Structures, Dredging & Fill, and Tidal Wetlands Permit and 401 WQC Application

West Beach Coastal Engineering Services
Boat Ramp Replacement Project
City of Stamford
Stamford, CT

Soil boring being completed at West Beach boat ramp, looking northwest, photo taken by RTG on December 19, 2018.

Soil boring being completed at West Beach boat ramp, looking north, photo taken by RTG on December 19, 2018

Submitted: January 28, 2019

Prepared By:

RT Group, Inc.
Engineered from the Ground Up
70 Romano Vineyard Way, Suite 134
North Kingstown, Rhode Island 02852
T 401 438 3100 F 401 294 9806
Geotechnical Waterfront Structural Civil Geo-Environmental

Prepared For:

The City of Stamford
888 Washington Blvd.
Stamford, CT 06901

RTG Project No. 18103.00

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Contents

Connecticut Department of
Energy & Environmental Protection
Bureau of Water Protection & Land Reuse
Office of Long Island Sound Programs

Permit Application for Programs Administered by the Office of Long Island Sound Programs

CPPU USE ONLY
App #:_____
Doc #:_____
Check #:_____
_____

IMPORTANT - Please refer to the instructions (DEEP-OLISP-INST-100) for completing this application form to ensure that all required information is provided. Print or type all information within the form, providing additional pages as necessary.

Part I: Permit Type and Fee Information

Check only one of the boxes below identifying the applicable state permit program(s). You must submit the initial fee indicated below and a copy of the published notice of permit application and the completed Certification of Notice Form with this application.

Type of Permit	Initial Fee
☐ **Structures, Dredging & Fill** *CGS sec. 22a-361 [#1085}*	$660.00
☐ **Structures, Dredging & Fill and 401 Water Quality Certificate** *[#1632]*	$660.00
☐ **Structures, Dredging & Fill, and Tidal Wetlands** *CGS sec. 22a-361 & sec. 22a-32 [#438]*	$660.00
☒ **Structures, Dredging & Fill, and Tidal Wetlands and 401 Water Quality Certificate** *[#417]*	$660.00
☐ **401 Water Quality Certificate** *33 U.S.C. 1341* ***(For Federal Use Only)*** *[#1195]*	None

Note: The fee for municipalities is 50% of the above listed rates. Additional fees based on the water area occupied by the project will be invoiced. The application will not be processed without the initial fee. The fee shall be non-refundable and shall be paid by check or money order to the Department of Energy and Environmental Protection.

Town where site is located: Stamford

Brief Description of Project:

The West Beach Facility, located in Wescott Cove, is owned and operated by the City and is comprised of West Beach and a boat ramp located to the north. The Facility serves as an important recreational asset to the City and provides public access to the water and other recreational amenities (e.g., playground, bathroom facilities, parking, picnic areas, etc.). The existing boat ramp enables public access to local marinas and the Federal Navigable Channel connecting Westcott Cove to Long Island Sound. The boat ramp, which was reportedly rebuilt in the mid-1990's, is comprised of precast concrete planks and is serviced by an existing timber floating dock system on its north side and parking facilities to the west. The boat ramp can reportedly accommodate boats up to 25-feet in length, but is not conducive to launching during low-tide due to its current configuration. As a part of on-going development along the Stamford waterfront, the City would like the boat ramp to be able to

accommodate boats up to 35-feet in length and to be available for use throughout the normal tide cycle (i.e., including low-tide). As a result, the City is proposing to replace the existing boat ramp in its entirety with a new precast concrete boat ramp, including extending its length and installing an additional timber floating dock system on its south side. To accomplish this, improvements dredging will be required in order to install the new ramp and to provide adequate water depths for launching larger boats. Improvements will also be made to the parking area that services the boat ramp to accommodate larger boats. Other repairs that are expected to be implemented under this project include addressing deterioration and erosion observed along the existing timber jetty adjacent to West Beach. The work detailed above is expected to occur in late 2019/early 2020.

The public notice of application must be published ***prior*** to submitting an application, as required in CGS section 22a-6g. A copy of the published notice of application and the completed Certification of Notice Form must be included as Attachment AA to this application. Your application will **not** be processed if Attachment AA is not included.

Date of Publication: **December 31st, 2018**

☐ Check here, in addition to one of the boxes above, if your application is being submitted pursuant to CGS sec. 22a-361(a)(2)(d) to address a violation.

Part II: Applicant Information

- *If an applicant is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, registrant's name shall be stated **exactly** as it is registered with the Secretary of State. Please note, for those entities registered with the Secretary of State, the registered name will be the name used by DEEP. This information can be accessed at the Secretary of State's database (CONCORD). (**www.concord-sots.ct.gov/CONCORD/index.jsp**)*
- *If an applicant is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).*
- *If there are any changes or corrections to your company/facility or individual mailing or billing address or contact information, please complete and submit the Request to Change Company/Individual Information to the address indicated on the form. If there is a change in name of the entity holding a DEEP license or a change in ownership, contact the Office of Planning and Program Development (OPPD) at 860-424-3003. For any other changes you must contact the specific program from which you hold a current DEEP license.*

1. Applicant Name: City of Stamford

Mailing Address: **888 Washington Boulevard**

City/Town: **Stamford** State: **CT** Zip Code: **06901**

Business Phone: **(203) 977-4715** ext.

Contact Person: **Mr. Zvonko Barisic, P.E.** Title: **Staff Engineer**

*E-mail: **ZBarisic@stamfordct.gov**

*By providing this e-mail address you are agreeing to receive official correspondence from DEEP, at this electronic address, concerning the subject application. Please remember to check your security settings to be sure you can receive e-mails from "ct.gov" addresses. Also, please notify DEEP if your e-mail address changes.a) Applicant Type (check one):

☐ individual ☐ federal agency ☐ state agency ☒ municipality ☐ tribal

☐ *business entity (*If a business entity complete i through iii):

i) check type: ☐ corporation ☐ limited liability company ☐ limited partnership ☐ limited liability partnership ☐ statutory trust ☐ Other: _____

ii) provide Secretary of the State business ID #:_____This information can be accessed at database (CONCORD). (**www.concord-sots.ct.gov/CONCORD/index.jsp**)

iii) ☐ Check here if your business is **NOT** registered with the Secretary of State's office.

b) Applicant's interest in property at which the proposed activity is to be located:

☒ site owner ☐ option holder ☐ lessee

☐ easement holder ☐ operator ☐ other (specify): _____

☐ Check if any co-applicants. If so, attach additional sheet(s) with the required information as requested above.

Note: If the applicant is not the owner, submit written permission from the owner as Attachment B.

2. List billing contact, if different than the applicant.

Name:

Mailing Address:

City/Town: State: Zip Code:

Business Phone: ext.

Contact Person: Title:

E-mail:

Part II: Applicant Information (continued)

3. List primary contact for departmental correspondence and inquiries if different than applicant.

Name: **RT Group, Inc.**
Mailing Address: **70 Romano Vineyard Way, Suite 134**
City/Town: **North Kingstown** State: **RI** Zip Code: **02852**
Business Phone: **(401) 438-3100** ext.
Contact Person: **Mr. Gregory J. Coren** Title: **Project Manager II**
*E-mail: **gcoren@rtg-eng.com**

4. List Site Owner, if different than applicant:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.
Contact Person: Title:
E-mail:

5. List Facility Owner, if different than applicant:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.
Contact Person: Title:
E-mail:

6. List attorney or other representative, if applicable.

Firm Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.
Attorney: Title:
E-mail:

7. List all engineer(s), surveyor(s) and/or other consultant(s) employed or retained to assist in preparing the application and designing or constructing the activity.

Name: **RT Group, Inc.**
Mailing Address: **70 Romano Vineyard Way, Suite 134**
City/Town: **North Kingstown** State: **RI** Zip Code: **02852**
Business Phone: **(401) 438-3100** ext.
Contact Person: **Mr. Gregory J. Coren** Title: **Project Manager II**
E-mail: **gcoren@rtg-eng.com**
Service Provided: **Engineering, Design, and Permitting**

☐ Check if additional Applicant Information sheets are included, and label and attach them to this sheet.

8. A pre-application meeting with Office of Long Island Sound Program (OLISP) staff is strongly recommended prior to application submission. Please note the meeting date and OLISP staff person's name:

Staff Name: **Mr. Jeff Caiola and Ms. Sue Bailey** Meeting Date: **6/21/2018**

Part III: Project Information

1. Describe the proposed regulated work and activities in a detailed narrative, including the number and dimensions of structures. Refer to both the instructions and Appendix A of the instructions (Activity Specific Instructions).

Please refer to the Executive Summary (Attachment A).

2. **a.** Describe the construction activities involved for the project in detail, including methods, sequencing, equipment, and any alternative construction methods that might be employed.

Please refer to the Executive Summary (Attachment A).

b. Describe any erosion and sedimentation or turbidity control installation and maintenance schedule and plans in detail.

Please refer to the Executive Summary (Attachment A).

c. Indicate the length of time needed to complete the project and identify any anticipated time period restrictions.

Please refer to the Executive Summary (Attachment A).

Part III: Project Information (continued)

3. Describe the purpose of, the need for, and intended use of the proposed activities. (For example, private recreational boating, marina, erosion protection, public infrastructure, etc.)

Please refer to the Executive Summary (Attachment A).

4. Identify and describe all coastal or aquatic resources on the site by checking the appropriate box and describe the expected impact on these resources. You may add addenda as necessary as Attachment M.

Coastal/Aquatic Resources	On-site	Adjacent	Describe Expected Impact
Coastal bluffs and escarpments	☐	☐	
Rocky Shorefront	☐	☐	
Beaches and Dunes	☐	☐	
Intertidal Flats	☐	☐	
Tidal Wetlands	☐	☒	**A small area (<250 sf) of Spartina Patens, Spartina Alterna flora, and Ammophila Breviligulata may be temporarily transplanted during the work**
Fresh Water Wetlands and Watercourses	☐	☐	
Estuarine Embayments	☐	☐	
Coastal Hazard Areas	☐	☐	
Developed Shorefront	☒	☒	**Improvement as described**
Islands	☐	☐	
Near shore Waters	☐	☐	
Offshore Waters	☐	☐	
Shorelands	☐	☐	
Shellfish Concentration Areas	☐	☐	
Wildlife Resources and Habitat	☐	☐	
Benthic (bottom) Habitat	☐	☐	
Indigenous aquatic life, including shellfish and finfish	☐	☐	
Submerged Aquatic Vegetation	☐	☐	

Part III: Project Information (continued)

5. Identify whether the proposed activities will impact the following categories. If so, describe the expected impact, adding addenda as necessary as Attachment M.

Categories	Yes	No	Describe Expected Impact
Prevention or alleviation of shoreline erosion and coastal flooding	☒	☐	**Jetty repairs will mitigate erosion of West Beach**
Use and development of adjoining uplands	☒	☐	**Enhance public use of existing water access facilities**
Use and development of adjacent lands and properties	☐	☒	
Improvement of coastal and inland navigation for all vessels, including small craft for recreational purposes	☒	☐	**Enhance use of boat ramp facility for larger boats**
Pollution control	☐	☒	
Water quality	☐	☒	
Water circulation and drainage	☐	☒	
Recreational use of public water	☒	☐	**Provide greater recreational boating access to Westcott Cove**
Management of coastal resources	☐	☒	
Public health and welfare	☐	☒	
The protection of life and property from flood, hurricane and other natural disasters	☐	☒	

6. Identify and evaluate any potential beneficial and adverse impacts to:

a. navigation: (include federal and local navigation channels and distance to nearby docks)

The proposed improvements are not anticipated to have adverse impacts to the adjacent federal channel and/or navigation through the area.

b. public access to, and public use of, public trust lands and waters waterward of mean high water:

The proposed improvements are anticipated to enhance the public access to and use of Westcott Cove, and other public waters.

Part III: Project Information (continued)

7. Describe how the proposed work will be a water-dependent use(s) of the property or will physically support water-dependent use(s) of the property, such as marinas, recreational and commercial fishing, boating facilities, shipyards and boat building facilities. Please do not include private recreation docks in this category. Include how upland facilities, such as sanitary facilities, designated parking, boat repair and sales, winter storage, etc., will support water-dependent uses on-site.

Please refer to the Executive Summary (Attachment A).

8. Identify and evaluate the potential adverse impacts of the proposed work upon future water-dependent development opportunities and activities.

Adverse impacts to future water-dependent development opportunities and activities are not anticipated.

9. Discuss the alternatives to the proposed project which were considered and indicate why they were rejected.

The proposed improvements are intended to enhance the public's use of and the resiliency of an existing boat ramp facility. Accordingly, other alternatives were not considered.

Part III: Project Information (continued)

10. After all measures to eliminate or minimize adverse impacts have been incorporated in the proposed project, describe why any adverse impacts that remain should be deemed acceptable by OLISP.

There are no anticipated adverse impacts.

11. a. Is any portion of the work for which authorization is being sought now complete or under construction?

☐ Yes ☒ No ***If No, skip to question #12***.

b. Specify what parts of the proposed work have been completed or are under construction.

c. Indicate when such work was undertaken or completed. Identify completed portions on the plans submitted.

d. When did you acquire interest in this property?

e. Were you responsible for the unauthorized activity as a result of actions taken before the acquisition of the property? ☐ Yes ☐ No If Yes, explain.

Part III: Project Information (continued)

f. Did you know or have reason to know of the unauthorized activity? ☐ Yes ☐ No If Yes, explain.

g. Is this application associated with an enforcement action pending with DEEP? ☐ Yes ☐ No

If Yes, explain:

12. Is there or will there be any federal and/or state funding of this project? ☐ Yes ☒ No If Yes, explain.

☐ Check here if additional Project Information sheets are necessary, and label and attach them to this sheet.

Part IV: Site and Resource Information

1. SITE NAME AND LOCATION

Name of Site : **West Beach**

Street Address or Location Description: **850 Shippan Avenue**

City/Town: **Stamford** State: **CT** Zip Code: **06901**

Tax Assessor's Reference: Map **134** Block **150** Lot **1A**

Latitude and longitude of the exact location of the proposed activity in degrees, minutes, and seconds or in decimal degrees: Latitude: **41.0039217** Longitude: **-73.522191**

Method of determination (check one):

☐ GPS ☐ USGS Map ☒ Other (please specify):

If a USGS Map was used, provide the quadrangle name: **Google Maps**

2. INDIAN LANDS: Will the activity which is the subject of this application be located on federally recognized Indian lands? ☐ Yes ☒ No

3. COASTAL AREA: Is the project site located in a municipality within the coastal area? (check town list in the instructions) ☒ Yes ☐ No

4. ENDANGERED OR THREATENED SPECIES: According to the most current "State and Federal Listed Species and Natural Communities Map", will the activity which is the subject of this application, including all impacted areas, be located within an area identified as a habitat for endangered, threatened or special concern species?

☒ Yes ☐ No Date of Map: **December 2017**

Part IV: Site Information (continued)

If yes, complete and submit a *Request for NDDB State Listed Species Review Form* (DEEP-APP-007) to the address specified on the form, **prior** to submitting this application. **Please note NDDB review generally takes 4 to 6 weeks and may require additional documentation from the applicant.** A **copy** of the completed *Request for NDDB State Listed Species Review Form* **and** the CT NDDB response ***must*** be submitted with this completed application as Attachment C.

For more information visit the DEEP website at www.ct.gov/deep/nddbrequest or call the NDDB at 860-424-3011.

5. AQUIFER PROTECTION AREAS: Is the site located within a mapped Level A or Level B Aquifer Protection Area, as defined in CGS section 22a-354a through 22a-354bb?

☐ Yes ☒ No If **yes**, check one: ☐ Level A **or** ☐ Level B

If **Level A**, are any of the regulated activities, as defined in RCSA section 22a-354i-1(34), conducted on this site? ☐ Yes ☐ No

If **yes**, and your business is **not** already registered with the Aquifer Protection Program, contact the local aquifer protection agent or DEEP to take appropriate actions.

For more information on the Aquifer Protection Area Program visit the DEEP website at www.ct.gov/deep/aquiferprotection or contact the program at 860-424-3020.

6. SHELLFISH COMMISSION: Does your town have a shellfish commission? ☒ Yes ☐ No

If yes, you must submit a completed *Shellfish Commission Consultation Form* (DEEP-OLISP-APP-101D) with this application as Attachment D.

7. HARBOR MANAGEMENT COMMISSION: Does your town have a Harbor Management Commission?

☒ Yes ☐ No

If yes, you must submit a completed *Harbor Management Commission Consultation Form* (DEEP-OLISP-APP-101E) with this application as Attachment E.

8. DEPARTMENT OF AGRICULTURE/BUREAU OF AQUACULTURE: If the subject site is located in a specific area as explained in Part IV, item 8 of the application instructions (DEEP-OLISP-INST-100), you must submit a completed *Department of Agriculture/Bureau of Aquaculture Consultation Form* (DEEP-OLIS-APP-101F) as Attachment F.

9. CONSERVATION OR PRESERVATION RESTRICTION: Will the activity which is the subject of this application be located within a conservation or preservation restriction area? ☐ Yes ☒ No

If Yes, proof of written notice of this application to the holder of such restriction or a letter from the holder of such restriction verifying that this application is in compliance with the terms of the restriction, must be submitted as Attachment G.

10. Indicate the number and date of issuance of any previous state coastal permits or certificates issued by DEEP authorizing work at the site and the names to whom they were issued.

Permit/COP Number	*Date Issued*	*Name of Permittee/Certificate Holder*
SD-89-173	**03/06/1990**	**City of Stamford**
SD-82-239	**02/02/1983**	**City of Stamford**
COP-2001-042-KC	**07/05/2001**	**City of Stamford**
COP-99-158-KH	**12/20/1999**	**City of Stamford**
SD-89-151	**02/06/1990**	**City of Stamford**

CT-STAM-17-89-701-R	**11/08/1989**	**City of Stamford**
SD-81-133	**08/19/1992**	**City of Stamford**
COP-92-040-LG	**04/29/1992**	**City of Stamford**
SD-H-81-133	**06/03/1981**	**City of Stamford**
COP-96-036-DS	**06/17/1996**	**City of Stamford**
EMER-LG-91-001	**06/03/1991**	**City of Stamford**
COP-94-083-LS	**11/29/1994**	**City of Stamford**
COP-92-068-LG	**09/15/1992**	**City of Stamford**

Part IV: Site Information (continued)

11. Identify any changes in conditions of the site (including ownership, development, use, or natural resources) since the issuance of the most recent state permit or certificate authorizing work at the site.

None

12. a. Identify and describe the existing municipal zoning classification of the site.

Park

b. Identify and describe the existing land use(s) on and adjacent to the site.

One Family, Two Family Residence, Multiple Family Medium Density Design, One Family Residence, Multiple Family High Density Design and General Industrial

13. Provide the name of the waterbody at the site of proposed work: **Westcott Cove**

14. Provide the elevation of the applicable regulatory limit for your project referenced to NAVD88. Refer to the instructions for more information.

☐ Tidal Wetlands Limit = _____ ☒ Coastal Jurisdiction Limit = **5.5'**

15. How was the regulatory limit identified above determined? Please check one of the following:

☒ **DEEP-calculated elevation**

☐ **Self-calculated elevation** (If a self-calculated elevation is used, please provide the additional information and calculations per the instructions.)

☐ **Mean High Water elevation** (use only if project is upstream of a tide gate, dam or weir)
(If a MHW elevation is used, provide a discussion of the location of the tide gate, dam or weir.)

If other than a DEEP calculated elevation was used to calculate the CJL, please provide the additional information and calculations per the instructions and label and attach them as Attachment M.

16. Provide the elevations of the mean high water and mean low water at the site and the reference datum used. Refer to the instructions regarding elevation datum.

MHW = **+3.15** MLW = **-3.6** Datum = **NAVD '88**

☐ Check here If NAVD88 is not referenced, and provide an orthometric conversion table in Attachment M.

Part V: Supporting Documents

The supporting documents listed below must be submitted with the application and labeled as indicated. The specific information required in each attachment is described in the *Instructions for Completing a Permit Application for Programs Administered by the Office of Long Island Sound Programs* (DEEP-OLIS-INST-100). Check the box by the attachments listed to indicate that they have been submitted.

☒	Attachment AA:	a copy of the published notice of permit application, as described in the instructions, attached to a completed "Certification of Notice Form (DEEP-APP-005A
☒	Attachment A:	Executive Summary; summarize the information contained in the complete application which must include a description of the proposed regulated activities and a synopsis of the environmental and engineering analyses of the impact of such activities. Include a list of the titles of all plans, drawings, reports, studies, appendices, or other documentation which are attached as part of the application.
☐	Attachment B:	If the applicant is not the owner, submit written permission from the owner as Attachment B.
☒	Attachment C:	**Copy** of the completed *Request for NDDB State Listed Species Review Form* (DEEP-APP-007) **and** the NDDB response, if applicable.
☒	Attachment D:	*Shellfish Commission Consultation Form* (DEEP-OLIS-APP-101D), if applicable.
☒	Attachment E:	*Harbor Management Commission Consultation Form* (DEEP-OLIS-APP-101E), if applicable.
☒	Attachment F:	*Department of Agriculture/Bureau of Aquaculture Consultation Form* (DEEP-OLIS-APP-101F), if applicable.
☐	Attachment G:	Conservation or Preservation Restriction Information, if applicable.
☒	Attachment H:	*Applicant Compliance Information Form* (DEEP-APP-002).
☒	Attachment I:	Provide plans of the project as Attachment I. They must be 8 1/2" x 11" scaled plans of the site and proposed work, with the datum of the measurements noted, including: a. A Vicinity Map; b. A Tax Assessor's Map showing the Map, Block and Lot #, subject property and immediately adjacent properties; c. Plan Views showing existing and proposed conditions, including vessel berthing arrangement, based on a site survey prepared by a licensed surveyor; and d. An Elevation or Cross-Section View showing existing and proposed conditions, including vessel berthing arrangement, based on a site survey prepared by a licensed surveyor. **Please refer to Attachment I of the instructions for identification and discussion of required plan components.**
☒	Attachment J:	Photographs showing existing conditions of the site.
☒	Attachment K:	Land owner information, including names and mailing addresses, for all land owners of record for any property located five hundred feet (500) or less from the property lines of the subject property, certification that a copy of the Notice of Application was sent to each identified property owner and names and addresses of any known claimants of water rights adjacent to the project and owners or lessees of shellfish grounds or franchises within the area which work is proposed.
☒	Attachment L:	*Applicant Background Information Form* (DEEP-APP-008) (if applicable).
☒	Attachment M:	Other Information: Any other information the applicant deems relevant or is required by DEEP.
☒	Attachment N:	*US. Army Corps of Engineers Consultation Form* (DEEP-OLISP-APP-101N)

Part VI: Applicant Certification

The applicant(s) *and* the individual(s) responsible for actually preparing the application must sign this part. An application will be considered insufficient unless *all* required signatures are provided.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief.

I understand that a false statement in the submitted information may be punishable as a criminal offense, in accordance with section 22a-6 of the General Statutes, pursuant to section 53a-157b of the General Statutes, and in accordance with any other applicable statute.

I certify that this application is on complete and accurate forms as prescribed by the commissioner without alteration of the text.

I certify that I have complied with all notice requirements as listed in section 22a-6g of the General Statutes."

Signature of Applicant	Date
Zvonko Barisic, P.E.	**Staff Engineer/City of Stamford**
Name of Applicant (print or type)	Title (if applicable)
Signature of Preparer (if different than above)	Date
Gregory J. Coren	**Project Manager / RT Group, Inc.**
Name of Preparer (print or type)	Title (if applicable)

☐ Check here if additional signatures are required. If so, please reproduce this sheet and attach signed copies to this sheet. You must include signatures of any person preparing any report or parts thereof required in this application (i.e., professional engineers, surveyors, soil scientists, consultants, etc.)

Note: Please submit the completed Application Form, Fee, and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Please remember to publish notice of the permit application **prior** to submitting your completed application to DEEP. Send a copy of the published notice to the chief elected official of the municipality in which the regulated activity is proposed and provide DEEP with a copy of the published notice, as described in the instructions, attached to a completed *Certification of Notice Form* (DEEP-APP-005A) as Attachment AA to this application.

Also send a copy of the notice to the Chairman of the Shellfish Commission and to the Chairman of the Harbor Management Commission in the municipality in which the regulated activity is proposed, where applicable. Refer to the Shellfish Commission and Harbor Management Commission lists for contact information.

Submit one complete application copy to the U.S. Army Corps of Engineers, Regulatory Division, 696 Virginia Road, Concord, MA, 01742.

If you are submitting a tidal wetlands application, mail complete application copies to the municipal CEO, Shellfish Commission and Conservation Commission.

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT AA
Notice of Permit Application

Connecticut Department of
Energy & Environmental Protection

Certification of Notice Form - Notice of Application

DEEP USE ONLY
Division
Application No.

I , **Zvonko Barisic, P.E. (on behalf of the city of Stamford)**, certify that
(Name of Applicant)

the attached notice represents a true copy of the notice that appeared in **The Advocate**
(Name of Newspaper)

on **December 31, 2018**
(Date)

I also certify that I have provided a copy of said notice to the chief elected municipal official listed below as required by section 22a-6g CGS.

Mr. David Martin	**Mayor**	
Name of Official	*Title of Official*	
888 Washington Boulevard, 10th Floor		
Address		
Stamford	**CT**	**06901**
City/Town	*State*	*Zip Code*
Signature of Applicant	*Date*	
Zvonko Barisic, P.E.	**Staff Engineer**	
Name of Applicant (print or type)	*Title (if applicable)*	

RT Group, Inc.
Engineered from the Ground Up SM

January 22, 2019

Mr. David Martin, Mayor
City of Stamford, CT
Stamford Government Center
888 Washington Boulevard, 10th Floor
Stamford, CT 06901

RE: Notice of Permit Application
West Beach Coastal Engineering Services
Boat Ramp Replacement Project
RTG Project No. 18103.00

Dear Mr. Martin:

As required by the Connecticut Dept. of Energy and Environmental Protection, and on behalf of the City of Stamford (the City), located at 888 Washington Boulevard, Stamford, CT, we are hereby informing you of the City's intent to file a permit application under the governing Sections of the Connecticut General Statute. The corresponding public Notice of Permit Application is attached hereto, and appeared in "The Advocate" on December 31, 2018.

For details regarding the project for which the City is submitting a permit application, please refer to the attached Notice. Should you have any questions, or concerns, please don't hesitate to contact this office.

Respectfully,

Gregory J. Coren, P.E.
Principal / Project Manager II

Attachments
Affidavit of Publication – Notice of Permit Application

cc: Mr. Zvonko Barisic, P.E., Staff Engineer/City of Stamford
Ms. Erin McKenna, Associate Planner/City of Stamford

R:\Projects\18103.00 - West Beach-Coastal Engineering Serv\PERMITS\CT DEEP Permits\Notice of Permit Application for City of Stamford.docx

70 Romano Vineyard Way, Suite 134 North Kingstown, Rhode Island 02852 T 401 438 3100 F 401 294 9806 www.rtg-eng.com

RT Group, Inc.
Engineered from the Ground Up SM

January 22, 2019

Dr. Damian Ortelli, Chairman
Harbor Management Commission
City of Stamford, CT
90 Magee Avenue
Stamford, CT 06902

RE: Notice of Permit Application
West Beach Coastal Engineering Services
Boat Ramp Replacement Project
RTG Project No. 18103.00

Dear Dr. Ortelli:

As required by the Connecticut Dept. of Energy and Environmental Protection, and on behalf of the City of Stamford (the City), located at 888 Washington Boulevard, Stamford, CT, we are hereby informing you of the City's intent to file a permit application under the governing Sections of the Connecticut General Statute. The corresponding public Notice of Permit Application is attached hereto, and appeared in "The Advocate" on December 31, 2018. Because the Harbor Management Commission has recently assumed the responsibilities of the City's Shellfish Commission, this letter is intended to serve as notification to both agencies.

For details regarding the project for which the City is submitting a permit application, please refer to the attached Notice. Should you have any questions, or concerns, please don't hesitate to contact this office.

Respectfully,

Gregory J. Coren

Gregory J. Coren, P.E.
Principal / Project Manager II

Attachments
Affidavit of Publication – Notice of Permit Application

cc: Mr. Zvonko Barisic, P.E., Staff Engineer/City of Stamford (Cover Letter Only)
Ms. Erin McKenna, Associate Planner/City of Stamford (Cover Letter Only)

R:\Projects\18103.00 - West Beach-Coastal Engineering Serv\PERMITS\CT DEEP Permits\Notice of Permit Application for Harbor Management Commission.docx

70 Romano Vineyard Way, Suite 134 North Kingstown, Rhode Island 02852 T 401 438 3100 F 401 294 9806 www.rtg-eng.com

A copy of the attached Letter and Affidavit of Publication - Notice of Permit Application was mailed by Certified Mail to each Property Owner/Abutter listed in Attachment K.

RT Group, Inc.
Engineered from the Ground Up SM

January 25, 2019

RE: Notice of Permit Application
West Beach Coastal Engineering Services
Boat Ramp Replacement Project
RTG Project No. 18103.00

Dear Resident/Property Owner:

As required by the Connecticut Dept. of Energy and Environmental Protection, and on behalf of the City of Stamford (the City), located at 888 Washington Boulevard, Stamford, CT, we are hereby informing you of the City's intent to file a permit application under the governing Sections of the Connecticut General Statute. The corresponding public Notice of Permit Application is attached hereto, and appeared in "The Advocate" on December 31, 2018. You are being provided a copy of this Notice because your property either abuts and/or is located within 500 feet of the property line for the property on which the project is taking place.

For details regarding the project for which the City is submitting a permit application, please refer to the attached Notice. Should you have any questions, or concerns, please don't hesitate to contact this office.

Respectfully,

Gregory J. Coren

Gregory J. Coren, P.E.
Principal / Project Manager II

Attachments
Affidavit of Publication – Notice of Permit Application

R:\Projects\18103.00 - West Beach-Coastal Engineering Serv\PERMITS\CT DEEP Permits\Notice of Permit Application for Abutters.docx

70 Romano Vineyard Way, Suite 134 North Kingstown, Rhode Island 02852 T 401 438 3100 F 401 294 9806 www.rtg-eng.com

HEARST | CONNECTICUT MEDIA GROUP

CONNECTICUT POST | THE NEWS-TIMES | THE ADVOCATE | The Hour | GREENWICH TIME
Darien News | Fairfield Citizen | New Canaan News | The Spectrum | Westport News | Wilton Villager

RT GROUP, INC.
70 Romano Vineyard Way, Suite 134

NORTH KINGSTOWN RI 02852

AFFIDAVIT OF PUBLICATION

STATE OF CONNECTICUT
COUNTY OF FAIRFIELD

I, _____
Being duly sworn, depose and say that I am a Representative in the employ of HEARST CONNECTICUT MEDIA GROUP, Publisher of the Stamford Advocate, that a LEGAL NOTICE as stated below was published in the Stamford Advocate.

Subscribed and sworn to before me on
this 17th Day of January, A.D. 2019.

Shelley D. Neville
Notary Public

SHELLEY D. NEVILLE
NOTARY PUBLIC OF CONNECTICUT
My Commission Expires 3/31/2023

My commission expires on

Notice of Permit Application

Town(s): Stamford, CT

Notice is hereby given that The City of Stamford (the "applicant") of 888 Washington Boulevard, Stamford, CT 06901 will submit to the Department of Energy and Environmental Protection an application under Section(s) 22a-32, Section 22a-361, and 33 U.S.C. 1341 of the Connecticut General Statutes.

Specifically, the applicant proposes to replace an existing municipal precast concrete boat ramp with a new, longer precast concrete boat ramp, including installing a floating dock system and dredging, and to make repairs to an existing timber jetty. The proposed activity will take place at the City's West Beach facility located off of Shippan Avenue. The proposed activity will potentially affect a small area of delineated wetlands adjacent to the existing boat ramp and the navigable channel between West Beach and Cummings Park.

Interested persons may obtain copies of the application from RT Group, Inc., 70 Romano Vineyard Way, Suite 134, North Kingstown, RI 02852, 401-438-3100.

The application will be available for inspection at the Office of the Department of Energy and Environmental Protection, Office of Long Island Sound Programs, 79 Elm Street, Hartford, CT 06106- 5127 telephone 860-424-3034 from 8:30 to 4:30 Monday through Friday. Please call in advance to schedule review of the application.

PO Number

Ad Caption
Notice of Permit Application To

Publication
Stamford Advocate

Ad Number
0002424856-01

Publication Schedule
12/31/2018

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT A
Executive Summary

EXECUTIVE SUMMARY

PROJECT OVERVIEW

DESCRIPTION OF EXISTING FACILITY

The West Beach Facility, located in Wescott Cove, is owned and operated by the City of Stamford (the City) and is comprised of West Beach and a boat ramp located to the north (Sheet No. 4). The Facility serves as an important recreational asset to the City and provides public access to the water and other recreational amenities (e.g., playground, bathroom facilities, parking, picnic areas, etc.).

The existing boat ramp enables public access to local marinas and the Federal Navigable Channel connecting Westcott Cove to Long Island Sound. It is also used by the Stamford Police and Fire Departments to launch patrol/rescue vessels. The boat ramp, which was reportedly rebuilt in the mid-1990's, is comprised of precast concrete planks, and is serviced by an existing floating timber dock system on its north side and parking facilities to the west (Sheet No. 4).

The boat ramp can reportedly accommodate boats up to 25-feet in length, but is not conducive to launching during low-tide due to its current configuration. This is exacerbated by on-going sedimentation around the toe of the existing ramp, which has reduced its usable width to a single lane on the north side.

The existing boat ramp is flanked by a rip rap shoreline and a storm sewer outfall to the south, and an undeveloped beach and tidal wetlands to the north (Sheet No. 4A). The previously mentioned parking facilities to the west consist of an existing asphalt parking lot and access road, with a large dirt lot that provides additional parking and turn-around space when needed. However, the dirt lot does not currently have a surface treatment and is susceptible to ponding and rutting.

To the south of the boat ramp is an existing timber jetty, which forms the northern edge of West Beach. The jetty is comprised of driven timber piles on each side of a timber sheet pile wall. The existing timber sheeting is deteriorated, and at some locations has rotted through, exposing the backfill. As a result, a sinkhole has developed behind the timber jetty on West Beach as backfill material is lost into the existing channel through the holes in the timber sheeting (Sheet No. 4). The sinkhole is currently surrounded by plastic jersey barriers installed by City, but continues to grow as material is lost over time.

PROPOSED IMPROVEMENTS

As a part of on-going development along the Stamford waterfront, the City is proposing to make improvements to the boat ramp and parking facilities, and address the deficiencies observed at the timber jetty. The City would like the boat ramp to be able to accommodate boats up to 35-feet in length and be available for use throughout the normal tide cycle (i.e., including low-tide). As a result, the City is proposing to replace the existing boat ramp in its

entirety, including extending its length and installing an additional floating dock system on its south side (Sheet Nos. 7 and 12).

The proposed boat ramp will be comprised of interlocking precast concrete panels, similar to the existing ramp (Sheet Nos. 12 and 14). Precast panels are being proposed in lieu of cast in place concrete for ease of installation, greater quality control, and to minimize the construction duration to the greatest extent possible. The new floating dock system will be similar to the existing, in that it will be secured by a series of driven timber guide piles and will be timber construction supported by polyethylene floats (Sheet Nos. 15 and 16).

To facilitate the boat ramp replacement and to accommodate larger boats at the ramp, the City is proposing to complete improvements dredging (Sheet Nos. 8 and 13). This work is expected to consist of mechanically removing approximately 2,000 cubic yards (CY) of material from a dredging footprint of approximately 14,000 square feet (SF). The anticipated dredge volume and area includes existing material beneath, on each side of, and waterward of the existing boat ramp that will be excavated in order to install the proposed ramp and riprap scour protection aprons along its sides and toe.

The parking facility improvements are expected to consist of installing a Cover Stone surface treatment in the existing dirt lot and creating designated parking spaces to accommodate longer truck and trailer combinations (Sheet No. 9). In addition, the access road leaving the parking area will be widened in order to promote safer and more efficient traffic flow for the larger truck and trailer combinations (Sheet No. 11).

With respect to the existing timber jetty, the City is proposing to excavate the existing soil from behind the jetty, and form and pour a concrete patch over the back face of the timber sheeting (Sheet No. 17). This will arrest the existing erosion and soil loss occurring through the existing sheeting, and will reinforce the jetty at the repair location.

SUPPORTING INFORMATION

In support of the design and permitting effort to complete the improvements above, the City implemented several phases of field work. This work included completing a Geotechnical Investigation, a Sediment Sampling and Analysis Plan, and a Wetlands Delineation/Sub-Aquatic Vegetation (SAV) Survey to characterize the existing site.

The Geotechnical Investigation consisted of completing four (4) soil borings, one along each face of the existing boat ramp. The soil borings were completed to depths of between 35 and 47 feet below grade using driven casing and wash methods. Soil samples were collected from each soil boring, and selected samples were submitted to Thielsch Engineering of Cranston, Rhode Island for grain size analyses.

In general, the soil borings indicate that the insitu soils consist of silts and sands underlain by dense glacial till. Varying amounts of gravel were also observed throughout each soil boring. Soil boring logs and the results of the grain size analyses are provided in Attachment M—Other Information.

The Sediment Sampling and Analysis Plan consisted of performing three (3) vibrocore sediment samples within the proposed improvements dredging footprint. These samples were obtained using a work boat-mounted electric vibrocore unit, and the samples were containerized in polyethylene liners, iced, and submitted for chemical and grain size analyses.

New England Testing Laboratory of West Warwick, RI completed the chemical and grain size analyses of the vibrocore samples in accordance with the State of Connecticut Remediation Standard Regulations and US Army Corp of Engineers Bulk Sediment Testing Requirements. Based on the results of the chemical analyses, the majority of the constituents tested for were not detected or were below the Commercial/Industrial Direct Exposure Criteria and GA Groundwater Pollutant Mobility Criteria[1].

The sediments obtained by vibrocore and that are proposed to be removed as a part of the improvements dredging for the proposed boat ramp are comprised of organic silt with sand, sand, and silty sand. A summary of the completed sampling, vibrocore logs, and the results of the chemical testing are provided in Attachment M—Other Information.

With respect to the Wetlands Delineation and SAV Survey, RTG and Mr. Richard M. Snarksi, PWS of New England Environmental Services, Inc. mobilized to the site to identify and survey wetlands species located in and around the project area. Mr. Snarksi identified several varieties of wetlands vegetation, which were generally located outside of the anticipated construction limits for the project (Sheet No. 4A). In addition, Mr. Snarksi performed an underwater investigation and did not observe any sub-aquatic vegetation within the subject survey area, which included the limits of the proposed improvements dredging.

DETAILED DESCRIPTION OF THE PROPOSED CONSTRUCTION ACTIVITY

It is anticipated that the proposed improvements will be installed using conventional and generally accepted construction methods and equipment as described below.

BOAT RAMP INSTALLATION

Because there is a large tidal range at the site (6 to 7 feet ±) and up to 16 feet of water at the toe of the proposed ramp, installing the work in the "wet", which would require the use of divers, is not considered feasible or economical. Furthermore, there are quality control issues inherent in performing work of this nature underwater. Based on this, it is anticipated that installing the proposed boat ramp will require the use of an internally braced temporary sheet pile cofferdam and active dewatering system (i.e., sumps and pumps) in order to perform the work in the "dry" (Sheet No. 7). The cofferdam is expected to be installed using an excavator or barge-mounted crane equipped with a vibratory hammer.

Once the temporary cofferdam is installed, the sediment within the cofferdam will be excavated to the proposed sub-grade/dredge elevations, and deposited into waiting dump trucks on the existing ramp for transport to a Temporary Containment Facility (TCF), as further enumerated under the IMPROVEMENTS DREDGING section below.

[1]Because the dredged material is expected to be utilized by the City for landscaping/park landforms, it was assumed that the Commercial/Industrial Direct Exposure and GA Groundwater Criteria are applicable for comparison.

As the work progresses from the toe of the existing ramp towards the parking lot, the existing precast boat ramp planks will be removed using an excavator and hauled offsite for disposal. The Contractor will then prepare the existing subgrade and install the precast concrete toe blocks, the grouted riprap scour protection apron, the geotextile wrapped bedding stone, the new precast concrete boat ramp planks, and the scour protection rip rap aprons at the sides of the proposed ramp.

Following the ramp installation, but prior to removing the temporary cofferdam, it is anticipated that the Contractor will complete the improvements dredging outside of the cofferdam as well, to minimize the potential for the this material to slough into the boat ramp area as the sheet piles are extracted.

Wetlands vegetation that may be disturbed by installing the temporary cofferdam will be removed from its existing location by hand and temporarily transplanted to a similar elevation on the beach front immediately north of the existing ramp. Once the work is complete, the Contractor shall be responsible for replanting the relocated vegetation in its original location.

Following installation of the boat ramp, the proposed timber guide piles for the floating docks will be installed. The existing floating dock system will be reinstalled on the north side of the ramp, and the proposed floating dock system will be set into place on the south side of the ramp.

IMPROVEMENTS DREDGING

The existing mudline elevations within the proposed dredging footprint vary between about El. -3.5' and El. -8.5' NAVD 88 (El. +0.1' and El. -4.9' MLW). The proposed dredge depth for this area is El. -11.0' NAVD 88 (El. -7.4' MLW), which includes a 1-foot overdredge allowance and is similar to the design depth of the adjacent Federal Channel (El. -8.0 MLW). The subgrade of the scour protection apron at the toe of the proposed boat ramp is expected to be about El. -14.0 NAVD 88 (El. -10.4 MLW) (Sheet Nos. 8, 12, and 13).

Equipment used to complete the dredging is expected to include, but may not be limited to a barge-mounted crane with a clamshell bucket, and/or an excavator (either barge-mounted or land-based, depending on the proximity of dredging operations to the boat ramp). The dredged sediment is expected to be placed immediately into waiting dump-trucks located on the existing boat ramp, and stockpiled in the TCF (Sheet No. 8).

The TCF is expected to be comprised of a strawbale/silt sock perimeter lined with geotextile fabric designed to minimize sediment migration out of the TCF (Sheet No. 18). Similar erosion and sediment controls would also be used between the boat ramp and the TCF to mitigate runoff from the dump-trucks transporting the material.

Because the previously discussed chemical analyses indicated relatively little contamination of the subject material, it is anticipated that the runoff from the TCF would be allowed to overland flow back into the channel adjacent to the boat ramp. At this time, we are assuming that the dewatering effort will take several days to weeks to complete and that an active treatment system (i.e., frac tanks, activated carbon, etc.) will not be required to treat the runoff.

At this time, the City is proposing to utilize the dredge material from the boat ramp improvements dredging as a part of several designed landforms in Cummings Park (see RTG's preliminary SSAP, submitted to CTDEEP on August 24, 2018). The landforms are proposed as a part of the City's existing West Beach and Cummings Park Master Plan, and are expected to also be constructed using dredge material generated during a planned US Army Corps of Engineers (USACE) dredging project for the Federal Channel adjacent to the boat ramp.

As previously discussed, the dredged sediments are comprised of varying amounts of sand and silt. Accordingly, and to promote the dewatering effort and proposed reuse in Cummings Park as described above, it is anticipated that the dredge material will be composited within the TCF in order to produce a more uniformly coarse grained material. The City will import additional clean sand as necessary for mixing to reduce the fines content of the dredged material for reuse in Cummings Park.

Should the dredge material need to be relocated from the TCF after dewatering but prior to construction of the landforms due to construction phasing, it will be moved and stockpiled in one of the several existing paved parking lots in Cummings Park. Similar erosion and sediment controls would be installed around the stockpile as required to minimize sediment migration from the temporary stockpile (i.e., strawbales/silt socks, tarps, etc.).

The City's Municipal Zoning Classification for both West Beach and Cummings Park is "P-Park"; both have a groundwater classification of GA according to the Water Quality Classifications Map of Stamford, CT published in October, 2017; and the nearest surface water body is the Channel adjacent to the boat ramp, designated as SA waters. Based on this, detrimental impacts to the ground and surface water quality at the proposed TCF and designed landform locations are not anticipated.

Due to the relatively small-volume of dredge material anticipated, open-water disposal was not considered feasible at this time, as the relatively high per-cubic-yard cost to transport it to a nearby open water disposal site (i.e., Western Long Island Sound Disposal Site) was considered prohibitive. Furthermore, it is not anticipated that the dredge material requires upland disposal at a landfill facility based on the results of the chemical analyses.

In addition to the above, because the proposed dredging footprint is relatively small, adverse impacts to navigation, area sedimentation rates, water quality, and the benthic habitat within the dredge area are not anticipated. It should be noted that a portion of the existing sediments within the proposed dredging area would be removed regardless while performing the planned maintenance dredging of the adjacent Federal Channel by the USACE.

At this time, it is believed that the sedimentation on the south side of the existing ramp is occurring due to a combination of soil transport due to tidal currents within the channel and flushing of built-up coarse-grained shoreline material from in front the adjacent storm sewer outfall during flow events. As a result, the City is requesting that the CTDEEP grant a 10-year Permit Life for this project, so that the City can perform periodic maintenance dredging to remove built-up sediments located at and around the toe of the boat ramp in the future.

Similar to this project, the sediments removed during maintenance dredging will be dewatered in a TCF and transported to upland locations for beneficial use. As an alternative, the sediment may be disposed of at a landfill facility for use as daily cover. If required, the City will conduct sampling and testing of the sediments prior to each maintenance dredging event, and will notify the CTDEEP of the work prior to mobilizing. It is anticipated that the maintenance dredging will be performed with a long-arm excavator or a small barge-mounted crane and clamshell bucket every 2 to 3 years following the Improvements Dredging, as required, and is estimated to generate between 50 and 200 CY of material per event.

PARKING FACILITY IMPROVEMENTS

With respect to the parking facility improvements, a Cover Stone surface treatment for the existing dirt lot is being proposed in lieu of asphalt pavement in order to maintain the existing drainage characteristics of the area and to minimize the amount of additional impervious surface at the site (Sheet No. 9). The existing lot will be rough graded prior to installing the surface treatment, which is anticipated to be completed using grading equipment and/or excavators and dump-trucks. The proposed timber parking guides are intended to maintain the waterfront aesthetic of the site.

As previously mentioned, the existing access roadway is also expected to be widened to help minimize the potential for a vehicle to cross the double-yellow centerline of the access road while negotiating the turn into and out of the parking facility. This work will consist of demolishing and removing the existing asphalt curb and a portion of the existing island, and installing new gravel subbase, asphalt pavement, and asphalt curbing. The area of new roadway is anticipated to be approximately 600 SF.

TIMBER JETTY REPAIRS

At this time, it is anticipated that the Contractor will install a temporary Support-of-Excavation (SOE) system around the deteriorated area of the existing timber jetty in order to complete the proposed work (Sheet 17). Alternatively, the Contractor may elect to open cut this excavation in lieu of using an SOE. This work is expected to require an excavator and concrete trucks to complete. Excavated soil will be stockpiled adjacent to the excavation, and backfilled/compacted in lifts back to existing grade. If additional material is required to complete backfilling, it will be imported material of similar grain size.

PHASING, ACCESS ROUTES, EROSION AND SEDIMENT CONTROLS, AND SCHEDULE

PHASING

The construction phasing of the proposed improvements will ultimately be the responsibility of the Contractor based on its project approach, efficiency, and construction methods. However, a suggested Constructing Phasing Plan has been provided on Sheet 10.

ACCESS ROUTES

Access to the site will be made by the existing paved access road.

EROSION AND SEDIMENTATION CONTROLS

Some of the erosion and sedimentation control devices that may be required include installing silt fence/haybales around construction staging areas and the TCF to filter runoff prior to overland flow. In addition, absorbent booms/socks/pads will be deployed around equipment and machinery operating on the work barges/floats, and spill response kits will be maintained at all times on barges and on land should a hazardous spill occur. All equipment and machinery will be required to use vegetable-based hydraulic fluid for this project, and shall be inspected for leaks/spills prior to use on a daily basis.

PROJECT SCHEDULE AND DURATION

At this time, the work described above is expected to begin in late November 2019, and is expected to last approximately 7 months (including a winter shut down). The project schedule will be driven by several considerations, including but not limited to dredging within the allowable dredge window (October 1 to January 31), completing the work in time for the 2020 boating season (July 2020 assumed), and phasing the work around inclement weather during the fall and winter seasons.

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT B
Property Owner Permission

Attachment B is not required because the applicant is the owner of the property.

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT C
Request for NDDB State Listed Species Review

Connecticut Department of
ENERGY &
ENVIRONMENTAL
PROTECTION

79 Elm Street • Hartford, CT 06106-5127 www.ct.gov/deep Affirmative Action/Equal Opportunity Employer

August 27, 2018

Trevin Alpaio
RT Group Inc.
458 Grande Ave
Suite 213
New Haven, CT 06513
talpaio@rtg-eng.com

Project: Jetty Repairs, Boat Ramp Improvements, Dredging, & Beach Replenishment at West Beach in Stamford
NDDB Determination No.: 201809496

Dear Trevin Alpaio,

I have reviewed Natural Diversity Data Base (NDDB) maps and files regarding the area delineated on the map provided for the proposed Jetty Repairs, Boat Ramp Improvements, Dredging, & Beach Replenishment at West Beach in Stamford, Connecticut. I do not anticipate negative impacts to State-listed species (RCSA Sec. 26-306) resulting from your proposed activity at the site based upon the information contained within the NDDB. The result of this review does not preclude the possibility that listed species may be encountered on site and that additional action may be necessary to remain in compliance with certain state permits. This determination is good for two years. Please re-submit a new NDDB Request for Review if the scope of work changes or if work has not begun on this project by August 27, 2020.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Department of Energy and Environmental Protection's Natural History Survey and cooperating units of DEEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at (860) 424-3592, or dawn.mckay@ct.gov . Thank you for consulting the Natural Diversity Data Base.

Sincerely,

Dawn M. McKay

Dawn M. McKay
Environmental Analyst 3

Connecticut Department of
Energy & Environmental Protection
Bureau of Natural Resources
Wildlife Division

CPPU USE ONLY
App #:_____
Doc #:_____
Check #: No fee required
Program: Natural Diversity Database Endangered Species
Hardcopy _____ **Electronic** _____

Request for Natural Diversity Data Base (NDDB) State Listed Species Review

Please complete this form in accordance with the instructions (DEEP-INST-007) to ensure proper handling of your request.
There are no fees associated with NDDB Reviews.

Part I: Preliminary Screening & Request Type

Before submitting this request, you must review the most current Natural Diversity Data Base "State and Federal Listed Species and Significant Natural Communities Maps" found on the DEEP website. These maps are updated twice a year, usually in June and December.

Does your site, including all affected areas, fall in an NDDB Area according to the map instructions:

☒ Yes ☐ No **Enter the date** of the map reviewed for pre-screening: **December 2017**

This form is being submitted for a :

☒ *New* NDDB request ☐ *Renewal/Extension* of a NDDB Request, ***without*** *modifications and within* ***one year*** *of issued NDDB determination* (no attachments required) [*CPPU Use Only - NDDB-Listed Species Determination #* 1736]	☐ *New* **Safe Harbor Determination** (optional) must be associated with an application for a GP for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities ☐ *Renewal/Extension* of an existing Safe Harbor Determination ☐ With modifications ☐ Without modifications (no attachments required) [*CPPU Use Only - NDDB-Safe Harbor Determination #* 1736]
Enter NDDB Determination Number for Renewal/Extension:	Enter Safe Harbor Determination Number for Renewal/Extension:

Part II: Requester Information

If the requester is a corporation, limited liability company, limited partnership, limited liability partnership, or a statutory trust, it must be registered with the Secretary of State. If applicable, the name shall be stated **exactly as it is registered with the Secretary of State. Please note, for those entities registered with the Secretary of State, the registered name will be the name used by DEEP. This information can be accessed at the Secretary of the State's database CONCORD.* (www.concord-sots.ct.gov/CONCORD/index.jsp)

If the requester is an individual, provide the legal name (include suffix) in the following format: First Name; Middle Initial; Last Name; Suffix (Jr, Sr., II, III, etc.).

If there are any changes or corrections to your company/facility or individual mailing or billing address or contact information, please complete and submit the Request to Change company/Individual Information to the address indicated on the form.

1. Requester*

Company Name: **City of Stamford**

Contact Name: **Ms. Erin McKenna**

Address: **888 Washington Boulevard**

City/Town: **Stamford** State: **CT** Zip Code: **06901**

Business Phone: **(203) 977-4715** ext.

E-mail: **emckenna@stamford.gov

**By providing this email address you are agreeing to receive official correspondence from the department, at this electronic address, concerning this request. Please remember to check your security settings to be sure you can receive emails from "ct.gov" addresses. Also, please notify the department if your e-mail address changes

a) Requester can best be described as:

☐ Individual ☐ Federal Agency ☐ State agency ☒ Municipality ☐ Tribal

☐ *business entity (* if a business entity complete i through iii):

i) Check type ☐ corporation ☐ limited liability company ☐ limited partnership ☐ limited liability partnership ☐ statutory trust ☐ Other:

ii) Provide Secretary of the State Business ID #: This information can be accessed at the Secretary of the State's database (CONCORD). (www.concord-sots.ct.gov/CONCORD/index.jsp)

iii) ☒ Check here if your business is **NOT** registered with the Secretary of State's office.

b) Acting as (Affiliation), pick one:

☒ Property owner ☐ Consultant ☐ Engineer ☒ Facility owner ☒ Applicant

☐ Biologist ☐ Pesticide Applicator ☐ Other representative:

2. List Primary Contact to receive Natural Diversity Data Base correspondence and inquiries, if different from requester.

Company Name: **RT Group, Inc.**

Contact Person: **Mr. Trevin Alpaio** Title: **Project Engineer**

Mailing Address: **458 Grande Avenue, Suite 213**

City/Town: **New Haven** State: **CT** Zip Code: **06513**

Business Phone: **(203) 823-9932** ext.

E-mail: **talpaio@rtg-eng.com

Part III: Site Information

This request can only be completed for one site. A separate request must be filed for each additional site.

1. SITE NAME AND LOCATION

Site Name or Project Name: **West Beach - Coastal Engineering Services**

Town(s): **Stamford**

Street Address or Location Description:
West Beach at the northern extent of Wescott Cove.

Size in acres, or site dimensions: **5 acres**

Latitude and longitude of the center of the site in decimal degrees (e.g., 41.23456 -71.68574):

Latitude: **41.0039217** Longitude: **-73.522191**

Method of coordinate determination (check one):

☐ GPS ☐ Photo interpolation using CTECO map viewer ☒ Other (specify): **Google Maps**

2a. Describe the current land use and land cover of the site.

The site is a City owned beach and boat ramp.

b. Check all that apply and enter the size in acres or % of area in the space after each checked category.

☐ Industrial/Commercial _____	☐ Residential _____	☐ Forest _____
☐ Wetland _____	☐ Field/grassland _____	☐ Agricultural _____
☒ Water 75%	☐ Utility Right-of-way _____	
☐ Transportation Right-of-way _____	☒ Other (specify): **Municipal**	

Part IV: Project Information

1. PROJECT TYPE:

Choose Project Type: Dock/Pier, Seawall, Bulkhead construction/Maint. , If other describe: _____

2. Is the subject activity limited to the maintenance, repair, or improvement of an existing structure within the existing footprint? ☐ Yes ☒ No If yes, explain.

Part IV: Project Information (continued)

3. Give a detailed description of the activity which is the subject of this request and describe the methods and equipment that will be used. Include a description of steps that will be taken to minimize impacts to any known listed species.

   The proposed improvements to the existing beachfront and boat ramp are expected to include but not be limited to replacing the existing boat ramp with a new precast concrete boat ramp, including improvements dredging; installing new floating dock systems; repairing an existing timber sheet pile jetty; and performing maintance dredging related to a sand back passing plan to replenish a portion of West Beach.

   The proposed improvements are anticipated to be installed using typical construction equipment such as excavators, dump trucks, work barges, cranes, and pile driving equipment. Turbidity barriers, dewatering bags, and silt fence/hay bales will be used as required to minimize erosion and sedimentation outside of the project limits. Impacts to known listed species are not anticipated.

4. If this is a renewal or extension of an existing Safe Harbor request *with* modifications, explain what about the project has changed.

   N/A

5. Provide a contact for questions about the project details if different from Part II primary contact.

   Name: **N/A**

   Phone:

   E-mail:

Part V: Request Requirements and Associated Application Types

Check *one* box from either Group 1, Group 2 *or* Group 3, indicating the appropriate category for this request.

Group 1. If you check one of these boxes, complete Parts I – VII of this form and submit the required attachments A and B.

- ☐ Preliminary screening was negative but an NDDB review is still requested
- ☐ Request regards a municipally regulated or unregulated activity (no state permit/certificate needed)
- ☐ Request regards a preliminary site assessment or project feasibility study
- ☐ Request relates to land acquisition or protection
- ☐ Request is associated with a *renewal* of an existing permit, with no modifications

Group 2. If you check one of these boxes, complete Parts I – VII of this form and submit required attachments A, B, *and* C.

- ☒ Request is associated with a *new* state or federal permit application
- ☐ Request is associated with modification of an existing permit
- ☐ Request is associated with a permit enforcement action
- ☐ Request regards site management or planning, requiring detailed species recommendations
- ☐ Request regards a state funded project, state agency activity, or CEPA request

☐ **Group 3.** If you are requesting a **Safe Harbor Determination**, complete Parts I-VII and submit required attachments A, B, and D. Safe Harbor determinations can only be requested if you are applying for a GP for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities

If you are filing this request as part of a state or federal permit application(s) enter the application information below.

Permitting Agency and Application Name(s):
CTDEEP: Structures Dredging and Fill; USACE: CT General Permit and Individual Permit (TBD)

State DEEP Application Number(s), if known: **TBD**

State DEEP Enforcement Action Number, if known: **N/A**

State DEEP Permit Analyst(s)/Engineer(s), if known: **Ms. Sue Bailey, Mr. Jeff Caiola**

Is this request related to a previously submitted NDDB request? ☐ Yes ☒ No

If yes, provide the previous NDDB Determination Number(s), if known: _____

Part VI: Supporting Documents

Check each attachment submitted as verification that *all* applicable attachments have been supplied with this request form. Label each attachment as indicated in this part (e.g., Attachment A, etc.) and be sure to include the requester's name, site name and the date. **Please note that Attachments A and B are required for all new requests and Safe Harbor renewals/extensions with modifications.** Renewals/Extensions with no modifications do not need to submit any attachments. Attachments C and D are supplied at the end of this form.

☒ Attachment A:	**Overview Map:** an 8 1/2" X 11" print/copy of the relevant portion of a USGS Topographic Quadrangle Map clearly indicating the exact location of the site.
☒ Attachment B:	**Detailed Site Map:** fine scaled map showing site boundary and area of work details on aerial imagery with relevant landmarks labeled. (Site and work boundaries in GIS [ESRI ArcView shapefile, in NAD83, State Plane, feet] format can be substituted for detailed maps, see instruction document)
☒ Attachment C:	**Supplemental Information, Group 2 requirement (attached, DEEP-APP-007C)** ☒ Section i: Supplemental Site Information and supporting documents ☒ Section ii: Supplemental Project Information and supporting documents
☐ Attachment D:	**Safe Harbor Report Requirements, Group 3 (attached, DEEP-APP-007D)**

Part VII: Requester Certification

The requester *and* the individual(s) responsible for actually preparing the request must sign this part. A request will be considered incomplete unless all required signatures are provided.

"I have personally examined and am familiar with the information submitted in this document and all attachments thereto, and I certify that based on reasonable investigation, including my inquiry of the individuals responsible for obtaining the information, the submitted information is true, accurate and complete to the best of my knowledge and belief."

Erin McKenna	7-20-2018
Signature of Requester (a typed name will substitute for a handwritten signature)	Date
Erin McKenna	**Associate Planner, Stamford**
Name of Requester (print or type)	Title (if applicable)
	7-20-2018
Signature of Preparer (if different than above)	Date
Trevin T. Alpaio	**Project Engineer, RTG**
Name of Preparer (print or type)	Title (if applicable)

Note: Please submit the completed Request Form and all Supporting Documents to:

CENTRAL PERMIT PROCESSING UNIT
DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION
79 ELM STREET
HARTFORD, CT 06106-5127

Or email request to: **deep.nddbrequest@ct.gov**

Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4715**	Fax:	
Contact Person: **Ms. Erin McKenna**	Phone: **203-977-4715**	

ATTACHMENT A
Overview Map

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

STAMFORD QUADRANGLE
CONNECTICUT-FAIRFIELD CO.
7.5-MINUTE SERIES

Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 18T
10 000-foot ticks: Connecticut Coordinate System of 1983

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permision before entering private lands.

