Conservation Commission Packet For 05/18/2016

NANTUCKET CONSERVATION COMMISSION

Updated Meeting Notice/Agenda for Wednesday, May 18th 2016

4:00 P.M. in the **2nd Floor** of the Public Safety Facility 4 Fairgrounds Road

*Matter has not been heard

I. PUBLIC MEETING

A. Public Comment

II. PUBLIC HEARING

A. Notice of Intent

1. Edwin Snider RT – 1 Brock's Ct (42.3.4-84) SE48-2834 **(06/29/2016)**
2. Edwin Snider RT – 1 Brock's Ct (42.3.4-84) SE48-2835 **(06/29/2016)**
3. Pocomo Neighbours – 47,53,55,57,61,63 & 69 Pocomo Road (Multiple) SE48-2874
4. The Trustees of Reservations –Costaka Coatue Wildlife Refuge and Great Point (7-1.7) SE48- 2884
5. The Town of Nantucket – Consue Springs off Union St (55.1.4-15) SE48-2880
6. *Bell – 13C Willard St (42.4.1-15.3) SE48-2887
7. *Hilderbrand – 60 Crooked Lane (41-198) SE48-2886
8. *Asness RT – 3 Hulbert Ave (29.2.3-6) SE48-
9. *Lindsay – 15 Pippins Way (43-94.3) SE48-2888
10. *Knight – 12 E Lincoln Ave (42.4.1-47) SE48-2889

B. Request for Determination

1. *40 Jefferson LLC – 40 Jefferson Ave (30-119)

II. PUBLIC MEETING

A. Certificate of Compliance

1. *Kafer – 143 Wauwinet Road (11-8) SE48-909

B. Orders of Conditions (If the public hearing is closed – for discussion and/or issuance)

Discussion of other closed Notices of Intent

1. Pocomo Neighbours – 47,53,55,57,61,63 & 69 Pocomo Road (Multiple) SE48-2874
2. The Trustees of Reservations –Costaka Coatue Wildlife Refuge and Great Point (7-1.7) SE48- 2884
3. The Town of Nantucket – Consue Springs off Union St (55.1.4-15) SE48-2880
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7. *Lindsay – 15 Pippins Way (43-94.3) SE48-2888
8. *Knight – 12 E Lincoln Ave (42.4.1-47) SE48-2889

C. Monitoring Reports

1. *Cigarran-25 East Tristam Ave (31-1) SE48-2840
2. *Giles RT- Off Of Tennessee Ave (60.1.2-33) SE48-2839

D. Other Business

1. Approval of Minutes 04/20/2016 & 05/04/2016
2. Enforcement Action
3. Reports: CPC, NP&EDC, Mosquito Control Committee, Other
4. Commissioner's Comment
5. Administrator/ Staff Reports.

PUBLIC MEETINGS AND PUBLIC HEARING

(from pp. 5-7 of the Nantucket Conservation Commission's Information and Procedures)

Public Meetings and Public Hearings are not the same. Public Meetings are conducted so that the Commission may discuss matters affecting the interests of the public and the rights of individuals in an open forum. To act on a matter, a quorum of the Commission (four of the seven members) must be present. Public Hearings are conducted for the same overall reasons as the Public Meeting – to protect both the public interest and the rights of individuals – with the additional purpose of gathering relevant information from the applicant, interested parties, and the public at large, and providing the Commission with the means of gathering the information necessary to developing an informed opinion and to issuing Orders that are fully supported by the appropriate facts, laws, and science.

Public Meetings, and Public Hearings held within Public Meetings, are held in conformance with the Massachusetts Open Meetings Law, M.G.L. Ch. 39 §§23A-C, and the Code of the Town of Nantucket §§1-7, 2-1, et seq., 136-4, where applicable. Pursuant to Section 1-7 of the Code of the Town of Nantucket, the Commission conducts business in accordance with parliamentary procedure as set out by Roberts Rules. The tenth edition is the most recent and presently effective version of Robert Rules. Additionally, where appropriate, the Commission follows the guidelines for Conservation Commission Meetings and Hearings set out by the Massachusetts Association of Conservation Commissions (MACC), the state umbrella organization of Conservation Commissions that works for strong, workable, science-based laws and regulations.

The Chairman or Chairwoman (hereinafter "Chair") presides at Public Meetings and Public Hearings. In the absence of the Chair, the Vice Chair, or another Commissioner designated by the Chair presides. Public Hearings are conducted with an appropriate degree of formality, in accordance with Roberts Rules of Order, and with reference to state and local laws and regulations. During the Public Hearing portion of the Public Meeting, the Commission follows the following procedures:

A. The Hearing is called by the applicant's name and the address of the proposed activity. The applicant may or may not be the owner of the property.
B. The applicant, or the applicant's representative, presents the proposal to the Commission by describing the activity or project, its environmental impact, and its location relative to resource areas and buffer zones.
C. The Commissioners or the Commission staff may at this point have questions for the applicant or the applicant's representative relating to clarity of the application.
D. Interested parties, whether abutters, representatives of other entities, or the public, are invited to provide evidence or propose questions relevant to the project, to the resource area, to the protected interests arising by statute or regulation in relation to the resource area, and/or to the performance standards for such activities in such resource areas. Any questions must be directed to and through the Chair, not to the applicant or another person at the hearing. The time available for such public input may be limited by the Chair, especially where a large number of people seek to address the Commission. Public input should be limited to new information—if someone already has provided the same information to the Commission it is unnecessary for it to be restated by another speaker. For the above reasons, it is helpful to the Commission, and often will have more impact, if comments or questions are submitted in writing, in advance if at all possible.
E. The Commission staff and/or technical consultants retained by the Commission will provide any additional information they may deem relevant to the application, may answer questions from the Commission, and may provide a recommendation to the Commission.
F. The Commissioners may have additional questions from either the applicant or from persons who have provided evidence or other input to the Hearing.
G. The Chairman will ask if the applicant has any additional information based on the questions and input outlined above.
H. The Commission then will deliberate and decide a course of action. The Commission should not be interrupted during its deliberations.

Comments and questions are welcomed at the appropriate time in the hearing. Those most helpful to assisting the Commission in fulfilling its legal mandate are those comments or questions that pertain to the proposal or resource areas that are the subject of the Public Hearing. Issues beyond the Commission's jurisdiction are not legally relevant and should be avoided.

Because of the acoustics of the room in which the Commissions conducts Pubic Meetings, it can be difficult for Commissioners to hear those appearing before the Commission, or each other for that matter, if people are engaging in conversation elsewhere in the room. Please take all private conversations to the hallway outside.

Please note that the Commission keeps minutes of its proceedings in accordance with state law. The person keeping the minutes must record the names of persons addressing the Commission, and those addressing the Commission may need to spell their names if the spelling is not obvious. The files related to applications are available for public review at the Commission's office during normal business hours in advance of, and following the Pubic Meeting. They are not available for such review during the meeting, when such review would be distracting to Commissioners and staff, and would interfere with the orderly conduct of the Public Meeting.

Typically, the persons appearing before the Commission are professionals, that is, persons who are paid to attend the hearings on behalf of their client or employer. Such persons are expected to understand the rules and procedures of the Commission, and the relevancy of evidence, commentary, or questions submitted to the Commission.

It is not unusual for members of the public to appear before the Commission, especially in response to a notice that an activity is proposed on an abutting or nearby property. The Commission's staff is available to assist the public in understanding the applications under consideration by the

Commission relative to resource areas and protected interests. The public may visit the Commission's office and examine the application, the plans that are part of the application, and other materials that may be related to the proposal. Recognizing that non-professionals are not as familiar with the rules and procedures, the Chair is likely to allow them a little more leeway than might be permitted professionals practicing before the Commission. Nevertheless, this guide to Information & Procedures is designed to inform everyone of the practices and procedures. The Chair may redirect anyone at any point if they go beyond what is appropriate under the Commission's rules of procedure.

Pocomo Neighbours

47,53,55,57,61,63 & 69 Pocomo Road

(Multiple)

SE48-2874

NOTICE OF INTENT APPLICATION

For Coastal Bank Stabilization

At

47, 53, 55, 57, 61, 63, 67, 69 Pocomo Road
Nantucket, MA

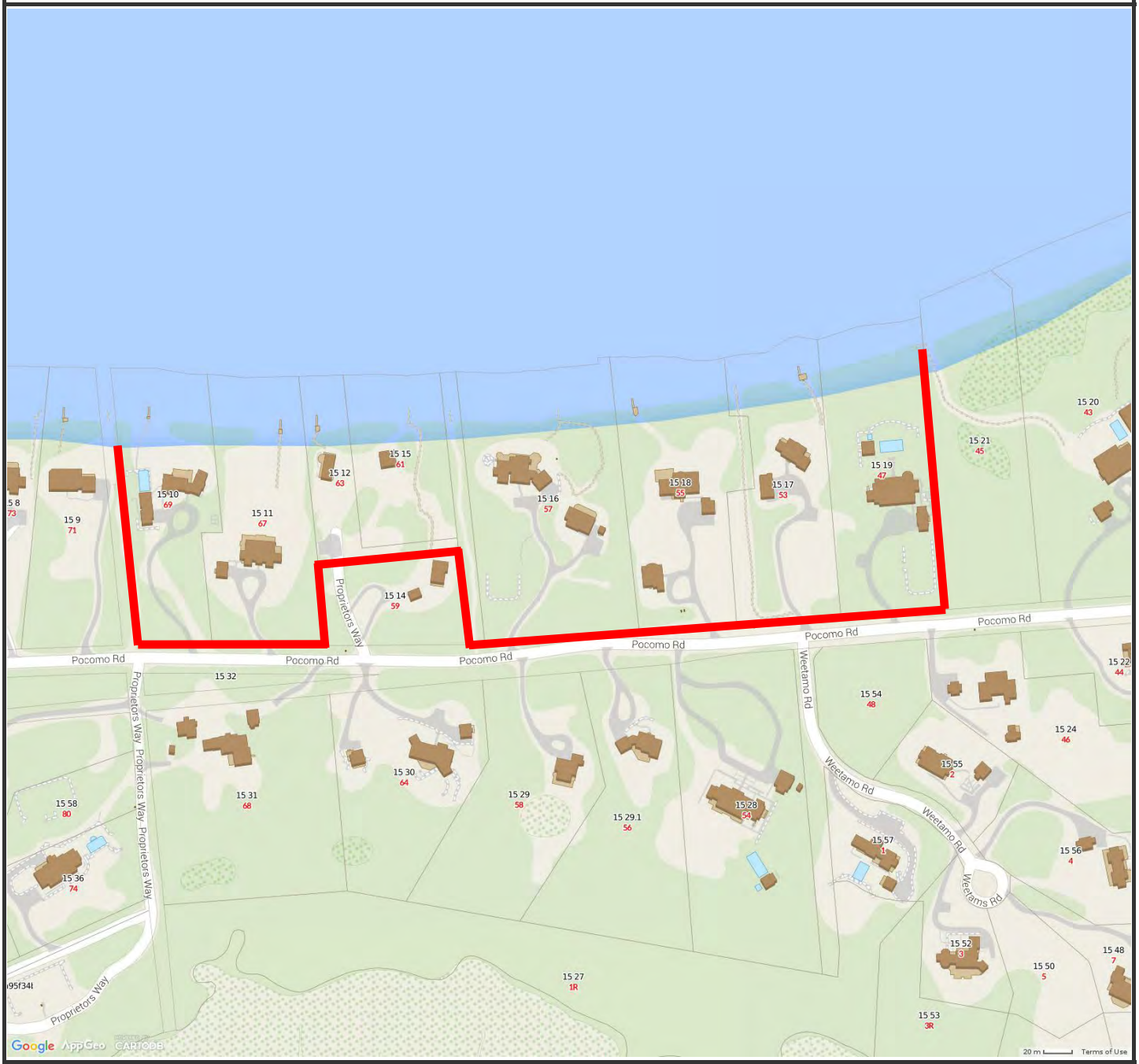
March 2016

Prepared For

POCOMO NEIGHBORS

20 Mary Ann Drive • Nantucket, MA 02554
508-825-5053 • www.NantucketEngineer.com

Locus Map - 47, 53, 55, 57, 61, 63, 67, 69 Pocomo Road



MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated December, 2014
Properties updated January, 2015

March 17, 2016

Mr. Ernest Steinauer, Chair
Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

Re: Notice of Intent for Coastal Bank Stabilization
47, 53, 55, 57, 61, 63, 67, 69 Pocomo Road
Nantucket, Massachusetts

Dear Mr. Steinauer:

On behalf of the property owners listed on the attached document titled Applicants for Pocomo Neighbors Coastal Stabilization Project, Nantucket Engineering & Survey, P.C. is submitting this Notice of Intent (NOI) to the Nantucket Conservation Commission for proposed Coastal Bank stabilization activities at the above referenced Pocomo Road properties (the "Site") in Nantucket, Massachusetts.

Proposed activities consist of stabilization, nourishment, and planting of American Beach Grass along the length of Coastal Bank located at the Site. Resource areas at the Site include Coastal Bank, Coastal Beach, Land Subject to Coastal Storm Flowage and Land Under the Ocean. No alteration is proposed to the Coastal Beach but it will be used as a working area during proposed Coastal Bank stabilization activities. Attached are permit drawings, including plans showing a site locus, existing conditions including resource area locations, and proposed construction areas.

A completed WPA Form 3 – Notice of Intent is attached along with the NOI Wetland Fee Transmittal Form including checks for $1,012.50, $25 and $200 to cover the WPA filing fee, Nantucket Wetland by-law fee and the Nantucket Expert Review fee. Also included is a check for $266.90 to the Inquirer & Mirror for publication of the notice of the public hearing. A Waiver Request from Section 2.05.B.3 of the Town of Nantucket Bylaw Chapter 136 has also been provided with this letter.

Notification of this NOI filing was provided to all abutting property owners by certified mail. This property owner listing was obtained from the Town of Nantucket Assessor's office. Documentation of the notification is provided including a copy of the notification letter, the property owner listing and certified mail receipts.

Attached is a publication by the Massachusetts Office of Coastal Zone Management which promotes this type of alternative for coastal stabilization. Also included are pages from the Order of Conditions (SE48-2789) issued on August 19, 2015 for a very similar project with similar conditions within Nantucket Harbor. The pages contain the Additional Conditions which this applicant also agrees to adhere to. That project has been constructed without apparent adverse impact to the interests protected by the Commission.

Please refer to the attached Site Assessment Report prepared by Lee Weishar, Ph.D. of the Woods Hole Group for additional supporting information.

Site Description

The Properties at 47, 53, 55, 57, 61, 63, 67, 69 Pocomo Road are listed as Map 15, Parcels 19, 17 18, 16, 15, 12, 11, 10 (Respectively) by the Town of Nantucket Assessor's Office. The combined property area is approximately 21-acres, and located in a residential area along the northern side of Pocomo Point. The properties are bounded to the north by Nantucket Harbor and to the east, west by existing residential properties. Pocomo Road runs along the southern side of the properties. Resource Areas on the Site consist of Coastal Bank and Coastal Beach and associated buffer zones, Land Subject to Coastal Storm Flowage and Land under the Ocean (Nantucket Harbor). No work is proposed in Nantucket Harbor (Land Subject to Coastal Storm Flowage), or below Mean High Water.

The Coastal Beach is located between the harbor and the existing Coastal Bank. Work proposed in this resource area includes only temporary machine activity associated with the project.

The Coastal Bank is located between the Coastal Beach and the upland areas (dunes). Work in this area consists of installation of five rows of sand-filled fiber rolls anchored into the Coastal Bank with duckbill anchors and anchor posts. The fiber rolls will be covered with sand and planted with American Beach Grass. Performance standards within this area are met, due to available sediment for transfer from the bank and fiber rolls to the adjacent resource areas. The 4 by 4-inch anchor posts at 5 feet on center are necessary to provide structural stability to the embankment slope and the toe until such time a full vegetative cover is established.

Land Subject to Coastal Storm Flowage extends to the 100-year flood elevation of 10 (NAVD88). The performance standards within this area are met as the ability of the land to contain flood waters is not impacted.

A portion of the project area is located within National Heritage and Endangered Species Program (NHESP) Priority Habitats of Rare Species or Estimated Habitats of Rare Wildlife. A copy of this application has been provided to NHESP for review and comment.

Project Description

The Pocomo Neighbors will retain an experienced contractor to perform the proposed Coastal Bank stabilization. The plans show the proposed construction details, including final grading and planting details. The proposed Coastal Bank stabilization that is the subject of this NOI consists of the following:

- Temporarily removing existing stairs;
- Adjustment of the embankment grade to 1:1.5 slope;
- Installing proposed stabilization system consisting of horizontal rows of 20-inch diameter fiber rolls, anchored in with duckbill anchors and anchor posts;
- Placement of erosion control blanket over the upper slope with a hand dug lock in trench;
- Placement of sand fill over fiber rolls (approximately 6 inches);
- Planting of American Beach Grass and other native species on the fiber rolls and on the slope.

Work Description

The applicant proposes to re-establish a vegetated slope on the face of the Coastal Bank, and enhance the ability of the landform to maintain a vegetated slope with the installation of biodegradable sand-filled fiber rolls with anchors, re-vegetation of the Coastal Bank, and maintenance of sand over the rolls. The sand cover will serve as sacrificial sediment to replicate a natural bank for storm damage protection and will maintain the available supply of sediment to the littoral system during storms.

The construction access for the project will be from the end of Pocomo Road to the beach along the existing sand track. This access will be used for once daily trips to get a small track excavator to the beach. No equipment will be left on the beach overnight or during severe storms. The beach access will be restored to match the existing conditions. Before and after construction photographs will be provided to the Commission to document appropriate restoration of the access area.

Sand and materials for the project will be delivered to the upland portion of the property for staging and transported to the beach as needed via small hoppers or front end loader.

Existing sand will be used as available and tested for grain size as part of this work. Supplemental sand brought in from offsite will be tested to confirm similar grain size characteristics to the existing sand.

Upon completion of the project, the face of the Coastal Bank will be vegetated with American Beach Grass and other appropriate native species.

Monitoring & Maintenance

The applicant proposes to conduct the following observation and maintenance program for the installed slope stabilization:

- Visit the site twice per year in early spring and late fall to observe condition of the slope and assess need for maintenance.
- Visit the site after each significant storm to assess conditions and provide as needed repairs.
- When significant storm damage is observed, the Conservation Commission will be notified to implement corrective measures.

Conclusion

The work as proposed will not affect the ability of the resource areas to function as they currently do, and will result in an improvement to the stability and vegetative community of the coastal bank system. The project will not result in an adverse impact on the areas or the interests protected by the Commission including flood control, erosion control, storm damage prevention, prevention of pollution, wildlife, and scenic views.

Sincerely,

Arthur D. Gasbarro, PE, PLS, LEED AP

NANTUCKET ENGINEERING & SURVEY, PC

POCOMO NEIGHBORS COASTAL STABILIZATION PROJECT

20 Mary Ann Drive • Nantucket, MA 02554
508-825-5053 • www.NantucketEngineer.com

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

NANTUCKET
City/Town

A. General Information

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

47, 53, 55, 57, 61, 63, 67, 69 Pocomo Road — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41d 18' 57" N — d. Latitude
70d 01' 30" W — e. Longitude

15 — f. Assessors Map/Plat Number
19, 17 18, 16, 15, 12, 11, 10 (Respectively) — g. Parcel /Lot Number

2. Applicant:

Refer to Attached List ("Pocomo Neighbors") — a. First Name
b. Last Name
c. Organization

c/o Arthur I. Reade, Jr., P.O. Box 2669 — d. Street Address
Nantucket — e. City/Town
MA — f. State
02584 — g. Zip Code
508-228-3128 — h. Phone Number
i. Fax Number
air@readelaw.com — j. Email Address

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

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

4. Representative (if any):

Arthur D. — a. First Name
Gasbarro, PE, PLS, LEED AP — b. Last Name
Nantucket Engineering & Survey, P.C. — c. Company
20 Mary Ann Drive — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
508-825-5053 — h. Phone Number
i. Fax Number
art@nantucketengineer.com — j. Email address

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

$2,000 + $25 + $200 — a. Total Fee Paid
$987.50 — b. State Fee Paid
$1,012.50 + $25 + $200 — c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

The applicants are proposing to install an anchored fiber roll array with reinforced soil lifts, timber posts, sand nourishment cover and beach grass/native species plantings along the face of a coastal bank. The existing debris and fence posts will be removed and the entire area cleaned up. Please refer to the attached Project Narrative and Site Plan for additional information.

7a. Project Type Checklist:

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

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

1. ☐ Yes ☐ No If yes, describe which limited project applies to this project:

2. Limited Project

8. Property recorded at the Registry of Deeds for:

NANTUCKET	Refer to Attached List ("Pocomo Neighbors")
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

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

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

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

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available)	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet	b. square feet within 100 ft.	c. square feet between 100 ft. and 200 ft.

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

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

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

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

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

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

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

	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☒ Coastal Banks	1,800' +/- Fiber Rolls, Sand Fill & Beach Grass Plantings	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	21,000+/- 1. square feet	

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

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

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings | b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/online_viewer.htm.

a. ☒ Yes ☐ No **If yes, include proof of mailing or hand delivery of NOI to:**

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
Route 135, North Drive
Westborough, MA 01581

10/1/08
b. Date of map

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

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

1. c. Submit Supplemental Information for Endangered Species Review*

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

      (a) within wetland Resource Area — 3% / 27,000+/- s.f. (of combined properties) (percentage/acreage)

      (b) outside Resource Area — 0 (percentage/acreage)

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

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

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

      (b) ☒ Photographs representative of the site

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

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

      (d) ☐ Vegetation cover type map of site

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

   d. OR Check One of the Following

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

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

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

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

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

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

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

a. ☐ Not applicable – project is in inland resource area only

b. ☐ Yes ☒ No If yes, include proof of mailing or hand delivery of NOI to either:

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

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694

North Shore - Hull to New Hampshire:

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

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

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

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

b. ACEC

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

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

a. ☐ Yes ☒ No

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

a. ☐ Yes ☒ No

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

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

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

2. ☐ A portion of the site constitutes redevelopment

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

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

1. ☒ Single-family house

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

2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

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

Site Plan to Accompany a Notice of Intent – 2 Sheets
a. Plan Title

Blackwell & Associates, Inc.&
Nantucket Engineering & Survey, P.C.

Arthur D. Gasbarro, PE, PLS, LEED AP
c. Signed and Stamped by

March 17, 2016
d. Final Revision Date

1" = 30'
e. Scale

Site Assessment by Woods Hole Group, Lee Weishar, Ph.D
f. Additional Plan or Document Title

g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

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

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

108	3/13/16
2. Municipal Check Number	3. Check date
107	3/13/16
4. State Check Number	5. Check date
Kenneth G.	Bartels (P N. Account)
6. Payor name on check: First Name	7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

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

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

Agent	3/16/16
1. Signature of Applicant	2. Date
Agent	3/16/16
3. Signature of Property Owner (if different)	4. Date
	3/16/16
5. Signature of Representative (if any)	6. Date

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

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

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

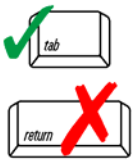
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

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



A. Applicant Information

1. Applicant:

Refer to Attached List ("Pocomo Neighbors")
a. First Name | b. Last Name

c. Organization

c/o Arthur I. Reade, Jr., P.O. Box 2669
d. Mailing Address

Nantucket | MA | 02584
e. City/Town | f. State | g. Zip Code

h. Phone Number | i. Fax Number | j. Email Address

2. Property Owner (if different):

Refer to Attached List ("Pocomo Neighbors")
a. First Name | b. Last Name

c. Organization

d. Mailing Address

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

h. Phone Number | i. Fax Number | j. Email Address

3. Project Location:

47, 53, 55, 57, 61, 63, 67, 69 Pocomo Road | Nantucket
a. Street Address | b. City/Town

B. Fees

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

The fee should be calculated using the following six-step process and worksheet. **Please see Instructions before filling out worksheet.**

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

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Install fiber rolls, sand fill & plant American beach grass.	1,800 l.f.	$4/foot	$2,000 (Max.)
Nantucket Wetland By-law Fee			$25
Nantucket Expert Review Fee			$200

Step 5/Total Project Fee: $2,000 + $25 + $200

Step 6/Fee Payments:

Total Project Fee:	$2,000 + $25 + $200 a. Total Fee from Step 5
State share of filing Fee:	$987.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$1012.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

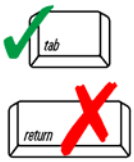
To MassDEP Regional Office (see Instructions): Send a copy of the Notice of Intent or Abbreviated Notice of Intent; a **copy** of this form; and a **copy** of the state fee payment. (E-filers of Notices of Intent may submit these electronically.)

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

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



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a. First Name | b. Last Name

c. Organization

c/o Arthur I. Reade, Jr., P.O. Box 2669
d. Mailing Address

Nantucket | MA | 02584
e. City/Town | f. State | g. Zip Code

h. Phone Number | i. Fax Number | j. Email Address

2. Property Owner (if different):

Refer to Attached List ("Pocomo Neighbors")
a. First Name | b. Last Name

c. Organization

d. Mailing Address

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

h. Phone Number | i. Fax Number | j. Email Address

3. Project Location:

47, 53, 55, 57, 61, 63, 67, 69 Pocomo Road | Nantucket
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Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Install fiber rolls, sand fill & plant American beach grass.	1,800 l.f.	$4/foot	$2,000 (Max.)
Nantucket Wetland By-law Fee			$25
Nantucket Expert Review Fee			$200

Step 5/Total Project Fee: $2,000 + $25 + $200

Step 6/Fee Payments:

Total Project Fee:	$2,000 + $25 + $200 a. Total Fee from Step 5
State share of filing Fee:	$987.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$1012.50 c. 1/2 Total Fee **plus** $12.50

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Department of Environmental Protection
Box 4062
Boston, MA 02211

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

APPLICANTS FOR POCOMO NEIGHBORS COASTAL STABILIZATION PROJECT

Owner	(#Pocomo Rd)	Map 15 Parcel	Certificate of Title
Jacqueline R. McCoy, Trustee Savel Nominee Trust 31 St. James Ave, Suite 740 Boston, MA 02116	(#47 & 53)	19 17	22,538 24,570
Arthur B. Page, Trustee Fifty-Five Pocomo Realty Trust P.O. Box 1022 Marlborough, MA 01752	(#55)	18	20,152
Robert S. Shapiro, Trustee Lois K. Shapiro, Trustee Pocomo Realty Trust II 273 Lansing Island Rd Satellite Beach, FL 32937	(#57)	16	13,605
Pocomo, LLC c/o York Capitol 767 5th Ave 17th Floor New York, NY 10153	(#61)	15	19,629
Peter Barrett & Mary V. Barrett 303 Columbus Ave #401 Boston, MA 02116	(#63)	12	19,639
Martin Wayne & Susan Wayne 440 Harris Road Bedford Hills, NY 10507	(#67)	11	22,595
Kenneth G. Bartels, Trustee 69 Pocomo Nominee Trust 38 Close Road Greenwich, CT 06831	(#69)	10	22,603

Pages from Title Documents

For Project Properties

Transfer Certificate of Title

Cert No:22538
Doc No:119609

From Transfer
Certificate No. 21999 Originally Registered October 31, 2005

the Registry District of Nantucket County

This is to Certify that

JACQUELINE R. MCCOY, Trustee of SAVEL NOMINEE TRUST, u/d/t dated March 5, 2007, registered as Document No. 119610 at the Registry District of Nantucket County,

of Paul McCoy Family Office Services LLP, 31 St. James Avenue, Suite 880, Boston in the County of Suffolk and the Commonwealth of Massachusetts 02116,
is the owner in fee simple, of that land situated in Nantucket,
in the County of Nantucket and said Commonwealth, bounded and described as follows:

SOUTHERLY	by the line of Pocomo Road, two hundred twenty and 74/100 (220.74) feet;
WESTERLY	by Lot 4 on plan hereinafter mentioned, measuring on the upland, about five hundred eighty-five (585.+-) feet;
NORTHERLY	by Nantucket Harbor; and
EASTERLY	by land now or formerly of Richard M. Everett et al, Trs., measuring on the upland, about six hundred twenty-four (624.+-) feet.

All of said boundaries, except the water lines, are determined by the Court to be located as shown upon plan numbered 20689-D, drawn by J. E. Marcklinger & Associates, Inc., Surveyors, dated April 14, 1982, and filed with Certificate of Title No. 10208 at the Registry District of Nantucket County. Said land is shown thereon as Lot 5.

There is appurtenant to said land the right to use, in common with all other persons lawfully entitled thereto, all the Proprietors Roads, shown on Plan No. 22667-A, which are not public, adjacent to the said land, to and from Pocomo Road and Nantucket Harbor.

And it is further certified that said land is under the operation and provisions of Chapter 185 of the General Laws, and that the title of said

JACQUELINE R. MCCOY, Trustee of SAVEL NOMINEE TRUST

to said land is registered under said Chapter subject, however, to any of the encumbrances mentioned in section forty-six of said chapter, which may be subsisting, and subject also as aforesaid; also subject to any and all public rights legally existing in and over the same below mean high water mark.

Witness **KARYN F. SCHEIER**, Esquire, Chief Justice of the Land Court, at Nantucket in said County of

Nantucket the twelfth day of March in the year two thousand and seven

at two o'clock and twelve minutes in the afternoon.

Attest , with the Seal of said Court, Jennifer H. Ferreira
Jennifer H. Ferreira, Assistant Recorder

Purported Property Address: 47 Pocomo Road

Land Court Case No. 20689

CERTIFICATE OF TITLE NO. **22538**

2012 00139365
Cert: 24570 Doc: DD
Registered: 12/18/2012 03:15 PM

DEED

I, JOHN G. McMILLIAN, Trustee of the McMILLIAN FAMILY TRUST under Declaration of Trust dated May 12, 2010, registered with Nantucket Registry District as Document No 134920, of Park City Utah, for consideration paid in the amount of $6,000,000.00, grant to JACQUELINE McCOY, Trustee of the SAVEL NOMINEE TRUST, under Declaration of Trust dated March 5, 2007, registered with Nantucket Registry District as Document No. 119610, with a mailing address of Suite 740, 31 St. James Avenue, Boston, Massachusetts 02116, with QUITCLAIM COVENANTS,

The land, together with all buildings, structures and improvements existing thereon, now known and numbered as 53 Pocomo Road, Town and County of Nantucket, Massachusetts, more particularly bounded and described as follows:

SOUTHERLY	by	Pocomo Road, Two Hundred Thirty-One and 01/100 (231.01) feet;
WESTERLY		Two Hundred Eighty-Nine and 12/100 (289.12) feet;
NORTHERLY		Forty-One and No/100 (41.00) feet;
WESTERLY		One Hundred Fifty and No/100 (150.00) feet;
SOUTHERLY		Forty-One and No/100 (41.00) feet;
WESTERLY		measuring on the upland about One Hundred (100±) feet, by Lot 6, as shown on a plan hereinafter mentioned;
NORTHERLY	by	Nantucket Harbor; and

EASTERLY by Lot 5, as shown on said plan, measuring on the upland about Five Hundred Seventy-Two (572±) feet.

Said land is shown as Lot 7 on Land Court Plan No. 20689-E.

Said land is conveyed subject to real estate taxes assessed by the Town of Nantucket for the fiscal year 2013 commencing on July 1, 2012.

For title, see Certificate of Title No. 24024.

The undersigned, by virtue of his execution hereof, hereby certifies that: (a) he is the sole Trustee of McMillian Family Trust; (b) said Trust has not been altered, amended, revoked, or terminated; (c) that no beneficiary of said Trust is a minor or under any incapacity; and (d) that he has been authorized and directed by all of the beneficiaries of said Trust to execute, acknowledge, and deliver the within deed.

Executed and sealed on December 15, 2012.

NANTUCKET LAND BANK
CERTIFICATE
☑ Paid $ 120,000.00
☐ Exempt
☐ Non-applicable
334169 12/18/12
No. Date
Authorization

John G. McMillian, Trustee of
McMillian Familty Trust

STATE OF UTAH

MASSACHUSETTS EXCISE TAX
Nantucket County ROD #16 001
Date: 12/18/2012 03:15 PM
Ctrl# 460377 26952 Doc# 00139365
Fee: $27,360.00 Cons: $6,000,000.00

SUMMIT, ss.

On this 15TH day of December, 2012, before me, the undersigned notary public, personally appeared John G. McMillian proved to me through satisfactory evidence of identification, which was PERSONALLY KNOWN, to be the person whose name is signed on the preceding or attached document, and acknowledged to me that he signed voluntarily for its stated purpose and who swore or affirmed to me that the contents of the document are truthful and accurate to the best of his knowledge and belief.

Notary Public

My commission expires:
6/20/2014

NOTARY PUBLIC
PETER ANDREW GARLAND
Commission No. 583147
Commission Expires
JUNE 20, 2014
STATE OF UTAH

TRANSFER CERTIFICATE OF TITLE

Cert. No. 20152
Docu. No. 95181

From TRANSFER Certificate No. 18045 Originally Registered

September 22, 1997 in Registration Book 95 Page 23

for the Registry District of Nantucket County.

THIS IS TO CERTIFY that ARTHUR B. PAGE, TRUSTEE of the FIFTY-FIVE POCOMO REALTY TRUST u/d/t dated 11/26/2001 and registered as document # 95180, of P.O. Box 1022, Marlborough in the County of Middlesex and Commonwealth of Massachusetts 01752

is the owner in fee simple

of that land situated in NANTUCKET

in the County of Nantucket and Commonwealth of Massachusetts, bounded and described as follows:

Lot 8 on plan 20689-F, drawn by Nantucket Surveyors, Inc., Surveyors, dated April 7, 1994, filed with Certificate of Title No. 13,604 at the Registry District of Nantucket County.

So much of the land hereby registered as is included within the limits of Pocomo Road, shown on said plan, is subject to the rights of the public in and over the same.

So much of the land hereby registered as is included within the limits of said Proprietors Road is subject to the rights of all persons lawfully entitled thereto in and over the same.

And it is further certified that said land is under the operation and provisions of Chapter 185 of the General Laws, and that the title of said ARTHUR B. PAGE, TRUSTEE of the FIFTY-FIVE POCOMO REALTY TRUST

to said land is registered under said chapter, subject, however, to any of the encumbrances mentioned in section forty-six of said chapter, which may be subsisting and subject as aforesaid; and to the memoranda of encumbrances for this certificate; and to any and all public rights legally existing in and over the same below mean high water mark.

WITNESS, PETER W. KILBORN, Esquire, Chief Justice of the Land Court, at Nantucket, in said County of Nantucket.

The eighteenth day of December in the year two thousand and one at 9 o'clock and 5 minutes in the forenoon.

Attest, with the seal of said court,

Joanne L. Kelley
Joanne L. Kelley, Assistant Recorder

Case # 20689

Purported Address of Property:
55 POCOMO ROAD
CERTIFICATE OF TITLE NO. 20152

FORM E

Bk 71
Pg 55

Transfer Certificate of Title.

No.13,605

From Transfer Certificate No. 8863, Originally Registered September 6, 19 79, in Registration Book 46 Page 43 for the Registry District of Nantucket County.

This is to Certify that ROBERT S. SHAPIRO and LOIS K. SHAPIRO Trustees of POCOMO REALTY TRUST III u/d/t dated April 19, 1988 and registered as Document No. 43509 at the Registry District of Nantucket County, of 50 Century Lane, Watchung in the State of New Jersey 07060 are the owners in fee simple of that certain parcel of land situate in Nantucket, in the County of Nantucket and Commonwealth of Massachusetts, bounded and described as follows:

SOUTHERLY by Proprietors Road, three hundred ten (310.00) feet;

WESTERLY by Proprietors Road, measuring on the upland, about five hundred forty-seven (547.±) feet;

NORTHERLY by Nantucket Harbor; and

EASTERLY by Lot 2 on plan hereinafter mentioned, measuring on the upland, about five hundred seventy-eight (578.±) feet.

All of said boundaries, except the water lines, are determined by the Court to be located as shown upon plan numbered 20689-C, drawn by Josiah S. Barrett, Engineer, dated April 8, 1963, and filed with Certificate of Title No. 4792 at the Registry District of Nantucket County. Said land is shown thereon as Lot 1.

So much of said premises as is included within the limits of Pocomo Road is subject to the rights of the public in and over the same.

And it is further certified that said land is under the operation and provisions of Chapter 185 of the General Laws, and that the title of said ROBERT S. SHAPIRO and LOIS K. SHAPIRO Trustees as aforesaid to said land is registered under said Chapter, subject, however, to any of the encumbrances mentioned in Section forty-six of said Chapter, which may be subsisting, and subject also to as aforesaid; and to any and all public rights legally existing in and over the same below mean high water mark.

WITNESS, MARILYN M. SULLIVAN, Esquire, Judge of the Land Court, at Nantucket in the County of Nantucket the twentieth day of April in the year nineteen hundred and eighty-eight at four o'clock and three minutes in the afternoon.

Attest, with the Seal of said Court,

Land Court Case No. 20689
Document No. 43508

Sandra M. Chadwick
Assistant Recorder.

FORM E

Book 87
Page 198

Transfer Certificate of Title.

No. 16,315

From Transfer Certificate No. 13,604, Originally Registered April 20th, 19 88, in Registration Book 71 Page 54 for the Registry District of Nantucket County.

This is to Certify that ROBERT S. SHAPIRO and LOIS K. SHAPIRO Trustees of POCOMO REALTY TRUST III u/d/t dated April 19, 1988, registered as Document No. 43509 at the Registry District of Nantucket County, of 50 Century Lane, Watchung in the State of New Jersey 07060,

are the owners in fee simple

of that certain parcel of land situate in Nantucket, of Massachusetts, in the County of Nantucket and Commonwealth, bounded and described as follows:

Lot 9 as shown upon plan numbered 20689-F, drawn by Nantucket Surveyors, Inc., Surveyors, dated April 7, 1994, and filed with Certificate of Title No. 13,604 at the Registry District of Nantucket County.

So much of the land hereby registered as is included within the limits of Pocomo road, shown on said plan, is subject to the rights of the public in and over the same.

So much of the land hereby registered as is included within the limits of said Proprietors Road is subject to the rights of all persons lawfully entitled thereto in and over the same.

And it is further certified that said land is under the operation and provisions of Chapter 185 of the General Laws, and that the title of said ROBERT S. SHAPIRO and LOIS K. SHAPIRO Trustees as aforesaid to said land is registered under said Chapter, subject, however, to any of the encumbrances mentioned in Section forty-six of said Chapter, which may be subsisting, and subject also as aforesaid; and to any and all public rights legally existing in and over the same below mean high water mark.

WITNESS, ROBERT V. CAUCHON, Esquire, Judge of the Land Court, at Nantucket in the County of Nantucket the twenty-fourth day of May in the year nineteen hundred and ninety-four at two o'clock and twenty minutes in the after noon.

Attest, with the Seal of said Court,

Land Court Case No. 20689
Document No. 64831

Sandra M. Chadwick
Assistant Recorder.

TRANSFER CERTIFICATE OF TITLE

Cert. No. 19629
Docu. No. 90418

From TRANSFER Certificate No. 19346 Originally Registered

February 23, 2000

for the Registry District of Nantucket County.

THIS IS TO CERTIFY that POCOMO, LLC of 550 PARK AVENUE, NEW YORK IN THE STATE OF NEW YORK 10021

is the owner in fee simple

of that land situated in NANTUCKET

in the County of Nantucket and Commonwealth of Massachusetts, bounded and described as follows:

Lot 43 as shown on plan numbered 22667-M, drawn by Schofield Brothers Inc., Surveyors, dated July 14, 1971, filed with Certificate of Title No. 6515 at the Registry District of Nantucket County.

So much of the land hereby registered as is included within the limits of all Proprietors' Roads not marked public on said plan is subject to the rights of all persons lawfully entitled thereto in and over the same.

So much of said Lot 15A as is included within the limits of Pocomo Road shown on said plan, is subject to the rights of the public in and over the same.

And it is further certified that said land is under the operation and provisions of Chapter 185 of the General Laws, and that the title of said POCOMO, LLC

to said land is registered under said chapter, subject, however, to any of the encumbrances mentioned in section forty-six of said chapter, which may be subsisting and subject as aforesaid; and to the memoranda of encumbrances for this certificate and subject to the memoranda of encumbrances for this certificate and to any and all public rights legally existing in and over the same below mean high water mark.

WITNESS, PETER W. KILBORN, Esquire, Chief Justice of the Land Court, at Nantucket, in said County of Nantucket.

The twenty-second day of September in the year two thousand at 1 o'clock and 30 minutes in the afternoon.

Attest, with the seal of said court,

Joanne L. Kelley
Joanne L. Kelley, Assistant Recorder

Case # 22667

Purported Address of Property:
61 POCOMO RD
CERTIFICATE 19629

TRANSFER CERTIFICATE OF TITLE

Cert. No. 19639
Docu. No. 90488

From TRANSFER Certificate No. 6515 Originally Registered

April 26, 1972 in Registration Book 33 Page 115

for the Registry District of Nantucket County.

THIS IS TO CERTIFY that PETER BARRETT and MARY V. BARRETT of 84 LORDS HIGHWAY, EAST, WESTON IN THE STATE OF CONNECTICUT 06883

are the owner(s) in fee simple as joint tenants with rights of survivorship

of that land situated in NANTUCKET

In the County of Nantucket and Commonwealth of Massachusetts, bounded and described as follows:

NORTHERLY	by Nantucket Harbor;
EASTERLY	by Lot 43 on plan hereinafter mentioned, about three hundred twenty-six (326.+-) feet;
NORTHERLY	by said Lot 43, two hundred (200.00) feet;
EASTERLY	by Proprietors Road, twenty (20.00) feet;
SOUTHERLY	by Lots 41 and 42 on said plan, three hundred (300.00) feet; and
WESTERLY	by Lot 39 as shown on said plan, about three hundred fifty-four (354.+-) feet.

All of said boundaries, except the water line, are determined by the Court to be located as shown upon plan numbered 22667-M, drawn by Schofield Brothers, Inc., Surveyors, dated July 14, 1971, and filed with Certificate of Title No. 6515 at the Registry District of Nantucket County. Said land is shown thereon as Lot 44.

So much of the land hereby registered as is included within the limits of all Proprietors' Roads not marked public on said plan is subject to the rights of all persons lawfully entitled thereto in and over the same.

Said Lot 44 is restricted for the benefit of other property of the Grantors, to single-family residential usage and shall not be further subdivided.

Said Lot 44 is subject to a ten (10) foot wide easement way over its westerly border to Nantucket Harbor in favor of Lots 41 and 42 on said plan together with the reserved rights appurtenant to Lots 41 and 42 to use the beach front of Lot 44 for the purposes of bathing and boating.

And it is further certified that said land is under the operation and provisions of Chapter 185 of the General Laws, and that the title of said PETER BARRETT and MARY V. BARRETT

to said land is registered under said chapter, subject, however, to any of the encumbrances mentioned in section forty-six of said chapter, which may be subsisting and subject as aforesaid; and to the memoranda of encumbrances for this certificate and to any and all public rights legally existing in and over the same below mean high water mark.

WITNESS, PETER W. KILBORN, Esquire, Chief Justice of the Land Court, at Nantucket, in said County of Nantucket.

Transfer Certificate of Title

Cert No:22595
Doc No:120206

From Transfer
Certificate No. 13939 Originally Registered January 10, 1989

the Registry District of Nantucket County

This is to Certify that

MARTIN WAYNE and SUSAN WAYNE

of 440 Harris Road, Bedford Hills in the State of New York 10507, are the owners in fee simple, as tenants by the entirety of that land situated in Nantucket, in the County of Nantucket and Commonwealth of Massachusetts, bounded and described as follows:

NORTHERLY	by Nantucket Harbor;
EASTERLY	by Lot 36 on L.C. Plan 22667-J, about five hundred ninety-nine (599±) feet;
SOUTHERLY	by Lot 40 as shown on plan hereinafter mentioned, three hundred ninety-four and 51/100 (394.51) feet;
WESTERLY	by Proprietors' Road, sixty and 29/100 (60.29) feet;
NORTHERLY	by Lot 37 on L.C. Plan 22667-K, one hundred fifty (150.00) feet;
WESTERLY	by said Lot 37, two hundred forty (240.00) feet;
NORTHERLY	by said Lot 37, fifty (50.00) feet; and
WESTERLY	by said Lot 37, about two hundred ninety (290±) feet.

All of said boundaries, except the water lines, are determined by the Court to be located as shown upon plan numbered 22667-L, drawn by Schofield Brothers, Inc., Surveyors, dated June 17, 1969, and filed with Certificate of Title No. 5924 at the Registry District of Nantucket County. Said land is shown thereon as Lot 39.

So much of the land hereby registered as is included within the limits of all Proprietors' Roads not marked public on said plan is subject to the rights of all persons lawfully entitled thereto in and over the same.

So much of said Lot 39 as is included within the limits of Pocomo Road, as shown on said plan, is subject to the rights of the public in and over the same.

Said Lot 39 is subject to the restriction that no building or structure will be built or maintained on Lot 39 northerly of a line running easterly across Lot 39 from the bound at the southeast corner of the 50.00 foot jog as appearing on said plan and on the same course.

And it is further certified that said land is under the operation and provisions of Chapter 185 of the General Laws, and that the title of said

MARTIN WAYNE and SUSAN WAYNE

to said land is registered under said Chapter subject, however, to any of the encumbrances mentioned in section forty-six of said chapter, which may be subsisting, and subject also as aforesaid; and to any and all public rights legally existing in and over the same below mean high water mark.

Witness **KARYN F. SCHEIER**, Esquire, Chief Justice of the Land Court, at Nantucket in said County of

Nantucket the first day of May in the year two thousand and seven

at two o'clock and no minutes in the afternoon.

Attest , with the Seal of said Court, Jennifer H. Ferreira

Jennifer H. Ferreira, Assistant Recorder

Transfer Certificate of Title

Cert No:22603
Doc No:120359

From Transfer
Certificate No. 21978 Originally Registered October 17, 2005

the Registry District of Nantucket County

This is to Certify that

KENNETH G. BARTELS, Trustee of 69 POCOMO NOMINEE TRUST u/d/t dated May 15, 2007, and registered as Document No. 120358 at the Registry District of Nantucket County

of 38 Close Road, Greenwich in the State of Connecticut, 06831 is the owner in fee simple, of that land situated in Nantucket, in the County of Nantucket and Commonwealth of Massachusetts, bounded and described as follows:

NORTHERLY	by Nantucket Harbor;
EASTERLY	by Lot 38 on plan hereinafter mentioned, about two hundred ninety (290.+-) feet;
SOUTHERLY	by said Lot 38, fifty (50.00) feet;
EASTERLY	by said Lot 38, two hundred forty (240.00) feet;
SOUTHERLY	by the line of Pocomo Road, one hundred fifty (150.00) feet; and
WESTERLY	by a Proprietors Road, about five hundred forty-one (541.+-) feet.

All of said boundaries, except the water lines, are determined by the Court to be located as shown upon plan numbered 22667-K, drawn by Schofield Brothers, Inc., Registered Land Surveyors, dated November 20, 1967, and filed with Certificate of Title No. 5476 at the Registry District of Nantucket County. Said land is shown thereon as Lot 37.

Said property is subject to the restriction that no dwelling or other structure shall be constructed within thirty (30) feet of the easterly boundary of Lot 37, or within sixty-two (62) feet of the top of the bank as presently existing on said plan.

So much of the land hereby registered as is included within the limits of all Proprietors Roads not marked public on said plan is subject to the rights of all persons lawfully entitled thereto in and over the same.

So much of Lot 37 as is included within the limits of Pocomo Road, as shown on said plan, is subject to the rights of the public in and over the same.

And it is further certified that said land is under the operation and provisions of Chapter 185 of the General Laws, and that the title of said

KENNETH G. BARTELS, Trustee of 69 POCOMO NOMINEE TRUST

to said land is registered under said Chapter subject, however, to any of the encumbrances mentioned in section forty-six of said chapter, which may be subsisting, and subject also as aforesaid; and to any and all public rights legally existing in and over the same below mean high water mark.

Witness **KARYN F. SCHEIER**, Esquire, Chief Justice of the Land Court, at Nantucket in said County of

Nantucket the fifteenth day of May in the year two thousand and seven

at one o'clock and thirty-seven minutes in the afternoon.

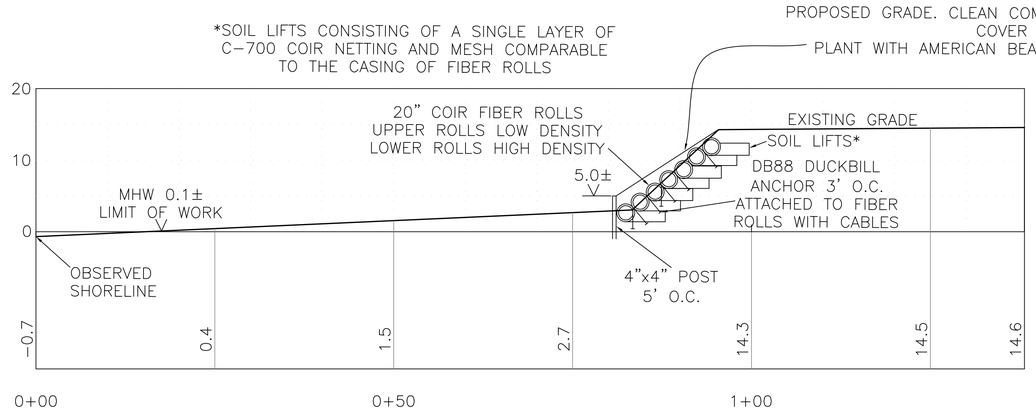
Attest, with the Seal of said Court, Jennifer H. Ferreira
Jennifer H. Ferreira, Assistant Recorder

Purported Property Address: 69 Pocomo Road

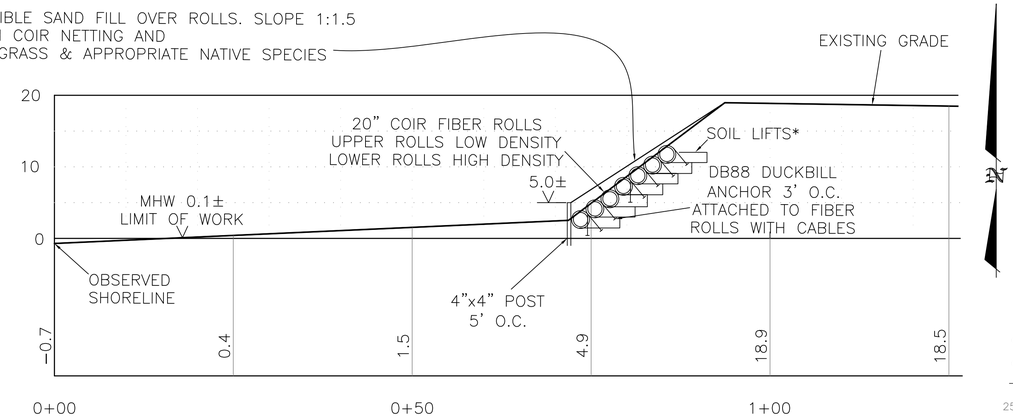
Land Court Case No. 22667

CERTIFICATE OF TITLE NO. **22603**

Project Plans

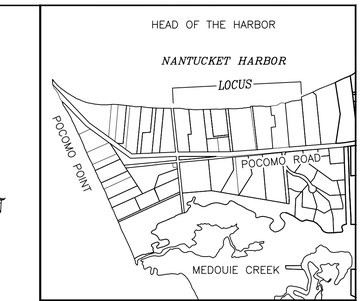


TRANSECT 1 PROFILE 1"=10'



TRANSECT 2 PROFILE 1"=10'

NANTUCKET HARBOR

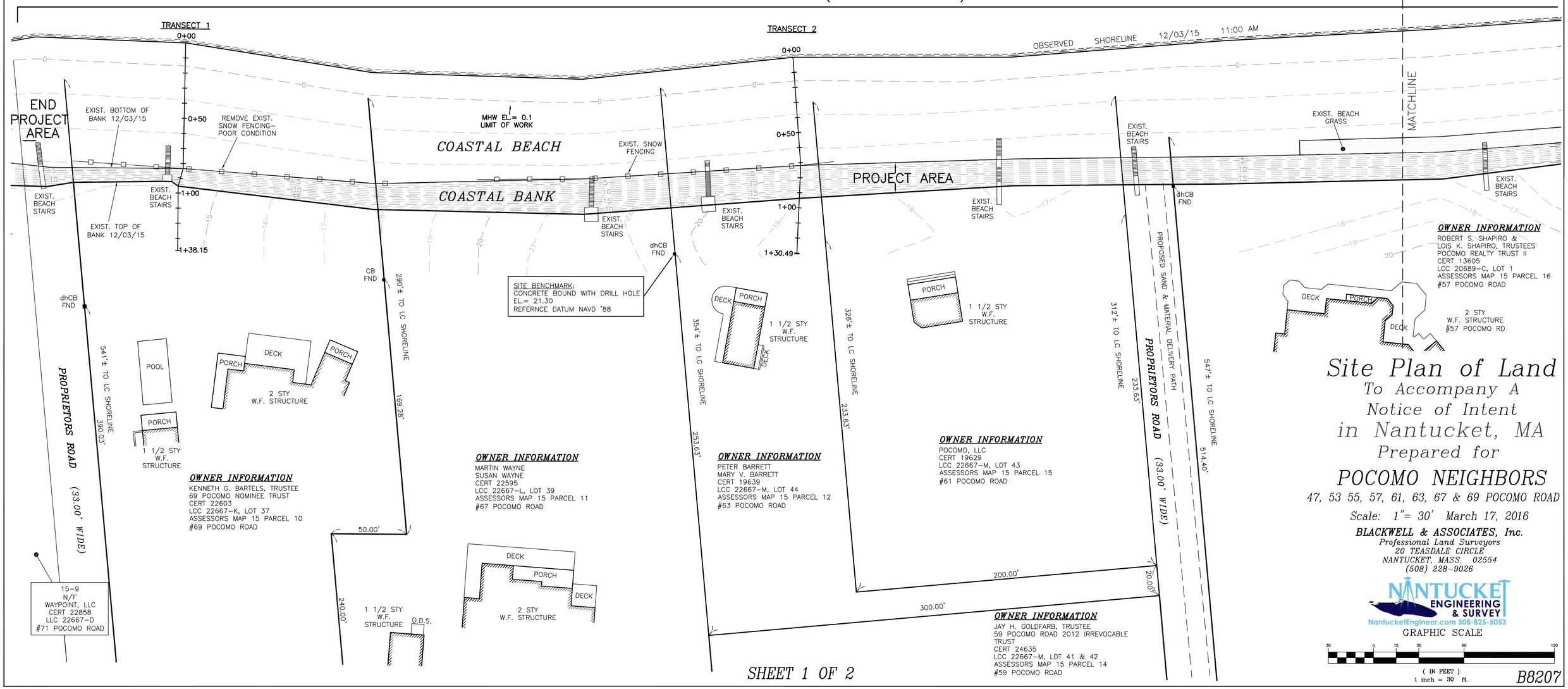


LOCUS MAP SCALE: 1"= 960' ±

LEGEND

- dhCB ■ DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
- dhCB ⊡ DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
- DENOTES EXIST. WOOD w/WIRE FARM FENCE
- 25 DENOTES EXIST. GRADE CONTOUR
- x24.3 DENOTES EXIST. GRADE SPOT ELEVATION

PROJECT LENGTH 1775'± (ALONG BANK FACE)



Site Plan of Land

To Accompany A Notice of Intent in Nantucket, MA

Prepared for

POCOMO NEIGHBORS

47, 53 55, 57, 61, 63, 67 & 69 POCOMO ROAD

Scale: 1"= 30' March 17, 2016

BLACKWELL & ASSOCIATES, Inc.
Professional Land Surveyors
20 TEASDALE CIRCLE
NANTUCKET, MASS. 02554
(508) 228-9026

NANTUCKET ENGINEERING & SURVEY
NantucketEngineer.com 508-825-5053

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

SHEET 1 OF 2

B8207

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR AND EQUIPMENT TO PERFORM THE WORK DESCRIBED ON THESE PLANS, AND AS APPROVED BY THE NANTUCKET CONSERVATION COMMISSION.

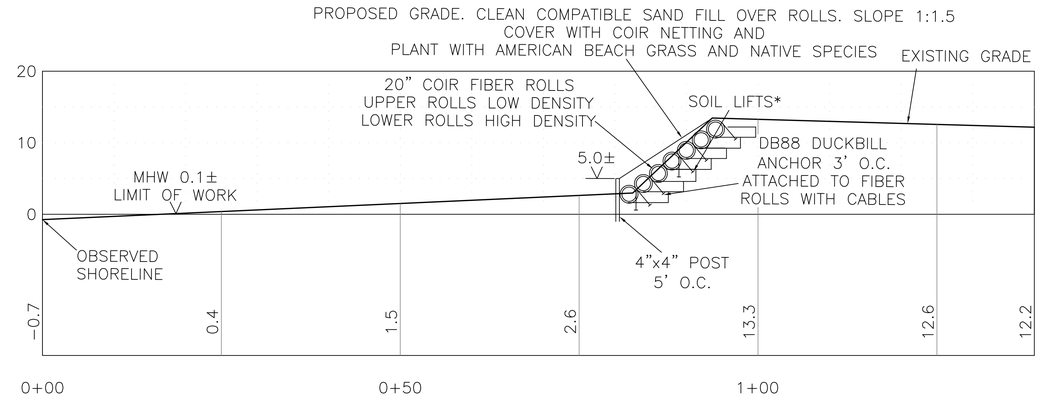
2. WORK SHALL BE IN COMPLIANCE WITH THE PLANS, SPECIFICATION AND THE ORDER OF CONDITIONS ISSUED BY THE NANTUCKET CONSERVATION COMMISSION.

3. THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION ON-SITE MEETING WHICH WILL BE ATTENDED BY THE ENGINEER, WITH NOTIFICATION TO A REPRESENTATIVE OF THE NANTUCKET CONSERVATION COMMISSION. THE CONTRACTOR WILL PRESENT THE PROPOSED METHODS AND MEANS TO CONSTRUCT THE PROPOSED IMPROVEMENTS.

4. THE CONTRACTOR SHALL NOT VARY FROM THE PLANS, SPECIFICATION, ORDER OF CONDITIONS OR INSTRUCTIONS PROVIDED AT THE PRE-CONSTRUCTION MEETING, WITHOUT FIRST OBTAINING APPROVAL OF THE CONSERVATION COMMISSION REPRESENTATIVE AND THE ENGINEER.

5. ONLY CLEAN COMPATIBLE FILL SHALL BE USED FOR FILL AND COVER FOR THIS PROJEFCT. THE CONTRACTOR AGREES TO OBTAIN SEDIMENT GRAIN SIZE DISTRIBUTION ANALYSIS, FROM A QUALIFIED LABORATORY, IF REQUESTED BY THE CONSERVATION COMMISSION REPRESENTATIVE.

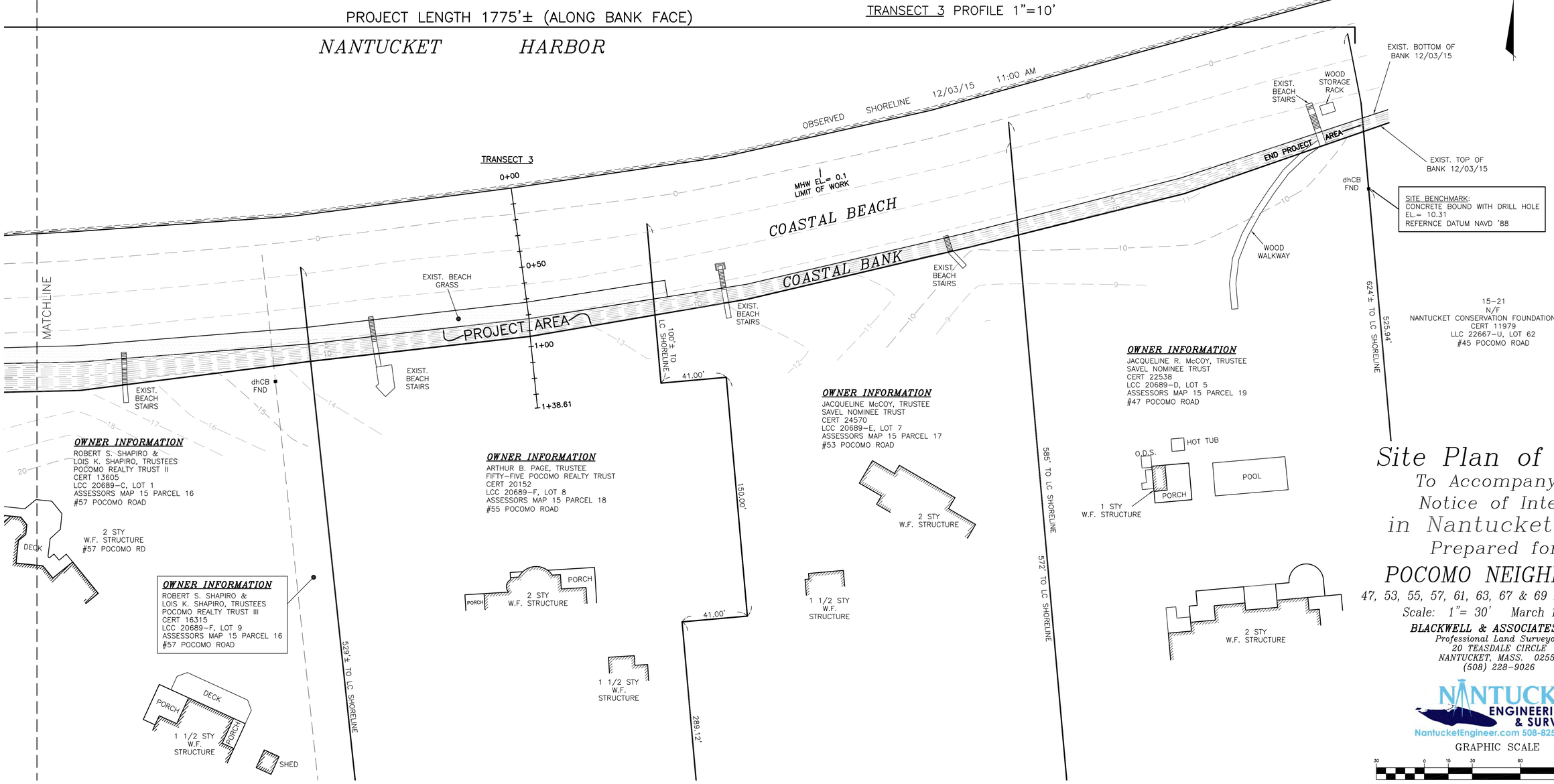
6. UPON COMPLETION OF RESTORATION, AND PRIOR TO DEMOBILIZATION OF EQUIPMENT, THE CONTRACTOR SHALL ARRANGE FOR A POST-CONSTRUCTION MEETING WITH THE ENGINEER. SHORT COMINGS AND DEFICIENCIES WILL BE OUTLINED TO THE CONTRACTOR AT THIS MEETING, THAT MUST BE CORRECTED PRIOR TO DEMOBILIZATION AND FINAL PAYMENTS FOR THE WORK.



TRANSECT 3 PROFILE 1"=10'

LEGEND

dhCB ■	DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
dhCB ⊡	DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
—□—□—	DENOTES EXIST. WOOD w/WIRE FARM FENCE
25 — — —	DENOTES EXIST. GRADE CONTOUR
x24.3	DENOTES EXIST. GRADE SPOT ELEVATION



Site Plan of Land

To Accompany A
Notice of Intent
in Nantucket, MA
Prepared for

POCOMO NEIGHBORS

47, 53, 55, 57, 61, 63, 67 & 69 POCOMO ROAD

Scale: 1"= 30' March 17, 2016

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NANTUCKET ENGINEERING & SURVEY
NantucketEngineer.com 508-825-5053

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

B8207

Waiver Request,
Impact Analysis of Protected Interests
&
Alternatives Analysis

March 15, 2016

Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

RE: Waiver Request

Dear Commission Members,

The purpose of this letter is to request and justify a waiver from Section 2.05.B.3 of Wetland Protection Regulations for administering the Town of Nantucket Wetlands By-law Chapter 136, which reads:

> 2.05.B.3: *All projects shall be restricted to activity as determined by the Commission to have no adverse effect on bank height, bank stability, wildlife habitat, vegetation, wetland scenic view, or the use of a bank as a sediment source.*

The request is to allow the placement of anchored fiber rolls with reinforced sand lifts and sand fill within a Coastal Bank Resource Area. The bank face will then be planted with American Beach Grass at eighteen inches on center.

The commission may grant a waiver from these regulations when the commission finds that a project will provide long-term net benefit/improvement to the resource area, provided any adverse effects are minimized by carefully considered conditions. However, no such project may be permitted which could have adverse effect on rare wildlife species. All proposed work is also being submitted to MA NHESP for review per the Mass. Endangered Species Act and will comply with their suggestions so there will be no adverse effects to rare or endangered species. Waivers from the By-law can be granted for a number of reasons including:

Chapter 1.03 F.3.a. (No Reasonable Alternative with No Adverse Impact) & **Chapter 1.03 F.3.d. (Long-term net benefit/improvement)** The proposed work in the Buffer Zone will improve the resource area without any adverse impact to the interests of the resource area protected by the Commission including storm damage prevention, erosion and flood control, serve as a sediment source for beach and inter-tidal areas, provide

wildlife habitat, and serve to provide important wetland scenic views and recreation. The fence and plantings will improve the existing bare bank by meeting the interest described in the Regulations, Section 2.05.A.1 – "Vegetation tends to stabilize a coastal bank and reduce the rate of erosion due to wind and rain runoff. Vegetated banks are critical to reducing wind and rain erosion and for providing important habitat and biodiversity."

We therefore request that the Commission grant a waiver under Sections 1.03 F.3.a & 1.03 F.3.d because there are no reasonable alternatives that would allow the project to proceed in compliance with the Regulations. As described in the cover letter included with the Notice of Intent, the supporting documents and presented to the Commission, the project will have no adverse effect on the protected interests, and will result in a long-term net benefit and improvement to the resource areas.

I plan to attend the Public Hearing on this matter to address any questions or concerns.

Sincerely,

Arthur D. Gasbarro, PE, PLS, LEED AP

Impact Analysis of Protected Interests of Coastal Bank and Coastal Beach Resource Areas

Bank Height – The project will have no adverse effect or impact on the height of the bank, which is not expected to change.

Bank Stability – The project will have no adverse effect or impact on the stability of the bank. Instead, the purpose of the project is to increase the stability of the bank.

Wildlife Habitat – The project will have no adverse effect or impact on wildlife through the utilization of protective measures such as monitoring for wildlife activity. The stabilized and vegetated bank will provide improved wildlife habitat.

Vegetation – The project will have no adverse effect or impact on vegetation on the bank. Instead, the purpose of the project is to stabilize the bank, protecting existing vegetation and supplementing with additional plantings along the restored portions of the bank.

Use of the Bank as a Sediment Source – The project will alter the rate at which sediment is available without an adverse effect or impact by supplying additional sediment for the beach from the sacrificial cover over the fiber rolls. Frequent monitoring to add cover when needed, along with biannual inspection and reporting to the Commission will ensure no adverse effect.

Wetland Scenic Views – The project will have no adverse effect or impact on the wetland scenic views because views will not be altered.

Public or Private Water Supply – The project will not interfere with water supplies in any way, and therefore have no impact on public or private water supplies.

Groundwater – The project will have no impact to groundwater. No dewatering or handling of water is proposed as part of this project.

Flood Control – The project will improve flood control by reducing wave energy through absorption, and providing sacrificial nourishment as a buffer, with no adverse impact on flood control.

Erosion Control – The project will have no adverse impact on erosion control and will improve conditions by supplying additional sediment for the beach from the sacrificial layer.

Storm Damage Prevention – The project will have no adverse impact to storm damage prevention. The project will stabilize the existing Coastal Bank and provide a sacrificial cover layer that will reduce wave energy.

20 Mary Ann Drive • Nantucket, MA 02554
508-825-5053 • www.NantucketEngineer.com

Water Pollution – The project will not cause water pollution. The property use remains the same and the project will not result in pollution of surface water or groundwater.

Fisheries – The project will have no adverse impact on fisheries because no work is proposed below the mean high water line.

Shellfish – The project will have no adverse impact on shellfish because no work is proposed below the mean high water line.

Rare species, including rare, threatened or endangered plant species and animals and habitats – The project will have no adverse impact on rare species as the work will adhere to conditions provided by NHESP.

Recreation – The project will have no adverse impact on recreation because the use of the property is not changing. Access across the beach will be maintained at all times during construction.

Alternatives Analysis

No Action – The Coastal Bank will continue to be damaged by storm-related erosion if no action is taken. This alternative would not achieve the goal of the proposed project.

Sand Drift Fence with Nourishment – This option allows for the rapid transport of unconsolidated nourishment material, and does not provide adequate protection for the property and staircase structures on the properties. This alternative would not achieve the goal of the proposed project.

Anchored Coir Fiber Rolls with Reinforced Sand Lifts and Cover Nourishment *(Most Favorable Alternative)* – This option is the most preferable alternative to achieve the goal of the proposed project and is detailed in the submitted documents. This alternative will require considerable maintenance effort as is described in this NOI.

Geotextile Fabric Tubes – This option would provide good resistance to wave damage however there are concerns with wave refraction impacts on the beach and considerable on-going maintenance costs. This option is also susceptible to damage from vandalism, debris, and UV degradation.

Stone Gabions – This option would provide good resistance to wave damage. However, there are concerns with wave refraction and wave energy impacts on adjacent areas, as well as past unfavorable action by the Commission. Disposal of materials could be a concern if removal was required in the future.

Marine Mattresses – This option would provide good resistance to wave damage. However, this option is considered to be hard, not friendly to the natural habitat creation, uncharacteristic

with the greater Nantucket inner harbor setting and will result in wave refraction impacts. Other concerns about this option include some on-going maintenance costs and past unfavorable action by the Commission.

Stone Revetment – This option provides a high level of protection but is dismissed due to concern for wave refraction impacts, alteration of natural habitat and uncharacteristic with the natural shoreline of Nantucket Harbor, and past unfavorable action by the Commission.

Wooden Bulkhead – This option provides a high level of protection but is dismissed due to concern for wave refraction impacts and past unfavorable action by the Commission.

Site Assessment Report

By

Woods Hole Group

Lee Weishar, Ph.D.

WHG Project # 2015-0168

March 18, 2016

Mr. Ernest Steinauer, Chairman
c/o Mr. Jeff Carlson
Natural Resource Coordinator
2 Bathing Beach Road
Nantucket, MA 02554

Transmitted via electronic mail: jcarlson@nantucket-ma.gov

Re: Site Assessment at 47, 53, 55, 57, 61, 63, 67, & 69 Pocomo Road, Nantucket, MA

Dear Mr. Steinauer:

The Woods Hole Group was asked to perform a site assessment and make recommendations on the most appropriate method to stabilize the coastal bank located at 47, 53, 55, 57, 61, 63, 67, & 69 Pocomo Road, on Nantucket. The purpose of the assessment was to examine the conditions on the beach, quantify the coastal processes at the site, determine the rate of change on the coastal beach and coastal bank, and to assess the impacts of sea level rise on the project. The results of my assessment are described in the following paragraphs.

The following letter presents the winds, water levels, and shoreline change at the property, makes recommendations on the best method to protect the coastal bank, and discusses if the project provides adequate sediment to replace sediment that would have been provided by erosion of the coastal bank. Additionally, the letter explains how this project is permittable under both the Massachusetts Wetland Protection Act and the Nantucket Wetlands Bylaws.

Project Setting

The proposed project is located within Nantucket Harbor on a north facing shoreline (Figures 1 & 2). The shoreline is generally oriented in the east-west (Figure 2). The coastal beach is protected from waves generated in Nantucket Sound by the barrier beach that encloses Nantucket Harbor, known as Coatue. The beach is oriented predominately to the east and west, however, there is a slight arcuate shape to the beach. The two apexes of the beach are located at the east and west ends while the middle of the project is slightly curved to the south (Figure 2).

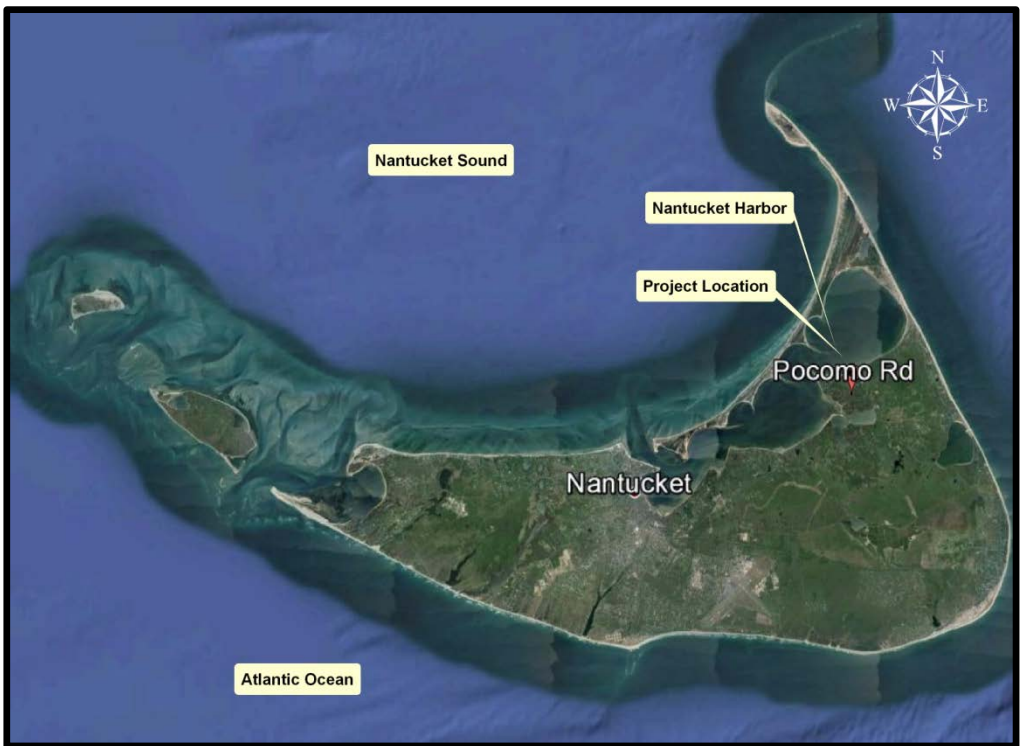

Figure 1. Project location within Nantucket Harbor.

Figure 2. This figure shows the project location, shoreline orientation and fetch lengths in the project boundaries.

The coastal resources located on the beach front are land subject to coastal storm flowage, land under the ocean, coastal beach, and coastal bank. At the time of the writing of this letter report there was no coastal dune present on the property. The proposed project will provide stabilization to the toe of the coastal bank for eight (8) properties and encompasses approximately 1,800 ft of shoreline.

The average width of the beach varies as you move through the project area. The average width of the beach from Mean Low Water to base of the coastal bank is approximately 80 ft while the average width of the high tide beach measured from the Mean Tide Level to the toe of the coastal bank is approximately 30 ft wide. The height of the coastal bank (measured from the toe of the bank to the crest) above the beach varies along the project length from a high of about 18 ft to a low of approximately 6 ft.

Because the beach is isolated from Nantucket Sound by the Coatue barrier beach the beach is exposed only to waves that are locally generated within Nantucket Harbor. The fetch lengths (the continuous distance over water that the wind can blow) for the project area are shown in Figure 2. The fetch lengths are 1.0, 2.1, and 1.9 miles from the northwest, north, and northeast respectively as shown in Figure 2. The relatively short fetch lengths will generate fetch-limited waves that in combination with storm surge will erode and destabilize the face of the coastal bank.

Site Visit

A site visit was performed on January 13, 2016. During the site visit, I had the opportunity to observe the project site, the costal beach, and coastal bank. The project encompasses approximately 1,800 ft of beach within Nantucket Harbor. The beach is generally oriented from the east to the west and is slightly arcuate. The width of the low tide beach varies as you travel from the east to the west. In general, the widest low tide beaches are located at the eastern and western ends of the project (approximately 80 ft in width). The narrowest beaches are located in the center of the project area which is in the center of the arc. The high tide beach is relatively narrow and is approximately 30 ft wide in the project area.

I began the site visit by walking the beach from the west to the east. Figure 3 was taken at the western end of the project and is looking to the east and shows the eroded coastal bank which is vertical and has a pronounced undercut at the top of the bank. This is clearly seen by the stranded roots hanging down the face of the bank. Figure 3 also shows the remnants of a sand fence. The fence has been destroyed over the years by waves and storm surge from winter and spring storms. Figure 4 also was taken from the western side of the project and is looking to the east. This figure shows an almost continuous line of sand fence that is mostly not functional. The bank is slightly undercut (not as pronounced as shown in Figure 3) and is unstable. The bank is composed of glacial till and while it is mostly sand it does have a large fraction of gravel and some small cobble. Figure 5 is again looking to the east and shows the relatively wide low tide beach that is composed of sand. Figure 6 looking to the east and shows the near vertical bank and the vegetation that has slumped down the face of the bank. Evidence of bank slumping is apparent along the entire bank face throughout the entire project area. This figure also shows the stranded sand fence.

Figure 3. A view looking to the east from the western project terminus.

Figure 4. A view to the east showing the eroded coastal bank and dilapidated sand fence.

Figure 5. A view showing the shallow and flat inter-tidal beach.

Figure 6. A view of the dilapidated sand fence, vegetation slumps on the bank face, and the undercut top of bank.

Figure 7 is a view taken from the eastern boundary of the project looking back to the west. This figure shows that the coastal bank is lower in elevation and is eroding. The vegetation has eroded from the top of the bank and has slumped down the bank face to the toe of the bank. The intertidal beach is wide along this section of beach. However, the high tide beach remains relatively narrow. There are no stranded sand fences or other debris on this section of beach. This figure also shows the arcuate shape of the beach extending to the east.

Figure 7. A view from the western project terminus looking to the east showing the eroded bank and inter-tidal beach.

Figure 8 was taken along the same section of beach looking to the east and shows the relatively wide and flat intertidal beach which is characteristic of the project area.

Storms Impacting Nantucket Harbor's Shoreline

As previously stated, the shoreline is generally oriented in east and west directions. The longest fetches are from the northeast clockwise through the north-northeast (Figure 2). Therefore, storms that generate winds from the northwest through the north-northeast produce waves which will impact the project shoreline.

Anecdotal observations and meteorologists have suggested that there have been more storms over the past several years and the frequency and intensity of these storms will continue to increase over the next several years and into the future. However, we have observed over the years that storm frequency and intensity tends to be cyclic. In order to determine if this was true, we analyzed the number of storms that occurred between 1980 and 2015 during the storm season. We defined the storm season to be between September and May of two successive years.

The 2015 storm season contained storm data only through mid February 2016. Therefore, wind data was parsed between the fall of one year and the spring of the next. The sustained wind data was binned first by direction, then by events that had sustained wind gusts with velocities equal to or greater than 25 miles per hour, and then finally if the event had a duration of 3 hours or greater. This means a storm was accepted for the analysis if it approached the Nantucket Harbor shore, had sustained wind gusts that exceeded 25 mph, and lasted at least 3 hours.

Figure 8. A view of the inter-tidal beach from the west end of the project.

Figure 9 shows the data for sustained winds with sustained gust velocities of 25 knots or greater and a duration of at least 3 hours or longer for the years 1980 through 2015. This figure shows that in general there as a steady increase of storms between 1982 and 1989. There was a decrease in the number of storms that occurred during the period between 1989 and 1993. In general, there is a 2 to 4 year cycle of increasing and decreasing frequency of storms. The last cycle shown on the graph shows a decrease in storm frequency between 2000 and 2001. While the cyclic nature of the storm frequency is clearly shown in Figure 9, the long-term average number of storms has been increasing since 1992[1].

The winds for the January 22-25, 2016 storm are shown in Figure 10. This figure shows the winds beginning out of the northeast early on January 23. The steady wind velocities increase to over 25 knots with sustained wind of over 30 knots with wind gusts over 40 knots. The sustained wind speeds lasting for over 24 hours. The storm surge produced by the January 22-25, 2016 storm is shown in Figure 11. This figure shows that at the height of the storm, the elevation of the storm surge exceeded MHW for four consecutive tidal cycles (Figure 11).

[1] Note that the 2015 data contained wind data only through mid February 2016.

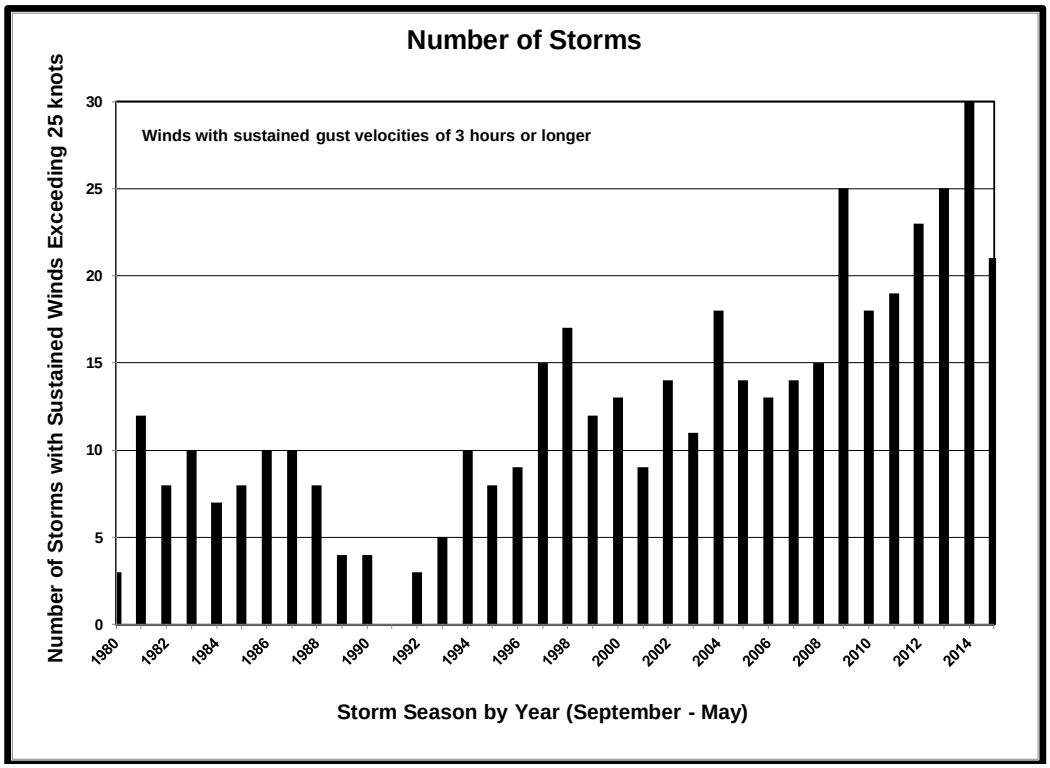

Figure 9. Number of storms occurring for each storm season from 1980 through 2014. The 2015 storm season has data only through February 16, 2016.

