NOTICE OF INTENT

MGL Ch. 131 s. 40
and
Town of Wakefield

For the

Parking Lot Improvements

at
21-29 Broadway
(Tax Map 13 Block 26 Lot 117)
Wakefield, Massachusetts

Submitted to:
Town of Wakefield
Conservation Commission
&
DEP N.E.R.O.

Prepared for:
Raymond S Falite
21 -29 Broadway Street
Wakefield, MA 01880

Prepared by:

Engineering Alliance, Inc.
Civil Engineering & Land Planning Consultants
194 Central Street
Saugus, MA 01906
Tel: (781) 231-1349
Fax: (781) 417-0020

1950 Lafayette Road
Portsmouth, NH 03801
Tel: (603) 610-7100
Fax: (603) 610-7101

March 12, 2024

Table of Contents

SECTION I

WPA Form 3 – Notice of Intent
Figure 1 – USGS Locus Map
Figure 2 – FEMA Flood Map
Figure 3 – Ortho Photo
Figure 4 –Natural Heritage Map
Figure 5 – SCS Soils Map

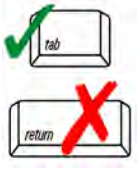
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

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

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



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

A. General Information

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

21 -29 Broadway Street — a. Street Address
Wakefield — b. City/Town
01880 — c. Zip Code

Latitude and Longitude:
42° 29' 53"N — d. Latitude
71° 04' 12"W — e. Longitude

Tax Map 13 Block 26 — f. Assessors Map/Plat Number
Lot 117 — g. Parcel /Lot Number

2. Applicant:

Raymond S — a. First Name
Falite — b. Last Name
c. Organization
9 Broadway Street — d. Street Address
Wakefield — e. City/Town
MA — f. State
01880 — g. Zip Code
(781) 246-9320 — h. Phone Number
i. Fax Number
ray@failtebros.com — j. Email Address

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

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

4. Representative (if any):

Richard — a. First Name
Salvo — b. Last Name
Engineering Alliance — c. Company
194 Central Street — d. Street Address
Saugus — e. City/Town
MA — f. State
01906 — g. Zip Code
(781) 231-1349 — h. Phone Number
(781) 417-0020 — i. Fax Number
rsalvo@eaicivil.com — j. Email address

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

$750 — a. Total Fee Paid
$362.50 — b. State Fee Paid
$387.50 — c. City/Town Fee Paid

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A. General Information (continued)

6. General Project Description:

The project consists of repaving an existing parking lot. The majority of the work will occur within 100-ft of a bank to an un-named stream and the 200-ft Riverfront Area associated with the same.

7a. Project Type Checklist: (Limited Project Types see Section A. 7b.)

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Commercial/Industrial
4. ☐ Dock/Pier
5. ☐ Utilities
6. ☐ Coastal engineering Structure
7. ☐ Agriculture (e.g., cranberries, forestry)
8. ☐ Transportation
9. ☒ Other

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

1. ☐ Yes ☒ No

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

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

a. County	b. Certificate # (if registered land)
Middlesex	
c. Book	**d. Page Number**
73575	44

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☐ Bordering Vegetated Wetland	1. square feet	2. square feet
c. ☐ Land Under Waterbodies and Waterways	1. square feet 3. cubic yards dredged	2. square feet

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☒ Riverfront Area	Un-named stream 1. Name of Waterway (if available) - **specify coastal or inland**	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: 44,660 square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet	b. square feet within 100 ft.	c. square feet between 100 ft. and 200 ft.
27,404 (currently paved)	9,937 (currently paved)	17,467 (currently paved)

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

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

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

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

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

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

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

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

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

4. ☐ Restoration/Enhancement

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

a. square feet of BVW

b. square feet of Salt Marsh

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings

b. number of replacement stream crossings

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Bureau of Resource Protection - Wetlands
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C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

   a. ☐ Yes ☒ No

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

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

   2021
   b. Date of map

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

   c. Submit Supplemental Information for Endangered Species Review*

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

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

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

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

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

   (b) ☐ Photographs representative of the site

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

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

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

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

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

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

(d) ☐ Vegetation cover type map of site

(e) ☐ Project plans showing Priority & Estimated Habitat boundaries

(f) OR Check One of the Following

1. ☐ Project is exempt from MESA review.
Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/mesa/mesa_exemptions.htm; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing.
a. NHESP Tracking # _____ b. Date submitted to NHESP _____

3. ☐ Separate MESA review completed.
Include copy of NHESP "no Take" determination or valid Conservation & Management Permit with approved plan.

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

a. ☒ Not applicable – project is in inland resource area only b. ☐ Yes ☐ No

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

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

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

North Shore - Hull to New Hampshire border:

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

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

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Bureau of Resource Protection - Wetlands

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

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

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

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

   b. ACEC

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

   a. ☐ Yes ☒ No

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

   a. ☐ Yes ☒ No

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

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

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

      2. ☒ A portion of the site constitutes redevelopment

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

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

      1. ☐ Single-family house

      2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

Massachusetts Department of Environmental Protection
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WPA Form 3 – Notice of Intent

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

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D. Additional Information (cont'd)

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

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

Plan to Accompany Notice of Intent
a. Plan Title

Engineering Alliance, Inc.
b. Prepared By

Richard A. Salvo, P.E.
c. Signed and Stamped by

March 12, 2024
d. Final Revision Date

1"=20'
e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☒ Attach Stormwater Report, if needed.

E. Fees

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

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

#9028
2. Municipal Check Number

3/12/24
3. Check date

#9029
4. State Check Number

3/12/24
5. Check date

Engineering Alliance, Inc.
6. Payor name on check: First Name

7. Payor name on check: Last Name

Massachusetts Department of Environmental Protection
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WPA Form 3 – Notice of Intent

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

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F. Signatures and Submittal Requirements

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

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

1. Signature of Applicant

2. Date 3/10/24

3. Signature of Property Owner (if different)

4. Date

5. Signature of Representative (if any)

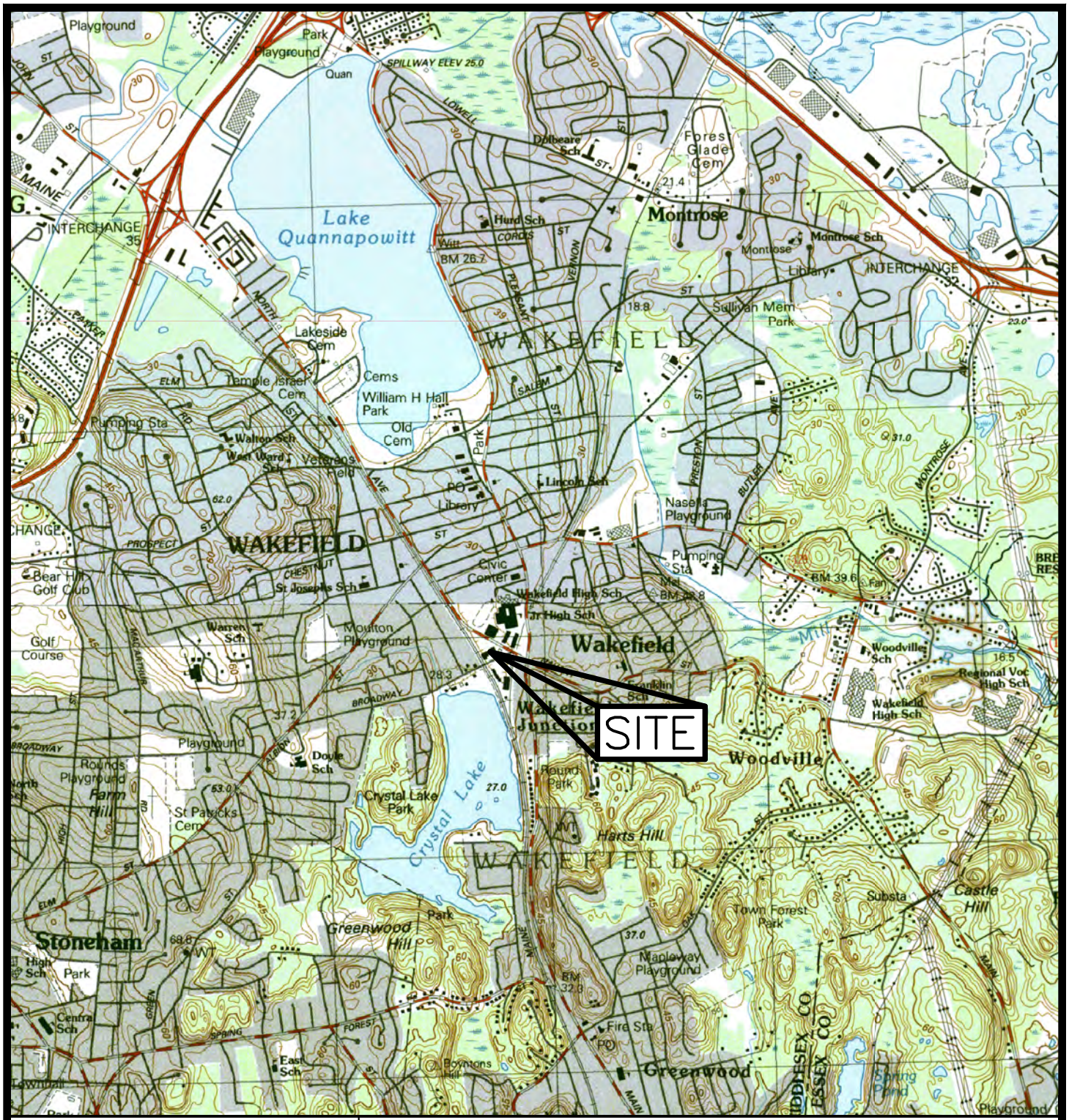
6. Date 3/10/24

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

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

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

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



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Fax: (781) 417-0020

1950 Lafayette Road
Portsmouth, NH 03801
Tel: (603) 610-7100
Fax: (603) 610-7101

PROJECT:

Notice of Intent

21 -29 Broadway Street
(Tax Map 13 Block 26 Lot 117)
Wakefield, MA

PROJECT: 23-27304	DATE: April 5, 2023
SCALE: 1:25,000	DWG FILE NAME: FIGURES.dwg
DESIGNED BY: Alexandra Benderskaya	CHECKED BY: Richard A. Salvo, P.E.

DRAWING TITLE:

FIGURE 1 - USGS LOCUS MAP

PREPARED BY:

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PROJECT:

Notice of Intent

21 -29 Broadway Street
(Tax Map 13 Block 26 Lot 117)
Wakefield, MA

PROJECT: 23-27304	DATE: April 5, 2023
SCALE: 1"=150'	DWG FILE NAME: FIGURES.dwg
DESIGNED BY: Alexandra Benderskaya	CHECKED BY: Richard A. Salvo, P.E.

