
City of New Bedford
Conservation Commission
133 William Street, Room 312
New Bedford, MA 02740

April 4, 2016

Attn: Sarah Porter, Conservation Agent

Re: Proposed Parking Lot Drainage Improvements
978 Nash Road, New Bedford, MA 02760

Dear Conservation Commissioners:

On behalf of our client, Reliable Bus Lines, Inc., we have attached a Request of Determination of Applicability (WPA – Form 1) for site work associated with parking lot drainage improvements to be completed at 978 Nash Road. Certain components of the proposed work are located within the one hundred (100) foot buffer zone of an adjacent bordering vegetated wetland (BVW) located to the east of the site.

The property at 978 Nash Road consists of approximately 1.71 acres of land, the majority of which has impervious surfaces (i.e. bituminous concrete pavement, concrete aprons and building roof). The property is the base of operations for a bus line company and the existing bituminous concrete pavement parking area is used to park buses when they are not in use. The current grading in the front (northerly) portion of the site, which consists of approximately 0.44 acres, directs stormwater runoff toward Nash Road and into the Nash Road street drain system through a catch basin located directly in front of the property. It appears that stormwater runoff from the rear (southerly) portion of the property is intended to be directed to a catch basin located to the south of the existing building on the property, however, flow from the southwesterly side of the site is impeded by flat grades and low spots that cause runoff from this area to flow onto abutting property to the north (994, 998 Nash Road) and also results in standing water in this area. Additionally, the existing catch basin functions as a pump chamber and houses a sump pump with a ¾" discharge hose that conveys runoff

directly into the bordering vegetated wetland (BVW) to the east. The catch basin does not conform to current MassDEP Stormwater Management Regulations.

To mitigate these conditions and to improve stormwater quality, Reliable Bus proposes to install two new catch basins in the rear portion of the bituminous concrete pavement parking area that will be constructed with deep sumps and hooded outlets. One of the new catch basins will replace the non-conforming structure to the south of the building and the other will be installed in the southwesterly portion of the parking area. Stormwater runoff collected from the catch basins will be conveyed through twelve (12) inch diameter HDPE piping to a CDS stormwater treatment unit, model CDS2015-4-C, as manufactured by Contech Construction Products, Inc., before connecting to the existing drainage system in Nash Road. The CDS stormwater treatment unit will discharge to what is presently a catch basin, located directly in front of the 978 Nash Road property that will be converted to a drain manhole. A new catch basin will be installed adjacent to the converted drain manhole to replace the existing catch basin. The converted drain manhole will continue, as the catch basin did, to discharge runoff through the existing twelve (12) inch diameter reinforced concrete pipe.

It should be noted that the Nash Road street drain system discharges into a BVW on the northerly side of Nash Road. All stormwater runoff from the site currently flows into this BVW so runoff patterns will not be altered. No additional impervious area will be created and no change in the parking area will be made except for some minor grading. Water quality will be improved by the deep sump and hooded catch basins and the CDS stormwater treatment unit. Additionally, all proposed pipe installation will take place within paved driveways and parking areas and pavement will be repaired after installation. An erosion control barrier consisting of straw wattles is proposed along the edge of the existing bituminous concrete pavement parking area to reduce the potential for erosion into the adjacent BVW.

The Wetlands Protection Act states under 310 CMR 10.02(b)2. "The following minor activities, provided that they comply with 310 CMR 10.02(b)1., are not otherwise subject to regulation...", referring to minor activities proposed in the one hundred (100) foot buffer zone to a resource area that are not subject to regulation provided that potential for adverse impacts are reduced during construction. The Act further specifies minor activities not subject to regulation and states under 310 CMR 10.02(b)2.i, "Installation of underground utilities within existing paved or unpaved roadways and private roadways / driveways, provided that all work is conducted within the roadway or driveway and that all trenches are closed at the completion of each workday". The proposed drainage improvement work is categorically listed as a minor activity that is not subject to

regulation and meets the criteria for an issuance of a Negative Determination of Applicability.

Attached, for your review, are design drawings that present the proposed drainage improvements at the site and pertinent details. Also enclosed are the total suspended solids removal worksheet and water quality volume calculation for the stormwater treatment unit provided by Contech Construction Products, Inc. Lastly, manufacturer literature for the proposed twelve (12) diameter HDPE piping is enclosed. Should you have any questions regarding this submittal, please do not hesitate to contact this office. Thank you for your consideration in this matter.

Sincerely,
SITEC Environmental, Inc.

A handwritten signature in cursive script that reads "Alexander Trakimas".

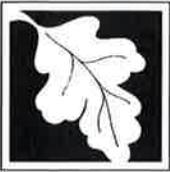
Alexander Trakimas
Principal

DEP Forms

RDA Form 1

Notification to Abutters

Copy of Local Filing Fee Check



WPA Form 1- Request for Determination of Applicability
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. General Information

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



1. Applicant:

Graham & Hunt Limited Liability Company
Name
978 Nash Road
Mailing Address
New Bedford
City/Town
508-992-0342
Phone Number
MA
State
02746-1300
Zip Code
E-Mail Address
Fax Number (if applicable)

2. Representative (if any):

SITEC Environmental, Inc.
Firm
Alexander Trakimas
Contact Name
769 Plain Street, Unit C
Mailing Address
Marshfield
City/Town
781-319-0100
Phone Number
atrakimas@sitec-engineering.com
E-Mail Address
MA
State
02050
Zip Code
781-834-4783
Fax Number (if applicable)

B. Determinations

1. I request the New Bedford Conservation Commission make the following determination(s). Check any that apply:

- a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.
- b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.
- c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.
- d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Name of Municipality

- e. whether the following **scope of alternatives** is adequate for work in the Riverfront Area as depicted on referenced plan(s).



