATHED TRENCH: W = D+2' (3'-0" MIN.)
SHEATHED TRENCH: W = D+2'+SHEATHING WIDTH:
4'-0" MIN. W/O WALERS
5'-0" MIN. W/WALERS
TRENCH BOX OR HYDRAULIC SHORING:
W = D+2' + [WALL SHIELD WIDTH ± 8"] + 1' FOR TRENCH BOX

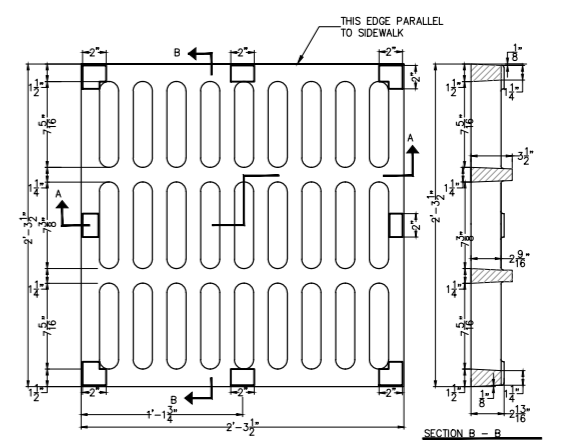
TRENCH DETAIL FOR PVC PIPE
SCALE: NOT TO SCALE



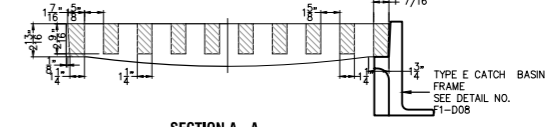
TAPPING SLEEVE AND GATE VALVE
NOT TO SCALE



STANDARD TRENCH DETAIL FOR UTILITY PIPE
NOT TO SCALE

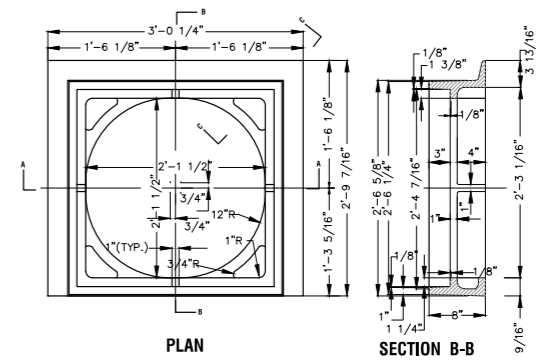


PLAN VIEW



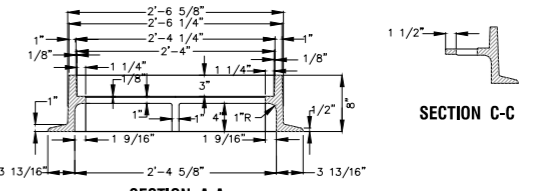
SECTION A - A

CATCH BASIN GRATE
NOT TO SCALE



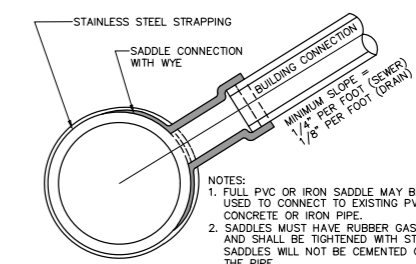
PLAN

SECTION B - B



SECTION A - A

CATCH BASIN FRAME AND GRATE
NOT TO SCALE



TYPICAL SADDLE CONNECTION TO EXISTING DRAIN OR SEWER
NOT TO SCALE

NOTES:
1. FULL PVC OR IRON SADDLE MAY BE USED TO CONNECT TO EXISTING PVC, CLAY, CONCRETE OR IRON PIPE.
2. SADDLES MUST HAVE RUBBER GASKETS AND SHALL BE TIGHTENED WITH STRAPS. SADDLES WILL NOT BE CEMENTED ONTO THE PIPE.
3. FULL WYE CONNECTION FITTINGS MAY BE USED.
4. PIPE SHALL BE CUT TO CONFORM TO THE OPENING IN THE SADDLE.
5. CONNECTIONS DIRECTLY INTO THE EXISTING PIPE WITHOUT A SADDLE OR A FULL WYE FITTING ARE NOT ALLOWED.



HDR Inc.
99 High Street, Suite 2300
Boston, MA 02110-2378



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

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

RBK I, LLC
c/o Related Beal
iSQ Seaport Phase II
6 Tide Street, Boston, MA 02210



Project Manager	Joseph Mamayek
Project Designer	Landscape Architect
Project Architect	Nitsch Engineering
Landscape Architect	McNamara Salvia
Civil Engineer	BR-A Consulting Engineers
Structural Engineer	BR-A Consulting Engineers
Mechanical Engineer	BR-A Consulting Engineers
Electrical Engineer	BR-A Consulting Engineers
Plumbing Engineer	HDR
Interior Designer	-
Equipment Planner	-
Wayfinding	-

Sheet Reviewer	Author	
MARK	DATE	DESCRIPTION
	4/17/2019	NOI FILING

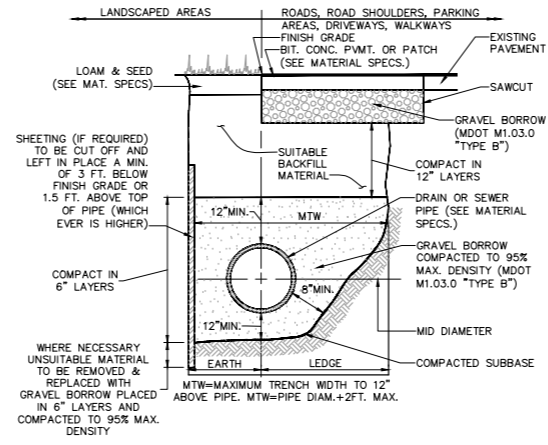
Project Number 10113837
Original Issue 03/01/19