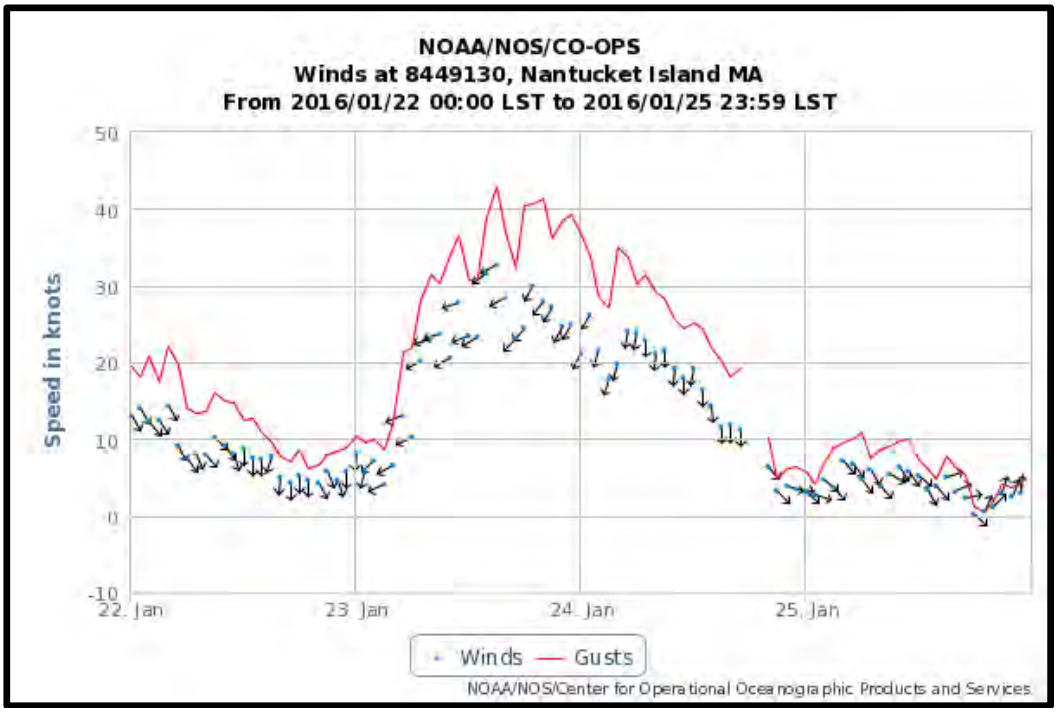

Figure 10. Figure showing a typical storm event that met the threshold criteria with winds out of the north & northeast, velocities greater than 25 knots, and lasing over 3 hours.

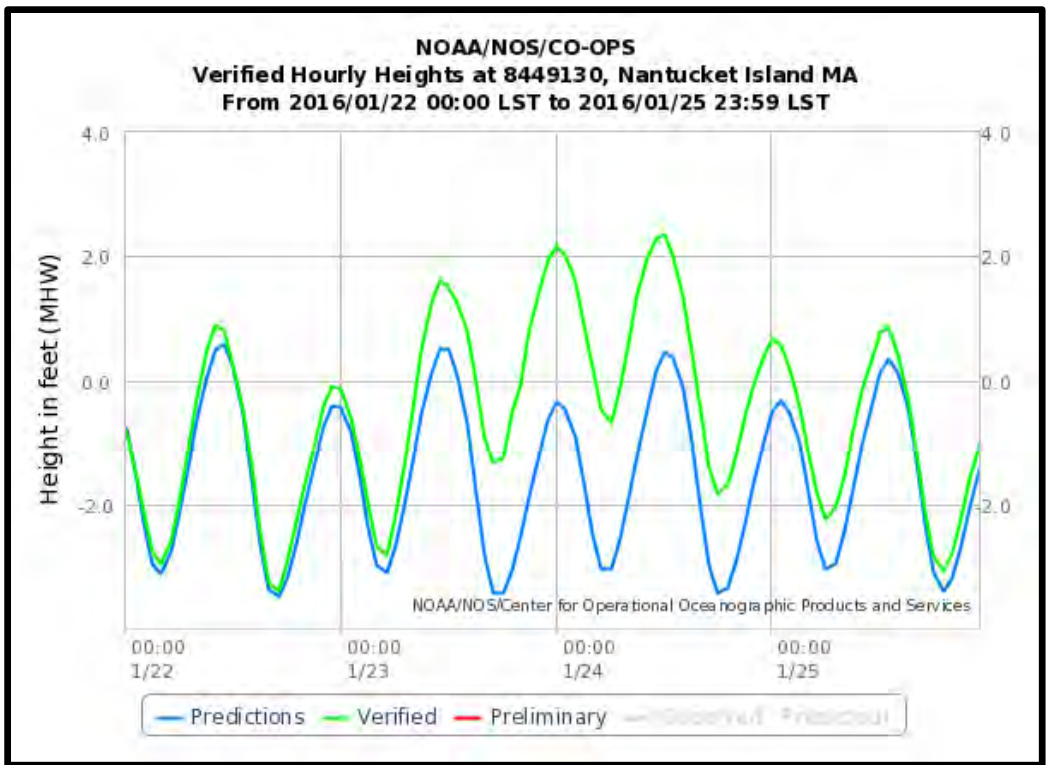

Figure 11. Water levels produced by the January 22, 2016 storm winds shown in Figure 10.

At the height of the storm, the water level was over 2.2 ft above MHW. All the while, the wind and waves were battering the shoreline and the toe of the coastal bank. Figure 12 shows the effect of this storm on the beach and the coastal bank at the site. Figure 21A shows the beach looking to the east along the shoreline and Figure 21B shows looking to the west along the beach. Both Figures show that the storm surge has completely inundated the high tide beach and that the waves and run-up are attacking the toe of the coastal bank.

Another disturbing trend was observed in the wind and wave data. The increase in storms has produced an increase in the number of storm surge events that have impacted the shoreline. While examining the data many smaller storms were noted that did not exceed the threshold criteria but produced water levels that were above MHW for one or more tidal cycles. This means that with the increased frequency of storm events, the toe of the coastal bank is being inundated and attacked on a more frequent basis.

Waves at the Site

Storm surge increases the depth of water in the nearshore and allows waves to break on the beach or directly at the base of the coastal bank. Therefore, an analysis was completed to calculate the maximum wave height that would be produced during a storm. Waves generated offshore can break either offshore in the nearshore zone or on the beach and at the base of the coastal bank. The waves breaking offshore of the beach are important because they are responsible for eroding the beach and transporting sediment downdrift of the breaking waves. The second breaker line will occur high on the beach and at the base of the coastal bank if the storm surge is high enough and will result in erosion of the toe of the bank.

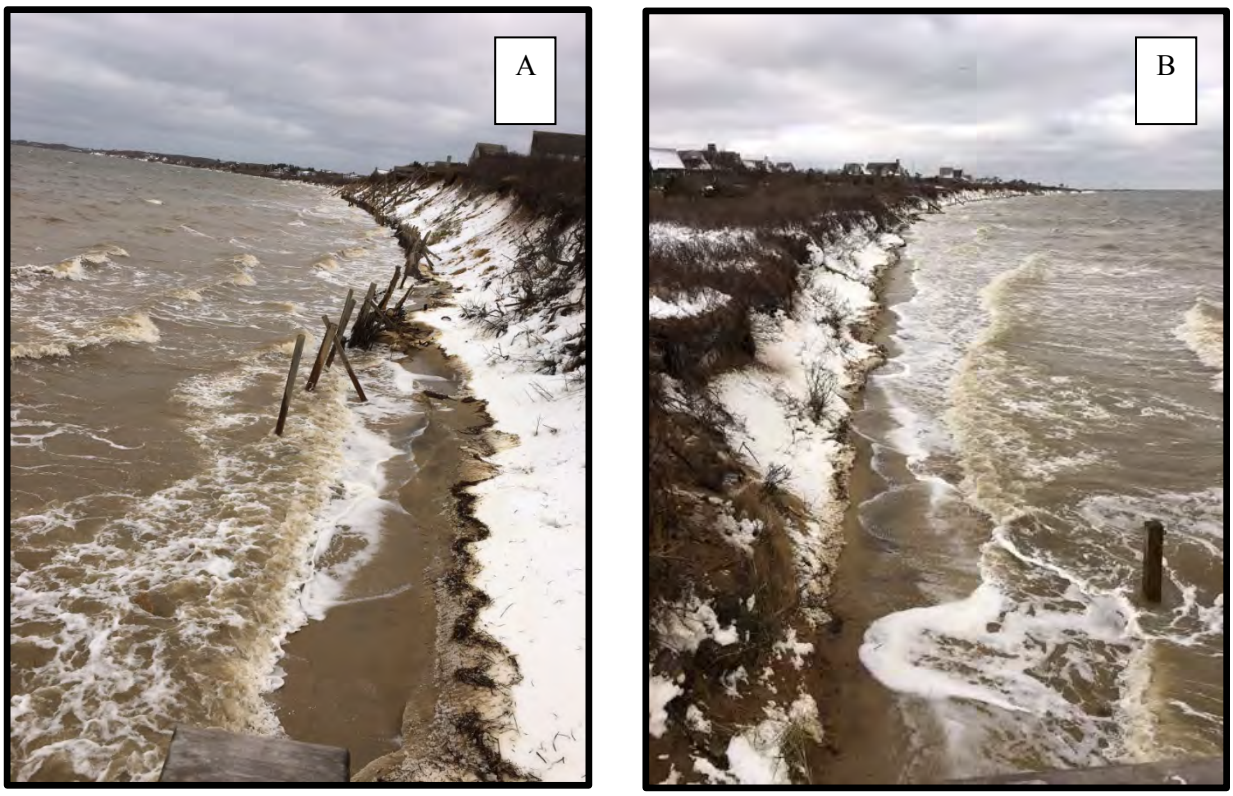

Figure 12. View of the project looking to the east (A) and from the west (B) during the storm shown in Figure 11.

As a result, waves were calculated using two methods. The first method utilized the US Army Corps of Engineers (USACE) Automated Coastal Engineering System (ACES) models. This group of computer programs was developed by the USACE Coastal Engineering Research Center[2] at the Waterways Experiment Station. The second technique used linear wave theory to calculate the maximum wave height that can be supported for a given water depth on the beach.

The ACES analysis calculates the maximum wave height that can be generated in Nantucket Harbor for a given wind speed and direction. A general storm (average) storm condition was synthesized using a wind speed of 40 miles per hour was used with a duration of 4 hours. We also ran the computer model for two storms conditions that occurred on Nantucket. The first was Nemo, a nor'easter that occurred on January 26, 2015 and the second unnamed nor'easter that occurred on January 22, 2016. Table 1 shows the results obtained from the ACES wave model for wind directions from the northwest clockwise through the north-northeast for these storms. These are the maximum wave heights that will be generated offshore of the beach during these storms. A larger storm will increase the water level, last longer, and will produce larger waves. Table 1 also shows the waves generated for the conditions shown in Figure 10 and 13A.

[2] Now the USACE Coastal and Hydraulic Laboratory.

Table 1. Wave heights in the harbor calculated from ACES.

Direction (deg)	Wave Height (ft) Winds ~40 mph 3 hr	Wave Height (ft) Nemo 1-26-15	Wave Height Nor'Easter (ft) 1-22-16
340	1.9	1.9	1.7
0	2.1	2.7	2.3
20	2.1	2.6	2.2

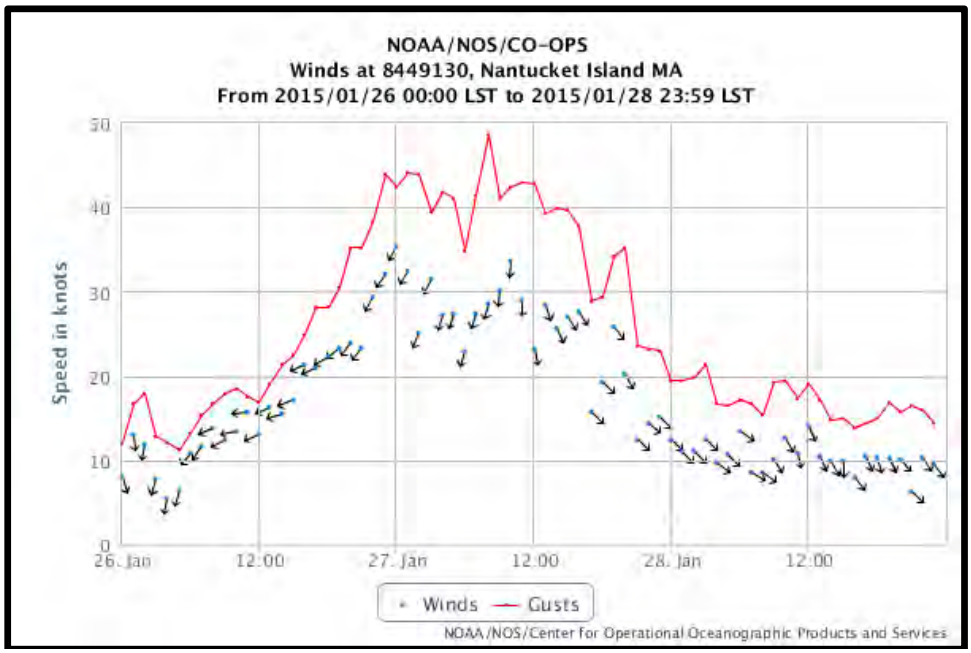

Figure 13A. Winds generated during the nor'easter Nemo January 2015.

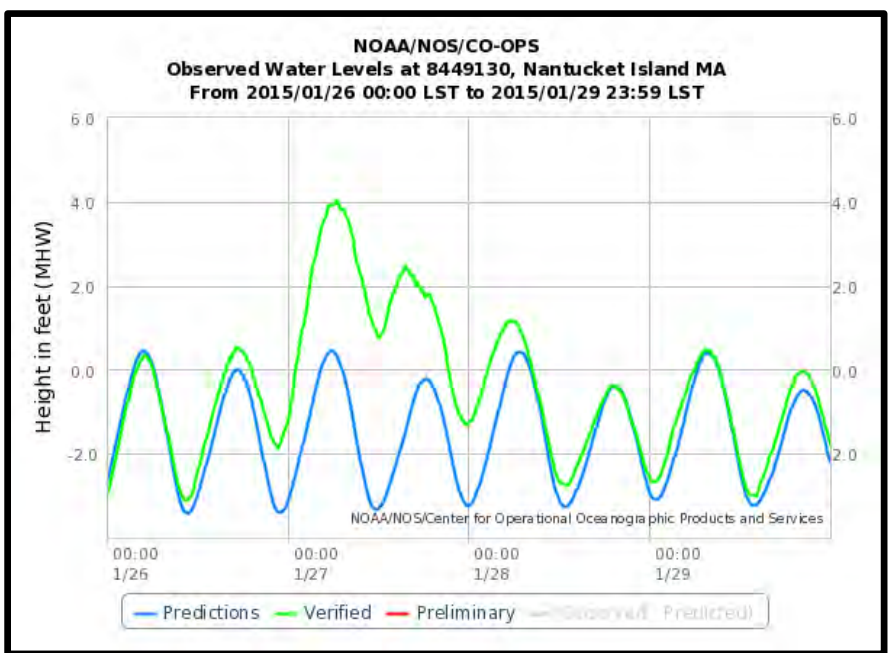

Figure 13B. Water levels that occurred during the nor'easter Nemo January 2015.

The waves calculated clearly show that the frequently occurring storms produce waves that will erode the beach and water levels that will inundate the entire beach.

The ACES model calculated wave heights in Nantucket Harbor. However, it is instructive to calculate the height of the wave that will break on the toe of the coastal bank. A height of a wave that approaches the beach and breaks on or at the toe of the bank will be dependent only on the depth of water at the toe of the coastal bank. Table 3 shows the depth of the water during the peak of the storm and the maximum height if the wave that will break at the toe of the coastal bank for the average, Nemo, and the January 22, 2016 storms. The water level during the peak of the storm shown in Figure 12 resulted in a water depth of approximately 0.5 – 0.75 ft at the base of the bank and produced a braking wave heights of 0.6 ft at the toe of the coastal bank. Nemo and the January 20126 nor'easter produced breaking wave heights of 4.0 and 2.7 ft respectively. These conditions allowed waves to not only break at the toe of the bank but also run up the face of the bank. The result is that during normal storm conditions the storm surge reaches the base of the bank allowing waves to break on the lower 1 ft of the bank. These conditions ensure that the bank face will remain vertical and will not have a chance to reach an angle of repose and to naturally vegetate.

Table 3. Water depths at the toe of the coastal bank

Date of Storm	Depth of water at the base of bank (ft)	Wave at Base of Bank (ft)
Normal Storm	0.8	0.6
Nemo 1/26/2015	5.1	4.0
1/22/2016	3.4	2.7

Flood Zone Elevations at the Project Site

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), dated June 9, 2014. The flood zone data for the project are is shown on Map Panel #25019C00884G. The flood insurance map shows that at the beach there is a Zone VE (EL10) (Figure 14) while just to the east the VE zone drops to a Zone VE (EL9). The Flood Insurance Study ("Brown Book") shows that the 10- and 50-year still water flood zone elevations are 3.6[3] and 5.1 ft respectively. This indicates that during a storm with a 10-year return period the toe of the bank will be attacked by storm surge and waves.

Shoreline Change Analysis

A shoreline change analysis was conducted to evaluate long- and short-term shoreline response of the coastline along the subject properties. There are several techniques that can be used to calculate shoreline change. The most accurate is to compare topographic surveys of the property that have been obtained over the years. However, most properties do not have a back-log of topographic surveys and if they did, the surveys would most likely be confined to the property of

[3] FEMA flood zone elevations are in NAVD88.

interest and not include adjacent properties. Therefore, an aerial photographic analysis is commonly used to calculate shoreline change. The method analyses successive aerial photographs and calculates the change in position of the shoreline or the top of the coastal bank. This allows the investigator to calculate rates of change for the beach or top of bank.

The Massachusetts Coastal Zone Management (CZM) has completed a shoreline change analysis for most of Massachusetts. The results of the CZM shoreline change analysis is reported in their Massachusetts Ocean Resource Information System (MORIS). CZM analyzed shorelines from 1844 through 2009 and calculated the shoreline change rates along equally spaced transects throughout Massachusetts. There are ten transects (Figure 14) that fall within the project boundaries (MORIS Transects N-1600 thru N-1610). The MORIS results in Table 2 show that the shoreline change is erosive along this section of shoreline.

Figure 14. Location of he CZM MORS shoreline change transects.

MORIS long-term erosion rates were calculated using the entire 150-year data set. The short-term rates of change were calculated using data spanning the most recent 30-year data set.

Table 2 shows that the long-term shoreline change is -0.6 ft/yr. The short-term rate of shoreline change is -1.7 ft/yr. The short-term shoreline change rate is usually used when determining how the shoreline will respond in the next 10 years because the short-term shoreline change rate includes the most recent storms but the data set spans a sufficiently long period so that the analysis is not biased by any one large erosion or accretion event.

Table 2. CZM MORIS long- and short-term erosion rates.

MORIS Transect Number	CZM Morris Long-Term Rate (ft/yr)	CZM Morris Short-Term Rate (ft/yr)
N-1600	-0.7	-1.7
N-1601	-0.7	-1.9
N-1602	-0.6	-1.9
N-1603	-0.5	-1.4
N-1604	-0.5	-1.6
N-1605	-0.7	-1.4
N-1606	-0.7	-1.7
N-1607	-0.6	-1.6
N-1608	-0.6	-1.7
N-1609	-0.5	-1.8
N-1610	-0.6	-1.7
Averge Change	-0.6	-1.7

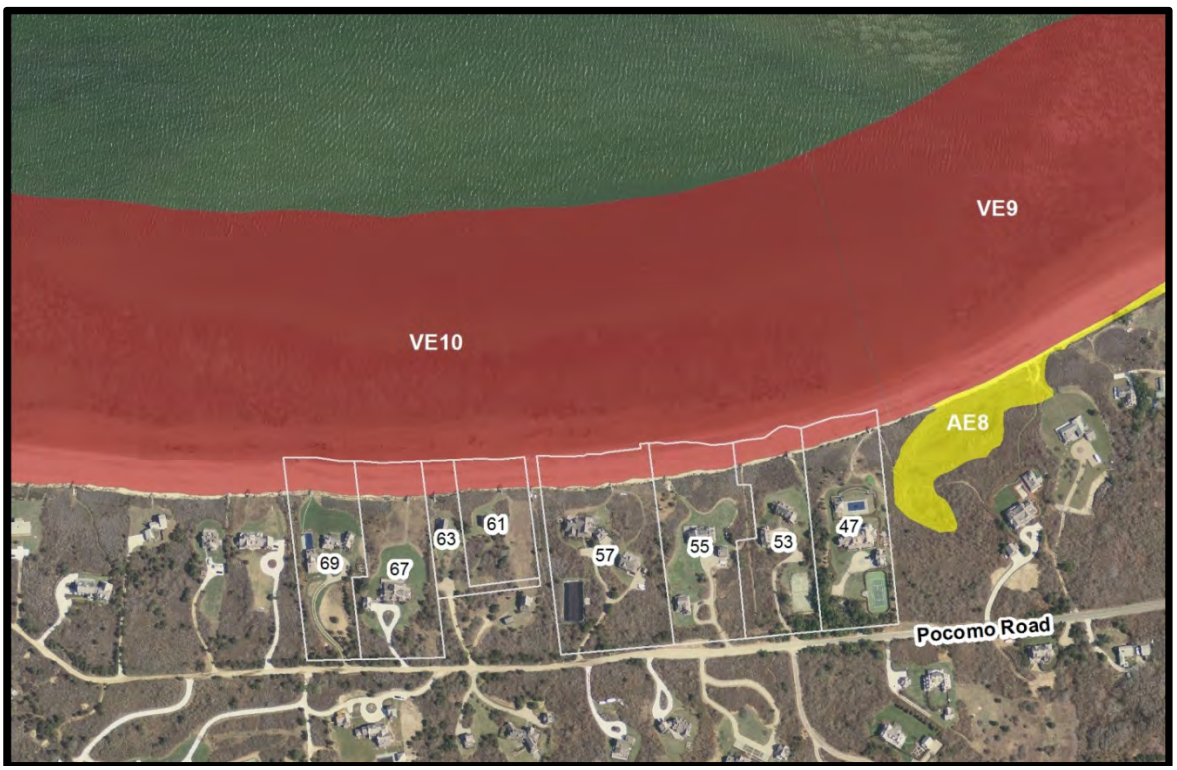

Figure 14. FEMA Flood Zones along the northern shore of Pocomo Road, Nantucket.

The MORIS data set only includes shoreline data up to 2009. Additionally, we have occasionally found some discrepancies in the shoreline change rates that have been reported in MORIS. Therefore, the Woods Hole Group performed its own shoreline change analysis to ensure there were no errors in the MORIS data and to bring the shoreline change analysis forward to include data from 2012, 2014, and 2015.

A computer-based shoreline mapping methodology within a Geographic Information System (GIS) framework was used to compile and analyze changes in historical shoreline positions for the properties along the north shore of Pocomo Road, and the adjacent area. The purpose of this task was to quantify the spatial and temporal changes in shoreline position using the most accurate data sources and compilation procedures available, and to evaluate the long-term and recent rates of change. Assuming that the trends continue at the same rate into the future, the information from the shoreline change analysis can also be used to predict patterns of shoreline erosion over the next several decades.

Woods Hole Group compiled and analyzed data from Google Earth imagery, MassGIS orthophotography, Massachusetts Coastal Zone Management (CZM) shoreline change study data and single-frame historical aerial photographs. Data covering thirteen (13) time periods were evaluated spanning the 128-year period from 1887 to 2015 (Table 3).

Table 3. Data Sources for Shoreline Change Analysis

Year	Source
2015	Google Earth
2014	MassGIS
2012	Google Earth
2009	MassGIS
2003	MassGIS
1999	Col-East, Inc.
1994	MassGIS
1990	Col-East, Inc.
1978	Mass CZM Shoreline
1971	Col-East, Inc.
1963	Col-East, Inc.
1955	Mass CZM Shoreline
1887	Mass CZM Shoreline

Woods Hole Group acquired the photos from MassGIS as georeferenced orthoimagery and the vector shorelines from Mass CZM. However, the aerial photographs from Col-East, Inc. and those extracted from Google Earth required georeferencing. Georeferencing was accomplished by identifying a series of evenly spaced control points on the images for which real world x, y coordinates were known. The 2014 MassGIS orthoimagery was utilized as the base image from which the ground control was obtained for all georeferencing.

Once the additional photographs were geo-referenced, and all data sources were brought to a common coordinate system, the locations of the mean high water line (MHW) and the top of bank (where identifiable) were located and digitized from each of the thirteen (13) data sources. Once these data were compiled, spatial and temporal changes in the data were computed. This was accomplished by identifying a series of shore normal transects along the coastline where discrete measurements of change could be made through time, and where rates of change could be determined. To analyze the shoreline change rates, a total of 95 shore normal transects were established at 50 foot evenly-spaced intervals along the coastline from the western end of

Pocomo Road to Lauretta Lane to the west. At each transect, the magnitude of shoreline and bank movement was calculated, and annual rates of change were determined using the various time intervals between the data sources. Rates of change were calculated using the linear regression method. In this method, an average rate of change is based on a best-fit line to a series of points representing the shoreline/bank position over time. The linear regression method is most accurate when looking at long-term averages and is most often used for planning purposes and management decisions.

The digitized locations of the shorelines, as well as the transect locations across the entire study area, are shown in Figure 15. Shoreline change rates were analyzed for the entire time period (1887 to 2015) (Figure 16), as well as two more recent sub-periods; the last 45 years (1971 to 2015) and the last 13 years (2003 to 2015) (Figures 17 & 18). The linear regression rates of shoreline change from these time periods are presented in the graph in Figure 19.

In general, all time periods analyzed show a trend of erosion across the entire study area for both the shoreline and the top of bank, with the rates of shoreline erosion generally greater than the rates of bank erosion. The average shoreline erosion rates for the entire study area were -0.6 ft/yr (1887 to 2015), -1.0 ft/yr (1971 to 2015), and -0.9 ft/yr (2003-2015). The average shoreline erosion rates immediately in front of the subject properties (transects 27 to 62) followed this trend, but with slightly higher rates of -0.8 ft/yr, -1.1 ft/yr and -1.2 ft/yr respectively. Average rates of shoreline change were also computed from the transects on each individual property and are listed in Table 4.

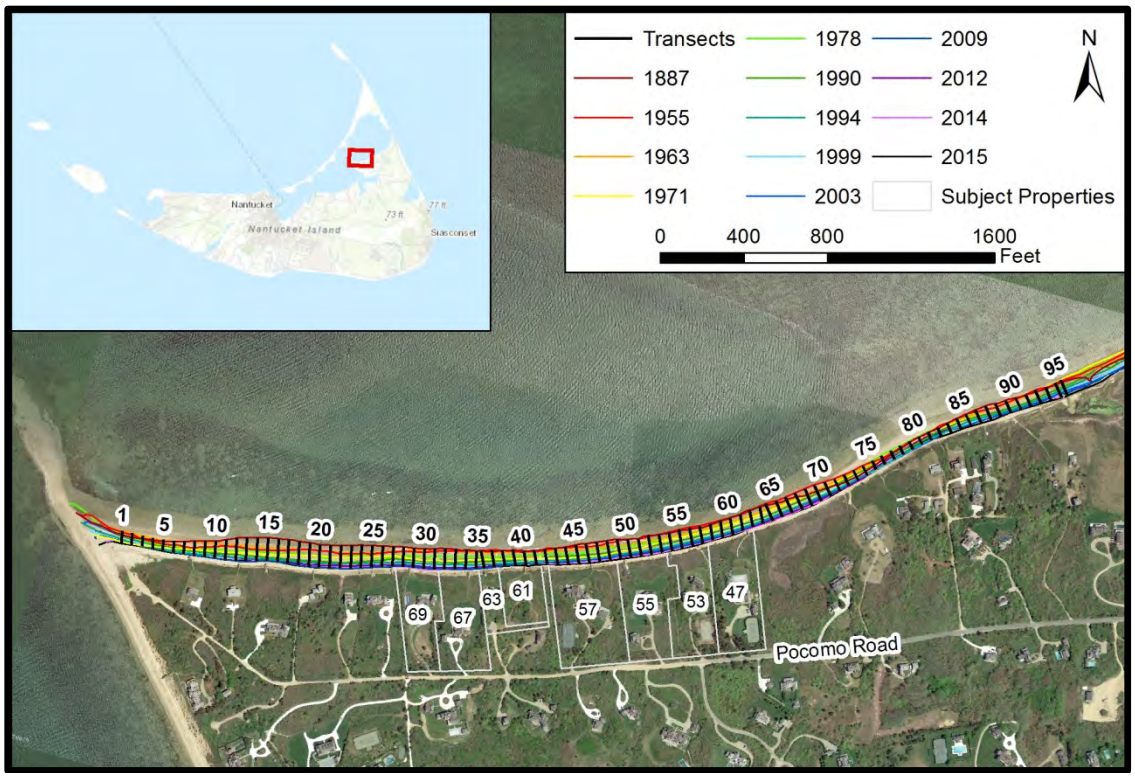

Figure 15. Historical shoreline positions and locations of analysis transects. Background is from 2015 GoogleEarth imagery. Pocomo Road subject properties are identified by their parcel boundaries and street address numbers.

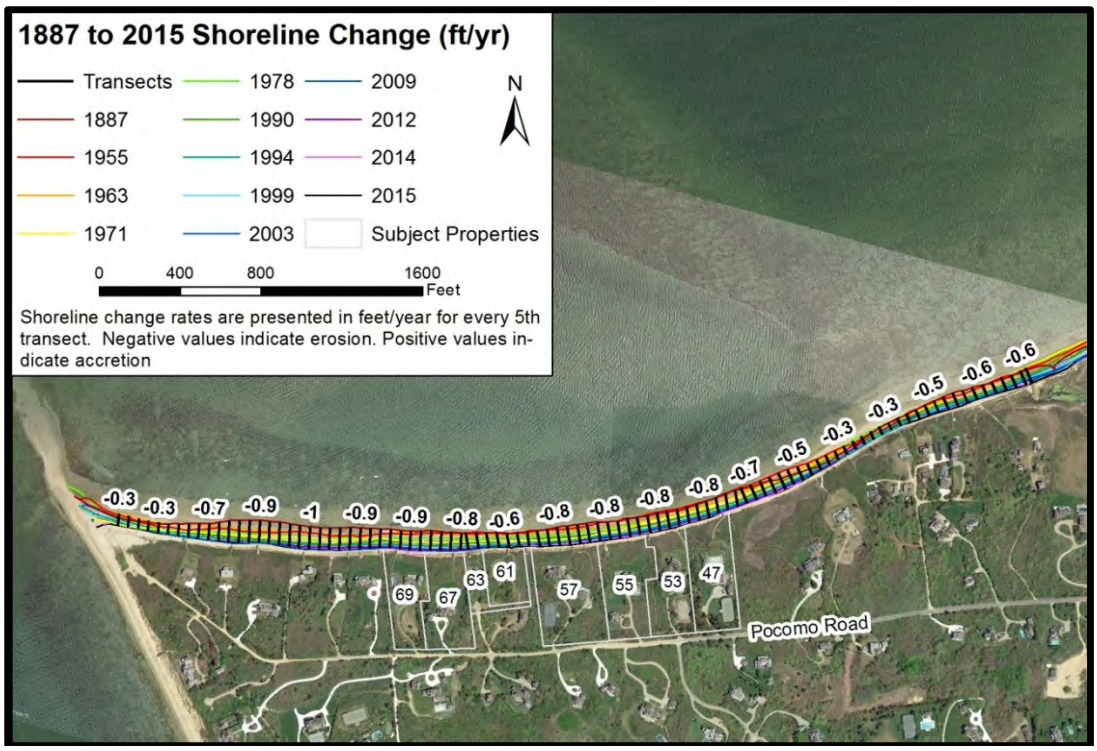

Figure 16. Long-term (1887-2015) rates of shoreline change (feet/year). Background is from 2015 GoogleEarth imagery.

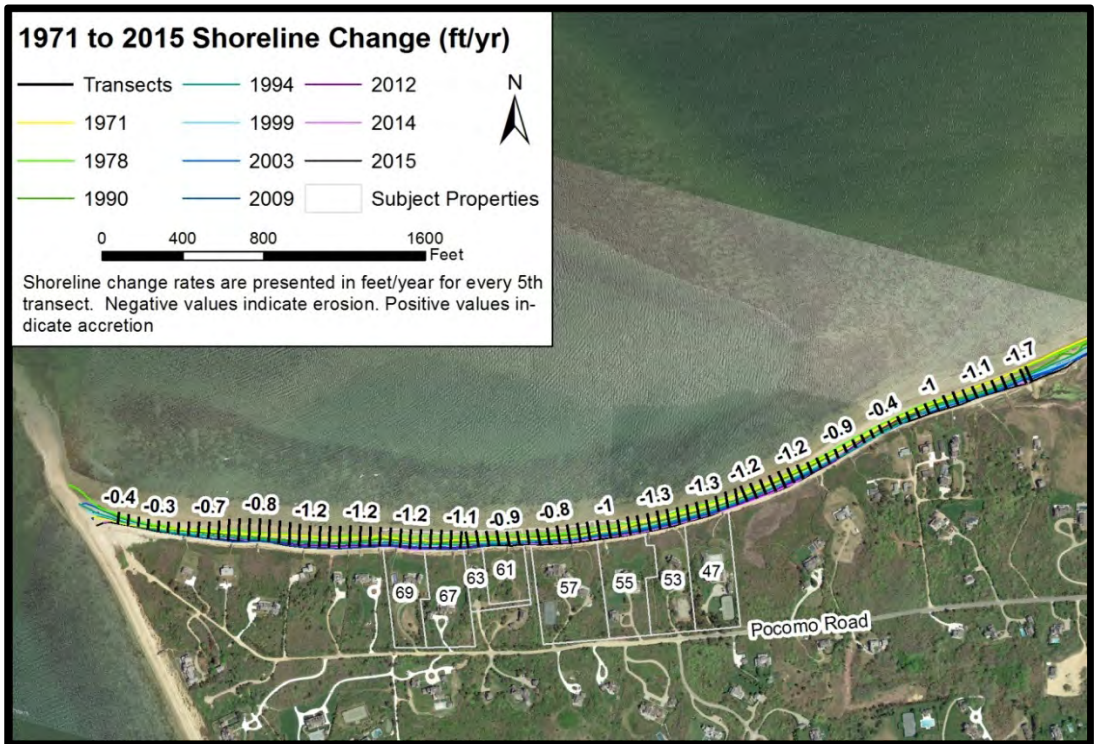

Figure 17. Recent (1971-2015) rates of shoreline change (feet/year). Background is from 2015 GoogleEarth imagery.

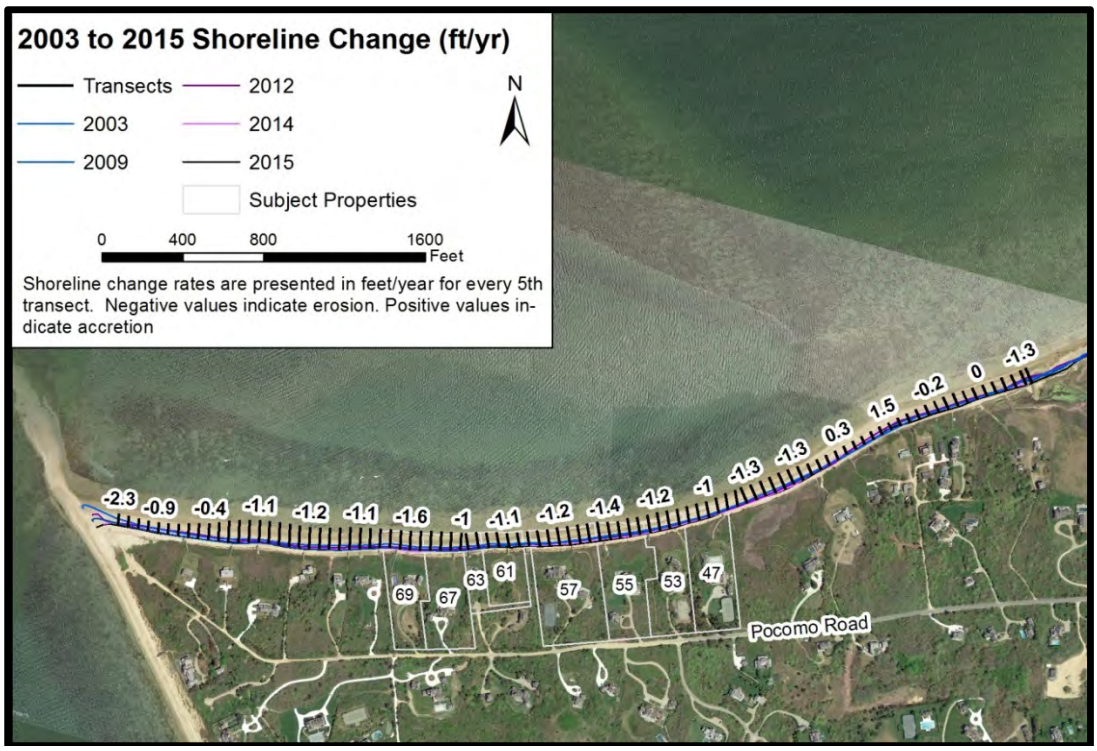

Figure 18. Short-term (2003-2015) rates of shoreline change (feet/year). Background is from 2015 GoogleEarth imagery.

Table 4. Average rate of shoreline and bank change along each subject property's coastline.

		Linear regression Shoreline		
Property	Transects	1887-2015	2003-2015	1971-2015
69 Pocomo Road	27 to 31	-0.8	-1.5	-1.2
67 Pocomo Road	32 to 35	-0.9	-1.1	-1.2
63 Pocomo Road	36 to 37	-0.8	-1.0	-1.0
61 Pocomo Road	38 to 41	-0.6	-1.1	-0.9
57 Pocomo Road	42 to 48	-0.7	-1.3	-0.9
55 Pocomo Road	49 to 53	-0.8	-1.5	-1.1
53 Pocomo Road	54 to 57	-0.8	-1.2	-1.3
47 Pocomo Road	58 to 62	-0.7	-0.9	-1.3
Average	**27 to 62**	**-0.8**	**-1.2**	**-1.1**

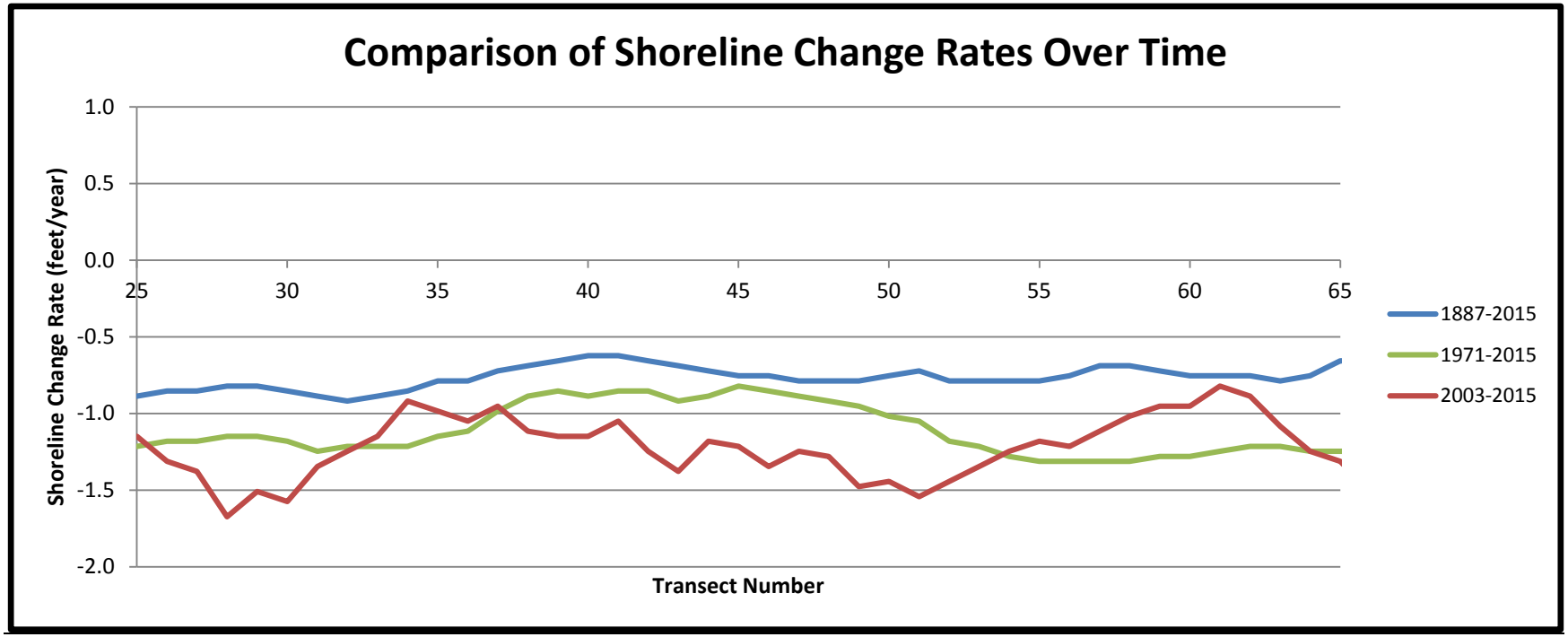

Figure 19. Rates of historical shoreline change for the entire study period (1887-2015), as well as two recent time periods (1971-2015 and 2003-2015) for the transects fronting the subject properties.

Sediment Contribution from the Coastal Bank

Erosion of the bank provides sediment to the littoral system and helps mitigate erosion that occurs downdrift of the property. The bank erodes under the influence of the storm surge and waves produced by coastal storms that have been described above. Therefore, it is important to quantify the shoreline change rates along this section of coast in order to determine how much sand is provided to the beach from coastal bank erosion. The average of the short-term erosion rates calculated from MORIS and from the Woods Hole Group analysis are shown in Table 5.

Table 5. Sediment contribution by the coastal bank calculated from MORIS and the Woods Hole Group rates.

MORIS Short-Term Erosion Rate (ft/yr)	MORIS Annual Bank Contribution (cu yd)	WHG Short-Term Erosion Rate (ft/yr)	WHG Annual Bank Contribution (cu yd)
-1.7	1,253	-1.2	885

The annual sediment contribution calculated using the MORIS shoreline erosion rate of -1/7 ft/yr is 1,253 cu yd/yr and the sediment contribution calculated using the Woods Hole Group short-term erosion rate is 885 cud yd/yr.

Sea Level Rise

Beach nourishment is one of the most effective methods to maintain beaches and minimize the effects of sea level rise. This is because sea level rise is small compared to the effects of storm surge and the design life of a beach nourishment project. A beach nourishment project will need maintenance and will need to periodically be replaced as storms attack the coast and erode the project. However, that is how beach nourishment is intended to work. The beach nourishment is designed to absorb the impact of the waves and erode thus providing sediment to the littoral system while providing protection to the back-beach and toe of the bank.

Sea level rise is on the order of 1.4 millimeters/year in the Barnstable area (Figure 12). This estimate was derived from an examination of tide gauges along the East Coast. A more recent study published by NOAA[4] showed that the sea level rise for the Boston area is 2.63 millimeters/year. In order to put this in perspective; 2.6 millimeters (Figure 13) is about the thickness of two nickels placed on top of each other. Therefore, a project would require a design life of 30 or 40 years before sea level rise would even become a design factor.

The beach nourishment portion of the project will help mitigate the effects of sea level rise by providing a long-term sediment source to the beach and littoral system. Additionally, the design life of the revetment is effectively 20 to 30 years. Using the information provided above, the water level can be expected to increase between 1.3 and 2.0 inches over the design life of the structure. As a result, the proposed design will not be impacted by sea level rise.

[4] http://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=8443970

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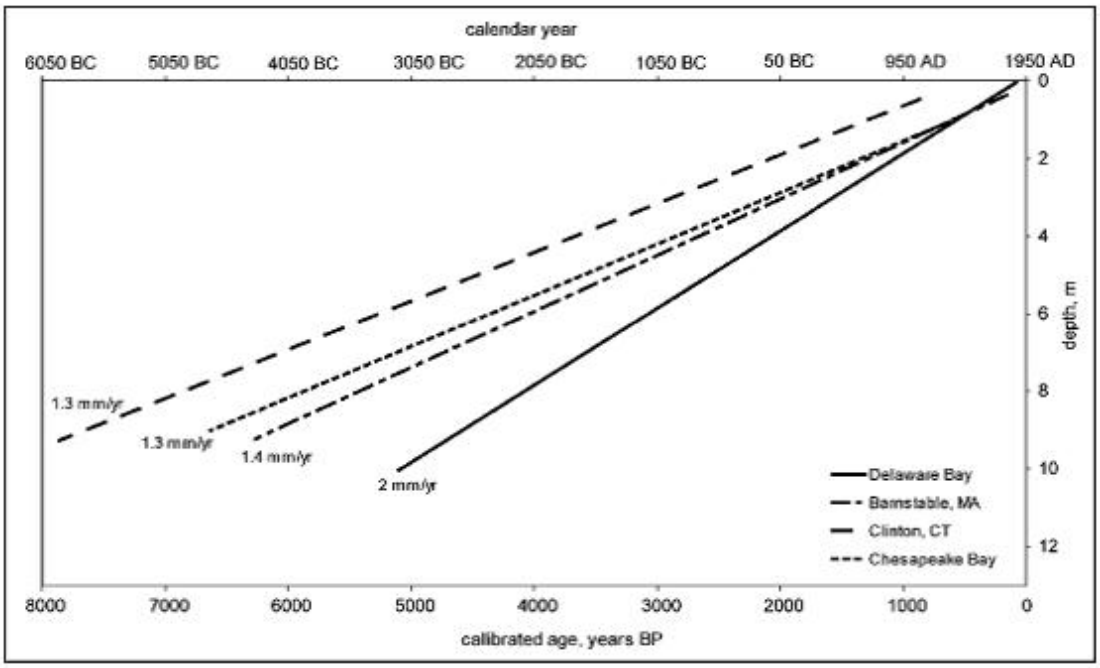

Figure 12. Showing the estimated long-term sea level rise for Barnstable Massachusetts[5].

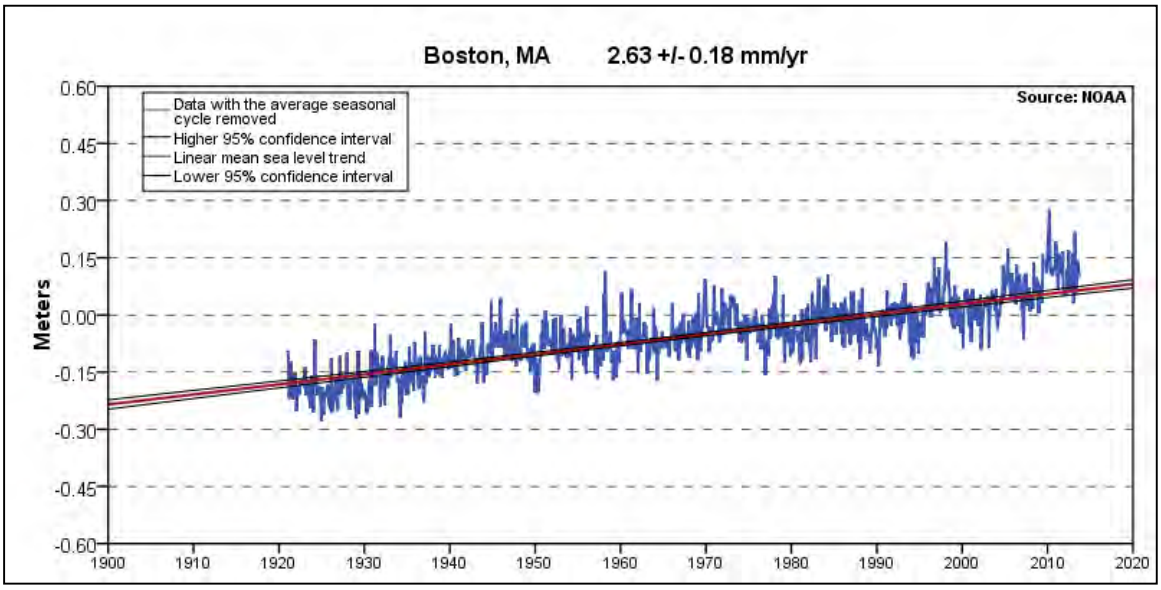

Figure 13. Sea Level Rise graph obtained from the NOAA COOPs web site.

[5] Relative long-term sea-level trends for Delaware Bay; Clinton, Connecticut; Barnstable, Massachusetts; and Chesapeake Bay (from Larsen and Clark, 2006. A search for scale in sea-level studies. *Journal of Coastal Research*, ***22(4)*** ,788–800).

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Proposed Project

The proposed project is located with Nantucket Harbor and is approximately 1,800 ft long. The applicant is proposing to install an anchored fiber roll array with reinforced soil lifts. The project will include a series of timber posts to help support and protect the fiber roll array from sliding. The project also includes approximately 1,000 cy of clean beach quality sand to replace sediment that would have been contributed by the coastal bank and to cover the lifts and fiber rolls. The face of the coastal bank will be planted with beach grass.

Performance Standards & Compliance Assessment

Wetland resource areas within one hundred feet seaward of the Project and protected by the Act and Bylaw include Coastal Beach, Coastal Bank and Land Subject to Coastal Storm Flowage. Due to the design of the project and proposed mitigation, the project will not have an adverse affect on any of these resources areas.

Nantucket Wetland Regulations, Section 2.01B: Land Under The Ocean

Land under the ocean provides feeding areas, spawning and nursery grounds, and shelter for manycoastal organisms related to marine fisheries and wildlife. Destruction of eelgrass beds (Zostera marina) will harm scallop production. Nearshore areas, and in some cases offshore areas, of land under the ocean help reduce storm damage, erosion, and flooding by diminishing and buffering the high energy effects of storms. Submerged sand bars dissipate wave energy. Such areas provide a source of sediment for seasonal rebuilding of coastal beaches and dunes. The bottom topography and sediment type of nearshore areas of land under the ocean is critical to erosion control, storm damage protection, and flood control. Water circulation and flushing rates, distribution of grain size, water quality (including but not limited to turbidity, temperature, nutrients, pollutants, salinity, and dissolved oxygen), and the habitat of wildlife, finfish, and shellfish are all factors critical to the protection of significant wildlife habitat and marine fin and shell fisheries. Land under the ocean in an unobstructed state is important to recreational swimming, fishing, and shellfishing, to recreational boating and sailing, to commercial fishing and shellfishing, and to wetland scenic views.

In view of the foregoing, whenever a proposed project involves removing, filling, dredging, altering or building upon land under the ocean, the Commission shall find that such land is significant to the protection of the following interests: flood control, erosion control, storm damage prevention, fisheries, shellfish, wildlife, significant wildlife habitat, recreation, and wetland scenic views. These findings may be overcome only upon a clear showing that the Land Under the Ocean does not play a role in protecting any of the interests given above and only upon a specific written determination to that effect by the Commission.

> *8. Water dependent projects shall be designed and performed so as to cause no adverse effects on wildlife, erosion control, marine fisheries, shellfish beds, storm damage prevention, flood control, recreation, and aquatic vegetation.*

This project does not involve removing, filling, dredging, altering, or building on land under the ocean. has been specifically designed to not have an impact on land under the ocean. The project is at the toe of the bank and will not encroach below the Mean High Water Line.

Additionally, the quantity of sediment that will be placed on the face of the bank has been carefully calculated to ensure that only the quantity of sand that would naturally reach the beach and nearshore system will be available during storms. Therefore, no adverse impacts will occur to wildlife, erosion control, marine fisheries, shellfish beds, storm damage prevention, flood control, recreation, and aquatic vegetation will occur.

Coastal Beach

The proposed sacrificial sand cover to be placed at the base of the coastal bank, covering the reinforced soil lifts and the coir fiber roles at the base of the bank where it intersects the coastal beach resource area. The soil lifts and coir fiber rolls will be covered with beach quality sand which will be available to the beach during storms. The coastal beach resource areas are important because they assist in storm damage prevention, erosion and flood control by allowing absorbing wave energy thus aiding in the protection of the toe of the bank and provide sediment to feed the adjacent coastal beach. The cover material will be composed of beach compatible sand and will therefore serve as a source of sediment for downdrift coastal resource areas. The cover material will not reduce the ability of the coastal beach to perform as a protector for the coastal bank and as a source of sediment, and meets all of the following performance standards of a coastal beach found at 310 CMR 10.27 and NWR Section 2.02B:

Wetland Protection Act Regulations, 310 CMR 10.27 – Coastal Beach

Pursuant to 310 CMR 10.27, coastal beaches are significant to storm damage prevention, flood control and the protection of wildlife habitat as they dissipate wave energy by their gentle slope, their permeability and their granular nature, which permit changes in beach form in response to changes in wave conditions. Furthermore, coastal beaches serve as a sediment source for dunes and subtidal areas, and also serve as a sediment source for downdrift coastal areas.

Coastal beaches serve the purposes of storm damage prevention and flood control by dissipating wave energy, by reducing the height of storm waves, and by providing sediment to supply other coastal features. Additionally, wildlife (birds) may nest in the coastal berm, between the toe of a dune and the high tide line.

While the project involves limited work on the coastal beach, the presumption that the coastal beach is significant to storm damage prevention, flood control and the protection of wildlife habitat, is overcome. The coastal beach at this locus is deprived of sediment buildup due to erosion and thus currently cannot function effectively due to its location. Recent storms have left the beach depressed in elevation, thus allowing an abnormal amount of direct wave attack to the base of the bank. The frequent wave attacks have caused instability at the base of the coastal bank causing it to erode and slump. Hence, the coastal beach is starved of beach building sediment and is unable to perform its intended functions which are to break waves and protect the base of the coastal bank.

The Regulations provide that when a coastal beach is determined to be significant to storm damage prevention, flood control, or protection of wildlife habitat, the following performance standards apply (310 CMR 10.27(3) to (7)):

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3. 310 CMR 10.27(3). Any project on a coastal beach, except any project permitted under 310 CMR 10.30(3)(a) shall not have an adverse effect by increasing erosion, decreasing the volume or changing the form of any such coastal beach or an adjacent or downdrift coastal beach.

The sand cover over the fiber roll array will aid in storm damage prevention, erosion and flood control by dissipating wave energy before the waves severely erode the base of coastal bank which serves as the foundation associated with coastal bank stabilization. The proposed project will continue to provide for the replenishment of the volume of the beach and therefore decrease the rate of erosion. Therefore, the project meets the performance standard found in 310 CMR 10.27(3).

4. Any groin, jetty, solid pier, or other such solid fill structure which will interfere with littoral drift, in addition to complying with 310 CMR 10.27(3), shall be constructed as follows:

(a) It shall be the minimum length and height demonstrated to be necessary to maintain beach form and volume. In evaluating necessity, coastal engineering, physical oceanographic and/or coastal geologic information shall be considered.

(b) Immediately after construction any groin shall be filled to entrapment capacity in height and length with sediment of grain size compatible with that of the adjacent beach.

(c) Jetties trapping littoral drift material shall contain a sand by-pass system to transfer sediments to the downdrift side of the inlet or shall be periodically redredged to provide beach nourishment to ensure that downdrift or adjacent beaches are not starved of sediments.

This performance standard does not apply as the project does not include the construction of a groin, jetty, solid pier, or other such solid fill structure which will interfere with littoral drift.

5. Notwithstanding 310 CMR 10.27(3), beach nourishment with clean sediment of a grain size compatible with that on the existing beach may be permitted.

The cover material over the fiber rolls will provide for sand contribution to the beach and system as waves reach the base of the bank in storm events. The cover material consisting of the placement of clean supplemental material of similar grain size will be replaced at a minimum of once a year if it is eroded during a severe storm. The erosion of this supplemental material provides compatible material to the nearshore and the adjacent beaches and by removal of the sand cover during storm events, sand will be provided to the littoral system that normally would be available from a functioning coastal bank during a severe storm. This material will provide sacrificial sand along the toe of the coastal bank and will replace sand that would naturally be eroded from the foundation base of the coastal bank.

6. In addition to complying with the requirements of 310 CMR 10.27(3) and 10.27(4), a project on a tidal flat shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water-dependent, have no adverse effects, on marine fisheries and wildlife habitat caused by:

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(a) alterations in water circulation,
(b) alterations in the distribution of sediment grain size, and
(c) changes in water quality, including, but not limited to, other than natural fluctuations in the levels of dissolved oxygen, temperature or turbidity, or the addition of pollutants.

This performance standard does not apply as the project is not proposed on a tidal flat.

7. Notwithstanding the provisions of 310 CMR 10.27(3) through 10.27(6), no project may be permitted which will have any adverse effect on specified habitat sites or rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

The existing conditions at the locus, caused by the lack of sediment buildup, do not allow for natural buildup of the beach elevation or creation of a natural dune at the base of the bank. The proposed project is not anticipated to remedy this situation. However, the project proposes to provide sediment at the base of the back along the beach as sacrificial material to feed the beach.

Nantucket Wetland Regulations, Section 2.02B: Coastal Beaches

1. The provisions of Section 2.01B (1-8) (Land Under the Ocean) shall apply to coastal beaches and tidal flats.

The project meets the performance standards found at NWR §2.01B (1-5) (Land Under the Ocean) as the project does not involve any dredging activity (NWR §2.01B(1)) and does not involve an aquacultural project or the construction, maintenance or repair of any pier (NWR §§2.01B(2 - 5)).

The project also satisfies the performance standard found at NWR §§2.01B(7) as it will cause no adverse effects on wildlife, erosion control, marine fisheries, shellfish beds, storm damage prevention, flood control and recreation. The existing coastal bank and coastal beach have been eroded by storms and the main purpose of the project is to prevent or slow down erosion at the property thereby increasing storm damage prevention and flood control resulting in a stabilized coastal bank that is significant to the interest of flood control, erosion control and storm damage prevention. With regard to wildlife, the project is located within an area of existing development and the coastal beach is currently used as a recreational beach. The proposed base stabilized coastal bank will be planted with vegetation, resulting in the project protecting the interest of wildlife and certainly presenting no greater effect on wildlife than those that may presently exist.

The project is a water dependent use and therefore does not require a waiver. We make this statement because the Nantucket Regulations define water dependent as follows:

Water Dependent Projects or Uses - projects which require direct wetlands access for their intended use and therefore cannot be located out of the Area Subject to Protection Under the Bylaw. ***Examples include but are not limited to****: docks, piers, boat landings,*

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boathouses, marinas, stairs to beaches, and boardwalks over wetland vegetation. Projects which benefit from wetlands access but which do not require it are not water dependent uses. Examples include: restaurants, dwellings, and commercial enterprises servicing marine-related uses such as fish markets, repair facilities, ships' chandleries, and general use recreational trails.

Our project is water dependent because it requires direct access to the wetland access and cannot be located outside the area subject to projections. The definition defines seven example projects. However, the regulations state that the examples include, but are not limited to, the examples stated.

2. No new bulkheads or coastal engineering structures shall be permitted to protect structures constructed, or substantially improved, after 8/78. Bulkheads may be rebuilt only if the Commission determines there is no environmentally better way to control an erosion problem, including in appropriate cases the moving of the threatened building. Other coastal engineering structures may be permitted only upon a clear showing that no other alternative exists to protect a structure built prior to 9/78, and not substantially improved, from imminent danger.

We are not proposing a coastal engineering structure such as a bulkhead, pier, or groin.

3. Dredging projects in flats must be done in accordance with such procedures as the Commission determines would disturb the absolute minimum amount of habitat possible.

This performance standard does not apply as the project does not include any dredging in flats.

4. Clean fill of similar grain size may be used on a Coastal Beach but not on a Tidal Flat, only if the Commission authorizes its use, and only if such fill is to be used for a beach or dune nourishment project. All possible mitigation measures shall be taken, as determined by the Commission, to limit the adverse effects of the fill.

The Applicant is proposing to use clean fill of similar grain size as sacrificial material for the coastal beach. No work is proposed on a tidal flat.

5. No part of any septic system shall be placed in shifting sands or on a coastal beach. The septic leach facility shall be at least 100 feet from the spring high tide line.

This performance standard does not apply as the project does not include the installation or repair of a septic system.

6. All work on projects which are not water dependent shall maintain at least a 25-foot natural undisturbed area adjacent to a coastal beach. All structures which are not water dependent shall be at least 50 feet from a coastal beach.

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This performance standard does not apply as the project requires direct resource area access for its intended use and consists of the installation of coir rolls and the placement of a sand cover over the rolls at the toe of the coast bank.

> *7. In areas of eroding shoreline, the distance from all buildings to the coastal beach shall be at least 20 times the average annual shoreline erosion or 100 feet, whichever is the lesser. The average annual shoreline erosion rate shall be determined by averaging the annual erosion rate over a 150 year period ending the date the NNOI was filed, or if no NNOI was filed, the date construction began. If erosion data is not available for the 150-year period, the Commission shall determine the average annual erosion rate from such lesser time period for which erosion data is available. In cases where documentation can be provided to show that the use of the 150-year period is inappropriate to existing shoreline characteristics and trends, alternate shoreline change rates may be used when based on a preponderance of credible evidence.*

This performance standard does not apply as the project does not include the construction of any buildings.

> *8. Vehicular access for existing houses or for recreational use shall be as unpaved ways and shall be done in accordance with such procedures as the Commission determines will minimize any adverse effect on the beach and the Interests of the Bylaw.*

This performance standard does not apply as the project does not include the installation, maintenance or repair of vehicular access.

E.2 <u>Coastal Bank</u>

The coastal bank is unable to properly sustain vegetation as a result of the slope becoming over-steepened due to erosion and slumping caused by the toe of the bank being eroded. Therefore, the existing coastal bank is not able to provide wildlife habitat to rare, endangered, and otherwise significant wildlife. The project seeks to improve the current condition of the coastal bank by stabilizing the foundation toe and lower face of the coastal bank using rows of anchored sand filled tubes along the base of the bank upward and the placement of sand cover over the face of the tubes. Additionally, the area of the scarped upper bank will be restored by adding fill and re-grading to a sustainable slope. The face of the upper bank will then be re-vegetated with beach grass. The project meets all of the following performance standards of a Coastal Bank found at 310 CMR 10.30 and NWR §2.05B:

<u>Wetland Protection Act Regulations, 310 CMR 10.30: Coastal Banks</u>

Pursuant to 310 CMR 10.30, coastal banks are likely to be significant to storm damage prevention and flood control by supplying sediment to coastal beaches, coastal dunes and barrier beaches and, due to their height, provide a buffer to upland areas from storm waters.

Coastal banks, because of their height and stability, may act as a buffer or natural wall, which protects upland areas from storm damage and flooding. Bank vegetation tends to stabilize the bank and reduce the rate of erosion due to wind and rain runoff. However, here, the coastal

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bank's ability to provide storm damage protection has been severely degraded as the bank is actively eroding.

The project recognizes that the coastal bank is significant to both storm damage prevention and flood control because it supplies sediment to coastal beaches, coastal dunes or barrier beaches and acts as a protective barrier. Therefore, the project is designed to allow the cover over the soil lifts to erode in response to wave action and supply material to downdrift coastal areas. The coastal bank is also significant to storm damage prevention and flood control as it serves as a vertical buffer to storm waters and therefore the project was also designed to stabilize the bank.

The Regulations provide that when a coastal bank is determined to be significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes or barrier beaches and serves as a vertical buffer to storm waters, the following performance standards apply (310 CMR 10.30(3) to (8)):

> *3. No new bulkhead, revetment, seawall, groin or other coastal engineering structure shall be permitted on such a coastal bank except that such a coastal engineering structure shall be permitted when required to prevent storm damage to buildings constructed prior to the effective date of 310 CMR 10.21 through 10.37 or constructed pursuant to a Notice of Intent filed prior to the effective date of 310 CMR 10.21 through 10.37 (August 10, 1978), including reconstructions of such buildings subsequent to the effective date of 310 CMR 10.21 through 10.37, provided that the following requirements are met:*
>
> > *(a) a coastal engineering structure or a modification thereto shall be designed and constructed so as to minimize, using best available measures, adverse effects on adjacent or nearby coastal beaches due to changes in wave action, and*
> > *(b) the applicant demonstrates that no method of protecting the building other than the proposed coastal engineering structure is feasible.*
> > *(c) protective planting designed to reduce erosion may be permitted.*

This regulation does not apply as we are not proposing to construct a coastal engineering structure. Additionally, the project is designed to avoid, or at least mitigate, potential adverse effects on adjacent or nearby coastal beaches due to changes in wave action. The project is designed to stabilize the toe of the coastal bank with a soft engineering solution that is not a coastal engineering structure.

> *4. Any project on a coastal bank or within 100 feet landward of the top of a coastal bank, other than a structure permitted by 310 CMR 10.30(3), shall not have an adverse effect due to wave action on the movement of sediment from the coastal bank to coastal beaches or land subject to tidal action.*

Since the project is permitable pursuant to 310 CMR 10.30(3), this performance is not applicable. However, the project will improve the condition of the coastal beach and coastal bank. This performance standard is clearly met as the project proposes to stabilize the coastal bank while concurrently providing sediment to downdrift areas.

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5. The Order of Conditions and the Certificate of Compliance for any new building within 100 feet landward of the top of a coastal bank permitted by the issuing authority under M.G.L. c. 131, § 40 shall contain the specific condition: 310 CMR 10.30(3), promulgated under M.G.L. c. 131, § 40, requires that no coastal engineering structure, such as a bulkhead, revetment, or seawall shall be permitted on an eroding bank at any time in the future to protect the project allowed by this Order of Conditions.

This performance standard does not apply as the project is not proposing any new buildings.

6. Any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.

The project meets this performance standard as the project will not adversely affect the stability of the coastal bank but actually seeks to improve the stability of the costal bank by stabilizing the foundation toe and lower face of the coastal bank. This sand cover will be replenished on a regular basis as it is removed by wave activity. The base of the bank would therefore continue to function as a sediment supply source.

7. Bulkheads, revetments, seawalls, groins or other coastal engineering structures may be permitted on such a coastal bank except when such bank is significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes, and barrier beaches.

While the coastal bank is significant to both storm damage prevention and flood control in part by supplying sediment to coastal beaches, coastal dunes, and barrier beaches, it is permitable under 310CMR 10.30 because it is not coastal engineering structure. However, the project will result in a stabilized coastal bank which, along with sand cover will increase the stability of the coastal bank and improve its capability to provide storm damage protection as a vertical buffer. Additionally, the proposed project will provide sediment to downdrift areas.

8. Notwithstanding the provisions of 310 CMR 10.30(3) through (7), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

The proposed project will not occur within the estimated habitat however, there is mapped potential habitat offshore of the beach and is presumed to be a feeding area for birds. According to previous letters from the Division of Fisheries & Wildlife, Natural Heritage & Endangered Species Program ("NHESP"), if work is prohibited between April 1 and August 31 of any year, "the project will not result in an adverse impact to the resource area habitats of state-listed wildlife species." If the Commission thinks it is appropriate, we will adhere to the time of year restrictions to avoid any potential conflict. Additionally, the proposed project is located within an area of existing development and the coastal beach is currently used as a recreational beach. The proposed improved coastal bank will be replanted with vegetation, resulting in the proposed project protecting the interest of wildlife and certainly presenting no greater effect on wildlife than those that may presently exist.

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Nantucket Wetland Regulations, Section 2.05B: Coastal Bank

1. No new bulkheads, coastal revetments, groin, or other coastal engineering structures shall be permitted to protect structures constructed, or substantially improved, after 8/78 except for public infrastructures. Bulkheads and groins may be rebuilt only if the Commission determines there is no environmentally better way to control an erosion problem, including in appropriate cases the moving of the threatened buildings and/or public infrastructure. Other coastal engineering structures may be permitted only upon a clear showing that no other alternative exists to protect a structure that has not been substantially improved or public infrastructure built prior to 9/78, from imminent danger.

This project employs soft engineering components and is not a coastal engineering structure.

2. Piers shall be constructed in compliance with the Town of Nantucket Zoning Bylaws (e.g. Section 136-22B 6/30/00) using procedures determined by the Commission to be the best available measures to minimize adverse effects on Interests Protected by the Bylaw.

This performance standard does not apply as the project does not include the construction of a pier.

3. All projects shall be restricted to activity as determined by the Commission to have no adverse effect on bank height, bank stability, wildlife habitat, vegetation, wetland scenic view, or the use of a bank as a sediment source.

The proposed project will not have any such adverse effects and will increase bank stability. The bank height will not be altered and the project proposes to stabilize the bank. Additionally, vegetation can act as habitat for endangered species. As the project proposes to stabilize the bank along with sand cover replenishment, it will vastly improve the bank's function as a sediment source without jeopardizing the foundation of the toe of the coastal bank. The project will replace the sand that would normally be eroded from the bank during storms however, since the Commission has required a waiver request for this paragraph for previous projects, we will submit a waiver request for this paragraph in the Notice of Intent.

4. Elevated walkways designed not to affect bank vegetation shall be required for pedestrian passage over a bank.

There are presently stairs over the bank to the beach at both of the properties. The stairs provide elevated access to the beach and prevent people from traversing the face of the coastal bank. We are asking to rebuild and to maintain these existing stairs as appropriate.

5. All projects which are not water dependent shall maintain at least a 25-foot natural undisturbed area adjacent to a coastal bank. All structures which are not water dependent shall be at least 50 feet from a coastal bank.

As stated above, this performance standard does not apply as the project is not proposing a structure and requires direct wetland access for its intended use. Additionally, the project seeks to protect a pre-existing structure, restore an eroding coastal bank, supply a source of sediment for downdrift coastal resource areas, and provide a safe access to the recreational beach.

> *6. The septic leach facility of a septic system shall be at least 100 feet from the top of the coastal bank and shall not be located within the face of the coastal bank.*

This performance standard does not apply as the project does not include the installation or repair of a septic system.

> *7. In areas of eroding shoreline, the distance from all buildings to the coastal bank shall be at least 20 times the average annual shoreline erosion or 100 feet, whichever is the lesser. The average annual shoreline erosion rate shall be determined by averaging the annual erosion over 150-year period ending the date the NOI was filed, or if no NOI was filed, the date construction began. If erosion data is not available for the 150-year period, the Commission shall determine the average annual erosion rate from such lesser time for which erosion data is available. In cases where documentation can be provided to show that use of the 150-year period is inappropriate to existing coastal shoreline characteristics and trends, alternate shoreline change rates may be used when based on a preponderance of credible evidence.*

This performance standard does not apply as the project does not include the construction of any buildings.

> *8. All permits issued for the construction of buildings under the Bylaw within 100 feet landward of the top of a coastal bank shall contain the specific condition that no coastal engineering structure of any kind shall be permitted on an eroding bank in the future to protect the project allowed by this permit, except those coastal engineering structures allowed by a waiver issued pursuant to Section 1.03F of these regulations.*

As stated above, this performance standard does not apply as the project does not include the construction of any buildings. However, due to the rapid erosion of the coastal bank the project seeks to protect the existing structure and the coastal bank from additional failure and seeks to protect the existing structure as the distance from the existing structure to the coastal beach is diminishing. Therefore, the project is necessary to maintain an adequate distance between the existing structure and the coastal beach in order to allow the coastal beach to properly function.

E.3 <u>Land Subject to Coastal Storm Flowage</u>
<u>Nantucket Wetland Regulations, Section 2.10B:</u>

> *1. The work shall not reduce the ability of the land to absorb and contain flood waters, or to buffer inland areas from flooding and wave damage.*

The proposed project will not reduce the ability of the land to absorb and contain flood waters and will not buffer inland areas from flooding and/or wave damage.

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2. Projects shall not cause ground, surface, or salt water pollution triggered by coastal storm flowage. All septic tanks shall be outside the 100-year floodplain.

The proposed project will not cause ground, surface, or salt water pollution triggered by coastal storm flowage and a septic system is not being proposed.

3. All private underground fuel tanks shall be outside the 100-year floodplain. Commercial tanks shall be outside the 100-year floodplain, or if the Commission determines this is not practicable, the commercial tanks shall be secured so that they cannot float loose.

This performance standard does not apply as the project does not include underground fuel tanks.

4. Building upon areas subject to coastal storm flowage in locations where such structure would be subject to storm damage may not be permitted. If permitted, all construction must be in compliance with state and local building code regulations for flood hazard areas.

This performance standard does not apply as the project does not propose a structure subject to state and local building codes regulations.

Conclusion

The proposed project will increase the ability of the coastal bank to act as a barrier to flood waters by stabilizing the toe of the bank. Additionally, the proposed project will provide sacrificial sediment that will be available during storm events to provide sediment to the beach and adjacent beaches. The proposed project complies with the regulations, bylaws, and performance standards of both Massachusetts and Nantucket. Therefore, it is permitable under both the Wetlands Protection Act and the Nantucket Wetland Protection bylaws.

Sincerely,

Lee L Weishar

Lee Weishar, PhD; PWS
Senior Scientist

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Work Protocol

By

Wilkinson Ecological Design, Inc.

Seth Wilkinson, President

WILKINSON
ECOLOGICAL DESIGN

Work Protocols for Fiber Roll Installation

47, 53, 55, 57, 61, 63, 67, & 69 Pocomo Road, Nantucket

March 16, 2016

Schedule and Access:

Initial stabilization work will be conducted in the Fall/Winter of 2016.

Two access routes are proposed for the project. The western route will bring equipment and materials along Pocomo Road and access the beach via its western terminus. The eastern route, along Proprietors Road between 61 and 57 Pocomo Road, will only be used for delivery of heavy materials such as fiber rolls and sand using compact equipment and noted on sheet one of the Site Plan of Land by Nantucket Engineering and Surveying. To protect existing vegetation within the eastern access route, brush mowing to a height of three inches is proposed. This proposed mowing will protect the root structures and allow regrowth of vegetation following construction. Given the considerable length of the shoreline associated with this project, two access points will reduce the total quantity of trips on the beach and reduce the duration of the project.

The lowest courses of fiber rolls are installed first and construction continues up gradient. Anchoring using Size DB88 Duckbill Anchors (or comparable equivalent) is installed as the array is constructed. All low-density fiber rolls will then be plugged with American beach grass and other native plant species at twelve inches on center.

The embankment will then be immediately seeded with the specified native seed mixture and then 100% biodegradable erosion control blankets will be properly installed over all disturbed sediments on the project area. Plugs of specified native herbaceous grass species will then be planted through the erosion control blankets. Bayberry and beach plum will be installed following the plugging of herbaceous species. A temporary irrigation system will also be installed at this time to water the bank and encourage rapid colonization of the embankment within the first three years after planting. Following establishment of the plantings, the irrigation system will be disconnected and removed from the embankment.

Sediment Nourishment:

Annually, in late March through early May, the fiber roll array will be re-nourished with compatible beach sand to address ongoing beach nourishment to preserve the function of supplying the adjacent coastal resources with an ongoing sediment source and extend the life of the fiber roll array. The goal of the sediment nourishment will be to annually maintain 4-6" of sediment cover over the fiber rolls. The access via the western route on Pocomo Road and the eastern route on Proprietors Road between 61 and 57 Pocomo Road will be utilized for the annual nourishment.

Ongoing Maintenance:

Maintenance of the fiber roll array and associated plants and bioengineering materials is critical for the long-term success of this erosion management strategy. On an annual basis, two primary activities are proposed. The annual sand nourishment is an activity which is described above and should be conducted on a long-term basis in order to maintain compliance with the protected function of providing adjacent coastal resource areas with a sediment source. Additionally, in the winter months it is anticipated that minor maintenance activities such as tightening anchor cables, repairing erosion control blankets and repositioning fiber rolls, if needed. The only other ongoing activities which could be necessary are repairs following damage from significant storms. Upon the necessity of any repairs or for regularly scheduled maintenance, the Conservation Commission shall be notified through its conservation administrator in advance of conducting any activities.

WILKINSON
ECOLOGICAL DESIGN

Planting Specification

47, 53, 55, 57, 61, 63, 67, & 69 Pocomo Road, Nantucket
March 16, 2016

Coastal Bank Planting Forbes and Grasses

Common Name	Latin Name	Size	Density
American Beach Grass	*Ammophila breviligulata*	2″ Plugs	12″ O.C.
Little Bluestem	*Schizachyrium scoparium*	2″ Plugs	12″ O.C.
Purple Love Grass	*Eragrostis spectabilis*	2″ Plugs	12″ O.C.
Seaside Goldenrod	*Solidago semprivirens*	2″ Plugs	12″ O.C.
Switchgrass	*Panicum virgatum*	2″ Plugs	12″ O.C.

Coastal Bank Planting Shrubs

Common Name	Latin Name	Size	Density
Beachplum	*Prunus maritima*	1 Gallon Pot	4′ O.C. in Clusters
Bayberry	*Myrica pensylvanica*	1 Gallon Pot	4′ O.C. in Clusters

Wilkinson Salt-Tolerant Native Grass Seed Mixture

Common Name	Latin Name	Percentage by Weight
Broomsedge	*Andropogon virginicus*	18%
Creeping Red Fescue	*Festuca rubra*	20%
Purple Love Grass	*Eragrostis spectabilis*	3%
Little Bluestem	*Schizachyrium scoparium*	18%
Sideoats Grama	*Bouteloua curtipendual*	8%
Switchgrass	*Panicum virgatum*	8%
Virgina Wildrye	*Elymus virginicus*	25%

28 LOTS HOLLOW RD. I ORLEANS, MA 02653 TEL: (508) 255-1113 FAX: (508) 255-9477 WWW.WILKINSONECOLOGICAL.COM

Pages from Order of Conditions – SE48-2789

For

Similar Project Approved and Installed at

48 Shimmo Pond Road

149780

2015 00149780
Cert: 22341 Doc: OOC
Registered: 10/30/2015 01:47 PM

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 5 – Order of Conditions- Revised and Restated

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
SE48- 2789
MassDEP File #

eDEP Transaction #

Nantucket
City/Town

A. General Information

1. From: Nantucket
Conservation Commission

2. This issuance is for (check one): a. ☒ Order of Conditions b. ☐ Amended Order of Conditions

3. To: Applicant:

Donald
a. First Name

Burns
b. Last Name

48 SPR LLC
c. Organization

450 Royal Palm Way # 450
d. Mailing Address

Palm Beach
e. City/Town

FL
f. State

33480
g. Zip Code

4. Property Owner (if different from applicant):

Same As Applicant
a. First Name

b. Last Name

c. Organization

d. Mailing Address

e. City/Town

f. State

g. Zip Code

5. Project Location:

48 Shimmo Pond Rd
a. Street Address

Nantucket
b. City/Town

43
c. Assessors Map/Plat Number

79
d. Parcel/Lot Number

Latitude and Longitude, if known: 41d17'10"
d. Latitude

70d04'31"
e. Longitude

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions- Revised and Restated
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:
SE48- 2789
MassDEP File #

eDEP Transaction #

Nantucket
City/Town

A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

Nantucket — a. County
22341 — b. Certificate Number (if registered land)
c. Book
d. Page

7. Dates: 05/22/15 — a. Date Notice of Intent Filed; 08/19/2015 — b. Date Public Hearing Closed; 08/19/2015 — c. Date of Issuance

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

Plans for Notice of Intent Coastal Stabilization Fig 1-8
a. Plan Title

GEI Consultants — b. Prepared By
Varoujan Y. Hagopian — c. Signed and Stamped by
July 2015 — d. Final Revision Date
1" 5' — e. Scale

f. Additional Plan or Document Title
g. Date

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

a. ☐ Public Water Supply
b. ☐ Land Containing Shellfish
c. ☒ Prevention of Pollution
d. ☐ Private Water Supply
e. ☐ Fisheries
f. ☒ Protection of Wildlife Habitat
g. ☐ Groundwater Supply
h. ☒ Storm Damage Prevention
i. ☒ Flood Control
j. ☐ Wetland Scenic Views (bylaw)
k. ☐ Recreation (Bylaw)

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

a. ☒ the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.

REVISED AND RESTATED
FINDINGS and ADDITIONAL CONDITIONS

Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40)
Town of Nantucket Wetlands Bylaw (Chapter 136)

Address:	48 Shimmo Pond Road
Assessor's Map and Parcel:	43-79
Property Owner:	48 SPR LLC
Applicant:	48 SPR LLC
DEP File Number:	SE48-2789
Filing Date:	May 22, 2015
Date Hearing Closed:	August 5, 2015
Date Orders Issued:	August 19, 2015
Plan of Record Information:	Notice of Intent for Coastal Bank Stabilization, dated July 2015, and stamped by Varoujan Hagopian, P.E.

Permit Overview:

This Order permits the applicant to repair existing stone revetments, construct and maintain sand filled coir tubes, sand drift fencing, maintaining of a sacrificial sand cover, removal of duneguard fencing, and removal of other coastal engineering structures on a Coastal Bank, Coastal Beach and Land Subject to Coastal Storm Flowage.