WPA Form 1- Request for Determination of Applicability

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

C. Project Description

1. a. Project Location (use maps and plans to identify the location of the area subject to this request):

978 Nash Road	New Bedford
Street Address	City/Town
123	120
Assessors Map/Plat Number	Parcel/Lot Number

- b. Area Description (use additional paper, if necessary):

See Cover Letter for Area Description

- c. Plan and/or Map Reference(s):

Existing Conditions	9/1/2016
Title	Date
Site Plan	3/2/2016: Rev.
Title	3/11/2016
Construction Details	3/2/2016
Title	Date

2. a. Work Description (use additional paper and/or provide plan(s) of work, if necessary):

See Cover Letter for Work Description



WPA Form 1- Request for Determination of Applicability

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

C. Project Description (cont.)

b. Identify provisions of the Wetlands Protection Act or regulations which may exempt the applicant from having to file a Notice of Intent for all or part of the described work (use additional paper, if necessary).

See Cover Letter for Provisions of the Wetlands Protection Act that exempts applicant from having to file a Notice of Intent.

3. a. If this application is a Request for Determination of Scope of Alternatives for work in the Riverfront Area, indicate the one classification below that best describes the project.

- Single family house on a lot recorded on or before 8/1/96
- Single family house on a lot recorded after 8/1/96
- Expansion of an existing structure on a lot recorded after 8/1/96
- Project, other than a single family house or public project, where the applicant owned the lot before 8/7/96
- New agriculture or aquaculture project
- Public project where funds were appropriated prior to 8/7/96
- Project on a lot shown on an approved, definitive subdivision plan where there is a recorded deed restriction limiting total alteration of the Riverfront Area for the entire subdivision
- Residential subdivision; institutional, industrial, or commercial project
- Municipal project
- District, county, state, or federal government project
- Project required to evaluate off-site alternatives in more than one municipality in an Environmental Impact Report under MEPA or in an alternatives analysis pursuant to an application for a 404 permit from the U.S. Army Corps of Engineers or 401 Water Quality Certification from the Department of Environmental Protection.

b. Provide evidence (e.g., record of date subdivision lot was recorded) supporting the classification above (use additional paper and/or attach appropriate documents, if necessary.)



WPA Form 1- Request for Determination of Applicability

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

D. Signatures and Submittal Requirements

I hereby certify under the penalties of perjury that the foregoing Request for Determination of Applicability and accompanying plans, documents, and supporting data are true and complete to the best of my knowledge.

I further certify that the property owner, if different from the applicant, and the appropriate DEP Regional Office were sent a complete copy of this Request (including all appropriate documentation) simultaneously with the submittal of this Request to the Conservation Commission.

Failure by the applicant to send copies in a timely manner may result in dismissal of the Request for Determination of Applicability.

Name and address of the property owner:

Graham & Hunt Limited Liability Company

Name

978 Nash Road

Mailing Address

New Bedford

City/Town

MA

State

02746-1300

Zip Code

Signatures:

I also understand that notification of this Request will be placed in a local newspaper at my expense in accordance with Section 10.05(3)(b)(1) of the Wetlands Protection Act regulations.

Jeffrey Graham JEFFREY GRAHAM
Signature of Applicant OWNER

3.24.16
Date

Alexander Trakimas ALEXANDER TRAKIMAS
Signature of Representative (if any) SITEG ENVIRONMENTAL, INC.

APRIL 4, 2016
Date

Notification to Abutters under the City of New Bedford **Wetlands Ordinance**

In Accordance with the City of New Bedford Wetlands Ordinance (New Bedford Code of Ordinances Section 15-101 through 15-112) you are hereby notified of the following.

The name of the applicant is: Graham & Hunt, Limited Liability Company

The applicant has filed a Request for Determination of Applicability for the municipality of New Bedford, Massachusetts seeking permission to remove, fill, dredge or alter an area subject to protection under the City of New Bedford Wetlands Ordinance (New Bedford Code of Ordinances Sections 15-101 through 15-112).

The address of the lot where the activity is proposed is: 978 Nash Road
Assessor's Map 123; Lot 120

Copies of the Request for Determination of Applicability may be examined at the New Bedford Conservation Commission, City Hall, 133 William St. Room 304 New Bedford, MA 02740 between the hours of 8:00 AM and 4:00 PM, Monday through Friday. For more information call (508) 991-6188.

Copies of the Request for Determination of Applicability may be obtained from either (check one) the applicant Graham & Hunt, Limited Liability Company or the applicant's representative SITEC Environmental, Inc. by calling this telephone number 781-319-0100 between the hours of 8:00 AM and 4:00 PM on the following days of the week: Monday through Friday.

Information regarding the date, time and place of the public hearing may be obtained from New Bedford Conservation Commission by calling 508-991-6188 between the hours of 8:00 AM and 4:00 PM Monday through Friday.

Note: Notice of the Public hearing, including its date, time and place, will be posted in the City Hall not less than forty eight (48) hours in advance of the meeting.

