

Proposed Building Addition

Saint Michael's Cemetery
500 Canterbury Street
Roslindale, MA

Notice of Intent Filing

Prepared for:

Saint Michael's Cemetery
c/o Michael Sheehan
500 Canterbury Street
Roslindale, MA

Submitted by:

Joyce Consulting Group, PC
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Braintree, MA
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May 5, 2021

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PROJECT NARRATIVE

1.0 INTRODUCTION

The applicant, Mr. Michael Sheehan of St. Michael’s Cemetery proposes to construct a 7,600 square foot addition to an existing mausoleum building with associated site improvements at 500 Canterbury Street in the Roslindale neighborhood of Boston. The majority of the proposed work will take place within the 100-foot buffer to a Bordering Vegetated Wetland associated with Canterbury Brook which bisects the project parcel. A small portion of the project will also take place within the 25-foot riverfront, this work consists of utility improvements over an existing bridge.

The plans included with this filing show the scope of the proposed work as well as the resource areas located on the site. Due to the fact that a portion of the proposed work falls within the 100-foot buffer to a resource area and within the 25-foot riverfront, the project is subject to the jurisdiction of the Massachusetts Wetlands Protection Act and the City of Boston Conservation Commission.

2.0 EXISTING CONDITIONS

2.1 Site Description

The site is located at 500 Canterbury Street, the parcel is bounded to the north by Canterbury Street, to the west by Walk Hill Street, to the south by American Legion Highway and to the east by a commercial landscape operation. The development parcel is approximately 12 acres in size and consists of a large cemetery lot occupied by two structures, a crematorium and a mausoleum building with office space. In addition to these structures the site also has bituminous concrete driveways and cemetery plots. Bisecting the entirety of the parcel is Canterbury Brook which generally runs parallel to American Legion Highway. Existing site features are indicated on the “Existing Conditions Plan” within the enclosed Plan Set. Existing features can also be seen below in Figure 1 “500 Canterbury Street Aerial Image”.

The site a rectangular lot that is relatively level and generally slopes at a gradual pitch towards Canterbury Brook. There are catch basins scattered throughout the site that ultimately drain to Canterbury Brook. There are no other stormwater management systems located on site.

There is bordering vegetated wetland located sporadically throughout the site. This wetland is associated with Canterbury Brook which has a 25-foot riverfront area.



Figure 1: 500 Canterbury Street - Aerial Image

As noted previously, there are two resources area that impact the site, a portion of the site is located within 100 feet of a Bordering Vegetated Wetland, and a portion of the site is located within the Riparian Zone. The resource areas are associated with Canterbury Brook which bisects the site. The resource areas are defined in the Massachusetts Wetlands Protection Act and the proposed project will require approval from the City of Boston Conservation Commission.

2.2 Rare Species Habitat

The property is not mapped as either priority or estimated habitat of rare species by the MA Natural Heritage and Endangered Species Program (MAGIS 2020) as shown below in Figure 2 “500 Canterbury Street NHESP Viewer.”

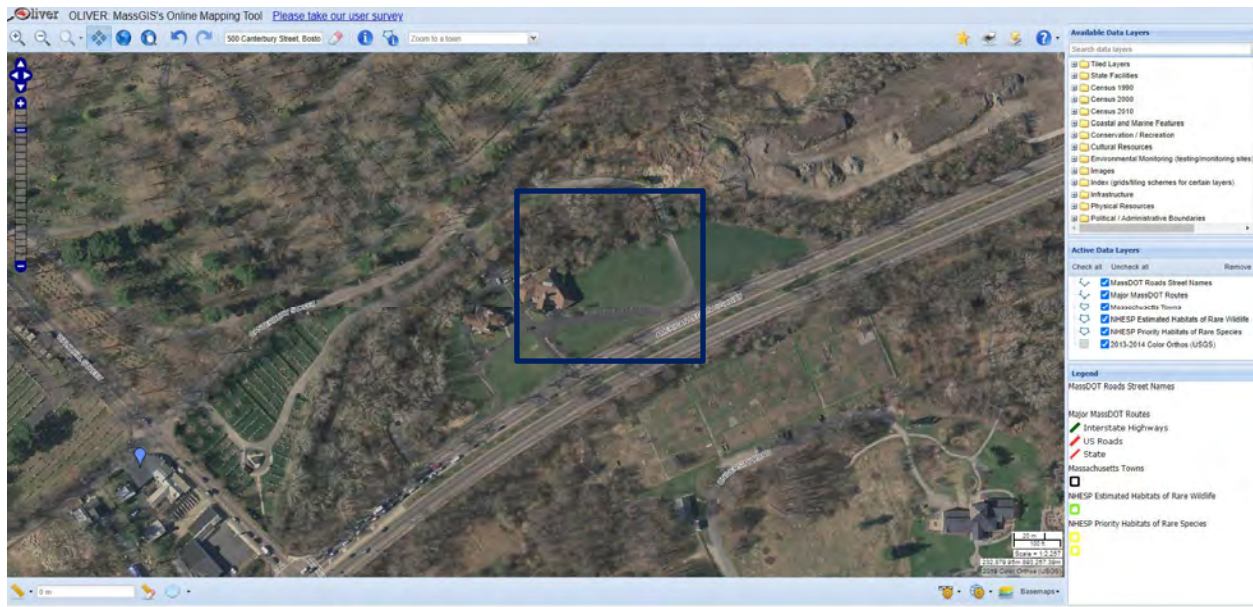


Figure 2 “500 Canterbury Street NHESP Viewer.”

3.0 WETLAND RESOURCE AREAS

The following wetland resources area are present on site and is subject to protection under the Wetlands Protection Act (M.G.L. Ch. 131 § 40) and the City of Boston Conservation Commission.

3.1 Bordering Vegetated Wetland

According to 310CMR 10.55(2)(a) A Bordering Vegetated Wetlands are freshwater wetlands which border on creeks, rivers, streams, ponds and lakes. The types of freshwater wetlands are wet meadows, marshes, swamps and bogs. Bordering Vegetated Wetlands are areas where the soils are saturated and/or inundated such that they support a predominance of wetland indicator plants.

The Bordering Vegetated Wetland (B.V.W.) is located immediately adjacent to Canterbury Brook with an associated 100-foot buffer extending into the area of proposed work. The proposed work will take place within previously disturbed grass area and paved areas. The proposed building footprint will extend to within approximately 20 feet from the resource area. There will be no work performed within the resource area. It is anticipated that this work will not have any adverse impact to the resource area.

The proposed project meets the general performance standards of 310CMR because all of the work will be performed outside of the resource area. There will be no work performed within the resource area.

3.2 Inland Bank

According to 310CMR 10.55(2)(a) A Bank is the portion of the land surface which normally abuts and confines a water body. It occurs between a water body and a vegetated bordering wetland and adjacent flood plain, or, in the absence of these, it occurs between a water body and an upland. A Bank may be

partially or totally vegetated, or it may be comprised of exposed soil, gravel or stone.

The Inland Bank is associated with Canterbury Brook, the bank has a 100-foot buffer extending into the area of proposed work. The proposed work will take place within previously disturbed grass area and paved areas. The proposed building footprint will extend to within approximately 20 feet from this resource area. There will be no work performed within the resource area. It is anticipated that this work will not have any adverse impact to the resource area.

The proposed project meets the general performance standards of 310CMR because all of the work will be performed outside of the resource area. There will be no work performed within the resource area.

3.3 Riverfront Area

According to 310CMR 10.58(2)(a) A Riverfront Area is the area of land between a river's mean annual high-water line and a parallel line measured horizontally. The riverfront area may include or overlap other resource areas or their buffer zones. The riverfront area does not have a buffer zone.

The Riverfront Area on the site is associated with Canterbury Brook, the associated riparian area is 25 feet. There will be no work performed within the riverfront area with the exception of utility installations that will be performed within the existing driveway, over an existing bridge. The driveway surface will be restored to its existing condition. It is anticipated that this work will not have any adverse impact to the resource area.

The proposed project meets the following performance standards: a) Protection of Other Resource Areas – The work performed for the proposed project will not take place within any other resource areas. Work that takes place within buffer areas will be performed areas that have been previously disturbed. b) Protection of Rare Species – It is not anticipated that the proposed work will have any impact on Rare Species. The work performed within the Riverfront area will consist of the installation of a water service within an existing paved driveway, at the end of the work the trench will be repaved. c) Practicable and Substantially Equivalent Economic Alternatives – There are no practicable and substantially equivalent alternatives as presented in the following alternatives analysis.

No Work Alternative:

In this option, there would be no work performed. This is not an economically viable option for the proposed development.

Move Addition North on the Property:

In this option, the addition would be tied into the north end of the existing building. In this alternative the proposed addition would be closer to all of the resource areas on site. The grading would ultimately be pushed into the wetland area. This option was not selected as it would have a greater impact on all of the resource areas.

Addition Centered on the North Side of the Building (Selected Option):

In this option, the addition would be tied into middle of the east side of the existing building. In this alternative the proposed addition would be located within the existing grass field. There will be no

significant work within any of the resource areas and no negative impact on any resource area. This is the preferred alternative.

3.4 Waterfront Area

According to the Boston Wetland Ordinance Section 7-1.4 the Waterfront Area is the portion of the buffer zone which extends twenty-five (25) feet horizontally from the edge of the following wetland resource areas:

1. Any coastal beach, dune, bank, tidal flats, rocky intertidal shores, salt marshes or land containing shellfish; or
2. Any inland bank, lake, pond, intermittent stream, brook, creek or riverfront area.

The Waterfront Area on the site is associated with 25 foot riparian zone that extends from Canterbury Brook. There will be no work performed within the waterfront area with the exception of utility installations that will be performed within the existing driveway, over an existing bridge and a minimal amount of grading that will be performed in an area of existing open grass. Once the grading has been complete the surface will be returned to it's original condition, the entirety of the waterfront area will remain vegetated. It is anticipated that this work will not have any adverse impact to the resource area.

4.0 PROPOSED IMPROVEMENTS

4.1 Proposed Site Improvements

The proposed project consists of the construction of a building addition to the existing mausoleum. The proposed building addition will have a footprint of approximately 7,610 square feet, with associated site grading, landscaping, utilities and a new driveway and parking area. The new building will have vehicular access from an existing internal driveway running parallel to American Legion Highway. There will be additional parking provided within the new parking area located immediately west of the proposed addition. Proposed site features and utility connections are indicated on the "Proposed Site Plan".

The majority of the proposed work is located within the 100-foot buffer to the Bordering Vegetated Wetland (B.V.W.) The existing driveway is not curbed and stormwater runs off the driveway untreated and into the wetland buffer. The proposed driveway will be bordered by bituminous concrete berm and all runoff will be directed to deep sump catch basins and then directed to an isolator row within the proposed subsurface infiltration area. The infiltration area will consist of 64 Stormtech SC-740 chambers surrounded with crushed stone. The infiltration area will outlet at an outlet control structure from which the stormwater will flow to an existing drainage manhole and ultimately to Canterbury Brook. The detention system has been designed to overflow during large storm events. The result of the proposed drainage design will be cleaner stormwater leaving the site at a reduced rate of runoff during all storm events. Overall, the proposed work, including the proposed drainage improvements are not anticipated to have any negative impact on the resource area. Details for proposed site features and improvements are indicated on the "Proposed Site Plan" plan.

4.2 Erosion Controls

Temporary erosion controls consisting of staked mulch wattles will be installed prior to commencement of

construction activities along the limit of work. All temporary erosion control devices will be inspected daily in areas of active construction to ensure proper functioning and maintenance. In other areas, temporary erosion control will be inspected and maintained throughout construction, and within 24 hours following storm events of greater than or equal to 0.25 inches of precipitation within a 24-hour period.

4.3 Site Stabilization and Planting

The final phase of the project is the restoration and stabilization of all exposed surfaces. Permanent restoration and re-vegetation measures serve to control erosion and sedimentation by establishing a vegetative cover. In the event that weather conditions prevent final restoration, temporary erosion and sedimentation measures will be employed until the weather is suitable for final cleanup. A final inspection will ensure that the project site has been permanently stabilized. Straw wattles and erosion controls will not be removed until the site is stabilized and the final inspection is complete.

5.0 REGULATORY COMPLIANCE

5.1 Wetlands Protection Act

The Project, as designed, complies with the performance standards of the Wetlands Protection Act for work proposed within the resource areas and their buffers. Erosion controls shall be installed at the limit of work to prevent stormwater from carrying sediment off site. Stormwater that outlets to Canterbury Brook will now be treated and the existing waterfront area will remain undisturbed.

6.0 CONSTRUCTION SEQUENCE

The following section provides construction details and highlights the construction sequence and timing of earthmoving activities.

6.1 Clearing

It is not anticipated that any clearing will be necessary. If any small shrubs or trees need to be removed, it shall be done in a manner that proceeds along the limit of work closest to the BVW such that erosion controls may be installed immediately subsequent to the vegetation removal. No grading will be conducted prior to the installation of erosion controls.

6.2 Installation of Erosion Controls

Erosion and sedimentation controls (i.e., mulch filled wattles) will be installed where needed and inspected at the limits of the work area prior to the commencement of earth moving activities.

6.3 Site Preparation and Foundation Construction

During this phase of construction, the foundation will be excavated and constructed. The excavation for the stormwater infiltration area will also be completed. Any soil that needs to be removed will not be stockpiled on site for any extended period of time and will be removed from the site prior to the end of the work day.

6.4 Utility Installation, Site Work and Vertical Construction of Building

During this phase of construction, the proposed sewer lateral, water, electric and gas services will be installed. Any soil that needs to be removed will not be stockpiled on site for any extended period of time and will be removed from the site prior to the completion of the work day.

6.5 Site Stabilization

The final phase of the project is the restoration and stabilization of all exposed surfaces. Disturbed areas will be landscaped or seeded as necessary with an erosion control seed mix. Much of the disturbed area is to be rough graded with topsoil and allowed to revegetated with indigenous species and kept thereafter in a natural state as habitat. Permanent restoration and revegetation measures serve to provide additional habitat and to control erosion and sedimentation by establishing a vegetative cover. In the event that weather conditions prevent final restoration, temporary erosion and sedimentation measures will be employed until the weather is suitable for final cleanup. A final inspection will ensure that the project site is cleared of all project debris and that erosion and sedimentation controls are functioning properly. Erosion controls will not be removed until the site is stabilized and the final inspection is complete.

7.0 CLIMATE CHANGE RESILIENCE

The following section provides construction details and highlights the construction sequence and timing of earthmoving activities.

7.1 Measures

The site has been designed in an effort to take climate change resilience into account. The proposed parking area incorporates landscape islands to minimize heat island effects. The parking area has also been designed to incorporate a stormwater management system that recharges stormwater, provides stormwater treatment and decreases stormwater runoff from the site. This system will improve stormwater runoff now and over the course of future rain events.

Appendix A: Notice of Intent



City of Boston
Environment



City of Boston
Mayor Martin J. Walsh

EXTENSION FORM

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

Applicant:

Michael Sheehan Saint Michael's Cemetery

a. First Name b. Last Name c. Company

500 Canterbury Street

d. Mailing Address

Boston MA 02131

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

617-524-1036 617-522-4646 michael.smc@comcast.net

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

Michael Sheehan **5/10/2021**
Signature of Applicant Date

Property Owner (if different):

a. First Name b. Last Name c. Company

d. Mailing Address

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

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

Signature of Property Owner (if different) Date

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



A. GENERAL INFORMATION

1. Project Location

<u>500 Canterbury Street</u>	<u>Boston</u>	<u>02131</u>
a. Street Address	b. City/Town	c. Zip Code
<u>Boston Assessors</u>	<u>Parcel 1405199000</u>	
f. Assessors Map/Plat Number	g. Parcel /Lot Number	

2. Applicant

<u>Michael</u>	<u>Sheehan</u>	<u>Italian Catholic Cemetery Association</u>	
a. First Name	b. Last Name	c. Company	
<u>500 Canterbury Street</u>			
d. Mailing Address			
<u>Boston</u>	<u>MA</u>	<u>02131</u>	
e. City/Town	f. State	g. Zip Code	
<u>617-524-1036</u>	<u>617-522-4646</u>	<u>michael.smc@comcast.net</u>	
h. Phone Number	i. Fax Number	j. Email address	

3. Property Owner

<u></u>	<u></u>	<u>Italian Catholic Cemetery Association c/o Michael Sheehan</u>	
a. First Name	b. Last Name	c. Company	
<u>474 Canterbury Street</u>			
d. Mailing Address			
<u>Boston</u>	<u>MA</u>	<u>02131</u>	
e. City/Town	f. State	g. Zip Code	
<u>617-524-1036</u>	<u>617-522-4646</u>	<u>michael.smc@comcast.net</u>	
h. Phone Number	i. Fax Number	j. Email address	

Check if more than one owner

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

4. Representative (if any)

<u>Michael</u>	<u>Joyce</u>	<u>Joyce Consulting Group</u>	
a. First Name	b. Last Name	c. Company	
<u>439 Washington Street, 3rd Floor</u>			
d. Mailing Address			
<u>Braintree</u>	<u>MA</u>	<u>02184</u>	
e. City/Town	f. State	g. Zip Code	
<u>781-817-6120</u>	<u></u>	<u>mjoyce@joycecg.com</u>	
h. Phone Number	i. Fax Number	j. Email address	



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

- Yes No

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

6. General Information

The applicant is proposing to construct an addition to an existing Mausoleum and perform associated site improvements. The proposed work will take place within 100 feet of Bordering Vegetated Wetland associated with Stony Brook. Refer to Project Narrative for additional information.

7. Project Type Checklist

- a. Single Family Home
- b. Residential Subdivision
- c. Limited Project Driveway Crossing
- d. Commercial/Industrial
- e. Dock/Pier
- f. Utilities
- g. Coastal Engineering Structure
- h. Agriculture – cranberries, forestry
- i. Transportation
- j. Other

8. Property recorded at the Registry of Deeds

Suffolk	130
_____ a. County	_____ b. Page Number
7567	
_____ c. Book	_____ d. Certificate # (if registered land)

9. Total Fee Paid

\$1,050 (WPA Fee)	\$550 (Bylaw Fee)	\$512.50	\$537.50
_____ a. Total Fee Paid	_____	_____ b. State Fee Paid	_____ c. City Fee Paid

B. BUFFER ZONE & RESOURCE AREA IMPACTS

Buffer Zone Only - Is the project located only in the Buffer Zone of a resource area protected by the Boston Wetlands Ordinance?

- Yes No

1. Coastal Resource Areas



<u>Resource Area</u>	<u>Resource Area Size</u>	<u>Proposed Alteration*</u>	<u>Proposed Mitigation</u>
<input type="checkbox"/> Coastal Flood Resilience Zone	_____ Square feet	_____ Square feet	_____ Square feet
<input checked="" type="checkbox"/> 25-foot Waterfront Area	69,901 _____ Square feet	50 _____ Square feet	50 _____ Square feet
<input type="checkbox"/> 100-foot Salt Marsh Area	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> Riverfront Area	_____ Square feet	_____ Square feet	_____ Square feet

2. Inland Resource Areas

<u>Resource Area</u>	<u>Resource Area Size</u>	<u>Proposed Alteration*</u>	<u>Proposed Mitigation</u>
<input type="checkbox"/> Inland Flood Resilience Zone	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> Isolated Wetlands	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> Vernal Pool	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> Vernal Pool Habitat (vernal pool + 100 ft. upland area)	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> 25-foot Waterfront Area	_____ Square feet	_____ Square feet	_____ Square feet
<input type="checkbox"/> Riverfront Area	_____ Square feet	_____ Square feet	_____ Square feet

C. OTHER APPLICABLE STANDARDS & REQUIREMENTS

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

Approval required from BWSC (currently under review), ZBA (currently under review) and Parks Commission (currently under review)



2. Is any portion of the proposed project located in Estimated Habitat of Rare Wildlife as indicated on the most recent Estimated Habitat Map of State-Listed Rare 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://www.mass.gov/dfwele/dfw/nhosp/nhregmap.htm>.

- Yes No

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

A. Submit Supplemental Information for Endangered Species Review

Percentage/acreage of property to be altered:

(1) within wetland Resource Area _____
percentage/acreage

(2) outside Resource Area _____
percentage/acreage

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

3. Is any portion of the proposed project within an Area of Critical Environmental Concern?

- Yes No

If yes, provide the name of the ACEC: _____

4. Is the proposed project subject to provisions of the Massachusetts Stormwater Management Standards?

- Yes. Attach a copy of the Stormwater Checklist & Stormwater Report as required.
 - Applying for a Low Impact Development (LID) site design credits
 - A portion of the site constitutes redevelopment
 - Proprietary BMPs are included in the Stormwater Management System
- No. Check below & include a narrative as to why the project is exempt
 - Single-family house
 - Emergency road repair
 - Small Residential Subdivision (less than or equal to 4 single family houses or less than or equal to 4 units in a multifamily housing projects) with no discharge to Critical Areas

5. Is the proposed project subject to Boston Water and Sewer Commission Review?

- Yes No



D. SIGNATURES AND SUBMITTAL REQUIREMENTS

I hereby certify under the penalties of perjury that the foregoing Notice of Intent and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge. I understand that the Conservation Commission will place notification of this Notice in a local newspaper at the expense of the applicant in accordance with the Wetlands Protection Ordinance.

Signature of Applicant

5/10/2021

Date

Signature of Property Owner (if different)

Signature of Representative (if any)

Date

05/10/2021

Date



Massachusetts Department of Environmental Protection

eDEP Transaction Copy

Here is the file you requested for your records.

To retain a copy of this file you must save and/or print.

Username: **JOYCECG**

Transaction ID: **1247911**

Document: **WPA Form 3 - NOI**

Size of File: **247.41K**

Status of Transaction: **In Process**

Date and Time Created: **5/12/2021:11:52:54 AM**

Note: This file only includes forms that were part of your transaction as of the date and time indicated above. If you need a more current copy of your transaction, return to eDEP and select to "Download a Copy" from the Current Submittals page.

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 #:
eDEP Transaction #:1247911
City/Town:BOSTON

A.General Information

1. Project Location:

a. Street Address 500 CANTERBURY STREET
b. City/Town BOSTON c. Zip Code 02131
d. Latitude 42.28955N e. Longitude 71.10437W
f. Map/Plat # BOSTON ASSESSOR g.Parcel/Lot # 1405199000

2. Applicant:

Individual Organization

a. First Name MICHAEL b.Last Name SHEEHAN
c. Organization SAINT MICHAEL'S CEMETERY
d. Mailing Address 500 CANTERBURY STREET
e. City/Town BOSTON f. State MA g. Zip Code 02131
h. Phone Number 617-524-1036 i. Fax j. Email michael.smc@comcast.net

3.Property Owner:

more than one owner

a. First Name MICHAEL b. Last Name SHEEHAN
c. Organization SAINT MICHAEL'S CEMETERY
d. Mailing Address 500 CANTERBURY STREET
e. City/Town BOSTON f.State MA g. Zip Code 02131
h. Phone Number 617-524-1036 i. Fax j.Email michael.smc@comcast.net

4.Representative:

a. First Name MICHAEL b. Last Name JOYCE
c. Organization JOYCE CONSULTING GROUP, P.C.
d. Mailing Address 439 WASHINGTON STREET, THIRD FLOOR
e. City/Town BRAINTREE f. State MA g. Zip Code 02184-4721
h.Phone Number 781-817-6120 i.Fax j.Email mjoyce@joycecg.com

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

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

6.General Project Description:

THE APPLICANT IS PROPOSING TO CONSTRUCT AN ADDITION TO AN EXISTING MAUSOLEUM AND PERFORM ASSOCIATED SITE IMPROVEMENTS. THE PROPOSED WORK WILL TAKE PLACE WITHIN 100 FEET OF BORDERING VEGETATED WETLAND ASSOCIATED WITH STONY BROOK. REFER TO PROJECT NARRATIVE FOR ADDITIONAL INFORMATION.

7a.Project Type:

- 1. Single Family Home
2. Residential Subdivision
3. Limited Project Driveway Crossing
4. Commercial/Industrial
5. Dock/Pier
6. Utilities
7. Coastal Engineering Structure
8. Agriculture (eg., cranberries, forestry)

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 #:
 eDEP Transaction #:1247911
 City/Town:BOSTON

- 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: (Sec 310 CMR 10.25 - 10.35)

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
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 Beaches	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
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, crea.
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 type="checkbox"/> Land Subject to Coastal Storm Flowage	1. square feet	

4.Restoration/Enhancement

Restoration/Replacement

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 entered the additional amount here.

- a. square feet of BVW b. square feet of Salt Marsh

□ **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 #:

eDEP Transaction #:1247911

City/Town:BOSTON

5. Projects Involves Stream Crossings

Project Involves Streams Crossings

If the project involves Stream Crossings, please enter the number of new stream crossings/number of replacement stream crossings.

a. number of new stream crossings

b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

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 of Endangered Species program (NHESP)?

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: FROM MAP VIEWER

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

c. Submit Supplemental Information for Endangered Species Review * (Check boxes as they apply)

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

3. Project plans for entire project site, including wetland resource areas and areas outside of wetland 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

c. MESA filing fee (fee information available at: <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/mass-endangered-species-act-mesa/mesa-fee-schedule.html>)

Make check payable to "Natural Heritage & Endangered Species Fund" 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

d. 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/eea/agencies/dfg/dfw/laws-regulations/cmr/321-cmr-1000-massachusetts-endangered-species-act.html#10.14>; 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.

□ **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 #:

eDEP Transaction #:1247911

City/Town:BOSTON

a. NHESP Tracking Number

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.

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review...

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

a. Not applicable - project is in inland resource area only

b. Yes No

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

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

North Shore - Hull to New Hampshire:

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
836 S. Rodney French Blvd
New Bedford, MA 02744

Division of Marine Fisheries -
North Shore Office
Attn: Environmental Reviewer
30 Emerson Avenue
Gloucester, MA 01930

If yes, it 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.

3. 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 DEP Website for ACEC locations). **Note:** electronic filers click on Website.

b. ACEC Name

4. 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

5. 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

6. 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, Explain why the project is exempt:

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 #:
eDEP Transaction #:1247911
City/Town:BOSTON

- 1. Single Family Home
- 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

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 by regular mail delivery.

- 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.
- 3. Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s). Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.
- 4. List the titles and dates for all plans and other materials submitted with this NOI.

a. Plan Title: b. Plan Prepared By: c. Plan Signed/Stamped By: c. Revised Final Date: e. Scale:

PROPOSED CIVIL
PLAN SET

MICHAEL JOYCE, P.E.

03/31/2021

- 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.

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 #:
eDEP Transaction #:1247911
City/Town:BOSTON

E. Fees

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

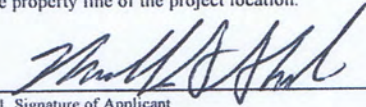
Applicants must submit the following information (in addition to pages 1 and 2 of the NOI Wetland Fee Transmittal Form) to confirm fee payment:

2. Municipal Check Number	3. Check date
4. State Check Number	5. Check date
6. Payer name on check: First Name	7. Payer name on check: Last Name

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).

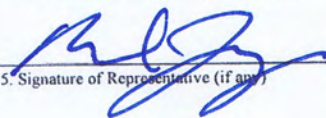
I further certify under penalties of perjury that all abutters were notified of this application, pursuant to the requirements of M.G.L. c. 131, § 40. Notice must be made by Certificate of Mailing or in writing by hand delivery or certified mail (return receipt requested) to all abutters within 100 feet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


1. Signature of Applicant

5/10/2021
2. Date

3. Signature of Property Owner (if different)

4. Date


5. Signature of Representative (if any)

05/10/21
6. Date

For Conservation Commission:

Two copies of the completed Notice of Intent (Form 3), including supporting plans and documents, two copies of the NOI Wetland Fee Transmittal Form, and the city/town fee payment, to the Conservation Commission by certified mail or hand delivery.

For MassDEP:

One copy of the completed Notice of Intent (Form 3), including supporting plans and documents, one copy of the NOI Wetland Fee Transmittal Form, and a copy of the state fee payment to the MassDEP Regional Office (see Instructions) by certified mail or hand delivery.

Other:

If the applicant has checked the "yes" box in Section C, Items 1-3, above, refer to that section and the Instructions for additional submittal requirements.

The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

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

Provided by MassDEP:
 MassDEP File #:
 eDEP Transaction #:1247911
 City/Town:BOSTON

A. Applicant Information

1. Applicant:

a. First Name	MICHAEL	b. Last Name	SHEEHAN		
c. Organization	SAINT MICHAEL'S CEMETERY				
d. Mailing Address	500 CANTERBURY STREET				
e. City/Town	BOSTON	f. State	MA	g. Zip Code	02131
h. Phone Number	6175241036	i. Fax		j. Email	michael.smc@comcast.net

2. Property Owner:(if different)

a. First Name	MICHAEL	b. Last Name	SHEEHAN		
c. Organization	SAINT MICHAEL'S CEMETERY				
d. Mailing Address	500 CANTERBURY STREET				
e. City/Town	BOSTON	f. State	MA	g. Zip Code	02131
h. Phone Number	6175241036	i. Fax		j. Email	michael.smc@comcast.net

3. Project Location:

a. Street Address	500 CANTERBURY STREET	b. City/Town	BOSTON
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Are you exempted from Fee?