Imagery.....NAIP, July 2014
Roads.....HERE, ©2013 - 2014
Names.....GNIS, 2015
Hydrography.....National Hydrography Dataset, 2014
Contours.....National Elevation Dataset, 2012
Boundaries.....Multiple sources; see metadata file 1972 - 2015

UTM GRID AND 2015 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
XL
Grid Zone Designation
18T

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011. A metadata file associated with this product is draft version 0.6.18

ROAD CLASSIFICATION

Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route

ADJOINING QUADRANGLES

1 Mount Kisco
2 Pound Ridge
3 Norwalk North
4 Glenville
5 Norwalk South
6 Mamaroneck
7 Bayville
8 Lloyd Harbor

STAMFORD, CT
2015

NGAREF NO. USGSX24428417

Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4715**	Fax:	
Contact Person: **Ms. Erin McKenna**	Phone: **203-977-4715**	

ATTACHMENT B
Detailed Site Map

Refer to Figure 1 provided in Attachment C.

Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4715**	Fax:	
Contact Person: **Ms. Erin McKenna**	Phone: **203-977-4715**	

ATTACHMENT C
Supplemental Information

Attachment C: Supplemental Information, Group 2 requirement

Section i: Supplemental Site Information

1. Existing Conditions

Describe all natural and man-made features including wetlands, watercourses, fish and wildlife habitat, floodplains and any existing structures potentially affected by the subject activity. Such features should be depicted and labeled on the site plan that must be submitted. Photographs of current site conditions may be helpful to reviewers.

The proposed improvements are located within Westcott Cove / Halloween Basin and are adjacent to a natural wetlands to the North. See Figure 1 (attached) for further details.

☒ **Site Photographs (optional) attached**

☒ **Site Plan/sketch of existing conditions attached**

2. Biological Surveys

Has a biologist visited the site and conducted a biological survey to determine the presence of any endangered, threatened or special concern species ☐ Yes ☒ No

If yes, complete the following questions and submit any reports of biological surveys, documentation of the biologist's qualifications, and any NDDB survey forms.

Biologist(s) name: _____

Habitat and/or species targeted by survey: _____

Dates when surveys were conducted: _____

☐ **Reports of biological surveys attached**

☐ **Documentation of biologist's qualifications attached**

☐ **NDDB Survey forms for any listed species observations attached**

Section ii: Supplemental Project Information

1. Provide a schedule for all phases of the project including the year, the month and/or season that the proposed activity will be initiated and the duration of the activity.

   Design - 2018 (6 months +/-)
   Jetty Repairs - Late Summer 2019 (1 month +/-)
   Boat Ramp Improvements - Fall 2019 (2 months +/-)
   Dredging - 2019 Dredge Season (0.5 months +/-)

2. Describe and quantify the proposed changes to existing conditions and describe any on-site or off-site impacts. In addition, provide an annotated site plan detailing the areas of impact and proposed changes to existing conditions.

   The proposed boat ramp replacement will extend waterward approximately 30 linear feet further than the existing ramp, with the toe of the proposed ramp extending downward approximately 2 feet below the exsting ramp's toe elevation. A new floating dock system is proposed to the south of the boat ramp. The anticipated mitigation of sedimentation around the boat ramp area is expected to include the intallation of a pre-cast concrete sediment trap upstream of the existing storm water outfall, which will also help minimize the potential for sediment to be transported into the channel. Repairs to the existing timber jetty are expected to include the installation of sheet piles and concrete fill in order to address the migration of sediment through deteriorated portions

of the jetty. The City also plans to establish a sand back-passing plan based upon historically performed beach re-nourishment to address erosion/accretion occurring along West Beach waterfront. We do not anticipate any adverse environmental impacts due the proposed work.

☒ **Annotated Site Plan attached**

Photo No. 1:
Existing Timber Sheet Pile Jetty, looking Southwest, photo taken on February 9, 2018.

Photo No. 2:
Existing Timber Sheet Piles and Erosion, looking Northeast, photo taken on February 9, 2018.

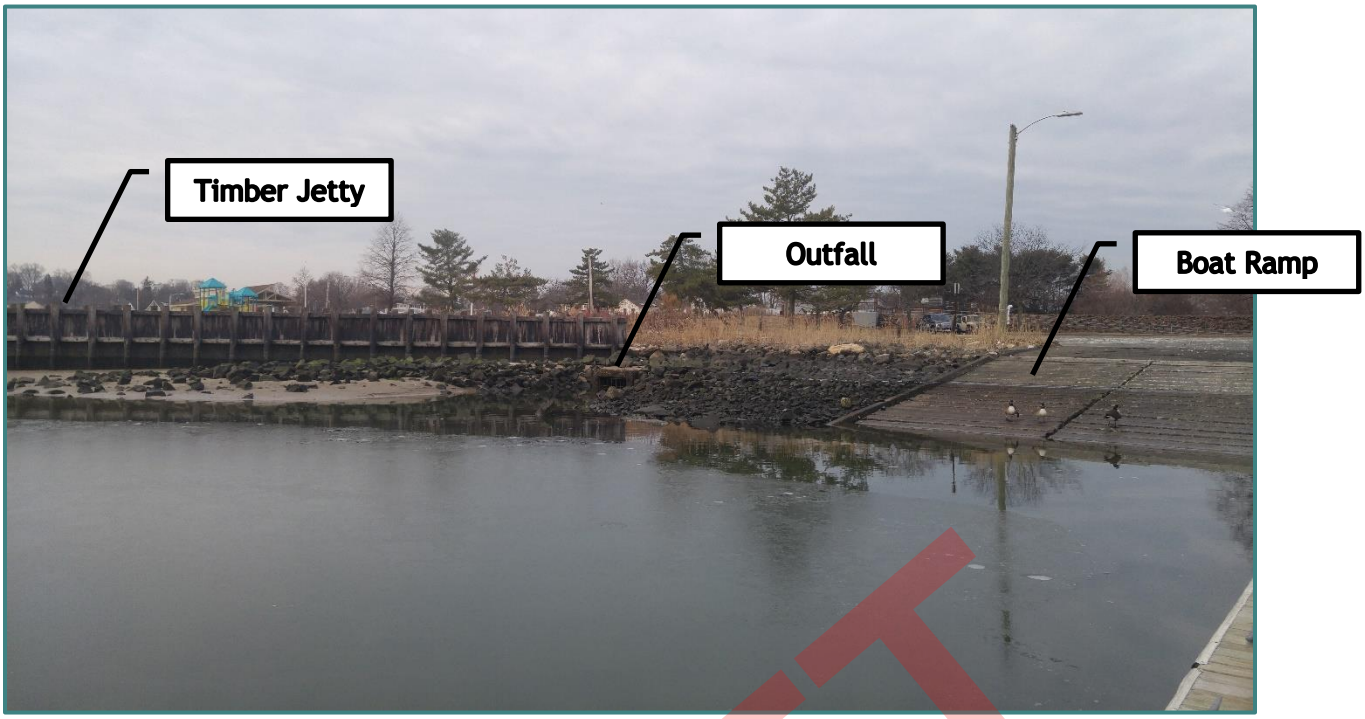


Photo No. 3:
Existing Timber Sheet Pile Jetty, Storm Water Outfall, and Boat Ramp, looking Southwest, photo taken on February 9, 2018.

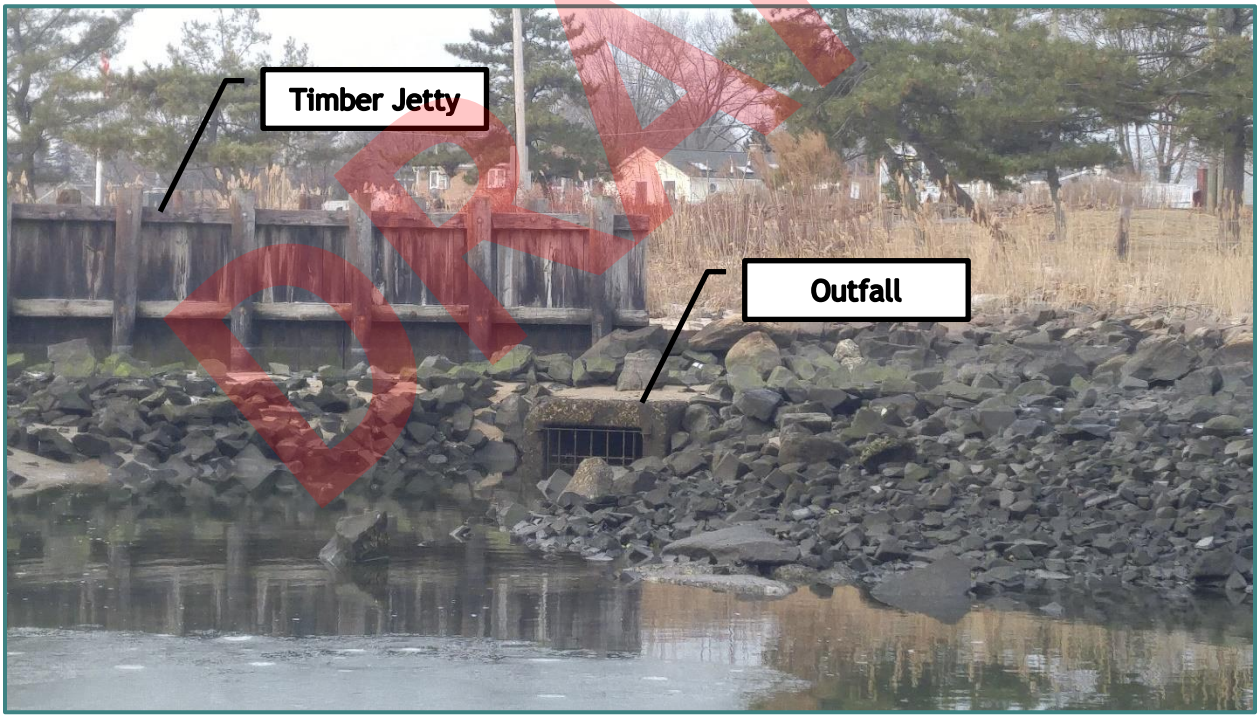


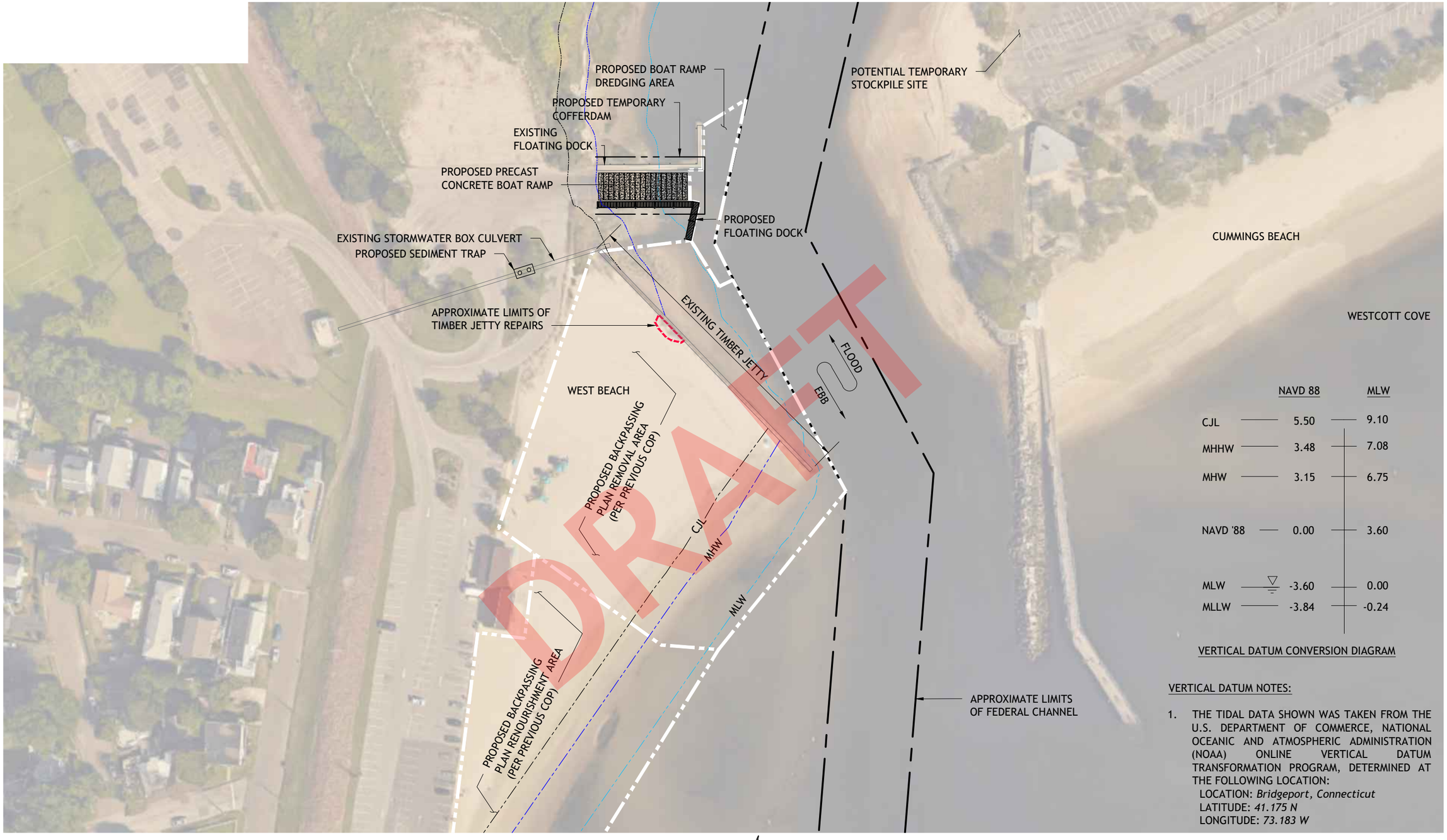
Photo No.4:
Existing Storm Water Outfall, looking Southwest, photo taken on February 9, 2018.

Photo No. 5:
Existing Boat Ramp and Floating Dock, looking Northeast, photo taken on February 9, 2018.

Photo No. 6:
Existing Boat Ramp and Floating Dock, looking East, photo taken on February 9, 2018.

Photo No. 7:
Existing Floating Dock, looking East, photo taken on February 9, 2018.

Photo No. 8:
West Beach, looking Southwest, photo taken on February 9, 2018.



	NAVD 88	MLW
CJL	5.50	9.10
MHHW	3.48	7.08
MHW	3.15	6.75
NAVD '88	0.00	3.60
MLW	-3.60	0.00
MLLW	-3.84	-0.24

VERTICAL DATUM CONVERSION DIAGRAM

VERTICAL DATUM NOTES:

1. THE TIDAL DATA SHOWN WAS TAKEN FROM THE U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) ONLINE VERTICAL DATUM TRANSFORMATION PROGRAM, DETERMINED AT THE FOLLOWING LOCATION:
   LOCATION: *Bridgeport, Connecticut*
   LATITUDE: *41.175 N*
   LONGITUDE: *73.183 W*

PLAN
SCALE: 1"=100'

Graphic Scale 1"=100'
100' 50' 0 100' 200'

RT Group, Inc.
Engineered from the Ground Up℠
458 Grand Avenue, Suite 213
New Haven, Connecticut 06513
T 203 823 9932 F 401 294 9806
DAM SAFETY · WATERFRONT · CONSTRUCTION ENGINEERING · GEOTECHNICAL
GEO-ENVIRONMENTAL · STRUCTURAL · CIVIL

WEST BEACH COASTAL ENGINEERING SERVICES

City of Stamford
Stamford, Connecticut

FIGURE 1
SITE PLAN

SHEET 1 of 1
DATE JUL 2018
PROJ No. 18103.00

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT D
Shellfish Commission Consultation Form

Connecticut Department of
Energy & Environmental Protection
Bureau of Water Protection & Land Reuse
Office of Long Island Sound Programs

ATTACHMENT D: SHELLFISH COMMISSION

DEEP PERMIT CONSULTATION FORM

You need to complete and submit this form only if your town has a Shellfish Commission.

To the applicant- Prior to the submission of your permit application to the Connecticut Department of Energy and Environmental Protection- Office of Long Island Sound Programs (DEEP-OLISP), please complete Part I and submit this form to your local shellfish commission (contact the town for the appropriate contact person) with a location map of your site and project plans. Once the commission returns the completed form to you, please submit it along with your permit application to the DEEP.

Part I: *To be completed by APPLICANT*

1. **List applicant information.**

   Name: **City of Stamford**
   Mailing Address: **888 Washington Boulevard, Engineering Bureau, 7th Floor**
   City/Town: **Stamford** State: **CT** Zip Code: **06901**
   Business Phone: **860-977-4856** ext. Fax:
   Contact Person: **Mr. Zvonko Barisic, P.E.** Title: **Staff Engineer**
   Email: **ZBarisic@stamford.gov**

2. **List engineer/surveyor/agent information.**

   Name: **RT Group Inc.**
   Mailing Address: **70 Romano Vineyard Way, Suite 134**
   City/Town: **North Kingstown** State: **RI** Zip Code: **02852**
   Business Phone: **401-438-3100** ext. Fax:
   Contact Person: **Mr. Gregory J. Coren, P.E.** Title: **Project Manager II**
   Service Provided: **Engineering Design and Permitting**

3. **Site Location:**

   Street Address or Location Description: **West Beach off of Shippan Avenue**
   City/Town: **Stamford** State: **CT** Zip Code: **06902**
   Tax Assessor's Reference: Map **134** Block **150** Lot **1A**

4. **Are plans attached?** ☒ Yes ☐ No If Yes, provide date of plans: **Sept. 2018**

5. **Provide or attach a brief, but thorough description of the project:**

   The West Beach Facility, located in Wescott Cove, is owned and operated by the City and is comprised of West Beach and a boat ramp located to the north. The Facility serves as an important recreational asset to the City and provides public access to the water and other recreational

amenities (e.g., playground, bathroom facilities, parking, picnic areas, etc.).

The existing boat ramp enables public access to local marinas and the Federal Navigable Channel connecting Westcott Cove to Long Island Sound. The boat ramp, which was reportedly rebuilt in the mid-1990's, is comprised of precast concrete planks and is serviced by an existing timber floating dock system on its north side and parking facilities to the west. The boat ramp can reportedly accommodate boats up to 25-feet in length, but is not conducive to launching during low-tide due to its current configuration.

As a part of on-going development along the Stamford waterfront, the City would like the boat ramp to be able to accommodate boats up to 35-feet in length and to be available for use throughout the normal tide cycle (i.e., including low-tide). As a result, the City is proposing to replace the existing boat ramp in its entirety with a new precast concrete boat ramp, including extending its length and installing an additional timber floating dock system on its south side. To accomplish this, improvements dredging will be required in order to install the new ramp and to provide adequate water depths for launching larger boats. Improvements will also be made to the parking area that services the boat ramp to accommodate larger boats.

Other repairs that are expected to be implemented under this project, but are anticipated to be permitted under a CTDEEP Certificate of Permission include addressing deterioration and erosion observed along the existing timber jetty adjacent to West Beach.

The work detailed above is expected to occur in late 2019/early 2020.

Part II: *To be completed by SHELLFISH COMMISSION*

This consultation form is required to be submitted as part of an application for a Structures, Dredging & Fill permit (section 22a-361 of the Connecticut General Statutes (CGS)) and/or Tidal Wetlands permit (CGS section 22a-32) to the DEEP-OLISP. The application has not yet been submitted to the DEEP. Please review the enclosed materials and determine whether the project will adversely impact shellfish beds. You may also provide comments or recommendations regarding the proposal. Should you have any questions regarding this process, please call DEEP-OLISP at (860) 424-3034 to speak with the analyst assigned to the town in which the work is proposed. **Please return the completed form to the applicant.**

SHELLFISH COMMISSION DETERMINATION:

Project located on (check one): ☐ natural bed ☐ state bed ☐ local bed ☒ none
☐ other, please specify:

If project is located upon a franchised or leased shellfish bed, please provide the owner or lessee's contact information below.

Check one of the following:

☐ I have determined that the work described in Part I of this form and attachments **WILL NOT** adversely impact a shellfish area.

☐ I have determined that the work described in Part I of this form and attachments **WILL** adversely impact a shellfish area. A summary of the Shellfish Commission's project-specific concerns/comments is described below or attached.

COMMENTS/RECOMMENDATIONS (check the box if attached: ☒):

Signature of Commission Representative

12/27/18
Date

Dr. Damian Ortelli
Print Name of Commission Representative

Chairman
Title

CITY OF STAMFORD, CONNECTICUT
HARBOR MANAGEMENT COMMISSION

December 27, 2018

Mr. Zvonko Barisic, P.E.
City of Stamford Engineering Bureau
888 Washington Boulevard
Stamford, Connecticut 06901

Subject: **Plans submitted to the Shellfish Commission concerning proposed work on the West Beach Boat Ramp in Cummings Park in the Stamford Harbor Management Area.**

Dear Mr. Barisic:

The Stamford Harbor Management Commission (SHMC), pursuant to an executive action by Mayor David Martin, is charged with the powers and duties of the municipal shellfish commission of the City of Stamford. In this regard, the SHMC is developing policies and procedures for managing Stamford's shellfish resources, including shellfish populations and the habitat necessary to grow and sustain those populations.

Among the SHMC's responsibilities as the Stamford Shellfish Commission is the review of applications for dredging, dock construction, and other activities subject to approval by the Connecticut Department of Energy and Environmental Protection's Land and Water Resources Division (DEEP LWRD). The purpose of that review is to consider the potential impacts of those activities on shellfish resources and shellfish harvesting opportunities.

In accordance with the coastal permitting process and requirements of the DEEP LWRD, the City of Stamford (the Applicant), has submitted plans to the SHMC concerning proposed work to improve the city-owned and -operated West Beach boat launching area. Those plans, submitted for harbor management review and dated September 2018, concern replacement of the existing boat ramp in its entirety, dredging, and other improvements to enable launching of vessels up to 35 feet in length during all stages of the normal tide.

Following a preliminary review of the submitted plans, the SHMC expressed no harbor management objection to their inclusion in an application to the DEEP LWRD and we reserved our right to make a final evaluation of them at such time as the DEEP LWRD may issue a public notice or the plans are subject to a public hearing. Our comments in this regard are included in my letter of December 27, 2018 to you.

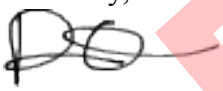
In addition, also in accordance with the coastal permitting process and requirements of the DEEP LWRD, the Applicant has submitted its plans for municipal shellfish commission review. Insofar as the SHMC is aware at this time of no apparent impacts of the proposed activity on shellfish resources or shellfishing opportunities, the SHMC, acting in its capacity as the Stamford Shellfish Commission, has no objection to the Applicant's plans being included in an application for a DEEP LWRD permit. We reserve our right, however, to review potential shellfish impacts with input from the Connecticut Bureau of Aquaculture at such time as a public notice may be issued by the DEEP LWRD or the proposal is the subject of a public hearing.

Please be advised that the SHMC reserves its right to continue to review the Applicant's proposal and provide additional comments at such time as the proposal may be modified or be the subject of another application or additional information is provided.

In addition, at such time as the project plans reviewed by the SHMC may be included in an application submitted to the DEEP LWRD, please provide a copy of that application to the SHMC.

If you have any questions or require any additional information, please contact me at (315) 651-0070 or dortelli@stamfordct.gov.

Sincerely,



Dr. Damian Ortelli
Chairman, Stamford Harbor Management Commission

cc:
Mr. Jeff Caiola, DEEP LWRD
Mr. David Carey, CT Bureau of Aquaculture
Mr. Greg Coren, P.E., RT Group, Inc.
Mr. Frank Fedeli, Stamford Office of Operations
Mr. Robert Karp, Chairman, SHMC Application Review Committee
Ms. Erin McKenna, Stamford Land Use Bureau
Ms. Diane Ray, U.S. Army Corps of Engineers
Mr. Jeff Saunders, Chairman, SHMC Shellfish Committee

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT E
Harbor Management Commission Consultation Form

Connecticut Department of
Energy & Environmental Protection
Bureau of Water Protection & Land Reuse
Office of Long Island Sound Programs

ATTACHMENT E: HARBOR MANAGEMENT COMMISSION DEEP PERMIT CONSULTATION FORM

You need to complete and submit this form only if your town has a Harbor Management Commission.

To the applicant- Prior to the submission of your permit application to the Connecticut Department of Energy and Environmental Protection- Office of Long Island Sound Programs (DEEP- OLISP), please complete Part I and submit this form to your local harbor management commission (contact the town for the appropriate contact person) with a location map of your site and project plans. Once the commission returns the completed form to you, please submit it along with your permit application to the DEEP.

Part I: *To be completed by APPLICANT*

1. **List applicant information.**

   Name: **City of Stamford**
   Mailing Address: **888 Washington Boulevard, Engineering Bureau, 7th Floor**
   City/Town: **Stamford** State: **CT** Zip Code: **06901**
   Business Phone: **860-977-4856** ext. Fax:
   Contact Person: **Mr. Zvonko Barisic, P.E.** Title: **Staff Engineer**
   E-mail: **ZBarisic@stamford.gov**

2. **List engineer/surveyor/agent information.**

   Name: **RT Group, Inc.**
   Mailing Address: **70 Romano Vineyard Way, Suite 134**
   City/Town: **North Kingstown** State: **RI** Zip Code: **02852**
   Business Phone: **401-438-3100** ext. Fax: **401-294-9806**
   Contact Person: **Mr. Gregory J. Coren, P.E.** Title: **Project Manager II**
   Service Provided: **Engineering Design and Permitting**

3. **Site Location:**

   Street Address or Location Description: **West Beach off of Shippan Avenue**

   City/Town: **Stamford** State: **CT** Zip Code: **06902**

   Tax Assessor's Reference: Map **134** Block **150** Lot **1A**

4. **Are plans attached?** ☒ Yes ☐ No If Yes, provide date of plans: **Sept. 2018**

5. **Provide or attach a brief, but thorough description of the project:**

   The West Beach Facility, located in Wescott Cove, is owned and operated by the City and is comprised of West Beach and a boat ramp located to the north. The Facility serves as an important recreational asset to the City and provides public access to the water and other recreational

amenities (e.g., playground, bathroom facilities, parking, picnic areas, etc.).

The existing boat ramp enables public access to local marinas and the Federal Navigable Channel connecting Westcott Cove to Long Island Sound. The boat ramp, which was reportedly rebuilt in the mid-1990's, is comprised of precast concrete planks and is serviced by an existing timber floating dock system on its north side and parking facilities to the west. The boat ramp can reportedly accommodate boats up to 25-feet in length, but is not conducive to launching during low-tide due to its current configuration.

As a part of on-going development along the Stamford waterfront, the City would like the boat ramp to be able to accommodate boats up to 35-feet in length and to be available for use throughout the normal tide cycle (i.e., including low-tide). As a result, the City is proposing to replace the existing boat ramp in its entirety with a new precast concrete boat ramp, including extending its length and installing an additional timber floating dock system on its south side. To accomplish this, improvements dredging will be required in order to install the new ramp and to provide adequate water depths for launching larger boats. Improvements will also be made to the parking area that services the boat ramp to accommodate larger boats.

Other repairs that are expected to be implemented under this project, but are anticipated to be permitted under a CTDEEP Certificate of Permission include addressing deterioration and erosion observed along the existing timber jetty adjacent to West Beach.

The work detailed above is expected to occur in late 2019/early 2020.

Part II: *To be completed by HARBOR MANAGEMENT COMMISSION*

This consultation form is required to be submitted as part of an application for a Structures, Dredging & Fill permit (section 22a-361 of the Connecticut General Statutes (CGS)) and/or Tidal Wetlands permit (CGS section 22a-32) to the DEEP- OLISP. The application has not yet been submitted to the DEEP. Please review the enclosed materials and determine whether the project is consistent or inconsistent with your local Harbor Management Plan. You may also provide comments or recommendations regarding the proposal. The Harbor Management Commission may still provide written comments to the Commissioner during the Department's public notice comment period. Should you have any questions regarding this process, please call DEEP-OLISP at (860) 424-3034 to speak with the analyst assigned to the town in which the work is proposed. **Please return the completed form to the applicant.**

HARBOR MANAGEMENT COMMISSION DETERMINATION:

Check one of the following:

☐ The Commission has determined that the work as described in Part I of this form and attachments is **CONSISTENT** with the harbor management plan.

☐ The Commission has determined that the work as described in Part I of this form and attachments is **INCONSISTENT** with the following section of the harbor management plan:

COMMENTS/RECOMMENDATIONS (or check here if attached: ☒):

Signature of Commission Representative	Date
	12/27/18
Dr. Damian Ortelli	Chairman
Print Name of Commission Representative	Title

CITY OF STAMFORD, CONNECTICUT
HARBOR MANAGEMENT COMMISSION

December 27, 2018

Mr. Zvonko Barisic, P.E.,
City of Stamford Engineering Bureau
888 Washington Boulevard
Stamford, Connecticut 06901

Subject: **Plans submitted to the Harbor Management Commission concerning proposed work on the West Beach Boat Ramp in Cummings Park in the Stamford Harbor Management Area.**

Dear Mr. Barisic:

The Stamford Harbor Management Commission (SHMC) has reviewed plans submitted by the City of Stamford (the Applicant), 888 Washington Boulevard, concerning proposed work to improve the city-owned and -operated West Beach boat launching area. The plans, dated September 2018, concern replacing the existing boat ramp in its entirety, installing an additional timber floating dock system, dredging, and constructing other improvements to enable launching of vessels up to 35 feet in length during all stages of the normal tide.

In accordance with the coastal permitting process and requirements of the Connecticut Department of Energy and Environmental Protection's Land and Water Resources Division (DEEP LWRD), the Applicant's plans were submitted to the SHMC for review. Our review was conducted for the purpose of considering the consistency of the plans with the Stamford Harbor Management Plan.

During its meeting on October 16, 2018, the SHMC discussed this matter and approved a motion to inform the Applicant and DEEP LWRD that the SHMC has: a) conducted a preliminary review of the Applicant's plans and has no objection to their inclusion in an application submitted to the DEEP LWRD; and b) reserves its right to make a final determination of the proposal's consistency with the Harbor Management Plan at such time as a public notice may be issued by the DEEP LWRD or the proposal is the subject of a public hearing.

In addition, the SHMC herewith transmits the following comments regarding the Applicant's proposal.

Comments:

1. The Harbor Management Plan calls for Cummings Park, including the West Beach area, to be managed and maintained as a focal point and central facility for public water access activities on the Stamford shoreline. The Plan encourages and supports continued use and enhancement of the West Beach boat launching area to enable safe and enjoyable access to Westcott Cove and the Stamford Harbor Management Area (SHMA) for recreational boating and emergency services purposes. The Plan also supports maintenance dredging to maintain the viability of water-dependent uses of the SHMA, including the city's public boating facilities.

2. The SHMC understands that dredged material disposal will occur in the most environmentally suitable manner based on the results of the Applicant's sampling and testing of marine sediments.

3. The SHMC understands that the city's Storm Water Management Department has reviewed the Applicant's plans and is of the opinion that the existing municipal storm drain nearby the project site does not appear to be a significant source of sediment into the area proposed to be dredged.

Please be advised that the SHMC reserves its right to continue to review the Applicant's proposal and provide additional comments at such time as the proposal may be modified or be the subject of another application or additional information is provided.

In addition, at such time as the project plans reviewed by the SHMC may be included in an application submitted to the DEEP LWRD, please provide a copy of that application to the SHMC.

If you have any questions or require any additional information, please contact me at (315) 651-0070 or dortelli@stamfordct.gov.

Sincerely,

Dr. Damian Ortelli
Chairman, Stamford Harbor Management Commission

cc:
Mr. Jeff Caiola, DEEP LWRD
Mr. Greg Coren, P.E., RT Group, Inc.
Mr. Frank Fedeli, Stamford Office of Operations

Mr. Robert Karp, Chairman, SHMC Application Review Committee
Ms. Erin McKenna, Stamford Land Use Bureau
Ms. Diane Ray, U.S. Army Corps of Engineers
Mr. Tyler Theder, Stamford Storm Water Management Department

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT F
Department of Agriculture/Bureau of Aquaculture Consultation Form

Connecticut Department of
Energy & Environmental Protection
Bureau of Water Protection & Land Reuse
Office of Long Island Sound Programs

ATTACHMENT F: DEPARTMENT OF AGRICULTURE / BUREAU OF AQUACULTURE

DEEP PERMIT CONSULTATION FORM

You need to complete and submit this form only if the subject site is located along the coastal area or in the municipalities as follows: south of Lyme or Essex on the Connecticut River; south of Orange and Derby/Ansonia on the Housatonic River; south of Norwich and Preston on the Thames River; or Lyme, Essex, Orange, Derby/Ansonia, Norwich or Preston and the activity includes dredging.

To the applicant- Prior to the submission of your permit application to the Connecticut Department of Energy and Environmental Protection- Office of Long Island Sound Programs (DEEP-OLISP), please complete Part I and submit this form to the Department of Agriculture, Bureau of Aquaculture ("DOA/BOA") (P.O. Box 97, Milford, CT 06460 or by facsimile at 203-783-9976) with a location map of your site and project plans. Once the DOA/BOA returns the completed form to you, please submit it along with your permit application to the DEEP.

Part I: *To be completed by APPLICANT*

1. List applicant information.

Name: **City of Stamford**
Mailing Address: **888 Washington Boulevard**
City/Town: **Stamford** State: **CT** Zip Code: **06901**
Business Phone: **(203) 977-4715** ext. Fax:
Contact Person: **Mr. Zvonko Barisic, P.E.** Title: **Staff Engineer**
E-mail: **ZBarisic@stamford.gov**

2. List engineer/surveyor/agent information.

Name: **RT Group, Inc.**
Mailing Address: **70 Romano Vineyard Way, Suite 134**
City/Town: **North Kingstown** State: **RI** Zip Code: **02852**
Business Phone: **(401) 438-3100** ext. Fax: **(401) 294-9806**
Contact Person: **Mr. Gregory J. Coren** Title: **Project Manager II**
E-mail: **gcoren@rtg-eng.com**
Service Provided: **Engineering, Design, and Permitting**

3. Site Location:

Street Address or Location Description: **West Beach off of Shippan Avenue**
City/Town: **Stamford** State: **CT** Zip Code: **06902**
Tax Assessor's Reference: Map **134** Block **150** Lot **1A**

4. Are plans attached? ☒ Yes ☐ No If Yes, provide date of plans: **Sept. 2018**

Part I: *To be completed by APPLICANT (continued)*

5. Provide or attach a brief, but thorough description of the project.

The West Beach Facility, located in Wescott Cove, is owned and operated by the City and is comprised of West Beach and a boat ramp located to the north. The Facility serves as an important recreational asset to the City and provides public access to the water and other recreational amenities (e.g., playground, bathroom facilities, parking, picnic areas, etc.).

The existing boat ramp enables public access to local marinas and the Federal Navigable Channel connecting Westcott Cove to Long Island Sound. The boat ramp, which was reportedly rebuilt in the mid-1990's, is comprised of precast concrete planks and is serviced by an existing timber floating dock system on its north side and parking facilities to the west. The boat ramp can reportedly accommodate boats up to 25-feet in length, but is not conducive to launching during low-tide due to its current configuration.

As a part of on-going development along the Stamford waterfront, the City would like the boat ramp to be able to accommodate boats up to 35-feet in length and to be available for use throughout the normal tide cycle (i.e., including low-tide). As a result, the City is proposing to replace the existing boat ramp in its entirety with a new precast concrete boat ramp, including extending its length and installing an additional timber floating dock system on its south side. To accomplish this, improvements dredging will be required in order to install the new ramp and to provide adequate water depths for launching larger boats. Improvements will also be made to the parking area that services the boat ramp to accommodate larger boats.

Other repairs that are expected to be implemented under this project include addressing deterioration and erosion observed along the existing timber jetty adjacent to West Beach.

The work detailed above is expected to occur in late 2019/early 2020.

Part II: *To be completed by DEPARTMENT OF AGRICULTURE / BUREAU OF AQUACULTURE*

This consultation form is required to be submitted as part of an application for a Structures, Dredging & Fill permit (section 22a-361 of the Connecticut General Statutes (CGS)) and/or Tidal Wetlands permit (CGS section 22a-32) to the DEEP- OLISP. The application has not yet been submitted to the DEEP. Please review the enclosed materials and determine whether the project will significantly impact shellfish beds. You may also provide comments or recommendations regarding the proposal. Should you have any questions regarding this process, please call DEEP-OLISP at (860) 424-3034 to speak with the analyst assigned to the town in which the work is proposed. **Please return the completed form to the applicant.**

Section 22a-361(b) of the Connecticut General Statutes requires that the Commissioner of the DEEP shall hold a public hearing on permit applications submitted pursuant to CGS section 22a-361 provided that a petition requesting such hearing signed by 25 or more persons is received **and** if the project will significantly impact any shellfish area, as determined by the Director of the Bureau of Aquaculture at the Department of Agriculture.

DEPARTMENT OF AGRICULTURE/ BUREAU OF AQUACULTURE DETERMINATION:

Project located on (check one): ☐ natural bed ☐ state bed ☐ local bed ☐ none
☐ other, please specify:

If project is located upon a franchised or leased shellfish bed, please provide the owner or lessee's contact information below.

Check one of the following:

☐ I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any shellfish area.

☐ I have determined that the work described in Part I of this form and attachments **WILL** significantly impact any shellfish area and that a public hearing must be held if the DEEP issues a public notice for the project as currently designed and a qualified petition is received.

COMMENTS/RECOMMENDATIONS (or check here if attached: ☐):	
Signature of Commission Representative	Date
Print Name of Commission Representative	Title

Part II: ***To be completed by DEPARTMENT OF AGRICULTURE/ BUREAU OF AQUACULTURE***

This consultation form is required to be submitted as part of an application for a Structures, Dredging & Fill perm (section 22a-361 CGS) and/or Tidal Wetlands permit (section 22a-32 CGS) to the DEP- OLISP. The application has not yet been submitted to the DEP. Please review the enclosed materials and determine whether the project will significantly impact shellfish beds. You may also provide comments or recommendations regarding the proposal. Should you have any questions regarding this process, please call DEP-OLISP at (860) 424-3034 to speak with the analyst assigned to the town in which the work is proposed. **Please return the completed form to the applicant.**

Section 22a-361(b) CGS requires that the Commissioner of the DEP shall hold a public hearing on permit applications submitted pursuant to section 22a-361 CGS provided that a petition requesting such hearing signed by 25 or more persons is received **and** if the project will significantly impact any shellfish area, as determined by the Director of the Bureau of Aquaculture at the Department of Agriculture.

DEPARTMENT OF AGRICULTURE/ BUREAU OF AQUACULTURE DETERMINATION:

Project located on (check one): ☐ natural bed ☐ state bed ☐ local bed ☒ none
☐ other, please specify:

If project is located upon a franchised or leased shellfish bed, please provide the owner or lessee's contact information below.

Check one of the following:

☒ I have determined that the work described in Part I of this form and attachments **WILL NOT** significantly impact any shellfish area.

☐ I have determined that the work described in Part I of this form and attachments **WILL** significantly impact any shellfish area and that a public hearing must be held if the DEP issues a public notice for the project as currently designed and a qualified petition is received.

COMMENTS/RECOMMENDATIONS (or check here if attached: ☐):

Town code of Project Location: Stamford City of Stamford
Address of Project : West Beach off Shippan Avenue, CT
Analyst Reviewing Project and Date: DHC 12/26/18

The following permit conditions are recommended to minimize impacts: The project is located within the Branford River which has natural populations of oysters.

__ NO Conditions Recommended

___Standard Condition to restrict work between June 1-Sept. 30 , inclusive, for dredging or excavation projects.

X -- No in water work during oyster spawning July 1 to August 30th.

David A Carey

Signature of Commission Representative

12/26/18

Date

Print Name of Commission Representative

Aquaculture Analyst

Title

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT G
Conservation or Preservation Restriction Information

Attachment G is not required because the property is not subject to conservation or preservation restrictions.

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT H
Applicant Compliance Information Form

Connecticut Department of
Energy & Environmental Protection

Applicant Compliance Information

DEEP ONLY
App. No. _____
Co./Ind. No. _____

Applicant Name: City of Stamford

Mailing Address: **888 Washington Boulevard**

City/Town: **Stamford** State: **CT** Zip Code: **06901**

Business Phone: **860-977-4856** ext.:

Contact Person: **Mr. Zvonko Barisic, P.E.** Phone: ext.

*E-mail: **ZBarisic@stamfordct.gov**

If you answer *yes* to any of the questions below, you must complete the Table of Enforcement Actions on the reverse side of this sheet as directed in the instructions for your permit application.

A. During the five years immediately preceding submission of this application, has the applicant been convicted in any jurisdiction of a criminal violation of any environmental law?

☐ Yes ☒ No

B. During the five years immediately preceding submission of this application, has a civil penalty been imposed upon the applicant in any state, including Connecticut, or federal judicial proceeding for any violation of an environmental law?

☐ Yes ☒ No

C. During the five years immediately preceding submission of this application, has a civil penalty exceeding five thousand dollars been imposed on the applicant in any state, including Connecticut, or federal administrative proceeding for any violation of an environmental law?

☐ Yes ☒ No

D. During the five years immediately preceding submission of this application, has any state, including Connecticut, or federal court issued any order or entered any judgement to the applicant concerning a violation of any environmental law?

☐ Yes ☒ No

E. During the five years immediately preceding submission of this application, has any state, including Connecticut, or federal administrative agency issued any order to the applicant concerning a violation of any environmental law?

☐ Yes ☒ No

Table of Enforcement Actions

(1) Type of Action	(2a) Date Commenced	(2b) Date Terminated	(3) Jurisdiction	(4) Case/Docket/ Order No.	(5) Description of Violation

☐ Check the box if additional sheets are attached. Copies of this form may be duplicated for additional space.

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

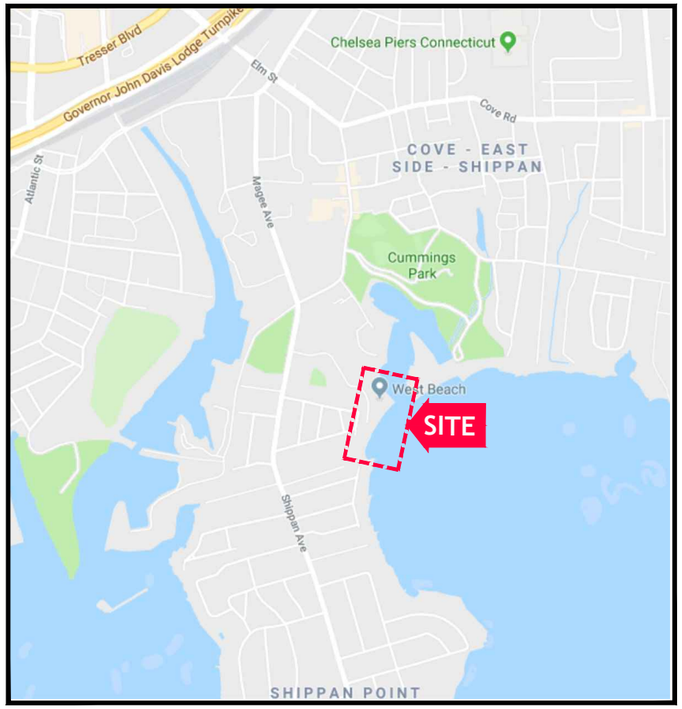
ATTACHMENT I
Project Plans

BOAT RAMP REPLACEMENT PROJECT

WEST BEACH

CITY OF STAMFORD

STAMFORD, CONNECTICUT



SITE VICINITY MAP

INDEX OF DRAWINGS

CATEGORY	SHEET	DRAWING	TITLE
GENERAL	1	G-01	TITLE, INDEX OF DRAWINGS, LOCATION AND VICINITY MAPS
	2	G-02	LEGEND AND ABBREVIATIONS
	3	G-03	GENERAL NOTES
CIVIL	4	C-01	EXISTING CONDITIONS PLAN
	4A	C-01A	EXISTING WETLANDS AND SAV SURVEY PLAN
	5	C-02	IMPROVEMENTS PLAN
	6	C-03	DEMOLITION AND REMOVAL PLAN
	7	C-04	BOAT RAMP PLAN
	8	C-05	IMPROVEMENTS DREDGING PLAN
	9	C-06	PARKING LOT IMPROVEMENTS PLAN
SECTIONS AND DETAILS	10	C-07	SUGGESTED PHASING PLAN
	11	D-01	ROAD WIDENING PLAN AND SECTION
	12	D-02	BOAT RAMP SECTION AND PROFILE
	13	D-03	IMPROVEMENTS DREDGING SECTIONS
	14	D-04	BOAT RAMP DETAILS
	15	D-05	FLOATING DOCK SECTIONS AND DETAILS - 1
	16	D-06	FLOATING DOCK SECTIONS AND DETAILS - 2
	17	D-07	JETTY REPAIRS PLAN AND SECTION
	18	D-08	EROSION AND SEDIMENTATION CONTROL DETAILS
	19	D-09	MISCELLANEOUS DETAILS - 1
	20	D-10	MISCELLANEOUS DETAILS - 2

SITE LOCATION MAP

PERMIT SUBMISSION
NOT FOR CONSTRUCTION
THIS DRAWING IS HALF SIZE

RT Group, Inc.
Engineered from the Ground Up℠
458 Grand Avenue, Suite 213
New Haven, Connecticut 06513
T 203 823 9932 F 401 294 9806
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GEO-ENVIRONMENTAL · STRUCTURAL · CIVIL

DSGN	JBR
DR	DBH
CHK	GJC
APVD	JBR

No.	DATE	REVISIONS	BY	APVD

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

TITLE, INDEX OF DRAWINGS, LOCATION AND VICINITY MAPS

SHEET	1 OF 20
DWG No.	G-01
DATE	JAN 2019
PROJ No.	18103.00

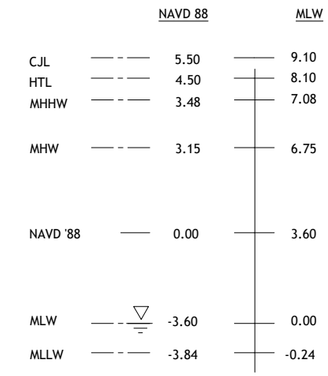
CIVIL LEGEND

EXISTING	PROPOSED	
0+50		BASELINE
		SURVEY CONTROL POINT
		MHW
		MLW
		HTL
		CTDEEP CJL
4	6	CONTOUR LINES
		EDGE OF PAVEMENT / CURBING
		MARKER ROPE
		STRAW BALES / SILT SOCK
		DREDGE BOUNDARY
		FEMA FLOOD ZONE BOUNDARY
x 6.18	X 4.5	SPOT GRADE ELEVATION
		DEMOLITION AND REMOVAL LIMITS
		RIPRAP
		RETAINING WALL
MH		MAN HOLE
HH		HAND HOLE
		PRECAST CONCRETE BOAT RAMP PLANK
		FLOATING DOCK
		TURBIDITY BARRIER
		TEMPORARY EARTH RETAINING SYSTEM/COFFERDAM
		BUILDING
		VEGETATION
	P	DEWATERING PUMP
		DEWATERING BAG
		TIMBER PILE
		ASPHALT
		TREE
		ROW OF BOULDERS
		SAWCUT
		ROCK OUTCROP
		FEDERAL CHANNEL
		STORM SEWER

EXISTING	PROPOSED	
RTG-SB-01		SOIL BORINGS PERFORMED BY NEW ENGLAND BORING FOR RTG (DECEMBER 18-19, 2018)
RTG-S-01		VIBROCORE SAMPLES PERFORMED BY ANDREW CAVANAGH MARINE FOR RTG (DECEMBER 17, 2018)
RTG-S-01		GRAB SAMPLE PERFORMED BY RTG (DECEMBER 17, 2018)

ABBREVIATIONS

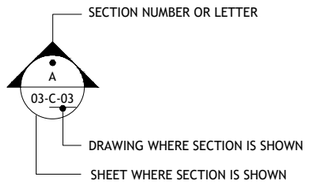
AC	ACRES
APPROX.	APPROXIMATE
BLDG.	BUILDING
CI	CAST IRON
CIP	CAST IN PLACE
C.J.	CONSTRUCTION JOINT
CJL	CT DEEP COASTAL JURISDICTION LINE
CONC.	CONCRETE
DIA.	DIAMETER
EL.	ELEVATION
E.J.	EXPANSION JOINT
E.O.P.	EDGE OF PAVEMENT
EPC	EPOXY COATED
EXIST	EXISTING
FT	FEET
F&I	FURNISH AND INSTALL
HDPE	HIGH DENSITY POLYETHYLENE
HORIZ	HORIZONTAL
LF	LINEAR FEET
LINE.	LINER
MAX.	MAXIMUM
MIN.	MINIMUM
MHW	MEAN HIGH WATER
MHHW	MEAN HIGHER HIGH WATER
MLW	MEAN LOW WATER
MLLW	MEAN LOWER LOW WATER
NAD 83	NORTH AMERICAN DATUM OF 1983
NAVD 88	NORTH AMERICAN VERTICAL DATUM OF 1988
NGVD 29	NATIONAL GEODETIC VERTICAL DATUM OF 1929
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
O.C.	ON CENTER
O.C.E.W.	ON CENTER EACH WAY
P&M	PROTECT AND MAINTAIN
PL	PROPERTY LINE
PVC	POLYVINYL CHLORIDE
REQ'D	REQUIRED
ROW	RIGHT OF WAY
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND REINSTALL
R&S	REMOVE AND STOCKPILE
SHL	STATE HIGHWAY LINE
SOE	SUPPORT OF EXCAVATION
S&T	SHRINKAGE AND TEMPERATURE
TBD	TO BE DETERMINED
TEMP.	TEMPORARY
TRAP.	TRAPEZOIDAL
TYP.	TYPICAL
UK	UNKNOWN
VERT	VERTICAL



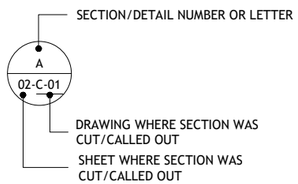
VERTICAL DATUM CONVERSION DIAGRAM

VERTICAL DATUM NOTES:

1. THE TIDAL DATA SHOWN WAS TAKEN FROM THE U.S. DEPARTMENT OF COMMERCE, NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA) ONLINE VERTICAL DATUM TRANSFORMATION PROGRAM, DETERMINED AT THE FOLLOWING LOCATION:
   LOCATION: *Bridgeport, Connecticut*
   LATITUDE: *41.175 N*
   LONGITUDE: *73.183 W*



SECTION / DETAIL



DETAIL AND SECTION DESIGNATION

RTG CONTROL POINT DATA				
POINT NO.	NORTHING	EASTING	ELEVATION (NAVD88)	DESCRIPTION
RTG-PK-01	786775.2571	575876.5101	8.0780	PK NAIL SET IN ASPHALT
RTG-PK-02	786834.9936	575918.3028	6.8700	PK NAIL SET IN ASPHALT
RTG-PK-03	786875.6760	575975.1370	6.4170	PK NAIL SET IN ASPHALT
RTG-PK-04	786724.9344	575953.5762	8.7740	PK NAIL SET IN ASPHALT
RTG-PK-05	786777.9400	575448.1776	9.5320	PK NAIL SET IN ASPHALT
RTG-PK-06	786797.8436	575591.8181	9.9170	PK NAIL SET IN ASPHALT

PERMIT SUBMISSION
NOT FOR CONSTRUCTION
THIS DRAWING IS HALF SIZE

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New Haven, Connecticut 06513
T 203 823 9932 F 401 294 9806
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GEO-ENVIRONMENTAL · STRUCTURAL · CIVIL

DSGN	JBR
DR	DBH
CHK	GJC
APVD	JBR

No.	DATE		BY	APVD

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY

BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

LEGEND AND ABBREVIATIONS

SHEET	2 OF 20
DWG No.	G-02
DATE	JAN 2019
PROJ No.	18103.00

GENERAL NOTES:

1. THE UTILITY LOCATIONS SHOWN ON THESE DRAWINGS ARE CONSIDERED APPROXIMATE AND WERE OBTAINED FROM THE BEST INFORMATION AVAILABLE. THE ACTUAL LOCATION OF UTILITIES MAY VARY FROM THAT SHOWN AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATIONS OF ALL UTILITIES, GRADES, AND DIMENSIONS PRIOR TO STARTING WORK.

2. THE TOPOGRAPHIC AND BATHYMETRIC INFORMATION SHOWN ON THESE DRAWINGS IS BASED ON SITE SURVEYS COMPLETED BY RT GROUP, INC. (RTG) ON JULY 5, 2018, JULY 19, 2018, AND AUGUST 10, 2018. A PROPERTY LINE SURVEY WAS NOT PERFORMED BY RTG.

3. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT "CALL BEFORE YOU DIG" (1-888-922-4455) A MINIMUM OF THREE (3) BUSINESS DAYS BEFORE COMMENCING WITH ANY EXCAVATION/GRADING, IN ORDER THAT ALL AFFECTED UTILITY COMPANIES ARE NOTIFIED PRIOR TO STARING WORK.

4. CONSTRUCTION LIMITS COINCIDE WITHIN PROPERTY LINE LIMITS AS SHOWN ON THE DRAWINGS.

5. THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY DURING THE PERFORMANCE OF THE WORK. SAFETY PROVISIONS SHALL COMPLY WITH OSHA AND OTHER APPLICABLE FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS. THESE REQUIREMENTS SHALL APPLY CONTINUOUSLY AND SHALL NOT BE LIMITED TO NORMAL WORKING HOURS.

6. STANDARD SPECIFICATIONS, WHEN REFERENCED IN THESE DRAWINGS, SHALL MEAN THE CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2010 ED). PARTS OF THE STANDARD SPECIFICATIONS THAT ARE SPECIFICALLY REFERENCED SHALL BECOME PART OF THESE DRAWINGS AS THOUGH STATED HEREIN IN FULL. IN CASE OF A DISCREPANCY BETWEEN THE STANDARD SPECIFICATIONS AND THE REQUIREMENTS STATED WITHIN THE DRAWINGS, THE REQUIREMENTS STATED WITHIN THE DRAWINGS SHALL PREVAIL.

7. THIS PROJECT IS OWNED AND FUNDED BY THE CITY OF STAMFORD (THE CITY). THEREFORE, SOME OF THE REFERENCES AND TERMINOLOGY OF THE STANDARD SPECIFICATIONS MAY SEEM OUT OF PLACE. THE OWNER IS THE CITY OF STAMFORD. THE ENGINEER FOR THIS PROJECT IS RT GROUP, INC. (RTG). THE CONNECTICUT DEPARTMENT OF TRANSPORTATION IS NOT A PARTY TO THE PROJECT.

8. THE CONTRACTOR SHALL MAINTAIN AND NOT HINDER ACCESS TO WEST BEACH AND THE FEDERAL CHANNEL DURING THE PERFORMANCE OF THIS WORK.

9. WEST BEACH IS LOCATED WITHIN A FEMA FLOOD ZONE AE AND WILL BE INUNDATED DURING THE 100 YEAR FLOOD. THE 100 YEAR FLOOD ELEVATION IS ESTIMATED AT ABOUT 14.0 FEET NAVD '88 AS SHOWN ON THE FAIRFIELD COUNTY FLOOD INSURANCE RATE MAP (FIRM) NO. 09001C0517G, COMMUNITY PANEL NUMBER 0517G, REVISED DATE: JULY 8, 2013.

10. THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS IN THE FIELD BEFORE ORDERING ANY MATERIAL, COMMENCING ANY FABRICATION, OR PERFORMING ANY WORK. THE CONTRACTOR SHALL NOTIFY THE ENGINEER, IN WRITING, OF ANY CONDITIONS OR DIMENSIONS WHICH VARY FROM THOSE SHOWN IN THE DRAWINGS AND INCORPORATE SUCH VARIATIONS IN THE CONSTRUCTION AS APPROVED BY THE ENGINEER.

11. RIGHT-OF-WAY LINES, LEASE LINES, PROPERTY LINES, AND EASEMENT LINES, WHEN SHOWN ON THESE DRAWINGS, ARE CONSIDERED APPROXIMATE.

LAYOUT WORK:

1. THE HORIZONTAL CONTROL DATUM FOR THIS PROJECT IS NAD '83.

2. THE VERTICAL CONTROL DATUM FOR THIS PROJECT IS NAVD '88.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL LAYOUT WORK USING THE INFORMATION PROVIDED.

AVAILABLE SUBSURFACE INFORMATION:

1. IT IS INTENDED THAT SUBSURFACE INFORMATION, AS INCLUDED AND SHOWN IN THE CONTRACT DOCUMENTS, BE USED ONLY AS AN INDICATION OF POSSIBLE SUBSURFACE CONDITIONS, AND THAT UPON THE CONTRACTOR'S REVIEW, FURTHER SUBSURFACE EXPLORATIONS MAY BE WARRANTED. SUCH EXPLORATIONS SHALL BE PERFORMED AT THE CONTRACTOR'S EXPENSE.

2. THE CONTRACTOR SHALL USE THE SUBSURFACE INFORMATION SHOWN IN THE CONTRACT DOCUMENTS AT ITS OWN RISK AND SHALL COMPLETELY HOLD HARMLESS THE CITY AND RTG FROM ALL CONSEQUENCES AND/OR FAULT ARISING FROM ITS USE.

DESIGN CRITERIA:

BOAT RAMP/PARKING LOT IMPROVEMENTS

1. THE PROPOSED BOAT RAMP PLANKS ARE RATED FOR HS-20 LOADING.

2. THE PROPOSED BOAT RAMP AND PARKING LOT IMPROVEMENTS HAVE BEEN DESIGNED TO ACCOMMODATE MOTOR BOATS UP TO 35-FEET IN LENGTH, ON TRAILERS UP TO 40-FEET IN LENGTH, AND A TOW VEHICLE (FULL SIZE PICKUP TRUCK ASSUMED) UP TO 20-FEET IN LENGTH.

FLOATING DOCK

1. THE FLOATING DOCK HAS BEEN DESIGNED BASED ON THE FOLLOWING DESIGN CRITERIA:

   A. THE FLOATING DOCK SHALL HAVE A MINIMUM FREEBOARD OF ABOUT 28 INCHES UNDER ITS SELF-WEIGHT AND ABOUT 16 INCHES UNDER ITS SELF-WEIGHT AND A LIVE LOAD OF 50 PSF.

TIMBER GUIDE PILES

1. THE TIMBER GUIDE PILES HAVE BEEN DESIGNED ASSUMING THE FOLLOWING VESSEL COULD UTILIZE THE FLOATING DOCKS:

   A. DESIGN VESSEL, L = 35', B = 13'

   i. WAVE FORCE = 2.0 KIPS (VESSEL MOORED BROADSIDE AND WAVE HEIGHT = 3')
   ii. WIND FORCE = 2.0 KIPS (VESSEL MOORED BROADSIDE AND WIND VELOCITY = 50 MPH)
   iii. IMPACT FORCE = 1.0 KIPS (VESSEL IMPACTS THE FLOATING DOCK AT MID-POINT AT 1 FPS)

   THE ABOVE DESIGN VESSEL WILL TRANSFER AN ESTIMATED MAXIMUM LATERAL LOAD OF ABOUT 0.70 KIPS TO THE GUIDE PILES, ASSUMING A MINIMUM OF THREE (3) GUIDE PILES ARE ENGAGED UNDER ITEM II.

2. THE FLOATING DOCK SHALL BE DETACHED FROM THE GUIDE PILES AND MOVED TO AN UPLAND LOCATION BY THE CITY FOR CONDITIONS THAT PRODUCE LOADS GREATER THAN THOSE PRESENTED ABOVE, (E.G., SIGNIFICANT STORM EVENTS, HURRICANES, ETC.).