DRAWING TITLE:

FIGURE 2 - ORTHO PHOTO

PANEL 427 OF 656

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MELROSE, CITY OF	250206	0427	E
STONEHAM, TOWN OF	250215	0427	E
WAKEFIELD, TOWN OF	250221	0427	E

MAP NUMBER
25017C0427E

EFFECTIVE DATE
JUNE 4, 2010

PREPARED BY:

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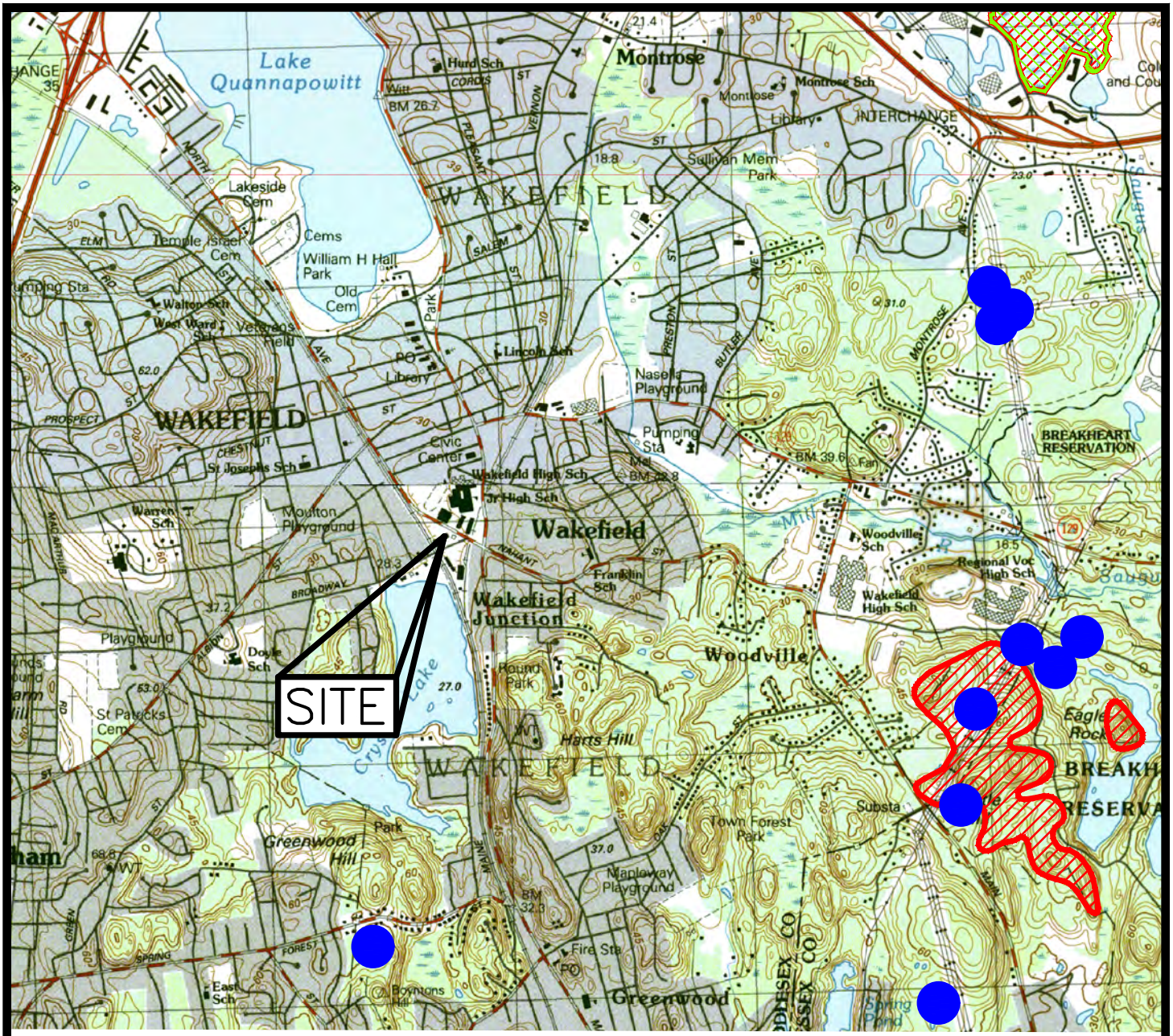
Wakefield, MA

PROJECT: 23-27304	DATE: April 5, 2023
SCALE: 1"=500'	DWG FILE NAME: FIGURES.dwg
DESIGNED BY: Alexandra Benderskaya	CHECKED BY: Richard A. Salvo, P.E.

DRAWING TITLE:

FIGURE 3 - FEMA FLOOD MAP



LEGEND:

- = NHESP CERTIFIED VERNAL POOL
- = NHESP ESTIMATED HABITATS OF RARE SPECIES
- = NHESP PRIORITY HABITATS OF RARE SPECIES

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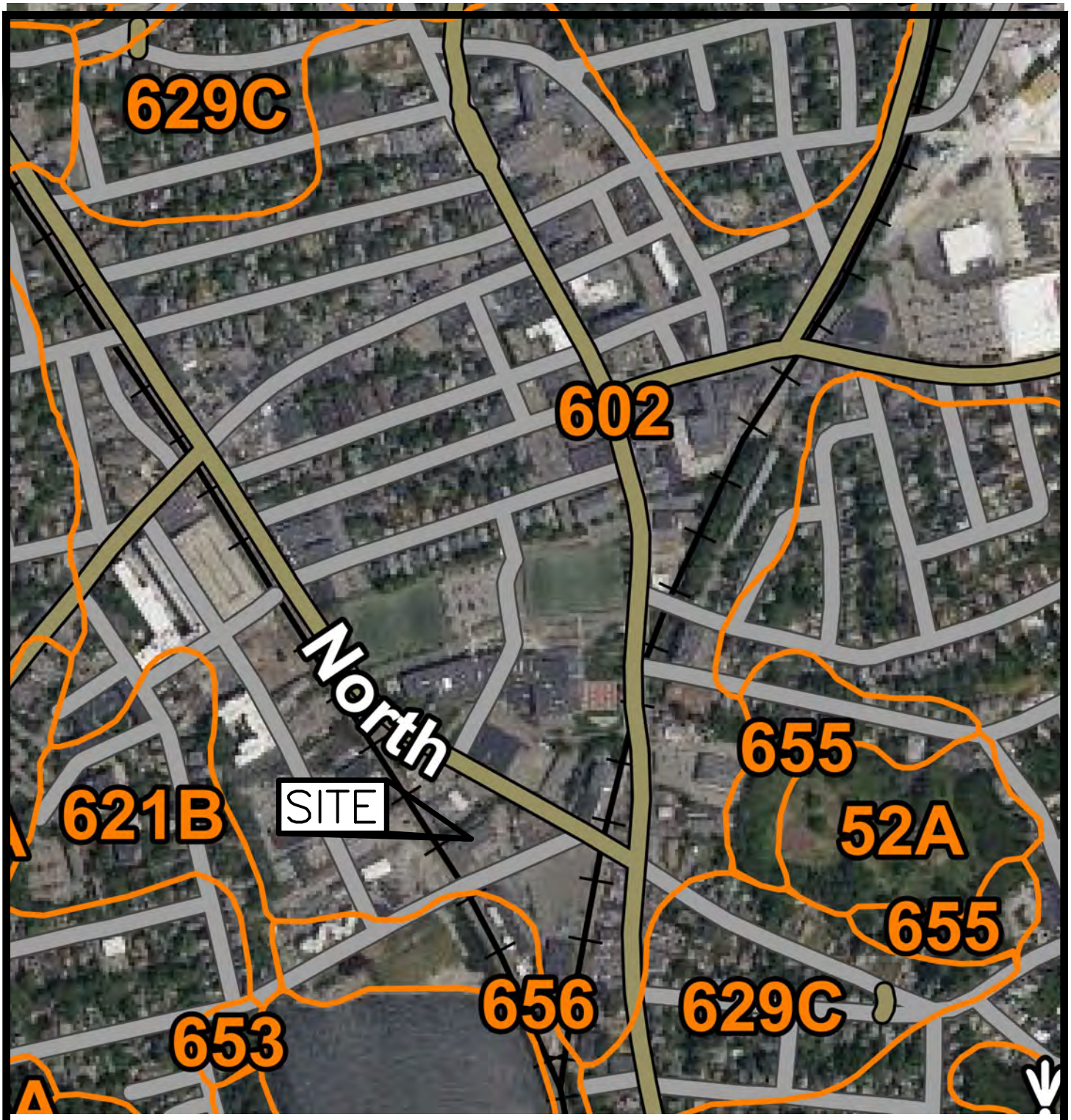
SCALE: 1:25,000	DWG FILE NAME: FIGURES.dwg
DESIGNED BY: Alexandra Benderskaya	CHECKED BY: Richard A. Salvo, P.E.

DRAWING TITLE:

FIGURE 4 - NATURAL HERITAGE MAP



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SCALE: 1"=500'	DWG FILE NAME: FIGURES.dwg
DESIGNED BY: Alexandra Benderskaya	CHECKED BY: Richard A. Salvo, P.E.

DRAWING TITLE:

FIGURE 5 - SOILS MAP

SECTION II

Project Narrative
Streamstats Analysis
Stormwater Checklist
Rational Method Drainage Calculations
Water Quality Inlet Sizing Calculation
TSS Removal Calculation
Best Management Practices Operation & Maintenance Plan

PROJECT NARRATIVE
Parking Lot Paving Project
29-29 Broadway

The project is located at 21-29 Broadway which is currently occupied by Wakefield Plaza. The land is shown on the Town of Wakefield Tax Maps as Map 13 Block 26 Lot 117 and is comprised of approximately 44,660+/- s.f. The site is occupied by the existing plaza and associated bituminous concrete parking area. The site is bordered to the south by Broadway, developed commercial property to the east, railroad tracks to the west and an unnamed perineal stream to the north.

The project consists of re-paving the existing parking lot along with proposed drainage improvements. The proposed pavement will act as an engineered barrier to protect the public from the existing contamination that exists on-site. The contamination located on the subject property consists of soil impacts from historical releases and dumping associated with former operations of the Lead Lined Iron Pipe Company. An evaluation of the urban fill soils on the property have indicated that heavy metal impacts occur across the entire site, but due to the limited mobility of the metals, no significant groundwater impacts have occurred. The urban fill will require remediation and/or an Activity and Use Limitation (AUL) placed on the property to achieve a level of no significant risk under the Massachusetts Contingency Plan (MCP)(310 CMR 40.0000). A screening of remedial actions for the property was undertaken with the objective to develop respconse action(s) to remediate heavy metals (lead) in subsurface urban fill from historical releases and dumping associated with former operations of the Lead Lined Iron Pipe Company. The specific remedial response objectives was to reduce Site soil heavy metals (in particular lead) in soils to a level below Method 1 S1 standards or restrict access to those soils to achieve a level of no significant risk. Based upon the screening of remediation options for the Site, sampling results of the Phase I and II and an understanding of the existing Site conditions and Site building layout, it is believed that the most appropriate actions to quickly and cost effectively achieve a Permanent Solution for the Site are as follows:

Capping
The existing pavement will be removed and the Site will be graded for preparation of capping materials. The capping system will consist of geotextile filter fabric laid over the graded Site, followed by six (6) inches of process gravel, followed by a two-inch base course and one-inch top course of bituminous asphalt pavement. Yellow caution tape will be placed at regular five-foot intervals across the top of the geotextile liner to indicate a visual defining layer. The one-inch top course of bituminous asphalt is not critical to the design of the engineered barrier, since two-inches of base course exists already. Therefore, the top course will be applied for completion of the parking area and it is not part of the engineered barrier. The capping system described covers approximately 26,364 square feet of the lot. The geotextile liner will be anchored to the building by placing it between the building and a six-inch wide strip of aluminum flashing which will be attached to the base of the building. The geotextile filter fabric of the capping system is designed to prevent silts and fines and from the lead-contaminated soil from migrating to the surface. The process gravel and pavement prevent potential dermal contact, ingestion, and inhalation exposures to soils containing lead and will significantly reduce permeation of the soil, surface runoff and rainfall from coming into contact with underlying contaminated soils. Shallow-root plantings will be placed in areas to be revegetated, with at least one foot of loam above the filter fabric and gravel layer.

Stormwater Upgrades
The existing limits of pavement will not be expanded, as a result, the project will <u>not</u> increase the rate of storm water runoff leaving the site. In fact, approximately 1,040 s.f. of pavement will

be removed from the site, closest to the stream, in an effort to slightly reduce the rate of storm water runoff leaving the site. The site is currently drained via a series of deep sump catch basins which discharge directly into the stream. A Contech water quality inlet has been proposed prior to the existing discharge point. This device has been sized so as to provide 91.63% Total Suspended Solids removal which constitutes a significant improvement in the quality of storm water leaving the site.

Resource Areas

Inland Bank

The un-named stream contains the resource area known as Inland Bank. The banks of the stream are relatively steep (1:1 to 2:1) and are approximately 4-ft high. Since the construction activity includes removal of a portion of an existing parking area and re-paving the remaining area which is separated by the top of bank by a stabilized, vegetated area, the project will not have any impact on the integrity of the bank.

Riverfront Area

Although, the un-named stream is not indicated on the USGS topographic quadrangle as a perennial stream, it does contain a watershed area of just over 1 square mile according to the streamstats analysis. As a result, it is presumed under 310 CMR 10.58 to contain an associated 200-foot Riverfront Area extending landward from the mean high water (MHW) line of the brook.

The Riverfront Area Regulations contained within 310 CMR 10.58 requires that a project located within RFA have no significant impact on the ability of the RFA to protect the interests of MGL Ch 131 S. 40. Up to 5,000 square feet or 10% of the riverfront area on the lot (whichever is greater) is allowed on a lot recorded on or before October 6, 1997, or up to 10% of the riverfront area within a lot recorded after October 6, 1997, provided certain general conditions are met, including;

1. An alternatives analysis which demonstrates that there are no other “practicable and substantially equivalent economic alternatives to the proposed project with less adverse effects on the interests identified in MGL Ch 131 s. 40. An alternatives analysis for this project is provided in the following section.

2. A minimum 100-foot wide area of undisturbed vegetation is provided, extending from the river. The work will occur within the 100-ft inner riparian zone as the majority of the property is located within this zone. However, this area is already developed with a maintained lawn area and shed. The pool will be located between the existing dwelling and the shed and has been located as far from the resource area as possible .