Note: Fee will be exempted if you are one of the following:

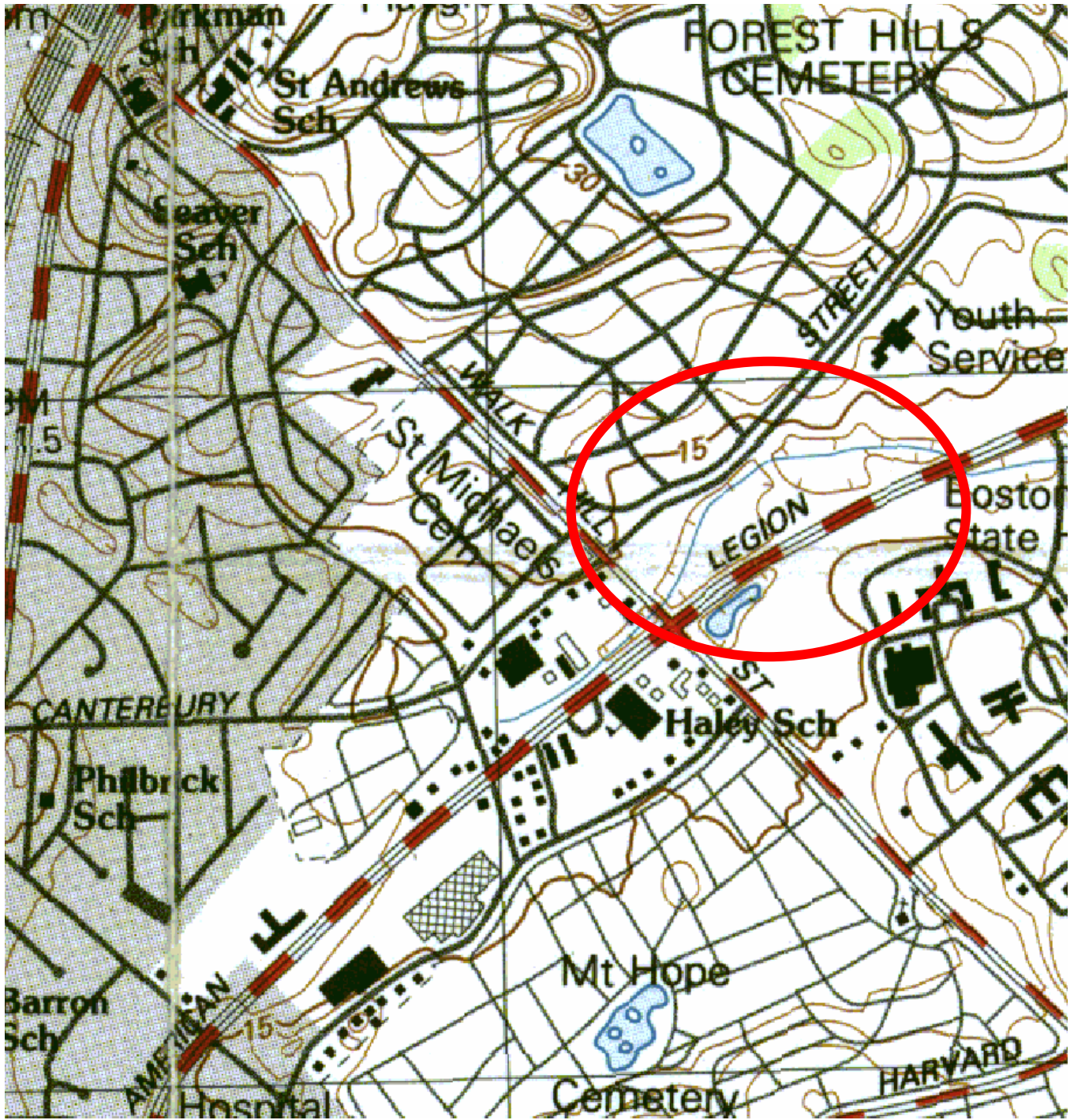
- City/Town/County/District
- Municipal Housing Authority
- Indian Tribe Housing Authority
- MBTA

State agencies are only exempt if the fee is less than \$100

B. Fees

Activity Type	Activity Number	Activity Fee	RF Multiplier	Sub Total
B.) EACH BUILDING (FOR DEVELOPMENT) INCLUDING SITE;	1	1050.00		1050.00
		City/Town share of filling fee	State share of filing fee	Total Project Fee
		\$537.50	\$512.50	\$1,050.00

Appendix B: Figures



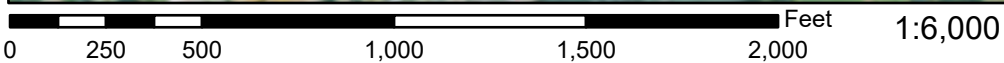
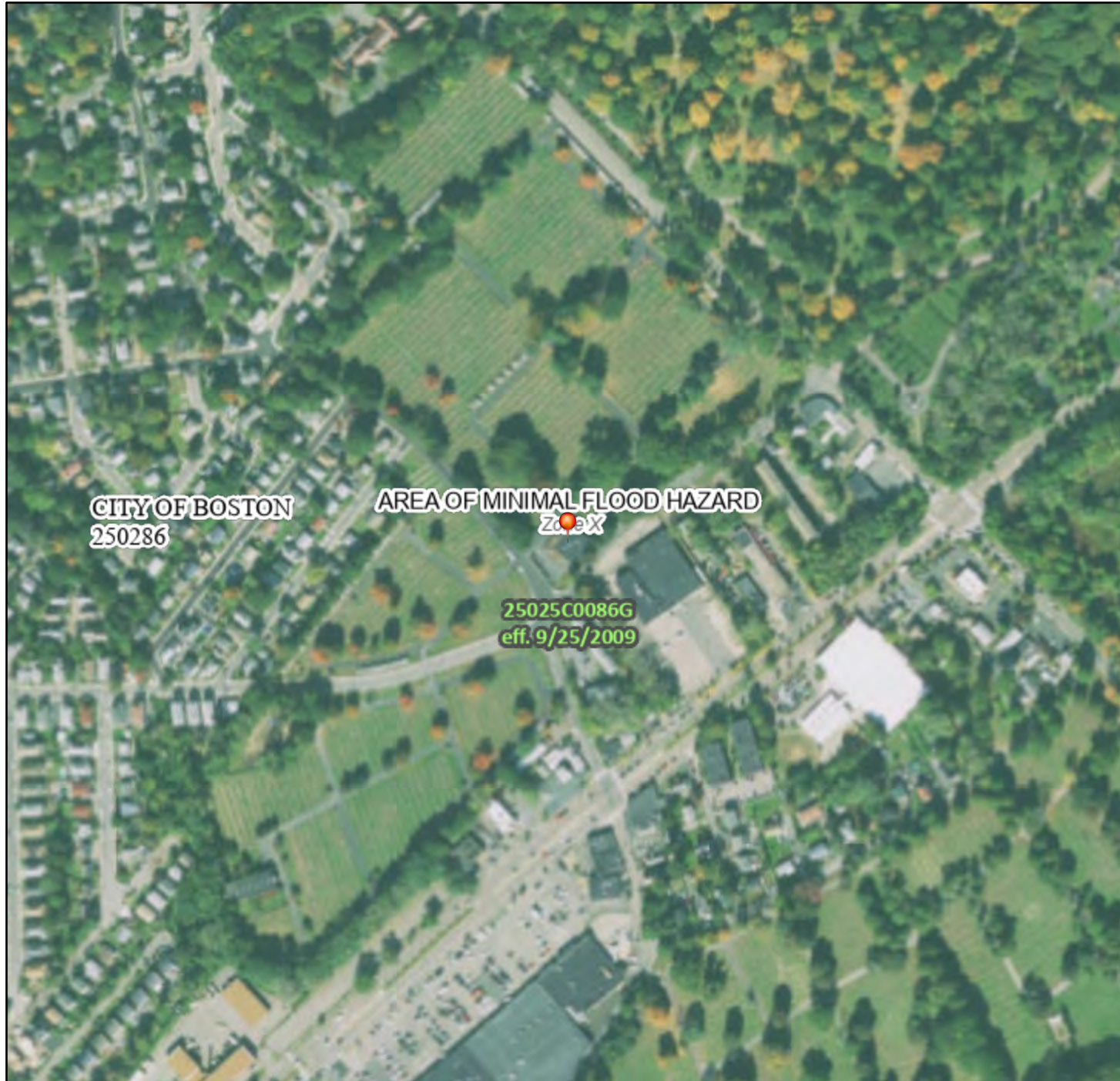
USGS Quad 233890

St. Michael's Cemetery - 500 Canterbury Street – Roslindale, MA

National Flood Hazard Layer FIRMMette



71°6'56"W 42°17'28"N



71°6'18"W 42°17'2"N

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

Legend

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

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) <i>Zone A, V, A99</i>
		With BFE or Depth <i>Zone AE, AO, AH, VE, AR</i>
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile <i>Zone X</i>
		Future Conditions 1% Annual Chance Flood Hazard <i>Zone X</i>
		Area with Reduced Flood Risk due to Levee. See Notes. <i>Zone X</i>
		Area with Flood Risk due to Levee <i>Zone D</i>
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard <i>Zone X</i>
		Effective LOMRs
GENERAL STRUCTURES		Area of Undetermined Flood Hazard <i>Zone D</i>
		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
		No Digital Data Available
		Unmapped
		The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.



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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **5/5/2021 at 11:01 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

Appendix C: Abutters Information



BABEL NOTICE

English:

IMPORTANT! This document or application contains **important information** about your rights, responsibilities and/or benefits. It is crucial that you understand the information in this document and/or application, and we will provide the information in your preferred language at no cost to you. If you need them, please contact us at cc@boston.gov or 617-635-3850.

Spanish:

¡IMPORTANTE! Este documento o solicitud contiene **información importante** sobre sus derechos, responsabilidades y/o beneficios. Es fundamental que usted entienda la información contenida en este documento y/o solicitud, y le proporcionaremos la información en su idioma preferido sin costo alguno para usted. Si los necesita, póngase en contacto con nosotros en el correo electrónico cc@boston.gov o llamando al 617-635-3850.

Haitian Creole:

AVI ENPÒTAN! Dokiman oubyen aplikasyon sa genyen **enfòmasyon ki enpòtan** konsènan dwa, responsablite, ak/oswa benefis ou yo. Li enpòtan ke ou konprann enfòmasyon ki nan dokiman ak/oubyen aplikasyon sa, e n ap bay enfòmasyon an nan lang ou prefere a, san ou pa peye anyen. Si w bezwen yo, tanpri kontakte nou nan cc@boston.gov oswa 617-635-3850.

Traditional Chinese:

非常重要！這份文件或是申請表格包含關於您的權利，責任，和／或福利的重要信息。請您務必完全理解這份文件或申請表格的全部信息，這對我們來說十分重要。我們會免費給您提供翻譯服務。如果您有需要請聯系我們的郵箱 cc@boston.gov 電話# 617-635-3850..

Vietnamese:

QUAN TRỌNG! Tài liệu hoặc đơn yêu cầu này chứa **thông tin quan trọng** về các quyền, trách nhiệm và/hoặc lợi ích của bạn. Việc bạn hiểu rõ thông tin trong tài liệu và/hoặc đơn yêu cầu này rất quan trọng, và chúng tôi sẽ cung cấp thông tin bằng ngôn ngữ bạn muốn mà không tính phí. Nếu quý vị cần những dịch vụ này, vui lòng liên lạc với chúng tôi theo địa chỉ cc@boston.gov hoặc số điện thoại 617-635-3850.

Simplified Chinese:

非常重要！这份文件或是申请表格包含关于您的权利，责任，和／或福利的重要信息。请您务必完全理解这份文件或申请表格的全部信息，这对我们来说十分重要。我们会免费给您提供翻译服务。如果您有需要请联联系我们的邮箱 cc@boston.gov 电话# 617-635-3850.

Cape Verdean Creole:

INPURTANTI! Es dukumentu ó aplikason ten **informason inpurtanti** sobri bu direitus, rasponsabilidadi i/ó benefisius. Ê krusial ki bu intendi informason na es dukumentu i/ó aplikason ó nu ta da informason na língua di bu preferênsia sen ninhun kustu pa bó. Si bu prisiza del, kontata-nu na cc@boston.gov ó 617-635-3850.

Arabic:

مهم! يحتوي هذا المستند أو التطبيق على معلومات مهمة حول حقوقك ومسؤولياتك أو فوائده. من الأهمية أن تفهم المعلومات الواردة في هذا المستند أو التطبيق. سوف نقدم المعلومات بلغتك المفضلة دون أي تكلفة عليك. إذا كنت في حاجة إليها، يرجى الاتصال بنا على cc@boston.gov أو 617-635-3850.

Russian:

ВАЖНО! В этом документе или заявлении содержится **важная информация** о ваших правах, обязанностях и/или льготах. Для нас очень важно, чтобы вы понимали приведенную в этом документе и/или заявлении информацию, и мы готовы бесплатно предоставить вам информацию на предпочитаемом вами языке. Если Вам они нужны, просьба связаться с нами по адресу электронной почты cc@boston.gov, либо по телефону 617-635-3850.

Portuguese:

IMPORTANTE! Este documento ou aplicativo contém **Informações importantes** sobre os seus direitos, responsabilidades e/ou benefícios. É importante que você compreenda as informações contidas neste documento e/ou aplicativo, e nós iremos fornecer as informações em seu idioma de preferência sem nenhum custo para você. Se precisar deles, fale conosco: cc@boston.gov ou 617-635-3850.

French:

IMPORTANT ! Ce document ou cette demande contient des **informations importantes** concernant vos droits, responsabilités et/ou avantages. Il est essentiel que vous compreniez les informations contenues dans ce document et/ou cette demande, que nous pouvons vous communiquer gratuitement dans la langue de votre choix. Si vous en avez besoin, veuillez nous contacter à cc@boston.gov ou au 617-635-3850.



**NOTIFICATION TO ABUTTERS
BOSTON CONSERVATION COMMISSION**

In accordance with the Massachusetts Wetlands Protection Act, Massachusetts General Laws Chapter 131, Section 40, and the Boston Wetlands Ordinance, you are hereby notified as an abutter to a project filed with the Boston Conservation Commission.

A. **Italian Catholic Cemetery Association** has filed a Notice of Intent with the Boston Conservation Commission seeking permission to alter an Area Subject to Protection under the Wetlands Protection Act (General Laws Chapter 131, section 40) and Boston Wetlands Ordinance.

B. The address of the lot where the activity is proposed is **500 Canterbury Street**.

C. The project involves **construction of an addition to an existing building and perform associated site improvements. Work will take place within 100 feet of a Bordering Vegetated Wetland.**

D. Copies of the Notice of Intent may be obtained by contacting the Boston Conservation Commission at CC@boston.gov.

E. Copies of the Notice of Intent may be obtained from **Joyce Consulting Group, P.C. (781)817-6120** between the hours of **10-2, Monday -Friday**.

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

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

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

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

NOTE: If you would like to provide comments, you may attend the public hearing or send written comments to CC@boston.gov or Boston City Hall, Environment Department, Room 709, 1 City Hall Square, Boston, MA 02201

NOTE: You also may contact the Boston Conservation Commission or the Department of Environmental Protection Northeast Regional Office for more information about this application or the Wetlands Protection Act. To contact DEP, call: the Northeast Region: (978) 694-3200.

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

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

A. The **Italian Catholic Cemetery Association** ha presentado una solicitud a la Comisión de Conservación de Boston pidiendo permiso para modificar una zona sujeta a protección en virtud de la Ley de protección de los humedales (Leyes generales, capítulo 131, sección 40) y la Ordenanza sobre los humedales de Boston.

B. La dirección del lote donde se propone la actividad es: **500 Canterbury Street.**

C. El proyecto consiste en la construcción de una adición a un edificio existente y a la realización de mejoras asociadas con el sitio. El trabajo se va a llevar a cabo a menos de 30 metros (100 pies) de un humedal con vegetación limítrofe.

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

E. Las copias de la notificación de intención pueden obtenerse de **Joyce Consulting Group, P.C.** llamando al: **(781)817- 6120** entre las **10:00 am y las 2:00 pm , de lunes a viernes.**

F. De acuerdo con el Decreto Ejecutivo de la Mancomunidad de Massachusetts que suspende ciertas disposiciones de la Ley sobre reuniones abiertas, la audiencia pública se va a llevar a cabo virtualmente en: <https://zoom.us/j/6864582044>. Si no tiene acceso a Internet, puede llamar al: 1-929-205-6099, ingresar el número de identificación de la reunión: 686 458 2044 # y usar nuevamente # como su identificación de participante.

G. La información relativa a la fecha y hora de la audiencia pública puede solicitarse a la **Comisión de Conservación de Boston** por correo electrónico a: CC@boston.gov o llamando al: **(617) 635-4416** entre las **9:00 am y las 5:00 pm, de lunes a viernes.**

NOTA: La notificación de la audiencia pública, incluida su fecha, hora y lugar, va a ser publicada en el **Boston Herald** con por lo menos cinco (5) días de antelación.

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

Affidavit of Translation

I, Gabriela Herrera, am fluent in English and Spanish. I hereby certify that I have verified the following document which is attached to this Affidavit: Abutter Notification for **500 Canterbury Street.**, of one page, on June 16, 2021. I further certify that, to the best of my knowledge, the attached document written in Spanish is a true and accurate translation of the attached document written in English.



Signature of Verifier

Gabriela Herrera

Print Name

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

Enter/Select a Street Name:
CANTERBURY
[Find Addresses](#)

Click an Address to find a Parcel:
430 CANTERBURY ST, 02131
450 CANTERBURY ST, 02131
474 CANTERBURY ST, 02131
576 CANTERBURY ST, 02131
578 CANTERBURY ST, 02131
582 CANTERBURY ST, 02131
586 CANTERBURY ST, 02131
594 CANTERBURY ST, 02131
598 CANTERBURY ST, 02131
602 CANTERBURY ST, 02131

Enter a Parcel ID:
1405199000
[Find a Parcel](#)

When you can see Parcels:
[Click Here to Select a Parcel](#)

Buffer Parameters:
Distance: 300 Feet
[Buffer and Select](#)

Click [here](#) to download a CSV file (Open in Notepad, not in Excel) for Mailing list.
Click [here](#) for an instruction to convert a CSV file to Mailing Labels using MS Word.

Note: Use newer versions of browser to view this site such as IE 11+ or Chrome 47+ etc.



Find a place

Miles

Measurement Result

Press CTRL to enable snapping.



300' ABUTTER LIST - ST. MICHAEL'S CEMETERY - 500 CANTERBURY STREET (PARCEL 1405199000)

PARCEL ID	OWNER	ADDRESSEE	MAILING ADDRESS	MAILING CITY/STATE	MAILING ZIP	PARCEL ADDRESS	PARCEL CITY	PARCEL ZIP
1405198010	MASS AUDUBON SOCIETY	MASS AUDUBON SOCIETY	450 WALK HILL ST	DORCHESTER MA	02124	AMERICAN LEGION HW	DORCHESTER	02124
1405199000	ITALIAN CATH CEM ASSN	ITALIAN CATH CEM ASSN	AMER LEGION HGWY	ROSLINDALE MA	02131	AMERICAN LEGION HW	ROSLINDALE	02131
1405199001	ITALIAN CATH CEMETERY ASSN	ITALIAN CATH CEMETERY ASSN	474 CANTERBURY	DORCHESTER MA	02124	474 CANTERBURY ST	ROSLINDALE	02131
1405199002	COMMWLTH OF MASSACHUSETTS	COMMWLTH OF MASSACHUSETTS	450 CANTERBURY	ROSLINDALE MA	02131	450 CANTERBURY ST	ROSLINDALE	02131
1806562000	LOUIS A CALISI FAMILY	LOUIS A CALISI FAMILY	52 ENGLISH COMMONS	TOPSFIELD MA	01983	283 WALK HILL ST	ROSLINDALE	02131
1806563000	CALISI DORA	CALISI DORA	52 ENGLISH COMMONS	TOPSFIELD MA	01983	289 WALK HILL ST	ROSLINDALE	02131
1806573000	ST MICHAEL CEMETERY CORP	ST MICHAEL CEMETERY CORP	500 CANTERBURY ST	ROSLINDALE MA	02131	586 CANTERBURY ST	ROSLINDALE	02131
1806574000	582 CANTERBURY LLC	582 CANTERBURY LLC	321 WEST GROVE ST	MIDDLEBORO MA	02346	582 CANTERBURY ST	ROSLINDALE	02131
1806575000	VELASQUEZ BROTHERS LLC	VELASQUEZ BROTHERS LLC	52 ENGLISH COMMONS	TOPSFIELD MA	01983	578 CANTERBURY ST	ROSLINDALE	02131
1806576000	CALISI LOUIS A	CALISI LOUIS A	52 ENGLISH COMMONS	TOPSFIELD MA	01983	576 CANTERBURY ST	ROSLINDALE	02131
1806577000	MAZZELLA JENNIE I TS	MAZZELLA JENNIE I TS	335 WALK HILL ST	ROSLINDALE MA	02131	530 AMERICAN LEGION HW	ROSLINDALE	02131
1806580000	MAZZELLA JENNIE GP	MAZZELLA JENNIE GP	335 WALK HILL ST	ROSLINDALE MA	02131	327 WALK HILL ST	ROSLINDALE	02131
1904556000	ITALIAN CATH CEM ASSN	ITALIAN CATH CEM ASSN	223 WALK HILL	ROSLINDALE MA	02131	223 WALK HILL ST	JAMAICA PLAIN	02130
1904602000	FOREST HILLS CEMETERY	FOREST HILLS CEMETERY	165A BLOCK	ROSLINDALE MA	02131	165 A BLOCK ST	ROSLINDALE	02131

**Obtained from City of Boston Online Assessing Database on 05-05-2021

Appendix D: Stormwater Report

St. Michael's Cemetery
500 Canterbury Street
Roslindale, MA

Stormwater Report

Prepared for:

Saint Michael's Cemetery
500 Canterbury Street
Roslindale, MA

Submitted by:

Joyce Consulting Group, PC
100 Wyman Road
Braintree, MA
(781) 817-6120
hello@joycecg.com



May 4, 2021

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

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

Standard 9: Operation and Maintenance Plan

Standard 10: Prohibition of Illicit Discharges

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APPENDIX LIST

EXISTING CONDITIONS

Site Description

The site is located at 500 Canterbury Street, the parcel is bounded to the north by Canterbury Street, to the west by Walk Hill Street, to the south by American Legion Highway and to the east by a commercial landscape operation. The development parcel is approximately 12 acres in size and consists of a large cemetery lot occupied by two structures, a crematorium and a mausoleum building with office space. In addition to these structures the site also has bituminous concrete driveways and cemetery plots. Bisecting the entirety of the parcel is Stony Brook which generally runs parallel to American Legion Highway. Existing site features are indicated on the “Existing Conditions Plan” within the enclosed Plan Set. Existing features can also be seen below in Figure 1 “500 Canterbury Street Aerial Image”.

The site a rectangular lot that is relatively level and generally slopes at a gradual pitch towards Stony Brook. There are catch basins scattered throughout the site that ultimately drain to Stony Brook. There are no other stormwater management systems located on site.



Figure 1: 500 Canterbury Street - Aerial Image

The Soil Survey of Norfolk and Suffolk Counties, Massachusetts, as mapped by the National Resources Conservation Service (NRCS), indicates that soils on the lot consist of – Udorthents, wet substratum (655), as shown in Figure 2 “NRCS Hydrologic Rating Mapping of 485 Blue Hills Parkway”. In addition to the soil mapping, exploratory test pits were advanced at the site, these test pit logs can be found within the plan set. The test pit efforts revealed soils that are generally classified as soils of hydrologic soil group B.



Figure 2: NRCS Hydrologic Rating Mapping of 500 Canterbury Street

For the sake of the stormwater analysis in this report, the immediate area of development is analyzed for pre-development and post-development runoff calculations. The drainage area, as generally delineated by the Limit of Work line, is the portion of the lot effected by the proposed work, the entirety of which drains towards Stony Brook. See Figure 3 for depiction of drainage area.

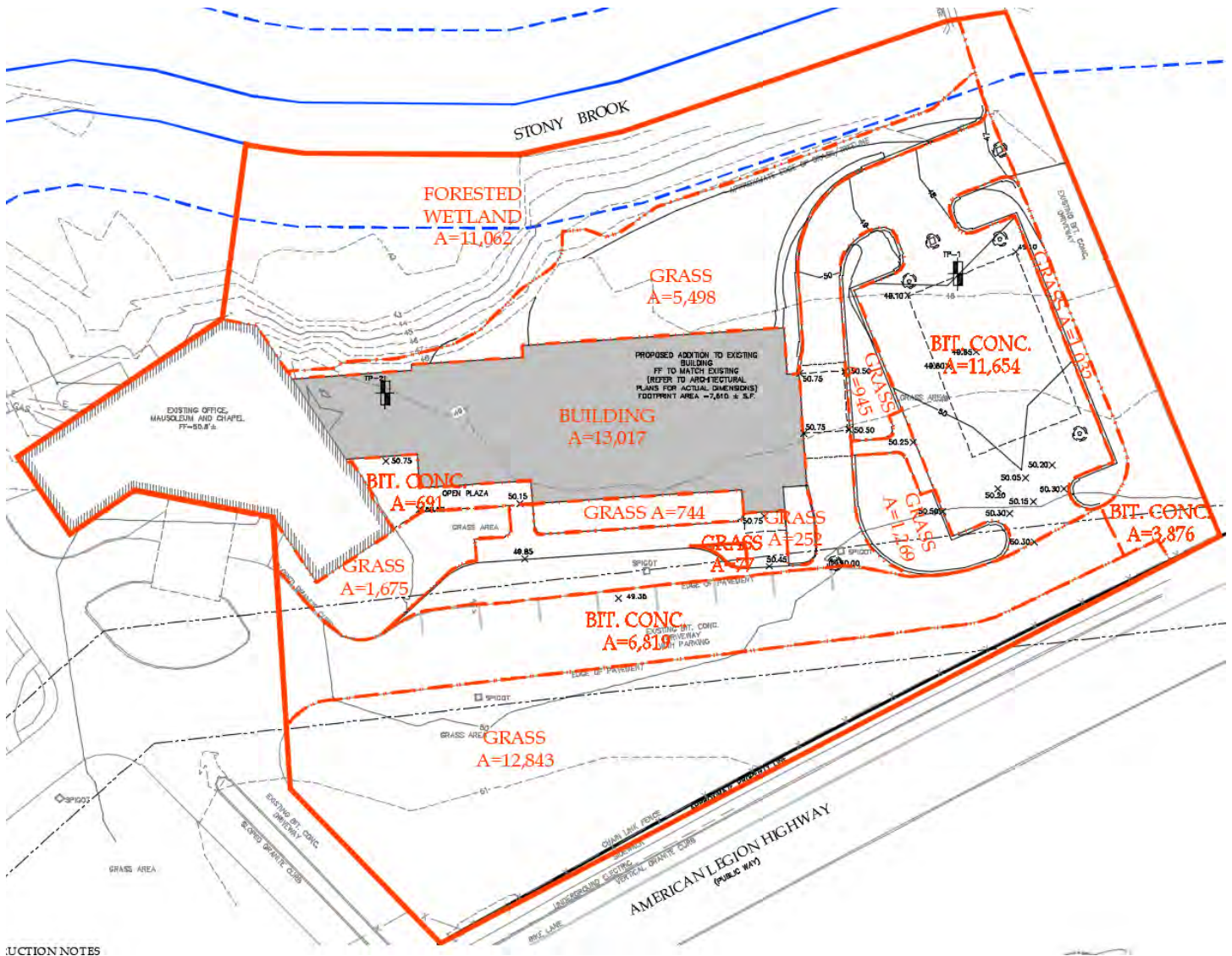


Figure 4: Proposed Drainage Areas – Post Development

Sediment and Erosion Control Measures

Sediment and erosion control during construction will prevent possible damage to surrounding properties. The following guidelines will be adhered to during construction:

1. Keep land disturbance to a minimum. Plan the phases of development so that only the areas actively being developed are exposed. All other areas should have natural vegetation preserved, have good temporary cover, or permanent vegetation established.
2. Stabilize disturbed areas. Permanent structures, temporary or permanent vegetation, and mulch should be employed as quickly as possible after land is disturbed.
3. Protect disturbed areas from stormwater runoff. Install erosion control or stormwater management measures to prevent water from entering and running over disturbed areas, and to prevent erosion damage to downstream facilities.

Installation of perimeter control practices (silt socks, siltation fences and/or haybales) will also occur prior to construction commencing. The contractor will be required to do inspections of all controls regularly to ensure that the controls are working properly. The contractor shall clean and reinstall any control that need to be cleaned or replaced.

STORMWATER MANAGEMENT ANALYSIS

Joyce Consulting Group has performed a stormwater management analysis to compare the pre- and post-development conditions of the site. The hydrology for the drainage areas was analyzed with the Soil Conservation Service's (SCS) Runoff Curve Number (CN) methodology. The HydroCAD Version 9.10 computer modeling system was used in conjunction with the SCS's methods to determine the peak rates of runoff for the 2-year, 10-year, 25-year and 100-year 24-hour storm events.

Existing Site Conditions

Joyce Consulting Group compiled the existing drainage areas from an existing conditions survey prepared by Joyce Consulting Group, P.C. The Drainage Area analyzed for this project is as shown in Figure 3: Existing Drainage Areas – Pre Development. There is one design point for the analysis which ultimately flows to Stony Brook.

Proposed Site Conditions

Joyce Consulting Group compiled the proposed drainage areas from the Site Plan enclosed in this report. The Drainage Area analyzed for this project is as shown in Figure 4: Proposed Drainage Areas – Post Development. There is one design points for the analysis at the edge of Stony Brook.

Department of Environmental Protection's Stormwater Management Standards

Project Type: This project is considered a mix of new development and redevelopment. The project is a mixed-use development, per the Massachusetts Stormwater Management Standards the project is subject to the standards see Volume 1: Overview of Massachusetts Stormwater Standards Chapter 1 Page 2 and Page 3. This project is designed to meet all of the Stormwater Management Standards.

LID Measures:

The project has taken into consideration Low Impact Development measures to the extent that the development is situated within an existing commercial lot and the proposed work is within an area that has been previously disturbed. There are wetlands off site associated with Pope's Pond, there is no work proposed within the wetland.

Standard 1: No New Untreated Discharges

Compliance: The proposed design will comply with this Standard. There will be no new untreated stormwater discharges from areas with pollutant loading. The majority of stormwater runoff flowing off the site will be from either the non-metal roof-top, which is considered runoff without higher potential pollutant loads, or from the driveway areas which are being treated via deep sump catch basins and a hydrodynamic oil & sediment removal chamber which will further cleanse the stormwater before releasing it off-site.