TIMBER JETTY REPAIRS

1. THE PROPOSED TIMBER JETTY REPAIRS ARE ASSUMED TO BE AN "IN-KIND" REPAIR DESIGNED TO MAINTAIN THE EXISTING FUNCTIONALITY OF THE TIMBER JETTY.

STRUCTURAL LUMBER:

1. ALL DECKING SHALL BE SOUTHERN YELLOW PINE, GRADE NO. 2 AND ALL STRINGERS AND BLOCKING SHALL BE SOUTHERN YELLOW PINE, GRADE NO. 1, CONFORMING TO THE FOLLOWING MINIMUM ALLOWABLE STRESSES IN ACCORDANCE WITH NDS.

ALLOWABLE STRESSES				
COMPONENT	EXTREME FIBER IN BENDING Fb (psi)	HORIZONTAL SHEAR Fv (psi)	COMPRESSION PERPENDICULAR TO GRAIN Fcl (psi)	COMPRESSION PARALLEL TO GRAIN Fc (psi)
DECKING	1,000	175	565	1,400
STRINGERS	1,050	175	565	1,450
BLOCKING	1,050	175	565	1,450

2. ALL TIMBER DIMENSIONS SHOWN ARE NOMINAL.

3. ALL TIMBER MATERIAL IN CONTACT WITH THE WATER SHALL BE CCA TREATED TO 2.0 PCF (MIN). ALL TIMBER IN THE SPLASH ZONE (STRINGERS, BLOCKING, AND DECKING) SHALL BE CCA TREATED TO 0.60 PCF (MIN).

4. ALL PRESSURE TREATED TIMBER THAT HAS BEEN FIELD CUT, DRESSED, AND/OR DRILLED SHALL BE COATED WITH TWO (2) COATS OF COPPER NAPTHENATE PRESERVATIVE, INCLUDING THE ENDS OF ANY SPLICED SEGMENTS.

MISCELLANEOUS METALS:

1. ALL BOLTS USED IN TIMBER CONSTRUCTION SHALL BE HOT-DIPPED GALVANIZED, A307 GRADE A BOLTS. ALL THREADED ROD SHALL BE HOT-DIPPED GALVANIZED A36 STEEL.

2. ALL MISC. STEEL HARDWARE USED IN TIMBER CONSTRUCTION SHALL BE HOT-DIPPED GALVANIZED A36 STEEL (MIN).

3. DECK BOARD FASTENERS SHALL BE 4" STAINLESS STEEL DECK SCREWS (20D).

COORDINATION AND SITE CONDITIONS:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 01040, COORDINATION AND SITE CONDITIONS.

PROJECT MEETINGS:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 01200, PROJECT MEETINGS.

SUBMITTALS:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 01340, SUBMITTALS.

QUALITY CONTROL:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 01400, QUALITY CONTROL.

TEMPORARY CONSTRUCTION FACILITIES:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 01500, TEMPORARY CONSTRUCTION FACILITIES.

TEMPORARY UTILITIES:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 01510, TEMPORARY UTILITIES.

TEMPORARY CONTROLS:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 01560, TEMPORARY CONTROLS.

PROJECT RECORD DOCUMENTS:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 01720, PROJECT RECORD DOCUMENTS.

MOBILIZATION/DEMOBILIZATION:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02005, MOBILIZATION/DEMOBILIZATION.

DEMOLITION AND REMOVAL:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02050, DEMOLITION AND REMOVAL.

EARTHWORK:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02200, EARTHWORK.

2. THE FINAL SLOPE GEOMETRY AND THE PROTECTION OF EXISTING STRUCTURES AND UTILITIES ADJACENT TO THE WORK AREA IS THE CONTRACTOR'S RESPONSIBILITY.

DREDGING AND DISPOSAL OF MATERIAL:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02203, DREDGING AND DISPOSAL OF MATERIAL.

EROSION AND SEDIMENT CONTROL:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02270, EROSION AND SEDIMENT CONTROL.

TEMPORARY EARTH RETAINING SYSTEMS AND COFFERDAMS:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02300, TEMPORARY EARTH RETAINING SYSTEMS AND COFFERDAMS.

TIMBER GUIDE PILES:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02368, TIMBER GUIDE PILES.

DEWATERING, CONTROL, AND DIVERSION OF WATER:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02400, DEWATERING, CONTROL, AND DIVERSION OF WATER.

2. CONSTRUCTION OF THE BOAT RAMP, INCLUDING THE PLACEMENT OF ALL EARTH AND STONE MATERIALS, SHALL BE COMPLETED IN THE "DRY".

3. DEWATERING PUMPS SHALL BE MULTIQUIP ST3020BCUL 170 GPM ELECTRIC SUBMERSIBLE WATER PUMP OR APPROVED EQUAL. ALL PUMPS SHALL BE CAPABLE OF DRY RUNNING.

4. DISCHARGE LINES SHALL BE APACHE 3" PVC LAY FLAT HOSES OR APPROVED EQUAL.

5. THE CONTRACTOR SHALL ROUTE ALL PUMPED WATER TO DEWATERING BASINS OR OTHER SUITABLE DEVICES (E.G., DEWATERING BAGS) PRIOR TO ALLOWING THE PUMPED WATER TO OVER LAND FLOW.

BITUMINOUS CONCRETE PAVEMENT:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02512, BITUMINOUS CONCRETE PAVEMENT.

LAWNS AND LANDSCAPING:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 02900, LAWNS AND LANDSCAPING.

REINFORCING STEEL:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 03200, REINFORCING STEEL.

CAST-IN-PLACE CONCRETE:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 03310, CONCRETE.

PRECAST CONCRETE STRUCTURES:

1. COORDINATE WITH THESE DRAWINGS AND SECTION 03399, PRECAST CONCRETE STRUCTURES.

STOCKPILE MANAGEMENT:

1. EXCAVATED MATERIAL GENERATED DURING THE EXECUTION OF THIS WORK SHALL BE STOCKPILED WITHIN THE TEMPORARY CONTAINMENT FACILITY.

2. THE CONTRACTOR SHALL MAINTAIN STOCKPILES AND THE AREAS AROUND THEM GRADED TO DRAIN AND TAKE ALL NECESSARY PRECAUTIONS TO MINIMIZE EROSION FROM THE STOCKPILES INCLUDING BUT NOT LIMITED TO THE INSTALLATION OF HAY BALES OR SILT FENCE.

3. SOIL MATERIAL THAT MEETS THE SPECIFIED GRADATION REQUIREMENTS UNDER EARTHWORK, MAY BE STOCKPILED FOR REUSE.

4. EXCESS EARTH MATERIAL, INCLUDING DEMOLITION DEBRIS, THAT DOES NOT MEET THE SPECIFIED GRADATION REQUIREMENTS AND/OR EXCAVATED MATERIAL IN EXCESS OF THAT REQUIRED FOR COMPLETING THIS PROJECT SHALL BE DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS AND REGULATIONS.

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DR	DBH
CHK	GJC
APVD	JBR

No.	DATE		BY	APVD

BAR IS ONE INCH ON ORIGINAL DRAWING.
0 — 1"
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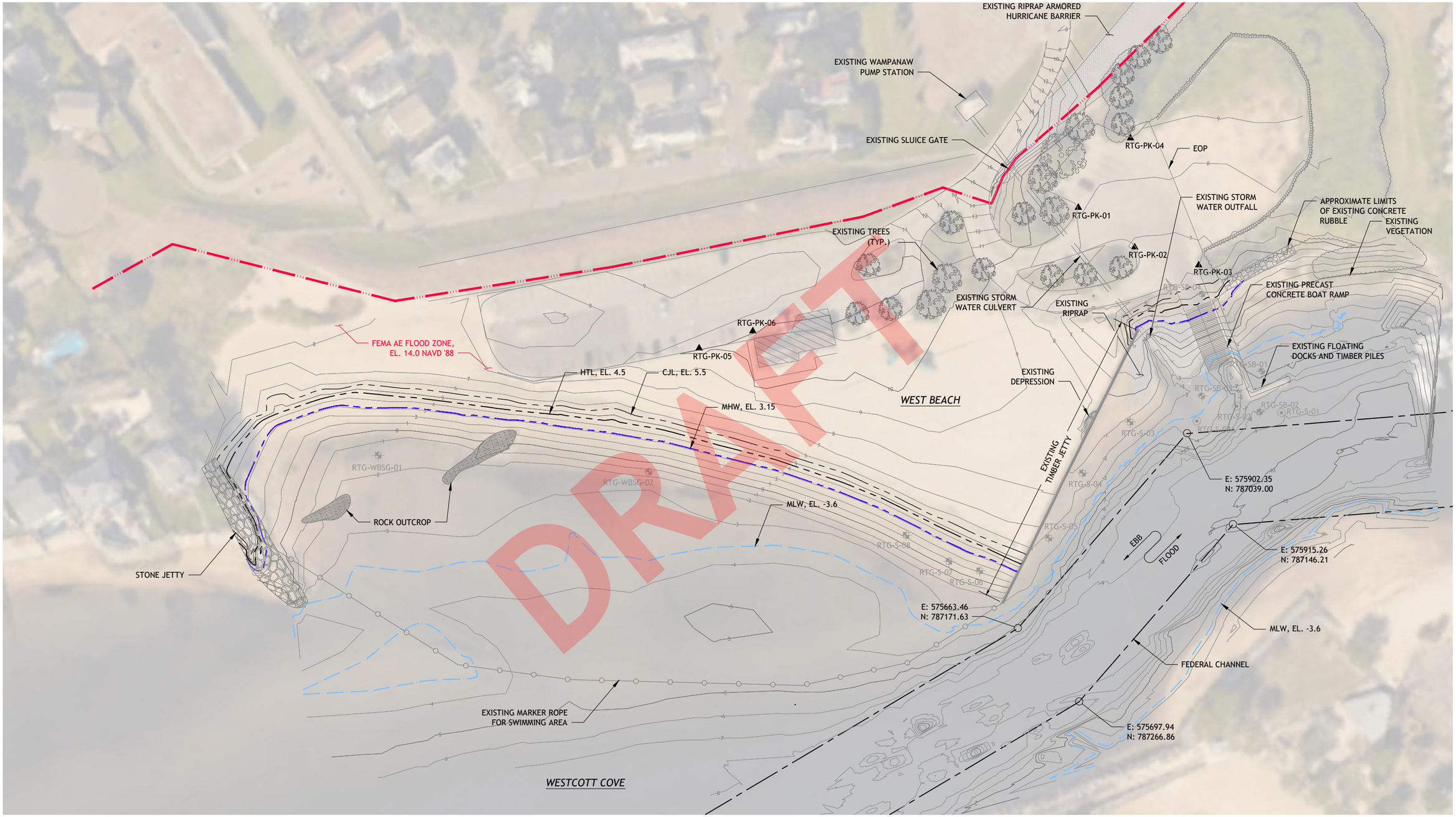
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

GENERAL NOTES

SHEET	3 OF 20
DWG No.	G-03
DATE	JAN 2019
PROJ No.	18103.00



Graphic Scale 1"=50'
50' 0 50' 100' 150'

OVERALL SITE PLAN
SCALE: 1"=50'-0"

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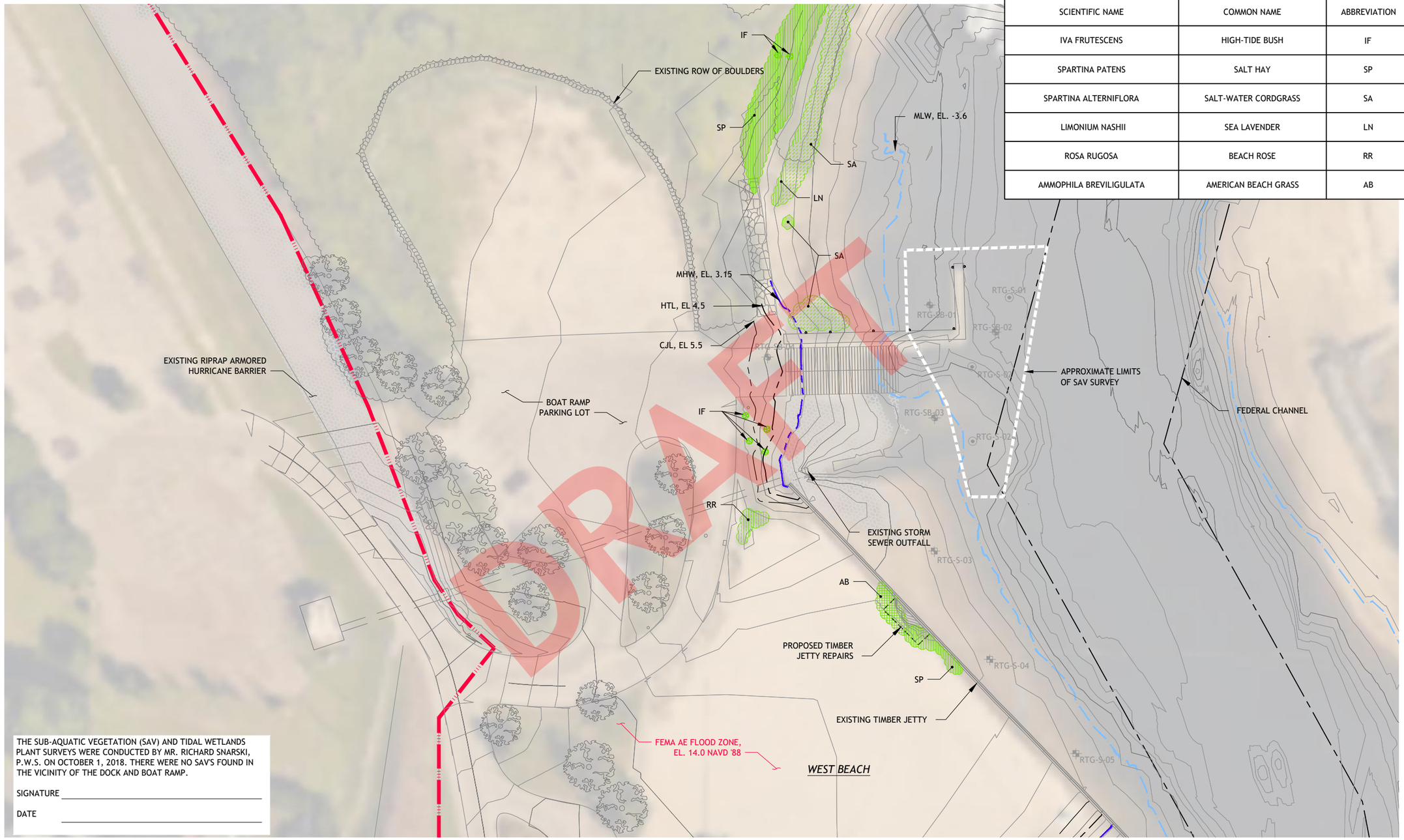
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

EXISTING CONDITIONS PLAN

SHEET	4 OF 20
DWG No.	C-01
DATE	JAN 2019
PROJ No.	18103.00

TIDAL WETLANDS PLANT SPECIES LEGEND			
SCIENTIFIC NAME	COMMON NAME	ABBREVIATION	SYMBOL
IVA FRUTESCENS	HIGH-TIDE BUSH	IF	
SPARTINA PATENS	SALT HAY	SP	
SPARTINA ALTERNIFLORA	SALT-WATER CORDGRASS	SA	
LIMONIUM NASHII	SEA LAVENDER	LN	
ROSA RUGOSA	BEACH ROSE	RR	
AMMOPHILA BREVILIGULATA	AMERICAN BEACH GRASS	AB	



THE SUB-AQUATIC VEGETATION (SAV) AND TIDAL WETLANDS PLANT SURVEYS WERE CONDUCTED BY MR. RICHARD SNARSKI, P.W.S. ON OCTOBER 1, 2018. THERE WERE NO SAV'S FOUND IN THE VICINITY OF THE DOCK AND BOAT RAMP.

SIGNATURE _____

DATE _____

Graphic Scale 1"=30'
30' 0 30' 60' 90'

PLAN
SCALE: 1"=30'

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APVD	JBR

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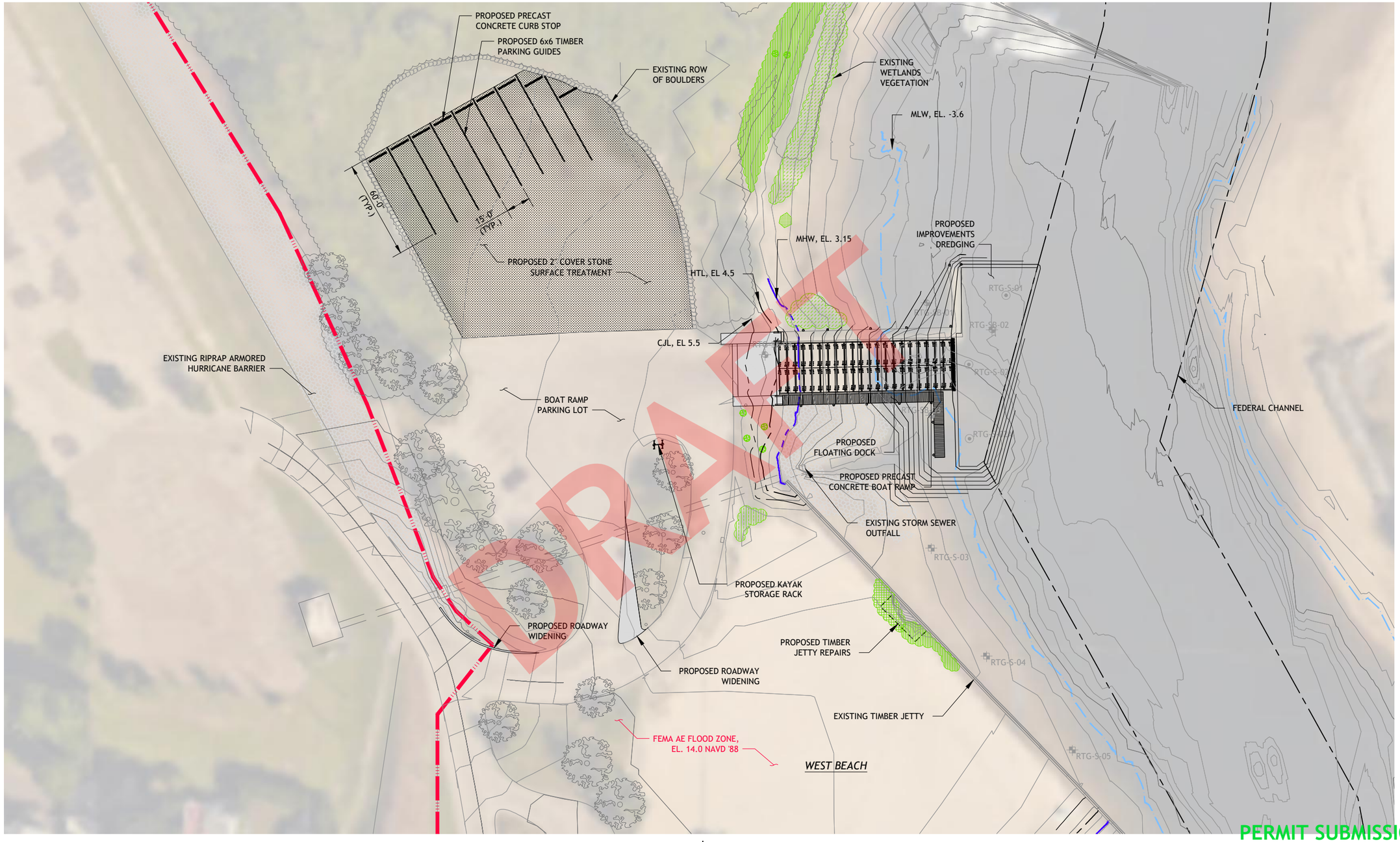
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

EXISTING WETLANDS AND SAV SURVEY PLAN

SHEET	4 OF 20
DWG No.	C-01A
DATE	JAN 2019
PROJ No.	18103.00



Graphic Scale 1"=30'
30' 0 30' 60' 90'

PLAN
SCALE: 1"=30'

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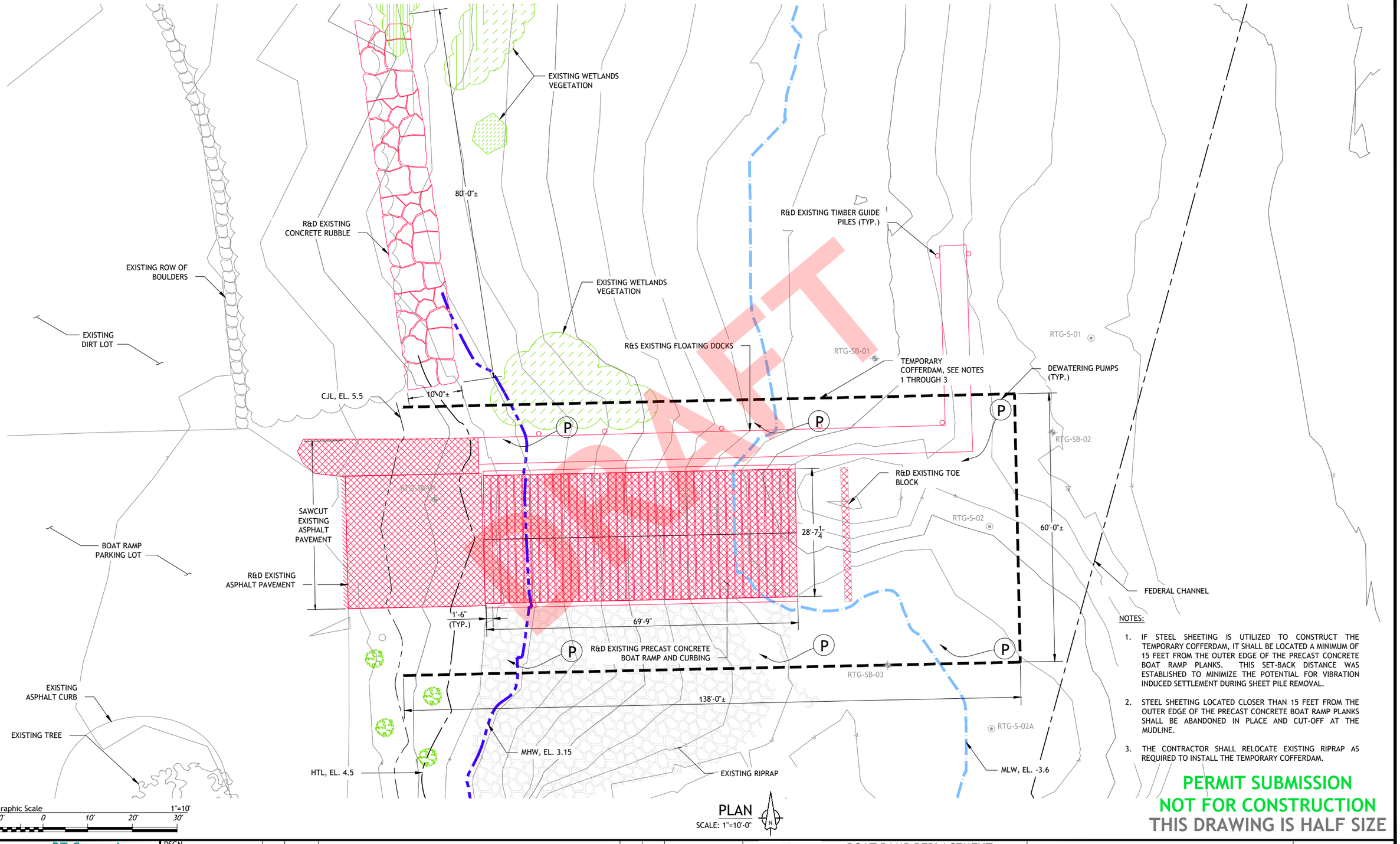
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

IMPROVEMENTS PLAN

SHEET	5 OF 20
DWG No.	C-02
DATE	JAN 2019
PROJ No.	18103.00



PLAN

SCALE: 1"=10'-0"

NOTES:

1. IF STEEL SHEETING IS UTILIZED TO CONSTRUCT THE TEMPORARY COFFERDAM, IT SHALL BE LOCATED A MINIMUM OF 15 FEET FROM THE OUTER EDGE OF THE PRECAST CONCRETE BOAT RAMP PLANKS. THIS SET-BACK DISTANCE WAS ESTABLISHED TO MINIMIZE THE POTENTIAL FOR VIBRATION INDUCED SETTLEMENT DURING SHEET PILE REMOVAL.
2. STEEL SHEETING LOCATED CLOSER THAN 15 FEET FROM THE OUTER EDGE OF THE PRECAST CONCRETE BOAT RAMP PLANKS SHALL BE ABANDONED IN PLACE AND CUT-OFF AT THE MUDLINE.
3. THE CONTRACTOR SHALL RELOCATE EXISTING RIPRAP AS REQUIRED TO INSTALL THE TEMPORARY COFFERDAM.

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APVD	JBR

No.	DATE		BY	APVD

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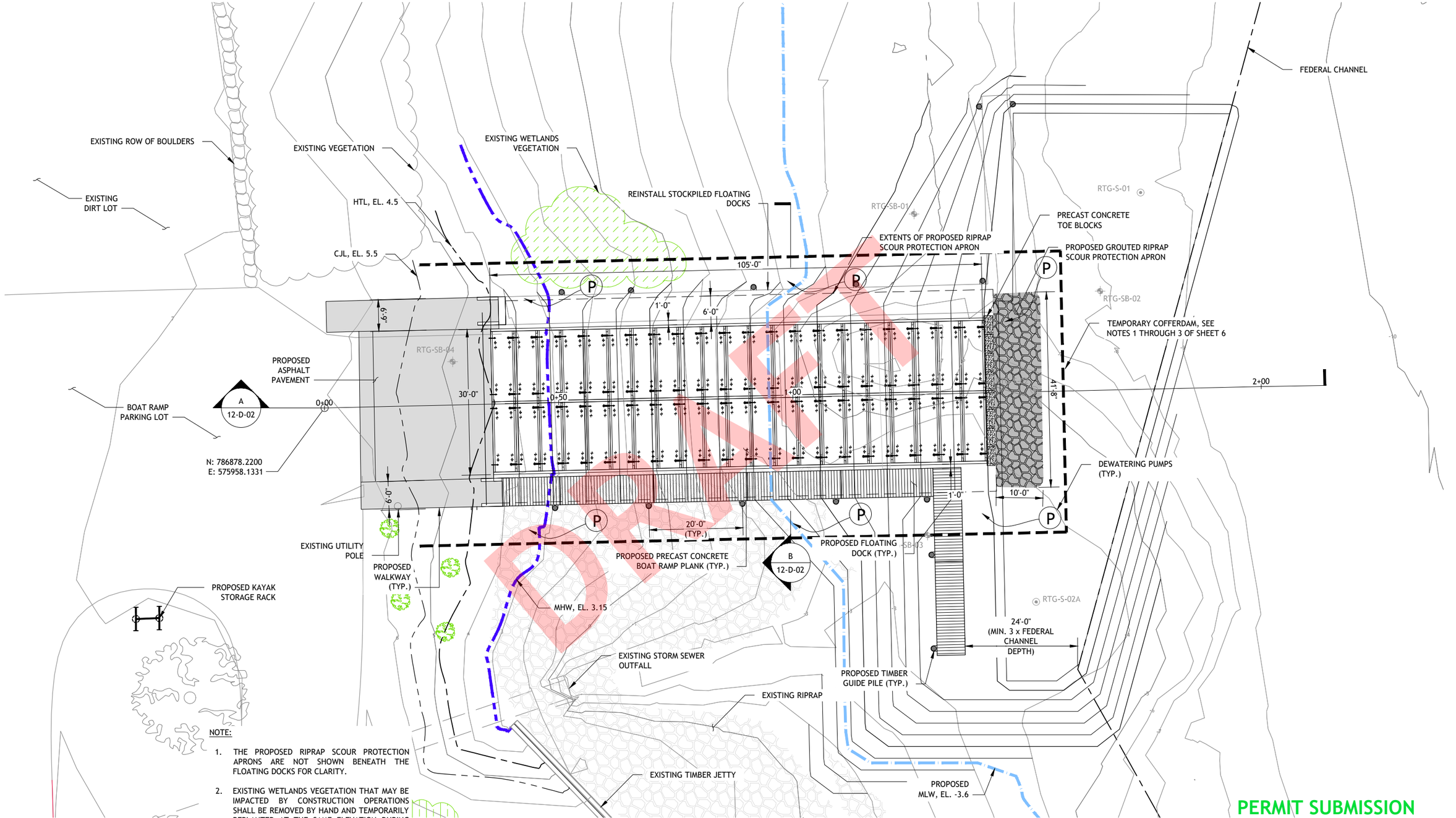
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

DEMOLITION AND REMOVAL PLAN

SHEET	6 OF 20
DWG No.	C-03
DATE	JAN 2019
PROJ No.	18103.00



NOTE:

1. THE PROPOSED RIPRAP SCOUR PROTECTION APRONS ARE NOT SHOWN BENEATH THE FLOATING DOCKS FOR CLARITY.
2. EXISTING WETLANDS VEGETATION THAT MAY BE IMPACTED BY CONSTRUCTION OPERATIONS SHALL BE REMOVED BY HAND AND TEMPORARILY REPLANTED AT THE SAME ELEVATION DURING THE WORK. UPON COMPLETION OF THE WORK, THE VEGETATION SHALL BE RETURNED TO ITS ORIGINAL LOCATION AND REPLANTED BY HAND.

PLAN

SCALE: 1"=10'-0"

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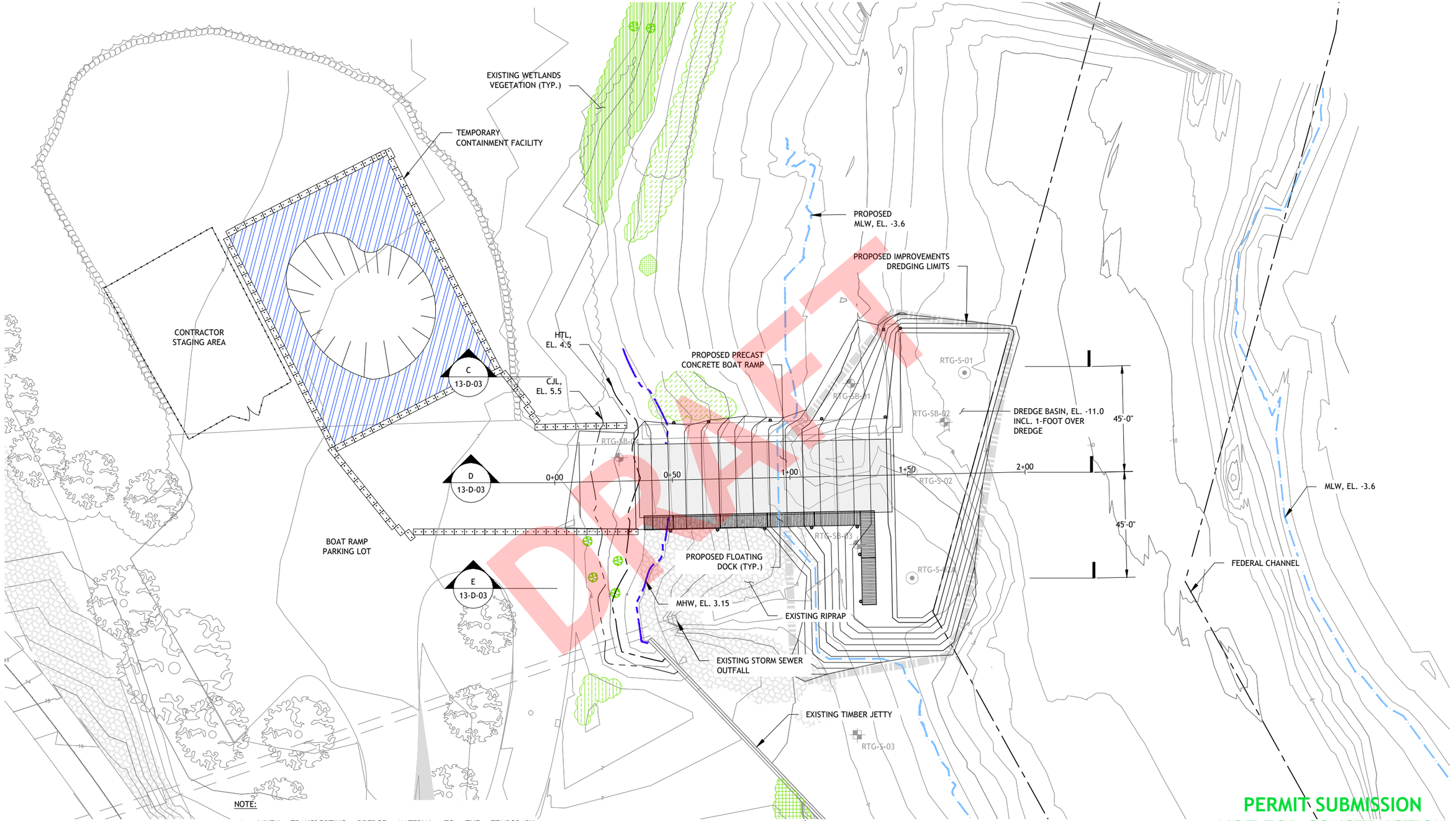
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

BOAT RAMP PLAN

SHEET	7 OF 20
DWG No.	C-04
DATE	JAN 2019
PROJ No.	18103.00



NOTE:

1. WHEN TRANSPORTING DREDGE MATERIAL TO THE TEMPORARY CONTAINMENT FACILITY, THE CONTRACTOR SHALL DEPLOY STRAWBAILS/SILTSOCKS BETWEEN THE FACILITY AND THE BOAT RAMP TO MINIMIZE SEDIMENTATION INTO AREAS UPLAND OF THE WORK AREA AND OUTSIDE OF THE TEMPORARY CONTAINMENT FACILITY.

Graphic Scale 1"=20'
20' 0 20' 40' 60'

OVERALL SITE PLAN
SCALE: 1"=20'-0"

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CHK	GJC
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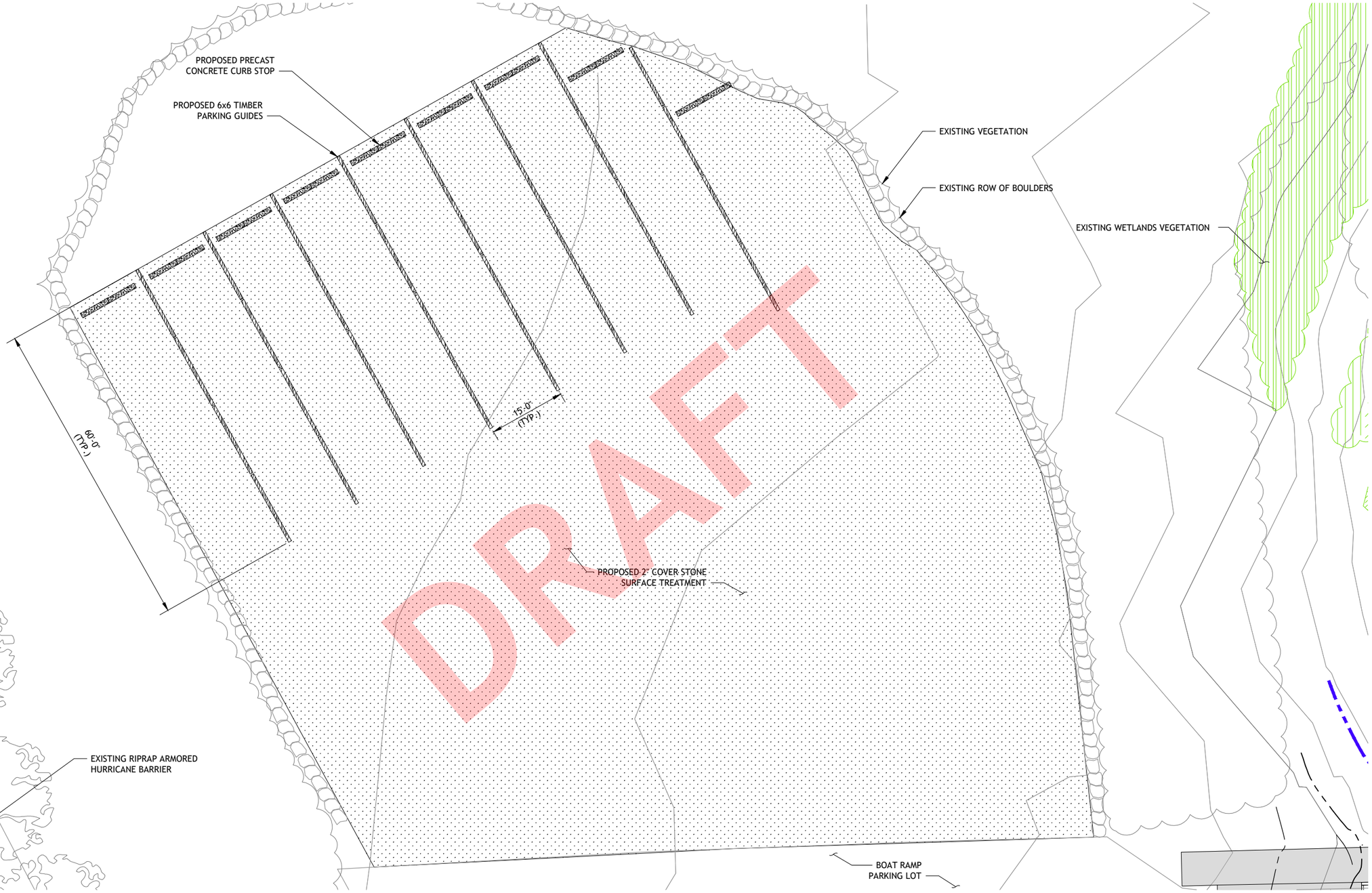
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

IMPROVEMENTS DREDGING PLAN

SHEET	8 OF 20
DWG No.	C-05
DATE	JAN 2019
PROJ No.	18103.00



Graphic Scale 1"=10'
10' 0 10' 20' 30'

PLAN
SCALE: 1"=10'

PERMIT SUBMISSION
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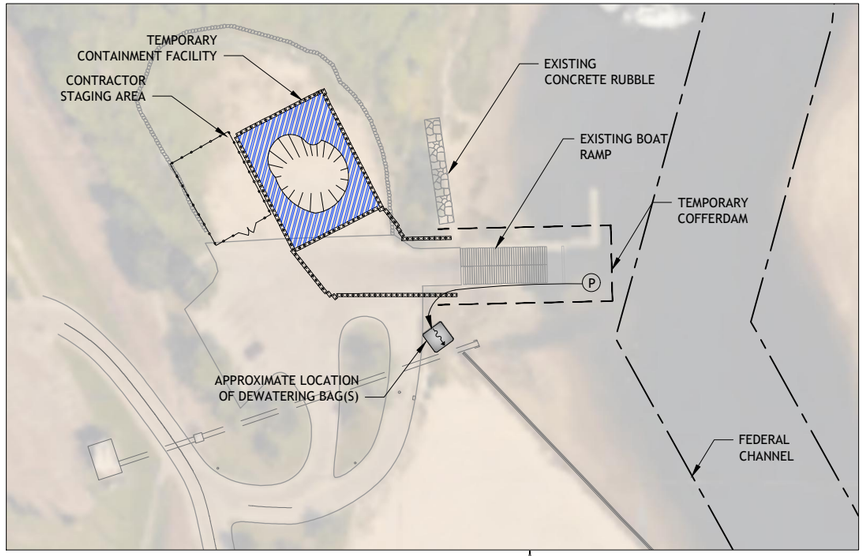
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

PARKING LOT IMPROVEMENTS PLAN

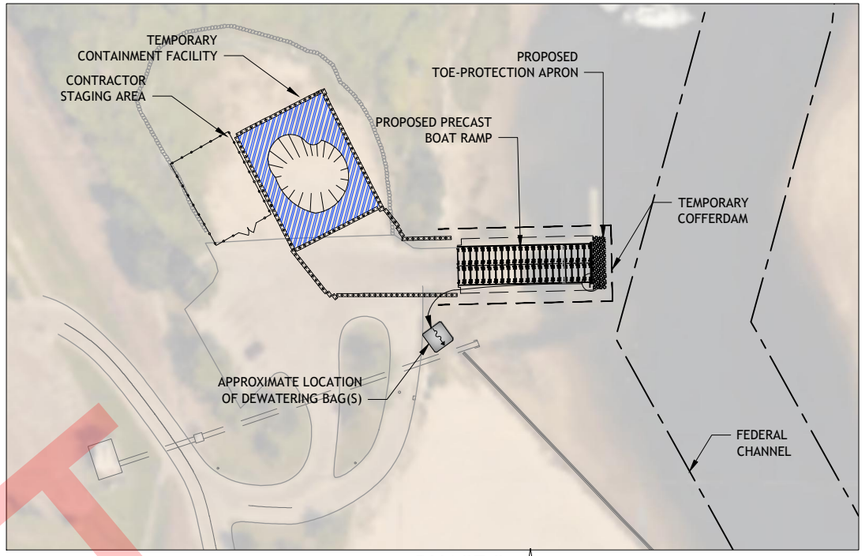
SHEET	9 OF 20
DWG No.	C-06
DATE	JAN 2019
PROJ No.	18103.00



PHASE 1

SCALE: 1"=60'-0"

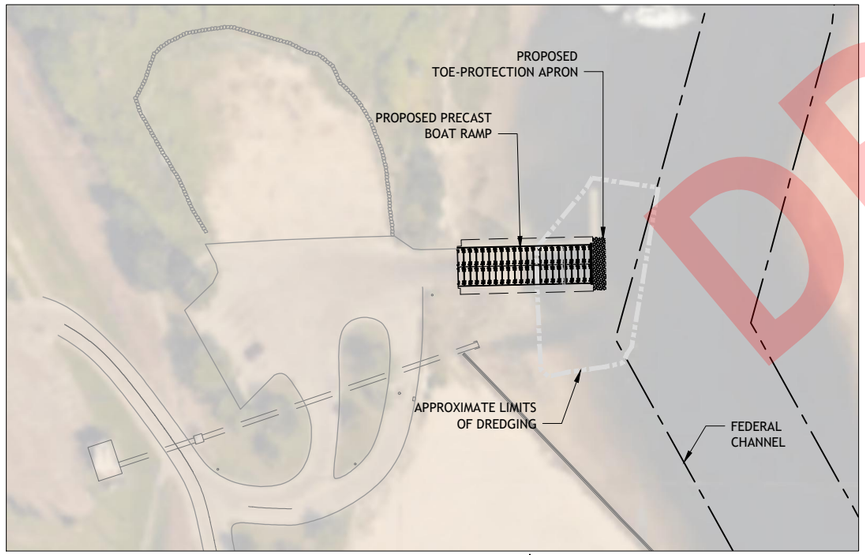
1. SETUP CONTRACTOR'S STAGING AREA AND TEMPORARY CONTAINMENT FACILITY.
2. R&D CONCRETE RUBBLE UPLAND OF WETLANDS.
3. R&S EXISTING FLOATING DOCKS AND R&D TIMBER GUIDE PILES.
4. F&I TEMPORARY COFFERDAM.
5. DEWATER TEMPORARY COFFERDAM.



PHASE 2

SCALE: 1"=60'-0"

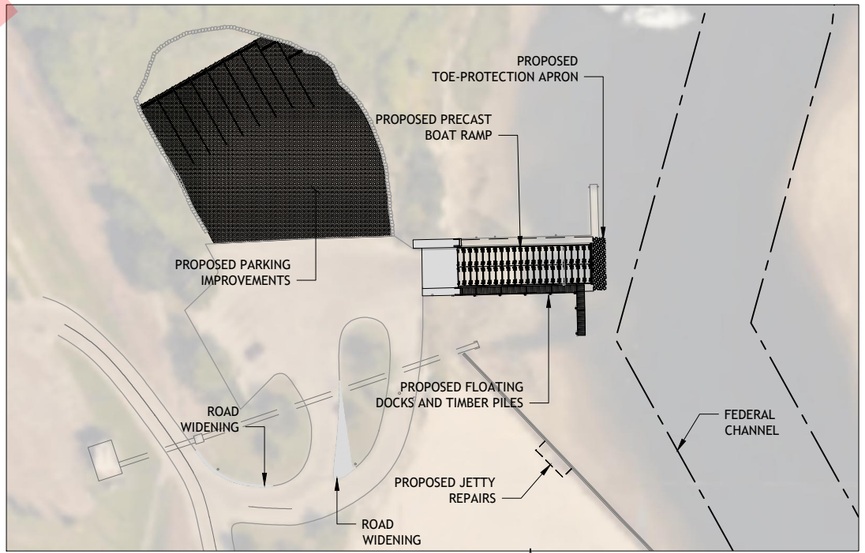
1. R&D EXISTING BOAT RAMP.
2. EXCAVATE AND PREPARE SUBGRADE.
3. INSTALL GEOTEXTILE FABRIC, CRUSHED STONE, GEOGRID, AND TOE BLOCKS.
4. F&I RIPRAP SCOUR PROTECTION APRON AT THE TOE OF RAMP.
5. F&I PRECAST BOAT RAMP PLANKS.
6. F&I RIPRAP SCOUR PROTECTION APRONS ALONG THE SIDES OF RAMP.



PHASE 3

SCALE: 1"=60'-0"

1. COMPLETE REMAINDER OF IMPROVEMENTS DREDGING.
2. REMOVE TEMPORARY COFFERDAM.
3. TRANSPORT STOCKPILED MATERIAL TO CUMMINGS PARK FOR CONSTRUCTION OF LANDSCAPE FEATURES.
4. REMOVE THE TEMPORARY CONTAINMENT FACILITY.



PHASE 4

SCALE: 1"=60'-0"

1. REINSTALL STOCKPILED FLOATING DOCKS AND INSTALL NEW TIMBER GUIDE PILES.
2. F&I NEW TIMBER GUIDE PILES AND FLOATING DOCKS.
3. F&I APPROACH PAVEMENT.
4. COMPLETE REMAINING IMPROVEMENTS AND DEMOBILIZE.

Graphic Scale 1"=60'
60' 0 60' 120' 180'

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APVD	JBR	No.	DATE		BY	APVD	

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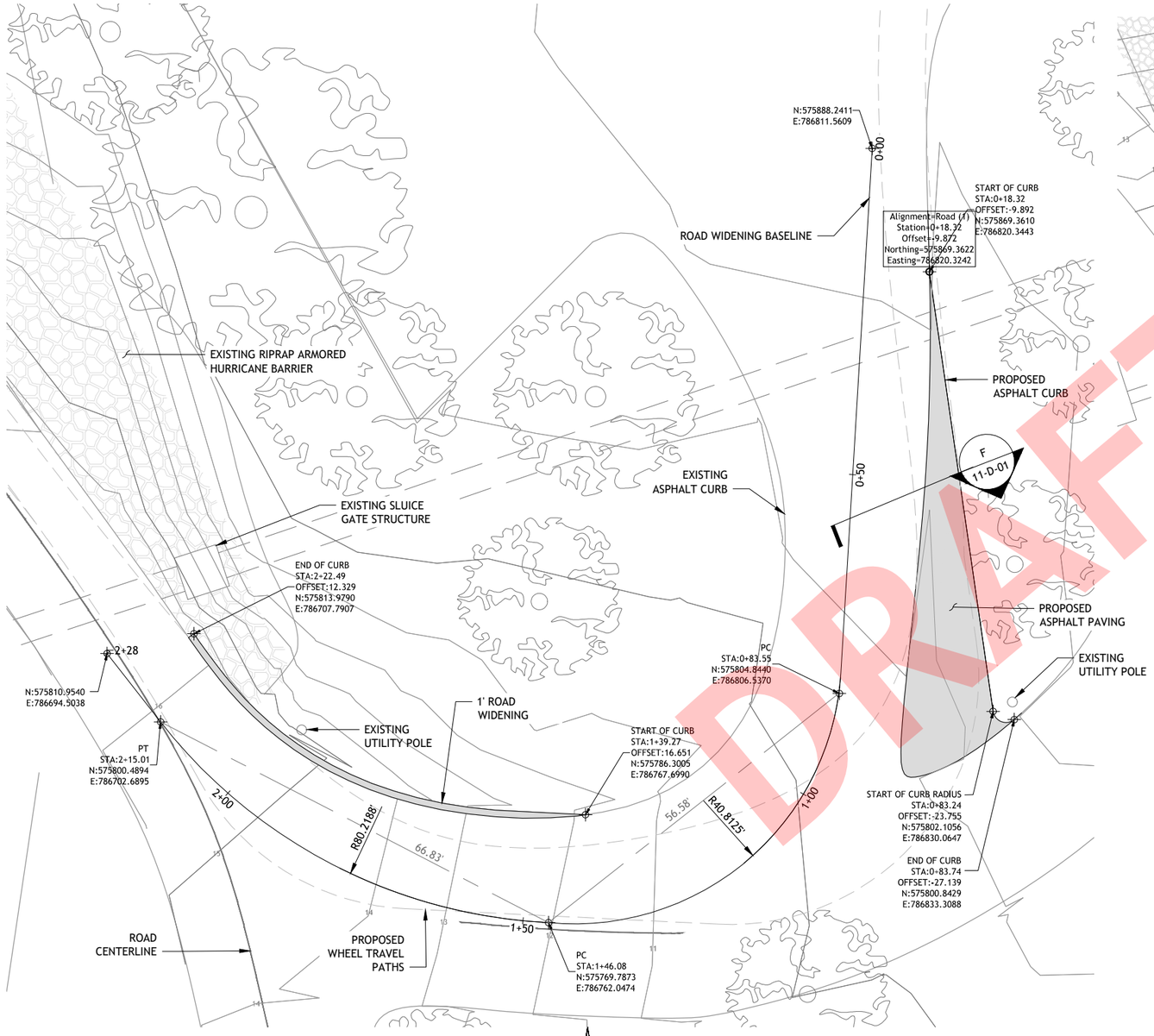
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

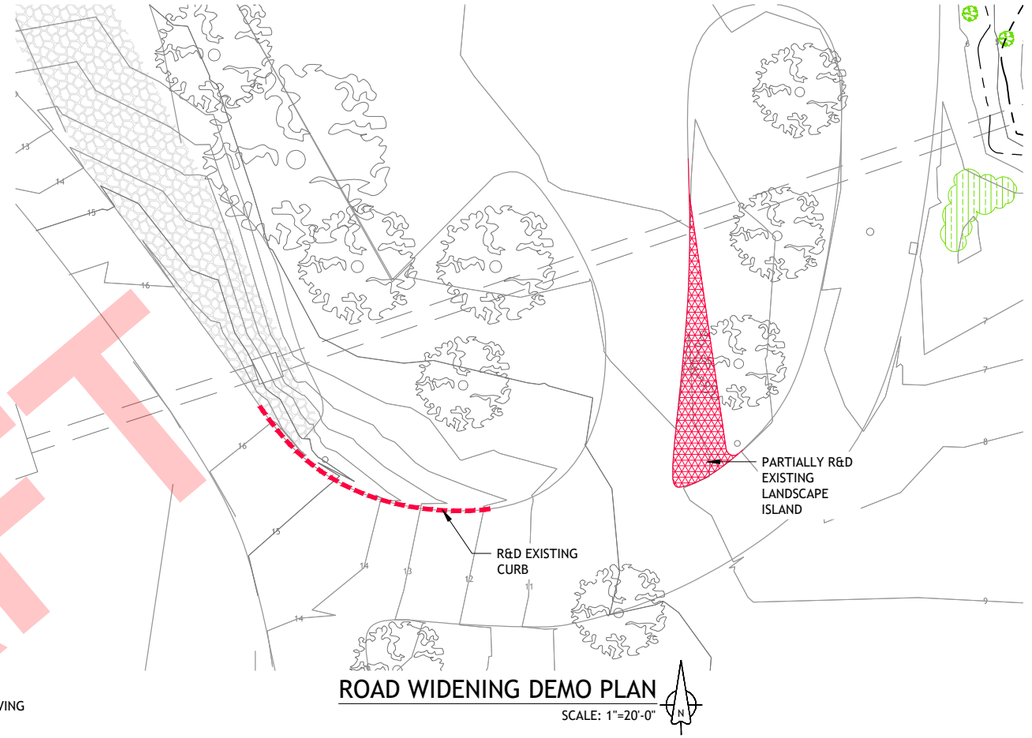
SUGGESTED PHASING PLAN

SHEET	10 OF 20
DWG No.	C-07
DATE	JAN 2019
PROJ No.	18103.00



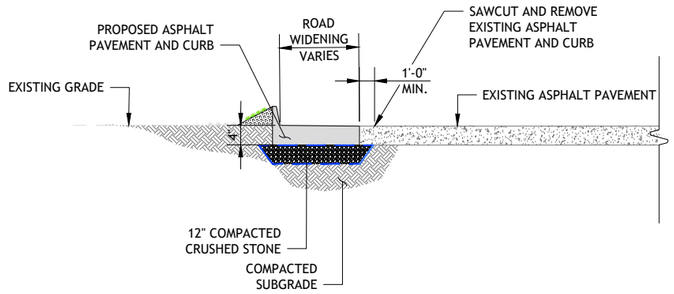
ROAD WIDENING PLAN

SCALE: 1"=10'-0"



ROAD WIDENING DEMO PLAN

SCALE: 1"=20'-0"



PAVING SECTION

F
11-D-01

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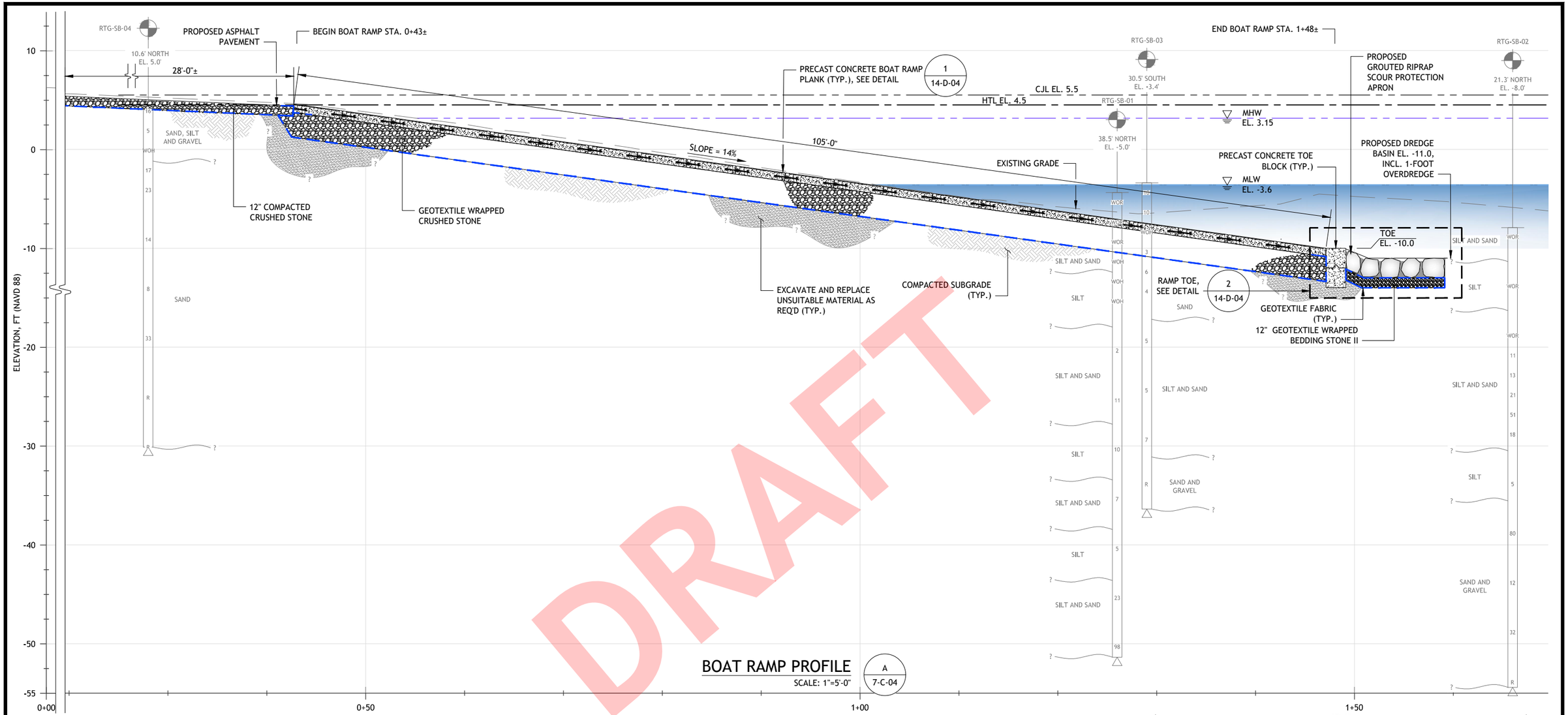
ROAD WIDENING PLAN AND SECTION

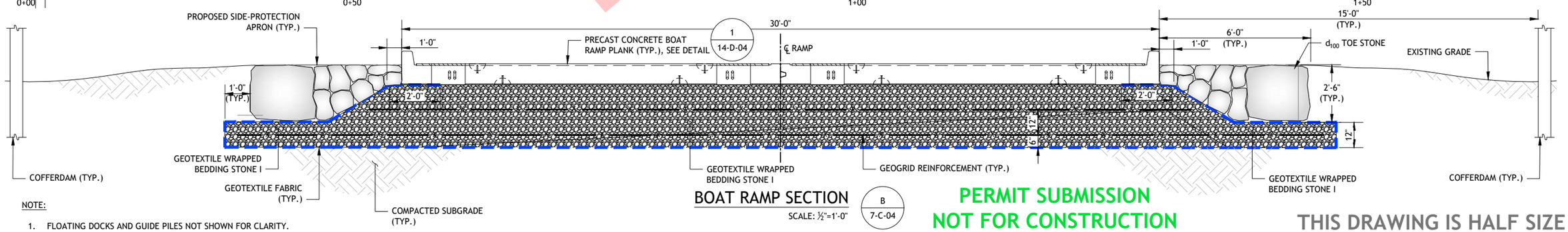
SHEET	11 OF 20
DWG No.	D-01
DATE	JAN 2019
PROJ No.	18103.00



BOAT RAMP PROFILE

SCALE: 1"=5'-0"

A
7-C-04



BOAT RAMP SECTION

SCALE: ½"=1'-0"

B
7-C-04

NOTE:

1. FLOATING DOCKS AND GUIDE PILES NOT SHOWN FOR CLARITY.

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APVD	JBR

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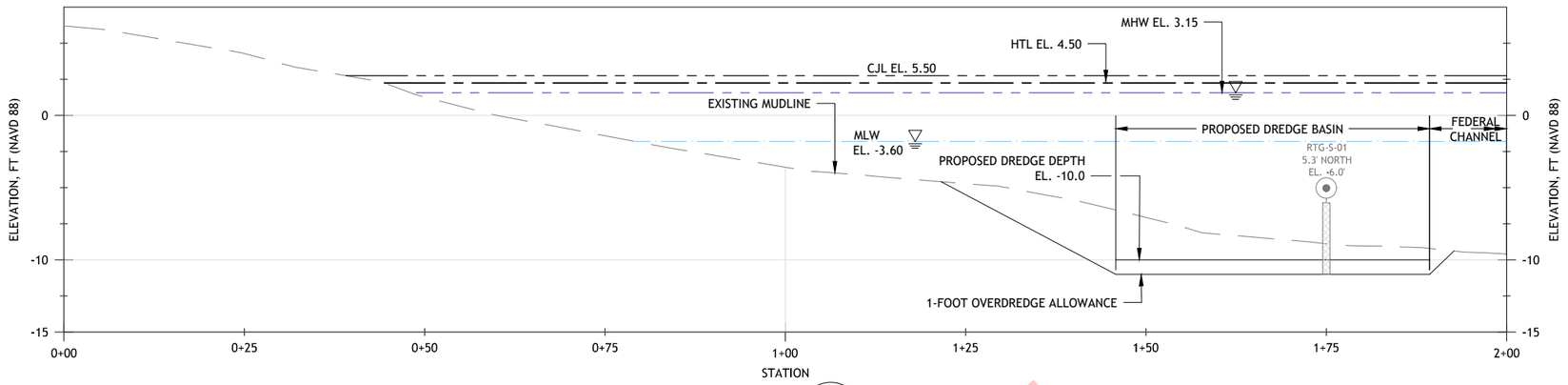
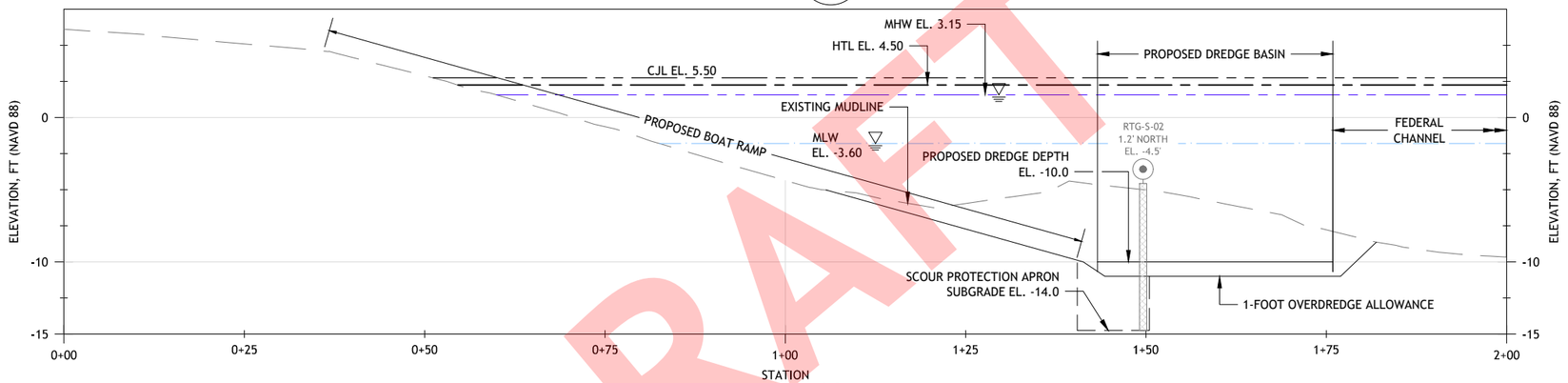
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

BOAT RAMP SECTION AND PROFILE

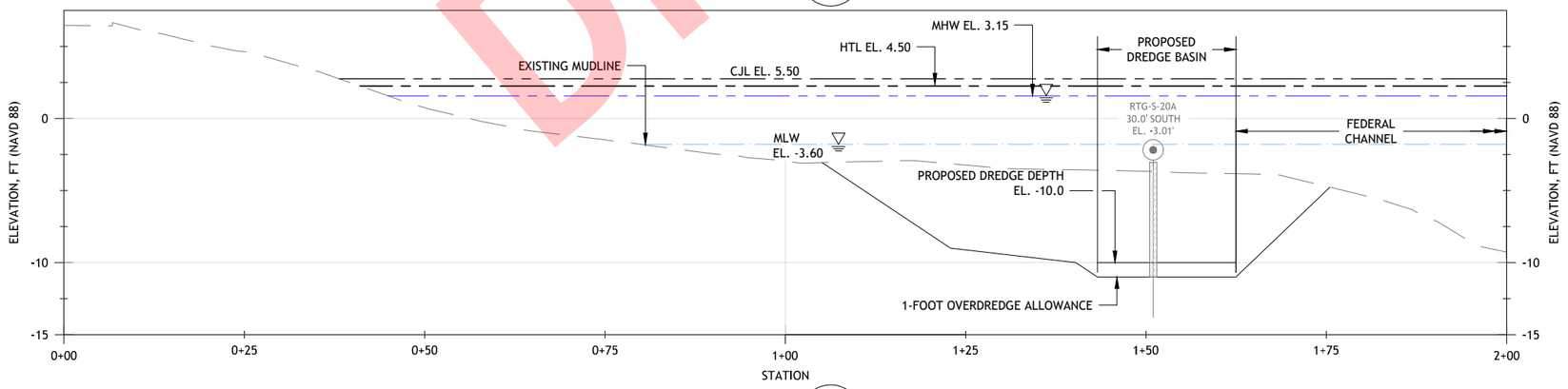
SHEET	12 OF 20
DWG No.	D-02
DATE	JAN 2019
PROJ No.	18103.00



SECTION C 8-C-05



SECTION D 8-C-05



SECTION E 8-C-05

Horizontal Scale 1"=10'
10' 0' 10' 20' 40'

Vertical Scale 1"=5'
5' 0' 5' 10' 20'

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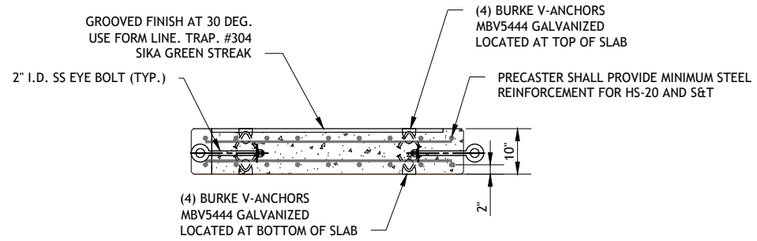
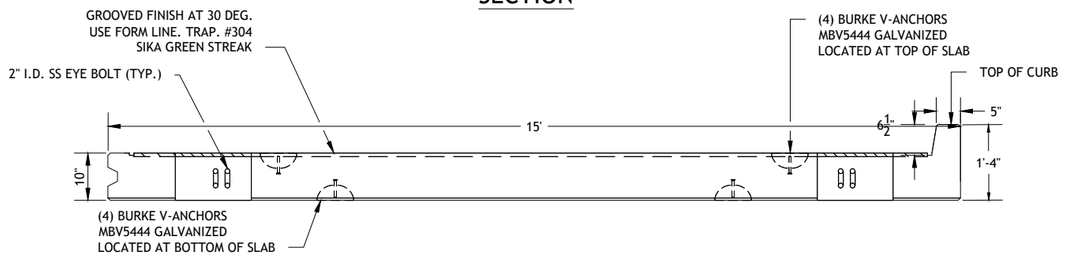
Stamford, Connecticut

IMPROVEMENTS DREDGING SECTIONS

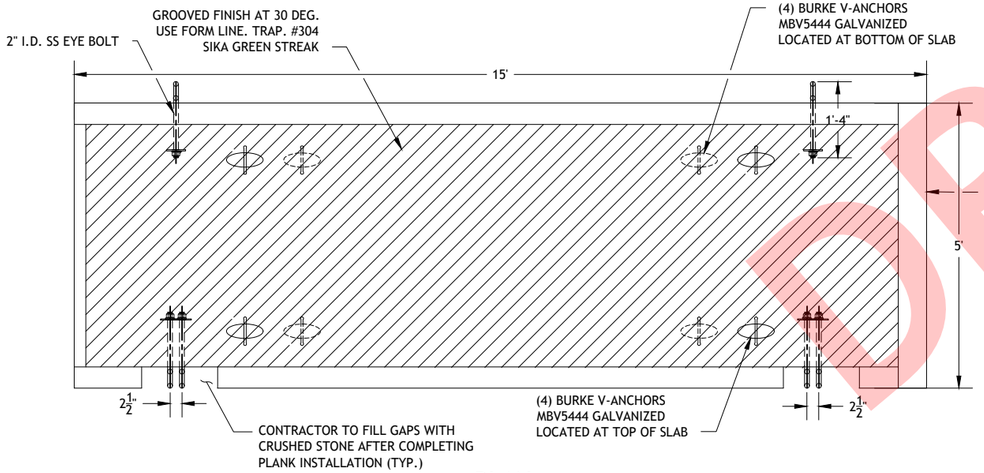
SHEET	13 OF 20
DWG No.	D-03
DATE	JAN 2019
PROJ No.	18103.00



SECTION



ELEVATION



PLAN

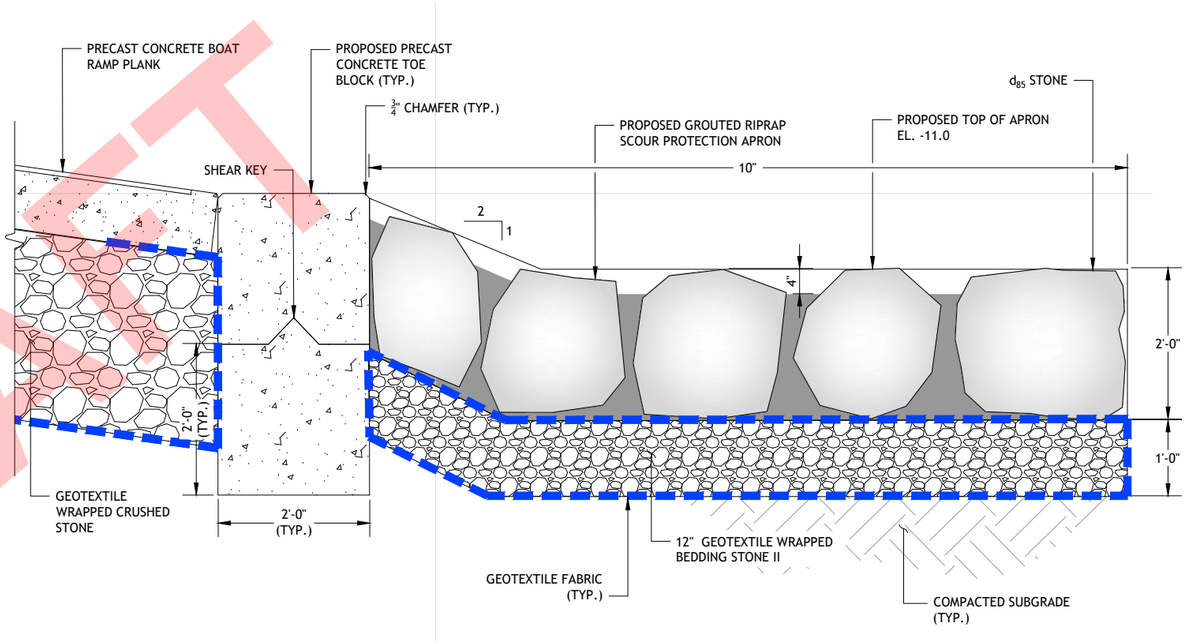
NOTE:

1. 2" MINIMUM COVER ON ALL SIDES OF REBAR.

PRECAST BOAT RAMP PLANK DETAIL

SCALE: 3/4"=1'-0"

1
12-D-02



NOTE:

1. RIPRAP FOR GROUTED SCOUR PROTECTION APRON SHALL BE 24" FLAT LAID STONES.

RAMP TOE DETAIL

SCALE: 1"=1'-0"

2
12-D-02

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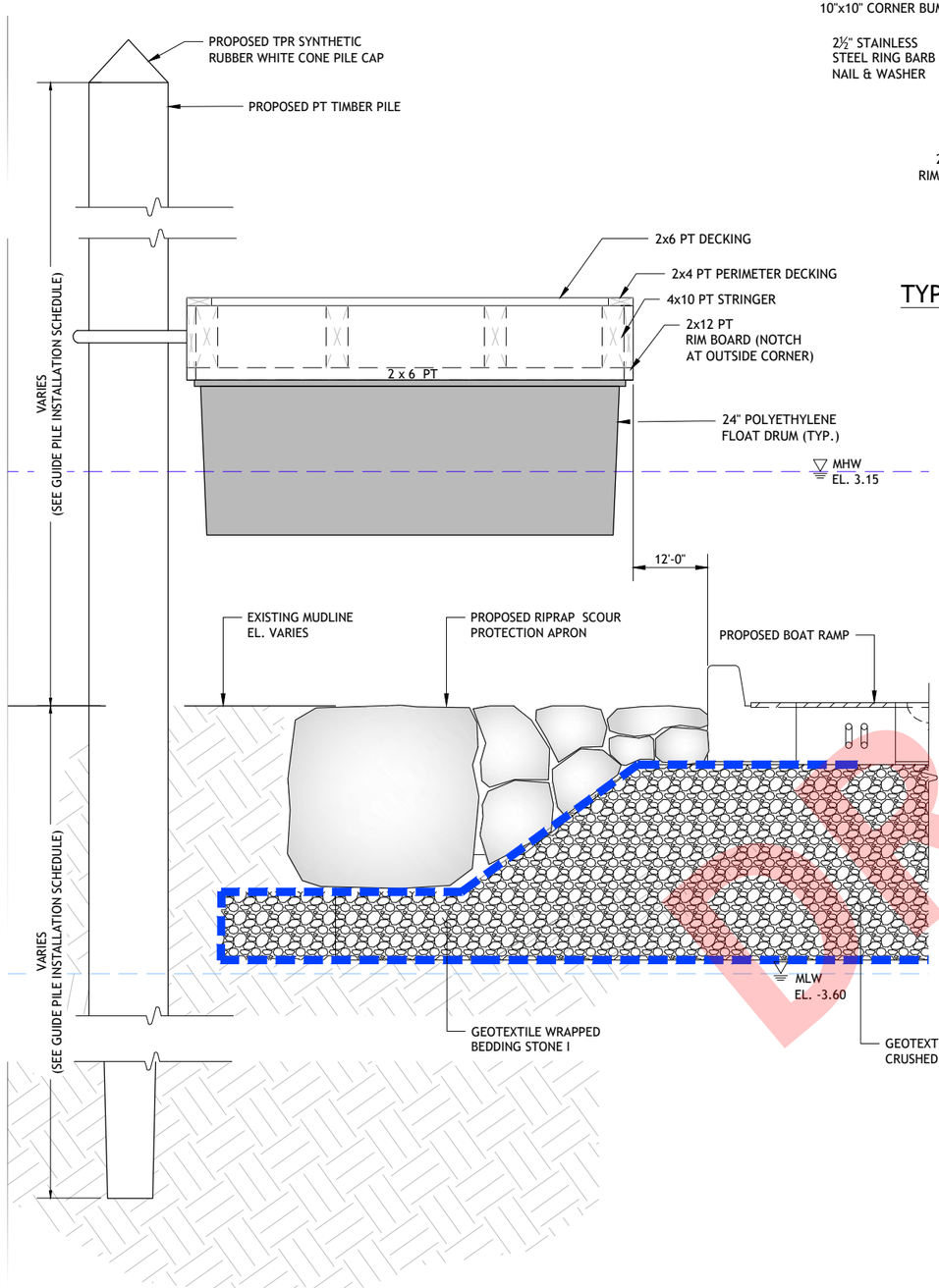
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

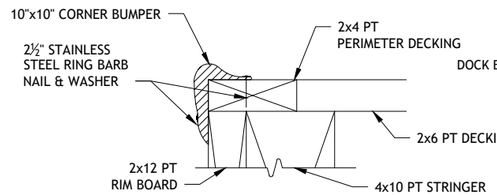
BOAT RAMP DETAILS

SHEET	14 OF 20
DWG No.	D-04
DATE	JAN 2019
PROJ No.	18103.00



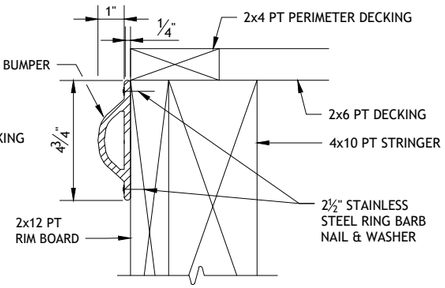
TYPICAL FLOATING DOCK SECTION

SCALE: 1" = 1'-0"



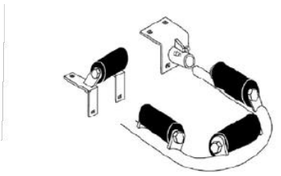
TYPICAL CORNER BUMPER DETAIL

SCALE: 4" = 1'-0"



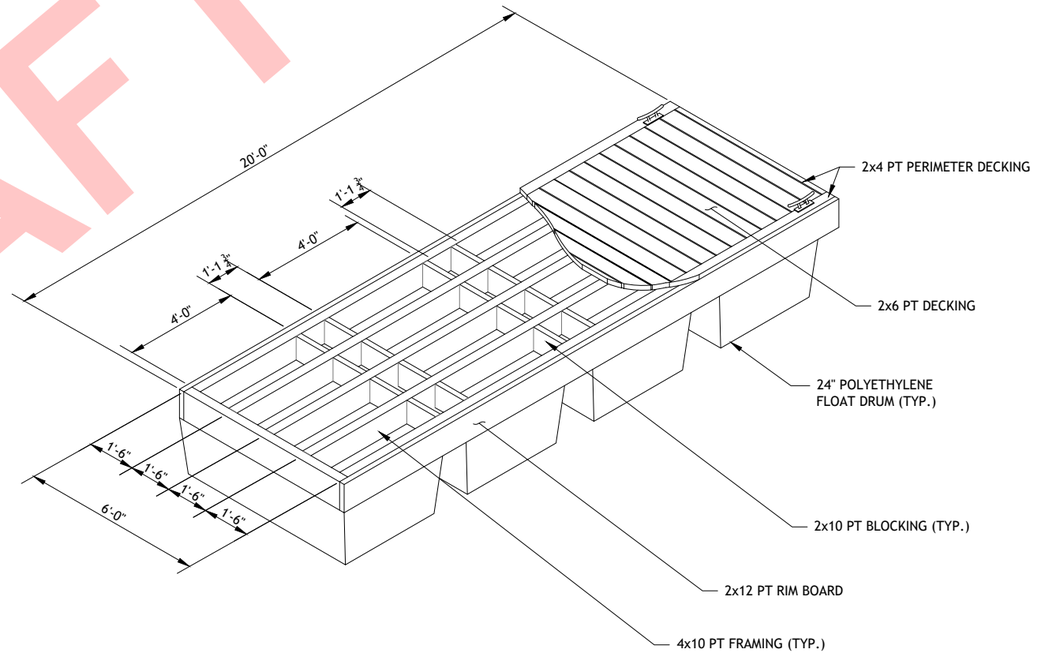
TYPICAL BUMPER DETAIL

SCALE: 4" = 1'-0"



16" MERCOMARINE PILE HOOP

SCALE: NTS



FLOATING DOCK ISOMETRIC VIEW

SCALE: ⅜" = 1'-0"

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No.	DATE		BY	APVD

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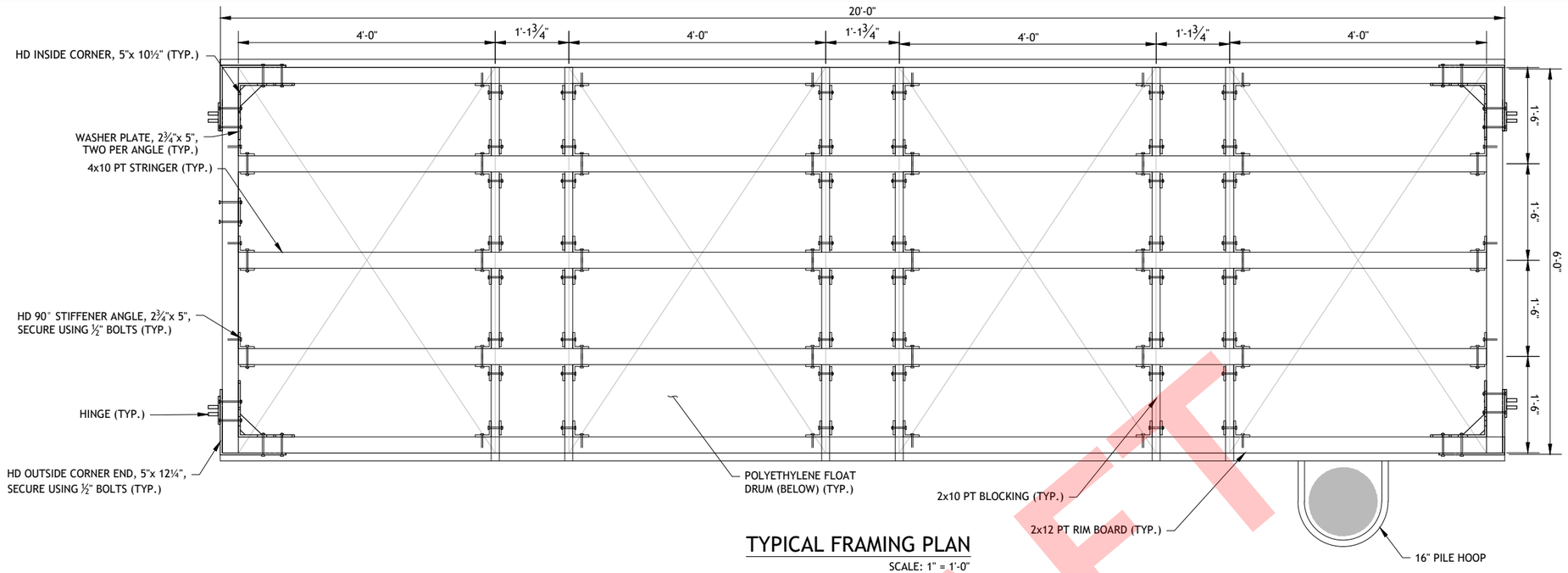
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

FLOATING DOCK SECTIONS AND DETAILS - 1

SHEET	15 OF 20
DWG No.	D-05
DATE	JAN 2019
PROJ No.	18103.00

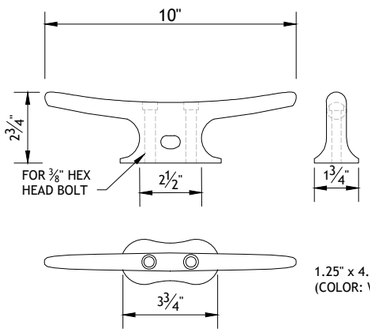


TYPICAL FRAMING PLAN

SCALE: 1" = 1'-0"

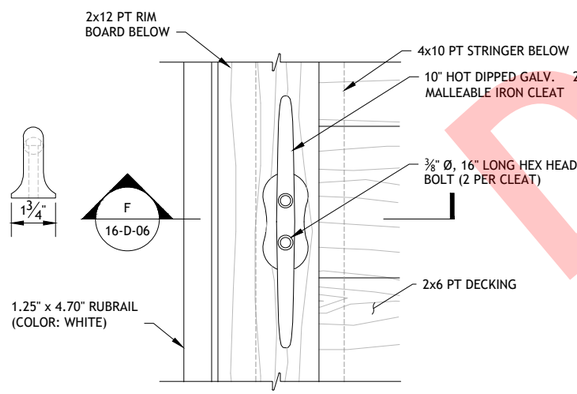
NOTES:

1. FLOATING DOCK HARDWARE BY FOLLANSBEEDOCKS.COM OR APPROVED EQUAL.
2. PILE GUIDES, CLEATS, AND BUMPERS BY MERCOMARINE.COM AND CUSTOMFLOAT.COM OR APPROVED EQUAL.
3. 2x6 PT TIMBER DECKING AND 2x6 PT FLOAT ATTACHMENT BOARDS NOT SHOWN ON FRAMING PLAN FOR CLARITY.
4. POLYETHYLENE FLOAT DRUMS BY PERMAFLOATS.COM, MODEL NO. DF-C-48072-24, OR APPROVED EQUAL.



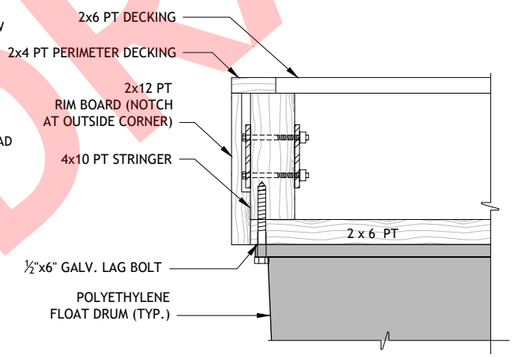
10" CLEAT DETAIL

SCALE: 4" = 1'-0"



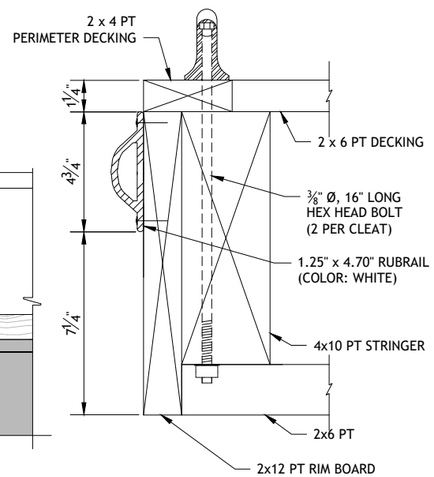
CLEAT CONNECTION - DETAIL

SCALE: 4" = 1'-0"



FLOAT DRUM CONNECTION DETAIL

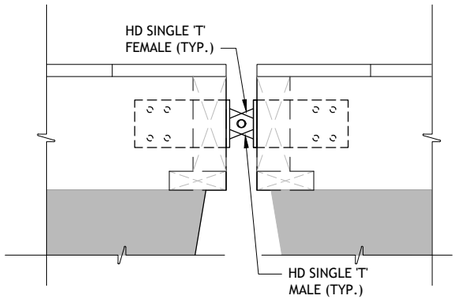
SCALE: 2" = 1'-0"



SECTION

F
16-D-06

SCALE: 4" = 1'-0"



HINGE DETAIL

SCALE: 1 1/2" = 1'-0"

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APVD	JBR

No.	DATE		BY	APVD

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BOAT RAMP REPLACEMENT PROJECT
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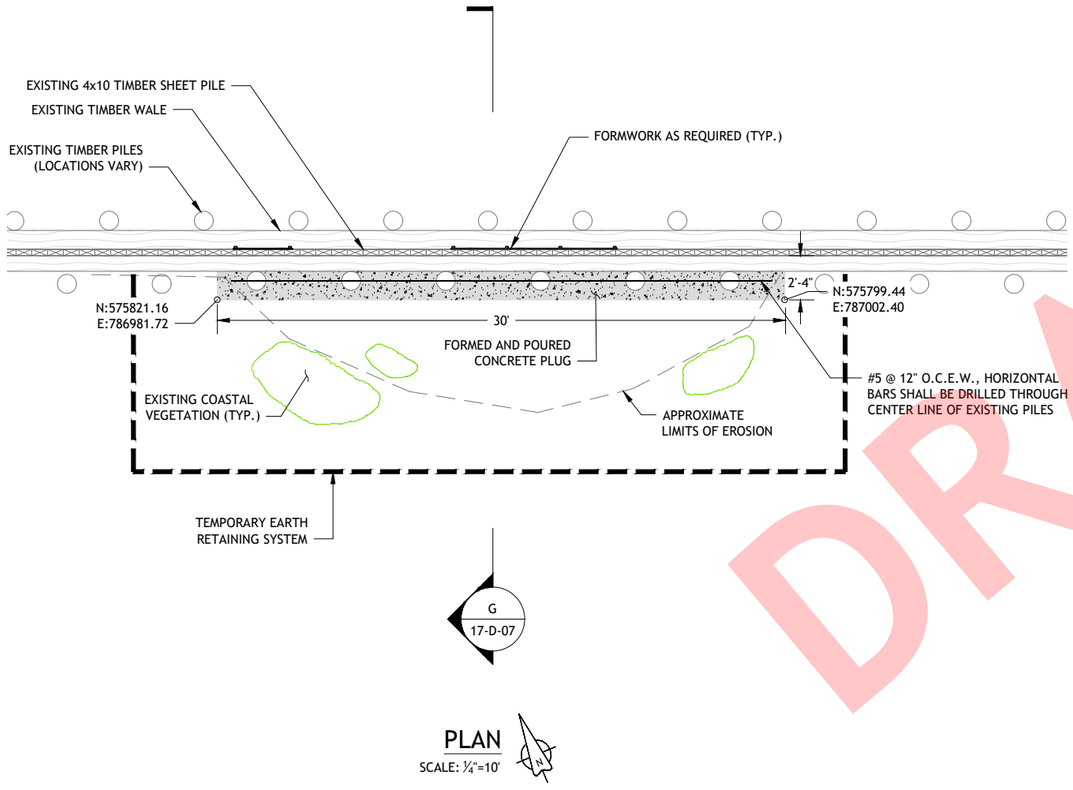
Stamford, Connecticut

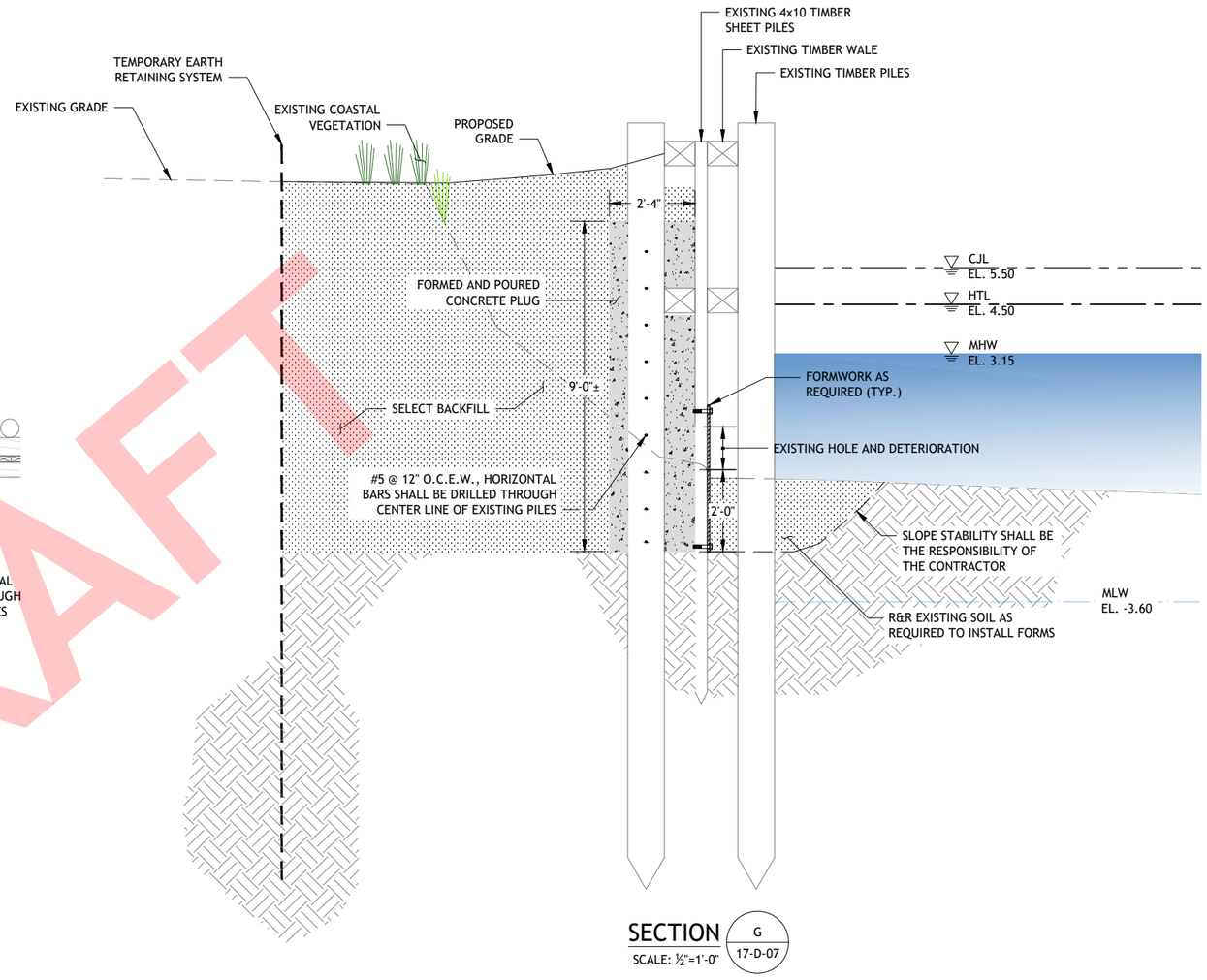
FLOATING DOCK SECTIONS AND DETAILS - 2

SHEET	16 OF 20
DWG No.	D-06
DATE	JAN 2019
PROJ No.	18103.00



PLAN
SCALE: ¼"=10'

G
17-D-07



SECTION
SCALE: ½"=1'-0"

G
17-D-07

NOTES:

1. FORM SYSTEMS SHALL BE CONTRACTOR DESIGNED AND CAPABLE OF WITHSTANDING A MARINE ENVIRONMENT FOR THE DURATION OF CONSTRUCTION.
2. THE CONTRACTOR SHALL TEMPORARILY TRANSPLANT EXISTING COASTAL VEGETATION LOCATED WITHIN THE WORK ZONE DURING THE COURSE OF CONSTRUCTION AND REPLANT IT AT ITS ORIGINAL LOCATION UPON COMPLETION.
3. 30-LB TAR PAPER SHALL BE INSTALLED IN ALL TIMBER SURFACES PRIOR TO PLACING CONCRETE.
4. THE CONTRACTOR MAY ELECT TO OPEN CUT THE EXCAVATION IN LIEU OF INSTALLING A TEMPORARY EARTH RETAINING SYSTEM.

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CHK	GJC						
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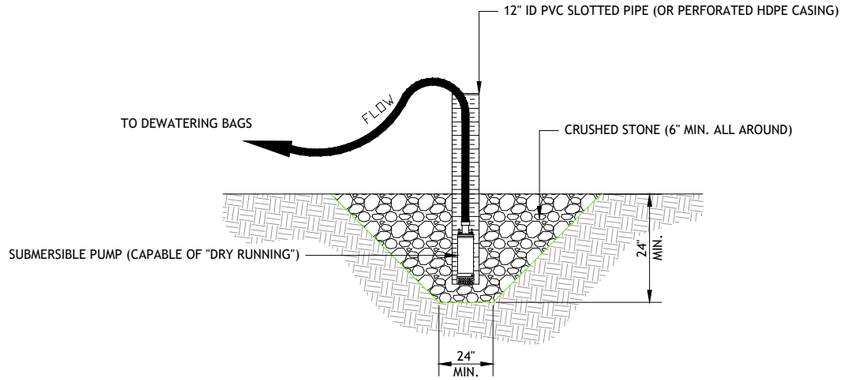
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

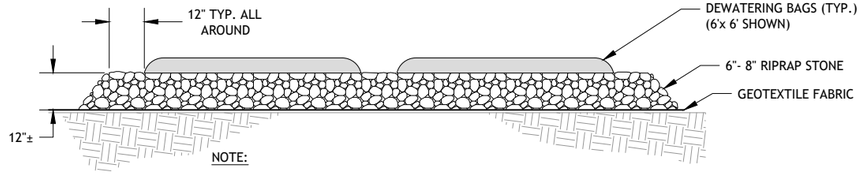
JETTY REPAIRS PLAN AND SECTION

SHEET	17 OF 20
DWG No.	D-07
DATE	JAN 2019
PROJ No.	18103.00



SUMP AND PUMP DETAIL

SCALE: NTS

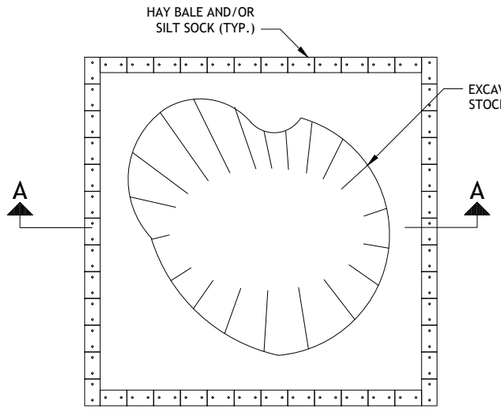


NOTE:

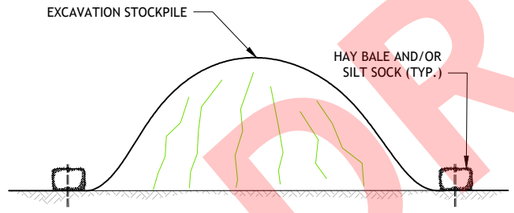
1. SIZE AND QUANTITY TO BE DETERMINED IN FIELD.
2. REMOVE DEWATERING BAGS, RIPRAP, AND GEOTEXTILE FABRIC IN THEIR ENTIRETY AT COMPLETION.

DEWATERING BAG DETAIL

SCALE: NTS



PLAN



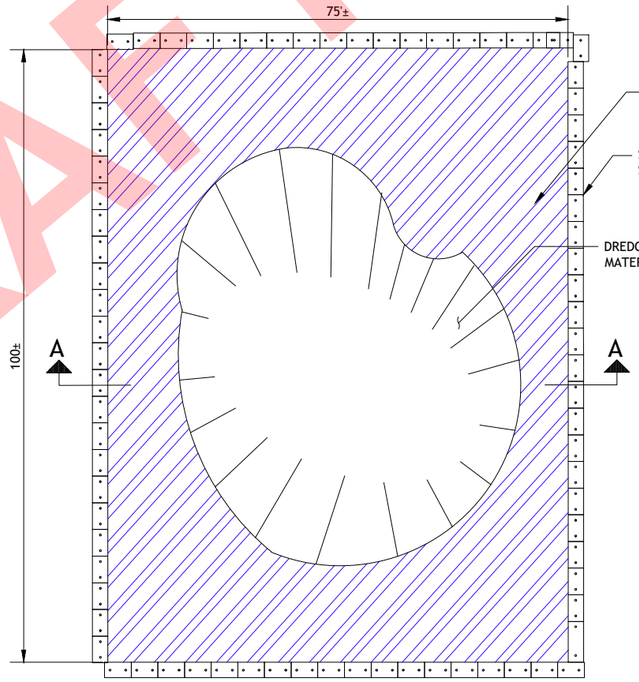
SECTION A-A

NOTES:

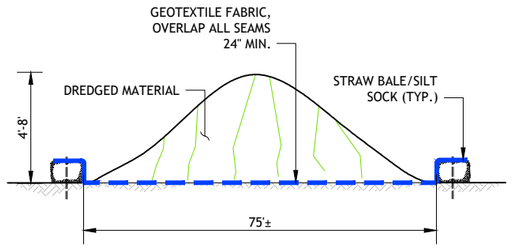
1. THE STOCKPILE DETAIL SHOWN IS CONSIDERED TYPICAL AND MAY VARY.
2. SEE THE STOCKPILE MANAGEMENT NOTES SHOWN ON SHEET NO. G-03 FOR STOCKPILE REQUIREMENTS.
3. SILT SOCKS MAY BE USED IN LIEU OF HAY BALES AT THE CONTRACTOR'S DISCRETION.

STOCKPILE DETAIL

SCALE: NTS



PLAN



SECTION A-A

TEMPORARY CONTAINMENT FACILITY DETAIL

SCALE: NTS

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No.	DATE		BY	APVD

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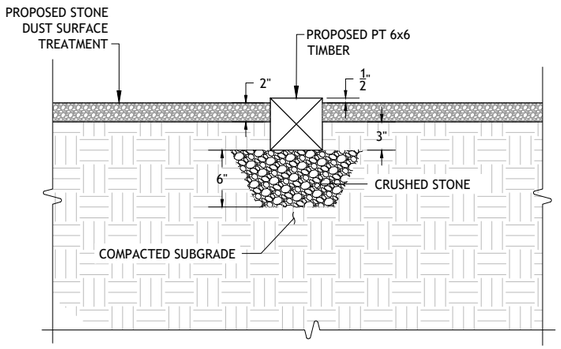
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

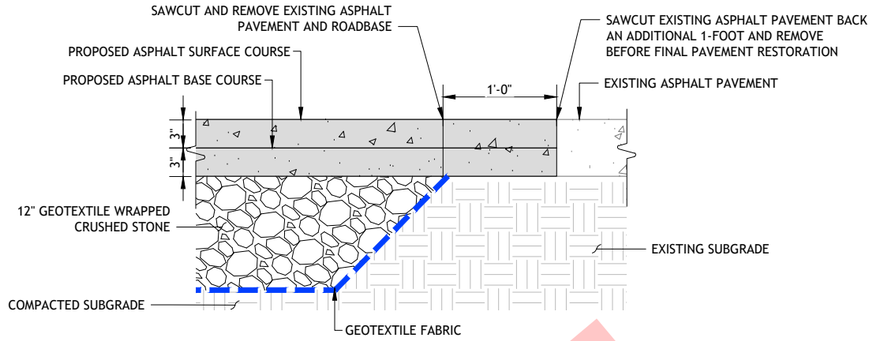
EROSION AND SEDIMENTATION CONTROL DETAILS

SHEET	18 OF 20
DWG No.	D-08
DATE	JAN 2019
PROJ No.	18103.00



TIMBER PARKING GUIDE SETTING DETAIL

SCALE: 1½" = 1'-0"

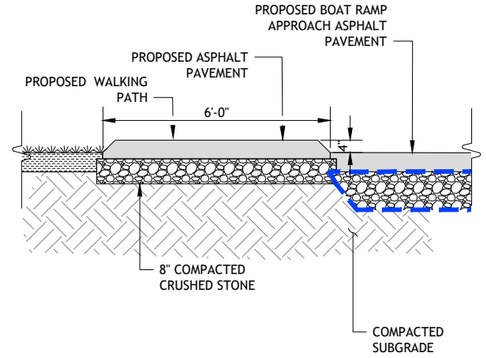


NOTE:

1. CONTRACTOR SHALL APPLY AN ASPHALT EMULSION TACK COAT TO ALL SURFACES BEFORE PLACING AND COMPACTING PROPOSED ASPHALT PAVEMENT.

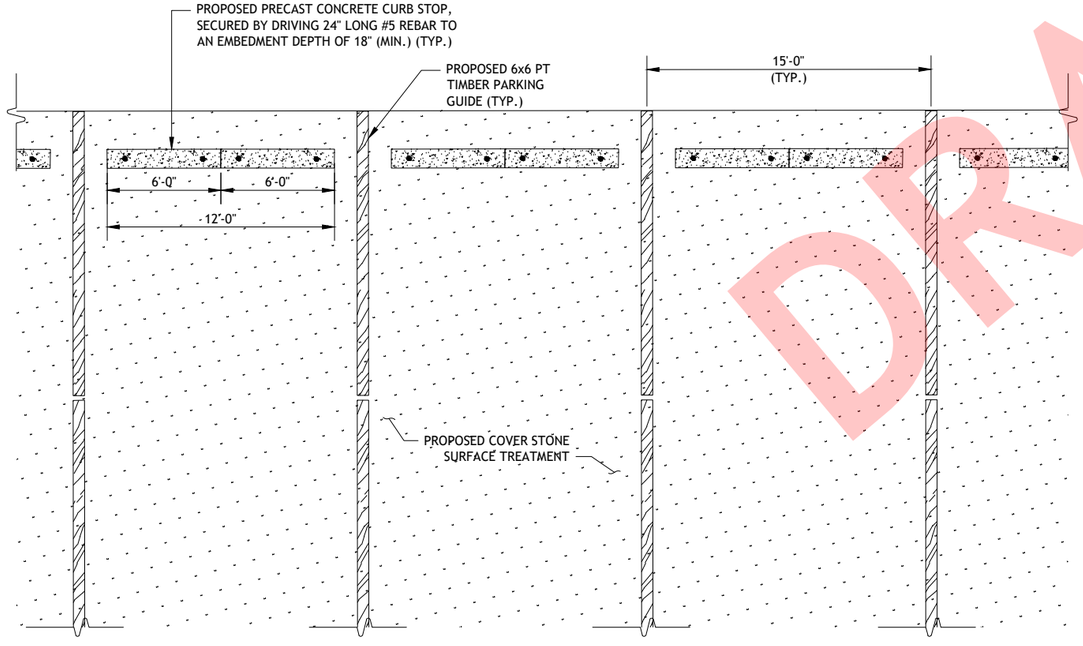
ASPHALT PAVEMENT RESTORATION DETAIL

SCALE: 1½" = 1'-0"



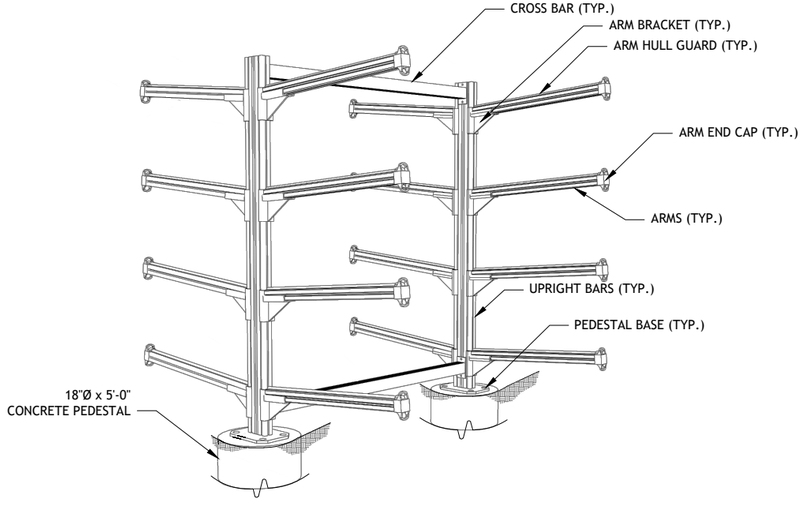
PROPOSED WALKING PATH SECTION

SCALE: NTS



PARKING LANE DETAIL

SCALE: ¼"=1'-0"



NOTE:

1. THE KAYAK STORAGE RACK SHALL BE MODEL NUMBER SRCCM8-P AS PRODUCED BY THE DOCK DOCTORS.
2. THE KAYAK RACK SHALL BE LOCKABLE WITH A STANDARD KAYAK LOCKING CABLE.

KAYAK STORAGE DETAIL

SCALE: NTS

PERMIT SUBMISSION
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DSGN	JBR
DR	DBH
CHK	GJC
APVD	JBR

No.	DATE		BY	APVD

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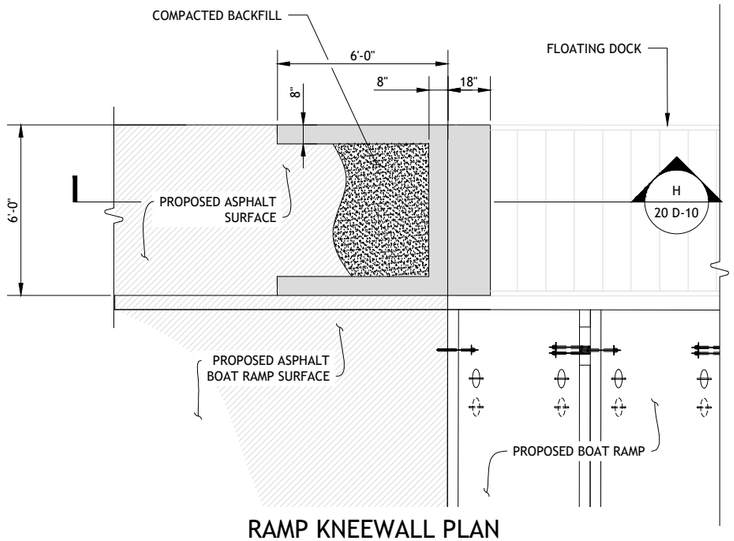
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

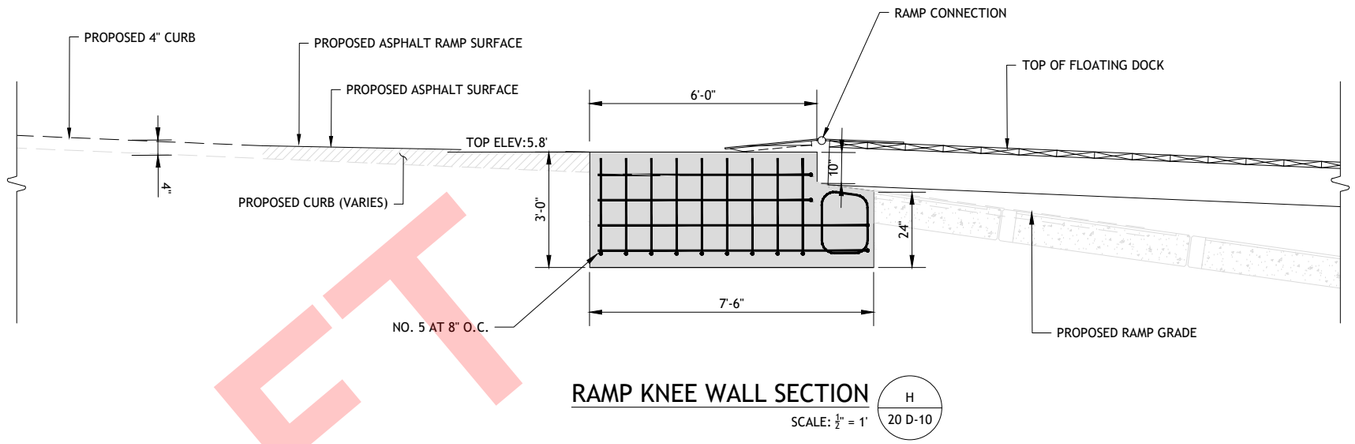
MISCELLANEOUS DETAILS - 1

SHEET	19 OF 20
DWG No.	D-09
DATE	JAN 2019
PROJ No.	18103.00



RAMP KNEEWALL PLAN

SCALE: $\frac{3}{8}$" = 1'-0"

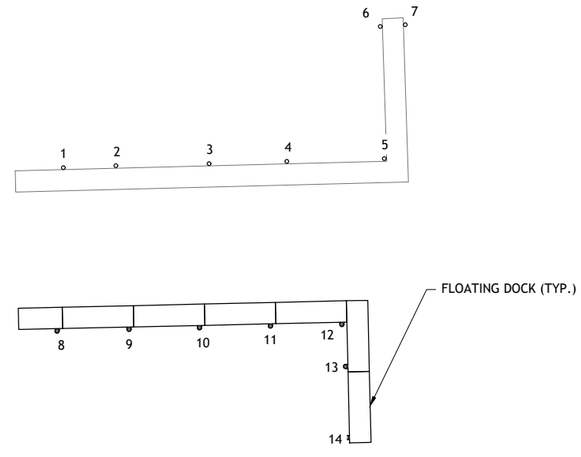


RAMP KNEE WALL SECTION

H
20 D-10

SCALE: $\frac{1}{2}$" = 1'

GUIDE PILE INSTALLATION SCHEDULE						
PILE	CUTOFF EL. (FT)	APPROXIMATE MUDLINE EL. (FT)	TIP EL. (FT)	MIN. EMBEDMENT (FT)	MIN. FREE LENGTH (FT)	TOTAL EST. PILE LENGTH (FT)
1	17.0	2.5	-43	45.5	14.5	60
2	17.0	1.0	-43	44.0	16.0	60
3	17.0	-2.5	-43	40.5	19.5	60
4	17.0	-6.0	-43	37.0	23.0	60
5	17.0	-10.0	-43	33.0	27.0	60
6	17.0	-8.0	-43	35.0	25.0	60
7	17.0	-10.0	-43	33.0	27.0	60
8	17.0	-3.0	-43	46.0	14.0	60
9	17.0	0.0	-43	53.0	7.0	60
10	17.0	-3.0	-43	40.0	20.0	60
11	17.0	-6.0	-43	37.0	23.0	60
12	17.0	-9.0	-43	34.0	26.0	60
13	17.0	-9.0	-43	34.0	26.0	60
14	17.0	-9.0	-43	34.0	26.0	60



GUIDE PILE INSTALLATION DIAGRAM

SCALE: NTS

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CHK	GJC
APVD	JBR

No.	DATE		BY	APVD

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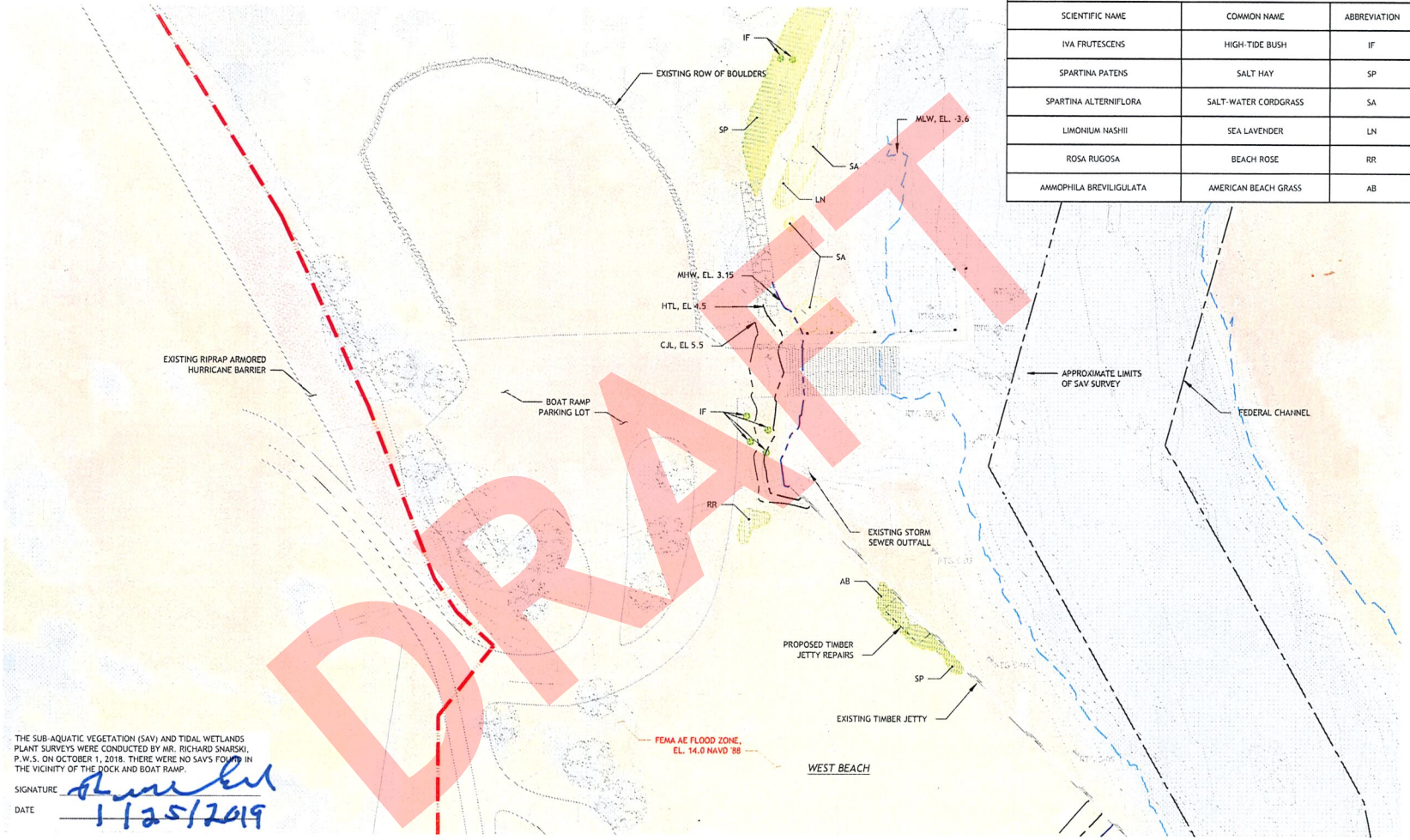
BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

MISCELLANEOUS DETAILS - 2

SHEET	20 OF 20
DWG No.	D-10
DATE	JAN 2019
PROJ No.	18103.00



TIDAL WETLANDS PLANT SPECIES LEGEND			
SCIENTIFIC NAME	COMMON NAME	ABBREVIATION	SYMBOL
IVA FRUTESCENS	HIGH-TIDE BUSH	IF	
SPARTINA PATENS	SALT HAY	SP	
SPARTINA ALTERNIFLORA	SALT-WATER CORDGRASS	SA	
LIMONIUM NASHII	SEA LAVENDER	LN	
ROSA RUGOSA	BEACH ROSE	RR	
AMMOPHILA BREVILIGULATA	AMERICAN BEACH GRASS	AB	

THE SUB-AQUATIC VEGETATION (SAV) AND TIDAL WETLANDS PLANT SURVEYS WERE CONDUCTED BY MR. RICHARD SNARSKI, P.W.S. ON OCTOBER 1, 2018. THERE WERE NO SAV'S FOUND IN THE VICINITY OF THE DOCK AND BOAT RAMP.

SIGNATURE

DATE 1/25/2019

Graphic Scale 30' 0 30' 60' 90' 1"=30'

PLAN
SCALE: 1"=30'

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CHK	GJC
APVD	JBR

No	DATE	BY	APVD

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BOAT RAMP REPLACEMENT PROJECT
WEST BEACH
CITY OF STAMFORD
Stamford, Connecticut

EXISTING WETLANDS AND SAV SURVEY PLAN

SHEET	4 OF 20
DWG No.	C-01A
DATE	JAN 2019
PROJ No.	18103.00

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT J
Selected Photographs

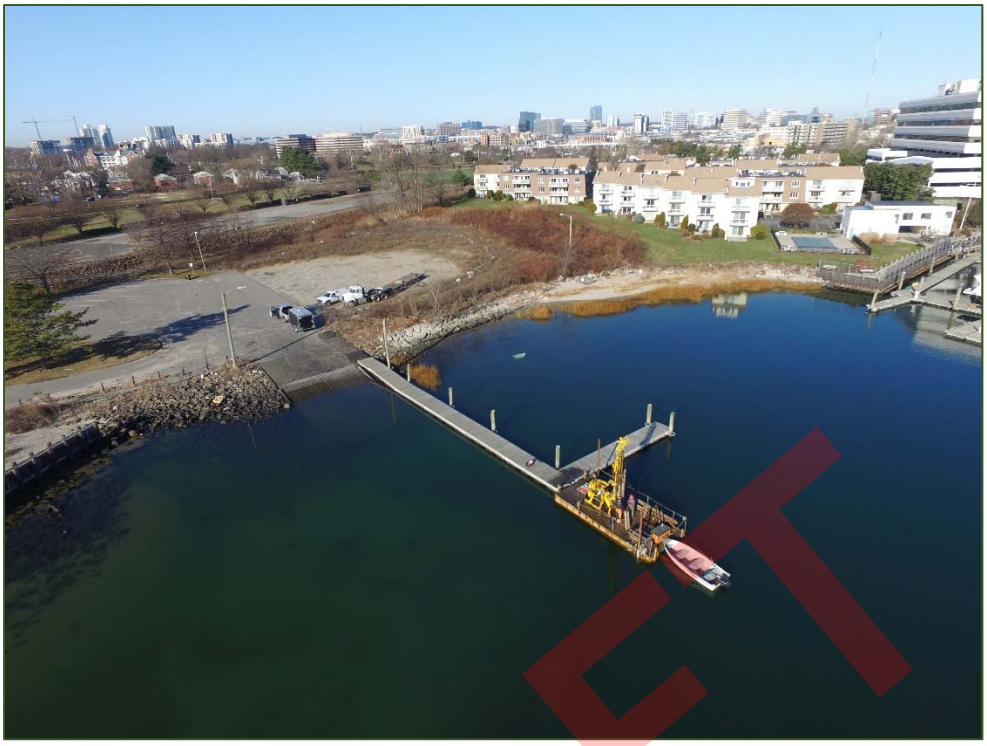

Photo No. 1

Overall Aerial, looking northwest, photo taken on December 19, 2018.

Photo No. 2

Boat Ramp with sedimentation build up, looking southeast, photo taken on December 18, 2018.

Photo No. 3

Existing Boat Ramp and Floating Dock, looking north, photo taken on July 5, 2018.

Photo No. 4

Existing Floating Dock with Timber Sheet Pile Jetty in background, looking southwest, photo taken on July 5, 2018.

Photo No. 5

Existing Floating Dock exposed at low tide, looking north, photo taken on December 18, 2018.

Photo No. 6

Aerial View of Existing Site, looking south, photo taken on December 19, 2018.

Photo No. 7

Asphalt Deterioration at Existing Floating Dock, looking east, photo taken on October 1, 2018.

Photo No. 8

Existing Asphalt Parking Lot, looking west, photo taken on July 5, 2018.

Photo No. 9

Existing Dirt Lot, looking northwest, photo taken on July 5, 2018.

Photo No. 10

Existing Timber Sheet Pile Jetty, looking northwest, photo taken on July 9, 2018.

Photo No. 11

Beginning of Existing Timber Sheet Pile Jetty, looking southeast, photo taken on July 5, 2018.

Photo No. 12

Existing Timber Sheet Pile Jetty with barriers protecting subsidence, looking northwest, photo taken on July 5, 2018.

