

N/F FRC INC
PARCEL 200359900

LIMIT OF VERNAL POOL HABITAT

N/F ROWE FAMILY LLC
PARCEL 2003597003
12,933 SQUARE FEET

N/F ROXBURY HOME FOR AGED WOMEN
PARCEL 2003597004

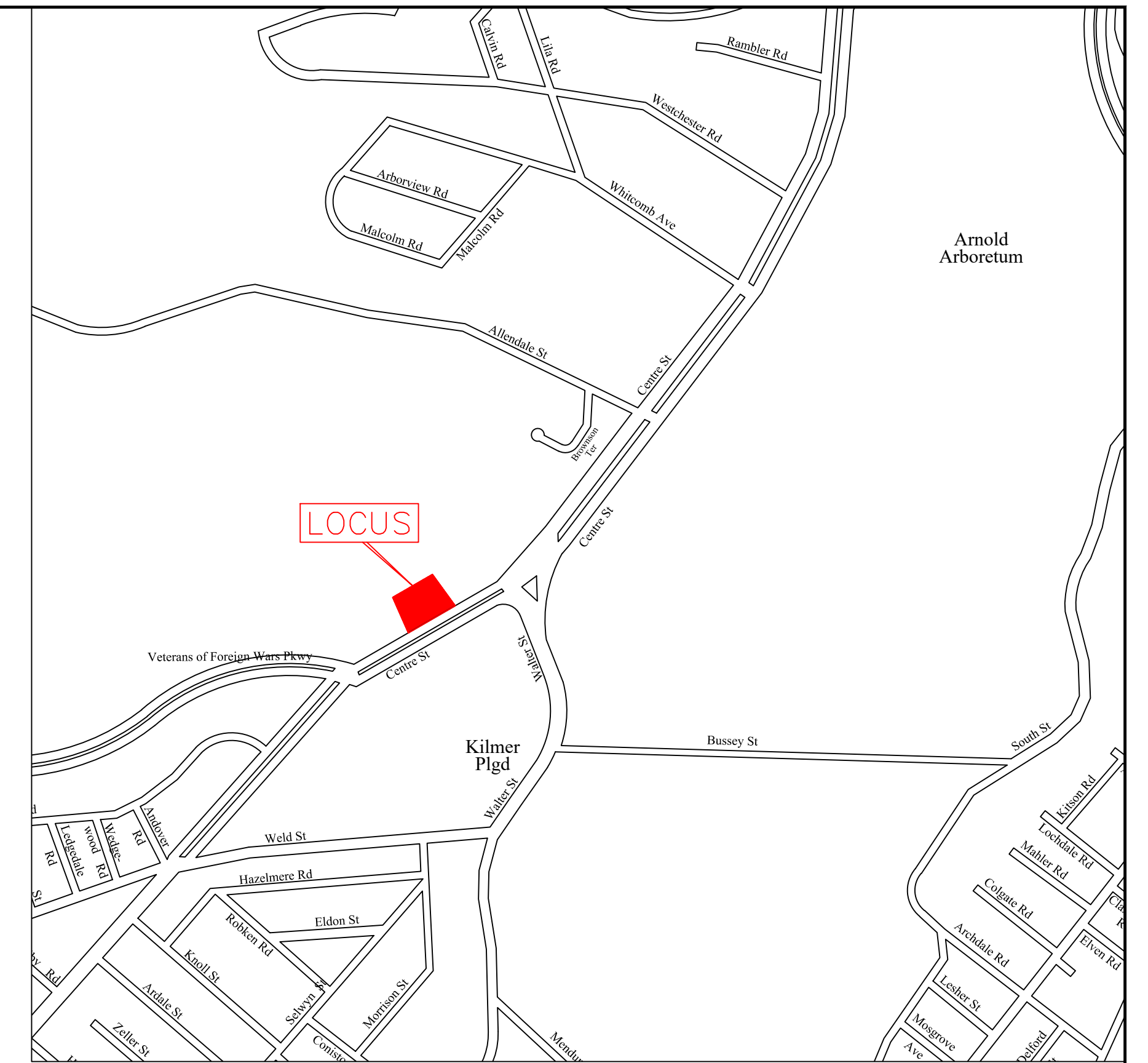
N/F ROXBURY HOME FOR AGED WOMEN
PARCEL 2003597002

EXISTING GRAVEL AREA

CENTRE STREET
80' WIDE PUBLIC WAY

SEH 12 C1CL 1932 (1995)

100' WETLAND BUFFER

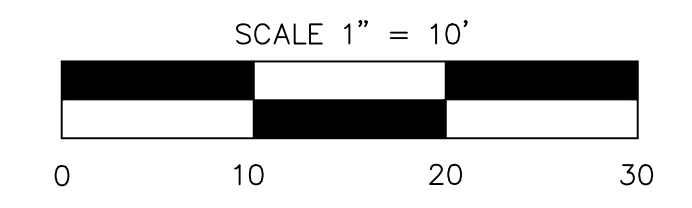


REFERENCES:
SUFFOLK COUNTY
DEEDS:
BOOK 8427 PAGE 563
BOOK 9560 PAGE 318
BOOK 39894 PAGE 89

PLANS:
BOOK 5900 PAGE 617
BOOK 6807 PAGE 495

LAND COURT
12247 A-H
24416 A-B

BOSTON PUBLIC WORKS
K-803
NB 725 PAGE 108-117
NB 807 PAGE 24-35
NB 876 PAGE 50-51
NB 893 PAGE 4-9
NB 1069 PAGE 4-5
NB 1140 PAGE 140-141
L 3475
L 6734
L 7430



THIS PLAN IS PREPARED AS A STUDY
AS PART OF A SUBMISSION TO THE
BOSTON ZONING BOARD OF APPEALS
THIS PLAN IS A RESULT OF FIELDWORK
CONDUCTED JANUARY 2017
PROPOSED DIMENSIONS ARE ACCURATE
ON THIS PLAN BUT ARE SUBJECT TO
CHANGE IN THE FIELD WHEN LAID OUT.

EXISTING CONDITIONS
1225-1229 and 1231A-1231B CENTRE STREET
WEST ROXBURY (ROSLINDALE DISTRICT)

FEBRUARY 23, 2017 SCALE: 1"=10'

VOZZELLA DESIGN GROUP INCORPORATED
3841 WASHINGTON STREET
BOSTON, MASSACHUSETTS 02131
617-983-8282

DRAWN BY:
J.G. VOZZELLA
CHECKED BY:
J.G. VOZZELLA
PROJ. MAN:
J.G. VOZZELLA

Paul L. Feldman

March 20, 2018

Amelia Croteau, Executive Secretary
Boston Conservation Commission
Boston City Hall, Room 709
Boston, MA 02201

Re: **1225 Centre Street – MassDEP File Number 006-1573**

Dear Ms. Croteau,

At the March 7, 2018 public hearing regarding the above Notice of Intent (“NOI”), members of the Commission asked for additional information regarding the project. This letter responds to two of those requests and the balance of the information requested has been provided by Rimmer Environmental Consulting, LLC and Vozzella Design Group Incorporated.

1. Vernal Pool Habitat

As presented on the plans filed with the NOI, there is a small area of vernal pool habitat that is coincident with the intermittent stream downgradient of the vernal pool that is north of the subject property. A question was raised as to how that habitat was determined.

As set forth in 310 CMR 10.04 Vernal Pool Habitat means confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions, **to the extent that such habitat is within an Area Subject to Protection under M.G.L. c. 131, § 40 as specified in 310 CMR 10.02(1).**

As set forth in 310 CMR 10.02 (1), the following areas are subject to protection under M.G.L. c. 131, § 40:

direct 617-589-3831 *direct fax* 617-305-3131
email pfeldman@davismalm.com

- (a) Any bank, any freshwater wetland, any coastal wetland, any beach, any dune, any flat, any marsh or any swamp, bordering on the ocean, any estuary, any creek, any river, any stream, any pond, or any lake
- (b) Land under any of the water bodies listed above
- (c) Land subject to tidal action
- (d) Land subject to coastal storm flowage
- (e) Land subject to flooding
- (f) Riverfront area.

Under this definition, therefore, vernal pool habitat includes (i) the pool itself and (ii) the area within 100 feet of the pool provided that the area is within one of the resource areas protected by the Wetlands Protection Act. Importantly, unlike buffer zone of bordering vegetated wetlands, the area beyond the boundary of the vernal pool itself is not simply within 100 feet of the boundary of the pool itself, but must also be within a resource area set forth in 310 CMR 10.02 (1).

This definition of the limit of vernal pool habitat is further elaborated upon in the Massachusetts Department of Environmental Protection Wildlife Habitat Protection Guidance for Inland Wetlands March 2006 (the "Guidance"). One of the purposes of the Guidance is to identify important wildlife habitat and illustrate the full extent of protection that can be afforded to protect important wildlife habitat in wetlands. Regarding vernal pool habitat the Guidance clearly articulates the regulatory requirement:

"Vernal pool habitat—that is the vernal pool and the 100-ft zone around a vernal pool—must occur within a resource area before it receives protection. Vernal pool habitat does not extend into non-jurisdictional upland or in the buffer zone of a resource area."

Moreover, in a recent case the Appeals Court affirmed that "[V]ernal pool habitat' as defined in 310 Code Mass. Regs. 10.04 (2008) is protected only to the extent that it falls within an 'Area Subject to Protection' under the act." *Cave Corp. v. Conservation Comm'n of Attleboro*, 91 Mass. App. Ct. 767, 772 (2017).

As shown on the NOI plans, in this case the vernal pool habitat extends 100 feet beyond the pool boundary within the intermittent stream channel and its associated banks, delineated by Rimmer Environmental Consulting as flags A1-A14 in December of 2016.

2. NOI Filing Requirements

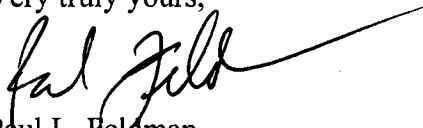
M.G.L. c. 131, § 40 provides that in order to obtain an Order of Conditions an applicant must obtain or apply for all obtainable permits, variances and approvals required by local by-law with respect to the proposed activity. A question was raised as to whether or not the Conservation Commission can determine that an Applicant must obtain other permits before an Order of Conditions issues. The Commission cannot.

The Wetlands Regulation at 310 CMR 10.05 (4) (e) provides that “the requirement under M.G.L. c. 131, § 40 to obtain or apply for all obtainable permits, variances and approvals required by local by-law with respect to the proposed activity shall mean only those which are feasible to obtain at the time the Notice of Intent is filed.” and 310 CMR 10.05 (4) (f) provides “if the issuing authority rejects a Notice of Intent because of a failure to obtain or apply for all permits, variances and approvals required by local by-law, it shall specify in writing the permit, variance or approval **that has not been applied for.**”

The Wetlands Protection Act provides the Applicant with a choice to obtain or apply for all obtainable permits, variances and approvals required by local by-law with respect to the proposed activity. The plain language of the statute does not provide that choice to a Conservation Commission.

Moreover as determined by the Division of Administrative Law Appeals *IN THE MATTER OF A.W. Perry South, Inc.*, Docket No. 2003-014, File No. SE31-726 (July 9, 2004), *available at* 2004 WL 4737147, at *1 the Administrative Magistrate held “The Wetlands Protection Regulations require only that an applicant apply for ‘all obtainable permits’ before its application is reviewed, and not that it actually obtain those permits first. See 310 CMR 10.05(4) (e).”