Additional Findings:

1. The Commission finds that the areas subject to regulation are coastal beach, coastal bank, land subject to coastal storm flowage and their associated buffer zones.
2. The Commission finds that the property is located within Priority Habitat of Rare Species or Estimated Habitat of Rare Wildlife as defined by the Massachusetts Natural Heritage and Endangered Species Program.
3. The Commission finds that the project is a water dependent project as it requires direct wetlands access for its intended use and therefore cannot be located out of the Area Subject to Protection Under the Bylaw.
4. The Commission finds that coastal beach is determined to be significant to storm damage prevention, flood control and protection of wildlife habitat as defined by the Commonwealth of Massachusetts Wetlands Protection Act (MGL Chapter 131§40).
5. The Commission finds that coastal bank is determined to be significant to storm damage prevention, and flood control because it supplies sediment to the coastal beach as defined by the Commonwealth of Massachusetts Wetlands Protection Act (MGL Chapter 131§40).
6. The Commission finds that coastal bank is determined to be significant to storm damage prevention, and flood control because it is a vertical buffer to storm waters as defined by the Commonwealth of Massachusetts Wetlands Protection Act (MGL Chapter 131§40).
7. The Commission finds that the coastal beach is significant to the protection of the following interests: flood control, erosion control, storm damage prevention, fisheries, shellfish, wildlife, recreation and wetland scenic views as defined by the Town of Nantucket Wetlands Protection Bylaw (Chapter 136).
8. The Commission finds that the coastal bank is significant to the protection of the following interests: flood control, erosion control, storm damage prevention,

wildlife, and wetland scenic views as defined by the Town of Nantucket Wetlands Protection Bylaw (Chapter 136).

9. The Commission finds that the land subject to coastal storm flowage is significant to the protection of the following interests: flood control, erosion control, storm damage prevention, wildlife, and water quality as defined by the Town of Nantucket Wetlands Protection Bylaw (Chapter 136).
10. The Commission recognizes that the coastal bank is unstable and subject to collapse and/or erosion due to wave action, overland stormwater erosion and/or groundwater flow/discharge.
11. The Commission recognizes the coastal bank to exist in a highly dynamic coastal environment and to be comprised of mixed glacial till material with locally perched groundwater.
12. The Commission finds that the project as conditioned by this Order will not adversely impact the interests protected by the Town of Nantucket Wetlands Protection Bylaw (Chapter 136) and is conditioned to mitigate effects to the resource areas. Further, the Commission finds that given the historical site conditions and current site conditions that there are no reasonable alternatives to this project as conditioned.
13. The Commission finds that this specific make-up, configuration of materials, its proposed rate of breakdown and the focus on natural vegetation is a bio-engineered option and is not a coastal engineering structure.

In addition to the General Conditions contained elsewhere in this document, the Commission includes the following Special Conditions pursuant to MGLCh131s40 and the Town of Nantucket Wetlands Protection Bylaw, Chapter 136:

14. All work shall be performed in accordance with the Site and Work Description contained within the Notice of Intent and plan notes set out on the plan of record, provided project narratives, waiver requests and protocols.
15. The only work areas permitted by this Order include the land specific to the project area as shown on the plan of record. No work is to be performed outside of this area.
16. A detailed as-built plan, stamped by a licensed engineer or surveyor is required to be filed with the Commission upon completion of initial construction. This survey shall include the entire project area.
17. Detailed survey plans as stamped by a licensed surveyor or licensed engineer shall be submitted to the Commission twice a year and post storm events, with storm events being defined as a period of sustained winds in excess of 40MPH for a period of 6 hours, to show from the top of the bank to the beach/bank interface landward of the toe and then extending to Mean Low Water. This survey shall include the entire project area. Reports shall be submitted to the Commission showing the amount of sand delivered to the project area and to which project area it was delivered.
18. Photographs of the project area are required quarterly and in addition photographs shall be required to be submitted, demonstrating the condition of the entire project area within 24 hours of each storm event.
19. All structural materials, such as the coir logs, posts, and anchors, shall be marked for identification. Distinguishing marks shall include tagging of plastic and branding of wood or metal.

20. The applicant shall be responsible for retrieving any and all materials stored, dislodged or washed off site for the life of the project.
21. Should the monitoring reports show an adverse impact to surrounding properties, an adverse impact to the project area, or the narrowing of the beach to where the mean high water mark is contacting the base of the project, the applicant shall appear before the Commission to discuss the proper action to take to mitigate the condition, including but not limited to the removal of the structure, repair of the structure or revision to the nourishment program.
22. The applicant will be required to provide the bi-annual reporting for one year post removal of the structure to demonstrate any impacts from the structure to the remaining coastal beach/bank.
23. Nourishment is required to be maintained to the volumes specified in the plan of record. All nourishment sands are to be beach compatible sand. The applicant shall provide the Commission with a grain size analysis from each sand source being used for the nourishment prior to the delivery to the beach. Following the installation of any post-construction nourishment a new detailed as-built by a licensed surveyor or engineer must be provided to the Commission showing the new profile and location.
24. The applicant shall provide the Commission with contact information including name, mailing address, and phone number of all participants in the project as well as any contractor working on the project.
25. The applicant shall get a written sign off from the Beach Manager on a bi-weekly basis from April 1st to September 15th to use vehicles on the beach. The sign-off will serve to confirm the presence or absence of any protected species within the project area or route of travel to and from the project area.
26. Pedestrian access across the public beach shall be maintained at all times.
27. No machinery or materials are to be stored on the beach.
28. The fence posts shall not exceed 4" x 4"
29. The initial monitoring report shall be presented to the Commission as part of a regular meeting of the Commission and is to take place one year after the installation is completed.
30. The coir logs shall be kept in good repair and if they are damaged they shall be repaired and notice provided to the Commission of the repair.
31. If less than 75% of the plantings are living plants the applicant shall come before the Commission for what remedial action is needed to return the structure into compliance.

WAIVERS UNDER THE NANTUCKET WETLANDS BYLAW/REGULATIONS

Waivers are required to Section 2.01(B)(8) that water dependent projects shall be designed and performed so as to cause no adverse effects on wildlife, erosion control, marine fisheries, shellfish beds, storm damage prevention, flood control and recreation, Section 2.05(B)(3) that all projects shall be restricted to activity as determined by the Commission to have no adverse effect on bank height, bank stability, wildlife habitat, vegetation, wetland scenic view or the use of a bank as a sediment source, and Section 2.10(B)(1) that the work shall not reduce the ability of the land to absorb and contain flood waters, or to buffer inland areas from flooding and wave damage of the Nantucket Wetlands Protection Regulations. The Commission finds that given the existing site conditions, the site specific historic conditions of previous and abutting structures and the site specific coastal dynamics that the project as proposed and conditioned will not have an adverse impact and that there are no reasonable alternatives to this project. Therefore the Commission grants a waiver under Section 1.03(F)(3)(a) of the Nantucket Wetland Protection Regulations.

StormSmart Properties Fact Sheet 4:
Bioengineering - Coir Rolls on Coastal Banks

By

Massachusetts Office of Coastal Zone Management

StormSmart Coasts

StormSmart Properties Fact Sheet 4: Bioengineering - Coir Rolls on Coastal Banks

The coast is a very dynamic environment and coastal shorelines—especially beaches, dunes, and banks—change constantly in response to wind, waves, tides, and other factors such as seasonal variation, sea level rise, and human alterations to the shoreline system. Consequently, many coastal properties are at risk from storm damage, erosion, and flooding. Inappropriate shoreline stabilization methods can actually do more harm than good by exacerbating beach erosion, damaging neighboring properties, impacting marine habitats, and diminishing the capacity of beaches, dunes, and other natural landforms to protect inland areas from storm damage and flooding. StormSmart Properties—part of the Massachusetts Office of Coastal Zone Management's (CZM) StormSmart Coasts program—provides coastal property owners with important information on a range of shoreline stabilization techniques that can effectively reduce erosion and storm damage while minimizing impacts to shoreline systems. This information is intended to help property owners work with consultants and other design professionals to select the best option for their circumstances.

What Are Bioengineering and Coir Rolls?

Coastal bioengineering projects reduce erosion and stabilize eroding shorelines by using a combination of deep-rooted plants and erosion-control products made of natural, biodegradable materials, such as coir rolls. Coir rolls are cylindrical rolls that span 12 to 20 inches in diameter, are packed with coir fibers (i.e., coconut husk fibers), and are held together with mesh. The rolls are typically 10- to 20-feet long and can be stitched together to provide continuous shoreline coverage. In contrast, coir envelopes are coir fabric filled with sand. Coir envelopes have very different impacts and design considerations and should not be confused with coir rolls.

No shoreline stabilization option permanently stops all erosion or storm damage. The level of protection provided depends on the option chosen, project design, and site-specific conditions such as the exposure to storms. All options require maintenance, and many also require steps to address adverse impacts to the shoreline system, called mitigation. Some options, such as seawalls and other hard structures, are only allowed in very limited situations because of their impacts to the shoreline system. When evaluating alternatives, property owners must first determine which options are allowable under state, federal, and local regulations and then evaluate their expected level of protection, predicted lifespan, impacts, and costs of project design, installation, mitigation, and long-term maintenance.

Below: This coir roll has been planted wth vegetation prior to installation.

PHOTO BY WILKINSON ECOLOGICAL DESIGN

As with all coastal bioengineering projects, salt-tolerant vegetation with extensive root systems is used with coir rolls to help stabilize the site. The vegetation is planted directly into the coir rolls and on the surrounding site. For important instructions on using plants in bioengineering projects, see S*tormSmart Properties Fact Sheet 3: Planting Vegetation to Reduce Erosion and Storm Damage*, which includes specific information on how vegetation reduces erosion and storm damage; instructions on selecting, properly planting, and caring for appropriate species; tips on maximizing the effectiveness of vegetation projects and minimizing impacts; and specifics on project design and implementation.

This fact sheet focuses on the use of coir rolls on coastal banks (also known as bluffs), where coir rolls are typically installed at the toe (i.e., base) of the bank—although they can also be installed up the bank face. In coastal areas, coir rolls can also be used to help reduce erosion problems created by to hard structures (i.e., seawalls and revetments). See "Appropriate Locations" in the Design Consideration section (page 4) for additional information.

Coir rolls are often used in conjunction with other techniques for erosion management, such as natural fiber blankets, runoff control, and beach nourishment. Natural fiber blankets are woven mats of natural fibers that are used to stabilize the ground surface while plants become established. Runoff control projects reduce and slow the flow of water over the ground surface, reducing coastal erosion problems. Beach nourishment adds sediment (i.e., sand, gravel, and cobble) from an off-site source to address beach erosion issues. See the following StormSmart Properties fact sheets for more information: *Controlling Overland Runoff to Reduce Coastal Erosion*, *Bioengineering - Natural Fiber Blankets on Coastal Banks*, and *Beach Nourishment*.

How Coir Rolls Reduce Storm Damage on Coastal Banks

If the toe of a bank is eroding, the upper bank may collapse even if it is well vegetated. Coir rolls can be used to protect and stabilize the toe by providing a physical barrier that buffers waves, tides, and currents, reducing erosion of exposed sediments.

Coir rolls provide stability and protection to the site while the vegetation planted in and above the rolls becomes established. As the coir rolls disintegrate, typically over 5-7 years, the plants take over the job of site stabilization. The dense root systems of the plants hold sand, gravel, and soils in place and help reduce erosion from rain, wind, tides, and waves. In addition, by taking up water directly from the ground and breaking the impact of raindrops or wave-splash, the plants slow the rate and reduce the quantity of upland water runoff that can lead to erosion.

For sites exposed to high wave energy, it may be necessary to replace and maintain coir rolls at the toe of the bank to provide longer-term stability. If the beach in front of the bank is narrow or narrows over time, if the beach elevation is too low or erodes down over time, or if the shoreline has a steep drop off below the low tide line, it may be necessary to combine bioengineering with other techniques, such as dune and beach nourishment, to ensure a successful project. (See the following StormSmart Properties fact sheets for more information: *Artificial Dunes and Dune Nourishment* and *Beach Nourishment*.) A professional with demonstrated success installing bioengineering projects in dynamic environments should be consulted to assess each site and make recommendations regarding the appropriate technique or combination of techniques.

PHOTO BY MASSACHUSETTS OFFICE OF COASTAL ZONE MANAGEMENT

Waves and tides eroded the toe of this bank, causing this collapse of a well vegetated section of the bank face.

PHOTOS BY NEW ENGLAND ENVIRONMENTAL

Top left: an exposed bank that was eroding at two feet per year before coir rolls and erosion-control vegetation were installed. Top right: the same site 10 years after project completion. (Note: This site has survived Hurricane Irene and Hurricane Sandy.)

Left: the same site during installation of the coir rolls, which were placed at the toe and up the face of the bank. Natural fiber blankets were also installed on the bank face. The site was then planted with salt-tolerant vegetation.

Relative Benefits and Impacts Compared to Other Options

Coir rolls provide direct, physical protection to a bank. Because they are made from natural, biodegradable materials and are planted with vegetation, coir rolls absorb much more wave energy than seawalls, rock revetments, or other "hard" shoreline stabilization structures, which reflect significantly more of the wave energy that hits them onto beaches or neighboring properties. The design of a hard structure affects how much wave energy is reflected, for example vertical walls reflect more wave energy than sloping rock revetments. These reflected waves erode beaches in front of and next to a hard structure, eventually undermining and reducing the effectiveness of the structure and leading to costly repairs. This erosion also lowers the elevation of the beach in front of the structure, ultimately leading to a loss of dry beach at high tide and reducing the beach's value for storm damage protection, recreation, and wildlife habitat. Coir roll projects also allow some natural erosion from the site while hard structures impede virtually all natural erosion of sediment. Without this sediment supply, down-current areas of the beach system are subject to increased erosion. In addition, coir rolls can often be installed without the use of mechanized equipment that can significantly impact the site. Because they are made with natural fibers and planted with vegetation, coir rolls also help preserve the natural character and habitat value of the coastal environment.

Under the Massachusetts Wetlands Protection Act, new hard structures are typically prohibited on all beaches and dunes. On coastal banks, hard structures are only allowed when necessary to protect buildings permitted before August 10, 1978, and only if no other alternative is feasible. In many cases, coir roll projects and other non-structural alternatives are therefore the only options available for reducing erosion and storm damage on coastal properties.

Like all shoreline stabilization options, however, coir roll projects can result in negative impacts when inappropriately designed or sited. While less severe than with hard structures, coir rolls can reflect some wave energy and they can inhibit the natural supply of sediment to down-current areas. Coir rolls made with synthetic materials or covered in wire mesh can cause additional significant impacts. Synthetic and wire mesh that remains after the rolls are degraded or is found on rolls that have been ripped away from a bank during a storm has the potential to entangle wildlife, disrupt navigation (e.g., by getting wrapped around boat propellers), and harm recreational beach users (e.g., rusted wire can puncture bare feet). To help address this issue, local officials often require identification tags to be sewn on coir rolls when they are installed to ensure proper disposal if the rolls are dislodged from the project site. In addition, wire mesh should not be used on coastal sites and the use of synthetic mesh should be minimized. For sites with higher wave energy, it is often necessary to use high density rolls (7-9 pounds per foot) in the bottom row, which are only available with synthetic mesh. This targeted use of synthetic materials is preferable to using more structural options such as a rock revetment to stabilize the site, which have greater adverse impacts.

Design Considerations for Coir Rolls on Coastal Banks

This section covers a variety of factors that should be considered to minimize adverse impacts and ensure successful design, permitting, construction, and maintenance of coir roll bioengineering projects on a coastal banks.

Appropriate Locations

For coastal bank projects, coir rolls can be used on both sheltered sites and sites exposed to wave energy. However, they are most effective in areas with higher beach elevations with some dry beach at high tide, where the rolls are not constantly subject to erosion from tides and waves. If the dry beach is narrow, the beach elevation is relatively low, and/or the site is exposed to moderate wave energy, more than one row of coir rolls will likely be needed on the face of the bank, as well as at the base. In these exposed conditions, the rolls will have a shorter lifespan and will require more frequent maintenance such as resetting, anchoring, or replacement. Additional erosion-control options may be needed at these sites, such as beach nourishment (see *StormSmart Properties Fact Sheet 8: Beach Nourishment*). It is essential to have a site-specific evaluation conducted by a professional with demonstrated experience and success implementing coir roll projects in exposed settings to determine the viability of coir rolls in these areas.

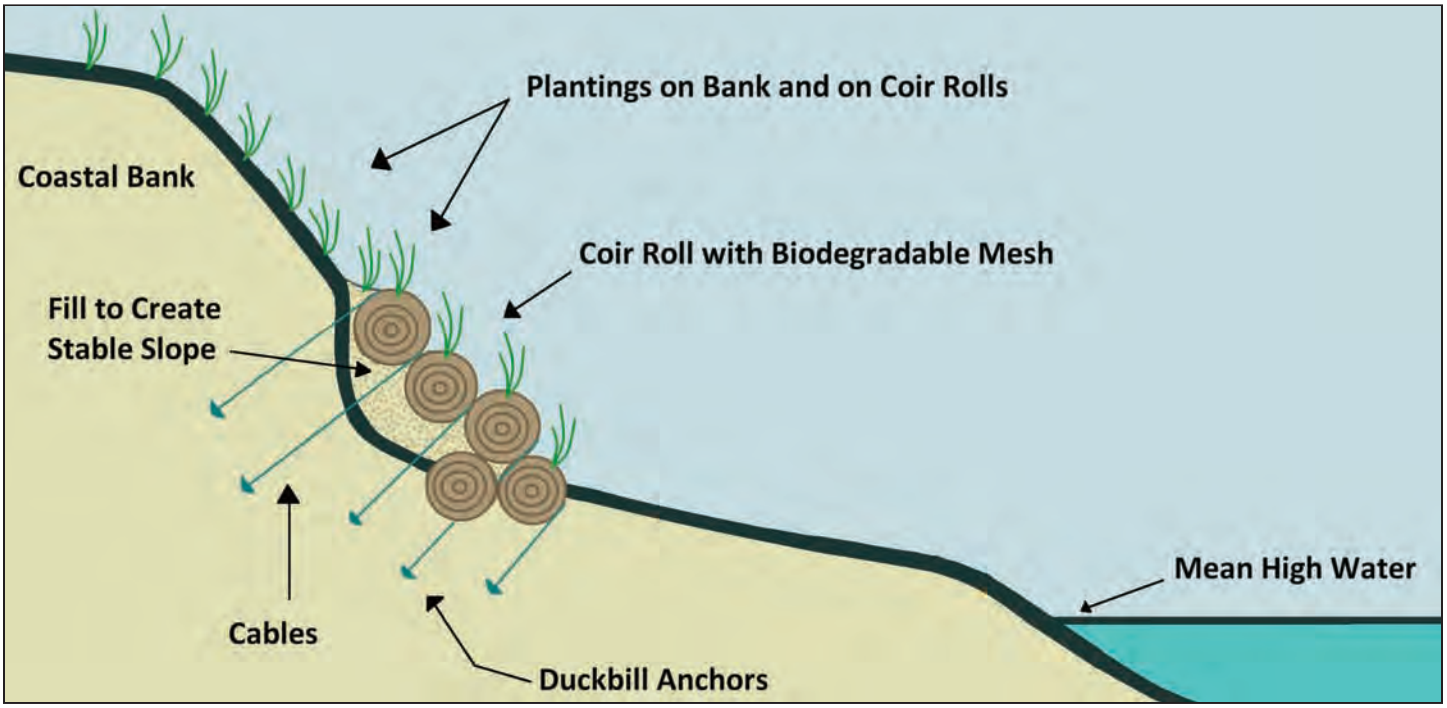
In some cases, coir rolls can also be used to effectively reduce erosion from hard structures such as seawalls. Coir rolls can be effectively installed at the base of and next to hard structures to help reduce erosion problems under the structure and on neighboring properties. They are also used on the face of the bank above the structure to stabilize the area.

PHOTO BY WILKINSON ECOLOGICAL DESIGN

A coir roll, natural fiber blanket, and fill were installed to minimize erosion at the end of this bulkhead.

Establishing a Stable Slope

On banks, a stable slope is essential for project success. If the bottom of the bank has eroded and its slope is steeper than the upper portion of the bank, the bank is likely unstable. Even when heavily planted with erosion-control vegetation, banks with unstable slopes are extremely vulnerable to



Cross-section of a bioengineering project on a bank in an exposed setting.

slumping or collapse that can endanger property landward of the bank. Before installing coir rolls or planting vegetation, therefore, the bank slope should be stabilized.

Ideally, soil of a similar type to that on the bank or beach is brought in as fill and added to the lower part of the bank to create a slope that matches or is less steep than the upper slope. However, if adding fill brings the toe of the bank within the reach of high tides, the fill will erode quickly and undermine the rest of the bank. In these cases, regrading the bank slope by removing sediment from the top of the bank is a better option. While removing part of the upper portion of the bank does reduce the land area of the property, it can be done in a controlled fashion that improves the overall stability and storm-damage prevention capacity of the bank. And if the slope is not stabilized by either adding fill at the bank toe or regrading the top of the bank, bank collapse during a storm could cause substantially more loss of land area to the sea. In addition, any investment in coir rolls, vegetation, and other site stabilization methods will be lost if the bank collapses. On sites where the top of the bank is well vegetated with mature, salt-tolerant species with extensive roots, the appropriate approach to stabilize the bank should be carefully developed by a professional with extensive experience successfully stabilizing similar sites.

Removing/Replacing Invasive Plants

Invasive plants (i.e., introduced species that thrive at the expense of native plants) should be removed and replaced with appropriate native plants if they are preventing establishment of erosion-control vegetation on a bank. This effort is particularly warranted when bank stability is severely compromised by the invasive plant. Because of their tenacity, successful control of invasive plants can take years to accomplish and may require perpetual monitoring and management. Effective ways to manage invasive species on the bank should therefore be incorporated into project design. See *StormSmart Properties Fact Sheet 3: Planting Vegetation to Reduce Erosion and Storm Damage* for more information.

Controlling Erosion from Overland Runoff and Other Sources

To help ensure the success of newly planted vegetation, sources of erosion on the site—including upland runoff and waves—should be identified and addressed as part of the site evaluation and design process. If overland runoff is causing erosion, this runoff should be reduced or redirected to give newly planted vegetation the best chance of survival (see *StormSmart Properties Fact Sheet 2: Controlling Overland Runoff to Reduce Coastal Erosion* for details). In areas subject to regular erosion from waves, tides, currents, wind, and coastal storms, additional techniques can be used to improve site protection. For example, beach nourishment (i.e., adding sediments, such as sand, gravel, and cobble to widen the beach—see *StormSmart Properties Fact Sheet 8: Beach Nourishment*) can protect coir roll projects by widening beaches in areas with relatively narrow beaches at high tide.

Protecting Vegetation

In addition to controlling erosion (see above), other steps should be taken to protect vegetation. Exposed areas should not be planted during the winter when the plants are dormant because wind or waves are likely to pull them out before they can get established. To prevent trampling of plants, pedestrian access to the shoreline should be restricted to designated access paths or walkways and the number of access points should be limited as much as possible. Often, multiple properties can use a common access point. To limit shading impacts to vegetation, access structures should be elevated on open pilings and their size should be minimized as much as possible.

Maintaining Sediment Supply to the System

Bank erosion is an important source of sediment to beaches and dunes in the shoreline system. To maintain this sediment supply, projects using two or more rows of coir rolls can bring in sediment from an offsite source on a regular basis (e.g., annually and after major storms) and place it on the beach in front of the rolls. This sediment will also help provide storm damage protection to the site by dissipating wave energy before it reaches the bank.

Minimizing Reflected Wave Energy

The ends of a coir roll project should be carefully designed to minimize any redirection of waves onto adjacent properties. Tapering the rolls down in number and height so that the project blends in to the adjacent bank helps address this problem.

PHOTO BY MASSACHUSETTS OFFICE OF COASTAL ZONE MANAGEMENT

This bioengineering project with coir rolls, natural fiber blankets, and vegetation was designed to minimize erosion on the adjacent property. At the end of the property, the number of rolls was tapered down to one and the bank's slope was reduced and blended in to the adjacent bank.

Project Installation and Coir Roll Anchoring

Coir rolls should be placed end to end and laced together with jute or coir twine to create continuous rolls parallel to the shoreline. The rolls are typically anchored by stakes on the seaward side of the rolls, earth anchor systems, or a combination of these two techniques. Wooden stakes are biodegradable but do not always hold well in areas with higher wave energy. Earth anchors, which are typically used for sites exposed to higher rates of erosion, consist of a metal duckbill anchor that extends into the bank and is connected to the coir roll by wire cables. Although earth anchors are not biodegradable, exposed portions of the cable system can be cut off and removed after the coir rolls have broken down to reduce marine debris impacts.

The anchoring system is critical to the success of the project. A professional is needed to determine the appropriate number and type of anchors for the site. It is also essential that the installation be carefully supervised and conducted by contractors with experience installing projects that have survived multiple storms. Anchors may need to be tightened after a period of time. To improve the longevity of the project, a professional can monitor the rolls over time and identify needed maintenance.

Coir rolls should be fully covered with sediment or tied into the existing bank at both ends of the project to minimize the potential for waves to get behind the rolls and erode the bank. The project can fail if the ends of the coir rolls become exposed.

Coir Roll Configuration and Size

The number of rows of coir rolls needed and their diameter depend on: 1) how exposed the site is to waves, 2) how frequently waves reach the base of the bank, and 3) the steepness of the bank face. In more sheltered sites or on relatively shallow bank slopes, one or two rows of 12-inch-diameter coir rolls may be sufficient. In more exposed areas and on steeper banks, multiple rows of 20-inch-diameter rolls may be needed up the face of the bank to provide effective site stabilization. The bottom row of coir rolls is often buried during installation to prevent undermining by beach erosion during a storm. In some cases, two side-by-side rows of rolls are installed at the base to provide more stability for the rows of rolls above.

Density of Coir Fibers

How densely the coconut husk fibers are packed into the coir rolls is also an important design element. While more densely packed rolls provide greater initial erosion protection, loosely packed rolls can be more heavily planted (because the vegetation can be easily inserted into the roll). This heavy planting allows the plants to become established more quickly, allowing the plant roots to effectively stabilize the site as the coconut fibers degrade. Both high-density and low-density coir rolls can be used together when heavily planted low-density rolls are installed adjacent to high-density rolls to help ensure the high-density rolls become vegetated over time. The professional designing the project should determine where rapid plant colonization or initial structural integrity is most important and then design a mix of rolls accordingly.

Reducing Damage from Sun Exposure

Plants can be used to shade the rolls and slow the degradation of the coir fibers that occurs from exposure to sunlight. The coir rolls can also be covered with sediment and natural fiber blankets (woven mats of natural fibers) to shade the coir rolls and slow degradation.

Heavy Equipment

While heavy equipment is not typically needed for coir roll projects, a mini-excavator or other small mechanized equipment may be necessary. Minimizing the use of heavy equipment can help reduce temporary disturbances from the project. Access for any equipment must be carefully planned to avoid destruction of existing vegetation; creation of ruts; destabilization of banks, beaches, or other landforms; impacts to wildlife and nesting habitat for protected shorebird species (i.e., species that are considered endangered, threatened, or of special concern in Massachusetts); and related impacts. When mechanical equipment is being used, contractors should keep hazardous material spill containment kits on-site at all times in case there is a release of oil, gasoline, or other toxic substances.

Wildlife and Fisheries Protection

If the project is proposed in or adjacent to habitat for protected wildlife species or horseshoe crab spawning areas, there may be limitations on the time of year that the project can be constructed. Information about the location of these resources and special permitting requirements is available from the Natural Heritage and Endangered Species Program of the Massachusetts Division of Fisheries and Wildlife (for protected wildlife species) and the Massachusetts Division of Marine Fisheries (for horseshoe crabs).

Permitting and Regulatory Standards

Most options for addressing coastal erosion, storm damage, and flooding are likely to require a permit under the Massachusetts Wetlands Protection Act through the local Conservation Commission. Additional permits may be needed from the Massachusetts Department of Environmental Protection (MassDEP) Waterways Program and the U.S. Army Corps of Engineers if the project footprint extends below the mean high water line or seaward of the reach of the highest high tide of the year, respectively. Permits or approvals may also be required from other state agencies and local departments, depending on the location and the work involved. Often, Conservation Commission staff are available to meet with applicants to go over important factors that need to be considered early in the design process.

Generally, regulatory programs are supportive of projects that use non-structural approaches to manage coastal erosion, such as coir rolls and vegetation, as opposed to hard structures. To obtain a permit, projects need to be designed to comply with regulatory requirements, including minimizing or avoiding impacts to sensitive resource areas such as horseshoe crab spawning areas and protected species habitat, which are protected by the various regulatory programs.

Professional Services Required

An environmental professional with significant experience designing, implementing, and successfully maintaining coir rolls and vegetation projects in coastal areas should be chosen to: 1) identify regulatory requirements and ensure the project fully conforms with those requirements; 2) determine the size, density, and number of rows of coir rolls needed based on site conditions (such as erosion history; exposure to winds, wave climate, and soil types; and runoff patterns); 3) determine whether natural fiber blankets, beach nourishment, or other techniques should be used in conjunction with the rolls; 4) identify any additional site conditions (including oversteepened slopes, erosion from overland runoff, and the presence of invasive species) that must be addressed; 5) select plant species and develop a plan for planting and plant maintenance; 6) identify the volume and composition of fill (if needed to re-establish a stable slope); 7) determine the best time of year to install the various components of the project; 8) develop an access plan if heavy equipment is needed; 9) prepare plans for and oversee permitting; 10) prepare design specifications and oversee construction; and 11) monitor and maintain the project. To ensure that essential design elements are appropriately implemented, *construction should be conducted by a contractor with experience installing coir roll projects that have survived multiple storms and carefully supervised by a consultant with significant experience and demonstrated success with coastal coir roll projects. Monitoring and maintenance by a consultant with significant experience is also strongly recommended*.

Project Timeline

It may take as little as four to eight months to have a bioengineering project with coir rolls designed, permitted, and installed, assuming that only a Massachusetts Wetlands Protection Act permit is required—but it can take longer, depending on the factors involved. Factors influencing this timeline include the contractor's experience with designing and permitting similar projects, completeness of permit applications, special considerations in the permitting process (such as objections by abutters, sensitive resources to be protected, and availability of access for construction), the need for special timing to avoid impacts (e.g., a prohibition on construction during endangered species nesting season), special timing needed for planting vegetation, and/or weather conditions during construction.

Maintenance Requirements

Bioengineering projects with coir rolls and vegetation require ongoing maintenance to ensure their success. Maintenance needs will depend, in part, on the proximity of the coir rolls to the reach of high tide, the elevation and width of the beach, the frequency and severity of storms, and how established the plants are before a storm hits. To maintain the project's designed level of protection, the coir rolls and vegetation should be inspected regularly, particularly after rain and coastal storms. Any storm damage should be addressed immediately to avoid further deterioration—this includes replacing any sediment that erodes around the coir rolls, resetting or replacing coir rolls as needed, and replanting vegetation (which may have to be conducted at the appropriate time of year). The more frequently high tides and waves reach and overtop the coir rolls, the higher the likely erosion rate and deterioration rate of the rolls. Erosion rates will be even higher if the site is not vegetated. Because the replacement of sediment and plants removed by storms is typically necessary, the original permit application should include a maintenance plan. This plan should specify any replacement materials and activities that may be used on the site and how the site will be accessed so that maintenance can be conducted without additional permitting.

Experience with what works, what doesn't, and how to adjust a design as site conditions change is very important to the success of bioengineering projects, particularly in coastal areas. Therefore, it is strongly recommended that the consultant who designed the project be involved in the monitoring and maintenance after any erosion from rain or coastal storms.

Project Costs

With coir roll projects, a range of options are available that give increasing levels of protection with increased construction costs. In addition, whenever you hire a professional to conduct work on your property, total costs are expected to vary significantly based on site-specific considerations. The considerations that most influence the costs of coir roll projects on coastal banks are: the severity of erosion, the width and elevation of the beach in front of the bank, the grading needed to create a stable slope, the diameter and number of rows of rolls, and the type and size of plants selected. For comparison with other shoreline stabilization options, the relative costs for coir roll projects are:

- Low-medium for design and permitting.
- Medium-high for construction.
- Low-medium for maintenance.
- Low for mitigation.

See the StormSmart Properties web page at www.mass.gov/czm/stormsmart-properties for a *Relative Costs of Shoreline Stabilization Options* chart that gives a full comparison.

Additional Information

Bioengineering with coir rolls can be used in conjunction with many other techniques for erosion management. See the following fact sheets on the CZM StormSmart Properties web page at www.mass.gov/czm/stormsmart-properties for additional information:

- *StormSmart Properties Fact Sheet 1: Artificial Dunes and Dune Nourishment*.
- *StormSmart Properties Fact Sheet 2: Controlling Overland Runoff to Reduce Coastal Erosion*.
- *StormSmart Properties Fact Sheet 3: Planting Vegetation to Reduce Erosion and Storm Damage*.
- *StormSmart Properties Fact Sheet 5: Bioengineering - Natural Fiber Blankets on Coastal Banks*.
- *StormSmart Properties Fact Sheet 8: Beach Nourishment*.

The following publications and websites also provide valuable information on bioengineering with coir rolls and vegetation:

- CZM's Coastal Landscaping website (www.mass.gov/czm/coastal_landscaping) focuses on

landscaping coastal beaches, dunes, and banks with salt-tolerant vegetation to reduce storm damage and erosion.

- CZM's *Landscaping to Protect Your Coastal Property from Storm Damage and Flooding* fact sheet (www.mass.gov/eea/docs/czm/stormsmart/ssc/ssc6-landscaping.pdf; PDF, 955.7 KB) gives specific information for homeowners on appropriate plants for erosion control in coastal areas.
- Woods Hole Sea Grant's Marine Extension Bulletin, *Biodegradable Erosion Control* (www.whoi.edu/fileserver.do?id=82284&pt=2&p=88928; PDF, 722 KB), provides information on various components of a coir roll project for coastal erosion control.
- CZM's *Environmental Permitting in Massachusetts* (www.mass.gov/eea/agencies/czm/program-areas/federal-consistency-review/environmental-permitting-in-massachusetts.html) gives brief descriptions of major environmental permits required for projects proposed in Massachusetts.
- *Guidelines for Barrier Beach Management in Massachusetts* (www.mass.gov/eea/docs/czm/stormsmart/beaches/barrier-beach-guidelines.pdf; PDF, 12.5 MB), which was produced by the Massachusetts Barrier Beach Task Force in 1994, provides an overview of the Massachusetts Wetlands Protection Act Regulations and the function of beaches, dunes, barrier beaches, and other resource areas (in Chapter 2). This document also gives information on various erosion-management techniques, their potential impacts, and recommended management measures to minimize impacts (Chapter 5).
- Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00) (www.mass.gov/eea/agencies/massdep/water/regulations/310-cmr-10-00-wetlands-protection-act-regulations.html) cover work in wetland resource areas and buffer zones.
- The Natural Heritage and Endangered Species Program website (www.mass.gov/eea/agencies/dfg/dfw/natural-heritage) provides information on protected species in Massachusetts, habitat maps, and regulatory review for projects in or adjacent to these habitats.
- The Massachusetts Division of Marine Fisheries can provide information on horseshoe crab protection and other fisheries resources. See their website at www.mass.gov/eea/agencies/dfg/dmf for contact information.
- The Massachusetts Ocean Resource Information System, or MORIS, is a web-based mapping tool for interactively viewing coastal data that is available at www.mass.gov/czm/mapping. It includes shoreline change data, which should be considered when evaluating and designing shoreline stabilization projects. Other data layers in MORIS (such as endangered species habitat, shellfish, and eelgrass) can help identify sensitive resource areas within or near the project site.

COMMONWEALTH OF MASSACHUSETTS
Deval L. Patrick, Governor

EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
Richard K. Sullivan Jr., Secretary

MASSACHUSETTS OFFICE OF COASTAL ZONE MANAGEMENT
Bruce K. Carlisle, Director

MASSACHUSETTS OFFICE OF COASTAL ZONE MANAGEMENT | 251 Causeway Street, Suite 800 | Boston, MA 02114 | (617) 626-1200
CZM INFORMATION LINE: (617) 626-1212 | **CZM WEBSITE:** www.mass.gov/czm

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PUBLICATION DATE: December 2013

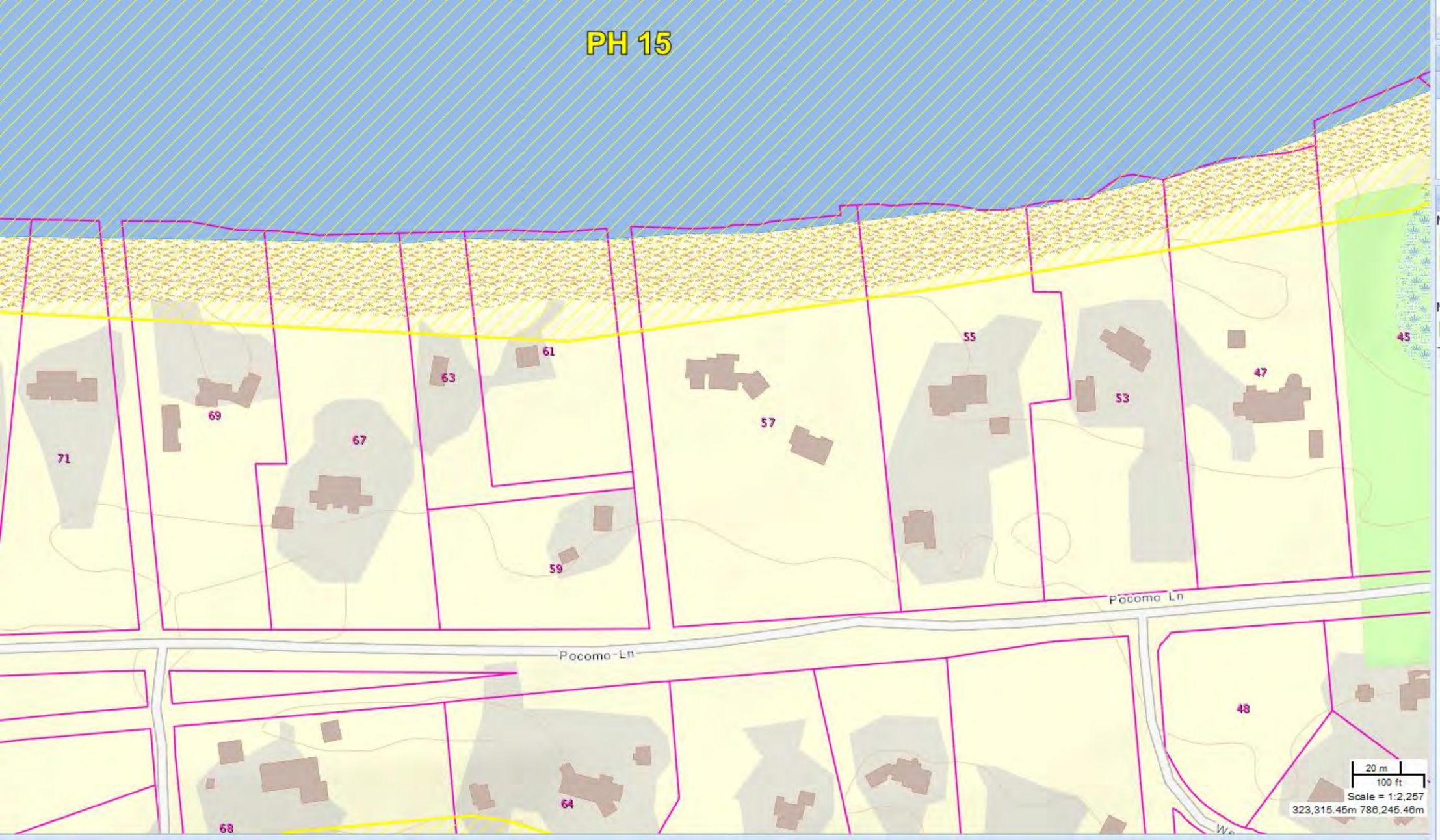
FEMA's National Flood Hazard Layer

20 Mary Ann Drive • Nantucket, MA 02554
508-825-5053 • www.NantucketEngineer.com

Estimated & Priority Habitat Mapping
On MassGIS

By

Massachusetts Natural Heritage & Endangered Species Program



Canoe Trips

Active Data Layers

Check all | Uncheck all

- NHESP Priority Habitats of Rare Spe
- NHESP Estimated Habitats of Rare W
- Tax Parcels for Query
- Detailed Features

Legend

NHESP Priority Habitats of Rare Species

NHESP Estimated Habitats of Rare Wildlife

Tax Parcels for Query

Head of the Harbor
Wauwinet
Wyers Point
Bess Point
Coatue
Pocomo Head
Squam Head
HARBOR
Pocomo
Squam
Third Point
Quaise Point
Quidnet
NANTUCKET
Sesachacha Pond
Savains Neck
Shawkemo
Polpis
Cranberry Bog
Quaise
Hoicks Hollow
Shimmo
Shawkemo Hills
Radio Facility
Altar Rock
Folger Hill
Lighthouse
NANTUCKET
Sauls Hills
NANTUCKET STATE FOREST
ISLAND
Gibbs Pond
Cranberry Bog
Cranberry Bog
Siasconset
Radio Towers
Nantucket Memorial Airport
Radio Towers
Coast Guard
LOW
BEACH
Tom Nevers Head

MESA PROJECT REVIEW CHECKLIST

Massachusetts Endangered Species Act M.G.L. c. 131A and Regulations (321 CMR 10.00)

Massachusetts Division of Fisheries & Wildlife
Natural Heritage & Endangered Species Program

~~~~ CONTACT INFORMATION ~~~~

If you already completed your Notice of Intent-Form 3, you can send page 1 of the NOI in place of questions 1 through 4 in this section.

1. Project Location:

See NOI Application Page 1

Street Address/Location | City/Town | Zip Code

Assessors Map/Plat Number | Parcel /Lot Number

2. Applicant:

First Name | Last Name | Company

Mailing Address

City/Town | State | Zip Code

Phone Number | Fax Number | Email address

3. Property owner (if different from applicant):

First Name | Last Name | Company

Mailing Address

City/Town | State | Zip Code

Phone Number | Fax Number | Email address

4. Representative (if any):

The MESA does not allow project segmentation. Your filing must reflect all anticipated work associated with the proposed project (CMR 321 10.16).

Company

Arthur D. | Gasbarro, PE, PLS, LEED AP

Contact Person First Name | Contact Person Last Name

20 Mary Ann Drive

Mailing Address

Nantucket | MA | 02554

City/Town | State | Zip Code

508-825-5053 | 5 | art@nantucketengineer.com

Phone Number | Fax Number | Email address

~~~~ADDITIONAL INFORMATION ~~~~

1. Will this project require a filing with the Conservation Commission and/or DEP? ☐ No ☑ Yes
2. Will this project meet any threshold for a MA Environmental Policy Act (MEPA) filing (excluding rare species, 301 CMR 11.03 (2))? ☑ No ☐ Yes
3. Has this project previously been issued a NHESP Tracking Number (either by previous NOI Submittal or MESA Information Request Form)? ☑ No ☐ Yes – Tracking No._____

from top:
Golden Winged Warbler - E

Small whorled pogonia - E

Marbled Salamander - T

* For an electronic copy of this form, visit www.nhesp.org *

~~~~PROJECT DESCRIPTION (attach separate sheet, as needed)~~~~

Certain projects or activities are exempt from review, see 321 CMR 10.14

The applicants are proposing to install an anchored fiber roll array with reinforced soil lifts, timber posts, sand nourishment cover and beach grass/native species plantings along the face of a coastal bank. The existing debris and fence posts will be removed and the entire area cleaned up. Please refer to the attached Project Narrative and Site Plan for additional information.

~~~~INCLUDE THE FOLLOWING INFORMATION ~~~~

We will notify the applicant within 30 days if the materials submitted do not satisfy requirements for a filing and request submission of any missing materials (321 CMR 10.18(1)).

ALL Applicants must submit:

- ☑ USGS map(1:24,000 or 1:25,000) with property boundary clearly outlined
- ☑ Project plans with existing and proposed conditions
- ☑ Assessor's map or right-of-way plan of site
- ☑ Project description
- ☑ Statement/proof that applicant is the Record Owner or that applicant is a person authorized in writing by the record owner to submit this filing
- ☑ Photographs representative of the site

Projects altering* 10 or more acres, must also submit:

- ☐ A vegetation cover type map of the site
- ☐ Project plans showing Priority Habitat boundaries

*Alteration: Any physical alteration of land, soils, drainage or destruction of plant life, see "Project or Activity" (321 CMR 10.02). If only a portion of the project site is located within Priority Habitat, indicate total area of disturbance for site as a whole

We may request additional information, such as, but not limited to, species and habitat surveys, wetland reports, soil map and reports, and stormwater management reports (321 CMR 10.16).

~~~~ FILING FEES ~~~~

For fees, see www.nhesp.org

a. Total MESA Fee Paid	b. Acreage of Alteration*	c. Total Site Acreage
$300.00	0.6+/-	21 +/-

~~~~ REQUIRED SIGNATURES~~~~

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

Arthur D. Salvo Agent — 3/16/16

Signature of Property Owner/Record Owner of Property — Date

Signature of Applicant (required, if different from Owner) — Date

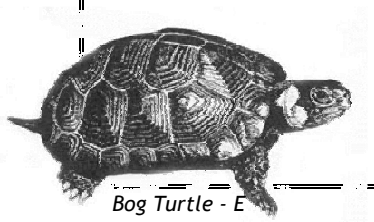
Please send form, required information, and filing fee (payable to "NHES Fund") to:

Regulatory Review
Natural Heritage & Endangered Species Program
North Drive, Route 135
Westborough, MA 01581

Natural Heritage & Endangered Species Program
Massachusetts Division of Fisheries & Wildlife

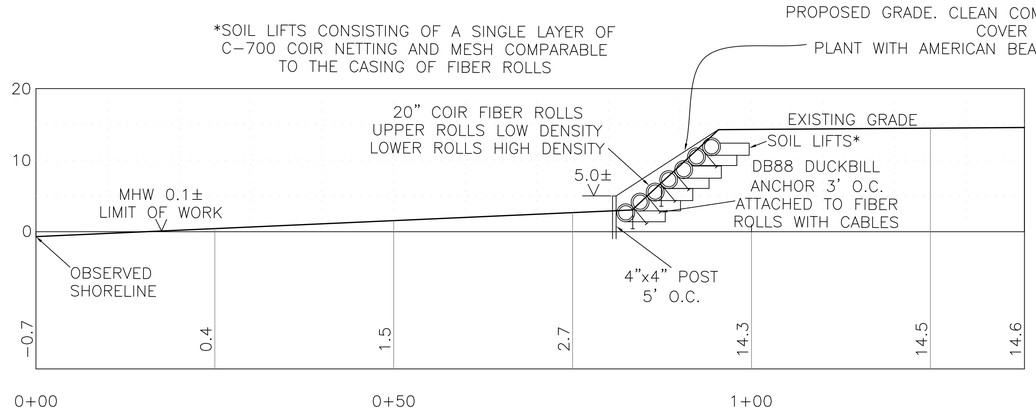
Telephone: 508-792-7270, Fax: 508-792-7821

Questions or Comments? natural.heritage@state.ma.us

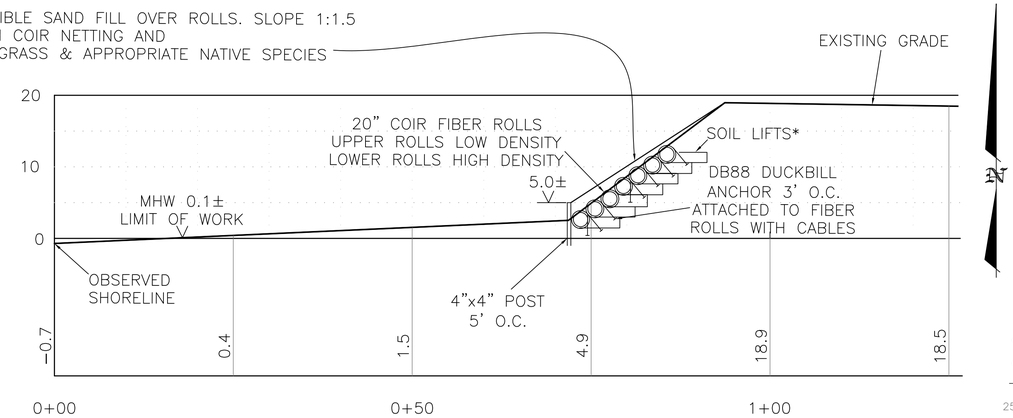


Bog Turtle - E

* For an electronic copy of this form, visit www.nhesp.org *

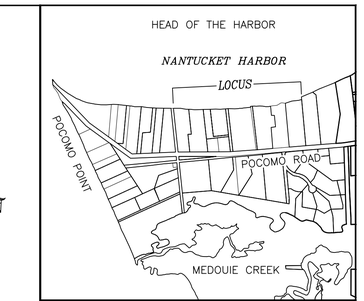


TRANSECT 1 PROFILE 1"=10'



TRANSECT 2 PROFILE 1"=10'

NANTUCKET HARBOR

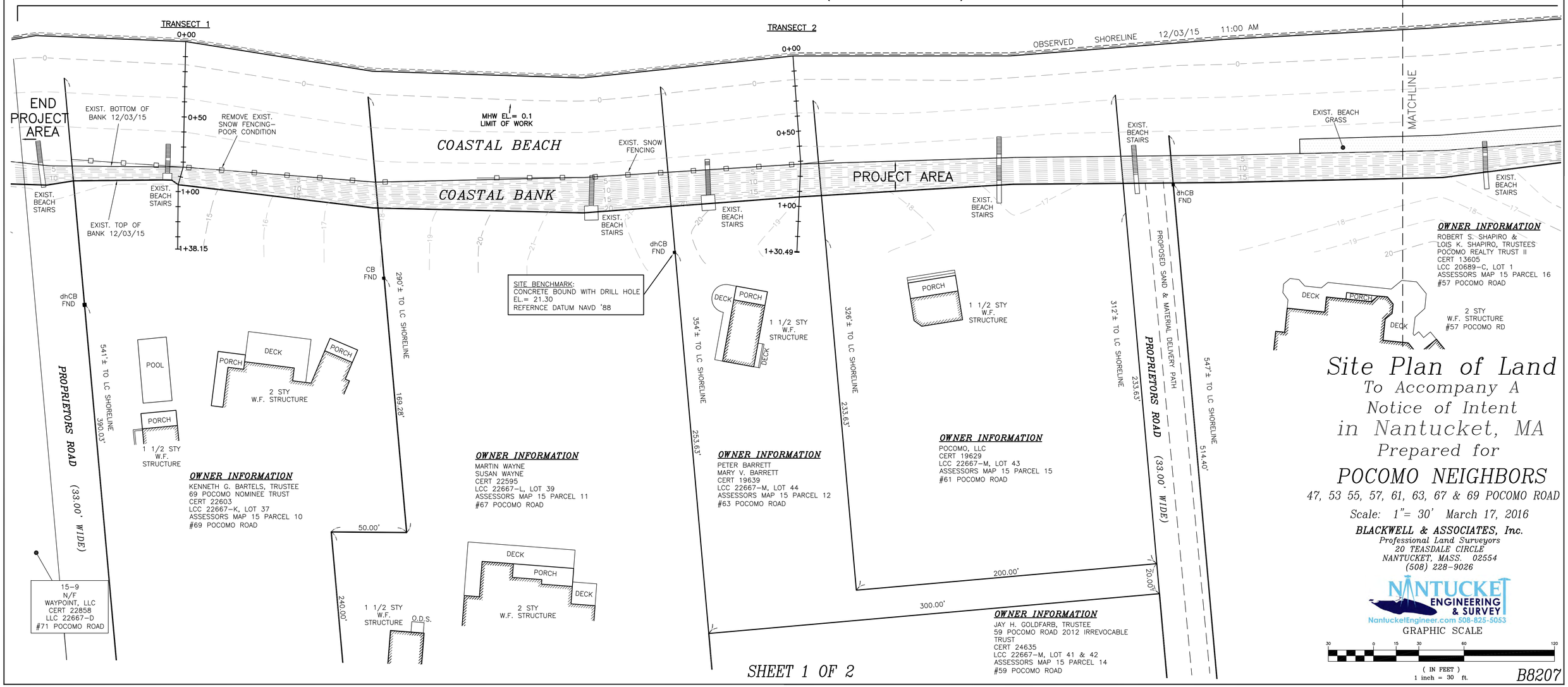


LOCUS MAP SCALE: 1"= 960' ±

LEGEND

- dhCB ■ DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
- dhCB ⊡ DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
- DENOTES EXIST. WOOD w/WIRE FARM FENCE
- 25 DENOTES EXIST. GRADE CONTOUR
- x24.3 DENOTES EXIST. GRADE SPOT ELEVATION

PROJECT LENGTH 1775'± (ALONG BANK FACE)



Site Plan of Land

To Accompany A
Notice of Intent
in Nantucket, MA
Prepared for

POCOMO NEIGHBORS

47, 53 55, 57, 61, 63, 67 & 69 POCOMO ROAD

Scale: 1"= 30' March 17, 2016

BLACKWELL & ASSOCIATES, Inc.
Professional Land Surveyors
20 TEASDALE CIRCLE
NANTUCKET, MASS. 02554
(508) 228-9026

NANTUCKET ENGINEERING & SURVEY
NantucketEngineer.com 508-825-5053

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

SHEET 1 OF 2

B8207

NEW INFORMATION FOR CURRENT HEARING

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR AND EQUIPMENT TO PERFORM THE WORK DESCRIBED ON THESE PLANS, AND AS APPROVED BY THE NANTUCKET CONSERVATION COMMISSION.

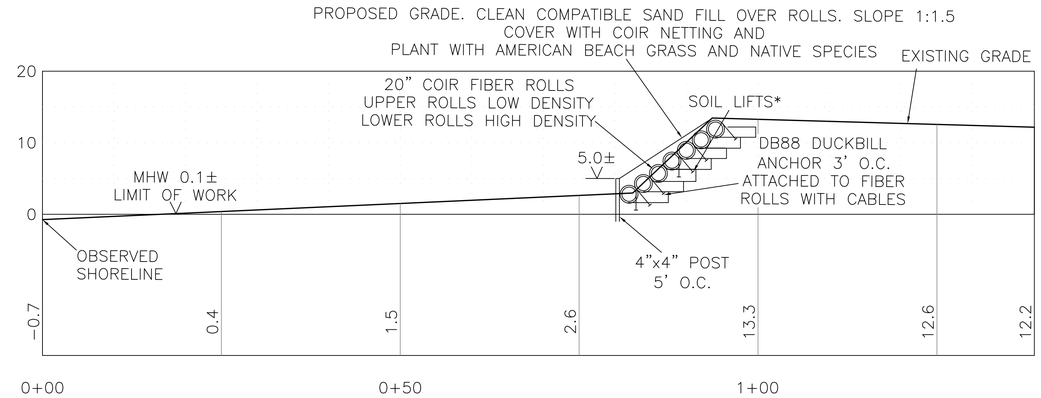
2. WORK SHALL BE IN COMPLIANCE WITH THE PLANS, SPECIFICATION AND THE ORDER OF CONDITIONS ISSUED BY THE NANTUCKET CONSERVATION COMMISSION.

3. THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION ON-SITE MEETING WHICH WILL BE ATTENDED BY THE ENGINEER, WITH NOTIFICATION TO A REPRESENTATIVE OF THE NANTUCKET CONSERVATION COMMISSION. THE CONTRACTOR WILL PRESENT THE PROPOSED METHODS AND MEANS TO CONSTRUCT THE PROPOSED IMPROVEMENTS.

4. THE CONTRACTOR SHALL NOT VARY FROM THE PLANS, SPECIFICATION, ORDER OF CONDITIONS OR INSTRUCTIONS PROVIDED AT THE PRE-CONSTRUCTION MEETING, WITHOUT FIRST OBTAINING APPROVAL OF THE CONSERVATION COMMISSION REPRESENTATIVE AND THE ENGINEER.

5. ONLY CLEAN COMPATIBLE FILL SHALL BE USED FOR FILL AND COVER FOR THIS PROJEFCT. THE CONTRACTOR AGREES TO OBTAIN SEDIMENT GRAIN SIZE DISTRIBUTION ANALYSIS, FROM A QUALIFIED LABORATORY, IF REQUESTED BY THE CONSERVATION COMMISSION REPRESENTATIVE.

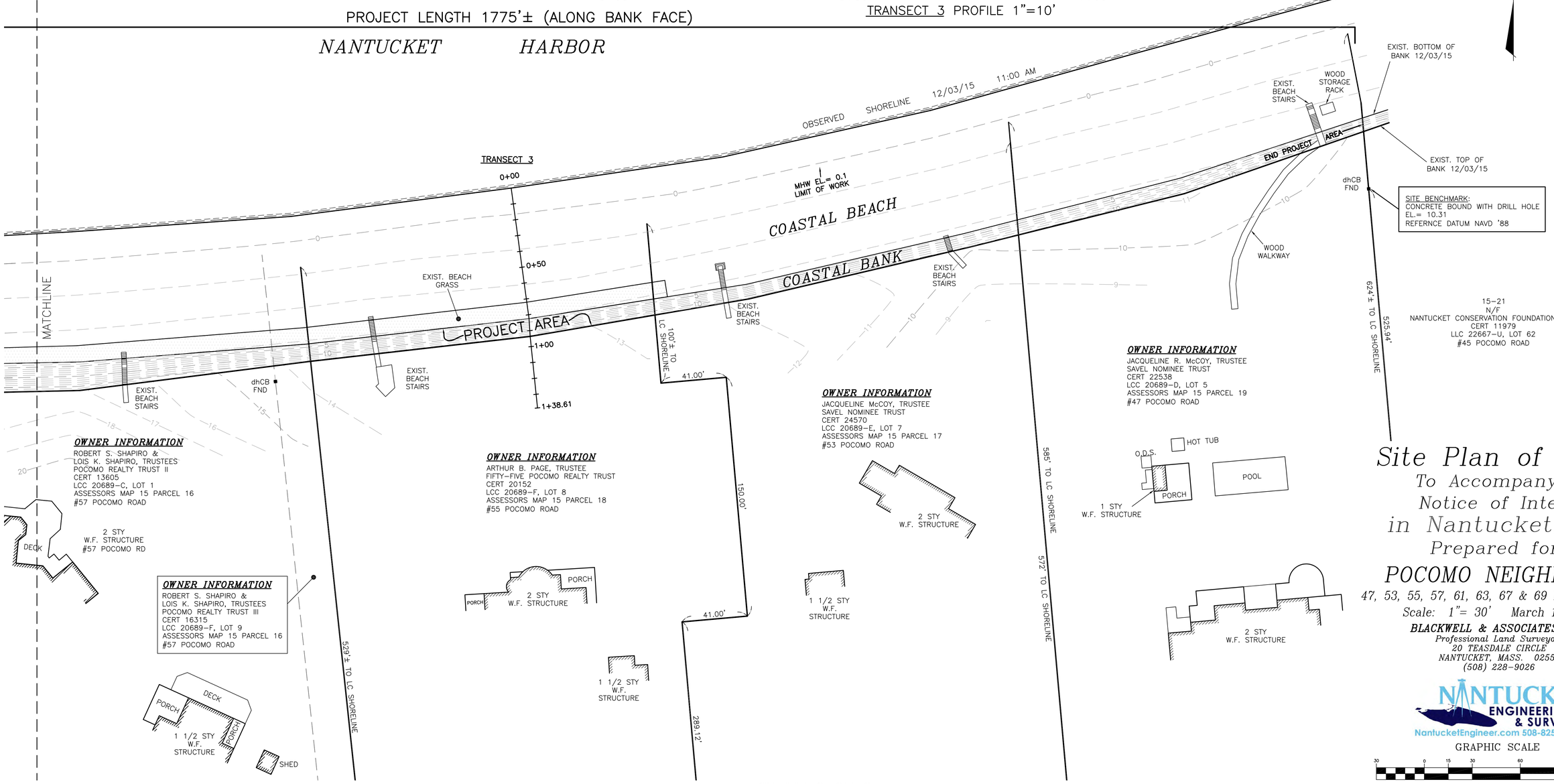
6. UPON COMPLETION OF RESTORATION, AND PRIOR TO DEMOBILIZATION OF EQUIPMENT, THE CONTRACTOR SHALL ARRANGE FOR A POST-CONSTRUCTION MEETING WITH THE ENGINEER. SHORT COMINGS AND DEFICIENCIES WILL BE OUTLINED TO THE CONTRACTOR AT THIS MEETING, THAT MUST BE CORRECTED PRIOR TO DEMOBILIZATION AND FINAL PAYMENTS FOR THE WORK.



TRANSECT 3 PROFILE 1"=10'

LEGEND

dhCB ■	DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
dhCB ⊡	DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
—□—□—	DENOTES EXIST. WOOD w/WIRE FARM FENCE
25 — — —	DENOTES EXIST. GRADE CONTOUR
x24.3	DENOTES EXIST. GRADE SPOT ELEVATION



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NantucketEngineer.com 508-825-5053

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

WHG Project # 2015-0168

April 21, 2016

Mr. Ernest Steinauer, Chairman
c/o Mr. Jeff Carlson
Natural Resource Coordinator
2 Bathing Beach Road
Nantucket, MA 02554

Transmitted via electronic mail: jcarlson@nantucket-ma.gov

Re: Site Assessment at 47, 53, 55, 57, 61, 63, 67, & 69 Pocomo Road, Nantucket, MA

Dear Mr. Steinauer:

During the Conservation Commission meeting a question was asked about date of the storms and the water levels contained in this report. I reviewed the text and found an error in the text. However, the figures and tables in the original report were correct and have not been changed. Please accept this revised report that contians several text changes.

The Woods Hole Group was asked to perform a site assessment and make recommendations on the most appropriate method to stabilize the coastal bank located at 47, 53, 55, 57, 61, 63, 67, & 69 Pocomo Road, on Nantucket. The purpose of the assessment was to examine the conditions on the beach, quantify the coastal processes at the site, determine the rate of change on the coastal beach and coastal bank, and to assess the impacts of sea level rise on the project. The results of my assessment are described in the following paragraphs.

The following letter presents the winds, water levels, and shoreline change at the property, makes recommendations on the best method to protect the coastal bank, and discusses if the project provides adequate sediment to replace sediment that would have been provided by erosion of the coastal bank. Additionally, the letter explains how this project is permittable under both the Massachusetts Wetland Protection Act and the Nantucket Wetlands Bylaws.

Project Setting

The proposed project is located within Nantucket Harbor on a north facing shoreline (Figures 1 & 2). The shoreline is generally oriented in the east-west (Figure 2). The coastal beach is protected from waves generated in Nantucket Sound by the barrier beach that encloses Nantucket Harbor, known as Coatue. The beach is oriented predominately to the east and west, however,

Figure 1. Project location within Nantucket Harbor.

Figure 2. This figure shows the project location, shoreline orientation and fetch lengths in the project boundaries.

there is a slight arcuate shape to the beach. The two apexes of the beach are located at the east and west ends while the middle of the project is slightly curved to the south (Figure 2).

The coastal resources located on the beach front are land subject to coastal storm flowage, land under the ocean, coastal beach, and coastal bank. At the time of the writing of this letter report there was no coastal dune present on the property. The proposed project will provide stabilization to the toe of the coastal bank for eight (8) properties and encompasses approximately 1,800 ft of shoreline.

The average width of the beach varies as you move through the project area. The average width of the beach from Mean Low Water to base of the coastal bank is approximately 80 ft while the average width of the high tide beach measured from the Mean Tide Level to the toe of the coastal bank is approximately 30 ft wide. The height of the coastal bank (measured from the toe of the bank to the crest) above the beach varies along the project length from a high of about 18 ft to a low of approximately 6 ft.

Because the beach is isolated from Nantucket Sound by the Coatue barrier beach the beach is exposed only to waves that are locally generated within Nantucket Harbor. The fetch lengths (the continuous distance over water that the wind can blow) for the project area are shown in Figure 2. The fetch lengths are 1.0, 2.1, and 1.9 miles from the northwest, north, and northeast respectively as shown in Figure 2. The relatively short fetch lengths will generate fetch-limited waves that in combination with storm surge will erode and destabilize the face of the coastal bank.

Site Visit

A site visit was performed on January 13, 2016. During the site visit, I had the opportunity to observe the project site, the costal beach, and coastal bank. The project encompasses approximately 1,800 ft of beach within Nantucket Harbor. The beach is generally oriented from the east to the west and is slightly arcuate. The width of the low tide beach varies as you travel from the east to the west. In general, the widest low tide beaches are located at the eastern and western ends of the project (approximately 80 ft in width). The narrowest beaches are located in the center of the project area which is in the center of the arc. The high tide beach is relatively narrow and is approximately 30 ft wide in the project area.

I began the site visit by walking the beach from the west to the east. Figure 3 was taken at the western end of the project and is looking to the east and shows the eroded coastal bank which is vertical and has a pronounced undercut at the top of the bank. This is clearly seen by the stranded roots hanging down the face of the bank. Figure 3 also shows the remnants of a sand fence. The fence has been destroyed over the years by waves and storm surge from winter and spring storms. Figure 4 also was taken from the western side of the project and is looking to the east. This figure shows an almost continuous line of sand fence that is mostly not functional. The bank is slightly undercut (not as pronounced as shown in Figure 3) and is unstable. The bank is composed of glacial till and while it is mostly sand it does have a large fraction of gravel and some small cobble. Figure 5 is again looking to the east and shows the relatively wide low tide beach that is composed of sand. Figure 6 looking to the east and shows the near vertical

bank and the vegetation that has slumped down the face of the bank. Evidence of bank slumping is apparent along the entire bank face throughout the entire project area. This figure also shows the stranded sand fence.

Figure 3. A view looking to the east from the western project terminus.

Figure 4. A view to the east showing the eroded coastal bank and dilapidated sand fence.

Figure 5. A view showing the shallow and flat inter-tidal beach.

Figure 6. A view of the dilapidated sand fence, vegetation slumps on the bank face, and the undercut top of bank.

Figure 7 is a view taken from the eastern boundary of the project looking back to the west. This figure shows that the coastal bank is lower in elevation and is eroding. The vegetation has eroded from the top of the bank and has slumped down the bank face to the toe of the bank. The intertidal beach is wide along this section of beach. However, the high tide beach remains relatively narrow. There are no stranded sand fences or other debris on this section of beach. This figure also shows the arcuate shape of the beach extending to the east.

Figure 7. A view from the western project terminus looking to the east showing the eroded bank and inter-tidal beach.

Figure 8 was taken along the same section of beach looking to the east and shows the relatively wide and flat intertidal beach which is characteristic of the project area.

Storms Impacting Nantucket Harbor's Shoreline

As previously stated, the shoreline is generally oriented in east and west directions. The longest fetches are from the northeast clockwise through the north-northeast (Figure 2). Therefore, storms that generate winds from the northwest through the north-northeast produce waves which will impact the project shoreline.

Anecdotal observations and meteorologists have suggested that there have been more storms over the past several years and the frequency and intensity of these storms will continue to increase over the next several years and into the future. However, we have observed over the years that storm frequency and intensity tends to be cyclic. In order to determine if this was true, we analyzed the number of storms that occurred between 1980 and 2015 during the storm

season. We defined the storm season to be between September and May of two successive years. The 2015 storm season contained storm data only through mid February 2016. Therefore, wind data was parsed between the fall of one year and the spring of the next. The sustained wind data was binned first by direction, then by events that had sustained wind gusts with velocities equal to or greater than 25 miles per hour, and then finally if the event had a duration of 3 hours or greater. This means a storm was accepted for the analysis if it approached the Nantucket Harbor shore, had sustained wind gusts that exceeded 25 mph, and lasted at least 3 hours.

Figure 8. A view of the inter-tidal beach from the west end of the project.

Figure 9 shows the data for sustained winds with sustained gust velocities of 25 knots or greater and a duration of at least 3 hours or longer for the years 1980 through 2015. This figure shows that in general there as a steady increase of storms between 1982 and 1989. There was a decrease in the number of storms that occurred during the period between 1989 and 1993. In general, there is a 2 to 4 year cycle of increasing and decreasing frequency of storms. The last cycle shown on the graph shows a decrease in storm frequency between 2000 and 2001. While the cyclic nature of the storm frequency is clearly shown in Figure 9, the long-term average number of storms has been increasing since 1992[1].

The winds for the January 22-25, 2016 storm are shown in Figure 10. This figure shows the winds beginning out of the northeast early on January 23. The steady wind velocities increase to over 25 knots with sustained wind of over 30 knots with wind gusts over 40 knots. The sustained wind speeds lasting for over 24 hours. The storm surge produced by the January 22-

[1] Note that the 2015 data contained wind data only through mid February 2016.

25, 2016 storm is shown in Figure 11. This figure shows that at the height of the storm, the elevation of the storm surge exceeded MHW for four consecutive tidal cycles (Figure 11).

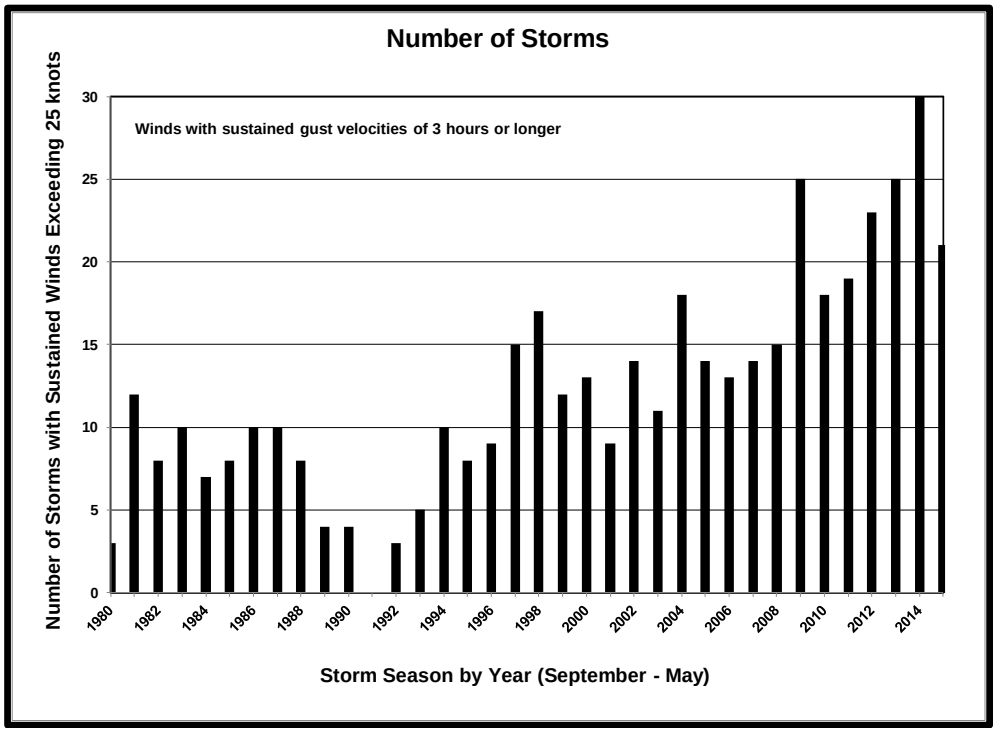

Figure 9. Number of storms occurring for each storm season from 1980 through 2014. The 2015 storm season has data only through February 16, 2016.

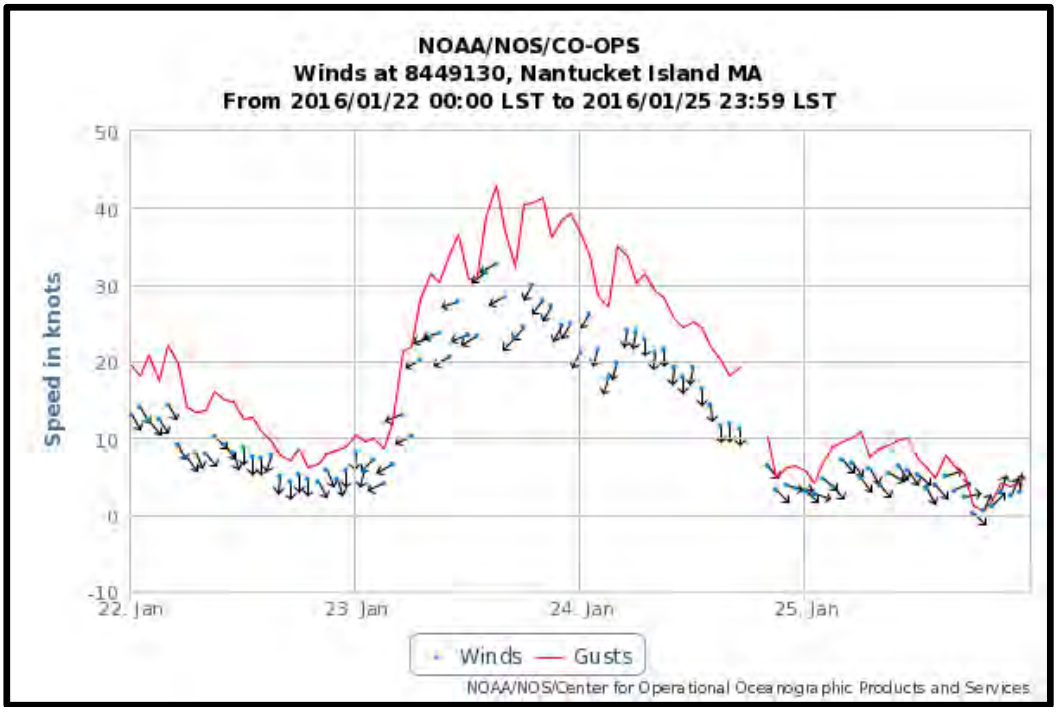

Figure 10. Figure showing a typical storm event that met the threshold criteria with winds out of the north & northeast, velocities greater than 25 knots, and lasing over 3 hours.

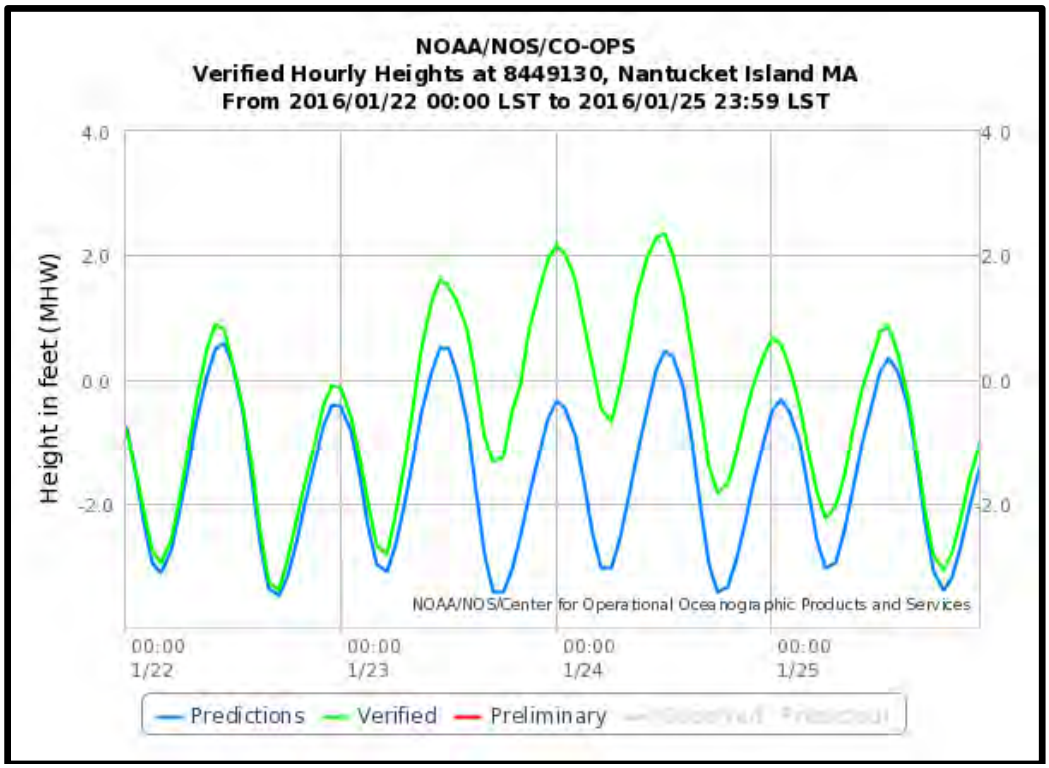

Figure 11. Water levels produced by the January 24, 2016 storm winds shown in Figure 10.

At the height of the storm, the water level was over 2.2 ft above MHW. All the while, the wind and waves were battering the shoreline and the toe of the coastal bank. Figure 12 shows the effect of this storm on the beach and the coastal bank at the site. Figure 12A shows the beach looking to the east along the shoreline and Figure 12B shows looking to the west along the beach. Both Figures show that the storm surge has completely inundated the high tide beach and that the waves and run-up are attacking the toe of the coastal bank.

Another disturbing trend was observed in the wind and wave data. The increase in storms has produced an increase in the number of storm surge events that have impacted the shoreline. While examining the data many smaller storms were noted that did not exceed the threshold criteria but produced water levels that were above MHW for one or more tidal cycles. This means that with the increased frequency of storm events, the toe of the coastal bank is being inundated and attacked on a more frequent basis.

Waves at the Site

Storm surge increases the depth of water in the nearshore and allows waves to break on the beach or directly at the base of the coastal bank. Therefore, an analysis was completed to calculate the maximum wave height that would be produced during a storm. Waves generated offshore can break either offshore in the nearshore zone or on the beach and at the base of the coastal bank. The waves breaking offshore of the beach are important because they are responsible for eroding the beach and transporting sediment downdrift of the breaking waves.

The second breaker line will occur high on the beach and at the base of the coastal bank if the storm surge is high enough and will result in erosion of the toe of the bank.

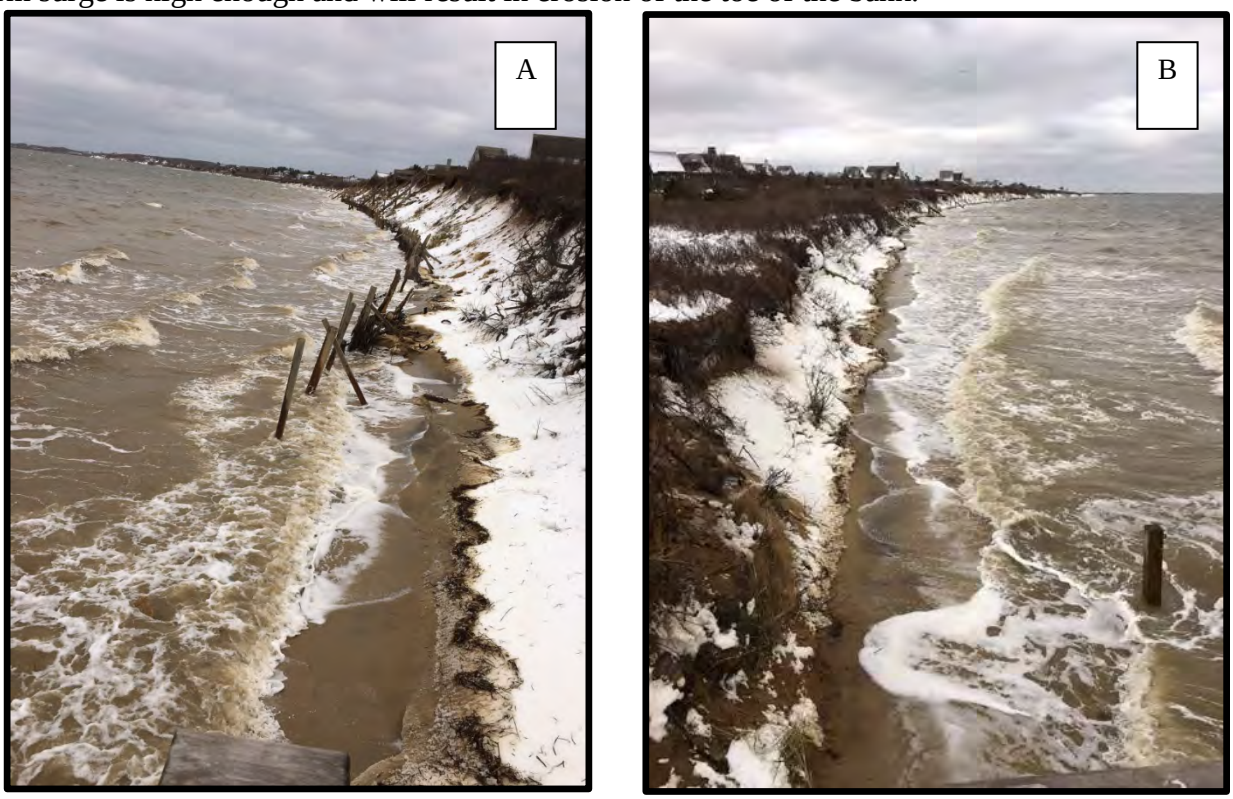

Figure 12. View of the project looking to the east (A) and from the west (B) during the storm shown in Figure 11.

As a result, waves were calculated using two methods. The first method utilized the US Army Corps of Engineers (USACE) Automated Coastal Engineering System (ACES) models. This group of computer programs was developed by the USACE Coastal Engineering Research Center[2] at the Waterways Experiment Station. The second technique used linear wave theory to calculate the maximum wave height that can be supported for a given water depth on the beach.

The ACES analysis calculates the maximum wave height that can be generated in Nantucket Harbor for a given wind speed and direction. A general storm (average) storm condition was synthesized using a wind speed of 40 miles per hour was used with a duration of 4 hours. We also ran the computer model for two storms conditions that occurred on Nantucket. The first was Nemo, a nor'easter that occurred on January 26, 2015 and the second unnamed nor'easter that occurred on January 24, 2016. Table 1 shows the results obtained from the ACES wave model for wind directions from the northwest clockwise through the north-northeast for these storms. These are the maximum wave heights that will be generated offshore of the beach during these storms. A larger storm will increase the water level, last longer, and will produce larger waves. Table 1 also shows the waves generated for the conditions shown in Figure 10 and 13A.