3. Stormwater is managed according to standards provided by DEP. The site contains a Single Family Dwelling which is not subject to the DEP Stormwater Regulations.

4. Proposed work does not impair the capacity of the river to provide important wildlife habitat functions. The site is not within estimated or priority habitat for rare wildlife. The rear of the dwelling is comprised of a maintained lawn area that was enclosed by an existing fence (recently removed) and a small wooded buffer between the fence location and the Brook. The project will take place completely within the maintained lawn area

and will not impact the wooded buffer between the re-constructed fence (same location) and the brook.

5. Proposed work shall not impair groundwater or surface water quality by incorporating erosion and sedimentation controls and other measures to control non-point source pollution. Best management practices are proposed to be employed during construction including standard erosion control measures.

According to the assessors records, the subject property was constructed in the early 1970's. The project includes re-surfacing an existing parking area. All work will take place within that portion of the riverfront area which is previously degraded (bituminous concrete parking lot). A portion of the work will include the removal of approximately 1,040 s.f. of bituminous concrete pavement closest to the stream and replacement with vegetation. The work will also include the installation of a water quality unit that will provide 91% TSS removal. The removal of the pavement coupled with the installation of the water quality unit will result in a net improvement to the Riverfront Area.

ALTERNATIVES ANALYSIS

According to 310 CMR 10.58(4) there must be no "practicable and substantially equivalent economic alternative to the proposed project with less adverse effects on the interests of the Wetlands Protection Act. The scope of alternatives that must be considered must be commensurate with the type and size of the project . Factors that may be considered include costs, existing technology, proposed use and logistics in light of overall project purpose. The project purpose in this case is re-surfacing an existing parking lot. The alternatives for this project include the following:

No Build Alternative
This alternative would leave the parking lot in as-is condition. The site contains contamination which could pose a risk to the public. This project will install necessary safeguards to protect the public from the contamination. If the project was not built, the public could be put at risk and the quality of stormwater being generated by the parking lot would remain in its current condition, which includes little to no treatment.

Preferred Alternative
This alternative is shown on the Site Plan. This alternative contemplates re-grading and re-surfacing the parking lot. The re-surfacing will include installation of measures to warn the public of the contamination that exists below the pavement. The project will also include the removal of bituminous concrete pavement closest to the stream as well as the installation of a water quality unit to improve the quality of storm water runoff generated by the existing parking prior to discharge into the stream. The project will not interfere with the modest wooded buffer that currently exists between the parking lot and the stream. The proposed alternative will result in an net improvement to the riverfront area.

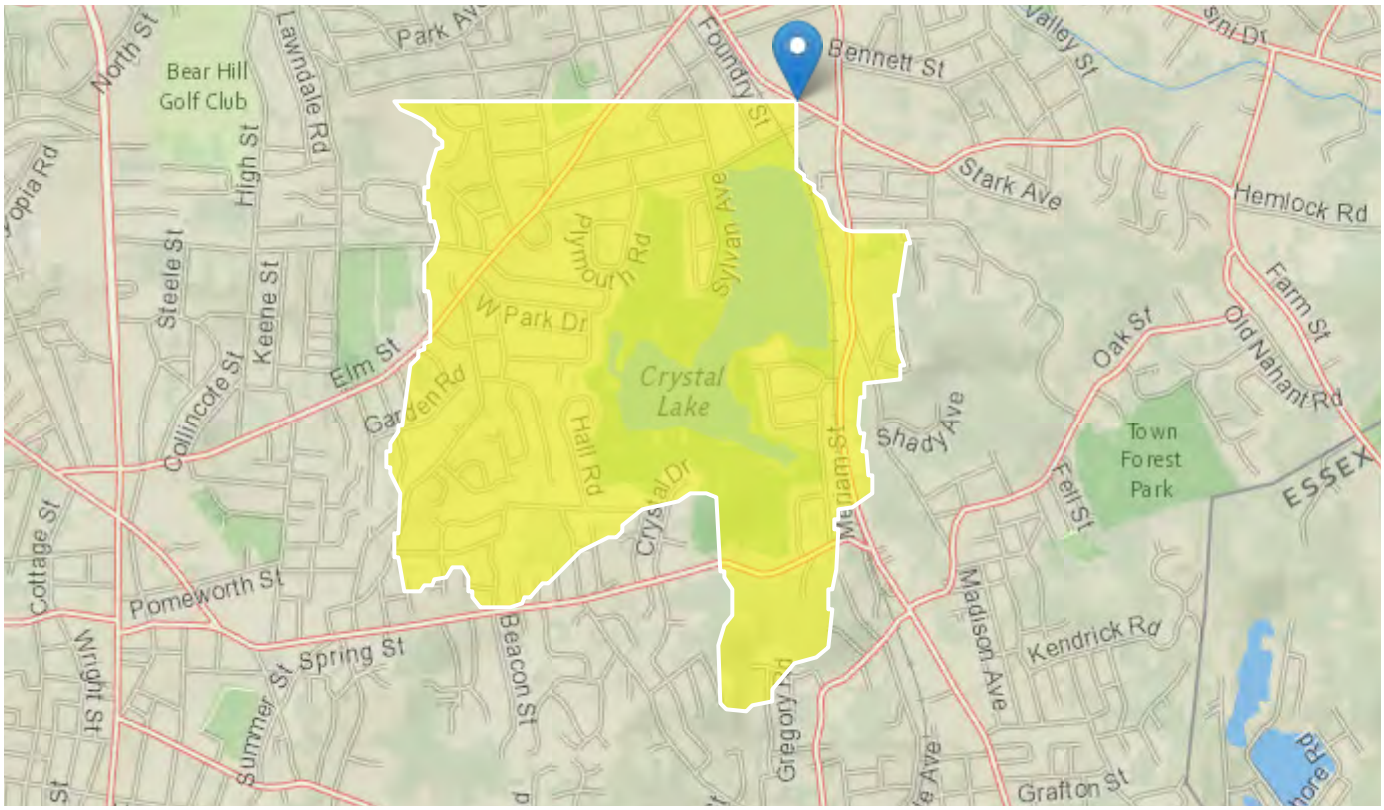
MITIGATION MEASURES

Standard erosion control practices are proposed during construction, including the installation of an erosion control barrier around the limit of work to prevent migration of sediment from erosion toward wetland resources.

Immediately following construction all areas of exposed soil will be stabilized with loam and seed, or otherwise stabilized as seasonally appropriate until seed can be applied.

StreamStats Report - 9 Broadway Street

Region ID: MA
Workspace ID: MA20230719160330640000
Clicked Point (Latitude, Longitude): 42.49848, -71.07109
Time: 2023-07-19 12:03:51 -0400



Collapse All

Basin Characteristics

Parameter Code	Parameter Description	Value	Unit
ACRSDFT	Area underlain by stratified drift	0.23	square miles
BSLDEM10M	Mean basin slope computed from 10 m DEM	8.315	percent
BSLDEM250	Mean basin slope computed from 1:250K DEM	2.487	percent

Parameter Code	Parameter Description	Value	Unit
CAT1ROADS	Length of interstates lmtd access highways and ramps for lmtd access highways, includes cloverleaf interchanges (USGS Ntl Transp Dataset)	0	miles
CAT2ROADS	Length of sec hwy or maj connecting roads; main arteries & hwys not lmtd access, usually in the US Hwy or State Hwy systems (USGS Ntl Transp Dataset)	0	miles
CAT3ROADS	Length of local connecting roads; roads that collect traffic from local roads & connect towns, subdivisions & neighborhoods (USGS Nat Transp Dataset)	1.27	miles
CAT4ROADS	Length of local roads; generally paved street, road, or byway that usually have single lane of traffic in each direction (USGS Ntnl Transp Dataset)	12.3	miles
CENTROIDX	Basin centroid horizontal (x) location in state plane coordinates	234715.7	meters
CENTROIDY	Basin centroid vertical (y) location in state plane units	915631.4	meters
CROSCOUNT1	Number of intersections between streams and roads, where the roads are interstate, limited access highway, or ramp (CAT1ROADS)	0	dimensionless
CROSCOUNT2	Number of intersections between streams and roads, where the roads are secondary highway or major connecting road (CAT2ROADS)	0	dimensionless
CROSCOUNT3	Number of intersections between streams and roads, where roads are local conecting roads (CAT3ROADS)	0	dimensionless
CROSCOUNT4	Number of intersections between streams and roads, where roads are local roads (CAT4ROADS)	3	dimensionless
CRSDFT	Percentage of area of coarse-grained stratified drift	22.92	percent

Parameter Code	Parameter Description	Value	Unit
CSL10_85	Change in elevation divided by length between points 10 and 85 percent of distance along main channel to basin divide - main channel method not known	96.6	feet per mi
DRFTPERSTR	Area of stratified drift per unit of stream length	-100000	square mile per mile
DRNAREA	Area that drains to a point on a stream	1.03	square miles
ELEV	Mean Basin Elevation	132	feet
FOREST	Percentage of area covered by forest	12.29	percent
LAKEAREA	Percentage of Lakes and Ponds	12.67	percent
LC06STOR	Percentage of water bodies and wetlands determined from the NLCD 2006	14.18	percent
LC11DEV	Percentage of developed (urban) land from NLCD 2011 classes 21-24	68.7	percent
LC11IMP	Average percentage of impervious area determined from NLCD 2011 impervious dataset	35	percent
LFPLENGTH	Length of longest flow path	1.43	miles
MAREGION	Region of Massachusetts 0 for Eastern 1 for Western	0	dimensionless
MAXTEMPC	Mean annual maximum air temperature over basin area, in degrees Centigrade	14.9	degrees C
OUTLETX	Basin outlet horizontal (x) location in state plane coordinates	235255	feet
OUTLETY	Basin outlet vertical (y) location in state plane coordinates	916525	feet
PCTSNDGRV	Percentage of land surface underlain by sand and gravel deposits	22.92	percent
PRECPRIS00	Basin average mean annual precipitation for 1971 to 2000 from PRISM	47.8	inches
STRMTOT	total length of all mapped streams (1:24,000-scale) in the basin	0	miles
WETLAND	Percentage of Wetlands	3.51	percent

Peak-Flow Statistics

Peak-Flow Statistics Parameters [Peak Statewide 2016 5156]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.03	square miles	0.16	512
ELEV	Mean Basin Elevation	132	feet	80.6	1948
LC06STOR	Percent Storage from NLCD2006	14.18	percent	0	32.3

Peak-Flow Statistics Flow Report [Peak Statewide 2016 5156]

PII: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PII	PIu	ASEp
50-percent AEP flood	31.9	ft^3/s	16.2	62.8	42.3
20-percent AEP flood	53.3	ft^3/s	26.7	106	43.4
10-percent AEP flood	70.3	ft^3/s	34.4	144	44.7
4-percent AEP flood	94.9	ft^3/s	44.8	201	47.1
2-percent AEP flood	115	ft^3/s	52.6	252	49.4
1-percent AEP flood	137	ft^3/s	60.7	309	51.8
0.5-percent AEP flood	160	ft^3/s	68.8	372	54.1
0.2-percent AEP flood	194	ft^3/s	79.5	473	57.6

Peak-Flow Statistics Citations

Zarriello, P.J.,2017, Magnitude of flood flows at selected annual exceedance probabilities for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2016–5156, 99 p. (https://dx.doi.org/10.3133/sir20165156)

Low-Flow Statistics

Low-Flow Statistics Parameters [Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.03	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.487	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	-100000	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

Low-Flow Statistics Disclaimers [Statewide Low Flow WRIR00 4135]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors. Equation M7D2Y in GC320 could not be calulated due to undefined basin characteristic. Equation M7D10Y in GC320 could not be calulated due to undefined basin characteristic.