Very truly yours,


Paul L. Feldman

PLF:vr



Joyce Consulting Group, P.C.
100 Wyman Road
Braintree, MA 02184
hello@joycecg.com
781.817.6120

March 20, 2018

Conservation Commission
Ms. Amelia Croteau, Executive Secretary
City of Boston
One City Hall Square, Room 709
Boston, MA 02201

RE: SUBMITTAL – Response to review comments for 1225 Centre Street

Dear Ms. Croteau:

On behalf of our client, Vozzella Design Group, Joyce Consulting Group (JCG) is submitting the following revised information to be included with the Notice of Intent filing for work at 1225 Centre Street in the City of Boston. As you are aware, work proposed at this site includes the construction of two multi-family dwellings with associated site grading and utility work. The following documents are being submitted to the City for review and approval:

1. Stormwater Report 03/20/18
2. Revised Plans dated 03/20/18

We are also providing the following information in response to requested information from the March 7 Conservation hearing, DEP comments dated March 20, 2018, and a response to Nitsch Engineering's review dated March 7, 2018 addressing the peer review questions and comments. Please note that we are only including outstanding review comments in italic text that specifically apply to the Civil Engineering drawings and our response in plain text.

Review comments from the March 7, 2018 Conservation hearing

1. Site Plans detailing the retaining wall and proposed fill;

The Site Plan has been revised to significantly reduce the amount of retaining wall required, specifically in the area abutting the existing intermittent stream. The reduced length of wall will vary in height from approximately one foot to seven feet. The wall is shortest in the area above the bank. In this section modular block will be used requiring minimal excavation and a gravel foundation. Where the wall is above three feet in height, toward the right rear corner of the property, a cast in place concrete section will be built.

2. Narrative on the impact of the slope of the bank during construction (specifically of the retaining wall) and how the applicant plans to mitigate those impacts. Said narrative should also detail how the applicant will get equipment out and around those areas to perform work.

As noted above, the plan has been revised to significantly reduce the amount of proposed retaining wall parallel to the intermittent stream. The remaining length of wall will be constructed in previously disturbed areas on the site that will become the proposed parking area. The intermittent stream will be protected by erosion control staked every eighteen inches and inspected after every storm.

3. Clarification on how the Applicant's delineation is different from CDM Smiths determination (venal pool and BVW.)

It is understood that this item will be addressed under separate cover.

4. *Revised stormwater plans to include a stormwater overflow system to prevent flood and flooding when the infiltration unit is at capacity. Said plans shall be stamped by a licensed engineer.*

Please find the revised stormwater report attached. The site plan has been revised to show an overflow to a proposed manhole over the existing drain line as requested by BWSC.

Review comments prepared by Nitsch Engineering dated March 7, 2018

1. *The Topographic Plan provided includes proposed conditions information, so it's difficult to review the existing conditions, including the existing land cover, topography, and wetlands delineation and related offsets. In addition, the proposed conditions provided in the Topographic Plan are inconsistent with the proposed conditions on the Site Plan. The Applicant should provide plans that clearly show the existing and proposed conditions so that the proposed changes are clearly distinguishable.*

Comment noted, it is our understanding that an existing conditions plan will be provided for review.

2. *The project narrative in the Stormwater Report references that there will be new utility services (I.e., water, sewer, electric) required to service the site. These should be indicated on the plans.*

The Plans have been updated accordingly, these locations may be revised as a result of permitting with Boston Water and Sewer Commission.

3. *MECO Environmental Services performed eight (8) test pits to determine the fill extents and underlying soil conditions and to screen samples for lead and gasoline constituents.....*

It is understood that this item will be addressed under separate cover.

4. *The Applicant should provide a completed Climate Change Resiliency and Preparedness policy and related Checklist consistent with the guidance for Filing for a Wetlands Permit with the Boston Conservation Commission.*

It is understood that this item will be addressed under separate cover.

5. *Boston Water and Sewer Commission now requires that Applicants use NOAA Atlas 14 Precipitation depths, rather than Technical Paper 40 by the National Weather Service for the design storm events. The Applicant should confirm the source of the precipitation depths used in the HydroCAD model.*

Comment noted, the HydroCAD model has been revised accordingly.

6. *Boston Water and Sewer Commission requires that Applicants provide a recharge for the first 1-inch of stormwater runoff from impervious areas. The Applicant should confirm if this requirement is applicable to this project.*

Recharge has been provided for the first inch of runoff.

7. *The Stormwater Report and calculations use the previous site development, the gas and service station, as the existing condition. Since the gas station appears to have been demolished in 2010-11, with the site sitting vacant and covered with crushed stone, we question if the current site condition is a more accurate representation of the existing condition for the calculations.*

In an effort to be as conservative as possible, the drainage calculations have been revised to model the site in its current state.

8. *A new stormwater outfall is proposed and will serve as an overflow from the proposed recharge system. Additional detail should be provided for this outfall, including the elevation, proximity to the pond/wetland boundary, and stabilization measures. These details are necessary to ensure there will be no proposed work within the wetland and that the area will remain stabilized after construction.*

The overflow from the infiltration system has been relocated to a proposed drainage manhole over the existing outlet pipe for the intermittent stream. This location was requested by BWSC and has less impact on the resource area.

9. *The topographic information shown on the drainage maps in the Stormwater Report indicates that the entire site drains north towards the existing pond. However, the southern portion of the site appears to drain south towards Centre Street in both the existing and proposed condition. The maps should be updated as needed to represent the two (2) potential design points (Centre Street and the pond).*

Comment noted, both the intermittent stream and the site runoff to Centre Street both ultimately enter the City of Boston drainage system. This was the control point utilized in the revised calculations.

10. *The storage volume of the proposed recharge system appears to be exceeded beginning in the 2-year storm event. This is indicated by the peak storage elevation in HydroCAD being higher than the top of stone noted in the detail on the Site Plan. The size of the system may need to be increased to provide additional volume capacity.*

There may have been a conflict in the HydroCAD data and the plan data with regards to the system elevation, this error has been resolved as a result of the revised calculations.

CONFORMANCE WITH THE MASSDEP STORMWATER STANDARDS

Nitsch Engineering reviewed the stormwater design and calculations for general conformance with the Massachusetts Department of Environmental Protection (MassDEP) Stormwater Standards. Based on this review, Nitsch Engineering offers the following comments:

1. ***Standard 2** requires that the stormwater management system mitigate post-development flow rates to, at, or below predevelopment flow rates. The provided table and calculations indicate that the proposed stormwater management system meets this requirement. However, as noted in General Comment #5, the existing condition used in the HydroCAD model should be reviewed and modified to reflect the current site condition.*

The drainage calculations have been updated to reflect the crushed gravel.

2. ***Standard 3** requires that the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil type. As noted in General Comment #3, the results of the environmental testing should be reviewed to confirm that infiltration is appropriate for this site.*

Comment noted, this item will be addressed under separate cover.

3. ***Standard 4** requires that stormwater management systems be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). The Stormwater Report documents compliance with this credit, however additional water quality measures may be required as the site discharges to a Critical Area (certified vernal pool). Refer to the comment regarding Standard 6 below.*

The plan has been revised to replace the proposed deep sump catch basin with a stormwater quality unit that will provide the required TSS removal prior to infiltration.

4. **Standard 4** also requires the development and implementation of suitable practices for source control and pollution prevention. These measures must be identified in a long-term pollution prevention plan including good housekeeping, storing materials and waste products inside or under cover, vehicle washing, routine inspections and maintenance of stormwater best management practices (BMPs), spill prevention and response, maintenance of lawns, gardens, and other landscaped areas, storage and use of fertilizers, herbicides, and pesticides, pet waste management, and proper management of deicing chemicals and snow. This information should be added to the Operation and Maintenance Plan.

The Operation and Maintenance Plan has been revised to include the requested additional information.

5. **Standard 6** provides additional design requirements for projects with stormwater discharges near any other critical area. The proposed project discharges to a pond that contains a certified vernal pool, which is designated as a critical area under Standard 6. These requirements include: (1) The required Water Quality Volume = 1.0-inch times impervious area; and, (2) At least 44 % TSS removal must be provided prior to discharge to infiltration BMPs. The stormwater design should be updated to meet these requirements.

The stormwater design has been updated as requested.

6. **Standard 10** prohibits Illicit discharges to the stormwater management systems. A signed illicit discharge statement should be provided for record.

An Illicit discharge statement has been provided as requested.

Review comments provided by MA DEP dated March 20, 2018

Soil test pits required at infiltration site to verify soil types and the ESHGW. Since infiltration will be used for both recharge and mitigation of peak discharge rates, there must be at least 4 feet of separation btw the bottom of the infiltration system and ESHG. If not, then a mounding analysis is required.

The stormwater design has been revised to not account for infiltration in the mitigation of peak discharge rates during all storm events. This revision reduces the minimum required separation to two feet between the bottom of the system and estimated seasonal high groundwater. The proposed infiltration system will provide approximately four feet of separation based on the test pit information provided by MECO Environmental.

There can be no discharge of stormwater into a vernal pool.

The Plan has been revised to discharge the infiltration overflow directly into the existing drainage pipe.

Should you have any questions regarding these documents, please feel free to contact us at (781) 817-6120 or mjoyce@joycecg.com. We look forward to your further review and approval.

Best Regards,

JOYCE CONSULTING GROUP, INC.



Michael G. Joyce, PE



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March 21, 2018

Conservation Commission
Ms. Amelia Croteau, Executive Secretary
City of Boston
One City Hall Square, Room 709
Boston, MA 02201

RE: SUBMITTAL – 1225 Centre Street Supplemental Narrative

Dear Ms. Croteau:

On behalf of our client, Vozzella Design Group, Joyce Consulting Group (JCG) is submitting the following revised information to be included with the Notice of Intent filing for work at 1225 Centre Street in the City of Boston. As you are aware, work proposed at this site includes the construction of two multi-family dwellings with associated site grading and utility work. The following documents are being submitted to the City for review and approval:

1. Revised Plans dated 03/21/18

We are also providing the following information in response to requested information from the March 7 Conservation hearing, specifically additional information on the proposed retaining wall, bank stability and the project status as it relates to being a new or re-development.

The revised site plans substantially shrink the footprint of the parking area compared to originally proposed, moving the proposed edge of asphalt parking an additional seven feet (approximately) away from the resource area. With the adjustment to the alignment of the parking area and removing a parking space, a retaining wall is no longer needed adjacent to the resource area. The proposed grade along the edge of asphalt will match the existing grade at this portion of the parking area.

As a result of the revised parking area layout, there will be no excavation for a proposed retaining wall between the edge of parking and the resource area. The proposed retaining wall will consist of a cast-in-place concrete retaining wall with a four-foot deep subsurface footing, the exposed portion of the retaining wall will vary dependent on depth. To excavate for the retaining wall, construction equipment will enter from Centre Street through an existing curb cut. All work for the proposed retaining wall will be conducted from the existing compacted gravel areas and at no time will there be equipment traversing up or down the existing bank.

Erosion controls will be installed at the limit of work, delineating the location of the bank. If at any time a disturbance to the bank does occur, the area will be immediately restored. If necessary, just mesh will be laid on the bank and a wetland buffer seed mix will be planted to re-establish vegetation.

The reduction in impervious area as a result of the removed parking space will have a positive impact on the drainage calculations. As such, the drainage report was not revised from the one issued on March 21, 2018. At the request of the Commission, this development is being designed as a “new” development and meets all of the required stormwater standards.

Joyce Consulting Group – Job No. 17-058
March 22, 2018
Page 2

I hope that this information addresses all of the remaining outstanding issues. Should you have any questions regarding these documents, please feel free to contact us at (781) 817-6120 or mjoyce@joycecg.com. We look forward to your further review and approval.

Best Regards,

JOYCE CONSULTING GROUP, INC.