[2] Now the USACE Coastal and Hydraulic Laboratory.

Table 1. Wave heights in the harbor calculated from ACES.

Direction (deg)	Wave Height (ft) Winds ~40 mph 3 hr	Wave Height (ft) Nemo 1-26-15	Wave Height Nor'Easter (ft) 1-24-16
340	1.9	1.9	1.7
0	2.1	2.7	2.3
20	2.1	2.6	2.2

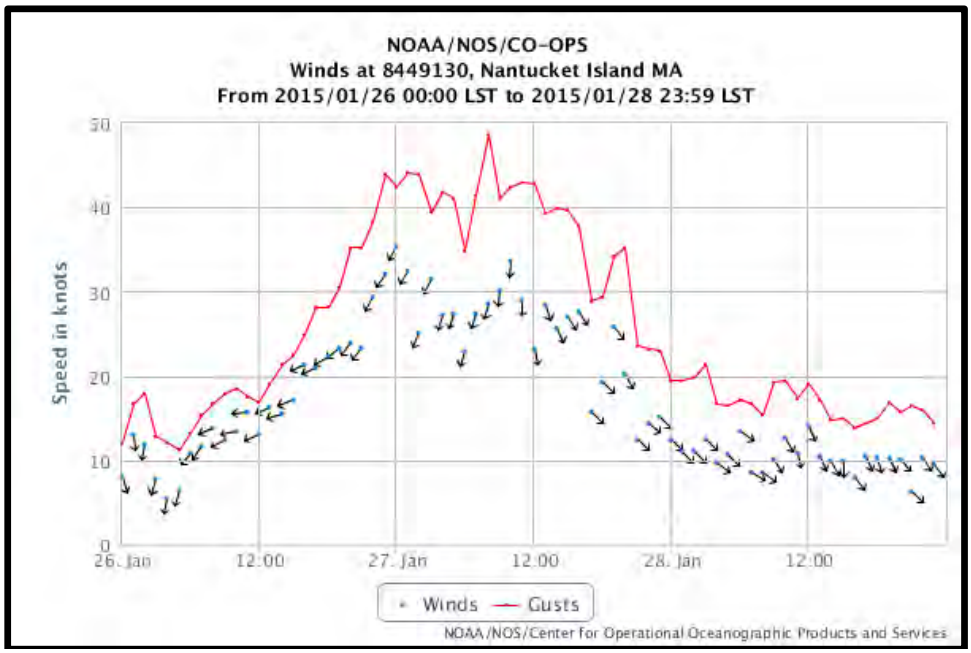

Figure 13A. Winds generated during the nor'easter Nemo January 2015.

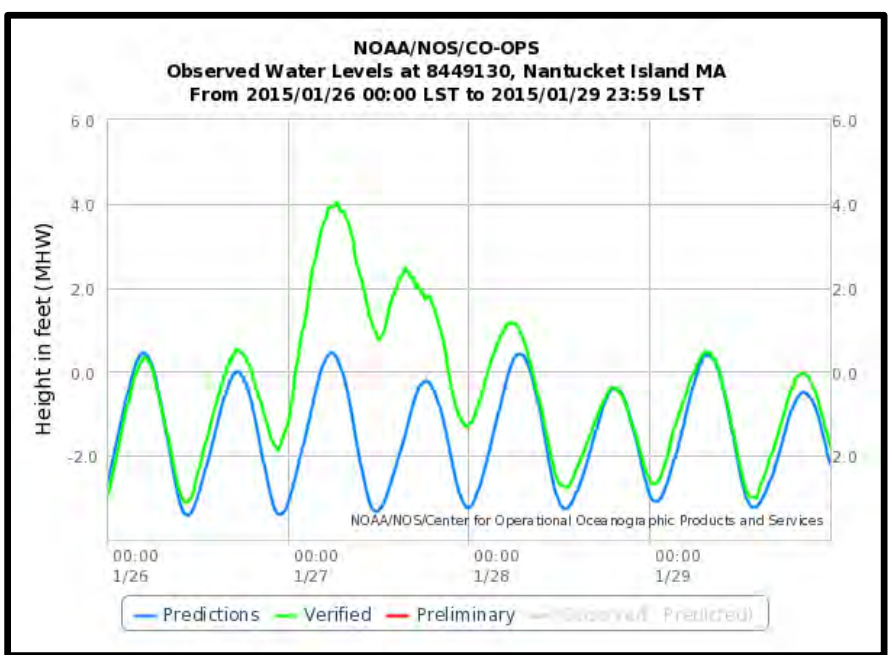

Figure 13B. Water levels that occurred during the nor'easter Nemo January 2015.

The waves calculated clearly show that the frequently occurring storms produce waves that will erode the beach and water levels that will inundate the entire beach.

The ACES model calculated wave heights in Nantucket Harbor. However, it is instructive to calculate the height of the wave that will break on the toe of the coastal bank. A height of a wave that approaches the beach and breaks on or at the toe of the bank will be dependent only on the depth of water at the toe of the coastal bank. Table 3 shows the depth of the water during the peak of the storm and the maximum height if the wave that will break at the toe of the coastal bank for the average, Nemo, and the January 24, 2016 storms. The water level during the peak of the storm shown in Figure 12 resulted in a water depth of approximately 0.5 – 0.75 ft at the base of the bank and produced a braking wave heights of 0.6 ft at the toe of the coastal bank. Nemo and the January 24.2016 nor'easter produced breaking wave heights of 4.0 and 2.7 ft respectively. These conditions allowed waves to not only break at the toe of the bank but also run up the face of the bank. The result is that during normal storm conditions the storm surge reaches the base of the bank allowing waves to break on the lower 1 ft of the bank. These conditions ensure that the bank face will remain vertical and will not have a chance to reach an angle of repose and to naturally vegetate.

Table 3. Water depths at the toe of the coastal bank.

Date of Storm	Depth of water at the base of bank (ft)	Wave at Base of Bank (ft)
1/24/2016	0.8	0.6
Nemo 1/26/2015	5.1	4.0

Flood Zone Elevations at the Project Site

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs), dated June 9, 2014. The flood zone data for the project are is shown on Map Panel #25019C00884G. The flood insurance map shows that at the beach there is a Zone VE (EL10) (Figure 14) while just to the east the VE zone drops to a Zone VE (EL9). The Flood Insurance Study ("Brown Book") shows that the 10- and 50-year still water flood zone elevations are 3.6[3] and 5.1 ft respectively. This indicates that during a storm with a 10-year return period the toe of the bank will be attacked by storm surge and waves.

Shoreline Change Analysis

A shoreline change analysis was conducted to evaluate long- and short-term shoreline response of the coastline along the subject properties. There are several techniques that can be used to calculate shoreline change. The most accurate is to compare topographic surveys of the property that have been obtained over the years. However, most properties do not have a back-log of topographic surveys and if they did, the surveys would most likely be confined to the property of interest and not include adjacent properties. Therefore, an aerial photographic analysis is

[3] FEMA flood zone elevations are in NAVD88.

commonly used to calculate shoreline change. The method analyses successive aerial photographs and calculates the change in position of the shoreline or the top of the coastal bank. This allows the investigator to calculate rates of change for the beach or top of bank.

The Massachusetts Coastal Zone Management (CZM) has completed a shoreline change analysis for most of Massachusetts. The results of the CZM shoreline change analysis is reported in their Massachusetts Ocean Resource Information System (MORIS). CZM analyzed shorelines from 1844 through 2009 and calculated the shoreline change rates along equally spaced transects throughout Massachusetts. There are ten transects (Figure 14) that fall within the project boundaries (MORIS Transects N-1600 thru N-1610). The MORIS results in Table 2 show that the shoreline change is erosive along this section of shoreline.

Figure 14. Location of he CZM MORS shoreline change transects.

MORIS long-term erosion rates were calculated using the entire 150-year data set. The short-term rates of change were calculated using data spanning the most recent 30-year data set.

Table 2 shows that the long-term shoreline change is -0.6 ft/yr. The short-term rate of shoreline change is -1.7 ft/yr. The short-term shoreline change rate is usually used when determining how the shoreline will respond in the next 10 years because the short-term shoreline change rate includes the most recent storms but the data set spans a sufficiently long period so that the analysis is not biased by any one large erosion or accretion event.

Table 2. CZM MORIS long- and short-term erosion rates.

MORIS Transect Number	CZM Morris Long-Term Rate (ft/yr)	CZM Morris Short-Term Rate (ft/yr)
N-1600	-0.7	-1.7
N-1601	-0.7	-1.9
N-1602	-0.6	-1.9
N-1603	-0.5	-1.4
N-1604	-0.5	-1.6
N-1605	-0.7	-1.4
N-1606	-0.7	-1.7
N-1607	-0.6	-1.6
N-1608	-0.6	-1.7
N-1609	-0.5	-1.8
N-1610	-0.6	-1.7
Averge Change	-0.6	-1.7

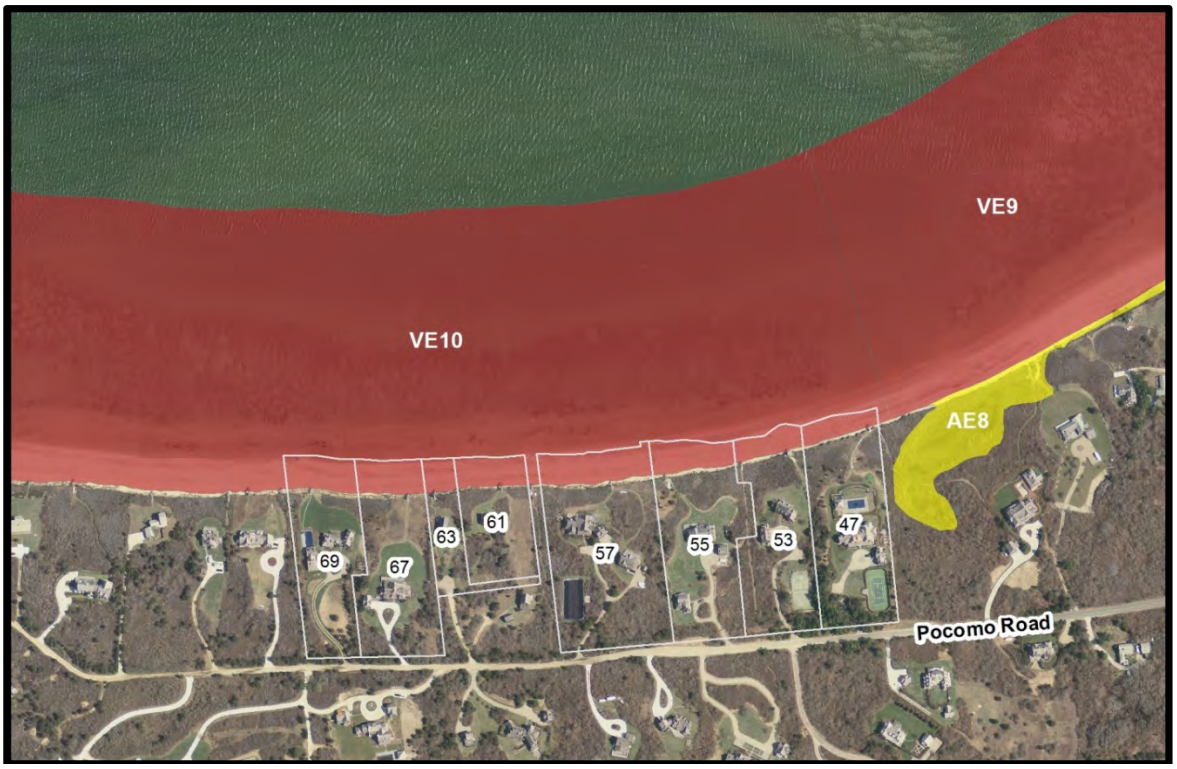

Figure 14. FEMA Flood Zones along the northern shore of Pocomo Road, Nantucket.

The MORIS data set only includes shoreline data up to 2009. Additionally, we have occasionally found some discrepancies in the shoreline change rates that have been reported in MORIS. Therefore, the Woods Hole Group performed its own shoreline change analysis to ensure there were no errors in the MORIS data and to bring the shoreline change analysis forward to include data from 2012, 2014, and 2015.

A computer-based shoreline mapping methodology within a Geographic Information System (GIS) framework was used to compile and analyze changes in historical shoreline positions for the properties along the north shore of Pocomo Road, and the adjacent area. The purpose of this task was to quantify the spatial and temporal changes in shoreline position using the most accurate data sources and compilation procedures available, and to evaluate the long-term and recent rates of change. Assuming that the trends continue at the same rate into the future, the information from the shoreline change analysis can also be used to predict patterns of shoreline erosion over the next several decades.

Woods Hole Group compiled and analyzed data from Google Earth imagery, MassGIS orthophotography, Massachusetts Coastal Zone Management (CZM) shoreline change study data and single-frame historical aerial photographs. Data covering thirteen (13) time periods were evaluated spanning the 128-year period from 1887 to 2015 (Table 3).

Table 3. Data Sources for Shoreline Change Analysis

Year	Source
2015	Google Earth
2014	MassGIS
2012	Google Earth
2009	MassGIS
2003	MassGIS
1999	Col-East, Inc.
1994	MassGIS
1990	Col-East, Inc.
1978	Mass CZM Shoreline
1971	Col-East, Inc.
1963	Col-East, Inc.
1955	Mass CZM Shoreline
1887	Mass CZM Shoreline

Woods Hole Group acquired the photos from MassGIS as georeferenced orthoimagery and the vector shorelines from Mass CZM. However, the aerial photographs from Col-East, Inc. and those extracted from Google Earth required georeferencing. Georeferencing was accomplished by identifying a series of evenly spaced control points on the images for which real world x, y coordinates were known. The 2014 MassGIS orthoimagery was utilized as the base image from which the ground control was obtained for all georeferencing.

Once the additional photographs were geo-referenced, and all data sources were brought to a common coordinate system, the locations of the mean high water line (MHW) and the top of bank (where identifiable) were located and digitized from each of the thirteen (13) data sources. Once these data were compiled, spatial and temporal changes in the data were computed. This was accomplished by identifying a series of shore normal transects along the coastline where discrete measurements of change could be made through time, and where rates of change could be determined. To analyze the shoreline change rates, a total of 95 shore normal transects were established at 50 foot evenly-spaced intervals along the coastline from the western end of Pocomo Road to Lauretta Lane to the west. At each transect, the magnitude of shoreline and

bank movement was calculated, and annual rates of change were determined using the various time intervals between the data sources. Rates of change were calculated using the linear regression method. In this method, an average rate of change is based on a best-fit line to a series of points representing the shoreline/bank position over time. The linear regression method is most accurate when looking at long-term averages and is most often used for planning purposes and management decisions.

The digitized locations of the shorelines, as well as the transect locations across the entire study area, are shown in Figure 15. Shoreline change rates were analyzed for the entire time period (1887 to 2015) (Figure 16), as well as two more recent sub-periods; the last 45 years (1971 to 2015) and the last 13 years (2003 to 2015) (Figures 17 & 18). The linear regression rates of shoreline change from these time periods are presented in the graph in Figure 19.

In general, all time periods analyzed show a trend of erosion across the entire study area for both the shoreline and the top of bank, with the rates of shoreline erosion generally greater than the rates of bank erosion. The average shoreline erosion rates for the entire study area were -0.6 ft/yr (1887 to 2015), -1.0 ft/yr (1971 to 2015), and -0.9 ft/yr (2003-2015). The average shoreline erosion rates immediately in front of the subject properties (transects 27 to 62) followed this trend, but with slightly higher rates of -0.8 ft/yr, -1.1 ft/yr and -1.2 ft/yr respectively. Average rates of shoreline change were also computed from the transects on each individual property and are listed in Table 4.

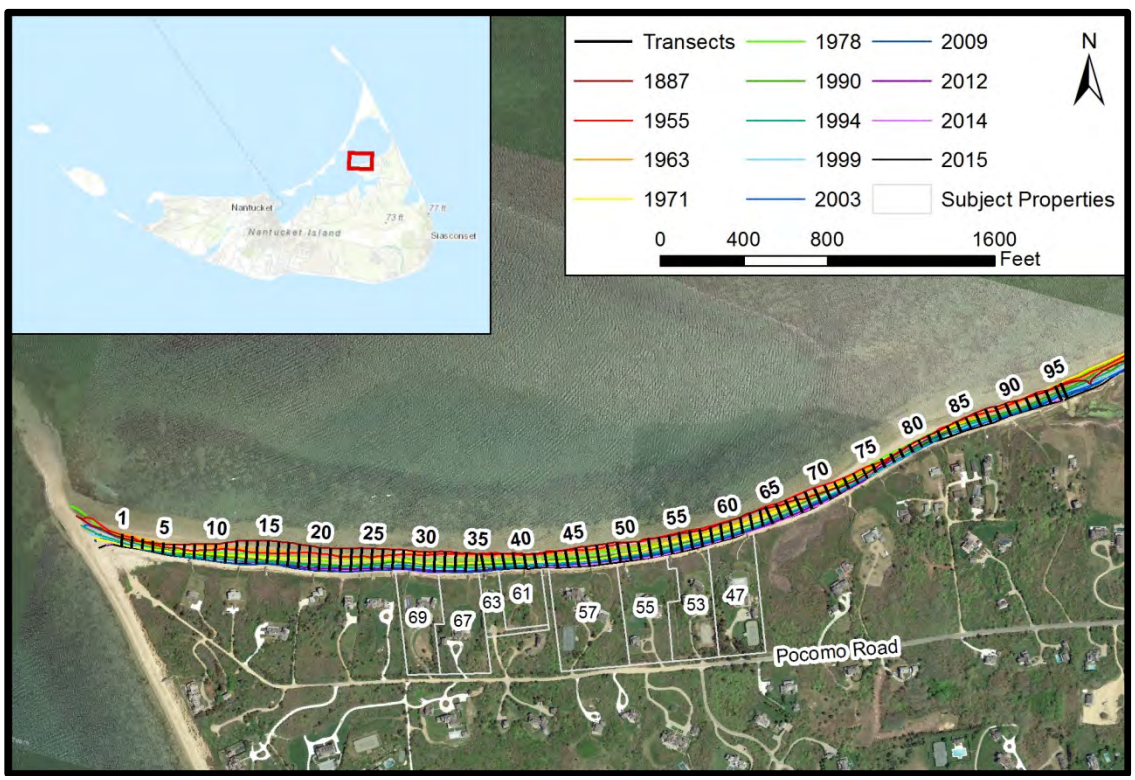

Figure 15. Historical shoreline positions and locations of analysis transects. Background is from 2015 GoogleEarth imagery. Pocomo Road subject properties are identified by their parcel boundaries and street address numbers.

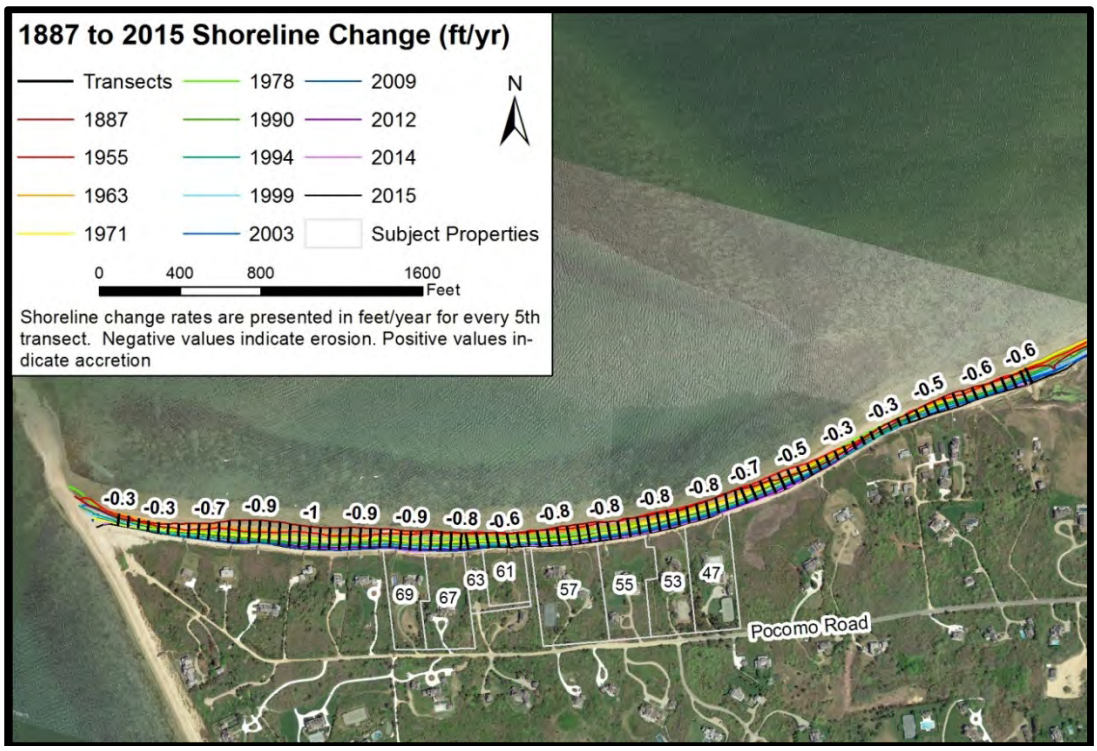

Figure 16. Long-term (1887-2015) rates of shoreline change (feet/year). Background is from 2015 GoogleEarth imagery.

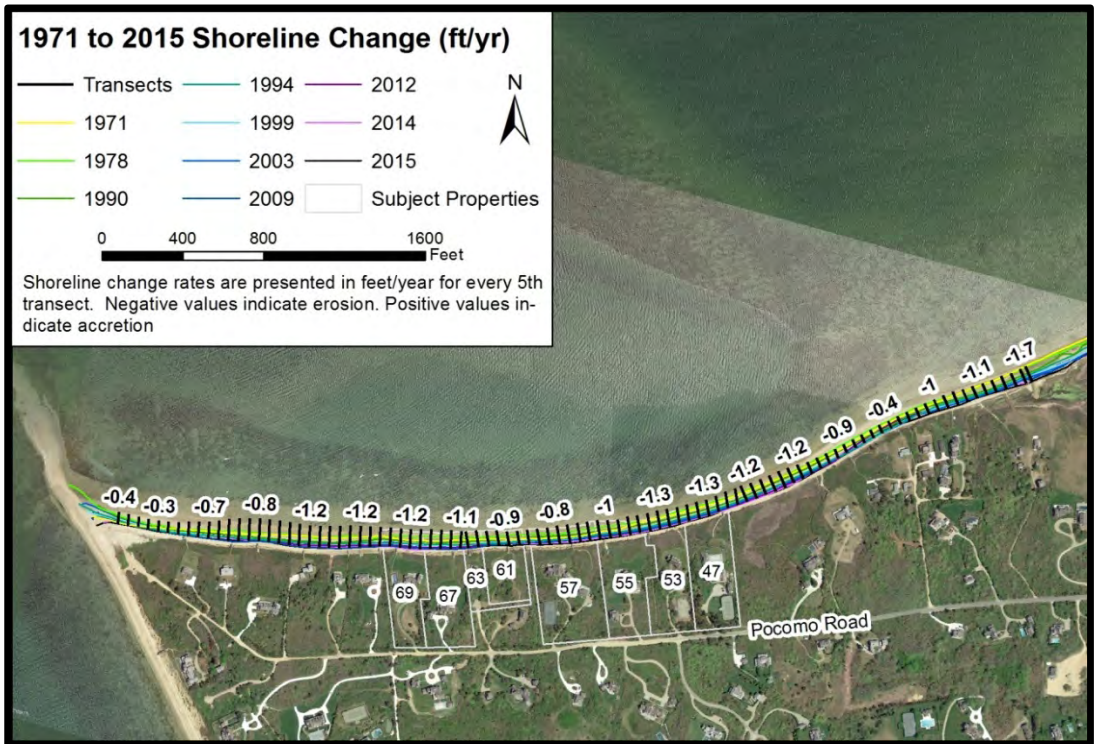

Figure 17. Recent (1971-2015) rates of shoreline change (feet/year). Background is from 2015 GoogleEarth imagery.

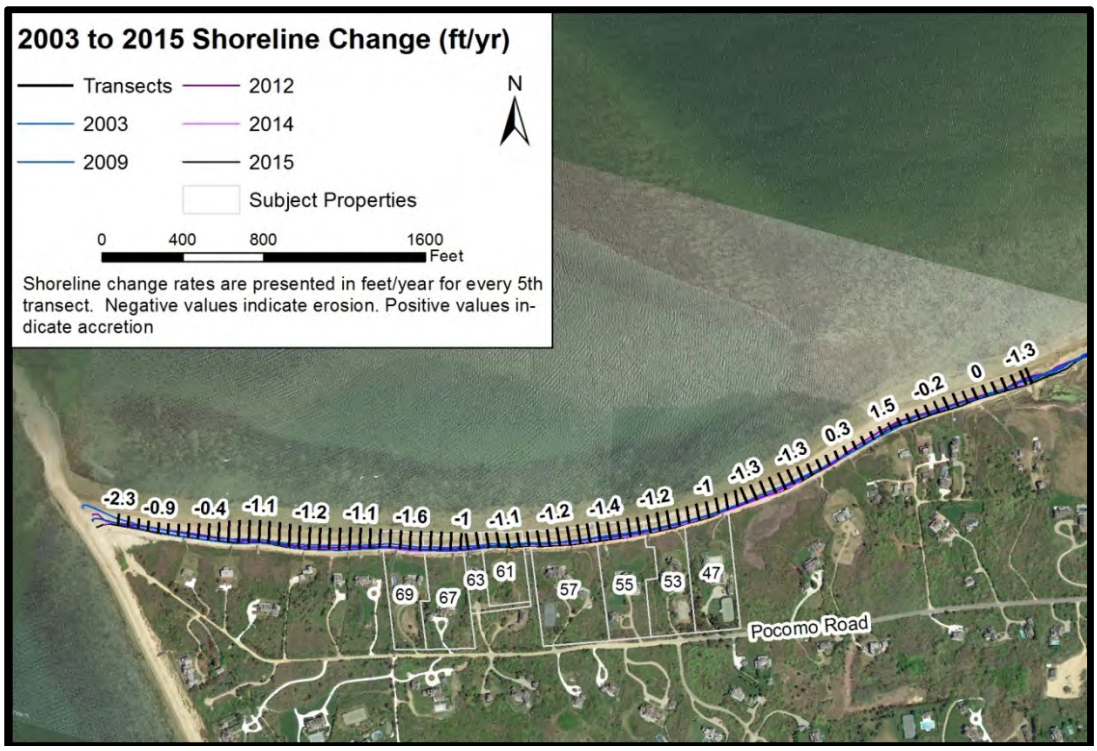

Figure 18. Short-term (2003-2015) rates of shoreline change (feet/year). Background is from 2015 GoogleEarth imagery.

Table 4. Average rate of shoreline and bank change along each subject property's coastline.

		Linear regression Shoreline		
Property	Transects	1887-2015	2003-2015	1971-2015
69 Pocomo Road	27 to 31	-0.8	-1.5	-1.2
67 Pocomo Road	32 to 35	-0.9	-1.1	-1.2
63 Pocomo Road	36 to 37	-0.8	-1.0	-1.0
61 Pocomo Road	38 to 41	-0.6	-1.1	-0.9
57 Pocomo Road	42 to 48	-0.7	-1.3	-0.9
55 Pocomo Road	49 to 53	-0.8	-1.5	-1.1
53 Pocomo Road	54 to 57	-0.8	-1.2	-1.3
47 Pocomo Road	58 to 62	-0.7	-0.9	-1.3
Average	**27 to 62**	**-0.8**	**-1.2**	**-1.1**

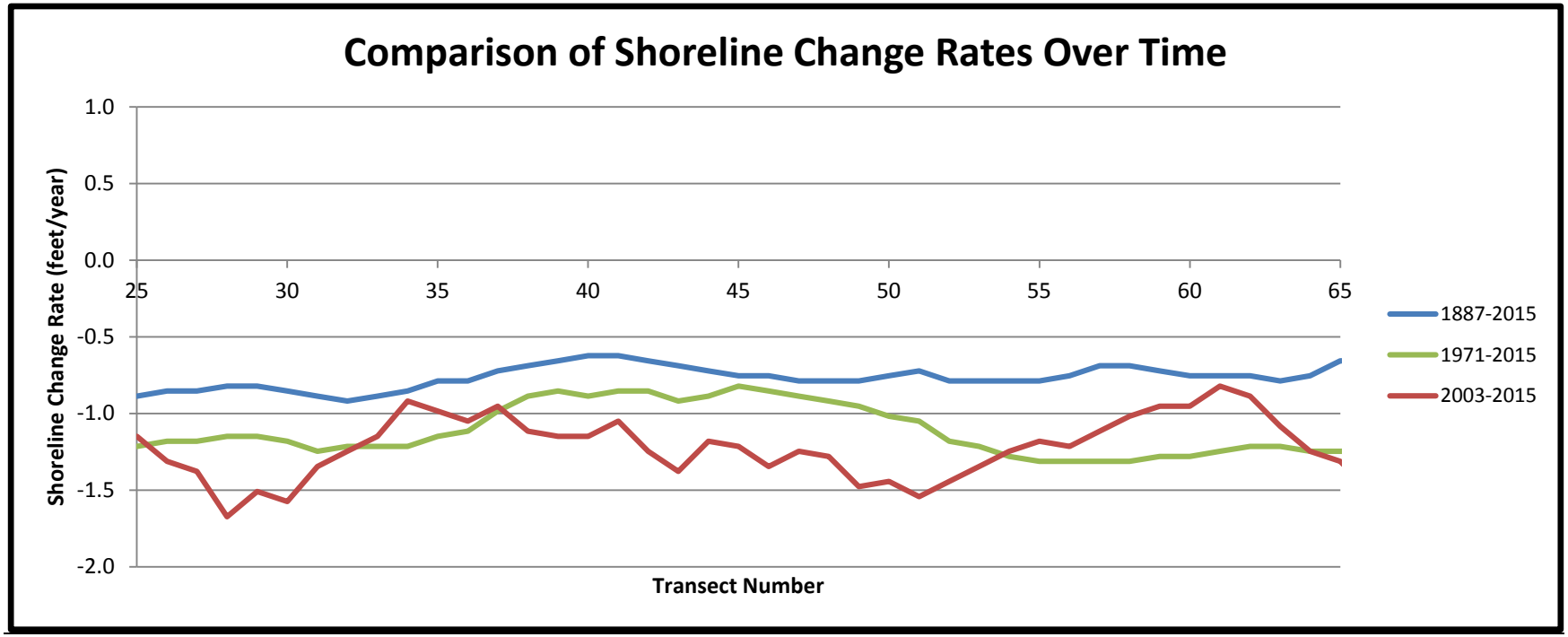

Figure 19. Rates of historical shoreline change for the entire study period (1887-2015), as well as two recent time periods (1971-2015 and 2003-2015) for the transects fronting the subject properties.

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Sediment Contribution from the Coastal Bank

Erosion of the bank provides sediment to the littoral system and helps mitigate erosion that occurs downdrift of the property. The bank erodes under the influence of the storm surge and waves produced by coastal storms that have been described above. Therefore, it is important to quantify the shoreline change rates along this section of coast in order to determine how much sand is provided to the beach from coastal bank erosion. The average of the short-term erosion rates calculated from MORIS and from the Woods Hole Group analysis are shown in Table 5.

Table 5. Sediment contribution by the coastal bank calculated from MORIS and the Woods Hole Group rates.

MORIS Short-Term Erosion Rate (ft/yr)	MORIS Annual Bank Contribution (cu yd)	WHG Short-Term Erosion Rate (ft/yr)	WHG Annual Bank Contribution (cu yd)
-1.7	1,253	-1.2	885

The annual sediment contribution calculated using the MORIS shoreline erosion rate of -1/7 ft/yr is 1,253 cu yd/yr and the sediment contribution calculated using the Woods Hole Group short-term erosion rate is 885 cud yd/yr.

Sea Level Rise

Beach nourishment is one of the most effective methods to maintain beaches and minimize the effects of sea level rise. This is because sea level rise is small compared to the effects of storm surge and the design life of a beach nourishment project. A beach nourishment project will need maintenance and will need to periodically be replaced as storms attack the coast and erode the project. However, that is how beach nourishment is intended to work. The beach nourishment is designed to absorb the impact of the waves and erode thus providing sediment to the littoral system while providing protection to the back-beach and toe of the bank.

Sea level rise is on the order of 1.4 millimeters/year in the Barnstable area (Figure 12). This estimate was derived from an examination of tide gauges along the East Coast. A more recent study published by NOAA[4] showed that the sea level rise for the Boston area is 2.63 millimeters/year. In order to put this in perspective; 2.6 millimeters (Figure 13) is about the thickness of two nickels placed on top of each other. Therefore, a project would require a design life of 30 or 40 years before sea level rise would even become a design factor.

The beach nourishment portion of the project will help mitigate the effects of sea level rise by providing a long-term sediment source to the beach and littoral system. Additionally, the design life of the revetment is effectively 20 to 30 years. Using the information provided above, the water level can be expected to increase between 1.3 and 2.0 inches over the design life of the structure. As a result, the proposed design will not be impacted by sea level rise.

[4] http://tidesandcurrents.noaa.gov/sltrends/sltrends_station.shtml?stnid=8443970

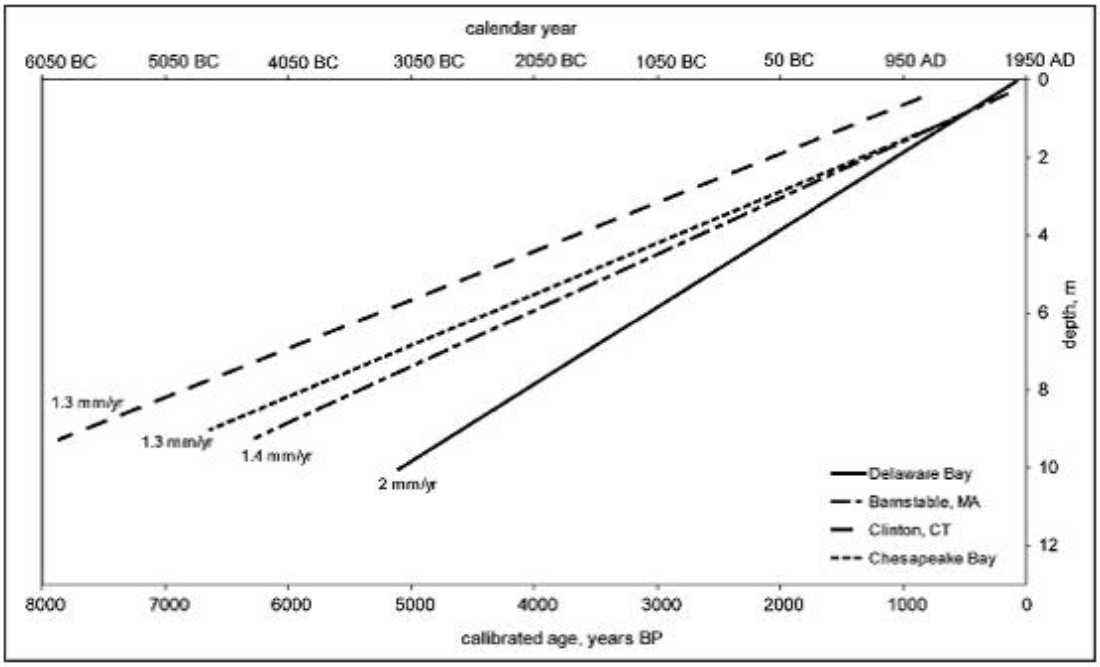

Figure 12. Showing the estimated long-term sea level rise for Barnstable Massachusetts[5].

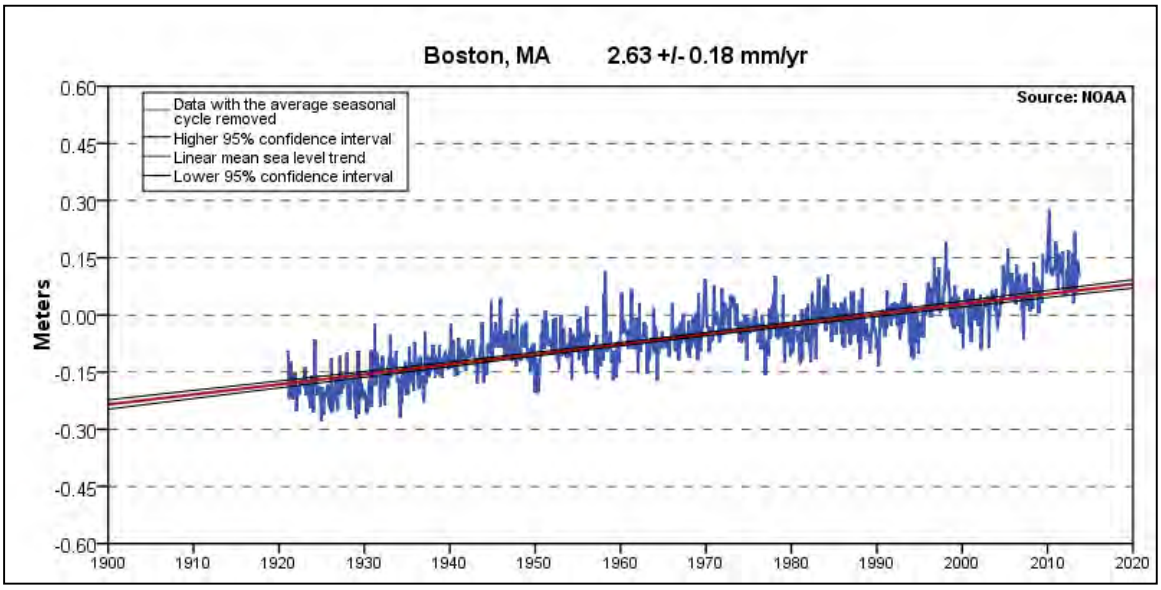

Figure 13. Sea Level Rise graph obtained from the NOAA COOPs web site.

[5] Relative long-term sea-level trends for Delaware Bay; Clinton, Connecticut; Barnstable, Massachusetts; and Chesapeake Bay (from Larsen and Clark, 2006. A search for scale in sea-level studies. *Journal of Coastal Research*, ***22(4)*** ,788–800).

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Proposed Project

The proposed project is located with Nantucket Harbor and is approximately 1,800 ft long. The applicant is proposing to install an anchored fiber roll array with reinforced soil lifts. The project will include a series of timber posts to help support and protect the fiber roll array from sliding. The project also includes approximately 1,000 cy of clean beach quality sand to replace sediment that would have been contributed by the coastal bank and to cover the lifts and fiber rolls. The face of the coastal bank will be planted with beach grass.

Performance Standards & Compliance Assessment

Wetland resource areas within one hundred feet seaward of the Project and protected by the Act and Bylaw include Coastal Beach, Coastal Bank and Land Subject to Coastal Storm Flowage. Due to the design of the project and proposed mitigation, the project will not have an adverse affect on any of these resources areas.

Nantucket Wetland Regulations, Section 2.01B: Land Under The Ocean

Land under the ocean provides feeding areas, spawning and nursery grounds, and shelter for manycoastal organisms related to marine fisheries and wildlife. Destruction of eelgrass beds (Zostera marina) will harm scallop production. Nearshore areas, and in some cases offshore areas, of land under the ocean help reduce storm damage, erosion, and flooding by diminishing and buffering the high energy effects of storms. Submerged sand bars dissipate wave energy. Such areas provide a source of sediment for seasonal rebuilding of coastal beaches and dunes. The bottom topography and sediment type of nearshore areas of land under the ocean is critical to erosion control, storm damage protection, and flood control. Water circulation and flushing rates, distribution of grain size, water quality (including but not limited to turbidity, temperature, nutrients, pollutants, salinity, and dissolved oxygen), and the habitat of wildlife, finfish, and shellfish are all factors critical to the protection of significant wildlife habitat and marine fin and shell fisheries. Land under the ocean in an unobstructed state is important to recreational swimming, fishing, and shellfishing, to recreational boating and sailing, to commercial fishing and shellfishing, and to wetland scenic views.

In view of the foregoing, whenever a proposed project involves removing, filling, dredging, altering or building upon land under the ocean, the Commission shall find that such land is significant to the protection of the following interests: flood control, erosion control, storm damage prevention, fisheries, shellfish, wildlife, significant wildlife habitat, recreation, and wetland scenic views. These findings may be overcome only upon a clear showing that the Land Under the Ocean does not play a role in protecting any of the interests given above and only upon a specific written determination to that effect by the Commission.

> *8. Water dependent projects shall be designed and performed so as to cause no adverse effects on wildlife, erosion control, marine fisheries, shellfish beds, storm damage prevention, flood control, recreation, and aquatic vegetation.*

This project does not involve removing, filling, dredging, altering, or building on land under the ocean. has been specifically designed to not have an impact on land under the ocean. The project is at the toe of the bank and will not encroach below the Mean High Water Line.

Additionally, the quantity of sediment that will be placed on the face of the bank has been carefully calculated to ensure that only the quantity of sand that would naturally reach the beach and nearshore system will be available during storms. Therefore, no adverse impacts will occur to wildlife, erosion control, marine fisheries, shellfish beds, storm damage prevention, flood control, recreation, and aquatic vegetation will occur.

Coastal Beach

The proposed sacrificial sand cover to be placed at the base of the coastal bank, covering the reinforced soil lifts and the coir fiber roles at the base of the bank where it intersects the coastal beach resource area. The soil lifts and coir fiber rolls will be covered with beach quality sand which will be available to the beach during storms. The coastal beach resource areas are important because they assist in storm damage prevention, erosion and flood control by allowing absorbing wave energy thus aiding in the protection of the toe of the bank and provide sediment to feed the adjacent coastal beach. The cover material will be composed of beach compatible sand and will therefore serve as a source of sediment for downdrift coastal resource areas. The cover material will not reduce the ability of the coastal beach to perform as a protector for the coastal bank and as a source of sediment, and meets all of the following performance standards of a coastal beach found at 310 CMR 10.27 and NWR Section 2.02B:

Wetland Protection Act Regulations, 310 CMR 10.27 – Coastal Beach

Pursuant to 310 CMR 10.27, coastal beaches are significant to storm damage prevention, flood control and the protection of wildlife habitat as they dissipate wave energy by their gentle slope, their permeability and their granular nature, which permit changes in beach form in response to changes in wave conditions. Furthermore, coastal beaches serve as a sediment source for dunes and subtidal areas, and also serve as a sediment source for downdrift coastal areas.

Coastal beaches serve the purposes of storm damage prevention and flood control by dissipating wave energy, by reducing the height of storm waves, and by providing sediment to supply other coastal features. Additionally, wildlife (birds) may nest in the coastal berm, between the toe of a dune and the high tide line.

While the project involves limited work on the coastal beach, the presumption that the coastal beach is significant to storm damage prevention, flood control and the protection of wildlife habitat, is overcome. The coastal beach at this locus is deprived of sediment buildup due to erosion and thus currently cannot function effectively due to its location. Recent storms have left the beach depressed in elevation, thus allowing an abnormal amount of direct wave attack to the base of the bank. The frequent wave attacks have caused instability at the base of the coastal bank causing it to erode and slump. Hence, the coastal beach is starved of beach building sediment and is unable to perform its intended functions which are to break waves and protect the base of the coastal bank.

The Regulations provide that when a coastal beach is determined to be significant to storm damage prevention, flood control, or protection of wildlife habitat, the following performance standards apply (310 CMR 10.27(3) to (7)):

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3. 310 CMR 10.27(3). Any project on a coastal beach, except any project permitted under 310 CMR 10.30(3)(a) shall not have an adverse effect by increasing erosion, decreasing the volume or changing the form of any such coastal beach or an adjacent or downdrift coastal beach.

The sand cover over the fiber roll array will aid in storm damage prevention, erosion and flood control by dissipating wave energy before the waves severely erode the base of coastal bank which serves as the foundation associated with coastal bank stabilization. The proposed project will continue to provide for the replenishment of the volume of the beach and therefore decrease the rate of erosion. Therefore, the project meets the performance standard found in 310 CMR 10.27(3).

4. Any groin, jetty, solid pier, or other such solid fill structure which will interfere with littoral drift, in addition to complying with 310 CMR 10.27(3), shall be constructed as follows:

(a) It shall be the minimum length and height demonstrated to be necessary to maintain beach form and volume. In evaluating necessity, coastal engineering, physical oceanographic and/or coastal geologic information shall be considered.

(b) Immediately after construction any groin shall be filled to entrapment capacity in height and length with sediment of grain size compatible with that of the adjacent beach.

(c) Jetties trapping littoral drift material shall contain a sand by-pass system to transfer sediments to the downdrift side of the inlet or shall be periodically redredged to provide beach nourishment to ensure that downdrift or adjacent beaches are not starved of sediments.

This performance standard does not apply as the project does not include the construction of a groin, jetty, solid pier, or other such solid fill structure which will interfere with littoral drift.

5. Notwithstanding 310 CMR 10.27(3), beach nourishment with clean sediment of a grain size compatible with that on the existing beach may be permitted.

The cover material over the fiber rolls will provide for sand contribution to the beach and system as waves reach the base of the bank in storm events. The cover material consisting of the placement of clean supplemental material of similar grain size will be replaced at a minimum of once a year if it is eroded during a severe storm. The erosion of this supplemental material provides compatible material to the nearshore and the adjacent beaches and by removal of the sand cover during storm events, sand will be provided to the littoral system that normally would be available from a functioning coastal bank during a severe storm. This material will provide sacrificial sand along the toe of the coastal bank and will replace sand that would naturally be eroded from the foundation base of the coastal bank.

6. In addition to complying with the requirements of 310 CMR 10.27(3) and 10.27(4), a project on a tidal flat shall if water-dependent be designed and constructed, using best available measures, so as to minimize adverse effects, and if non-water-dependent, have no adverse effects, on marine fisheries and wildlife habitat caused by:

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(a) alterations in water circulation,
(b) alterations in the distribution of sediment grain size, and
(c) changes in water quality, including, but not limited to, other than natural fluctuations in the levels of dissolved oxygen, temperature or turbidity, or the addition of pollutants.

This performance standard does not apply as the project is not proposed on a tidal flat.

7. Notwithstanding the provisions of 310 CMR 10.27(3) through 10.27(6), no project may be permitted which will have any adverse effect on specified habitat sites or rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

The existing conditions at the locus, caused by the lack of sediment buildup, do not allow for natural buildup of the beach elevation or creation of a natural dune at the base of the bank. The proposed project is not anticipated to remedy this situation. However, the project proposes to provide sediment at the base of the back along the beach as sacrificial material to feed the beach.

Nantucket Wetland Regulations, Section 2.02B: Coastal Beaches

1. The provisions of Section 2.01B (1-8) (Land Under the Ocean) shall apply to coastal beaches and tidal flats.

The project meets the performance standards found at NWR §2.01B (1-5) (Land Under the Ocean) as the project does not involve any dredging activity (NWR §2.01B(1)) and does not involve an aquacultural project or the construction, maintenance or repair of any pier (NWR §§2.01B(2 - 5)).

The project also satisfies the performance standard found at NWR §§2.01B(7) as it will cause no adverse effects on wildlife, erosion control, marine fisheries, shellfish beds, storm damage prevention, flood control and recreation. The existing coastal bank and coastal beach have been eroded by storms and the main purpose of the project is to prevent or slow down erosion at the property thereby increasing storm damage prevention and flood control resulting in a stabilized coastal bank that is significant to the interest of flood control, erosion control and storm damage prevention. With regard to wildlife, the project is located within an area of existing development and the coastal beach is currently used as a recreational beach. The proposed base stabilized coastal bank will be planted with vegetation, resulting in the project protecting the interest of wildlife and certainly presenting no greater effect on wildlife than those that may presently exist.

The project is a water dependent use and therefore does not require a waiver. We make this statement because the Nantucket Regulations define water dependent as follows:

Water Dependent Projects or Uses - projects which require direct wetlands access for their intended use and therefore cannot be located out of the Area Subject to Protection Under the Bylaw. ***Examples include but are not limited to****: docks, piers, boat landings,*

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boathouses, marinas, stairs to beaches, and boardwalks over wetland vegetation. Projects which benefit from wetlands access but which do not require it are not water dependent uses. Examples include: restaurants, dwellings, and commercial enterprises servicing marine-related uses such as fish markets, repair facilities, ships' chandleries, and general use recreational trails.

Our project is water dependent because it requires direct access to the wetland access and cannot be located outside the area subject to projections. The definition defines seven example projects. However, the regulations state that the examples include, but are not limited to, the examples stated.

2. No new bulkheads or coastal engineering structures shall be permitted to protect structures constructed, or substantially improved, after 8/78. Bulkheads may be rebuilt only if the Commission determines there is no environmentally better way to control an erosion problem, including in appropriate cases the moving of the threatened building. Other coastal engineering structures may be permitted only upon a clear showing that no other alternative exists to protect a structure built prior to 9/78, and not substantially improved, from imminent danger.

We are not proposing a coastal engineering structure such as a bulkhead, pier, or groin.

3. Dredging projects in flats must be done in accordance with such procedures as the Commission determines would disturb the absolute minimum amount of habitat possible.

This performance standard does not apply as the project does not include any dredging in flats.

4. Clean fill of similar grain size may be used on a Coastal Beach but not on a Tidal Flat, only if the Commission authorizes its use, and only if such fill is to be used for a beach or dune nourishment project. All possible mitigation measures shall be taken, as determined by the Commission, to limit the adverse effects of the fill.

The Applicant is proposing to use clean fill of similar grain size as sacrificial material for the coastal beach. No work is proposed on a tidal flat.

5. No part of any septic system shall be placed in shifting sands or on a coastal beach. The septic leach facility shall be at least 100 feet from the spring high tide line.

This performance standard does not apply as the project does not include the installation or repair of a septic system.

6. All work on projects which are not water dependent shall maintain at least a 25-foot natural undisturbed area adjacent to a coastal beach. All structures which are not water dependent shall be at least 50 feet from a coastal beach.

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This performance standard does not apply as the project requires direct resource area access for its intended use and consists of the installation of coir rolls and the placement of a sand cover over the rolls at the toe of the coast bank.

> *7. In areas of eroding shoreline, the distance from all buildings to the coastal beach shall be at least 20 times the average annual shoreline erosion or 100 feet, whichever is the lesser. The average annual shoreline erosion rate shall be determined by averaging the annual erosion rate over a 150 year period ending the date the NNOI was filed, or if no NNOI was filed, the date construction began. If erosion data is not available for the 150-year period, the Commission shall determine the average annual erosion rate from such lesser time period for which erosion data is available. In cases where documentation can be provided to show that the use of the 150-year period is inappropriate to existing shoreline characteristics and trends, alternate shoreline change rates may be used when based on a preponderance of credible evidence.*

This performance standard does not apply as the project does not include the construction of any buildings.

> *8. Vehicular access for existing houses or for recreational use shall be as unpaved ways and shall be done in accordance with such procedures as the Commission determines will minimize any adverse effect on the beach and the Interests of the Bylaw.*

This performance standard does not apply as the project does not include the installation, maintenance or repair of vehicular access.

E.2 <u>Coastal Bank</u>

The coastal bank is unable to properly sustain vegetation as a result of the slope becoming over-steepened due to erosion and slumping caused by the toe of the bank being eroded. Therefore, the existing coastal bank is not able to provide wildlife habitat to rare, endangered, and otherwise significant wildlife. The project seeks to improve the current condition of the coastal bank by stabilizing the foundation toe and lower face of the coastal bank using rows of anchored sand filled tubes along the base of the bank upward and the placement of sand cover over the face of the tubes. Additionally, the area of the scarped upper bank will be restored by adding fill and re-grading to a sustainable slope. The face of the upper bank will then be re-vegetated with beach grass. The project meets all of the following performance standards of a Coastal Bank found at 310 CMR 10.30 and NWR §2.05B:

<u>Wetland Protection Act Regulations, 310 CMR 10.30: Coastal Banks</u>

Pursuant to 310 CMR 10.30, coastal banks are likely to be significant to storm damage prevention and flood control by supplying sediment to coastal beaches, coastal dunes and barrier beaches and, due to their height, provide a buffer to upland areas from storm waters.

Coastal banks, because of their height and stability, may act as a buffer or natural wall, which protects upland areas from storm damage and flooding. Bank vegetation tends to stabilize the bank and reduce the rate of erosion due to wind and rain runoff. However, here, the coastal

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bank's ability to provide storm damage protection has been severely degraded as the bank is actively eroding.

The project recognizes that the coastal bank is significant to both storm damage prevention and flood control because it supplies sediment to coastal beaches, coastal dunes or barrier beaches and acts as a protective barrier. Therefore, the project is designed to allow the cover over the soil lifts to erode in response to wave action and supply material to downdrift coastal areas. The coastal bank is also significant to storm damage prevention and flood control as it serves as a vertical buffer to storm waters and therefore the project was also designed to stabilize the bank.

The Regulations provide that when a coastal bank is determined to be significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes or barrier beaches and serves as a vertical buffer to storm waters, the following performance standards apply (310 CMR 10.30(3) to (8)):

> *3. No new bulkhead, revetment, seawall, groin or other coastal engineering structure shall be permitted on such a coastal bank except that such a coastal engineering structure shall be permitted when required to prevent storm damage to buildings constructed prior to the effective date of 310 CMR 10.21 through 10.37 or constructed pursuant to a Notice of Intent filed prior to the effective date of 310 CMR 10.21 through 10.37 (August 10, 1978), including reconstructions of such buildings subsequent to the effective date of 310 CMR 10.21 through 10.37, provided that the following requirements are met:*
>
> > *(a) a coastal engineering structure or a modification thereto shall be designed and constructed so as to minimize, using best available measures, adverse effects on adjacent or nearby coastal beaches due to changes in wave action, and*
> > *(b) the applicant demonstrates that no method of protecting the building other than the proposed coastal engineering structure is feasible.*
> > *(c) protective planting designed to reduce erosion may be permitted.*

This regulation does not apply as we are not proposing to construct a coastal engineering structure. Additionally, the project is designed to avoid, or at least mitigate, potential adverse effects on adjacent or nearby coastal beaches due to changes in wave action. The project is designed to stabilize the toe of the coastal bank with a soft engineering solution that is not a coastal engineering structure.

> *4. Any project on a coastal bank or within 100 feet landward of the top of a coastal bank, other than a structure permitted by 310 CMR 10.30(3), shall not have an adverse effect due to wave action on the movement of sediment from the coastal bank to coastal beaches or land subject to tidal action.*

Since the project is permitable pursuant to 310 CMR 10.30(3), this performance is not applicable. However, the project will improve the condition of the coastal beach and coastal bank. This performance standard is clearly met as the project proposes to stabilize the coastal bank while concurrently providing sediment to downdrift areas.

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5. The Order of Conditions and the Certificate of Compliance for any new building within 100 feet landward of the top of a coastal bank permitted by the issuing authority under M.G.L. c. 131, § 40 shall contain the specific condition: 310 CMR 10.30(3), promulgated under M.G.L. c. 131, § 40, requires that no coastal engineering structure, such as a bulkhead, revetment, or seawall shall be permitted on an eroding bank at any time in the future to protect the project allowed by this Order of Conditions.

This performance standard does not apply as the project is not proposing any new buildings.

6. Any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.

The project meets this performance standard as the project will not adversely affect the stability of the coastal bank but actually seeks to improve the stability of the costal bank by stabilizing the foundation toe and lower face of the coastal bank. This sand cover will be replenished on a regular basis as it is removed by wave activity. The base of the bank would therefore continue to function as a sediment supply source.

7. Bulkheads, revetments, seawalls, groins or other coastal engineering structures may be permitted on such a coastal bank except when such bank is significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes, and barrier beaches.

While the coastal bank is significant to both storm damage prevention and flood control in part by supplying sediment to coastal beaches, coastal dunes, and barrier beaches, it is permitable under 310CMR 10.30 because it is not coastal engineering structure. However, the project will result in a stabilized coastal bank which, along with sand cover will increase the stability of the coastal bank and improve its capability to provide storm damage protection as a vertical buffer. Additionally, the proposed project will provide sediment to downdrift areas.

8. Notwithstanding the provisions of 310 CMR 10.30(3) through (7), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

The proposed project will not occur within the estimated habitat however, there is mapped potential habitat offshore of the beach and is presumed to be a feeding area for birds. According to previous letters from the Division of Fisheries & Wildlife, Natural Heritage & Endangered Species Program ("NHESP"), if work is prohibited between April 1 and August 31 of any year, "the project will not result in an adverse impact to the resource area habitats of state-listed wildlife species." If the Commission thinks it is appropriate, we will adhere to the time of year restrictions to avoid any potential conflict. Additionally, the proposed project is located within an area of existing development and the coastal beach is currently used as a recreational beach. The proposed improved coastal bank will be replanted with vegetation, resulting in the proposed project protecting the interest of wildlife and certainly presenting no greater effect on wildlife than those that may presently exist.

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Nantucket Wetland Regulations, Section 2.05B: Coastal Bank

> *1. No new bulkheads, coastal revetments, groin, or other coastal engineering structures shall be permitted to protect structures constructed, or substantially improved, after 8/78 except for public infrastructures. Bulkheads and groins may be rebuilt only if the Commission determines there is no environmentally better way to control an erosion problem, including in appropriate cases the moving of the threatened buildings and/or public infrastructure. Other coastal engineering structures may be permitted only upon a clear showing that no other alternative exists to protect a structure that has not been substantially improved or public infrastructure built prior to 9/78, from imminent danger.*

This project employs soft engineering components and is not a coastal engineering structure.

> *2. Piers shall be constructed in compliance with the Town of Nantucket Zoning Bylaws (e.g. Section 136-22B 6/30/00) using procedures determined by the Commission to be the best available measures to minimize adverse effects on Interests Protected by the Bylaw.*

This performance standard does not apply as the project does not include the construction of a pier.

> *3. All projects shall be restricted to activity as determined by the Commission to have no adverse effect on bank height, bank stability, wildlife habitat, vegetation, wetland scenic view, or the use of a bank as a sediment source.*

The proposed project will not have any such adverse effects and will increase bank stability. The bank height will not be altered and the project proposes to stabilize the bank. Additionally, vegetation can act as habitat for endangered species. As the project proposes to stabilize the bank along with sand cover replenishment, it will vastly improve the bank's function as a sediment source without jeopardizing the foundation of the toe of the coastal bank. The project will replace the sand that would normally be eroded from the bank during storms however, since the Commission has required a waiver request for this paragraph for previous projects, we will submit a waiver request for this paragraph in the Notice of Intent.

> *4. Elevated walkways designed not to affect bank vegetation shall be required for pedestrian passage over a bank.*

There are presently stairs over the bank to the beach at both of the properties. The stairs provide elevated access to the beach and prevent people from traversing the face of the coastal bank. We are asking to rebuild and to maintain these existing stairs as appropriate.

> *5. All projects which are not water dependent shall maintain at least a 25-foot natural undisturbed area adjacent to a coastal bank. All structures which are not water dependent shall be at least 50 feet from a coastal bank.*

As stated above, this performance standard does not apply as the project is not proposing a structure and requires direct wetland access for its intended use. Additionally, the project seeks to protect a pre-existing structure, restore an eroding coastal bank, supply a source of sediment for downdrift coastal resource areas, and provide a safe access to the recreational beach.

> *6. The septic leach facility of a septic system shall be at least 100 feet from the top of the coastal bank and shall not be located within the face of the coastal bank.*

This performance standard does not apply as the project does not include the installation or repair of a septic system.

> *7. In areas of eroding shoreline, the distance from all buildings to the coastal bank shall be at least 20 times the average annual shoreline erosion or 100 feet, whichever is the lesser. The average annual shoreline erosion rate shall be determined by averaging the annual erosion over 150-year period ending the date the NOI was filed, or if no NOI was filed, the date construction began. If erosion data is not available for the 150-year period, the Commission shall determine the average annual erosion rate from such lesser time for which erosion data is available. In cases where documentation can be provided to show that use of the 150-year period is inappropriate to existing coastal shoreline characteristics and trends, alternate shoreline change rates may be used when based on a preponderance of credible evidence.*

This performance standard does not apply as the project does not include the construction of any buildings.

> *8. All permits issued for the construction of buildings under the Bylaw within 100 feet landward of the top of a coastal bank shall contain the specific condition that no coastal engineering structure of any kind shall be permitted on an eroding bank in the future to protect the project allowed by this permit, except those coastal engineering structures allowed by a waiver issued pursuant to Section 1.03F of these regulations.*

As stated above, this performance standard does not apply as the project does not include the construction of any buildings. However, due to the rapid erosion of the coastal bank the project seeks to protect the existing structure and the coastal bank from additional failure and seeks to protect the existing structure as the distance from the existing structure to the coastal beach is diminishing. Therefore, the project is necessary to maintain an adequate distance between the existing structure and the coastal beach in order to allow the coastal beach to properly function.

E.3 <u>Land Subject to Coastal Storm Flowage</u>
<u>Nantucket Wetland Regulations, Section 2.10B:</u>

> *1. The work shall not reduce the ability of the land to absorb and contain flood waters, or to buffer inland areas from flooding and wave damage.*

The proposed project will not reduce the ability of the land to absorb and contain flood waters and will not buffer inland areas from flooding and/or wave damage.

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2. Projects shall not cause ground, surface, or salt water pollution triggered by coastal storm flowage. All septic tanks shall be outside the 100-year floodplain.

The proposed project will not cause ground, surface, or salt water pollution triggered by coastal storm flowage and a septic system is not being proposed.

3. All private underground fuel tanks shall be outside the 100-year floodplain. Commercial tanks shall be outside the 100-year floodplain, or if the Commission determines this is not practicable, the commercial tanks shall be secured so that they cannot float loose.

This performance standard does not apply as the project does not include underground fuel tanks.

4. Building upon areas subject to coastal storm flowage in locations where such structure would be subject to storm damage may not be permitted. If permitted, all construction must be in compliance with state and local building code regulations for flood hazard areas.

This performance standard does not apply as the project does not propose a structure subject to state and local building codes regulations.

Conclusion

The proposed project will increase the ability of the coastal bank to act as a barrier to flood waters by stabilizing the toe of the bank. Additionally, the proposed project will provide sacrificial sediment that will be available during storm events to provide sediment to the beach and adjacent beaches. The proposed project complies with the regulations, bylaws, and performance standards of both Massachusetts and Nantucket. Therefore, it is permitable under both the Wetlands Protection Act and the Nantucket Wetland Protection bylaws.

Sincerely,

Lee L Weishar

Lee Weishar, PhD; PWS
Senior Scientist

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April 29, 2016

Mr. Ernest Steinauer, Chair
Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

Re: Notice of Intent Application
47, 53, 55, 57, 61, 63, 67, 69 Pocomo Road
DEP File No. SE48-2874
NHESP Tracking No. 16-35464

Dear Mr. Steinauer:

The purpose of this letter is to provide supplemental information in response to questions and comments at the first public hearing, as well as from Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (Division), on the referenced application.

Attached is an updated site plan and sieve analysis results from soil samples taken from the coastal bank. The revised site plan includes details of the terminal ends of the proposed project. The westerly end of the project terminates to a permitted sand drift fence. The easterly end has been moved back from the property line common with Nantucket Conservation Foundation by ten feet. Additional sand nourishment will be placed in this area with each maintenance activity. The purpose is to offset any localized terminal effects, which are expected to be minor in scope, if any. The updated site plan includes additional monitoring transects, located approximately every 300-feet, for a total of seven.

In response to specific questions and comments,

<u>From the Division</u>:

1. Provide information relative to the maintenance of the proposed structure.

   a. How will the applicants ensure a sand cover of 4-6 inches overtop the coir; are benchmarks proposed?

      Four to six-inches of sand is the proposed cover for the top three vegetated coir rolls; there will be more over the lower rolls as a result of the slope (please see attached cross sectional drawing). The twice-per-year survey will determine the elevation of the sand cover, which can be compared to the known elevation of the top of the coir rolls.

   b. How will the applicants "assess the need for maintenance"; what constitutes the need for maintenance?

      The project condition will be inspected at least twice per year, as well as following any storm event when the wind exceeds forty miles per hour for six consecutive hours. Maintenance will be performed if there is any visible damage to the system.

c. Does the project propose to monitor the beach elevation in front of the structure?

Yes, additional survey transects have been added to the plan, which will be measured twice per year and reported to the Commission in plan format.

2. Provide information relative to the project design.

a. Will the 4”x 4” posts be connected by any other horizontal or vertical framework (e.g. stringers or pickets)?

No. The posts will be free-standing, with a top elevation that has been reduced, and will be slightly above or just below the sand when the system is in equilibrium.

b. According to the plan, the proposed sand cover ends ± 2-3 feet above the beach elevation, what will keep this material in place?

The plan detail has been clarified to depict the bank slope extending to the beach level. Sediment at this slope is within the angle of repose, and will not require any structural reinforcement.

c. Will the ends of the structure taper into the existing Coastal Bank?

Yes, at 45-degrees, as shown on the updated site plan.

3. Provide clarification regarding to the following items.

a. The amount of nourishment proposed: will a specific amount occur annually or is it proposed only if needed as cover for the structure?

Nourishment will be added as needed to maintain the cover and/or the slope shown on the plans. The applicant will monitor, and supply only the required amount of sand such that it is not over nourishing.

b. The plantings and density. The Project Description, Waiver Request, and Wilkinson Report all contain conflicting information.

The plantings and density will be per the Wilkinson Report. The plantings will be monitored and reported to the Commission as a condition of the Order. Any discrepancies have been rectified.

<u>From the Commission</u>:

Will the sand nourishment be overly transported by the wind, and will it have adverse impact on the eelgrass beds?

It will not, as the provided sediment will have similar characteristics of sand in the bank as demonstrated by the provided sieve analysis results from the bank and supply pit (Reis). This is further supported by the filed correspondence from Woods Hole Group. The applicant will monitor, and supply only the required amount of sand such that it is not over nourishing; therefore, the project will replicate what the bank would naturally supply.

Request for a meiofauna study.

The Applicant agrees to take a summer sample of the invertebrate life within the beach from three locations in the project area, and two from the beach north, and two from the beach south, of the project area. The locations of all samples shall be provided to the Commission.

Provide historic photos of the bank

Attached are a series of aerial photos that depict varying amounts of vegetation on the face of the bank. The proposed project and plantings will improve the existing bare bank by meeting the interest described in the Regulations, Section 2.05.A.1 – "Vegetation tends to stabilize a coastal bank and reduce the rate of erosion due to wind and rain runoff. Vegetated banks are critical to reducing wind and rain erosion and for providing important habitat and biodiversity."

Is the coastal bank used by birds (swallows) for nesting?

There are no nesting holes apparent in the coastal bank for the length of the project area.

Is there groundwater seeping out of the coastal bank in the project area?

There is no evidence of exposed clay layers and/or weeping groundwater apparent from the bank for the length of the project area.

How will we monitor the cobble content of the beach?

The beach composition is highly dynamic as shown in the report photos where there is no evidence of cobbles. The Applicant will monitor and provide photos of the beach composition at each transect location. Additionally, we will only be replacing sand that has been lost to the system naturally. Therefore, the dynamic nature of the beach and nearshore area will continue to occur naturally.

What phase of the tide did the January 24, 2016 storm occur?

The storm occurred during the lunar high.

What is the failure criteria for the project?

Damage that requires replacement of greater than 50% of the project materials over two consecutive years. Should this occur, the Applicant will apply for an Amended Order of Conditions to modify the project based on review and approval of the Commission.

Need more monitoring transects.

We have added a transect every 300-feet, for a total of seven transects.

Will the nourishment be matching the sediment naturally contributed by the bank?

Yes, the sand nourishment will have similar characteristics of sand in the bank as demonstrated by the provided sieve analysis results from the bank and supply pit (Reis).

Is this a sustainable project, will Nantucket run out of available sediment from inland sources?

The applicant will maintain a volume and not a set amount of sand each year. There are large volumes of sand available for excavation at both the Holdgate and Reis Pits. Sand could also be brought over on a barge as gravel currently is delivered.

How is success of this project determined?

Through the monitoring requirements the Applicant will demonstrate that the coastal bank will become partially colonized with vegetation within the first growing season, and at least 75% of the disturbed coastal bank above the fiber roll array will be well-vegetated within 3 years.

How long until it is likely to be deemed "successful"?

Within three-years we expect at least 75% of the bank to be covered with established vegetation, as described above.

How does each end terminate? Will there be end scour?

The revised site plan includes details of the terminal ends of the proposed project. The westerly end of the project terminates to a permitted coastal stabilization project, SE48-2305. The easterly end has been moved back from the property line common with Nantucket Conservation Foundation by ten feet. Additional sand nourishment will be placed in this area with each maintenance activity. The purpose is to offset any localized terminal effects, which are expected to be minor in scope, if any.

Is there a single entity that would be responsible for the multiple properties?

The project is a collective effort per a Memorandum of Understanding executed by all of the property owners.

What happens if an individual property owner is not willing to continue to abide by imposed permit conditions?

The Order of Conditions will be recorded in the chain of title for each property. The right of enforcement will run against each individual owner. The owners are working cooperatively through a memorandum of understanding.

<u>From Nantucket Land Council:</u>

Would like more detail concerning the mesh encompassing the fiber rolls.

> *The proposed fiber rolls are the same as those approved and recently installed at 48 Shimmo Pond Road. Additional detail has been added to the attached site plan.*

Define the trigger that will result in re-nourishment

> *Through monitoring, we will determine when sand lost from the original template needs to be replaced so as to maintain the sand cover and slope of the bank.*

Define the parameters of a significant storm that will require reporting.

> *The Commission has set the parameters for other projects, which should remain consistent. Specifically, per Additional Condition 17, SE48-2789, "…storm events being defined as period of sustained winds in excess of 40 mph for a period of 6 hours…" The bi-annual monitoring will cover the effects of any intermediate storms.*

Require project representative to appear before the Commission on a regular basis to present the on-going reports.

> *The annual reports will be presented to the Commission by a project representative.*

How will the elevation of the beach and location of mean high water (MHW) be monitored?

> *The survey transects plotted over each other will show the position of MHW as it moves through space and time at each transect location. Further, the location of MHW will be shown on the site plan for each survey.*

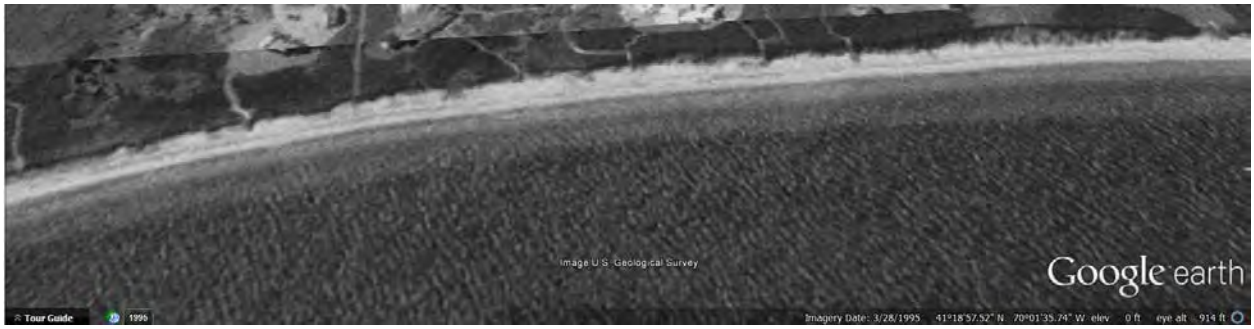
The requested project is justified, and will result in an improvement to the existing site conditions by creating a stable vegetated coastal bank, which meets and promotes the interests protected by the Commission. I plan to attend your next meeting to review this information, and address any additional questions or comments.

Sincerely,

Nantucket Engineering & Survey, P.C.
By: Arthur D. Gasbarro, PE, PLS, LEED AP

Cc: MassDEP – S.E.R.O.
Massachusetts Division of Fisheries & Wildlife - NHESP
Pocomo Neighbors (Applicants/Owners)
Arthur I. Reade, Jr., Reade, Gullickson, Hanley & Gifford, LLP
Glenn Wood, Rubin & Rudman, LLP
Lee Weishar, Ph.D., Woods Hole Group
Seth Wilkinson, Wilkinson Ecological Design, Inc.

1995:



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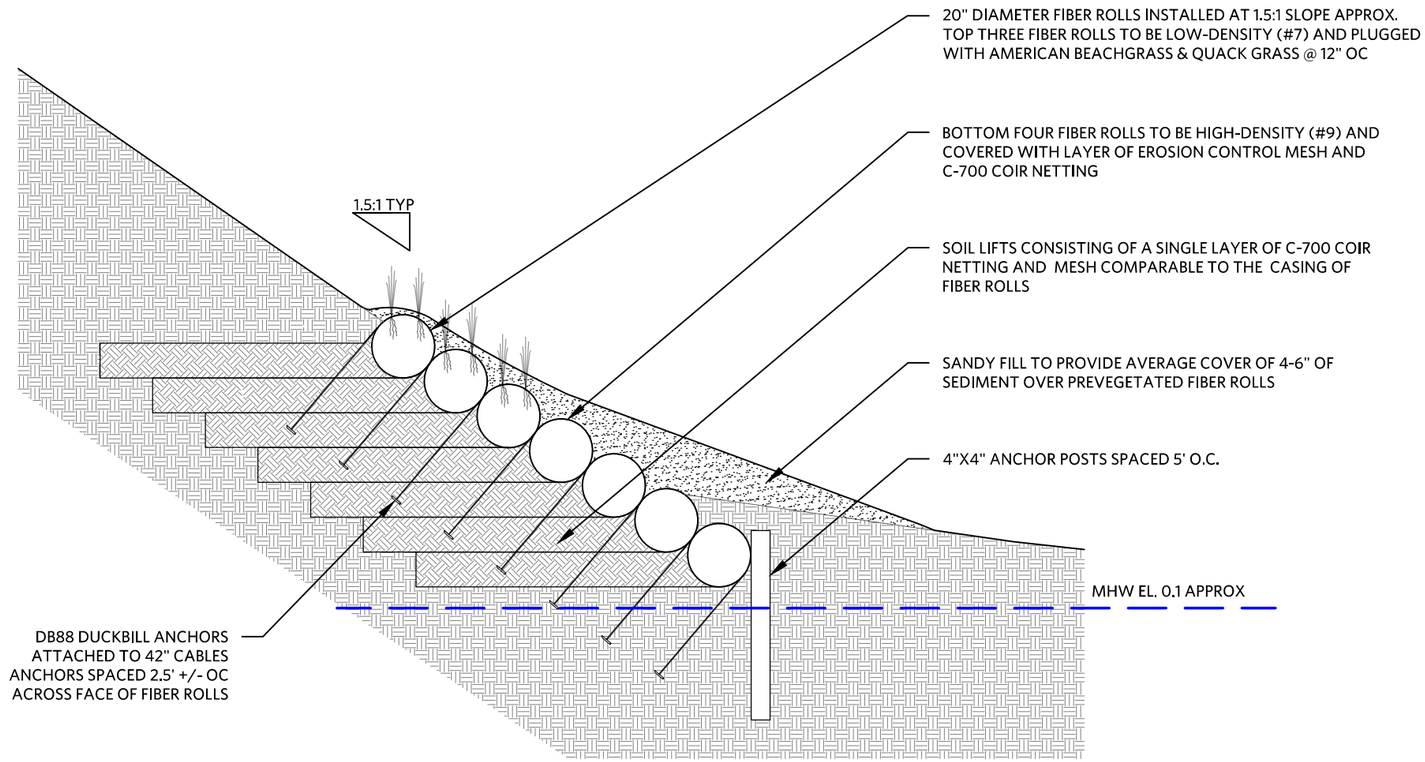

1 REINFORCED FIBER ENCASED SAND LIFT SECTION, TYPICAL

Scale: 1/4"=1'-0"

WILKINSON
ECOLOGICAL DESIGN

28 Lots Hollow Rd., Orleans, MA 02653
TEL: (508) 255-1113 FAX: (508)255-9477
WWW.WILKINSONECOLOGICAL.COM

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SURVEY PROVIDED BY:

BLACKWELL & ASSOCIATES, INC.
20 TEASDALE CIRCLE
NANTUCKET, MA 02554
(508) 228-9026

NOTES:

LEGEND:

REV	DATE	DESCRIPTION

POCOMO NEIGHBORS

47, 53, 55, 57, 61, 63, 67, & 69
POCOMO ROAD
NANTUCKET, MA

DATE: 04/2/2016	SCALE: 1/4" = 1'-0"
DRAWN BY: TtB	CHECKED BY: SW

FOR PERMITTING PURPOSES ONLY
THIS DRAWING IS NOT INTENDED FOR CONSTRUCTION

TYPICAL SECTION

SIEVE ANALYSIS RESULTS
OF COASTAL BANK SEDIMENT SAMPLES

By

BRIGGS ENGINEERING & TESTING

Prepared For

POCOMO NEIGHBORS

20 Mary Ann Drive • Nantucket, MA 02554
508-825-5053 • www.NantucketEngineer.com

Briggs Engineering & Testing
A Division of PK Associates, Inc.

Nantucket Engineering & Survey
20 Mary Ann Drive
Nantucket, MA 02554
Attn: Mr. Arthur Gasbarro

Report Date: 4/28/16

Project: **Coastal Bank-Nantucket Engr.**
Briggs #: 28878

Tested: 4/27/16
Received: 4/20/16

1	Sample No.	Description	Source of Material
	M-27132	Existing Material	Sample #1

2. Sieve Analysis {ASTM C 136, and ASTM C 117}

Sieve Size		Results	Specifications
Standard	Alternate	{% Passing by Wt.}	
100 mm	4"	100	
75 mm	3"	100	
63 mm	2-1/2"	100	
50 mm	2"	100	
37.5 mm	1-1/2"	100	
25 mm	1"	100	
19 mm	3/4"	99	
12.5 mm	1/2"	99	
9.5 mm	3/8"	99	
4.75 mm	#4	98	
2.36 mm	#8	95	
1.18 mm	#16	91	
0.600 mm	#30	69	
0.300 mm	#50	26	
0.150 mm	#100	12	
0.075 mm	#200	8.3	

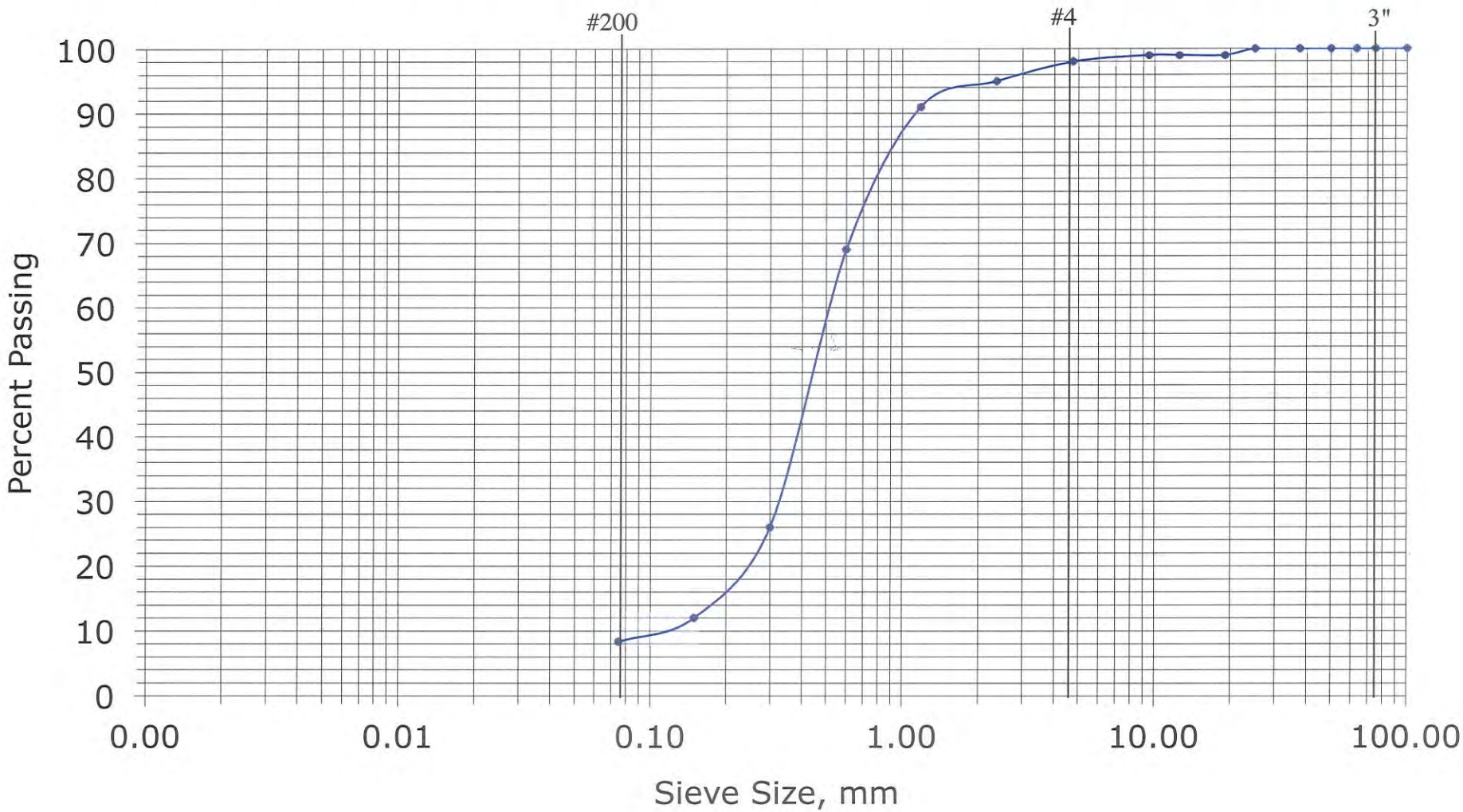
BRIGGS ENGINEERING & TESTING
A Division of PK Associates, Inc.