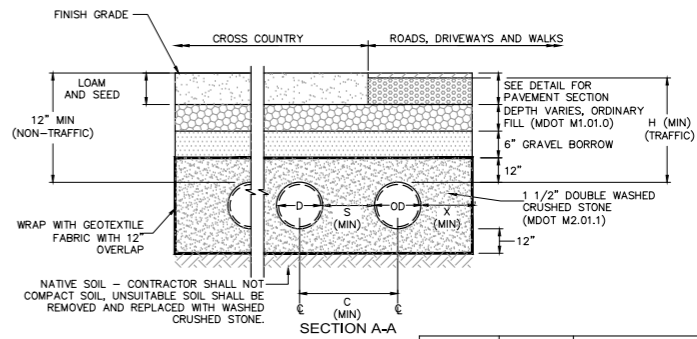
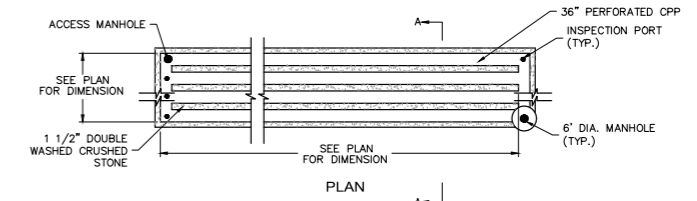
Sheet Name
Civil Construction
Details 3

Sheet Number
C04-03

Project Status
Schematic Design (In Progress)

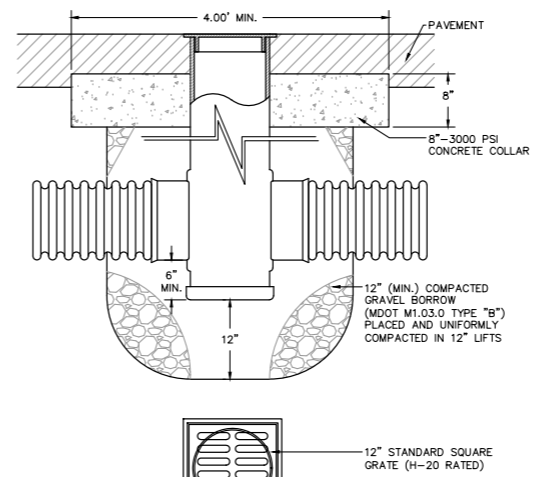


STANDARD TRENCH DETAIL FOR UTILITY PIPE
NOT TO SCALE

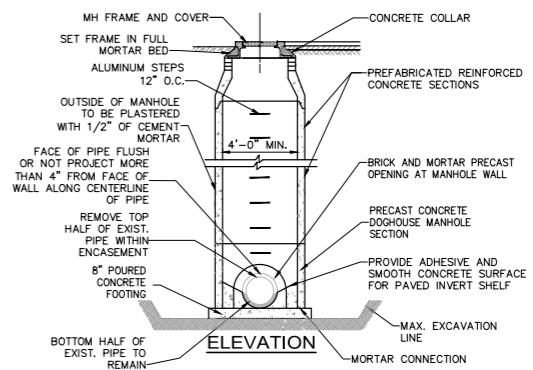


UNDERGROUND STORMWATER RECHARGE SYSTEM DETAIL
NOT TO SCALE

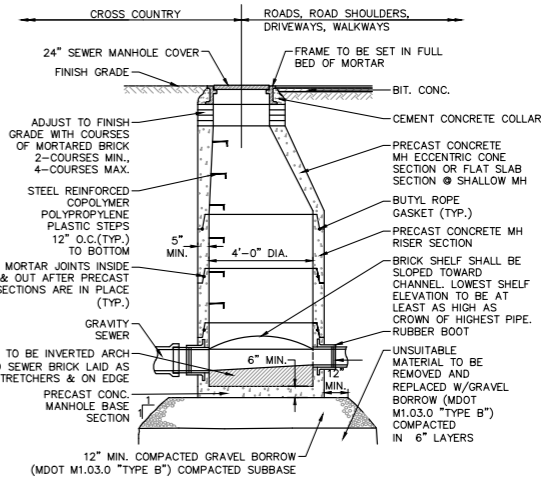
NOMINAL DIAMETER (D)	OUTSIDE DIAMETER (OD)	MIN. SPACING			
		C	S	X	H
12"	14.5"	25.4"	11"	8"	12"
15"	18"	28.9"	12"	8"	12"
18"	21"	33.9"	17"	9"	12"
24"	28"	40.7"	13"	10"	12"
30"	36"	53.1"	18"	18"	12"
36"	42"	63"	22"	18"	12"
42"	48"	71.9"	24"	18"	24"
48"	54"	78.5"	25"	18"	24"
60"	67"	90"	24"	18"	24"



AREA DRAIN IN PAVEMENT
NOT TO SCALE

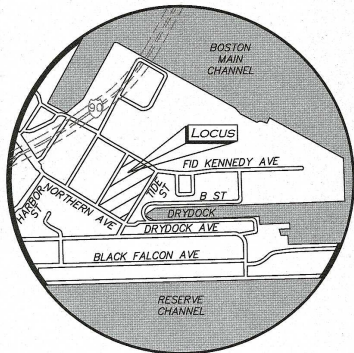


DOGHOUSE SEWER/DRAIN MANHOLE DETAIL
NOT TO SCALE



TYPICAL SEWER MANHOLE DETAIL
NOT TO SCALE

10/24/2019 10:28:08 AM C:\A\2019\10113837\iSQ Phase II\019_CHEERGRUEE.dwg



LOCUS MAP
(NOT TO SCALE)