Low-Flow Statistics Flow Report [Statewide Low Flow WRIR00 4135]

Statistic	Value	Unit
7 Day 2 Year Low Flow	undefined	ft^3/s
7 Day 10 Year Low Flow	undefined	ft^3/s

Low-Flow Statistics Citations

Ries, K.G., III,2000, Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135, 81 p. (http://pubs.usgs.gov/wri/wri004135/)

Flow-Duration Statistics

Flow-Duration Statistics Parameters [Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.03	square miles	1.61	149

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRFTPERSTR	Stratified Drift per Stream Length	-100000	square mile per mile	0	7.29
MAREGION	Massachusetts Region	0	dimensionless	0	1
BSLDEM250	Mean Basin Slope from 250K DEM	2.487	percent	0.32	24.6

Flow-Duration Statistics Disclaimers [Statewide Low Flow WRIR00 4135]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors. Equation D60 in GC320 could not be calulated due to undefined basin characteristic. Equation D70 in GC320 could not be calulated due to undefined basin characteristic. Equation D75 in GC320 could not be calulated due to undefined basin characteristic. Equation D80 in GC320 could not be calulated due to undefined basin characteristic. Equation D85 in GC320 could not be calulated due to undefined basin characteristic. Equation D90 in GC320 could not be calulated due to undefined basin characteristic. Equation D95 in GC320 could not be calulated due to undefined basin characteristic. Equation D98 in GC320 could not be calulated due to undefined basin characteristic. Equation D99 in GC320 could not be calulated due to undefined basin characteristic.

Flow-Duration Statistics Flow Report [Statewide Low Flow WRIR00 4135]

Statistic	Value	Unit
50 Percent Duration	0.984	ft^3/s
60 Percent Duration	undefined	ft^3/s
70 Percent Duration	undefined	ft^3/s
75 Percent Duration	undefined	ft^3/s
80 Percent Duration	undefined	ft^3/s
85 Percent Duration	undefined	ft^3/s
90 Percent Duration	undefined	ft^3/s
95 Percent Duration	undefined	ft^3/s
98 Percent Duration	undefined	ft^3/s
99 Percent Duration	undefined	ft^3/s

Flow-Duration Statistics Citations

Ries, K.G., III,2000, Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135, 81 p. (http://pubs.usgs.gov/wri/wri004135/)

August Flow-Duration Statistics

August Flow-Duration Statistics Parameters [Statewide Low Flow WRIR00 4135]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.03	square miles	1.61	149
BSLDEM250	Mean Basin Slope from 250K DEM	2.487	percent	0.32	24.6
DRFTPERSTR	Stratified Drift per Stream Length	-100000	square mile per mile	0	1.29
MAREGION	Massachusetts Region	0	dimensionless	0	1

August Flow-Duration Statistics Disclaimers [Statewide Low Flow WRIR00 4135]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors. Equation AUGD50 in GC320 could not be calulated due to undefined basin characteristic.

August Flow-Duration Statistics Flow Report [Statewide Low Flow WRIR00 4135]

Statistic	Value	Unit
August 50 Percent Duration	undefined	ft^3/s

August Flow-Duration Statistics Citations

Ries, K.G., III,2000, Methods for estimating low-flow statistics for Massachusetts streams: U.S. Geological Survey Water Resources Investigations Report 00-4135, 81 p. (http://pubs.usgs.gov/wri/wri004135/)

Bankfull Statistics

Bankfull Statistics Parameters [Bankfull Statewide SIR2013 5155]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.03	square miles	0.6	329

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
BSLDEM10M	Mean Basin Slope from 10m DEM	8.315	percent	2.2	23.9

Bankfull Statistics Parameters [Appalachian Highlands D Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.03	square miles	0.07722	940.1535

Bankfull Statistics Parameters [New England P Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.03	square miles	3.799224	138.999861

Bankfull Statistics Parameters [USA Bieger 2015]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.03	square miles	0.07722	59927.7393

Bankfull Statistics Flow Report [Bankfull Statewide SIR2013 5155]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
Bankfull Width	15.6	ft	21.3
Bankfull Depth	0.978	ft	19.8
Bankfull Area	15.1	ft^2	29
Bankfull Streamflow	42.7	ft^3/s	55

Bankfull Statistics Flow Report [Appalachian Highlands D Bieger 2015]

Statistic	Value	Unit
Bieger_D_channel_width	15.4	ft
Bieger_D_channel_depth	1.13	ft
Bieger_D_channel_cross_sectional_area	17.6	ft^2

Bankfull Statistics Disclaimers [New England P Bieger 2015]

One or more of the parameters is outside the suggested range. Estimates were extrapolated with unknown errors.

Bankfull Statistics Flow Report [New England P Bieger 2015]

Statistic	Value	Unit
Bieger_P_channel_width	25.5	ft
Bieger_P_channel_depth	1.38	ft
Bieger_P_channel_cross_sectional_area	35.1	ft^2

Bankfull Statistics Flow Report [USA Bieger 2015]

Statistic	Value	Unit
Bieger_USA_channel_width	12.5	ft
Bieger_USA_channel_depth	1.21	ft
Bieger_USA_channel_cross_sectional_area	17.4	ft^2

Bankfull Statistics Flow Report [Area-Averaged]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	ASEp
Bankfull Width	15.6	ft	21.3
Bankfull Depth	0.978	ft	19.8
Bankfull Area	15.1	ft^2	29
Bankfull Streamflow	42.7	ft^3/s	55
Bieger_D_channel_width	15.4	ft	
Bieger_D_channel_depth	1.13	ft	
Bieger_D_channel_cross_sectional_area	17.6	ft^2	
Bieger_P_channel_width	25.5	ft	
Bieger_P_channel_depth	1.38	ft	
Bieger_P_channel_cross_sectional_area	35.1	ft^2	
Bieger_USA_channel_width	12.5	ft	
Bieger_USA_channel_depth	1.21	ft	

Statistic	Value	Unit	ASEp
Bieger_USA_channel_cross_sectional_area	17.4	ft^2	

Bankfull Statistics Citations

Bent, G.C., and Waite, A.M.,2013, Equations for estimating bankfull channel geometry and discharge for streams in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2013–5155, 62 p., (http://pubs.usgs.gov/sir/2013/5155/)
Bieger, Katrin; Rathjens, Hendrik; Allen, Peter M.; and Arnold, Jeffrey G.,2015, Development and Evaluation of Bankfull Hydraulic Geometry Relationships for the Physiographic Regions of the United States, Publications from USDA-ARS / UNL Faculty, 17p. (https://digitalcommons.unl.edu/usdaarsfacpub/1515?utm_source=digitalcommons.unl.edu%2Fusdaarsfacpub%2F1515&utm_medium=PDF&utm_

Probability Statistics

Probability Statistics Parameters [Perennial Flow Probability]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.03	square miles	0.01	1.99
PCTSNDGRV	Percent Underlain By Sand And Gravel	22.92	percent	0	100
FOREST	Percent Forest	12.29	percent	0	100
MAREGION	Massachusetts Region	0	dimensionless	0	1

Probability Statistics Flow Report [Perennial Flow Probability]

PIl: Prediction Interval-Lower, PIu: Prediction Interval-Upper, ASEp: Average Standard Error of Prediction, SE: Standard Error (other -- see report)

Statistic	Value	Unit	PC
Probability Stream Flowing Perennially	0.943	dim	71

Probability Statistics Citations

Bent, G.C., and Steeves, P.A.,2006, A revised logistic regression equation and an automated procedure for mapping the probability of a stream flowing perennially in Massachusetts: U.S. Geological Survey Scientific Investigations Report 2006–5031, 107 p. (http://pubs.usgs.gov/sir/2006/5031/pdfs/SIR_2006-5031rev.pdf)

Maximum Probable Flood Statistics

Maximum Probable Flood Statistics Parameters [Crippen Bue Region 2]

Parameter Code	Parameter Name	Value	Units	Min Limit	Max Limit
DRNAREA	Drainage Area	1.03	square miles	0.1	3000

Maximum Probable Flood Statistics Flow Report [Crippen Bue Region 2]

Statistic	Value	Unit
Maximum Flood Crippen Bue Regional	5730	ft^3/s

Maximum Probable Flood Statistics Citations

Crippen, J.R. and Bue, Conrad D.1977, Maximum Floodflows in the Conterminous United States, Geological Survey Water-Supply Paper 1887, 52p. (https://pubs.usgs.gov/wsp/1887/report.pdf)

Application Version: 4.16.0
StreamStats Services Version: 1.2.22
NSS Services Version: 2.2.1

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

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

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

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

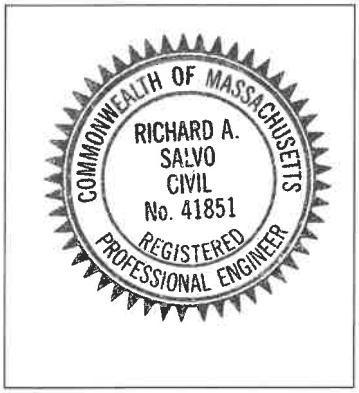
Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the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

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature



3/12/24
Signature and Date

Checklist

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

☐ New development

☒ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

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

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

Standard 1: No New Untreated Discharges

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

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☒ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

☐ Soil Analysis provided.

☐ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☐ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☐ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☒ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☐ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☐ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

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

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality

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

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☐ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☒ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☒ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☐ The BMP is sized (and calculations provided) based on:

- ☐ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☒ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

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

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☒ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☐ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☐ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

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

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☐ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☐ Bike Path and/or Foot Path
- ☒ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☐ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☒ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

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

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

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

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

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☒ The project is ***not*** covered by a NPDES Construction General Permit.

☐ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☐ Schedule for implementation of routine and non-routine maintenance tasks;
- ☐ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☒ Estimated operation and maintenance budget; and
- ☒ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☒ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☐ An Illicit Discharge Compliance Statement is attached;

☐ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.

Engineering Alliance, Inc.
Civil Engineering & Land Planning Consultants
194 Central Street
Saugus, MA 01906
Tel: (781) 231-1349
Fax: (781) 417-0020
1950 Lafayette Road
Portsmouth, NH 03801
Tel: (603) 610-7100
Fax: (603) 610-7101

Rational Method Drainage Calculations

Name:	**21-29 Broadway Wakefield, MA**	Project No.:	**24-27304**
		Date:	**3/12/2024**
		Computed By:	**C. Reach**
Client:	**Raymond Falite**	Checked By:	**R. Salvo, P.E.**

Rational Method Drainage Calculations (Q=CiA)

Where:

Q=Peak Flow (Cubic Feet Per Second)
C=Runoff Coefficient (Unitless)
i=Rainfall Intensity (in/hr)
A=Area (acres)

PRE-DEVELOPMENT CONDITION

Areas

Impervious:

Building	0.303	AC.
Parking Lot	0.629	AC.
Sidewalk	0.017	AC.

Pervious:

Landscaped areas	0.076	AC.

Time of Concentration

Minimum time of concentration controls 5 Minutes

Intensity (i) for 2, 10, 25 & 100 Year Storm Event

See attached rainfall intensity data

I= 3.26 in/hr (2-yr) 5.14 in/hr (10-yr) 6.32 in/hr (25-yr) 8.13 in/hr (100-yr)

Description of Area	Area (Acres)	Runoff Coefficient	AxC
Building	0.303	0.90	0.273
Parking Lot	0.629	0.90	0.566
Sidewalk	0.017	0.90	0.015
Landscaping	0.076	0.30	0.023
Totals:	1.03		0.88
Weighted Runoff Coefficient=∑(AxC)/∑A=			0.84

2 Year Storm Event	Q(CFS)= 2.81
10 Year Storm Event	Q(CFS)= 4.43
25 Year Storm Event	Q(CFS)= 5.45
100 Year Storm Event	Q(CFS)= 7.00

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Rational Method Drainage Calculations

Name:	**21-29 Broadway Wakefield, MA**	Project No.:	**24-27304**
		Date:	**3/12/2024**
		Computed By:	**C. Reach**
Client:	**Raymond Falite**	Checked By:	**R. Salvo, P.E.**

POST-DEVELOPMENT CONDITION

Areas

Impervious:

Building	0.303	AC.
Parking Lot	0.605	AC.
Sidewalk	0.017	

Pervious:

Landscaped areas	0.010	AC.