Standard 2: Peak Rate Attenuation

Compliance: This project will comply with this Standard – see Table 1, below. Stormwater management systems have been designed to mitigate post-development peak discharge rates to less than pre-development levels. Supporting hydrologic model calculations are attached at the end of this report.

Table 1: Peak Rates of Runoff (all rates listed in cfs)

	Design Point– SC-1 (Stony Brook)			
	2-Year	10-year	25-year	100-Year
Existing	1.25	3.09	4.20	5.96
Proposed	1.07	2.95	4.11	5.95

Compliance: This project will comply with this standard with the implementation of the proposed stormwater recharge area. The retention area at the west side of the site will provide recharge below the invert of the outlet control structure (elevation 42.95.) A volume of 1,640 c.f. is provided below the lowest invert out of the infiltration system. This recharge volume meets the required recharge volume of 1,052 cubic feet. As shown in the below calculations.

INSTRUCTIONS:

1. Determine the increase in impervious area (in square feet) proposed above each Hydrologic Soil Group and input those areas in the appropriate blue cells.
2. The Required Recharge Volume (in cubic feet) will be calculated and displayed in the yellow cell.

Step No.	
1	Impervious area located above: Hydrologic Soil Group "A" Soil = <input type="text" value="0"/> sf Hydrologic Soil Group "B" Soil = <input type="text" value="36058"/> sf Hydrologic Soil Group "C" Soil = <input type="text" value="0"/> sf Hydrologic Soil Group "D" Soil = <input type="text" value="0"/> sf
2	Required Recharge Volume = <input type="text" value="1051.69"/> cf

Step No.									
1	Method: <input type="text" value="Static"/>								
2	Required Recharge Volume (in cubic feet): <input type="text" value="1052 as determined by the"/> Static Method								
3	Bottom Area (in Feet) <input type="text" value="2329"/>								
4a	<table border="1"> <tr> <td>ONLY - If using Dynamic: In-Situ Method --> Enter Hydraulic Conductivity Rate</td> <td>Hydraulic Conductivity Rate: <input type="text" value="0"/></td> <td>In-Situ Saturated Hydraulic Conductivity Rate: <input type="text" value="0"/></td> </tr> </table>	ONLY - If using Dynamic: In-Situ Method --> Enter Hydraulic Conductivity Rate	Hydraulic Conductivity Rate: <input type="text" value="0"/>	In-Situ Saturated Hydraulic Conductivity Rate: <input type="text" value="0"/>					
ONLY - If using Dynamic: In-Situ Method --> Enter Hydraulic Conductivity Rate	Hydraulic Conductivity Rate: <input type="text" value="0"/>	In-Situ Saturated Hydraulic Conductivity Rate: <input type="text" value="0"/>							
4b	<table border="1"> <thead> <tr> <th>Texture Class</th> <th>NRCS Hydrologic Soil Group (HSG)</th> <th>Infiltration Rate (Inches/Hour)</th> <th>Hours</th> </tr> </thead> <tbody> <tr> <td><input type="text" value="Loamy Sand"/></td> <td><input type="text" value="B"/></td> <td><input type="text" value="1.02"/></td> <td></td> </tr> </tbody> </table>	Texture Class	NRCS Hydrologic Soil Group (HSG)	Infiltration Rate (Inches/Hour)	Hours	<input type="text" value="Loamy Sand"/>	<input type="text" value="B"/>	<input type="text" value="1.02"/>	
Texture Class	NRCS Hydrologic Soil Group (HSG)	Infiltration Rate (Inches/Hour)	Hours						
<input type="text" value="Loamy Sand"/>	<input type="text" value="B"/>	<input type="text" value="1.02"/>							
Time _{drawdown} = <input type="text" value="5.31"/>									
72-Hour Drawdown Requirement Check: <input type="text" value="OK"/>									

Standard 4: Water Quality

Compliance: The project will comply with this standard. The required water quality volume is equal to 0.5” times the Impervious Area of the Site.

$$\text{Required WQv} = (0.5/12) \times (36,058\text{sf}) = 1,502 \text{ cf}$$

The Stormwater infiltration area below the proposed parking lot provides sufficient volume for the required water quality volume with 1,640 cubic feet of storage below the proposed outlet. In addition to this water quality storage, the runoff will also be treated by an isolator row within the infiltration area to further improve water quality.

Parking Lot sweeping, deep sump catch basins, and the isolator row are water quality BMPs that have been incorporated into the design and sized to provide greater than 80% TSS removal. The anticipated TSS removal calculations are included below. A Long-Term Operation and Maintenance (O&M) Plan for the storm drainage system has been included at the end of this report as well.

3. After BMP is selected, TSS Removal and other Columns are automatically completed.

Location:

TSS Removal Calculation Worksheet	B	C	D	E	F
	BMP ¹	TSS Removal Rate ¹	Starting TSS Load*	Amount Removed (C*D)	Remaining Load (D-E)
	Street Sweeping - 5%	0.05	1.00	0.05	0.95
	Deep Sump and Hooded Catch Basin	0.25	0.95	0.24	0.71
	Proprietary Treatment Practice	0.80	0.71	0.57	0.14
		0.00	0.14	0.00	0.14
		0.00	0.14	0.00	0.14

Total TSS Removal =

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

Project:
Prepared By:
Date:

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

DESCRIPTION OF DISCHARGE POINT: Detention Basin

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

Compliance: The project is not associated with Higher Potential Pollutant Loads. This project complies with this standard.

Standard 6: Critical Areas

Compliance: The site is not located near any Critical Areas. This project complies with this standard.

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

Compliance: Since the project is a mix of new development and redevelopment, the project is complying with all of the Stormwater Management Standards, as indicated previously in this report.

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

Compliance: The project will comply with this standard. Sedimentation and erosion controls will be incorporated as part of the design of this project and employed during site construction.

Standard 9: Operation and Maintenance Plan

Compliance: An operations and maintenance plan intended to ensure the continued proper functioning of the existing stormwater controls and the proposed stormwater controls has been included with this report as Appendix F.

Standard 10: Prohibition of Illicit Discharges.

Compliance: An Illicit Discharge Statement will be provided prior to discharge to post-construction BMP's as required.

CONCLUSION

In conclusion, the proposed work at 500 Canterbury Street will have a beneficial effect on the stormwater management of the site by reducing the rate of stormwater runoff from the site, providing the necessary suspended solids removal and will comply with the DEP's Stormwater Management Handbook standards.

APPENDIX LIST

Appendix A – NRCS (SCS) Soil Description

Appendix B – Plans

Appendix C – Hydrologic Model

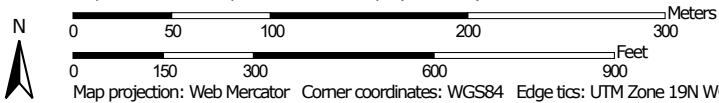
Appendix D – Operations and Maintenance Plan

APPENDIX A
NRCS (SCS) SOIL DESCRIPTION

Soil Map—Norfolk and Suffolk Counties, Massachusetts
(St. Michael's Cemetery)




Map Scale: 1:3,830 if printed on A landscape (11" x 8.5") sheet.




Soil Map—Norfolk and Suffolk Counties, Massachusetts
(St. Michael's Cemetery)


MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)




















Soils







 Soil Map Unit Polygons

 Soil Map Unit Lines


 Soil Map Unit Points

Special Point Features






-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features


Water Features

 Streams and Canals

Transportation

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

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

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

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

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

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5	Saco silt loam, 0 to 3 percent slopes	1.4	2.0%
70A	Ridgebury fine sandy loam, 0 to 3 percent slopes	5.5	7.9%
73A	Whitman fine sandy loam, 0 to 3 percent slopes, extremely stony	6.5	9.4%
254B	Merrimac fine sandy loam, 3 to 8 percent slopes	0.8	1.2%
310B	Woodbridge fine sandy loam, 3 to 8 percent slopes	18.1	26.1%
420B	Canton fine sandy loam, 3 to 8 percent slopes	12.4	17.8%
602	Urban land, 0 to 15 percent slopes	0.5	0.7%
653	Udorthents, sandy	5.5	8.0%
655	Udorthents, wet substratum	18.7	26.9%
Totals for Area of Interest		69.4	100.0%

Norfolk and Suffolk Counties, Massachusetts

655—Udorthents, wet substratum

Map Unit Setting

National map unit symbol: vkyd

Elevation: -30 to 310 feet

Mean annual precipitation: 45 to 54 inches

Mean annual air temperature: 43 to 54 degrees F

Frost-free period: 145 to 240 days

Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Landform position (two-dimensional): Footslope, shoulder

Landform position (three-dimensional): Tread, riser

Down-slope shape: Linear, convex

Across-slope shape: Linear, convex

Parent material: Excavated and filled sandy and gravelly human transported material over highly-decomposed herbaceous organic material

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Minor Components

Urban land

Percent of map unit: 3 percent

Hydric soil rating: Unranked

Ipswich

Percent of map unit: 2 percent

Landform: Marshes

Hydric soil rating: Yes

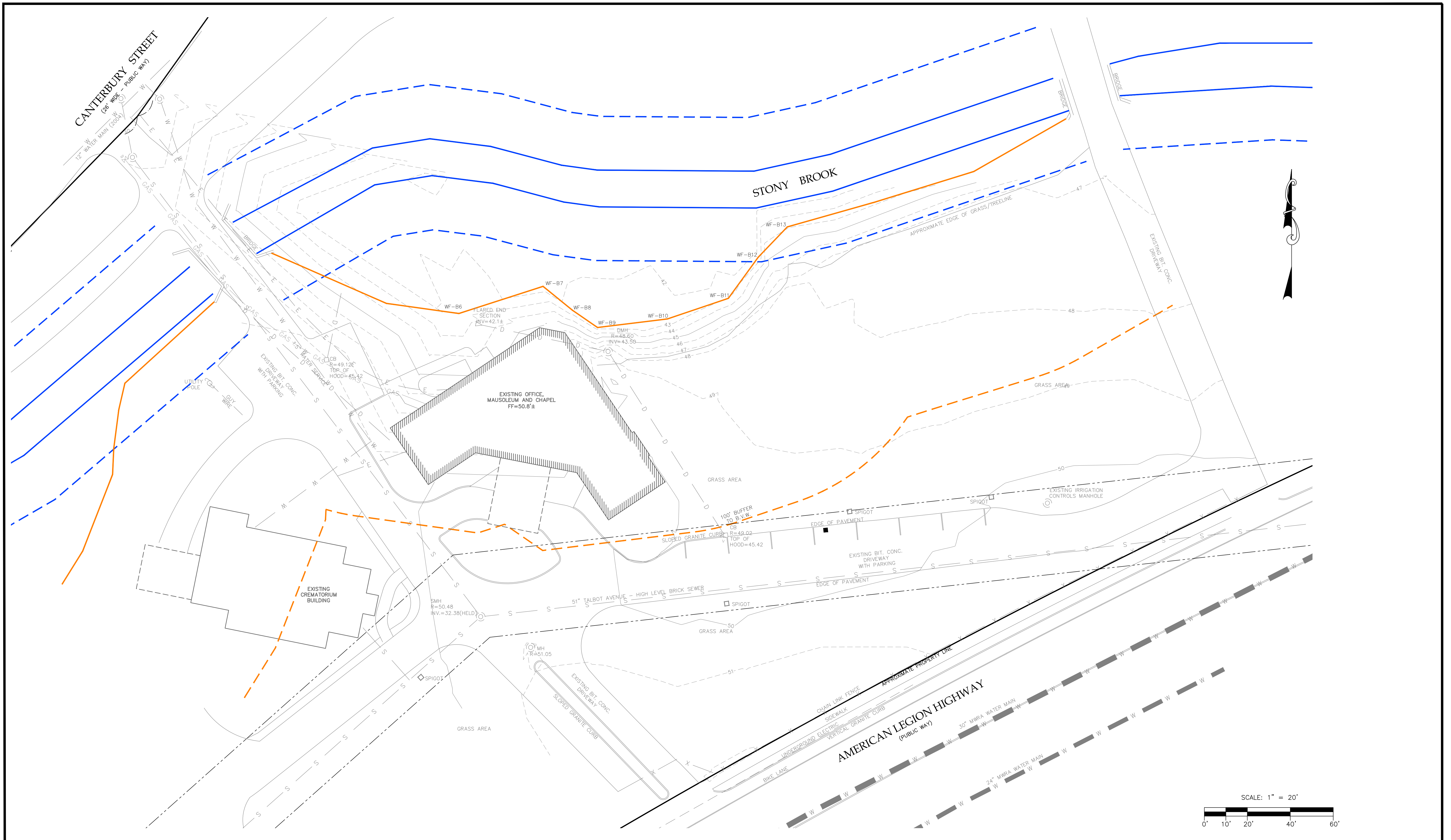
Data Source Information

Soil Survey Area: Norfolk and Suffolk Counties, Massachusetts

Survey Area Data: Version 16, Jun 11, 2020

APPENDIX B

EXISTING CONDITIONS PLANS PROPOSED CONDITIONS PLANS



GENERAL NOTES

1. SITE FEATURES AND UTILITIES SHOWN ON THIS PLAN ARE BASED ON A COMPILATION OF RECORD PLANS, PLANS ACQUIRED FROM UTILITY PROVIDERS, GPS AND LAND INSTRUMENT SURVEY.
2. LOCATION OF SUBSURFACE UTILITIES IS APPROXIMATE. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING UTILITY SERVICES THROUGHOUT CONSTRUCTION. CONTACT DIG SAFE AT 1-888-DIGSAFE AT LEAST 72 HOURS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

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CIVIL ENGINEERS

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BRAintree, MA 02184

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LEGEND

W	EX. WATER	SMH	SEWER MANHOLE
S	EX. SEWER	TMH	TELEPHONE MANHOLE
D	EX. DRAIN	CB	EX. CATCH BASIN
E	EX. ELECT	HT	EX. HANDHOLE
T	EX. TEL	URP	UTILITY POLE
G	EX. GAS	URV	GAS VALVE
LP	EX. LIGHT POLE	URF	FLUSH GRANITE CURB
DMH	DRAM MANHOLE	URC	CONCRETE RETAINING WALL
EMH	ELECTRIC MANHOLE		
VDC	VERTICAL GRANITE CURB		
FDC	FLUSH GRANITE CURB		
CRTW	CONCRETE RETAINING WALL		

SCALE	1"=20'	JOB NO.	JCG 20-052
DATE	10.21.20	REVISIONS	
NO.	DATE	REVISION	BY

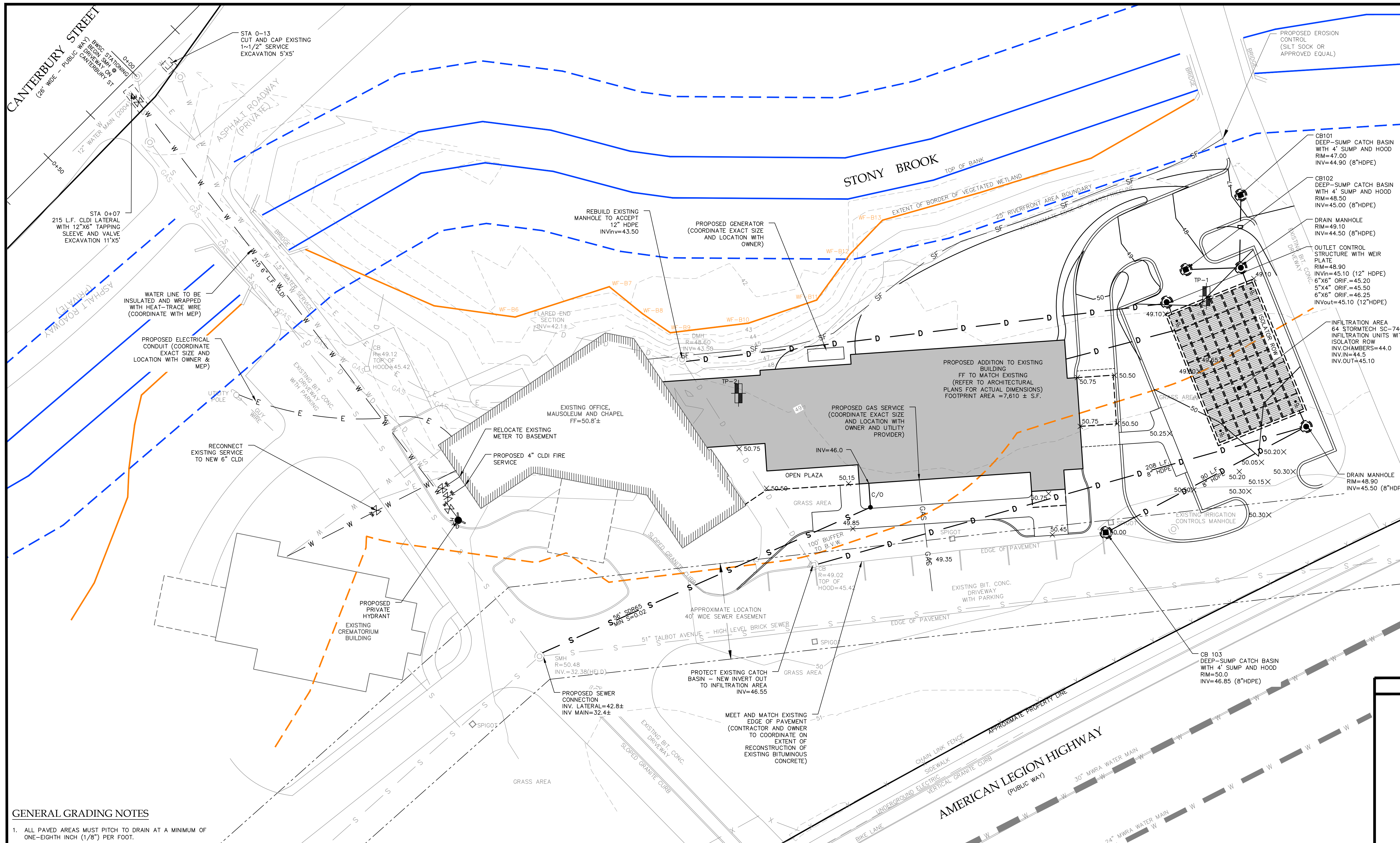
SCALE: 1" = 20'

0' 10' 20' 40' 60'

PLAN TITLE: EXISTING CONDITIONS PLAN
GRADING, UTILITY AND DRAINAGE
500 CANTERBURY STREET
ROSLINDALE, MA

PREPARED FOR: SAINT MICHAEL'S CEMETERY
500 CANTERBURY STREET
ROSLINDALE, MA

C-1



DRAINAGE CALCULATIONS:

PROPOSED IMPERVIOUS AREA:
 TOTAL PROPOSED IMPERVIOUS AREA = 7,609 SF
 NEW BUILDING = 7,609 SF
 NEW DRIVEWAY & HARDSCAPE = 11,654 SF
 TOTAL = 19,263 SF

STORAGE REQUIRED:
 19,263 S.F. * 1 1/2" = 1,605 C.F. REQUIRED

STORAGE PROVIDED:
 CRUSHED STONE BED TOTAL VOLUME:
 58.96' X 39.5' X 3.5' = 8,151.2 C.F.

SYSTEM HEIGHT: 3.5'
 TOTAL CHAMBER VOLUME PROVIDED:
 64-SC 740 UNITS (45.9 CF/CHAMBER)
 64 * 45.9 CF/UNIT = 2,937.6 C.F. STORAGE
 CRUSHED STONE BED STORAGE VOLUME:
 (STONE VOLUME LESS CHAMBER STORAGE)
 8,151.2 C.F. - 2,937.6 C.F. = 5,213.6 C.F.
 5,213.6 C.F. X (30% Voids)
 5,213.6 C.F. X 0.30 = 1,564.1 C.F.

TOTAL STORAGE PROVIDED:
 CHAMBER STORAGE + STONE STORAGE
 2,937.6 C.F. + 1,564.1 C.F. = 4,501.7 C.F. STORAGE

OUTLET AT ELEV. 45.20' (36.4% OF STORAGE)
 36.4% = 1,640 C.F. STORAGE PRIOR TO OUTLET

STORAGE REQUIRED < STORAGE PROVIDED
 (1,605 C.F. < 1,640 C.F.)

THEFORE SYSTEM CAPACITY IS SUFFICIENT

SITE INFORMATION:
 ADDRESS: 500 CANTERBURY STREET
 PARCEL: 1405199000
 WARD: 14
 EXISTING WATER ACCOUNT# 1582218
 LAND USE CODE: CL

OWNER:
 ITALIAN CATHOLIC CEMETERY ASSOCIATION

PROJECT CONTACT:
 SAINT MICHAEL'S CEMETERY
 CONTACT: MICHAEL SHEEHAN
 PHONE: 617-524-1036
 500 CANTERBURY STREET
 BOSTON, MA 02131

BWSC SITE PLAN #
BWSC USE ONLY

GENERAL GRADING NOTES

- ALL PAVED AREAS MUST PITCH TO DRAIN AT A MINIMUM OF ONE-EIGHTH INCH (1/8") PER FOOT.
- WHERE NEW PAVING MEETS EXISTING PAVING, MEET LINE AND GRADE OF EXISTING.
- UNDERGROUND UTILITIES SHOWN AS APPROXIMATE ONLY.
- PROVIDE POSITIVE DRAINAGE AWAY FROM FACE OF BUILDINGS AT ALL LOCATIONS.
- ALL PROPOSED TOP OF CURB ELEVATIONS ARE SIX INCHES (6") ABOVE BOTTOM OF CURB ELEVATIONS UNLESS SHOWN OTHERWISE.
- THE GENERAL CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING EARTHWORK.
- ALL POINTS OF CONSTRUCTION EGRESS AND/OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADS.
- THE CONTRACTOR SHALL VERIFY ALL EXISTING GRADES IN THE FIELD AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ARCHITECT/ENGINEER PRIOR TO STARTING WORK.
- ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE GENERAL CONTRACTOR AND SHARED WITH THE ARCHITECT AND ENGINEER AS REQUIRED.
- SURPLUS MATERIALS SHALL NOT BE REMOVED FROM THE SITE UNLESS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
- ANY AREAS OUTSIDE OF THE LIMIT-OF-WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.

UTILITY CONSTRUCTION NOTES

- WATER SERVICE SHALL BE 6" DI. CL. CLASS 56 PIPE. ALL WATER MAIN FITTINGS, VALVES AND GATES SHALL MEET THE BWSC STANDARDS.
- MINIMUM COVER OVER THE WATER MAIN AND SERVICES SHALL BE FIVE (5) FEET.
- SANITARY SEWER GRAVITY PIPE SHALL BE 6" PVC, SDR 35, AND SHALL MEET THE BWSC STANDARDS.
- WATER MAIN BENDS, TEES, AND PLUGS SHALL HAVE A CONCRETE THRUST BLOCKS AS SPECIFIED IN THE DETAIL SHEET.
- ALL CONSTRUCTION TO MEET BWSC STANDARDS.
- GAS, TELEPHONE, CABLE, ELECTRICITY TO BE DESIGNED BY THE INDIVIDUAL UTILITY COMPANY.
- MAINTAIN 10 FEET HORIZONTAL SEPARATION BETWEEN SEWER AND WATER LINES. ENCASE BOTH UTILITIES WITH CONCRETE IF 10 FEET SEPARATION CANNOT BE MAINTAINED. WHEREVER THERE IS LESS THAN 10 FEET OF HORIZONTAL SEPARATION AND 18" OF VERTICAL SEPARATION BETWEEN A PROPOSED OR EXISTING SEWER LINE TO REMAIN AND A PROPOSED OR EXISTING WATER LINE TO REMAIN, BOTH UTILITIES SHALL BE ENCASED IN CONCRETE.
- PROPOSED CLEANOUTS WILL BE CONSTRUCTED OF TWO 22.5 DEGREE ELBOWS AND ONE 45 DEGREE ELBOW.

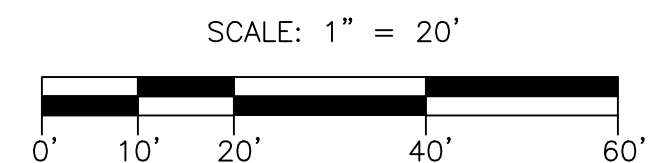
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 781-817-6120
 hello@joycecg.com

LEGEND

W	EX. WATER	SM	WATER VALVE
S	EX. SEWER	SMH	HYDRANT
D	EX. DRAIN	SMH	SEWER MANHOLE
E	EX. ELECT	SMH	TELEPHONE MANHOLE
T	EX. TEL	SMH	EX. CATCH BASIN
G	EX. GAS	SMH	EX. MANHOLE
LP	EX. LIGHT POLE	SMH	UTILITY POLE
DMH	DRAIN MANHOLE	SMH	GAS VALVE
EMH	ELECTRIC MANHOLE	SMH	
VCC	VERTICAL GRANITE CURB	SMH	
FCC	FLUSH GRANITE CURB	SMH	
CRW	CONCRETE RETAINING WALL	SMH	



SCALE: 1" = 20'

DATE: 03.31.21

JOB NO.: JCG 20-052

NO.	DATE	REVISION	BY

PLAN TITLE: **BWSC SITE PLAN (BWSC SHEET 1 OF 2)**
GRADING, UTILITY AND DRAINAGE
500 CANTERBURY STREET
ROSLINDALE, MA

PREPARED FOR:
SAINT MICHAEL'S CEMETERY
500 CANTERBURY STREET
ROSLINDALE, MA

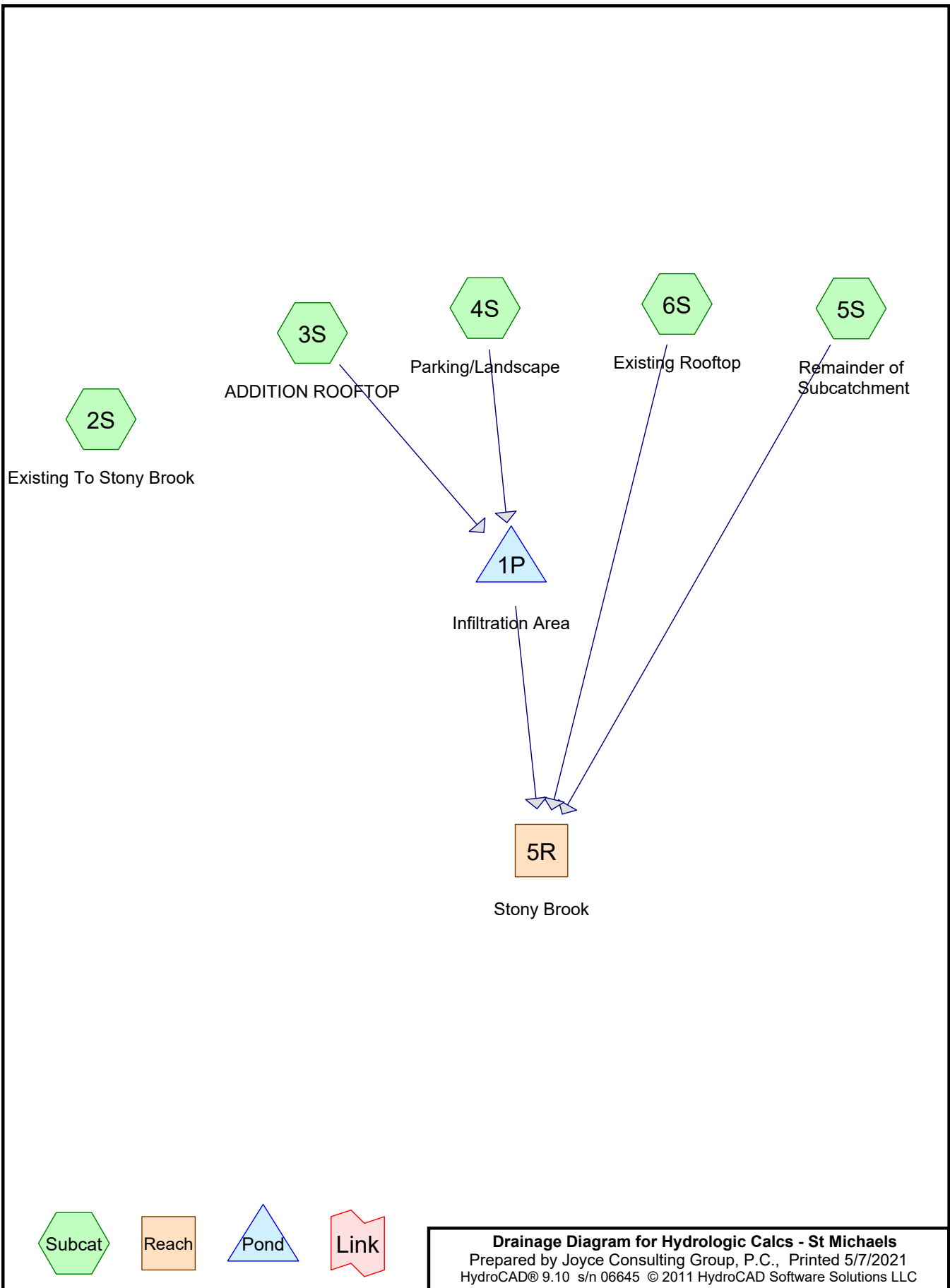
C-4

500 Canterbury Street
JCG #20-052

Boston, Massachusetts
05/04/2021

APPENDIX C

HYDROLOGIC MODEL



Hydrologic Calcs - St Michaels

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
0.520	60	Woods, Fair, HSG B (2S, 5S)
1.575	61	>75% Grass cover, Good, HSG B (2S, 4S, 5S)
0.248	98	Existing Building (2S, 6S)
0.246	98	Parking/Driveway (2S)
0.175	98	Roof (3S)
0.089	98	driveway (5S)
0.157	98	ex pav (4S)
0.268	98	new pave (4S)
0.016	98	open patio (4S)
3.292	74	TOTAL AREA

Hydrologic Calcs - St Michaels

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St. Michael's Cemetery- Hydro Calcs

Type III 24-hr 2-Year Rainfall=3.20"

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Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 points

Runoff by SCS TR-20 method, UH=SCS

Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 2S: Existing To Stony Brook Runoff Area=71,709 sf 22.46% Impervious Runoff Depth>0.70"
Flow Length=269' Tc=7.2 min CN=69 Runoff=1.25 cfs 0.096 af