UTILITY STATEMENT

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BENCHMARK SUMMARY

TBM #	DESCRIPTION	ELEV.
1	X-CUT IN HYDRANT FLANGE BOLT	17.65
2	CGSS IN UTILITY POLE #3458-15	17.50

LOCUS REFERENCES

-CITY OF BOSTON ASSESSORS PARCEL #0602674000

PLAN REFERENCES

- BOOK 8960 PAGE 479 AND 484.
- PLAN ENTITLED "BWSC MARINE INDUSTRIAL PARK WATER TRANSFER PROJECT" AS PREPARED BY THE BOSTON REDEVELOPMENT AUTHORITY/EDIC, PROJECT #5022 DATED JULY 25, 2009.
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- PLAN 570 OF 2017

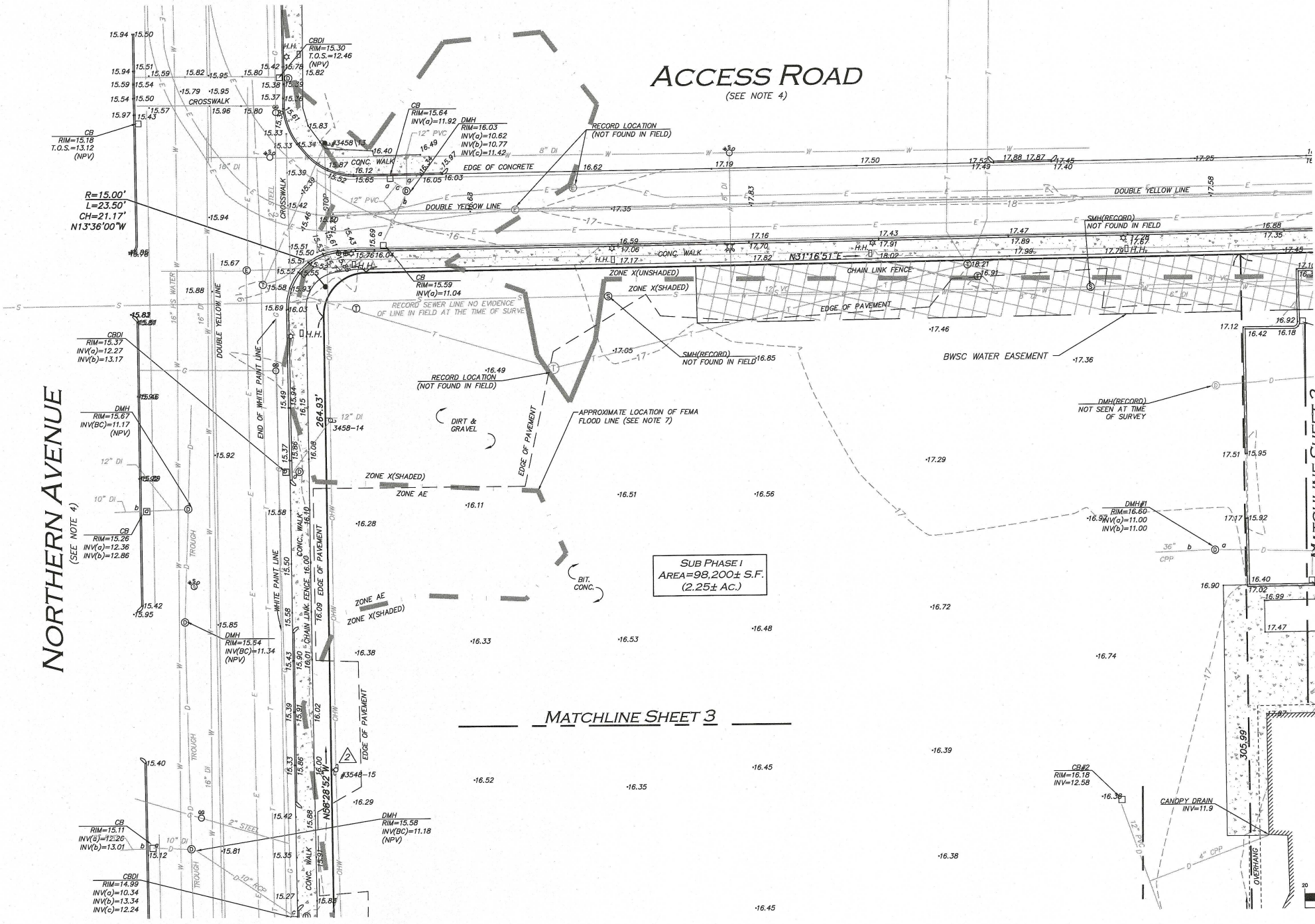
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- THE STREETS SHOWN HEREON ARE UNDER THE OWNERSHIP OF THE EDIC.
- VERTICAL DATUM IS BOSTON CITY BASE.
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FOR REGISTRY USE ONLY