Note: Notice of the Public Hearing including its date, time and place, will be published at least five (5) days in advance in the Standard Times.

Note: You may also contact the New Bedford Conservation Commission at 508-991-6188 for more information about this publication or the City of New Bedford Wetlands Ordinance.

CASH ONLY IF ALL CHECKLOCK SECURITY FEATURES LISTED ON BACK INDICATE NO TAMPERING OR COPYING

7641

Reliable Bus Lines, Inc.

978 Nash Road
New Bedford, MA 02746-1300
508-992-0342

RBS CITIZENS, NA
NEW BEDFORD, MA 02746
6-70372110

3/28/2016

PAY TO THE ORDER OF CITY OF NEW BEDFORD

\$ **240.10

Two Hundred Forty and 10/100***** DOLLARS

CITY OF NEW BEDFORD

VOID AFTER 90 DAYS



MEMO

Conservation Commission Filing Fee

⑈00764⑈ ⑆21070175⑆ 1303404211⑈

Intuit® CheckLock™ Secure Check Details on Back

Reliable Bus Lines, Inc.

CITY OF NEW BEDFORD

7641

Date	Type	Reference	Original Amt.	Balance Due	Discount	Payment
3/28/2016	Bill	Filing Fee	240.10	240.10		240.10
					Check Amount	240.10

REQUEST FOR A DETERMINATION OF APPLICABILITY
978 NASH ROAD
(ASSESSORS MAP 123, PARCEL 120)
NEW BEDFORD, MASSACHUSETTS

TABLE OF CONTENTS
APRIL 2016

DEP FORMS

RDA Form 1 – Request for Determination of Applicability
Notification to Abutters
Copy of Local Filing Fee Check (\$150.00 + \$0.10 per SF of Disturbed Buffer Zone = \$240.10)

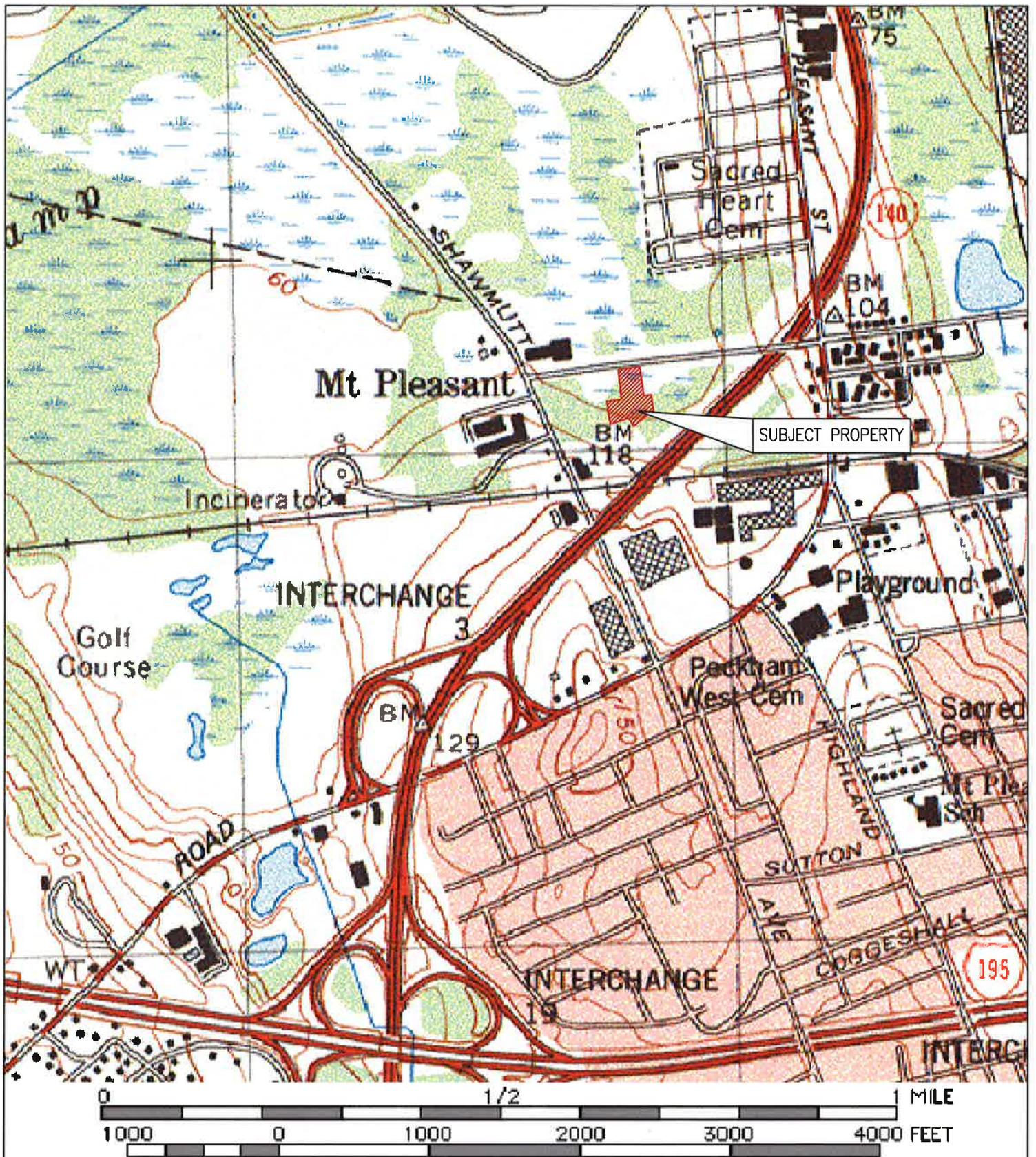
LIST OF ATTACHMENTS

Attachment 1 USGS Locus Map
Attachment 2 Assessors Map & Certified Abutters List
Attachment 3 Property Deed & Online Assessors Property Card
Attachment 4 Natural Heritage Map
Attachment 5 FEMA Flood Insurance Rate Map
Attachment 6 Contech TSS Removal & Stormwater Treatment Unit Information
Attachment 7 Drawings (See List Below)