Sean Skorohod
Director of Testing Services
Construction Technology Division

Briggs Engineering & Testing
A Division of PK Associates, Inc.

Project:	Coastal Bank-Nantucket Engr.
Date Tested:	4/27/16
Lab Ref. No.:	M-27132

Sieve Analysis



Briggs Engineering & Testing
A Division of PK Associates, Inc.

Nantucket Engineering & Survey
20 Mary Ann Drive
Nantucket, MA 02554
Attn: Mr. Arthur Gasbarro

Report Date: 4/28/16

Project: **Coastal Bank-Nantucket Engr.**
Briggs #: 28878

Tested: 4/27/16
Received: 4/20/16

1	Sample No.	Description	Source of Material
	M-27133	Existing Material	Sample #2

2. Sieve Analysis {ASTM C 136, and ASTM C 117}

Sieve Size		Results	Specifications
Standard	Alternate	{% Passing by Wt.}	
100 mm	4"	100	
75 mm	3"	100	
63 mm	2-1/2"	100	
50 mm	2"	100	
37.5 mm	1-1/2"	100	
25 mm	1"	100	
19 mm	3/4"	100	
12.5 mm	1/2"	100	
9.5 mm	3/8"	100	
4.75 mm	#4	99	
2.36 mm	#8	98	
1.18 mm	#16	94	
0.600 mm	#30	74	
0.300 mm	#50	34	
0.150 mm	#100	11	
0.075 mm	#200	7.5	

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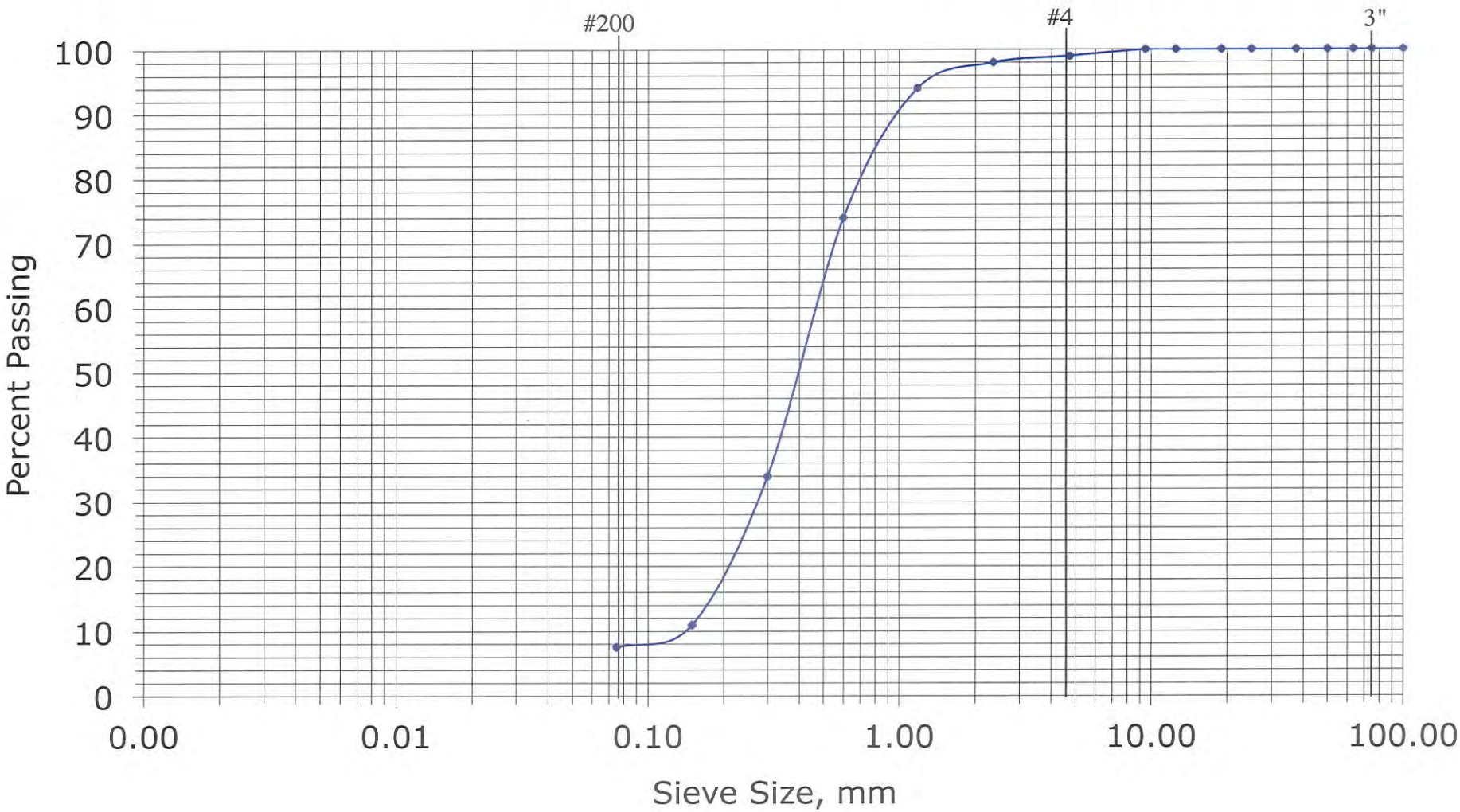
Sean Skorohod
Director of Testing Services
Construction Technology Division

Briggs Engineering & Testing
A Division of PK Associates, Inc.

Project:	Coastal Bank-Nantucket Engr.
Date Tested:	4/27/16
Lab Ref. No.:	M-27133

Sieve Analysis



Briggs Engineering & Testing
A Division of PK Associates, Inc.

Nantucket Engineering & Survey
20 Mary Ann Drive
Nantucket, MA 02554
Attn: Mr. Arthur Gasbarro

Report Date: 4/28/16

Project: **Coastal Bank-Nantucket Engr.**
Briggs #: 28878

Tested: 4/27/16
Received: 4/20/16

1	Sample No.	Description	Source of Material
	M-27134	Existing Material	Sample #3

2. Sieve Analysis {ASTM C 136, and ASTM C 117}

Sieve Size		Results	Specifications
Standard	Alternate	{% Passing by Wt.}	
100 mm	4"	100	
75 mm	3"	100	
63 mm	2-1/2"	100	
50 mm	2"	100	
37.5 mm	1-1/2"	100	
25 mm	1"	100	
19 mm	3/4"	100	
12.5 mm	1/2"	100	
9.5 mm	3/8"	100	
4.75 mm	#4	99	
2.36 mm	#8	96	
1.18 mm	#16	91	
0.600 mm	#30	69	
0.300 mm	#50	33	
0.150 mm	#100	13	
0.075 mm	#200	8.4	

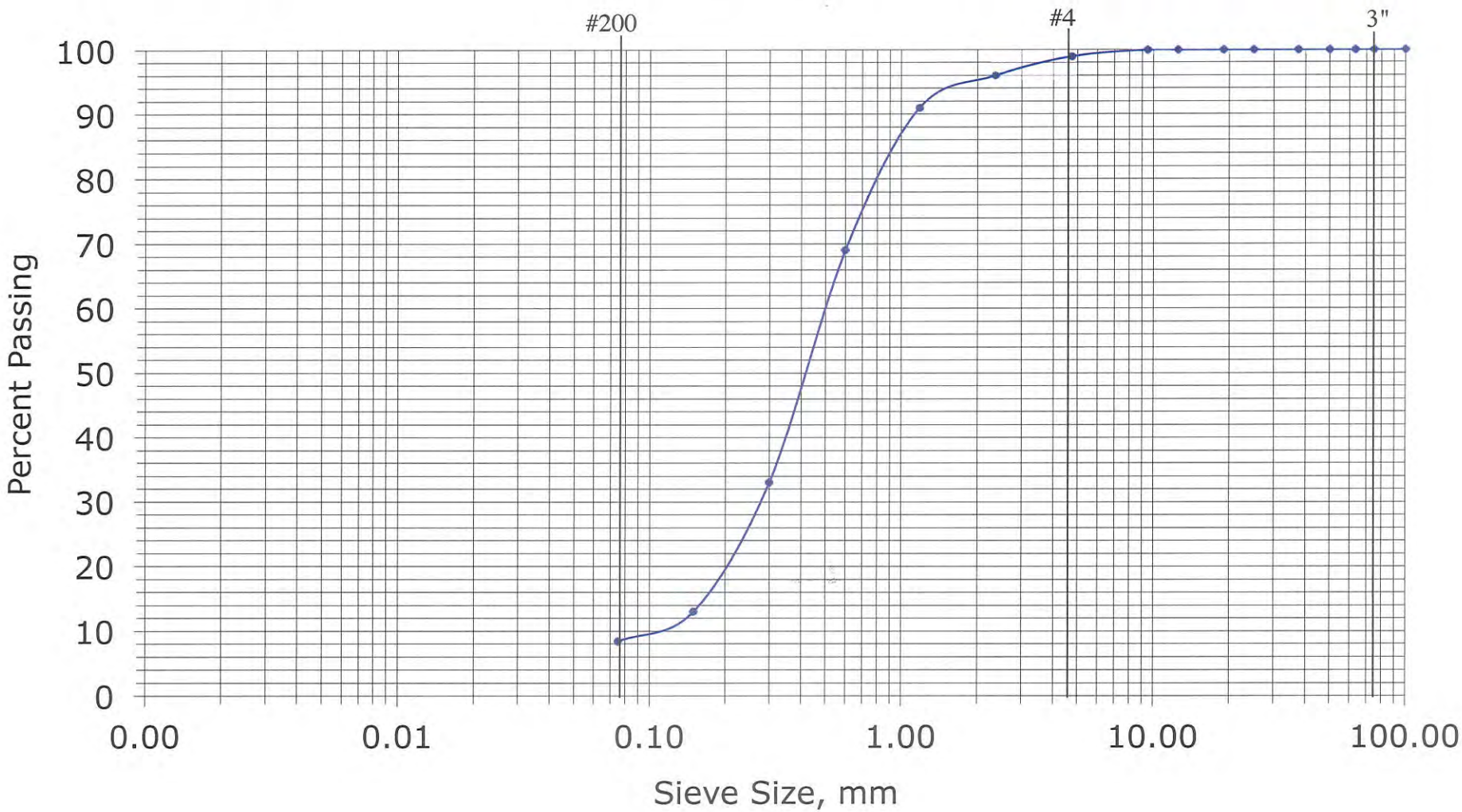
BRIGGS ENGINEERING & TESTING
A Division of PK Associates, Inc.

Sean Skorohod
Director of Testing Services
Construction Technology Division

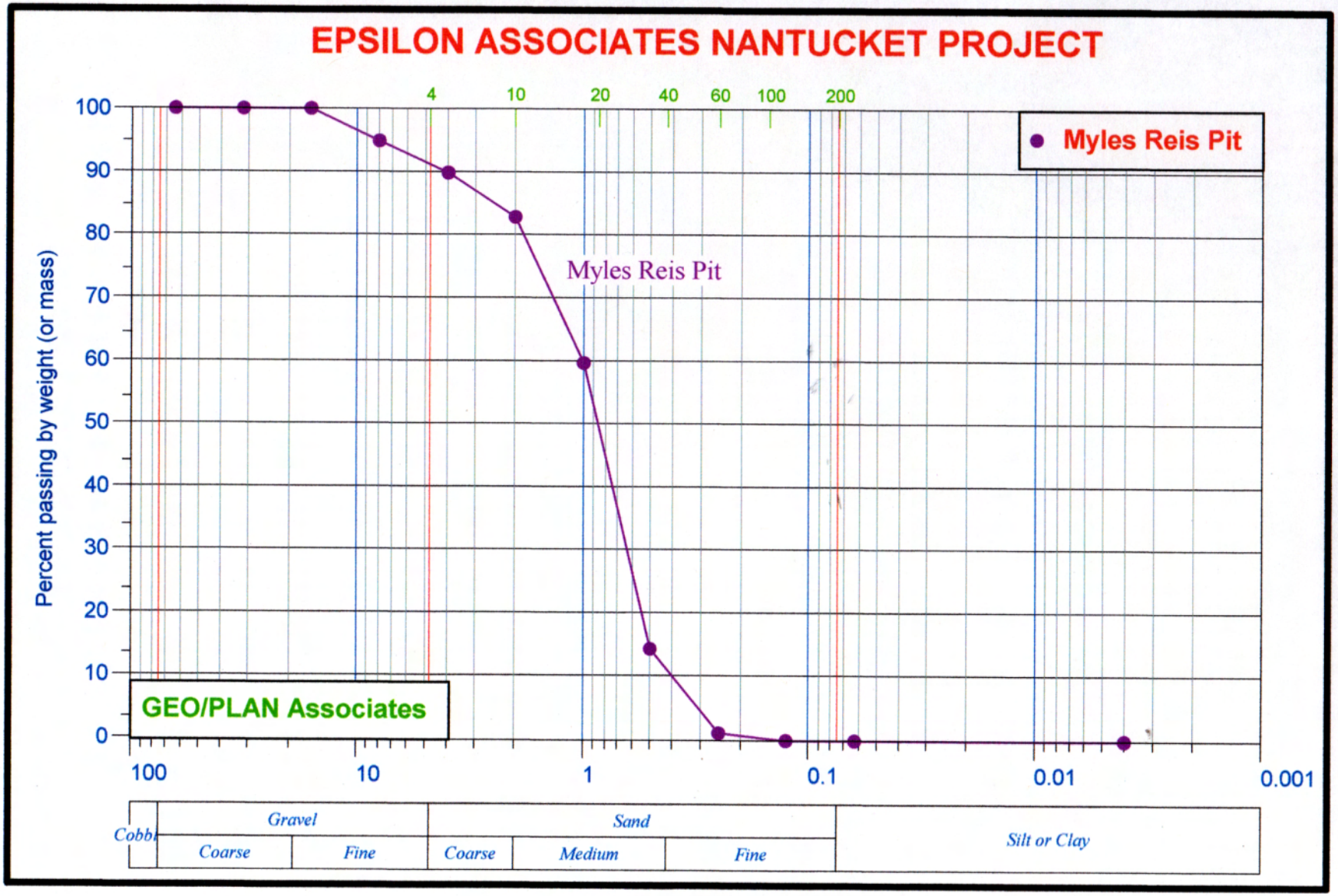
Briggs Engineering & Testing
A Division of PK Associates, Inc.

Project:	Coastal Bank-Nantucket Engr.
Date Tested:	4/27/16
Lab Ref. No.:	M-27134

Sieve Analysis



Reis Sand Pit
Sediment Analysis From
Record Files



GEO/PLAN Associates
Sediment Grain Size Analysis
Client:Epsilon Associates
Project: Nantucket, MA
Project Location: Nantucket, MA
Project No.
Date: October 2011

Sample: **Myles Reis Pit**

Phi	Cum Wt	Total Wt	% Wt	Cum %	Sand Only % Wt	Sand Only Cum %
>-5	0.00	0.00	0.00	0.00	0.00	0.00
-4	0.00	0.00	0.00	0.00	0.00	0.00
-3	5.91	5.91	5.05	5.05	5.05	5.05
-2	12.01	6.11	5.22	10.27	5.22	10.27
-1	20.16	8.15	6.97	17.24	6.97	17.24
0	47.07	26.92	23.02	40.25	23.02	40.25
1	100.01	52.94	45.27	85.53	45.27	85.53
2	115.54	15.53	13.28	98.81	13.28	98.81
3	116.91	1.37	1.17	99.98	1.17	99.98
4	116.93	0.03	0.02	100.00	0.02	100.00

Phi	Total Wt	Bkr Wt	Corr. Wt	Wt Frac	% Wt	Bk No.
Silt	0.0000	0.0000	0.0000	0.0000	0.0000	--
Clay	0.0000	0.0000	0.0000	0.0000	0.0000	--
		Disp. Wt	0.0000			

Wt. Coarse	116.9300
Wt Fine	0.0000
Total Wt	116.9300

Phi	Wt %	Phi Mid Pt	Wt % Mid Pt	Mid pt - Mean (=X)	X sq	X sq Wt %
>-5	0.00	-5.50	0.00	-5.43	29.47	0.00
-4	0.00	-4.50	0.00	-4.43	19.61	0.00
-3	5.05	-3.50	-17.68	-3.43	11.76	59.37
-2	5.22	-2.50	-13.05	-2.43	5.90	30.80
-1	6.97	-1.50	-10.45	-1.43	2.04	14.22
0	23.02	-0.50	-11.51	-0.43	0.18	4.23
1	45.27	0.50	22.64	0.57	0.33	14.78
2	13.28	1.50	19.92	1.57	2.47	32.78
3	1.17	2.50	2.93	2.57	6.61	7.75
4	0.02	3.50	0.07	3.57	12.75	0.27
Silt	0.00	6.00	0.00	6.07	36.86	0.00
Clay	0.00	9.00	0.00	9.07	82.29	0.00
TOTAL	100.00		-7.13			164.19

Total Sample		Mean =	-0.07	Variance = 1.64
				Sample SD = 1.28
Coarse Only	100.00		-7.13	164.19
		Mean =	-0.07	Variance = 1.64
				Sample SD = 1.28

Gravel	Sand	Silt	Clay	Total
17.2	82.8	0.0	0.0	100.0

Sand	Silt	Clay	Total
100.0	0.0	0.0	100.0

April 29, 2016

Mr. Ernest Steinauer, Chair
Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

Re: Notice of Intent Application
47, 53, 55, 57, 61, 63, 67, 69 Pocomo Road
DEP File No. SE48-2874
NHESP Tracking No. 16-35464

Dear Mr. Steinauer:

The purpose of this letter is to provide supplemental information in response to questions and comments at the first public hearing, as well as from Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (Division), on the referenced application.

Attached is an updated site plan and sieve analysis results from soil samples taken from the coastal bank. The revised site plan includes details of the terminal ends of the proposed project. The westerly end of the project terminates to a permitted sand drift fence. The easterly end has been moved back from the property line common with Nantucket Conservation Foundation by ten feet. Additional sand nourishment will be placed in this area with each maintenance activity. The purpose is to offset any localized terminal effects, which are expected to be minor in scope, if any. The updated site plan includes additional monitoring transects, located approximately every 300-feet, for a total of seven.

In response to specific questions and comments,

<u>From the Division</u>:

1. Provide information relative to the maintenance of the proposed structure.

   a. How will the applicants ensure a sand cover of 4-6 inches overtop the coir; are benchmarks proposed?

      Four to six-inches of sand is the proposed cover for the top three vegetated coir rolls; there will be more over the lower rolls as a result of the slope (please see attached cross sectional drawing). The twice-per-year survey will determine the elevation of the sand cover, which can be compared to the known elevation of the top of the coir rolls.

   b. How will the applicants "assess the need for maintenance"; what constitutes the need for maintenance?

      The project condition will be inspected at least twice per year, as well as following any storm event when the wind exceeds forty miles per hour for six consecutive hours. Maintenance will be performed if there is any visible damage to the system.

c. Does the project propose to monitor the beach elevation in front of the structure?

Yes, additional survey transects have been added to the plan, which will be measured twice per year and reported to the Commission in plan format.

2. Provide information relative to the project design.

a. Will the 4”x 4” posts be connected by any other horizontal or vertical framework (e.g. stringers or pickets)?

No. The posts will be free-standing, with a top elevation that has been reduced, and will be slightly above or just below the sand when the system is in equilibrium.

b. According to the plan, the proposed sand cover ends ± 2-3 feet above the beach elevation, what will keep this material in place?

The plan detail has been clarified to depict the bank slope extending to the beach level. Sediment at this slope is within the angle of repose, and will not require any structural reinforcement.

c. Will the ends of the structure taper into the existing Coastal Bank?

Yes, at 45-degrees, as shown on the updated site plan.

3. Provide clarification regarding to the following items.

a. The amount of nourishment proposed: will a specific amount occur annually or is it proposed only if needed as cover for the structure?

Nourishment will be added as needed to maintain the cover and/or the slope shown on the plans. The applicant will monitor, and supply only the required amount of sand such that it is not over nourishing.

b. The plantings and density. The Project Description, Waiver Request, and Wilkinson Report all contain conflicting information.

The plantings and density will be per the Wilkinson Report. The plantings will be monitored and reported to the Commission as a condition of the Order. Any discrepancies have been rectified.

<u>From the Commission</u>:

Will the sand nourishment be overly transported by the wind, and will it have adverse impact on the eelgrass beds?

It will not, as the provided sediment will have similar characteristics of sand in the bank as demonstrated by the provided sieve analysis results from the bank and supply pit (Reis). This is further supported by the filed correspondence from Woods Hole Group. The applicant will monitor, and supply only the required amount of sand such that it is not over nourishing; therefore, the project will replicate what the bank would naturally supply.

Request for a meiofauna study.

The Applicant agrees to take a summer sample of the invertebrate life within the beach from three locations in the project area, and two from the beach north, and two from the beach south, of the project area. The locations of all samples shall be provided to the Commission.

Provide historic photos of the bank

Attached are a series of aerial photos that depict varying amounts of vegetation on the face of the bank. The proposed project and plantings will improve the existing bare bank by meeting the interest described in the Regulations, Section 2.05.A.1 – "Vegetation tends to stabilize a coastal bank and reduce the rate of erosion due to wind and rain runoff. Vegetated banks are critical to reducing wind and rain erosion and for providing important habitat and biodiversity."

Is the coastal bank used by birds (swallows) for nesting?

There are no nesting holes apparent in the coastal bank for the length of the project area.

Is there groundwater seeping out of the coastal bank in the project area?

There is no evidence of exposed clay layers and/or weeping groundwater apparent from the bank for the length of the project area.

How will we monitor the cobble content of the beach?

The beach composition is highly dynamic as shown in the report photos where there is no evidence of cobbles. The Applicant will monitor and provide photos of the beach composition at each transect location. Additionally, we will only be replacing sand that has been lost to the system naturally. Therefore, the dynamic nature of the beach and nearshore area will continue to occur naturally.

What phase of the tide did the January 24, 2016 storm occur?

The storm occurred during the lunar high.

What is the failure criteria for the project?

Damage that requires replacement of greater than 50% of the project materials over two consecutive years. Should this occur, the Applicant will apply for an Amended Order of Conditions to modify the project based on review and approval of the Commission.

Need more monitoring transects.

We have added a transect every 300-feet, for a total of seven transects.

Will the nourishment be matching the sediment naturally contributed by the bank?

Yes, the sand nourishment will have similar characteristics of sand in the bank as demonstrated by the provided sieve analysis results from the bank and supply pit (Reis).

Is this a sustainable project, will Nantucket run out of available sediment from inland sources?

The applicant will maintain a volume and not a set amount of sand each year. There are large volumes of sand available for excavation at both the Holdgate and Reis Pits. Sand could also be brought over on a barge as gravel currently is delivered.

How is success of this project determined?

Through the monitoring requirements the Applicant will demonstrate that the coastal bank will become partially colonized with vegetation within the first growing season, and at least 75% of the disturbed coastal bank above the fiber roll array will be well-vegetated within 3 years.

How long until it is likely to be deemed "successful"?

Within three-years we expect at least 75% of the bank to be covered with established vegetation, as described above.

How does each end terminate? Will there be end scour?

The revised site plan includes details of the terminal ends of the proposed project. The westerly end of the project terminates to a permitted coastal stabilization project, SE48-2305. The easterly end has been moved back from the property line common with Nantucket Conservation Foundation by ten feet. Additional sand nourishment will be placed in this area with each maintenance activity. The purpose is to offset any localized terminal effects, which are expected to be minor in scope, if any.

Is there a single entity that would be responsible for the multiple properties?

The project is a collective effort per a Memorandum of Understanding executed by all of the property owners.

What happens if an individual property owner is not willing to continue to abide by imposed permit conditions?

The Order of Conditions will be recorded in the chain of title for each property. The right of enforcement will run against each individual owner. The owners are working cooperatively through a memorandum of understanding.

<u>From Nantucket Land Council:</u>

Would like more detail concerning the mesh encompassing the fiber rolls.

> *The proposed fiber rolls are the same as those approved and recently installed at 48 Shimmo Pond Road. Additional detail has been added to the attached site plan.*

Define the trigger that will result in re-nourishment

> *Through monitoring, we will determine when sand lost from the original template needs to be replaced so as to maintain the sand cover and slope of the bank.*

Define the parameters of a significant storm that will require reporting.

> *The Commission has set the parameters for other projects, which should remain consistent. Specifically, per Additional Condition 17, SE48-2789, "…storm events being defined as period of sustained winds in excess of 40 mph for a period of 6 hours…" The bi-annual monitoring will cover the effects of any intermediate storms.*

Require project representative to appear before the Commission on a regular basis to present the on-going reports.

> *The annual reports will be presented to the Commission by a project representative.*

How will the elevation of the beach and location of mean high water (MHW) be monitored?

> *The survey transects plotted over each other will show the position of MHW as it moves through space and time at each transect location. Further, the location of MHW will be shown on the site plan for each survey.*

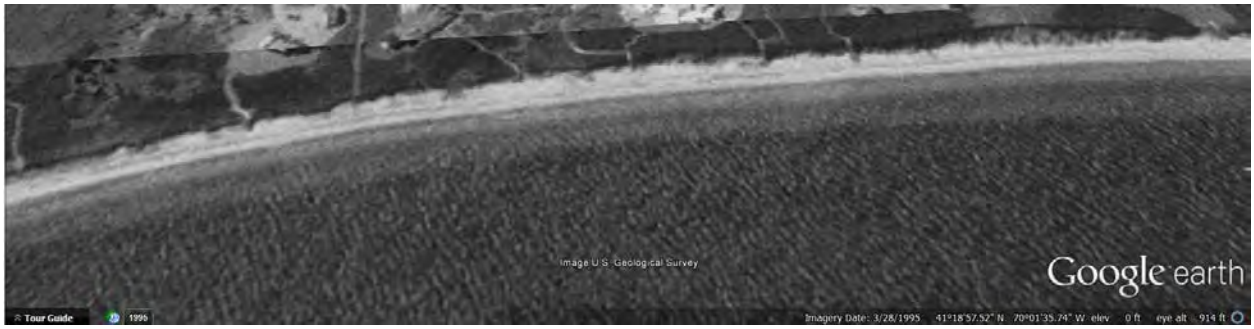
The requested project is justified, and will result in an improvement to the existing site conditions by creating a stable vegetated coastal bank, which meets and promotes the interests protected by the Commission. I plan to attend your next meeting to review this information, and address any additional questions or comments.

Sincerely,

Nantucket Engineering & Survey, P.C.
By: Arthur D. Gasbarro, PE, PLS, LEED AP

Cc: MassDEP – S.E.R.O.
Massachusetts Division of Fisheries & Wildlife - NHESP
Pocomo Neighbors (Applicants/Owners)
Arthur I. Reade, Jr., Reade, Gullickson, Hanley & Gifford, LLP
Glenn Wood, Rubin & Rudman, LLP
Lee Weishar, Ph.D., Woods Hole Group
Seth Wilkinson, Wilkinson Ecological Design, Inc.

1995:

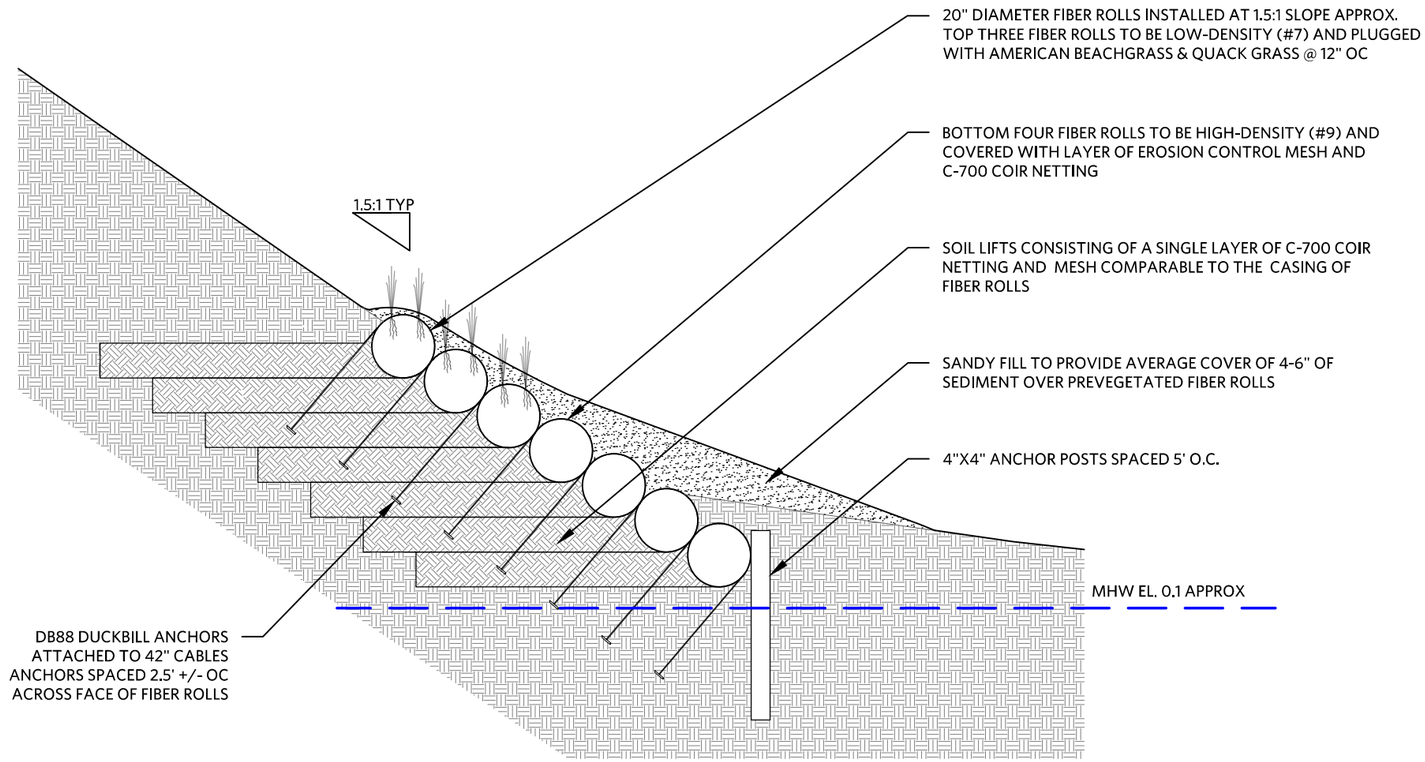


2000:

2005:

2010:

2015:



1 REINFORCED FIBER ENCASED SAND LIFT SECTION, TYPICAL

Scale: 1/4"=1'-0"

WILKINSON
ECOLOGICAL DESIGN

28 Lots Hollow Rd., Orleans, MA 02653
TEL: (508) 255-1113 FAX: (508)255-9477
WWW.WILKINSONECOLOGICAL.COM

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SURVEY PROVIDED BY:

BLACKWELL & ASSOCIATES, INC.
20 TEASDALE CIRCLE
NANTUCKET, MA 02554
(508) 228-9026

NOTES:

LEGEND:

REV	DATE	DESCRIPTION

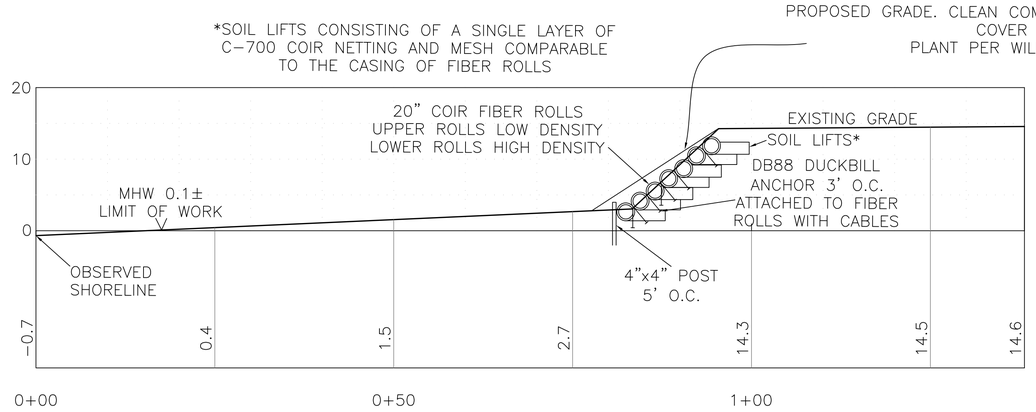
POCOMO NEIGHBORS

47, 53, 55, 57, 61, 63, 67, & 69
POCOMO ROAD
NANTUCKET, MA

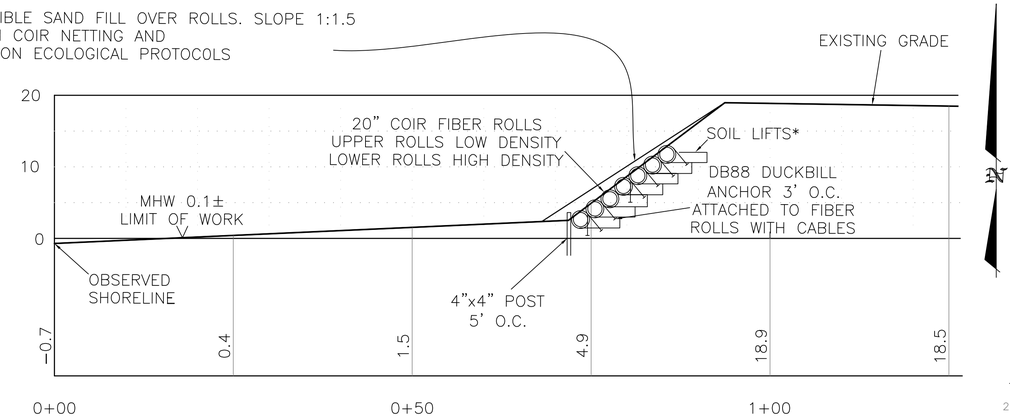
DATE: 04/2/2016	SCALE: 1/4" = 1'-0"
DRAWN BY: TtB	CHECKED BY: SW

FOR PERMITTING PURPOSES ONLY
THIS DRAWING IS NOT INTENDED FOR CONSTRUCTION

TYPICAL SECTION

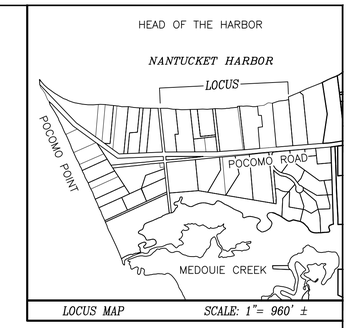


TRANSECT 1 PROFILE 1"=10'



TRANSECT 2 PROFILE 1"=10'

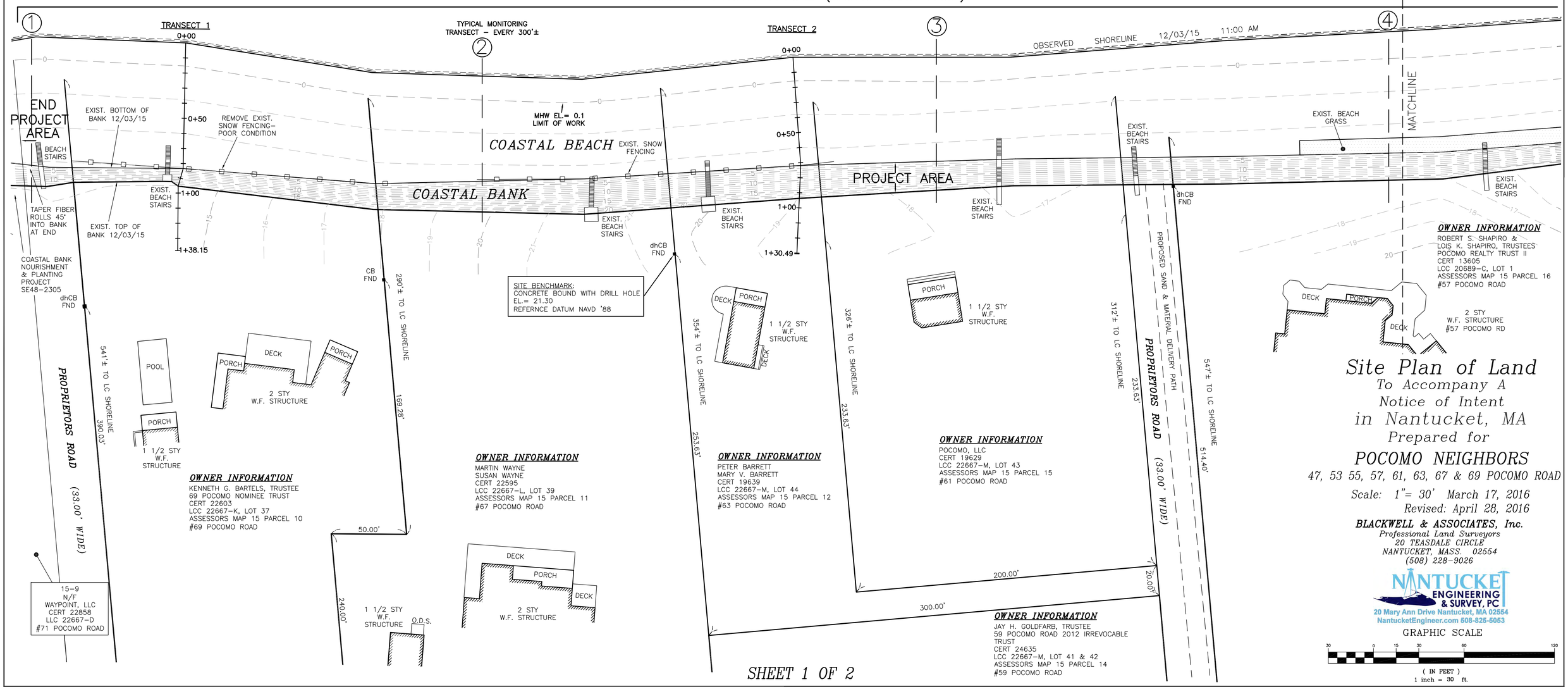
NANTUCKET HARBOR



LEGEND

dhCB ■	DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
dhCB ⊡	DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
—o—o—	DENOTES EXIST. WOOD w/WIRE FARM FENCE
25— — —	DENOTES EXIST. GRADE CONTOUR
x24.3	DENOTES EXIST. GRADE SPOT ELEVATION

PROJECT LENGTH 1775'± (ALONG BANK FACE)



Site Plan of Land

To Accompany A
Notice of Intent
in Nantucket, MA
Prepared for

POCOMO NEIGHBORS

47, 53 55, 57, 61, 63, 67 & 69 POCOMO ROAD

Scale: 1"= 30' March 17, 2016
Revised: April 28, 2016

BLACKWELL & ASSOCIATES, Inc.
Professional Land Surveyors
20 TEASDALE CIRCLE
NANTUCKET, MASS. 02554
(508) 228-9026

NANTUCKET ENGINEERING & SURVEY, PC
20 Mary Ann Drive Nantucket, MA 02554
NantucketEngineer.com 508-825-5053

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

SHEET 1 OF 2

GENERAL NOTES:

1. THE CONTRACTOR SHALL PROVIDE ALL MATERIAL, LABOR AND EQUIPMENT TO PERFORM THE WORK DESCRIBED ON THESE PLANS, AND AS APPROVED BY THE NANTUCKET CONSERVATION COMMISSION.

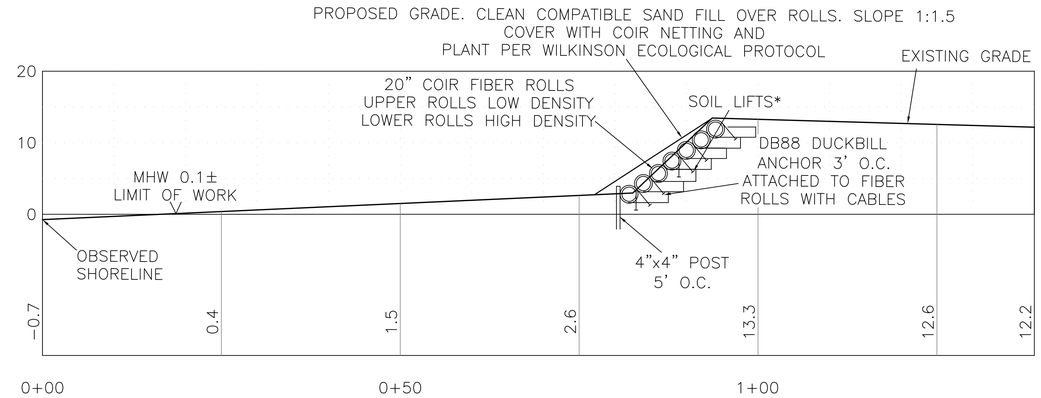
2. WORK SHALL BE IN COMPLIANCE WITH THE PLANS, SPECIFICATION AND THE ORDER OF CONDITIONS ISSUED BY THE NANTUCKET CONSERVATION COMMISSION.

3. THE CONTRACTOR SHALL ATTEND A PRE-CONSTRUCTION ON-SITE MEETING WHICH WILL BE ATTENDED BY THE ENGINEER, WITH NOTIFICATION TO A REPRESENTATIVE OF THE NANTUCKET CONSERVATION COMMISSION. THE CONTRACTOR WILL PRESENT THE PROPOSED METHODS AND MEANS TO CONSTRUCT THE PROPOSED IMPROVEMENTS.

4. THE CONTRACTOR SHALL NOT VARY FROM THE PLANS, SPECIFICATION, ORDER OF CONDITIONS OR INSTRUCTIONS PROVIDED AT THE PRE-CONSTRUCTION MEETING, WITHOUT FIRST OBTAINING APPROVAL OF THE CONSERVATION COMMISSION REPRESENTATIVE AND THE ENGINEER.

5. ONLY CLEAN COMPATIBLE FILL SHALL BE USED FOR FILL AND COVER FOR THIS PROJEFCT. THE CONTRACTOR AGREES TO OBTAIN SEDIMENT GRAIN SIZE DISTRIBUTION ANALYSIS, FROM A QUALIFIED LABORATORY, IF REQUESTED BY THE CONSERVATION COMMISSION REPRESENTATIVE.

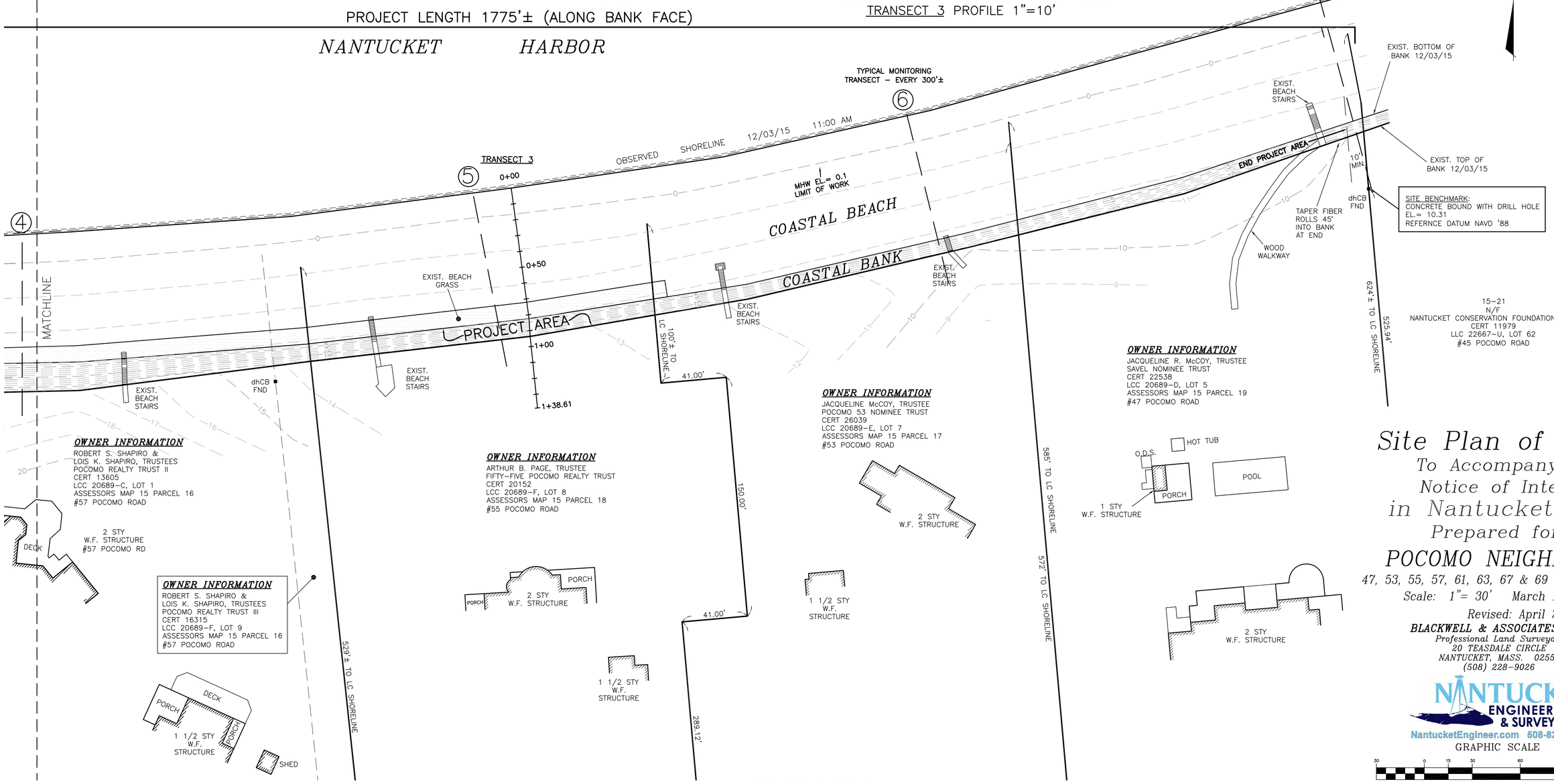
6. UPON COMPLETION OF RESTORATION, AND PRIOR TO DEMOBILIZATION OF EQUIPMENT, THE CONTRACTOR SHALL ARRANGE FOR A POST-CONSTRUCTION MEETING WITH THE ENGINEER. SHORTCOMINGS AND DEFICIENCIES WILL BE OUTLINED TO THE CONTRACTOR AT THIS MEETING, THAT MUST BE CORRECTED PRIOR TO DEMOBILIZATION AND FINAL PAYMENTS FOR THE WORK.



TRANSECT 3 PROFILE 1"=10'

LEGEND

dhCB ■	DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
dhCB ⊡	DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
—□—□—	DENOTES EXIST. WOOD w/WIRE FARM FENCE
25 — — —	DENOTES EXIST. GRADE CONTOUR
x24.3	DENOTES EXIST. GRADE SPOT ELEVATION



Site Plan of Land

To Accompany A
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in Nantucket, MA
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47, 53, 55, 57, 61, 63, 67 & 69 POCOMO ROAD

Scale: 1"= 30' March 17, 2016

Revised: April 28, 2016

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NANTUCKET ENGINEERING & SURVEY, PC
NantucketEngineer.com 508-825-5053

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

B8207

SIEVE ANALYSIS RESULTS
OF COASTAL BANK SEDIMENT SAMPLES

By

BRIGGS ENGINEERING & TESTING

Prepared For

POCOMO NEIGHBORS

20 Mary Ann Drive • Nantucket, MA 02554
508-825-5053 • www.NantucketEngineer.com

Briggs Engineering & Testing
A Division of PK Associates, Inc.

Nantucket Engineering & Survey
20 Mary Ann Drive
Nantucket, MA 02554
Attn: Mr. Arthur Gasbarro

Report Date: 4/28/16

Project: **Coastal Bank-Nantucket Engr.**
Briggs #: 28878

Tested: 4/27/16
Received: 4/20/16

1	Sample No.	Description	Source of Material
	M-27132	Existing Material	Sample #1

2. Sieve Analysis {ASTM C 136, and ASTM C 117}

Sieve Size		Results	Specifications
Standard	Alternate	{% Passing by Wt.}	
100 mm	4"	100	
75 mm	3"	100	
63 mm	2-1/2"	100	
50 mm	2"	100	
37.5 mm	1-1/2"	100	
25 mm	1"	100	
19 mm	3/4"	99	
12.5 mm	1/2"	99	
9.5 mm	3/8"	99	
4.75 mm	#4	98	
2.36 mm	#8	95	
1.18 mm	#16	91	
0.600 mm	#30	69	
0.300 mm	#50	26	
0.150 mm	#100	12	
0.075 mm	#200	8.3	

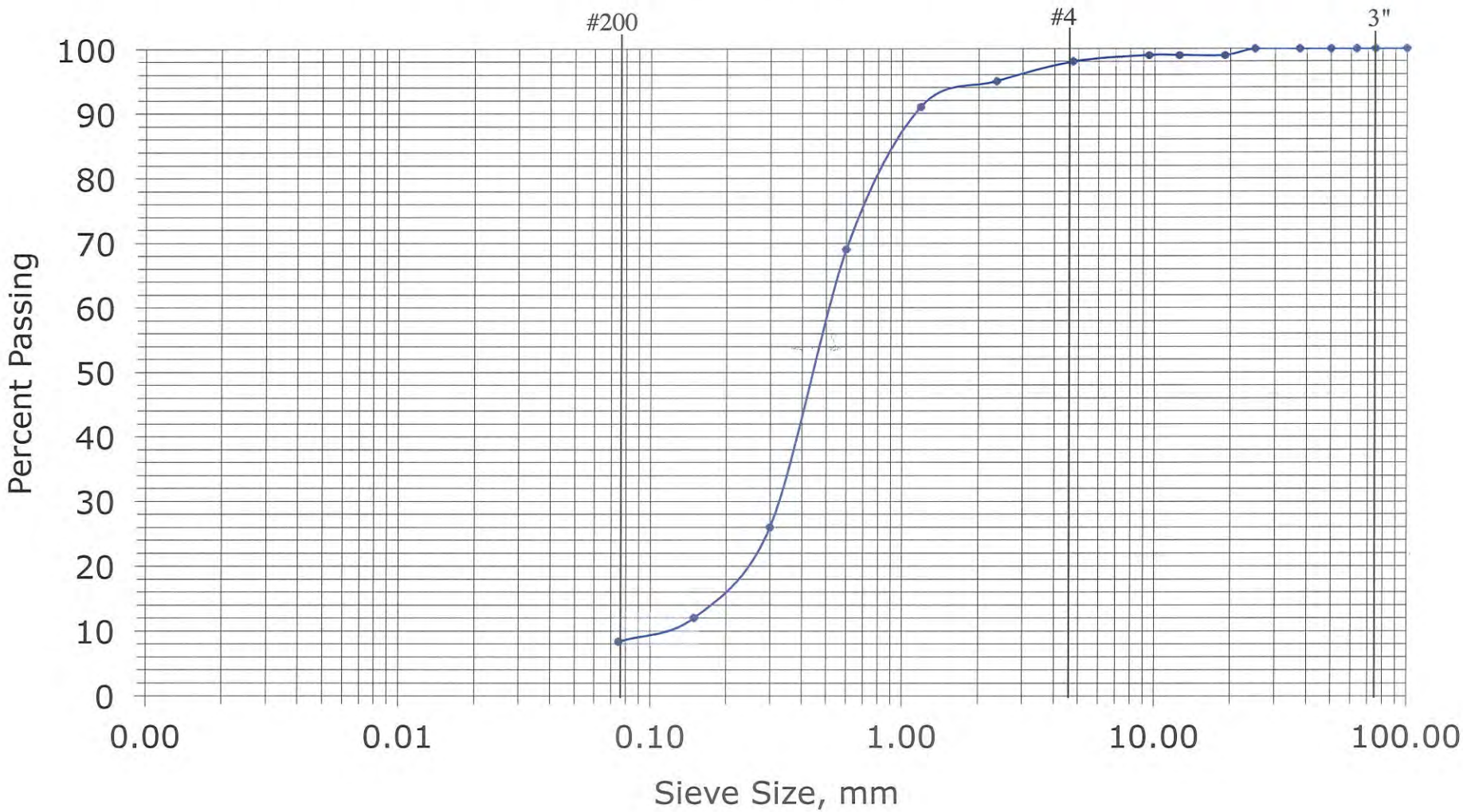
BRIGGS ENGINEERING & TESTING
A Division of PK Associates, Inc.

Sean Skorohod
Director of Testing Services
Construction Technology Division

Briggs Engineering & Testing
A Division of PK Associates, Inc.

Project:	Coastal Bank-Nantucket Engr.
Date Tested:	4/27/16
Lab Ref. No.:	M-27132

Sieve Analysis



Briggs Engineering & Testing
A Division of PK Associates, Inc.

Nantucket Engineering & Survey
20 Mary Ann Drive
Nantucket, MA 02554
Attn: Mr. Arthur Gasbarro

Report Date: 4/28/16

Project: **Coastal Bank-Nantucket Engr.**
Briggs #: 28878

Tested: 4/27/16
Received: 4/20/16

1	Sample No.	Description	Source of Material
	M-27133	Existing Material	Sample #2

2. Sieve Analysis {ASTM C 136, and ASTM C 117}

Sieve Size		Results	Specifications
Standard	Alternate	{% Passing by Wt.}	
100 mm	4"	100	
75 mm	3"	100	
63 mm	2-1/2"	100	
50 mm	2"	100	
37.5 mm	1-1/2"	100	
25 mm	1"	100	
19 mm	3/4"	100	
12.5 mm	1/2"	100	
9.5 mm	3/8"	100	
4.75 mm	#4	99	
2.36 mm	#8	98	
1.18 mm	#16	94	
0.600 mm	#30	74	
0.300 mm	#50	34	
0.150 mm	#100	11	
0.075 mm	#200	7.5	

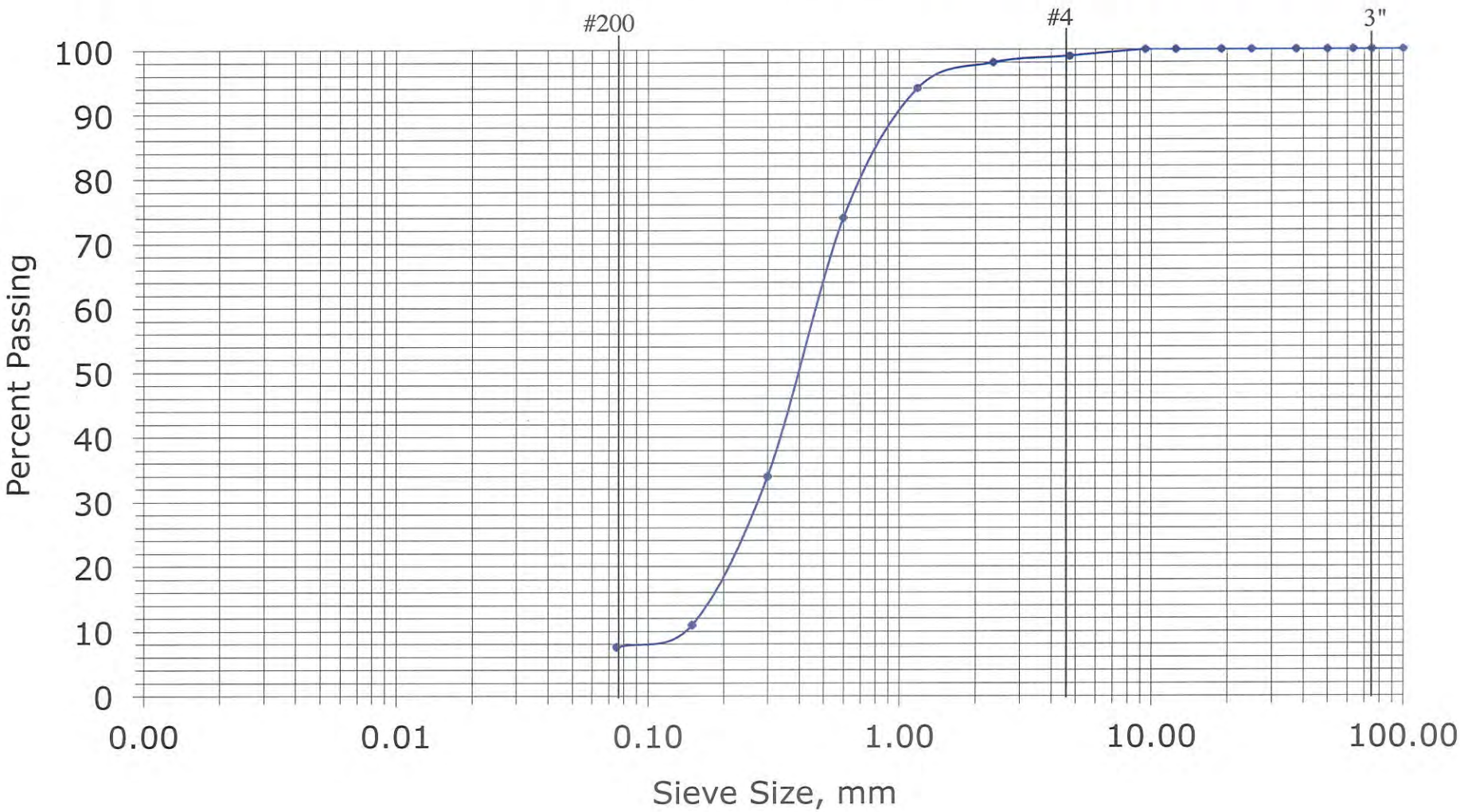
BRIGGS ENGINEERING & TESTING
A Division of PK Associates, Inc.

Sean Skorohod
Director of Testing Services
Construction Technology Division

Briggs Engineering & Testing
A Division of PK Associates, Inc.

Project:	Coastal Bank-Nantucket Engr.
Date Tested:	4/27/16
Lab Ref. No.:	M-27133

Sieve Analysis



Briggs Engineering & Testing
A Division of PK Associates, Inc.

Nantucket Engineering & Survey
20 Mary Ann Drive
Nantucket, MA 02554
Attn: Mr. Arthur Gasbarro

Report Date: 4/28/16

Project: **Coastal Bank-Nantucket Engr.**
Briggs #: 28878

Tested: 4/27/16
Received: 4/20/16

1	Sample No.	Description	Source of Material
	M-27134	Existing Material	Sample #3

2. Sieve Analysis {ASTM C 136, and ASTM C 117}

Sieve Size		Results	Specifications
Standard	Alternate	{% Passing by Wt.}	
100 mm	4"	100	
75 mm	3"	100	
63 mm	2-1/2"	100	
50 mm	2"	100	
37.5 mm	1-1/2"	100	
25 mm	1"	100	
19 mm	3/4"	100	
12.5 mm	1/2"	100	
9.5 mm	3/8"	100	
4.75 mm	#4	99	
2.36 mm	#8	96	
1.18 mm	#16	91	
0.600 mm	#30	69	
0.300 mm	#50	33	
0.150 mm	#100	13	
0.075 mm	#200	8.4	

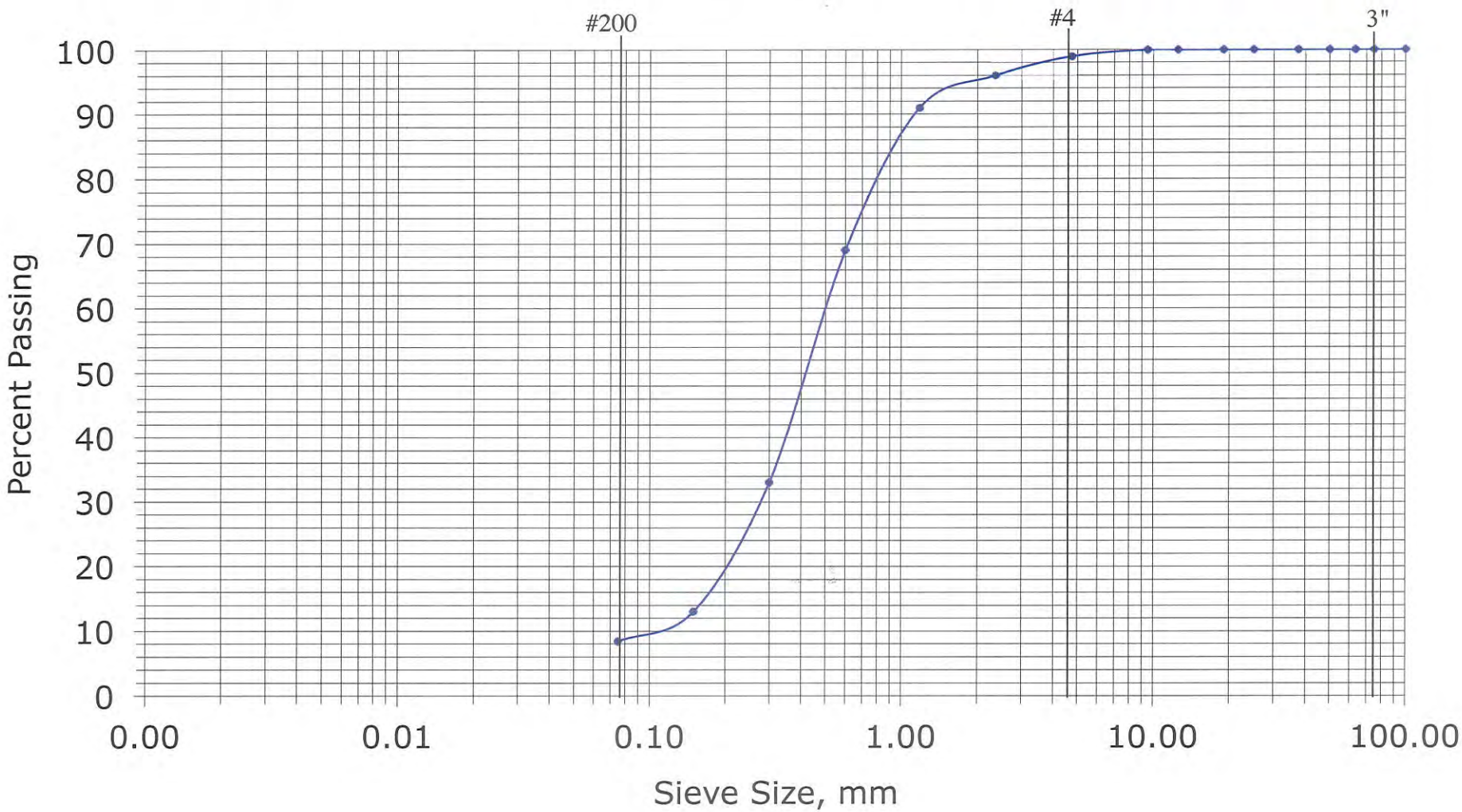
BRIGGS ENGINEERING & TESTING
A Division of PK Associates, Inc.

Sean Skorohod
Director of Testing Services
Construction Technology Division

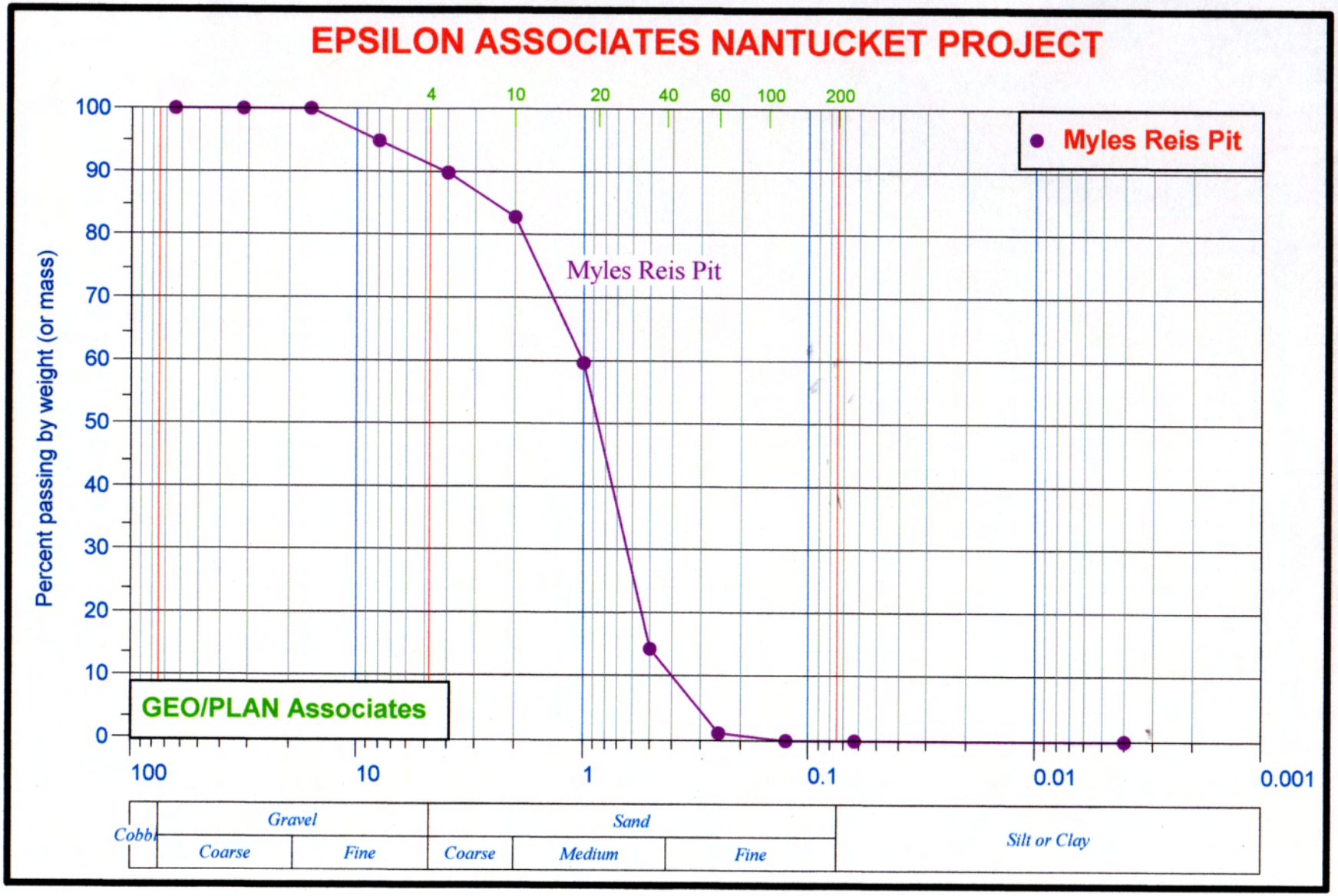
Briggs Engineering & Testing
A Division of PK Associates, Inc.

Project:	Coastal Bank-Nantucket Engr.
Date Tested:	4/27/16
Lab Ref. No.:	M-27134

Sieve Analysis



Reis Sand Pit
Sediment Analysis From
Record Files



GEO/PLAN Associates
Sediment Grain Size Analysis
Client:Epsilon Associates
Project: Nantucket, MA
Project Location: Nantucket, MA
Project No.
Date: October 2011

Sample: **Myles Reis Pit**

Phi	Cum Wt	Total Wt	% Wt	Cum %	Sand Only % Wt	Sand Only Cum %
>-5	0.00	0.00	0.00	0.00	0.00	0.00
-4	0.00	0.00	0.00	0.00	0.00	0.00
-3	5.91	5.91	5.05	5.05	5.05	5.05
-2	12.01	6.11	5.22	10.27	5.22	10.27
-1	20.16	8.15	6.97	17.24	6.97	17.24
0	47.07	26.92	23.02	40.25	23.02	40.25
1	100.01	52.94	45.27	85.53	45.27	85.53
2	115.54	15.53	13.28	98.81	13.28	98.81
3	116.91	1.37	1.17	99.98	1.17	99.98
4	116.93	0.03	0.02	100.00	0.02	100.00

Phi	Total Wt	Bkr Wt	Corr. Wt	Wt Frac	% Wt	Bk No.
Silt	0.0000	0.0000	0.0000	0.0000	0.0000	--
Clay	0.0000	0.0000	0.0000	0.0000	0.0000	--
		Disp. Wt	0.0000			

Wt. Coarse	116.9300
Wt Fine	0.0000
Total Wt	116.9300

Phi	Wt %	Phi Mid Pt	Wt % Mid Pt	Mid pt - Mean (=X)	X sq	X sq Wt %
>-5	0.00	-5.50	0.00	-5.43	29.47	0.00
-4	0.00	-4.50	0.00	-4.43	19.61	0.00
-3	5.05	-3.50	-17.68	-3.43	11.76	59.37
-2	5.22	-2.50	-13.05	-2.43	5.90	30.80
-1	6.97	-1.50	-10.45	-1.43	2.04	14.22
0	23.02	-0.50	-11.51	-0.43	0.18	4.23
1	45.27	0.50	22.64	0.57	0.33	14.78
2	13.28	1.50	19.92	1.57	2.47	32.78
3	1.17	2.50	2.93	2.57	6.61	7.75
4	0.02	3.50	0.07	3.57	12.75	0.27
Silt	0.00	6.00	0.00	6.07	36.86	0.00
Clay	0.00	9.00	0.00	9.07	82.29	0.00
TOTAL	100.00		-7.13			164.19

Total Sample		Mean =	-0.07	Variance = 1.64
				Sample SD = 1.28
Coarse Only	100.00		-7.13	164.19
		Mean =	-0.07	Variance = 1.64
				Sample SD = 1.28

Gravel	Sand	Silt	Clay	Total
17.2	82.8	0.0	0.0	100.0

Sand	Silt	Clay	Total
100.0	0.0	0.0	100.0

NEW INFORMATION FOR CURRENT HEARING

The Trustees of Reservations

Costaka Coatue Wildlife Refuge and Great Point

(7-1.7)

the trustees of reservations

Conserving the Massachusetts Landscape Since 1891
572 Essex Street, Beverly, Massachusetts 01915-1530

CITIZENS BANK
BOSTON, MA 02109
5-7017/2110

Shield

212773

CHECK DATE	CHECK NO.
4/7/2016	212773

CHECK AMOUNT

$** 25.00

PAY **Twenty five and 00/100 Dollars**

TO THE ORDER OF

TOWN OF NANTUCKET
188 MADAKET ROAD
NANTUCKET, MA 02554

MP

MP

MUST BE COUNTERSIGNED IF OVER $5000

HEAT SENSITIVE

Details on Back. Security Features Included

⑈212773⑈ ⑆211070175⑆ 1107854234⑈

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

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

tab

return

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

A. General Information

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

Coskata Coatue Wildlife Refuge and Great Point — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
various — d. Latitude
various — e. Longitude

7 — f. Assessors Map/Plat Number
1.7 — g. Parcel /Lot Number

2. Applicant:

Christopher — a. First Name
Kennedy — b. Last Name
The Trustees of Resevations — c. Organization
23 Pocha Rd Ext — d. Street Address
Edgartown — e. City/Town
Massachusetts — f. State
02568 — g. Zip Code
508-693-7689 — h. Phone Number
508.693.7717 — i. Fax Number
kennedy@thetrustees.org — j. Email Address

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

a. First Name
b. Last Name
The Trustees of Reservations — c. Organization
572 Essex St — d. Street Address
Beverly — e. City/Town
MA — f. State
01915 — g. Zip Code
978.921.1944 — h. Phone Number
978.921.1948 — i. Fax Number
information@thetrustees.org — j. Email address

4. Representative (if any):

A. General Information (continued)

6. General Project Description:

Shorebird and Dune conservation plan and Re-authorization of pre 1972 OSV trail use. The Trustees of Reservations owns Coskata Coatue Wildlife Refuge and manages the Nantucket National Wildlife Refuge under and agreement with the US Fish and Wildlife Service. Both Properties are accessed by ORV's and contain critical habitat for endangered shorebirds.

7a. Project Type Checklist:

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

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

1. ☐ Yes ☒ No If yes, describe which limited project applies to this project:

2. Limited Project

8. Property recorded at the Registry of Deeds for:

Nantucket	
a. County	b. Certificate # (if registered land)
148, 208	192, 194, 262
c. Book	d. Page Number

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

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

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

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available)	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

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

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

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	0 1. square feet	
	0 2. cubic yards dredged	
c. ☒ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	0 1. square feet	0 2. cubic yards beach nourishment
e. ☐ Coastal Dunes	0 1. square feet	0 2. cubic yards dune nourishment

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

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

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

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

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

a. ☒ Yes ☐ No **If yes, include proof of mailing or hand delivery of NOI to:**

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
Route 135, North Drive
Westborough, MA 01581

2008
b. Date of map

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

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

1. c. Submit Supplemental Information for Endangered Species Review *

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

      (a) within wetland Resource Area — 0 percentage/acreage

      (b) outside Resource Area — 0 percentage/acreage

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

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

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

      (b) ☒ Photographs representative of the site

      (c) ☒ MESA filing fee (fee information available at: http://www.mass.gov/dfwele/dfw/nhesp/nhenvmesa.htm)
      Make check payable to "Natural Heritage & Endangered Species Fund" and ***mail to NHESP*** at above address

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

      (d) ☐ Vegetation cover type map of site

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

   d. OR Check One of the Following

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

      2. ☐ Separate MESA review ongoing.

      a. NHESP Tracking Number _____ b. Date submitted to NHESP _____

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

* Some projects **not** in Estimated Habitat may be located in Priority Habitat, and require NHESP review (see www.nhesp.org regulatory review tab). Priority Habitat includes habitat for state-listed plants and strictly upland species not protected by the Wetlands Protection Act.

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

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

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

   a. ☐ Not applicable – project is in inland resource area only

   b. ☐ Yes ☒ No If yes, include proof of mailing or hand delivery of NOI to either:

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

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

   North Shore - Hull to New Hampshire:

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

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

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

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

   b. ACEC

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

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

   a. ☐ Yes ☒ No

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

   a. ☐ Yes ☒ No

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

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

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

      2. ☐ A portion of the site constitutes redevelopment

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

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

      1. ☐ Single-family house

      2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

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

a. Plan Title

b. Prepared By | c. Signed and Stamped by

d. Final Revision Date | e. Scale

f. Additional Plan or Document Title | g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

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

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

212587
2. Municipal Check Number

3/31/2016
3. Check date

212502
4. State Check Number

3/31/2016
5. Check date

The trustees of reservations
6. Payor name on check: First Name

7. Payor name on check: Last Name

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

F. Signatures and Submittal Requirements

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

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

1. Signature of Applicant	2. Date 4/12/2016
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

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

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

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

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

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

MassWildlife

Jack Buckley, *Director*

May 11, 2016

Nantucket Conservation Commission
37 Washington Street
Nantucket, MA 02554

RE: Shorebird Management Plan and Oversand Vehicle Use
Coskata Coatue Wildlife Refuge and Great Point
NHESP File No. 16-35450

Dear Commissioners:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife ("Division") has reviewed the Notice of Intent ("NOI") associated with the Shorebird Management Plan and Oversand Vehicle Use ("OSV"), Coskata Coatue Wildlife Refuge and Great Point, for compliance with the rare wildlife provisions of the Massachusetts Wetland Protection Act ("WPA"; 321 CMR 10.37) and the Massachusetts Endangered Species Act (MGL c. 131A; 321 CMR 10.00). In 1993, the Division published Guidelines for Managing Recreational Use of Beaches to Protect Piping Plovers, Terns, and Their Habitats in Massachusetts ("State Guidelines"; Attachment 1). The State Guidelines contain recommended procedures for managing recreational activities, including but not limited to ORV use, to ensure compliance with the Massachusetts Endangered Species Act ("MESA"; MGL c. 131A, 321 CMR 10.00) and the rare species provisions of the WPA. The U.S. Fish & Wildlife Service published similar guidelines in 1994, and issued an amendment in 2015 ("Federal Guidelines"). The NOI contains management protocols intended to ensure that beach management is consistent with these State and Federal Guidelines. However, as noted in the section entitled, "Timing of Vehicle Restrictions in Chick Habitat," as part of the Commonwealth's Piping Plover Habitat Conservation Plan ("HCP") (http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/rare-birds/piping-plover-hcp.html), the applicant may request from the Division a Certificate of Inclusion and MESA permit that would allow limited deviations from management in accordance with State and Federal Guidelines.

Based on a review of the information that has been provided and the information contained in the Natural Heritage database, the Division has determined that the proposed activity will occur within the actual Resource Area Habitat of the following state and federally listed species:

Common Name	Scientific Name	MESA Status	ESA Status
Piping Plover	*Charadrius melodus*	Threatened	Threatened
Least Tern	*Sternula antillarum*	Special Concern	-

Roseate Tern	*Sterna dougallii*	Endangered	Endangered
Common Tern	*Sterna hirundo*	Special Concern	-
Arctic Tern	*Sterna paradisaea*	Special Concern	-
Red Knot	*Calidris canuta rufa*	Threatened	Threatened

Coskata Coatue Wildlife Refuge and Great Point provides important breeding, foraging, migratory, and sheltering habitat for the Piping Plover and Least Tern, and important migratory (staging), foraging, and sheltering habitat for the remaining listed species.

The Division has determined that the activity, as currently proposed, will not adversely affect the actual Resource Area Habitat of state-listed species or result in a prohibited Take of state-listed species provided that the following conditions are met, and included in the final Order of Conditions:

1. All management activities must be carried out in accordance with State and Federal Guidelines and in accordance with "The Trustees of Reservations Nantucket Shorebird and Dune Management Plan, Nantucket National Wildlife, Nantucket Island ("Management Plan", dated 3/17/16; subject to the amendments requested below), unless expressly approved in writing in advance by the Division.[1]
2. The Management Plan shall be amended to specify a maximum width for the OSV corridor, and that the corridor shall be sited so as to minimize impacts to beach wrack. We note that the maximum width for a vehicle corridor specified in the Draft HCP is 15 feet.

Massachusetts Endangered Species Act Compliance

In addition to measures necessary to avoid adverse effects to Resource Area habitat, the Management Plan contains provisions to avoid the direct Take of Plovers and Terns through harm, harassment, injury or mortality that could result from OSVs or other recreational activities (e.g. additional OSV closures when chicks are present, restrictions on pets).[2]

Implementation of the Management Plan, as currently proposed, will not result in a Take of state-listed species. We note that a decision by The Trustees of Reservations (TTOR) to apply for a Certificate of Inclusion (COI) in the Statewide Piping Plover Habitat Conservation Plan (HCP) to allow *limited* escorted OSV use in the vicinity of unfledged Piping Plover chicks would not alter our no adverse effect finding pursuant to the WPA because the intent of the timing restriction on use of the OSV travel corridor when unfledged plover and tern chicks are present is to avoid direct Take (a MESA issue), not to prevent adverse effects to Resource Area rare species habitat. However, if the TTOR were to apply for a COI, and the Division approved the application, the Division would need to issue a Take determination and Conservation & Management Permit, pursuant to MESA, as part of the COI approval process.

---

[1] For example, if the TTOR applies for a Certificate of Inclusion (COI) and MESA Conservation & Management Permit (CMP) associated with the Statewide Habitat Conservation Plan (HCP) for the Piping Plover, the Division could approve deviations from the Guidelines and from the Beach Management Plan.

[2] Although some measures such as symbolic fencing may be necessary to avoid both a Take and adverse effects to the Resource Area habitat, other measures are only necessary to avoid direct Take; for example restrictions on dogs and timing restrictions on use of a limited ORV travel corridor through an area with unfledged plover or least tern chicks.

Please contact Jon Regosin, Ph.D., with any questions about this letter at (508) 389-6376 (jonathan.regosin@state.ma.us).

Sincerely,

Thomas W. French, Ph.D.
Assistant Director

cc: Christopher Kennedy, The Trustees of Reservations
Susi von Oettingen, U.S. Fish and Wildlife Service
Daniel Gilmore, DEP Southeast Regional Office, Wetlands Program

The Town of Nantucket

Consue Springs off Union Street

(55.1.4-15)

SE48-2880

Proactive By Design.
Our Company Commitment

NOTICE OF INTENT
Consue Springs Stormwater Improvements and Tidal Pond Restoration Project

Nantucket, MA

Prepared in compliance with the Wetlands Protection Act and the Town of Nantucket Wetlands Protection Bylaw

Library of Congress, Call Number: HABS MASS, 10-NANT, 84—153, 1969

Prepared for:

Town of Nantucket
Department of Public Works
188 Madaket Road
Nantucket, MA 02554

April 2016

Representative:
GZA GeoEnvironmental, Inc.
1350 Main St – Suite 1400 | Springfield, MA 01103
413-726-2100

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

Provided by MassDEP:
MassDEP File #:
eDEP Transaction #:734096
City/Town:NANTUCKET

A.General Information

1. Project Location:

a. Street Address	UNION ST.		
b. City/Town	NANTUCKET	c. Zip Code	02554
d. Latitude	41.27707N	e. Longitude	70.09310W
f. Map/Plat #	5514	g.Parcel/Lot #	15

2. Applicant:

☐ Individual ☑ Organization

a. First Name	KARA	b.Last Name	BUZANOSKI		
c. Organization	TOWN OF NANTUCKET DEPARTMENT OF PUBLIC WORKS				
d. Mailing Address	188 MADAKET ROAD				
e. City/Town	NANTUCKET	f. State	MA	g. Zip Code	02554
h. Phone Number	508-228-7244	i. Fax	508-228-7289	j. Email	kbuzanoski@nantucket-ma.gov

3.Property Owner:

☑ more than one owner

a. First Name			b. Last Name		
c. Organization	TOWN OF NANTUCKET				
d. Mailing Address	16 BROAD STREET				
e. City/Town	NANTUCKET	f.State	MA	g. Zip Code	02554
h. Phone Number		i. Fax		j.Email	

4.Representative:

a. First Name	STEPHEN		b. Last Name	LECCO	
c. Organization	GZA GEOENVIRONMENTAL INC.				
d. Mailing Address	1350 MAIN ST. SUITE 1400				
e. City/Town	SPRINGFIELD	f. State	MA	g. Zip Code	01103
h.Phone Number	413-726-2100	i.Fax	413-732-1249	j.Email	stephen.lecco@gza.com

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

a.Total Fee Paid	0.00	b.State Fee Paid	0.00	c.City/Town Fee Paid	0.00

6.General Project Description:

THE PROPOSED PROJECT IS LOCATED IN THE CONSUE SPRINGS SECTION OF NANTUCKET AND INVOLVES THREE GENERAL COMPONENTS: 1) IMPROVEMENTS TO THE EXISTING STORMWATER SYSTEM AROUND GOOSE POND TO REDUCE FLOODING ON UNION AND ORANGE STREETS; 2) DREDGING OF GOOSE POND TO REMOVE ACCUMULATED SEDIMENTS; AND, 3) IMPROVED TIDAL CONNECTION BETWEEN GOOSE POND AND THE CREEKS SALT MARSH TO REDUCE THE PRESENCE OF PHRAGMITES AUSTRALIS AND INCREASE THE DISTRIBUTION OF NATIVE SPECIES

7a.Project Type:

1. ☐ Single Family Home
2. ☐ Residential Subdivision
3. ☐ Limited Project Driveway Crossing
4. ☐ Commercial/Industrial
5. ☐ Dock/Pier
6. ☐ Utilities

7. ☐ Coastal Engineering Structure
8. ☐ Agriculture (eg., cranberries, forestry)
9. ☐ Transportation
10. ☑ Other

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

1. ☐ Yes ☑ No If yes, describe which limited project applies to this project:
2. Limited Project

8.Property recorded at the Registry of Deeds for:

a.County:	b.Certificate:	c.Book:	d.Page:
NANTUCKET		00896	0182
NANTUCKET		00149	038
NANTUCKET		01019	0164
NANTUCKET		00227	145
NANTUCKET		00211	227
NANTUCKET		00663	0263
NANTUCKET		00004	854
NANTUCKET		C0004	854

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

1.Buffer Zone & Resource Area Impacts (temporary & permanent):

☐ This is a Buffer Zone only project - Check if the project is located only in the Buffer Zone of a Bordering Vegetated Wetland, Inland Bank, or Coastal Resource Area.