LEGEND

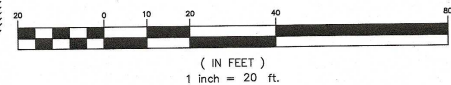
DRAIN MANHOLE (DMH)	⊙
SEWER MANHOLE (SMH)	⊗
ELECTRIC MANHOLE (EMH)	⊕
MISC. MANHOLE (MH)	⊖
TELEPHONE MANHOLE (TMH)	⊙
CATCH BASIN (CB)	⊠
ROUND CATCH BASIN (RCB)	⊡
UTILITY POLE	⊙
UTILITY POLE W/RISER	⊙
UTILITY POLE W/LIGHT	⊙
LIGHT	⊙
FIRE HYDRANT	⊙
BOLLARD	⊙
HAND HOLE	⊙
WATER GATE	⊙
GAS GATE	⊙
SIGN	⊙
FIRE ALARM BOX	⊙
SPOT GRADE	⊙
CONCRETE	⊙
TRUNCATED DOME STRIP	⊙
PROPERTY LINE	⊙
PHASE LINE	⊙
FLOOD LINE	⊙
EDGE OF PAVEMENT	⊙
CURB	⊙
CHAIN LINK FENCE	⊙
1' CONTOUR	⊙
5' CONTOUR	⊙
SEWER LINE	⊙
DRAIN LINE	⊙
WATER LINE	⊙
ELECTRIC LINE	⊙
TELEPHONE LINE	⊙
GAS LINE	⊙
OVERHEAD WIRES	⊙
VITRIFIED CLAY PIPE	⊙
INVERT	⊙
NO PIPES VISIBLE	⊙
TOP OF SILT	⊙
TOP OF WATER	⊙
TOP OF BELL	⊙
BOTTOM CENTER (BC)	⊙
REINFORCED CONCRETE PIPE	⊙
POLYVINYL CHLORIDE PIPE	⊙
CATCH BASIN DROP INLET	⊙
BITUMINOUS	⊙
CONCRETE	⊙
COTTON GIN SPINDLE SET	⊙



MATCHLINE SHEET 2

MATCHLINE SHEET 3

GRAPHIC SCALE



N:\PROJECTS\1935-02\SURVEY\DRAWINGS\5-1935-02-AB-PHASE 2.DWG
FB# 1711 PG. 135

WE HEREBY CERTIFY THAT:

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THE CITY OF BOSTON HAS NOT ADOPTED THE SUBDIVISION CONTROL LAWS.
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THE ABOVE IS CERTIFIED TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF.

ALLEN & MAJOR ASSOCIATES, INC.

Professional Land Surveyor for Allen & Major Associates, Inc.

REV	DATE	DESCRIPTION

APPLICANT/OWNER:
RELATED BEAL
177 MILK STREET
BOSTON, MA 02109

PROJECT:
6 TIDE STREET
BOSTON, MA

PROJECT NO. 1935-02 DATE: 2/19/19

SCALE: 1" = 20' DWG. NAME: 5-1935-02-EC

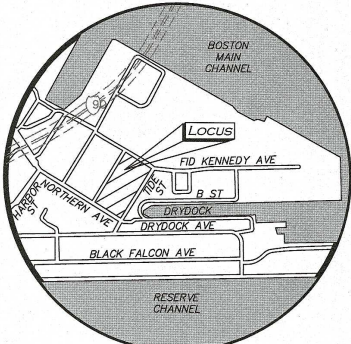
DRAFTED BY: AJR CHECKED BY: NIL

PREPARED BY:

ALLEN & MAJOR ASSOCIATES, INC.
civil & structural engineering • land surveying
environmental consulting • landscape architecture
www.allenmajor.com
100 COMMERCE WAY
P.O. BOX 2118
WOBURN MA 01888-0118
TEL: (781) 935-6889
FAX: (781) 935-3896
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DRAWING TITLE: EXISTING CONDITIONS SHEET NO. 1 OF 4



LOCUS MAP
(NOT TO SCALE)