A handwritten signature in blue ink, appearing to read "Michael G. Joyce". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michael G. Joyce, PE



Wildlife Habitat Evaluation 1225 Centre Street West Roxbury, MA

March 20, 2018

1.0 INTRODUCTION

The subject of the subject Notice of Intent filed under the Massachusetts Wetlands Protection Act (MGL Ch. 131 s. 40) is the proposed development of a 12,933 square foot parcel located at 1225. This project will require work to be conducted within the 100-foot buffer zone to jurisdictional wetland resources. A small portion of the site is also located within the 100-foot buffer zone to a Certified Vernal Pool, located approximately 80 feet north of and upstream of the project site. The associated Vernal Pool Habitat extends from the boundary of the vernal pool 100 feet, to the extent that such habitat is within a jurisdictional wetland resource area as specified in 310 CMR 10.02(1). This vernal pool habitat therefore includes approximately 23 linear feet of stream channel and Inland Bank resource within the project site.

No work is proposed within the Vernal Pool Habitat and no work is proposed within any other wetland resource which would trigger the requirement for preparation of a Wildlife Habitat Evaluation (WHE) as described in 310 CMR 10.60. Even though the project does not require a WHE, the following information has been prepared at the request of the Boston Conservation Commission to evaluate the potential for any adverse impacts to protected wildlife habitat functions of wetland resource areas at the project site. By providing this information the Applicant is not waiving the position that under the regulations it is not required.

A Wildlife Habitat Evaluation (WHE) is intended to assess whether a project will result in temporary or long term adverse effect on wildlife habitat characteristics listed in 310 CMR 10.60(2) such that after two growing seasons following project completion, the project will substantially reduce the capacity of the wetland resource to provide important wildlife habitat functions such as shelter, food and breeding areas and consequently reduce the site's capacity to support wildlife. The WHE is designed to identify significant habitat features as an indicator of wildlife habitat function, such as food, cover, nesting or breeding areas. It does not provide an inventory of wildlife populations or any direct protection to wildlife itself but rather the wildlife habitat functions that a wetland resource may provide. If potential adverse impacts to resource functions are identified, the WHE provides recommendations for measures to avoid or mitigate these effects.

This WHE is based upon observations of the site on by Mary Rimmer, Sr. Wetland Scientist and Certified Wetland Scientist, on February 13 and March 19, 2018. A

MassDEP Simplified Wildlife Habitat Evaluation Form (Appendix A) is also attached as to provide additional documentation of any significant habitat features.

2.0 EXISTING CONDITIONS

The project site is a former gas station that was demolished in recent years to facilitate site remediation which has now been completed. The majority of the site presently contains a relatively flat and open gravel pad in the area of the previous pavement and structures, and subsequent remediation. Several piles of gravel fill material remain along the rear property boundary and the southwestern property boundary. An intermittent stream drains from the vernal pool described above, into a well-defined intermittent stream channel and then into a 24-inch culvert in the northwestern portion of the site where it then discharges under the southern portion of the site and under Centre Street. Between the stream bank and the proposed development is a very steep slope (estimated to be 1:1 horizontal:vertical) consisting of unconsolidated fill material. The slope rises approximately 7 feet above the bank to the developed portion of the site. There are 2 large trees very close together on the slope near the inlet to the culvert consisting of a 24-inch american elm (*Ulmus americana*) a twin 24-inch tree of heaven (*Ailanthus altissima*), one with a portion of the top broken off. A 30-inch black locust (*Robinia pseudoacacia*) is located above and just west of the culvert. The remainder of the slope consists primarily of non-native and invasive plant species, especially Japanese knotweed (*Polygonum cuspidatum*), multiflora rose (*Rosa multiflora*) and asiatic bittersweet (*Celastrus orbiculatus*). Under the trees and near the culvert are shrub sized tree-of-heaven.



View east of gravel pad and fill areas at rear of site 2-13-18



View north of slope containing Japanese knotweed



View upstream from culvert



2 mature trees on slope near inlet to culvert

4.0 EVALUATION OF WILDLIFE HABITAT FEATURES

The site was divided into four zones for evaluation as follows:

1. The gravel pad which was the location of the previous development and contaminated soil removal. This area is virtually devoid of vegetation, organic matter or topsoil and therefore lacks any potential food, cover, nesting or breeding habitat. This environment is particularly inhospitable to the vernal pool breeding amphibians due to lack of shade, topsoil, cover and food source.
2. The southern property boundary and southwestern property corner. These areas contain piles of gravel fill and some construction debris. They are vegetated, but almost exclusively with non-native and invasive vegetation typical of urbanized areas and also lack topsoil. Vegetation includes predominantly Japanese knotweed, seedling to shrub sized tree-of-heaven, and asiatic bittersweet. These invasive plants contain little wildlife habitat value since native wildlife are not well adapted to them and because their opportunistic growth in typically disturbed sites outcompetes native vegetation with higher wildlife value. This area did not contain any significant habitat features again due to lack of suitable food source, and poor substrate conditions. It is likely that the shrubs provide some cover during the growing season for typical urban bird species.
3. The slope from the developed portion of the site to the stream bank. This area contains unconsolidated substrate vegetated almost exclusively with Japanese knotweed along much of its length. Other plants include the non-native multiflora rose and seedling Norway maple. The slope did not contain any burrows or nest sites and the unconsolidated material make them poorly suited for this use in most areas. The 4 mature trees near the culvert provide some shade and cover in this part of the site, but did not contain any significant cavities for wildlife. Only the American elm is native. The slope on the opposite bank contains much higher diversity of trees, and include native species such as red maple (*Acer rubrum*), black birch (*Betula lenta*), and black cherry (*Prunus serotina*) and significantly less Japanese knotweed.
4. The intermittent stream channel. Where the channel enters the site from the north, it is approximately 7 feet wide bank to bank. It widens to about 13 feet and then narrows again to 4 feet at the culvert. There was flow at the time of both observations to average depths less than 6 inches. A tree had fallen across the channel and created a small dam where depths were slightly deeper. The substrate is sandy and mucky. The channel bottom may dry up during the summer months and according to a photos included in a report prepared by CDM (revised March 27, 2017) for the Sophia Snow Place, may even become partially vegetated with herbaceous species such as jewelweed (*Impatiens capensis*). The portion of this channel within 100 feet of the vernal pool is considered part of the vernal pool habitat and is therefore considered significant to the protection of wildlife habitat functions provided by the pool. This stream does not support fish, but is likely to support a variety of invertebrates that can provide a food source for wildlife.

None of the areas described above provide any of the significant wildlife habitat features described in the attached MassDEP Appendix A: Simplified Wildlife Habitat Evaluation Form which would suggest a need to provide a more detailed Appendix B evaluation. The most significant habitat is the stream channel itself and the west bank which has a more protected and less disturbed buffer with more native plant cover and more structural diversity in the cover types.

5.0 PROJECT IMPACTS AND MITIGATION MEASURES

The portion of the site proposed to be developed was determined to contain very poor quality wildlife habitat value. Portions of the site with the most significant habitat including the stream and the western bank will remain undisturbed under the proposed development. The project site is located downgradient of the vernal pool. Therefore, all stormwater flows away from the pool toward the culvert as it will under proposed conditions as well. The project site will not destroy vegetation or habitat that would adversely impact the productivity of the vernal pool. The fact that there is breeding habitat for vernal pool species at this pool is due to recruitment and dispersal areas for amphibians located to the north and west of the site because the areas proposed to be developed cannot support amphibians.

The project requires very little disturbance to vegetation, and includes removal only of non-native species with little habitat significance along the rear of the site and some Japanese knotweed on the eastern slope above the stream in order to construct the retaining wall. Erosion control measures will be required to minimize the potential for erosion of this slope and sedimentation of the resource during construction.

The most significant portions of the site for wildlife were determined to be the resource area itself (the intermittent stream channel) and the western stream bank. The eastern bank, other than its proximity to the resource, does not by itself provide any significant habitat features. The one American elm should be preserved as it provides cover, shade and food source for wildlife. In order to enhance wildlife habitat, native berry-producing shrubs have been proposed as part of the landscape planting plan. These include shadbush (*Amelanchier canadense*), inkberry (*Ilex glabra*) and highbush blueberry (*Vaccinium corymbosum*).

Based on the evaluation of this site and review of the proposed site conditions, REC concludes that project will not adversely impact wildlife habitat characteristics listed in 310 CMR 10.60(2) such that it would “substantially reduce the capacity of the wetland resource to provide important wildlife habitat functions such as shelter, food and breeding areas.”



Wildlife Habitat Protection Guidance

Appendix A: Simplified Wildlife Habitat Evaluation

Project Information

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



1225 Centre St. West Roxbury

Project Location (from NOI)

Mary W Rimmer

Name of Person Completing Form

3-19-18

Date

Important Habitat Features

Direct alterations to the following important habitat features in resource areas may be permitted only if they will have no adverse effect (refer to Section V).

- Habitat for state-listed animal species (receipt of a positive opinion or permit from MNHESP shall be presumed to be correct. Do not refer to Section V).
- Sphagnum hummocks and pools suitable to serve as nesting habitat for four-toed salamanders
- Trees with large cavities (≥ 18 " tree diameter at cavity entrance)
- Existing beaver, mink or otter dens
- Areas within 100 feet of existing beaver, mink or otter dens (if significant disturbance)
- Existing nest trees for birds that traditionally reuse nests (bald eagle, osprey, great blue heron)
- Land containing freshwater mussel beds
- Wetlands and waterbodies known to contain open water in winter with the capacity to serve as waterfowl winter habitat
- Turtle nesting areas
- Vertical sandy banks (bank swallows, rough-winged swallows or kingfishers)

The following habitat characteristics when not commonly encountered in the surrounding area:

- Stream bed riffle zones (e.g. in eastern MA)
- Springs
- Gravel stream bottoms (trout and salmon nesting substrate)
- Plunge pools (deep holes) in rivers or streams
- Medium to large, flat rock substrates in streams



Wildlife Habitat Protection Guidance

Appendix A: Simplified Wildlife Habitat Evaluation

Activities

When any one of the following activities is proposed within resource areas, applicants should complete a Detailed Wildlife Habitat Evaluation (refer to Appendix B).

- Activities located in mapped “Habitat of Potential Regional or Statewide Importance”
- Activities affecting certified or documented vernal pool habitat, including habitat within 100’ of a certified or documented vernal pool when within a resource area
- Activities in bank, land under water, bordering land subject to flooding (presumed significant) where alterations are more than twice the size of thresholds
- Activities affecting vegetated wetlands >5000 sq. ft. occurring in resource areas other than Bordering Vegetated Wetland
- Activities affecting the sole connector between habitats >50 acres in size
- Installation of structures that prevent animal movement
- Activities for the purpose of bank stabilization using hard structure solutions that significantly affect ability of stream channel to shift and meander, or disrupt continuity in cover that would inhibit animal passage
- Dredging (greater than 5,000 sf)