Subcatchment 3S: ADDITION ROOFTOP Runoff Area=7,610 sf 100.00% Impervious Runoff Depth>2.77"
Tc=6.0 min CN=98 Runoff=0.53 cfs 0.040 af

Subcatchment 4S: Parking/Landscape Runoff Area=36,683 sf 52.24% Impervious Runoff Depth>1.30"
Tc=0.0 min CN=80 Runoff=1.58 cfs 0.091 af

Subcatchment 5S: Remainder of Runoff Area=22,008 sf 17.61% Impervious Runoff Depth>0.62"
Tc=0.0 min CN=67 Runoff=0.39 cfs 0.026 af

Subcatchment 6S: Existing Rooftop Runoff Area=5,408 sf 100.00% Impervious Runoff Depth>2.77"
Tc=6.0 min CN=98 Runoff=0.38 cfs 0.029 af

Reach 5R: Stony Brook Inflow=1.07 cfs 0.145 af
Outflow=1.07 cfs 0.145 af

Pond 1P: Infiltration Area Peak Elev=45.72' Storage=2,523 cf Inflow=1.95 cfs 0.131 af
Outflow=0.72 cfs 0.091 af

Total Runoff Area = 3.292 ac Runoff Volume = 0.282 af Average Runoff Depth = 1.03"
63.63% Pervious = 2.095 ac 36.37% Impervious = 1.197 ac

Hydrologic Calcs - St Michaels

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St. Michael's Cemetery- Hydro Calcs

Type III 24-hr 2-Year Rainfall=3.20"

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Summary for Subcatchment 2S: Existing To Stony Brook

Runoff = 1.25 cfs @ 12.12 hrs, Volume= 0.096 af, Depth> 0.70"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
44,544	61	>75% Grass cover, Good, HSG B
11,062	60	Woods, Fair, HSG B
* 5,408	98	Existing Building
* 10,695	98	Parking/Driveway
71,709	69	Weighted Average
55,606		77.54% Pervious Area
16,103		22.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	48	0.0200	0.15		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.20"
0.2	25	0.0160	2.57		Shallow Concentrated Flow, Shallow Conc. Paved Kv= 20.3 fps
1.0	120	0.0160	2.04		Shallow Concentrated Flow, Shallow conc Unpaved Kv= 16.1 fps
0.1	31	0.1900	7.02		Shallow Concentrated Flow, SC Unpaved Kv= 16.1 fps
0.5	45	0.0100	1.61		Shallow Concentrated Flow, sc Unpaved Kv= 16.1 fps
7.2	269	Total			

Summary for Subcatchment 3S: ADDITION ROOFTOP

Runoff = 0.53 cfs @ 12.09 hrs, Volume= 0.040 af, Depth> 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

Area (sf)	CN	Description
* 7,610	98	Roof
7,610		100.00% Impervious Area

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

Hydrologic Calcs - St Michaels

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St. Michael's Cemetery- Hydro Calcs

Type III 24-hr 2-Year Rainfall=3.20"

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Summary for Subcatchment 4S: Parking/Landscape

Runoff = 1.58 cfs @ 12.01 hrs, Volume= 0.091 af, Depth> 1.30"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

	Area (sf)	CN	Description
*	11,654	98	new pave
*	6,819	98	ex pav
	17,519	61	>75% Grass cover, Good, HSG B
*	691	98	open patio
	36,683	80	Weighted Average
	17,519		47.76% Pervious Area
	19,164		52.24% Impervious Area

Summary for Subcatchment 5S: Remainder of Subcatchment

Runoff = 0.39 cfs @ 12.02 hrs, Volume= 0.026 af, Depth> 0.62"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

	Area (sf)	CN	Description
*	3,876	98	driveway
	1,032	61	>75% Grass cover, Good, HSG B
	5,498	61	>75% Grass cover, Good, HSG B
	11,602	60	Woods, Fair, HSG B
	22,008	67	Weighted Average
	18,132		82.39% Pervious Area
	3,876		17.61% Impervious Area

Summary for Subcatchment 6S: Existing Rooftop

Runoff = 0.38 cfs @ 12.09 hrs, Volume= 0.029 af, Depth> 2.77"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-Year Rainfall=3.20"

	Area (sf)	CN	Description
*	5,408	98	Existing Building
	5,408		100.00% Impervious Area

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

Hydrologic Calcs - St Michaels

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St. Michael's Cemetery- Hydro Calcs
Type III 24-hr 2-Year Rainfall=3.20"

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Summary for Reach 5R: Stony Brook

Inflow Area = 1.646 ac, 50.28% Impervious, Inflow Depth > 1.06" for 2-Year event
 Inflow = 1.07 cfs @ 12.22 hrs, Volume= 0.145 af
 Outflow = 1.07 cfs @ 12.22 hrs, Volume= 0.145 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: Infiltration Area

Inflow Area = 1.017 ac, 60.45% Impervious, Inflow Depth > 1.55" for 2-Year event
 Inflow = 1.95 cfs @ 12.01 hrs, Volume= 0.131 af
 Outflow = 0.72 cfs @ 12.30 hrs, Volume= 0.091 af, Atten= 63%, Lag= 17.2 min
 Primary = 0.72 cfs @ 12.30 hrs, Volume= 0.091 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 45.72' @ 12.30 hrs Surf.Area= 2,329 sf Storage= 2,523 cf

Plug-Flow detention time= 140.1 min calculated for 0.090 af (69% of inflow)
 Center-of-Mass det. time= 69.3 min (849.8 - 780.5)

Volume	Invert	Avail.Storage	Storage Description
#1A	44.00'	1,563 cf	39.50'W x 58.96'L x 3.50'H Field A 8,151 cf Overall - 2,940 cf Embedded = 5,211 cf x 30.0% Voids
#2A	44.50'	2,940 cf	StormTech SC-740 x 64 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		4,503 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	45.20'	6.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#2	Primary	45.50'	5.0" W x 4.0" H Vert. Orifice/Grate C= 0.600
#3	Primary	46.25'	6.0" W x 6.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=0.72 cfs @ 12.30 hrs HW=45.71' TW=0.00' (Dynamic Tailwater)

- 1=Orifice/Grate (Orifice Controls 0.59 cfs @ 2.36 fps)
- 2=Orifice/Grate (Orifice Controls 0.13 cfs @ 1.49 fps)
- 3=Orifice/Grate (Controls 0.00 cfs)

Hydrologic Calcs - St Michaels

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St. Michael's Cemetery- Hydro Calcs
Type III 24-hr 10-Year Rainfall=4.70"

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Summary for Subcatchment 2S: Existing To Stony Brook

Runoff = 3.09 cfs @ 12.11 hrs, Volume= 0.219 af, Depth> 1.60"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
44,544	61	>75% Grass cover, Good, HSG B
11,062	60	Woods, Fair, HSG B
* 5,408	98	Existing Building
* 10,695	98	Parking/Driveway
71,709	69	Weighted Average
55,606		77.54% Pervious Area
16,103		22.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	48	0.0200	0.15		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.20"
0.2	25	0.0160	2.57		Shallow Concentrated Flow, Shallow Conc. Paved Kv= 20.3 fps
1.0	120	0.0160	2.04		Shallow Concentrated Flow, Shallow conc Unpaved Kv= 16.1 fps
0.1	31	0.1900	7.02		Shallow Concentrated Flow, SC Unpaved Kv= 16.1 fps
0.5	45	0.0100	1.61		Shallow Concentrated Flow, sc Unpaved Kv= 16.1 fps
7.2	269	Total			

Summary for Subcatchment 3S: ADDITION ROOFTOP

Runoff = 0.78 cfs @ 12.09 hrs, Volume= 0.060 af, Depth> 4.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

Area (sf)	CN	Description
* 7,610	98	Roof
7,610		100.00% Impervious Area

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

Hydrologic Calcs - St Michaels

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St. Michael's Cemetery- Hydro Calcs
Type III 24-hr 10-Year Rainfall=4.70"

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Summary for Subcatchment 4S: Parking/Landscape

Runoff = 2.99 cfs @ 12.00 hrs, Volume= 0.173 af, Depth> 2.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	11,654	98	new pave
*	6,819	98	ex pav
	17,519	61	>75% Grass cover, Good, HSG B
*	691	98	open patio
	36,683	80	Weighted Average
	17,519		47.76% Pervious Area
	19,164		52.24% Impervious Area

Summary for Subcatchment 5S: Remainder of Subcatchment

Runoff = 1.04 cfs @ 12.01 hrs, Volume= 0.062 af, Depth> 1.46"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	3,876	98	driveway
	1,032	61	>75% Grass cover, Good, HSG B
	5,498	61	>75% Grass cover, Good, HSG B
	11,602	60	Woods, Fair, HSG B
	22,008	67	Weighted Average
	18,132		82.39% Pervious Area
	3,876		17.61% Impervious Area

Summary for Subcatchment 6S: Existing Rooftop

Runoff = 0.56 cfs @ 12.09 hrs, Volume= 0.043 af, Depth> 4.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-Year Rainfall=4.70"

	Area (sf)	CN	Description
*	5,408	98	Existing Building
	5,408		100.00% Impervious Area

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

Hydrologic Calcs - St Michaels

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St. Michael's Cemetery- Hydro Calcs
Type III 24-hr 10-Year Rainfall=4.70"

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Summary for Reach 5R: Stony Brook

Inflow Area = 1.646 ac, 50.28% Impervious, Inflow Depth > 2.15" for 10-Year event
Inflow = 2.95 cfs @ 12.07 hrs, Volume= 0.295 af
Outflow = 2.95 cfs @ 12.07 hrs, Volume= 0.295 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: Infiltration Area

Inflow Area = 1.017 ac, 60.45% Impervious, Inflow Depth > 2.75" for 10-Year event
Inflow = 3.52 cfs @ 12.01 hrs, Volume= 0.233 af
Outflow = 1.83 cfs @ 12.16 hrs, Volume= 0.191 af, Atten= 48%, Lag= 9.1 min
Primary = 1.83 cfs @ 12.16 hrs, Volume= 0.191 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 46.40' @ 12.16 hrs Surf.Area= 2,329 sf Storage= 3,546 cf

Plug-Flow detention time= 99.5 min calculated for 0.191 af (82% of inflow)
Center-of-Mass det. time= 48.4 min (820.2 - 771.8)

Volume	Invert	Avail.Storage	Storage Description
#1A	44.00'	1,563 cf	39.50'W x 58.96'L x 3.50'H Field A 8,151 cf Overall - 2,940 cf Embedded = 5,211 cf x 30.0% Voids
#2A	44.50'	2,940 cf	StormTech SC-740 x 64 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		4,503 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	45.20'	6.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#2	Primary	45.50'	5.0" W x 4.0" H Vert. Orifice/Grate C= 0.600
#3	Primary	46.25'	6.0" W x 6.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=1.82 cfs @ 12.16 hrs HW=46.39' TW=0.00' (Dynamic Tailwater)

- 1=Orifice/Grate (Orifice Controls 1.17 cfs @ 4.66 fps)
- 2=Orifice/Grate (Orifice Controls 0.57 cfs @ 4.10 fps)
- 3=Orifice/Grate (Orifice Controls 0.09 cfs @ 1.22 fps)

Hydrologic Calcs - St Michaels

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St. Michael's Cemetery- Hydro Calcs
Type III 24-hr 25-Year Rainfall=5.50"

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Summary for Subcatchment 2S: Existing To Stony Brook

Runoff = 4.20 cfs @ 12.11 hrs, Volume= 0.294 af, Depth> 2.15"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
44,544	61	>75% Grass cover, Good, HSG B
11,062	60	Woods, Fair, HSG B
* 5,408	98	Existing Building
* 10,695	98	Parking/Driveway
71,709	69	Weighted Average
55,606		77.54% Pervious Area
16,103		22.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	48	0.0200	0.15		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.20"
0.2	25	0.0160	2.57		Shallow Concentrated Flow, Shallow Conc. Paved Kv= 20.3 fps
1.0	120	0.0160	2.04		Shallow Concentrated Flow, Shallow conc Unpaved Kv= 16.1 fps
0.1	31	0.1900	7.02		Shallow Concentrated Flow, SC Unpaved Kv= 16.1 fps
0.5	45	0.0100	1.61		Shallow Concentrated Flow, sc Unpaved Kv= 16.1 fps
7.2	269	Total			

Summary for Subcatchment 3S: ADDITION ROOFTOP

Runoff = 0.92 cfs @ 12.09 hrs, Volume= 0.071 af, Depth> 4.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-Year Rainfall=5.50"

Area (sf)	CN	Description
* 7,610	98	Roof
7,610		100.00% Impervious Area

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

Hydrologic Calcs - St Michaels

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St. Michael's Cemetery- Hydro Calcs

Type III 24-hr 25-Year Rainfall=5.50"

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Summary for Subcatchment 4S: Parking/Landscape

Runoff = 3.77 cfs @ 12.00 hrs, Volume= 0.219 af, Depth> 3.13"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr 25-Year Rainfall=5.50"

	Area (sf)	CN	Description
*	11,654	98	new pave
*	6,819	98	ex pav
	17,519	61	>75% Grass cover, Good, HSG B
*	691	98	open patio
	36,683	80	Weighted Average
	17,519		47.76% Pervious Area
	19,164		52.24% Impervious Area

Summary for Subcatchment 5S: Remainder of Subcatchment

Runoff = 1.44 cfs @ 12.01 hrs, Volume= 0.084 af, Depth> 1.99"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr 25-Year Rainfall=5.50"

	Area (sf)	CN	Description
*	3,876	98	driveway
	1,032	61	>75% Grass cover, Good, HSG B
	5,498	61	>75% Grass cover, Good, HSG B
	11,602	60	Woods, Fair, HSG B
	22,008	67	Weighted Average
	18,132		82.39% Pervious Area
	3,876		17.61% Impervious Area

Summary for Subcatchment 6S: Existing Rooftop

Runoff = 0.65 cfs @ 12.09 hrs, Volume= 0.050 af, Depth> 4.87"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Type III 24-hr 25-Year Rainfall=5.50"

	Area (sf)	CN	Description
*	5,408	98	Existing Building
	5,408		100.00% Impervious Area

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

Hydrologic Calcs - St Michaels

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St. Michael's Cemetery- Hydro Calcs
Type III 24-hr 25-Year Rainfall=5.50"

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Summary for Reach 5R: Stony Brook

Inflow Area = 1.646 ac, 50.28% Impervious, Inflow Depth > 2.78" for 25-Year event
 Inflow = 4.11 cfs @ 12.07 hrs, Volume= 0.382 af
 Outflow = 4.11 cfs @ 12.07 hrs, Volume= 0.382 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: Infiltration Area

Inflow Area = 1.017 ac, 60.45% Impervious, Inflow Depth > 3.43" for 25-Year event
 Inflow = 4.40 cfs @ 12.01 hrs, Volume= 0.290 af
 Outflow = 2.65 cfs @ 12.12 hrs, Volume= 0.248 af, Atten= 40%, Lag= 6.6 min
 Primary = 2.65 cfs @ 12.12 hrs, Volume= 0.248 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
 Peak Elev= 46.76' @ 12.12 hrs Surf.Area= 2,329 sf Storage= 3,961 cf

Plug-Flow detention time= 87.6 min calculated for 0.247 af (85% of inflow)
 Center-of-Mass det. time= 43.9 min (812.0 - 768.1)

Volume	Invert	Avail.Storage	Storage Description
#1A	44.00'	1,563 cf	39.50'W x 58.96'L x 3.50'H Field A 8,151 cf Overall - 2,940 cf Embedded = 5,211 cf x 30.0% Voids
#2A	44.50'	2,940 cf	StormTech SC-740 x 64 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		4,503 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	45.20'	6.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#2	Primary	45.50'	5.0" W x 4.0" H Vert. Orifice/Grate C= 0.600
#3	Primary	46.25'	6.0" W x 6.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=2.60 cfs @ 12.12 hrs HW=46.74' TW=0.00' (Dynamic Tailwater)

- 1=Orifice/Grate (Orifice Controls 1.36 cfs @ 5.46 fps)
- 2=Orifice/Grate (Orifice Controls 0.69 cfs @ 4.98 fps)
- 3=Orifice/Grate (Orifice Controls 0.55 cfs @ 2.24 fps)

Hydrologic Calcs - St Michaels

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St. Michael's Cemetery- Hydro Calcs

Type III 24-hr 100-Year Rainfall=6.70"

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Summary for Subcatchment 2S: Existing To Stony Brook

Runoff = 5.96 cfs @ 12.11 hrs, Volume= 0.416 af, Depth> 3.03"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
44,544	61	>75% Grass cover, Good, HSG B
11,062	60	Woods, Fair, HSG B
* 5,408	98	Existing Building
* 10,695	98	Parking/Driveway
71,709	69	Weighted Average
55,606		77.54% Pervious Area
16,103		22.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	48	0.0200	0.15		Sheet Flow, Sheet Grass: Short n= 0.150 P2= 3.20"
0.2	25	0.0160	2.57		Shallow Concentrated Flow, Shallow Conc. Paved Kv= 20.3 fps
1.0	120	0.0160	2.04		Shallow Concentrated Flow, Shallow conc Unpaved Kv= 16.1 fps
0.1	31	0.1900	7.02		Shallow Concentrated Flow, SC Unpaved Kv= 16.1 fps
0.5	45	0.0100	1.61		Shallow Concentrated Flow, sc Unpaved Kv= 16.1 fps
7.2	269	Total			

Summary for Subcatchment 3S: ADDITION ROOFTOP

Runoff = 1.12 cfs @ 12.09 hrs, Volume= 0.087 af, Depth> 5.97"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

Area (sf)	CN	Description
* 7,610	98	Roof
7,610		100.00% Impervious Area

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

Hydrologic Calcs - St Michaels

Prepared by Joyce Consulting Group, P.C.

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St. Michael's Cemetery- Hydro Calcs
Type III 24-hr 100-Year Rainfall=6.70"

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Summary for Subcatchment 4S: Parking/Landscape

Runoff = 4.97 cfs @ 12.00 hrs, Volume= 0.292 af, Depth> 4.16"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

	Area (sf)	CN	Description
*	11,654	98	new pave
*	6,819	98	ex pav
	17,519	61	>75% Grass cover, Good, HSG B
*	691	98	open patio
	36,683	80	Weighted Average
	17,519		47.76% Pervious Area
	19,164		52.24% Impervious Area

Summary for Subcatchment 5S: Remainder of Subcatchment

Runoff = 2.08 cfs @ 12.01 hrs, Volume= 0.120 af, Depth> 2.85"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

	Area (sf)	CN	Description
*	3,876	98	driveway
	1,032	61	>75% Grass cover, Good, HSG B
	5,498	61	>75% Grass cover, Good, HSG B
	11,602	60	Woods, Fair, HSG B
	22,008	67	Weighted Average
	18,132		82.39% Pervious Area
	3,876		17.61% Impervious Area

Summary for Subcatchment 6S: Existing Rooftop

Runoff = 0.80 cfs @ 12.09 hrs, Volume= 0.062 af, Depth> 5.97"

Runoff by SCS TR-20 method, UH=SCS, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-Year Rainfall=6.70"

	Area (sf)	CN	Description
*	5,408	98	Existing Building
	5,408		100.00% Impervious Area

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

Hydrologic Calcs - St Michaels

Prepared by Joyce Consulting Group, P.C.

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St. Michael's Cemetery- Hydro Calcs
Type III 24-hr 100-Year Rainfall=6.70"

Printed 5/7/2021

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Summary for Reach 5R: Stony Brook

Inflow Area = 1.646 ac, 50.28% Impervious, Inflow Depth > 3.77" for 100-Year event
Inflow = 5.95 cfs @ 12.06 hrs, Volume= 0.517 af
Outflow = 5.95 cfs @ 12.06 hrs, Volume= 0.517 af, Atten= 0%, Lag= 0.0 min

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

Summary for Pond 1P: Infiltration Area

Inflow Area = 1.017 ac, 60.45% Impervious, Inflow Depth > 4.47" for 100-Year event
Inflow = 5.73 cfs @ 12.01 hrs, Volume= 0.379 af
Outflow = 3.73 cfs @ 12.10 hrs, Volume= 0.335 af, Atten= 35%, Lag= 5.7 min
Primary = 3.73 cfs @ 12.10 hrs, Volume= 0.335 af

Routing by Dyn-Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 47.42' @ 12.10 hrs Surf.Area= 2,329 sf Storage= 4,450 cf

Plug-Flow detention time= 76.5 min calculated for 0.335 af (89% of inflow)
Center-of-Mass det. time= 39.3 min (802.7 - 763.3)

Volume	Invert	Avail.Storage	Storage Description
#1A	44.00'	1,563 cf	39.50'W x 58.96'L x 3.50'H Field A 8,151 cf Overall - 2,940 cf Embedded = 5,211 cf x 30.0% Voids
#2A	44.50'	2,940 cf	StormTech SC-740 x 64 Inside #1 Effective Size= 44.6"W x 30.0"H => 6.45 sf x 7.12'L = 45.9 cf Overall Size= 51.0"W x 30.0"H x 7.56'L with 0.44' Overlap
		4,503 cf	Total Available Storage

Storage Group A created with Chamber Wizard

Device	Routing	Invert	Outlet Devices
#1	Primary	45.20'	6.0" W x 6.0" H Vert. Orifice/Grate C= 0.600
#2	Primary	45.50'	5.0" W x 4.0" H Vert. Orifice/Grate C= 0.600
#3	Primary	46.25'	6.0" W x 6.0" H Vert. Orifice/Grate C= 0.600

Primary OutFlow Max=3.72 cfs @ 12.10 hrs HW=47.42' TW=0.00' (Dynamic Tailwater)

- 1=Orifice/Grate (Orifice Controls 1.69 cfs @ 6.75 fps)
- 2=Orifice/Grate (Orifice Controls 0.88 cfs @ 6.37 fps)
- 3=Orifice/Grate (Orifice Controls 1.15 cfs @ 4.60 fps)

APPENDIX D

OPERATIONS AND MAINTENANCE PLAN

***Stormwater Operation and Maintenance Plan
Erosion and Sedimentation Control Plan,
Pollution Prevention Plan,
and Construction Scheduling***

**Stormwater Management System:
500 Canterbury Street
Boston, MA**

**Stormwater Management System's Owner & Responsible Party:
Property Owner(s) : St. Michael's Cemetery
c/o Michael Sheehan
617-524-1036**

As part of any infrastructure improvement the system must be maintained in order to work properly. The following is an Operation and Maintenance plan to upkeep the proposed non-structural and structural best performance practices as outlined in the Massachusetts Department of Environmental Protection's Stormwater Management Policy and in accordance with the approved design drawings.

Operation and Maintenance Plan During Construction, Construction Pollution Prevention Plan, and Construction Scheduling:

Operator to Complete : "CONSTRUCTION: Erosion and Sedimentation Controls Inspection & Maintenance Report" after completion of each maintenance activity.

The potential pollutants and their sources during construction are as follows:

Source of Pollution	Type of Pollution	Approximate Chemical/Physical Description	Potential Stormwater Pollutants	BMP Section
Erosion and sedimentation during excavation/grading	Sedimentation	Soil, sediment	Soil, sediment	Sediment and Erosion Control
Dust during soil removal, excavation, grading and construction	Dust Particles	Dust Particles	Dust Particles	Sediment and Erosion Control
Vehicle/machine/equipment refueling or maintenance	Gasoline	Colorless, pale brown or pink petroleum hydrocarbon	Benzene, ethyl benzene, toluene, xylene, MTBE	Good Housekeeping
Vehicle/machine/equipment refueling or maintenance	Diesel Fuel	Clear, blue-green to yellow liquid	Petroleum distillate, oil & grease, naphthalene, xylenes	Good Housekeeping
Vehicle/machine/equipment refueling or maintenance	Antifreeze/coolant	Clear green/yellow liquid	Ethylene glycol, propylene glycol, heavy metals (copper, lead, zinc)	Good Housekeeping
Vehicle/machine/equipment refueling or maintenance	Hydraulic oil/fluids	Brown oily petroleum hydrocarbon	Mineral oil	Good Housekeeping

1) Sediment and Erosion Control

All erosion and sediment control measures must be installed prior to any disturbance.

Perimeter Silt Fence: A silt fence must be installed around a section of the perimeter of the site as shown on the enclosed Site Plan Set.

Installation: Follow manufacturer's specifications.

Maintenance: Silt fence should be inspected daily and trapped sediment should be removed.

Dust Control: Sprinkle water as necessary to control dust during construction.

Material Stockpiling: Stockpiles of material must be placed upgradient of the perimeter silt fence and, if left overnight, protected from the weather with silt fence around the immediate stock pile perimeter.

2) Good Housekeeping

The following good housekeeping BMP's will be implemented in order to prevent pollution during construction:

- All vehicles on site will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage.
- Petroleum products will be stored in tightly sealed containers which are clearly labeled.
- If portable sanitary units are used, sanitary waste will be removed as necessary to avoid overfilling.
- All paint and other hazardous waste materials will be tightly sealed and stored when not in use. Excess material will not be discharged into the stormwater system but will be properly disposed of according to the manufacturer's specifications.
- If dewatering is necessary during excavation, water should be directed to the temporary dewatering perimeter as shown on the plan. Sediment will be immediately removed from the siltation fabric during dewatering procedures.
- All spills will be cleaned up immediately upon discovery. Spills large enough to reach the stormwater systems will be reported to the National Response Center at 1-800-424-8802

3) Upon completion of construction and permanent stabilization of all disturbed areas, sediment control may be removed.

Operation and Maintenance Plan Post Construction

Operator to Complete : “POST CONSTRUCTION: Stormwater Management System Report” after completion of each maintenance activity.

Pavement Sweeping

The locus site shall be swept a minimum of four (4) times a year (quarterly) primarily in the spring and fall if a High Efficiency Vacuum Sweeper or Regenerative Air Sweeper was used.

Deep Sump Catch Basin & Structures

Inspect or clean deep sump basins at least four times per year and at the end of the foliage and snow removal seasons. Sediments must also be removed four times per year or whenever the depth of deposits is greater than or equal to one half the depth from the bottom of the invert of the lowest pipe in the basin. If handling runoff from land uses with higher potential pollutant loads or discharging runoff near or to a critical area, more frequent cleaning may be necessary.

Subsurface Infiltration Area

Conduct semi-annual inspections and inspections after large storm events (more than 3.2-inches of rainfall in a 24-hour period.) Remove sediment by jetting system in accordance with Manufacturer’s recommendations when sediment is observed in the inspection ports.

Piping, Inlets, Outlets

Because piping is installed underground it is difficult to inspect it is important to ensure that all piping is functioning properly. Inlets and outlets should be inspected in late winter or early spring after the snow melts, preferably during a rain event. In addition to ensuring that all piping is functioning properly, any sediment or garbage that has gathered at inlets or outlets each inspection period.

Snow Management

Snow will be stored at corners and edges of parking areas; at no time will the snow be stored directly over any catch basin. In the event of the snow storage capacity being maximized, a snow removal contractor will remove snow from the site.

Maintenance Access Areas:

Catch Basin Inlet and Hood

Catch basins and its hoods are easily accessible for maintenance. No designated access area is needed.

Infiltration Bed Maintenance

The Infiltration Bed is accessible from the parking area.

Detention Bed Maintenance

The Detention Bed is accessible from the end of driveway.

Parking Lot Cleaning

All vehicular paved areas are accessible from Blue Hills Parkway Street.

Estimated Operations and Maintenance Budget:

Maintenance Task	Estimated Cost	Frequency (times/year)	Annual Budget
Pavement Sweeping	\$300	4	\$1,200
Inspection of Stormwater Management System	\$100	4	\$400
Catch Basin Cleaning (Sediment Removal)	\$500	0.5 (anticipated maximum)	\$250
Infiltration System Cleaning	\$1,000	0.25 (anticipated maximum)	\$250
TOTAL ANTICIPATED BUDGET:			\$2,100

Illicit Discharge Compliance Statement

No known illicit discharges presently exist at 500 Canterbury Street. Runoff consists mainly of pavement and roof runoff. Routine visual inspections of all catch basins, oil water separators, and infiltration systems are meant to ensure and prevent any illicit discharges from occurring in the future.