LIST OF DRAWINGS

Sheet No.	Title	Date
1 of 3	Existing Conditions	Sep. 1, 2015
2 of 3	Site Plan	Mar. 2, 2016; Rev. Mar 11, 2016
3 of 3	Construction Details	Mar. 2, 2016

ATTACHMENT 1
USGS Locus Map



BASE IMAGE: USGS TOPOGRAPHIC MAP – New Bedford North 1979

ATTACHMENT 1	LOCUS MAP	<p>SITEC ENVIRONMENTAL 769 Plain Street, Unit C Marshfield, MA 02050 Tel. (781) 319-0100 FAX (781) 834-4783</p>
<i>appx. scale:</i>	RELIABLE BUS LINES, INC.	
AS SHOWN	978 NASH ROAD NEW BEDFORD, MASSACHUSETTS	

ATTACHMENT 2

Assessors Map & Certified Abutters List



City of New Bedford
REQUEST for a CERTIFIED ABUTTERS LIST

This information is needed so that an official abutters list as required by MA General Law may be created and used in notifying abutters. You, as applicant, are responsible for picking up and paying for the certified abutters list from the assessor's office (city hall, room #109).

SUBJECT PROPERTY			
MAP #	123	LOT(S)#	120
ADDRESS: 978 Nash Road			
OWNER INFORMATION			
NAME: Graham & Hunt Limited Liability Company			
MAILING ADDRESS: 978 Nash Road, New Bedford, MA 02746			
APPLICANT/CONTACT PERSON INFORMATION			
NAME (IF DIFFERENT): Contact Information: SITEC Environmental, Inc. Attn: Alexander Trakimas			
MAILING ADDRESS (IF DIFFERENT): 769 Plain Street - Suite C, Marshfield, MA 02050			
TELEPHONE #	Office: 781-319-0100 Cellular: 508-274-7332		
EMAIL ADDRESS:	atrakimas@sitec-engineering.com		
REASON FOR THIS REQUEST: <i>Check appropriate</i>			
<input type="checkbox"/>	ZONING BOARD OF APPEALS APPLICATION		
<input type="checkbox"/>	PLANNING BOARD APPLICATION		
<input checked="" type="checkbox"/>	CONSERVATION COMMISSION APPLICATION		
<input type="checkbox"/>	LICENSING BOARD APPLICATION		
<input type="checkbox"/>	OTHER (Please explain):		

PLANNING
 MAR 14 2016
 DEPARTMENT

Once obtained, the Certified List of Abutters must be attached to this Certification Letter.

Submit this form to the Planning Division Room 303 in City Hall, 133 William Street. You, as applicant, are responsible for picking up and paying for the certified abutters list from the assessor's office (city hall, room #109).

Official Use Only:

As Administrative Assistant to the City of New Bedford's Board of Assessors, I do hereby certify that the names and addresses as identified on the attached "abutters list" are duly recorded and appear on the most recent tax.