Photo No. 13

Existing Timber Sheet Pile Jetty deterioration, looking west, photo taken on July 19, 2018.

Photo No. 14

Existing Storm Water Outfall, looking west, photo taken on July 19, 2018.

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT K
Abutting/Adjacent Property Owner's Information

Adjoining Map: 135

Adjoining Map: 140

500' PARCEL BUFFER

SUBJECT PARCEL

Adjoining Map: 134

DRAFT

Graphic Scale 1"=250'

250' 125' 0 250' 500'

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Stamford, Connecticut

FIGURE 1
500' BUFFER PARCEL MAP

SHEET 1 of 1
DATE JAN 2019
PROJ No. 18103.00

Abutting Property Owners

Stamford:

1. Plat 150, Lot A – 0 Chestnut Hill Road, Stamford, CT
   Wilder Karen Trustee, 11100 Santa Monica Blvd, Los Angeles, CA 90025

2. Plat 150, Lot C – 0 Ingall Street, Stamford, CT
   614 Shippan Associates LLC, 1387 Seaview Ave, Bridgeport, CT 06607

3. Plat 150, Lot B – 640 Shippan Ave, Stamford, CT
   Guo Kevin ET Al, 102 Harbor Drive, Stamford, CT 06902

4. Plat 150, Lot 1 – 880 Shippan Ave, Stamford, CT
   Bocchino Mary, 880 Shippan Ave, Stamford, CT 06902

5. Plat 150, Lot 2 – 880 Shippan Ave, Stamford, CT
   William Mary S, 892 Shippan Ave, Stamford #A, CT 06902
   Dasgupta Rajat Et Al, 892 Shippan Ave #E, Stamford, CT 06902

6. Plat 150, Lot A-B – 916/922 Shippan Ave, Stamford, CT
   Parkview Associates, 880 Shippan Ave, Stamford, CT 06902

7. Plat 150, Lot 4 – 940 Shippan Ave, Stamford, CT
   Mccarthy Daniel A, 940 Shippan Ave, Stamford, CT 06902

8. Plat 150, Lot 5 – 954 Shippan Ave, Stamford, CT
   Guarnieri Rosaria, 954 Shippan Ave #4, Stamford, CT 06902

9. Plat 150, Lot 6 – 964 Shippan Ave, Stamford, CT
   Ellis Georgia H Living Trust, 964 Shippan Ave, Stamford, CT 06902

10. Plat 150, Lot 44TO046 – 20 Rippowam Rd, Stamford, CT
    Noga Pjerin Et Al, 20 Rippowam Rd, Stamford, CT 06902

11. Plat 150, Lot 47TO048 – 22 Rippowam Rd, Stamford, CT
    Popkin Lawrence, 60 Rippowam Rd, Stamford, CT 06902

12. Plat 150, Lot 49TO51 – 24 Rippowam Rd, Stamford, CT
    Byzov Ilya Sergey Et Al, 24 Rippowam Rd, Stamford, CT 06902

13. Plat 150, Lot 52TO053 – 32 Rippowam Rd, Stamford, CT
    Polotaye William F, 32 Rippowam Rd, Stamford, CT 06902

14. Plat 150, Lot 54TO55 – 34 Rippowam Rd, Stamford, CT
    Marino Elizabeth A, 34 Rippowam Rd, Stamford, CT 06902

15. Plat 150, Lot 56TO057 – 36 Rippowam Rd, Stamford, CT
    Burbank Barbara J Et Al, 36 Rippowam Rd, Stamford, CT 06902

16. Plat 150, Lot 58-59 – 40 Rippowam Rd, Stamford, CT
    Kazantzdis Konstantinos Et Al, 40 Rippowam Rd, Stamford, CT 06902

17. Plat 150, Lot 606162 – 44 Rippowam Rd, Stamford, CT
    Gutowski Emily, 44 Rippowam Rd, Stamford, CT 06902

18. Plat 150, Lot 63TO064 – 48 Rippowam Rd, Stamford, CT
    Naydenov Delian, 48 Rippowam Rd, Stamford, CT 06902

19. Plat 150, Lot 65TO066 – 52 Rippowam Rd, Stamford, CT
    Sibilio Corazon D, 52 Rippowam Rd, Stamford, CT 06902

20. Plat 150, Lot 67TO068 – 54 Rippowam Rd, Stamford, CT
    Sempey Cynthia L, 54 Rippowam Rd, Stamford, CT 06902

21. Plat 150, Lot 69TO70 – 58 Rippowam Rd, Stamford, CT
    Palencia Edwin D Et Al, 58 Rippowam Rd, Stamford, CT 06902

22. Plat 150, Lot 71TO072 – 60 Rippowam Rd, Stamford, CT
    Popkin Lawrence, 60 Rippowam Rd, Stamford, CT 06902

23. Plat 150, Lot 73-74 – 64 Rippowam Rd, Stamford, CT
    Masine Giuseppe Tr Et Al, 64 Rippowam Rd, Stamford, CT 06902

24. Plat 150, Lot 75TO76 – 68 Rippowam Rd, Stamford, CT
    Vartuli Frank, 3151 High Ridge Rd, Stamford, CT 06902

25. Plat 150, Lot 77PT078 – 70 Rippowam Rd, Stamford, CT
    Vartuli Judith, 3151 High Ridge Rd, Stamford, CT 06902

26. Plat 150, Lot 79PT078 – 72 Rippowam Rd, Stamford, CT
    Mareno Amanda, 72 Rippowam Rd, Stamford, CT 06902

27. Plat 150, Lot 80-81 – 78 Rippowam Rd, Stamford, CT
    Oneill Michael Et Al, 78 Rippowam Rd, Stamford, CT 06902

28. Plat 150, Lot 82PT083 – 80 Rippowam Rd, Stamford, CT
    Sargent Joseph P Et Al, 80 Rippowam Rd, Stamford, CT 06902

29. Plat 150, Lot A – 82 Rippowam Rd, Stamford, CT
    Aikeler Christopher, 43 Bayne Street, Norwalk, CT 06851

30. Plat 150, Lot A – 1170 Shippan Ave, Stamford, CT
    Our Lady Star of Sea Corp, 1170 Shippan Ave, Stamford, CT 06902

31. Plat 150, Lot 41TO042 – 76 Auldwood Rd, Stamford, CT
    Vincent Gauthier Et Al, 76 Auldwood Rd, Stamford, CT 06901

32. Plat 150, Lot 40TO039 – 2 Ocean Dr, Stamford, CT
    Pietryga Mary Ellen, 2 Ocean Dr, Stamford, CT 06901

33. Plat 108, Lot A-1 – 521 Shippan Avenue, Stamford CT
    RAHF IV Shippan LLC, 551 Fifth Avenue 23rd Floor, New York, NY 10176

34. Plat 108, Lot B – 212 Magee Ave, Stamford, CT
    Stamford Motors Inc., 330 Elm Street #8, New Canaan, CT 06840

35. Plat 108, Lot 19TO020 – 609 Shippan Ave, Stamford CT
    Keskin Real Estate MGT LLC, 38 Rexview Circle, Trumbull, CT 06611

36. Plat 108, Lot 23TO26 – 637 Shippan Ave, Stamford, CT
    AJLN LLC, 117 Prospect St, Stamford, CT 06901

37. Plat 108, Lot 23TO26 – 0 Shippan Ave, Stamford, CT
    Herman John W Revocable TR ET AL, 106 Soundview Drive, Stamford, CT 06902

38. Plat 108, Lot 35TO36 – 695 Shippan Ave, Stamford, CT
    VJH LLC, 106 Soundview Drive, Stamford, CT 06902

39. Plat 108, Lot B – 703 Shippan Ave, Stamford, CT
    VJH LLC, 106 Soundview Drive, Stamford, CT 06902

40. Plat 108, Lot A – 705 Shippan Ave, Stamford, CT
    Stinson Jeffrey Et Al, 6346 Vanderbilt Ave, Dallas, TX 75214

41. Plat 108, Lot 39TO41 – 707 Shippan Ave, Stamford, CT

Getty Petroleum Corp., Two Jericho Plaza Wing C Suite 110, Jericho, NY 11753

42. Plat 108, Lot A-2 – 511 Shippan Ave, Stamford, CT
    National Church Res of Stamford, 2335 North Bank Drive, Columbus, OH 43220

43. Plat 150, Lot A – 614 Shippan Ave, Stamford, CT
    614 Shippan Associates LLC, 1387 Seaview Ave, Bridgeport, CT 06607

44. Plat 150, Lot D – 3 Seaview Ave, Stamford, CT
    Schectman Zachary J, 3 Seaview Ave, Stamford, CT 06902

45. Plat 150, Lot S – 23 Seaview Ave, Stamford CT
    23 Seaview Stamford LLC, 42 Hedge Brook Lane, Stamford, CT 06903

46. Plat 150, Lot M – 14 Ingall Street, Stamford, CT
    Schuck Ligia, 14 Ingall St, Apt A1, Stamford, CT 06902

47. Plat 150, Lot – 14 Ingall Street, Stamford CT
    Giorgi Mary T, 14 Ingall Strret #B-6, Stamford, CT 06902

48. Plat 150, Lot A – 43 Seaview Ave, Stamford, CT
    Moorings Apartments Inc., 24 Ralsey Road, Stamford, CT 06902

49. Plat 150, Lot A – 61 Seaview Lane, Stamford, CT
    Kirouac Paul, 61 Seaview Ave #1, Stamford, CT 06902

50. Plat 150, Lot A – 61 Seaview Lane, Stamford, CT
    Capano Daniel E ET AL, 61 Seaview Ave #G-79, Stamford, CT 06902

51. Plat 150, Lot B – 68 Seaview Ave, Stamford, CT
    Seaview House LLC, PO Box 110472, Stamford, CT 06911

52. Plat 25, Lot A – Lot A Magee Ave, Stamford, CT
    205 Magee Avenue LLC, 1 Elmcroft Road Suite 500, Stamford, CT 06902

53. Plat 25, Lot 1 – 27 Lindstrom Road, Stamford, CT
    Jegadeesan Renin M ET AL, 27 Lindstrom Road # A-1, Stamford, CT 06902

54. Plat 25, Lot 1 - 27 Lindstrom Road, Stamford, CT
    Pascual-Young Josephine ET AL, 27 Lindstrom Rd Bldg 6 UT C6, Stamford CT 06902

55. Plat 25, Lot 0 – 935 Shippan Ave #1, Stamford, CT
    Pluzdrak Nanvy ET AL, 849 Savannah Circle, Walnut Creek, CA 94598

56. Plat 25, Lot 0 – 935 Shippan Ave #5, Stamford, CT
    McDaniel Christopher ET AL, 935 Shippan Ave #5, Stamford, CT 06902

57. Plat 25, Lot 21 – 957 Shippan Ave, Stamford, CT
    25 Division Street LLC, 127 Guinea Road, Stamford, CT 06903

58. Plat 25, Lot 20 – 965 Shippan Ave, Stamford, CT
    Davis Russel, 127 Guinea Road, Stamford, CT 06903

59. Plat 25, Lot 19 – 985 Shippan Ave, Stamford CT
    Sarrazin Evouilnie ET AL, 985 Shippan Ave, Stamford CT 06902

60. Plat 25, Lot 18 – 995 Shippan Ave, Stamford CT
    Lombardi Luciano ET AL, 995 Shippan Ave, Stamford, CT 06902

61. Plat 25, Lot 17 – 1003 Shippan Ave, Stamford, CT
    Athanasiadis Kelesidis Rebecca ET AL, 1015 Shippan Ave, Stamford, CT 06902

62. Plat 25, Lot 16 – 1015 Shippan Ave, Stamford, CT
    Kelesidis Rebecca Ahanasiadis, 1015 Shippan Ave, Stamford, CT 06902

63. Plat 25, Lot 15 – 1027 Shippan Ave, Stamford, CT
    Begetis Constance E ET AL, 1608 Shippan Ave, Stamford, CT 06902

64. Plat 25, Lot 14 – 1035 Shippan Ave, Stamford, CT
    1035 Shippan Ave LLC,, 1035 SHippan Ave, Stamford, CT 06902

65. Plat 25, Lot 38 – 15 Mariner's Lane, Stamford, CT
    Guarnieri Lous, 27 White Birch Lane, Stamford, CT 06905

66. Plat 25, Lot 23 – 16 Lindstrom Rd, Stamford, CT
    Vinewyck-RE LLC, 5825 Edgehill Drive, Alexandria, VA 22303

67. Plat 25, Lot 24 – 16 Lindstrom Rd, Stamford, CT
    Ivanov Ivo 5% ET AL, 16 Lindstrom Rd #6, Stamford, CT 06902

68. Plat 145, Lot 5-6 – 0 Shippan Ave, Stamford, CT
    Lapin Harvey, 16 Grace Street, New Caan, CT 06840

69. Plat 134, Lot 7TO008 – 0 Shippan Ave, Stamford, CT
    Toner Margaret C Trustee, 1022 Shippan Ave, Stamford, CT 06902

70. Plat 145, Lot 9TO010 – 1022 Shippan Ave, Stamford, CT
    Toner Margaret C Trustee, 1022 Shippan Ave, Stamford, CT 06902

71. Plat 145, Lot 11TO014 – 1028 Shippan Ave, Stamford, CT
    Kazantzidis Stylianos ET AL, 1028 Shippan Ave, Stamford, CT 06902

72. Plat 145, Lot 15TO016 – 1042 Shippan Ave, Stamford, CT
    Macduff Eric, 1042 Shippan Ave, Stamford, CT 06902

73. Plat 145, LOT 17TO018 – 1052 Shippan Ave, Stamford, CT
    Mickelson Michael W ET AL, 1052 Shippan Ave, Stamford, CT 06902

74. Plat 145, Lot 19TO020 – 1060 Shippan Ave, Stamford, CT
    Cameron Richard Roger, 48 Westcott Road, Stamford, CT 06902

75. Plat 145, Lot 21TO024 – 1076 Shippan Ave, Stamford, CT
    Zawistowski Lucyna, 1076 Shippan Ave, Stamford, CT 06902

76. Plat 145, Lot 224TO226 – 0 Mohegan Ave, Stamford, CT
    Tournas Dimitrios, 45 Thornridge Drive, Stamford, CT 06903

77. Plat 145, Lot 227TO228 – 5 Mohegan Ave, Stamford, CT
    Leon Wendy ET AL, 5 Mohegan Ave, Stamford, CT 06902

78. Plat 145, Lot R-B – 9 Mohegan Ave, Stamford, CT
    Samsone Daniel C, 9 Mohegan Ave, Stamford, CT 06902

79. Plat 145, Lot R-A – 15 Mohegan Ave, Stamford, CT
    Kolenberg Thomas G ET AL, 15 Mohegan Ave, Stamford, CT 06902

80. Plat 145, Lot 234-5 – 17 Mohegan Ave, Stamford, CT
    New England Properties 1 LLC, 8 Konandreas Drive, Stamford, CT 06903

81. Plat 145, Lot 236-0237 – 19 Mohegan Ave, Stamford, CT
    New England Properties 1 LLC, 8 Konandreas Drive, Stamford, CT 06903

82. Plat 145, Lot 238-9 – 25 Mohegan Ave, Stamford, CT
    Mullins Dorothy, 200 Cedar Wood Road, Stamford, CT 06903

83. Plat 145, Lot 240-1 – 29 Mohegan Ave, Stamford, CT
    Wilcox William Brian, 29 Mohegan Ave, Stamford, CT 06902

84. Plat 146, Lot 199TO200 – 4 Mohegan Ave, Stamford, CT

Reichard Doreen, 4 Mohegan Ave, Stamford, CT 06902

85. Plat 146, Lot A – 6 Mohegan Ave, Stamford, CT
    Samelko Jerzy ET AL, 34 Jamroga Lane, Stamford, CT 06905

86. Plat 146, Lot 204TO205 – 12 Mohegan Ave, Stamford, CT
    Hill Mackenzie ET AL, 12 Mohegan Ave, Stamford, CT 06902

87. Plat 146, Lot 206TO207 – 20 Mohegan Ave, Stamford, CT
    Sherman Jill, 20 Mohegan Ave, Stamford, CT 06902

88. Plat 146, Lot 208TO209 – 22 Mohegan Ave, Stamford, CT
    Keeler Harold J JR ET AL, 22 Mohegan Ave, Stamford, CT

89. Plat 146, Lot 210TO211 – 24 Mohegan Ave, Stamford, CT
    Needle Seth ET AL, 24 Mohegan Ave, Stamford, CT 06902

90. Plat 146, Lot 212TO213 – 26 Mohegan Ave, Stamford, CT
    JCB Mohegan LLC, 101 Newfield Drive, Stamford, CT 06905

91. Plat 146, Lot 214-5 – 28 Mohegan Ave, Stamford, CT
    Garvey Catherine M, 28 Mohegan Ave, Stamford, CT 06902

92. Plat 146, Lot 216-217 – 30 Mohegan Ave, Stamford, CT
    Garvey Catherine M, 28 Mohegan Ave, Stamford, CT 06902

93. Plat 146, Lot 177TO178 – 1 Ponus Ave, Stamford, CT
    Cartwright Angela, 637 Cove Road # A-12, Stamford, CT 06902

94. Plat 146, Lot 179TO180 – 5 Ponus Ave, Stamford, CT
    Melecio Jamie K, 5 Ponus Ave, Stamford, CT 06902

95. Plat 146, Lot 181TO182 – 7 Ponus Ave, Stamford, CT
    Lombardi Maria, 19 Ponus Ave, Stamford, CT 06902

96. Plat 146, Lot 183TO184 – 11 Ponus Ave, Stamford, CT
    Patterson Pauline ET AL, 11 Ponus Ave, Stamford, CT 06902

97. Plat 146, Lot B – 17 Ponus Ave, Stamford, CT
    Lombardi Frank, 19 Ponus Ave, Stamford, CT 06902

98. Plat 146, Lot A – 19 Ponus Ave, Stamford, CT
    Lombardi Maria ET AL, 19 Ponus Ave, Stamford, CT 06902

99. Plat 146, Lot 190TO192 – 25 Ponus Ave, Stamford, CT
Lapin Seymour, 73 Strawberry Hill Avenue #100, Norwalk, CT 06855

100. Plat 146, Lot 193TO194 – 27 Ponus Ave, Stamford, CT
Derisme Eddy ET AL, 27 Ponus Ave, Stamford, CT 06902

101. Plat 147, Lot 142TO144 – 47 Rippowam Road, Stamford, CT
Rutledge Libby Cooke Revocable TR ET AL, 47 Rippowam Road, Stamford, CT 06902

102. Plat 147, Lot 140TO141 – 51 Rippowam Road, Stamford, CT
Portanova Maria (LU) ET AL, 51 Rippowam Road, Stamford, CT 06902

103. Plat 147, Lot 145TO146 – 10 Ponus Ave, Stamford, CT
Lowe Ralph T III ET AL, 10 Ponus Ave, Stamford, CT 06902

104. Plat 147, Lot 147TO148 – 14 Ponus Ave, Stamford, CT
Cabrera Plinio ET AL, 14 Ponus Ave, Stamford, CT 06902

105. Plat 147, Lot 149 – 16 Ponus Ave, Stamford, CT
Aleen Douglas C ET AL, 16 Ponus Ave, Stamford, CT 06902

106. Plat 147, Lot 150TO151 – 20 Ponus Ave, Stamford, CT
Fox Run Properties LLC, 32 Fox Run Road, Redding, CT 06896

107. Plat 147, Lot 152-153 – 22 Ponus Ave, Stamford, CT
Gjuroviq Vera ET AL, 22 Ponus Ave, Stamford, CT 06902

108. Plat 147, Lot B – 24 Ponus Ave, Stamford, CT
Frecker Leigh, 24 Ponus Ave, Stamford, CT 06902

109. Plat 147, Lot A – 30 Ponus Ave, Stamford, CT
Rabita Louis S 50% ET AL, 30 Ponus Ave, Stamford, CT 06902

110. Plat 147, Lot 137TO139 – 55 Rippowam Road, Stamford, CT
Allen Janie E, 3 Fresh Meadows Lane, Darien, CT 06820

111. Plat 147, Lot 135TO136 – 59 Rippowam Road, Stamford, CT
Hayes Laurence J, 59 Rippowam Road, Stamford, CT 06902

112. Plat 147, Lot 154TO155 – 9 Algonquin Ave, Stamford CT
Tsiahouridis Anatasios ET AL, 48 Lanell Drive, Stamford, CT

113. Plat 147, Lot 156TO157 – 11 Algonquin Ave, Stamford, CT
Utley George D III ET AL, 11 Algonquin Ave, Stamford, CT 06902

114. Plat 147, Lot 167TO168 – 60 Iroquois Rd, Stamford, CT
Edelman Emily T, 60 Iroquois Rd, Stamford, CT 06902

115. Plat 147, Lot A – 64 Iroquois Rd, Stamford, CT
Tsiahouridis Anastasios, 48 Lanell Dr, Stamford, CT 06902

116. Plat 147, Lot B – 68 Iroquois Rd, Stamford, CT
Mojica Edgar ET AL, 68 Iroquois Rd, Stamford, CT 06902

117. Plat 147, Lot 160-161 – 70 Iroquois Rd, Stamford, CT
Valdes Maureen Lynch ET AL, 6 Wakeman Place, Westport, CT 06880

118. Plat 147, Lot 158-159 – 17 Algonquin Ave, Stamford, CT
Stenback Kathleen, 17 Algonquin Ave, Stamford, CT 06902

119. Plat 148, Lot 125TO128 – 71 Rippowam Rd, Stamford, CT
Fraioloi Josie ET AL, 71 Rippowam Rd, Stamford, CT 06902

120. Plat 148, Lot 123TO124 – 73 Rippowam Rd, Stamford, CT
Caras Louis G, 73b Rippowam Rd, Stamford, CT 06902

121. Plat 148, Lot 121TO122 – 77 Rippowam Rd, Stamford, CT
Keeney Bret D, 77 Rippowam Rd, Stamford, CT 06903

122. Plat 148, Lot 119TO120 – 81 Rippowam Rd, Stamford, CT
Mazarkos Kostas ET AL, 81 Rippowam Rd, Stamford, CT 06902

123. Plat 148, Lot 131TO134 – 14 Algonquin Ave, Stamford, CT
Ding Belinda Yuek Way, 14 Algonquin Ave, Stamford, CT 06902

124. Plat 148, Lot 133TO134 – 82 Iroquois Rd, Stamford, CT
Dowd Sean O, 35 West Broad Street #405, Stamford, CT 06902

125. Plat 148, Lot 131TO132 – 86 Iroquois Rd, Stamford, CT
Dowd Sean O, 35 West Broad Street #405, Stamford, CT 06902

126. Plat 148, Lot 129-130 – 90 Iroquois Rd, Stamford, CT
Rizos John ET AL, 45 White Oak Shae Lane, New Canaan, CT 06840

127. Plat 25, Lot B – 1055 Shippan Ave, Stamford, CT

Piantino A Sema, 189 Bedford Street, Stamford, CT 06901

128. Plat 150, Lot 271TO272 – 43 Iroquois Rd, Stamford, CT
Degabriel Richard, 1704 Newfield Ave, Stamford, CT 06902

129. Plat 150, Lot 273TO274 – 45 Iroquois Rd, Stamford, CT
Boehringer Robert, 83 Sea Beach Drive, Stamford, CT 06902

130. Plat 150, Lot 276TO278 – 47 Iroquois Rd, Stamford, CT
Boehringer Robert, 83 Sea Beach Drive, Stamford, CT 06902

131. Plat 150, Lot 279TO281 – 49 Iroquois Rd, Stamford, CT
Moshos Helen, 49 Iroquois Rd, Stamford, CT 06902

132. Plat 150, Lot 282TO284 – 61 Iroquois Rd, Stamford, CT
Maragos Maria, – 61 Iroquois Rd, Stamford, CT 06902

133. Plat 150, Lot 285TO287 – 67 Iroquois Rd, Stamford, CT
Cyr Ann, 108 Woodmere Rd, Stamford, CT 06905

134. Plat 150, Lot 288-289 - 69 Iroquois Rd, Stamford, CT
Whitehead Walter A Jr, 69 Iroquois Rd, Stamford, CT 06902

135. Plat 150, Lot 290TO291 - 73 Iroquois Rd, Stamford, CT
Whelan Gordon P ET AL, PO BOX 0086617, Sioux Falls, SD 57186

136. Plat 150, Lot 292TO293 – 75 Iroquois Rd, Stamford, CT
Burdock Warren ET AL, 75 Iroquois Rd, Stamford, CT 06902

137. Plat 150, Lot 294TO296 – 87 Iroquois Rd, Stamford, CT
Jackson Michael J H, 87 Iroquois Rd, Stamford, CT 06902

138. Plat 150, Lot 297TO298 – 4 Wampanaw Ave, Stamford, CT
RISVAN LLC, 45 White Oak Shade Lane, New Canaan, CT 06840

139. Plat 150, Lot A – 1170 Shippan Ave, Stamford CT
Our Lady of Star Sea Corp, 1170 Shippan Ave, Stamford CT 06902

140. Plat 150, Lot 6 – 42 Lanell Drive, Stamford, CT
US Bank Trust NA, 16745 W Bernardo Drive STE 300, SAN Diego, CA 92127

141. Plat 150, Lot 7 – 48 Lanell Dr, Stamford, CT
Tsiahouridis Anastasios ET AL, 48 Lanell Dr, Stamford, CT 06902

142. Plat 150, Lot 8 – 54 Lanell Dr, Stamford, CT
Greifzu James P, 54 Lanell Dr, Stamford, CT 06902

143. Plat 150, Lot 9 – 58 Lanell Dr, Stamford, CT
Clausen Maura Nolan, 58 Lanell Dr, Stamford, CT 06902

144. Plat 150, Lot 10 - 68 Lanell Dr, Stamford, CT
Nash Ronald, 68 Lanell Dr, Stamford, CT 06902

145. Plat 150, Lot 43 – 70 Auldwood Rd, Stamford, CT
Rovegno John F ET AL, 70 Auldwood Rd, Stamford, CT 06902

146. Plat 150, Lot 44 - 66 Auldwood Rd, Stamford, CT
White Geogiana D, 66 Auldwood Rd, Stamford, CT 06902

147. Plat 150, Lot 45 – 60 Auldwood Rd, Stamford, CT
Staley Nina Cheung ET AL, 60 Auldwood Rd, Stamford, CT 06902

148. Plat 150, Lot 46 - 58 Auldwood Rd, Stamford, CT
Heraghty Robin, 58 Auldwood Rd, Stamford, CT 06902

149. Plat 150, Lot 12 – 50 Auldwood Rd, Stamford, CT
McArthur Joshel ET AL, 50 Auldwood Rd, Stamford, CT 06902

150. Plat 150, Lot 13 – 46 Auldwood Rd, Stamford, CT
Beckles Nathaniel ET AL, 46 Auldwood Rd, Stamford, CT 06902

151. Plat 149, Lot 54PTO53 – 51 Auldwood Rd, Stamford, CT
Patel Raj ET AL, 51 Auldwood Rd, Stamford, CT 06902

152. Plat 149, Lot 52PTO53 – 59 Auldwood Rd, Stamford, CT
Hornstein Darlene B ET AL, 59 Auldwood Rd, Stamford, CT 06902

153. Plat 149, Lot 47 - 69 Auldwood Rd, Stamford, CT
Dickinson Malcolm, 69 Auldwood Rd, Stamford, CT 06902

154. Plat 149, Lot 48TO049 – 11 Ocean Drive North, Stamford, CT
Heller Bruce D ET AL, 11 Ocean Drive North, Stamford, CT 06902

155. Plat 150, Lot A - 6 Ocean Drive North, Stamford, CT
Gold Ronald M ET AL, - 6 Ocean Drive North, Stamford, CT 06902

156. Plat 150, Lot B - 10 Ocean Drive North, Stamford, CT
Norton Jeffery L ET AL, 1345 Ave of the Americas, New York, NY 10105

157. Plat 150, Lot 36 - 14 Ocean Drive North, Stamford, CT
Desanctis Steven G ET AL, 14 Ocean Drive North, Stamford, CT 06902

158. Plat 150, Lot 35 - 18 Ocean Drive North, Stamford, CT
Wiberg Bo ET AL, 18 Ocean Drive North, Stamford, CT 06902

159. Plat 150, Lot 34 – 22 Ocean Drive North, Stamford, CT
Hubertus Shippan LLC, 1462 Oenoke Ridge Road, New Canaan, CT 06840

160. Plat 150, Lot 33 – 26 Ocean Drive North, Stamford, CT
Hackner Susan G ET AL, 26 Ocean Drive North, Stamford, CT 06902

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT L
Applicant Background Information

Connecticut Department of
Energy & Environmental Protection

Applicant Background Information

Check the box by the entity which best describes the applicant and complete the requested information. **You must choose one of the following:** corporation, limited liability company, limited partnership, general partnership, voluntary association and individual or business type. Be sure to include the signatory authority or authorized representative certifying the application.

☐ **Corporation**

☐ Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. Parent Corporation
   Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.:
   Contact Person: Phone: ext.
   E-mail:
2. Subsidiary Corporation:
   Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.:
   Contact Person: Phone: ext.
   E-mail:
3. Directors:
   Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.:
   E-mail:
4. Officers:
   Name:
   Mailing Address:
   City/Town: State: Zip Code:
   Business Phone: ext.:
   E-mail:

Applicant Background Information (continued)

☐ **Limited Liability Company**

☐ Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. List each member.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

2. List any manager(s) who, through the articles of organization, are vested the management of the business, property and affairs of the limited liability company.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Applicant Background Information (continued)

☐ **Limited Partnership**

☐ Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. General Partners:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

2. Limited Partners:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Applicant Background Information (continued)

☐ **General Partnership**

☐ Check the box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. General Partners:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
Contact Person: Phone: ext.
E-mail:

Applicant Background Information (continued)

☐ **Voluntary Association**

☐ Check box if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. List authorized persons of association or list all members of association.

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

Name:
Mailing Address:
City/Town: State: Zip Code:
Business Phone: ext.:
E-mail:

☒ **Individual or Other Business Type**

☐ Check the box, if additional sheets are necessary. If so, label and attach additional sheet(s) to this sheet with the required information.

1. Name: **City of Stamford**
Mailing Address: 888 Washington Boulevard
City/Town: Stamford State: CT Zip Code: 06901
Business Phone: 860-977-4856 ext.:
E-mail: ZBarisic@stamford.gov

2. State other names by which the applicant is known, including business names.
Name:

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT M
Other Information

Soil Boring Logs and Grain Size Analysis Results

RT Group, Inc.
Engineered from the Ground Up℠
70 Romano Vineyard Way, Suite 134
North Kingstown, Rhode Island 02852
T 401 438 3100 F 401 294 9806
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GEO-ENVIRONMENTAL · STRUCTURAL · CIVIL

SOIL BORING LOG

BORING NUMBER: RTG-SB-01
DATE(S): 12/19/2018
PROJECT NUMBER: 18103.00

PROJECT: West Beach Coastal Engineering Services
LOCATION: N:575,999.6 E:787,004.1 (CT State Plane)
ELEVATION: -5.0' (NAVD 88)
DRILLING CONTRACTOR: New England Boring Contractors
DRILLING METHOD AND EQUIPMENT: Driven Casing and wash, barge mounted CME-45 Drill rig, Automatic/Safety Hammer
WATER LEVEL AND DATE: EL. 1.2' @ 9:30 AM
START: 9:45 AM 12/19/2018 **FINISH:** 12:15 PM 12/19/2018 **LOGGER:** G. Coren

DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"- 6"- 6"- 6"	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
0.0						Begin drilling at 9:45 AM, 12/19/2018
	0-2	SS S-1	0.7	WOR-WOR-WOR-WOR	SILT WITH SAND, (ML), black, wet, very soft, fine to medium sand	
	2-4	SS S-2	0.7	WOR-WOR-WOR-WOR	SILT WITH SAND, (ML), black, wet, very soft, fine to medium sand	140# safety hammer, organic smell detected
5.0	4-6	SS S-3	1.1	WOR-WOR-WOR-WOR	SILT WITH SAND, (ML), black, wet, very soft, fine to medium sand	
	6-8	SS S-4*	1.6	WOR-WOH-WOH-WOH	SILTY SAND, (SM), dark gray, wet, very loose	
10.0	8-10	SS S-5	1.2	WOR-WOR-WOH-WOH	SILT, (ML), black, wet, very soft	Casing to -8'
	10-12	SS S-6	1.4	WOR-WOH-WOH-WOH	SILT, (ML), black, wet, very soft	Casing to -15', shell fragments present, switched to 140# automatic hammer
15.0						
	15-17	SS S-7	0.8	WOH-1-1-4	POORLY GRADED SAND WITH SILT, (SP-SM), dark gray, wet, very loose, fine to medium sand	Casing to -20'
20.0						
	20-22	SS S-8*	1.3	2-5-6-7	POORLY GRADED SAND, (SP), brown/gray, wet, medium dense, fine to medium sand	Casing to -25'
25.0						
	25-27	SS S-9	1.2	3-4-6-7	SILT, (ML), tan, wet, stiff	Wash for this strata started at 24' below mud line. Casing to -30'
30.0						
	30-32	SS S-10	1.0	2-4-3-4	SILT WITH SAND, (ML), gray, wet, firm, fine sand	Casing to -35'
35.0						
	35-37	SS S-11	1.8	2-3-2-4	SILT, (ML), gray, wet, firm	Casing to -40'
40.0						

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North Kingstown, Rhode Island 02852
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GEO-ENVIRONMENTAL · STRUCTURAL · CIVIL

SOIL BORING LOG

BORING NUMBER: RTG-SB-01
DATE(S): 12/19/2018
PROJECT NUMBER: 18103.00

PROJECT: West Beach Coastal Engineering Services
LOCATION: N:575,999.6 E:787,004.1 (CT State Plane)
ELEVATION: -5.0' (NAVD 88)
DRILLING CONTRACTOR: New England Boring Contractors
DRILLING METHOD AND EQUIPMENT: Driven Casing and wash, barge mounted CME-45 Drill rig, Automatic/Safety Hammer
WATER LEVEL AND DATE: EL. 1.2' @ 9:30 AM
START: 9:45 AM 12/19/2018
FINISH: 12:15 PM 12/19/2018
LOGGER: G. Coren

DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"- 6"- 6"- 6"	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
40.0						
	40-42	SS S-12*	1.3	4-7-16-19	SILT WITH SAND, (ML), gray, wet, very stiff, fine to medium sand	Some gravel in tip, casing to -45'
45.0	45-47	SS S-13	0.3	20-47-51-61	WELL GRADED SAND, (SW), brown/gray, very dense	Hard drilling noted
50.0					END BORING AT 47 FEET BELOW GRADE	End drilling at 12:15 PM, 12/19/2018
55.0					An asterisk (*) next to a sample number denotes a sample on which a laboratory grain size analysis was performed.	
60.0						
65.0						
70.0						
75.0						
80.0						

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SOIL BORING LOG

BORING NUMBER: RTG-SB-02
DATE(S): 12/19/2018
PROJECT NUMBER: 18103.00

PROJECT: West Beach Coastal Engineering Services
LOCATION: N:575,983.1 E:787,043.8 (CT State Plane)
ELEVATION: -8.0' (NAVD 88)
DRILLING CONTRACTOR: New England Boring Contractors
DRILLING METHOD AND EQUIPMENT: Driven Casing and wash, barge mounted CME-45 Drill rig, Automatic/Safety Hammer
WATER LEVEL AND DATE: EL. 1.2' NAVD 88
START: 10:20 AM 12/19/2018 **FINISH:** 2:15 PM 12/19/2018 **LOGGER:** G. Coren

DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"- 6"- 6"- 6"	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
0.0						Begin drilling at 10:20 AM, 12/19/2018
	0-2	SS S-1	1.0	WOR-WOR-WOR-WOR	ORGANIC SILT WITH SAND, (ML), black, wet, very soft, fine sand	Casing to -3'
5.0	5-7	SS S-2	2.0	WOR-WOR-WOR-WOR	ORGANIC SILT, (ML), black, wet, very soft	Casing to -10', odor detected
10.0	10-12	SS S-3	1.7	WOR-WOR-WOH-1	SANDY ORGANIC SILT, (ML), black, wet, very soft, fine sand	Casing to -14', odor detected
	12-14	SS S-4	1.4	2-5-6-6	Upper 8": SANDY ORGANIC SILT, (ML), black, wet, stiff, fine sand Lower 9": POORLY GRADED SAND, (SP), tan, wet, medium dense, fine sand	Casing to -16'
15.0	14-16	SS S-5	1.2	6-5-8-11	POORLY GRADED SAND, (SP), tan, wet, medium dense, fine sand	
	16-18	SS S-6*	1.0	9-8-13-11	SILTY SAND, (SM), brown, wet, medium dense, fine to medium sand	Switched to 140# safey hammer, casing to -18'
20.0	18-20	SS S-7	0.8	21-25-26-26	POORLY GRADED SAND, (SP), tan, wet, very dense, fine to medium sand	Casing to -20'
	20-22	SS S-8	1.6	4-9-9-8	SILT, (ML), gray, wet, medium dense fine sand	Switched to 140# automatic hammer, casing to -25'
25.0	25-27	SS S-9*	1.8	1-2-3-4	SILT, (ML), gray, wet, firm	Casing to -30'
30.0	30-32	SS S-10	0.7	66-27-53-15	WELL GRADED SAND WITH GRAVEL, (SP), gray, wet, very dense	Switched to 140# safety hammer, casing to -35'
35.0	35-37	SS S-11	0.6	4-4-8-11	WELL GRADED GRAVEL WITH SAND, (GW), gray, wet, medium dense	Casing to -40'
40.0						

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North Kingstown, Rhode Island 02852
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GEO-ENVIRONMENTAL · STRUCTURAL · CIVIL

SOIL BORING LOG

BORING NUMBER: RTG-SB-02
DATE(S): 12/19/2018
PROJECT NUMBER: 18103.00

PROJECT: West Beach Coastal Engineering Services
LOCATION: N:575,983.1 E:787,043.8 (CT State Plane)
ELEVATION: -8.0' (NAVD 88)
DRILLING CONTRACTOR: New England Boring Contractors
DRILLING METHOD AND EQUIPMENT: Driven Casing and wash, barge mounted CME-45 Drill rig, Automatic/Safety Hammer
WATER LEVEL AND DATE: EL. 1.2' NAVD 88
START: 10:20 AM 12/19/2018
FINISH: 2:15 PM 12/19/2018
LOGGER: G. Coren

DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"- 6"- 6"- 6"	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
40.0						
	40-42	SS S-12	1.1	14-15-17-15	POORLY GRADED SAND WITH GRAVEL, (SP), gray, wet, dense, fine to medium sand, fine to medium gravel	Casing to -45'
45.0	45-46.5	SS S-13	0.5	20-24-50/3"	POORLY GRADED SAND WITH GRAVEL, (SP), gray, wet, very dense, fine to medium sand, fine to medium gravel	
50.0					END BORING AT 47 FEET BELOW GRADE An asterisk (*) next to a sample number denotes a sample on which a laboratory grain size analysis was performed.	End drilling at 2:15 PM, 12/19/2018
55.0						
60.0						
65.0						
70.0						
75.0						
80.0						

RT Group, Inc.
Engineered from the Ground Up℠
70 Romano Vineyard Way, Suite 134
North Kingstown, Rhode Island 02852
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SOIL BORING LOG

BORING NUMBER: RTG-SB-03
DATE(S): 12/19/2018
PROJECT NUMBER: 18103.00

PROJECT: West Beach Coastal Engineering Services
LOCATION: N:575,999.6 E:787,004.1 (CT State Plane)
ELEVATION: -3.4' (NAVD 88)
DRILLING CONTRACTOR: New England Boring Contractors
DRILLING METHOD AND EQUIPMENT: Driven Casing and wash, barge mounted CME-45 Drill rig, Automatic/Safety Hammer
WATER LEVEL AND DATE: EL. 4.6' NAVD 88 @ 6:45 AM
START: 6:50 AM 12/19/2018 **FINISH:** 9:00 AM 12/19/2018 **LOGGER:** G. Coren

DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"- 6"- 6"- 6"	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
0.0						Begin drilling at 6:50 AM, 12/19/2018
	0-2	SS S-1	0.5	WOH-5-5-6	WELL GRADED SAND, (SW), brown/gray, wet, loose	Casing to -2'
	2-4	SS S-2	0.5	5-5-5-3	WELL GRADED SAND, (SW), brown/gray, wet, loose	Casing to -4'
5.0	4-6	SS S-3	0.2	WOH-WOH-1-2	POORLY GRADED SAND, (SP), brown/gray, wet, very loose	Casing to -6'
	6-8	SS S-4*	0.6	3-2-1-3	POORLY GRADED SAND, (SP), brown/gray, wet, very loose	Casing to -8'
10.0	8-10	SS S-5	0.5	1-3-3-3	POORLY GRADED SAND, (SP), gray, wet, loose, fine to medium sand	Casing to -10'
	10-12	SS S-6	1.0	1-2-2-3	POORLY GRADED SAND, (SP), gray, wet, very loose, fine to medium sand	Casing to -15'
15.0						
	15-17	SS S-7	2.0	WOH-2-3-4	Upper 18": ORGANIC SILT, (ML), black, wet Lower 6": POORLY GRADED SAND WITH SILT, (SP-SM), gray, wet, loose, fine to medium sand	Casing to -20'
20.0						
	20-22	SS S-8	0.2	2-1-4-3	POORLY GRADED SAND WITH SILT, (SP-SM), tan, wet, loose, fine sand	Casing to -23'
25.0						
	25-27	SS S-9*	1.3	2-4-3-4	SILT WITH SAND, (SP-SM), gray, wet, firm, fine sand	Casing to -27'
30.0						
	30-31	SS S-10	0.4	18-39-50/1"	WELL GRADED GRAVEL WITH SAND, (GW), gray, wet, very dense, fine sand	Hard drilling Gravel (0.25") in wash Rock fragments in sampler tip, gravel and till from 32.5'-36' below mudline
				18" boulder, 31-32.8'	Switched to 3" roller bit Roller bit through 18" boulder	
35.0					END BORING AT 33 FEET BELOW GRADE	End drilling at 9:00 AM, 12/19/2018
40.0					An asterisk (*) next to a sample number denotes a sample on which a laboratory grain size analysis was performed.	

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SOIL BORING LOG

BORING NUMBER: RTG-SB-04
DATE(S): 11/20/2018
PROJECT NUMBER: 18103.00

PROJECT: West Beach Coastal Engineering Services
LOCATION: N:575,968.0 E: 786,905.6 (CT State Plane)
ELEVATION: 5.2' ± (NAVD 88)
DRILLING CONTRACTOR: New England Boring Contractors
DRILLING METHOD AND EQUIPMENT: Driven Casing and wash, truck mounted Mobil Drill rig, automatic hammer
WATER LEVEL AND DATE:
START: 9:00 AM 11/20/2018 **FINISH:** 2:00 PM 11/20/2018 **LOGGER:** T. Alpaio

DEPTH BELOW SURFACE (FT)	INTERVAL	TYPE AND NUMBER	RECOVERY (FT)	STANDARD PENETRATION TEST RESULTS 6"- 6"- 6"- 6"	SOIL DESCRIPTION: SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT, RELATIVE DENSITY OR CONSISTENCY, SOIL STRUCTURE, MINERALOGY	COMMENTS: DEPTH OF CASING, DRILLING RATE, DRILLING FLUID LOSS, TESTS AND INSTRUMENTATION
0.0					3" Asphalt Pavement	Began drilling at 9:00 AM, 11/20/2018
	0-2	SS S-1	1.0	10-8-8-6	WELL GRADED GRAVEL, (GW), gray, wet, medium dense	
	2-4	SS S-2	0.3	6-3-2-2	POORLY GRADED SAND WITH SILT AND GRAVEL, (SP-SM), gray, wet, loose, f-m sand, fine gravel	Organic odor detected
5.0	4-6	SS S-3	1.0	1-WOH-WOH-1	POORLY GRADED SAND WITH SILT, (SP-SM), gray, wet, very loose, f-m sand	Organic odor detected
	6-8	SS S-4*	0.7	4-9-8-11	WELL GRADED SAND WITH SILT AND GRAVEL, (SW), gray, wet, medium dense	Organic odor detected
10.0	8-10	SS S-5	2.0	13-11-12-12	WELL GRADED SAND, (SW), gray, wet, medium dense	Organic odor detected
15.0	13-15	SS S-6	1.1	4-5-9-9	WELL GRADED SAND, (SW), gray, wet, medium dense	
20.0	18-20	SS S-7	1.0	2-4-4-5	POORLY GRADED SAND, (SP), gray, wet, loose, f-m sand	
25.0	23-25	SS S-8	0.7	39-17-16-21	POORLY GRADED SAND, (SP), gray, wet, dense, f-m sand	
30.0	30	SS S-9	0.3	50/5"	WELL GRADED SAND WITH GRAVEL, (SW), gray, wet, very dense, fine gravel	Assumed boulder, rollerbit through / rock fragments present
35.0	35	SS S-10	0.0	50/1"	No Recovery (Refusal due to damaged casing)	Rollerbit grinding, rollerbit teeth broke off
40.0					END BORING AT 35 FEET BELOW GRADE An asterisk (*) next to a sample number denotes a sample on which a laboratory grain size analysis was performed.	End drilling at 2:00 PM, 11/20/2018

THIELSCH ENGINEERING
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Let's Build a Solid Foundation

Client Information:
RT Group, Inc.
North Kingstown, RI
PM: Greg Coron
Assigned By: Greg Coron
Collected By: Client

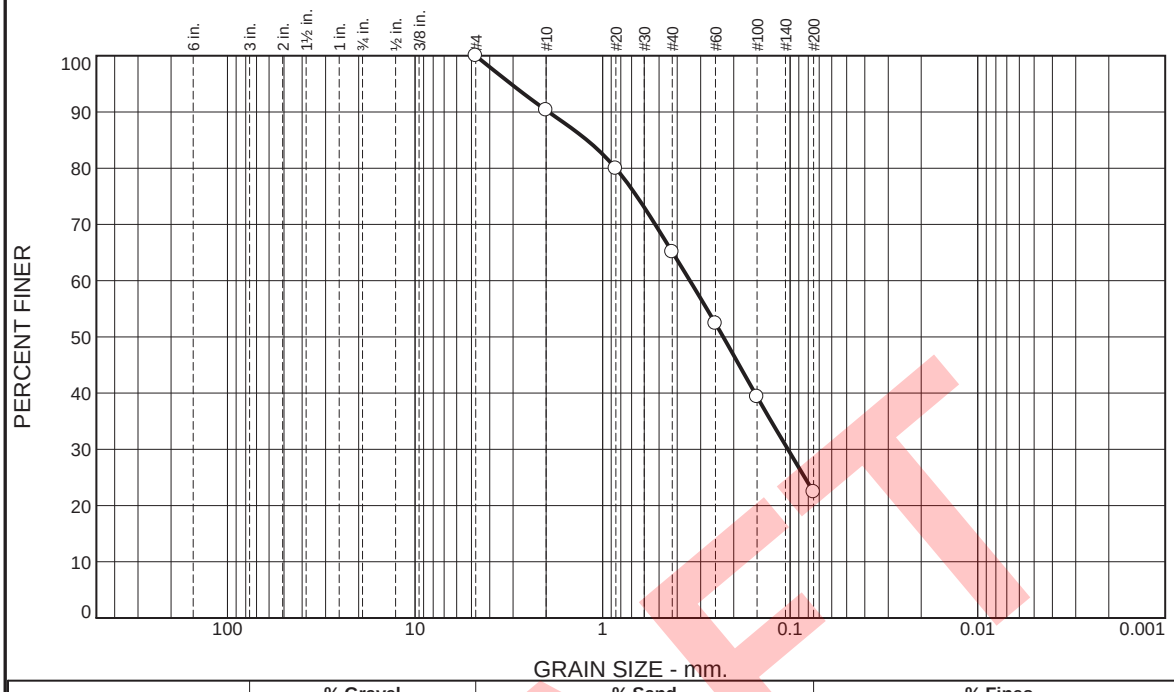
Project Information:
Stamford Geotech
Stamford Boat Ramp
RTG Project Number: 18103.00
Summary Page: 1 of 1
Report Date: 01.23.19

LABORATORY TESTING DATA SHEET

Boring ID	Sample No.	Depth (ft)	Laboratory No.	Identification Tests								Proctor / CBR / Permeability Tests								Laboratory Log and Soil Description
				Water Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	G_s	Dry unit wt. pcf	Test Water Content %	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) (Corr.)	Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"	Perme-ability (cm/sec)	
				D2216	D4318		D6913			D2874	D854			D1557			D1883			
SB-01	S-4	6-8	19-S-204				0.0	77.6	22.4											Dark Grey Organic silty sand
SB-01	S-8	20-22	19-S-205				0.0	95.1	4.9											Brown poorly graded sand
SB-01	S-12	40-42	19-S-206				0.0	24.4	75.6											Grey silt with sand
SB-02	S-6	16-18	19-S-207				0.0	72.4	27.6											Brown silty sand
SB-02	S-9	25-27	19-S-208				0.0	3.6	96.4											Grey silt
SB-03	S-4	6-8	19-S-209				4.5	93.9	1.6											Grey poorly graded sand
SB-03	S-9	25-27	19-S-210				0.0	14.9	85.1											Grey silt with sand
SB-04	S-4	6-8	19-S-211				17.1	77.7	5.2											Grey well-graded sand with silt and gravel

Reviewed By _____ 01.22.2019

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	9.7	25.2	42.7	22.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	90.3		
#20	80.0		
#40	65.1		
#60	52.4		
#100	39.3		
#200	22.4		

* (no specification provided)

Material Description

Dark Grey Organic silty sand

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= SM AASHTO (M 145)= A-2-4(0)

Coefficients

D_{90}= 1.9392 D_{85}= 1.2103 D_{60}= 0.3424
D_{50}= 0.2274 D_{30}= 0.1028 D_{15}=
D_{10}= C_u= C_c=

Remarks

Sample visually classified as plastic. Sample rolled to 1/4".

Date Received: 1.17.19 **Date Tested:** 1.22.19

Tested By: MN

Checked By: Rebecca Roth

Title: Laboratory Coordinator

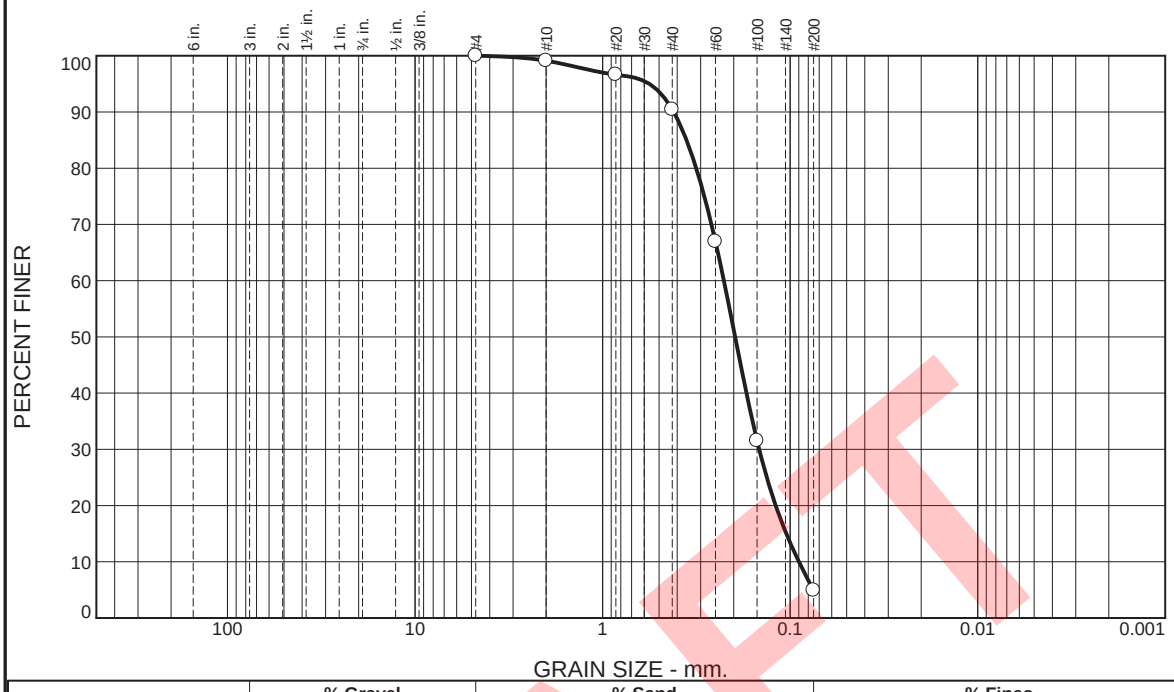
Source of Sample: SB-01 **Depth:** 6-8' **Date Sampled:**
Sample Number: S-4

Thielsch Engineering Inc.

Cranston, RI

Client: RT Group, Inc.
Project: Stamford Geotech
Stamford Boat Ramp
Project No: 18103.00 **Figure** 19-S-204

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.9	8.7	85.5	4.9	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	99.1		
#20	96.6		
#40	90.4		
#60	67.0		
#100	31.5		
#200	4.9		

* (no specification provided)

Material Description

Brown poorly graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SP **AASHTO (M 145)=** A-3

Coefficients

D_{90}= 0.4176 D_{85}= 0.3568 D_{60}= 0.2256
D_{50}= 0.1964 D_{30}= 0.1462 D_{15}= 0.1049
D_{10}= 0.0898 C_u= 2.51 C_c= 1.06

Remarks

Date Received: 1.17.19 **Date Tested:** 1.22.19

Tested By: MN

Checked By: Rebecca Roth

Title: Laboratory Coordinator

Source of Sample: SB-01 **Depth:** 20-22' **Date Sampled:**
Sample Number: S-8

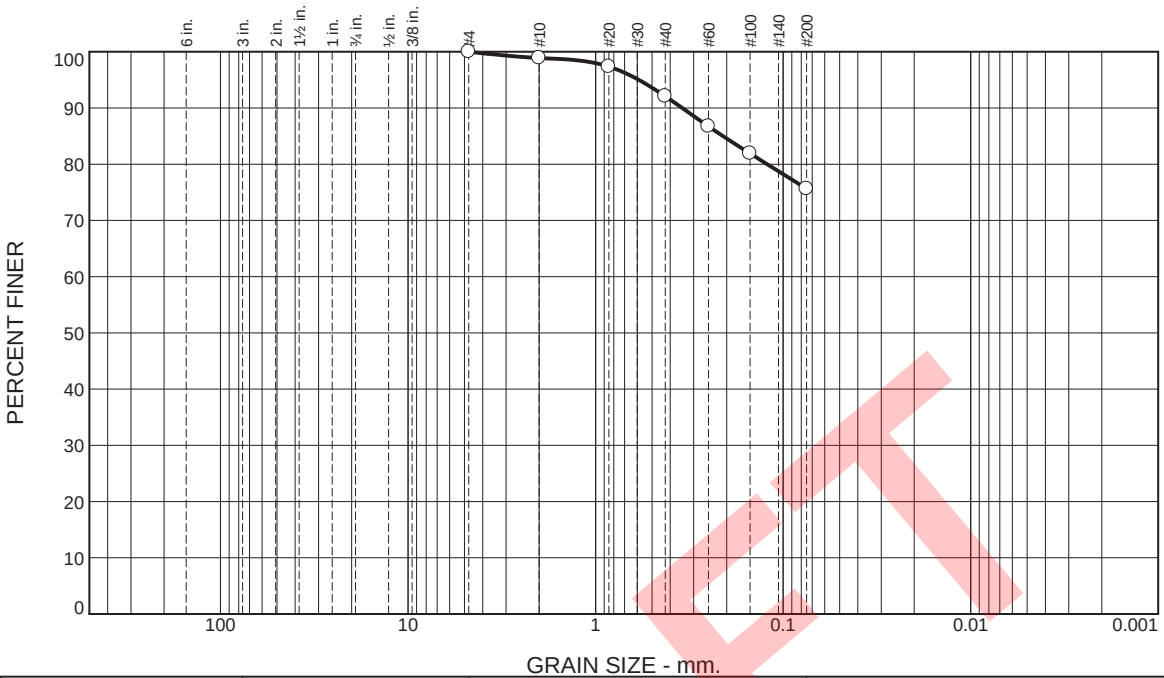
Thielsch Engineering Inc.

Cranston, RI

Client: RT Group, Inc.
Project: Stamford Geotech
Stamford Boat Ramp

Project No: 18103.00 **Figure** 19-S-205

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	1.1	6.8	16.5	75.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	98.9		
#20	97.4		
#40	92.1		
#60	86.7		
#100	81.9		
#200	75.6		

* (no specification provided)

Material Description

Grey silt with sand

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= ML AASHTO (M 145)= A-4(0)

Coefficients

D_{90}= 0.3450 D_{85}= 0.2093 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sample visually classified as plastic. Sample rolled to 1/8".

Date Received: 1.17.19 **Date Tested:** 1.22.19

Tested By: MN

Checked By: Rebecca Roth

Title: Laboratory Coordinator

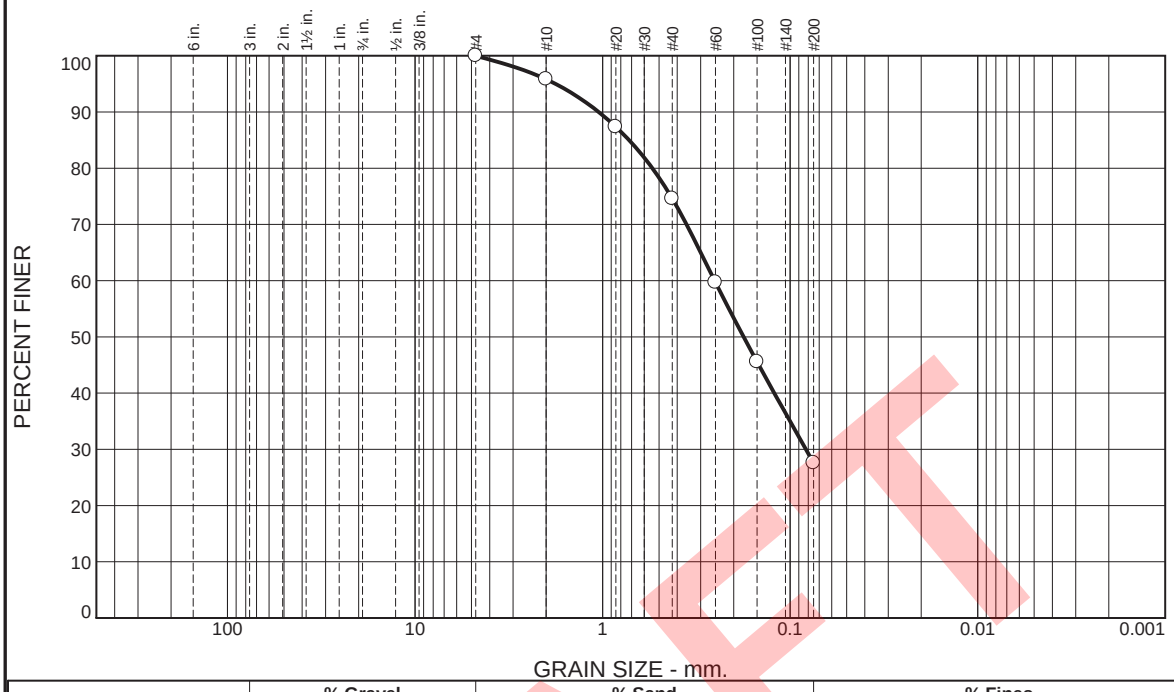
Source of Sample: SB-01 **Depth:** 40-42' **Date Sampled:**
Sample Number: S-12

Thielsch Engineering Inc.