2.Inland Resource Areas: (See 310 CMR 10.54 - 10.58, if not applicable, go to Section B.3. Coastal Resource Areas)

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Bank	1. linear feet	2. linear feet
b. ☑ Bordering Vegetated Wetland	4734 1. square feet	0 2. square feet
c. ☐ Land under Waterbodies and Waterways	1. Square feet	2. square feet
	3. cubic yards dredged	
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if any)	

2. Width of Riverfront Area (check one)

☐ 25 ft. - Designated Densely Developed Areas only
☐ 100 ft. - New agricultural projects only
☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project

square feet

4. Proposed Alteration of the Riverfront Area:

a. total square feet

b. square feet within 100 ft.

c. square feet between 100 ft. and 200 ft.

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under	Land under the ocean below,
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beaches	Indicate size under Coastal Beaches and/or Coatstal Dunes, below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment
f. ☑ Coastal Banks	1389 1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☑ Salt Marshes	205 1. square feet	2. sq ft restoration, rehab, crea.
i. ☑ Land Under Salt Ponds	42178 1. square feet	
	2550 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above	
	1. cubic yards dredged	
l. ☑ Land Subject to Coastal Storm Flowage	67994 1. square feet	

4.Restoration/Enhancement

☐ Restoration/Replacement

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

a. square feet of BVW

b. square feet of Salt Marsh

5.Projects Involves Stream Crossings

☐ Project Involves Streams Crossings

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

a. number of new stream crossings

b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage of Endangered Species program (NHESP)?

a. ☑ Yes ☐ No

If yes, include proof of mailing or hand delivery of NOI to:
Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
1 Rabbit Hill Road
Westborough, MA 01581

b. Date of map:2008

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

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

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

(a) within Wetland Resource Area	27% percentage/acreage
(b) outside Resource Area	16% percentage/acreage

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

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

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

b. ☑ Photographs representative of the site

c. ☑ MESA filing fee (fee information available at: http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/regulatory-review/mass-endangered-species-act-mesa/mesa-fee-schedule.html)
Make check payable to "Natural Heritage & Endangered Species Fund" and **mail to NHESP** at above address

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

d. ☐ Vegetation cover type map of site

e. ☐ Project plans showing Priority & Estimated Habitat boundaries

d. OR Check One of the following

1. ☐ Project is exempt from MESA review. Attach applicant letter indicating which MESA exemption applies. (See 321 CMR 10.14, http://www.mass.gov/eea/agencies/dfg/dfw/laws-regulations/cmr/321-cmr-1000-massachusetts-endangered-species-act.html#10.14; the NOI must still be sent to NHESP if the project is within estimated habitat pursuant to 310 CMR 10.37 and 10.59.)

2. ☐ Separate MESA review ongoing.

a. NHESP Tracking Number

b. Date submitted to NHESP

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

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

2. For coastal projects only, is any portion of the proposed project located below the mean high waterline or in a fish run?
   a. ☐ Not applicable - project is in inland resource area only
   b. ☑ Yes ☐ No

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

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

   Division of Marine Fisheries - Southeast Marine Fisheries Station
   Attn: Environmental Reviewer
   1213 Purchase street - 3rd floor
   New Bedford, MA 02740-6694

   North Shore - Hull to New Hampshire:

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

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

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

   a. ☐ Yes ☑ No

   If yes, provide name of ACEC (see instructions to WPA Form 3 or DEP Website for ACEC locations).
   Note: electronic filers click on Website.

   b. ACEC Name

4. Is any portion of the proposed project within an area designated as an Outstanding Resource Water (ORW) as designated in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00?
   a. ☐ Yes ☑ No

5. Is any portion of the site subject to a Wetlands Restriction Order under the Inland Wetlands Restriction Act (M.G.L.c. 131, § 40A) or the Coastal Wetlands Restriction Act (M.G.L.c. 130, § 105)?
   a. ☐ Yes ☑ No

6. Is this project subject to provisions of the MassDEP Stormwater Management Standards?
   a. ☑ Yes, Attach a copy of the Stormwater Report as required by the Stormwater Management Standards per 310 CMR 10.05 (6)(k)-(q) and check if:
      1. ☐ Applying for Low Impact Development (LID) site design credits (as described in Stormwater Management Handbook Vol.2, Chapter 3)
      2. ☑ A portion of the site constitutes redevelopment
      3. ☐ Proprietary BMPs are included in the Stormwater Management System
   b. ☐ No, Explain why the project is exempt:
      1. ☐ Single Family Home
      2. ☐ Emergency Road Repair
      3. ☐ Small Residential Subdivision (less than or equal to 4 single-family houses or less than or equal to 4 units in multi-family housing project) with no discharge to Critical Areas.

D. Additional Information

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

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

1. ☑ USGS or other map of the area (along with a narrative description, if necessary) containing sufficient information for the Conservation Commission and the Department to locate the site. (Electronic filers may omit this item.)
2. ☑ Plans identifying the location of proposed activities (including activities proposed to serve as a Bordering Vegetated Wetland [BVW] replication area or other mitigating measure) relative to the boundaries of each affected resource area.
3. ☑ Identify the method for BVW and other resource area boundary delineations (MassDEP BVW Field Data Form(s). Determination of Applicability, Order of Resource Area Delineation, etc.), and attach documentation of the methodology.
4. ☑ List the titles and dates for all plans and other materials submitted with this NOI.

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

5. ☑ If there is more than one property owner, please attach a list of these property owners not listed on this form.
6. ☑ Attach proof of mailing for Natural Heritage and Endangered Species Program, if needed.
7. ☑ Attach proof of mailing for Massachusetts Division of Marine Fisheries, if needed.
8. ☑ Attach NOI Wetland Fee Transmittal Form.
9. ☐ Attach Stormwater Report, if needed.

E.Fees

1.

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

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

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

F.Signatures and Submittal Requirements

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

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

1. Signature of Applicant	2. Date 4/12/16
3. Signature of Property Owner(if different)	4. Date
5. Signature of Representative (if any)	6. Date 4/12/2016

For Conservation Commission:

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

For MassDEP:

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

Other:

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

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

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

Provided by MassDEP:
MassDEP File #:
eDEP Transaction #:734096
City/Town:NANTUCKET

A. Applicant Information

1. Applicant:

a. First Name	KARA		b.Last Name	BUZANOSKI	
c. Organization	TOWN OF NANTUCKET DEPARTMENT OF PUBLIC WORKS				
d. Mailing Address	188 MADAKET ROAD				
e. City/Town	NANTUCKET	f. State	MA	g. Zip Code	02554
h. Phone Number	5082287244	i. Fax	5082287289	j. Email	kbuzanoski@nantucket-ma.gov

2.Property Owner:(if different)

a. First Name			b. Last Name		
c. Organization	TOWN OF NANTUCKET				
d. Mailing Address	16 BROAD STREET				
e. City/Town	NANTUCKET	f.State	MA	g. Zip Code	02554
h. Phone Number		i. Fax		j.Email	

3. Project Location:

a. Street Address	UNION ST.	b. City/Town	NANTUCKET

Are you exempted from Fee? ☐ (YOU HAVE SELECTED 'YES')

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

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

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

B. Fees

Activity Type	Activity Number	Activity Fee	RF Multiplier	Sub Total
	City/Town share of filling fee		State share of filing fee	Total Project Fee
	$0.00		$0.00	$0.00

Appendix A

Narrative

Introduction

GZA GeoEnvironmental Inc. (representative) is pleased to submit this Notice of Intent to the Town of Nantucket Conservation Commission on behalf of the Nantucket Department of Public Works (applicant) for the Consue Springs Stormwater Improvement and Tidal Pond ("Goose Pond") Restoration Project. Consue Springs is located to the south of downtown Nantucket. Goose Pond is a popular attraction for residents and tourists who often feed the local waterfowl population and enjoy the scenic views of the Pond as well as The Creeks salt marsh.

Existing Conditions and Jurisdictional Resource Areas

Consue Springs is a tidally influenced salt pond system, influenced by groundwater from the adjacent fresh water vegetated wetland creating a unique system which supports both glycophytic and halophytic plant species which follow salt concentration contours. The system therefore has both inland wetland and coastal wetland resource areas as detailed below. The resource areas are subject to both the Massachusetts Wetlands Protection Act ("WPA") and the Town of Nantucket's Wetland Bylaw Chapter 136 ("NBL").

Table 1. Jurisdictional Resource Areas (Wetland Protection Act (WPA) & Town of Nantucket Bylaw (NBL)) Within and Adjacent to the Work Zone		
Area	Inland Wetland	Coastal Wetland
Goose Pond	-	Land Under Salt Ponds (WPA); Salt Ponds (NBL)
	-	Coastal Banks (WPA & NBL)
Vegetated Wetland	Bordering Vegetated Wetlands (WPA); Vegetated Wetlands (NBL)	-
The Creeks salt marsh	-	Salt Marshes (WPA & NBL)
Land Subject to Flooding	Land Subject to Flooding (WPA & NBL)	Land Subject to Flooding (WPA); Land Subject to Coastal Storm Flowage (NBL)
Entire Site	Estimated Habitats of Rare Wildlife (for Inland Wetlands) (WPA); Estimated Habitats of Rare/Significant Wildlife and Rare/Significant Flora and Fauna (for Inland Wetlands) (NBL)	Estimated Habitats of Rare Wildlife (for Coastal Wetlands) (WPA); Estimated Habitats of Rare/Significant Wildlife and Rare/Significant Flora and Fauna (for Coastal Wetlands) (NBL)

Resource Areas:

Goose Pond: Goose Pond is a 1± acre salt pond, located along the eastern end of the project site. The pond receives input from both seawater, groundwater, stormwater runoff, and precipitation events. Only during low tide is the water below typical seawater salt concentration. The tidal inflow is received through a set of two 18-inch diameter pipes which are located beneath the old railroad bed, which is currently used as a walking path and is slated to be converted to a bike path. The pond is bordered by a fresh water vegetated wetland to the west, and an upland berm to the east (old railroad embankment). This berm impounds much of the water held in the pond, and separates the pond area from The Creeks salt marsh, located across the railroad bed to the east of the site. The pond's depth averages 2.5± feet.

Vegetated Wetland: The vegetated wetland which borders the pond is 2.06 acres total± in size (inclusive of offsite), 1.55 acres total within project parcels. The wetland is spring fed, with stormwater and precipitation inputs during rain/snow events. The vegetation within the wetland consists almost exclusively of *Phragmites australis* within the interior of the area. The soils which comprise the wetland are identified on the NRCS Soil Survey Map as Map Unit 63A: "Pawcatuck mucky peat, 0 to 2 percent slopes, very frequently flooded." The soils are composed of 85% Pawcatuck (tidal marshes), with 5% inclusions, respectively, of Sandyhook (back-barrier flats), Ipswich (tidal marshes), and Mantunuck (tidal marshes). This soil unit consists generally of 64% organic matter down to 45".

Land Subject to Flooding: The land that is subject to flooding on site includes the entirety of the work area and totals 4.3 acres, approximately 1.3 acres of which includes FEMA Flood Zone AE. Approximately 2.3 acres of this total is FEMA Flood Zone VE and 386-square feet is within FEMA Flood Zone XE.

Salt Marsh: The Creeks salt marsh is located to the east of the project area. The marsh is separated from Goose Pond by an old railroad embankment but it is connected hydraulically as described above. The marsh is characterized by an almost monotypic stand of cord grass (*Spartina spp.*). According to the NRCS Soil Survey Map, the soils are composed of 85% Pawcatuck (tidal marshes), with 5% inclusions, respectively, of Sandyhook (back-barrier flats), Ipswich (tidal marshes), and Mantunuck (tidal marshes). This soil unit consists generally of 64% organic matter down to 45". All work will occur outside of the marsh, with potential or temporary impacts with the installation of the new culvert in the railroad embankment.

Rare Species Habitat: The site is mapped on the most recent (2008) Massachusetts Natural Heritage Endangered Species Program (NHESP) Map as Priority Habitat Area 15 (PH 15). An info request was submitted to NHESP in 2011, and they identified the area as priority habitat for the Straight Lined Mallow Moth (*Bagisara rectifascia*) species; this species was indicated as being "Special Concern" following GZA's 2011 request (NHESP Tracking No.: 10-27890). A May 23, 2014, inquiry was made in writing to NHESP requesting clarification on the potential delisting of the moth; NHESP responded on May 30, 2014, by stating that the moth had been delisted, although the project is subject to review as the site is still mapped as priority habitat. Accordingly, this NOI has been simultaneously submitted to their office and proof of mailing is included in Appendix J.

Resource Area Delineation: In November 2011, wetland scientists from GZA visited the site to delineate the regulated resource areas in and around Consue Springs. Delineation methods followed criteria established

by the U.S. Army Corps of Engineers 1987 *Wetland Delineation Manual*[1], 2012 *Northcentral Northeast Regional Supplement*[2], and the *Delineating Bordering Vegetated Wetlands Under the Massachusetts Wetland Protection Act Handbook*, March 1995[3]. Data was recorded using the U.S. Army Corps of Engineers Wetland Determination Data Form and are attached in Appendix F. The wetland boundary flags were survey located following the delineation. Subsequently, the points were entered into a mobile GPS unit (Trimble 7X). This unit was brought to the site in April 2015to confirm the vegetated wetland delineation line; no changes to the delineated line were noted.

Project Description and Proposed Work

The proposed project is located in the Consue Springs section of Nantucket and involves three general components: 1) improvements to the existing stormwater system around Goose Pond to reduce flooding on Union and Orange Streets; 2) dredging of Goose Pond to remove accumulated sediments; and, 3) improved tidal connection between Goose Pond and The Creeks salt marsh to reduce the presence of *Phragmites australis* and increase the distribution of native species. These elements are described below:

Stormwater Quality Improvements: A new parallel stormwater collection and conveyance system along the east side of Union Street is proposed. Due to limited available space within the Town's right-of-way, this new system will be located on land owned by the Nantucket Island Land Bank (Appendix G). Three new Stormceptor ® units will be installed to capture stormwater runoff sediments (mostly road sand) before they enter Goose Pond. The existing discharge pipes to the pond will be abandoned.

Dredging: Deepening of the pond to a maximum of -5.0 ft Nantucket High Tide Datum ("NHTD") in the area of open water is proposed. Dredging would result in removal of most of the accumulated muck/sand layer within the pond, which has accumulated as a result of storm events moving sediments into the pond without treatment. The dredge volume is estimated at 2,550 cubic yards. The intent of the proposed grading is to remove as much of the in-pond sediment as practicable without creating overly-steep sideslopes. The proposed grades are gentler along the pond's longitudinal axis, as steep grades are not believed necessary in this direction to remove the majority of the sediment.

Testing has revealed that the sediments are suitable for use as landfill cover and may also be suitable for beneficial reuse (e.g. fill or grading material), although a final location for disposal or reuse has not been determined. Stockpiling and dewatering of sediments will occur within a portion of the pond, which will need to be dewatered during dredging operations.

Tidal Connection: A number of pipe sizes and elevations were considered and evaluated. A 3'W x 2'H box culvert with a timber headwall, invert elevation at -0.15' NHTD" will be installed to achieve the goal of

[1] 1987 Environmental Laboratory. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
[2] 2012 U.S. Army Corps of Engineers. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0). U.S. Army Engineer Research and Development Center, Environmental Laboratory. Vicksburg, MS
[3] 1995 Massachusetts Department of Environmental Protection Division of Wetlands and Waterways. Delineating Bordering Vegetated Wetlands, Under the Massachusetts Wetlands Protection Act, A Handbook. MADEP and the Wetlands Delineation Advisory Committee. Boston, MA

increased tidal flushing of the pond while still maintaining the pond's water quality benefits and its current natural ability to trap sediments before they enter the salt marsh community in The Creeks salt marsh. This can be accomplished without impacting the sanitary sewer line in the adjacent railroad embankment and is compatible with the plans for the proposed bicycle path along the embankment. The existing invert elevation of the culverts is 0.90' NHTD and the new invert elevation will be -0.15' NHTD, thereby resulting in a lowering of the connection by 1.05' which will serve to allow for a full exchange of water between the pond and the creek during all tidal cycles. The Mean High Water elevation (high tide) at the site is 2.42', the Mean Sea Level elevation is 0.95', and the Mean Low Low Water (low tide) is -.82', all elevations in NHTD. The new headwall for the box culvert will impact Land Subject to Coastal Flooding VE, Salt Marsh, and Land Under Salt Ponds. A temporary sandbag cofferdam on the salt marsh side of the railroad bed will be installed therefore enabling the work to be conducted "in the dry." The area of temporary impact totals to 205 ft^2. This cofferdam will be removed once the work on the headwall is completed. The headwall itself will impact 27 ft^2 of Salt Marsh permanently; although, the new headwall will ensure long term stability of the culvert, the existing outlet pipes simply extend from the railroad bed.

Included in Appendix K is a memorandum prepared by the Horsley Witten Group ("HWG") for Tim Smith of the Massachusetts Wetlands Restoration Program, entitled "Hydrologic/Hydraulic Investigation for the Consue Springs, Town of Nantucket. In this memo HWG stated:

> "High water elevations in Consue Springs were observed to exceed those in the Harbor during periods of wet weather. This indicates that the culvert restricts stormwater runoff that collects in Consue Springs and flows out to the Harbor. The likely data also show that low water elevations in Consue Springs are limited by the invert elevations of the culverts[.] This appears to prevent adequate tidal exchange as stated in the dredging study."

HWG prepared a table in the memo outlining three proposed culvert options, which is included in Appendix K. In summation, the preferred option for sizing of a culvert was a 2'x2' concrete box culvert. During the design stage by GZA, in order to increase the possibility of increased tidal flushing and salt marsh restoration, the size was increased to 3'x2' with a timber bulkhead.

Pond Drawdown: The project will require a temporary complete drawdown of Goose Pond. Dredging of the pond basin is expected to remove 2,550 cubic yards of sediment. After the dredging is complete, the water levels will return and the Salt Pond resource will be restored naturally. There is an extensive vegetated wetland within the vicinity of the pond. These resources are primarily groundwater fed and are not expected to be effected by the drawdown.

Within the pond, at its lowest elevation, a dewatering sump will be excavated where groundwater and stormwater will collect during construction. Filter fabric will be installed within the sump to prevent sediments from running into the collected water. A perforated pipe will be installed and the sump will be filled with washed crushed stone. The collected water will be pumped to a geotextile dewatering bag located on the railroad embankment. The bag will be installed at this location on a stabilized area over dense vegetation, straw, or crushed stone. The unit will be replaced when it is ½ full of sediment or when

the sediment has reduced the flow rate of the pump discharge to an impractical rate. Flocculants may be utilized by the contractor.

Temporary disturbance of approximately 1400 ft^2 of Land Subject to Coastal Flooding VE will occur for temporary access roads into the emptied pond basin; two areas are proposed: one along the old railroad embankment where the new bike path is proposed, and one entering from Washington Street Extension. The former is preferred, although contingent upon whether the bike path has been constructed by the time the contractor for this project is on site; impacts associated with this project would result in possibly undermining the integrity of the new path from heavy equipment driving across it. The use of the Washington Street Extension would result only if the bike path had been installed, or is planned to be installed before or during the dredging phase of this project.

Stormwater Management: The proposed stormwater retrofit improvements have been designed to improve stormwater quality entering Goose Pond and The Creeks. These proposed improvements are the best practicable efforts given the constraints of existing utilities in the adjacent roads and the limited right-of-way available for new piping and treatment systems. Three new Stormceptor ® (or equivalent) units will be installed to treat runoff before it enters Goose Pond. There is currently no treatment of runoff. Stormwater runoff during construction and operation of the selected sediment reuse/disposal site will be managed with the appropriate use of erosion controls and other Best Management Practices (BMPs) until the site is stabilized with permanent vegetation.

The project will improve the wetlands by the restoration of tidal flushing, which will serve to reduce the density of common reed (*Phragmites australis*) that currently dominates the vegetated wetland; thereby creating conditions conducive to the success of cordgrass (*Spartina spp*.). There will be a 4,734-square foot temporary impact to the vegetated wetland as a new stormwater pipe from Orange St. and a new timber headwall is installed, although once the pipe has been installed and soils have been replaced, the area is expected to recover rapidly. There will be 21 ft^2 of permanent impact to the vegetated wetland from the installation of the new headwall at the discharge point of the new pipe originating from Orange St. An additional 284-linear feet of piping will be installed from the intersection of Union and Orange Streets to the northwestern curve of Union Street where it begins to turn into town.

Alternatives: Appropriate and practical steps have been evaluated to avoid and minimize impacts. Dredging and culvert reconstruction is the only alternative that will increase the depth and volume of the pond to levels that will increase stormwater retention. Stormwater system improvements in Orange and Union Streets could be maximized but only by a total reconstruction of all the utilities in these two streets which is beyond the scope and funds available for this project; therefore, this was not considered a feasible alternative. Greater flushing of the pond and adjacent vegetated wetland could be achieved by increasing the culvert size and lowering its invert elevation even further than proposed; however, the presence of the sewer line in the railroad is a constraining factor. Also, there would be potential increases in flooding of adjacent properties and a significant change in the pond water salt content which could change its overall biotic characteristics; therefore, these alternatives are not proposed.

Construction Sequencing: The general sequencing of the project will be to first to draw down the pond by closing off the culvert at low tide, the remaining water within the pond will then be pumped out of the pond. The next step will be to complete either or both of the two proposed project entry areas for access for the heavy equipment into the pond. The main operations will then begin; the dredged material will be dewatered within the pond. Once the material is sufficiently dewatered, it will then be loaded onto trucks and removed from the site. During the pond drawdown, the new headwall for the new drainage system originating at Orange St will be installed. The new storm drainage system will then be installed along Orange and Union Streets. A turbidity curtain will be installed around the inlet to the pond in order to facilitate the installation of the new culvert within the berm. The turbidity curtain and the dammed culvert will then be removed therefore restoring connection to the tide. The areas of temporary impact from the installation of the storm drainage systems will be restored to original grades and turf will be established by placement of loam, native seed, and mulch. Demobilization will then commence.

Vegetated Wetland Restoration Plan: The temporary impacts to the vegetated wetland will need to be restored once the operations are complete. In order to restore the areas, they will need to be regraded to restore the original topography before the work commenced. An island-native seed mix, will be spread about the disturbed areas.

Stream Crossing: The replacement of the existing pipes under the railroad embankment with a 3'x2' box culvert will increase tidal flushing and stream continuity. This will be done by lowering the invert elevation of the culvert so that a full tidal exchange between the pond and creek is established. The project was conceptualized to increase tidal flushing to improve water quality within the pond which will likely cause the stand of *Phragmites* along the pond margins to retreat. Salt marsh vegetation is likely to recolonize the vacated areas about the outlet and other areas which will be exposed to increased tidal flushing.

Impact Assessment

There will be permanent and temporary impacts to various Resource Areas as detailed in Table 2 below. In the long term, the majority of the permanent impacts will be beneficial to the system, namely improved water quality in the pond and the marsh and a decrease in invasive species around the pond; however, in order to achieve this permanent improvement there will need to be some temporary negative impacts to resource areas.

The impacts to each resource area is detailed in Table 2 below.

Table 2. Impacts to Jurisdictional Resource Areas						
Resource Area		Existing on All Parcels Area	Existing within Limit of Work	Temporary Impacts within Limit of Work	Permanent Impacts within Limit of Work	Total
Land Under Salt Ponds/Salt Ponds		42,178 ft^2	42,178 ft^2	22,504 ft^2	19,674 ft^2 2,550 CY (Dredged Material)	22,504 ft^2 (Temporary) + 19,674 ft^2 (Permanent) 42,178 ft^2 (Total) 2,550 CY (Perm: Dredged Material)
Coastal Bank		2,010 LF	1,389 LF	305 LF	151 LF (Dredge Area)	305 LF (Temp: Dewatering Area) + 151 LF (Perm: Dredge Footprint) 456 LF (Total)
Land Subject to Flooding (Limit of Work)	AE (0.1%)	55,797 ft^2	12,236 ft^2	11,560 ft^2	None	11,560 ft^2 (Temp: Pipe installation)
	VE (Land Subject to Coastal Storm Flowage)	129,678 ft^2	67,994 ft^2	45,490 ft^2	22,504 ft^2 (Perm: Dredge Footprint) 2,550 CY (Dredged Material)	45,490 ft^2 (Temporary) + 22,504 ft^2 (Perm: Dredge Footprint) 67,994 ft^2 (Total) 2,550 CY (Dredged Material)
	X (0.2%)	386 ft^2	386 ft^2	70 ft^2	None	70 ft^2 (Temp: Storm Drain Footprint)
Salt Marshes		27 ft^2	205 ft^2	205 ft^2	27 ft^2	205 ft^2 (Temporary) + 27 ft^2 (Permanent) 232 ft^2
Vegetated Wetland		92,155 ft^2	4,734 ft^2	4,713 ft^2	21 ft^2	4,734 ft^2 (Temporary) + 21 ft^2 (Permanent) 4,755 ft^2 (Total)

Effects on Wildlife Habitat: Wildlife habitat will be effected by the temporary work by displacing species from the project site while the work is occurring. Goose Pond is well known as a waterfowl feeding and observation area for Nantucket residents and for tourists alike. The drawdown of the water and the use of heavy equipment will invariably cause such species to temporarily relocate. These species are expected to re-inhabit the pond once the work is complete. The draw down may result in a small scale fish die-off; although, due to several factors, including the salt regime change (resulting from the increase in residence time of tidal flowage) in the pond; although, the population composition will trend toward halophilic fishes, crustaceans, and bivalves. The pond currently has very high concentrations of deleterious bacteria from the presence of a large waterfowl population, due to this, the pond's fish population is already expected to

be low. Due to salt input (tidal flowage), amphibians and herptiles are generally absent (none were observed). No fish were observed upon three visits to the site, although they are likely to inhabit the pond. Observed waterfowl included various ducks and Canada geese; these species are expected to temporarily relocate to adjacent sites during the work.

The area of work where the temporary vegetated wetland impacts will occur is comprised of a monotypic stand of *Phragmites.* This vegetation type is almost devoid of habitat value save for a select few species such as red-winged black birds, ducks, and geese. These species will utilize stands of *Phragmites*, yet only out of exploitation, not as an element of a native ecosystem type. It is not anticipated that there will be habitat loss of any value during or after construction; further, there will in fact be an improvement, as the area of disturbance will be seeded with an island-native seed mix once the work is complete.

Effects on Water Quality: Water quality will be improved as improvements to the stormwater system are being proposed as well as the effect of increased tidal flushing. There will be 2 beneficial effects as a result of the project on water quality. First, the Stormceptor ® units will work to remove street sediments from the flowage into the system. As long as these units are maintained, they will reduce the sedimentation effects from road sand accumulation upon the pond greatly.. Secondly, the quality of the water within the pond will improve by the reduction in temperature of the water by removing street runoff from entering the system and increased tidal flushing. Street runoff is much warmer than typical groundwater and ocean water. The reduction in water temperature will also increase dissolved oxygen, benefitting both flora and fauna.

Effects on Invasive Species: Invasive species are present in high density on the pond margins and in the surrounding vegetated wetland. An effect of the project will be to increase tidal flushing of the pond, therefore increasing residence time of high concentration salt water, the local *Phragmites australis* population is likely to experience a partial dieback as the salt concentration increases. This, coupled with the invasive species management efforts being conducted by others, will serve to reduce the invasive species biomass within the overall system.

Mass Stream Crossing Standards: Although the Massachusetts Stream Crossing Standards were not developed for tidal systems, the project was conceptualized with these standards in mind. The project proposes to remove the two 18" diameter pipes which are perched above The Creeks salt marsh, and replace these pipes with a 3'x2' box culvert. This culvert will be located 1.05 feet below the current elevation of the existing pipes. This will allow continuity of tidal flow into the pond area, and therefore allow wildlife passage to occur unimpeded. The cross section area of the two 18" pipes totals 508.68 in^2, while the installation of the new culvert will increase that cross section area to 864 in^2; a ratio of 170%, or 1.7:1. The total area will increase from 15,770 ft^3 to 23,328 ft^3, a ratio of 148%, or 1.48:1.

Impacts from the installation of the new crossing will include Coastal Bank, Land Under Salt Ponds, Salt Marsh, and FEMA Flood Zone VE.

***Vegetated Wetland Impact Assessment*:** There will be temporary impacts the vegetated wetland. These impacts will be to the topsoils and some subsoils. They will be excavated to the side while the new pipe is laid. Once the pipe has been installed, the subsoils and top soils will be reinstalled back into the excavated

area. This area will be seeded with an island-native seed mix to provide for quick coverage and minimize invasive species recolonization. Temporary effects will also include the compression of adjacent soils as heavy equipment will be required for the excavation and installation of the infrastructure. Timber mats (a.k.a. bog mats) will be required to stabilize the driving surface for these pieces of machinery. Once the mats are removed, the ground will be restored to its original topography. The timber headwall for the section of piping from Orange St. to the pond bank will be installed at the shoreline of Goose Pond and will permanently affect 21-square feet of the vegetated wetland.

Sediment Sampling Results: In March 2012 (Samples A-E) and April 2015, GZA scientists collected sediment samples within Goose Pond. These samples were sent to ESS Laboratories and analyzed for various chemicals as required by MassDEP for Water Quality Certification. There were no detected compounds or elements above the S1/GW1 or Lined Landfill criteria, as shown in Table 3. However, in the 2012 samples, laboratory reporting limits exceeded the S1/GW1 standard for 13 organic compounds; therefore, it could not be definitively determined at that time if those compounds were present in the sediments above the S1/GW1 standards. So in 2015, two additional samples were collected, as directed by MassDEP, to: 1) definitively determine if those compounds are above the S1/GW1 standards; and, 2) provide updated sediment testing results because the original sampling was done over three years ago. In those samples the S1/GW1 detection limits were achieved in 12 of the 13 compounds that did not meet S1/GW1 detection limits in the 2012 testing. The only exception was lindane.

The reporting limits for all elements and compounds were below the lined landfill criteria and there were no detected elements or compounds above the S1/GW1 standards.

The constituents which were tested for include the following:

- Grain Size;
- Metals;
- SVOCs;
- VOCs;
- Petroleum hydrocarbons;
- Pesticides;
- Reactive Sulfides; and,
- Conductivity.

Table 3. Reporting Limit Exceedances of MassDEP S1/GW1 Standards										
	Analyte	Sample A	Sample B	Sample C	Sample D	Sample E	Sample GP-1	Sample GP-2	S1/GW1 Standard	Lined Landfill Criteria
		µg/kg								
VOC's	Methyl tert-butyl ether	-*	<110	<140	-	<110	-	-	100	x**
	1,2-Dichloroethane	-	<110	<140	-	<110	-	-		x
	1,2-Dichloropropane	-	<110	<140	-	<110	-	-		x
	Bromodichloromethane	-	<110	<140	-	<110	-	-		x
	4-Methyl-2-pentanone (MIBK)	<1,300	<2,900	<3,500	<2,300	<2,900	-	-	400	x
	1,1,2-Trichloroethane	-	<110	<140	-	<110	-	-	100	x
	Dibromochloromethane	<50	<110	<140	<90	<110	-	-	5	x
	1,2-Dibromoethane (EDB)	<100	<220	<270	<180	<220	-	-	100	x
	1,1,1,2-Tetrachloroethane	-	<110	<140	-	<110	-	-		x
	Bromoform	-	<220	<270	<180	<220	-	-		x
	1,1,2,2-Tetrachloroethane	<50	<110	<140	<90	<110	-	-		x
sVOC's	2,4-Dinitrophenol	<3,300	<3,300	<3,300	<3,300	<3,300	-	-	3,000	x
	4-Chloroaniline	-	-	-	-	-	-	<1,050	1,000	x
	3,3'-Dichlorobenzidine	-	-	-	-	-	-	<1,050		x
	Benzo [a] Pyrene	-	-	-	-	-	-	<2,620	2,000	x
	Dibenzo [a,h] Anthracene	-	-	-	-	-	<1,900	-	700	x
Organochlorine Pesticides	gamma-BHC (Lindane)	<6.0	<6.0	<6.0	<6.0	<6.0	-	<3.2	3	x

*: "-" indicates that detect limit was lower than the S1/GW1 standard.
** "x" indicates that no Lined Landfill Criteria exist for constituent

Nantucket Harbor Watershed Protection:

It should be noted that the project area falls within Zone A of the Nantucket Harbor Watershed Protection District. This project proposes to foster water quality improvements in Nantucket Harbor by removing pollutants associated with stormwater before they enter Goose Pond, The Creek, and eventually Nantucket Harbor. The input of stormwater and groundwater from the vegetated system (spring fed) will continue to flow out of the system in the same volume as before the project.

Compliance with Regulations

An Environmental Notification Form (ENF) was submitted to the Massachusetts Environmental Protection Agency (MEPA) for initial review of the project. MassDEP SERO issued a memorandum on September 15, 2014 giving guidance for the continued application process regarding the Notice of Intent and the 401 Water Quality Certification, as well as a Chapter 91 License application. The Secretary's Certificate is attached in Appendix I. Such guidance included the following bullet points:

- "The Proposed Preliminary Site Plan does not show alteration to Salt Marsh from installation of the box culvert and headwall; but according to a plan note, the wetland delineation shown represents flags that were [already] present at the time of the survey in January 2012. The Proponent should note that, per 310 CMR 10.32(3), a proposed project in a salt marsh, on lands within 100 feet of a salt marsh, or in a body of water adjacent to a salt marsh shall not destroy any portion of the salt marsh and shall not have an adverse effect on the productivity of the salt marsh. **However, a project which will restore or rehabilitate a salt marsh, or create a salt marsh, may be permitted per 310 CMR 10.32(5).**
- This stormwater retrofit **project meets the definition of Redevelopment** with respect to the Stormwater Management Standards at 310 CMR 10.04 and 314 CMR 9.02; therefore, compliance with any Stormwater Management Standards that are relevant to the proposed activities would be only to the maximum extent possible."

This stormwater retrofit project meets the definition of Redevelopment under Standard 7 "Redevelopment Projects: Maintenance and improvement of existing roadways, including widening less than a single lane, adding shoulders, correcting substandard intersections, improving existing drainage systems, and repaving." Therefore, compliance with any Stormwater Management Standards that are relevant to the proposed activities would be only to the maximum extent practicable which it does by increasing stormwater treatment prior to discharge. Although the system will be improved upon, no new point source discharges are proposed. The drainage pipe which runs along Union St is being replaced with a new pipe and updated catch basins and two new Stormceptor Systems are proposed on this run to improve road-sediment runoff before entering Goose Pond. Currently, a stormwater system on Orange St. discharges into a swale located to the southwest of 112 Orange St. along the roadway. This swale conveys flow towards Goose Pond, where, since the swale has lacked adequate maintenance and has infilled, it now flows overland into the pond. The discharge point will be relocated from its adjacency to Orange St to the interior of Consue Springs at the high tide line as detailed in "Storm Drain Profiles & Details" figure in Appendix L. The relocation of the discharge point will convey the same amount of flow. A Stormceptor will also be installed at the interchange at Orange St. with the existing stormwater system which is located under Orange St. This device will treat the stormwater flowage before it enters Consue Springs.

This project has taken into consideration these two points. Firstly, the work will occur within Salt Marsh, and 27 ft^2 will be permanently impacted by the installation of the culvert headwall. It is hoped that the restoration of the salt marsh around the salt pond will mitigate for this loss (see DEP's comment in the first bullet point above). The stormwater retrofit will greatly improve the current system from a wholly untreated system, to one which will treat the stormwater as described above and below.

Included within the Secretary's Certificate is a correspondence from Christian Petitpas of The Massachusetts Division of Marine Fisheries stating that they have "no recommendations for sequencing, timing, or methods that would avoid or minimize impact at this time."

Compliance with Town of Nantucket Bylaw:

Table 4. Compliance with Town of Nantucket Wetland By-Law 2.06; Salt Marshes: Performance Standards		
Performance Standard	Compliance with Standard	Explanation of Compliance
1. Salt Marshes shall not be filled.	Yes	205 ft2 of temporary work and 27 ft2 of permanent work. This permanent work is needed to replace the existing outlet pipes, which restrict the tidal connection between The Creeks salt marsh and Goose Pond with a box culvert and headwall. It is expected that the resulting salinity increase will foster some salt marsh vegetation development in the pond, thereby offsetting any permanent salt marsh impact.
2. Salt hay may be harvested from a salt marsh only if performed in a manner which does not disturb the marsh substrate.	-	Not Applicable.
3. No proposed project in a salt marsh, or in lands within 100 feet of a salt marsh, shall destroy any portion of the salt marsh, change species composition of the marsh, have any adverse effect on salt marsh productivity, pollute the salt marsh, or adversely affect water quality.	Yes	Permanent work will occur within 100' of The Creeks salt marsh; although, that work will not impact the salt marsh. 205 ft^2 of temporary work and 27 ft^2 of permanent work will occur within the marsh. It is anticipated that the restoration of marsh around Goose Pond resulting from increased tidal flushing will offset the loss.
4. All projects which are not water dependent shall maintain at least a 25-foot natural undisturbed area adjacent to a salt marsh. All structures which are not water dependent [sic] shall be no closer than 50 feet from a salt marsh, and all structures shall maintain an undisturbed two-foot separation to high groundwater. Fifty percent (50%) of the area between the 25-foot buffer and the 50-foot buffer shall not be altered. Additional soils and groundwater information may be required for applications in areas of high groundwater.	Yes	Work is water dependent.
5. The septic leach facility of a septic system shall be at least 100 feet from the salt marsh.	-	Not Applicable.
6. Piers shall be constructed and maintained using procedures determined by the Commission to be the best available measures to minimize adverse effects on the Interests protected by the Bylaw.	Yes	No new piers are associated with this project.
7. Elevated walkways shall be designed not to affect marsh vegetation or existing water circulation patterns.	Yes	No new walkways are associated with this project.
8. Materials cannot be stored or deposited on a Salt Marsh.	Yes	Precautions will be taken, using proper BMP's for E&S controls, to prevent the deposition of materials.
9. Fertilizers shall be used in accordance with the "Best Management Practices for Landscape Fertilizer Use on Nantucket Island"	Yes	No fertilizers will be used for this project.

Table 5. Compliance with Town of Nantucket Wetland By-Law 2.07; Salt Ponds: Performance Standards		
Performance Standard	Compliance with Standard	Explanation of Compliance
1. The work shall be done in accordance with procedures determined by the Commission to have no adverse effect on wildlife, fisheries, shellfish, existing water quality, recreation, or wetland scenic views and so as not to pollute the pond or alter the critical characteristics of salt ponds.	Yes	a. Removal of accumulated sediments and the increase in tidal flushing will improve water quality and the result will be an increase the functions and values for wildlife including fisheries and shellfish. b. Recreational opportunities will be increased within the pond as the depths to sediment will be increased. c. Wetland scenic views will be increase in value, as the increase in salt concentration from the improvement to tidal flushing of the pond will improve and therefore may decrease the overall presence of *Phragmites australis.*
2. All projects which are not water dependent shall maintain at least a 25-foot natural undisturbed area adjacent to a salt pond. All structures which are not water dependent shall be at least 50 feet from a salt pond, and all structures shall maintain an undisturbed two-foot separation to high groundwater. Fifty percent (50%) of the area between the 25-foot buffer and the 50-foot buffer shall not be altered.	Yes	Work is water dependent.

Table 5. Compliance with Town of Nantucket Wetland By-Law 2.07; Salt Ponds: Performance Standards		
Performance Standard	Compliance with Standard	Explanation of Compliance
Additional soils and groundwater information may be required for applications in areas of high groundwater.		
3. The septic leach facility of a septic system shall be at least 100 feet from a salt pond.	Yes	No septic systems are associated with this project.
4. Projects designed to enhance a particular fishery or shellfish shall be designed in accordance with such procedures as the Commission determines will minimize adverse ecological effects on the salt pond, including adverse effects on plants and animals which are not the species targeted for management. If such management projects have adverse effects on any of the Protected Interests of the Bylaw, such projects shall be permitted only pursuant to a waiver, as set forth in Section 1.03F of these regulations.	Yes	Enhancement to a particular fishery or shellfish is not a particular goal of this project, although shellfish may re-inhabit the pond once tidal continuity is restored.
5. Piers shall be constructed and maintained using procedures determined by the Commission to be the best available measures to minimize adverse effects on the Interests protected by the Bylaw.	Yes	No new piers are associated with this project.
6. Elevated walkways shall be designed not to affect vegetation or existing water circulation patterns. Elevated walkways shall be required to allow for pedestrian passage over the salt pond and fringing bordering vegetated wetlands.	Yes	No new walkways are associated with this project.
7. Fertilizers shall be used in accordance with the "Best Management Practices for Landscape Fertilizer Use on Nantucket Island" (a copy of which is attached to these regulations as appendix A).	Yes	No use of fertilizers is associated with this project.

Table 6. Compliance with Town of Nantucket Wetland By-Law 2.10; Land Subject to Coastal Storm Flowage: Performance Standards		
Performance Standard	Compliance with Standard	Explanation of Compliance
1. Work shall not reduce the ability of the land to absorb and contain flood waters, or to buffer inland areas from flooding and wave damage.	Yes	The ability of the land to absorb and contain flood waters will not be affected by the project.
2. Projects shall not cause ground, surface, or salt water pollution triggered by coastal storm flowage. All septic tanks and leach facilities shall be located outside the 100-year floodplain.	Yes	There are no septic systems associated with this project.
3. All private underground fuel tanks shall be outside the 100-year floodplain. Commercial tanks shall be outside the 100-year floodplain, or if the Commission determines this is not practicable, the commercial tanks shall be secured so that they cannot float loose.	Yes	There are no private underground fuel tanks associated with this project.
4. Building upon areas subject to coastal storm flowage in locations where such structure would be subject to storm damage may not be permitted. If permitted, all construction must be in compliance with state and local building code regulations for flood hazard areas.	Yes	There are no new building structures associated with this project.
5. Fertilizers shall be used in accordance with the "Best Management Practices for Landscape Fertilizer Use on Nantucket Island" (a copy of which is attached to these regulations as appendix A).	Yes	Fertilizer usage is not proposed.

Table 7. Compliance with Town of Nantucket Wetland By-Law 2.11; Estimated Habitat for Rare/Significant Wildlife and Rare/Significant Flora and Fauna (for coastal wetlands): Performance Standards		
Performance Standard	Compliance with Standard	Explanation of Compliance
1. No activity shall be permitted that alters existing vegetation within 25 feet of verified rare/significant species habitat.	Yes	NHESP has determined that the project will not affect rare species associated with the mapped rare species habitats at the site.
2. No activity shall be permitted that results in the construction or enlargement of a structure within 50 feet of verified rare/significant species habitat.	Yes-	NHESP has determined that the project will not affect rare species associated with the mapped rare species habitats at the site.
3. No alteration of topography (filling or cutting) and/or drainage characteristics shall be permitted within 50 feet of verified rare/significant species habitat.	Yes	NHESP has determined that the project will not affect rare species associated with the mapped rare species habitats at the site.
4. No part of any septic system shall be placed within 50 feet and no leaching facility shall be placed within 100 feet of a verified rare/significant species habitat.	Yes	NHESP has determined that the project will not affect rare species associated with the mapped rare species habitats at the site.

Table 8. Compliance with Town of Nantucket Wetland By-Law 3.02; Vegetated Wetlands: Performance Standards		
Performance Standard	Compliance with Standard	Explanation of Compliance
1. Proposed projects which are not water dependent shall maintain at least a 25-foot natural undisturbed area adjacent to vegetated wetlands. All structures which are not water dependent [sic] shall be at least 50 feet from a vegetated wetland, and all structures shall maintain an undisturbed two-foot separation to high groundwater. Fifty percent (50%) of the area between the 25-foot buffer and the 50-foot buffer shall not be altered. Additional soils and groundwater information may be required for applications in areas of high groundwater.	Yes	The project is water dependent.
2. Proposed projects shall not use procedures that the Commission determines changes the flood protection function (leveling out of storm surges by storing and slowly releasing water) of vegetated wetlands by significantly changing the rate of water flow through the wetlands (by channelization or other means).	Yes	The impacts to the vegetated wetland are temporary in nature, so impacts will occur only for a short duration; natural conditions will reestablish once the project is complete, only 21 ft^2 will be impacted permanently.
3. No permit shall be issued which authorizes the destruction of forested swamps. The Commission may authorize the excavation of other vegetated wetlands to create ponds or clear the edge of a pond if the project is designed to increase wildlife habitat diversity and to minimize groundwater or surface water loss.	Yes	Not applicable.
4. The septic leach facility of a septic system shall be at least 100 feet from the vegetated wetland.	Yes	Not Applicable
5. Piers shall be constructed and maintained using procedures determined by the Commission to be the best available measures to minimize adverse effects on Interests Adopted February 25, 1988 - 46 - Revised July 1, 2013 Protected by the Bylaw.	Yes	No new structures will be placed in the Inland Bank.
6. Elevated walkways determined to be water dependent designed not to affect existing vegetation shall be required for pedestrian passage over vegetated wetlands.	Yes	No new piers are associated with this project.
7. Fertilizers shall be used in accordance with the "Best Management Practices for Landscape Fertilizer Use on Nantucket Island"		Fertilizers usage is not proposed.

Table 9. Compliance with Town of Nantucket Wetland By-Law 3.04 Land Subject to Flooding (Both Bordering and Isolated Area)		
Performance Standard	Compliance with Standard	Explanation of Compliance
1. Work on isolated wetlands and small ponds is subject to the regulations set forth in Section 3.03 (Ponds) and Section 3.02 (Vegetated Wetlands).	Yes	Section 3.03 is not applicable; Section 3.02 is addressed in Table 7 above.
2. Projects on land subject to flooding shall be permitted only in connection with such procedures determined by the Commission as not having the effect of reducing the ability of the land to absorb and contain floodwaters.	Yes	Dredging will result in the increase in storage capacity of the pond, therefore increasing the land's ability to absorb and contain floodwaters.
3. If such a site is available on the applicant's land, all septic tanks and leach facilities shall be located outside the 100-year floodplain.	Yes	No septic systems are associated with this project.
4. Underground fuel oil or gasoline tanks, or tanks designed to hold any hazardous substance, shall not be permitted on land subject to flooding..	Yes	There are no private underground fuel tanks associated with this project.
5. Proposed projects shall employ such safeguards as determined by the Commission to preclude ground water or surface water pollution triggered by flooding.	Yes	Ground water recharge will not be impacted, as work within the recharge area is temporary in nature, and the effect of increased tidal flushing will not have an effect on flooding.
6. The Commission may require compensating or greater flood storage capacity in the same watershed if it permits any filling of land subject to flooding, and all filling of areas subject to flooding shall be strictly minimized. Except as stated in the preceding sentence, no proposed projects shall be permitted to displace or direct floodwaters, through fill or other means, to other areas.	-	Not applicable.
7. Building upon areas subject to flooding shall be in compliance with appropriate state and local building code requirements.	Yes	No new buildings or retrofitting of existing buildings is associated with this project.
8. Proposed projects in land subject to flooding shall use such procedures as the Commission determines will minimize their effect on wildlife.	Yes	There will be minimal short-term and long-term effects upon wildlife usage of the area. Temporary and unavoidable displacement of resident wildlife is likely do to work operations.

Table 10. Compliance with Town of Nantucket Wetland By-Law 3.05; Estimated Habitat for Rare/Significant Wildlife and Rare/Significant Flora and Fauna (for inland wetlands): Performance Standards		
Performance Standard	Compliance with Standard	Explanation of Compliance
1. No activity shall be permitted that alters existing vegetation within 50 feet of verified rare/significant species habitat, including certified vernal pools, and vernal pools defined in Section 1.02.	Yes	NHESP has determined that the project will not affect rare species associated with the mapped rare species habitats at the site.
2. No activity shall be permitted that results in the construction or enlargement of a structure within 75 feet of verified rare/significant species habitat, including certified vernal pools, and vernal pools defined in Section 1.02.	Yes	NHESP has determined that the project will not affect rare species associated with the mapped rare species habitats at the site.
3. No alteration of topography (filling or cutting) and/or drainage characteristics shall be permitted within 50 feet of verified rare/significant species habitat, including certified 4. Adopted February 25, 1988 - 52 - Revised July 1, 2013 5. Vernal pools, and vernal pools defined in Section 1.02.	Yes	NHESP has determined that the project will not affect rare species associated with the mapped rare species habitats at the site.
6. No new construction or enlargement of drainage facilities within 50 feet of verified rare/significant species habitat, including certified vernal pools, and vernal pools defined in Section 1.02, shall be permitted.	Yes	NHESP has determined that the project will not affect rare species associated with the mapped rare species habitats at the site.
7. No part of any septic system shall be placed within 50 feet, and no leaching facility shall be placed within 100 feet, of a verified rare/significant species habitat, including certified vernal pools, and vernal pools defined in Section 1.02.	Yes	NHESP has determined that the project will not affect rare species associated with the mapped rare species habitats at the site.

Compliance with WPA Performance Standards:

Table 11. Compliance with 310 CMR 10.55(4)(a-e): Bordering Vegetated Wetland			
Standard		Compliance with Standard	Explanation of Compliance
(a)	Where the presumption set forth in 310 CMR 10.55(3) is not overcome, any proposed work in a Bordering Vegetated Wetland shall not destroy or otherwise impair any portion of said area.	Yes	There will be temporary impacts to vegetated wetlands from the work and only 21ft^2 of permanent impact, resulting in net improvements to the wetland, by increasing water quality of the adjacent pond, and by the potential reduction in *Phragmites*.
(b)	Replacement BVW	-	Not Applicable
(c)	Loss of BVW	-	Not Applicable
(d)	Effect upon rare species and habitat	Yes	The MA NHESP has determined that the project will have no adverse effect upon rare species
(e)	Areas of Critical Environmental Concern	-	Not Applicable

Table 12. Compliance with 310 CMR 10.30 (4, 6-7): Coastal Bank		
Standard	Compliance with Standard	Explanation of Compliance
(4) Any project on a coastal bank or within 100 feet landward of the top of a coastal bank, other than a structure permitted by 310 CMR 10.30(3), shall not have an adverse effect due to wave	Yes	The proposed culvert headwall will not adversely affect the movement of sediment from the coastal bank to coastal beaches or land subject to tidal action, as the bank in this area is

Table 12. Compliance with 310 CMR 10.30 (4, 6-7): Coastal Bank		
Standard	Compliance with Standard	Explanation of Compliance
action on the movement of sediment from the coastal bank to coastal beaches or land subject to tidal action.		vegetated and protected by a salt marsh to the east, and contained within Goose Pond to the west.
(6) Any project on such a coastal bank or within 100 feet landward of the top of such coastal bank shall have no adverse effects on the stability of the coastal bank.	Yes	The project will not affect the coastal bank resources located within the project site permanently. This regulated resource area will reestablish once tidal connectivity is reintroduced. All work within the 100' landward edge of the coastal bank will have no adverse effect upon the coastal bank by not significantly altering the area.
(7) Bulkheads, revetments, seawalls, groins or other coastal engineering structures may be permitted on such a coastal bank except when such bank is significant to storm damage prevention or flood control because it supplies sediment to coastal beaches, coastal dunes, and barrier beaches.	-	Not Applicable
(8) Notwithstanding the provisions of 310 CMR 10.30(3) through (7), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.	Yes	The MA NHESP has issued a determination stating that this project will not result in adverse impacts to rare species (Appendix D).

Table 13. Compliance with 310 CMR 10.32 (3-6): Salt Marshes		
Standard	Compliance with Standard	Explanation of Compliance
(3) A proposed project in a salt marsh, on lands within 100 feet of a salt marsh, or in a body of water adjacent to a salt marsh shall not destroy any portion of the salt marsh and shall not have an adverse effect on the productivity of the salt marsh. Alterations in growth, distribution and composition of salt marsh vegetation shall be considered in evaluating adverse effects on productivity. 310 CMR 10.32(3) shall not be construed to prohibit the harvesting of salt hay.	Yes	205 ft2 of temporary work and 27 ft2 of permanent work. This permanent work is needed to replace the existing outlet pipes, which restrict the tidal connection between The Creeks salt marsh and Goose Pond with a box culvert and timber headwall. It is expected that the resulting salinity increase will foster some salt marsh vegetation development around the pond, thereby offsetting any permanent salt marsh impact.
(4) Notwithstanding the provisions of 310 CMR 10.32(3), a small project within a salt marsh, such as an elevated walkway or other structure which has no adverse effects other than blocking sunlight from the underlying vegetation for a portion of each day, may be permitted if such a project complies with all other applicable requirements of 310 CMR 10.21 through 10.37.	-	Not Applicable
(5) Notwithstanding the provisions of 310 CMR 10.32(3), a project which will restore or rehabilitate a salt marsh, or create a salt marsh, may be permitted in accordance with 310 CMR 10.11 through 10.14, 10.24(8), and/or 10.53(4).	Yes	The expansion of the Creeks Salt Marsh is likely into the pond area, although that is not the intent of the project.
(6) Notwithstanding the provisions of 310 CMR 10.32(3) through (5), no project may be permitted which will have any adverse effect on specified habitat sites of Rare Species, as identified by procedures established under 310 CMR 10.37.	Yes	The MA NHESP has issued a determination stating that this project will not result in adverse impacts to rare species (Appendix D).

Table 14. Compliance with 310 CMR 10.33 (3-5): Land under Salt Ponds			
Standard		Compliance with Standard	Explanation of Compliance
(3) Any project on land under a salt pond, on lands within 100 feet of the mean high water line of a salt pond, or on land under a body of water adjacent to a	(a) alterations of water circulation;	Yes	The work will result in increased tidal flushing thereby causing an increase in the salt concentration of the pond.
	(b) alterations in the distribution of sediment grain size and the relief or elevation of the bottom topography;	Yes	The Pond will be dredged thereby removing the accumulated sediments deposited by street runoff.
	(c) modifications in the flow of fresh and/or salt water;	Yes	The flow of salt water will increase into the pond therefore establishing a higher concentration of salt water over a longer period. This will be beneficial to the pond overall by improving water quality. The freshwater floral species found around the pond, almost exclusively *Phragmites australis*, will likely be reduced as a result of the increased salt content.
	(d) alterations in the productivity of plants, or	Yes	The productivity of the freshwater plants will be interrupted therefore creating opportunities for halophytic plants to increase.

Table 14. Compliance with 310 CMR 10.33 (3-5): Land under Salt Ponds			
Standard		Compliance with Standard	Explanation of Compliance
salt pond shall not have an adverse effect on the marine fisheries or wildlife habitat of such a salt pond caused by:.	(e) alterations in water quality, including, but not limited to, other than normal fluctuations in the level of dissolved oxygen, nutrients, temperature or turbidity, or the addition of pollutants.	Yes	The water quality will improve; currently the outlet of freshwater is restricted therefore holding freshwater in and limiting its outflow, by increasing tidal flushing, Dissolved oxygen levels will increase, nutrients will be removed, temperature will decrease slightly, and turbidity will be consistent with ocean tides.
(4) Notwithstanding the provisions of 310 CMR 10.33(3), activities specifically required and intended to maintain the depth and the opening of the salt pond to the ocean in order to maintain or enhance the marine fisheries or for the specific purpose of fisheries management, may be permitted.		-	Not Applicable
(5) Notwithstanding the provisions of 310 CMR 10.33(3) and (4), no project may be permitted which will have any adverse effect on specified habitat sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.		Yes	The MA NHESP has issued a determination stating that this project will not result in adverse impacts to rare species (Appendix D).

Table 15. Compliance with 310 CMR 10.53(8)(b): General Provisions		
Standard	Compliance with Standard	Explanation of Compliance
The potential for downstream flooding;	Yes	The probability of downstream flooding will not be increased.
Upstream and downstream habitat (in-stream habitat, wetlands);	Yes	Upstream habitat will benefit from the potential for salt marsh restoration.
Potential for erosion and head-cutting;	Yes	Erosion and head-cutting will likely occur within the ponded area as tidal flushing is reestablished. Eventually, an equilibrium will occur and further erosion and head-cutting will cease.
Stream stability;	Yes	It is expected that once tidal flushing has reestablished successfully, the stability of the intertidal flow will naturally balance.
Habitat fragmentation caused by the crossing;	Yes	Habitat continuity will increase with the increase in tidal volume exchange.
The amount of stream mileage made accessible by the improvements;	-	Not Applicable: tidal.
Storm flow conveyance;	Yes	Storm flow conveyance will increase as the capacity of flow from the marsh into the ponded area will improve with the improved tidal flushing capacity.
Engineering design constraints specific to the crossing;	Yes	Engineering constraints include the necessity to retain the sewer line located above the culvert, as well as the abandoned railroad bed whcih will become a bike path in the near future.
Hydrologic constraints specific to the crossing;	Yes	Only the continued groundwater discharge into the ponded area poses a constraint, requiring that the existing pipes could not be decreased in size without increased back-flooding; therefore, this is generally not applicable.
Impacts to wetlands that would occur by improving the crossing;	Yes	The only expected impact by the improvement of the crossing will result in the potential increase in salt marsh from the expansion of The Creeks Salt marsh.
Potential to affect property and infrastructure; and	Yes	This project is an infrastructure improvement project (storm water).
Cost of replacement.	-	Not Applicable

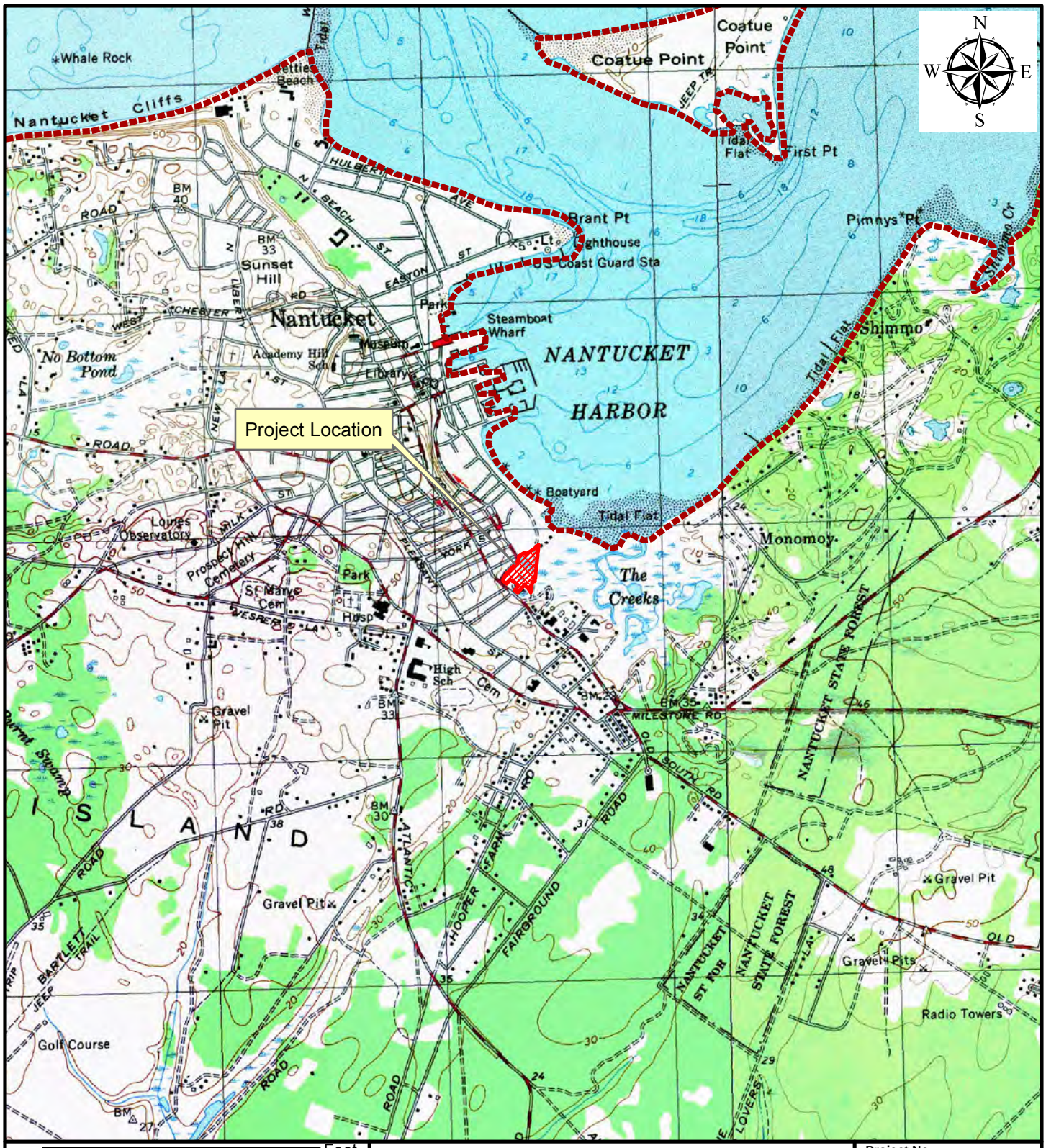
Conclusion:

The intent of this project is to improve water quality in Goose Pond by: 1) making stormwater retrofit improvements at Consue Springs; 2) dredging Goose Pond; and 3) replacing the existing culvert connection between the pond and the adjacent marsh. Existing stormwater infrastructure, pond sediment loads and the lack of consistent tidal flushing is having a negative impact on the pond and these improvements are expected to improve conditions within the pond and adjacent areas. There will be an overall net positive impact to resources in and adjacent to the pond, including:

- Removal of pollutants, including sediment, from stormwater prior to discharge to the pond and the adjacent creek;
- Increased water depth and sediment carrying capacity of the pond; and,
- Increased salinity within the pond which will serve to reduce the amount of invasive species (*Phragmites*) proliferation along the pond margins and adjacent BVW.

Appendix B

Maps



LOCUS MAP

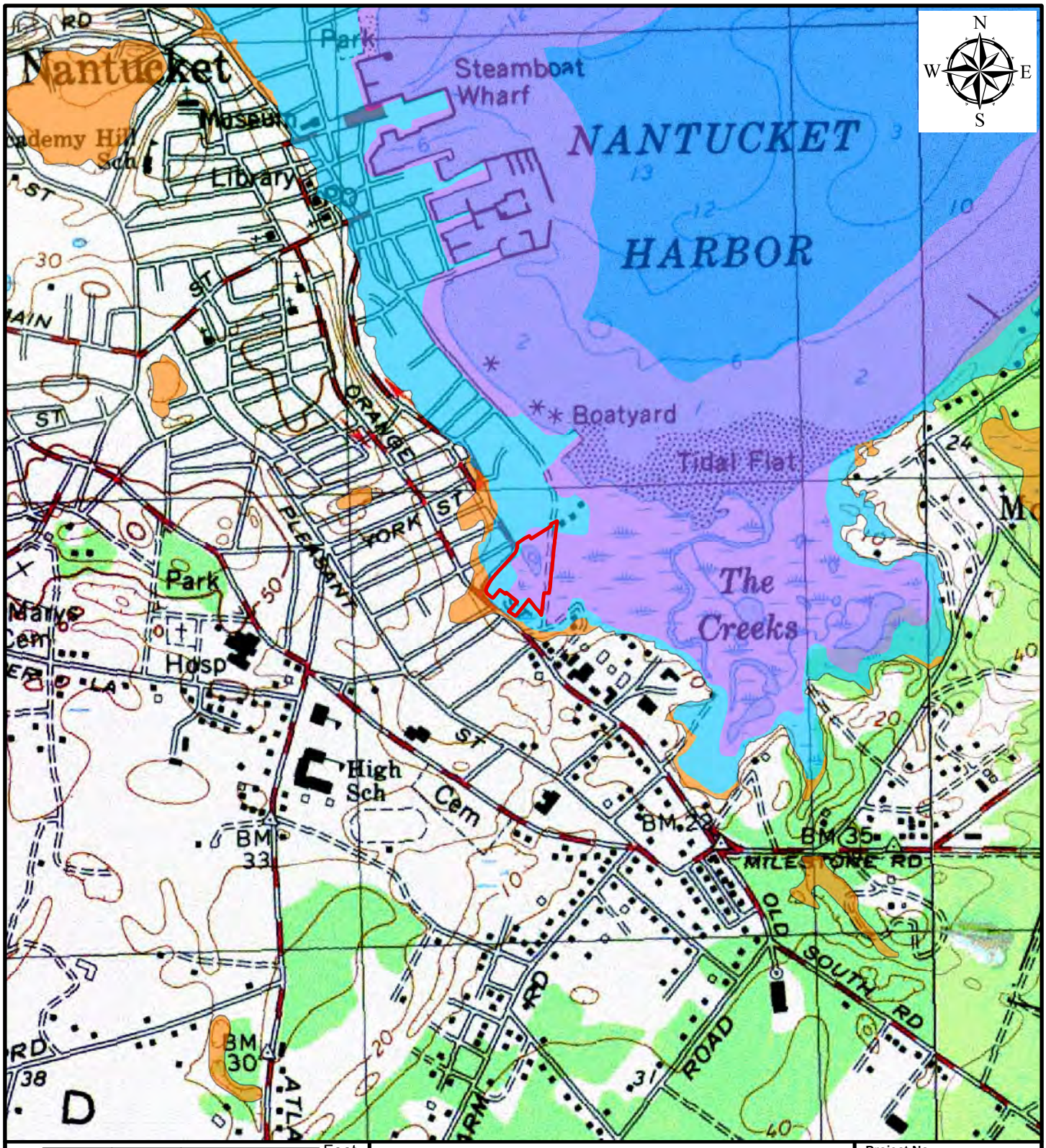
Consue Springs Stormwater Improvements and Salt Pond Restoration Project
Nantucket, MA

BASE MAP:USGS TOPOGRAPHIC QUADRANGLE MAP, Nantucket 1977 & Siasconset 1972

Data obtained from the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division

GZA GeoEnvironmental, Inc.
Springfield, Massachusetts

Project No:	15.0166274.00
Drawn by:	SRT
Checked by:	SLL
Date:	February 2016
Figure No:	1



Feet
1,000 500 0 1,000

LEGEND

- Project Area
- AE, 1% Annual Chance Flood Hazard
- Open Water
- VE, Coastal Hazard
- X, 0.2% Annual Chance Flood Hazard
- X, Minimal Flood Hazard

GZA GeoEnvironmental, Inc.
Springfield, Massachusetts

FEMA MAP

Consue Springs Stormwater Improvements and Salt Pond Restoration Project
Nantucket, MA

BASE MAP:USGS TOPOGRAPHIC QUADRANGLE MAP, Nantucket 1977 & Siasconset 1972

Data obtained from the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division. National Flood Hazard Layer obtained from FEMA. Q3 Flood layer: created by FEMA by scanning current Flood Insurance Rate Maps.

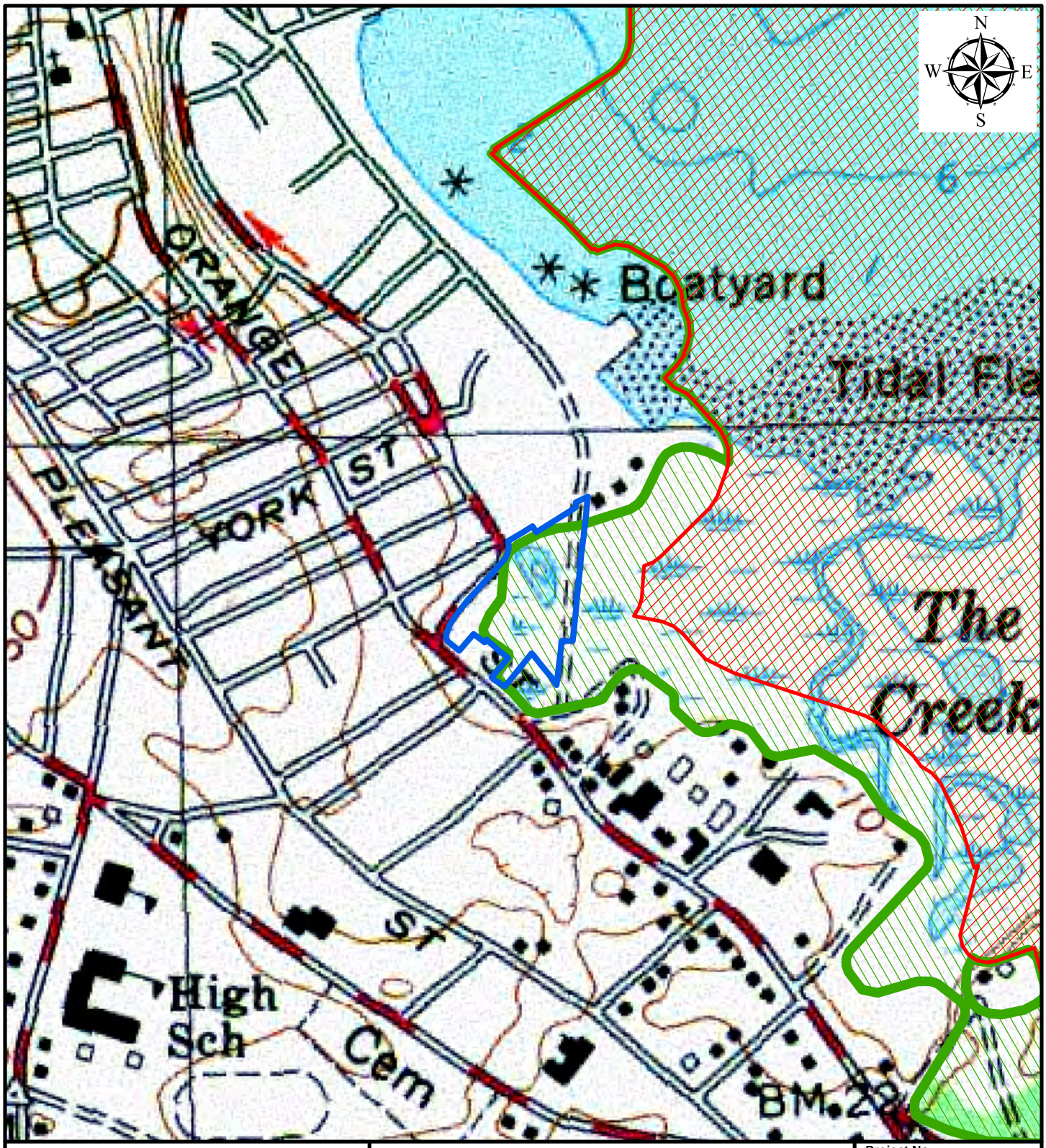
Project No: 15.0166274.00

Drawn by: SRT

Checked by: SLL

Date: February 2016

Figure No: 2



Feet
500 250 0 500

Legend

- Project Area
- Estimated Habitats 2008
- Priority Habitats 2008
- Certified Vernal Pools (MAY 2015)

GZA GeoEnvironmental, Inc.
Springfield, Massachusetts

NHESP MAP

Consue Springs Stormwater Improvements and Salt Pond Restoration Project Nantucket, MA

BASE MAP:USGS TOPOGRAPHIC QUADRANGLE MAP, Nantucket 1977 & Siasconset 1972

Data obtained from the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division. NHESP 2008 Estimated and Priority Habitats for Rare Wildlife for use with the MA Wetlands Protection Act (310 CMR 10.00)

Project No: 15.0166274.00

Drawn by: SRT

Checked by: SLL

Date: February 2016

Figure No: 3

Feet
250 125 0 250

SOILS MAP

Project No: 15.0166274.00

LEGEND

- Project Area
- 293B Riverhead-Nantucket complex, 3 to 8 percent slopes
- 294A Evesboro sand, 0 to 3 percent slopes
- 294B Evesboro sand, 3 to 8 percent slopes
- 52A Medisaprists, 0 to 1 percent slopes
- 607 Water, saline
- 610 Beaches
- 63A Pawcatuck mucky peat, 0 to 1 percent slopes

Consue Springs Stormwater Improvements and Salt Pond Restoration Project Nantucket, MA

Drawn by: SRT

Checked by: SLL

Date: February 2016

BASE MAP: BING MAPS

Figure No: 4

GZA GeoEnvironmental, Inc.
Springfield, Massachusetts

Data obtained from the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division. USDA NRCS Soil Survey, NAME COUNTY

Appendix C

Abutter Information

Proactive by Design

Geotechnical
Environmental
Ecological
Water
Construction Management

530 Broadway
Providence, RI 02909
401.421.4140
www.gza.com

April 13, 2016

To: Project Abutters

From: GZA GeoEnvironmental, Inc. (GZA)

Re: Consue Springs (Goose Pond) Dredging and Stormwater Management Improvements Project Foot of Railroad Avenue

Nantucket, Massachusetts

Dear Project Abutter:

On behalf of the Nantucket Department of Public Works, GZA has submitted a Notice of Intent application to the Nantucket Conservation Commission for the above referenced project. An application has been filed to describe the proposed work which consists of: 1) improvements to the existing stormwater system around Goose Pond to reduce flooding on Union and Orange Streets; 2) dredging of Goose Pond to remove accumulated sediments and increase tidal flushing; and, 3) improved tidal connection between Goose Pond and The Creek to reduce the presence of *Phragmites australis* and increase the distribution of native species.

Pursuant to the Wetlands Protection Act regulations, 310 CMR 10.00, all abutters to the project location must be notified of the Notice of Intent application (via certified mail, certificate of mailing, or hand delivery).

The Public Hearing to discuss this application is expected to take place on **May 4, 2016 at 4:00 P.M. on the 2nd Floor of the Public Safety Facility located at 4 Fairgrounds Road, Nantucket, MA 02554**. Copies of the NOI are available after **April 15, 2016** for review at the **2 Bathing Beach Road Nantucket, MA 02554** or by calling (**508) 228-7230** to set up an appointment.

Very truly yours,

GZA GeoEnvironmental, Inc

Stephen Lecco, AICP, CEP

Senior Environmental Planner

Notification to Abutters Under the Massachusetts Wetlands Protection Act (310 CMR 10.00)

In accordance with the second paragraph of the Massachusetts General Laws Chapter 31, Section 40, you are hereby notified of the following work within a wetland resource area or within the 100-foot buffer zone of a resource area:

1. The name of the applicant is: **Nantucket Department of Public Works.**

2. The address of the lot where activity is proposed is: **Consue Springs, off of Orange and Union Streets.**

3. The applicant has filed a Notice of Intent with the Conservation Commission of **Nantucket** seeking permission to perform work within wetland resource areas or areas subject to protection under the Wetlands Protection Act (General Laws 131, Section 40).

4. The Public Hearing to discuss this application is expected to take place on **May 4, 2016** at **4:00 P.M.** on the **2nd Floor of the Public Safety Facility** located at **4 Fairgrounds Road, Nantucket, MA 02554**. Copies of the NOI are available after **April 15, 2016** for review at the **2 Bathing Beach Road Nantucket, MA 02554** or by calling (**508) 228-7230** to set up an appointment.

For more information regarding this notice or where copies of the NOI Application may be obtained, contact the applicant's representative:

GZA GeoEnvironmental, Inc.
1350 Main St. Suite 1400
Springfield, MA 01103 (413)
726-2100
Attention: Stephen Lecco

Mon – Fri 8:30 – 5:00

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

MassDEP Southeast Region: (508) 946-2700

Nantucket Assessors Certified List of Abutters
Mailing Addresses
BLOOM PHILIP CHRISTOPHER 234 NORTH 9TH ST. BROOKLYN, NY 11211
BRENNAN MICHAEL P 680 KINGS HIGHWAY EAST FAIRFIELD, CT 06825
CHARDER BARBARA ANN C/0 CHARDER ARA P.O. BOX 734 NANTUCKET, MA 02554
CLAYTON JEFFREY 339 STANFORD AVE. BATON ROUGE, LA 70808
DINEEN KEVIN P P.O. BOX 2815 NANTUCKET, MA 02584
FISHER SUSAN J TRST BLUE WATER NOMINEE TRUST P.O. BOX 2103 NANTUCKET, MA 02584
GAMPETRO ANTHONY J & RONALD W 130 EAST 75TH ST APT-9C NEW YORK, NY 10021
GLIDDEN RICHARD J TRST C/0 DONATO MARK 106 ORANGE ST NANTUCKET, MA 02554
GREAT HARBOR YACHT CLUB INC 96 WASHINGTON STREET NANTUCKET, MA 02584
GULLEY LARRY & PRISCILLA 115 WASHINGTON ST NANTUCKET, MA 02584
GUNSON MICHAEL T ETAL 1 MILESTONE CROSSING NANTUCKET, MA 02584
HOFFMAN RONALD W & GAMPETRO ANTHONY J 130 EAST 75TH ST APT 9C NEW YORK, NY 10021
HOLSTEIN ARTHUR G IV 1032 WEST ALTGELD ST CHICAGO, IL 60614
KERSHAW THOMAS A 84 BEACON STREET BOSTON, MA 02108
LANG ALEXANDER & SHEILA TRSTS C/O LANG SHEILA 60 BLENHEIM DR OTTAWA, ON K115B5
LENIHAN ASHLEY T & ROBERT J III 39 HUNTSWORTH MEWS LONDON ENGLAN NW1 6DB
LIEBERMAN CARL M & KARIN A 734 CENTRE STREET NEWTON MA 02458
LORING PATRICIA H PO BOX 1332 NANTUCKET, MA 02554
MACLEAN WILLIAM Q JR TRS THE MACLEAN NOMINEE TRUST PO BOX 230 FAIRHAVEN MA 02719
MACLENNAN ANNE L P 0 BOX 423 NANTUCKET, MA 02554

Nantucket Assessors Certified List of Abutters
Mailing Addresses
MCCLUSKEY STEPHEN C PO BOX 1321 NANTUCKET, MA 02554
NANTUCKET CONSERVATION FOUND I PO BOX 13 NANTUCKET, MA 02554
NANTUCKET COUNTY OF 16 BROAD ST NANTUCKET, MA 02554
NANTUCKET ISLANDS LAND BANK 22 BROAD ST NANTUCKET, MA 02554
NANTUCKET TOWN OF 16 BROAD ST NANTUCKET, MA 02554
NANTUCKET TOWN OF CONSERVATION COMMISSION 16 BROAD ST NANTUCKET, MA 02554
NICHOLAS SHARON S TRUSTEE OLD ORANGE NOMINEE TRUST 33 OLD SOUTH ROAD NANTUCKET, MA 02554
PICCIRILLO PAUL P,O, BOX 16 NANTUCKET, MA 02554
PORRINI CYNTHIA STENTA ETAL 11 WINDING WAY WAYNE, PA 19087
RICHMOND GREAT POINT DEV LLC ETAL 23 CONCORD STREET WILMINGTON, MA 01887
ROSE FRANK E III & JAYNE L 5905 BRYN MAWR RD COLLEGE PARL, MD 20740
ROSE GRACE J TRUSTEE ROSE NOMINEE TRUST 28 DILLINGHAM WAY PLYMOUTH, MA 02360
S/P NORWELL LLC C/O NEW ENGLAND DEVELOP-ACCTING DEP 75 PARK PLAZA BOSTON, MA 02116
SAYLE CHARLES F JR & KATHLEEN M PO BOX 1062 NANTUCKET, MA 02554
SAYLE JUDITH A & WILLIAM R TRST PO BOX 1233 NANTUCKET, MA 02554
TONER SUSAN J TRUSTEE C/O DONATO MARK 106 ORANGE ST NANTUCKET, MA 02554
VALERO RICHARD A & GALE L 1 GOOSE POND LANE NANTUCKET, MA 02554
VALERO SHANE RICHARD TRUSTEE POVERTY POINT REALTY TRUST 1 GOOSE POND LANE NANTUCKET, MA 02554
YOUNG BRENT B 118 ORANGE NANTUCKET, MA 02554
YOUNG JULIE A PO BOX 474 NANTUCKET, MA 02554

Appendix D

Massachusetts NHESP Information

MESA Information Request Form

Please complete this form to request site-specific information from the Natural Heritage & Endangered Species Program
(Please submit only one project per request form).

Please include a check for $50.00 made out to the Comm. of MA - NHESP

Requestor Information

Name: Erin Gillen Haugh

Affiliation: GZA

Address: 1350 Main St., Suite 1400

City: Springfield State: MA Zip Code: 01103

Daytime Phone: 413-726-2115 Ext. Email address: *erin.gillen@gza.com*

Project Information

Project or Site Name: Consue Springs Stormwater Improvements

Location: Consue Springs Town: Nantucket

Name of Landowner or Project Proponent: Town of Nantucket

Acreage of the Property:

Description of Proposed Project and Current Site Conditions: (If necessary attach additional sheet)

GZA is interviewing to receive a design phase project for stormwater improvements at this site as shown on the attached maps.