Carlos Amado

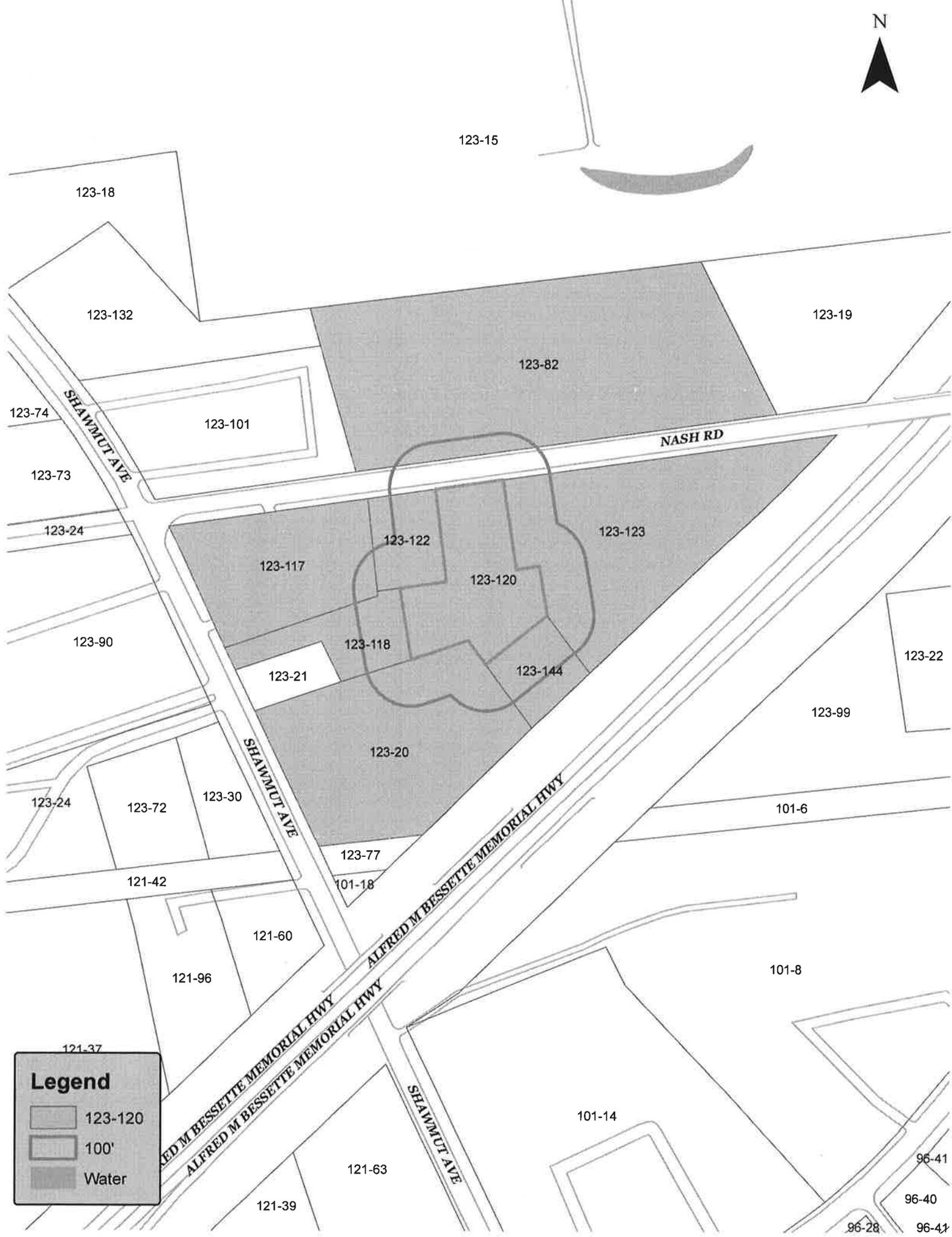
Printed Name

Judith M. Serdahl

Signature

3/15/2016

Date



123-15

123-18

123-132

123-19

123-82

123-74

123-101

NASH RD

123-73

123-24

123-122

123-123

123-117

123-120

123-90

123-118

123-144

123-21

123-22

123-99

123-20

123-24

123-72

123-30

101-6

SHAWMUT AVE

123-77

101-18

121-42

ALFRED M BESSETTE MEMORIAL HWY

121-60

101-8

121-96

121-37

Legend

-  123-120
-  100'
-  Water

ALFRED M BESSETTE MEMORIAL HWY

SHAWMUT AVE

121-63

101-14

121-39

96-41

96-40

96-28

96-41

March 15, 2016
 Dear Applicant,

Please find below the List of Abutters within 100 feet of the property known as 978 Nash road (123-120) The current ownership listed herein must be checked and verified by the City of New Bedford Assessor's Office. Following said verification, the list shall be considered a Certified List of Abutters.

Please note that multiple listed properties with identical owner name and mailing address shall be considered duplicates, and shall require only 1 mailing. Additionally, City of New Bedford-Owned properties shall not require mailed notice.

Parcel	Location	Owner and Mailing Address
123-120	978 NASH RD	GRAHAM & HUNT LIMITED LIABILITY COMPANY, 978 NASH ROAD NEW BEDFORD, MA 02746-1300
123-122	994 NASH RD <i>998</i>	SHAWMUT ASSOCIATES LLC, 1245 SHAWMUT AVENUE NEW BEDFORD, MA 02745
123-123 <i>CS</i>	NASH RD	CITY OF NEW BEDFORD, 133 WILLIAM ST NEW BEDFORD, MA 02740
123-20	1080 SHAWMUT AVE	CHARTER REALTY CORP, 1080 SHAWMUT AVE NEW BEDFORD, MA 02746
123-118 <i>ES</i>	SHAWMUT AVE	CHARTER REALTY CORP, C/O SHAWMUT ASSOCIATES PO BOX 50540 NEW BEDFORD, MA 02745
123-144 <i>CS</i>	NASH RD	CHARTER REALTY CORP, 1080 SHAWMUT AVE NEW BEDFORD, MA 02746
123-117	1136 SHAWMUT AVE	SHAWMUT ASSOCIATES LLC, 1245 SHAWMUT AVENUE NEW BEDFORD, MA 02745
123-82 <i>ES</i>	SHAWMUT AVE	CITY OF NEW BEDFORD, 133 WILLIAM ST NEW BEDFORD, MA 02740

ATTACHMENT 3

Property Deed & Online Assessors Property Card

QUITCLAIM DEED

Charter Realty Corp., a Massachusetts corporation duly established under the laws of the Commonwealth of Massachusetts and having its usual place of business at New Bedford, Bristol County, Massachusetts, for consideration paid, and in full consideration of Three Hundred Thousand (\$300,000.00) Dollars grants to Graham & Hunt Limited Liability Company, a Delaware limited liability company with an address at 978 Nash Road, New Bedford, Massachusetts 02746, with quitclaim covenants, the land with any buildings thereon in New Bedford, Bristol County, Massachusetts bounded and described as follows:

The land with the buildings thereon shown as Lot 6 on Plan of Land in New Bedford, MA, drawn for Charter Realty Co." Scale 1"=100', dated December 3, 1986, Olde Boston Land Survey Co., Inc., Surveyors and Engineers recorded in Plan Book 115, Page 84.