Owner

CONSTRUCTION: Erosion and Sedimentation Controls Inspection & Maintenance Report

500 Canterbury Street – Boston, MA

Stormwater Management System Owner:

Property Owner(s)

INSPECTOR: _____ DATE: _____ NUMBER: _____

DAYS SINCE LAST RAINFALL: _____ AMOUNT LAST RAINFALL: _____ INCHES

TEMPORARY STABILIZATION

CATCH BASIN SILT SACKS? (YES/NO)	PAVED AREAS? (YES/NO)	LANDSCAPED AREAS? (YES/NO)

COMMENTS/ACTION:

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

STABILIZED CONSTRUCTION ENTRANCE

IS SEDIMENT TRACKED ONTO ROAD? (YES/NO)	IS THE GRAVEL CLEAN? (YES/NO)	DOES ALL TRAFFIC USE THE STABILIZED ENTRANCE TO LEAVE THE SITE? (YES/NO)

COMMENTS/ACTION:

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

SILT FENCES AND HAYBALES

	DEPTH OF SEDIMENT	CONDITION OF EFFLUENT?	CONDITION OF SILT FENCE	ANY EVIDENCE OF SEDIMENT BYPASSING THE FENCE
SILT FENCE				

COMMENTS/ACTION:

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN/REASONS FOR CHANGES:

INSPECTED BY _____ SIGNATURE _____ DATE _____

POST CONSTRUCTION: Stormwater Management System Report

500 Canterbury Street- Boston, MA

Stormwater Management System Owner:

Property Owner(s)

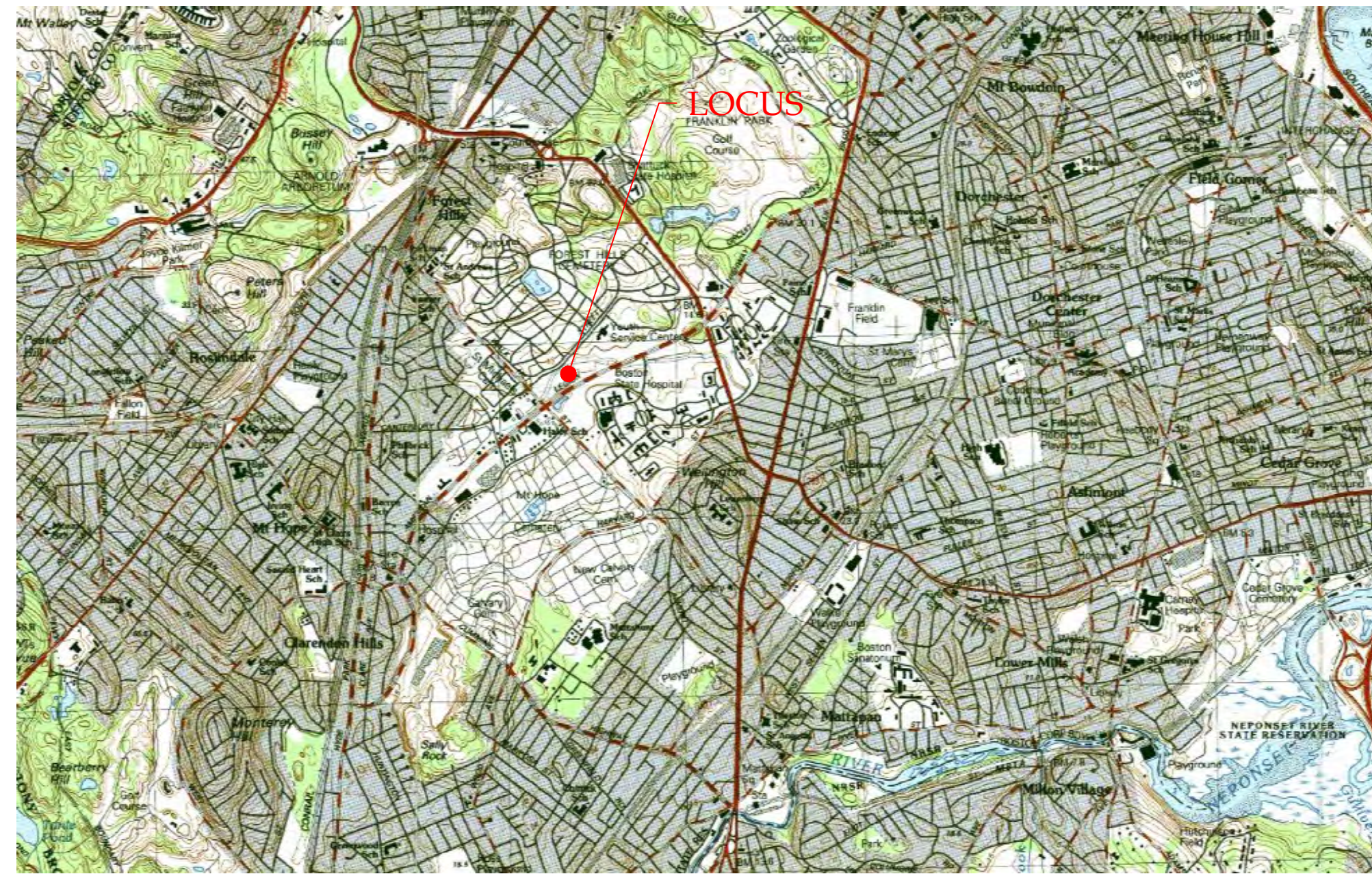
500 Canterbury Street Bosotn, MA		Inspected by: _____ Date: _____
Component	Status	Action Taken

Appendix E: Plan Set

GENERAL NOTES

1. SITE FEATURES AND UTILITIES SHOWN ON THIS PLAN ARE BASED ON A COMPILATION OF RECORD PLANS, PLANS ACQUIRED FROM UTILITY PROVIDERS, AERIAL IMAGERY AND A LAND INSTRUMENT SURVEY.
2. PROPERTY LINE SHALL BE CONSIDERED APPROXIMATE.
3. THE CONTRACTOR SHALL COMPLY WITH MASSACHUSETTS GENERAL LAWS CHAPTER 82, SECTION 40, AS AMENDED, WHICH STATES THAT NO ONE MAY EXCAVATE IN THE COMMONWEALTH OF MASSACHUSETTS EXCEPT IN AN EMERGENCY WITHOUT 72 HOURS NOTICE, EXCLUSIVE OF SATURDAYS, SUNDAYS, AND LEGAL HOLIDAYS, TO NATURAL GAS PIPELINE COMPANIES, AND MUNICIPAL UTILITY DEPARTMENTS THAT SUPPLY GAS, ELECTRICITY, TELEPHONE, OR CABLE TELEVISION SERVICE IN OR TO THE CITY OR TOWN WHERE THE EXCAVATION IS TO BE MADE. THE CONTRACTOR SHALL CALL "DIG SAFE" AT 1-888-DIG-SAFE.
4. ALL UTILITY CONNECTIONS ARE SUBJECT TO THE APPROVAL OF, AND GRANTING OF PERMITS BY, THE CITY OF BOSTON AND THE BOSTON WATER AND SEWER COMMISSION. IT SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR TO SEE THAT ALL PERMITS AND APPROVALS ARE OBTAINED BEFORE STARTING CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR MAKING ALL NECESSARY ARRANGEMENTS FOR AND FOR PERFORMING ANY NECESSARY WORK INVOLVED IN CONNECTION WITH THE DISCONTINUANCE OF ANY UTILITIES OR WITHIN THE JURISDICTION OF ANY UTILITY COMPANIES, SUCH AS ELECTRICITY, TELEPHONE, WATER, GAS, AND ANY SYSTEM OR SYSTEMS WHICH WILL BE AFFECTED BY THE WORK TO BE PERFORMED UNDER THIS CONTRACT. THE CONTRACTOR SHALL NOTIFY ALL APPROPRIATE AGENCIES, DEPARTMENTS, AND UTILITY COMPANIES, IN WRITING, AT LEAST 48 HOURS AND NOT MORE THAN 30 DAYS PRIOR TO ANY CONSTRUCTION. CONSTRUCTION SHALL NOT INTERFERE WITH OR INTERRUPT UTILITIES WHICH ARE TO REMAIN IN OPERATION.
5. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE FEDERAL, STATE, AND LOCAL LAWS, RULES, REGULATIONS AND SAFETY CODES IN THE CONSTRUCTION OF ALL IMPROVEMENTS.
6. THE CONTRACTOR SHALL TAKE ADEQUATE PRECAUTIONS TO PROTECT ALL WALKS, GRADING, SIDEWALKS AND SITE DETAILS OUTSIDE OF THE LIMITS OF REGRADING AND WORK AS SHOWN ON THE DRAWINGS AND SHALL REPAIR AND REPLACE OR OTHERWISE MAKE GOOD AS DIRECTED BY THE ENGINEER OR OWNER'S DESIGNATED REPRESENTATIVE ANY SUCH OR OTHER DAMAGE SO CAUSED.
7. THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL RUBBISH AND DEBRIS FOUND THEREON. STORAGE OF SUCH MATERIALS ON THE PROJECT SITE WILL NOT BE PERMITTED. THE CONTRACTOR SHALL LEAVE THE SITE IN SAFE, CLEAN, AND LEVEL CONDITION UPON COMPLETION OF THE SITE CLEARANCE WORK.
8. THE CONTRACTOR SHALL REMOVE FROM THE AREA OF CONSTRUCTION PAVEMENT, CONCRETE, GRANITE CURBING, CEMENT CURBING, POLES AND FOUNDATIONS, ISLANDS, TREE BERMS AND OTHER FEATURES WITHIN THE LIMITS OF CONSTRUCTION AS REQUIRED TO ACCOMMODATE NEW CONSTRUCTION WHETHER SPECIFIED ON THE DRAWINGS OR NOT.
9. ALL WATER, SEWER, AND DRAIN WORK SHALL BE PERFORMED ACCORDING TO THE REQUIREMENTS AND STANDARD SPECIFICATIONS OF THE BOSTON WATER AND SEWER COMMISSION.
10. ELEVATIONS REFER TO BOSTON CITY BASE.
11. GAS, TELEPHONE, ELECTRIC, AND CABLE SERVICES ARE TO BE DESIGNED BY EACH UTILITY COMPANY IN COORDINATION WITH THE MECHANICAL, ELECTRIC AND PLUMBING CONSULTANTS. THE CONTRACTOR SHALL COORDINATE CONSTRUCTION ACTIVITIES AND DESIGN OF NEW UTILITIES WITH ELECTRIC, CABLE TELEVISION AND TELECOMMUNICATION UTILITIES.
12. UTILITY STRUCTURES TO BE ABANDONED SHALL BE REMOVED TO A DEPTH OF NO LESS THAN 3 FEET BELOW FINISHED GRADE, THE BOTTOMS OF THE STRUCTURES SHALL BE BROKEN AND THE STRUCTURES SHALL BE BACKFILLED WITH GRAVEL BORROW AND COMPACTED.
13. CONTRACTOR SHALL MAINTAIN ALL EXISTING UTILITIES EXCEPT THOSE NOTED TO BE ABANDONED OR REMOVED & DISPOSED.
14. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR TRENCHING, BACKFILLING, AND SURFACE RESTORATION FOR THE GAS LINE INSTALLATION.
15. ALL GRATES IN WALKWAYS, IF REQUIRED, SHALL BE ADA COMPLIANT.

SAINT MICHAEL'S CEMETERY PROPOSED BUILDING ADDITION 500 CANTERBURY STREET ROSLINDALE, MA 02131



USGS LOCUS MAP
SCALE: N.T.S.

LEGEND

— W —	EX. WATER
— S —	EX. SEWER
— D —	EX. DRAIN
— E —	EX. ELECT
— T —	EX. TEL
— G —	EX. GAS
LP ☆	LIGHT POLE
DMH ○	DRAIN MANHOLE
EMH ○	ELECTRIC MANHOLE
VGC ○	VERTICAL GRANITE CURB
FGC ○	FLUSH GRANITE CURB
CRTW	CONCRETE RETAINING WALL
DMH ○	PROPOSED DRAIN MANHOLE
CS □	PROPOSED CATCH BASIN
AD □	PROPOSED AREA DRAIN
SMH ○	PROPOSED SEWER MANHOLE
WV ⊗	PROPOSED WATER VALVE
CO ⊗	PROPOSED CLEANOUT
— W —	PROPOSED WATER LINE
— D —	PROPOSED DRAIN LINE
LF	LINEAR FEET
INV.	INVERT
TRP.	TYPICAL
CONC.	CONCRETE
BIT. CONC.	BITUMINOUS CONCRETE
RD	ROOF DRAIN
SS	SANITARY SEWER
WF	VERIFY IN FIELD
WV ⊗	WATER VALVE
HYD	HYDRANT
SMH ○	SEWER MANHOLE
TMH ○	TELEPHONE MANHOLE
CB □	EX. CATCH BASIN
HH □	EX. HANDHOLE
UP ⊗	UTILITY POLE
WV ⊗	GAS VALVE
— S —	PROPOSED SEWER LINE
— E —	PROPOSED ELECTRIC LINE
— G —	PROPOSED GAS LINE
— — —	LINE TO BE ABANDONED
RAD	REMOVE AND DISPOSE
R&R	REMOVE AND REPLACE
RCP	REINFORCED CONCRETE PIPE
PVC	POLYVINYL CHLORIDE PIPE

ARCHITECT:
O'SULLIVAN ARCHITECTS, INC.
580 MAIN STREET
READING, MA 01867
781.439.6166

CIVIL ENGINEER:
JOYCE CONSULTING GROUP, P.C.
439 WASHINGTON STREET, 3RD FLOOR
BRAINTREE, MA 02184
781.817.6120

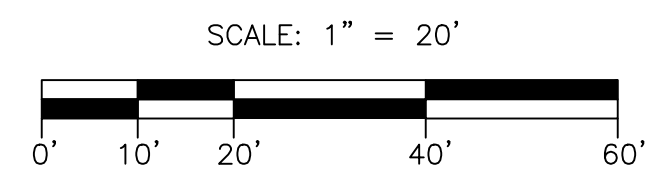
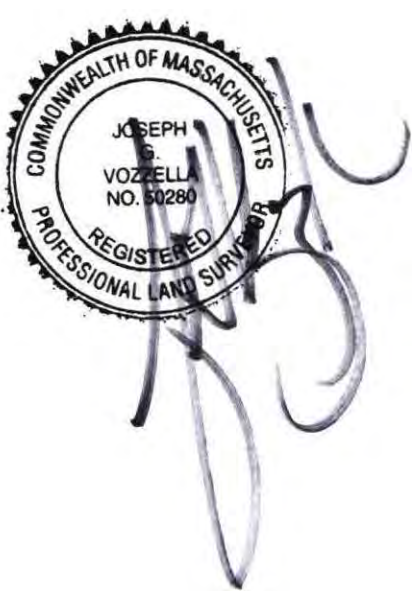
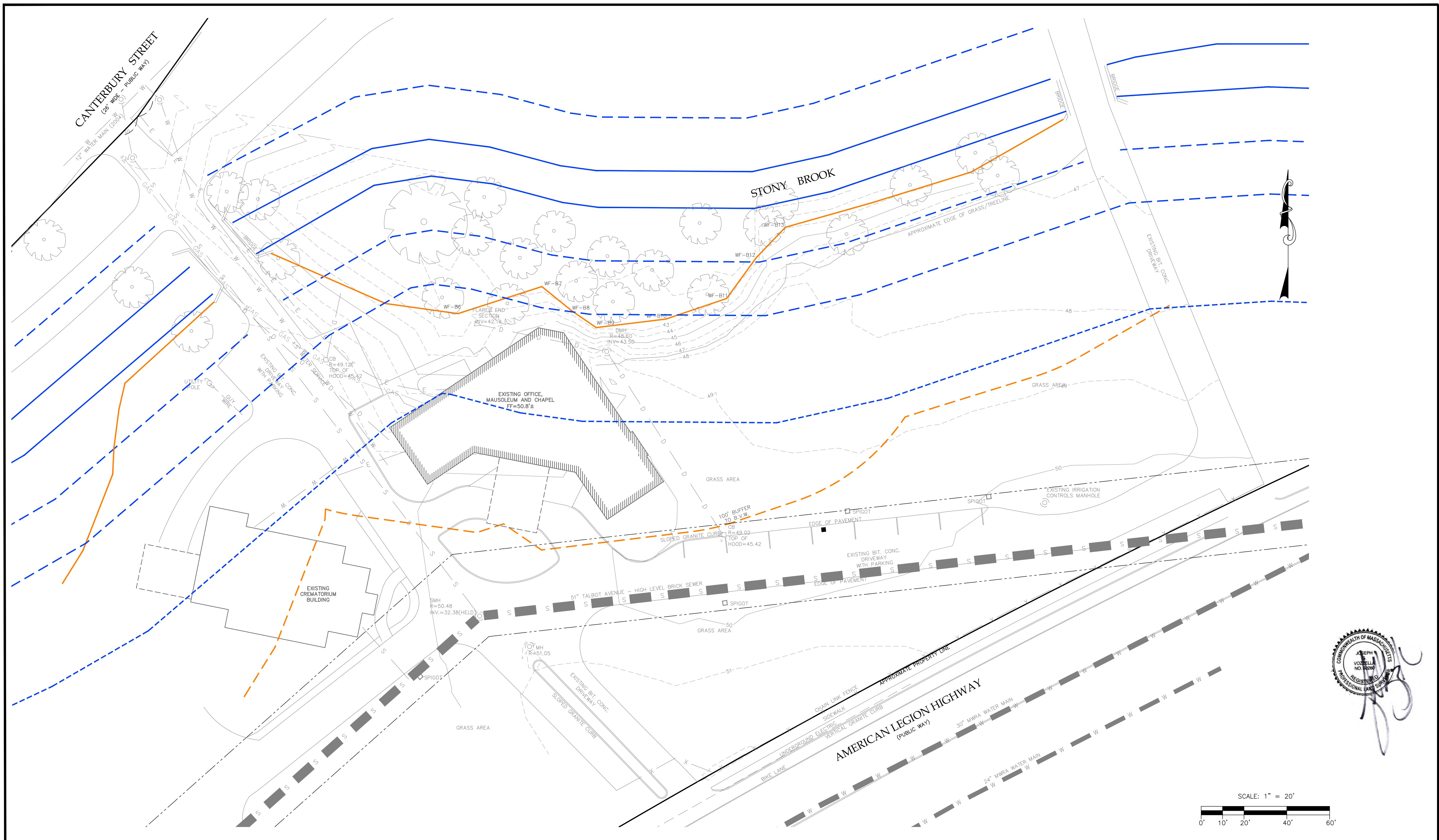
APPLICANT:
SAINT MICHAEL'S CEMETERY
500 CANTERBURY STREET
BOSTON, MA 02131
617.524.1036

SHEET INDEX:

- C-0 COVER SHEET
- C-1 EXISTING CONDITIONS PLAN
- C-2 SITE DEMO AND EROSION CONTROL PLAN
- C-3 SITE LAYOUT PLAN
- C-4 BWSC SITE PLAN
- C-5 BWSC DETAIL SHEET I
- C-6 DETAIL SHEET II



 100 WYMAN ROAD BRAINTREE, MA 02184 781-817-6120 hello@joycecg.com	<p>LEGEND</p> <table border="0" style="font-size: small;"> <tr><td>— W —</td><td>EX. WATER</td><td>WV ⊗</td><td>WATER VALVE</td></tr> <tr><td>— S —</td><td>EX. SEWER</td><td>HYD</td><td>HYDRANT</td></tr> <tr><td>— D —</td><td>EX. DRAIN</td><td>SMH ○</td><td>SEWER MANHOLE</td></tr> <tr><td>— E —</td><td>EX. ELECT</td><td>TMH ○</td><td>TELEPHONE MANHOLE</td></tr> <tr><td>— T —</td><td>EX. TEL</td><td>CB □</td><td>EX. CATCH BASIN</td></tr> <tr><td>— G —</td><td>EX. GAS</td><td>HH □</td><td>EX. HANDHOLE</td></tr> <tr><td>LP ☆</td><td>LIGHT POLE</td><td>UP ⊗</td><td>UTILITY POLE</td></tr> <tr><td>DMH ○</td><td>DRAIN MANHOLE</td><td>WV ⊗</td><td>GAS VALVE</td></tr> <tr><td>EMH ○</td><td>ELECTRIC MANHOLE</td><td></td><td></td></tr> <tr><td>VGC ○</td><td>VERTICAL GRANITE CURB</td><td></td><td></td></tr> <tr><td>FGC ○</td><td>FLUSH GRANITE CURB</td><td></td><td></td></tr> <tr><td>CRTW</td><td>CONCRETE RETAINING WALL</td><td></td><td></td></tr> </table>	— W —	EX. WATER	WV ⊗	WATER VALVE	— S —	EX. SEWER	HYD	HYDRANT	— D —	EX. DRAIN	SMH ○	SEWER MANHOLE	— E —	EX. ELECT	TMH ○	TELEPHONE MANHOLE	— T —	EX. TEL	CB □	EX. CATCH BASIN	— G —	EX. GAS	HH □	EX. HANDHOLE	LP ☆	LIGHT POLE	UP ⊗	UTILITY POLE	DMH ○	DRAIN MANHOLE	WV ⊗	GAS VALVE	EMH ○	ELECTRIC MANHOLE			VGC ○	VERTICAL GRANITE CURB			FGC ○	FLUSH GRANITE CURB			CRTW	CONCRETE RETAINING WALL			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>SCALE</td><td>AS NOTED</td><td>JOB NO.</td><td>JCG 20-052</td></tr> <tr><td>DATE</td><td>03.31.21</td><td></td><td></td></tr> <tr><td colspan="4" style="text-align: center;">REVISIONS</td></tr> <tr><td>NO.</td><td>DATE</td><td>REVISION</td><td>BY</td></tr> <tr><td>1</td><td>05.21.21</td><td>ADDED TREES AND INLAND BANK BUFFER</td><td>MGJ</td></tr> <tr><td>2</td><td>07.02.21</td><td>REMOVED PARKING FROM WATERFRONT AREA</td><td>MGJ</td></tr> </table>	SCALE	AS NOTED	JOB NO.	JCG 20-052	DATE	03.31.21			REVISIONS				NO.	DATE	REVISION	BY	1	05.21.21	ADDED TREES AND INLAND BANK BUFFER	MGJ	2	07.02.21	REMOVED PARKING FROM WATERFRONT AREA	MGJ	<p>PLAN TITLE:</p> <p style="text-align: center;">COVER SHEET 500 CANTERBURY STREET ROSLINDALE, MA</p>	<p>PREPARED FOR:</p> <p style="text-align: center;">SAINT MICHAEL'S CEMETERY 500 CANTERBURY STREET ROSLINDALE, MA</p> <div style="font-size: 2em; font-weight: bold; text-align: center;">C-0</div>
		— W —	EX. WATER	WV ⊗	WATER VALVE																																																																							
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LP ☆	LIGHT POLE	UP ⊗	UTILITY POLE																																																																									
DMH ○	DRAIN MANHOLE	WV ⊗	GAS VALVE																																																																									
EMH ○	ELECTRIC MANHOLE																																																																											
VGC ○	VERTICAL GRANITE CURB																																																																											
FGC ○	FLUSH GRANITE CURB																																																																											
CRTW	CONCRETE RETAINING WALL																																																																											
SCALE	AS NOTED	JOB NO.	JCG 20-052																																																																									
DATE	03.31.21																																																																											
REVISIONS																																																																												
NO.	DATE	REVISION	BY																																																																									
1	05.21.21	ADDED TREES AND INLAND BANK BUFFER	MGJ																																																																									
2	07.02.21	REMOVED PARKING FROM WATERFRONT AREA	MGJ																																																																									



GENERAL NOTES

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2. LOCATION OF SUBSURFACE UTILITIES IS APPROXIMATE. THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING UTILITY SERVICES THROUGHOUT CONSTRUCTION. CONTACT DIG SAFE AT 1-888-DIGSAFE AT LEAST 72 HOURS PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

JCG JOYCE CONSULTING GROUP
CIVIL ENGINEERS

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LEGEND

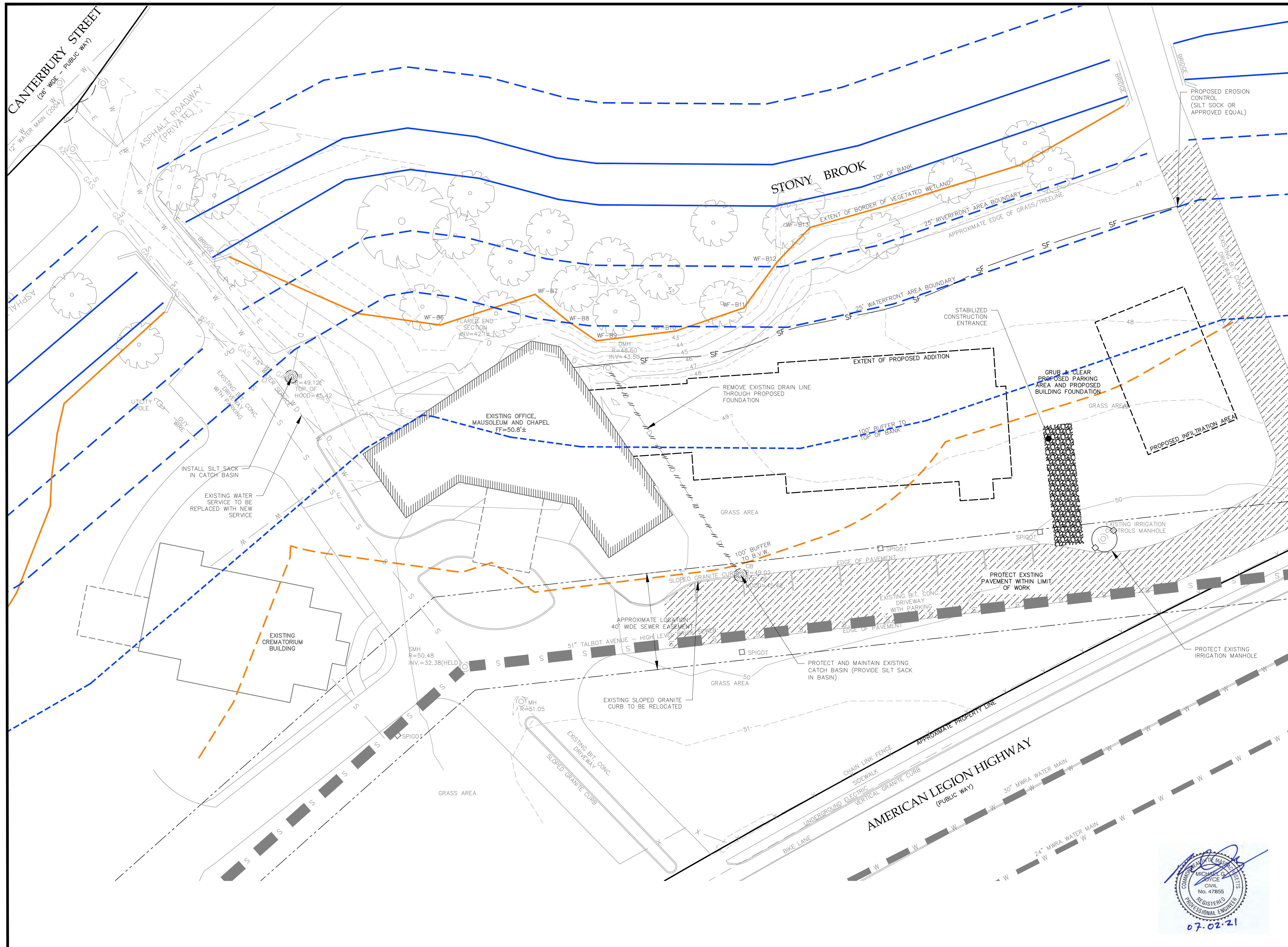
W	EX. WATER	SM	WATER VALVE
S	EX. SEWER	HY	HYDRANT
D	EX. DRAIN	SMH	SEWER MANHOLE
E	EX. ELEC.	CB	EX. CATCH BASIN
T	EX. TEL.	EX	EX. HANDHOLE
G	EX. GAS	TMH	TELEPHONE MANHOLE
LP	EX. LIGHT POLE	DMH	DRAIN MANHOLE
EMH	ELECTRIC MANHOLE	EMH	ELECTRIC MANHOLE
VOC	VERTICAL GRANITE CURB	VOC	VERTICAL GRANITE CURB
FCC	FLUSH GRANITE CURB	FCV	UTILITY POLE
CRW	CONCRETE RETAINING WALL	GV	GAS VALVE

SCALE	1"=20'	JOB NO.	JCG 20-052
DATE	10.21.20		
REVISIONS			
NO.	DATE	REVISION	BY
1	05.21.21	ADDED TOP OF BANK BUFFER	MGI
2	07.02.21	ADDED WATERFRONT AREA BUFFER	MGI

PLAN TITLE: **EXISTING CONDITIONS PLAN
500 CANTERBURY STREET
ROSLINDALE, MA**

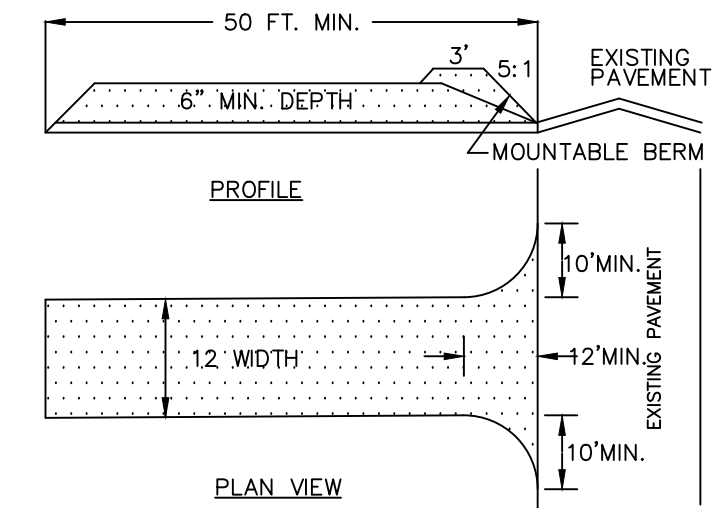
PREPARED FOR: **SAINT MICHAEL'S CEMETERY
500 CANTERBURY STREET
ROSLINDALE, MA**

C-1

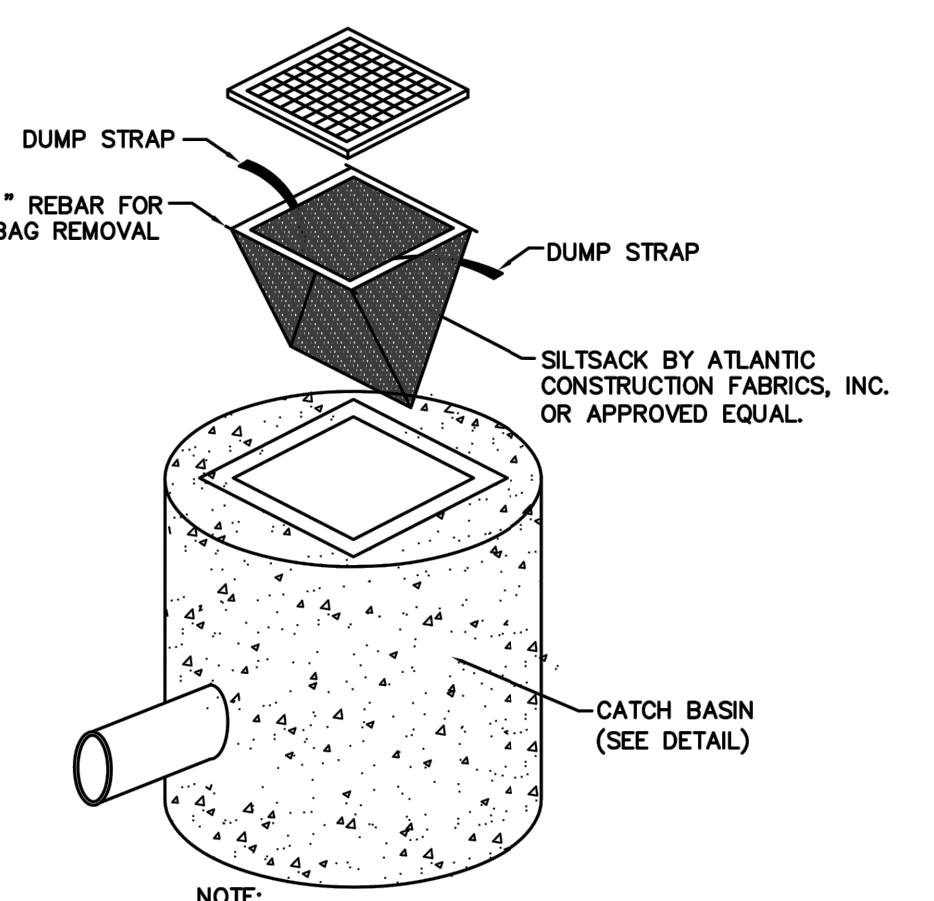
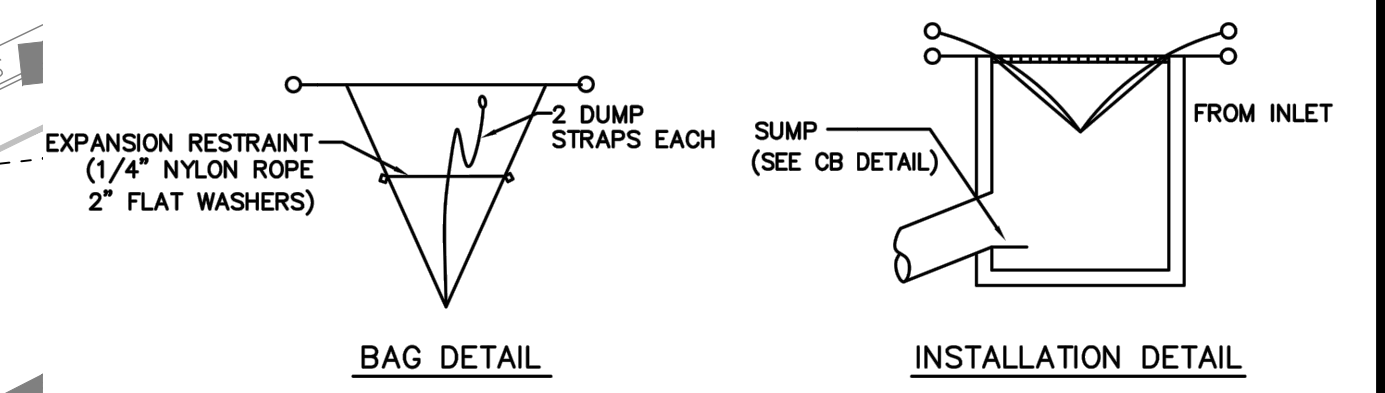