REC

Rimmer Environmental Consulting, LLC

57 Boston Road ◦ Newbury, MA 01951 ◦ Tel 978-463-9226 ◦ Fax 978-463-8716

March 19, 2018

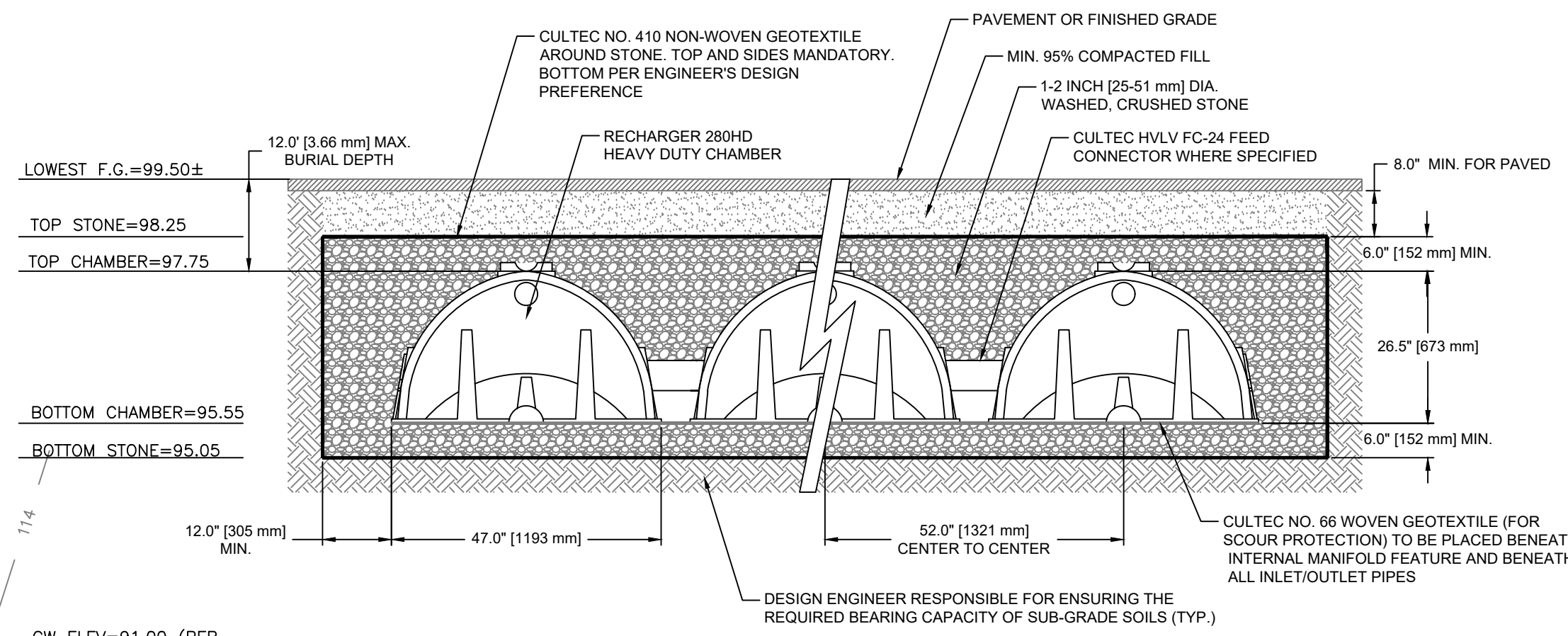
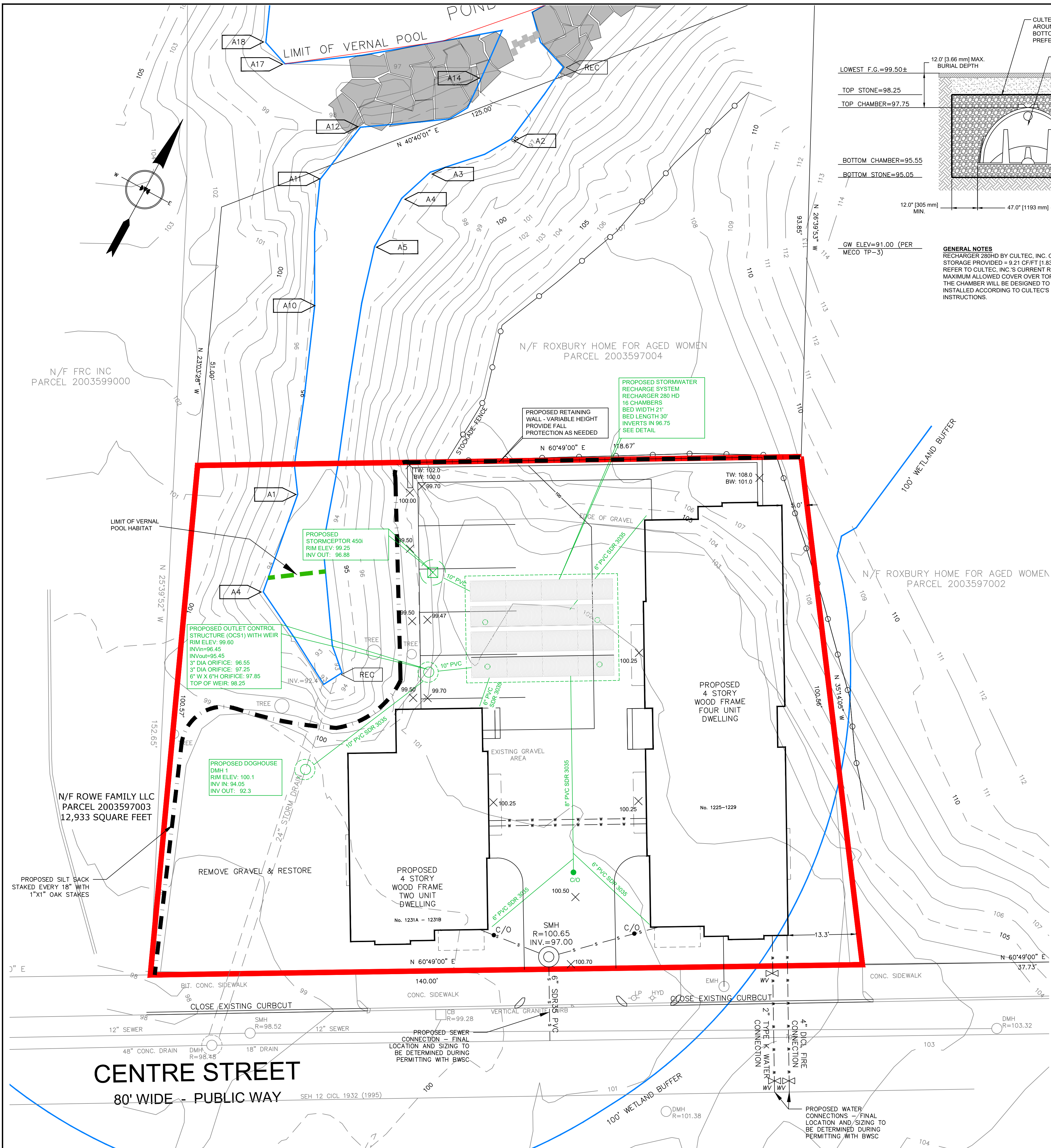
To: Boston Conservation Commission
From: Mary Rimmer
Re: Wetland Delineation, 1225 Centre Street
MassDEP # 006-1573

At your request, I have reviewed the delineation conducted by CDM Smith for the Boston Parks and Recreation Department in June 2016 that is applicable to the subject property and Rimmer Environmental Consulting, LLC ("REC") provides the following additional information regarding the delineation of wetland resources at the site presented by the Applicant. A review of the CDM report you provided, revised through March 27, 2017, and the accompanying figure depicting the location of wetland flags indicates the wetland boundary is very similar to REC's delineation of December 2016. The CDM figure is based on GPS survey and not a more accurate instrument survey as has been prepared by the Applicant so some discrepancy may be due to differences in the degree of error of survey methods. Of the 44 flags placed by CDM, only 6 are on 1225 Centre Street. Therefore, the written report was largely focused on a description of other portions of their delineation and their data forms were not based on transects at 1225 Centre Street. For this reason, it is difficult to distinguish from the report which flags are intended to represent Inland Bank resource and which are Bordering Vegetated Wetland (BVW) on the 1225 Centre St, parcel. Generally, when there is a very narrow fringe of BVW along a Bank the delineator will flag the higher of the two resources and not both. In the case of CDM delineation, portions of their flagging may depict BVW and portions BVW, depending on which one was most upgradient. However, because both Inland Bank and BVW contain a similar 100-foot Buffer Zone and are protected for similar resource functions, it is a distinction that has little consequence for the project proposed in the Notice of Intent. REC found nearly 100% upland vegetation on the eastern bank (primarily Japanese knotweed) that is closest to the project development and generally no vegetation downgradient of the flags toward the stream channel to the water surface and therefore concluded this was Bank resource. There was a very small amount of wetland vegetation that was included in the delineation on the western bank which could be categorized as BVW.

Below are photos taken on December 12, 2016 showing the CDM flags in blue and REC flags in pink/black stripes. As you will note, the flags are right next to each other and the boundary is very similar.



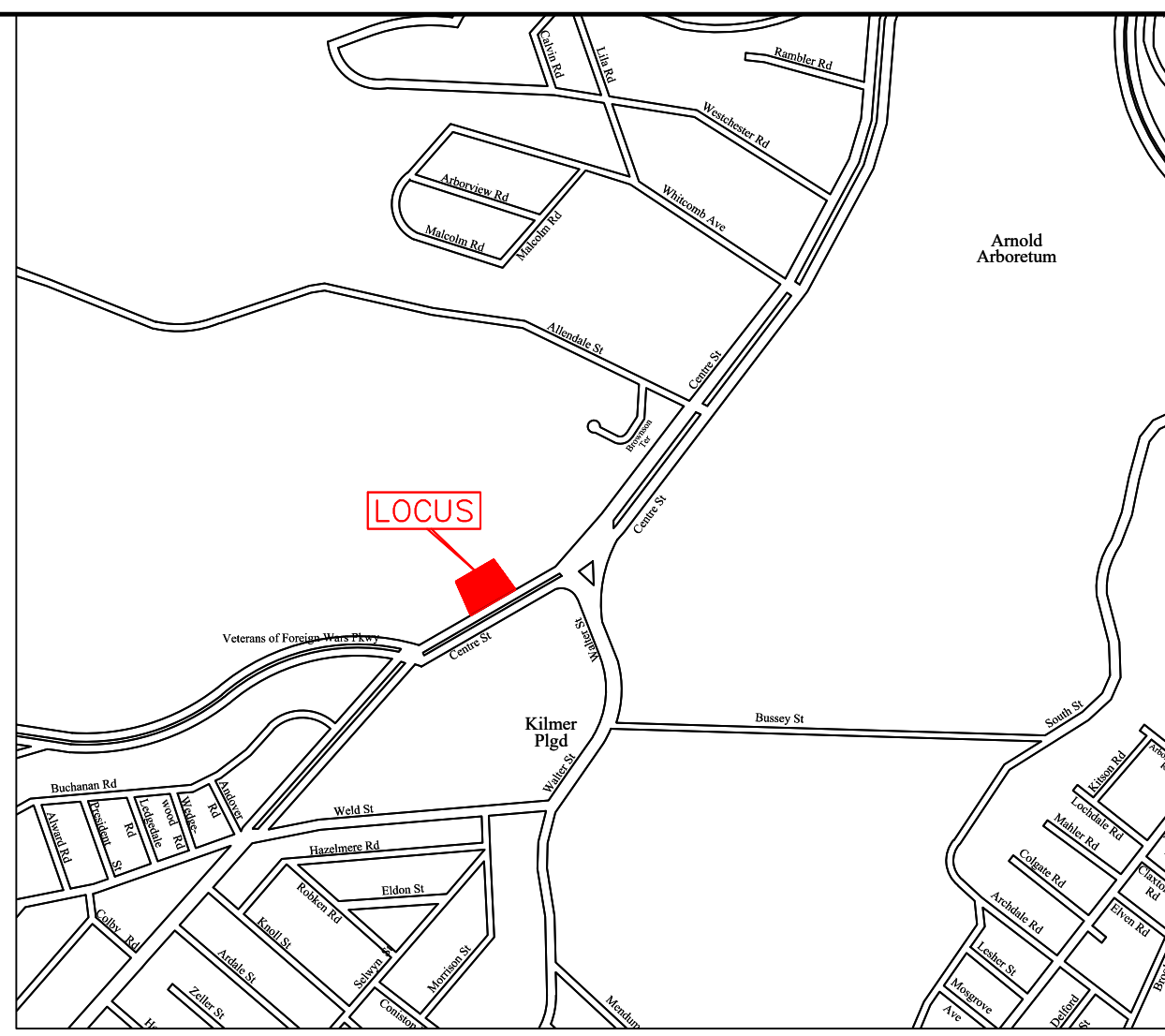
Photo Dec 12, 2016



GENERAL NOTES
 RECHARGER 280HD BY CULTEC, INC. OF BROOKFIELD, CT. STORAGE PROVIDED = 9.21 CF/FT (1.83 m³/m) PER DESIGN UNIT. REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES. MAXIMUM ALLOWED COVER OVER TOP OF UNIT SHALL BE 12" (305 mm). THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.