Cranston, RI

Client: RT Group, Inc.
Project: Stamford Geotech
Stamford Boat Ramp
Project No: 18103.00 **Figure** 19-S-206

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	4.2	21.2	47.0	27.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	95.8		
#20	87.3		
#40	74.6		
#60	59.7		
#100	45.6		
#200	27.6		

* (no specification provided)

Material Description

Brown silty sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SM **AASHTO (M 145)=** A-2-4(0)

Coefficients

D_{90}= 1.0501 D_{85}= 0.7228 D_{60}= 0.2526
D_{50}= 0.1769 D_{30}= 0.0825 D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: 1.17.19 **Date Tested:** 1.22.19

Tested By: MN

Checked By: Rebecca Roth

Title: Laboratory Coordinator

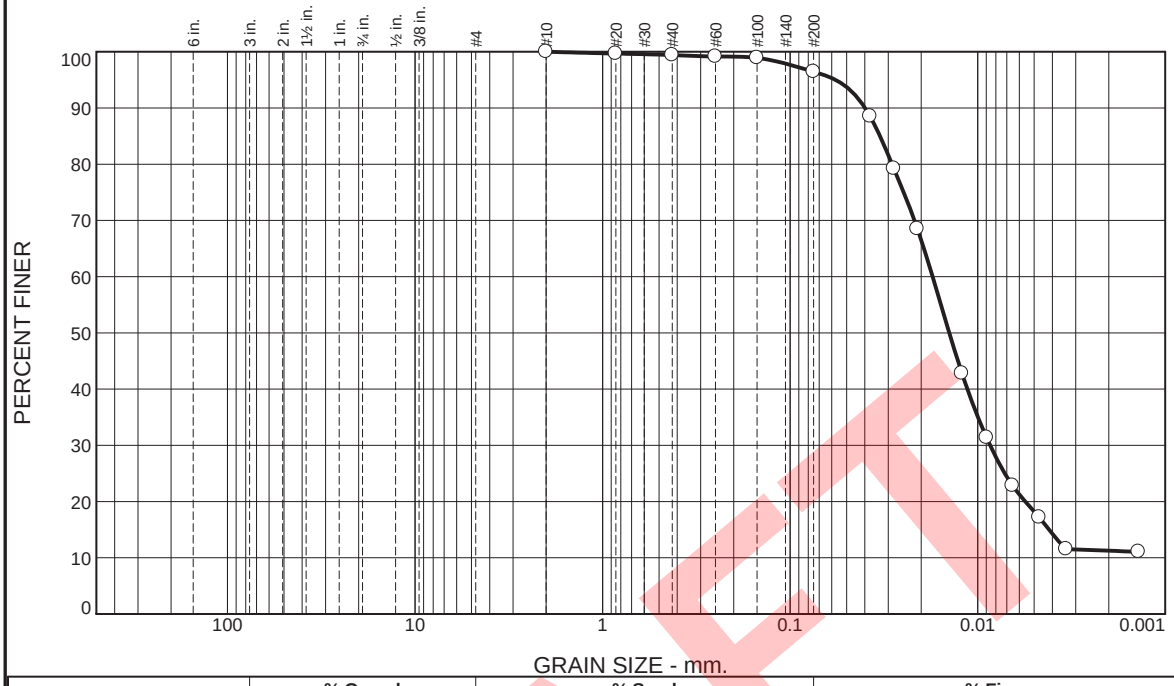
Source of Sample: SB-02 **Depth:** 16-18' **Date Sampled:**
Sample Number: S-6

Thielsch Engineering Inc.

Cranston, RI

Client: RT Group, Inc.
Project: Stamford Geotech
Stamford Boat Ramp
Project No: 18103.00 **Figure** 19-S-207

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.6	3.0	85.1	11.3

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#10	100.0		
#20	99.7		
#40	99.4		
#60	99.2		
#100	98.9		
#200	96.4		
0.0374 mm.	88.5		
0.0280 mm.	79.2		
0.0210 mm.	68.5		
0.0121 mm.	42.8		
0.0090 mm.	31.4		
0.0065 mm.	22.9		
0.0047 mm.	17.2		
0.0034 mm.	11.5		
0.0014 mm.	11.1		

* (no specification provided)

Material Description

Grey silt

Atterberg Limits (ASTM D 4318)

PL= LL= PI=

Classification

USCS (D 2487)= ML AASHTO (M 145)= A-4(6)

Coefficients

D_{90}= 0.0398 D_{85}= 0.0332 D_{60}= 0.0174
D_{50}= 0.0142 D_{30}= 0.0086 D_{15}= 0.0042
D_{10}= C_u= C_c=

Remarks

Sample visually classified as plastic. Sample rolled to 1/4".

Date Received: 1.17.19 **Date Tested:** 1.23.19

Tested By: MN

Checked By: Rebecca Roth

Title: Laboratory Coordinator

Source of Sample: SB-02 **Depth:** 25-27' **Date Sampled:**
Sample Number: S-9

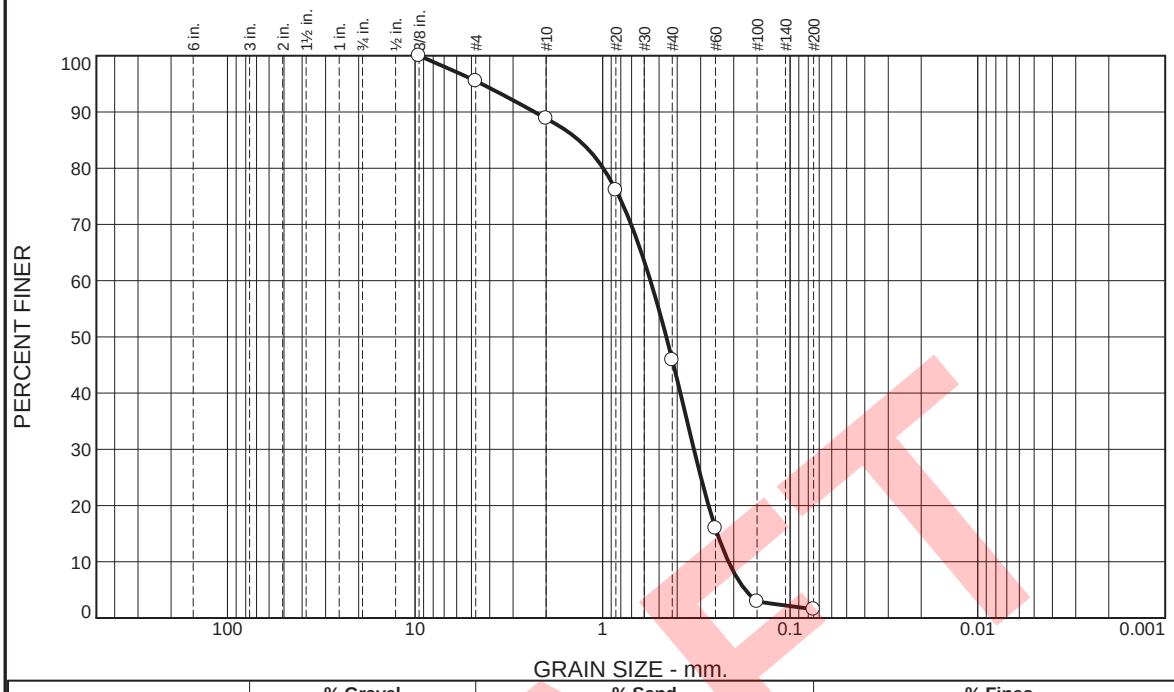
Thielsch Engineering Inc.

Cranston, RI

Client: RT Group, Inc.
Project: Stamford Geotech
Stamford Boat Ramp

Project No: 18103.00 **Figure** 19-S-208

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.5	6.7	42.9	44.3	1.6	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	95.5		
#10	88.8		
#20	76.1		
#40	45.9		
#60	16.0		
#100	2.9		
#200	1.6		

* (no specification provided)

Material Description

Grey poorly graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SP **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 2.3074 D_{85}= 1.3392 D_{60}= 0.5558
D_{50}= 0.4570 D_{30}= 0.3258 D_{15}= 0.2445
D_{10}= 0.2132 C_u= 2.61 C_c= 0.90

Remarks

Date Received: 1.17.19 **Date Tested:** 1.22.19

Tested By: MN

Checked By: Rebecca Roth

Title: Laboratory Coordinator

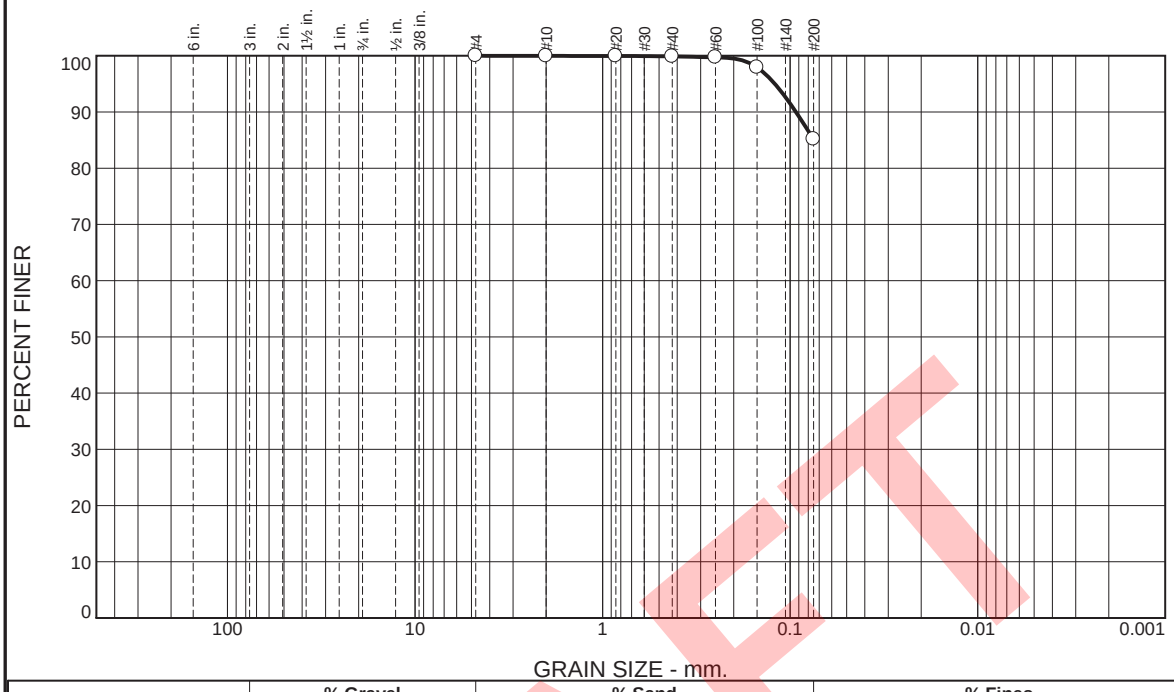
Source of Sample: SB-03 **Depth:** 6-8'
Sample Number: S-4 **Date Sampled:**

Thielsch Engineering Inc.

Cranston, RI

Client: RT Group, Inc.
Project: Stamford Geotech
Stamford Boat Ramp
Project No: 18103.00 **Figure** 19-S-209

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	14.8	85.1	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.9		
#60	99.7		
#100	97.9		
#200	85.1		

* (no specification provided)

Material Description

Grey silt with sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= ML **AASHTO (M 145)=** A-4(0)

Coefficients

D_{90}= 0.0932 D_{85}= D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sample visually classified as non-plastic.

Date Received: 1.17.19 **Date Tested:** 1.22.19

Tested By: MN

Checked By: Rebecca Roth

Title: Laboratory Coordinator

Source of Sample: SB-03 **Depth:** 25-27' **Date Sampled:**

Sample Number: S-9

Thielsch Engineering Inc.

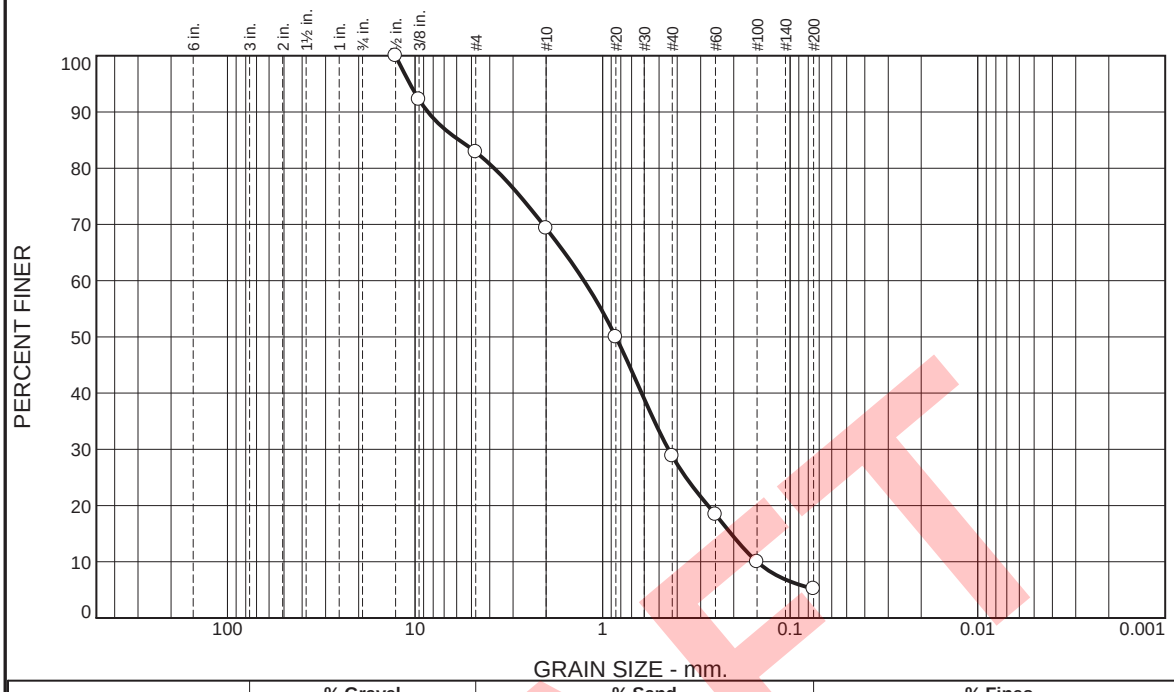
Cranston, RI

Client: RT Group, Inc.

Project: Stamford Geotech
Stamford Boat Ramp

Project No: 18103.00 **Figure** 19-S-210

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	17.1	13.6	40.5	23.6	5.2	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	92.2		
#4	82.9		
#10	69.3		
#20	50.0		
#40	28.8		
#60	18.4		
#100	10.0		
#200	5.2		

* (no specification provided)

Material Description

Grey well-graded sand with silt and gravel

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SW-SM **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 8.5363 D_{85}= 5.8159 D_{60}= 1.2574
D_{50}= 0.8505 D_{30}= 0.4451 D_{15}= 0.2064
D_{10}= 0.1500 C_u= 8.38 C_c= 1.05

Remarks

Date Received: 1.17.19 **Date Tested:** 1.22.19

Tested By: MN

Checked By: Rebecca Roth

Title: Laboratory Coordinator

Source of Sample: SB-04 **Depth:** 6-8' **Date Sampled:**
Sample Number: S-4

Thielsch Engineering Inc.

Cranston, RI

Client: RT Group, Inc.
Project: Stamford Geotech
Stamford Boat Ramp
Project No: 18103.00 **Figure** 19-S-211

Sediment Sampling Summary and Vibrocore Logs

TABLE 1
Sediment Sampling Summary
Sediment Sampling Plan
West Beach Coastal Engineering
RTG Project No. 18103.00

Sample Number	Sample Type	MHW EL. (ft, NAVD 88)	MLW El. (ft, NAVD 88)	Surveyed Mudline El. (ft, NAVD 88)	Proposed Mudline El. (ft, NAVD 88)	Approx. Sampled Depth (ft)
S-01	Vibrocore			-6	-11	5
S-02	Vibrocore			-4.5	-14	9.5
S-02a	Vibrocore			-3	-11	8
S-03	Grab			-1.4	1	1
S-04	Grab			-1	2.5	1
S-05	Grab	3.15	-3.6	-2	-2	1
S-06	Grab			0.5	-1	1.5
S-07	Grab			0	-1	1
S-08	Grab			0.5	-1	1.5
WBSG-01	Grab			-2	0	1
WBSG-02	Grab			-2	3	1

Note:
1. For samples in which the proposed mudline elevation is higher than the existing mudline elevation, a 1-foot shallow grab sample was obtained to provide reference values only. Filling these areas may be proposed under the Sand Back-Passing Plan.

RT Group, Inc.
Engineered from the Ground Up℠
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North Kingstown, Rhode Island 02852
T 401 438 3100 F 401 294 9806
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SOIL CORE LOG

BORING NUMBER: S-01 (CS)
DATE(S): 12/17/2018
PROJECT NUMBER: 18103.00

PROJECT: West Beach Coastal Eng. Projects Sediment Sampling
LOCATION: Dredge Area (North) (N: 576,004.1, E: 787,052.4)
APPROX. MUDLINE ELEVATION: -6.0± NAVD 88
CORING CONTRACTOR: Cavanagh Marine, Inc.
CORE METHOD AND EQUIPMENT: Work boat mounted electric vibro-core, 4" diameter polycarbonate core barrel, flexible PE core barrel liner
WATER ELEVATION: -1.5± NAVD 88
START: 10:50 AM
FINISH: 10:55 AM
LOGGER: G. Coren

DEPTH BELOW SURFACE (FT)	RECOVERY/ CORE LENGTH (FT)	APPROX. VIBRO-CORE DESCENT SPEED (FT/MIN)	INTERVAL	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT	COMMENTS
0.0					Begin sampling at 10:50 AM.
	5.5'/5.5'	3.33ft/min	0'-5.5'	SILT WITH SAND, (ML), black, wet	Some organic odor detected
5.0					
				END VIBRO-CORE AT 5.5 ft.	End sampling at 10:55 AM. Sample marked and preserved on ice until delivered to laboratory.
10.0					
15.0					
20.0					
25.0					
30.0					
35.0					
40.0					

Abbreviations:
BG - Below Grade

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SOIL CORE LOG

BORING NUMBER: S-02 (CS)
DATE(S): 12/17/2018
PROJECT NUMBER: 18103.00

PROJECT: West Beach Coastal Eng. Projects Sediment Sampling
LOCATION: Dredge Area (Toe of Proposed Ramp) (N: 575,961.9, E: 787,029.7)
APPROX. MUDLINE ELEVATION: -4.5± NAVD 88
CORING CONTRACTOR: Cavanagh Marine, Inc.
CORE METHOD AND EQUIPMENT: Work boat mounted electric vibro-core, 4" diameter aluminum core barrel, flexible PE core barrel liner
WATER ELEVATION: -2.5± NAVD 88
START: 12:00 PM
FINISH: 12:05 PM
LOGGER: G. Coren

DEPTH BELOW SURFACE (FT)	RECOVERY/ CORE LENGTH (FT)	APPROX. VIBRO-CORE DESCENT SPEED (FT/MIN)	INTERVAL	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT	COMMENTS
0.0					Begin sampling at 12:00 PM.
5.0	6.5'/10'	6ft/min.	0'-6.5'	SILTY SAND, (SM), black, wet	Some organic odor detected, could not obtain full recovery of core length.
10.0				END VIBRO-CORE AT 10 ft.	End sampling at 12:05 PM. Sample marked and preserved on ice until delivered to laboratory.
15.0					
20.0					
25.0					
30.0					
35.0					
40.0					

Abbreviations:
BG - Below Grade

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SOIL CORE LOG

BORING NUMBER: S-02a (CS)
DATE(S): 12/17/2018
PROJECT NUMBER: 18103.00

PROJECT: West Beach Coastal Eng. Projects Sediment Sampling
LOCATION: Dredge Area (South) (N: 575,916.7,E: 787,030.1)
APPROX. MUDLINE ELEVATION: -3.0± NAVD 88
CORING CONTRACTOR: Cavanagh Marine, Inc.
CORE METHOD AND EQUIPMENT: Work boat mounted electric vibro-core, 4" diameter polycarbonate core barrel, flexible PE core barrel liner
WATER ELEVATION: -1.0± NAVD 88
START: 2:15 PM
FINISH: 2:25 PM
LOGGER: G. Coren

DEPTH BELOW SURFACE (FT)	RECOVERY/ CORE LENGTH (FT)	APPROX. VIBRO-CORE DESCENT SPEED (FT/MIN)	INTERVAL	SOIL NAME, USCS GROUP SYMBOL, COLOR, MOISTURE CONTENT	COMMENTS
0.0					Begin sampling at 2:15 PM.
5.0	4.5'/8'	1ft/min.	0'-4.5'	POORLY GRADED SAND, (SP), gray, wet	Could not obtain full recovery of core length after 3 attempts.
10.0				END VIBRO-CORE AT 8 ft.	End sampling at 2:25 PM. Sample marked and preserved on ice until delivered to laboratory.
15.0					
20.0					
25.0					
30.0					
35.0					
40.0					

Abbreviations:
BG - Below Grade

Sediment Chemical Testing Results
Summary Table and Report

TABLE 1
Chemical Testing Results - Direct Exposure Criteria
Sediment Sampling and Analysis Plan
West Beach Boat Ramp Replacement Project

NETLAB Case Number 8L18096	S-01 (CS)	S0-2 (CS)	S-02a (CS)		
Compound Name	Sample Result	Sample Result	Sample Result	Units	CTDEEP Industrial Commerical Criteria (mg/kg)(ppm)
Volatile Organic Substances					
Acetone	ND	ND	ND	mg/kg	1,000
Acrylonitrile	ND	ND	ND	mg/kg	11
Benzene	ND	ND	ND	mg/kg	200
Bromoform	ND	ND	ND	mg/kg	720
2-Butanone (MEK)	ND	ND	ND	mg/kg	1,000
Carbon Tetracholride	ND	ND	ND	mg/kg	44
Chlorobenzene	ND	ND	ND	mg/kg	1,000
Chloroform	ND	ND	ND	mg/kg	940
Dibromochloromethane	ND	ND	ND	mg/kg	68
1,2-Dichlorobenzene	ND	ND	ND	mg/kg	1,000
1,3-Dichlorobenzene	ND	ND	ND	mg/kg	1,000
1,4-Dichlorobenzene	ND	ND	ND	mg/kg	240
1,1-Dichloroethane	ND	ND	ND	mg/kg	1,000
1,2-Dichloroethane	ND	ND	ND	mg/kg	63
1,1-Dichloroethylene	ND	ND	ND	mg/kg	9.5
cis-1,2-Dichloroethylene	ND	ND	ND	mg/kg	1,000
trans-1,2-Dichloroethylene	ND	ND	ND	mg/kg	1,000
1,2-Dichloropropane	ND	ND	ND	mg/kg	84
1,3-Dichloropropene	ND	ND	ND	mg/kg	32
Ethylbenzene	ND	ND	ND	mg/kg	1,000
Ethylene dibromide (EDB)	ND	ND	ND	mg/kg	0.067
Methyl-tert-buyl-ether	ND	ND	ND	mg/kg	1,000
Methyl isobutyl ketone	ND	ND	ND	mg/kg	1,000
Methylene chloride	ND	ND	ND	mg/kg	760
Styrene	ND	ND	ND	mg/kg	1,000
1,1,1,2-Tetrachloroethane	ND	ND	ND	mg/kg	220
1,1,2,2-Tetrachloroethane	ND	ND	ND	mg/kg	29
Tetrachloroethylene	ND	ND	ND	mg/kg	110
Toluene	ND	ND	ND	mg/kg	1,000
1,1,1-Trichloroethane	ND	ND	ND	mg/kg	1,000
1,1,2-Trichloroethane	ND	ND	ND	mg/kg	100
Trichloroethylene	ND	ND	ND	mg/kg	520
Vinyle chloride	ND	ND	ND	mg/kg	3
Xylenes	ND	ND	ND	mg/kg	1,000
Semivolatile Substance					
Acenaphytylene	ND	ND	ND	mg/kg	2,500
Anthracene	ND	ND	ND	mg/kg	2,500
Benzo(a)anthracene	ND	ND	ND	mg/kg	7.8
Benzo(b)fluoranthene	ND	0.222	ND	mg/kg	7.8
Benzon(k)flouranthene	ND	ND	ND	mg/kg	78
Benzo(a)pyrene	ND	ND	ND	mg/kg	1
Bis(2-Chloroethyl)ether	ND	ND	ND	mg/kg	5.2
Bis(2-Chloroisopropyl)ether	ND	ND	ND	mg/kg	82
Bis(2-Ethylhexyl)phthalate	ND	ND	ND	mg/kg	410
Butyl benzyl phthalate	ND	ND	ND	mg/kg	2,500
2-chlorophenol	ND	ND	ND	mg/kg	2,500
Di-n-butyl phthalate	ND	ND	ND	mg/kg	2,500
Di-n-octyl phthalate	ND	ND	ND	mg/kg	2,500
2,4-Dichlorophenol	ND	ND	ND	mg/kg	2,500
Fluoranthene	ND	ND	ND	mg/kg	2,500
Fluorene	ND	ND	ND	mg/kg	2,500
Hexachloroethane	ND	ND	ND	mg/kg	410
Hexachlorobenzene	ND	ND	ND	mg/kg	3.6
Naphthalene	ND	ND	ND	mg/kg	2,500
Pentachlorophenol	ND	ND	ND	mg/kg	48
Phenanthrene	ND	ND	ND	mg/kg	2,500
Phenol	ND	ND	ND	mg/kg	2,500
Pyrene	ND	ND	ND	mg/kg	2,500

TABLE 1
Chemical Testing Results - Direct Exposure Criteria
Sediment Sampling and Analysis Plan
West Beach Boat Ramp Replacement Project

NETLAB Case Number 8L18096	S-01 (CS)	S0-2 (CS)	S-02a (CS)		
Compound Name	Sample Result	Sample Result	Sample Result	Units	CTDEEP Industrial Commerical Criteria (mg/kg)(ppm)
Inorganic Substances					
Antimony	1.24	ND	ND	mg/kg	8,200
Arsenic	9.03	2.34	ND	mg/kg	10
Barium	81.2	26.7	10.7	mg/kg	140,000
Beryllium	ND	ND	ND	mg/kg	2
Cadmium	5.76	1.77	0.42	mg/kg	1,000
Chromium, trivalent	92.3	21.3	4.17	mg/kg	51,000
Chromium, hexavalent	ND	ND	ND	mg/kg	100
Copper	165	38.8	6.03	mg/kg	76,000
Cyanide	ND	ND	ND	mg/kg	41,000
Lead	91.6	20.7	5.27	mg/kg	1,000
Mercury	0.698	0.139	ND	mg/kg	610
Nickel	29.4	9.05	3.04	mg/kg	7,500
Selenium	ND	ND	ND	mg/kg	10,000
Silver	ND	ND	ND	mg/kg	10,000
Thallium	ND	ND	ND	mg/kg	160
Vanadium	65.4	20.9	5.38	mg/kg	14,000
Zinc	268	79.3	20.7	mg/kg	610,000
Pesticides, PCB's and Total Petroleum Hydrocarbons (TPH)					
Alachlor	NSTD	NSTD	NSTD	mg/kg	72
Aldicarb	NSTD	NSTD	NSTD	mg/kg	410
Aldrin	ND	ND	ND	mg/kg	NA
Atrazine	NSTD	NSTD	NSTD	mg/kg	26
Chlordane	ND	ND	ND	mg/kg	2.2
Dieldrin	ND	ND	ND	mg/kg	0.36
DDT	ND	ND	ND	mg/kg	NA
DDE	ND	ND	ND	mg/kg	NA
DDD	ND	ND	ND	mg/kg	NA
Endrin	ND	ND	ND	mg/kg	610
Endosulfan I	ND	ND	ND	mg/kg	NA
Endosulfan II	ND	ND	ND	mg/kg	NA
Endosulfan Sulfate	ND	ND	ND	mg/kg	NA
2-4 D	ND	ND	ND	mg/kg	20,000
Heptachlor epoxide	ND	ND	ND	mg/kg	0.63
Heptachlor	ND	ND	ND	mg/kg	1.3
Hexachlorobenzene	ND	ND	ND	mg/kg	NA
Lindane	ND	ND	ND	mg/kg	610
Methoxychlor	ND	ND	ND	mg/kg	10,000
Toxaphene	ND	ND	ND	mg/kg	5.2
Trans-nonachlor	NSTD	NSTD	NSTD	mg/kg	NA
PCB's	ND	ND	ND	mg/kg	10
TPH	222	167	ND	mg/kg	2,500
Extractable TPH	222	253	20	mg/kg	2,500
Polyaromatic Hydrocarbons (PAH's)					
Acenaphthene	ND	ND	ND	mg/kg	NA
Benzo(g,h,i)perylene	ND	ND	ND	mg/kg	NA
Chrysene	ND	0.21	ND	mg/kg	NA
Dibenz(a,h)anthracene	ND	ND	ND	mg/kg	NA
Indeno(1,2,3-cd)pyrene	ND	ND	ND	mg/kg	NA
Solids (%)					
Solids (%)	45	62.5	88.1	%	NA

Cells highlighted in orange are detected levels above the CTDEEP Industrial/Commerical Exposure Criteria.

Abbreviations:

ND - Not Detected

NA - Not Applicable

NTSD - No Standard Available, Constituent Not Tested For

TABLE 2
Chemical Testing Results - Groundwater Leachability Criteria
Sediment Sampling and Analysis Plan
West Beach Boat Ramp Replacement Project

NETLAB Case Number 8L18096	S-01 (CS)	S0-2 (CS)	S-02a (CS)	Units	CTDEEP
Compound Name	Sample Result	Sample Result	Sample Result		GA, GAA Mobility Criteria in mg/kg (ppm)
Volatile Organic Substances					
Acetone	ND	ND	ND	mg/kg	14
Acrylonitrile	ND	ND	ND	mg/kg	0.01
Benzene	ND	ND	ND	mg/kg	0.02
Bromoform	ND	ND	ND	mg/kg	0.08
2-Butanone (MEK)	ND	ND	ND	mg/kg	8
Carbon Tetracholride	ND	ND	ND	mg/kg	0.1
Chlorobenzene	ND	ND	ND	mg/kg	2
Chloroform	ND	ND	ND	mg/kg	0.12
Dibromochloromethane	ND	ND	ND	mg/kg	0.01
1,2-Dichlorobenzene	ND	ND	ND	mg/kg	3.1
1,3-Dichlorobenzene	ND	ND	ND	mg/kg	12
1,4-Dichlorobenzene	ND	ND	ND	mg/kg	1.5
1,1-Dichloroethane	ND	ND	ND	mg/kg	1.4
1,2-Dichloroethane	ND	ND	ND	mg/kg	0.02
1,1-Dichloroethylene	ND	ND	ND	mg/kg	0.14
cis-1,2-Dichloroethylene	ND	ND	ND	mg/kg	1.4
trans-1,2-Dichloroethylene	ND	ND	ND	mg/kg	2
1,2-Dichloropropane	ND	ND	ND	mg/kg	0.1
1,3-Dichloropropene	ND	ND	ND	mg/kg	0.01
Ethylbenzene	ND	ND	ND	mg/kg	10.1
Ethylene dibromide (EDB)	ND	ND	ND	mg/kg	0.01
Methyl-tert-buyl-ether	ND	ND	ND	mg/kg	2
Methyl isobutyl ketone	ND	ND	ND	mg/kg	7
Methylene chloride	ND	ND	ND	mg/kg	0.1
Styrene	ND	ND	ND	mg/kg	2
1,1,1,2-Tetrachloroethane	ND	ND	ND	mg/kg	0.02
1,1,2,2-Tetrachloroethane	ND	ND	ND	mg/kg	0.01
Tetrachloroethylene	ND	ND	ND	mg/kg	0.1
Toluene	ND	ND	ND	mg/kg	20
1,1,1-Trichloroethane	ND	ND	ND	mg/kg	4
1,1,2-Trichloroethane	ND	ND	ND	mg/kg	0.1
Trichloroethylene	ND	ND	ND	mg/kg	0.1
Vinyl chloride	ND	ND	ND	mg/kg	0.04
Xylenes	ND	ND	ND	mg/kg	19.5
Semivolatile Substance					
Acenaphytylene	ND	ND	ND	mg/kg	8.4
Anthracene	ND	ND	ND	mg/kg	40
Benzo(a)anthracene	ND	ND	ND	mg/kg	1
Benzo(b)fluoranthene	ND	0.222	ND	mg/kg	1
Benzon(k)flouranthene	ND	ND	ND	mg/kg	1
Benzo(a)pyrene	ND	ND	ND	mg/kg	1
Bis(2-Chloroethyl)ether	ND	ND	ND	mg/kg	1
Bis(2-Chloroisopropyl)ether	ND	ND	ND	mg/kg	1
Bis(2-Ethylhexyl)phthalate	ND	ND	ND	mg/kg	1
Butyl benzyl phthalate	ND	ND	ND	mg/kg	20
2-chlorophenol	ND	ND	ND	mg/kg	1
Di-n-butyl phthalate	ND	ND	ND	mg/kg	14
Di-n-octyl phthalate	ND	ND	ND	mg/kg	2
2,4-Dichlorophenol	ND	ND	ND	mg/kg	1
Fluoranthene	ND	ND	ND	mg/kg	5.6
Fluorene	ND	ND	ND	mg/kg	5.6
Hexachloroethane	ND	ND	ND	mg/kg	1
Hexachlorobenzene	ND	ND	ND	mg/kg	1
Naphthalene	ND	ND	ND	mg/kg	5.6
Pentachlorophenol	ND	ND	ND	mg/kg	1
Phenanthrene	ND	ND	ND	mg/kg	4
Phenol	ND	ND	ND	mg/kg	80
Pyrene	ND	ND	ND	mg/kg	4

TABLE 2
Chemical Testing Results - Groundwater Leachability Criteria
Sediment Sampling and Analysis Plan
West Beach Boat Ramp Replacement Project

NETLAB Case Number 8L18096	S-01 (CS)	S0-2 (CS)	S-02a (CS)	Units	CTDEEP
Compound Name	Sample Result	Sample Result	Sample Result		GA, GAA Mobility Criteria in mg/kg (ppm)
Inorganic Substances - SPLP					**mg/L**
Antimony	0.01	ND	ND	mg/L	0.006
Arsenic	ND	ND	ND	mg/L	0.05
Barium	0.032	0.029	0.006	mg/L	1
Beryllium	ND	ND	ND	mg/L	0.004
Cadmium	ND	ND	ND	mg/L	0.005
Chromium, Total	ND	ND	ND	mg/L	0.05
Copper	ND	ND	ND	mg/L	1.3
Cyanide	ND	ND	ND	mg/L	0.2
Lead	0.028	0.034	ND	mg/L	0.015
Mercury	ND	ND	ND	mg/L	0.002
Nickel	ND	ND	ND	mg/L	0.1
Selenium	ND	ND	ND	mg/L	0.05
Silver	ND	ND	ND	mg/L	0.036
Thallium	ND	ND	ND	mg/L	0.005
Vanadium	ND	ND	ND	mg/L	0.05
Zinc	ND	ND	ND	mg/L	5
PCB's - SPLP	ND	ND	ND	mg/L	0.0005
Pesticides, PCB's and Total Petroleum Hydrocarbons (TPH)					
Alachlor	NSTD	NTSD	NTSD	mg/kg	0.23
Aldicarb	NTSD	NSTD	NTSD	mg/kg	1
Atrazine	NTSD	NSTD	NTSD	mg/kg	0.2
Chlordane	ND	ND	ND	mg/kg	0.066
Dieldrin	ND	ND	ND	mg/kg	0.007
2-4 D	ND	ND	ND	mg/kg	1.4
Heptachlor epoxide	ND	ND	ND	mg/kg	0.02
Heptachlor	ND	ND	ND	mg/kg	0.013
Lindane	ND	ND	ND	mg/kg	0.02
Methoxychlor	ND	ND	ND	mg/kg	0.8
Simazine	NTSD	NTSD	NTSD	mg/kg	0.8
Toxaphene	ND	ND	ND	mg/kg	0.33
TPH	222	167	ND	mg/kg	500
Extractable TPH	222	253	20	mg/kg	500

Cells highlighted in red are detected levels above the CTDEEP Industrial/Commerical Exposure Criteria.

Abbreviations:

ND - Not Detected

NA - Not Applicable

NTSD - No Standard Available, Constituent Not Tested For

New England Testing Laboratory, Inc.
(401) 353-3420

REPORT OF ANALYTICAL RESULTS

NETLAB Work Order Number: 8L18096
Client Project: 18103.00 - West Beach Boat Ramp, Stamford

Report Date: 03-January-2019

Prepared for:

Greg Coren
RT Group
70 Romano Vinyard Way Suite 134
North Kingstown, RI 02852

Richard Warila, Laboratory Director
New England Testing Laboratory, Inc.
59 Greenhill Street
West Warwick, RI 02893
rich.warila@newenglandtesting.com

Samples Submitted :

The samples listed below were submitted to New England Testing Laboratory on 12/18/18. The group of samples appearing in this report was assigned an internal identification number (case number) for laboratory information management purposes. The client's designations for the individual samples, along with our case numbers, are used to identify the samples in this report. This report of analytical results pertains only to the sample(s) provided to us by the client which are indicated on the custody record. The case number for this sample submission is 8L18096. Custody records are included in this report.

Lab ID	Sample	Matrix	Date Sampled	Date Received
8L18096-01	S-01 (CS)	Soil	12/17/2018	12/18/2018
8L18096-02	S-02 (CS)	Soil	12/17/2018	12/18/2018
8L18096-03	S-02a (CS)	Soil	12/17/2018	12/18/2018

Request for Analysis

At the client's request, the analyses presented in the following table were performed on the samples submitted.

S-01 (CS) (Lab Number: 8L18096-01)

Analysis	Method
Antimony	EPA 6010C
Arsenic	EPA 6010C
Barium	EPA 6010C
Beryllium	EPA 6010C
Cadmium	EPA 6010C
Chromium	EPA 6010C
Connecticut ETPH	By Subcontract
Copper	EPA 6010C
Cyanide	EPA 9014
Herbicides	EPA 8151A
Hexavalent Chromium	SM3500-Cr-B
Lead	EPA 6010C
Mercury	EPA 7471B
Nickel	EPA 6010C
PCBs	EPA 8082A
Percent Total Solids	Gravimetric
Pesticides	EPA 8081B
Selenium	EPA 6010C
Semivolatile Organic Compounds	EPA 8270D
Sieve/particle size analysis	By Subcontract
Silver	EPA 6010C
SPLP Antimony	EPA 6010C
SPLP Arsenic	EPA 6010C
SPLP Barium	EPA 6010C
SPLP Beryllium	EPA 6010C
SPLP Cadmium	EPA 6010C
SPLP Chromium	EPA 6010C
SPLP Copper	EPA 6010C
SPLP Cyanide	SM4500-CN-E
SPLP Lead	EPA 6010C
SPLP Mercury	EPA 7470A
SPLP Nickel	EPA 6010C
SPLP PCBs	EPA 8082A
SPLP Selenium	EPA 6010C
SPLP Silver	EPA 6010C
SPLP Thallium	EPA 7010
SPLP Vanadium	EPA 6010C
SPLP Zinc	EPA 6010C
Thallium	EPA 7010
Total Organic Carbon	EPA 9060
Total Petroleum Hydrocarbons	EPA-8100-mod
Trivalent Chromium	Calculation
Vanadium	EPA 6010C
Volatile Organic Compounds	EPA 8260C
Zinc	EPA 6010C

Request for Analysis (continued)

S-02 (CS) (Lab Number: 8L18096-02)

Analysis	Method
Antimony	EPA 6010C
Arsenic	EPA 6010C
Barium	EPA 6010C
Beryllium	EPA 6010C
Cadmium	EPA 6010C
Chromium	EPA 6010C
Connecticut ETPH	By Subcontract
Copper	EPA 6010C
Cyanide	EPA 9014
Herbicides	EPA 8151A
Hexavalent Chromium	SM3500-Cr-B
Lead	EPA 6010C
Mercury	EPA 7471B
Nickel	EPA 6010C
PCBs	EPA 8082A
Percent Total Solids	Gravimetric
Pesticides	EPA 8081B
Selenium	EPA 6010C
Semivolatile Organic Compounds	EPA 8270D
Sieve/particle size analysis	By Subcontract
Silver	EPA 6010C
SPLP Antimony	EPA 6010C
SPLP Arsenic	EPA 6010C
SPLP Barium	EPA 6010C
SPLP Beryllium	EPA 6010C
SPLP Cadmium	EPA 6010C
SPLP Chromium	EPA 6010C
SPLP Copper	EPA 6010C
SPLP Cyanide	SM4500-CN-E
SPLP Lead	EPA 6010C
SPLP Mercury	EPA 7470A
SPLP Nickel	EPA 6010C
SPLP PCBs	EPA 8082A
SPLP Selenium	EPA 6010C
SPLP Silver	EPA 6010C
SPLP Thallium	EPA 7010
SPLP Vanadium	EPA 6010C
SPLP Zinc	EPA 6010C
Thallium	EPA 7010
Total Organic Carbon	EPA 9060
Total Petroleum Hydrocarbons	EPA-8100-mod
Trivalent Chromium	Calculation
Vanadium	EPA 6010C
Volatile Organic Compounds	EPA 8260C
Zinc	EPA 6010C

Request for Analysis (continued)

S-02a (CS) (Lab Number: 8L18096-03)

Analysis	Method
Antimony	EPA 6010C
Arsenic	EPA 6010C
Barium	EPA 6010C
Beryllium	EPA 6010C
Cadmium	EPA 6010C
Chromium	EPA 6010C
Connecticut ETPH	By Subcontract
Copper	EPA 6010C
Cyanide	EPA 9014
Herbicides	EPA 8151A
Hexavalent Chromium	SM3500-Cr-B
Lead	EPA 6010C
Mercury	EPA 7471B
Nickel	EPA 6010C
PCBs	EPA 8082A
Percent Total Solids	Gravimetric
Pesticides	EPA 8081B
Selenium	EPA 6010C
Semivolatile Organic Compounds	EPA 8270D
Sieve/particle size analysis	By Subcontract
Silver	EPA 6010C
SPLP Antimony	EPA 6010C
SPLP Arsenic	EPA 6010C
SPLP Barium	EPA 6010C
SPLP Beryllium	EPA 6010C
SPLP Cadmium	EPA 6010C
SPLP Chromium	EPA 6010C
SPLP Copper	EPA 6010C
SPLP Cyanide	SM4500-CN-E
SPLP Lead	EPA 6010C
SPLP Mercury	EPA 7470A
SPLP Nickel	EPA 6010C
SPLP PCBs	EPA 8082A
SPLP Selenium	EPA 6010C
SPLP Silver	EPA 6010C
SPLP Thallium	EPA 7010
SPLP Vanadium	EPA 6010C
SPLP Zinc	EPA 6010C
Thallium	EPA 7010
Total Organic Carbon	EPA 9060
Total Petroleum Hydrocarbons	EPA-8100-mod
Trivalent Chromium	Calculation
Vanadium	EPA 6010C
Volatile Organic Compounds	EPA 8260C
Zinc	EPA 6010C

Method References

Standard Methods for the Examination of Water and Wastewater, 20th Edition, APHA/ AWWA-WPCF, 1998

Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW846, USEPA

Case Narrative

Sample Receipt

The samples were all appropriately cooled and preserved upon receipt. The samples were received in the appropriate containers. The chain of custody was adequately completed and corresponded to the samples submitted.

Metals

All analyses were performed according to NETLAB's documented Standard Operating Procedures, within all required holding times, and with appropriate quality control measures. All QC was within laboratory established acceptance criteria. The samples were received, processed, and reported with no anomalies.

Herbicides

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

PCBs

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Pesticides

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Semi-volatile Compounds

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Total Petroleum Hydrocarbons

All samples were extracted and analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control criteria.

Volatile Organic Compounds

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures. The results for the associated calibration, method blank and laboratory control sample (LCS) were within method specified quality control requirements and allowances.

Wet Chemistry

All samples were analyzed within method specified holding times and according to NETLAB's documented standard operating procedures.

Results: Calculation

Sample: S-01 (CS)
Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	**92.3**		0.495	mg/kg	12/24/18	12/24/18

Results: Calculation

Sample: S-02 (CS)
Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	**21.3**		0.390	mg/kg	12/24/18	12/24/18

Results: Calculation

Sample: S-02a (CS)
Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Trivalent Chromium	**4.17**		0.218	mg/kg	12/24/18	12/24/18

Results: General Chemistry

Sample: S-01 (CS)

Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Solids, Percent	**45.0**		0.05	Percent	12/19/18	12/20/18
Cyanide	ND		0.4	mg/kg	12/19/18	12/19/18
Hexavalent chromium	ND		2	mg/kg	12/24/18	12/24/18
Total Organic Carbon	**3**		0	Percent	12/22/18	12/22/18

Results: General Chemistry

Sample: S-02 (CS)

Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Solids, Percent	**62.5**		0.05	Percent	12/19/18	12/20/18
Cyanide	ND		0.3	mg/kg	12/19/18	12/19/18
Hexavalent chromium	ND		2	mg/kg	12/24/18	12/24/18
Total Organic Carbon	**2**		0	Percent	12/22/18	12/22/18

Results: General Chemistry

Sample: S-02a (CS)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Solids, Percent	**88.1**		0.05	Percent	12/19/18	12/20/18
Cyanide	ND		0.2	mg/kg	12/19/18	12/19/18
Hexavalent chromium	ND		1	mg/kg	12/24/18	12/24/18
Total Organic Carbon	**0.3**		0	Percent	12/22/18	12/22/18

Results: SPLP General Chemistry

Sample: S-01 (CS)
Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Cyanide	ND		0.01	mg/L	12/20/18	12/20/18

Results: SPLP General Chemistry

Sample: S-02 (CS)
Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Cyanide	ND		0.01	mg/L	12/20/18	12/20/18

Results: SPLP General Chemistry

Sample: S-02a (CS)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Cyanide	ND		0.01	mg/L	12/20/18	12/20/18

Results: Total Metals

Sample: S-01 (CS)

Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Antimony	**1.24**		0.99	mg/kg	12/19/18	12/20/18
Arsenic	**9.03**		0.99	mg/kg	12/19/18	12/20/18
Barium	**81.2**		0.49	mg/kg	12/19/18	12/20/18
Beryllium	ND		0.49	mg/kg	12/19/18	12/20/18
Cadmium	**5.76**		0.49	mg/kg	12/19/18	12/20/18
Chromium	**92.3**		0.49	mg/kg	12/19/18	12/20/18
Copper	**165**		1.99	mg/kg	12/19/18	12/20/18
Lead	**91.6**		0.49	mg/kg	12/19/18	12/20/18
Mercury	**0.698**		0.107	mg/kg	12/19/18	12/19/18
Nickel	**29.4**		0.49	mg/kg	12/19/18	12/20/18
Selenium	ND		0.99	mg/kg	12/19/18	12/20/18
Silver	ND		0.49	mg/kg	12/19/18	12/20/18
Thallium	ND		0.199	mg/kg	12/19/18	12/20/18
Vanadium	**65.4**		0.49	mg/kg	12/19/18	12/20/18
Zinc	**268**		2.0	mg/kg	12/19/18	12/20/18

Results: Total Metals

Sample: S-02 (CS)

Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Antimony	ND		0.78	mg/kg	12/19/18	12/20/18
Arsenic	**2.34**		0.78	mg/kg	12/19/18	12/20/18
Barium	**26.7**		0.39	mg/kg	12/19/18	12/20/18
Beryllium	ND		0.39	mg/kg	12/19/18	12/20/18
Cadmium	**1.77**		0.39	mg/kg	12/19/18	12/20/18
Chromium	**21.3**		0.39	mg/kg	12/19/18	12/20/18
Copper	**38.8**		1.57	mg/kg	12/19/18	12/20/18
Lead	**20.7**		0.39	mg/kg	12/19/18	12/20/18
Mercury	**0.139**		0.104	mg/kg	12/19/18	12/19/18
Nickel	**9.05**		0.39	mg/kg	12/19/18	12/20/18
Selenium	ND		0.78	mg/kg	12/19/18	12/20/18
Silver	ND		0.39	mg/kg	12/19/18	12/20/18
Thallium	ND		0.157	mg/kg	12/19/18	12/20/18
Vanadium	**20.9**		0.39	mg/kg	12/19/18	12/20/18
Zinc	**79.3**		1.6	mg/kg	12/19/18	12/20/18

Results: Total Metals

Sample: S-02a (CS)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Antimony	ND		0.44	mg/kg	12/19/18	12/20/18
Arsenic	ND		0.44	mg/kg	12/19/18	12/20/18
Barium	**10.7**		0.22	mg/kg	12/19/18	12/20/18
Beryllium	ND		0.22	mg/kg	12/19/18	12/20/18
Cadmium	**0.42**		0.22	mg/kg	12/19/18	12/20/18
Chromium	**4.17**		0.22	mg/kg	12/19/18	12/20/18
Copper	**6.03**		0.88	mg/kg	12/19/18	12/20/18
Lead	**5.27**		0.22	mg/kg	12/19/18	12/20/18
Mercury	ND		0.077	mg/kg	12/19/18	12/19/18
Nickel	**3.04**		0.22	mg/kg	12/19/18	12/20/18
Selenium	ND		0.44	mg/kg	12/19/18	12/20/18
Silver	ND		0.22	mg/kg	12/19/18	12/20/18
Thallium	ND		0.088	mg/kg	12/19/18	12/20/18
Vanadium	**5.38**		0.22	mg/kg	12/19/18	12/20/18
Zinc	**20.7**		0.9	mg/kg	12/19/18	12/20/18

Results: Volatile Organic Compounds

Sample: S-01 (CS)

Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Acetone	ND		8	ug/kg	12/23/18	12/24/18
Benzene	ND		8	ug/kg	12/23/18	12/24/18
Bromobenzene	ND		8	ug/kg	12/23/18	12/24/18
Bromochloromethane	ND		8	ug/kg	12/23/18	12/24/18
Bromodichloromethane	ND		8	ug/kg	12/23/18	12/24/18
Bromoform	ND		8	ug/kg	12/23/18	12/24/18
Bromomethane	ND		8	ug/kg	12/23/18	12/24/18
2-Butanone	ND		8	ug/kg	12/23/18	12/24/18
tert-Butyl alcohol	ND		8	ug/kg	12/23/18	12/24/18
sec-Butylbenzene	ND		8	ug/kg	12/23/18	12/24/18
n-Butylbenzene	ND		8	ug/kg	12/23/18	12/24/18
tert-Butylbenzene	ND		8	ug/kg	12/23/18	12/24/18
Methyl t-butyl ether (MTBE)	ND		8	ug/kg	12/23/18	12/24/18
Carbon Disulfide	ND		8	ug/kg	12/23/18	12/24/18
Carbon Tetrachloride	ND		8	ug/kg	12/23/18	12/24/18
Chlorobenzene	ND		8	ug/kg	12/23/18	12/24/18
Chloroethane	ND		8	ug/kg	12/23/18	12/24/18
Chloroform	ND		8	ug/kg	12/23/18	12/24/18
Chloromethane	ND		8	ug/kg	12/23/18	12/24/18
4-Chlorotoluene	ND		8	ug/kg	12/23/18	12/24/18
2-Chlorotoluene	ND		8	ug/kg	12/23/18	12/24/18
1,2-Dibromo-3-chloropropane (DBCP)	ND		8	ug/kg	12/23/18	12/24/18
Dibromochloromethane	ND		8	ug/kg	12/23/18	12/24/18
1,2-Dibromoethane (EDB)	ND		8	ug/kg	12/23/18	12/24/18
Dibromomethane	ND		8	ug/kg	12/23/18	12/24/18
1,2-Dichlorobenzene	ND		8	ug/kg	12/23/18	12/24/18
1,3-Dichlorobenzene	ND		8	ug/kg	12/23/18	12/24/18
1,4-Dichlorobenzene	ND		8	ug/kg	12/23/18	12/24/18
1,1-Dichloroethane	ND		8	ug/kg	12/23/18	12/24/18
1,2-Dichloroethane	ND		8	ug/kg	12/23/18	12/24/18
trans-1,2-Dichloroethene	ND		8	ug/kg	12/23/18	12/24/18
cis-1,2-Dichloroethene	ND		8	ug/kg	12/23/18	12/24/18
1,1-Dichloroethene	ND		8	ug/kg	12/23/18	12/24/18
1,2-Dichloropropane	ND		8	ug/kg	12/23/18	12/24/18
2,2-Dichloropropane	ND		8	ug/kg	12/23/18	12/24/18
cis-1,3-Dichloropropene	ND		8	ug/kg	12/23/18	12/24/18
trans-1,3-Dichloropropene	ND		8	ug/kg	12/23/18	12/24/18
1,1-Dichloropropene	ND		8	ug/kg	12/23/18	12/24/18
1,3-Dichloropropene (cis + trans)	ND		8	ug/kg	12/23/18	12/24/18
Diethyl ether	ND		8	ug/kg	12/23/18	12/24/18
1,4-Dioxane	ND		164	ug/kg	12/23/18	12/24/18
Ethylbenzene	ND		8	ug/kg	12/23/18	12/24/18
Hexachlorobutadiene	ND		8	ug/kg	12/23/18	12/24/18
2-Hexanone	ND		8	ug/kg	12/23/18	12/24/18
Isopropylbenzene	ND		8	ug/kg	12/23/18	12/24/18

Results: Volatile Organic Compounds (Continued)

Sample: S-01 (CS) (Continued)

Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
p-Isopropyltoluene	ND		8	ug/kg	12/23/18	12/24/18
Methylene Chloride	ND		8	ug/kg	12/23/18	12/24/18
4-Methyl-2-pentanone	ND		8	ug/kg	12/23/18	12/24/18
Naphthalene	ND		8	ug/kg	12/23/18	12/24/18
n-Propylbenzene	ND		8	ug/kg	12/23/18	12/24/18
Styrene	ND		8	ug/kg	12/23/18	12/24/18
1,1,1,2-Tetrachloroethane	ND		8	ug/kg	12/23/18	12/24/18
Tetrachloroethene	ND		8	ug/kg	12/23/18	12/24/18
Tetrahydrofuran	ND		8	ug/kg	12/23/18	12/24/18
Toluene	ND		8	ug/kg	12/23/18	12/24/18
1,2,4-Trichlorobenzene	ND		8	ug/kg	12/23/18	12/24/18
1,2,3-Trichlorobenzene	ND		8	ug/kg	12/23/18	12/24/18
1,1,2-Trichloroethane	ND		8	ug/kg	12/23/18	12/24/18
1,1,1-Trichloroethane	ND		8	ug/kg	12/23/18	12/24/18
Trichloroethene	ND		8	ug/kg	12/23/18	12/24/18
1,2,3-Trichloropropane	ND		8	ug/kg	12/23/18	12/24/18
1,3,5-Trimethylbenzene	ND		8	ug/kg	12/23/18	12/24/18
1,2,4-Trimethylbenzene	ND		8	ug/kg	12/23/18	12/24/18
Vinyl Chloride	ND		8	ug/kg	12/23/18	12/24/18
o-Xylene	ND		8	ug/kg	12/23/18	12/24/18
m&p-Xylene	ND		16	ug/kg	12/23/18	12/24/18
Total xylenes	ND		16	ug/kg	12/23/18	12/24/18
1,1,2,2-Tetrachloroethane	ND		8	ug/kg	12/23/18	12/24/18
tert-Amyl methyl ether	ND		8	ug/kg	12/23/18	12/24/18
1,3-Dichloropropane	ND		8	ug/kg	12/23/18	12/24/18
Ethyl tert-butyl ether	ND		8	ug/kg	12/23/18	12/24/18
Diisopropyl ether	ND		8	ug/kg	12/23/18	12/24/18
Trichlorofluoromethane	ND		8	ug/kg	12/23/18	12/24/18
Dichlorodifluoromethane	ND		8	ug/kg	12/23/18	12/24/18
Acrylonitrile	ND		8	ug/kg	12/23/18	12/24/18

Surrogate(s)	Recovery%	Limits		
4-Bromofluorobenzene	*%*	*70-130*	12/23/18	12/24/18
1,2-Dichloroethane-d4	*%*	*70-130*	12/23/18	12/24/18
Toluene-d8	*%*	*70-130*	12/23/18	12/24/18

Results: Volatile Organic Compounds

Sample: S-02 (CS)

Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Acetone	ND		6	ug/kg	12/23/18	12/24/18
Benzene	ND		6	ug/kg	12/23/18	12/24/18
Bromobenzene	ND		6	ug/kg	12/23/18	12/24/18
Bromochloromethane	ND		6	ug/kg	12/23/18	12/24/18
Bromodichloromethane	ND		6	ug/kg	12/23/18	12/24/18
Bromoform	ND		6	ug/kg	12/23/18	12/24/18
Bromomethane	ND		6	ug/kg	12/23/18	12/24/18
2-Butanone	ND		6	ug/kg	12/23/18	12/24/18
tert-Butyl alcohol	ND		6	ug/kg	12/23/18	12/24/18
sec-Butylbenzene	ND		6	ug/kg	12/23/18	12/24/18
n-Butylbenzene	ND		6	ug/kg	12/23/18	12/24/18
tert-Butylbenzene	ND		6	ug/kg	12/23/18	12/24/18
Methyl t-butyl ether (MTBE)	ND		6	ug/kg	12/23/18	12/24/18
Carbon Disulfide	ND		6	ug/kg	12/23/18	12/24/18
Carbon Tetrachloride	ND		6	ug/kg	12/23/18	12/24/18
Chlorobenzene	ND		6	ug/kg	12/23/18	12/24/18
Chloroethane	ND		6	ug/kg	12/23/18	12/24/18
Chloroform	ND		6	ug/kg	12/23/18	12/24/18
Chloromethane	ND		6	ug/kg	12/23/18	12/24/18
4-Chlorotoluene	ND		6	ug/kg	12/23/18	12/24/18
2-Chlorotoluene	ND		6	ug/kg	12/23/18	12/24/18
1,2-Dibromo-3-chloropropane (DBCP)	ND		6	ug/kg	12/23/18	12/24/18
Dibromochloromethane	ND		6	ug/kg	12/23/18	12/24/18
1,2-Dibromoethane (EDB)	ND		6	ug/kg	12/23/18	12/24/18
Dibromomethane	ND		6	ug/kg	12/23/18	12/24/18
1,2-Dichlorobenzene	ND		6	ug/kg	12/23/18	12/24/18
1,3-Dichlorobenzene	ND		6	ug/kg	12/23/18	12/24/18
1,4-Dichlorobenzene	ND		6	ug/kg	12/23/18	12/24/18
1,1-Dichloroethane	ND		6	ug/kg	12/23/18	12/24/18
1,2-Dichloroethane	ND		6	ug/kg	12/23/18	12/24/18
trans-1,2-Dichloroethene	ND		6	ug/kg	12/23/18	12/24/18
cis-1,2-Dichloroethene	ND		6	ug/kg	12/23/18	12/24/18
1,1-Dichloroethene	ND		6	ug/kg	12/23/18	12/24/18
1,2-Dichloropropane	ND		6	ug/kg	12/23/18	12/24/18
2,2-Dichloropropane	ND		6	ug/kg	12/23/18	12/24/18
cis-1,3-Dichloropropene	ND		6	ug/kg	12/23/18	12/24/18
trans-1,3-Dichloropropene	ND		6	ug/kg	12/23/18	12/24/18
1,1-Dichloropropene	ND		6	ug/kg	12/23/18	12/24/18
1,3-Dichloropropene (cis + trans)	ND		6	ug/kg	12/23/18	12/24/18
Diethyl ether	ND		6	ug/kg	12/23/18	12/24/18
1,4-Dioxane	ND		126	ug/kg	12/23/18	12/24/18
Ethylbenzene	ND		6	ug/kg	12/23/18	12/24/18
Hexachlorobutadiene	ND		6	ug/kg	12/23/18	12/24/18
2-Hexanone	ND		6	ug/kg	12/23/18	12/24/18
Isopropylbenzene	ND		6	ug/kg	12/23/18	12/24/18

Results: Volatile Organic Compounds (Continued)

Sample: S-02 (CS) (Continued)

Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
p-Isopropyltoluene	ND		6	ug/kg	12/23/18	12/24/18
Methylene Chloride	ND		6	ug/kg	12/23/18	12/24/18
4-Methyl-2-pentanone	ND		6	ug/kg	12/23/18	12/24/18
Naphthalene	ND		6	ug/kg	12/23/18	12/24/18
n-Propylbenzene	ND		6	ug/kg	12/23/18	12/24/18
Styrene	ND		6	ug/kg	12/23/18	12/24/18
1,1,1,2-Tetrachloroethane	ND		6	ug/kg	12/23/18	12/24/18
Tetrachloroethene	ND		6	ug/kg	12/23/18	12/24/18
Tetrahydrofuran	ND		6	ug/kg	12/23/18	12/24/18
Toluene	ND		6	ug/kg	12/23/18	12/24/18
1,2,4-Trichlorobenzene	ND		6	ug/kg	12/23/18	12/24/18
1,2,3-Trichlorobenzene	ND		6	ug/kg	12/23/18	12/24/18
1,1,2-Trichloroethane	ND		6	ug/kg	12/23/18	12/24/18
1,1,1-Trichloroethane	ND		6	ug/kg	12/23/18	12/24/18
Trichloroethene	ND		6	ug/kg	12/23/18	12/24/18
1,2,3-Trichloropropane	ND		6	ug/kg	12/23/18	12/24/18
1,3,5-Trimethylbenzene	ND		6	ug/kg	12/23/18	12/24/18
1,2,4-Trimethylbenzene	ND		6	ug/kg	12/23/18	12/24/18
Vinyl Chloride	ND		6	ug/kg	12/23/18	12/24/18
o-Xylene	ND		6	ug/kg	12/23/18	12/24/18
m&p-Xylene	ND		13	ug/kg	12/23/18	12/24/18
Total xylenes	ND		13	ug/kg	12/23/18	12/24/18
1,1,2,2-Tetrachloroethane	ND		6	ug/kg	12/23/18	12/24/18
tert-Amyl methyl ether	ND		6	ug/kg	12/23/18	12/24/18
1,3-Dichloropropane	ND		6	ug/kg	12/23/18	12/24/18
Ethyl tert-butyl ether	ND		6	ug/kg	12/23/18	12/24/18
Diisopropyl ether	ND		6	ug/kg	12/23/18	12/24/18
Trichlorofluoromethane	ND		6	ug/kg	12/23/18	12/24/18
Dichlorodifluoromethane	ND		6	ug/kg	12/23/18	12/24/18
Acrylonitrile	ND		6	ug/kg	12/23/18	12/24/18

Surrogate(s)	Recovery%	Limits		
4-Bromofluorobenzene	*%*	*70-130*	12/23/18	12/24/18
1,2-Dichloroethane-d4	*%*	*70-130*	12/23/18	12/24/18
Toluene-d8	*%*	*70-130*	12/23/18	12/24/18

Results: Volatile Organic Compounds

Sample: S-02a (CS)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Acetone	ND		5	ug/kg	12/23/18	12/24/18
Benzene	ND		5	ug/kg	12/23/18	12/24/18
Bromobenzene	ND		5	ug/kg	12/23/18	12/24/18
Bromochloromethane	ND		5	ug/kg	12/23/18	12/24/18
Bromodichloromethane	ND		5	ug/kg	12/23/18	12/24/18
Bromoform	ND		5	ug/kg	12/23/18	12/24/18
Bromomethane	ND		5	ug/kg	12/23/18	12/24/18
2-Butanone	ND		5	ug/kg	12/23/18	12/24/18
tert-Butyl alcohol	ND		5	ug/kg	12/23/18	12/24/18
sec-Butylbenzene	ND		5	ug/kg	12/23/18	12/24/18
n-Butylbenzene	ND		5	ug/kg	12/23/18	12/24/18
tert-Butylbenzene	ND		5	ug/kg	12/23/18	12/24/18
Methyl t-butyl ether (MTBE)	ND		5	ug/kg	12/23/18	12/24/18
Carbon Disulfide	ND		5	ug/kg	12/23/18	12/24/18
Carbon Tetrachloride	ND		5	ug/kg	12/23/18	12/24/18
Chlorobenzene	ND		5	ug/kg	12/23/18	12/24/18
Chloroethane	ND		5	ug/kg	12/23/18	12/24/18
Chloroform	ND		5	ug/kg	12/23/18	12/24/18
Chloromethane	ND		5	ug/kg	12/23/18	12/24/18
4-Chlorotoluene	ND		5	ug/kg	12/23/18	12/24/18
2-Chlorotoluene	ND		5	ug/kg	12/23/18	12/24/18
1,2-Dibromo-3-chloropropane (DBCP)	ND		5	ug/kg	12/23/18	12/24/18
Dibromochloromethane	ND		5	ug/kg	12/23/18	12/24/18
1,2-Dibromoethane (EDB)	ND		5	ug/kg	12/23/18	12/24/18
Dibromomethane	ND		5	ug/kg	12/23/18	12/24/18
1,2-Dichlorobenzene	ND		5	ug/kg	12/23/18	12/24/18
1,3-Dichlorobenzene	ND		5	ug/kg	12/23/18	12/24/18
1,4-Dichlorobenzene	ND		5	ug/kg	12/23/18	12/24/18
1,1-Dichloroethane	ND		5	ug/kg	12/23/18	12/24/18
1,2-Dichloroethane	ND		5	ug/kg	12/23/18	12/24/18
trans-1,2-Dichloroethene	ND		5	ug/kg	12/23/18	12/24/18
cis-1,2-Dichloroethene	ND		5	ug/kg	12/23/18	12/24/18
1,1-Dichloroethene	ND		5	ug/kg	12/23/18	12/24/18
1,2-Dichloropropane	ND		5	ug/kg	12/23/18	12/24/18
2,2-Dichloropropane	ND		5	ug/kg	12/23/18	12/24/18
cis-1,3-Dichloropropene	ND		5	ug/kg	12/23/18	12/24/18
trans-1,3-Dichloropropene	ND		5	ug/kg	12/23/18	12/24/18
1,1-Dichloropropene	ND		5	ug/kg	12/23/18	12/24/18
1,3-Dichloropropene (cis + trans)	ND		5	ug/kg	12/23/18	12/24/18
Diethyl ether	ND		5	ug/kg	12/23/18	12/24/18
1,4-Dioxane	ND		103	ug/kg	12/23/18	12/24/18
Ethylbenzene	ND		5	ug/kg	12/23/18	12/24/18
Hexachlorobutadiene	ND		5	ug/kg	12/23/18	12/24/18
2-Hexanone	ND		5	ug/kg	12/23/18	12/24/18
Isopropylbenzene	ND		5	ug/kg	12/23/18	12/24/18

Results: Volatile Organic Compounds (Continued)

Sample: S-02a (CS) (Continued)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
p-Isopropyltoluene	ND		5	ug/kg	12/23/18	12/24/18
Methylene Chloride	ND		5	ug/kg	12/23/18	12/24/18
4-Methyl-2-pentanone	ND		5	ug/kg	12/23/18	12/24/18
Naphthalene	ND		5	ug/kg	12/23/18	12/24/18
n-Propylbenzene	ND		5	ug/kg	12/23/18	12/24/18
Styrene	ND		5	ug/kg	12/23/18	12/24/18
1,1,1,2-Tetrachloroethane	ND		5	ug/kg	12/23/18	12/24/18
Tetrachloroethene	ND		5	ug/kg	12/23/18	12/24/18
Tetrahydrofuran	ND		5	ug/kg	12/23/18	12/24/18
Toluene	ND		5	ug/kg	12/23/18	12/24/18
1,2,4-Trichlorobenzene	ND		5	ug/kg	12/23/18	12/24/18
1,2,3-Trichlorobenzene	ND		5	ug/kg	12/23/18	12/24/18
1,1,2-Trichloroethane	ND		5	ug/kg	12/23/18	12/24/18
1,1,1-Trichloroethane	ND		5	ug/kg	12/23/18	12/24/18
Trichloroethene	ND		5	ug/kg	12/23/18	12/24/18
1,2,3-Trichloropropane	ND		5	ug/kg	12/23/18	12/24/18
1,3,5-Trimethylbenzene	ND		5	ug/kg	12/23/18	12/24/18
1,2,4-Trimethylbenzene	ND		5	ug/kg	12/23/18	12/24/18
Vinyl Chloride	ND		5	ug/kg	12/23/18	12/24/18
o-Xylene	ND		5	ug/kg	12/23/18	12/24/18
m&p-Xylene	ND		10	ug/kg	12/23/18	12/24/18
Total xylenes	ND		10	ug/kg	12/23/18	12/24/18
1,1,2,2-Tetrachloroethane	ND		5	ug/kg	12/23/18	12/24/18
tert-Amyl methyl ether	ND		5	ug/kg	12/23/18	12/24/18
1,3-Dichloropropane	ND		5	ug/kg	12/23/18	12/24/18
Ethyl tert-butyl ether	ND		5	ug/kg	12/23/18	12/24/18
Diisopropyl ether	ND		5	ug/kg	12/23/18	12/24/18
Trichlorofluoromethane	ND		5	ug/kg	12/23/18	12/24/18
Dichlorodifluoromethane	ND		5	ug/kg	12/23/18	12/24/18
Acrylonitrile	ND		5	ug/kg	12/23/18	12/24/18

Surrogate(s)	Recovery%	Limits		
4-Bromofluorobenzene	*%*	*70-130*	12/23/18	12/24/18
1,2-Dichloroethane-d4	*%*	*70-130*	12/23/18	12/24/18
Toluene-d8	*%*	*70-130*	12/23/18	12/24/18

Results: Semivolatile organic compounds

Sample: S-01 (CS)

Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,2,4-Trichlorobenzene	ND		283	ug/kg	12/20/18	12/23/18
1,2-Dichlorobenzene	ND		283	ug/kg	12/20/18	12/23/18
1,3-Dichlorobenzene	ND		283	ug/kg	12/20/18	12/23/18
1,4-Dichlorobenzene	ND		283	ug/kg	12/20/18	12/23/18
Phenol	ND		283	ug/kg	12/20/18	12/23/18
2,4,5-Trichlorophenol	ND		283	ug/kg	12/20/18	12/23/18
2,4,6-Trichlorophenol	ND		283	ug/kg	12/20/18	12/23/18
2,4-Dichlorophenol	ND		283	ug/kg	12/20/18	12/23/18
2,4-Dimethylphenol	ND		718	ug/kg	12/20/18	12/23/18
2,4-Dinitrophenol	ND		718	ug/kg	12/20/18	12/23/18
2,4-Dinitrotoluene	ND		283	ug/kg	12/20/18	12/23/18
2,6-Dinitrotoluene	ND		283	ug/kg	12/20/18	12/23/18
2-Chloronaphthalene	ND		283	ug/kg	12/20/18	12/23/18
2-Chlorophenol	ND		283	ug/kg	12/20/18	12/23/18
2-Methylnaphthalene	ND		283	ug/kg	12/20/18	12/23/18
Nitrobenzene	ND		283	ug/kg	12/20/18	12/23/18
2-Methylphenol	ND		283	ug/kg	12/20/18	12/23/18
2-Nitroaniline	ND		283	ug/kg	12/20/18	12/23/18
2-Nitrophenol	ND		718	ug/kg	12/20/18	12/23/18
3,3'-Dichlorobenzidine	ND		718	ug/kg	12/20/18	12/23/18
3-Nitroaniline	ND		283	ug/kg	12/20/18	12/23/18
4,6-Dinitro-2-methylphenol	ND		718	ug/kg	12/20/18	12/23/18
4-Bromophenyl phenyl ether	ND		283	ug/kg	12/20/18	12/23/18
4-Chloro-3-methylphenol	ND		283	ug/kg	12/20/18	12/23/18
4-Chloroaniline	ND		283	ug/kg	12/20/18	12/23/18
4-Chlorophenyl phenyl ether	ND		283	ug/kg	12/20/18	12/23/18
4-Nitroaniline	ND		283	ug/kg	12/20/18	12/23/18
4-Nitrophenol	ND		718	ug/kg	12/20/18	12/23/18
Acenaphthene	ND		283	ug/kg	12/20/18	12/23/18
Acenaphthylene	ND		283	ug/kg	12/20/18	12/23/18
Aniline	ND		283	ug/kg	12/20/18	12/23/18
Anthracene	ND		283	ug/kg	12/20/18	12/23/18
Benzo(a)anthracene	ND		283	ug/kg	12/20/18	12/23/18
Benzo(a)pyrene	ND		283	ug/kg	12/20/18	12/23/18
Benzo(b)fluoranthene	ND		283	ug/kg	12/20/18	12/23/18
Benzo(g,h,i)perylene	ND		283	ug/kg	12/20/18	12/23/18
Benzo(k)fluoranthene	ND		283	ug/kg	12/20/18	12/23/18
Benzoic acid	ND		2180	ug/kg	12/20/18	12/23/18
Bis(2-chloroethoxy)methane	ND		283	ug/kg	12/20/18	12/23/18
Bis(2-chloroethyl)ether	ND		283	ug/kg	12/20/18	12/23/18
Bis(2-chloroisopropyl)ether	ND		283	ug/kg	12/20/18	12/23/18
Bis(2-ethylhexyl)phthalate	ND		870	ug/kg	12/20/18	12/23/18
Butyl benzyl phthalate	ND		283	ug/kg	12/20/18	12/23/18
Chrysene	ND		283	ug/kg	12/20/18	12/23/18
Di(n)octyl phthalate	ND		435	ug/kg	12/20/18	12/23/18

Results: Semivolatile organic compounds (Continued)

Sample: S-01 (CS) (Continued)

Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Dibenz(a,h)anthracene	ND		283	ug/kg	12/20/18	12/23/18
Dibenzofuran	ND		283	ug/kg	12/20/18	12/23/18
Diethyl phthalate	ND		283	ug/kg	12/20/18	12/23/18
Dimethyl phthalate	ND		718	ug/kg	12/20/18	12/23/18
Di-n-butylphthalate	ND		435	ug/kg	12/20/18	12/23/18
Fluoranthene	ND		283	ug/kg	12/20/18	12/23/18
Fluorene	ND		283	ug/kg	12/20/18	12/23/18
Hexachlorobenzene	ND		283	ug/kg	12/20/18	12/23/18
Hexachlorobutadiene	ND		283	ug/kg	12/20/18	12/23/18
Hexachlorocyclopentadiene	ND		718	ug/kg	12/20/18	12/23/18
Hexachloroethane	ND		283	ug/kg	12/20/18	12/23/18
Indeno(1,2,3-cd)pyrene	ND		283	ug/kg	12/20/18	12/23/18
Isophorone	ND		283	ug/kg	12/20/18	12/23/18
Naphthalene	ND		283	ug/kg	12/20/18	12/23/18
N-Nitrosodimethylamine	ND		283	ug/kg	12/20/18	12/23/18
N-Nitrosodi-n-propylamine	ND		283	ug/kg	12/20/18	12/23/18
N-Nitrosodiphenylamine	ND		283	ug/kg	12/20/18	12/23/18
Pentachlorophenol	ND		718	ug/kg	12/20/18	12/23/18
Phenanthrene	ND		283	ug/kg	12/20/18	12/23/18
Pyrene	ND		283	ug/kg	12/20/18	12/23/18
m&p-Cresol	ND		566	ug/kg	12/20/18	12/23/18
Pyridine	ND		283	ug/kg	12/20/18	12/23/18

Surrogate(s)	Recovery%	Limits		
Nitrobenzene-d5	*53.3%*	*30-126*	12/20/18	12/23/18
p-Terphenyl-d14	*91.5%*	*47-130*	12/20/18	12/23/18
2-Fluorobiphenyl	*55.0%*	*34-130*	12/20/18	12/23/18
Phenol-d6	*52.1%*	*30-130*	12/20/18	12/23/18
2,4,6-Tribromophenol	*97.3%*	*30-130*	12/20/18	12/23/18
2-Fluorophenol	*50.4%*	*30-130*	12/20/18	12/23/18

Results: Semivolatile organic compounds

Sample: S-02 (CS)

Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,2,4-Trichlorobenzene	ND		195	ug/kg	12/20/18	12/23/18
1,2-Dichlorobenzene	ND		195	ug/kg	12/20/18	12/23/18
1,3-Dichlorobenzene	ND		195	ug/kg	12/20/18	12/23/18
1,4-Dichlorobenzene	ND		195	ug/kg	12/20/18	12/23/18
Phenol	ND		195	ug/kg	12/20/18	12/23/18
2,4,5-Trichlorophenol	ND		195	ug/kg	12/20/18	12/23/18
2,4,6-Trichlorophenol	ND		195	ug/kg	12/20/18	12/23/18
2,4-Dichlorophenol	ND		195	ug/kg	12/20/18	12/23/18
2,4-Dimethylphenol	ND		495	ug/kg	12/20/18	12/23/18
2,4-Dinitrophenol	ND		495	ug/kg	12/20/18	12/23/18
2,4-Dinitrotoluene	ND		195	ug/kg	12/20/18	12/23/18
2,6-Dinitrotoluene	ND		195	ug/kg	12/20/18	12/23/18
2-Chloronaphthalene	ND		195	ug/kg	12/20/18	12/23/18
2-Chlorophenol	ND		195	ug/kg	12/20/18	12/23/18
2-Methylnaphthalene	ND		195	ug/kg	12/20/18	12/23/18
Nitrobenzene	ND		195	ug/kg	12/20/18	12/23/18
2-Methylphenol	ND		195	ug/kg	12/20/18	12/23/18
2-Nitroaniline	ND		195	ug/kg	12/20/18	12/23/18
2-Nitrophenol	ND		495	ug/kg	12/20/18	12/23/18
3,3'-Dichlorobenzidine	ND		495	ug/kg	12/20/18	12/23/18
3-Nitroaniline	ND		195	ug/kg	12/20/18	12/23/18
4,6-Dinitro-2-methylphenol	ND		495	ug/kg	12/20/18	12/23/18
4-Bromophenyl phenyl ether	ND		195	ug/kg	12/20/18	12/23/18
4-Chloro-3-methylphenol	ND		195	ug/kg	12/20/18	12/23/18
4-Chloroaniline	ND		195	ug/kg	12/20/18	12/23/18
4-Chlorophenyl phenyl ether	ND		195	ug/kg	12/20/18	12/23/18
4-Nitroaniline	ND		195	ug/kg	12/20/18	12/23/18
4-Nitrophenol	ND		495	ug/kg	12/20/18	12/23/18
Acenaphthene	ND		195	ug/kg	12/20/18	12/23/18
Acenaphthylene	ND		195	ug/kg	12/20/18	12/23/18
Aniline	ND		195	ug/kg	12/20/18	12/23/18
Anthracene	ND		195	ug/kg	12/20/18	12/23/18
Benzo(a)anthracene	ND		195	ug/kg	12/20/18	12/23/18
Benzo(a)pyrene	ND		195	ug/kg	12/20/18	12/23/18
Benzo(b)fluoranthene	**222**		195	ug/kg	12/20/18	12/23/18
Benzo(g,h,i)perylene	ND		195	ug/kg	12/20/18	12/23/18
Benzo(k)fluoranthene	ND		195	ug/kg	12/20/18	12/23/18
Benzoic acid	ND		1500	ug/kg	12/20/18	12/23/18
Bis(2-chloroethoxy)methane	ND		195	ug/kg	12/20/18	12/23/18
Bis(2-chloroethyl)ether	ND		195	ug/kg	12/20/18	12/23/18
Bis(2-chloroisopropyl)ether	ND		195	ug/kg	12/20/18	12/23/18
Bis(2-ethylhexyl)phthalate	ND		600	ug/kg	12/20/18	12/23/18
Butyl benzyl phthalate	ND		195	ug/kg	12/20/18	12/23/18
Chrysene	**210**		195	ug/kg	12/20/18	12/23/18
Di(n)octyl phthalate	ND		300	ug/kg	12/20/18	12/23/18

Results: Semivolatile organic compounds (Continued)

Sample: S-02 (CS) (Continued)

Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Dibenz(a,h)anthracene	ND		195	ug/kg	12/20/18	12/23/18
Dibenzofuran	ND		195	ug/kg	12/20/18	12/23/18
Diethyl phthalate	ND		195	ug/kg	12/20/18	12/23/18
Dimethyl phthalate	ND		495	ug/kg	12/20/18	12/23/18
Di-n-butylphthalate	ND		300	ug/kg	12/20/18	12/23/18
Fluoranthene	ND		195	ug/kg	12/20/18	12/23/18
Fluorene	ND		195	ug/kg	12/20/18	12/23/18
Hexachlorobenzene	ND		195	ug/kg	12/20/18	12/23/18
Hexachlorobutadiene	ND		195	ug/kg	12/20/18	12/23/18
Hexachlorocyclopentadiene	ND		495	ug/kg	12/20/18	12/23/18
Hexachloroethane	ND		195	ug/kg	12/20/18	12/23/18
Indeno(1,2,3-cd)pyrene	ND		195	ug/kg	12/20/18	12/23/18
Isophorone	ND		195	ug/kg	12/20/18	12/23/18
Naphthalene	ND		195	ug/kg	12/20/18	12/23/18
N-Nitrosodimethylamine	ND		195	ug/kg	12/20/18	12/23/18
N-Nitrosodi-n-propylamine	ND		195	ug/kg	12/20/18	12/23/18
N-Nitrosodiphenylamine	ND		195	ug/kg	12/20/18	12/23/18
Pentachlorophenol	ND		495	ug/kg	12/20/18	12/23/18
Phenanthrene	ND		195	ug/kg	12/20/18	12/23/18
Pyrene	ND		195	ug/kg	12/20/18	12/23/18
m&p-Cresol	ND		390	ug/kg	12/20/18	12/23/18
Pyridine	ND		195	ug/kg	12/20/18	12/23/18

Surrogate(s)	Recovery%	Limits		
Nitrobenzene-d5	*41.0%*	*30-126*	12/20/18	12/23/18
p-Terphenyl-d14	*82.7%*	*47-130*	12/20/18	12/23/18
2-Fluorobiphenyl	*50.8%*	*34-130*	12/20/18	12/23/18
Phenol-d6	*42.5%*	*30-130*	12/20/18	12/23/18
2,4,6-Tribromophenol	*90.2%*	*30-130*	12/20/18	12/23/18
2-Fluorophenol	*37.5%*	*30-130*	12/20/18	12/23/18

Results: Semivolatile organic compounds

Sample: S-02a (CS)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
1,2,4-Trichlorobenzene	ND		143	ug/kg	12/20/18	12/23/18
1,2-Dichlorobenzene	ND		143	ug/kg	12/20/18	12/23/18
1,3-Dichlorobenzene	ND		143	ug/kg	12/20/18	12/23/18
1,4-Dichlorobenzene	ND		143	ug/kg	12/20/18	12/23/18
Phenol	ND		143	ug/kg	12/20/18	12/23/18
2,4,5-Trichlorophenol	ND		143	ug/kg	12/20/18	12/23/18
2,4,6-Trichlorophenol	ND		143	ug/kg	12/20/18	12/23/18
2,4-Dichlorophenol	ND		143	ug/kg	12/20/18	12/23/18
2,4-Dimethylphenol	ND		364	ug/kg	12/20/18	12/23/18
2,4-Dinitrophenol	ND		364	ug/kg	12/20/18	12/23/18
2,4-Dinitrotoluene	ND		143	ug/kg	12/20/18	12/23/18
2,6-Dinitrotoluene	ND		143	ug/kg	12/20/18	12/23/18
2-Chloronaphthalene	ND		143	ug/kg	12/20/18	12/23/18
2-Chlorophenol	ND		143	ug/kg	12/20/18	12/23/18
2-Methylnaphthalene	ND		143	ug/kg	12/20/18	12/23/18
Nitrobenzene	ND		143	ug/kg	12/20/18	12/23/18
2-Methylphenol	ND		143	ug/kg	12/20/18	12/23/18
2-Nitroaniline	ND		143	ug/kg	12/20/18	12/23/18
2-Nitrophenol	ND		364	ug/kg	12/20/18	12/23/18
3,3'-Dichlorobenzidine	ND		364	ug/kg	12/20/18	12/23/18
3-Nitroaniline	ND		143	ug/kg	12/20/18	12/23/18
4,6-Dinitro-2-methylphenol	ND		364	ug/kg	12/20/18	12/23/18
4-Bromophenyl phenyl ether	ND		143	ug/kg	12/20/18	12/23/18
4-Chloro-3-methylphenol	ND		143	ug/kg	12/20/18	12/23/18
4-Chloroaniline	ND		143	ug/kg	12/20/18	12/23/18
4-Chlorophenyl phenyl ether	ND		143	ug/kg	12/20/18	12/23/18
4-Nitroaniline	ND		143	ug/kg	12/20/18	12/23/18
4-Nitrophenol	ND		364	ug/kg	12/20/18	12/23/18
Acenaphthene	ND		143	ug/kg	12/20/18	12/23/18
Acenaphthylene	ND		143	ug/kg	12/20/18	12/23/18
Aniline	ND		143	ug/kg	12/20/18	12/23/18
Anthracene	ND		143	ug/kg	12/20/18	12/23/18
Benzo(a)anthracene	ND		143	ug/kg	12/20/18	12/23/18
Benzo(a)pyrene	ND		143	ug/kg	12/20/18	12/23/18
Benzo(b)fluoranthene	ND		143	ug/kg	12/20/18	12/23/18
Benzo(g,h,i)perylene	ND		143	ug/kg	12/20/18	12/23/18
Benzo(k)fluoranthene	ND		143	ug/kg	12/20/18	12/23/18
Benzoic acid	ND		1100	ug/kg	12/20/18	12/23/18
Bis(2-chloroethoxy)methane	ND		143	ug/kg	12/20/18	12/23/18
Bis(2-chloroethyl)ether	ND		143	ug/kg	12/20/18	12/23/18
Bis(2-chloroisopropyl)ether	ND		143	ug/kg	12/20/18	12/23/18
Bis(2-ethylhexyl)phthalate	ND		441	ug/kg	12/20/18	12/23/18
Butyl benzyl phthalate	ND		143	ug/kg	12/20/18	12/23/18
Chrysene	ND		143	ug/kg	12/20/18	12/23/18
Di(n)octyl phthalate	ND		221	ug/kg	12/20/18	12/23/18

Results: Semivolatile organic compounds (Continued)

Sample: S-02a (CS) (Continued)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Dibenz(a,h)anthracene	ND		143	ug/kg	12/20/18	12/23/18
Dibenzofuran	ND		143	ug/kg	12/20/18	12/23/18
Diethyl phthalate	ND		143	ug/kg	12/20/18	12/23/18
Dimethyl phthalate	ND		364	ug/kg	12/20/18	12/23/18
Di-n-butylphthalate	ND		221	ug/kg	12/20/18	12/23/18
Fluoranthene	ND		143	ug/kg	12/20/18	12/23/18
Fluorene	ND		143	ug/kg	12/20/18	12/23/18
Hexachlorobenzene	ND		143	ug/kg	12/20/18	12/23/18
Hexachlorobutadiene	ND		143	ug/kg	12/20/18	12/23/18
Hexachlorocyclopentadiene	ND		364	ug/kg	12/20/18	12/23/18
Hexachloroethane	ND		143	ug/kg	12/20/18	12/23/18
Indeno(1,2,3-cd)pyrene	ND		143	ug/kg	12/20/18	12/23/18
Isophorone	ND		143	ug/kg	12/20/18	12/23/18
Naphthalene	ND		143	ug/kg	12/20/18	12/23/18
N-Nitrosodimethylamine	ND		143	ug/kg	12/20/18	12/23/18
N-Nitrosodi-n-propylamine	ND		143	ug/kg	12/20/18	12/23/18
N-Nitrosodiphenylamine	ND		143	ug/kg	12/20/18	12/23/18
Pentachlorophenol	ND		364	ug/kg	12/20/18	12/23/18
Phenanthrene	ND		143	ug/kg	12/20/18	12/23/18
Pyrene	ND		143	ug/kg	12/20/18	12/23/18
m&p-Cresol	ND		287	ug/kg	12/20/18	12/23/18
Pyridine	ND		143	ug/kg	12/20/18	12/23/18

Surrogate(s)	Recovery%	Limits		
Nitrobenzene-d5	*74.8%*	*30-126*	12/20/18	12/23/18
p-Terphenyl-d14	*93.4%*	*47-130*	12/20/18	12/23/18
2-Fluorobiphenyl	*70.3%*	*34-130*	12/20/18	12/23/18
Phenol-d6	*73.7%*	*30-130*	12/20/18	12/23/18
2,4,6-Tribromophenol	*101%*	*30-130*	12/20/18	12/23/18
2-Fluorophenol	*71.8%*	*30-130*	12/20/18	12/23/18

Results: Pesticides

Sample: S-01 (CS)

Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
alpha-BHC	ND		3.51	ug/kg	12/20/18	12/24/18
gamma-BHC (Lindane)	ND		3.51	ug/kg	12/20/18	12/24/18
beta-BHC	ND		3.51	ug/kg	12/20/18	12/24/18
delta-BHC	ND		3.51	ug/kg	12/20/18	12/24/18
Heptachlor	ND		3.51	ug/kg	12/20/18	12/24/18
Aldrin	ND		3.51	ug/kg	12/20/18	12/24/18
Heptachlor epoxide	ND		3.51	ug/kg	12/20/18	12/24/18
gamma-Chlordane	ND		3.51	ug/kg	12/20/18	12/24/18
alpha-Chlordane	ND		3.51	ug/kg	12/20/18	12/24/18
Chlordane	ND		35.1	ug/kg	12/20/18	12/24/18
4,4'-DDE	ND		7.01	ug/kg	12/20/18	12/24/18
Endosulfan I	ND		3.51	ug/kg	12/20/18	12/24/18
Dieldrin	ND		3.51	ug/kg	12/20/18	12/24/18
Endrin	ND		3.51	ug/kg	12/20/18	12/24/18
4,4'-DDD	ND		7.01	ug/kg	12/20/18	12/24/18
Endosulfan II	ND		3.51	ug/kg	12/20/18	12/24/18
Endrin aldehyde	ND		3.51	ug/kg	12/20/18	12/24/18
4,4'-DDT	ND		7.01	ug/kg	12/20/18	12/24/18
Methoxychlor	ND		7.01	ug/kg	12/20/18	12/24/18
Endosulfan sulfate	ND		3.51	ug/kg	12/20/18	12/24/18
Endrin Ketone	ND		3.51	ug/kg	12/20/18	12/24/18
Toxaphene	ND		35.1	ug/kg	12/20/18	12/24/18

Surrogate(s)	Recovery%	Limits		
2,4,5,6-Tetrachloro-m-xylene (TCMX)	*47.4%*	*30-106*	12/20/18	12/24/18
Decachlorobiphenyl (DCBP)	*69.8%*	*32-110*	12/20/18	12/24/18

Results: Pesticides

Sample: S-02 (CS)

Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
alpha-BHC	ND		2.54	ug/kg	12/20/18	12/24/18
gamma-BHC (Lindane)	ND		2.54	ug/kg	12/20/18	12/24/18
beta-BHC	ND		2.54	ug/kg	12/20/18	12/24/18
delta-BHC	ND		2.54	ug/kg	12/20/18	12/24/18
Heptachlor	ND		2.54	ug/kg	12/20/18	12/24/18
Aldrin	ND		2.54	ug/kg	12/20/18	12/24/18
Heptachlor epoxide	ND		2.54	ug/kg	12/20/18	12/24/18
gamma-Chlordane	ND		2.54	ug/kg	12/20/18	12/24/18
alpha-Chlordane	ND		2.54	ug/kg	12/20/18	12/24/18
Chlordane	ND		25.4	ug/kg	12/20/18	12/24/18
4,4'-DDE	ND		5.06	ug/kg	12/20/18	12/24/18
Endosulfan I	ND		2.54	ug/kg	12/20/18	12/24/18
Dieldrin	ND		2.54	ug/kg	12/20/18	12/24/18
Endrin	ND		2.54	ug/kg	12/20/18	12/24/18
4,4'-DDD	ND		5.06	ug/kg	12/20/18	12/24/18
Endosulfan II	ND		2.54	ug/kg	12/20/18	12/24/18
Endrin aldehyde	ND		2.54	ug/kg	12/20/18	12/24/18
4,4'-DDT	ND		5.06	ug/kg	12/20/18	12/24/18
Methoxychlor	ND		5.06	ug/kg	12/20/18	12/24/18
Endosulfan sulfate	ND		2.54	ug/kg	12/20/18	12/24/18
Endrin Ketone	ND		2.54	ug/kg	12/20/18	12/24/18
Toxaphene	ND		25.4	ug/kg	12/20/18	12/24/18

Surrogate(s)	Recovery%	Limits		
2,4,5,6-Tetrachloro-m-xylene (TCMX)	*54.6%*	*30-106*	12/20/18	12/24/18
Decachlorobiphenyl (DCBP)	*80.0%*	*32-110*	12/20/18	12/24/18

Results: Pesticides

Sample: S-02a (CS)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
alpha-BHC	ND		1.79	ug/kg	12/20/18	12/24/18
gamma-BHC (Lindane)	ND		1.79	ug/kg	12/20/18	12/24/18
beta-BHC	ND		1.79	ug/kg	12/20/18	12/24/18
delta-BHC	ND		1.79	ug/kg	12/20/18	12/24/18
Heptachlor	ND		1.79	ug/kg	12/20/18	12/24/18
Aldrin	ND		1.79	ug/kg	12/20/18	12/24/18
Heptachlor epoxide	ND		1.79	ug/kg	12/20/18	12/24/18
gamma-Chlordane	ND		1.79	ug/kg	12/20/18	12/24/18
alpha-Chlordane	ND		1.79	ug/kg	12/20/18	12/24/18
Chlordane	ND		17.9	ug/kg	12/20/18	12/24/18
4,4'-DDE	ND		3.57	ug/kg	12/20/18	12/24/18
Endosulfan I	ND		1.79	ug/kg	12/20/18	12/24/18
Dieldrin	ND		1.79	ug/kg	12/20/18	12/24/18
Endrin	ND		1.79	ug/kg	12/20/18	12/24/18
4,4'-DDD	ND		3.57	ug/kg	12/20/18	12/24/18
Endosulfan II	ND		1.79	ug/kg	12/20/18	12/24/18
Endrin aldehyde	ND		1.79	ug/kg	12/20/18	12/24/18
4,4'-DDT	ND		3.57	ug/kg	12/20/18	12/24/18
Methoxychlor	ND		3.57	ug/kg	12/20/18	12/24/18
Endosulfan sulfate	ND		1.79	ug/kg	12/20/18	12/24/18
Endrin Ketone	ND		1.79	ug/kg	12/20/18	12/24/18
Toxaphene	ND		17.9	ug/kg	12/20/18	12/24/18

Surrogate(s)	Recovery%	Limits		
2,4,5,6-Tetrachloro-m-xylene (TCMX)	*50.4%*	*30-106*	12/20/18	12/24/18
Decachlorobiphenyl (DCBP)	*66.0%*	*32-110*	12/20/18	12/24/18

Results: Polychlorinated Biphenyls (PCBs)

Sample: S-01 (CS)

Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Aroclor-1016	ND		210	ug/kg	12/20/18	12/21/18
Aroclor-1221	ND		210	ug/kg	12/20/18	12/21/18
Aroclor-1232	ND		210	ug/kg	12/20/18	12/21/18
Aroclor-1242	ND		210	ug/kg	12/20/18	12/21/18
Aroclor-1248	ND		210	ug/kg	12/20/18	12/21/18
Aroclor-1254	ND		210	ug/kg	12/20/18	12/21/18
Aroclor-1260	ND		210	ug/kg	12/20/18	12/21/18
Aroclor-1262	ND		210	ug/kg	12/20/18	12/21/18
Aroclor-1268	ND		210	ug/kg	12/20/18	12/21/18
PCBs (Total)	ND		210	ug/kg	12/20/18	12/21/18

Surrogate(s)	Recovery%		Limits			
2,4,5,6-Tetrachloro-m-xylene (TCMX)	*56.1%*		*36.2-108*		12/20/18	12/21/18
Decachlorobiphenyl (DCBP)	*64.4%*		*43.3-118*		12/20/18	12/21/18

Results: Polychlorinated Biphenyls (PCBs)

Sample: S-02 (CS)

Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Aroclor-1016	ND		152	ug/kg	12/20/18	12/21/18
Aroclor-1221	ND		152	ug/kg	12/20/18	12/21/18
Aroclor-1232	ND		152	ug/kg	12/20/18	12/21/18
Aroclor-1242	ND		152	ug/kg	12/20/18	12/21/18
Aroclor-1248	ND		152	ug/kg	12/20/18	12/21/18
Aroclor-1254	ND		152	ug/kg	12/20/18	12/21/18
Aroclor-1260	ND		152	ug/kg	12/20/18	12/21/18
Aroclor-1262	ND		152	ug/kg	12/20/18	12/21/18
Aroclor-1268	ND		152	ug/kg	12/20/18	12/21/18
PCBs (Total)	ND		152	ug/kg	12/20/18	12/21/18

Surrogate(s)	Recovery%	Limits		
2,4,5,6-Tetrachloro-m-xylene (TCMX)	*66.5%*	*36.2-108*	12/20/18	12/21/18
Decachlorobiphenyl (DCBP)	*77.8%*	*43.3-118*	12/20/18	12/21/18

Results: Polychlorinated Biphenyls (PCBs)

Sample: S-02a (CS)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Aroclor-1016	ND		107	ug/kg	12/20/18	12/21/18
Aroclor-1221	ND		107	ug/kg	12/20/18	12/21/18
Aroclor-1232	ND		107	ug/kg	12/20/18	12/21/18
Aroclor-1242	ND		107	ug/kg	12/20/18	12/21/18
Aroclor-1248	ND		107	ug/kg	12/20/18	12/21/18
Aroclor-1254	ND		107	ug/kg	12/20/18	12/21/18
Aroclor-1260	ND		107	ug/kg	12/20/18	12/21/18
Aroclor-1262	ND		107	ug/kg	12/20/18	12/21/18
Aroclor-1268	ND		107	ug/kg	12/20/18	12/21/18
PCBs (Total)	ND		107	ug/kg	12/20/18	12/21/18

Surrogate(s)	Recovery%	Limits		
2,4,5,6-Tetrachloro-m-xylene (TCMX)	*54.9%*	*36.2-108*	12/20/18	12/21/18
Decachlorobiphenyl (DCBP)	*67.1%*	*43.3-118*	12/20/18	12/21/18

Results: Herbicides

Sample: S-01 (CS)

Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Dalapon	ND		845	ug/kg	12/24/18	12/26/18
Dicamba	ND		422	ug/kg	12/24/18	12/26/18
Dichloroprop	ND		422	ug/kg	12/24/18	12/26/18
2,4-D	ND		422	ug/kg	12/24/18	12/26/18
2,4,5-TP (Silvex)	ND		422	ug/kg	12/24/18	12/26/18
2,4,5-T	ND		422	ug/kg	12/24/18	12/26/18
2,4-DB	ND		422	ug/kg	12/24/18	12/26/18
Dinoseb	ND		845	ug/kg	12/24/18	12/26/18

Surrogate(s)	Recovery%	Limits		
2,4-Dichlorophenyl acetic acid	*90.4%*	*41-145*	12/24/18	12/26/18

Results: Herbicides

Sample: S-02 (CS)

Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Dalapon	ND		314	ug/kg	12/24/18	12/26/18
Dicamba	ND		157	ug/kg	12/24/18	12/26/18
Dichloroprop	ND		157	ug/kg	12/24/18	12/26/18
2,4-D	ND		157	ug/kg	12/24/18	12/26/18
2,4,5-TP (Silvex)	ND		157	ug/kg	12/24/18	12/26/18
2,4,5-T	ND		157	ug/kg	12/24/18	12/26/18
2,4-DB	ND		157	ug/kg	12/24/18	12/26/18
Dinoseb	ND		314	ug/kg	12/24/18	12/26/18

Surrogate(s)	Recovery%		Limits			
2,4-Dichlorophenyl acetic acid	*63.5%*		*41-145*		12/24/18	12/26/18

Results: Herbicides

Sample: S-02a (CS)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Dalapon	ND		219	ug/kg	12/24/18	12/26/18
Dicamba	ND		110	ug/kg	12/24/18	12/26/18
Dichloroprop	ND		110	ug/kg	12/24/18	12/26/18
2,4-D	ND		110	ug/kg	12/24/18	12/26/18
2,4,5-TP (Silvex)	ND		110	ug/kg	12/24/18	12/26/18
2,4,5-T	ND		110	ug/kg	12/24/18	12/26/18
2,4-DB	ND		110	ug/kg	12/24/18	12/26/18
Dinoseb	ND		219	ug/kg	12/24/18	12/26/18

Surrogate(s)	Recovery%	Limits		
2,4-Dichlorophenyl acetic acid	*56.0%*	*41-145*	12/24/18	12/26/18

Results: Total Petroleum Hydrocarbons

Sample: S-01 (CS)

Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Petroleum Hydrocarbons	**222**		117	mg/kg	12/20/18	12/24/18
Surrogate(s)	Recovery%		Limits			
Chlorooctadecane	*71.1%*		*42.9-128*		12/20/18	12/24/18

Results: Total Petroleum Hydrocarbons

Sample: S-02 (CS)

Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Petroleum Hydrocarbons	**167**		83	mg/kg	12/20/18	12/24/18
Surrogate(s)	Recovery%		Limits			
Chlorooctadecane	*77.9%*		*42.9-128*		12/20/18	12/24/18

Results: Total Petroleum Hydrocarbons

Sample: S-02a (CS)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Total Petroleum Hydrocarbons	ND		60	mg/kg	12/20/18	12/24/18
Surrogate(s)	Recovery%		Limits			
Chlorooctadecane	*75.5%*		*42.9-128*		12/20/18	12/24/18

Results: SPLP Metals

Sample: S-01 (CS)

Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Antimony	**0.01**		0.006	mg/L	01/02/19	01/02/19
Arsenic	ND		0.05	mg/L	01/02/19	01/02/19
Beryllium	ND		0.004	mg/L	01/02/19	01/02/19
Nickel	ND		0.005	mg/L	01/02/19	01/02/19
Silver	ND		0.005	mg/L	01/02/19	01/02/19
Thallium	ND		0.005	mg/L	12/26/18	12/27/18
Vanadium	ND		0.050	mg/L	01/02/19	01/02/19
Barium	**0.032**		0.005	mg/L	01/02/19	01/02/19
Copper	ND		0.1	mg/L	01/02/19	01/02/19
Zinc	ND		0.1	mg/L	01/02/19	01/02/19
Cadmium	ND		0.005	mg/L	01/02/19	01/02/19
Chromium	ND		0.025	mg/L	01/02/19	01/02/19
Lead	**0.028**		0.015	mg/L	01/02/19	01/02/19
Mercury	ND		0.001	mg/L	01/02/19	01/02/19
Selenium	ND		0.05	mg/L	01/02/19	01/02/19

Results: SPLP Metals

Sample: S-02 (CS)

Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Antimony	ND		0.006	mg/L	01/02/19	01/02/19
Arsenic	ND		0.05	mg/L	01/02/19	01/02/19
Beryllium	ND		0.004	mg/L	01/02/19	01/02/19
Nickel	ND		0.005	mg/L	01/02/19	01/02/19
Silver	ND		0.005	mg/L	01/02/19	01/02/19
Thallium	ND		0.005	mg/L	12/26/18	12/27/18
Vanadium	ND		0.050	mg/L	01/02/19	01/02/19
Barium	**0.029**		0.005	mg/L	01/02/19	01/02/19
Copper	ND		0.1	mg/L	01/02/19	01/02/19
Zinc	ND		0.1	mg/L	01/02/19	01/02/19
Cadmium	ND		0.005	mg/L	01/02/19	01/02/19
Chromium	ND		0.025	mg/L	01/02/19	01/02/19
Lead	**0.034**		0.015	mg/L	01/02/19	01/02/19
Mercury	ND		0.001	mg/L	01/02/19	01/02/19
Selenium	ND		0.05	mg/L	01/02/19	01/02/19

Results: SPLP Metals

Sample: S-02a (CS)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Antimony	ND		0.006	mg/L	01/02/19	01/02/19
Arsenic	ND		0.05	mg/L	01/02/19	01/02/19
Beryllium	ND		0.004	mg/L	01/02/19	01/02/19
Nickel	ND		0.005	mg/L	01/02/19	01/02/19
Silver	ND		0.005	mg/L	01/02/19	01/02/19
Thallium	ND		0.005	mg/L	12/26/18	12/27/18
Vanadium	ND		0.050	mg/L	01/02/19	01/02/19
Barium	**0.006**		0.005	mg/L	01/02/19	01/02/19
Copper	ND		0.1	mg/L	01/02/19	01/02/19
Zinc	ND		0.1	mg/L	01/02/19	01/02/19
Cadmium	ND		0.005	mg/L	01/02/19	01/02/19
Chromium	ND		0.025	mg/L	01/02/19	01/02/19
Lead	ND		0.015	mg/L	01/02/19	01/02/19
Mercury	ND		0.001	mg/L	01/02/19	01/02/19
Selenium	ND		0.05	mg/L	01/02/19	01/02/19

Results: SPLP PCBs

Sample: S-01 (CS)
Lab Number: 8L18096-01 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Aroclor-1016	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1221	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1232	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1242	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1248	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1254	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1260	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1262	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1268	ND		0.0005	mg/L	12/27/18	12/27/18

Results: SPLP PCBs

Sample: S-02 (CS)
Lab Number: 8L18096-02 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Aroclor-1016	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1221	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1232	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1242	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1248	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1254	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1260	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1262	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1268	ND		0.0005	mg/L	12/27/18	12/27/18

Results: SPLP PCBs

Sample: S-02a (CS)

Lab Number: 8L18096-03 (Soil)

Analyte	Result	Qual	Reporting Limit	Units	Date Prepared	Date Analyzed
Aroclor-1016	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1221	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1232	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1242	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1248	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1254	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1260	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1262	ND		0.0005	mg/L	12/27/18	12/27/18
Aroclor-1268	ND		0.0005	mg/L	12/27/18	12/27/18

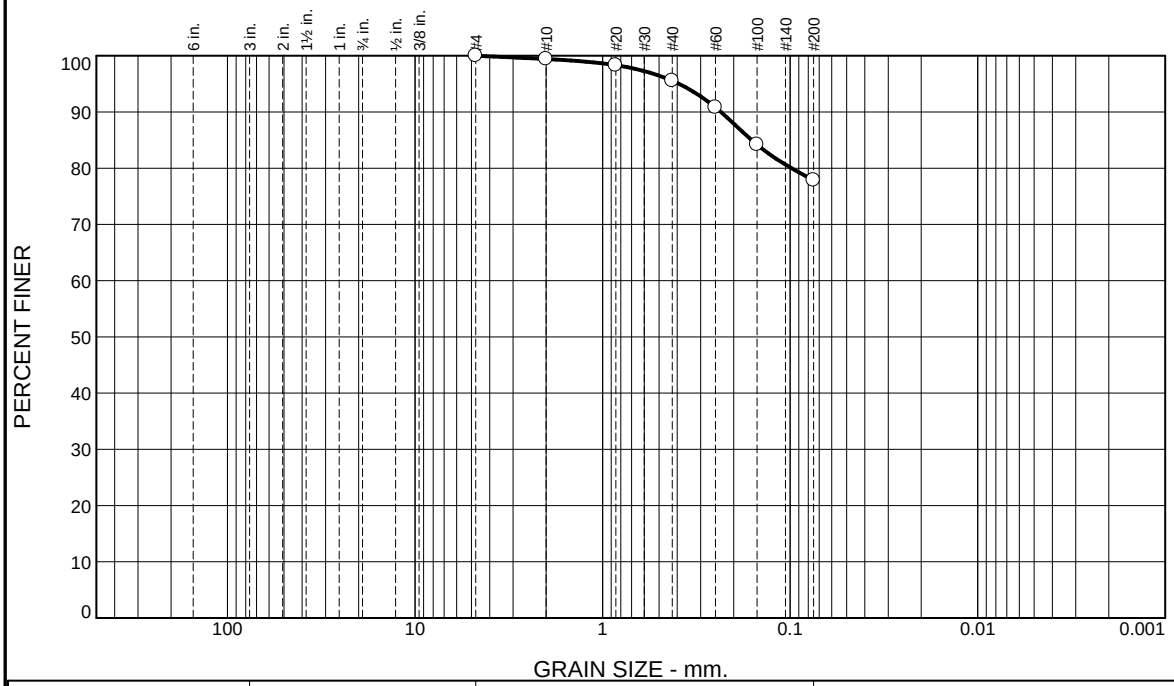
THIELSCH ENGINEERING	195 Frances Avenue Cranston RI, 02910 Phone: (401)-467-6454 Fax: (401)-467-2398 thielsch.com *Let's Build a Solid Foundation*	Client Information: New England Testing Laboratory 59 Greenhill Street, West Warwick, RI 02893 PM: Karen Staple Assigned By: Karen Staple Collected By: Client	Project Information: **8L18096** TEI Project Number: 74-18-0002.46 Summary Page: 1 of 1 Report Date: 12.28.18

LABORATORY TESTING DATA SHEET

Boring ID	Sample I.D.	Depth (ft)	Laboratory No.	Identification Tests								Proctor / CBR / Permeability Tests								Laboratory Log and Soil Description
				Water Content %	LL %	PL %	Gravel %	Sand %	Fines %	Org. %	G_s	Dry unit wt. pcf	Test Water Content %	γ_d MAX (pcf) W_{opt} (%)	γ_d MAX (pcf) W_{opt} (%) (Corr.)	Test Setup as % of Proctor	CBR @ 0.1"	CBR @ 0.2"	Perme-ability (cm/sec)	
				D2216	D4318		D6913			D2874	D854			D1557			D1883			
	S-01 (CS)		18-S-1999				0.0	22.1	77.9											Black Organic silt with sand
	S-02 (CS)		18-S-2000				2.7	52.6	44.7											Black Organic silty sand
	S-02a (CS)		18-S-2001				4.2	94.4	1.4											Grey poorly graded sand

Reviewed By _____ 12.28.2018

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.6	3.8	17.7	77.9	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	99.4		
#20	98.3		
#40	95.6		
#60	90.8		
#100	84.2		
#200	77.9		

* (no specification provided)

Material Description

Black Organic silt with sand

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= OH **AASHTO (M 145)=** A-8

Coefficients

D_{90}= 0.2339 D_{85}= 0.1602 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sample visually classified as plastic.

Date Received: 12.21.18 **Date Tested:** 12.27.18

Tested By: MN

Checked By: Rebecca Roth

Title: Laboratory Coordinator

Source of Sample: 8L18096 **Date Sampled:**
Sample Number: S-01 (CS)

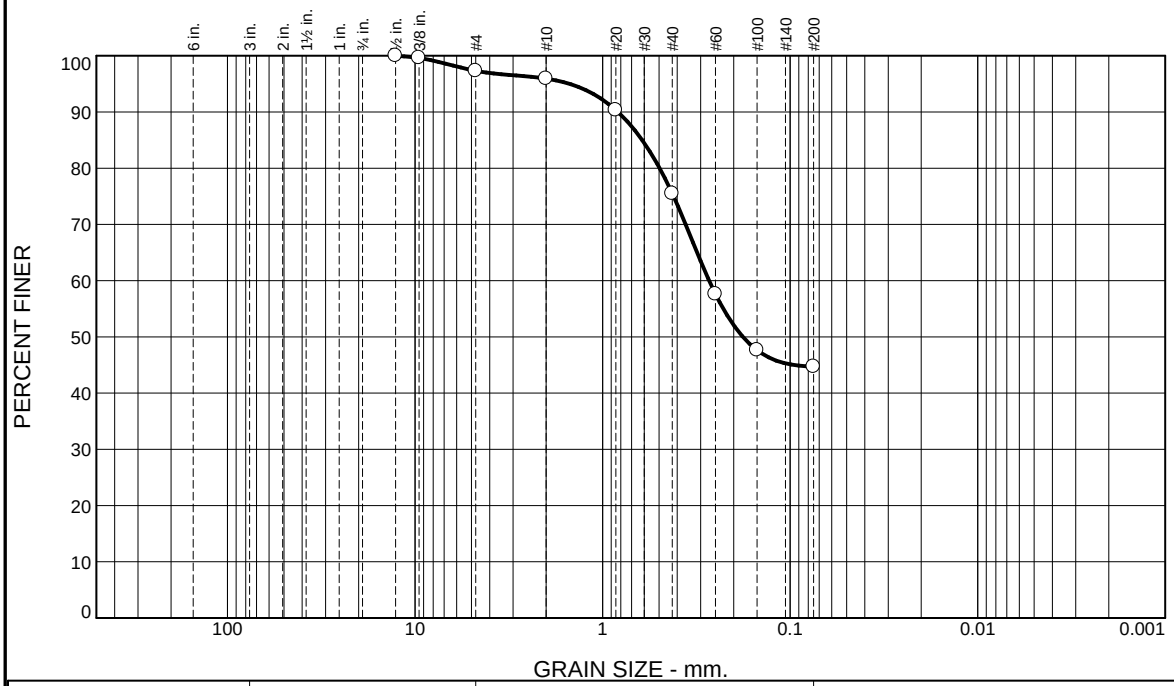
Thielsch Engineering Inc.

Cranston, RI

Client: New England Testing Laboratory
Project: 8L18096

Project No: 74-18-0002.46 **Figure** 18-S-1999

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	2.7	1.4	20.4	30.8	44.7	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.5"	100.0		
0.375"	99.6		
#4	97.3		
#10	95.9		
#20	90.3		
#40	75.5		
#60	57.6		
#100	47.6		
#200	44.7		

* (no specification provided)

Material Description

Black Organic silty sand

Atterberg Limits (ASTM D 4318)

PL= **LL=** **PI=**

Classification

USCS (D 2487)= OH **AASHTO (M 145)=** A-8

Coefficients

D_{90}= 0.8289 D_{85}= 0.6149 D_{60}= 0.2703
D_{50}= 0.1785 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Sample visually classified as plastic.

Date Received: 12.21.18 **Date Tested:** 12.27.18

Tested By: MN

Checked By: Rebecca Roth

Title: Laboratory Coordinator

Source of Sample: 8L18096 **Date Sampled:**
Sample Number: S-02 (CS)

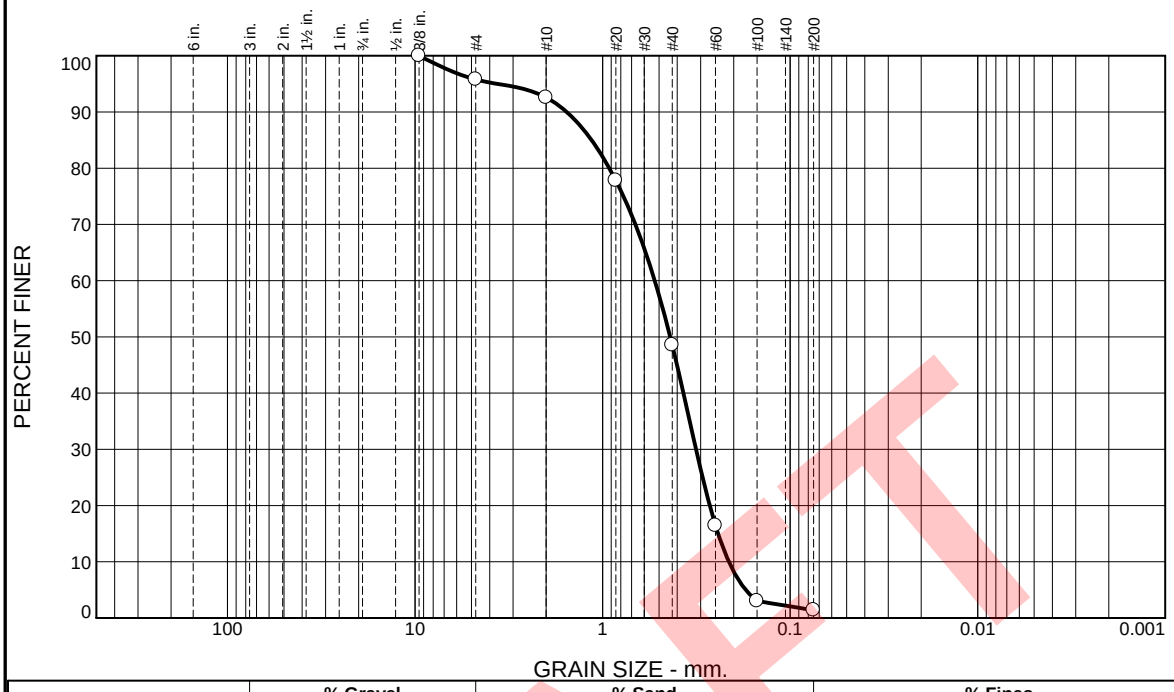
Thielsch Engineering Inc.

Cranston, RI

Client: New England Testing Laboratory
Project: 8L18096

Project No: 74-18-0002.46 **Figure** 18-S-2000

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	4.2	3.2	44.1	47.1	1.4	

Test Results (D6913 & ASTM D 1140)

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
0.375"	100.0		
#4	95.8		
#10	92.6		
#20	77.8		
#40	48.5		
#60	16.4		
#100	3.0		
#200	1.4		

* (no specification provided)

Material Description

Grey poorly graded sand

Atterberg Limits (ASTM D 4318)

PL= NP **LL=** NV **PI=** NP

Classification

USCS (D 2487)= SP **AASHTO (M 145)=** A-1-b

Coefficients

D_{90}= 1.5521 D_{85}= 1.1444 D_{60}= 0.5271
D_{50}= 0.4358 D_{30}= 0.3175 D_{15}= 0.2423
D_{10}= 0.2122 C_u= 2.48 C_c= 0.90

Remarks

Date Received: 12.21.18 **Date Tested:** 12.27.18

Tested By: MN

Checked By: Rebecca Roth

Title: Laboratory Coordinator

Source of Sample: 8L18096 **Date Sampled:**
Sample Number: S-02a (CS)

Thielsch Engineering Inc.

Cranston, RI

Client: New England Testing Laboratory
Project: 8L18096

Project No: 74-18-0002.46 **Figure** 18-S-2001

MICROBAC®

Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D8L2024

New England Testing Laboratory

Karen Staple
59 Greenhill Street
West Warwick, RI 02893

Project Name: 8L18096

Project / PO Number: 8L18096
Received: 12/20/2018
Reported: 12/27/2018

Analytical Testing Parameters

Client Sample ID: S-01 (CS)
Sample Matrix: Soil/Sediment
Lab Sample ID: D8L2024-01
Collected By: Customer
Collection Date: 12/17/2018 10:50

Inorganics	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: Wet Chem - S/SM2540 G-1997							
Percent Solids	**45.9**		% by Weight	**Y1**	12/20/18 1945	12/21/18 1520	JEO

Petroleum Hydrocarbon Range Organics - GC/FID	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 3550C/CT ETPH							
Connecticut ETPH	**222**	87.0	mg/kg dry		12/21/18 0915	12/21/18 2121	CDT
Surrogate: 1-Chlorooctadecane	63.8	Limit: 50-150	% Rec		12/21/18 0915	12/21/18 2121	CDT

Client Sample ID: S-02 (CS)
Sample Matrix: Soil/Sediment
Lab Sample ID: D8L2024-02
Collected By: Customer
Collection Date: 12/17/2018 12:00

Inorganics	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: Wet Chem - S/SM2540 G-1997							
Percent Solids	**52.5**		% by Weight	**Y1**	12/20/18 1945	12/21/18 1520	JEO

Petroleum Hydrocarbon Range Organics - GC/FID	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 3550C/CT ETPH							
Connecticut ETPH	**253**	75.5	mg/kg dry		12/21/18 0915	12/21/18 2213	CDT
Surrogate: 1-Chlorooctadecane	66.8	Limit: 50-150	% Rec		12/21/18 0915	12/21/18 2213	CDT

MICROBAC®

Microbac Laboratories, Inc. - Dayville

CERTIFICATE OF ANALYSIS

D8L2024

Client Sample ID:	S-02a (CS)		
Sample Matrix:	Soil/Sediment	**Collected By:**	Customer
Lab Sample ID:	D8L2024-03	**Collection Date:**	12/17/2018 15:30

Inorganics	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: Wet Chem - S/SM2540 G-1997							
Percent Solids	**87.4**		% by Weight	**Y1**	12/20/18 1945	12/21/18 1520	JEO

Petroleum Hydrocarbon Range Organics - GC/FID	Result	RL	Units	Note	Prepared	Analyzed	Analyst
Method: EPA 3550C/CT ETPH							
Connecticut ETPH	**20.0**	11.4	mg/kg dry		12/21/18 0915	12/21/18 1844	CDT
Surrogate: 1-Chlorooctadecane	71.0	Limit: 50-150	% Rec		12/21/18 0915	12/21/18 1844	CDT

Definitions

RL: Reporting Limit

Y1: Accreditation is not offered by the accrediting body for this analyte.