SITE PREPARATION & EROSION CONTROL NOTES

- CONTRACTOR SHALL CLEAR THE PERIMETER OF THE CONSTRUCTION AREA AND PLACE EROSION CONTROL MEASURES PRIOR TO COMMENCING WORK. EROSION CONTROL DEVICES TO BE MAINTAINED BY THE CONTRACTOR UNTIL GROUND COVER HAS BEEN ESTABLISHED. CRUSHED STONE STABILIZATION PAD TO BE PLACED AT THE CONSTRUCTION ENTRANCE. IF BUILDING AND SITE WORK TO BE PHASED, CLEARING LIMITS SHOULD NOT EXCEED AREA NECESSARY TO CONSTRUCT EACH PHASE OF CONSTRUCTION.
- AS EARTHWORK IS IN PROGRESS EROSION CONTROL DEVICES SHALL BE INSTALLED AS SLOPES ARE DISTURBED OR CREATED. SLOPES SHALL BE STABILIZED AS SOON AS WORK ON THEM IS COMPLETED. SLOPES AT 3:1 OR GREATER SHALL BE TRACKED AND SEEDED. SLOPES SHALL BE SEEDED AS SOON AS POSSIBLE AFTER COMPLETION OF WORK.
- IN AREAS WHERE SOIL DISTURBANCE ACTIVITY HAS BEEN TEMPORARILY OR PERMANENTLY CEASED, TEMPORARY OR PERMANENT SOIL STABILIZATION MEASURES SHALL BE INSTALLED AND/OR IMPLEMENTED WITHIN 7 DAYS FROM THE DATE THE SOIL DISTURBANCE ACTIVITY CEASED AS PER THE NPDES CONSTRUCTION GENERAL PERMIT.
- UPON COMPLETION OF THE EARTHWORK, THE CONTRACTOR SHALL PROCEED WITH THE INSTALLATION OF ALL UNDERGROUND UTILITIES AND PLACE SILT SACKS IN NEW INLETS AS SHOWN ON THE PLANS. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE AGENCY PRIOR TO MAKING CONNECTION OR ALTERING ANY EXISTING UTILITIES.
- DURING CONSTRUCTION, THE CONTRACTOR WILL BE RESPONSIBLE FOR REPLACING ANY SILT FENCING, CHECK DAMS OR CATCH BASIN/YARD INLET PROTECTIONS WHICH BECAME CLOGGED, INOPERABLE OR DAMAGED. SILT FENCE SHALL BE INSPECTED AFTER RAINFALL EVENTS. ALL EROSION AND SILTATION CONTROLS INCLUDING SILT FENCING, CHECK DAMS, INLET PROTECTION AND DESILTATION SINKS WILL BE INSPECTED AFTER A STORM EVENT AND REQUIRED REPAIRS WILL BE MADE IMMEDIATELY.
- CRUSHED STONE PAD SHALL BE INSTALLED AT CONSTRUCTION ENTRANCE TO PROVIDE A STABILIZED ENTRANCE POINT. (SEE DETAIL)
- ANY SILT OR SEDIMENT ACCUMULATED IN EXISTING SWALES, STORM SEWERS, STREET AND/OR GUTTERS SHALL BE CLEANED OUT DURING CONSTRUCTION.



- STONE SIZE - USE #2 STONE
- THICKNESS - NOT LESS THAN 6 (SIX) INCHES.
- WIDTH - FULL ENTRANCE WIDTH
- USE FILTER FABRIC UNDER STONE FOR ENTRANCE STABILITY.
- MAINTENANCE - THE CONTRACTOR SHALL MAINTAIN THE ENTRANCE IN A CONDITION WHICH WILL PREVENT TRACKING OR SEDIMENT FLOW ONTO A PUBLIC ROADWAY.
- WHEN ROADWAY WASHING IS REQUIRED, IT SHALL BE DONE IN A MANNER THAT DIRECTS SEDIMENT RUNOFF TOWARDS EROSION CONTROL DEVICES. INSTALL ADDITIONAL EROSION CONTROLS, IF NEEDED.
- PERIODIC INSPECTION AND MAINTENANCE SHALL BE PROVIDED AFTER EACH RAINSTORM.



NOTE:
1. SILTSACKS SHALL BE INSTALLED IN ALL CATCH BASIN UNTIL DRAINAGE AREA HAS BEEN FULLY STABILIZED.

SILT SACK DETAIL
NOT TO SCALE

GENERAL NOTES

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CIVIL ENGINEERS

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LEGEND

W	EX. WATER	WATER VALVE
S	EX. SEWER	HYDRANT
D	EX. DRAIN	SEWER MANHOLE
E	EX. ELECT	EX. CATCH BASIN
T	EX. TEL	EX. HANDHOLE
G	EX. GAS	UTILITY POLE
LP	EX. LIGHT POLE	
DMH	DRAIN MANHOLE	
EMH	ELECTRIC MANHOLE	
VOC	VERTICAL GRANITE CURB	
FGC	FLUSH GRANITE CURB	
CRW	CONCRETE RETAINING WALL	

SCALE 1"=20'

DATE 03.31.21

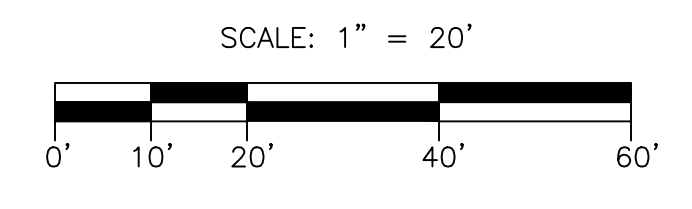
JOB NO. JCG 20-052

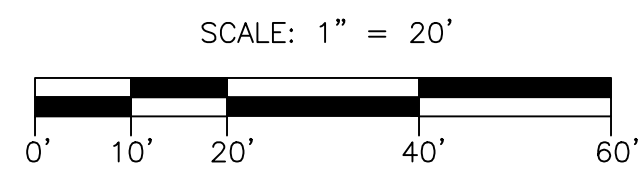
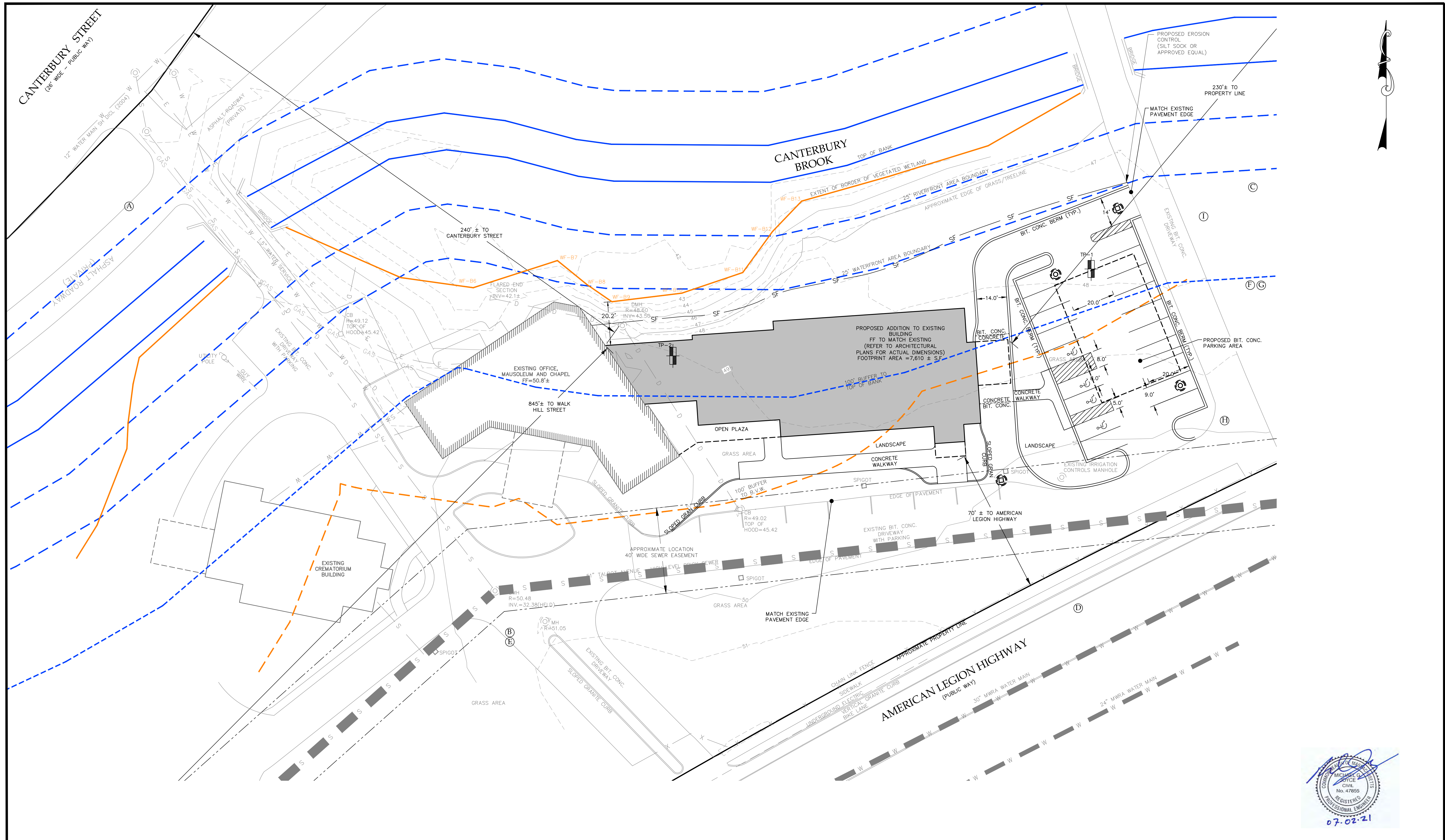
REVISIONS		
NO.	DATE	REVISION
1	05.21.21	ADDED TOP OF BANK BUFFER
2	07.02.21	ADDED WATERFRONT AREA BUFFER

PLAN TITLE: **SITE DEMOLITION & EROSION CONTROL**
500 CANTERBURY STREET
ROSLINDALE, MA

PREPARED FOR:
SAINT MICHAEL'S CEMETERY
500 CANTERBURY STREET
ROSLINDALE, MA

C-2





GENERAL NOTES

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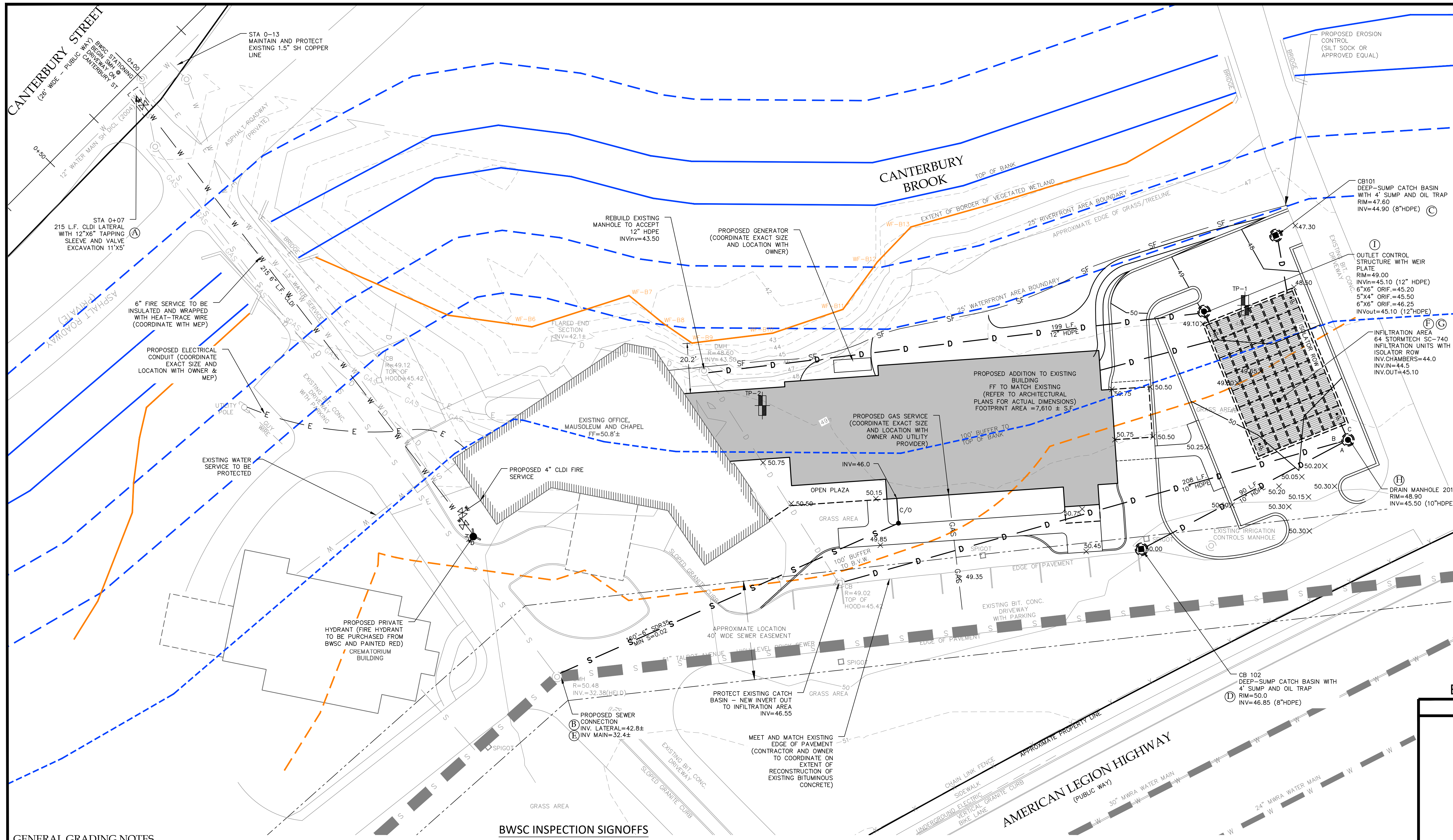
LEGEND

W	EX. WATER	WATER VALVE	
S	EX. SEWER	HYDRANT	
D	EX. DRAIN	SEWER MANHOLE	
E	EX. ELEC.	EX. CATCH BASIN	
T	EX. TEL.	EX. HANDHOLE	
G	EX. GAS	UTILITY POLE	
LP	EX. LIGHT POLE	SM	SM
DMH	EX. DRAIN MANHOLE	TM	TM
EMH	EX. ELECTRIC MANHOLE	CB	CB
VOC	VERTICAL GRANITE CURB	UB	UB
FGC	FLUSH GRANITE CURB	UV	UV
CRW	CONCRETE RETAINING WALL	GV	GV

SCALE	1"=20'	JOB NO.	JCG 20-052
DATE	03.31.21	PLAN TITLE:	
REVISIONS			
NO.	DATE	REVISION	BY
1	05.21.21	ADDED TREES AND INLAND BANK BUFFER	MGI
2	07.02.21	REMOVED PARKING FROM WATERFRONT AREA	MGI

SAINT MICHAEL'S CEMETERY
500 CANTERBURY STREET
ROSLINDALE, MA

C-3



DRAINAGE CALCULATIONS:

PROPOSED IMPERVIOUS AREA:
 TOTAL PROPOSED IMPERVIOUS AREA
 NEW BUILDING = 7,609 SF
 NEW DRIVEWAY & HARDSCAPE = 11,624 SF
 TOTAL = 19,233 SF

STORAGE REQUIRED:
 19,263 S.F. * 1' / 12" = 1,605 C.F. REQUIRED

STORAGE PROVIDED:
 CRUSHED STONE BED TOTAL VOLUME:
 58.96' X 39.5' X 3.5' = 8,151.2 C.F.

SYSTEM HEIGHT: 3.5'

TOTAL CHAMBER VOLUME PROVIDED:
 64-SC 740 UNITS (45.9 CF/CHAMBER)
 64 * 45.9 CF/UNIT = 2,937.6 C.F. STORAGE

CRUSHED STONE BED CHAMBER STORAGE:
 8,151.2 C.F. - 2,937.6 C.F. = 5,213.6 C.F.
 5,213.6 C.F. X (30% VOIDS)
 5,213.6 C.F. X 0.30 = 1,564.1 C.F.

TOTAL STORAGE PROVIDED:
 CHAMBER STORAGE + STONE STORAGE
 2,937.6 C.F. + 1,564.1 C.F. = 4,501.7 C.F. STORAGE

OUTLET AT ELEV. 45.20' (36.4% OF STORAGE)
 36.4% = 1,640 C.F. STORAGE PRIOR TO OUTLET

STORAGE REQUIRED < STORAGE PROVIDED
 (1,605 C.F. < 1,640 C.F.)

THEREFORE SYSTEM CAPACITY IS SUFFICIENT

SITE INFORMATION:
 ADDRESS: 500 CANTERBURY STREET
 PARCEL: 1405199000
 WARD: 14
 EXISTING WATER ACCOUNT#: 1582218
 LAND USE CODE: CL

OWNER:
 ITALIAN CATHOLIC CEMETERY ASSOCIATION

PROJECT CONTACT:
 SAINT MICHAEL'S CEMETERY
 CONTACT: MICHAEL SHEEHAN
 PHONE: 617-524-1036
 500 CANTERBURY STREET
 BOSTON, MA 02131

SEWAGE FLOW:
 EXISTING:
 PROPOSED:

BWSC SITE PLAN # 21140
 BWSC USE ONLY

- GENERAL GRADING NOTES**
- ALL PAVED AREAS MUST PITCH TO DRAIN AT A MINIMUM OF ONE-EIGHTH INCH (1/8") PER FOOT.
 - WHERE NEW PAVING MEETS EXISTING PAVING, MEET LINE AND GRADE OF EXISTING.
 - UNDERGROUND UTILITIES SHOWN AS APPROXIMATE ONLY.
 - PROVIDE POSITIVE DRAINAGE AWAY FROM FACE OF BUILDINGS AT ALL LOCATIONS.
 - ALL PROPOSED TOP OF CURB ELEVATIONS ARE SIX INCHES (6") ABOVE BOTTOM OF CURB ELEVATIONS UNLESS SHOWN OTHERWISE.
 - THE GENERAL CONTRACTOR SHALL BLEND NEW EARTHWORK SMOOTHLY INTO EXISTING EARTHWORK.
 - ALL POINTS OF CONSTRUCTION EGRESS AND/OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADS.
 - THE CONTRACTOR SHALL VERIFY ALL EXISTING GRADES IN THE FIELD AND REPORT ANY DISCREPANCIES IMMEDIATELY TO THE ARCHITECT/ENGINEER PRIOR TO STARTING WORK.
 - ANY ALTERATIONS TO THESE DRAWINGS MADE IN THE FIELD DURING CONSTRUCTION SHALL BE RECORDED BY THE GENERAL CONTRACTOR AND SHARED WITH THE ARCHITECT AND ENGINEER AS REQUIRED.
 - SURPLUS MATERIALS SHALL NOT BE REMOVED FROM THE SITE UNLESS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
 - ANY AREAS OUTSIDE OF THE LIMIT-OF-WORK THAT IS DISTURBED SHALL BE RESTORED TO ITS ORIGINAL CONDITION AT NO COST TO THE OWNER.

- UTILITY CONSTRUCTION NOTES**
- WATER SERVICE SHALL BE 6" DI. CL. CLASS 56 PIPE. ALL WATER MAIN FITTINGS, VALVES AND GATES SHALL MEET THE BWSC STANDARDS.
 - MINIMUM COVER OVER THE WATER MAIN AND SERVICES SHALL BE FIVE (5') FEET.
 - SANITARY SEWER GRAVITY PIPE SHALL BE 6" PVC, SDR 35, AND SHALL MEET THE BWSC STANDARDS.
 - WATER MAIN BENDS, TEES, AND PLUGS SHALL HAVE A CONCRETE THRUST BLOCKS AS SPECIFIED IN THE DETAIL SHEET.
 - ALL CONSTRUCTION TO MEET BWSC STANDARDS.
 - GAS, TELEPHONE, CABLE, ELECTRICITY TO BE DESIGNED BY THE INDIVIDUAL UTILITY COMPANY.
 - MAINTAIN 10 FEET HORIZONTAL SEPARATION BETWEEN SEWER AND WATER LINES. ENCASE BOTH UTILITIES WITH CONCRETE IF 10 FEET SEPARATION CANNOT BE MAINTAINED. WHEREVER THERE IS LESS THAN 10 FEET OF HORIZONTAL SEPARATION AND 18" OF VERTICAL SEPARATION BETWEEN A PROPOSED OR EXISTING SEWER LINE TO REMAIN AND A PROPOSED OR EXISTING WATER LINE TO REMAIN, BOTH UTILITIES SHALL BE ENCASED IN CONCRETE.
 - PROPOSED CLEANOUTS WILL BE CONSTRUCTED OF TWO 22.5 DEGREE ELBOWS AND ONE 45 DEGREE ELBOW.

BWSC INSPECTION SIGNOFFS

ITEM	DESCRIPTION	BWSC INSPECTOR/DATE	COMMENTS
(A)	6" FIRE SERVICE		
(B)	6" SEWER LATERAL & CLEANOUT		
(C)	CATCH BASIN 101		
(D)	CATCH BASIN 102		
(E)	DYE TEST (SEWER)		
(F)	INFILTRATION AREA		
(G)	DYE TEST (DRAIN)		
(H)	DRAIN MANHOLE 201		
(I)	OUTLET CONTROL STRUCTURE		
(J)	ASBUILT FEE		

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 CIVIL ENGINEERS

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 BRAintree, MA 02184

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LEGEND

W	EX. WATER	SM	WATER VALVE
S	EX. SEWER	SM	HYDRANT
D	EX. DRAIN	SM	SEWER MANHOLE
E	EX. ELEC.	SM	TELEPHONE MANHOLE
T	EX. TEL.	SM	EX. CATCH BASIN
G	EX. GAS	SM	EX. HATCH
LP	EX. LIGHT POLE	SM	UTILITY POLE
DM	DRAIN MANHOLE	SM	GAS VALVE
EMH	ELECTRIC MANHOLE	SM	
VCC	VERTICAL CURB	SM	
FGC	FLUSH GRANITE CURB	SM	
CRW	CONCRETE RETAINING WALL	SM	

SCALE: 1"=20'

DATE: 03.31.21

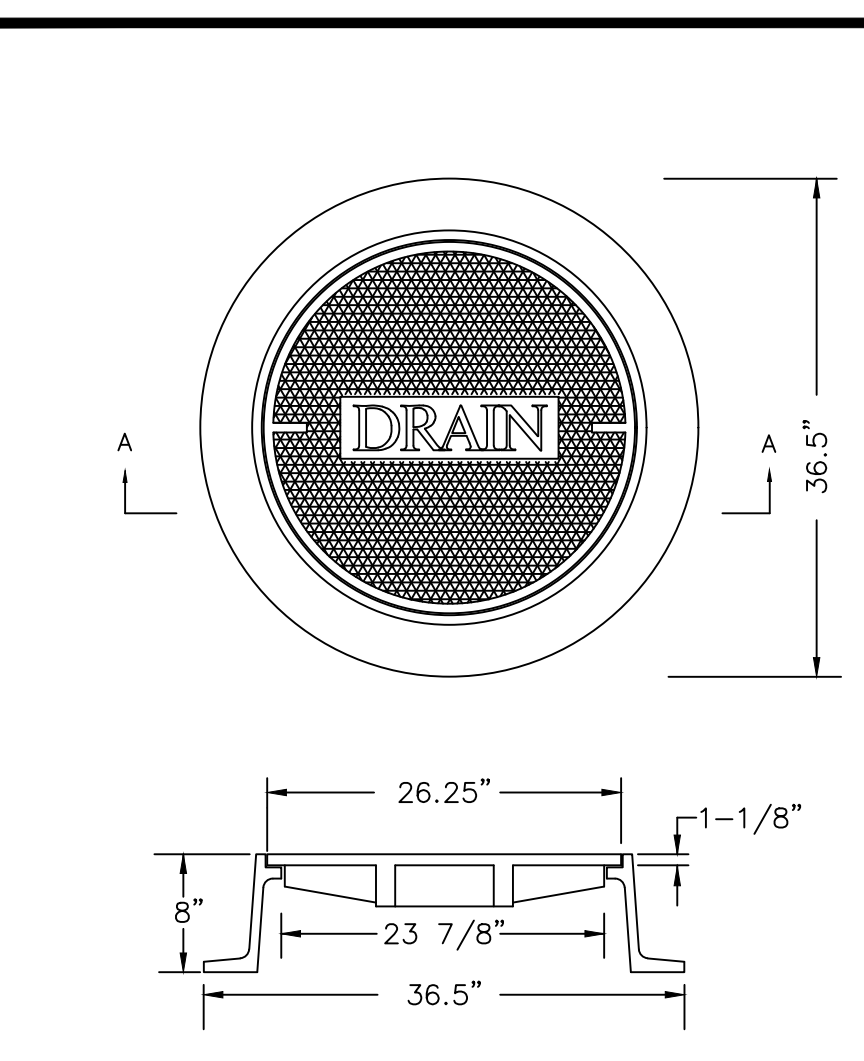
JOB NO.: JCG 20-052

PLAN TITLE: BWSC SITE PLAN (BWSC SHEET 1 OF 2) GRADING, UTILITY AND DRAINAGE 500 CANTERBURY STREET ROSLINDALE, MA

NO.	DATE	REVISION	BY
1	05.21.21	ADDED TREES AND INLAND BANK BUFFER	MCI
2A	07.02.21	REMOVED PARKING FROM WATERFRONT AREA	MCI
2B	07.02.21	BWSC COMMENTS	MCI