UTILITY STATEMENT

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BENCHMARK SUMMARY

TBM #	DESCRIPTION	ELEV.
⚠	X-CUT IN HYDRANT FLANGE BOLT	17.68
⚠	CGSS IN UTILITY POLE #3458-15	17.50

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- PLAN 570 OF 1017

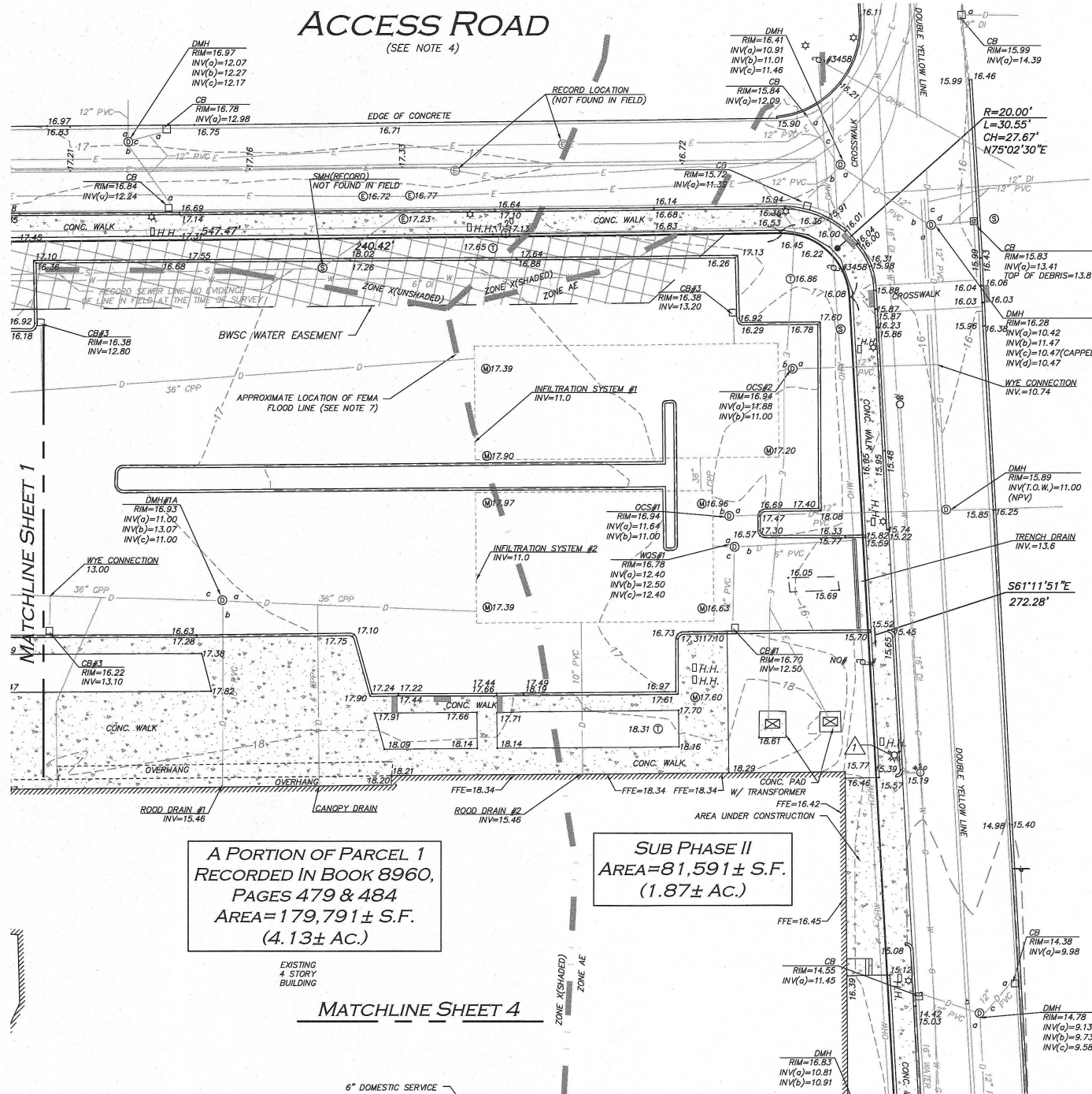
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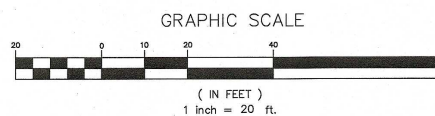
DRAIN MANHOLE (DMH)	⊙
SEWER MANHOLE (SMH)	⊙
ELECTRIC MANHOLE (EMH)	⊙
MISC. MANHOLE (MH)	⊙
TELEPHONE MANHOLE (TMH)	⊙
CATCH BASIN (CB)	⊙
ROUND CATCH BASIN (RCB)	⊙
UTILITY POLE	⊙
UTILITY POLE W/RISER	⊙
UTILITY POLE W/LIGHT	⊙
LIGHT	⊙
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HAND HOLE	⊙
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TRANSFORMER	⊙
SPOT GRADE	⊙
CONCRETE	⊙
TRUNCATED DOME STRIP	⊙
PROPERTY LINE	⊙
PHASE LINE	⊙
FLOOD LINE	⊙
EDGE OF PAVEMENT	⊙
BUILDING	⊙
BUILDING OVERHANG	⊙
CURB	⊙
CHAIN LINK FENCE	⊙
1' CONTOUR	⊙
5' CONTOUR	⊙
SEWER LINE	⊙
DRAIN LINE	⊙
WATER LINE	⊙
ELECTRIC LINE	⊙
TELEPHONE LINE	⊙
GAS LINE	⊙
OVERHEAD WIRES	⊙
VITRIFIED CLAY PIPE	⊙
INVERT	⊙
NO PIPES VISIBLE	⊙
TOP OF SILT	⊙
TOP OF WATER	⊙
TOP OF BELL	⊙
BOTTOM CENTER	⊙
REINFORCED CONCRETE PIPE	⊙
POLYVINYL CHLORIDE PIPE	⊙
CATCH BASIN DROP INLET	⊙
BITUMINOUS	⊙
CONCRETE	⊙
COTTON GIN SPINDLE SET	⊙



FID KENNEDY AVENUE
(SEE NOTE 4)

MATCHLINE SHEET 4

6" DOMESTIC SERVICE



N:\PROJECTS\1935-02\SURVEY\DRAWINGS\5-1935-02-AB-PHASE 2.DWG
FB# 1711 PG. 135

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THE ABOVE IS CERTIFIED TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF.

ALLEN & MAJOR ASSOCIATES, INC.

April 19, 2019
PROFESSIONAL LAND SURVEYOR FOR ALLEN & MAJOR ASSOCIATES, INC.



REV	DATE	DESCRIPTION

APPLICANT/OWNER:

RELATED BEAL
177 MILK STREET
BOSTON, MA 02109

PROJECT:

6 TIDE STREET
BOSTON, MA

PROJECT NO. 1935-02 DATE: 2/19/19

SCALE: 1" = 20' DWG. NAME: 5-1935-02-EC

DRAFTED BY: AJR CHECKED BY: NIL

PREPARED BY:

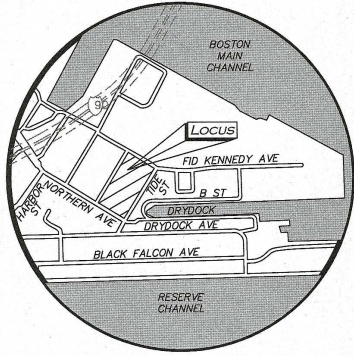
ALLEN & MAJOR ASSOCIATES, INC.
civil & structural engineering • land surveying
environmental consulting • landscape architecture
www.allenmajor.com
100 COMMERCE WAY
P.O. BOX 2118
WOBURN MA 01888-0118
TEL: (781) 935-6889
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DRAWING TITLE: SHEET No.