Time of Concentration

Minimum time of concentration controls 5 Minutes

Intensity (I) for 2, 10, 25 & 100 Year Storm Event

See attached rainfall intensity data

I= 3.26 in/hr (2-yr) 5.14 in/hr (10-yr) 6.32 in/hr (25-yr) 8.13 in/hr (100-yr)

Description of Area	Area (Acres)	Runoff Coefficient	AxC
Building	0.303	0.90	0.273
Parking Lot	0.605	0.90	0.545
Sidewalk	0.017	0.90	0.015
Landscaping	0.010	0.30	0.003
Totals:	0.94		0.84

Weighted Runoff Coefficient= $\sum(AxC)/\sum A=$ 0.88

2 Year Storm Event	Q(CFS)= 2.67
10 Year Storm Event	Q(CFS)= 4.22
25 Year Storm Event	Q(CFS)= 5.18
100 Year Storm Event	Q(CFS)= 6.67

Hydrodynamic Separation Product Calculator

21-29 Broadway

21-29 Broadway (Wakefield Plaza)

CDS 2015-4

Project Information					
Project Name	21-29 Broadway			**Option #**	A
Country	UNITED_STATES	**State**	Massachusetts	**City**	Wakefield

Contact Information			
First Name	Rick	**Last Name**	Salvo
Company	Engineering Alliance,Inc.	**Phone #**	781-231-1349
Email	rsalvo@eaicivil.com		

Design Criteria					
Site Designation	21-29 Broadway (Wakefield Plaza)			**Sizing Method**	Net Annual
Screening Required?	Yes	**Drainage Area (ac)**	0.56	**Peak Flow (cfs)**	4.61
Groundwater Depth (ft)	0 - 5	**Pipe Invert Depth (ft)**	0 - 5	**Bedrock Depth (ft)**	>15
Multiple Inlets?	No	**Grate Inlet Required?**	No	**Pipe Size (in)**	12.00
Required Particle Size Distribution?	No	**90° between two inlets?**	N/A	**180° between inlet and outlet?**	No
Runoff Coefficient	0.90	**Rainfall Station**	69 - Boston Airport, MA	**TC (Min)**	5

Treatment Selection					
Treatment Unit	CDS	**System Model**	2015-4		
Target Removal	80%	**Particle Size Distribution (PSD)**	125	**Predicted Net Annual Removal**	91.63%

CONTECH ENGINEERED SOLUTIONS

Hydrodynamic Separation Product Calculator

21-29 Broadway

21-29 Broadway (Wakefield Plaza)

CDS 2015-4

CDS ESTIMATED NET ANNUAL SOLIDS LOAD REDUCTION BASED ON THE RATIONAL RAINFALL METHOD								
Rainfall Intensity[1] (in/hr)	% Rainfall Volume[1]	Cumulative Rainfall Volume	Rainfall Volume Treated	Total Flowrate (cfs)	Treated Flowrate (cfs)	Operating Rate (%)	Removal Efficiency (%)	Incremental Removal (%)
0.0200	10.17%	10.17%	10.17%	0.0101	0.0101	1.44%	100.00%	10.17%
0.0400	9.65%	19.82%	9.65%	0.0202	0.0202	2.89%	100.00%	9.65%
0.0600	9.45%	29.27%	9.45%	0.0302	0.0302	4.31%	100.00%	9.45%
0.0800	7.74%	37.01%	7.74%	0.0403	0.0403	5.76%	100.00%	7.74%
0.1000	8.57%	45.58%	8.57%	0.0504	0.0504	7.20%	99.97%	8.57%
0.1200	6.30%	51.88%	6.30%	0.0605	0.0605	8.64%	99.68%	6.28%
0.1400	4.66%	56.54%	4.66%	0.0706	0.0706	10.09%	99.39%	4.63%
0.1600	4.64%	61.18%	4.64%	0.0806	0.0806	11.51%	99.11%	4.60%
0.1800	3.54%	64.72%	3.54%	0.0907	0.0907	12.96%	98.82%	3.50%
0.2000	4.34%	69.06%	4.34%	0.1008	0.1008	14.40%	98.53%	4.28%
0.2500	8.00%	77.06%	8.00%	0.1260	0.1260	18.00%	97.81%	7.82%
0.3000	5.59%	82.65%	5.59%	0.1512	0.1512	21.60%	97.09%	5.43%
0.3500	4.37%	87.02%	4.37%	0.1764	0.1764	25.20%	96.37%	4.21%
0.4000	2.53%	89.55%	2.53%	0.2016	0.2016	28.80%	95.65%	2.42%
0.4500	2.53%	92.08%	2.53%	0.2268	0.2268	32.40%	94.93%	2.40%
0.5000	1.38%	93.46%	1.38%	0.2520	0.2520	36.00%	94.21%	1.30%
0.7500	5.04%	98.50%	5.04%	0.3780	0.3780	54.00%	90.60%	4.57%
1.0000	1.01%	99.51%	1.01%	0.5040	0.5040	72.00%	87.00%	0.88%
1.5000	0.00%	99.51%	0.00%	0.7560	0.7000	100.00%	75.37%	0.00%
2.0000	0.00%	99.51%	0.00%	1.0080	0.7000	100.00%	56.53%	0.00%
3.0000	0.48%	99.99%	0.22%	1.5120	0.7000	100.00%	37.69%	0.18%
								98.08%
							Removal Efficiency Adjustment[2] =	6.45%
							Predicted % Annual Rainfall Treated =	93.28%
							Predicted Net Annual Load Removal Efficiency =	91.63%
1 - Based on 10 years of hourly precipitation data from NCDC Station 770, Boston WSFO AP, Suffolk County, MA								
2 - Reduction due to use of 60-minute data for a site that has a time of concentration less than 30-minutes.								

SECTION (_____)
STORM WATER TREATMENT DEVICE

1.0 GENERAL

1.1 This item shall govern the furnishing and installation of the CDS® by Contech Engineered Solutions LLC, complete and operable as shown and as specified herein, in accordance with the requirements of the plans and contract documents.

1.2 The Contractor shall furnish all labor, equipment and materials necessary to install the storm water treatment device(s) (SWTD) and appurtenances specified in the Drawings and these specifications.

1.3 The manufacturer of the SWTD shall be one that is regularly engaged in the engineering design and production of systems deployed for the treatment of storm water runoff for at least five (5) years and which have a history of successful production, acceptable to the Engineer. In accordance with the Drawings, the SWTD(s) shall be a CDS® device manufactured by:

Contech Engineered Solutions LLC
9025 Centre Pointe Drive
West Chester, OH, 45069
Tel: 1 800 338 1122

1.4 Related Sections

1.4.1 Section 02240: Dewatering
1.4.2 Section 02260: Excavation Support and Protection
1.4.3 Section 02315: Excavation and Fill
1.4.4 Section 02340: Soil Stabilization

1.5 All components shall be subject to inspection by the engineer at the place of manufacture and/or installation. All components are subject to being rejected or identified for repair if the quality of materials and manufacturing do not comply with the requirements of this specification. Components which have been identified as defective may be subject for repair where final acceptance of the component is contingent on the discretion of the Engineer.

1.6 The manufacturer shall guarantee the SWTD components against all manufacturer originated defects in materials or workmanship for a period of twelve (12) months from the date the components are delivered to the owner for installation. The manufacturer shall upon its determination repair, correct or replace any manufacturer originated defects advised in writing to the manufacturer within the referenced warranty period. The use of SWTD components shall be limited to the application for which it was specifically designed.

1.7 The SWTD manufacturer shall submit to the Engineer of Record a “Manufacturer’s Performance Certification” certifying that each SWTD is capable of achieving the specified removal efficiencies listed in these specifications. The certification shall be supported by independent third-party research

1.8 No product substitutions shall be accepted unless submitted 10 days prior to project bid date, or as directed by the Engineer of Record. Submissions for substitutions require review and approval by the Engineer of Record, for hydraulic performance, impact to project designs, equivalent treatment performance, and any required project plan and report (hydrology/hydraulic, water quality, stormwater pollution) modifications that would be required by the approving jurisdictions/agencies. Contractor to coordinate with the Engineer of Record any applicable modifications to the project estimates of cost, bonding amount determinations, plan check fees for changes to approved documents, and/or any other regulatory requirements resulting from the product substitution.

2.0 MATERIALS

2.1 Housing unit of stormwater treatment device shall be constructed of pre-cast or cast-in-place concrete, no exceptions. Precast concrete components shall conform to applicable sections of ASTM C 478, ASTM C 857 and ASTM C 858 and the following:

- 2.1.1 Concrete shall achieve a minimum 28-day compressive strength of 4,000 pounds per square-inch (psi);
- 2.1.2 Unless otherwise noted, the precast concrete sections shall be designed to withstand lateral earth and AASHTO H-20 traffic loads;
- 2.1.3 Cement shall be Type III Portland Cement conforming to ASTM C 150;
- 2.1.4 Aggregates shall conform to ASTM C 33;
- 2.1.5 Reinforcing steel shall be deformed billet-steel bars, welded steel wire or deformed welded steel wire conforming to ASTM A 615, A 185, or A 497.
- 2.1.6 Joints shall be sealed with preformed joint sealing compound conforming to ASTM C 990.
- 2.1.7 Shipping of components shall not be initiated until a minimum compressive strength of 4,000 psi is attained or five (5) calendar days after fabrication has expired, whichever occurs first.

2.2 Internal Components and appurtenances shall conform to the following:

- 2.2.1 Screen and support structure shall be manufactured of Type 316 and 316L stainless steel conforming to ASTM F 1267-01;
- 2.2.2 Hardware shall be manufactured of Type 316 stainless steel conforming to ASTM A 320;
- 2.2.3 Fiberglass components shall conform to applicable sections of ASTM D-4097
- 2.2.4 Access system(s) conform to the following:
- 2.2.5 Manhole castings shall be designed to withstand AASHTO H-20 loadings and manufactured of cast-iron conforming to ASTM A 48 Class 30.

3.0 PERFORMANCE

3.1 The SWTD shall be sized to either achieve an 80 percent average annual reduction in the total suspended solid load with a particle size distribution having a mean particle size (d_{50}) of 125 microns unless otherwise stated.

3.2 The SWTD shall be capable of capturing and retaining 100 percent of pollutants greater than or equal to 2.4 millimeters (mm) regardless of the pollutant's specific gravity (i.e.: floatable and neutrally buoyant materials) for flows up to the device's rated-treatment capacity. The SWTD shall be designed to retain all previously captured pollutants addressed by this

subsection under all flow conditions. The SWTD shall be capable of capturing and retaining total petroleum hydrocarbons. The SWTD shall be capable of achieving a removal efficiency of 92 and 78 percent when the device is operating at 25 and 50 percent of its rated-treatment capacity. These removal efficiencies shall be based on independent third-party research for influent oil concentrations representative of storm water runoff (20 ± 5 mg/L). The SWTD shall be greater than 99 percent effective in controlling dry-weather accidental oil spills.

3.3 The SWTD shall be designed with a sump chamber for the storage of captured sediments and other negatively buoyant pollutants in between maintenance cycles. The minimum storage capacity provided by the sump chamber shall be in accordance with the volume listed in Table 1. The boundaries of the sump chamber shall be limited to that which do not degrade the SWTD's treatment efficiency as captured pollutants accumulate. The sump chamber shall be separate from the treatment processing portion(s) of the SWTD to minimize the probability of fine particle re-suspension. In order to not restrict the Owner's ability to maintain the SWTD, the minimum dimension providing access from the ground surface to the sump chamber shall be 16 inches in diameter.

3.4 The SWTD shall be designed to capture and retain Total Petroleum Hydrocarbons generated by wet-weather flow and dry-weather gross spills and have a capacity listed in Table 1 of the required unit.

3.5 The SWTD shall convey the flow from the peak storm event of the drainage network, in accordance with required hydraulic upstream conditions as defined by the Engineer. If a substitute SWTD is proposed, supporting documentation shall be submitted that demonstrates equal or better upstream hydraulic conditions compared to that specified herein. This documentation shall be signed and sealed by a Professional Engineer registered in the State of the work. All costs associated with preparing and certifying this documentation shall be born solely by the Contractor.

3.6 The SWTD shall have completed field tested following TARP Tier II protocol requirements

4.0 EXECUTION

4.1 The contractor shall exercise care in the storage and handling of the SWTD components prior to and during installation. Any repair or replacement costs associated with events occurring after delivery is accepted and unloading has commenced shall be borne by the contractor.

4.2 The SWTD shall be installed in accordance with the manufacturer's recommendations and related sections of the contract documents. The manufacturer shall provide the contractor installation instructions and offer on-site guidance during the important stages of the installation as identified by the manufacturer at no additional expense. A minimum of 72 hours notice shall be provided to the manufacturer prior to their performance of the services included under this subsection.

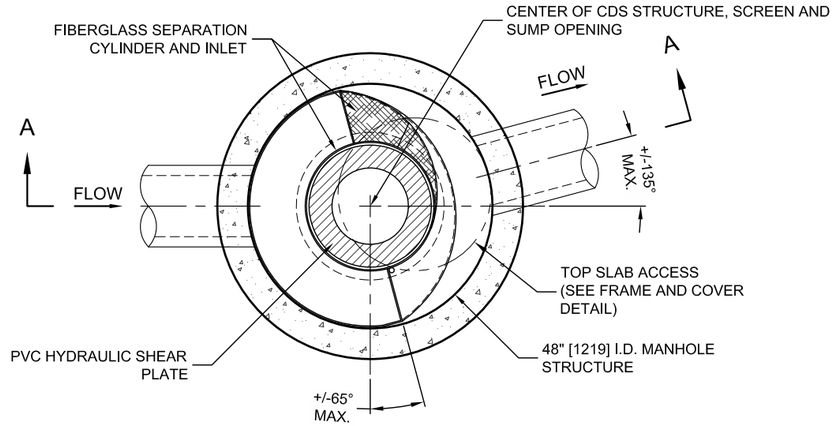
4.3 The contractor shall fill all voids associated with lifting provisions provided by the manufacturer. These voids shall be filled with non-shrinking grout providing a finished surface consistent with adjacent surfaces. The contractor shall trim all protruding lifting provisions flush with the adjacent concrete surface in a manner, which leaves no sharp points or edges.