ALL RECHARGER 280HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER. ALL RECHARGER 280HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

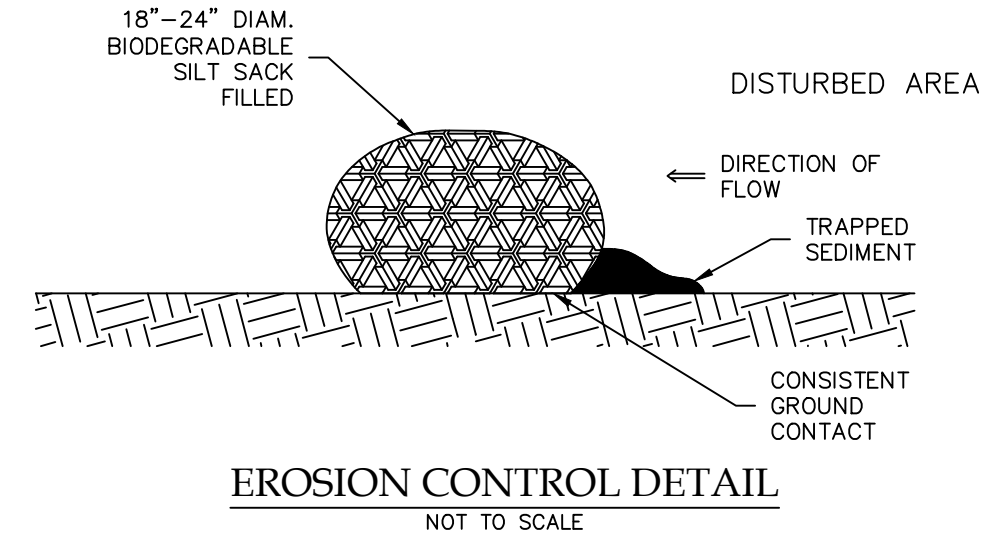
UNDERGROUND INFILTRATION AREA
 NOT TO SCALE



THIS PLAN IS PREPARED AS A STUDY AS PART OF A SUBMISSION TO THE BOSTON ZONING BOARD OF APPEALS

THIS PLAN IS A RESULT OF FIELDWORK CONDUCTED JANUARY 2017

PROPOSED DIMENSIONS ARE ACCURATE ON THIS PLAN BUT ARE SUBJECT TO CHANGE IN THE FIELD WHEN LAID OUT.



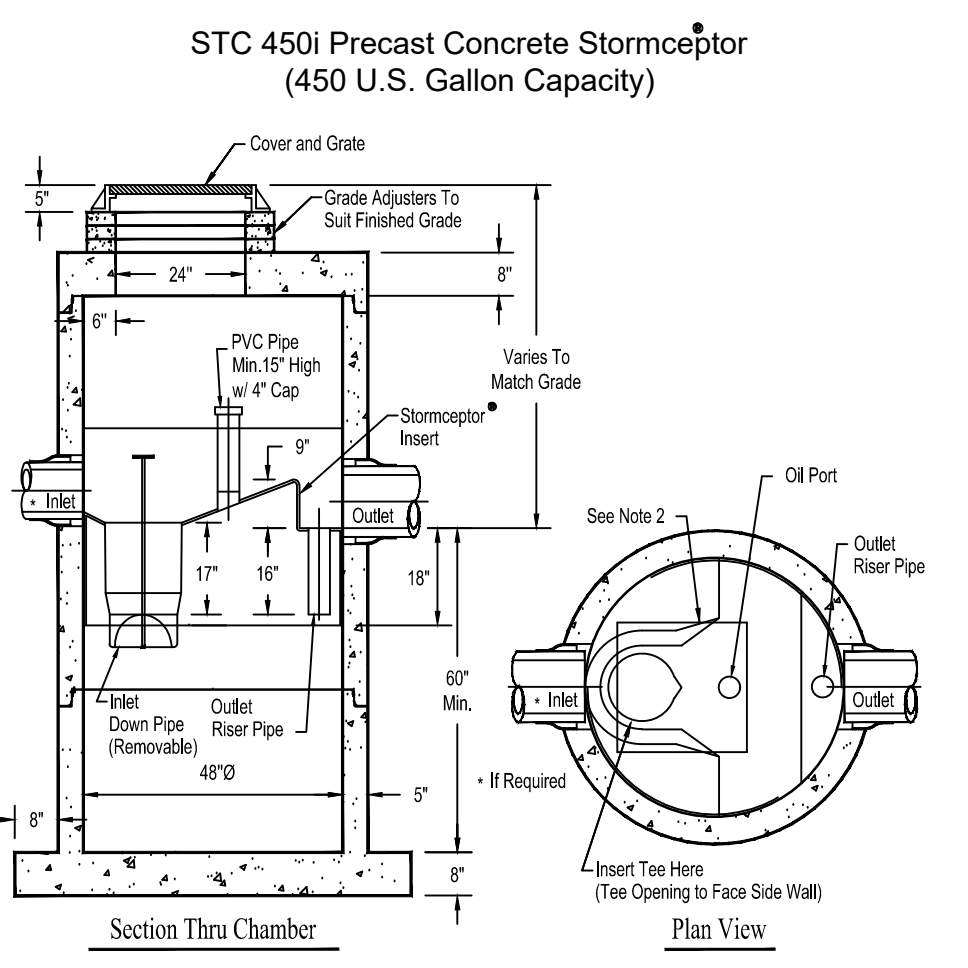
REFERENCES:

SUFFOLK COUNTY DEEDS:
 BOOK 8427 PAGE 563
 BOOK 9560 PAGE 318
 BOOK 39894 PAGE 89

PLANS:
 BOOK 5900 PAGE 617
 BOOK 6807 PAGE 495

LAND COURT
 12247 A-H
 24416 A-B

BOSTON PUBLIC WORKS
 K-603
 NB 8077 PAGE 24-35
 NB 876 PAGE 50-51
 NB 893 PAGE 4-9
 NB 1069 PAGE 4-5
 L 3475
 L 6734
 L 7430



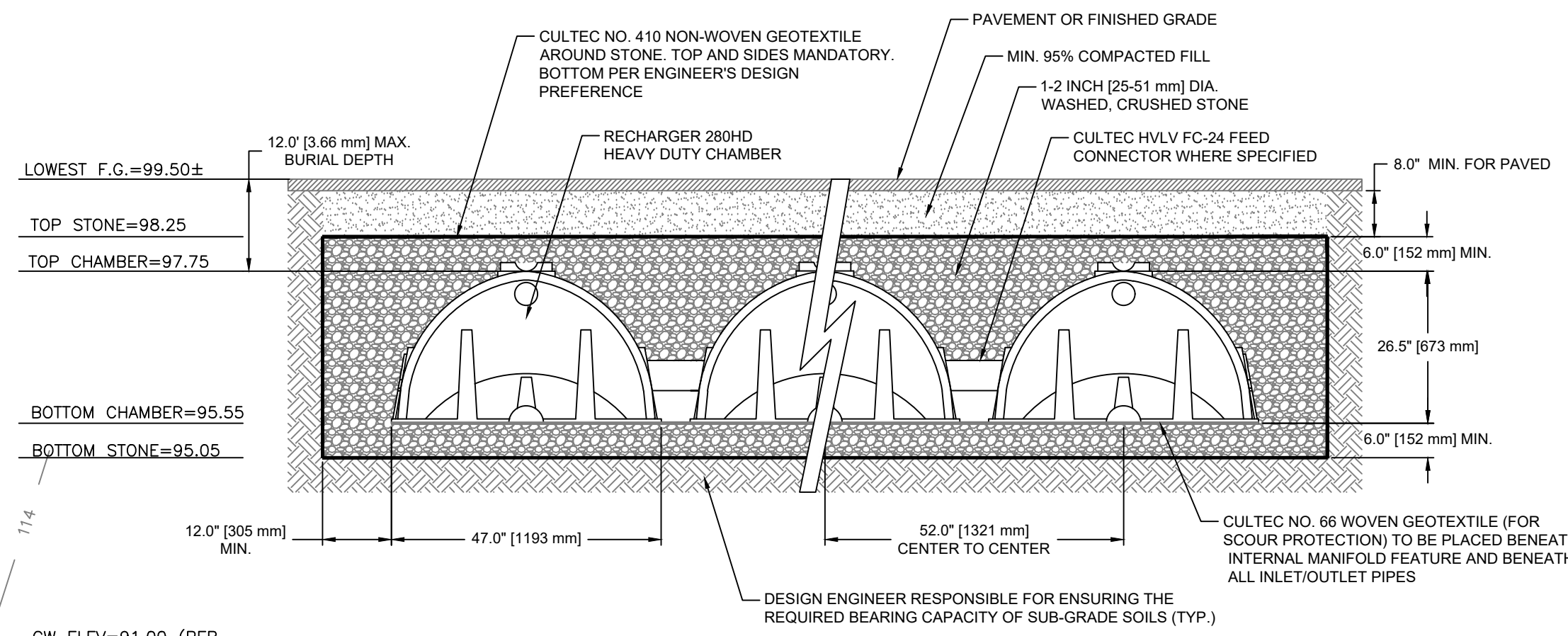
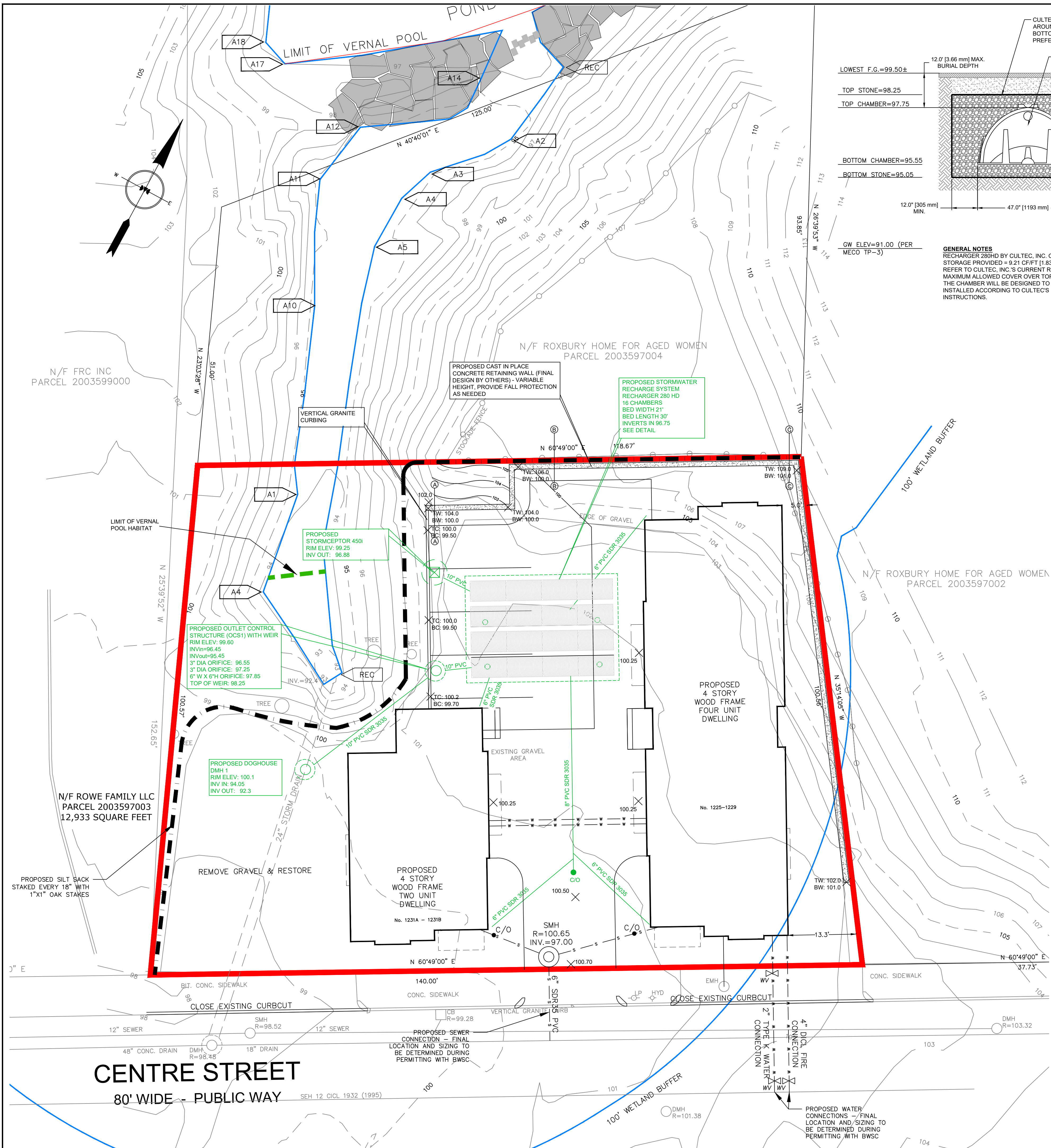
Notes:
 1. The Use Of Flexible Connection is Recommended at The Inlet and Outlet Where Applicable.
 2. The Cover Should be Positioned Over The Inlet Drop Pipe and The Oil Port.
 3. The Stormceptor System is protected by one or more of the following U.S. Patents: #5753115, #5849181, #6060765, #6371690, #7582216, #7646652.
 4. Contact a Concrete Pipe Division representative for further details not listed on this drawing.