Being a portion of the premises conveyed to grantor by deed of Arthur W. Martin dated October 27, 1980, recorded with the Bristol County (S.D.) Registry of Deeds in Book 1812, Page 874.

Subject to a slope easement to the City of New Bedford as shown on said plan.

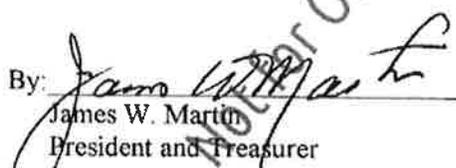
Subject to the real estate taxes for fiscal 2000 which the grantee assumes and agrees to pay.

IN WITNESS WHEREOF, the said Charter Realty Corp. has caused its corporate seal to be here to affixed and these presents to be signed, acknowledged and delivered in its name and behalf by James W. Martin, its President and Treasurer, hereto duly authorized, this 1st day of May, 2000.

Signed and sealed in presence of

CHARTER REALTY CORP.



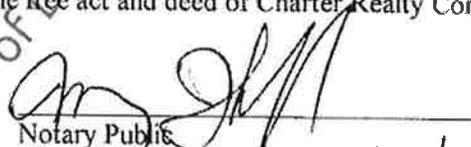
By: 
James W. Martin
President and Treasurer

COMMONWEALTH OF MASSACHUSETTS

Bristol, ss.

May 1, 2000

Then personally appeared the above-named James W. Martin, President and Treasurer, and acknowledged the foregoing instrument to be the free act and deed of Charter Realty Corp., before me