4.4 The contractor shall removal all loose material and pooling water from the SWTD prior to the transfer of operational responsibility to the Owner.

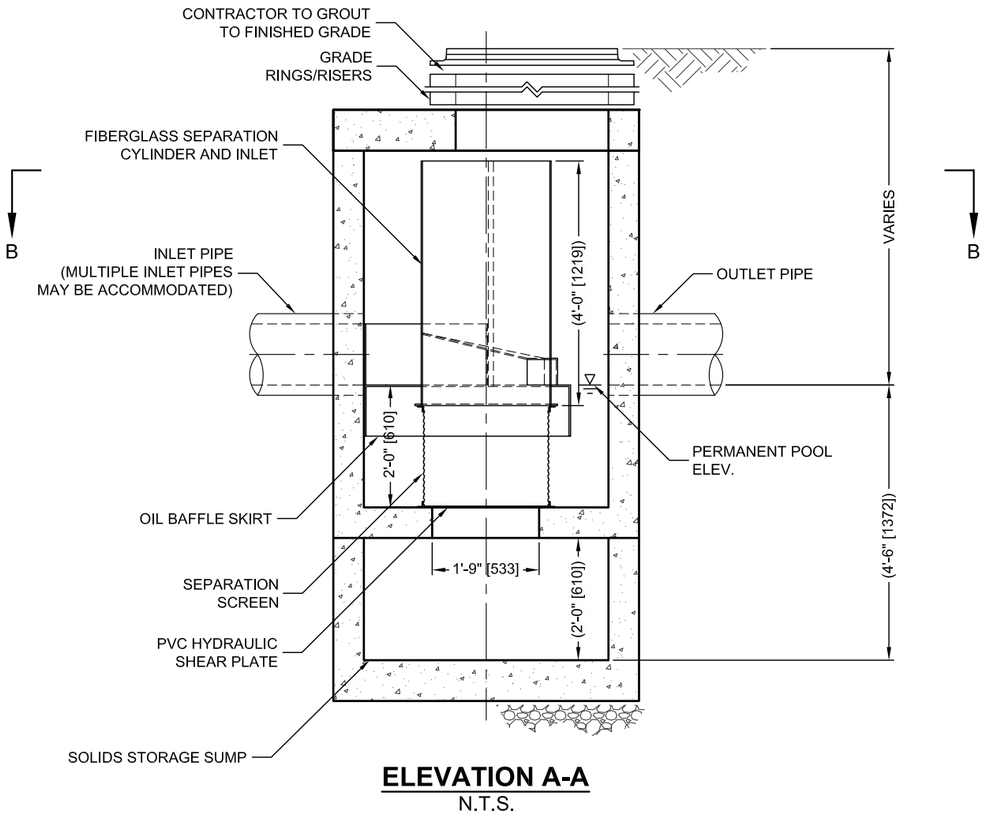
TABLE 1
Storm Water Treatment Device
Storage Capacities

CDS Model	Minimum Sump Storage Capacity $(yd^3)/(m^3)$	Minimum Oil Storage Capacity (gal)/(L)
CDS2015-4	0.9(0.7)	61(232)
CDS2015-5	1.5(1.1)	83(313)
CDS2020-5	1.5(1.1)	99(376)
CDS2025-5	1.5(1.1)	116(439)
CDS3020-6	2.1 (1.6)	184(696)
CDS3025-6	2.1(1.6)	210(795)
CDS3030-6	2.1 (1.6)	236(895)
CDS3035-6	2.1 (1.6)	263(994)
CDS3535-7	2.9(2.2)	377(1426)
CDS4030-8	5.6(4.3)	426(1612)
CDS4040-8	5.6 (4.3)	520(1970)
CDS4045-8	5.6 (4.3)	568(2149)
CDS5640-10	8.7(6.7)	758(2869)
CDS5653-10	8.7(6.7)	965(3652)
CDS5668-10	8.7(6.7)	1172(4435)
CDS5678-10	8.7(6.7)	1309(4956)
CDS7070-DV	3.6(2.8)	914 (3459)
CDS10060-DV	5.0 (3.8)	792 (2997)
CDS10080-DV	5.0 (3.8)	1057 (4000)
CDS100100-DV	5.0 (3.8)	1320 (4996)

END OF SECTION



PLAN VIEW B-B
N.T.S.



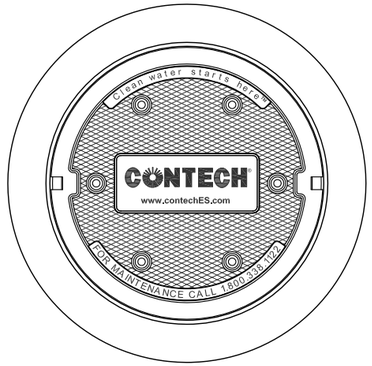
ELEVATION A-A
N.T.S.

THIS PRODUCT MAY BE PROTECTED BY ONE OR MORE OF THE FOLLOWING U.S. PATENTS: 5,788,848; 6,641,720; 6,511,595; 6,581,782; RELATED FOREIGN PATENTS, OR OTHER PATENTS PENDING.

CDS2015-4-C DESIGN NOTES

THE STANDARD CDS2015-4-C CONFIGURATION IS SHOWN. ALTERNATE CONFIGURATIONS ARE AVAILABLE AND ARE LISTED BELOW. SOME CONFIGURATIONS MAY BE COMBINED TO SUIT SITE REQUIREMENTS.

CONFIGURATION DESCRIPTION
GRATED INLET ONLY (NO INLET PIPE)
GRATED INLET WITH INLET PIPE OR PIPES
CURB INLET ONLY (NO INLET PIPE)
CURB INLET WITH INLET PIPE OR PIPES
SEPARATE OIL BAFFLE (SINGLE INLET PIPE REQUIRED FOR THIS CONFIGURATION)
SEDIMENT WEIR FOR NJDEP / NJCAT CONFORMING UNITS



FRAME AND COVER
(DIAMETER VARIES)
N.T.S.

SITE SPECIFIC DATA REQUIREMENTS

STRUCTURE ID	
WATER QUALITY FLOW RATE (CFS OR L/s)	*
PEAK FLOW RATE (CFS OR L/s)	*
RETURN PERIOD OF PEAK FLOW (YRS)	*
SCREEN APERTURE (2400 OR 4700)	*

PIPE DATA:	I.E.	MATERIAL	DIAMETER
INLET PIPE 1	*	*	*
INLET PIPE 2	*	*	*
OUTLET PIPE	*	*	*

RIM ELEVATION	*

ANTI-FLOTATION BALLAST	WIDTH	HEIGHT
	*	*

NOTES/SPECIAL REQUIREMENTS:

* PER ENGINEER OF RECORD

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO HS20 AND CASTINGS SHALL MEET HS20 (AASHTO M 306) LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION.
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

CONTECH® ENGINEERED SOLUTIONS LLC
www.contechES.com
9025 Centre Pointe Dr., Suite 400, West Chester, OH 45069
800-338-1122 513-645-7000 513-645-7993 FAX

CDS2015-4-C INLINE CDS STANDARD DETAIL

Engineering Alliance, Inc.
Civil Engineering & Land Planning Consultants
194 Central Street
Saugus, MA 01906
Tel: (781) 231-1349
Fax: (781) 417-0020

1950 Lafayette Road
Portsmouth, NH 03801
Tel: (603) 610-7100
Fax: (603) 610-7101

TSS Removal Calculations

Name: Parking Lot Re-surfacing
Wakefield, MA
Client: Raymond Falite
County: Middlesex

Proj. No.: 23-27304
Date: 3/12/2024
Computed by: EBS
Checked by: RAS

A BMP	B TSS Removal Rate	C Starting TSS Load*	D Amount Removed (BxC)	E Remaining Load (C-D)
Deep Sump hooded Catch Basins	25	1.00	0.25	0.75
Water Quality Inlet	91	0.75	0.68	0.07

Infiltration Basin 2 Total TSS Removal= **93%**

Notes:

*Starting TSS Load for first BMP= 1.00. TSS load for subsequent BMP's is equal to the Remaining Load (E) from the previous BMP.

BEST MANAGEMENT PRACTICES OPERATION AND MAINTENANCE PLAN

For

Proposed Parking Lot Improvements

located at

21-29 Broadway
(Tax Map 13 Block 26 Lot 117)
Wakefield, Massachusetts

Submitted to:

Town of Wakefield
Conservation Commission
&
DEP N.E.R.O.

Prepared for:

Raymond S Falite
21 -29 Broadway Street
Wakefield, MA 01880

Prepared by

Engineering Alliance, Inc.
Civil Engineering & Land Planning Consultants
194 Central Street
Saugus, MA 01906
Tel: (781) 231-1349
Fax: (781) 417-0020

1950 Lafayette Road
Portsmouth, NH 03801
Tel: (603) 610-7100
Fax: (603) 610-7101

March 12, 2024

BEST MANAGEMENT PRACTICES OPERATION AND MAINTENANCE PLAN

The purpose of this Best Management Practices Operation and Maintenance plan is to provide guidance for mandatory maintenance procedures of site preparation and pre and post construction activities for the project located at 21-29 Broadway (Tax Map 13 Block 26 Lots 117) in Wakefield, Massachusetts. The project consists of the re-surfacing of the existing parking lot, removal of 1,040 s.f. of pavement and installation of a water quality structure. The project proposes to disturb approximately 0.6 acres of the property to construct the proposed improvements.

Project Description

The project consists of re-paving an existing parking lot which will act as an engineered barrier to an existing contaminated site. The work will include removing the existing pavement and grading the site for preparation of capping materials. The capping system will consist of geotextile filter fabric laid over the graded Site, followed by six (6) inches of process gravel, followed by a two-inch base course and one-inch top course of bituminous asphalt pavement. Yellow caution tape will be placed at regular five-foot intervals across the top of the geotextile liner to indicate a visual defining layer. The one-inch top course of bituminous asphalt is not critical to the design of the engineered barrier, since two-inches of base course exists already. Therefore, the top course will be applied for completion of the parking area and it is not part of the engineered barrier. In addition approximately 1,040 s.f. of pavement will be removed closest to the stream and a water quality inlet will be installed to improve TSS and nitrate removal.

The Best Management Practices Operation and Maintenance Plan is summarized below and will be incorporated into the construction documents for this project. This plan is broken into two major sections. The first section is construction-related erosion and sedimentation controls. The second section is devoted to a post-development operation and maintenance plan.

Basic Information

Owner/Maintenance Responsibilities:
Raymond Falite
9 Broadway
Wakefield, MA
(781) 262-3348

Inspector:
Richard A. Salvo, P.E.
194 Central Street
Saugus, MA 01906
(781) 231-1349

In the event that the property ownership changes, this Operation and Maintenance Plan shall continue to run with the land and apply to any successors or assigns. Upon the conveyance of land, the Conservation Commission shall be notified in writing indicating the new ownership's contact information within 48 hours of the conveyance.

Prior to the conveyance of the property, an educational meeting shall be held between the current owner, the new owner and the parties responsible for the maintenance of the stormwater management facility. The purpose of the meeting will be to educate the new owner on the maintenance responsibilities for the stormwater management facility including, but not limited to:

- Description of system components
- Required maintenance of each component
- Frequency of maintenance of each component

This document shall be updated to indicate the time and date of the meeting as well as the contact information for the new property owner.