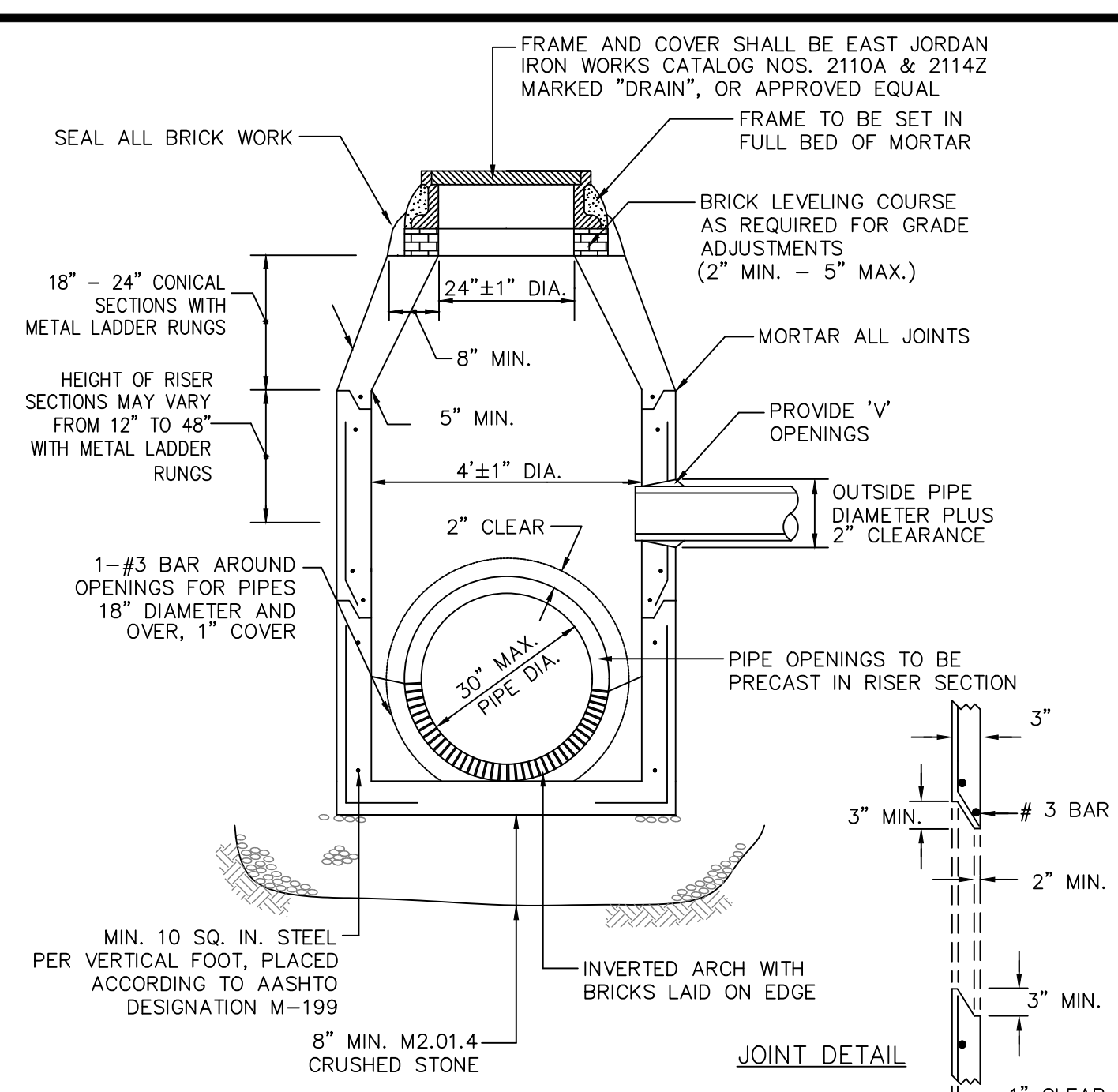
PREPARED FOR:
 SAINT MICHAEL'S CEMETERY
 500 CANTERBURY STREET
 ROSLINDALE, MA



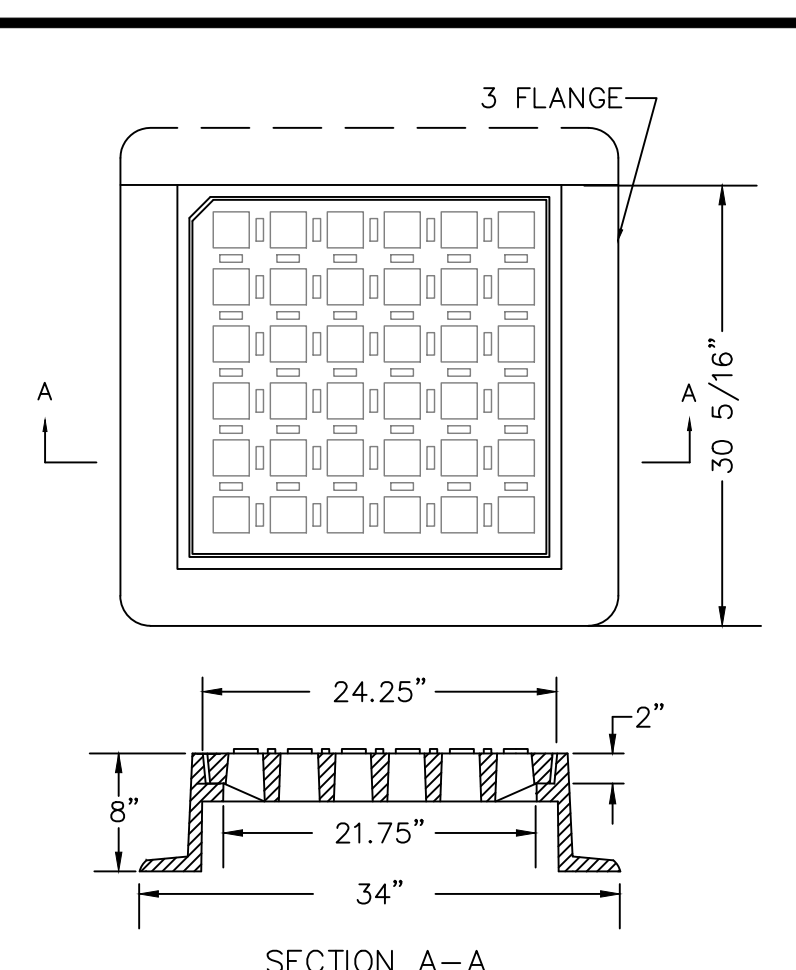


SECTION A-A
 NOTE:
 FRAME AND COVER SHALL BE EAST JORDAN IRON WORKS CATALOG NOS. 2110A & 2114Z MARKED "DRAIN", OR APPROVED EQUAL.

DRAIN MANHOLE COVER DETAIL
 NOT TO SCALE

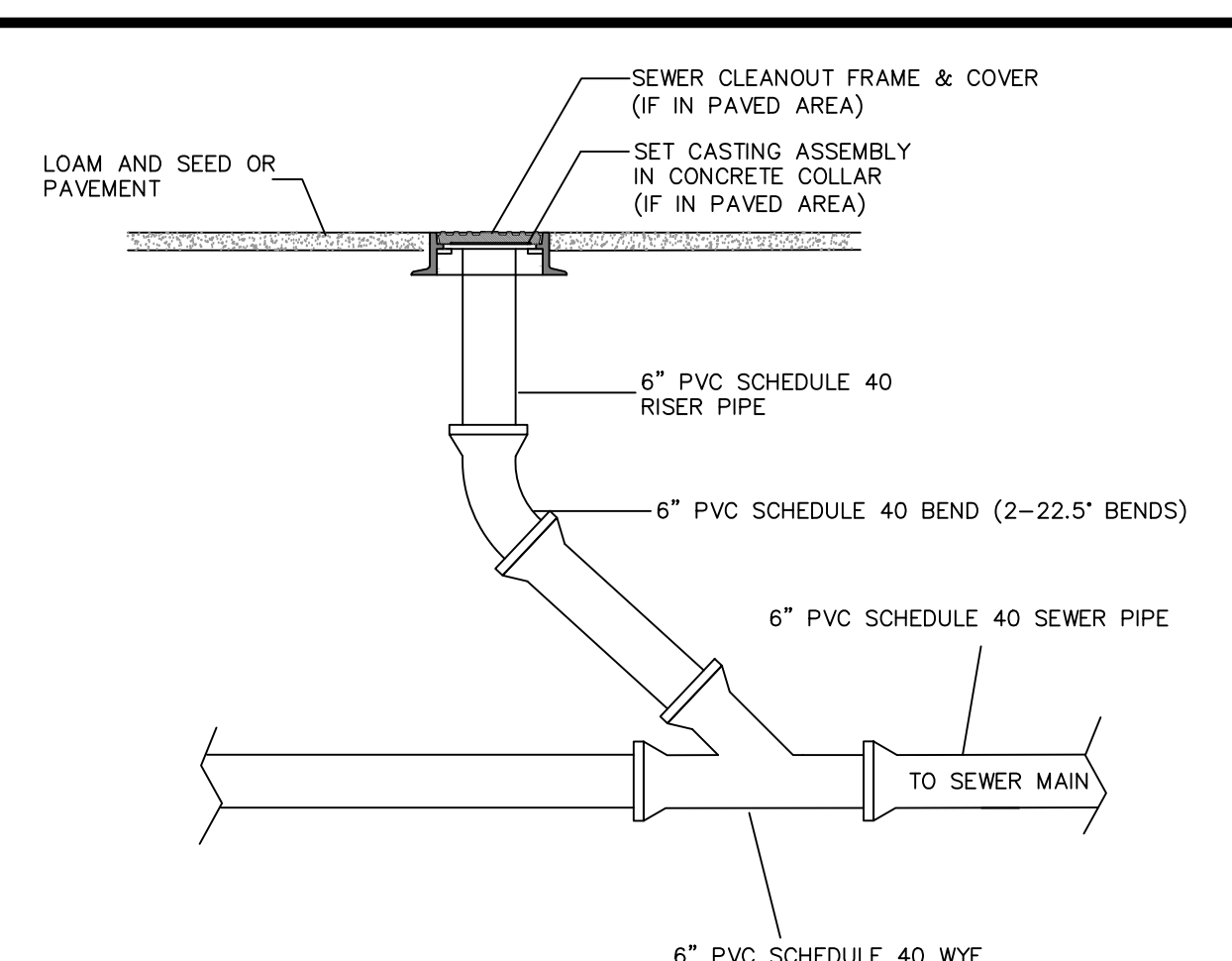


DRAIN MANHOLE DETAIL
 NOT TO SCALE

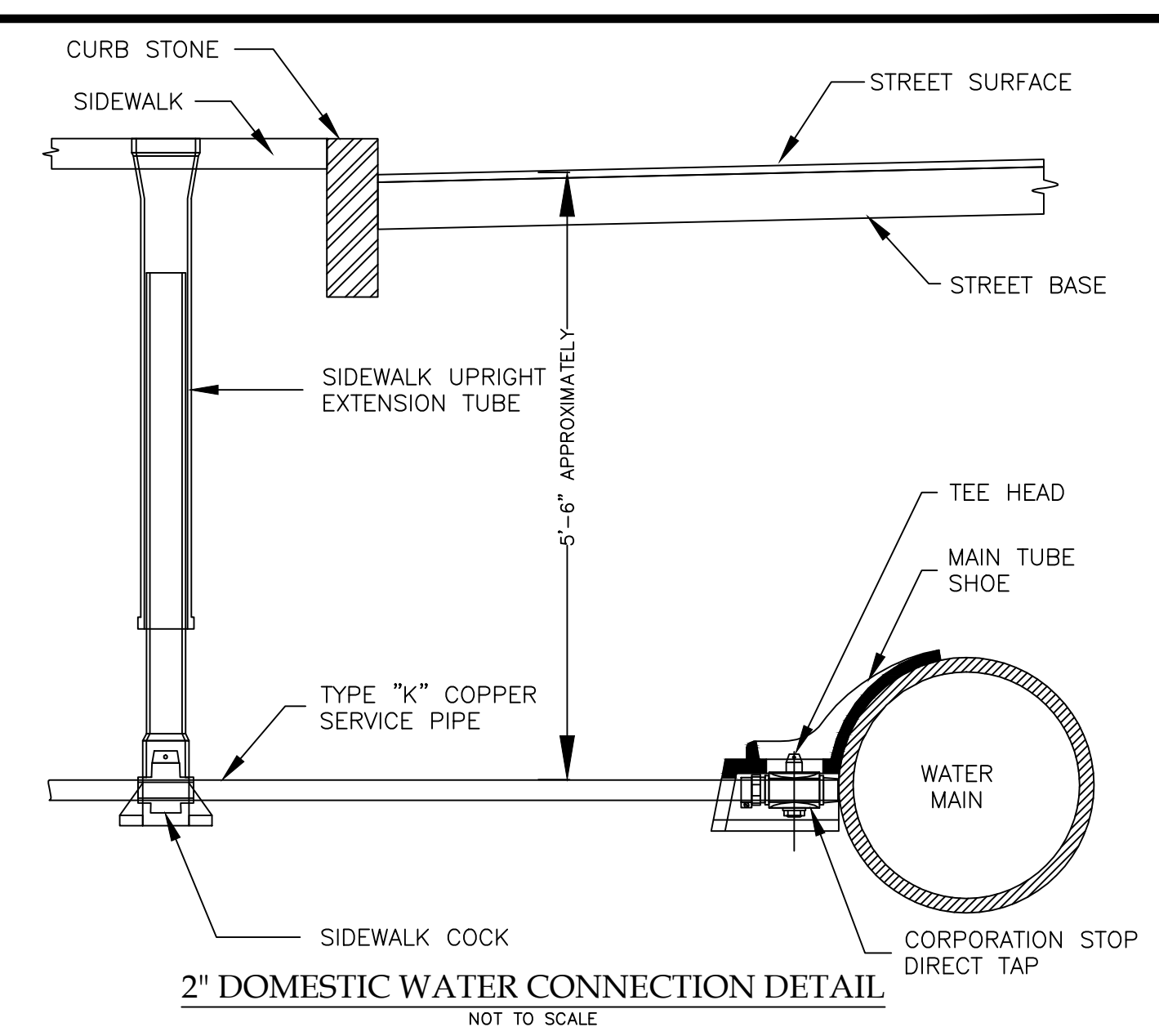


SECTION A-A
 NOTE:
 FRAME AND GRATE SHALL BE EAST JORDAN IRON WORKS CATALOG NOS. 5520M5 & 5524Z FOR THE 4 FLANGE AND CATALOG NOS. 5520M5 & 5523Z FOR THE 3 FLANGE, OR APPROVED EQUAL.

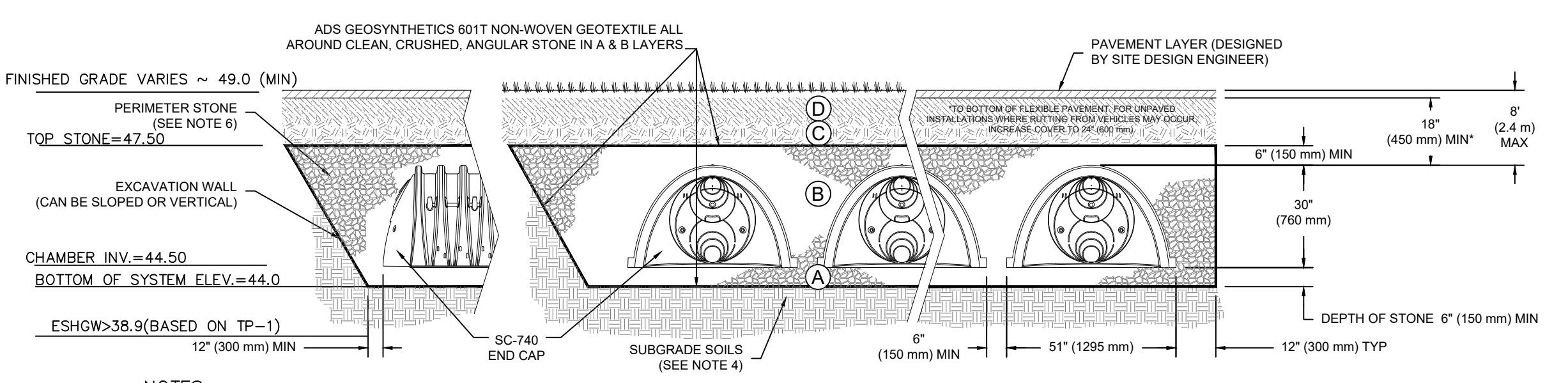
CATCH BASIN GRATE DETAIL
 NOT TO SCALE



CLEANOUT DETAIL
 NOT TO SCALE
 NOTE:
 CLEANOUT TOP SHALL BE ENCLOSED IN CASTING AND/OR FABRICATED COVER ASSEMBLY.
 NOTES:
 1. SEWER CLEANOUTS SHALL BE TYPICALLY LOCATED A MINIMUM OF 10' FROM THE FOUNDATION, HOWEVER, IN SPECIAL CIRCUMSTANCES THE CLEANOUT MAY BE LOCATED WITHIN 10' OF THE FOUNDATION WITH PERMISSION OF THE ENGINEERING DEPARTMENT. THE 10' ZONE SHALL BE CONSIDERED THE DISTANCE FROM THE INSIDE FACE OF THE FOUNDATION TO A DISTANCE OF 10' OUTSIDE OF THE FOUNDATION, PERPENDICULAR TO THE INSIDE FACE OF THE FOUNDATION.
 2. ALL WORK TO BE CONDUCTED WITHIN THE 10' ZONE SHALL BE PERFORMED BY A PLUMBER LICENSED IN THE STATE OF MASSACHUSETTS AND SHALL CONFORM TO 248 CMR 2.00 AND 248 CMR 10.00.

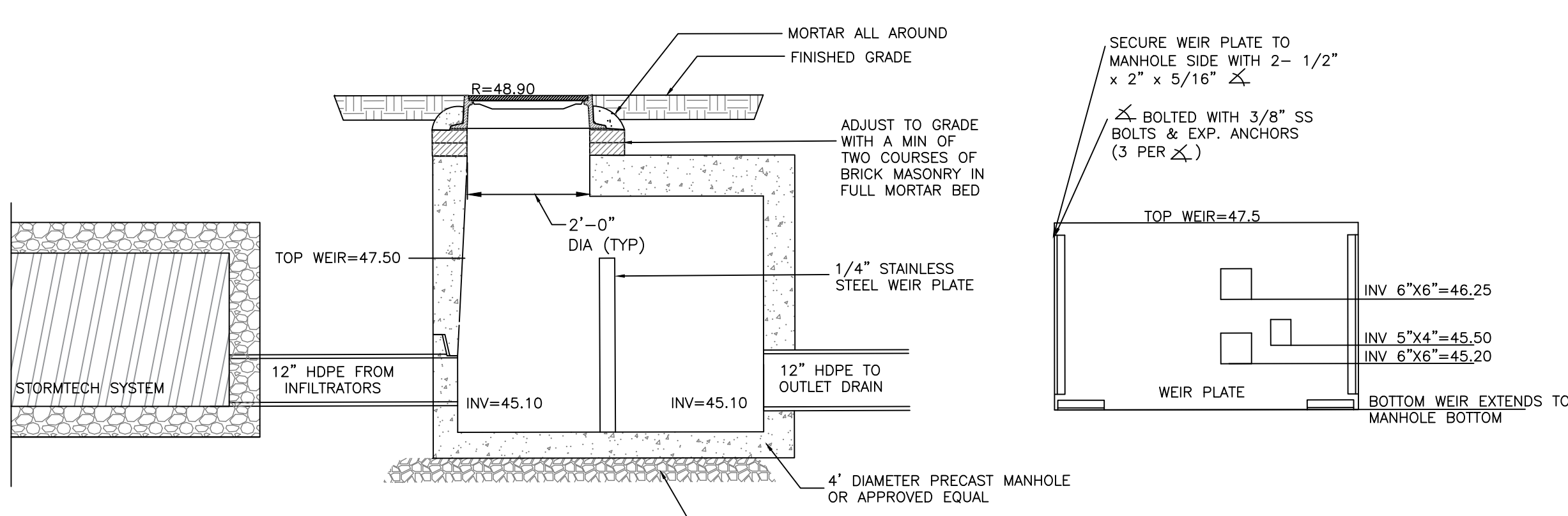


2" DOMESTIC WATER CONNECTION DETAIL
 NOT TO SCALE



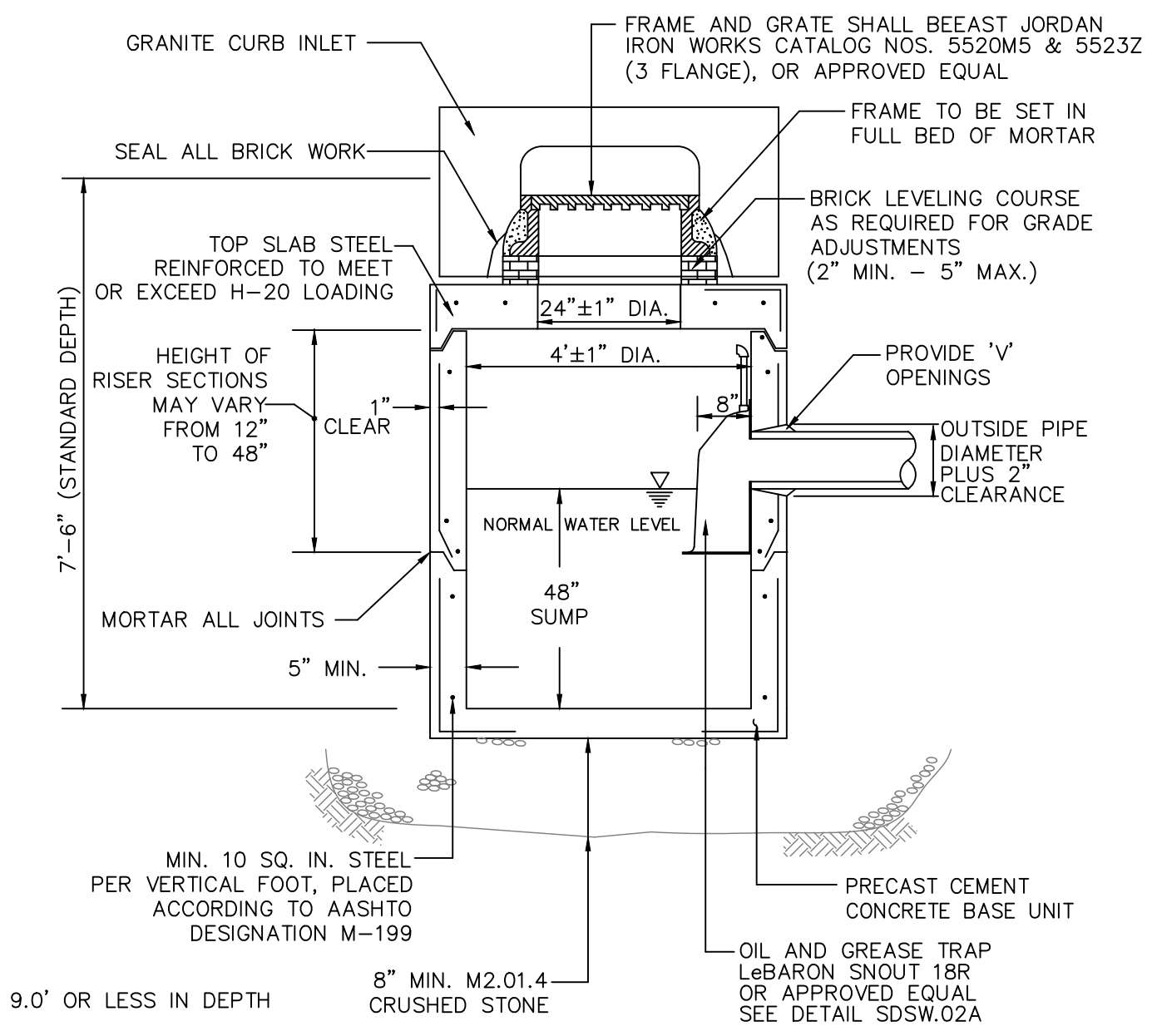
NOTES:
 1. SC-740 CHAMBERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM F2418 "STANDARD SPECIFICATION FOR POLYPROPYLENE (PP) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS", OR ASTM F2922 "STANDARD SPECIFICATION FOR POLYETHYLENE (PE) CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 2. SC-740 CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787 "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
 3. "ACCEPTABLE FILL MATERIALS" TABLE ABOVE PROVIDES MATERIAL LOCATIONS, DESCRIPTIONS, GRADATIONS, AND COMPACTION REQUIREMENTS FOR FOUNDATION, EMBEDMENT, AND FILL MATERIALS.
 4. THE SITE DESIGN ENGINEER IS RESPONSIBLE FOR ASSESSING THE BEARING RESISTANCE (ALLOWABLE BEARING CAPACITY) OF THE SUBGRADE SOILS AND THE DEPTH OF FOUNDATION STONE WITH CONSIDERATION FOR THE RANGE OF EXPECTED SOIL MOISTURE CONDITIONS.
 5. PERIMETER STONE MUST BE EXTENDED HORIZONTALLY TO THE EXCAVATION WALL FOR BOTH VERTICAL AND SLOPED EXCAVATION WALLS.
 6. ONCE LAYER 'C' IS PLACED, ANY SOIL/MATERIAL CAN BE PLACED IN LAYER 'D' UP TO THE FINISHED GRADE. MOST PAVEMENT SUBBASE SOILS CAN BE USED TO REPLACE THE MATERIAL REQUIREMENTS OF LAYER 'C' OR 'D' AT THE SITE DESIGN ENGINEER'S DISCRETION.

UNDERGROUND DETENTION AREA
 NOT TO SCALE



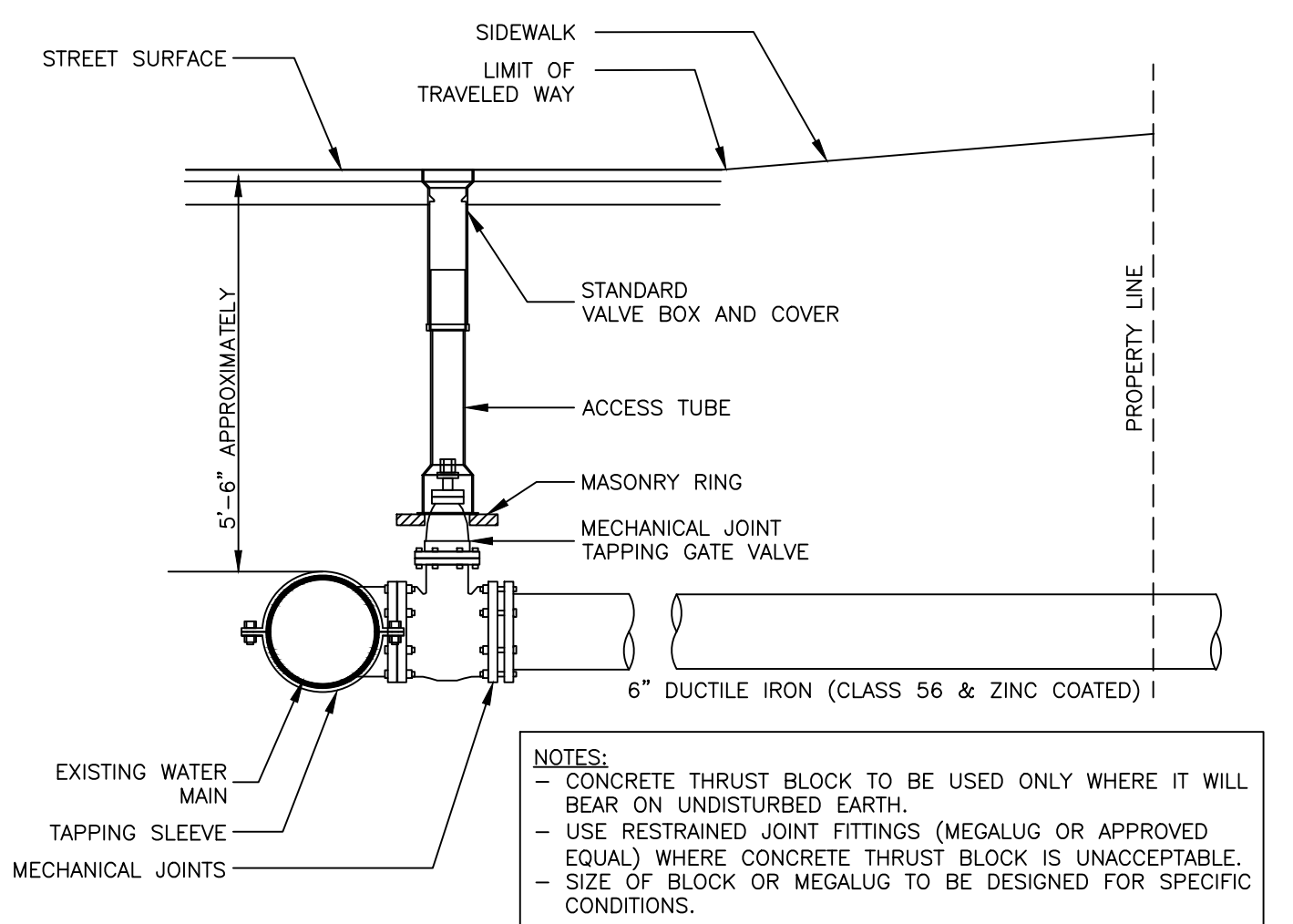
NOTES:
 1. PROVIDE RESILIENT CONNECTOR WHERE PIPE ENTERS MANHOLE.
 2. DESIGN LIVE LOAD HS20-44.
 SECURE WEIR PLATE TO MANHOLE SIDE WITH 2- 1/2" x 2" x 5/16" ANCHORS
 BOLTED WITH 3/8" SS BOLTS & EXP. ANCHORS (3 PER ANCHOR)
 TOP WEIR=47.5
 INV 6"x6"=46.25
 INV 5"x4"=45.50
 INV 6"x6"=45.20
 BOTTOM WEIR EXTENDS TO MANHOLE BOTTOM