EXISTING CONDITIONS 2 OF 4

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LOCUS MAP
(NOT TO SCALE)

UTILITY STATEMENT

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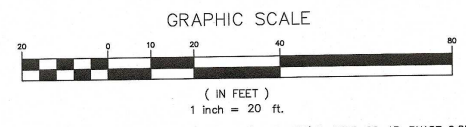
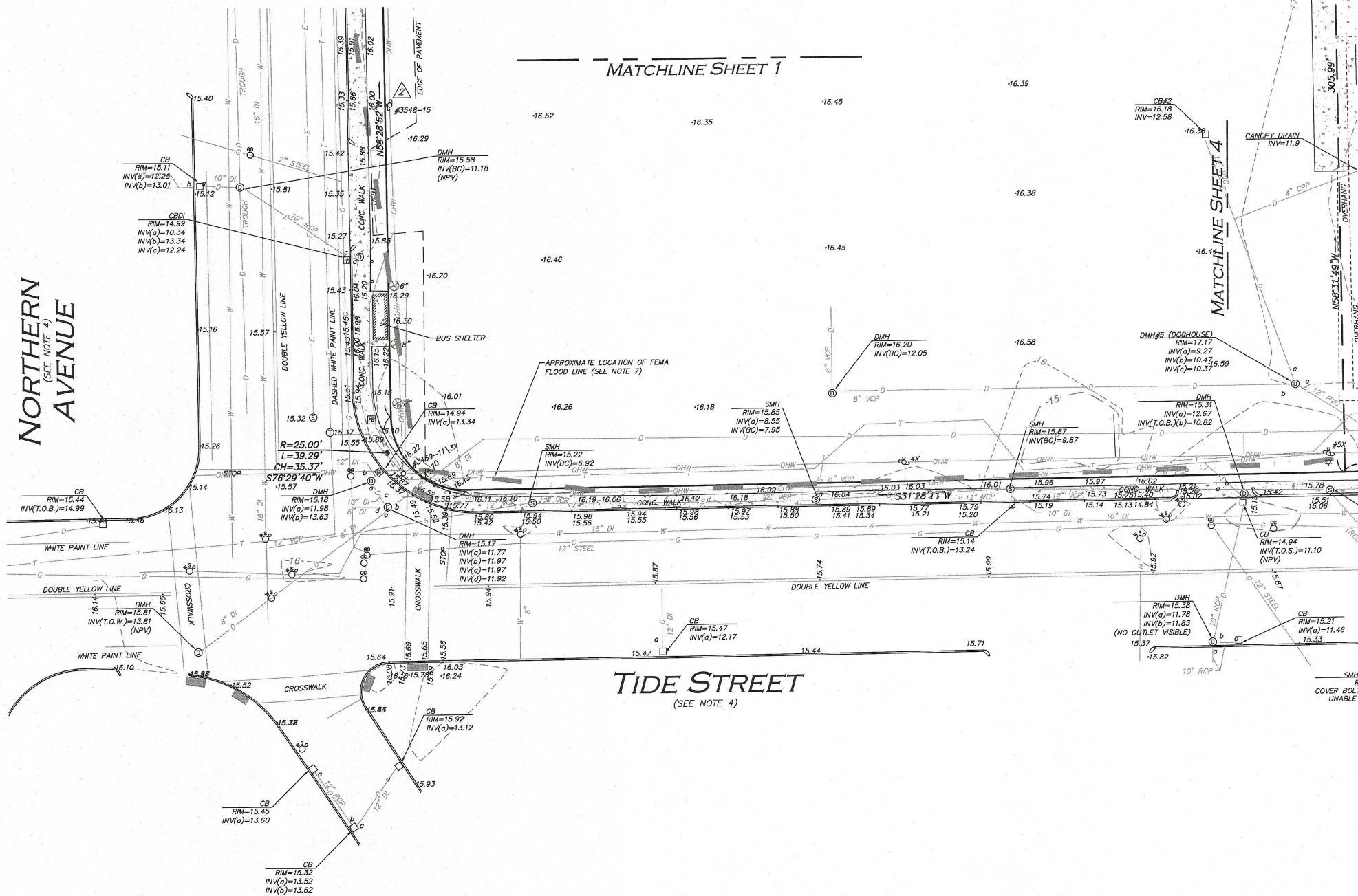
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LEGEND

DRAIN MANHOLE (DMH)	⊙
SEWER MANHOLE (SMH)	⊙
ELECTRIC MANHOLE (EMH)	⊙
MISC. MANHOLE (MH)	⊙
TELEPHONE MANHOLE (TMH)	⊙
CATCH BASIN (CB)	⊙
ROUND CATCH BASIN (RCB)	⊙
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UTILITY POLE W/ RISER	⊙
UTILITY POLE W/ LIGHT	⊙
LIGHT	⊙
FIRE HYDRANT	⊙
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GAS GATE	⊙
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BUILDING	⊙
BUILDING OVERHANG	⊙
CURB	⊙
CHAIN LINK FENCE	⊙
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SEWER LINE	⊙
DRAIN LINE	⊙
WATER LINE	⊙
ELECTRIC LINE	⊙
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TOP OF SILT	⊙
TOP OF WATER	⊙
TOP OF BELL	⊙
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REINFORCED CONCRETE PIPE	⊙
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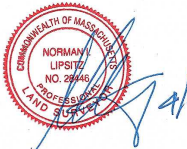
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APR 16 2019
PROFESSIONAL LAND SURVEYOR FOR ALLEN & MAJOR ASSOCIATES, INC.