Time and Date of Educational Meeting: _____

New Owner Information

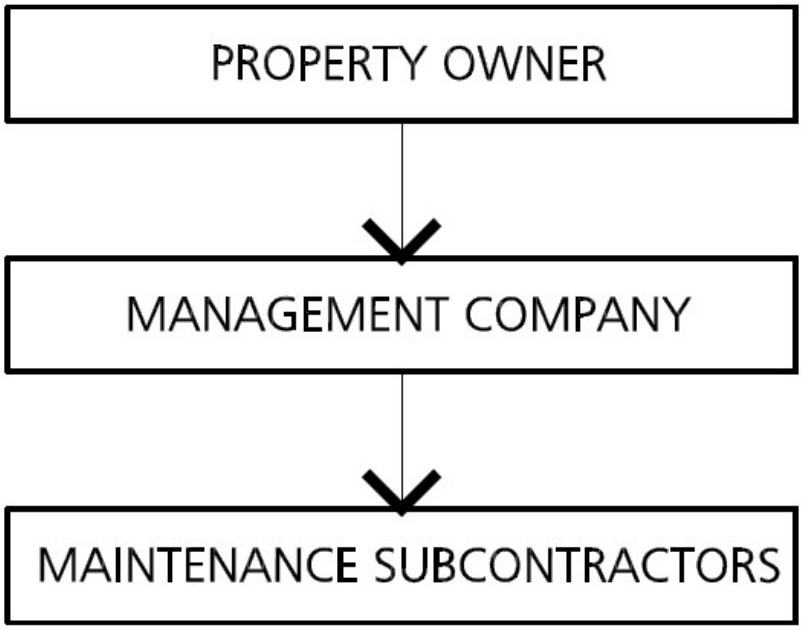
_____

_____

_____

_____

ORGANIZATION CHART



Acknowledgement of Storm Water Management Maintenance Responsibilities:

_____ _____

Owner Signature Date

Acknowledgement of Storm Water Management Maintenance Responsibilities:

_____ _____

Management Company Representative Signature Date

Maintenance Budget

A compounding annual budget of **$5,000 per year** shall be set aside to maintain and/or replace the stormwater management system. This budget shall cover the cost of:

- Parking Lot Sweeping
- Cleaning of Catch Basins
- Cleaning of Water Quality Structure

Training Requirements

Personnel responsible for the installation, maintenance, and/or repair of stormwater controls must be trained to understand the following (if related to the scope of their job duties):

- Permit deadlines associated with installation, maintenance, removal of stormwater controls, and stabilization
- Location of all stormwater controls required on site and how they are to be maintained
- When and how to conduct inspections, record findings, and take corrective actions
- Spill prevention response and pollution prevention measures

Training for all personnel responsibilities will be required **at a minimum of twice a year** to ensure that any and all new employees are properly educated on all specific responsibilities.

O&M Plan Updates

NOTE: All updates, BMP, or site changes must be submitted to the Town of Wakefield Conservation Commission for approval and recertification. At a minimum, an annual update to the O&M Plan is required.

Update Number: _____
Date of Update: _____
Date of Last Update to Plan: _____
Sections Out of Date:

_____
_____
_____
_____
_____
_____

Updates Required:

_____
_____
_____
_____
_____
_____

Update Number: _____
Date of Update: _____
Date of Last Update to Plan: _____
Sections Out of Date:

_____
_____
_____
_____
_____
_____

Updates Required:

_____
_____
_____
_____
_____
_____

Update Number: _____
Date of Update: _____
Date of Last Update to Plan: _____
Sections Out of Date:

_____
_____
_____
_____
_____
_____

Updates Required:

_____
_____
_____
_____
_____
_____

*Additional update sheets have been included at the end of this O&M Report.

Section 1 - Construction Activities & Erosion Controls

1. Contact the Wakefield Conservation Commission at least three (3) days prior to start of construction.

2. The contractor shall only disturb the minimum area necessary in order to limit the impact on the surrounding area including the bordering vegetated wetlands and abutting residential developments.

3. Install straw wattles and silt fence around the proposed work zone to prevent sediment from leaving the subject property. Haybales, straw wattles, and silt fence are to be inspected on a weekly basis and inspections are to be logged in the Erosion Control Maintenance Log provided with this Operation and Maintenance plan. Any damaged or compromised erosion control measures are to be replaced immediately.

4. Proper erosion and sediment control must be employed around all material stockpile areas. Regular provisions for dust control must be used, via a water truck or other acceptable method. Erosion and sediment controls around material stockpile areas are to be inspected on a weekly basis and inspections are to be logged in the Erosion Control Maintenance Log provided with this Operation and Maintenance plan. Any damaged or compromised erosion control measures are to be replaced immediately.

5. Waste material is to be stored in a dumpster on site and covered at all times. Waste material dumpster is to be maintained to ensure no overtopping or leaks will occur.

6. Construction materials are to be stored onsite and covered at all times. Upon completion of building framing, construction materials are to be stored inside building.

7. If necessary, dewatering shall include all necessary control, management, and disposal of groundwater on a 24-hour basis as appropriate during construction. Dewatering shall include the lowering of the groundwater table to relieve any hydrostatic head that could cause a decrease in the stability of the excavated subgrade. It shall also include the intercepting seepage which could otherwise emerge from the slope or sides of excavations which could cause a decrease in the stability of the excavated subgrade of the slopes or sides of the excavations.

   Dewatering shall be performed during construction to temporarily protect against the following.
   1. The loss of any material beneath the excavated subgrade or from the slopes or sides of the excavations or the movement of any fine particle materials from the soil.
   2. Any increased vertical or lateral loads on the excavation support systems.
   3. Any disturbance, rupture, instability, build, or heaving of the bottom of the excavated subgrade during excavation and trenching, placement of foundation or bedding materials, construction of slabs, footings, pipes, conduits, underdrains, and any other structures, and backfilling operations.

   The dewatering systems and equipment shall be removed from the site when no longer required.

8. Slopes exceeding 3(H):1(V) shall be stabilized with temporary seeding. All slopes are to be checked periodically to see that vegetation is in good condition. Any damage from erosion or animal burrowing should be repaired immediately to prevent further damage. Areas requiring revegetation should be repaired immediately. Slopes should be limed and fertilized as necessary to keep vegetation healthy. Control undesirable vegetation such as weeds and woody growth to avoid bank stability problems in the future.

9. The entire project area shall be swept upon completion of construction and prior to removal of the erosion control devices.

10. All disturbed areas of the worksite must be stabilized during the winter months (October 15th – April 15th) by placement of approximately six (6) inches of hay mulch or straw.

11. Refueling of machinery is to occur offsite whenever possible. Any necessary onsite refueling shall occur within the designated refueling area.

Construction Sequencing

1. Install erosion control measures per plan.
2. Demolish existing pavement
3. Grade site
4. Install geotextile and processed gravel
5. Install warning tape
6. Install Bituminous Concrete Pavement
7. Stabilize any exposed soil with vegetation
8. Remove Erosion Control Devices

Spill Prevention and Response

Prevention:

The following are the material management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff:

1. An effort will be made to store only the amount of material required to do the job.
2. All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or other enclosure.
3. Products will be kept in their original containers with the original manufacturer's label.
4. Substances will not be mixed with one another unless recommended by the manufacturer.
5. Whenever possible, all of a product will be used up before disposing of the container.
6. Manufacturer's recommendations for proper use and disposal will be followed.
7. The site superintendent will inspect daily to ensure proper use and disposal of materials onsite.
8. Products will be kept in the original containers unless they are not re-sealable.
9. Original labels and material safety data will be retained; they contain important product information.
10. If surplus product must be disposed of, manufacturers or local and State recommended methods for proper disposal will be followed.
11. Petroleum Products – All onsite vehicles 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 that are clearly labeled. Any asphalt substances used onsite will be applied according to the manufacturer's recommendations.
12. Paints – All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be properly disposed of according to the manufacturer's instructions or State and local regulations.
13. Fertilizers – Fertilizers used will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to stormwater. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.
14. Concrete Trucks - Concrete Trucks will not be allowed to wash out or discharge surplus concrete or drum wash water on the site.

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and clean-up:

1. Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
2. Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but not be limited to brooms, dustpans, mops, rags, gloves, goggles, kitty litter, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
3. All spills will be cleaned up immediately upon discovery.
4. The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
5. Spills of toxic or hazardous substances will be reported to the appropriate State or local government agency, regardless of the size.
6. The spill prevention plan will be adjusted to include measure to prevent this type of spill from reoccurring and how to clean up the spill if there should be another. A description of the spill, what caused it, and the cleanup measure will also be included.
7. The Site Superintendent responsible for the day-to-day site operation will be the spill prevention and cleanup coordinator.

Fueling and Maintenance of Equipment or Vehicles

General**:**
Vehicle and equipment fueling procedures are designed to prevent fuel spills and leaks in order to minimize the discharge of such pollutants into storm drains and waterways.

Implementation:
Offsite fueling stations should be used as much as possible. • When fueling offsite is not practicable, a designated fueling area away from drainage ways must be used. • Locate designated fueling areas a minimum of 50 feet away from concentrated flows of stormwater, drainage ways, and inlets. • An impermeable surface should be used at the designated fueling area. • Containment should be built around the designated fueling areas to prevent the release of spills, as well as runoff and runon. • Absorbent spill cleanup materials should be available at all designated fueling areas. If absorbent materials are used on spills, the material is to be removed immediately and disposed of properly. • Fueling nozzles should be equipped with an automatic shutoff to control drips. • Topping off of fuel tanks should be discouraged. • A sign is to be installed adjacent to each fueling facility to inform equipment operators of the designated fueling location. • For larger equipment, such as cranes and excavators that are not able to travel to a designated fueling area, mobile fueling may be necessary. Absorbent spill cleanup materials and spill kits should be available on all fueling trucks. Drip pans or absorbent pads should be used in mobile fueling operations. • The contractor shall train his/her employees and subcontractors in proper fueling and cleanup procedures. These procedures must be documented.

Inspection/Maintenance:
The contractor should inspect vehicles and equipment for leaks each day they are used. Leaks are to be repaired immediately or the piece of equipment should be removed from the project site. • Designated fueling areas should be inspected for leaks and spills each day they are used. Any leaks or spills are to be cleaned up immediately. • Any leaks or spills discharged through a drainage system will require the preparation of an Incidence of Non-Compliance. • Update the SWPPP anytime a designated fueling location has been removed, relocated, added, modified, or required maintenance.

Washing of Equipment and Vehicles

Wash water from vehicle and equipment cleaning is not to be discharged from construction sites because the rinse water may contain contaminates such as sediment, petroleum/lubricant residues, soaps, or solvents that could enter storm drain systems or receiving waters.

Equipment/vehicle cleaning should be conducted offsite. All vehicles that regularly enter and leave the construction site must be cleaned offsite.

For equipment that must be cleaned on site, the cleaning operations must be fully contained and disposed of offsite. The vehicle wash area must be properly identified by sign and located away from storm drain inlets, drainage facilities, and watercourses. It must be paved with concrete or asphalt and have a berm to contain runoff and prevent run-on. It must be equipped with a sump for the collection and disposal of wash water.

Response:

Upon discovery of a spill or leak, personnel are instructed to stop the discharge to the extent possible (considering health and safety issues). They are instructed to take immediate measures (such as deploying spill containment pillows) to contain the spill in the immediate area and prevent the oil from reaching a floor drain or storm drain, or navigable waters. Call 911 immediately in response to any possible injuries or imminent danger.

The closest hospital to contact is as follows:
Melrose Wakefield Hospital
585 Lebanon Street
Melrose, MA 02176
Emergency Department Phone Number: **(781) 979-3000**

After taking initial containment measures, the person discovering the spill must call (781) 289-2900 (Property Owner) or _____ (Property Manager) to provide the following information:

•Location, date, and time of release
•An assessment of the potential for the release reaching a catch basin, floor drain, or release to the sewer, or discharge over land to a navigable waterway, wetland or other sensitive areas
•Type of oil released

•Approximate quantity of oil released
•Source of release
•Description of release
•Name and telephone number of the responsible person in the area where the release occurred
•Description of immediate response actions taken
•Any other information, including potential environmental impacts, that is relevant to assessing the degree of the hazard posed by the release.

A record of all calls pertaining to spills must be kept by the Property Manager for compliance notification.

In the event of a spill of any oil or other hazardous substance that exceeds the quantities specified in Table 1 below, or that is released into abutting wetlands, the Property Manager is required by state and federal regulations to immediately inform the United States Environmental Protection Agency (USEPA) and the Massachusetts Department of Environmental Protection (MADEP) of the location of the spill and as much as is known of the extent of the situation. If any spill occurs which has the potential of reaching the abutting wetlands, the decision to notify the agencies will be the responsibility of the Property Manager or a designated Facilities Manager. If they cannot be reached within 2 hours of the spill, one person from the property management company will verify the need to contact the MADEP and USEPA.