STORMWATER MANAGEMENT PLAN

1225-1229 and 1231A-1231B CENTRE STREET
 WEST ROXBURY (ROSLINDALE DISTRICT)

OCTOBER 23, 2017
 MARCH 20, 2018

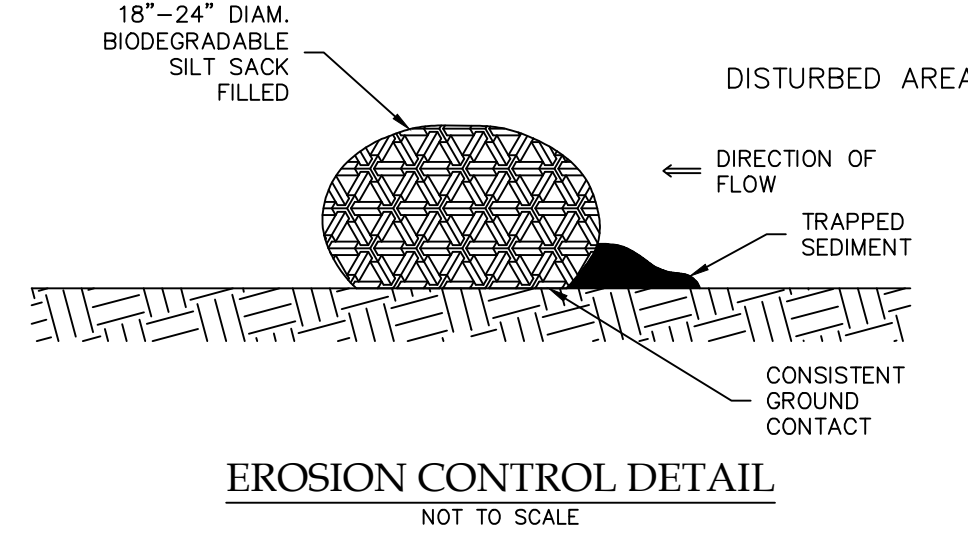
SCALE: 1"=10'



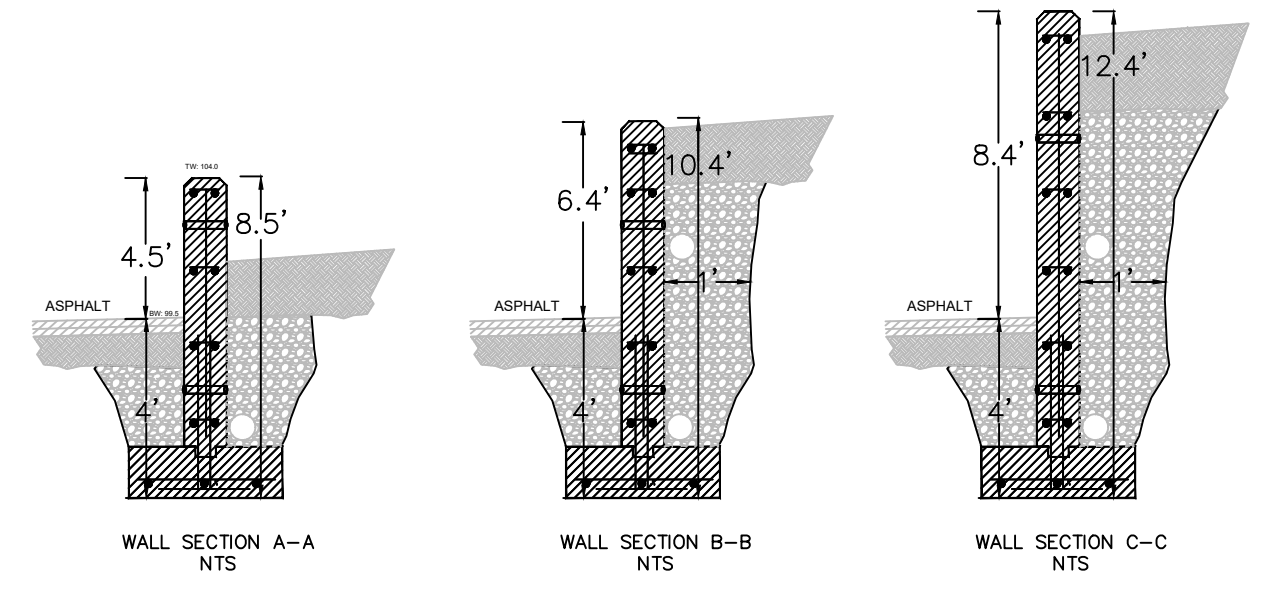
GENERAL NOTES
 RECHARGER 280HD BY CULTEC, INC. OF BROOKFIELD, CT. STORAGE PROVIDED = 9.21 CF/FT (1.83 m³/m) PER DESIGN UNIT. REFER TO CULTEC, INC.'S CURRENT RECOMMENDED INSTALLATION GUIDELINES. MAXIMUM ALLOWED COVER OVER TOP OF UNIT SHALL BE 12' (3.65 m). THE CHAMBER WILL BE DESIGNED TO WITHSTAND TRAFFIC LOADS WHEN INSTALLED ACCORDING TO CULTEC'S RECOMMENDED INSTALLATION INSTRUCTIONS.

ALL RECHARGER 280HD HEAVY DUTY UNITS ARE MARKED WITH A COLOR STRIPE FORMED INTO THE PART ALONG THE LENGTH OF THE CHAMBER. ALL RECHARGER 280HD CHAMBERS MUST BE INSTALLED IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS.