Notary Public

My commission expires: 12/27/2002

REG. OF DEEDS
REG #07
BRISTOL S

05/02/00 9:53AM
000000 #424

FEE \$1362.00
CASH \$1362.00

Bristol South
Registry of Deeds

Bristol South
Registry of Deeds

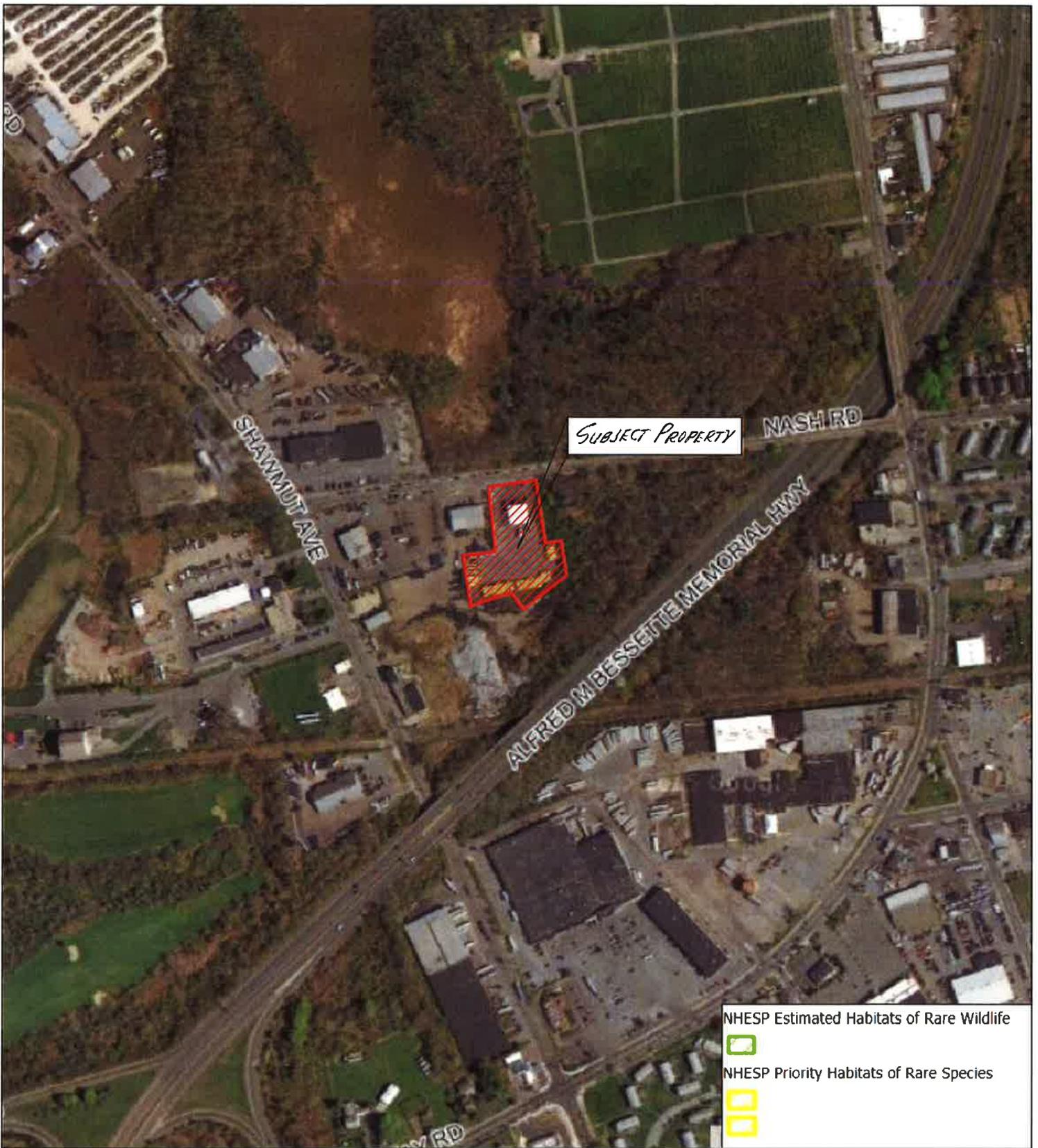
Not for Official Use

Not for

Not for

Official Use

ATTACHMENT 4
Natural Heritage Map



BASE IMAGE: MASSGIS — NHESP DATA LAYER 2008

ATTACHMENT 4	NHESP MAP	<p>SITEC ENVIRONMENTAL</p> <p>769 Plain Street, Unit C Marshfield, MA 02050 Tel. (781) 319-0100 FAX (781) 834-4783</p>
<p><i>appx. scale:</i></p> <p>1"=400'</p>	<p>RELIABLE BUS LINES, INC. 978 NASH ROAD NEW BEDFORD, MASSACHUSETTS</p>	

ATTACHMENT 5
FEMA Flood Insurance Rate Map



MAP SCALE 1" = 500'

0 500 1000
FEET
0 500
METERS

INCLIP

PANEL 0387F

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

PANEL 307 OF 500
SEE MAP INDEX FOR FIRM PANEL LAYOUT
CONTAINS:
COMMUNITY NUMBER PANEL SUBJECTS
COMMUNITY NUMBER 0387F

Note: In Law Title Map Number shown. Please consult the
FIRM for the correct community number. Community numbers
shown should be used in all correspondence for the subject
community.



MAP NUMBER
25005C0387F
EFFECTIVE DATE
JULY 7, 2009

Federal Emergency Management Agency

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

NATIONAL FLOOD INSURANCE PROGRAM

CITY OF NEW BEDFORD 255216

SUBJECT PROPERTY



ZONE X

SEA STREET

AVENUE

RAILROAD

WALKER ST

NASH

NEWCO

BARRETT

ATTACHMENT 6

Contech TSS Removal & Stormwater Treatment Unit Information

**CDS ESTIMATED NET ANNUAL TSS REDUCTION
BASED ON THE RATIONAL RAINFALL METHOD**



**RELIABLE BUS FACILITY
NEW BEDFORD, MA
for SYSTEM: SWT UNIT**

Area	0.94	acres	CDS Model	
Weighted C	0.90		2015-4	
Tc	6	minutes	CDS Treatment Capacity	1.4
				cfs

<u>Rainfall Intensity¹</u> (in/hr)	<u>Percent Rainfall Volume¹</u>	<u>Cumulative Rainfall Volume</u>	<u>Total Flowrate (cfs)</u>	<u>Treated Flowrate (cfs)</u>	<u>Removal Efficiency (%)</u>	<u>Incremental Removal (%)</u>
0.02	10.2%	10.2%	0.02	0.02	96.4	9.8
0.04	9.6%	19.8%	0.03	0.03	95.6	9.2
0.06	9.4%	29.3%	0.05	0.05	94.7	9.0
0.08	7.7%	37.0%	0.07	0.07	93.9	7.3
0.10	8.6%	45.6%	0.08	0.08	93.1	8.0
0.12	6.3%	51.9%	0.10	0.10	92.3	5.8
0.14	4.7%	56.5%	0.12	0.12	91.5	4.3
0.16	4.6%	61.2%	0.14	0.14	90.6	4.2
0.18	3.5%	64.7%	0.15	0.15	89.8	3.2
0.20	4.3%	69.1%	0.17	0.17	89.0	3.9
0.25	8.0%	77.1%	0.21	0.21	86.9	7.0
0.30	5.6%	82.7%	0.25	0.25	84.9	4.7
0.35	4.4%	87.0%	0.30	0.30	82.8	3.6
0.40	2.5%	89.5%	0.34	0.34	80.8	2.0
0.45	2.5%	92.1%	0.38	0.38	78.7	2.0
0.50	1.4%	93.5%	0.42	0.42	76.6	1.1
0.75	5.0%	98.5%	0.63	0.63	66.3	3.3
1.00	1.0%	99.5%	0.85	0.85	56.1	0.6
1.50	0.0%	99.5%	1.27	1.27	35.5	0.0
2.00	0.0%	99.5%	1.69	1.40	24.1	0.0
3.00	0.5%	100.0%	2.54	1.40	16.1	0.1

88.9

Removal Efficiency Adjustment² = 6.5%
 Predicted % Annual Rainfall Treated = 93.3%

Predicted Net Annual Load Removal Efficiency = 82.5%

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.

Project: Reliable Bus
 Location: New Bedford, MA
 Prepared For: Jeff Couture - Sitec - Marshfield, MA



Purpose: To calculate the water quality flow rate (WQF) over a given site area. In this situation the WQF is derived from the first 0.50" of runoff.