Project Requested Certification(s)

Microbac Laboratories, Inc. - Dayville

PH-0465 Connecticut Department of Public Health

Report Comments

Samples were received in proper condition and the reported results conform to applicable accreditation standard unless otherwise noted.

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included.

Reviewed and Approved By:

Ronald L. Warila

Director

Reported: 12/27/2018 17:58

New England Testing Laborat
59 Greenhill Street
West Warwick, RI 02893
1-888-863-8522

D 8 L 2 0 2 4
New England Testing Laboratory

SUB: Microbac SUB

Project No.	Project Name/Location: 8L18096				Matrix					Tests**							
Client: NETLab Email to: netlab@newenglandtesting.com																	
Report To: Karen Staple																	
Invoice To:																	
Date	Time	Comp	Grab	Sample I.D.	Aqueous	Soil	Other	No. of Containers	Preservative	CT ETPH by CT DEEP Method							
12/17/2018	10:50	x		S-01 (CS)		x		1		x							
12/17/2018	12:00	x		S-02 (CS)		x		1		x							
12/17/2018	15:30	x		S-02a (CS)		x		1		x							
Sampled By:		Date/Time		Received By:		Date/Time		Laboratory Remarks:		Special Instructions: CT Soil Email report **CT GA/GAA Standards Please**							
Relinquished By:		Date/Time		Received By:		Date/Time											
		12/20/18 9:39				12/20/18 0939		Temp. Received: 1.6°C									
**Netlab Subcontracts the following tests: Radiologicals, Radon, TOC, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates										Turnaround Time [Business Days]: Standard							

12/20/18 1445

Quality Control

General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0813 - Cyanide										
Blank (B8L0813-BLK1)					Prepared & Analyzed: 12/19/18					
Cyanide	ND		0.2	mg/kg						
Blank (B8L0813-BLK2)					Prepared & Analyzed: 12/19/18					
Cyanide	ND		0.2	mg/kg						
LCS (B8L0813-BS1)					Prepared & Analyzed: 12/19/18					
Cyanide	2.2		0.2	mg/kg	2.00		109	90-110		
LCS (B8L0813-BS2)					Prepared & Analyzed: 12/19/18					
Cyanide	2.1		0.2	mg/kg	2.00		106	90-110		
LCS (B8L0813-BS3)					Prepared & Analyzed: 12/19/18					
Cyanide	1.9		0.2	mg/kg	2.00		93.0	90-110		
Duplicate (B8L0813-DUP1)		**Source: 8L18051-01**			Prepared & Analyzed: 12/19/18					
Cyanide	ND		0.2	mg/kg dry		ND				20
Matrix Spike (B8L0813-MS1)		**Source: 8L18051-01**			Prepared & Analyzed: 12/19/18					
Cyanide	2.4		0.2	mg/kg dry	2.23	ND	107	80-120		
Batch: B8L0980 - Hexavalent Chrome										
Blank (B8L0980-BLK1)					Prepared & Analyzed: 12/24/18					
Hexavalent chromium	ND		1	mg/kg						
Blank (B8L0980-BLK2)					Prepared & Analyzed: 12/24/18					
Hexavalent chromium	ND		1	mg/kg						

Quality Control
(Continued)

General Chemistry (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0980 - Hexavalent Chrome (Continued)										
LCS (B8L0980-BS1)					Prepared & Analyzed: 12/24/18					
Hexavalent chromium	19		1	mg/kg	20.0		94.8	90-110		
LCS (B8L0980-BS2)					Prepared & Analyzed: 12/24/18					
Hexavalent chromium	21		1	mg/kg	20.0		103	90-110		
Duplicate (B8L0980-DUP1)		**Source: 8L18010-01**			Prepared & Analyzed: 12/24/18					
Hexavalent chromium	ND		6	mg/kg dry		ND				20
Matrix Spike (B8L0980-MS1)		**Source: 8L18010-01**			Prepared & Analyzed: 12/24/18					
Hexavalent chromium	97		6	mg/kg dry	111	ND	86.8	80-120		

Quality Control
(Continued)

SPLP General Chemistry

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L1089 - Cyanide										
Blank (B8L1089-BLK1)					Prepared & Analyzed: 12/20/18					
Cyanide	ND		0.01	mg/L						
LCS (B8L1089-BS1)					Prepared & Analyzed: 12/20/18					
Cyanide	0.10		0.01	mg/L	0.100		103	90-110		

Quality Control
(Continued)

Total Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0799 - Metals Digestion Soils										
Blank (B8L0799-BLK1)					Prepared: 12/19/18 Analyzed: 12/20/18					
Nickel	ND		0.50	mg/kg						
Copper	ND		2.00	mg/kg						
Selenium	ND		0.99	mg/kg						
Chromium	ND		0.50	mg/kg						
Cadmium	ND		0.50	mg/kg						
Beryllium	ND		0.50	mg/kg						
Barium	ND		0.50	mg/kg						
Vanadium	ND		0.50	mg/kg						
Arsenic	ND		0.99	mg/kg						
Zinc	ND		2.0	mg/kg						
Lead	ND		0.50	mg/kg						
Thallium	ND		0.200	mg/kg						
Antimony	ND		0.99	mg/kg						
Silver	ND		0.50	mg/kg						
LCS (B8L0799-BS1)					Prepared: 12/19/18 Analyzed: 12/20/18					
Zinc	110		2.0	mg/kg	100		110	85-115		
Vanadium	100		0.50	mg/kg	100		100	85-115		
Selenium	21.8		0.99	mg/kg	20.0		109	85-115		
Lead	100		0.50	mg/kg	100		100	85-115		
Antimony	106		0.99	mg/kg	100		106	85-115		
Copper	91.5		2.00	mg/kg	100		91.5	85-115		
Nickel	102		0.50	mg/kg	100		102	85-112		
Chromium	101		0.50	mg/kg	100		101	85-115		
Cadmium	103		0.50	mg/kg	100		103	85-115		
Beryllium	20.3		0.50	mg/kg	20.0		102	85-115		
Barium	101		0.50	mg/kg	100		101	85-115		
Arsenic	21.8		0.99	mg/kg	20.0		109	85-115		
Silver	38.7		0.50	mg/kg	40.0		96.6	85-115		

Quality Control
(Continued)

Total Metals (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0799 - Metals Digestion Soils (Continued)										
LCS (B8L0799-BS2)					Prepared: 12/19/18 Analyzed: 12/20/18					
Thallium	0.596		0.066	mg/kg	0.667		89.5	85-115		
Batch: B8L0817 - Metals Digestion Soils										
Blank (B8L0817-BLK1)					Prepared & Analyzed: 12/19/18					
Mercury	ND		0.071	mg/kg						
LCS (B8L0817-BS1)					Prepared & Analyzed: 12/19/18					
Mercury	1.01			ug/l	1.00		101	93-114		

Quality Control
(Continued)

Volatile Organic Compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L1028 - EPA 5035										
Blank (B8L1028-BLK1)					Prepared & Analyzed: 12/23/18					
Acetone	ND		5	ug/kg						
Benzene	ND		5	ug/kg						
Bromobenzene	ND		5	ug/kg						
Bromochloromethane	ND		5	ug/kg						
Bromodichloromethane	ND		5	ug/kg						
Bromoform	ND		5	ug/kg						
Bromomethane	ND		5	ug/kg						
2-Butanone	ND		5	ug/kg						
tert-Butyl alcohol	ND		5	ug/kg						
sec-Butylbenzene	ND		5	ug/kg						
n-Butylbenzene	ND		5	ug/kg						
tert-Butylbenzene	ND		5	ug/kg						
Methyl t-butyl ether (MTBE)	ND		5	ug/kg						
Carbon Disulfide	ND		5	ug/kg						
Carbon Tetrachloride	ND		5	ug/kg						
Chlorobenzene	ND		5	ug/kg						
Chloroethane	ND		5	ug/kg						
Chloroform	ND		5	ug/kg						
Chloromethane	ND		5	ug/kg						
4-Chlorotoluene	ND		5	ug/kg						
2-Chlorotoluene	ND		5	ug/kg						
1,2-Dibromo-3-chloropropane (DBCP)	ND		5	ug/kg						
Dibromochloromethane	ND		5	ug/kg						
1,2-Dibromoethane (EDB)	ND		5	ug/kg						
Dibromomethane	ND		5	ug/kg						
1,2-Dichlorobenzene	ND		5	ug/kg						
1,3-Dichlorobenzene	ND		5	ug/kg						
1,4-Dichlorobenzene	ND		5	ug/kg						
1,1-Dichloroethane	ND		5	ug/kg						
1,2-Dichloroethane	ND		5	ug/kg						
trans-1,2-Dichloroethene	ND		5	ug/kg						
cis-1,2-Dichloroethene	ND		5	ug/kg						
1,1-Dichloroethene	ND		5	ug/kg						
1,2-Dichloropropane	ND		5	ug/kg						
2,2-Dichloropropane	ND		5	ug/kg						
cis-1,3-Dichloropropene	ND		5	ug/kg						
trans-1,3-Dichloropropene	ND		5	ug/kg						
1,1-Dichloropropene	ND		5	ug/kg						
1,3-Dichloropropene (cis + trans)	ND		5	ug/kg						
Diethyl ether	ND		5	ug/kg						
1,4-Dioxane	ND		100	ug/kg						
Ethylbenzene	ND		5	ug/kg						
Hexachlorobutadiene	ND		5	ug/kg						
2-Hexanone	ND		5	ug/kg						
Isopropylbenzene	ND		5	ug/kg						
p-Isopropyltoluene	ND		5	ug/kg						
Methylene Chloride	ND		5	ug/kg						
4-Methyl-2-pentanone	ND		5	ug/kg						
Naphthalene	ND		5	ug/kg						
n-Propylbenzene	ND		5	ug/kg						
Styrene	ND		5	ug/kg						
1,1,1,2-Tetrachloroethane	ND		5	ug/kg						
Tetrachloroethene	ND		5	ug/kg						
Tetrahydrofuran	ND		5	ug/kg						

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L1028 - EPA 5035 (Continued)										
Blank (B8L1028-BLK1)					Prepared & Analyzed: 12/23/18					
Toluene	ND		5	ug/kg						
1,2,4-Trichlorobenzene	ND		5	ug/kg						
1,2,3-Trichlorobenzene	ND		5	ug/kg						
1,1,2-Trichloroethane	ND		5	ug/kg						
1,1,1-Trichloroethane	ND		5	ug/kg						
Trichloroethene	ND		5	ug/kg						
1,2,3-Trichloropropane	ND		5	ug/kg						
1,3,5-Trimethylbenzene	ND		5	ug/kg						
1,2,4-Trimethylbenzene	ND		5	ug/kg						
Vinyl Chloride	ND		5	ug/kg						
o-Xylene	ND		5	ug/kg						
m&p-Xylene	ND		10	ug/kg						
Total xylenes	ND		10	ug/kg						
1,1,2,2-Tetrachloroethane	ND		5	ug/kg						
tert-Amyl methyl ether	ND		5	ug/kg						
1,3-Dichloropropane	ND		5	ug/kg						
Ethyl tert-butyl ether	ND		5	ug/kg						
Diisopropyl ether	ND		5	ug/kg						
Trichlorofluoromethane	ND		5	ug/kg						
Dichlorodifluoromethane	ND		5	ug/kg						
Surrogate: 4-Bromofluorobenzene			*44.9*	ug/kg	*50.0*		*89.8*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4			*50.4*	ug/kg	*50.0*		*101*	*70-130*		
Surrogate: Toluene-d8			*50.1*	ug/kg	*50.0*		*100*	*70-130*		
LCS (B8L1028-BS1)					Prepared & Analyzed: 12/23/18					
1,3,5-Trichlorobenzene	52			ug/kg	50.0		104	70-130		
Acetone	32			ug/kg	50.0		63.8	70-130		
Benzene	53			ug/kg	50.0		106	70-130		
Bromobenzene	52			ug/kg	50.0		104	70-130		
Bromochloromethane	50			ug/kg	50.0		100	70-130		
Bromodichloromethane	48			ug/kg	50.0		96.2	70-130		
Bromoform	49			ug/kg	50.0		99.0	70-130		
Bromomethane	57			ug/kg	50.0		113	70-130		
2-Butanone	36			ug/kg	50.0		72.8	70-130		
tert-Butyl alcohol	40			ug/kg	50.0		79.2	70-130		
sec-Butylbenzene	53			ug/kg	50.0		106	70-130		
n-Butylbenzene	53			ug/kg	50.0		106	70-130		
tert-Butylbenzene	53			ug/kg	50.0		106	70-130		
Methyl t-butyl ether (MTBE)	48			ug/kg	50.0		95.6	70-130		
Carbon Disulfide	52			ug/kg	50.0		105	70-130		
Carbon Tetrachloride	44			ug/kg	50.0		88.5	70-130		
Chlorobenzene	51			ug/kg	50.0		103	70-130		
Chloroethane	49			ug/kg	50.0		98.4	70-130		
Chloroform	47			ug/kg	50.0		94.0	70-130		
Chloromethane	37			ug/kg	50.0		74.2	70-130		
4-Chlorotoluene	50			ug/kg	50.0		100	70-130		
2-Chlorotoluene	51			ug/kg	50.0		101	70-130		
1,2-Dibromo-3-chloropropane (DBCP)	46			ug/kg	50.0		92.1	70-130		
Dibromochloromethane	52			ug/kg	50.0		103	70-130		
1,2-Dibromoethane (EDB)	53			ug/kg	50.0		106	70-130		
Dibromomethane	52			ug/kg	50.0		103	70-130		
1,2-Dichlorobenzene	55			ug/kg	50.0		111	70-130		
1,3-Dichlorobenzene	51			ug/kg	50.0		103	70-130		
1,4-Dichlorobenzene	52			ug/kg	50.0		105	70-130		

Quality Control
(Continued)

Volatile Organic Compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L1028 - EPA 5035 (Continued)										
LCS (B8L1028-BS1)					Prepared & Analyzed: 12/23/18					
1,1-Dichloroethane	47			ug/kg	50.0		94.0	70-130		
1,2-Dichloroethane	44			ug/kg	50.0		87.7	70-130		
trans-1,2-Dichloroethene	51			ug/kg	50.0		101	70-130		
cis-1,2-Dichloroethene	53			ug/kg	50.0		105	70-130		
1,1-Dichloroethene	51			ug/kg	50.0		103	70-130		
1,2-Dichloropropane	53			ug/kg	50.0		106	70-130		
2,2-Dichloropropane	43			ug/kg	50.0		85.8	70-130		
cis-1,3-Dichloropropene	54			ug/kg	50.0		107	70-130		
trans-1,3-Dichloropropene	50			ug/kg	50.0		100	70-130		
1,1-Dichloropropene	51			ug/kg	50.0		103	70-130		
Diethyl ether	42			ug/kg	50.0		84.4	70-130		
1,4-Dioxane	230			ug/kg	250		91.9	70-130		
Ethylbenzene	52			ug/kg	50.0		104	70-130		
Hexachlorobutadiene	53			ug/kg	50.0		107	70-130		
2-Hexanone	39			ug/kg	50.0		77.0	70-130		
Isopropylbenzene	53			ug/kg	50.0		106	70-130		
p-Isopropyltoluene	52			ug/kg	50.0		105	70-130		
Methylene Chloride	42			ug/kg	50.0		83.2	70-130		
4-Methyl-2-pentanone	44			ug/kg	50.0		87.1	70-130		
Naphthalene	71			ug/kg	50.0		142	70-130		
n-Propylbenzene	52			ug/kg	50.0		103	70-130		
Styrene	51			ug/kg	50.0		102	70-130		
1,1,1,2-Tetrachloroethane	49			ug/kg	50.0		98.1	70-130		
Tetrachloroethene	54			ug/kg	50.0		108	70-130		
Tetrahydrofuran	49			ug/kg	50.0		97.2	70-130		
Toluene	52			ug/kg	50.0		104	70-130		
1,2,4-Trichlorobenzene	53			ug/kg	50.0		106	70-130		
1,2,3-Trichlorobenzene	54			ug/kg	50.0		108	70-130		
1,1,2-Trichloroethane	51			ug/kg	50.0		101	70-130		
1,1,1-Trichloroethane	46			ug/kg	50.0		92.5	70-130		
Trichloroethene	47			ug/kg	50.0		93.4	70-130		
1,2,3-Trichloropropane	46			ug/kg	50.0		91.0	70-130		
1,3,5-Trimethylbenzene	52			ug/kg	50.0		104	70-130		
1,2,4-Trimethylbenzene	51			ug/kg	50.0		103	70-130		
Vinyl Chloride	48			ug/kg	50.0		97.0	70-130		
o-Xylene	54			ug/kg	50.0		108	70-130		
m&p-Xylene	102			ug/kg	100		102	70-130		
1,1,2,2-Tetrachloroethane	50			ug/kg	50.0		100	70-130		
tert-Amyl methyl ether	53			ug/kg	50.0		105	70-130		
1,3-Dichloropropane	54			ug/kg	50.0		108	70-130		
Ethyl tert-butyl ether	49			ug/kg	50.0		97.0	70-130		
Trichlorofluoromethane	45			ug/kg	50.0		89.0	70-130		
Dichlorodifluoromethane	47			ug/kg	50.0		93.0	70-130		
Surrogate: 4-Bromofluorobenzene			*47.2*	ug/kg	*50.0*		*94.3*	*70-130*		
Surrogate: 1,2-Dichloroethane-d4			*52.4*	ug/kg	*50.0*		*105*	*70-130*		
Surrogate: Toluene-d8			*49.5*	ug/kg	*50.0*		*99.1*	*70-130*		

Semivolatile organic compounds

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0835 - EPA 3546										
Blank (B8L0835-BLK1)					Prepared: 12/20/18 Analyzed: 12/21/18					
1,2,4-Trichlorobenzene	ND		130	ug/kg						
1,2-Dichlorobenzene	ND		130	ug/kg						
1,3-Dichlorobenzene	ND		130	ug/kg						
1,4-Dichlorobenzene	ND		130	ug/kg						
Phenol	ND		130	ug/kg						
2,4,5-Trichlorophenol	ND		130	ug/kg						
2,4,6-Trichlorophenol	ND		130	ug/kg						
2,4-Dichlorophenol	ND		130	ug/kg						
2,4-Dimethylphenol	ND		330	ug/kg						
2,4-Dinitrophenol	ND		330	ug/kg						
2,4-Dinitrotoluene	ND		130	ug/kg						
2,6-Dinitrotoluene	ND		130	ug/kg						
2-Chloronaphthalene	ND		130	ug/kg						
2-Chlorophenol	ND		130	ug/kg						
2-Methylnaphthalene	ND		130	ug/kg						
Nitrobenzene	ND		130	ug/kg						
2-Methylphenol	ND		130	ug/kg						
2-Nitroaniline	ND		130	ug/kg						
2-Nitrophenol	ND		330	ug/kg						
3,3'-Dichlorobenzidine	ND		330	ug/kg						
3-Nitroaniline	ND		130	ug/kg						
4,6-Dinitro-2-methylphenol	ND		330	ug/kg						
4-Bromophenyl phenyl ether	ND		130	ug/kg						
4-Chloro-3-methylphenol	ND		130	ug/kg						
4-Chloroaniline	ND		130	ug/kg						
4-Chlorophenyl phenyl ether	ND		130	ug/kg						
4-Nitroaniline	ND		130	ug/kg						
4-Nitrophenol	ND		330	ug/kg						
Acenaphthene	ND		130	ug/kg						
Acenaphthylene	ND		130	ug/kg						
Aniline	ND		130	ug/kg						
Anthracene	ND		130	ug/kg						
Benzo(a)anthracene	ND		130	ug/kg						
Benzo(a)pyrene	ND		130	ug/kg						
Benzo(b)fluoranthene	ND		130	ug/kg						
Benzo(g,h,i)perylene	ND		130	ug/kg						
Benzo(k)fluoranthene	ND		130	ug/kg						
Benzoic acid	ND		1000	ug/kg						
Bis(2-chloroethoxy)methane	ND		130	ug/kg						
Bis(2-chloroethyl)ether	ND		130	ug/kg						
Bis(2-chloroisopropyl)ether	ND		130	ug/kg						
Bis(2-ethylhexyl)phthalate	ND		400	ug/kg						
Butyl benzyl phthalate	ND		130	ug/kg						
Chrysene	ND		130	ug/kg						
Di(n)octyl phthalate	ND		200	ug/kg						
Dibenz(a,h)anthracene	ND		130	ug/kg						
Dibenzofuran	ND		130	ug/kg						
Diethyl phthalate	ND		130	ug/kg						
Dimethyl phthalate	ND		330	ug/kg						
Di-n-butylphthalate	ND		200	ug/kg						
Fluoranthene	ND		130	ug/kg						
Fluorene	ND		130	ug/kg						
Hexachlorobenzene	ND		130	ug/kg						
Hexachlorobutadiene	ND		130	ug/kg						

Semivolatile organic compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0835 - EPA 3546 (Continued)										
Blank (B8L0835-BLK1)					Prepared: 12/20/18 Analyzed: 12/21/18					
Hexachlorocyclopentadiene	ND		330	ug/kg						
Hexachloroethane	ND		130	ug/kg						
Indeno(1,2,3-cd)pyrene	ND		130	ug/kg						
Isophorone	ND		130	ug/kg						
Naphthalene	ND		130	ug/kg						
N-Nitrosodimethylamine	ND		130	ug/kg						
N-Nitrosodi-n-propylamine	ND		130	ug/kg						
N-Nitrosodiphenylamine	ND		130	ug/kg						
Pentachlorophenol	ND		330	ug/kg						
Phenanthrene	ND		130	ug/kg						
Pyrene	ND		130	ug/kg						
m&p-Cresol	ND		260	ug/kg						
Pyridine	ND		130	ug/kg						
Surrogate: Nitrobenzene-d5			*3110*	ug/kg	*3330*		*93.3*	*30-126*		
Surrogate: p-Terphenyl-d14			*3140*	ug/kg	*3330*		*94.2*	*47-130*		
Surrogate: 2-Fluorobiphenyl			*2660*	ug/kg	*3330*		*79.9*	*34-130*		
Surrogate: Phenol-d6			*2850*	ug/kg	*3330*		*85.4*	*30-130*		
Surrogate: 2,4,6-Tribromophenol			*3200*	ug/kg	*3330*		*95.9*	*30-130*		
Surrogate: 2-Fluorophenol			*2810*	ug/kg	*3330*		*84.4*	*30-130*		
LCS (B8L0835-BS1)					Prepared: 12/20/18 Analyzed: 12/21/18					
1,2,4-Trichlorobenzene	2570		130	ug/kg	3330		77.2	40-130		
1,2-Dichlorobenzene	2380		130	ug/kg	3330		71.5	40-130		
1,3-Dichlorobenzene	2340		130	ug/kg	3330		70.3	40-130		
1,4-Dichlorobenzene	2360		130	ug/kg	3330		70.7	40-130		
Phenol	2770		130	ug/kg	3330		83.2	40-130		
2,4,5-Trichlorophenol	3120		130	ug/kg	3330		93.5	40-130		
2,4,6-Trichlorophenol	2960		130	ug/kg	3330		88.7	40-130		
2,4-Dichlorophenol	3070		130	ug/kg	3330		92.0	40-130		
2,4-Dimethylphenol	3000		330	ug/kg	3330		89.9	40-130		
2,4-Dinitrotoluene	3300		130	ug/kg	3330		99.0	40-130		
2,6-Dinitrotoluene	3230		130	ug/kg	3330		97.0	40-130		
2-Chloronaphthalene	2560		130	ug/kg	3330		76.8	40-130		
2-Chlorophenol	2910		130	ug/kg	3330		87.3	40-130		
2-Methylnaphthalene	2740		130	ug/kg	3330		82.3	40-130		
Nitrobenzene	2800		130	ug/kg	3330		83.9	40-130		
2-Methylphenol	2830		130	ug/kg	3330		84.9	40-130		
2-Nitroaniline	3410		130	ug/kg	3330		102	40-130		
2-Nitrophenol	3620		330	ug/kg	3330		108	40-130		
3-Nitroaniline	3350		130	ug/kg	3330		101	40-130		
4,6-Dinitro-2-methylphenol	3280		330	ug/kg	3330		98.5	40-130		
4-Bromophenyl phenyl ether	3060		130	ug/kg	3330		91.8	40-130		
4-Chloro-3-methylphenol	3180		130	ug/kg	3330		95.3	40-130		
4-Chlorophenyl phenyl ether	2920		130	ug/kg	3330		87.5	40-130		
4-Nitroaniline	3160		130	ug/kg	3330		94.8	40-130		
4-Nitrophenol	3400		330	ug/kg	3330		102	40-130		
Acenaphthene	2710		130	ug/kg	3330		81.2	40-130		
Acenaphthylene	2660		130	ug/kg	3330		79.7	40-130		
Anthracene	3630		130	ug/kg	3330		109	40-130		
Benzo(a)anthracene	3170		130	ug/kg	3330		95.1	40-130		
Benzo(a)pyrene	3370		130	ug/kg	3330		101	40-130		
Benzo(b)fluoranthene	3340		130	ug/kg	3330		100	40-130		
Benzo(g,h,i)perylene	3230		130	ug/kg	3330		96.8	40-130		
Benzo(k)fluoranthene	3310		130	ug/kg	3330		99.4	40-130		

Quality Control
(Continued)

Semivolatile organic compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0835 - EPA 3546 (Continued)										
LCS (B8L0835-BS1)					Prepared: 12/20/18 Analyzed: 12/21/18					
Bis(2-chloroethoxy)methane	3110		130	ug/kg	3330		93.4	40-130		
Bis(2-chloroethyl)ether	2910		130	ug/kg	3330		87.3	40-130		
Bis(2-chloroisopropyl)ether	3290		130	ug/kg	3330		98.7	40-130		
Bis(2-ethylhexyl)phthalate	3970		400	ug/kg	3330		119	40-130		
Butyl benzyl phthalate	3810		130	ug/kg	3330		114	40-130		
Chrysene	3080		130	ug/kg	3330		92.5	40-130		
Di(n)octyl phthalate	4100		200	ug/kg	3330		123	40-130		
Dibenz(a,h)anthracene	3090		130	ug/kg	3330		92.8	40-130		
Dibenzofuran	3330		130	ug/kg	3330		99.9	40-130		
Diethyl phthalate	2970		130	ug/kg	3330		89.0	40-130		
Dimethyl phthalate	2880		330	ug/kg	3330		86.5	40-130		
Di-n-butylphthalate	2770		200	ug/kg	3330		83.0	40-130		
Fluoranthene	3190		130	ug/kg	3330		95.7	40-130		
Fluorene	3390		130	ug/kg	3330		102	40-130		
Hexachlorobenzene	2730		130	ug/kg	3330		82.0	40-130		
Hexachlorobutadiene	2880		130	ug/kg	3330		86.5	40-130		
Hexachlorocyclopentadiene	2300		330	ug/kg	3330		69.0	40-130		
Hexachloroethane	2420		130	ug/kg	3330		72.6	40-130		
Indeno(1,2,3-cd)pyrene	3210		130	ug/kg	3330		96.2	40-130		
Isophorone	2880		130	ug/kg	3330		86.3	40-130		
Naphthalene	2510		130	ug/kg	3330		75.4	40-130		
N-Nitrosodimethylamine	2630		130	ug/kg	3330		78.9	40-130		
N-Nitrosodi-n-propylamine	2760		130	ug/kg	3330		82.8	40-130		
N-Nitrosodiphenylamine	3470		130	ug/kg	3330		104	40-130		
Pentachlorophenol	4030		330	ug/kg	3330		121	40-130		
Phenanthrene	3500		130	ug/kg	3330		105	40-130		
Pyrene	3950		130	ug/kg	3330		118	40-130		
m&p-Cresol	2810		260	ug/kg	3330		84.2	40-130		
Surrogate: Nitrobenzene-d5			*3010*	ug/kg	*3330*		*90.2*	*30-126*		
Surrogate: p-Terphenyl-d14			*3210*	ug/kg	*3330*		*96.4*	*47-130*		
Surrogate: 2-Fluorobiphenyl			*2580*	ug/kg	*3330*		*77.5*	*34-130*		
Surrogate: Phenol-d6			*2770*	ug/kg	*3330*		*83.2*	*30-130*		
Surrogate: 2,4,6-Tribromophenol			*3380*	ug/kg	*3330*		*101*	*30-130*		
Surrogate: 2-Fluorophenol			*2760*	ug/kg	*3330*		*82.8*	*30-130*		

Quality Control
(Continued)

Semivolatile organic compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0835 - EPA 3546 (Continued)										
LCS Dup (B8L0835-BSD1)					Prepared: 12/20/18 Analyzed: 12/21/18					
1,2,4-Trichlorobenzene	2550		130	ug/kg	3330		76.6	40-130	0.676	30
1,2-Dichlorobenzene	2400		130	ug/kg	3330		71.9	40-130	0.474	30
1,3-Dichlorobenzene	2350		130	ug/kg	3330		70.6	40-130	0.454	30
1,4-Dichlorobenzene	2350		130	ug/kg	3330		70.4	40-130	0.397	30
Phenol	2800		130	ug/kg	3330		84.0	40-130	0.933	30
2,4,5-Trichlorophenol	3090		130	ug/kg	3330		92.6	40-130	0.903	30
2,4,6-Trichlorophenol	3000		130	ug/kg	3330		90.1	40-130	1.48	30
2,4-Dichlorophenol	3060		130	ug/kg	3330		91.8	40-130	0.196	30
2,4-Dimethylphenol	3010		330	ug/kg	3330		90.2	40-130	0.289	30
2,4-Dinitrotoluene	3300		130	ug/kg	3330		98.9	40-130	0.101	30
2,6-Dinitrotoluene	3150		130	ug/kg	3330		94.6	40-130	2.53	30
2-Chloronaphthalene	2560		130	ug/kg	3330		76.8	40-130	0.0521	30
2-Chlorophenol	2940		130	ug/kg	3330		88.1	40-130	0.981	30
2-Methylnaphthalene	2720		130	ug/kg	3330		81.6	40-130	0.903	30
Nitrobenzene	2770		130	ug/kg	3330		83.2	40-130	0.838	30
2-Methylphenol	2850		130	ug/kg	3330		85.5	40-130	0.798	30
2-Nitroaniline	3360		130	ug/kg	3330		101	40-130	1.32	30
2-Nitrophenol	3500		330	ug/kg	3330		105	40-130	3.13	30
3-Nitroaniline	3370		130	ug/kg	3330		101	40-130	0.595	30
4,6-Dinitro-2-methylphenol	3300		330	ug/kg	3330		99.0	40-130	0.567	30
4-Bromophenyl phenyl ether	3080		130	ug/kg	3330		92.5	40-130	0.803	30
4-Chloro-3-methylphenol	3120		130	ug/kg	3330		93.7	40-130	1.76	30
4-Chlorophenyl phenyl ether	2870		130	ug/kg	3330		86.1	40-130	1.68	30
4-Nitroaniline	3120		130	ug/kg	3330		93.5	40-130	1.34	30
4-Nitrophenol	3460		330	ug/kg	3330		104	40-130	1.59	30
Acenaphthene	2680		130	ug/kg	3330		80.3	40-130	1.02	30
Acenaphthylene	2670		130	ug/kg	3330		80.1	40-130	0.451	30
Anthracene	3620		130	ug/kg	3330		109	40-130	0.257	30
Benzo(a)anthracene	3110		130	ug/kg	3330		93.4	40-130	1.83	30
Benzo(a)pyrene	3300		130	ug/kg	3330		98.9	40-130	2.06	30
Benzo(b)fluoranthene	3260		130	ug/kg	3330		97.7	40-130	2.63	30
Benzo(g,h,i)perylene	3190		130	ug/kg	3330		95.6	40-130	1.21	30
Benzo(k)fluoranthene	3280		130	ug/kg	3330		98.3	40-130	1.11	30
Bis(2-chloroethoxy)methane	3080		130	ug/kg	3330		92.4	40-130	1.08	30
Bis(2-chloroethyl)ether	2950		130	ug/kg	3330		88.5	40-130	1.36	30
Bis(2-chloroisopropyl)ether	3340		130	ug/kg	3330		100	40-130	1.43	30
Bis(2-ethylhexyl)phthalate	3910		400	ug/kg	3330		117	40-130	1.46	30
Butyl benzyl phthalate	3730		130	ug/kg	3330		112	40-130	2.14	30
Chrysene	3010		130	ug/kg	3330		90.2	40-130	2.47	30
Di(n)octyl phthalate	4030		200	ug/kg	3330		121	40-130	1.69	30
Dibenz(a,h)anthracene	3050		130	ug/kg	3330		91.4	40-130	1.48	30
Dibenzofuran	3390		130	ug/kg	3330		102	40-130	1.77	30
Diethyl phthalate	2960		130	ug/kg	3330		88.7	40-130	0.383	30
Dimethyl phthalate	2880		330	ug/kg	3330		86.4	40-130	0.0463	30
Di-n-butylphthalate	2790		200	ug/kg	3330		83.6	40-130	0.768	30
Fluoranthene	3220		130	ug/kg	3330		96.6	40-130	0.895	30
Fluorene	3410		130	ug/kg	3330		102	40-130	0.490	30
Hexachlorobenzene	2720		130	ug/kg	3330		81.6	40-130	0.440	30
Hexachlorobutadiene	2900		130	ug/kg	3330		87.1	40-130	0.692	30
Hexachlorocyclopentadiene	2350		330	ug/kg	3330		70.4	40-130	2.01	30
Hexachloroethane	2460		130	ug/kg	3330		73.7	40-130	1.53	30
Indeno(1,2,3-cd)pyrene	3070		130	ug/kg	3330		92.0	40-130	4.40	30
Isophorone	2890		130	ug/kg	3330		86.8	40-130	0.532	30
Naphthalene	2520		130	ug/kg	3330		75.7	40-130	0.397	30

Quality Control
(Continued)

Semivolatile organic compounds (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0835 - EPA 3546 (Continued)										
LCS Dup (B8L0835-BSD1)					Prepared: 12/20/18 Analyzed: 12/21/18					
N-Nitrosodimethylamine	2620		130	ug/kg	3330		78.7	40-130	0.254	30
N-Nitrosodi-n-propylamine	2790		130	ug/kg	3330		83.8	40-130	1.10	30
N-Nitrosodiphenylamine	3460		130	ug/kg	3330		104	40-130	0.154	30
Pentachlorophenol	4040		330	ug/kg	3330		121	40-130	0.149	30
Phenanthrene	3580		130	ug/kg	3330		107	40-130	2.37	30
Pyrene	3910		130	ug/kg	3330		117	40-130	0.831	30
m&p-Cresol	2820		260	ug/kg	3330		84.7	40-130	0.568	30
Surrogate: Nitrobenzene-d5			*2900*	ug/kg	*3330*		*87.1*	*30-126*		
Surrogate: p-Terphenyl-d14			*3160*	ug/kg	*3330*		*94.9*	*47-130*		
Surrogate: 2-Fluorobiphenyl			*2590*	ug/kg	*3330*		*77.7*	*34-130*		
Surrogate: Phenol-d6			*2830*	ug/kg	*3330*		*84.9*	*30-130*		
Surrogate: 2,4,6-Tribromophenol			*3310*	ug/kg	*3330*		*99.2*	*30-130*		
Surrogate: 2-Fluorophenol			*2780*	ug/kg	*3330*		*83.3*	*30-130*		

Quality Control
(Continued)

Pesticides

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0839 - EPA 3550C										
Blank (B8L0839-BLK1)					Prepared & Analyzed: 12/20/18					
alpha-BHC	ND		1.67	ug/kg						
gamma-BHC (Lindane)	ND		1.67	ug/kg						
beta-BHC	ND		1.67	ug/kg						
delta-BHC	ND		1.67	ug/kg						
Heptachlor	ND		1.67	ug/kg						
Aldrin	ND		1.67	ug/kg						
Heptachlor epoxide	ND		1.67	ug/kg						
gamma-Chlordane	ND		1.67	ug/kg						
alpha-Chlordane	ND		1.67	ug/kg						
Chlordane	ND		16.7	ug/kg						
4,4'-DDE	ND		3.33	ug/kg						
Endosulfan I	ND		1.67	ug/kg						
Dieldrin	ND		1.67	ug/kg						
Endrin	ND		1.67	ug/kg						
4,4'-DDD	ND		3.33	ug/kg						
Endrin aldehyde	ND		1.67	ug/kg						
Endosulfan II	ND		1.67	ug/kg						
4,4'-DDT	ND		3.33	ug/kg						
Methoxychlor	ND		3.33	ug/kg						
Endosulfan sulfate	ND		1.67	ug/kg						
Endrin Ketone	ND		1.67	ug/kg						
Toxaphene	ND		16.7	ug/kg						
Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)			*7.27*	ug/kg	*13.3*		*54.5*	*30-106*		
Surrogate: Decachlorobiphenyl (DCBP)			*10.3*	ug/kg	*13.3*		*77.1*	*32-110*		
LCS (B8L0839-BS1)					Prepared & Analyzed: 12/20/18					
alpha-BHC	10.0		1.67	ug/kg	13.3		75.2	50-132		
gamma-BHC (Lindane)	10.3		1.67	ug/kg	13.3		77.5	54-128		
beta-BHC	12.2		1.67	ug/kg	13.3		91.3	69-126		
delta-BHC	10.7		1.67	ug/kg	13.3		80.4	40-126		
Heptachlor	10.7		1.67	ug/kg	13.3		80.2	55-125		
Aldrin	10.2		1.67	ug/kg	13.3		76.4	45-135		
Heptachlor epoxide	10.6		1.67	ug/kg	13.3		79.3	54-127		
gamma-Chlordane	10.7		1.67	ug/kg	13.3		80.1	55-124		
alpha-Chlordane	11.0		1.67	ug/kg	13.3		82.6	54-126		
4,4'-DDE	11.5		3.33	ug/kg	13.3		86.4	63-130		
Endosulfan I	9.66		1.67	ug/kg	13.3		72.5	53-128		
Dieldrin	11.2		1.67	ug/kg	13.3		84.0	57-124		
Endrin	12.8		1.67	ug/kg	13.3		95.7	40-140		
4,4'-DDD	11.8		3.33	ug/kg	13.3		88.4	74-140		
Endosulfan II	11.5		1.67	ug/kg	13.3		86.4	45-125		
Endrin aldehyde	12.0		1.67	ug/kg	13.3		89.8	40-140		
4,4'-DDT	12.9		3.33	ug/kg	13.3		96.6	60-140		
Methoxychlor	14.7		3.33	ug/kg	13.3		110	71-140		
Endosulfan sulfate	12.6		1.67	ug/kg	13.3		94.4	43-131		
Endrin Ketone	11.6		1.67	ug/kg	13.3		87.4	56-131		
Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)			*8.89*	ug/kg	*13.3*		*66.7*	*38-106*		
Surrogate: Decachlorobiphenyl (DCBP)			*11.1*	ug/kg	*13.3*		*83.3*	*32-110*		

Pesticides (Continued)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0839 - EPA 3550C (Continued)										
LCS Dup (B8L0839-BSD1)					Prepared & Analyzed: 12/20/18					
alpha-BHC	10.6		1.67	ug/kg	13.3		79.1	50-132	5.09	200
gamma-BHC (Lindane)	11.1		1.67	ug/kg	13.3		83.0	54-128	6.95	200
beta-BHC	12.6		1.67	ug/kg	13.3		94.2	69-126	3.13	200
delta-BHC	11.8		1.67	ug/kg	13.3		88.1	40-126	9.23	200
Heptachlor	12.0		1.67	ug/kg	13.3		89.8	55-125	11.3	200
Aldrin	11.5		1.67	ug/kg	13.3		86.4	45-135	12.3	200
Heptachlor epoxide	13.6		1.67	ug/kg	13.3		102	54-127	24.6	200
gamma-Chlordane	13.4		1.67	ug/kg	13.3		100	55-124	22.6	200
alpha-Chlordane	13.7		1.67	ug/kg	13.3		103	54-126	21.8	200
4,4'-DDE	14.0		3.33	ug/kg	13.3		105	63-130	19.1	200
Endosulfan I	12.2		1.67	ug/kg	13.3		91.5	53-128	23.2	200
Dieldrin	14.1		1.67	ug/kg	13.3		106	57-124	22.9	200
Endrin	15.3		1.67	ug/kg	13.3		115	40-140	18.2	200
4,4'-DDD	14.1		3.33	ug/kg	13.3		106	74-140	18.1	200
Endrin aldehyde	11.2		1.67	ug/kg	13.3		84.3	40-140	6.26	200
Endosulfan II	13.4		1.67	ug/kg	13.3		101	45-125	15.1	200
4,4'-DDT	15.0		3.33	ug/kg	13.3		113	60-140	15.3	200
Methoxychlor	16.3		3.33	ug/kg	13.3		122	71-140	10.6	200
Endosulfan sulfate	13.0		1.67	ug/kg	13.3		97.7	43-131	3.46	200
Endrin Ketone	13.3		1.67	ug/kg	13.3		100	56-131	13.6	200
Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)			*8.87*	ug/kg	*13.3*		*66.6*	*38-106*		
Surrogate: Decachlorobiphenyl (DCBP)			*13.7*	ug/kg	*13.3*		*102*	*32-110*		

Quality Control
(Continued)

Polychlorinated Biphenyls (PCBs)

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0838 - EPA 3550C										
Blank (B8L0838-BLK1)					Prepared: 12/20/18 Analyzed: 12/21/18					
Aroclor-1016	ND		100	ug/kg						
Aroclor-1221	ND		100	ug/kg						
Aroclor-1232	ND		100	ug/kg						
Aroclor-1242	ND		100	ug/kg						
Aroclor-1248	ND		100	ug/kg						
Aroclor-1254	ND		100	ug/kg						
Aroclor-1260	ND		100	ug/kg						
Aroclor-1262	ND		100	ug/kg						
Aroclor-1268	ND		100	ug/kg						
PCBs (Total)	ND		100	ug/kg						
Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)			*11.1*	ug/kg	*13.3*		*83.1*	*36.2-108*		
Surrogate: Decachlorobiphenyl (DCBP)			*13.8*	ug/kg	*13.3*		*103*	*43.3-118*		
LCS (B8L0838-BS1)					Prepared: 12/20/18 Analyzed: 12/21/18					
Aroclor-1016	134		100	ug/kg	167		80.3	58.2-125		
Aroclor-1260	150		100	ug/kg	167		90.3	65.5-130		
Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)			*10.3*	ug/kg	*13.3*		*77.3*	*36.2-108*		
Surrogate: Decachlorobiphenyl (DCBP)			*13.4*	ug/kg	*13.3*		*101*	*43.3-118*		
LCS Dup (B8L0838-BSD1)					Prepared: 12/20/18 Analyzed: 12/21/18					
Aroclor-1016	130		100	ug/kg	167		78.2	58.2-125	2.59	20
Aroclor-1260	149		100	ug/kg	167		89.4	65.5-130	1.02	20
Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)			*10.2*	ug/kg	*13.3*		*76.4*	*36.2-108*		
Surrogate: Decachlorobiphenyl (DCBP)			*13.0*	ug/kg	*13.3*		*97.3*	*43.3-118*		

Quality Control
(Continued)

Herbicides

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0978 - EPA 8151A										
Blank (B8L0978-BLK1)					Prepared: 12/24/18 Analyzed: 12/26/18					
Dalapon	ND		100	ug/kg						
Dicamba	ND		50	ug/kg						
Dichloroprop	ND		50	ug/kg						
2,4-D	ND		50	ug/kg						
2,4,5-TP (Silvex)	ND		50	ug/kg						
2,4,5-T	ND		50	ug/kg						
2,4-DB	ND		50	ug/kg						
Dinoseb	ND		100	ug/kg						
Surrogate: 2,4-Dichlorophenyl acetic acid			*249*	ug/kg	*250*		*99.4*	*41-145*		
LCS (B8L0978-BS1)					Prepared: 12/24/18 Analyzed: 12/26/18					
Dalapon	230		100	ug/kg	250		91.9	40-140		
Dicamba	275		50	ug/kg	250		110	40-140		
Dichloroprop	265		50	ug/kg	250		106	40-140		
2,4-D	241		50	ug/kg	250		96.5	40-140		
2,4,5-TP (Silvex)	269		50	ug/kg	250		107	40-140		
2,4,5-T	269		50	ug/kg	250		108	40-140		
2,4-DB	227		50	ug/kg	250		90.8	40-140		
Dinoseb	162		100	ug/kg	250		64.7	40-140		
Surrogate: 2,4-Dichlorophenyl acetic acid			*267*	ug/kg	*250*		*107*	*41-145*		
LCS Dup (B8L0978-BSD1)					Prepared: 12/24/18 Analyzed: 12/26/18					
Dalapon	212		100	ug/kg	250		85.0	40-140	7.77	20
Dicamba	269		50	ug/kg	250		108	40-140	2.07	20
Dichloroprop	257		50	ug/kg	250		103	40-140	3.09	20
2,4-D	228		50	ug/kg	250		91.3	40-140	5.51	20
2,4,5-TP (Silvex)	267		50	ug/kg	250		107	40-140	0.588	20
2,4,5-T	271		50	ug/kg	250		108	40-140	0.502	20
2,4-DB	259		50	ug/kg	250		104	40-140	13.3	20
Dinoseb	154		100	ug/kg	250		61.4	40-140	5.25	20
Surrogate: 2,4-Dichlorophenyl acetic acid			*273*	ug/kg	*250*		*109*	*41-145*		

Quality Control
(Continued)

Total Petroleum Hydrocarbons

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L0893 - EPA 3546										
Blank (B8L0893-BLK1)					Prepared: 12/20/18 Analyzed: 12/24/18					
Total Petroleum Hydrocarbons	ND		27	mg/kg						
Surrogate: Chlorooctadecane			*6.59*	mg/kg	*8.33*		*79.0*	*42.9-128*		
LCS (B8L0893-BS1)					Prepared: 12/20/18 Analyzed: 12/24/18					
Total Petroleum Hydrocarbons	446		27	mg/kg	667		66.8	40-115		
Surrogate: Chlorooctadecane			*6.08*	mg/kg	*8.33*		*73.0*	*42.9-128*		
LCS Dup (B8L0893-BSD1)					Prepared: 12/20/18 Analyzed: 12/24/18					
Total Petroleum Hydrocarbons	471		27	mg/kg	667		70.7	40-115	5.64	200
Surrogate: Chlorooctadecane			*6.35*	mg/kg	*8.33*		*76.2*	*42.9-128*		

Quality Control
(Continued)

SPLP Metals

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B9A0018 - Hot plate acid digestion waters										
Blank (B9A0018-BLK1)					Prepared & Analyzed: 01/02/19					
Silver	ND		0.005	mg/L						
Arsenic	ND		0.05	mg/L						
Beryllium	ND		0.02	mg/L						
Antimony	ND		0.05	mg/L						
Vanadium	ND		0.010	mg/L						
Nickel	ND		0.005	mg/L						
Barium	ND		0.025	mg/L						
Copper	ND		0.02	mg/L						
Zinc	ND		0.02	mg/L						
Cadmium	ND		0.02	mg/L						
Chromium	ND		0.025	mg/L						
Lead	ND		0.025	mg/L						
Selenium	ND		0.05	mg/L						
LCS (B9A0018-BS1)					Prepared & Analyzed: 01/02/19					
Nickel	1.04		0.005	mg/L	1.00		104	85-115		
Silver	0.413		0.005	mg/L	0.400		103	0-200		
Arsenic	0.22		0.05	mg/L	0.200		109	0-200		
Copper	1.0		0.02	mg/L	1.00		104	0-200		
Barium	1.05		0.025	mg/L	1.00		105	0-200		
Zinc	1.1		0.02	mg/L	1.00		113	0-200		
Cadmium	1.04		0.02	mg/L	1.00		104	0-200		
Chromium	1.03		0.025	mg/L	1.00		103	0-200		
Lead	1.04		0.025	mg/L	1.00		104	0-200		
Selenium	0.21		0.05	mg/L	0.200		103	0-200		

Quality Control
(Continued)

SPLP PCBs

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L1080 - Sep-Funnel-extraction										
Blank (B8L1080-BLK1)					Prepared & Analyzed: 12/27/18					
Aroclor-1016	ND		0.0005	mg/L						
Aroclor-1221	ND		0.0005	mg/L						
Aroclor-1232	ND		0.0005	mg/L						
Aroclor-1242	ND		0.0005	mg/L						
Aroclor-1248	ND		0.0005	mg/L						
Aroclor-1254	ND		0.0005	mg/L						
Aroclor-1260	ND		0.0005	mg/L						
Aroclor-1262	ND		0.0005	mg/L						
Aroclor-1268	ND		0.0005	mg/L						
Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)			*0.0000627*	mg/L	*0.0000800*		*78.4*	*30-129*		
Surrogate: Decachlorobiphenyl (DCBP)			*0.0000555*	mg/L	*0.0000800*		*69.4*	*30-126*		
LCS (B8L1080-BS1)					Prepared & Analyzed: 12/27/18					
Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)			*0.0000617*	mg/L	*0.0000800*		*77.1*	*30-129*		
Surrogate: Decachlorobiphenyl (DCBP)			*0.0000663*	mg/L	*0.0000800*		*82.9*	*30-126*		
Leach Fluid Blank (B8L1080-LBK1)					Prepared & Analyzed: 12/27/18					
Aroclor-1016	ND		0.0005	mg/L						
Aroclor-1221	ND		0.0005	mg/L						
Aroclor-1232	ND		0.0005	mg/L						
Aroclor-1242	ND		0.0005	mg/L						
Aroclor-1248	ND		0.0005	mg/L						
Aroclor-1254	ND		0.0005	mg/L						
Aroclor-1260	ND		0.0005	mg/L						
Aroclor-1262	ND		0.0005	mg/L						
Aroclor-1268	ND		0.0005	mg/L						
Surrogate: 2,4,5,6-Tetrachloro-m-xylene (TCMX)			*0.0000492*	mg/L	*0.0000800*		*61.5*	*30-129*		
Surrogate: Decachlorobiphenyl (DCBP)			*0.0000574*	mg/L	*0.0000800*		*71.7*	*30-126*		

Quality Control
(Continued)

Subcontracted

Analyte	Result	Qual	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch: B8L1173 - Subcontract										
Blank (B8L1173-BLK1)					Prepared & Analyzed: 12/21/18					
CT ETPH	ND		30	mg/kg						

Notes and Definitions

Item	Definition
Wet	Sample results reported on a wet weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

8 L 1 8096

n of Custody Record

★ PLEASE COMPOSITE EACH SAMPLE WITH ITSELF

PER QUOTE BY RICH WARILA

Project No.	Project Name/Location:
18103.00	WEST BEACH BOAT RAMP – STAMFORD
Client:	RT GROUP, INC., 70 ROMANO VINEYARD WAY SUITE 134, N. KINGSTOWN RI 02852
Report To:	GREG COTON, P.E.
Invoice To:	MARY ARPIN

Date	Time	Comp	Grab	Sample I.D.	Matrix: Aqueous	Matrix: Soil	Matrix: Other	No. of Containers	Preservative	Tests**
~~12~~ 12/17/18	10:50 AM	X		S-01 (CS)		X		1 SLEEVE	ICE	
12/17/18	12:00 PM	X		S-02 (CS)		X		1 SLEEVE	ICE	
12/17/18	3:30 PM	X		S-02a (CS)		X		1 SLEEVE	ICE	

Sampled By:	Date/Time	Received By:	Date/Time	Laboratory Remarks:	Special Instructions:
D. HOPKINS, P.E. RTG	12/17/18 SEE ABOVE				★ PLEASE COMPOSITE EACH SAMPLE WITH ITSELF BEFORE TEST ★ THESE ARE "VIBRO-CORE" SAMPLES ★ PLEASE HOLD EXCESS MATERIAL UNTIL NOTED OTHERWISE
Relinquished By:	Date/Time	Received By:	Date/Time	Temp. Received:	
	12/17/18		12/18/18 16:16		

**Netlab Subcontracts the following tests: Radiologicals, Radon, TOC, Asbestos, UCMRs, Perchlorate, Bromate, Bromide, Sieve, Salmonella, Carbamates

Turnaround Time [Business Days]: **5 Days**

Applicant: **City of Stamford**		
Mailing Address: **888 Washington Boulevard**		
City/Town: **Stamford**	State: **CT**	Zip Code: **06901**
Business Phone: **203-977-4856**	Fax:	
Contact Person: **Mr. Zvonko Barisic, P.E.**	Phone: **203-977-4715**	

ATTACHMENT N
U.S. Army Corps. of Engineers Consultation Form

Connecticut Department of
Energy & Environmental Protection
Bureau of Water Protection & Land Reuse
Office of Long Island Sound Programs

ATTACHMENT N: U.S. ARMY CORPS OF ENGINEERS DEEP PERMIT CONSULTATION FORM

To the applicant- Prior to the submission of your permit application to the Connecticut Department of Energy and Environmental Protection - Office of Long Island Sound Programs (DEEP- OLISP), please complete Part I and submit this form to the U.S. Army Corps of Engineers (USACE), Regulatory Division, Attn: Diane M. Ray, 696 Virginia Road, Concord, MA 01742, with a location map of your site and project plans. Once they return the completed form to you, please submit it along with your permit application to the DEEP.

Part I: Applicant Information

To be completed by applicant.

1. List applicant information:

Name: **City of Stamford**

Mailing Address: **888 Washington Boulevard, Engineering Bureau, 7th Floor**

City/Town: **Stamford** State: **CT** Zip Code: **06901**

Business Phone: **860-977-4856** ext. _____ Fax: _____

Contact Person: **Mr. Zvonko Barisic, P.E.** Title: **Staff Engineer**

E-mail: **ZBarisic@stamford.gov**

2. List engineer, surveyor or agent information:

Name: **RT Group Inc.**

Mailing Address: **70 Romano Vineyard Way, Suite 134**

City/Town: **North Kingstown** State: **RI** Zip Code: **02852**

Business Phone: **401-438-3100** ext. _____ Fax: _____

Contact Person: **Mr. Gregory J. Coren, P.E.** Title: **Project Manager II**

E-mail: **gcoren@rtg-eng.com**

Service provided: **Engineering Design and Permitting**

3. Site location:

Name of site : **West Beach and Boat Ramp**

Street Address or Location Description: **West Beach off of Shippan Avenue**

City/Town: **Stamford** State: **CT** Zip Code: **06902**

Tax Assessor's Reference: Map **134** Block **150** Lot **1A**

4. Are plans attached? ☒ Yes ☐ No If yes, provide date of plans: **Sept. 2018**

Part I: Applicant Information (continued)

5. Provide or attach a brief, but thorough description of the project:

The West Beach Facility, located in Wescott Cove, is owned and operated by the City and is comprised of West Beach and a boat ramp located to the north. The Facility serves as an important recreational asset to the City and provides public access to the water and other recreational amenities (e.g., playground, bathroom facilities, parking, picnic areas, etc.).

The existing boat ramp enables public access to local marinas and the Federal Navigable Channel connecting Westcott Cove to Long Island Sound. The boat ramp, which was reportedly rebuilt in the mid-1990's, is comprised of precast concrete planks and is serviced by an existing timber floating dock system on its north side and parking facilities to the west. The boat ramp can reportedly accommodate boats up to 25-feet in length, but is not conducive to launching during low-tide due to its current configuration.

As a part of on-going development along the Stamford waterfront, the City would like the boat ramp to be able to accommodate boats up to 35-feet in length and to be available for use throughout the normal tide cycle (i.e., including low-tide). As a result, the City is proposing to replace the existing boat ramp in its entirety with a new precast concrete boat ramp, including extending its length and installing an additional timber floating dock system on its south side. To accomplish this, improvements dredging will be required in order to install the new ramp and to provide adequate water depths for launching larger boats. Improvements will also be made to the parking area that services the boat ramp to accommodate larger boats.

Other repairs that are expected to be implemented under this project include addressing deterioration and erosion observed along the existing timber jetty adjacent to West Beach.

The work detailed above is expected to occur in late 2019/early 2020.

Part II: To be Completed by US Army Corps of Engineers

This consultation form is required to be submitted as part of an application for a Structures, Dredging & Fill permit (section 22a-361 of the Connecticut general Statutes (CGS)) and/or Tidal Wetlands permit (CGS section 22a-32) to the DEEP- OLISP. The application has not yet been submitted to the DEEP. Please review the enclosed materials with regard to the U.S. Army Corp of Engineers review process pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act; and provide any comments or recommendations you may have with regard to this proposal. Please call DEEP-OLISP at 860-424-3034 to speak with the analyst assigned to the town in which the work is proposed if you have any questions. **Please return the completed form to the applicant.**

COMMENTS/RECOMMENDATIONS:

The EPA will review this project once the agency resumes normal operations and provide recommendations/comments if necessary.

We anticipate the following special conditions for fisheries purposes:

-The lowermost part of the floats should be ≥18 inches above the substrate at all times. This is to avoid grounding and propeller scour and to provide adequate circulation and flushing.

-Appropriate soil erosion, sediment and turbidity controls should be used and maintained in effective operating condition during construction. Activities capable of producing greater than minimal turbidity or sedimentation should be done during periods of low-flow or no-flow, when the stream or tide is waterward of the work, or when controls are used to obtain dry work conditions.

-Due to the Federal Navigation Channel turbidity curtains for some areas will likely not be required, as to not impact navigation.

-Compensatory mitigation should be provided for impacts to tidal SAS, intertidal areas, or natural rocky habitats.

We anticipate the following special conditions related to the dredging project:

-Rocks should be relocated to an area of equivalent depth and substrate type.

CONTINUED ON NEXT PAGE

USACE Application number: NAE-2018-02081-PRE-APP

COMEAU.CHRISTINA.MARIE.1297852074

Digitally signed by COMEAU.CHRISTINA.MARIE.1297852074
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USA, cn=COMEAU.CHRISTINA.MARIE.1297852074
Date: 2019.01.23 16:09:19 -05'00'

Signature of Project Manager

1/23/2019
Date

Christina M. Comeau

Printed Name of Project Manager

COMMENTS/RECOMMENDATIONS CONTINUED

-Dredged materials should be deposited and retained in an upland area to prevent sediments from reentering aquatic habitats; unless they are disposed of at either a U.S. EPA/Corps designated disposal site or a CAD cell.

-Dredge material shall be dewatered in the dewatering area shown on the attached plans. This will allow the suspended sediment to settle and the filtered water to flow back to [receiving water body].al The scheduling of dredging and dewatering shall be such that the capacity of the dewatering area is not exceeded under any circumstances.

-There shall be no dredging or disposal February 1 through September 30 inclusive, in order to minimize adverse impact to fisheries resources at the dredge and disposal sites.

For Navigation purposes:

1. For work near Federal Navigation Projects (FNPs), the as-built drawing(s) shall also include:
   a. The structure's horizontal location relative to the closest FNP and the waterway, horizontal coordinates, the FNP limits, bar (graphic) scale, north arrow, and the dates of the survey and drawings.
   b. The structure's horizontal state plane coordinates in U.S. survey feet based on the [insert state grid system] for the [insert state] [insert zone] NAD 1983.

2. The permittee shall locate all structures (including vessels and floats) far enough outside the Federal Navigation Project (FNP) limits so neither the structures, nor any vessels tied to these structures, encroach into the FNP at any time.

3. The permittee shall not interfere with Corps of Engineers personnel or its contractors engaged in hydrographic surveys, maintenance or improvement of the existing FNP. If, in the opinion of the Corps, the permittee's structures or vessels attached to them must be moved to allow for the maintenance or improvement of the existing FNP, the permittee shall move the structures or vessels as directed by the Corps.

4. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

5. The permittee shall not hold the Government or its contractor responsible for damage(s) to these structures or any vessels tied to them during surveying or dredging operations.

This boat ramp and dock project is going to be reviewed with the dredging project as a single Individual Permit (IP) and will require a public notice.

This project might require a Section 408 permit.

This proposal will require an individual consultation with the National Marine Fisheries Service(NMFS) to comply with the Endangered Species Act. The Corps of Engineers project manager will coordinate with NMFS upon receipt of the final plans.

-To make the consultation process easier, please provide the total number of pilings, type and size of pilings, and method of installation at the time of application submittal.