- ☑ Will this project be reviewed as a Notice of Intent by the local Conservation Commission?
- ☑ Will this project be undergoing MEPA review for reasons other than rare species?
- ☑ Have you enclosed the required copy of a USGS topographic map in the scale 1:24,000 or 1:25,000 (not copy reduced) with the site location clearly marked and centered on the copy page? (Copies of Natural Heritage Atlas pages are not accepted)

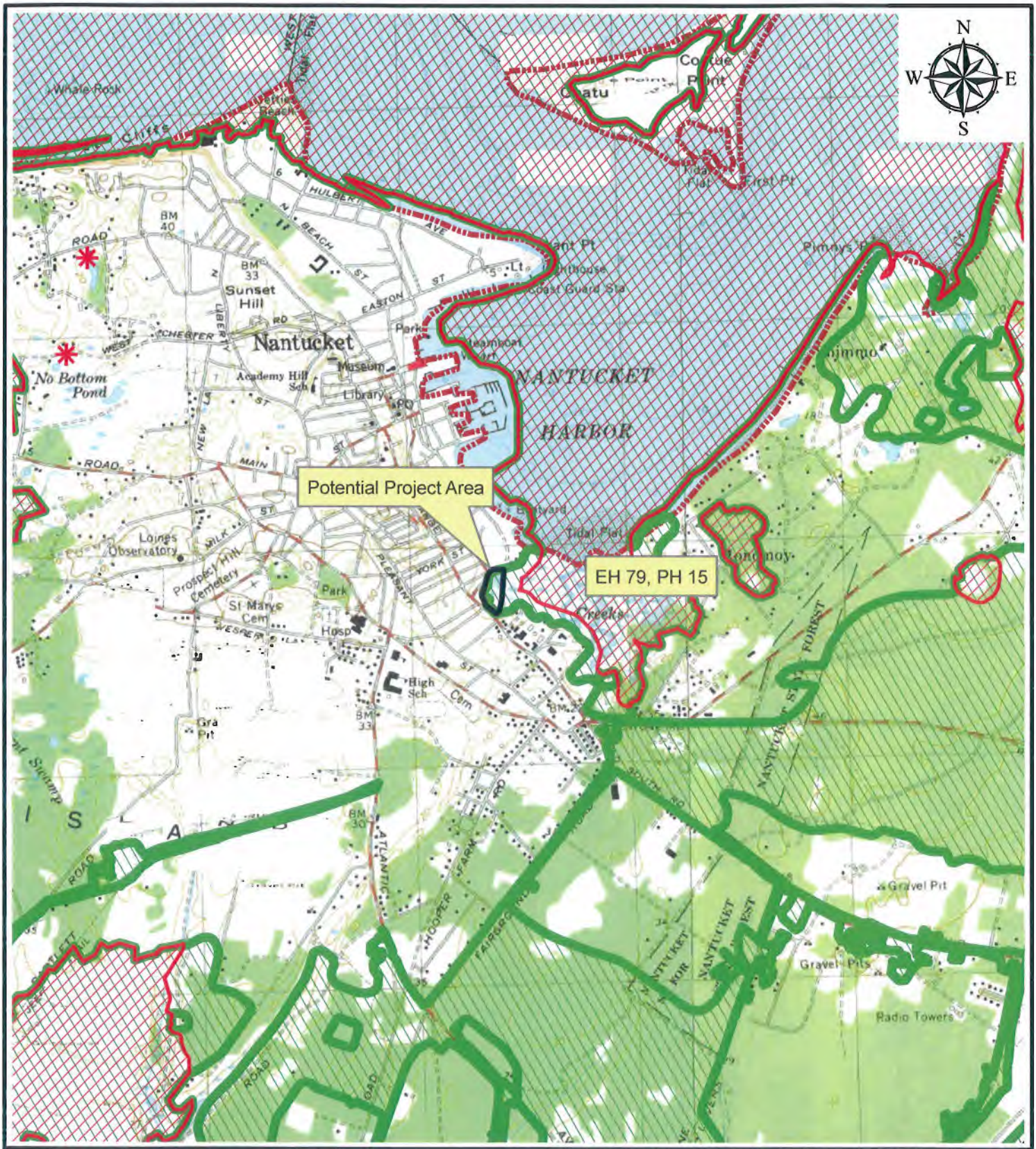
Please **mail** this completed form and topographic map to:

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

Questions regarding this form should be directed according to the county that the property is located:
Berkshire, Essex, Franklin, Hampshire, Hampden, Middlesex & Worcester Counties call: 508-389-6361
Barnstable, Bristol, Dukes, Nantucket, Norfolk, Plymouth & Suffolk Counties call: 508-389-6364

Persons requesting information will receive a written response within 30 days of receipt of all information required. Please do not ask for an expedited review. *If you are requesting information for habitat management or conservation purposes and you are a non-profit conservation group, government agency or working with a government agency please fill out a Data Release Form.

June 2009



Feet 2,000 1,000 0 2,000	**NHESP MAP**	**Project No:** 01.P000520.11
LEGEND Certified Vernal Pools 2010 Estimated Habitats 2008 Priority Habitats 2008 Town Boundary	**Consue Springs** **Nantucket, Massachusetts**	**Drawn by:** ERH **Checked by:** ERH **Date:** 1/7/11
	BASE MAP: USGS QUADRANGLE MAP - NANTUCKET, MASSACHUSETTS 1977	**Figure No:** 1
GZA GeoEnvironmental, Inc. **Springfield, Massachusetts**	Data obtained from MASS GIS, Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs (EEA). NHESP 2008 Estimated and Priority Habitats for Rare Wildlife for use with the MA Wetlands Protection Act (310 CMR 10.00)	

1,000 500 0 1,000 Feet

LEGEND

- Certified Vernal Pools 2010
- Estimated Habitats 2008
- Priority Habitats 2008
- Town Boundary

GZA GeoEnvironmental, Inc.
Springfield, Massachusetts

NHESP MAP

Consue Springs
Nantucket, Massachusetts

BASE MAP: MassGIS ORTHOPHOTO APRIL 2005

Data obtained from MASS GIS, Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs (EEA). NHESP 2008 Estimated and Priority Habitats for Rare Wildlife for use with the MA Wetlands Protection Act (310 CMR 10.00)

Project No: 01.P000520.11

Drawn by: ERH

Checked by: ERH

Date: 1/7/11

Figure No: 2

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

MassWildlife

Wayne F. MacCallum, *Director*

January 19, 2011

Erin Gillen Haugh
GZA Geoenvironmental, Inc.
ONE FINANCIAL PLAZA
1350 Main Street, Suite 1400
Springfield MA 01103

RE: Project Location: 84 & 90 Union Street; 112 Orange Street
Town: NANTUCKET
NHESP Tracking No.: 10-27890

To Whom It May Concern:

Thank you for contacting the Natural Heritage and Endangered Species Program ("NHESP") of the MA Division of Fisheries & Wildlife for information regarding state-listed rare species in the vicinity of the above referenced site. Based on the information provided, this project site, or a portion thereof, is located **within** *Priority Habitat 15* (PH 15) as indicated in the *Massachusetts Natural Heritage Atlas* (13th Edition). Our database indicates that the following state-listed rare species have been found in the vicinity of the site:

Scientific name	Common Name	Taxonomic Group	State Status
Bagisara rectifascia	Straight Lined Mallow Moth	Butterflies and Moths	Special Concern

The species listed above is/are protected under the Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and its implementing regulations (321 CMR 10.00). State-listed wildlife are also protected under the state's Wetlands Protection Act (WPA) (M.G.L. c. 131, s. 40) and its implementing regulations (310 CMR 10.00). Fact sheets for most state-listed rare species can be found on our website (www.nhesp.org).

Please note that projects and activities located within Priority and/or Estimated Habitat **must** be reviewed by the NHESP for compliance with the state-listed rare species protection provisions of MESA (321 CMR 10.00) and/or the WPA (310 CMR 10.00).

Wetlands Protection Act (WPA)

If the project site is within Estimated Habitat and a Notice of Intent (NOI) is required, then a copy of the NOI must be submitted to the NHESP so that it is received at the same time as the local conservation commission. If the NHESP determines that the proposed project will adversely affect the actual Resource Area habitat of state-protected wildlife, then the proposed project may not be permitted (310 CMR 10.37, 10.58(4)(b) & 10.59). In such a case, the project proponent may request a consultation with the NHESP to discuss potential project design modifications that would avoid adverse effects to rare wildlife habitat.

A streamlined joint MESA/WPA review process is now available. When filing a Notice of Intent (NOI), the applicant may now file concurrently under the MESA on the same NOI form and qualify for a 30-day

streamlined joint review. For a copy of the revised NOI form, please visit the MA Department of Environmental Protection's website: http://www.mass.gov/dep/water/approvals/wpaform3.doc.

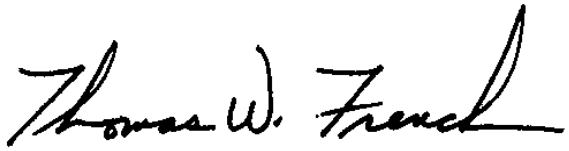
MA Endangered Species Act (MESA)

If the proposed project is located within Priority Habitat and is not exempt from review (see 321 CMR 10.14), then project plans, a fee, and other required materials must be sent to NHESP Regulatory Review to determine whether a probable "take" under the MA Endangered Species Act would occur (321 CMR 10.18). Please note that all proposed and anticipated development must be disclosed, as MESA does not allow project segmentation (321 CMR 10.16). For a MESA filing checklist and additional information please see our website: www.nhesp.org ("Regulatory Review" tab).

We recommend that rare species habitat concerns be addressed during the project design phase prior to submission of a formal MESA filing, as avoidance and minimization of impacts to rare species and their habitats is likely to expedite endangered species regulatory review.

This evaluation is based on the most recent information available in the Natural Heritage database, which is constantly being expanded and updated through ongoing research and inventory. If you have any questions regarding this letter please contact Amy Coman, Endangered Species Review Assistant, at (508) 389-6364.

Sincerely,



Thomas W. French, Ph.D.
Assistant Director

Seth Taylor

From: Holt, Emily (FWE) <emily.holt@state.ma.us>
Sent: Friday, May 30, 2014 3:04 PM
To: Seth Taylor
Subject: RE: NHESP Tracking No. 10-27890

Hi Seth,

The Straight-Lined Mallow Moth is no longer state-listed. However, since the site is still within Priority Habitat, from a regulatory perspective, any project or activity on site still requires review pursuant to the MESA.

Best,
Emily

Emily Holt
Endangered Species Review Assistant
Natural Heritage & Endangered Species Program | Division of Fisheries & Wildlife
100 Hartwell Street, Suite 230 | West Boylston, MA 01583
ph: 508.389.6385 | fax: 508.389.7890
emily.holt@state.ma.us | www.mass.gov/nhesp

From: Seth Taylor [mailto:Seth.Taylor@gza.com]
Sent: Friday, May 23, 2014 10:59 AM
To: Veinotte, Amanda
Subject: NHESP Tracking No. 10-27890

Ms. Veinotte,

A project that has been delayed on the island of Nantucket is about to resume concerning permitting. We submitted an info request form in 2011 and received your office's response as the pdf which I've attached, re: NHESP Tracking No.: 10-27890. We are looking to discover if this species which your office identified is still listed, the Straight Lined Mallow Moth (*Bagisara rectifascia*), state status SC.

If this species has been delisted, would we need to refile an info request with your office or will the site no longer be subject to MESA review?

Please advise!

Thank you,

Seth

Seth R. Taylor
Environmental Scientist
GZA GeoEnvironmental, Inc.
1350 Main St. Suite 1400 | Springfield, MA 01103

o: 413.726.2102 | c: 413.977.3651
seth.taylor@gza.com | www.gza.com

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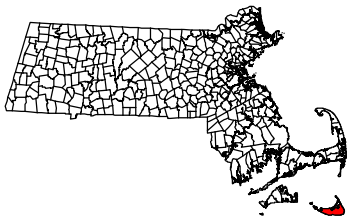
For information about GZA GeoEnvironmental, Inc. and its services, please visit our website at www.gza.com.

100 50 0 100 Feet

VEGETATIVE COMPOSITION



Consue Springs Stormwater Improvements and Salt Pond Restoration Project Nantucket, Massachusetts

BASE MAP: Bing Maps 2016

Data obtained from the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division. National Flood Hazard Layer obtained from FEMA. Q3 Flood layer: created by FEMA by scanning current Flood Insurance Rate Maps.

GZA GeoEnvironmental, Inc.
Springfield, Massachusetts

Project No: 15.0166274.00

Drawn by: SRT

Checked by: SLL

Date: February 2016

Figure No: -

Note: See Appendix H for Site Photos

Appendix E

Sediment Sampling Analysis

Consue Springs Sediment Sampling Results

EPA Method	Chemical	CAS #	Unit	March 11, 2012										April 30, 2015				S1/GW1	Reuse Levels	
				Sample A		Sample B		Sample C		Sample D		Sample E		Sample GP-1		Sample GP-2			Lined Landfill	Unlined Landfill
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL			
EPA 8260 (Samples A - E); EPA 8260B Low (Sample GP1 & GP-2)	**VOLATILE ORGANICS**	-	-	-	-	-	-	-	-	-	-	-	-	-				-	-	-
	Dichlorodifluoromethane	75-71-8	µg/kg	<	100	<	220	<	270	<	180	<	220	<	5.1	-	23.8	-	-	-
	Chloromethane	74-87-3	µg/kg	<	100	<	220	<	270	<	180	<	220	<	5.1	-	23.8	-	-	-
	Vinyl chloride	75-01-4	µg/kg	<	50	<	110	<	140	<	90	<	110	<	5.1	-	23.8	600	-	-
	Bromomethane	74-83-9	µg/kg	<	100	<	220	<	270	<	180	<	220	<	5.1	-	23.8	500	-	-
	Chloroethane	75-00-3	µg/kg	<	50	<	110	<	140	<	90	<	110	<	5.1	-	23.8	-	-	-
	Trichlorofluoromethane	75-69-4	µg/kg	<	100	<	220	<	270	<	180	<	220	<	2.6	-	11.9	-	-	-
	Diethylether	60-29-7	µg/kg	<	100	<	220	<	270	<	180	<	220	<	2.6	-	11.9	-	-	-
	Acetone	67-64-1	µg/kg	<	1,300	<	2,900	<	3,500	<	2,300	<	2,900	**7.1**	5.1	**221.0**	23.8	6,000	-	-
	1,1-Dichloroethene	75-35-4	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	Carbon disulfide	75-15-0	µg/kg	<	100	<	220	<	270	<	180	<	220	<	2.6	**45.6**	11.9	-	-	-
	Dichloromethane	75-09-2	µg/kg	<	100	<	220	<	270	<	180	<	220	<	5.1	-	23.8	100	-	-
	Methyl tert-butyl ether	1634-04-4	µg/kg	<	50	<	*110*	<	*140*	<	90	<	*110*	<	2.6	-	11.9	100	-	-
	trans-1,2-Dichloroethene	156-60-5	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	1,1-Dichloroethane	75-34-3	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	400	-	-
	2-Butanone (MEK)	78-93-3	µg/kg	<	1,300	<	2,900	<	3,500	<	2,300	<	2,900	<	5.1	**24.1**	23.8	4,000	-	-
	2,2-Dichloropropane	594-20-7	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	cis-1,2-Dichloroethene	156-59-2	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	Chloroform	67-66-3	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	400	-	-
	Bromochloromethane	74-97-5	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	Tetrahydrofuran	109-99-9	µg/kg	<	500	<	1,100	<	1,400	<	900	<	1,100	<	2.6	-	11.9	-	-	-
	1,1,1-Trichloroethane	71-55-6	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	30,000	-	-
	1,1-Dichloropropene	563-58-6	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	Carbon tetrachloride	56-23-5	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	10,000	-	-
	1,2-Dichloroethane	107-06-2	µg/kg	<	50	<	*110*	<	*140*	<	90	<	*110*	<	2.6	-	11.9	100	-	-
	Benzene	71-43-2	µg/kg	<	50	<	*110*	<	*140*	<	90	<	*110*	<	2.6	-	11.9	2,000	-	-
	Trichloroethene	79-01-6	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	300	-	-
	1,2-Dichloropropane	78-87-5	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	100	-	-
	Bromodichloromethane	75-27-4	µg/kg	<	50	<	*110*	<	*140*	<	90	<	*110*	<	2.6	-	11.9	100	-	-
	Dibromomethane	74-95-3	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	4-Methyl-2-pentanone (MIBK)	108-10-1	µg/kg	<	1,300	<	2,900	<	3,500	<	2,300	<	2,900	<	5.1	-	23.8	400	-	-
	cis-1,3-Dichloropropene	10061-01-5	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	Toluene	108-88-3	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	30,000	-	-
	trans-1,3-Dichloropropene	10061-02-6	µg/kg	<	100	<	220	<	270	<	180	<	220	<	2.6	-	11.9	-	-	-
	1,1,2-Trichloroethane	79-00-5	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	100	-	-
	2-Hexanone	591-78-6	µg/kg	<	1,300	<	2,900	<	3,500	<	2,300	<	2,900	<	5.1	-	23.8	-	-	-
	1,3-Dichloropropane	142-28-9	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	Tetrachloroethene	127-18-4	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	1,000	-	-
	Dibromochloromethane	124-48-1	µg/kg	<	*50*	<	*110*	<	*140*	<	*90*	<	*110*	<	1.0	-	4.8	5	-	-
	1,2-Dibromoethane (EDB)	106-93-4	µg/kg	<	*100*	<	*220*	<	*270*	<	*180*	<	*220*	<	2.6	-	11.9	100	-	-
	Chlorobenzene	108-90-7	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	1,000	-	-
	1,1,1,2-Tetrachloroethane	630-20-6	µg/kg	<	50	<	*110*	<	*140*	<	90	<	*110*	<	2.6	-	11.9	100	-	-
	Ethylbenzene	100-41-4	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	40,000	-	-
	m&p-Xylene	179601-231	µg/kg	<	100	<	220	<	270	<	180	<	220	<	-	-	-	-	-	-
	o-Xylene	95-47-6	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	Styrene	100-42-5	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	3,000	-	-
	Bromoform	75-25-2	µg/kg	<	*100*	<	*220*	<	*270*	<	*180*	<	*220*	<	2.6	-	11.9	100	-	-
	Isopropylbenzene	98-82-8	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	1,1,2,2-Tetrachloroethane	79-34-5	µg/kg	<	50	<	110	<	140	<	90	<	110	<	1.0	-	4.8	5	-	-
	1,2,3-Trichloropropane	96-18-4	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	Bromobenzene	108-86-1	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	n-Propylbenzene	103-65-1	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	2-Chlorotoluene	95-49-8	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	1,3,5-Trimethylbenzene	108-67-8	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	4-Chlorotoluene	106-43-4	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-

Consue Springs Sediment Sampling Results

EPA Method	Chemical	CAS #	Unit	March 11, 2012										April 30, 2015				S1/GW1	Reuse Levels	
				Sample A		Sample B		Sample C		Sample D		Sample E		Sample GP-1		Sample GP-2			Lined Landfill	Unlined Landfill
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL			
	tert-Butylbenzene	98-06-6	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	1,2,4-Trimethylbenzene	95-63-6	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	sec-Butylbenzene	135-98-8	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	p-Isopropyltoluene	99-87-6	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	1,3-Dichlorobenzene	541-73-1	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	1,000	-	-
	1,4-Dichlorobenzene	106-46-7	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	700	-	-
	n-Butylbenzene	104-51-8	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	1,2-Dichlorobenzene	95-50-1	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	9,000	-	-
	1,2-Dibromo-3-chloropropane	96-12-8	µg/kg	<	100	<	220	<	270	<	180	<	220	<	2.6	-	11.9	-	-	-
	1,2,4-Trichlorobenzene	120-82-1	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	2,000	-	-
	Hexachlorobutadiene	87-68-3	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	6,000	-	-
	Naphthalene	91-20-3	µg/kg	<	100	<	220	<	270	<	180	<	220	<	2.6	-	11.9	4,000	-	-
	1,2,3-Trichlorobenzene	87-61-6	µg/kg	<	50	<	110	<	140	<	90	<	110	<	2.6	-	11.9	-	-	-
	TOTAL VOCs	-	µg/kg	ND	varies	ND	varies	ND	varies	ND	varies	ND	varies	-	varies	-	varies	-	10,000	4,000
	POLYCHLORINATED BIPHENYLS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Aroclor 1268	11100-14-4	µg/kg	<	100	<	100	<	100	<	100	<	100	-	-	-	-	-	-	-
	Aroclor 1262	37324-23-5	µg/kg	<	100	<	100	<	100	<	100	<	100	-	-	-	-	-	-	-
	Aroclor 1260	11096-82-5	µg/kg	<	100	<	100	<	100	<	100	<	100	-	-	-	-	-	-	-
	Aroclor 1254	11097-69-1	µg/kg	<	100	<	100	<	100	**230**	100	<	100	-	-	-	-	-	-	-
	Aroclor 1248	12672-29-6	µg/kg	<	100	<	100	<	100	<	100	<	100	-	-	-	-	-	-	-
	Aroclor 1242/1016	53469-21-9	µg/kg	<	100	<	100	<	100	<	100	<	100	-	-	-	-	-	-	-
	Aroclor 1232	11141-16-5	µg/kg	<	100	<	100	<	100	<	100	<	100	-	-	-	-	-	-	-
	Aroclor 1221	11104-28-2	µg/kg	<	100	<	100	<	100	<	100	<	100	-	-	-	-	-	-	-
	TOTAL PCBs (Aroclor)	-	-	ND	100	ND	100	ND	100	**230**	100	ND	100	-	-	-	-	1,000	2,000	2,000
	BZ # 8	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 18	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 28	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 44	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
EPA 8082	BZ # 52	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 66	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 101	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 105	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 118	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 128	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 138	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 153	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 170	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 180	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 187	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 195	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 206	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	BZ # 209	-	µg/kg	-	-	-	-	-	-	-	-	-	-	ND	0.13	ND	0.13	-	-	-
	Summation of Congeners	-	µg/kg	-	-	-	-	-	-	-	-	-	-	0	-	0	-	1,000	2,000	2,000
	SEMI-VOLATILE ORGANICS	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Phenol	108-95-2	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	1,000	-	-
	2-Chlorophenol	95-57-8	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	700	-	-
	2-Methylphenol	95-48-7	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	3&4-Methylphenol	108-39-4	µg/kg	<	330	<	330	<	330	<	330	<	330	<	0	-	-	-	-	-
	2-Nitrophenol	88-75-5	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	2,4-Dimethylphenol	105-67-9	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	700	-	-
	2,4-Dichlorophenol	120-83-2	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	700	-	-
	2,4,6-Trichlorophenol	88-06-2	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	700	-	-
	2,4,5-Trichlorophenol	95-95-4	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	4,000	-	-
	2,4-Dinitrophenol	51-28-5	µg/kg	<	*3,300*	<	*3,300*	<	*3,300*	<	*3,300*	<	*3,300*	<	1,900	<	2,620	3,000	-	-
	4-Nitrophenol	100-02-7	µg/kg	<	1,700	<	1,700	<	1,700	<	1,700	<	1,700	<	1,900	<	2,620	-	-	-

Consue Springs Sediment Sampling Results

EPA Method	Chemical	CAS #	Unit	March 11, 2012										April 30, 2015				S1/GW1	Reuse Levels	
				Sample A		Sample B		Sample C		Sample D		Sample E		Sample GP-1		Sample GP-2			Lined Landfill	Unlined Landfill
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL			
EPA 8270	Pentachlorophenol	87-86-5	µg/kg	<	1,700	<	1,700	<	1,700	<	1,700	<	1,700	<	1,900	<	2,620	3,000	-	-
	bis(2-Chloroethyl)Ether	111-44-4	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	700	-	-
	1,3-Dichlorobenzene	541-73-1	µg/kg	<	330	<	330	<	330	<	330	<	330	<	2.6	<	11.9	1,000	-	-
	1,4-Dichlorobenzene	106-46-7	µg/kg	<	330	<	330	<	330	<	330	<	330	<	2.6	<	11.9	700	-	-
	1,2-Dichlorobenzene	95-50-1	µg/kg	<	330	<	330	<	330	<	330	<	330	<	2.6	<	11.9	9,000	-	-
	bis(2-Chloroisopropyl)Ether	108-60-1	µg/kg	<	330	<	330	<	330	<	330	<	330	<	-	-	-	700	-	-
	Acetophenone	98-86-2	µg/kg	<	330	<	330	<	330	<	330	<	330	<	760	<	1,050	-	-	-
	Hexachloroethane	67-72-1	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	700	-	-
	Nitrobenzene	98-95-3	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	Isophorone	78-59-1	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	bis(2-Chloroethoxy)Methane	111-91-1	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	1,2,4-Trichlorobenzene	120-82-1	µg/kg	<	330	<	330	<	330	<	330	<	330	<	2.6	<	11.9	2,000	-	-
	Naphthalene	91-20-3	µg/kg	<	330	<	330	<	330	<	330	<	330	<	2.6	<	11.9	4,000	-	-
	4-Chloroaniline	106-47-8	µg/kg	<	660	<	660	<	660	<	660	<	660	<	760	<	1,050	1,000	-	-
	Hexachlorobutadiene	87-68-3	µg/kg	<	330	<	330	<	330	<	330	<	330	<	2.6	<	11.9	6,000	-	-
	2-Methylnaphthalene	91-57-6	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	700	-	-
	Aniline	62-53-3	µg/kg	<	330	<	330	<	330	<	330	<	330	<	1,900	<	2,620	-	-	-
	2-Chloronaphthalene	91-58-7	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	Dimethylphthalate	131-11-3	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	30,000	-	-
	Acenaphthylene	208-96-8	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	1,000	-	-
	2,6-Dinitrotoluene	606-20-2	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	Acenaphthene	83-32-9	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	4,000	-	-
	Dibenzofuran	132-64-9	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	2,4-Dinitrotoluene	121-14-2	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	700	-	-
	Diethylphthalate	84-66-2	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	10,000	-	-
	Fluorene	86-73-7	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	1,000,000	-	-
	Azobenzene	103-33-3	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	4-Bromophenyl Phenyl Ether	101-55-3	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	Hexachlorobenzene	118-74-1	µg/kg	<	330	<	330	<	330	<	330	<	330	<	3	<	5.3	700	-	-
	Phenanthrene	85-01-8	µg/kg	<	330	<	330	<	330	**440**	330	<	330	<	379	<	523	10,000	-	-
	Anthracene	120-12-7	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	1,000,000	-	-
	di-n-Butylphthalate	84-74-2	µg/kg	<	500	<	500	<	500	<	500	<	500	<	379	<	523	-	-	-
	Fluoranthene	206-44-0	µg/kg	<	330	<	330	**520**	330	**820**	330	<	330	<	379	<	523	1,000,000	-	-
	Pyrene	129-00-0	µg/kg	<	330	<	330	**460**	330	**700**	330	<	330	<	379	<	523	1,000,000	-	-
	Butylbenzylphthalate	85-68-7	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	Benzo [a] Anthracene	56-55-3	µg/kg	<	330	<	330	<	330	**390**	330	<	330	<	379	<	523	7,000	-	-
	3,3'-Dichlorobenzidine	91-94-1	µg/kg	<	660	<	660	<	660	<	660	<	660	<	760	<	1,050	1,000	-	-
	Chrysene	218-01-9	µg/kg	<	330	<	330	<	330	**350**	330	<	330	<	1,900	<	2,620	70,000	-	-
	bis(2-Ethylhexyl)Phthalate	117-81-7	µg/kg	<	330	**2,000**	330	**2,600**	330	**2,300**	330	**3,400**	330	<	379	<	523	200,000	-	-
	di-n-Octylphthalate	117-84-0	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	-	-	-
	Benzo [b] Fluoranthene	205-99-2	µg/kg	<	330	<	330	<	330	430	330	<	330	<	379	<	523	7,000	-	-
	Benzo [k] Fluoranthene	207-08-9	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	70,000	-	-
	Benzo [a] Pyrene	50-32-8	µg/kg	<	330	<	330	<	330	330	330	<	330	<	1,900	<	2,620	2,000	-	-
	Indeno [1,2,3-cd] Pyrene	193-39-5	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	7,000	-	-
	Dibenzo [a,h] Anthracene	53-70-3	µg/kg	<	330	<	330	<	330	<	330	<	330	<	1,900	<	2,620	700	-	-
	Benzo [g,h,i] Perylene	191-24-2	µg/kg	<	330	<	330	<	330	<	330	<	330	<	379	<	523	1,000,000	-	-
	TOTAL SVOCs	-	-	ND	varies	2,000	varies	3,580	varies	5,760	varies	3,400	varies	-	varies	-	varies	-	100,000	100,000
Mod. EPA 8100	**TOTAL PETROLEUM HYDROCARBON**	-	-	-	-	-	-	-	-	-	-	-	-	ND	11,900	52,500	21,000	-	-	-
	Hydrocarbon Content	TPH	mg/kg	<	12	220	18	120	18	150	13	47	15	NT	-	NT	-	1,000	5,000	2,500
EPA 9050	**Conductivity**	1064	uS/cm	101	20	610	20	2,900	20	220	20	2,800	20	307	5	447	5	-	8,000	4,000
SW846 9060	**Total Organic Carbon**	-	mg/kg	<	1,000	14,000	1,000	26,000	1,000	20,000	1,000	7,500	1,000	31,300.0	1,000	31,300	1,000	-	-	-

Consue Springs Sediment Sampling Results

EPA Method	Chemical	CAS #	Unit	March 11, 2012										April 30, 2015				S1/GW1	Reuse Levels	
				Sample A		Sample B		Sample C		Sample D		Sample E		Sample GP-1		Sample GP-2			Lined Landfill	Unlined Landfill
				Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL	Result	RL			
EPA 8081	**ORGANOCHLORINE PESTICIDES**	-	-	-	-	-	-	-	-	-	-	-	-		0	0	0	-	-	-
	Hexachlorobenzene	118-74-1	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	700	-	-
	alpha-BHC	319-84-6	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	-	-	-
	gamma-BHC (Lindane)	58-89-9	µg/kg	<	*6*	<	*6*	<	*6*	<	*6*	<	*6*	<	2	-	3.2	3	-	-
	beta-BHC	319-85-7	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	-	-	-
	Heptachlor	76-44-8	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	200	-	-
	delta-BHC	319-86-8	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	-	-	-
	Aldrin	309-00-2	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	40	-	-
	Heptachlor Epoxide	1024-57-3	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	90	-	-
	Endosulfan I	959-98-8	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	-	-	-
	4,4'-DDE	72-55-9	µg/kg	<	6	<	6	<	6	**21**	6	<	6	<	3	**125**	5.3	3,000	-	-
	Dieldrin	60-57-1	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	50	-	-
	Endrin	72-20-8	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	8,000	-	-
	4,4'-DDD	72-54-8	µg/kg	<	6	**6**	6	**14**	6	**19**	6	<	6	<	0	**6.2**	5.3	4,000	-	-
	Endosulfan II	33213-65-9	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	-	-	-
	4,4'-DDT	50-29-3	µg/kg	<	6	<	6	<	6	**14**	6	<	6	<	3	-	5.3	3,000	-	-
	Endosulfan Sulfate	1031-07-8	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	-	-	-
	Methoxychlor	72-43-5	µg/kg	<	50	<	50	<	50	<	50	<	50	<	3	-	5.3	200,000	-	-
	Endrin Ketone	53494-70-5	µg/kg	<	6	<	6	<	6	<	6	<	6	<	3	-	5.3	-	-	-
	Chlordane (technical)	57-74-9	µg/kg	<	20	<	20	**51**	20	**41**	20	<	20	<	23.9	-	42.8	-	-	-
-	**REACTIVE SULFIDES**	-	-	-	-	-	-	-	-	-	-	-	-	ND	2,000	ND	2,000	-	-	-
-	**REACTIVE CYANIDE**	-	-	-	-	-	-	-	-	-	-	-	-	ND	2,000	ND	2,000	-	-	-
EPA 6010C	**RCRA METALS**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Silver	7440-22-4	mg/kg	<	0	<	0	<	1	<	0	<	0	<	0.46	<	0.95	100	-	-
	Arsenic	7440-38-2	mg/kg	**1**	1	**3**	1	**4**	1	**1**	1	**1**	1	<	2.28	**6.5**	4.73	20	40	40
	Barium	7440-39-3	mg/kg	**4**	0	**11**	1	**26**	1	**16**	0	**7**	0	<	2.28	**24.1**	4.73	1,000	-	-
	Cadmium	7440-43-9	mg/kg	<	0	<	1	**1**	1	<	0	<	0	<	0.46	<	0.95	2	80	30
	Chromium	7440-47-3	mg/kg	**3**	0	**12**	1	**22**	1	**7**	0	**6**	0	**2.32**	0.91	**19.5**	1.89	30	1,000	1,000
	Lead	7439-92-1	mg/kg	**2**	1	**44**	1	**110**	1	**97**	1	**39**	1	**14.0**	4.56	**87.8**	9.46	300	2,000	1,000
	Selenium	7782-49-2	mg/kg	<	1	<	3	<	3	<	2	<	3	<	4.56	<	9.46	400	-	-
	Zinc			-	-	-	-	-	-	-	-	-	-	**4.13**	2.28	**62.4**	4.73	1,000	-	-
EPA 7471B	Mercury	7439-97-6	mg/kg	<	0	**0**	0	**0**	0	**0**	0	**0**	0	<	0.030	**0.08**	0.07	20	10	10
-	**PERCENT SOLID**	-	%	85	-	57	-	55	-	75	-	68	-	87	-	47	-	-	-	-
Sieve	**GRAIN SIZE**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Gravel	-	%	13.1	-	1.3	-	0.1	-	5.2	-	13.4	-	5.6	-	0	-	-	-	-
	Sand	-	%	86.5	-	73.4	-	54.4	-	82.5	-	83.6	-	92.4	-	48.3	-	-	-	-
	Fines		%	0.4	-	25.3	-	45.4	-	12.3	-	3.1	-	1.9	-	51.7	-	-	-	-

Bold denotes detected compound/element
Bold italics denotes detected above landfill reuse criteria
Bold underlined denotes detected above S1/GW1 criteria
Bold italics underlined denotes detected above landfill reuse and S1/GW1 criteria
Grey shading denotes reporting limit exceedance of landfill and/or SW/GW1 criteria
Grey shading italics denotes reporting limit exceeds landfill and/or S1/GW1 criteria
* denotes PAH
** denotes exceedance of theoretical TCLP limit
ND indicates "Not Dectected"
NT indicates "Not Tested"
RL indicates "Reporting Limit"

Appendix F

US Army Corps of Engineers Wetland Data Forms

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region		Wetland
	X	Upland

Project Site: Consue Springs City/County: Nantucket Date 11/15/2011, 4/30/2015

Applicant/Owner: Town of Nantucket State: MA Sampling Point: B/t A-10/11 and B-· +5 ft

Investigator(s): Erin Haugh/Steve Lecco (2011), Seth Taylor/SL (2015) Section/Township/Range: Coastal Salt Pond

Landform (hillslope, terrace, etc.): Filled Berm on Shore of Salt Pond Local Relief (concave, convex, none): Convex Slope (%): N/A

Subregion (LRR or MLRA): LRR S Latitude: 41.27696 Longitude: -70.09332 Datum: WGS 1984

Soil Map Unit Name: Pawcatuck mucky peat NWI Classification: Urban or Developed

Are climatic/hydrologic conditions on site typical for this time of year? Yes X No (explain) _____

Is vegetation _____ Soil _____ Hydrology _____ Significantly Disturbed? (check if appropriate)

Is vegetation _____ Soil _____ Hydrology _____ Naturally Problematic? (check if appropriate)

Are "Normal Circumstances" present? X Yes _____ No

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	_____ Yes	X No	Is the Sampled Area within a Wetland?	_____ Yes	
Hydric Soil Present?	_____ Yes	X No			
Wetland Hydrology Present?	_____ Yes	X No		X No	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply)

- _____ Surface Water (A1)
- _____ High Water Table (A2)
- _____ Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2)
- _____ Drift Deposits (B2)
- _____ Algal Mat or Crust (B4)
- _____ Iron Deposits (B5)
- _____ Inundation Visible on Aerial Imagery (B7)
- _____ Sparsely Vegetated Concave Surface (B8)
- _____ Water-Stained Leaves (B9)
- _____ Aquatic Fauna (B13)
- _____ Marl Deposits (B15)
- _____ Hydrogen Sulfide Odor (C1)
- _____ Thin Muck Surface (C7)
- _____ Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Tilled Soils (C6)
- _____ Oxidized Rhizospheres on Living Roots (C3)
- _____ Other (Explain in Remarks)

Secondary Indicators (Min. 2 Required)

- _____ Surface Soil Cracks (B6)
- _____ Drainage Patterns (B10)
- _____ Moss Trim Lines (B16)
- _____ Dry-Season Water Table (C2)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- _____ Stunted or Stressed Plants (D1)
- _____ Geomorphic Position (D2)
- _____ Shallow Aquitard (D3)
- _____ Microtopographic Relief (D4)
- _____ FAC-Neutral Test (D5)

Field Observations

Surface Water Present?	_____ Yes	_____ No	Depth (inches) _____	
Water Table Present?	_____ Yes	_____ No	Depth (inches) _____	**Wetland Hydrology Present?** _____ Yes
Saturation Present? (Includes capillary fringe)	_____ Yes	_____ No	Depth (inches) _____	X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - *Use scientific names* B/t A-10/11 and B-1 Upland

Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 *Black Willow (Salix nigra)*	25	YES	OBL
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
	25 =	Total Tree Cover	

Sapling/Shrub Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 --	--	--	--
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
	0 =	Total Sapling/Shrub Cover	

Herb Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 *Black Raspberry (Rubus occidentalis)*	60	YES	UPL
2 *Common St. John's-Wort (Hypericum perforatum)*	3	NO	UPL
3 *Japanese Honeysuckle (Lonicera japonica)*	3	NO	FACU
4 --	--	--	--
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
8 --	--	--	--
9 --	--	--	--
10 --	--	--	--
11 --	--	--	--
12 --	--	--	--
	66 =	Total Herb Cover	

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 --	--	--	--
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
	0 =	Total Woody Vine Cover	

Dominance Test Worksheet:

No. of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total No. of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 50.00 (C)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:		
OBL species	25	x	1	=	25
FACW species	0	x	2	=	0
FAC species	0	x	3	=	0
FACU species	3	x	4	=	12
UPL species	63	x	5	=	315
Column Totals	91 (A)				352 (B)

Prevalence Index = B/A = **3.9**

Hydrophytic Vegetation Indicators:

_____ Rapid Test for Hydrophytic Vegetation

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Morphological Adaptations[1]

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil & wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata

Tree- Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. in DBH and greater than 3.28 ft. (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants < 3.28 ft tall

Woody Vines - All woody vines greater than 3.28 ft in height

Hydrophytic Vegetation Present?

_____ Yes

X No

Remarks: (Include photo numbers here or on a separate sheet)

0

SOILS B/t A-10/11 and B-1 Upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Horizon	Depth (in)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
Fill	0-12	10YR 4/4	--	--	--	--	--	S	--
Fill	12-20+	10YR 5/6	--	--	--	--	--	S	--
--	--	0	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

____	Histosol (A1)	____	Polyvalue Below Surface (S8)	____	2cm Muck (A10) (**LRR K, L, MLRA 149B**)
____	Histic Epipedon (A2)		**(LRR R, MLRA 149 B)**	____	Coast Prairie Redox (A16) (**LRR K, L, R**)
____	Black Histic (A3)	____	Thin Dark Surface (S9)	____	5cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
____	Hydrogen Sulfide (A4)		**(LRR R, MLRA 149B**)	____	Dark Surface (S7) (**LRR K, L**)
____	Stratified Layers (A5)	____	LOAMY Mucky Mineral (F1)	____	Polyvalue Below Surface (S8) (**LRR K, L**)
____	Depleted Below Dark Surface (A11)		(**LRR K, L**)	____	Thin Dark Surface (S9) (**LRR K, L**)
____	Thick Dark Surface(A12)	____	Loamy Gleyed Matrix (F2)	____	Iron-Manganese Masses (F12) (**LRR K, L, R**)
____	Sandy Mucky Mineral (S1)	____	Depleted Matrix (F3)	____	Piedmont Floodplain Soils (F19) (**MLRA 149B**)
____	Sandy Gleyed Matrix (S4)	____	Redox Dark Surface (F6)	____	Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
____	Sandy Redox (S5)	____	Depleted Dark Surface (F7)	____	Red Parent Material (**F21**)
____	Stripped Matrix (S6)	____	Redox Depressions (F8)	____	Very Shallow Dark Surface (**TF12**)
____	Dark Surface (S7) (**LRR R, MLRA 149B**)			____	Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____ Depth: _____ inches

Hydric Soil Present?

____ Yes ___X___ No

Remarks:

0

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Revised: GZA 09/2014

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

X Wetland
Upland

Project Site: Consue Springs City/County: Nantucket Date 11/15/2011, 4/30/2015
Applicant/Owner: Town of Nantucket State: MA Sampling Point: B/t A-10/11 and B-1 -5 ft
Investigator(s): Erin Haugh/Steve Lecco (2011), Seth Taylor/SL (2015) Section/Township/Range: Coastal Salt Pond
Landform (hillslope, terrace, etc.): Filled Berm on Shore of Salt Pond Local Relief (concave, convex, none): Convex Slope (%): N/A
Subregion (LRR or MLRA): LRR S Latitude: 41.27696 Longitude: -70.09332 Datum: WGS 1984
Soil Map Unit Name: Water, Saline NWI Classification: PUBV
Are climatic/hydrologic conditions on site typical for this time of year? Yes X No (explain) ____
Is vegetation ____ Soil ____ Hydrology ____ Significantly Disturbed? (check if appropriate)
Is vegetation ____ Soil ____ Hydrology ____ Naturally Problematic? (check if appropriate)
Are "Normal Circumstances" present? X Yes ____ No

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	X Yes	____ No	Is the Sampled Area within a Wetland?	X Yes	
Hydric Soil Present?	X Yes	____ No		____ No	
Wetland Hydrology Present?	X Yes	____ No			

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B2)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Thin Muck Surface (C7)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Other (Explain in Remarks)

Secondary Indicators (Min. 2 Required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations

Surface Water Present?	X Yes	____ No	Depth (inches)	2
Water Table Present?	X Yes	____ No	Depth (inches)	0
Saturation Present? (Includes capillary fringe)	X Yes	____ No	Depth (inches)	0

Wetland Hydrology Present? X Yes ____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - *Use scientific names* B/t A-10/11 and B-1 Wetland

Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 *Black Willow (Salix nigra)*	3	YES	OBL
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
	3 =	Total Tree Cover	

Sapling/Shrub Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 --	--	--	--
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
	0 =	Total Sapling/Shrub Cover	

Herb Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 --	--	--	--
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
8 --	--	--	--
9 --	--	--	--
10 --	--	--	--
11 --	--	--	--
12 --	--	--	--
	0 =	Total Herb Cover	

Woody Vine Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1 --	--	--	--
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
	0 =	Total Woody Vine Cover	

Dominance Test Worksheet:

No. of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total No. of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 100.00 (C)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:		
OBL species	3	x	1	=	3
FACW species	0	x	2	=	0
FAC species	0	x	3	=	0
FACU species	0	x	4	=	0
UPL species	0	x	5	=	0
Column Totals	3 (A)				3 (B)

Prevalence Index = B/A = **1.0**

Hydrophytic Vegetation Indicators:

	Rapid Test for Hydrophytic Vegetation
X	Dominance Test is >50%
X	Prevalence Index is ≤3.0[1]
	Morphological Adaptations[1]
	Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil & wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata

Tree- Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. in DBH and greater than 3.28 ft. (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants < 3.28 ft tall

Woody Vines - All woody vines greater than 3.28 ft in height

Hydrophytic Vegetation Present?

X Yes

No

Remarks: (Include photo numbers here or on a separate sheet)

0

SOILS B/t A-10/11 and B-1 Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Horizon	Depth (in)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
--	--	0	--	--	--	--	--	--	Inundated
--	--	0	--	--	--	--	--	--	--
--	--	0	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

	Histosol (A1)		Polyvalue Below Surface (S8)		2cm Muck (A10) (**LRR K, L, MLRA 149B**)
	Histic Epipedon (A2)		**(LRR R, MLRA 149 B)**		Coast Prairie Redox (A16) (**LRR K, L, R**)
	Black Histic (A3)		Thin Dark Surface (S9)		5cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
	Hydrogen Sulfide (A4)		**(LRR R, MLRA 149B**)		Dark Surface (S7) (**LRR K, L**)
	Stratified Layers (A5)		LOAMY Mucky Mineral (F1)		Polyvalue Below Surface (S8) (**LRR K, L**)
	Depleted Below Dark Surface (A11)		(**LRR K, L**)		Thin Dark Surface (S0) (**LRR K, L**)
	Thick Dark Surface(A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (**LRR K, L, R**)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Piedmont Floodplain Soils (F19) (**MLRA 149B**)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Red Parent Material (**TF2**)
	Stripped Matrix (S6)		Redox Depressions (F8)		Very Shallow Dark Surface (**TF12**)
	Dark Surface (S7) (**LRR R, MLRA 149B**)			X	Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____ Depth: _____ inches

Hydric Soil Present?

X Yes _____ No

Remarks:

Area under 2" of water at low tide, soils were not examined.

US Army Corps of Engineers Northcentral and Northeast Region- Version 2.0

Revised: GZA 09/2014

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

	Wetland
X	Upland

Project Site: Consue Springs City/County: Nantucket Date 11/15/2011, 4/30/2015

Applicant/Owner: Town of Nantucket State: MA Sampling Point: B/t B30- and C-6 +5 ft

Investigator(s): Erin Haugh/Steve Lecco (2011), Seth Taylor/SL (2015) Section/Township/Range: Coastal Salt Pond

Landform (hillslope, terrace, etc.): Filled Berm on Shore of Salt Pond Local Relief (concave, convex, none): Convex Slope (%): N/A

Subregion (LRR or MLRA): LRR S Latitude: 41.27642 Longitude: -70.09273 Datum: WGS 1984

Soil Map Unit Name: Pawcatuck mucky peat NWI Classification: Urban or Developed

Are climatic/hydrologic conditions on site typical for this time of year? Yes X No (explain) _____

Is vegetation _____ Soil _____ Hydrology _____ Significantly Disturbed? (check if appropriate)

Is vegetation _____ Soil _____ Hydrology _____ Naturally Problematic? (check if appropriate)

Are "Normal Circumstances" present? X Yes _____ No

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	_____ Yes	X No	Is the Sampled Area within a Wetland?	_____ Yes	
Hydric Soil Present?	_____ Yes	X No			
Wetland Hydrology Present?	_____ Yes	X No		X No	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply)

- _____ Surface Water (A1)
- _____ High Water Table (A2)
- _____ Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2)
- _____ Drift Deposits (B2)
- _____ Algal Mat or Crust (B4)
- _____ Iron Deposits (B5)
- _____ Inundation Visible on Aerial Imagery (B7)
- _____ Sparsely Vegetated Concave Surface (B8)
- _____ Water-Stained Leaves (B9)
- _____ Aquatic Fauna (B13)
- _____ Marl Deposits (B15)
- _____ Hydrogen Sulfide Odor (C1)
- _____ Thin Muck Surface (C7)
- _____ Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Tilled Soils (C6)
- _____ Oxidized Rhizospheres on Living Roots (C3)
- _____ Other (Explain in Remarks)

Secondary Indicators (Min. 2 Required)

- _____ Surface Soil Cracks (B6)
- _____ Drainage Patterns (B10)
- _____ Moss Trim Lines (B16)
- _____ Dry-Season Water Table (C2)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- _____ Stunted or Stressed Plants (D1)
- _____ Geomorphic Position (D2)
- _____ Shallow Aquitard (D3)
- _____ Microtopographic Relief (D4)
- _____ FAC-Neutral Test (D5)

Field Observations

Surface Water Present?	_____ Yes	X No	Depth (inches)	_____
Water Table Present?	_____ Yes	X No	Depth (inches)	_____
Saturation Present? (Includes capillary fringe)	_____ Yes	X No	Depth (inches)	_____

Wetland Hydrology Present? _____ Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - *Use scientific names* B/t B30- and C-6 Upland

Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 --	--	--	--
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
	0 =	Total Tree Cover	

Sapling/Shrub Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 *Groundseltree (Baccharis halimifolia)*	5	YES	FACW
2 *Russian-Olive (Elaeagnus angustifolia)*	5	YES	FACU
3 *Twinsisters (Lonicera tatarica)*	3	YES	FACU
4 --	--	--	--
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
	13 =	Total Sapling/Shrub Cover	

Herb Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 *Grass (Graminae sp.)*	70	YES	UPL
2 *English Plantain (Plantago lanceolata)*	10	NO	FACU
3 *Black Raspberry (Rubus occidentalis)*	3	NO	UPL
4 *Rambler Rose (Rosa multiflora)*	3	NO	FACU
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
8 --	--	--	--
9 --	--	--	--
10 --	--	--	--
11 --	--	--	--
12 --	--	--	--
	86 =	Total Herb Cover	

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 --	--	--	--
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
	0 =	Total Woody Vine Cover	

Dominance Test Worksheet:

No. of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total No. of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 25.00 (C)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:		
OBL species	0	x	1	=	0
FACW species	5	x	2	=	10
FAC species	0	x	3	=	0
FACU species	21	x	4	=	84
UPL species	73	x	5	=	365
Column Totals	99 (A)				459 (B)

Prevalence Index = B/A = **4.6**

Hydrophytic Vegetation Indicators:

_____ Rapid Test for Hydrophytic Vegetation

_____ Dominance Test is >50%

_____ Prevalence Index is ≤3.0[1]

_____ Morphological Adaptations[1]

_____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil & wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata

Tree- Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. in DBH and greater than 3.28 ft. (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants < 3.28 ft tall

Woody Vines - All woody vines greater than 3.28 ft in height

Hydrophytic Vegetation Present?

_____ Yes

X No

Remarks: (Include photo numbers here or on a separate sheet)

0

SOILS B/t B30- and C-6 Upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Horizon	Depth (in)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
Fill	0-5	10YR 3/4	--	--	--	--	--	S	Loose granular fill with some woody debris
Fill	5-12	10YR 5/4	--	--	--	--	--	S	--
Fill	12-20+	7.5YR 5/6	--	--	--	--	--	S	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
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--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

	Histosol (A1)		Polyvalue Below Surface (S8)		2cm Muck (A10) (**LRR K, L, MLRA 149B**)
	Histic Epipedon (A2)		**(LRR R, MLRA 149 B)**		Coast Prairie Redox (A16) (**LRR K, L, R**)
	Black Histic (A3)		Thin Dark Surface (S9)		5cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
	Hydrogen Sulfide (A4)		**(LRR R, MLRA 149B**)		Dark Surface (S7) (**LRR K, L**)
	Stratified Layers (A5)		LOAMY Mucky Mineral (F1)		Polyvalue Below Surface (S8) (**LRR K, L**)
	Depleted Below Dark Surface (A11)		(**LRR K, L**)		Thin Dark Surface (S9) (**LRR K, L**)
	Thick Dark Surface(A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (**LRR K, L, R**)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Piedmont Floodplain Soils (F19) (**MLRA 149B**)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Red Parent Material (**F21**)
	Stripped Matrix (S6)		Redox Depressions (F8)		Very Shallow Dark Surface (**TF12**)
	Dark Surface (S7) (**LRR R, MLRA 149B**)				Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____ Depth: _____ inches

Hydric Soil Present?

_____ Yes X No

Remarks:

0

US Army Corps of Engineers Northcentral and Northeast Region- Version 2.0

Revised: GZA 09/2014

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region	X	Wetland
		Upland

Project Site: Consue Springs City/County: Nantucket Date 11/15/2011, 4/30/2015

Applicant/Owner: Town of Nantucket State: MA Sampling Point: B/t B30- and C-6 -5 ft

Investigator(s): Erin Haugh/Steve Lecco (2011), Seth Taylor/SL (2015) Section/Township/Range: Coastal Salt Pond

Landform (hillslope, terrace, etc.): Filled Berm on Shore of Salt Pond Local Relief (concave, convex, none): Concave Slope (%): N/A

Subregion (LRR or MLRA): LRR S Latitude: 41.27642 Longitude: -70.09273 Datum: WGS 1984

Soil Map Unit Name: Water, Saline NWI Classification: PUBV

Are climatic/hydrologic conditions on site typical for this time of year? Yes X No (explain) ____

Is vegetation ____ Soil ____ Hydrology ____ Significantly Disturbed? (check if appropriate)

Is vegetation ____ Soil ____ Hydrology ____ Naturally Problematic? (check if appropriate)

Are "Normal Circumstances" present? X Yes ____ No

SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	X Yes	____ No	Is the Sampled Area within a Wetland?	X Yes	
Hydric Soil Present?	X Yes	____ No		____ No	
Wetland Hydrology Present?	X Yes	____ No			

Remarks:

HYDROLOGY

Wetland Hydrology Indicators

Primary Indicators (minimum of one is required; check all that apply)

X	Surface Water (A1)	____	Water-Stained Leaves (B9)	____	Surface Soil Cracks (B6)
____	High Water Table (A2)	____	Aquatic Fauna (B13)	____	Drainage Patterns (B10)
X	Saturation (A3)	____	Marl Deposits (B15)	____	Moss Trim Lines (B16)
____	Water Marks (B1)	____	Hydrogen Sulfide Odor (C1)	____	Dry-Season Water Table (C2)
____	Sediment Deposits (B2)	____	Thin Muck Surface (C7)	____	Crayfish Burrows (C8)
____	Drift Deposits (B2)	____	Presence of Reduced Iron (C4)	X	Saturation Visible on Aerial Imagery (C9)
____	Algal Mat or Crust (B4)	____	Recent Iron Reduction in Tilled Soils (C6)	____	Stunted or Stressed Plants (D1)
____	Iron Deposits (B5)			____	Geomorphic Position (D2)
X	Inundation Visible on Aerial Imagery (B7)	____	Oxidized Rhizospheres on Living Roots (C3)	____	Shallow Aquitard (D3)
____	Sparsely Vegetated Concave Surface (B8)	____	Other (Explain in Remarks)	____	Microtopographic Relief (D4)
				____	FAC-Neutral Test (D5)

Secondary Indicators (Min. 2 Required)

Field Observations

Surface Water Present?	X Yes	____ No	Depth (inches)	6	
Water Table Present?	X Yes	____ No	Depth (inches)	0	
Saturation Present? (Includes capillary fringe)	X Yes	____ No	Depth (inches)	0	

Wetland Hydrology Present? X Yes ____ No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - *Use scientific names*

B/t B30- and C-6 Wetland

Tree Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 --	--	--	--
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
	0 =	Total Tree Cover	

Sapling/Shrub Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 *Groundseltree (Baccharis halimifolia)*	3	YES	FACW
2 *Russian-Olive (Elaeagnus angustifolia)*	3	YES	FACU
3 --	--	--	--
4 --	--	--	--
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
	6 =	Total Sapling/Shrub Cover	

Herb Stratum (Plot Size:)	Absolute % Cover	Dominant Species	Indicator Status
1 --	--	--	--
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
5 --	--	--	--
6 --	--	--	--
7 --	--	--	--
8 --	--	--	--
9 --	--	--	--
10 --	--	--	--
11 --	--	--	--
12 --	--	--	--
	0 =	Total Herb Cover	

Woody Vine Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1 --	--	--	--
2 --	--	--	--
3 --	--	--	--
4 --	--	--	--
	0 =	Total Woody Vine Cover	

Dominance Test Worksheet:

No. of Dominant Species That are OBL, FACW, or FAC: 1 (A)

Total No. of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 50.00 (C)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:		
OBL species	0	x	1	=	0
FACW species	3	x	2	=	6
FAC species	0	x	3	=	0
FACU species	3	x	4	=	12
UPL species	0	x	5	=	0
Column Totals	6 (A)				18 (B)

Prevalence Index = B/A = **3.0**

Hydrophytic Vegetation Indicators:

- ____ Rapid Test for Hydrophytic Vegetation
- ____ Dominance Test is >50%
- X Prevalence Index is ≤3.0[1]
- ____ Morphological Adaptations[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil & wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata

Tree- Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height

Sapling/shrub - Woody plants less than 3 in. in DBH and greater than 3.28 ft. (1 m) tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants < 3.28 ft tall

Woody Vines - All woody vines greater than 3.28 ft in height

Hydrophytic Vegetation Present?

X Yes

____ No

Remarks: (Include photo numbers here or on a separate sheet)

0

SOILS B/t B30- and C-6 Wetland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Horizon	Depth (in)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
--	--	0	--	--	--	--	--	--	Inundated
--	--	0	--	--	--	--	--	--	--
--	--	0	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators

	Histosol (A1)		Polyvalue Below Surface (S8)		2cm Muck (A10) (**LRR K, L, MLRA 149B**)
	Histic Epipedon (A2)		**(LRR R, MLRA 149 B)**		Coast Prairie Redox (A16) (**LRR K, L, R**)
	Black Histic (A3)		Thin Dark Surface (S9)		5cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
	Hydrogen Sulfide (A4)		**(LRR R, MLRA 149B**)		Dark Surface (S7) (**LRR K, L**)
	Stratified Layers (A5)		LOAMY Mucky Mineral (F1)		Polyvalue Below Surface (S8) (**LRR K, L**)
	Depleted Below Dark Surface (A11)		(**LRR K, L**)		Thin Dark Surface (S0) (**LRR K, L**)
	Thick Dark Surface(A12)		Loamy Gleyed Matrix (F2)		Iron-Manganese Masses (F12) (**LRR K, L, R**)
	Sandy Mucky Mineral (S1)		Depleted Matrix (F3)		Piedmont Floodplain Soils (F19) (**MLRA 149B**)
	Sandy Gleyed Matrix (S4)		Redox Dark Surface (F6)		Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
	Sandy Redox (S5)		Depleted Dark Surface (F7)		Red Parent Material (**TF2**)
	Stripped Matrix (S6)		Redox Depressions (F8)		Very Shallow Dark Surface (**TF12**)
	Dark Surface (S7) (**LRR R, MLRA 149B**)			X	Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____ Depth: _____ inches

Hydric Soil Present?

X Yes _____ No

Remarks:

Area under 6" of water at low tide, soils were not examined.

US Army Corps of Engineers Northcentral and Northeast Region- Version 2.0

Revised: GZA 09/2014

Appendix G

Property Owner Information

Nantucket Department of Public Works Stormwater Improvements & Consue Springs Tidal Pond Restoration Project			
Owner	**Property Address**	**Mailing Address**	**Parcel ID**
Nantucket Islands Land Bank	90 Union St. Nantucket, MA 02554	22 Broad St. Nantucket, MA 02554	3639
	86 Union St. Nantucket, MA 02554	22 Broad St. Nantucket, MA 02554	3645
Nantucket Conservation Foundation	112 Orange St. Nantucket, MA 02554	P.O. Box 13. Nantucket, MA 02554	3643
Town of Nantucket (Conservation Commission)	84 Union St. Nantucket, MA 02554	16 Broad St. Nantucket, MA 02554	3646
Town of Nantucket	84R Union St. Nantucket, MA 02554		3647
	4 Goose Pond Ln. Nantucket, MA 02554		3648
	Consue Springs Nantucket, MA 02554		10801

Appendix H

Site Photos

Goose Pond

View of Open Water, fringe Vegetated Wetland on the right of photo, retaining wall in the rear, Union St beyond that.

View: West

Spring 2012

Goose Pond

View of Open Water, Vegetated Wetland Dominated by Phragmites in rear of Photo, historical railroad bed on left.

View: South West

Spring 2012

Goose Pond

View of Open Water and fringe Vegetated Wetland in Rear, Floral composition within the salt pond is almost entirely algae.

View: East

Spring 2015

Washington Street Extension

View: Northeast

Spring 2015

Goose Pond

View of Algae in Water Column

View: Southeast

Spring 2015

Goose Pond and Railroad Bed

View of Footpath over historical Railroad Bed and of Vegetated Wetland in rear

View: Southwest

Spring 2015

Goose Pond and Adjacent Vegetated Wetland

Mown Area of Phragmites-Dominated Vegetated Wetland

View: Northwest

Spring 2012

Footpath over historical Railroad Bed

Footpath from Washington St. Extension

View: Southwest

Spring 2012

Footpath over historical Railroad Bed

View: Northeast

Spring 2012

Outlet Pipes under historical Railroad Bed

Outlet Pipes Discharging at Low Tide

View Northwest (looking upstream)

Spring 2012

Tidal Creek in The Creeks Salt Marsh at Low Tide

View: East

Spring 2012

Tidal Creek in The Creeks Salt Marsh at High Tide

View: East

Spring 2012

The Creeks Salt Marsh

View: East

Spring 2012

The Creeks Salt Marsh

View: East

Fall 2011

Appendix I

MEPA Certificate & MHC and BUAR Correspondence

The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

Deval L. Patrick
GOVERNOR

Maeve Vallely Bartlett
SECRETARY

Tel: (617) 626-1000
Fax: (617) 626-1181
http://www.mass.gov/envir

September 26, 2014

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME	: Consue Springs Tidal Pond Restoration
PROJECT MUNICIPALITY	: Nantucket
PROJECT WATERSHED	: Islands
EEA NUMBER	: 15257
PROJECT PROPONENT	: Town of Nantucket Department of Public Works
DATE NOTICED IN MONITOR	: August 27, 2014

Pursuant to the Massachusetts Environmental Policy Act (MEPA) (M.G. L. c. 30, ss. 61-62I) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project **does not require** the preparation of an Environmental Impact Report (EIR).

Project Description

The project involves work to improve water quality within the Goose Pond and Consue Springs system, and to help restore and improve saltmarsh habitat within the Consue Springs system. The work includes the construction of a new stormwater collection and conveyance system to intercept stormwater before it reaches Goose Pond; dredging of approximately 2,500 cubic yards of material from within the pond; and installation of a three-foot wide by two-foot high box culvert between Goose Pond and The Creek to improve tidal exchange. The project site is an undeveloped 4.42-acre parcel generally bounded by Union Street, Orange Street, Goose Pond Lane, and the Goose Pond Trail.

Permitting and Jurisdiction

The project is undergoing MEPA review and requires submission of an ENF pursuant to 301 CMR 11.03(3)(b)(1) (a) because it will alter Coastal Bank, and 11.03(3)(b)(1)(f) because it

will alter ½ or more acres of other wetlands, and it requires State Agency Permits. The project requires a 401 Water Quality Certification and a Chapter 91 (c.91) License from the Massachusetts Department of Environmental Protection (MassDEP).

It will undergo Federal Consistency Review by the Office of Coastal Zone Management (CZM). It also requires an Order of Conditions under the Wetlands Protection Act and Nantucket Wetlands Bylaw from the Nantucket Conservation Commission, and a Section 404 Permit from the U.S. Army Corps of Engineers (ACOE). It may also require a National Pollutant Discharge Elimination System (NPDES) Stormwater Permit for Construction Activities and/or a NPDES Dewatering Permit from the U.S. Environmental Protection Agency.

Because the Town may seek Financial Assistance from the Commonwealth for the project, MEPA jurisdiction is broad and extends to all aspects of the project that have the potential to cause Damage to the Environment, as defined in the MEPA regulations.

Review of the ENF

The ENF provided a brief description of the project, preliminary project plans, an alternatives analysis, and identified measures to avoid, minimize and mitigate project impacts.

Wetlands and Stormwater

The ENF indicates that the project will result in temporary impacts to 30 linear feet (lf) of Coastal Bank, 30,425 square feet (sf) of Land Under the Ocean (LUO), 2,540 sf of Bordering Vegetated Wetlands (BVW), 41,925 sf of Bordering Land Subject to Flooding, and 3.33 sf of Land Subject to Coastal Storm Flowage. Most of the impacts to BVW would result from the proposed installation of a storm drain from Orange Street. In its comments MassDEP questions whether the Town considered the use of horizontal directional drilling in order to avoid these impacts. The Town's Notice of Intent to the Conservation Commission should include a restoration or replication plan for the proposed alteration of BVW. It should also identify a final site for the disposal of dredged material if it is located in an area under the jurisdiction of the Wetlands Protection Act.

In its comments, MassDEP states that the project meets the definition of redevelopment with respect to the Stormwater Management Standards at 310 CMR 10.04 and 314 CMR 9.02; therefore, the project would be expected to comply with any applicable Stormwater Management Standards to the maximum extent practicable. Because the project includes the installation of a new culvert, drainage pipes and associated headwalls, it will require a c.91 License. Jurisdiction of the c.91 License is limited to the area below Mean High Water within Goose Pond. MassDEP also has determined that the project would be classified as a water-dependent use in accordance with the Waterways Regulations at 310 CMR 9.12.

The ENF does not include any water or sediment sampling data for Goose Pond; however, prior testing conducted as part of the assessment and feasibility study for the project found that pond sediments contain high levels of bacteria due to its large waterfowl population. In its comments, CZM indicates its support for the Town's efforts to remove these contaminated

sediments from the pond, which currently acts as a source of bacterial pollution to the adjacent salt marsh system. In conjunction with this effort, CZM recommends that the Town develop a management plan for the Goose Pond area that would address the feeding of the waterfowl in the pond, including but not limited to the creation of a vegetative buffer around the edge of the pond as a way to help to discourage this activity. CZM also encourages the Town to consult with the staff of the Department of Fish and Game's Division of Ecological Restoration to ensure that the box culvert is designed to maximize tidal exchange within Goose Pond.

The proposed conditions plan presented in the ENF does not show alteration to Salt Marsh from the proposed installation of the box culvert and headwall; however, according to a plan note, the wetland delineation shown represents flags that were present at the time of the wetlands survey conducted in January, 2012. The Town should note that, pursuant to the Wetlands Protection regulations at 310 CMR 10.32(3), a proposed project within a salt marsh, on lands within 100 feet of a salt marsh, or in a body of water adjacent to a salt marsh shall not destroy any portion of the salt marsh and shall not have an adverse effect on the productivity of the salt marsh. However, a project that will restore or rehabilitate a salt marsh, or create a salt marsh, may be permitted pursuant to 310 CMR 10.32(5).

Historic and Archeological Resources

The Town should note the comments submitted by the Board of Underwater Archeological Resources, as well as the letter sent by the Massachusetts Historical Commission (MHC) to ACOE. MHC has determined the project area to be archeologically sensitive and requests that an intensive survey be conducted prior to the commencement of any work. Because the project proposes to dredge the pond, this survey should include the pond itself, as well as the upland portions of the site.

Conclusion

The ENF has sufficiently defined the nature and general elements of the project for the purposes of MEPA review and demonstrated that the project's environmental impacts will be avoided, minimized and/or mitigated to the extent practicable. Based on the information in the ENF and after consultation with State Agencies, I find that no further MEPA review is required at this time. Remaining issues can be addressed through the local, state and federal permitting and review processes.

September 26, 2014
Date

for Maeve Vallely Bartlett

Comments received:

09/10/2014	Massachusetts Office of Coastal Zone Management (CZM)
09/12/2014	Massachusetts Division of Marine Fisheries (DMF)
09/16/2014	Massachusetts Department of Environmental Protection – Southeast Regional Office (MassDEP/SERO)
09/17/2014	Massachusetts Board of Underwater Archeological Resources (BUAR)

MVB/RAB/rab

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

MEMORANDUM

TO: Maeve Vallely Bartlett, Secretary, EEA
ATTN: Anne Canaday, MEPA Unit
FROM: Bruce Carlisle, Director, CZM
DATE: September 10, 2014
RE: EEA-15258, Consue Springs Tidal Pond Restoration Project, Nantucket

---

The Massachusetts Office of Coastal Zone Management (CZM) has completed its review of the above-referenced Environmental Notification Form (ENF), noticed in the *Environmental Monitor* dated August 27, 2014 and offers the following comments.

Project Description

The project involves work to improve water quality within the Goose Pond and Consue Springs system, and to help restore and improve saltmarsh habitat within the Consue system. The work includes the construction of a new stormwater collection and conveyance system to intercept stormwater before it reaches Goose Pond; dredging of approximately 2,500 cubic yards of material from within the pond; and installation of a 3 foot wide x 2 foot high box culvert between Goose Pond and The Creek to improve increase tidal exchange within Goose Pond. The project requires an Order of Conditions under the Wetlands Protection Act and Nantucket Weltands Bylaw, a 401 Water Quality Certification and Chapter 91 License from the Massachusetts Department of Environmental Protection, a U.S. Army Corps Section 404 Permit, and Coastal Zone Management Federal Consistency Review.

Project Comments

CZM has reviewed the ENF, visited the site and is familiar with the Town's stormwater and restoration efforts for the Consue Springs and The Creek's system. CZM has funded three prior stormwater projects designed to treat strormwater in the upper portions of the Consue Spring watershed. CZM has also funded an assessment and feasibility study to look at options for the dredging and restoration of Goose Pond. CZM is pleased to see that the Town is continuing these efforts with the work proposed in the ENF. The ENF does not contain any water sampling data or sediment sampling data for Goose Pond, however prior testing done as part of the assessment and feasibility study found that pond sediments contained high levels of bacteria due to the large population of waterfowl in the pond. CZM is supportive of the Town's efforts to remove these contaminated sediments from the pond, which currently acts as a source of bacterial pollution to The Creek's salt marsh system. In conjunction with this effort, CZM recommends that the Town develop a management plan for the Goose Pond area that addresses the continued feeding of the waterfowl in the pond. In the past, the creation of a vegetative buffer around the edge of the pond has been discussed as a way to help control and manage this activity, and thereby reduce future bacterial loadings to this system. CZM also encourages the Town to consult with the staff at the Massachusetts Division of Ecological Restoration to help ensure the proposed box culvert maximizes tidal exchange within Goose Pond.

Federal Consistency

The proposed project may be subject to CZM federal consistency review. For further information on this process, please contact, Robert Boeri, Project Review Coordinator, at 617-626-1050 or visit the CZM web site at www.state.ma.us/czm/fcr.htm.

BKC/sm

cc: Stephen McKenna,
CZM Cape & Islands Regional Coordinator
Elizabeth Kouloheras, Section Chief
Southeast Regional Office, MA DEP
Kara Buzanowski, Nantucket Department of Public Works
188 Madaket Road, Nantucket MA 02554
Stephen Lecco, GZA GeoEnvironmental, Inc.
1350 Main Street, Suite1400, Springfield, MA 01103

Canaday, Anne (EEA)

From: Petitpas, Christian (FWE)
Sent: Friday, September 12, 2014 4:33 PM
To: Canaday, Anne (EEA)
Cc: Chris Boelke; 'Alison Verkade - NOAA Affiliate'; Boeri, Robert (EEA); Ed Reiner (E-mail); Chin, Ken (DEP); 'jcarlson@nantucket-ma.gov'; 'stephen.lecco@gza.com'
Subject: EEA# 15257, Town of Nantucket DPW

Secretary Maeve Vallely Bartlett
Executive Office of Energy and Environmental Affairs (EEA)
Attn: MEPA Office
Anne Canaday, EEA No. 15257
100 Cambridge Street, Suite 900
Boston, MA 02114

Dear Secretary Bartlett:

The Division of Marine Fisheries (*MarineFisheries*) has reviewed the Environmental Notification Form by the Town of Nantucket Department of Public Works for the proposed Consue Springs Tidal Pond Restoration project. The project involves improvements to the existing stormwater system around Goose Pond, installation of two Stormceptor units, abandonment of existing discharge pipes, dredging of Goose Pond, and installation of a 3' W x 2' H box culvert at "The Creek" to increase tidal flushing at the site off of Union Street in the Town of Nantucket. The proposed project was reviewed with respect to potential impacts to marine fisheries resources and habitat.

The scope of work as currently proposed is not expected to impact marine resources so *MarineFisheries* has no recommendations for sequencing, timing, or methods that would avoid or minimize impact at this time.

Questions regarding this review may be directed to John Logan in our New Bedford office at 508-990-2860 ext. 141.

Sent on behalf of John Logan

MEMORANDUM

TO: Anne Canaday, Environmental Reviewer, MEPA Unit

THROUGH: Jonathan Hobill, Regional Engineer, Bureau of Resource Protection
Philip Weinberg, Regional Director
David Johnston, Deputy Regional Director, BRP
Maria Pinaud, Deputy Regional Director, BWP
Millie Garcia-Serrano, Deputy Regional Director, BWSC
Brenda Chabot, Deputy Regional Director, ADMIN

CC: Elizabeth Kouloheras, Chief, Wetlands and Waterways
Christine Odiaga, Wetlands Program
Pamela Truesdale, Municipal Facilities
Leonard Pinaud, Chief, Site Management
Allen Hemberger, Site Management
Nantucket Conservation Commission

FROM: Sharon Stone, SERO MEPA Coordinator

DATE: September 16, 2014

RE: ENF EOEEA #15257 – NANTUCKET – Consue Springs Tidal Pond Restoration, Union Street

****

"For Use in Intra-Agency Policy Deliberations"

The Southeast Regional Office of the Department of Environmental Protection (MassDEP) has reviewed the Environmental Notification Form (ENF) for the proposed Consue Springs Tidal Pond restoration project to be located at Union Street, Nantucket, Massachusetts (EOEEA #15257). The project proponent provides the following information for the project:

"The proposed project involves three general components:

1) **Improvements to the existing stormwater system around Goose Pond**
2) **Dredging of Goose Pond**
3) **Improved tidal connection between Goose Pond and The Creek.**

Permits listed in the ENF to be sought for the project include the following:

Order of Conditions – MA Wetlands Protection Act and Nantucket Bylaw
MassDEP 401 Water Quality Certificate; Dredge Permit
USACE Section 404 Permit."

Wetlands and Waterways Program Comments
The Wetlands and Waterways Program offers the following comments on the subject ENF:

- The proposed activities require a Wetlands Protection Act (WPA) Order of Conditions; a Notice of Intent (NOI) must be submitted to Nantucket Conservation Commission for all temporary and permanent alterations to Land Under Ocean, Coastal Bank, Bordering Vegetated Wetland (BVW), Bordering Land Subject to Flooding and Land Subject to Coastal Storm Flowage, and to Buffer Zones where applicable.

- The Proposed Preliminary Site Plan does not show alteration to Salt Marsh from installation of the box culvert and headwall; but according to a plan note, the wetland delineation shown represents flags that were [already] present at the time of the survey in January 2012. The Proponent should note that, per 310 CMR 10.32(3), a proposed project in a salt marsh, on lands within 100 feet of a salt marsh, or in a body of water adjacent to a salt marsh shall not destroy any portion of the salt marsh and shall not have an adverse effect on the productivity of the salt marsh. However, a project which will restore or rehabilitate a salt marsh, or create a salt marsh, may be permitted per 310 CMR 10.32(5).

- The ENF indicates 2,540 sf of temporary BVW alteration, most of which will be for installation of a storm drain from Orange Street; has directional drilling been considered, to avoid the bulk of that alteration? The NOI should include a restoration or replication plan for BVW alteration.

- An individual 401 Water Quality Certification is required for proposed dredging in waters of the United States within the Commonwealth; a BRP WW08 application must be submitted to the MassDEP Boston office.

- This stormwater retrofit project meets the definition of Redevelopment with respect to the Stormwater Management Standards at 310 CMR 10.04 and 314 CMR 9.02; therefore, compliance with any Stormwater Management Standards that are relevant to the proposed activities would be only to the maximum extent practicable.

- A final location for the disposal of dredged material has not yet been identified. If disposal occurs within WPA jurisdiction, the activity would have to be included in the Notice of Intent.

- Since Goose Pond is subject to tidal action, the area below the Mean High Water Line is subject to Chapter 91 jurisdiction.

- The project which includes the installation of a new culvert, drainage pipes and associated headwalls will require the submittal of a Chapter 91 License application. The improvement dredging component of the project would be included in the License conditions. The Waterways Program has determined that the project would be classified

as a water-dependent use in accordance with the Waterways Regulations at 310 CMR 9.12.

Construction Stormwater Permit
The project construction activities may disturb one or more acres of land and therefore, may require a NPDES Stormwater Permit for Construction Activities. The proponent can access information regarding the NPDES Stormwater requirements and an application for the Construction General Permit at the EPA website: http://cfpub.epa.gov/npdes/stormwater/cgp.cfm

Dewatering NPDES Permit
If dewatering activities are to occur during construction, an EPA NPDES dewatering permit may be required.

Bureau of Waste Site Cleanup
Based upon the information provided, the Bureau of Waste Site Cleanup (BWSC) searched its databases for disposal sites and release notifications that may have occurred within and around the proposed project area. A disposal site is a location where there has been a release to the environment of oil and/or hazardous material that is regulated under M.G.L. c. 21E, and the Massachusetts Contingency Plan [MCP – 310 CMR 40.0000].

The proposed project involves improvements to the pond including dredging, upgrades to stormwater controls, and construction of a new culvert to connect the pond to the creek. There are twenty-one listed disposal sites located within one-half mile of the proposed project area. Seventeen of the listed disposal sites have been closed under the MCP, and require no further remedial actions. Note that one of the closed disposal sites was closed under a Temporary Solution, and continued reporting is required under the MCP. The associated Release Tracking Number (RTN) for that site is 4-317, On Island Gas, 34 Sparks Street, located approximately 0.25-miles south of the proposed project area.

There are four open MCP disposal sites located within one-half mile of the proposed project area. Two of the RTNs, 4-702 and 4-18335, are associated with the bulk fuel storage facility on New Whale Street, located approximately 0.4-miles north-northwest of the proposed project area. Another open site is RTN 4-363, Nantucket Harbor Boat Basin, also located approximately 0.4-miles north-northwest of the proposed project area. Finally, RTN 4-16608, 129 Orange Street, is located approximately 300 feet south of the proposed project area. Continued response actions are required at these four open disposal sites prior to site closure under the MCP.

There are no other listed disposal sites located at or within one-half mile of the proposed project area. The MCP compliance status of these and other BWSC disposal sites may be viewed using the BWSC Waste Sites/Reportable Release Lookup at: http://public.dep.state.ma.us/SearchableSites2/Search.aspx

The Project Proponent is advised that if oil and/or hazardous material are identified during the implementation of this project, notification pursuant to the Massachusetts Contingency Plan (310 CMR 40.0000) must be made to MassDEP, if necessary. A Licensed Site Professional (LSP) should be retained to determine if notification is

required and, if need be, to render appropriate opinions. The LSP may evaluate whether risk reduction measures are necessary or prudent if contamination is present. The BWSC may be contacted for guidance if questions arise regarding cleanup.

Proposed s.61 Findings

The "Certificate of the Secretary of Energy and Environmental Affairs on the Environmental Notification Form" may indicate that this project requires further MEPA review and the preparation of an Environmental Impact Report. Pursuant to MEPA Regulations 301 CMR 11.12(5)(d), the Proponent will prepare Proposed Section 61 Findings to be included in the EIR in a separate chapter updating and summarizing proposed mitigation measures. In accordance with 301 CMR 11.07(6)(k), this chapter should also include separate updated draft Section 61 Findings for each State agency that will issue permits for the project. The draft Section 61 Findings should contain clear commitments to implement mitigation measures, estimate the individual costs of each proposed measure, identify the parties responsible for implementation, and contain a schedule for implementation.

The MassDEP Southeast Regional Office appreciates the opportunity to comment on this proposed project. If you have any questions regarding these comments, please contact Sharon Stone at (508) 946-2846.

Canaday, Anne (EEA)

From: Mastone, Victor (EEA)
Sent: Wednesday, September 17, 2014 11:30 AM
To: Canaday, Anne (EEA)
Subject: 15257-Consue Springs Pond Restoraion

Anne,

In checking the MEPA Monitor, I see that BUAR has missed the deadline to submit comments on the above referenced project. However, BUAR has conducted a review of its files and other sources. While BUAR has no record for submerged cultural resources, such as shipwrecks, in the project area, it does consider the area to be archaeological sensitive for ancient Native American uses and sites. BUAR concurs with MHC's determination the area is archaeologically sensitive and supports request for an intensive archaeological survey. As dredging of the pond is being proposed, BUAR believes the archaeological investigation should also include the pond and not just upland portions of the project area.

Thank you for your consideration of these comments. If you should have any questions, do not hesitate to contact BUAR.

Sincerely,

Vic

Victor T. Mastone
Director and Chief Archaeologist
Board of Underwater Archaeological Resources
251 Causeway Street, Suite 800
Boston, MA 02114
Direct Line: 617-626-1141
Fax line: 617-626-1240
Email: victor.mastone@state.ma.us
Website: http://www.mass.gov/eea/agencies/czm/buar/

AC

The Commonwealth of Massachusetts

William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

August 29, 2014

RECEIVED
SEP 03 2014
MEPA

Karen Kirk Adams
Chief, Permits and Enforcement Branch
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

RE: Consue Springs Pond Restoration and Stormwater Improvements, Goose Pond, Union Street, Nantucket. MHC #RC.52206. EEA #15257.

Dear Ms. Adams:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the Environmental Notification Form (ENF), received August 14, 2014, for the project referenced above. The project includes stormwater quality improvements, including installation of stormwater interceptors and piping at the intersection of Union and Orange Street through Nantucket Land Bank properties at 90 and 86 Union Street and Nantucket Conservation Fund property at 112 Orange Street, dredging of Goose Pond and the installation of a box culvert at the location of existing drain pipes under the former Nantucket Railroad embankment at the Creek.

The project requires review and permitting by the US Army Corps of Engineers. The MHC is reviewing a related bike path project that includes the construction of an approximately 1,200 foot bike path between Washington Street and Orange Street on the former Nantucket railroad embankment (MHC # RC.51502, MADOT # 606433) proposed to be funded by the Federal Highway Administration, through the Massachusetts Highway Department (MADOT). The proposed Goose Pond dredging and culvert rehabilitation is included as an element of the bike path project, and the projects appear to be related. The MHC will review the projects under Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800) and looks forward to consultation with the involved federal agencies for the projects.