REV	DATE	DESCRIPTION

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BOSTON, MA 02109**

PROJECT:
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BOSTON, MA**

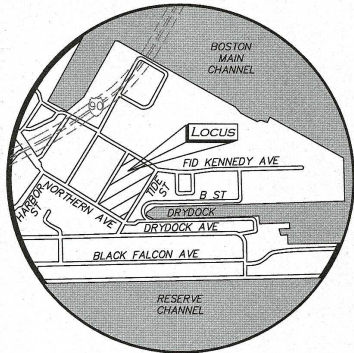
PROJECT NO. 1935-02 DATE: 2/19/19
SCALE: 1" = 20' DWG. NAME: S-1935-02-EC
DRAFTED BY: AIR CHECKED BY: NIL

PREPARED BY:

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DRAWING TITLE: EXISTING CONDITIONS SHEET No. 3 OF 4
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LOCUS MAP
(NOT TO SCALE)

UTILITY STATEMENT

THE UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. ALLEN & MAJOR ASSOCIATES, INC. (A&M) MAKES NO GUARANTEE THAT THE UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. A&M FURTHER DOES NOT WARRANT THAT THE UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. A&M HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

TBM #	DESCRIPTION	ELEV.
△	X-CUT IN HYDRANT FLANGE BOLT	17.68
△	CGSS IN UTILITY POLE #3458-15	17.50

LOCUS REFERENCES

-CITY OF BOSTON ASSESSORS PARCEL #0602674000

PLAN REFERENCES

-BOOK 8960 PAGE 479 AND 484.
 -PLAN ENTITLED "BWSC MARINE INDUSTRIAL PARK WATER TRANSFER PROJECT" AS PREPARED BY THE BOSTON REDEVELOPMENT AUTHORITY/EDIC, PROJECT #5022 DATED JULY 25, 2009.
 -PLAN ENTITLED "PLAN OF LAND, LEASE PARCEL 6 TIDE STREET OWNED BY THE ECONOMIC DEVELOPMENT AND INDUSTRIAL CORPORATION, BOSTON MASS." PREPARED BY ALLEN & MAJOR ASSOCIATES, DATED OCTOBER 21, 2014.
 -PLAN 570 OF 2017