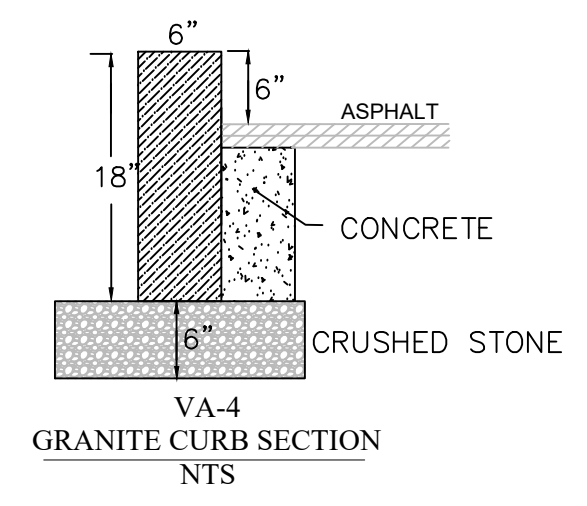
UNDERGROUND INFILTRATION AREA
 NOT TO SCALE



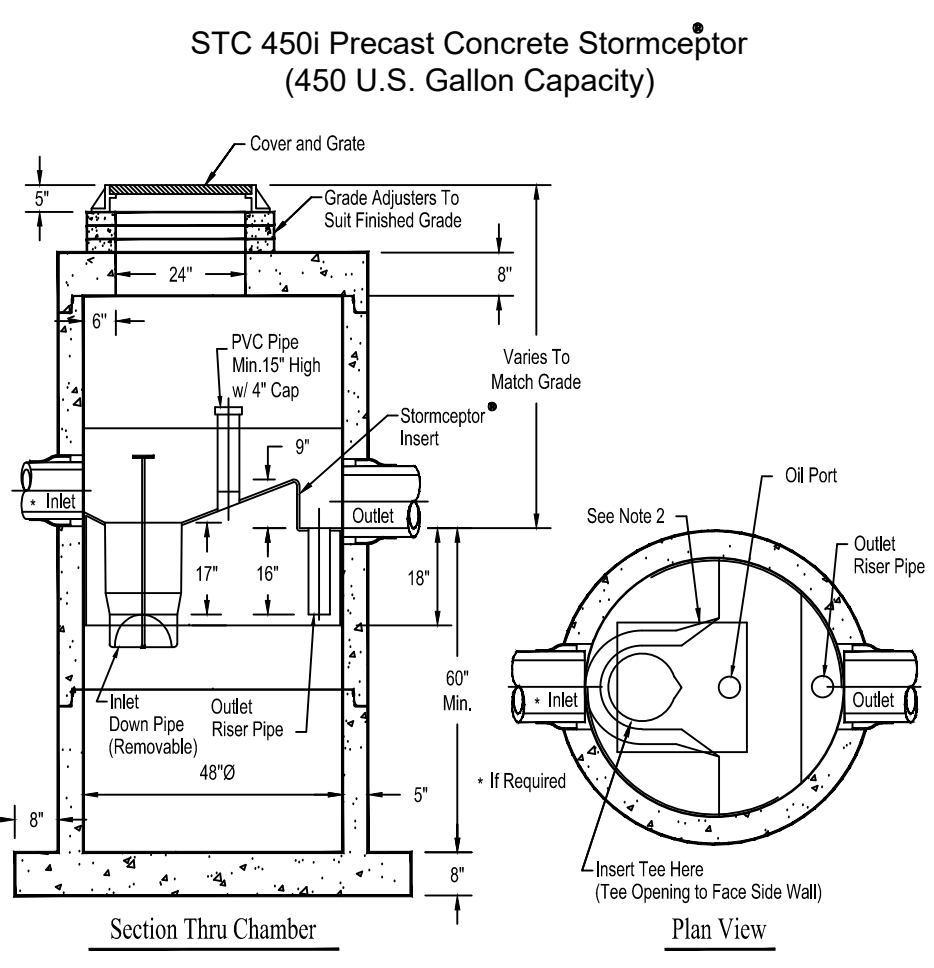
EROSION CONTROL DETAIL
 NOT TO SCALE



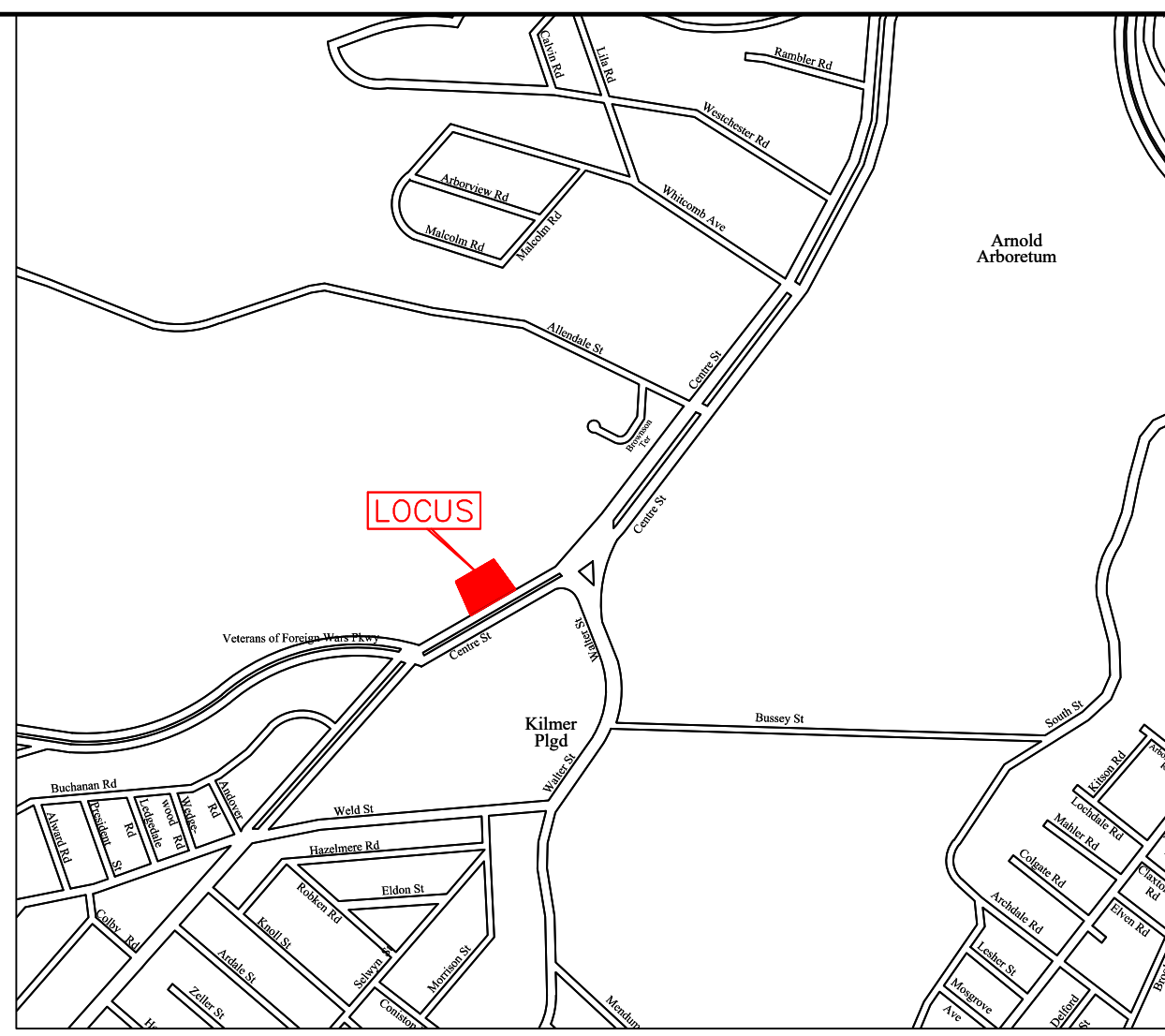
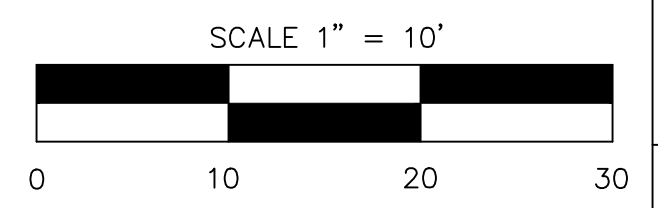
REINFORCED CONCRETE WALL SECTIONS
 WALL DESIGN IS SCHEMATIC.



VA-4 GRANITE CURB SECTION
 NTS



Notes:
 1. The Use Of Flexible Connection is Recommended at the Inlet and Outlet Where Applicable.
 2. The Cover Should be Positioned Over The Inlet Drop Pipe and The Oil Port.
 3. The Stormceptor System is protected by one or more of the following U.S. Patents: #5753115, #5849181, #6060765, #6371690, #7582216, #7646652.
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 NB 876 PAGE 50-51
 NB 893 PAGE 4-9
 NB 1069 PAGE 4-5
 NB 1140 PAGE 140-141
 L 3475
 L 6734
 L 7430



STORMWATER MANAGEMENT PLAN

1225-1229 and 1231A-1231B CENTRE STREET
 WEST ROXBURY (ROSLINDALE DISTRICT)
 OCTOBER 23, 2017
 MARCH 20, 2018
 MARCH 21, 2018

DRAWN BY:
 J.G. VOZZELLA

CHECKED BY:
 J.G. VOZZELLA

PROJ. MAN.:
 J.G. VOZZELLA

CENTRE STREET
 80' WIDE - PUBLIC WAY

SEH 12 CGL 1932 (1995)



March 23, 2018

Mr. John Sullivan
215 Burroughs Road
Braintree, MA 02184

RE: Migration of soil contaminants due to stormwater recharge system.
1225 Centre Street
Roslindale, Massachusetts

Dear Mr. Sullivan:

As we discussed the contaminated soil found to be above regulatory limits will be remediated during the construction process. Remediation in this case is excavated then transported and disposed of at a permitted landfill facility. The remaining soils will be sampled to make sure they meet state standards. The stormwater recharge system will be located in the area of the ash but any soil hot spots will have been remediated along with the fact that most of the soil will have been displaced by the new materials (crushed stone and plastic structures) that make up the recharge system. All displaced soils will be removed from the site. Please contact me with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth M. Goddard", is written over a light blue horizontal line.

Kenneth M. Goddard
Project Manager

Climate Change Preparedness and Resiliency Checklist Performance Criteria

The Climate Change Preparedness and Resiliency Policy, enacted in 2013, requires that all projects subject to Boston Zoning Code Article 80B, Large Project Review, complete a Climate Change Preparedness and Resiliency Checklist (Resiliency Checklist). The Resiliency Checklist provides a framework for considering present and future climate conditions in assessing projects' environmental impacts including building passive survivability, long-term integrity, and the safety of inhabitants. It also offers context for describing actions to mitigate adverse impacts.

The following guidance is provided to assist development teams in project planning and in completing the Resiliency Checklist. This guidance will be updated to reflect the most current climate change information, research, and practices.

Resiliency Checklist, Section B - Extreme Weather and Heat Events

What is the full expected life of the project?

What time span of future Climate Conditions was considered?

The “full expected life” refers to the project’s likely physical longevity. The full expected life for a large building in Boston is at least 60 years. The “span of future Climate Conditions” and related analyses should similarly extend at least 60 years and as long as the full expected life of the project. Proponents may present a case for considering a different lifespan.

What Extreme Heat Event characteristics will be used for project planning – Peak High, Duration, and Frequency?

The City of Boston defines three types of high-heat events:

- Heat Advisory: temperature is over 86 degrees F and humidity is greater than 68%
- Heat Wave/Heat Alert: Three consecutive days with temperatures over 90 degrees F
- Heat Emergency: When heat wave temperatures last longer than three days

(Source: City of Boston EMS; MassResources.org)

According to the 2007 report of the Union of Concerned Scientists *Northeast Climate-Change Impacts Assessment* the annual number of days over 90 degrees is likely to increase from the current 10 to between 32 to 64 by the end of the century; the number of days over 100, from 1 to between 6 to 24. See the UCS report for projected values at other times.

What Extreme Rain Event characteristics will be used for project planning – Seasonal Rain Fall, Peak Rain Fall, and Frequency of Events per year?

The Boston Water and Sewer Commission (BWSC) released in 2015 its Wastewater and Storm Drainage System Facility Plan, a technical report describing the BWSC’s new capital plan for the storm and wastewater system. The IGBC recommends that project developers rely on the BWSC’s projections. However, developers may present a case for considering different numbers.

An example of the BWSC precipitation projections follow in Table 7-15. Developers should consult the full report to identify the storm characteristics appropriate for their projects.

**TABLE 7-15
Forecasted 10-year, 24-hour Design Storm Volumes and Peak Hourly Intensities**

Scenario	Total Storm Volume (inches)			Peak Hourly Intensity (inches per hour)		
	2035	2060	2100	2035	2060	2100
Medium (B2)	5.55	5.76	6.08	1.76	1.83	1.93
Precautionary (A1FI)	5.60	6.03	6.65	1.78	1.91	2.11

The current BWSC 10-year, 24-hour design storm volume is 4.80 inches and peak intensity is 1.52 inches/hour.

Resiliency Checklist, Section C.2 - Sea-Level Rise and Storms: Analysis

Sea Level Rise

Sea-Level Rise (SLR) will increase with time and increase the frequency and extent of coastal flooding. Projections of sea-level rise are generally stated as ranges, and such projections are likely to change as scientists collect more data and update climate models. The City of Boston currently relies on the 2013 report of the Massachusetts Office of Coastal Zone Management (CZM) Sea Level Rise: Understanding and Applying Trends and Future Scenarios for Analysis and Planning, (reference information below). In particular, see page 10, table 3, and page 11, figure 5.

For the purpose of the requirements of Climate Change Workshop, the IGBC recommends that developers prepare for, at least, the CZM intermediate high scenario for most projects and the highest scenario for critical facilities and infrastructure. Proponents may present a case for considering other scenarios.

Scenario	2025		2038		2050		2063		2075		2088		2100	
	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m	ft	m
Highest	0.49	0.15	1.08	0.33	1.81	0.55	2.80	0.85	3.92	1.19	5.33	1.63	6.83	2.08
Intermediate High	0.36	0.11	0.73	0.22	1.19	0.36	1.80	0.55	2.47	0.75	3.32	1.01	4.20	1.28

Referenced Web Links:

Union of Concerned Scientists, Northeast Climate Change Assessment:

http://www.ucsusa.org/sites/default/files/legacy/assets/documents/global_warming/pdf/confronting-climate-change-in-the-u-s-northeast.pdf

Boston Water and Sewer Commission

Available from the BWSC, 617-989-7000

Massachusetts Office of Coastal Zone Management, Seal Level Rise guidance:

<http://www.mass.gov/eea/docs/czm/stormsmart/slr-guidance-2013.pdf>

Climate Change Preparedness and Resiliency Checklist for New Construction

In November 2013, in conformance with the Mayor's 2011 Climate Action Leadership Committee's recommendations, the Boston Redevelopment Authority adopted policy for all development projects subject to Boston Zoning Article 80 Small and Large Project Review, including all Institutional Master Plan modifications and updates, are to complete the following checklist and provide any necessary responses regarding project resiliency, preparedness, and to mitigate any identified adverse impacts that might arise under future climate conditions.

For more information about the City of Boston's climate policies and practices, and the 2011 update of the climate action plan, *A Climate of Progress*, please see the City's climate action web pages at <http://www.cityofboston.gov/climate>

In advance we thank you for your time and assistance in advancing best practices in Boston.

Climate Change Analysis and Information Sources:

1. Northeast Climate Impacts Assessment (www.climatechoices.org/ne/)
2. USGCRP 2009 (<http://www.globalchange.gov/publications/reports/scientific-assessments/us-impacts/>)
3. Army Corps of Engineers guidance on sea level rise (<http://planning.usace.army.mil/toolbox/library/ECs/EC11652212Nov2011.pdf>)
4. Proceeding of the National Academy of Science, "Global sea level rise linked to global temperature", Vermeer and Rahmstorf, 2009 (<http://www.pnas.org/content/early/2009/12/04/0907765106.full.pdf>)
5. "Hotspot of accelerated sea-level rise on the Atlantic coast of North America", Asbury H. Sallenger Jr*, Kara S. Doran and Peter A. Howd, 2012 ([http://www.bostonredevelopmentauthority.org/planning/Hotspot of Accelerated Sea-level Rise 2012.pdf](http://www.bostonredevelopmentauthority.org/planning/Hotspot%20of%20Accelerated%20Sea-level%20Rise%202012.pdf))
6. "Building Resilience in Boston": Best Practices for Climate Change Adaptation and Resilience for Existing Buildings, Linnean Solutions, The Built Environment Coalition, The Resilient Design Institute, 2103 (http://www.greenribboncommission.org/downloads/Building_Resilience_in_Boston_SML.pdf)

Checklist

Please respond to all of the checklist questions to the fullest extent possible. For projects that respond "Yes" to any of the D.1 – Sea-Level Rise and Storms, Location Description and Classification questions, please respond to all of the remaining Section D questions.