Reference: Massachusetts Dept. of Environmental Protection Wetlands Program / United States Department of Agriculture Natural Resources Conservation Service TR-55 Manual

Given:

Structure Name	Impv. (acres)	A (miles ²)	t _c (min)	t _c (hr)	WQV (in)
WQU	0.94	0.0014688	6.0	0.100	0.50
		0.0000000		0.000	
		0.0000000		0.000	

Procedure: Determine unit peak discharge using Figure 1 or 2. Figure 2 is in tabular form so is preferred. Using the t_c, read the unit peak discharge (qu) from Figure 1 or Table in Figure 2. qu is expressed in the following units: cfs/mi²/watershed inches (csm/in).

Structure Name	qu (csm/in.)
WQU	752.00
0	
0	

1. Compute Q Rate using the following equation:

$$Q_{0.5} = (qu) (A) (WQV)$$

where:

Q_{0.5} = flow rate associated with first 1/2" of runoff

qu = the unit peak discharge, in csm/in.

A = impervious surface drainage area (in square miles)

WQV = water quality volume in watershed inches (1/2" in this case)

Structure Name	Q _{0.5} (cfs)
WQU	0.55
0	0.00
0	0.00

CDS2015-4-C DESIGN NOTES

CDS2015-4-C RATED TREATMENT CAPACITY IS 1.4 CFS, OR PER LOCAL REGULATIONS.
 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



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

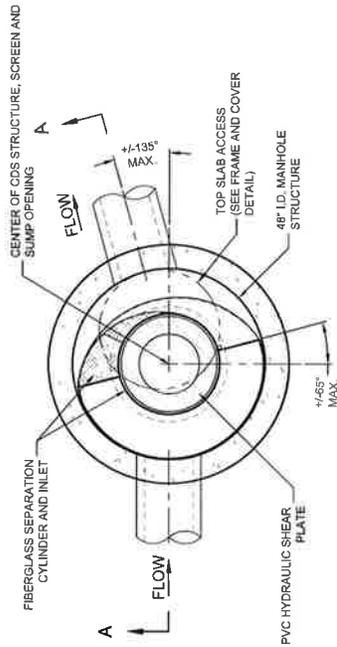
SITE SPECIFIC DATA REQUIREMENTS	
STRUCTURE ID	
WATER QUALITY FLOW RATE (QFS)	*
PEAK FLOW RATE (QFS)	*
RETURN PERIOD OF PEAK FLOW (YRS)	*
SCREEN APERTURE (2400 OR 4700)	*
PIPE DATA:	
LE	MATERIAL
DIAMETER	
INLET PIPE 1	*
INLET PIPE 2	*
OUTLET PIPE	*
RIM ELEVATION	*
ANTI-FLOTATION BALLAST	WIDTH
	HEIGHT
NOTES/SPECIAL REQUIREMENTS:	
* PER ENGINEER OF RECORD	

GENERAL NOTES

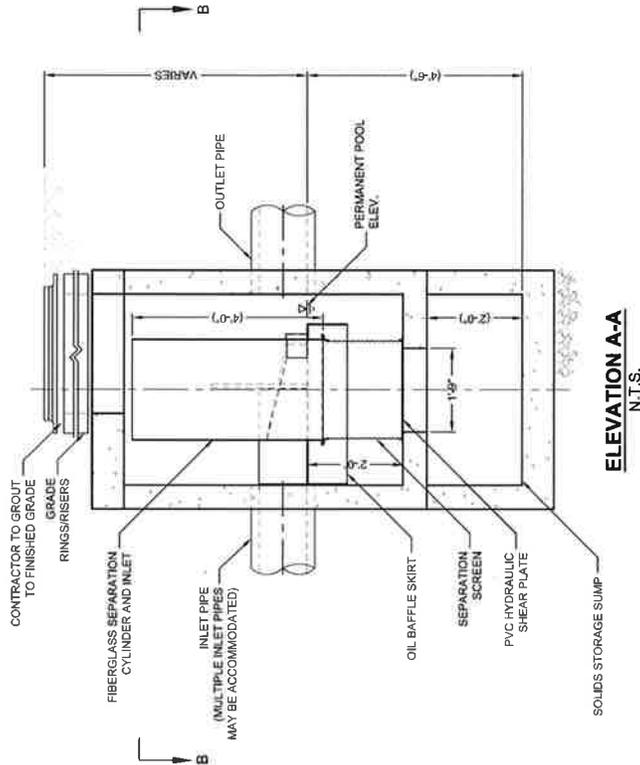
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH () ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR FABRICATION DRAWINGS WITH DETAILED STRUCTURE DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH CONSTRUCTION PRODUCTS REPRESENTATIVE. www.contech-spl.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET ASHTO HS20 AND CASTINGS SHALL MEET ASHTO M588 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM FACTOR OF SAFETY FOR GROUNDWATER ELEVATION TO FLOWLINE INVERT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ANTI-FLOTATION BALLAST TO BOTTOM OF SCREEN CYLINDER, REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES

1. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
2. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
3. CONTRACTOR TO PROVIDE SEALANT BETWEEN ALL STRUCTURE SECTIONS AND ASSEMBLY STRUCTURE.
4. CONTRACTOR TO PROVIDE INSTALL AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
5. 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.



PLAN VIEW B-B
N.T.S.



CDS
 CONSTRUCTION PRODUCTS INC.
 9025 Centre Parkway Dr., Suite 400, West Chester, OH 45069
 800-338-1122 513-545-7000 513-545-7993 FAX

CDS2015-4-C
CDS INLINE
STANDARD DETAIL

ATTACHMENT 7

Drawings