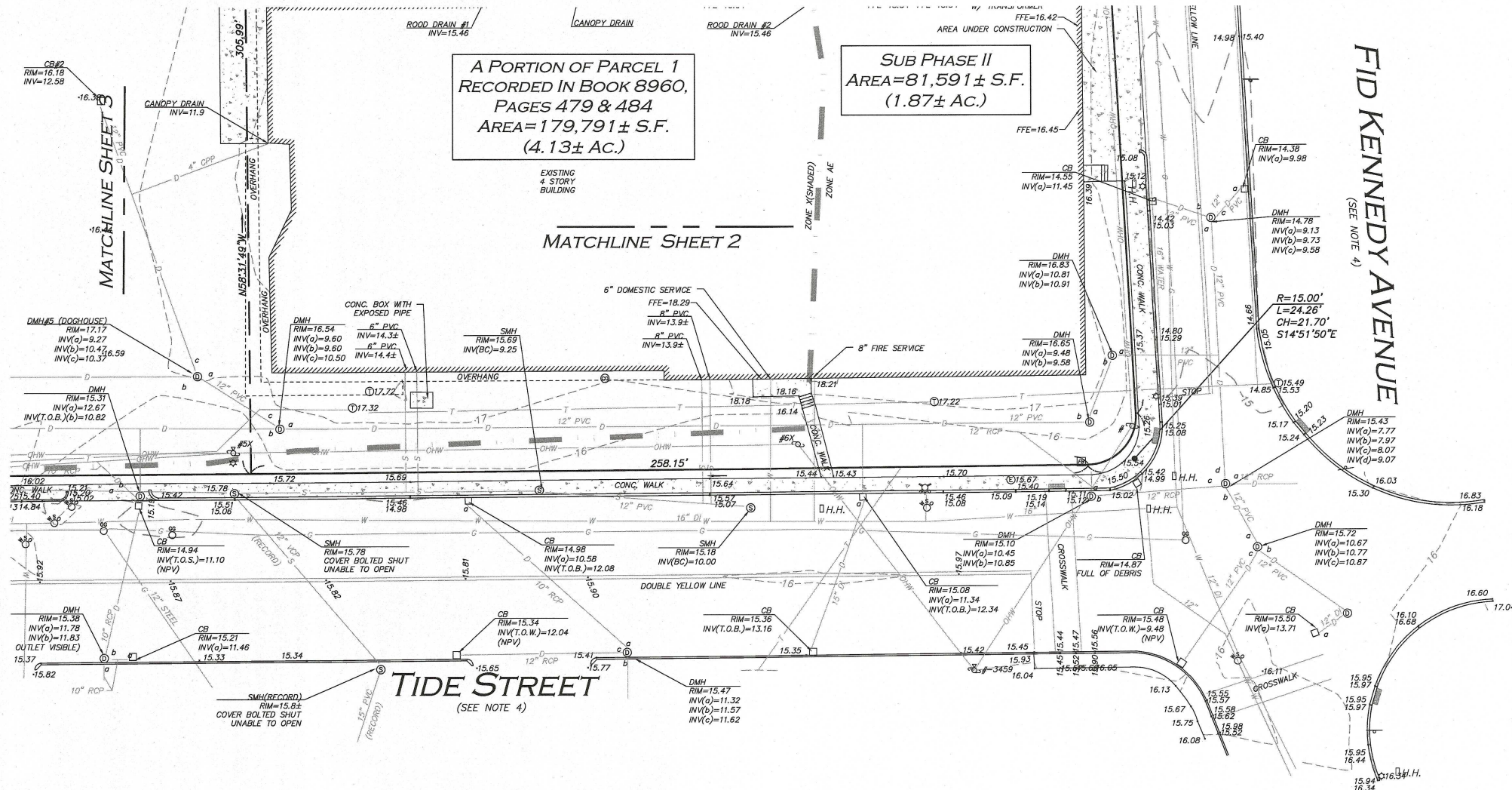
NOTES

- NORTH ARROW IS BASED UPON NAD 1983 (MASSACHUSETTS STATE PLANE COORDINATE SYSTEM MAIN LAND ZONE.)
- ALL CURB SHOWN HEREON IS GRANITE UNLESS OTHERWISE SPECIFIED.
- THERE WERE NO STRIPED PARKING SPACES VISIBLE AT THE TIME OF SURVEY.
- THE STREETS SHOWN HEREON ARE UNDER THE OWNERSHIP OF THE EDIC.
- VERTICAL DATUM IS BOSTON CITY BASE.
- CONTOUR INTERVAL IS ONE FOOT.
- FLOOD LINES SHOWN HEREON TRACED FROM THE FLOOD INSURANCE RATE MAP FOR THE CITY OF BOSTON MASSACHUSETTS SUFFOLK COUNTY COMMUNITY PANEL NUMBERS 250286 0081J AND 0082J, EACH WITH A LAST REVISED DATE OF MARCH 16, 2016.
- THERE WERE NO STRIPED PARKING SPACES AT THE TIME OF SURVEY.

FOR REGISTRY USE ONLY

LEGEND

DRAIN MANHOLE (DMH)	⊙
SEWER MANHOLE (SMH)	⊕
ELECTRIC MANHOLE (EMH)	⊖
MISC. MANHOLE (MH)	⊗
TELEPHONE MANHOLE (TMH)	⊘
CATCH BASIN (CB)	⊠
ROUND CATCH BASIN (RCB)	⊡
UTILITY POLE	⊙
UTILITY POLE W/ RISER	⊙
UTILITY POLE W/ LIGHT	⊙
LIGHT	⊙
FIRE HYDRANT	⊙
BOLLARD	⊙
HAND HOLE	⊙
WATER GATE	⊙
GAS GATE	⊙
SIGN	⊙
FIRE ALARM BOX	⊙
TRANSFORMER	⊙
SPOT GRADE	⊙
CONCRETE	⊙
TRUNCATED DOME STRIP	⊙
PROPERTY LINE	⊙
PHASE LINE	⊙
FLOOD LINE	⊙
EDGE OF PAVEMENT	⊙
BUILDING	⊙
BUILDING OVERHANG	⊙
CURB	⊙
CHAIN LINK FENCE	⊙
1' CONTOUR	⊙
5' CONTOUR	⊙
SEWER LINE	⊙
DRAIN LINE	⊙
WATER LINE	⊙
ELECTRIC LINE	⊙
TELEPHONE LINE	⊙
GAS LINE	⊙
OVERHEAD WIRES	⊙
VITRIFIED CLAY PIPE	⊙
INVERT	⊙
NO PIPES VISIBLE	⊙
TOP OF SILT	⊙
TOP OF WATER	⊙
TOP OF BELL	⊙
BOTTOM CENTER	⊙
REINFORCED CONCRETE PIPE	⊙
POLYVINYL CHLORIDE PIPE	⊙
CATCH BASIN DROP INLET	⊙
BITUMINOUS	⊙
CONCRETE	⊙
COTTON GIN SPINDLE SET	⊙



A PORTION OF PARCEL 1
 RECORDED IN BOOK 8960,
 PAGES 479 & 484
 AREA=179,791± S.F.
 (4.13± AC.)

SUB PHASE II
 AREA=81,591± S.F.
 (1.87± AC.)

FID KENNEDY AVENUE
 (SEE NOTE 4)

TIDE STREET
 (SEE NOTE 4)

WE HEREBY CERTIFY THAT:
 THIS PLAN IS THE RESULT OF AN ACTUAL ON THE GROUND SURVEY PERFORMED ON OR BETWEEN SEPTEMBER 26, 2014 AND JANUARY 30, 2019.
 THIS PLAN WAS PREPARED IN ACCORDANCE WITH THE RULES AND REGULATIONS OF THE REGISTERS OF DEEDS DATED JANUARY 1, 1976 AND REVISED JANUARY 12, 1988.
 THE CITY OF BOSTON HAS NOT ADOPTED THE SUBDIVISION CONTROL LAWS.
 THE ABOVE CERTIFICATION IS INTENDED TO MEET REGISTRY OF DEEDS REQUIREMENTS FOR THE RECORDING OF PLANS AND IS NOT A CERTIFICATION TO THE TITLE OR OWNERSHIP OF THE PROPERTY SHOWN. OWNERS OF ADJOINING PROPERTIES ARE SHOWN ACCORDING TO CURRENT CITY OF BOSTON ASSESSOR'S INFORMATION.
 THE ABOVE IS CERTIFIED TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF.
 ALLEN & MAJOR ASSOCIATES, INC.

PROFESSIONAL LAND SURVEYOR FOR ALLEN & MAJOR ASSOCIATES, INC.

2/10/19

REV	DATE	DESCRIPTION

APPLICANT/OWNER:
RELATED BEAL
 177 MILK STREET
 BOSTON, MA 02109

PROJECT:
6 TIDE STREET
 BOSTON, MA

PROJECT NO.	1935-02	DATE:	2/19/19
SCALE:	1" = 20'	DWG. NAME:	S-1935-02-EC
DRAFTED BY:	AJR	CHECKED BY:	NIL

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DRAWING TITLE:	SHEET No.
EXISTING CONDITIONS	4 OF 4