OUTLET CONTROL STRUCTURE DETAIL
 NOT TO SCALE

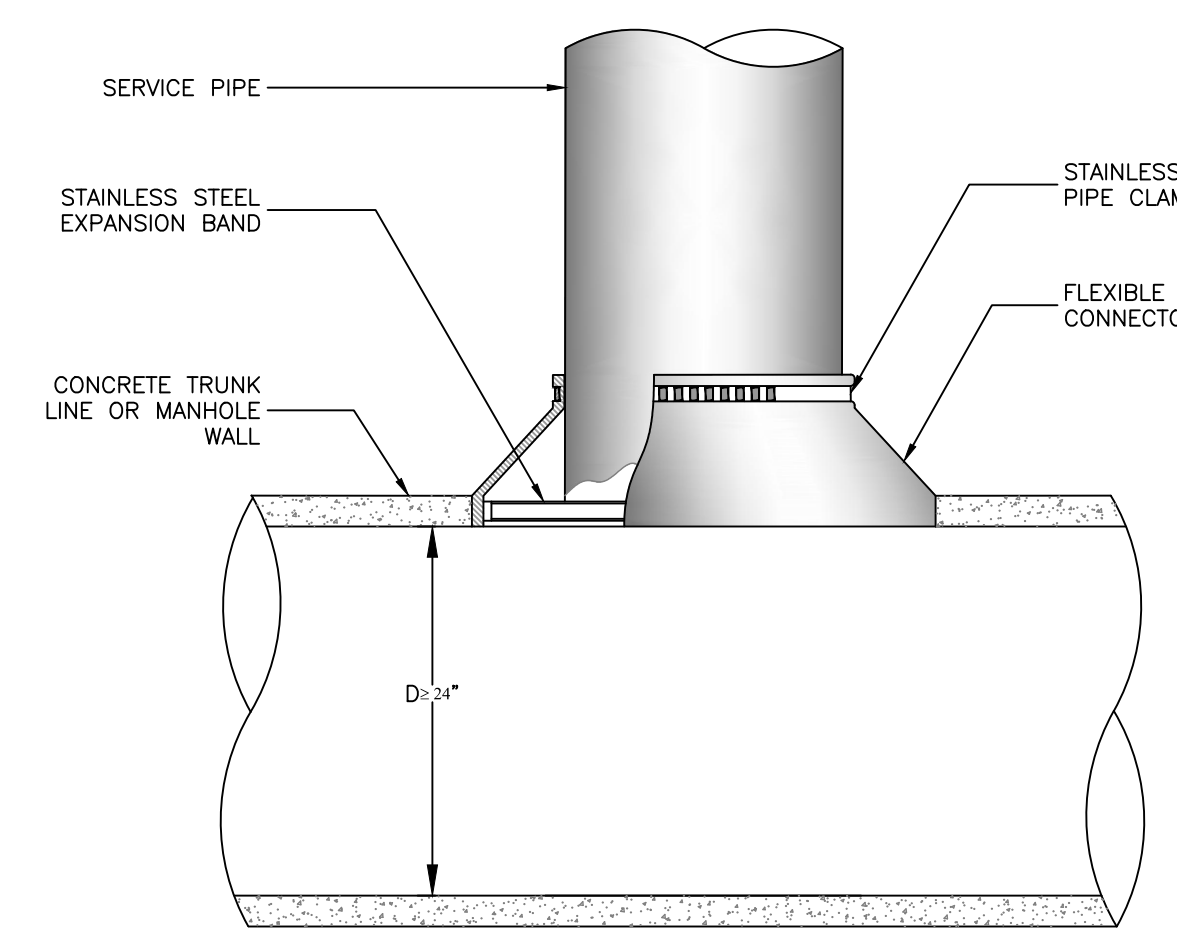


CATCH BASIN DETAIL
 NOT TO SCALE

CLEANOUT DETAIL
 NOT TO SCALE



FIRE AND LATERAL CONNECTION DETAIL
 NOT TO SCALE



NOTES:
 1. OPENING IN CONCRETE WALL SHALL BE CORED USING HIGH SPEED DIAMOND DRILL
 2. ALL METAL FIXTURES SHALL BE OF STAINLESS STEEL
 3. SERVICE LINE SHALL BE FLUSH WITH THE INSIDE OF THE CONCRETE PIPE OR WALL
 4. IF TRUNK LINE DIAMETER IS LESS THAN 24" THEN A SADDLE TYPE CONNECTION WILL BE USED

SEWER CONNECTION DETAIL
 NOT TO SCALE

BWSC SITE PLAN # 21140
 BWSC USE ONLY

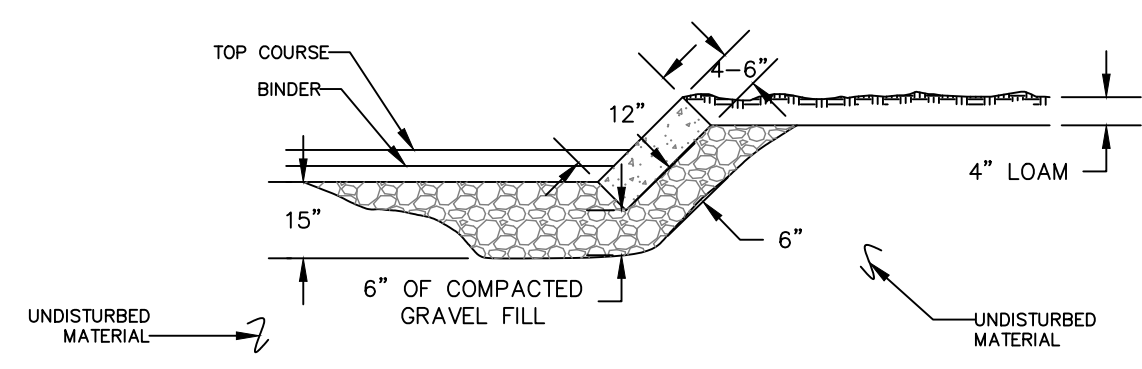
JCG JOYCE CONSULTING GROUP
 CIVIL ENGINEERS
 100 WYMAN ROAD BRAINTREE, MA 02184
 781-817-6120
 hello@joycecg.com

LEGEND

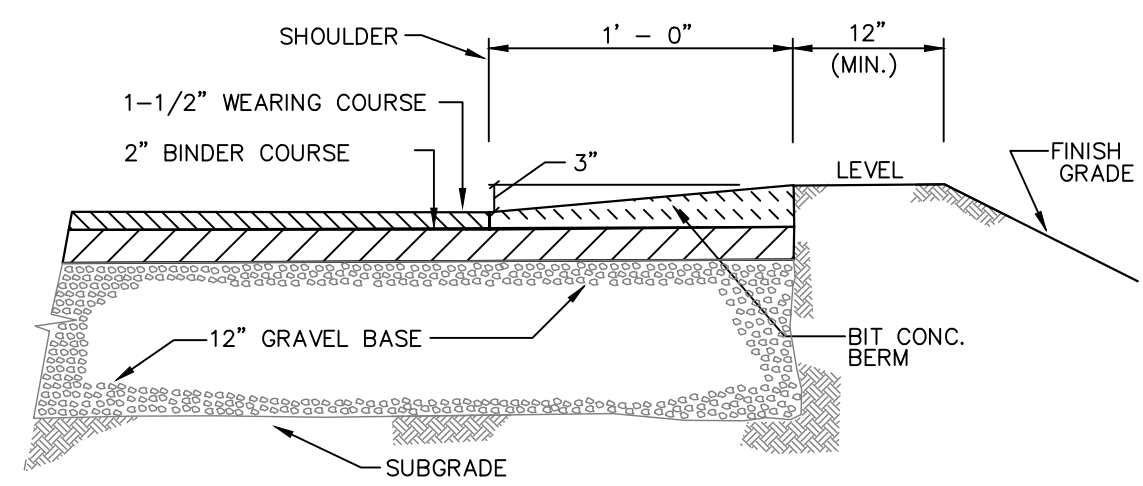
—	EX. WATER	⊗	WATER VALVE
-S	EX. SEWER	⊕	HYDRANT
-D	EX. DRAIN	⊙	SEWER MANHOLE
-E	EX. ELECT	⊗	TELEPHONE MANHOLE
-T	EX. TEL.	⊕	EX. CATCH BASIN
-G	EX. GAS	⊙	EX. HANDHOLE
UP ⊙	LIGHT POLE	UP ⊙	UTILITY POLE
DMH ⊙	DRAIN MANHOLE	⊕	FLUSH GRANITE CURB
EMH ⊙	ELECTRIC MANHOLE	⊗	CONCRETE RETAINING WALL
VGC ⊙	VERTICAL GRANITE CURB		
FGC ⊙	FLUSH GRANITE CURB		
CRTW ⊙	CONCRETE RETAINING WALL		

SCALE 1"=20'
DATE 03.31.21
JOB NO. JCG 20-052
PLANNED BY
DATE 07.02.21
REVISIONS
 NO. DATE REVISION BY
 2B 07.02.21 BWSC COMMENTS MKG

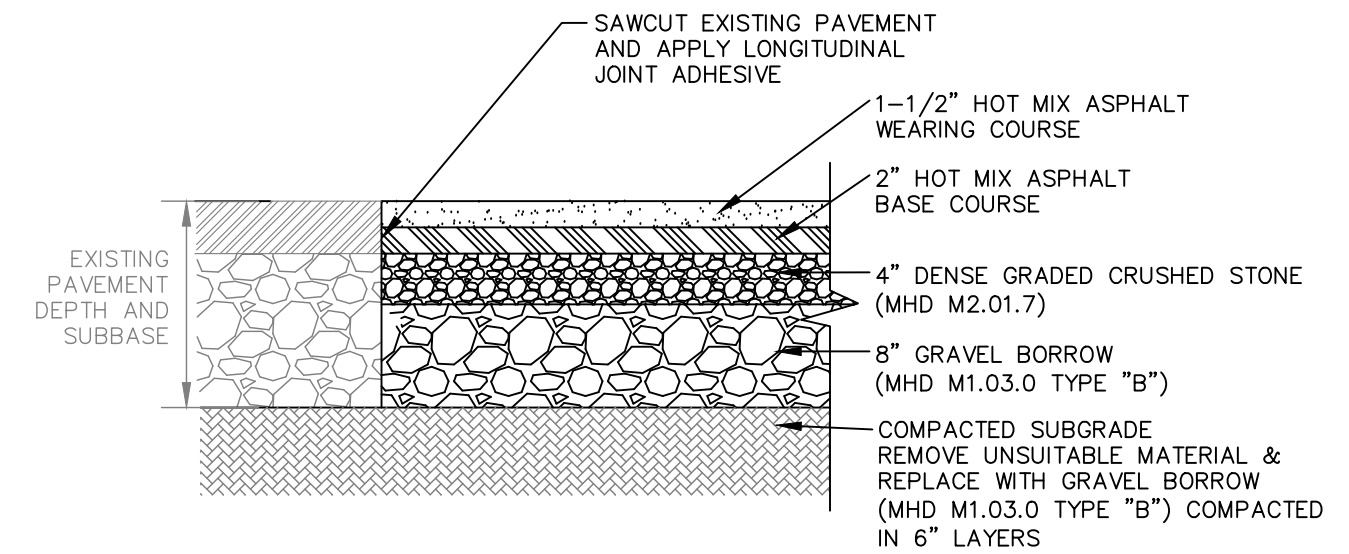
PLAN TITLE:
 BWSC DETAIL SHEET I (BWSC SHEET 2 OF 2)
 500 CANTERBURY STREET
 ROSLINDALE, MA
 PREPARED FOR:
 SAINT MICHAEL'S CEMETERY
 500 CANTERBURY STREET
 ROSLINDALE, MA
C-5



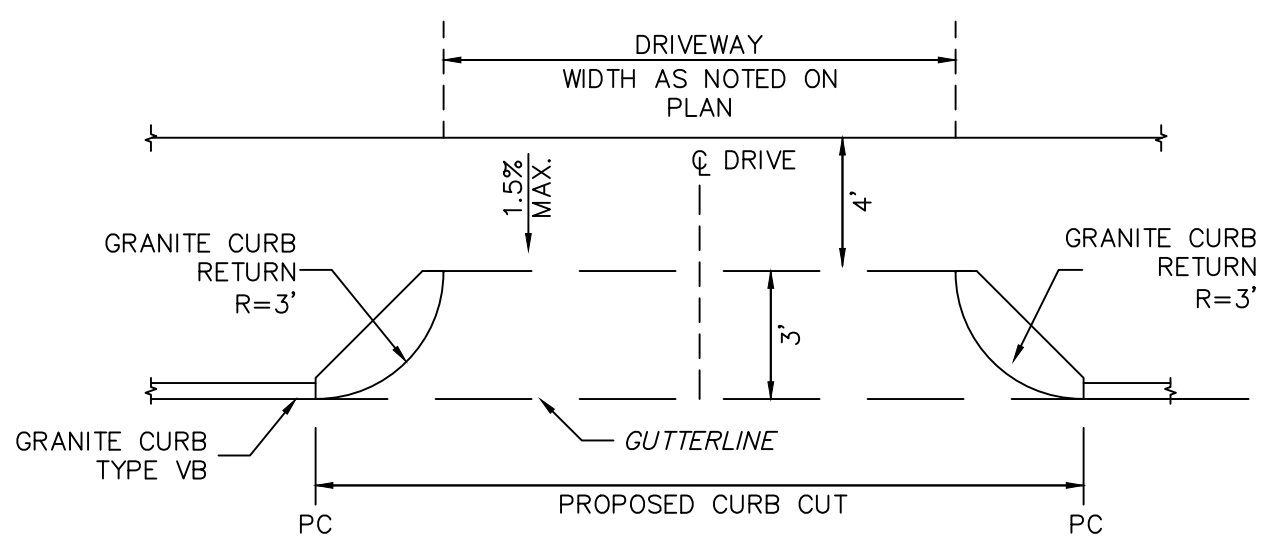
SLOPED GRANITE CURB DETAIL
NOT TO SCALE



CAPE COD BERM DETAIL
NOT TO SCALE



BITUMINOUS CONCRETE PAVEMENT (TWO COURSES)
NOT TO SCALE



DRIVEWAY DETAIL
NOT TO SCALE

TEST PIT 1
GRD EL 47.9' ±
G.W. EL > 38.9'

0	10YR 3/3	A HORIZON: LOAM (FILL - GRANULAR, FRIABLE)
1	10YR 4/4	FILL: LOAMY SAND 3-5% GRAVEL
224		
3		
4	10YR 4/1	FILL - C1 HORIZON: LOAMY SAND
5		
6		
7	10YR 7/1	C HORIZON: SANDY LOAM, HIGH SILT CONTENT
8		3-5% GRAVEL, 3-5% COBBLES/STONES
9	BTP@96"	

DATE 01-25-21
LOGGED BY: M. JOYCE, JCG

NOTES:
1. NO INDICATIONS OF ESTIMATED SEASONAL HIGH GROUNDWATER.
2. DRY TO BOTTOM OF HOLE

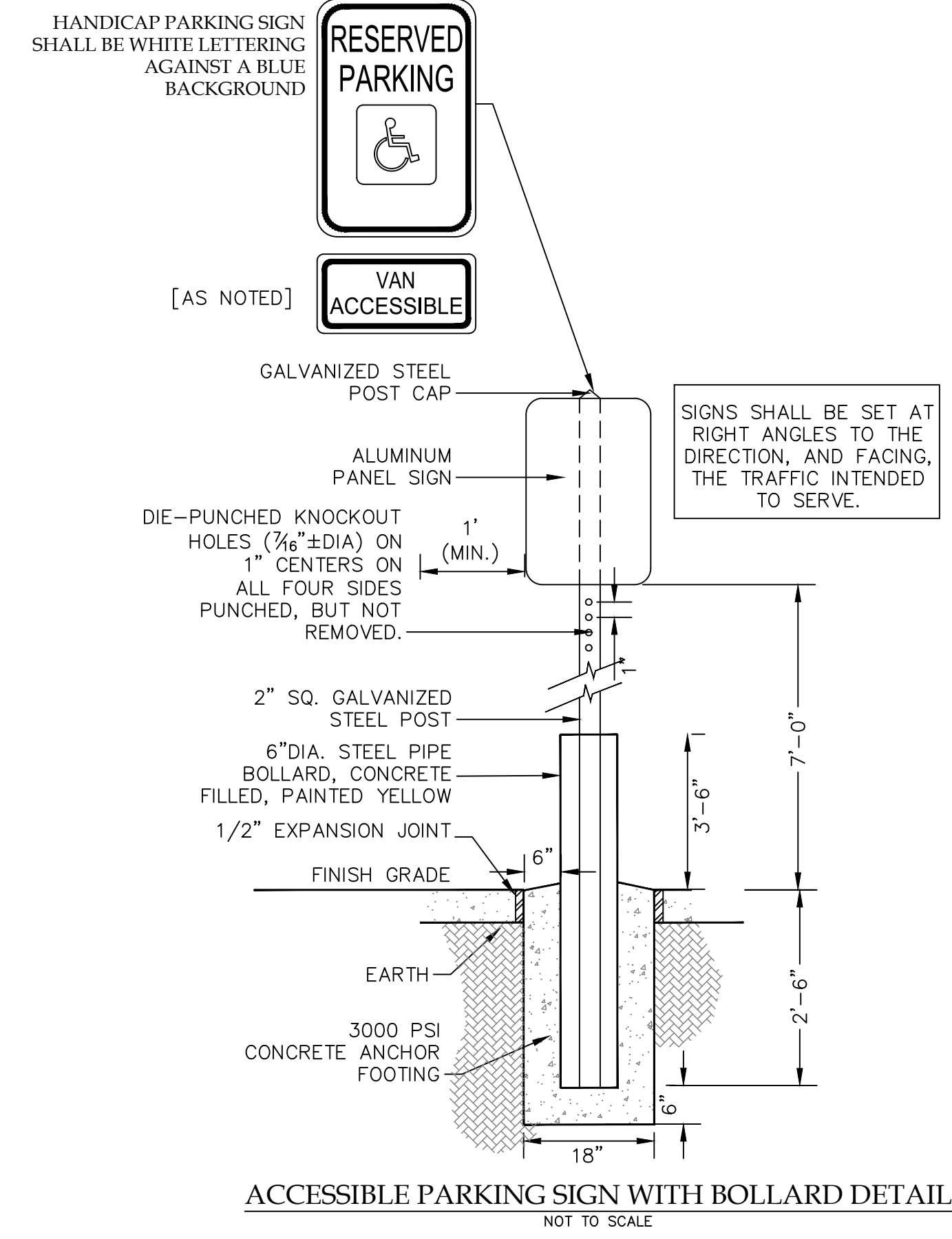
EXPLORATORY TEST-PIT LOG
NOT TO SCALE

TEST PIT 2
GRD EL 49.0' ±
G.W. EL > 43.0'

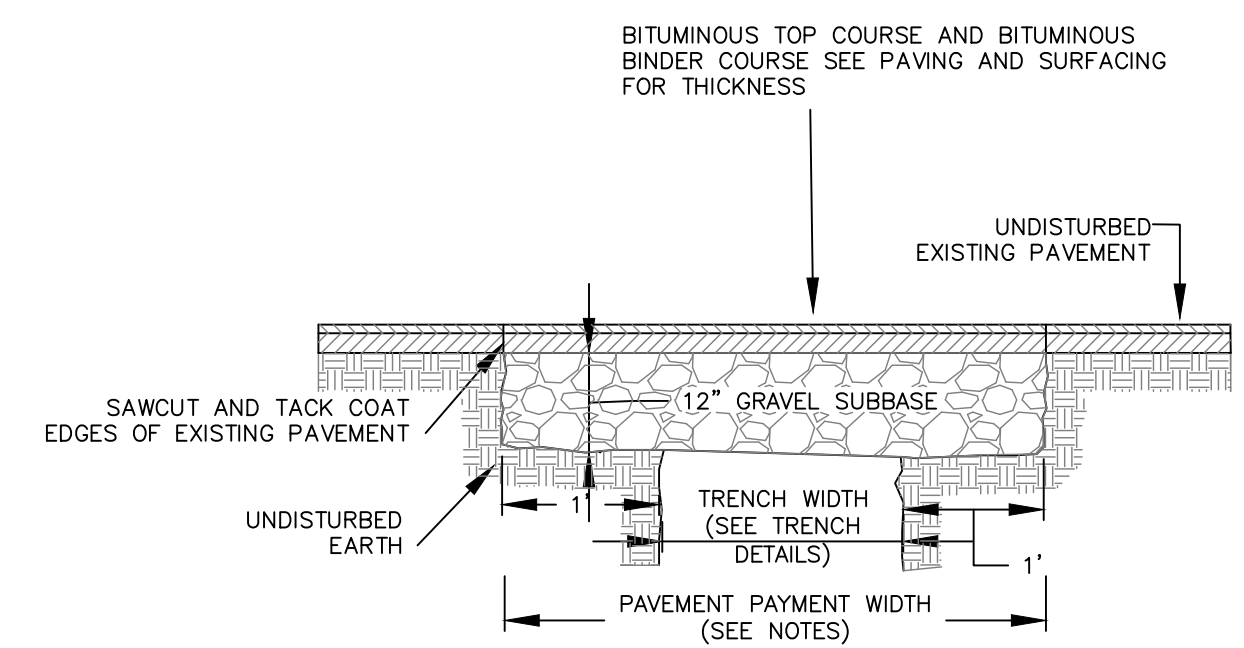
0	10YR 3/3	A HORIZON: LOAM (FILL - GRANULAR, FRIABLE)
1	10YR 4/4	FILL: LOAMY SAND 3-5% GRAVEL
2		
3		
4	10YR 4/1	FILL - C1 HORIZON: LOAMY SAND SOME BRICK & WOOD
5		
6	BTP@72"	

DATE 01-25-21
LOGGED BY: M. JOYCE, JCG

NOTES:
1. NO INDICATIONS OF ESTIMATED SEASONAL HIGH GROUNDWATER.
2. DRY TO BOTTOM OF HOLE

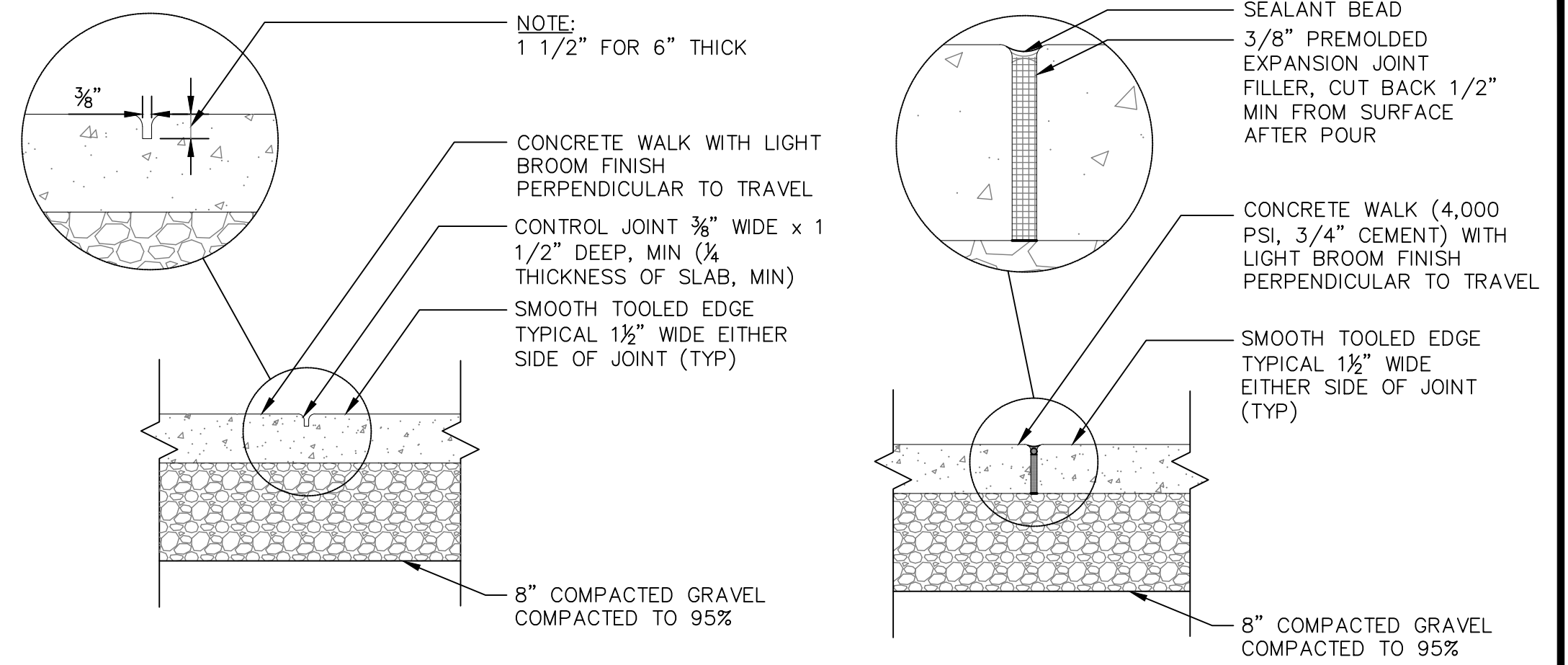


ACCESSIBLE PARKING SIGN WITH BOLLARD DETAIL
NOT TO SCALE



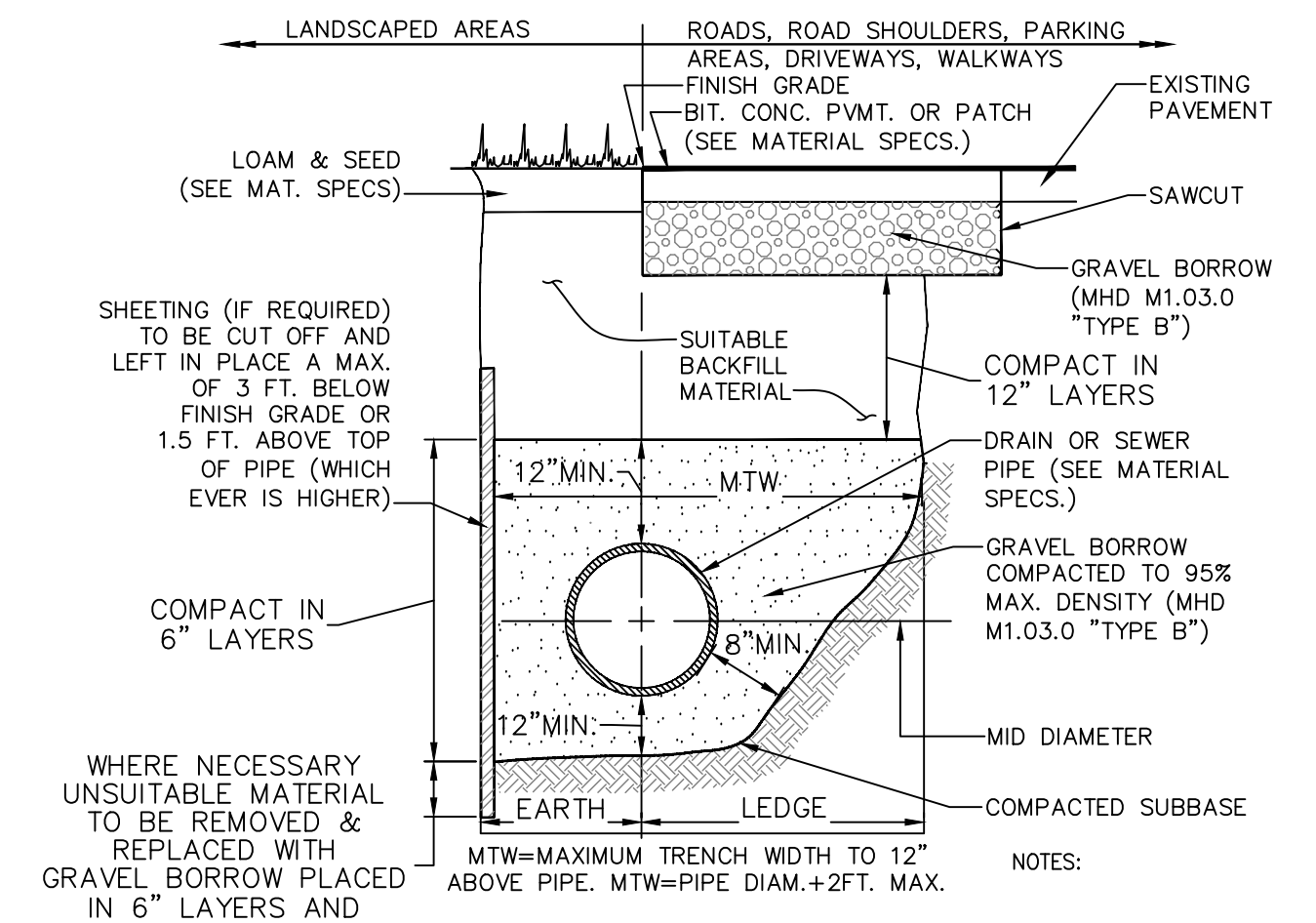
TRENCH PAVEMENT DETAIL
NOT TO SCALE

NOTES:
1. PERMANENT TRENCH PAVEMENT PAYMENT WIDTH SHALL BE THE TRENCH PAY LIMIT PLUS 2 FEET
2. TEMPORARY TRENCH PAVEMENT PAYMENT WIDTH SHALL BE EQUAL TO THE TRENCH PAYMENT LIMIT
3. REMOVE AND DISPOSE ALL TEMPORARY PAVEMENT AS REQUIRED. RESTORE AND COMPACT SUBBASE AS REQUIRED PRIOR TO PERMANENT TRENCH PAVEMENT.



CONTROL JOINT [5'-0" O.C. MAX] **EXPANSION JOINT [30'-0" O.C. MAX]**

CONCRETE SIDEWALK DETAIL



STANDARD TRENCH DETAIL FOR UTILITY PIPE
NOT TO SCALE

WHERE NECESSARY UNSUITABLE MATERIAL TO BE REMOVED & REPLACED WITH GRAVEL BORROW PLACED IN 6" LAYERS AND COMPACTED TO 95% MAX. DENSITY

NOTES:
MTW=MAXIMUM TRENCH WIDTH TO 12" ABOVE PIPE. MTW=PIPE DIAM.+2FT. MAX.



JCG JOYCE CONSULTING GROUP
CIVIL ENGINEERS

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LEGEND

— W —	EX. WATER	⊗	WATER VALVE
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— D —	EX. DRAIN	⊗	SEWER MANHOLE
— E —	EX. ELECT	⊗	TELEPHONE MANHOLE
— T —	EX. TEL.	⊗	EX. CATCH BASIN
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LP ⊙	LIGHT POLE	⊗	UTILITY POLE
DMH ⊙	DRAIN MANHOLE	⊗	EX. CATCH BASIN
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VGC ⊙	VERTICAL GRANITE CURB	⊗	UTILITY POLE
FGC ⊙	FLUSH GRANITE CURB	⊗	GAS VALVE
CRTW ⊙	CONCRETE RETAINING WALL		

SCALE 1"=20'

DATE 03.31.21

JOB NO. JCG 20-052

REVISIONS		
NO.	DATE	REVISION

PLAN TITLE: **DETAIL SHEET II**
500 CANTERBURY STREET
ROSLINDALE, MA

PREPARED FOR: **SAINT MICHAEL'S CEMETERY**
500 CANTERBURY STREET
ROSLINDALE, MA

C-6