If it is determined that a spill has reached the abutting wetlands or has the potential to reach the abutting wetlands, and notification is required, calls must be made to the following numbers, with a responsible person at each location acknowledging receipt of the information. This person's name should be recorded:

1. **Emergency Spill Response Contractor:** _____
   Name: _____
   Address: _____
   Spill Response Capabilities:
   _____
   _____

   The property manager is responsible for determining a spill response contractor prior to the start of construction.
2. **Federal EPA National Response Center:** (800) 424-8802
   If no answer, call the alternative number, (202) 267-2675, or call EPA Region 1 Headquarters at (617) 233-6700. The Nation Response Center should be informed of the location of the spill, and the quantity and type of oil spilled. If appropriate, the caller should also identify the potential for discharge to the sewer system or the abutting wetlands.
3. **Massachusetts Department of Environmental Protection Emergency Response:** (888)-304-1133
   During normal work hours call the MA DEP regional office at (978) 694-3200. In the evening call the emergency spill response line listed above.
4. **Town of Wakefield Fire Department:** (781)-246-6435

The personnel providing the notification should be prepared to offer the following information:
• Exact address and location
• Name and phone number of:
  - Owner's Name/Location
  - Owner's Contact Person
  - Person reporting spill or incident
• Date and time of discharge
• Type of material released
• Estimated quantity of discharge
• Source of discharge
• Cause of the discharge
• How close to surface water does the discharge occur
• Description of all affected media
• Any damages or injuries caused by the discharge
• Actions being taken to stop, remove or mitigate the discharge
• If an evacuation may be necessary
• Names of emergency response contractors or other organizations that have been contacted
• Names of other federal, state or local agencies that have been notified
• Any other information including potential environmental impacts relevant to assessing the degree of the hazard

Following the completion of initial response and notification activities, property management will be responsible for restocking emergency equipment, restoring the impacted area, and properly managing contaminated debris.

Massachusetts DEP Release Reporting Requirements (Per Massachusetts Contingency Plan)

[1]TABLE 1 RELEASE REPORTING CRITERIA		
2 HOUR REPORTING CONDITIONS	72 HOUR REPORTING CONDITIONS	120 DAY REPORTING CONDITIONS
Sudden release *(equal to or greater than the Reportable Quantity(RQ),or unknown)*	Subsurface, non-aqueous phase liquid (NAPL) equal to or greater than ½ inch	Release of hazardous materials to soil or groundwater exceeding reportable concentration
Threat of sudden release *(likely to occur in quantities equal to or greater than the RQ)*	Underground storage tank (UST) release	Release of oil to soil exceeding reportable concentration and affecting more than 2 cubic yards
Oil sheen on surface Water	Threat of UST release	Release of oil to groundwater exceeding reportable concentration
"Poses" Imminent Hazard	Release to groundwater near water supply	Subsurface NAPL equal to or greater than 1/8 inch and less than ½ inch
Could "pose" Imminent Hazard	[1]Refer to 310 CMR 40.03 et seq. for detailed reporting criteria.	
Release detected in private well		
Release to storm drain		
Sanitary sewer release (Imminent Hazard only)		

Section 2 – Post Development Operation & Maintenance

1. Paved Areas (Bituminous Concrete) - Paved areas shall be swept by street sweepers periodically during dry weather to remove excess sediments, reducing the amount of sediments that the drainage system will have to remove from the runoff. Salt for de-icing on the paved areas during the winter months should be limited as much as possible, as this will reduce the need for removal and treatment. Sand containing the minimum amount of calcium chloride (or approved equivalent) needed for handling may be applied as part of the routine winter maintenance activities. **At a minimum all paved areas must be swept two times annually, in the fall and in the spring.**

2. Catch Basins – Catch basins shall be inspected monthly for the initial twelve-month period following the completion of the construction of the paved areas. Debris shall be removed from the catch basin grates, sumps and outlet pipes and disposed of in compliance with local, state and federal guidelines.

   Upon a period beginning twelve months after the completion of the site, all catch basins shall be inspected and maintained twice annually, once in April and once in November. Debris shall be removed from the catch basin grates, sumps and outlet pipes and disposed of in compliance with local, state and federal guidelines.

3. Water Quality Manhole: Contech CDS unit with manhole cover should be maintained bi-annually, after a large rain event, and when sediment levels exceed maintenance volumes, as required by the manufacturer. **At a minimum, water quality manholes shall be serviced every spring and fall.**

4. Snow removal and storage - Plowed snow shall be placed in pervious areas adjacent to the parking lots where it can slowly infiltrate. Sediments shall be removed from this area every spring. When the amount of snow exceeds the capacity of the snow storage areas, it shall be removed from the site at the owner's expense.

5. All headwalls with pipes ten (10) inches in diameter and larger are to be fitted with trash racks and/or child proof grates of a type approved by the Wakefield Conservation Commission. The owner shall be responsible for removing trash or other obstructions from the trash racks or grate on a regular basis. This Condition shall remain in force permanently and shall be recorded as such on the Certificate of Compliance.

6. Maintenance Responsibilities **-** All post construction maintenance activities shall be documented and kept on file and made available to the Town of Wakefield annually, or upon request. All post construction maintenance activities shall run with the title of the property in perpetuity.

Parking Lot Improvements

21-29 Broadway

Stormwater BMP Maintenance Log

BMP STRUCTURE	INSPECTOR (NAME)	WORK PERFORMED	DATE PERFORMED	COMMENTS
Catch Basin #1				
Catch Basin #2				
Contech CDS Unit #1				
Outlet at headwall				

Additional Comments:

SECTION III

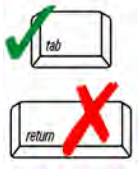
Wetland Fee Transmittal Form
Copy of Checks

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

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



A. Applicant Information

1. Location of Project:

21 -29 Broadway Street	Wakefield
a. Street Address	b. City/Town
#9029	$362.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Raymond S		Falite	
a. First Name		b. Last Name	
c. Organization			
9 Broadway Street			
d. Mailing Address			
Wakefield	MA	01880	
e. City/Town	f. State	g. Zip Code	
(781) 246-9320		ray@falitebros.com	
h. Phone Number	i. Fax Number	j. Email Address	

3. Property Owner (if different):

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

B. Fees

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

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

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

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Category 2b Parking Lot	1.5	$750	$750

Step 5/Total Project Fee: $500

Step 6/Fee Payments:

Total Project Fee:	$750 (a. Total Fee from Step 5)
State share of filing Fee:	$362.50 (b. 1/2 Total Fee **less $**12.50)
City/Town share of filling Fee:	$387.50 (c. 1/2 Total Fee **plus** $12.50)

C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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

9028

ENGINEERING ALLIANCE, INC.
781-231-1349
194 CENTRAL STREET, 2ND FLOOR
SAUGUS, MA 01906

ROCKLAND TRUST
WWW.ROCKLANDTRUST.COM

53-447/113

3/12/2024

PAY TO THE ORDER OF Town of Wakefield

$**387.50

Three Hundred Eighty-Seven and 50/100********** DOLLARS

Town of Wakefield

Details on back

Security Features Included

SECURED BY EZSHIELD

MEMO

MP

⑈009028⑈ ⑆011304478⑆ 7776131344⑈

9029

ENGINEERING ALLIANCE, INC.
781-231-1349
194 CENTRAL STREET, 2ND FLOOR
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53-447/113

3/12/2024

PAY TO THE ORDER OF Commonwealth of Massachusetts

$**362.50

Three Hundred Sixty-Two and 50/100********** DOLLARS

Department of Environmental Protection
Box 4062
Boston, MA 02211

Details on back

Security Features Included

SECURED BY EZSHIELD

MEMO

MP

⑈009029⑈ ⑆011304478⑆ 7776131344⑈

SECTION IV

Abutter Notification Form
Certified Abutters List

Notification to Abutters Under the Massachusetts Wetlands Protection Act

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

A. The name of the applicant is **Raymond S Falite.**

B. The applicant has filed a Notice of Intent with the municipality of the **Town of Wakefield** seeking permission to remove, fill, dredge or alter an Area Subject to Protection Under the Wetlands Protection Act (General Laws Chapter 131, Section 40).

The proposed work includes the repaving the existing parking lot.

C. The address of the lot where the activity is proposed is **21-29 Broadway (Tax Map 13 Block 26 Lot 117).**

D. Copies of the Notice of Intent may be examined at:

Wakefield Conservation Commission
Town Hall
1 Lafayette Street
Wakefield, MA 01880

between the hours of **9:30 A.M. and 2:00 P.M.** on the following days of the week: **Tuesday, and Thursday,** remotely between the hours of **10:00 A.M. and 2:00 P.M.** on the following days of the week: **Wednesday**, and **by appointment** on the following days of the week: **Friday**. For more information or an appointment call **(781) 224-5015**. This is the **number for the local conservation commission.**

E. Copies of the Notice of Intent may be obtained from the applicant's representative, by calling this telephone number **(781) 231-1349** between the hours of **9:00 A.M.** and **5:00 P.M.** on the following days of the week: **Monday, Tuesday, Wednesday, Thursday and Friday.**

F. Information regarding the date, time, and place of the public hearing may be obtained from the **Wakefield Conservation Commission** by calling this telephone number: **(781) 224-5015** between the hours of **9:00 A.M. and 2:00 P.M.** on the following days of the week: **Tuesday and Thursday**, and between the hours of **10:00 A.M.** and **2:00 P.M.** on the following days of the week: **Wednesday**. This is the **Local Conservation Commission.**

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

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

NOTE: You may also contact your local conservation commission or the nearest Department of Environmental Protection Regional Office for more information about this application or the Wetlands Protection Act. To contact DEP, call:

Central Region: (508) 792-7650 **Northeast Region: (978) 661-7600**

Southeast Region: (508) 946-2800 Western Region: (413) 784-1100

Town of Wakefield, MA Abutters Report

100ft. Abutters of Property 13-026-117
at 21 -29 BROADWAY

Please be aware that the abutters list reflects mailing address for the real estate tax bills as requested by the property owners. Mortgage companies, banks and other financial institutions may be receiving the notification and not the homeowner as required. Please be sure you are complying with notification requirements. Property data updated December 29th, 2021.

Abutter	Site Address	Property ID	Owner Address
10-037-44A MASS BAY TRANS, AUTHORITY	0 MAIN ST	10-037-44A	MASS BAY TRANS, AUTHORITY 10 PARK PLAZA BOSTON, MA 02116
13-029-115 MASS BAY TRANS, AUTHORITY	0 NORTH AVE	13-029-115	MASS BAY TRANS, AUTHORITY 10 PARK PLAZA BOSTON, MA 02116
10-036-44AB BROADWAY CROSSING LLC	40 -40A-42 BROADWAY	10-036-44AB	BROADWAY CROSSING LLC 80 NEW SALEM ST WAKEFIELD, MA 01880
10-035-46A PIETRAFITTA RICHARD A TR	34 BROADWAY	10-035-46A	PIETRAFITTA RICHARD A TR 14 BROOKBRIDGE ROAD STONEHAM, MA 02180
13-022-127B TOWN OF WAKEFIELD DPW	29 NORTH AVE	13-022-127B	TOWN OF WAKEFIELD DPW 1 LAFAYETTE ST WAKEFIELD, MA 01880
13-040-110A R T PROPERTIES INC T E	55 BROADWAY	13-040-110A	R T PROPERTIES INC T E 86 CONDOR ST EAST BOSTON, MA 02128
13-022-127A TOWN OF WAKEFIELD DPW	27 NORTH AVE	13-022-127A	TOWN OF WAKEFIELD DPW 1 LAFAYETTE ST WAKEFIELD, MA 01880
10-034-46H NEW CREEK LLC	10 BROADWAY	10-034-46H	NEW CREEK LLC 500 N. BROADWAY # 201 JERICHO, NY 11753

Town of Wakefield, MA Abutters Report

100ft. Abutters of Property 13-026-117
at 21 -29 BROADWAY

Please be aware that the abutters list reflects mailing address for the real estate tax bills as requested by the property owners. Mortgage companies, banks and other financial institutions may be receiving the notification and not the homeowner as required. Please be sure you are complying with notification requirements. Property data updated December 29th, 2021.

10-038-045 TOWN OF WAKEFIELD DPW	108 BROADWAY	10-038-045	TOWN OF WAKEFIELD DPW 1 LAFAYETTE ST WAKEFIELD, MA 01880
13-025-118 RONRAY REAL ESTATE CORP	9 BROADWAY	13-025-118	RONRAY REAL ESTATE CORP 9 BROADWAY WAKEFIELD, MA 01880
13-027-116 NORTH AVENUE REAL ESTATE MANAGEMENT LLC	64 NORTH AVE	13-027-116	NORTH AVENUE REAL ESTATE MANAGEMENT LLC 1 COMMON ST WAKEFIELD, MA 01880