Checklist responses are due at the time of initial project filing or Notice of Project Change and final filings just prior seeking Final BRA Approval. A PDF of your response to the Checklist should be submitted to the Boston Redevelopment Authority via your project manager.

Please Note: When initiating a new project, please visit the BRA web site for the most current [Climate Change Preparedness & Resiliency Checklist](#).

Climate Change Resiliency and Preparedness Checklist

A.1 - Project Information

Project Name:	1225 Centre Street Development
Project Address Primary:	1225 Centre Street
Project Address Additional:	West Roxbury, MA
Project Contact (name / Title / Company / email / phone):	Gary Martell, Developer 617-877-4127

A.2 - Team Description

Owner / Developer:	Gary Martell
Architect:	McKay Architects
Engineer (building systems):	
Sustainability / LEED:	
Permitting:	
Construction Management:	
Climate Change Expert:	

A.3 - Project Permitting and Phase

At what phase is the project – most recent completed submission at the time of this response?

PNF / Expanded PNF Submission	Draft / Final Project Impact Report Submission <input checked="" type="checkbox"/>	BRA Board Approved	Notice of Project Change
Planned Development Area	BRA Final Design Approved	Under Construction	Construction just completed:

A.4 - Building Classification and Description

List the principal Building Uses:	Residential
List the First Floor Uses:	Parking / Living Area

What is the principal Construction Type – select most appropriate type?

Wood Frame <input checked="" type="checkbox"/>	Masonry	Steel Frame	Concrete
--	---------	-------------	----------

Describe the building?

Site Area:	12933 SF	Building Area:	14183 SF
Building Height:	43 Ft.	Number of Stories:	4 Flrs.
First Floor Elevation (reference Boston City Base):	Elev.	Are there below grade spaces/levels, if yes how many:	no No / Number of Levels

A.5 - Green Building

Which LEED Rating System(s) and version has or will your project use (by area for multiple rating systems)?

Select by Primary Use:	New Construction <input checked="" type="checkbox"/>	Core & Shell	Healthcare	Schools
	Retail	Homes Midrise	Homes	Other
Select LEED Outcome:	Certified	Silver	Gold	Platinum

Will the project be USGBC Registered and / or USGBC Certified?

Registered:	Yes / No	Certified:	Yes / No
	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>

A.6 - Building Energy

What are the base and peak operating energy loads for the building?

Electric - base / peak:	/ (kW)	Heating - base / peak:	/ (MMBtu/hr)
What is the planned building Energy Use Intensity:	(kbut/SF or kWh/SF)	Cooling - base / peak:	/ (Tons/hr)

What are the peak energy demands of your critical systems in the event of a service interruption?

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

What is nature and source of your back-up / emergency generators?

Electrical Generation:	(kW)	Fuel Source:	
System Type and Number of Units:	Combustion Engine	Gas Turbine	Combine Heat and Power (Units)

B - Extreme Weather and Heat Events

Climate change will result in more extreme weather events including higher year round average temperatures, higher peak temperatures, and more periods of extended peak temperatures. The section explores how a project responds to higher temperatures and heat waves.

B.1 - Analysis

What is the full expected life of the project?

Select most appropriate:	10 Years	25 Years	50 Years	75 Years <input checked="" type="checkbox"/>
--------------------------	----------	----------	----------	--

What is the full expected operational life of key building systems (e.g. heating, cooling, and ventilation)?

Select most appropriate:	10 Years	25 Years	50 Years	75 Years <input checked="" type="checkbox"/>
--------------------------	----------	----------	----------	--

What time span of future Climate Conditions was considered?

Select most appropriate:	10 Years	25 Years	50 Years	75 Years <input checked="" type="checkbox"/>
--------------------------	----------	----------	----------	--

Analysis Conditions - What range of temperatures will be used for project planning – Low/High?

/ Deg.

What Extreme Heat Event characteristics will be used for project planning – Peak High, Duration, and Frequency?

Deg.	Days	Events / yr.
------	------	--------------

What Drought characteristics will be used for project planning – Duration and Frequency?

Days	Events / yr.
------	--------------

What Extreme Rain Event characteristics will be used for project planning – Seasonal Rain Fall, Peak Rain Fall, and Frequency of Events per year?

Inches / yr.	Inches	Events / yr.
--------------	--------	--------------

What Extreme Wind Storm Event characteristics will be used for project planning – Peak Wind Speed, Duration of Storm Event, and Frequency of Events per year?

Peak Wind	Hours	Events / yr.
-----------	-------	--------------

B.2 - Mitigation Strategies

What will be the overall energy performance, based on use, of the project and how will performance be determined?

Building energy use below code:

5	%
---	---

How is performance determined:

HERS

What specific measures will the project employ to reduce building energy consumption?

Select all appropriate:

High performance building envelope <input checked="" type="checkbox"/>	High performance lighting & controls <input checked="" type="checkbox"/>	Building day lighting <input checked="" type="checkbox"/>	EnergyStar equip. / appliances <input checked="" type="checkbox"/>
High performance HVAC equipment <input type="checkbox"/>	Energy recovery ventilation <input type="checkbox"/>	No active cooling <input type="checkbox"/>	No active heating <input type="checkbox"/>
x	x		

Describe any added measures:

What are the insulation (R) values for building envelope elements?

Roof:	R = 38	Walls / Curtain Wall Assembly:	R = 21
Foundation:	R = 7	Basement / Slab:	R = 7
Windows:	R = / U = .29	Doors:	R = / U = .3

What specific measures will the project employ to reduce building energy demands on the utilities and infrastructure?

On-site clean energy / CHP system(s)	Building-wide power dimming	Thermal energy storage systems	Ground source heat pump
On-site Solar PV	On-site Solar Thermal	Wind power	None
Describe any added measures:			

Will the project employ Distributed Energy / Smart Grid Infrastructure and /or Systems?

Select all appropriate:

Connected to a local electrical micro-grid	Building will be Smart Grid ready	Connected to distributed steam, hot, chilled water	Distributed thermal energy ready
--	-----------------------------------	--	----------------------------------

Will the building remain operable without utility power for an extended period?

	no	Yes / No		If yes, for how long:	Days
If Yes, is building "Islandable?"					
If Yes, describe strategies:					

Describe any non-mechanical strategies that will support building functionality and use during an extended interruption(s) of utility services and infrastructure:

Select all appropriate:

Solar oriented – longer south walls	Prevailing winds oriented	External shading devices	Tuned glazing, <input checked="" type="checkbox"/>
Building cool zones	Operable windows <input checked="" type="checkbox"/>	Natural ventilation <input checked="" type="checkbox"/>	Building shading <input checked="" type="checkbox"/>
Potable water for drinking / food preparation <input checked="" type="checkbox"/>	Potable water for sinks / sanitary systems	Waste water storage capacity	High Performance Building Envelope <input checked="" type="checkbox"/>

Describe any added measures:

--

What measures will the project employ to reduce urban heat-island effect?

Select all appropriate:

High reflective paving materials	Shade trees & shrubs <input checked="" type="checkbox"/>	High reflective roof materials <input checked="" type="checkbox"/>	Vegetated roofs
----------------------------------	--	--	-----------------

Describe other strategies:

--

What measures will the project employ to accommodate rain events and more rain fall?

Select all appropriate:

On-site retention systems & ponds	Infiltration galleries & areas	vegetated water capture systems	Vegetated roofs
-----------------------------------	--------------------------------	---------------------------------	-----------------

Describe other strategies:

--

What measures will the project employ to accommodate extreme storm events and high winds?

Select all appropriate:

Hardened building structure & elements	Buried utilities & hardened infrastructure	Hazard removal & protective landscapes	Soft & permeable surfaces (water infiltration)
--	--	--	--

Describe other strategies:

--

C - Sea-Level Rise and Storms

Rising Sea-Levels and more frequent Extreme Storms increase the probability of coastal and river flooding and enlarging the extent of the 100 Year Flood Plain. This section explores if a project is or might be subject to Sea-Level Rise and Storm impacts.

C.1 - Location Description and Classification:

Do you believe the building to susceptible to flooding now or during the full expected life of the building?

Yes / No

Describe site conditions?

Site Elevation – Low/High Points:

<i>Boston City Base Elev.(Ft.)</i>

Building Proximity to Water:

Is the site or building located in any of the following?

Coastal Zone:

Velocity Zone:

Flood Zone:

Area Prone to Flooding:

Will the 2013 Preliminary FEMA Flood Insurance Rate Maps or future floodplain delineation updates due to Climate Change result in a change of the classification of the site or building location?

2013 FEMA Prelim. FIRMs:

Future floodplain delineation updates:

What is the project or building proximity to nearest Coastal, Velocity or Flood Zone or Area Prone to Flooding?

If you answered YES to any of the above Location Description and Classification questions, please complete the following questions. Otherwise you have completed the questionnaire; thank you!

C - Sea-Level Rise and Storms

This section explores how a project responds to Sea-Level Rise and / or increase in storm frequency or severity.

C.2 - Analysis

How were impacts from higher sea levels and more frequent and extreme storm events analyzed:

Sea Level Rise:

Frequency of storms:

C.3 - Building Flood Proofing

Describe any strategies to limit storm and flood damage and to maintain functionality during an extended periods of disruption.

What will be the Building Flood Proof Elevation and First Floor Elevation:

Flood Proof Elevation:

First Floor Elevation:

Will the project employ temporary measures to prevent building flooding (e.g. barricades, flood gates):

If Yes, to what elevation

If Yes, describe:

What measures will be taken to ensure the integrity of critical building systems during a flood or severe storm event:

Systems located above 1 st Floor.	Water tight utility conduits	Waste water back flow prevention	Storm water back flow prevention
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Were the differing effects of fresh water and salt water flooding considered:

Will the project site / building(s) be accessible during periods of inundation or limited access to transportation:

If yes, to what height above 100 Year Floodplain:

Will the project employ hard and / or soft landscape elements as velocity barriers to reduce wind or wave impacts?

Yes / No

If Yes, describe:

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Will the building remain occupiable without utility power during an extended period of inundation:

Yes / No

If Yes, for how long:

days

Describe any additional strategies to addressing sea level rise and or sever storm impacts:

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C.4 - Building Resilience and Adaptability

Describe any strategies that would support rapid recovery after a weather event and accommodate future building changes that respond to climate change:

Will the building be able to withstand severe storm impacts and endure temporary inundation?

Select appropriate:

Yes / No	Hardened / Resilient Ground Floor Construction	Temporary shutters and or barricades	Resilient site design, materials and construction
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Can the site and building be reasonably modified to increase Building Flood Proof Elevation?

Select appropriate:

Yes / No	Surrounding site elevation can be raised	Building ground floor can be raised	Construction been engineered
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Describe additional strategies:

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Has the building been planned and designed to accommodate future resiliency enhancements?

Select appropriate:

Yes / No	Solar PV	Solar Thermal	Clean Energy / CHP System(s)
	Potable water storage	Wastewater storage	Back up energy systems & fuel

Describe any specific or additional strategies:

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Thank you for completing the Boston Climate Change Resilience and Preparedness Checklist!

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