Review of the Inventory of Historic and Archaeological Assets of the Commonwealth indicates that the project is within the Nantucket Historic District (NAN.C), a National Historic Landmark, which is listed in the State and National Registers of Historic Places and is also a local historic district. The project area is adjacent to multiple recorded archaeological sites. Undisturbed portions of the uplands within the stormwater quality improvements project area are considered by MHC to be archaeologically sensitive. This sensitivity is due to the favorable environmental characteristics of the area, with level, well-drained soils, favorable for ancient and historic period land use and occupation in proximity to the wetlands, fresh and saltwater resources of the Creek and Nantucket Sound.

The MHC requests that an intensive (locational) archaeological survey (950 CMR 70) be conducted for the archaeologically sensitive portions of the project. The purpose of the survey is to locate and identify any significant historic or archaeological resources that may be affected by the project. The results of the survey will provide information to assist in consultation to avoid, minimize or mitigate any adverse effects to significant archaeological resources. A State Archaeologist's permit application (950 CMR 70) should be submitted to the MHC by a qualified professional archaeological consultant.

220 Morrissey Boulevard, Boston, Massachusetts 02125
(617) 727-8470 • Fax: (617) 727-5128
www.sec.state.ma.us/mhc

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), M.G.L c. 9. ss 26-27C (950 CMR 70-71) and MEPA (301 CMR 11). If you have any questions or require additional information, please contact Jonathan K. Patton at this office.

Sincerely,

for: Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc: Kate Atwood, USACOE-NED
Bettina Washington, Wampanoag Tribe of Gay Head (Aquinnah)
Ramona Peters, Mashpee Wampanoag Tribe
John Rempelakis, MADOT
Secretary Maeve Vallely Bartlett, EEA, Attn: Anne Canaday, MEPA Unit
Victor Mastone, MBUAR
Bob Boeri, MA Office of Coastal Zone Management
DEP-SERO, Wetlands & Waterways
C. Elizabeth Gibson, Nantucket Town Administrator
Kara Buzanowski, Nantucket Department of Public Works
Mark Voigt, Nantucket Historic District Commission
Deborah Timmerman, Nantucket Historical Commission
Stephen Lecco, GZA GeoEnvironmental, Inc.

December 16, 2015

Kevin Kotelly
Chief, Permits and Enforcement Branch
US Army Corps of Engineers
New England District
696 Virginia Road
Concord, MA 01742-2751

The Commonwealth of Massachusetts
William Francis Galvin, Secretary of the Commonwealth
Massachusetts Historical Commission

RE: Consue Springs Pond Restoration and Stormwater Improvements, Goose Pond, Union Street, Nantucket. MHC #RC.52206. EEA #15257.

Dear Mr. Kotelly:

Staff of the Massachusetts Historical Commission (MHC) have reviewed the technical archaeological reports, *Intensive (Locational) Archaeological Survey Consue Springs Pond Restoration and Storm Water Improvements, Nantucket, Massachusetts*, prepared by the PAL, Inc., and *Marine Archaeological Core Monitoring for the Consue Springs Pond Restoration Project, Nantucket, Massachusetts*, prepared by HRA Gray & Pape, submitted by the PAL, received December 10, 2015, for the project referenced above.

Results of the intensive (locational) archaeological survey and marine archaeological coring for the project yielded no significant historic or archaeological resources. Since no significant historic or archaeological resources were identified within the project area MHC concurs with the management recommendation provided in these technical reports. No further survey is recommended for the project, as proposed.

In the MHC's staff opinion, the Corps could make a finding of "no adverse effect" (36 CFR 800.5(b); 950 CMR 71.07(2)(b)(2)) to the Nantucket Historic District (NAN.C), for the project as proposed. If project plans change in future, then current project information should be submitted to the MHC for review and comment.

These comments are offered to assist in compliance with Section 106 of the National Historic Preservation Act of 1966, as amended (36 CFR 800), M.G.L c. 9. ss 26-27C (950 CMR 71) and MEPA (301 CMR 11). If you have any questions or require additional information, please contact Jonathan K. Patton at this office.

Sincerely,

Brona Simon

Brona Simon
State Historic Preservation Officer
Executive Director
State Archaeologist
Massachusetts Historical Commission

xc: Kate Atwood, USACOE-New England District
Bettina Washington, Wampanoag Tribe of Gay Head (Aquinnah)
Ramona Peters, Mashpee Wampanoag Tribe
John Rempelakis, MADOT
Secretary Matthew A. Beaton, EEA, Attn: Anne Canaday, MEPA Unit
Victor Mastone, MBUAR
Bob Boeri, MA Office of Coastal Zone Management
DEP-SERO, Wetlands & Waterways
C. Elizabeth Gibson, Nantucket Town Administrator
Kara Buzanowski, Nantucket Department of Public Works
Mark Voigt, Nantucket Historic District Commission
Deborah Timmerman, Nantucket Historical Commission
Stephen Lecco, GZA GeoEnvironmental, Inc.
Deborah C. Cox, PAL, Attn: Duncan Ritchie

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The COMMONWEALTH OF MASSACHUSETTS
BOARD OF UNDERWATER ARCHAEOLOGICAL RESOURCES
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
251 Causeway Street, Suite 800, Boston, MA 02114-2136
Tel. (617) 626-1141 Fax (617) 626-1240 Web Site: www.mass.gov/eca/agencies/czm/buar/

December 28, 2015

Mr. Duncan Ritchie, RPA
PAL
26 Main Street
Pawtucket, RI 02860

RE: Marine Archaeological Core Monitoring for Consue Springs Pond Restoration and Storm Water Improvements, Nantucket, Massachusetts
BUAR Special Use Permit 15-001

Dear Mr. Ritchie,

The staff of the Massachusetts Board of Underwater Archaeological Resources has completed its review of the above referenced project's *Technical Report, Intensive (Locational) Archaeological Survey, Consue Springs Pond Restoration and Storm Water Improvements, Nantucket, Massachusetts* (August 2015) and *Marine Archaeological Core Monitoring for Consue Springs Pond Restoration and Storm Water Improvements, Nantucket , Massachusetts* (Draft, June 26, 2015). This research was conducted and prepared by HRA-Gray & Pape (under SUP 15-001) and The Public Archaeology Laboratory, Inc. The Board concurs with the report's conclusions and recommendations for both reports.

The Board appreciates the opportunity to provide these comments as part of the review process. Should you have any questions regarding this letter, please do not hesitate to contact me at the address above, by email at victor.mastone@state.ma.us, or by telephone at (617) 626-1141.

Sincerely,

Victor T. Mastone
Director and Chief Archaeologist

/vtm
Cc: Brona Simon, MHC
Michael Tuttle, HRA Gray & Pape

Printed on Recycled Paper

Appendix J

Proof of Mailings

Appendix K

Horsley Witten Group Memorandum

Horsley Witten Group
Sustainable Environmental Solutions
90 Route 6A • Sandwich, MA • 02563
Tel: 508-833-6600 • Fax: 508-833-3150 • www.horsleywitten.com

MEMORANDUM

TO: Tim Smith, Massachusetts Wetlands Restoration Program

FROM: Richard A. Claytor, P.E.

DATE: June 30, 2006

RE: Hydrologic/Hydraulic Investigation for the Consue Springs, Town of Nantucket

---

The Horsley Witten Group (HW), through the Massachusetts Wetlands Restoration Program, has examined the hydrologic and hydraulic characteristics of the tidal culvert that connects Nantucket Harbor with Consue Springs in the Town of Nantucket. This investigation included collection and analysis of water level data, field survey of the existing culverts and adjacent low-lying property, and analytical modeling to evaluate culvert replacement options that may improve flushing and mixing between Consue Springs and Nantucket Harbor.

Consue Springs, a pond and wetland complex near the intersection of Orange and Union Streets, is separated from Nantucket Harbor and adjacent salt marsh by an abandoned railroad bed (Figure 1). The culvert structure consists of a pair of 18-inch pipes that serve to convey stormwater runoff out of Consue Springs and allow limited passage of tidal flows. A dredging feasibility study prepared by Vine Associates and ATP Environmental for the Nantucket Land Council in June 2004, states that the invert elevations of the culverts are too high to allow adequate tidal flushing of Consue Springs.

Data Collection

HW delineated the surrounding wetland area between March 27th and 29th, 2006 and collected topographical survey data on May 17th and May 28th, 2006. Survey data collected by Greenman Pederson, Inc. during March 2006 as part of a bike trail feasibility study were also incorporated. Elevations were adjusted to the Nantucket Half Tide Datum (NHTD) unless otherwise noted. Figure 2 summarizes these efforts and provides a representation of observed conditions within the study area.

The existing culverts were found to consist of two 18-inch concrete pipes that project out of the earthen berm on both ends (Figure 3 photos). The pipes are about 31 and 33 feet in length. Invert elevations of the pipes at the Consue Springs entrance were found to be at 1.13 and 1.08 feet, NHTD. Invert elevations of the pipes at the marsh side were found to be 0.97 and 0.98 feet, NHTD.

Electronic pressure transducers were deployed between March 27, 2006 and May 17, 2006 to collect water level measurements on both sides of the culverts at fifteen-minute intervals. These water level data were successfully retrieved from the Consue-side unit and adjusted to elevations, but the marsh-side unit failed and yielded no data. To compensate, data from the near-by Center of Operational Oceanographic Products and Services (CO-OPS) tide data station were used. This station is located on Steamboat Wharf in Nantucket Harbor about 0.6 miles from Consue Springs (Figure 4). These data were retrieved in 6-minute increments based on Mean Low Low Water (MLLW) elevation datum and were adjusted to NHTD based on published vertical benchmark data.

The tidal data demonstrates that high water elevations within Consue Springs and Nantucket Harbor are generally within a tenth of a foot or so during dry weather. This indicates that the existing culverts are not significantly restrictive of incoming tides. High water elevations in Consue Springs were observed to exceed those in the Harbor during periods of wet weather. This indicates that the culvert restricts stormwater runoff that collects in Consue Springs and flows out to the Harbor. The likely data also show that low water elevations in Consue Springs are limited by the invert elevations of the culverts (Figure 5). This appears to prevent adequate tidal exchange as stated in the dredging study.

Existing Conditions Model

HW modeled the existing headwater/tailwater condition, using the hydraulic evaluation software, PondPack (V.10.0 by Haestad Methods). The observed tidal cycle was input into the software as a tailwater outlet from Nantucket Harbor, along with the existing culvert specifications in order to reproduce the existing headwater stage fluctuation. The following assumptions were made with respect to culvert characteristics. These assumptions likely account for the variations between the observed tidal cycle and the modeled cycle.

- Culvert parameters such as roughness coefficient, entry and exit loss coefficients, culvert geometry, sediment depth, etc., were estimated based on field observations of the condition of the culvert. The non-uniformity of the culvert geometry and the uneven texture of the culvert walls could not be simulated exactly; however, typical values for concrete pipe were assumed to be adequate for model simulations.

- The bathymetry of the Pond was interpolated from Nantucket GIS topographic contours and information found in a Dredging Feasibility Study conducted for the upstream Pond, prepared for the Nantucket Land Council Inc., June 2004, by Vine Associates, Inc.

A 24-hour tidal cycle was simulated using the PondPack software and compared to actual headwater fluctuation data collected in the field. The model was then calibrated by adjusting culvert and the Pond bathymetry parameters within acceptable value ranges. Once a good match between modeled and observed conditions with the existing culvert was obtained, the model was considered calibrated to existing conditions, and various simulated culvert configurations were evaluated to model headwater/tailwater relationships that would provide improved flushing of the Pond.

Figure 6 presents observed surface water elevations in Consue Springs as well as in Nantucket Harbor for a 24-hour period from April 28th to 29th, 2006. This event was selected for the lowest tide elevation from our observation period. In addition, the modeled existing condition of Consue Springs is also shown on the figure to indicate the degree of calibration achieved.

Model Evaluation of Potential Restoration Scenarios

HW modeled two potential restoration scenarios expected to improve tidal flushing within Consue Springs. Maximum flushing would be indicated by near-identical water elevations on both sides of the culvert during periods of dry weather. Considering that the existing structures appear to provide sufficient hydraulic capacity, the modeled restoration scenarios both involve a box culvert with a two-foot high by two-foot wide (2'x 2') opening that provides similar hydraulic capacity. Box culverts are preferred over pipes as they generally provide advantages related to overall cross-sectional area, wildlife passage, and ease of construction.

The two scenarios modeled involve two different invert elevations. The first involves lowering a proposed box culvert to an elevation of 0.39-feet to match the channel bottom on the marsh side near the existing culvert outlet. This is the lowest elevation that could be achieved without excavating within the marsh channel. The second scenario involves lowering a proposed box culvert to an elevation of -1.42-feet. This would involve excavating the marsh channel and a portion of Consue Springs to establish a hydraulic connection with the lower depths of the duck pond.

1.42?

Model results indicate that by dropping the invert elevations as described above, low tide in Consue Springs would decrease to approximately 0.85-feet and 2.29-feet, respectively (Figure 7). For example, the existing culvert is at elevation 1.13 feet on the Pond side and would be dropped by 0.74-feet to an elevation of 0.39 feet in the first scenario. The existing condition shows the lowest water elevation reaching approximately 1.31 feet on the Pond side. However, under proposed condition (invert of 0.39 feet) the lowest water elevation would reach approximately 0.46 feet (a net of approximately 0.85 feet). High tide elevations in Consue Springs would very nearly match those in the Harbor as they do now. Table 1 below summarizes the existing and proposed alternative culvert configurations.

Table 1. Evaluation of Potential Culvert Configurations

Openings	Culvert Invert Elevation (ft)	Lowest Tide Elevation (Nantucket Harbor) (ft)	Lowest Pond Elevation (ft)	Change in Lowest Pond Elevation w/ New Invert (ft)
Existing Two – 18-inch Pipes	1.13	-1.49	1.42	---
Scenario 1: Proposed 2'x2' Concrete Box Culvert	0.39	-1.49	0.46	0.85
Scenario 2: Proposed 2'x2' Concrete Box Culvert	-1.42	-1.49	-0.98	2.29

Note: The above modeling results were based on the lowest tide event (April 28 – 29, 2006) of the observation period.

Construction Cost Estimates

Approximate construction costs were estimated for both restoration scenarios. These estimates include provisions for the earthwork, materials, and temporary facilities necessary to demolish the existing structures and build the new culverts (and channel specified in Scenario 2). These estimates do not include provisions for additional dredging and stormwater improvements specified in other studies. Planning-level construction costs were estimated as follows, based on June, 2006 values:

Scenario 1, 2'x2' Concrete Box Culvert, 0.39 Invert Elevation	$140,000
Scenario 2, 2'x2' Concrete Box Culvert, -1.42 Invert El.	$190,000

Flood Hazard Assessment

Local flood hazards were evaluated to determine what effects the proposed culvert improvements may have. The evaluation considered several scenarios including large coastal inundation events, smaller coastal events, and stormwater runoff events. The evaluation is focused on identifying changes in flood hazard that may occur if either culvert replacement scenario is implemented.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map for the area (Community-Panel Number 250230 0011 D), Consue Springs is within Zones A5 and A7. These zones are associated with a 100-year flood return frequency and stillwater elevations of 8 feet, NHTD. This is approximately three feet higher that the crest elevation of the railroad bed, found to be approximately 5 feet, NHTD. During a coastal storm flowage event near the 100-year return frequency, water from Nantucket Harbor would overtop the existing railroad bed and flood adjacent low-lying areas regardless of the culvert dimensions or hydraulic capacity. Simply put, flow over the broad, relatively flat railroad bed during such conditions

would be so much greater than that through the culvert, that the effects of the proposed culvert changes would be insignificant.

Potential culvert changes may be significant during smaller events where water elevations do not overtop the railroad bed. In such cases, the railroad bed provides a degree of protection from incoming coastal storm flowage. If the hydraulic capacity of the culvert is increased, water elevations in Consue Springs may be increased from what would occur with the existing culverts. However, both potential restoration scenarios evaluated in this study involve replacement structures with similar hydraulic characteristics to the existing culverts. Therefore, it is unlikely that there would be measurable change in coastal storm flood elevations within Consue Springs due to these improvements.

A similar conclusion may be drawn for stormwater runoff events. Stormwater that flows to Consue Springs is impounded when incoming flows exceed that discharged to Nantucket Harbor. Large volumes of runoff that flow quickly into Consue Springs will cause the water elevation to increase because of the finite hydraulic capacity of the culvert. As such, larger culverts generally decrease the flood hazard in these situations. However, the potential restoration scenarios evaluated in this study involve replacement structures with similar hydraulic characteristics to the existing culverts. Therefore, it is unlikely that there would be measurable change in stormwater runoff flood elevations within Consue Springs due to these improvements.

This also applies to combination scenarios with elevated water in Nantucket Harbor and significant stormwater runoff. In these situations, where water elevations are high on both sides of the culvert, very little flow will occur regardless of culvert characteristics. This is because flow through culverts like these is driven by differences in water elevation. Stormwater runoff impounded in Consue Springs simply won't have a viable outlet when Nantucket Harbor rises at a similar rate.

During a conference call on June 7th, 2006 with local officials, it was suggested that an additional scenario be evaluated that involves both elevated water levels in Nantucket Harbor and significant stormwater runoff discharging from the surrounding watershed. To address this, HW looked at the water elevation data and identified an event where Consue Springs exceeded Nantucket Harbor. On May 2nd, 2006 the Consue Springs high tide elevation peaked 0.2 feet higher than Nantucket Harbor. According to NOAA precipitation records, a total of 1.07 inches fell in the area that day. In additional 0.41 inches of rain fell the previous day. This resulted in the higher Pond elevation. Also during that time, Nantucket Harbor experienced tides about 1.2 feet higher than predicted. HW built a new model scenario with the input tide data for May 2nd and adjusted the watershed information in the model (i.e. runoff coefficients) to mimic the existing Pond elevation for the time period. All other model parameters (i.e. Pond bathymetry, culvert size, culvert inverts, etc.) did not change from the calibrated April 28th to 29th model shown above.

Figure 8 shows the calibration of the watershed data in the existing condition model to mimic existing observed peak Consue Springs elevations. The proposed culvert configurations (as discussed above) were then modeled with the same calibrated model for May 2nd. The results are summarized on Figure 9 and indicate that the proposed culvert improvements will not increase

water elevations in Consue Springs relative to the existing conditions, even during a precipitation event similar to the May 1 – 2 rainfall. The proposed culvert has similar capacity to the existing culvert and therefore will not increase Consue Springs water elevations during high tide conditions. In addition, by lowering the culvert invert elevation, this promotes lower low tide conditions that ultimately provides more storage volume in the pond to attenuate peak runoff rates from small but intense runoff events.

Sediment Migration

It is important to note that both restoration scenarios may result in increased migration of sediment from Consue Springs to the salt marsh and Nantucket Harbor. According to the 2004 dredging study, the pond area is laden with areas of fine and coarse-grain sediment deposits with varying levels of contaminants including metals and organic compounds. Biological contaminants such as fecal coliform were not addressed in that study, but likely also occur in significant amounts in Consue Springs. The study indicates that sediment and contaminants continue to discharge to Consue Springs via stormwater runoff from the surrounding urban areas. Waterfowl populations also likely contribute to biological contaminants.

If allowed to migrate unchecked, these contaminants may negatively impacts downstream resources in the marsh and Nantucket Harbor such as shellfish growing areas. It is recommended that future culvert replacement activities be scheduled to occur after stormwater quality measures have been implemented in the watershed and contaminated sediment within Consue Springs is removed or stabilized.

Summary

The existing culverts that connect Consue Springs with Nantucket Harbor appear to restrict tidal exchange due to high invert elevations. However, the hydraulic capacity of the culverts appears to be adequate. As a result, this investigation considered two potential restoration scenarios to improve tidal fluctuations within Consue Springs that involve lowering the culvert. One involves lowering the culvert to the elevation of the adjacent channel bottom on the marsh side (El. 0.39, NHTD). The other involves lowering the culvert to an elevation near the bottom of the duck pond and excavating the marsh channel and a new channel in Consue Springs (El. –1.42, NHTD). Both involve replacing the existing 18-inch pipes with a box culvert having a two-foot high by three-foot wide opening and a flat slope. The first offers limited improvement to tidal fluctuation within Consue Springs but will likely cost less and possibly be easier to permit due to its smaller scope. It is unlikely that local flood hazards will change if the proposed improvements are implemented. It is suggested that the culvert replacement be coordinated to occur after stormwater management improvements are made in the contributing watershed and after contaminated sediment in Consue Springs is removed or stabilized. Proceeding otherwise may allow sediment and contaminants to migrate from Consue Springs to the adjacent salt marsh and Nantucket Harbor.

Legend

- Consue Springs Site
- Buildings
- Parcels
- Pond
- Salt Marsh
- Wetland

*1:5,000 Color Ortho Imagery (2005) - MassGIS, April 2005

N

Feet
300

Horsley Witten Group
phone: 508 833-6630
www.horsleywitten.com

Site Map
Consue Springs
Nantucket, MA

6/30/06 cc
J:\6010 WRP-Consue Springs\GIS\
consue_springs.mxd

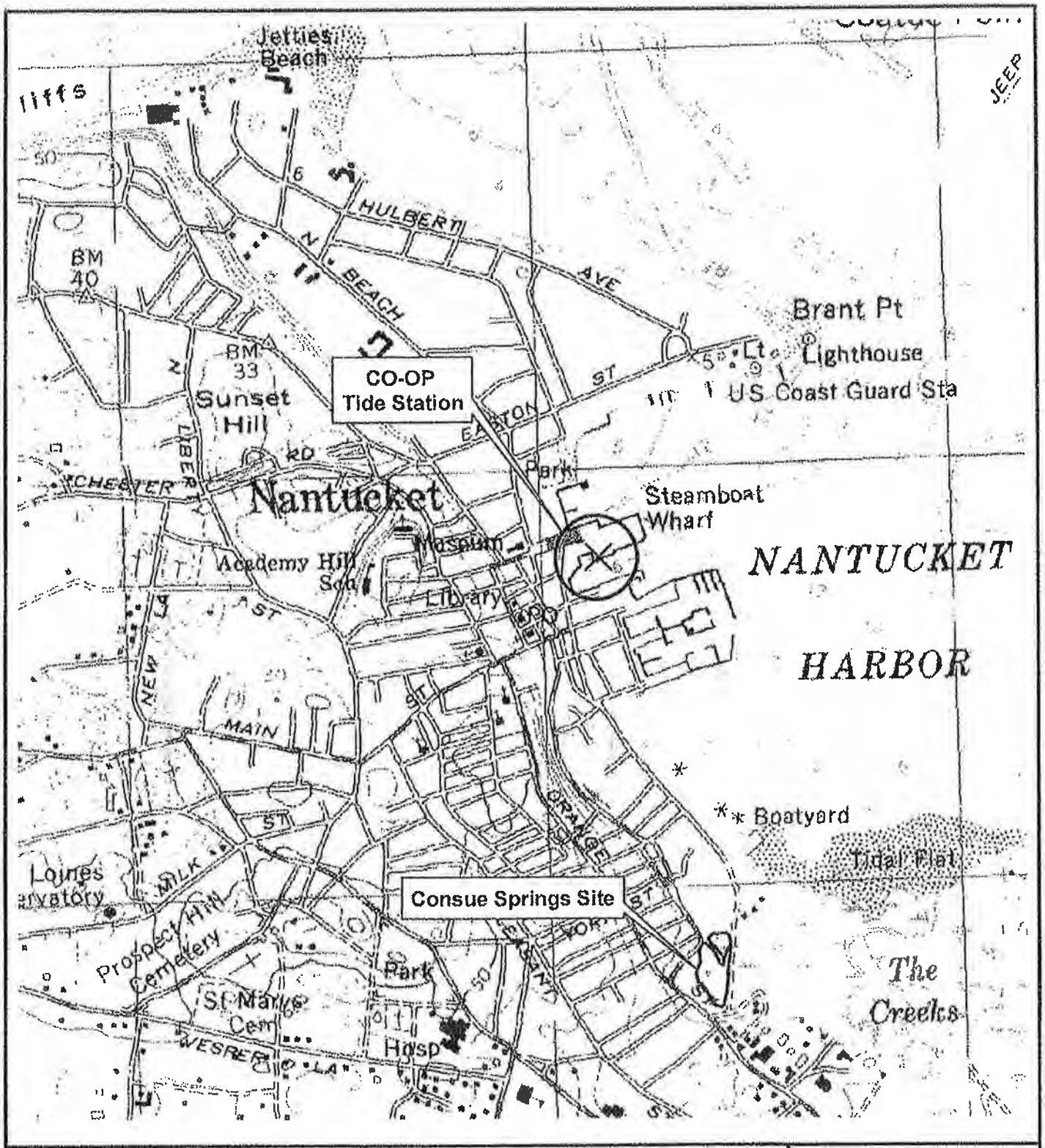
Figure 1

Figure 3: Photos of Existing Culvert

Downstream Culvert (Tidal Side)

Upstream Culvert (Pond Side)

J:\6018 WRP-Consue Springs\Photos\Figure 3.doc



N

Feet

1,000

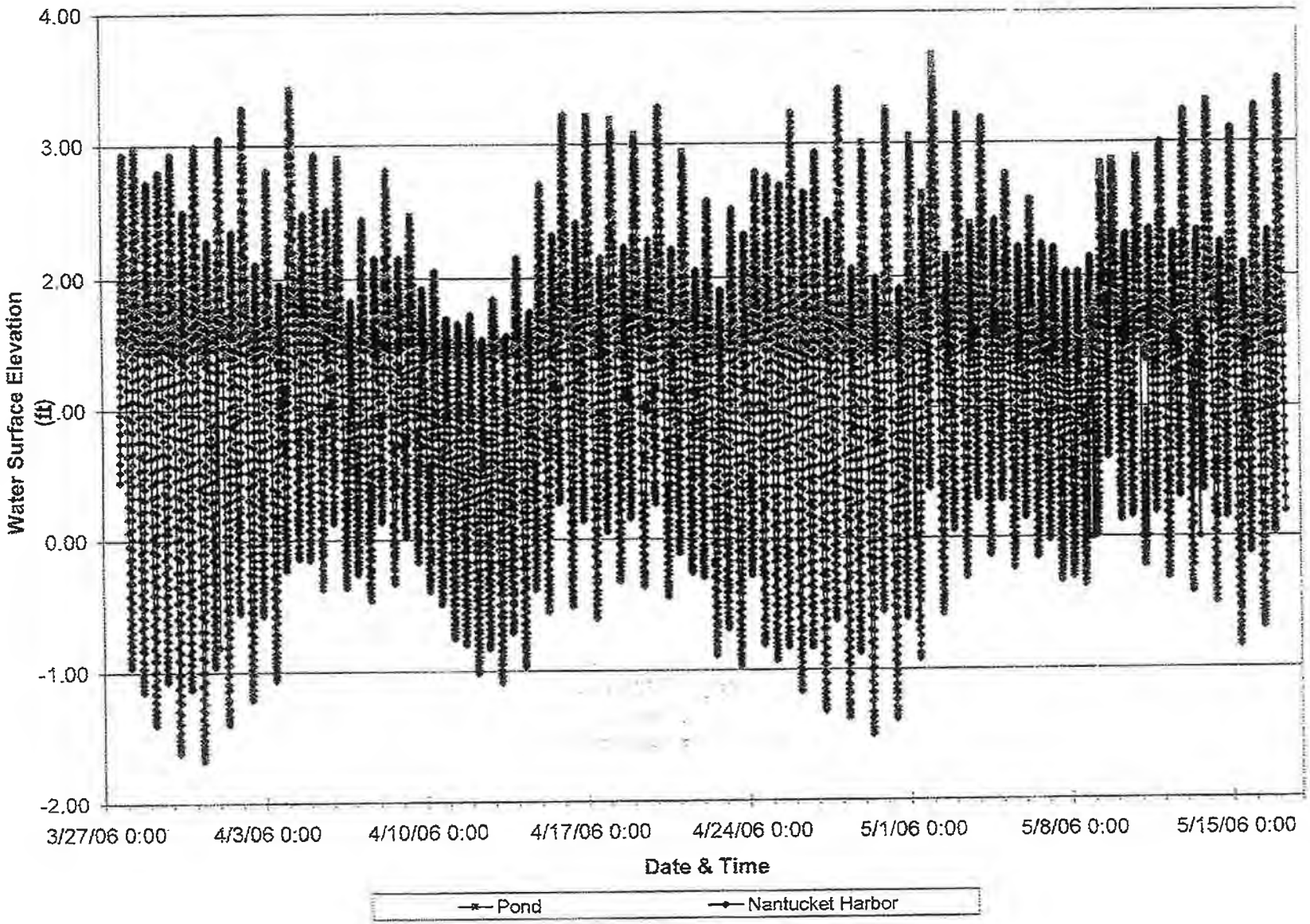
Horsley Witten Group

Locus Map
Consue Springs
Nantucket, MA

6/30/08 cc
J:\6010 WRP-Consue Springs\GIS\USGS.mxd

Figure 4

Figure 5. Existing Condition - Consue Springs
(March 27 - May 17, 2006)



J:\6018 WRP-Consue Springs\Excel Files\Existing Cond_Summary.xls\All Chart

Figure 6. Observed & Modeled Existing Condition (April 28-29, 2006)

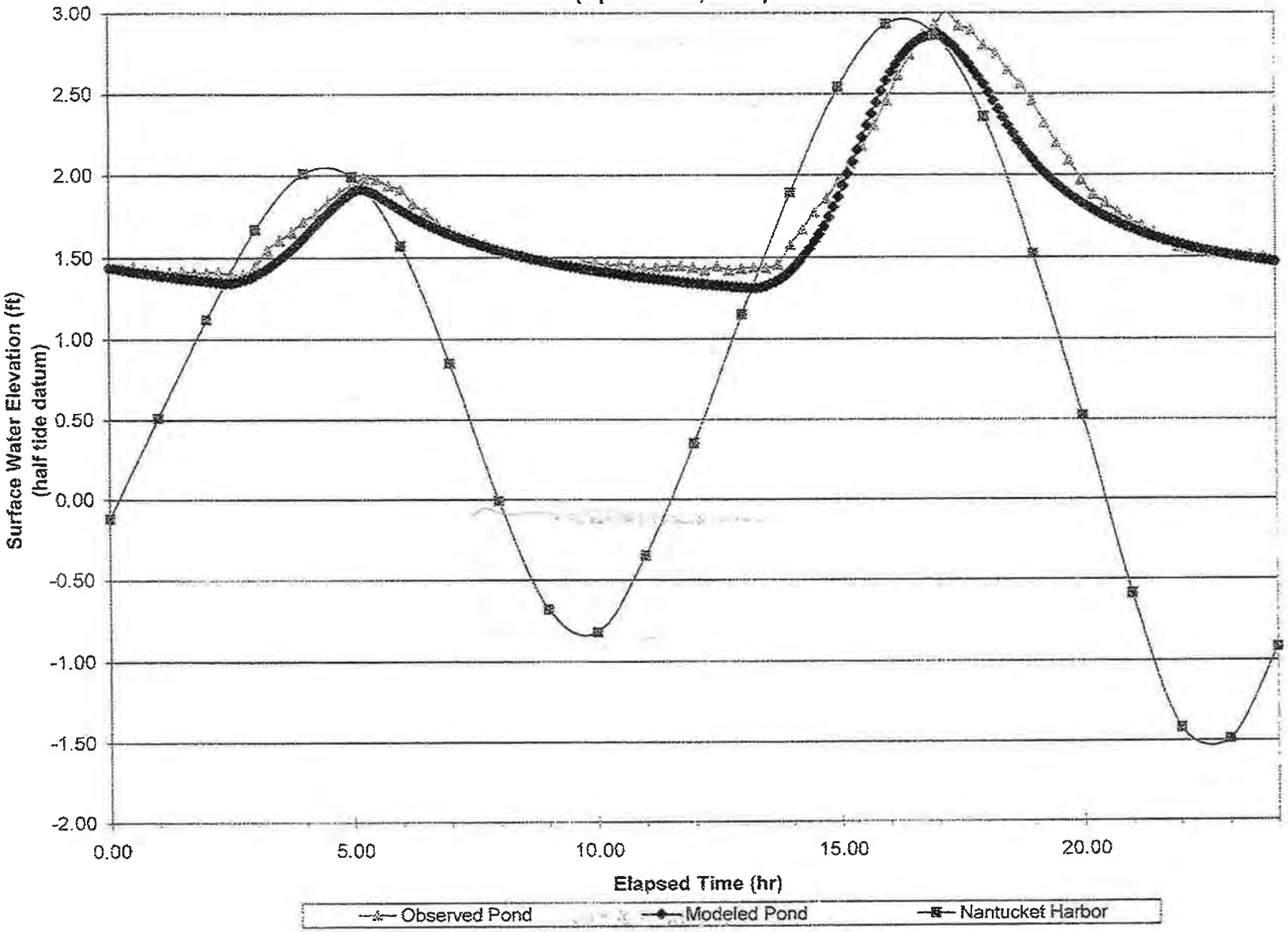


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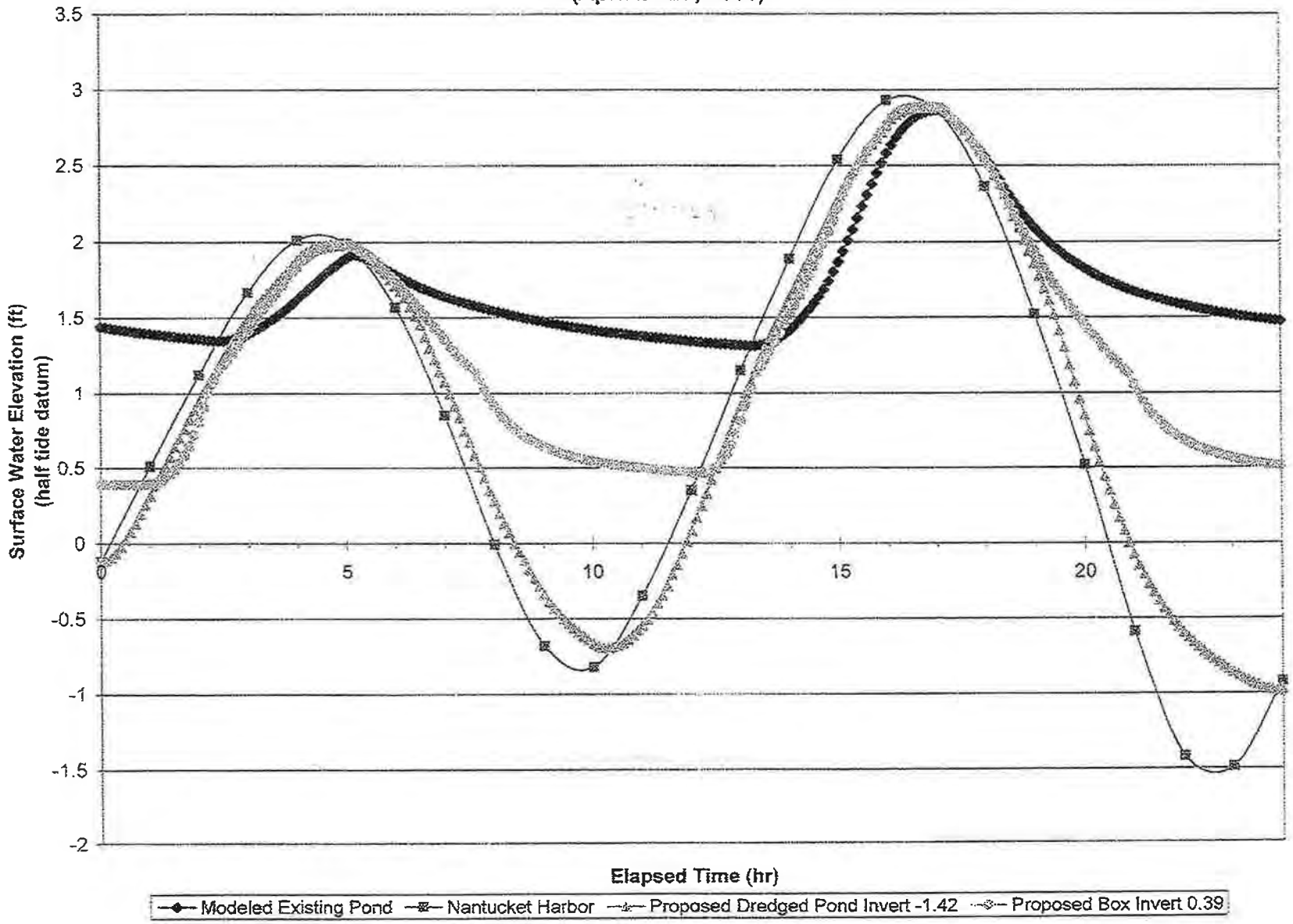
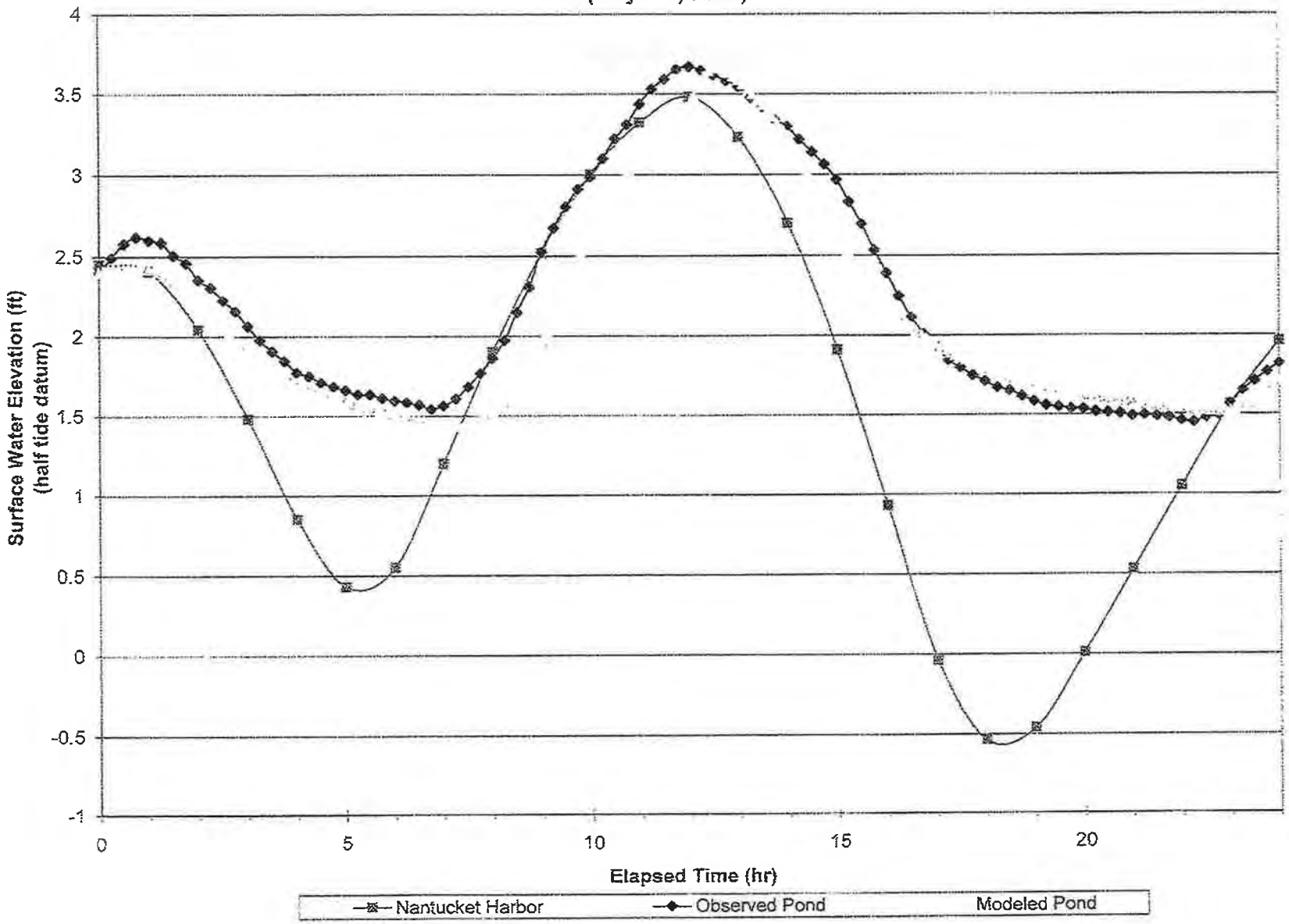
Figure 7. Modeled Existing & Proposed Condition (April 28-29, 2006)



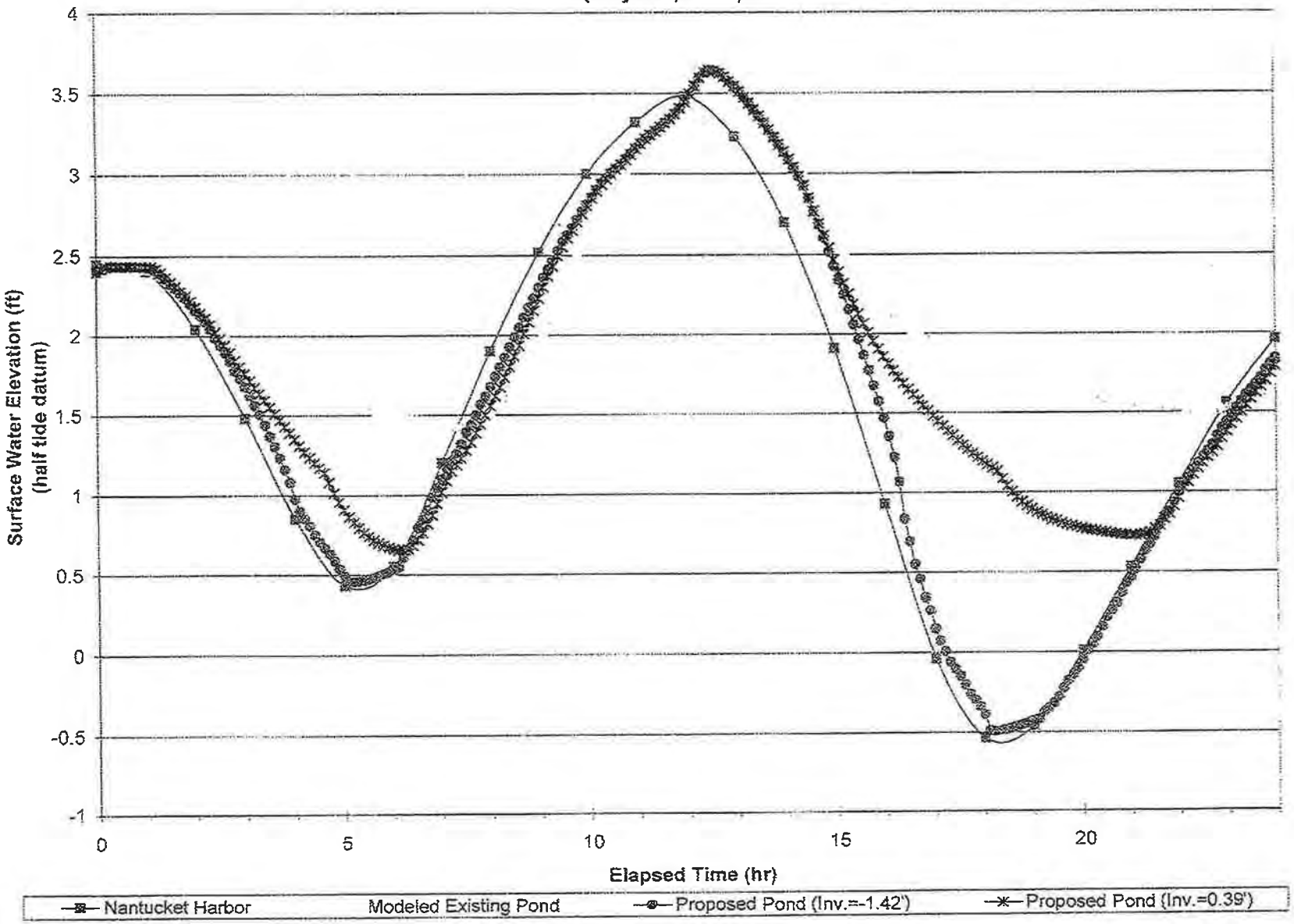
J:\6018 WRP-Consue Springs\Excel Files\Proposed Cond_Summary.xls\April Chart Prop

Figure 8. Observed & Modeled Existing Condition
(May 1-2, 2006)



J:\6018 WRP-Consue Springs\Excel Files\Existing Cond_Summary.xls\Existing May 1-2 Chart

Figure 9. Modeled Existing & Proposed Condition (May 1-2, 2006)



J:\6018 WRP-Consue Springs\Excel Files\Proposed Cond_Summary.xls\Proposed May 1-2 Chart

Appendix L

Project Plans

CONSUE SPRINGS STORMWATER IMPROVEMENTS AND TIDAL POND RESTORATION

NANTUCKET, MA

MARCH, 2016

PERMITTING PLAN SET

DRAWING LIST:

1 COVER SHEET
2 EXISTING CONDITIONS
3 PROPOSED PLAN
4 WETLAND RESOURCE PLAN
5 POND DEWATERING AND EROSION & SEDIMENT CONTROL PLAN
6 POND CROSS SECTIONS
7 STORM DRAIN PROFILES & DETAILS
8 DETAILS

LOCUS PLAN
NANTUCKET MASSACHUSETTS
U.S.G.S. Nantucket Quad
1" = 2000'±

GENERAL NOTES:

1. ALL LOCATIONS OF UNDERGROUND AND OVERHEAD UTILITIES AS SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. THIS PLAN DOES NOT PURPORT TO SHOW ALL UTILITIES WITHIN THE SUBJECT PROPERTY. CONTRACTOR SHALL USE ALL MEANS AVAILABLE TO VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION AND SHALL CONTACT THE DIG SAFE CENTER (1-888-DIG-SAFE) 72 HOURS PRIOR TO BEGINNING EXCAVATION ACTIVITIES.

2. ALL WORK SHALL COMPLY WITH THE ENVIRONMENTAL PERMITS ISSUED FOR THIS PROJECT.

3. UNLESS OTHERWISE NOTED, ALL WORK AND MATERIALS SHALL COMPLY WITH APPLICABLE SECTIONS OF THE MASSACHUSETTS HIGHWAY DEPARTMENT'S "STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES", AS AMENDED.

4. CONTRACTOR SHALL PERFORM ALL EXCAVATIONS IN STRICT CONFORMANCE WITH APPLICABLE STATE AND O.S.H.A. RULES AS AMENDED.

5. SEQUENCE OF SEDIMENT EXCAVATION OPERATIONS SHALL INSURE THE EFFICIENT REMOVAL OF MATERIALS IN A TIMELY MANNER. SEQUENCE OF OPERATIONS SHALL COMPLY WITH THE TERMS OF THE ENVIRONMENTAL PERMITS ISSUED FOR THIS PROJECT.

6. NOTIFY OWNER'S REPRESENTATIVE IF ANY UTILITIES ARE DISCOVERED DURING THE DRAWDOWN OF THE POND OR EXCAVATION OPERATIONS. UTILITIES DETERMINED TO BE ABANDONED SHALL BE REMOVED WITHIN THE GRADES SHOWN ON THE PLANS. ACTIVE UTILITIES SHALL NOT BE DISTURBED UNLESS DIRECTED BY THE OWNER'S REPRESENTATIVE.

7. SEDIMENT EXCAVATION BEYOND THE AREA OF WORK AND CONTOURS INDICATED ON THE PLANS AND THE ELEVATIONS INDICATED ON THE CROSS-SECTIONS WILL NOT BE PERMITTED OR PAID FOR WITHOUT THE PRIOR WRITTEN APPROVAL OF THE OWNER. NO CUTTING OF TREES OR SHRUBS SHALL BE CONDUCTED WITHOUT APPROVAL OF THE OWNER.

8. EQUIPMENT AND MATERIALS STORAGE SHALL BE CONFINED TO THE STAGING AREA.

9. REFUELING OF EQUIPMENT SHALL TAKE PLACE OUTSIDE OF THE POND LIMITS.

10. THE POTENTIAL FOR FLOODING OF THE WORK AREA EXISTS. THE CONTRACTOR SHALL NOT LEAVE EQUIPMENT WITHIN THE POND LIMITS WHEN PERSONNEL ARE NOT ON-SITE TO MOVE IT.

11. AT THE COMPLETION OF EXCAVATION OPERATIONS, THE CONTRACTOR SHALL REMOVE ALL EROSION CONTROL BARRIERS, GEOTEXTILE FABRICS, AND GRAVEL OR STONE USED FOR TEMPORARY ACCESS TO AND ALONG THE POND BOTTOM. ALL DISTURBED POND BANKS SHALL BE RESTORED TO ORIGINAL, VEGETATED CONDITIONS TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE PRIOR TO FINAL ACCEPTANCE OF WORK.

12. CONTRACTOR SHALL ENSURE THAT THEIR OPERATIONS HAVE MINIMUM IMPACT ON THE EXISTING TOWN ROADWAYS. THE CONTRACTOR SHALL MAINTAIN AND PROTECT TRAFFIC DURING CONSTRUCTION AS NEEDED.

PREPARED FOR:

Town of Nantucket
PUBLIC WORKS DEPARTMENT
188 MADAKET ROAD
NANTUCKET, MA 02554

DESIGNER:

GZA GeoEnvironmental, Inc.
Engineers and Scientists
ONE FINANCIAL PLAZA
1350 Main Street, Suite 1400
Springfield, MA 01103
413-726-2100

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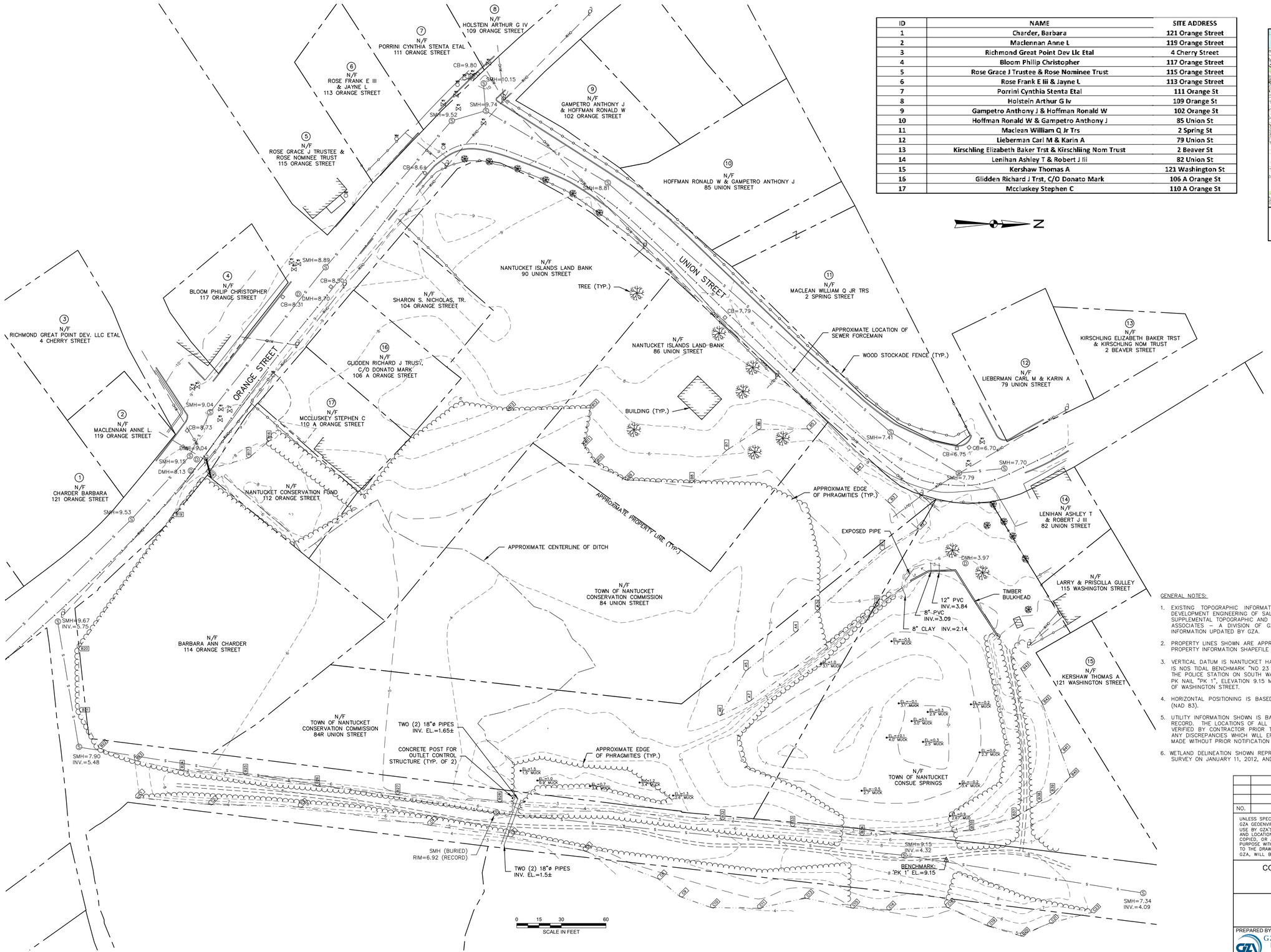
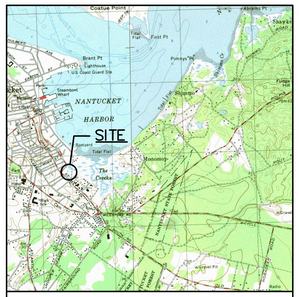


ID	NAME	SITE ADDRESS
1	Charder, Barbara	121 Orange Street
2	Maclennan Anne L	119 Orange Street
3	Richmond Great Point Dev Llc Etal	4 Cherry Street
4	Bloom Philip Christopher	117 Orange Street
5	Rose Grace J Trustee & Rose Nominee Trust	115 Orange Street
6	Rose Frank E Iii & Jayne L	113 Orange Street
7	Porrini Cynthia Stenta Etal	111 Orange St
8	Holstein Arthur G Iv	109 Orange St
9	Gampetro Anthony J & Hoffman Ronald W	102 Orange St
10	Hoffman Ronald W & Gampetro Anthony J	85 Union St
11	Maclean William Q Jr Trs	2 Spring St
12	Lieberman Carl M & Karin A	79 Union St
13	Kirschling Elizabeth Baker Trst & Kirschliing Nom Trust	2 Beaver St
14	Lenihan Ashley T & Robert J Iii	82 Union St
15	Kershaw Thomas A	121 Washington St
16	Glidden Richard J Trst, C/O Donato Mark	106 A Orange St
17	Mccluskey Stephen C	110 A Orange St



LOCUS PLAN

LEGEND

	EXISTING
CONTOUR	15
SPOT GRADE	20.0
DRAIN MANHOLE	D
CATCH BASIN	
DRAIN LINE	D
SEWER MANHOLE	S
SEWER LINE	S
WATER VALVE	WV
WATER LINE	W
HYDRANT	
WATER METER	WM
UTILITY POLE	
WETLAND FLAG	A7
WETLAND BOUNDARY	
POST & RAIL FENCE	
WOOD FENCE	
SEDIMENT PROBE (01/11/12)	EL.=1.6 (TOP OF MUCK); 2.8' MUCK (THICKNESS BASED ON PROBINGS)

GENERAL NOTES:

1. EXISTING TOPOGRAPHIC INFORMATION BASED ON DATA PROVIDED BY PATROWICZ LAND DEVELOPMENT ENGINEERING OF SALEM, MA FOR SITE SURVEY PERFORMED ON MAY 27, 2004. SUPPLEMENTAL TOPOGRAPHIC AND SOUNDING INFORMATION BASED ON FIELD SURVEYS BY VINE ASSOCIATES – A DIVISION OF GZA GEOENVIRONMENTAL ON JANUARY 11, 2012. ABUTTER INFORMATION UPDATED BY GZA.
2. PROPERTY LINES SHOWN ARE APPROXIMATE AND BASED ON TOWN OF NANTUCKET ASSESSORS PROPERTY INFORMATION SHAPEFILE OBTAINED FROM MassGIS INFORMATION DATABASE.
3. VERTICAL DATUM IS NANTUCKET HALF TIDE LEVEL DATUM OF 1934 (NHTL). SITE BENCHMARK IS NOS TIDAL BENCHMARK "NO 23 1934" A DISK SET IN A CONCRETE DRIVEWAY APRON NEAR THE POLICE STATION ON SOUTH WATER STREET, ELEVATION 8.71 MLW. LOCAL BENCHMARK IS PK NAIL "PK 1", ELEVATION 9.15 MLW, SET IN ASPHALT ALONG THE PATHWAY NEAR THE END OF WASHINGTON STREET.
4. HORIZONTAL POSITIONING IS BASED ON MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (NAD 83).
5. UTILITY INFORMATION SHOWN IS BASED ON BOTH FIELD SURVEY AND THE LATEST PLANS OF RECORD. THE LOCATIONS OF ALL STRUCTURES AND UTILITIES IS APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES WHICH WILL EFFECT SITE DESIGN. NO CHANGES IN THE FIELD SHALL BE MADE WITHOUT PRIOR NOTIFICATION OF THE DESIGN ENGINEER.
6. WETLAND DELINEATION SHOWN REPRESENTS FLAGS THAT WERE PRESENT AT THE TIME OF THE SURVEY ON JANUARY 11, 2012, AND VERIFIED IN APRIL, 2015.

NO.	ISSUE/DESCRIPTION	BY	DATE

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CONSUE SPRINGS STORMWATER IMPROVEMENTS AND TIDAL POND RESTORATION PERMITTING PLAN SET

EXISTING CONDITIONS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
TOWN OF NANTUCKET
PUBLIC WORKS DEPT.
188 MADAKET ROAD
NANTUCKET, MA 02554

PROJ MGR: SLL	REVIEWED BY: TEJ	CHECKED BY: RS/STD	DRAWING 2
DESIGNED BY: JZ	DRAWN BY: JZ/EDM	SCALE: 1"=30'	
DATE: MARCH, 2016	PROJECT NO. 15.0166274.00	REVISION NO. -	SHEET NO. 2 OF 8

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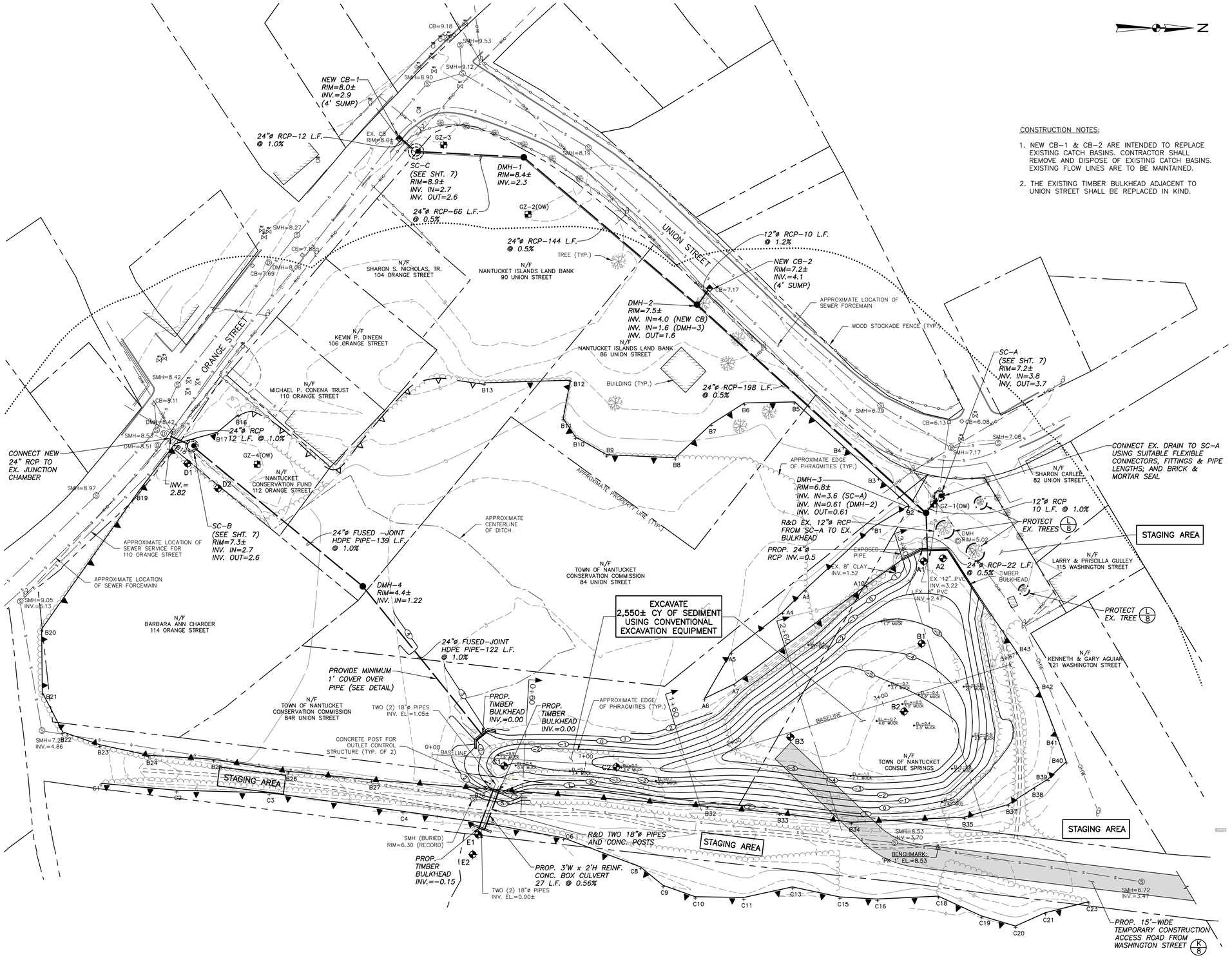

LEGEND

- 100 FT. WETLAND BUFFER BOUNDARY
- ESTIMATED WETLAND BOUNDARY
- WETLAND BOUNDARY
- B7 WETLAND FLAG
- 15 EXISTING CONTOUR
- 20.0 EXISTING SPOT GRADE
- EXISTING DRAIN MANHOLE
- EXISTING CATCH BASIN
- D EXISTING DRAIN LINE
- S EXISTING SEWER MANHOLE
- S EXISTING SEWER LINE
- EXISTING WATER VALVE
- W EXISTING WATER LINE
- EXISTING HYDRANT
- EXISTING WATER METER
- EXISTING UTILITY POLE
- EXISTING POST & RAIL FENCE
- EXIISTING WOOD FENCE
- SEDIMENT PROBE
- B1 SEDIMENT SAMPLE LOCATION
- GZ-1(OW) SOIL BORING LOCATION/MONITORING WELL
- PROPOSED CONTOUR
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- PROPOSED STORMWATER BMP (SEE SHT. 7)
- PROPOSED DRAIN LINE
- R&D REMOVE AND DISPOSE OF

CONSTRUCTION NOTES:

1. NEW CB-1 & CB-2 ARE INTENDED TO REPLACE EXISTING CATCH BASINS. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING CATCH BASINS. EXISTING FLOW LINES ARE TO BE MAINTAINED.
2. THE EXISTING TIMBER BULKHEAD ADJACENT TO UNION STREET SHALL BE REPLACED IN KIND.

GENERAL NOTES:

1. EXISTING TOPOGRAPHIC INFORMATION BASED ON DATA PROVIDED BY PATROWCZ LAND DEVELOPMENT ENGINEERING OF SALEM, MA FOR SITE SURVEY PERFORMED ON MAY 27, 2004. SUPPLEMENTAL TOPOGRAPHIC AND SOUNDING INFORMATION BASED ON FIELD SURVEYS BY VINE ASSOCIATES – A DIVISION OF GZA GEOENVIRONMENTAL ON JANUARY 11, 2012.
2. PROPERTY LINES SHOWN ARE APPROXIMATE AND BASED ON TOWN OF NANTUCKET ASSESSORS PROPERTY INFORMATION SHAPEFILE OBTAINED FROM OFFICE OF GEOGRAPHIC INFORMATION (MassGIS), COMMONWEALTH OF MASSACHUSETTS INFORMATION TECHNOLOGY DIVISION INFORMATION DATABASE.
3. VERTICAL DATUM IS NANTUCKET HALF TIDE LEVEL DATUM OF 1934 (NHTL). SITE BENCHMARK IS NOS TIDAL BENCHMARK "NO 23 1934" A DISK SET IN A CONCRETE DRIVEWAY APRON NEAR THE POLICE STATION ON SOUTH WATER STREET. BENCHMARK IS LISTED AS "RM 22" ON FEMA FIRM COMMUNITY–PANEL NUMBER 250230 0011 D, MAP REVISED: JULY 2, 1992, ELEVATION = 8.09 NHTL. LOCAL BENCHMARK IS PK NAIL "PK 1", ELEVATION 8.53 NHTL, SET IN ASPHALT ALONG THE PATHWAY NEAR THE END OF WASHINGTON STREET.
4. HORIZONTAL POSITIONING IS BASED ON MASSACHUSETTS STATE PLANE COORDINATE SYSTEM (NAD 83).
5. WETLAND DELINEATION SHOWN REPRESENTS FLAGS THAT WERE PRESENT AT THE TIME OF THE SURVEY ON JANUARY 11, 2012, AND VERIFIED IN APRIL, 2015.
6. UTILITY INFORMATION SHOWN IS BASED ON BOTH FIELD SURVEY AND THE LATEST PLANS OF RECORD. THE LOCATIONS OF ALL STRUCTURES AND UTILITIES ARE APPROXIMATE AND SHALL BE VERIFIED BY CONTRACTOR PRIOR TO CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED OF ANY DISCREPANCIES WHICH WILL EFFECT SITE DESIGN. NO CHANGES IN THE FIELD SHALL BE MADE WITHOUT PRIOR NOTIFICATION OF THE DESIGN ENGINEER.

0 15 30 60
SCALE IN FEET

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CONSUE SPRINGS STORMWATER IMPROVEMENTS AND TIDAL POND RESTORATION PERMITTING PLAN SET

PROPOSED PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
TOWN OF NANTUCKET
PUBLIC WORKS DEPT.
188 MADAKET ROAD
NANTUCKET, MA 02554

PROJ MGR: SLL	REVIEWED BY: TEJ	CHECKED BY: RS/STD	DRAWING 3
DESIGNED BY: RS/STD	DRAWN BY: EDM	SCALE: 1"=30'	
DATE: MARCH, 2016	PROJECT NO. 15.0166274.00	REVISION NO. -	SHEET NO. 3 OF 8

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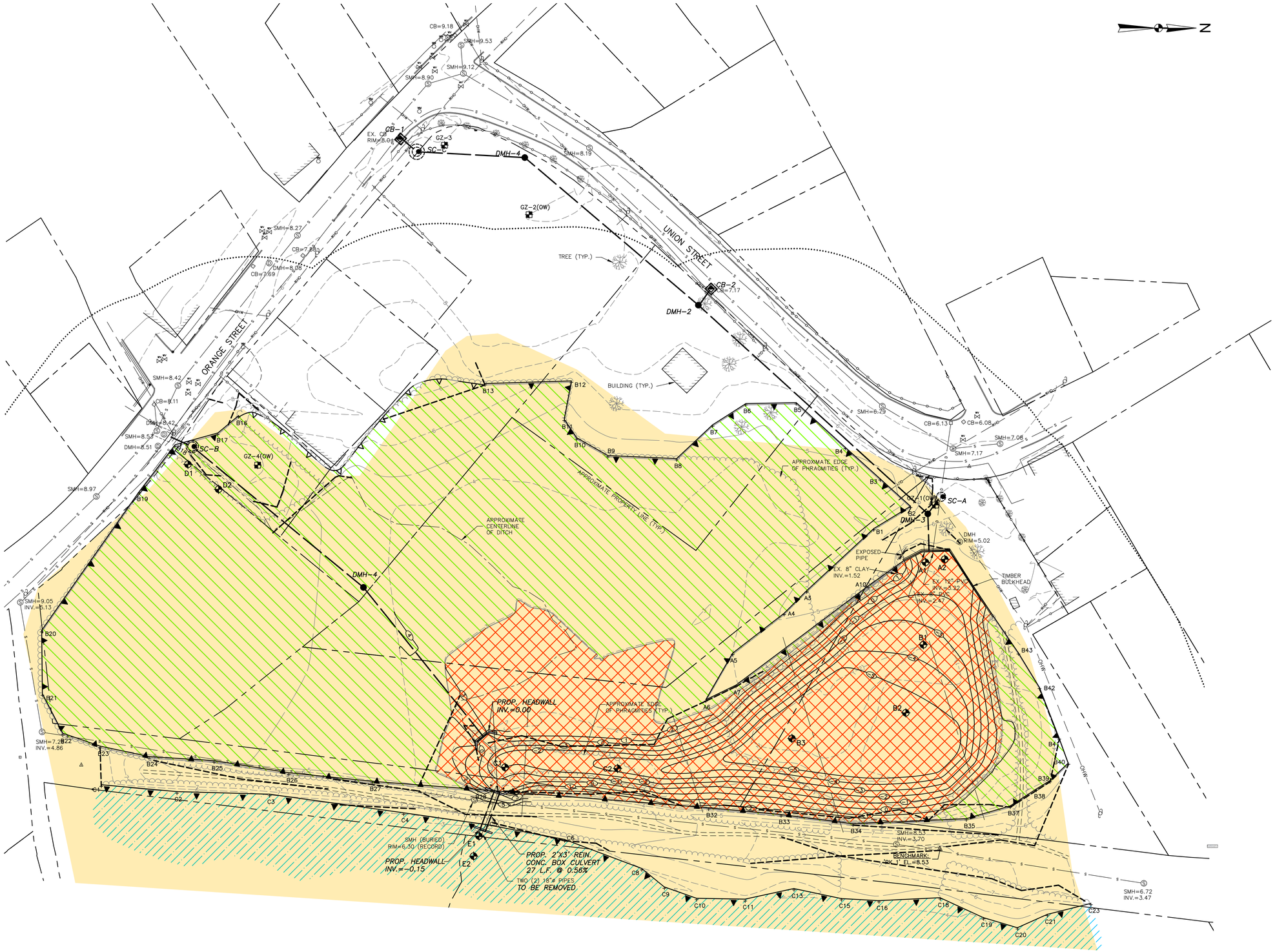

LEGEND

- 100 FT. WETLAND BUFFER BOUNDARY
- ESTIMATED WETLAND BOUNDARY
- WETLAND BOUNDARY
- B7 WETLAND FLAG
- 15 EXISTING CONTOUR
- 20.0 EXISTING SPOT GRADE
- EXISTING DRAIN MANHOLE
- EXISTING CATCH BASIN
- D EXISTING DRAIN LINE
- EXISTING SEWER MANHOLE
- S EXISTING SEWER LINE
- EXISTING WATER VALVE
- W EXISTING WATER LINE
- EXISTING HYDRANT
- EXISTING WATER METER
- EXISTING UTILITY POLE
- EXISTING POST & RAIL FENCE
- EXIISTING WOOD FENCE
- B1 SEDIMENT SAMPLE LOCATION
- GZ-1(OW) SOIL BORING LOCATION/MONITORING WELL
- PROPOSED CONTOUR
- PROPOSED CATCH BASIN
- PROPOSED DRAIN MANHOLE
- PROPOSED DRAIN LINE
- COASTAL BANK
- LAND UNDER SALT PONDS
- BVW
- SALT MARSH
- PRIORITY HABITAT 15

0 15 30 60
SCALE IN FEET

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CONSUE SPRINGS STORMWATER IMPROVEMENTS AND TIDAL POND RESTORATION

WETLAND RESOURCE PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
TOWN OF NANTUCKET
PUBLIC WORKS DEPT.
188 MADAKET ROAD
NANTUCKET, MA 02554

PROJ MGR: SL	REVIEWED BY: TEJ	CHECKED BY: RS/STD	DRAWING 4
DESIGNED BY: RS/STD	DRAWN BY: EDM	SCALE: 1"=30'	
DATE: FEBRUARY, 2016	PROJECT NO. 15.0166274.00	REVISION NO. -	SHEET NO. 4 OF 8

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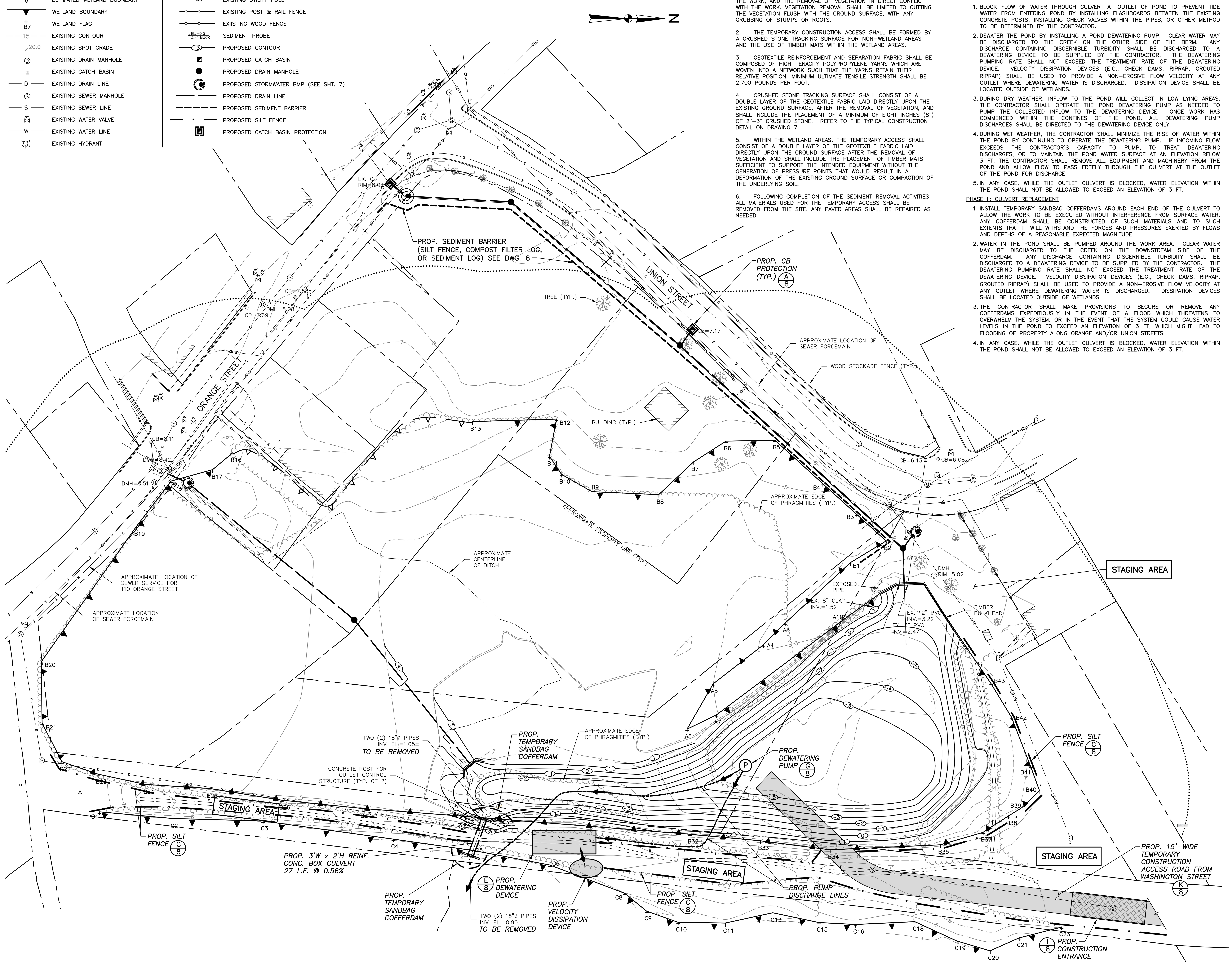
LEGEND

Symbol	Description	Symbol	Description
··············	100 FT. WETLAND BUFFER BOUNDARY	WM	EXISTING WATER METER
— ▽ —	ESTIMATED WETLAND BOUNDARY		EXISTING UTILITY POLE
—▼—	WETLAND BOUNDARY		EXISTING POST & RAIL FENCE
+ B7	WETLAND FLAG		EXIISTING WOOD FENCE
— —15— —	EXISTING CONTOUR	EL.=0.5 / 3.4' MUCK	SEDIMENT PROBE
× 20.0	EXISTING SPOT GRADE	—(-3)—	PROPOSED CONTOUR
Ⓓ	EXISTING DRAIN MANHOLE		PROPOSED CATCH BASIN
□	EXISTING CATCH BASIN	●	PROPOSED DRAIN MANHOLE
— D —	EXISTING DRAIN LINE		PROPOSED STORMWATER BMP (SEE SHT. 7)
Ⓢ	EXISTING SEWER MANHOLE		PROPOSED DRAIN LINE
— S —	EXISTING SEWER LINE		PROPOSED SEDIMENT BARRIER
WV	EXISTING WATER VALVE		PROPOSED SILT FENCE
— W —	EXISTING WATER LINE		PROPOSED CATCH BASIN PROTECTION
	EXISTING HYDRANT		



TEMPORARY ACCESS TO POND

1. CUTTING OF EXISTING VEGETATION SHALL BE LIMITED TO THE TRIMMING OF OVERHANGING BRANCHES WHICH MIGHT INTERFERE WITH THE WORK, AND THE REMOVAL OF VEGETATION IN DIRECT CONFLICT WITH THE WORK. VEGETATION REMOVAL SHALL BE LIMITED TO CUTTING THE VEGETATION FLUSH WITH THE GROUND SURFACE, WITH ANY GRUBBING OF STUMPS OR ROOTS.

2. THE TEMPORARY CONSTRUCTION ACCESS SHALL BE FORMED BY A CRUSHED STONE TRACKING SURFACE FOR NON-WETLAND AREAS AND THE USE OF TIMBER MATS WITHIN THE WETLAND AREAS.

3. GEOTEXTILE REINFORCEMENT AND SEPARATION FABRIC SHALL BE COMPOSED OF HIGH-TENACITY POLYPROPYLENE YARNS WHICH ARE WOVEN INTO A NETWORK SUCH THAT THE YARNS RETAIN THEIR RELATIVE POSITION. MINIMUM ULTIMATE TENSILE STRENGTH SHALL BE 2,700 POUNDS PER FOOT.

4. CRUSHED STONE TRACKING SURFACE SHALL CONSIST OF A DOUBLE LAYER OF THE GEOTEXTILE FABRIC LAID DIRECTLY UPON THE EXISTING GROUND SURFACE, AFTER THE REMOVAL OF VEGETATION, AND SHALL INCLUDE THE PLACEMENT OF A MINIMUM OF EIGHT INCHES (8") OF 2"-3" CRUSHED STONE. REFER TO THE TYPICAL CONSTRUCTION DETAIL ON DRAWING 7.

5. WITHIN THE WETLAND AREAS, THE TEMPORARY ACCESS SHALL CONSIST OF A DOUBLE LAYER OF THE GEOTEXTILE FABRIC LAID DIRECTLY UPON THE GROUND SURFACE AFTER THE REMOVAL OF VEGETATION AND SHALL INCLUDE THE PLACEMENT OF TIMBER MATS SUFFICIENT TO SUPPORT THE INTENDED EQUIPMENT WITHOUT THE GENERATION OF PRESSURE POINTS THAT WOULD RESULT IN A DEFORMATION OF THE EXISTING GROUND SURFACE OR COMPACTION OF THE UNDERLYING SOIL.

6. FOLLOWING COMPLETION OF THE SEDIMENT REMOVAL ACTIVITIES, ALL MATERIALS USED FOR THE TEMPORARY ACCESS SHALL BE REMOVED FROM THE SITE. ANY PAVED AREAS SHALL BE REPAIRED AS NEEDED.

SUGGESTED CONTROL OF WATER METHODS AND SEQUENCE:

PHASE I: POND DREDGING

1. BLOCK FLOW OF WATER THROUGH CULVERT AT OUTLET OF POND TO PREVENT TIDE WATER FROM ENTERING POND BY INSTALLING FLASHBOARDS BETWEEN THE EXISTING CONCRETE POSTS, INSTALLING CHECK VALVES WITHIN THE PIPES, OR OTHER METHOD TO BE DETERMINED BY THE CONTRACTOR.
2. DEWATER THE POND BY INSTALLING A POND DEWATERING PUMP. CLEAR WATER MAY BE DISCHARGED TO THE CREEK ON THE OTHER SIDE OF THE BERM. ANY DISCHARGE CONTAINING DISCERNIBLE TURBIDITY SHALL BE DISCHARGED TO A DEWATERING DEVICE TO BE SUPPLIED BY THE CONTRACTOR. THE DEWATERING PUMPING RATE SHALL NOT EXCEED THE TREATMENT RATE OF THE DEWATERING DEVICE. VELOCITY DISSIPATION DEVICES (E.G., CHECK DAMS, RIPRAP, GROUTED RIPRAP) SHALL BE USED TO PROVIDE A NON-EROSIVE FLOW VELOCITY AT ANY OUTLET WHERE DEWATERING WATER IS DISCHARGED. DISSIPATION DEVICE SHALL BE LOCATED OUTSIDE OF WETLANDS.
3. DURING DRY WEATHER, INFLOW TO THE POND WILL COLLECT IN LOW LYING AREAS. THE CONTRACTOR SHALL OPERATE THE POND DEWATERING PUMP AS NEEDED TO PUMP THE COLLECTED INFLOW TO THE DEWATERING DEVICE. ONCE WORK HAS COMMENCED WITHIN THE CONFINES OF THE POND, ALL DEWATERING PUMP DISCHARGES SHALL BE DIRECTED TO THE DEWATERING DEVICE ONLY.
4. DURING WET WEATHER, THE CONTRACTOR SHALL MINIMIZE THE RISE OF WATER WITHIN THE POND BY CONTINUING TO OPERATE THE DEWATERING PUMP. IF INCOMING FLOW EXCEEDS THE CONTRACTOR'S CAPACITY TO PUMP, TO TREAT DEWATERING DISCHARGES, OR TO MAINTAIN THE POND WATER SURFACE AT AN ELEVATION BELOW 3 FT, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND MACHINERY FROM THE POND AND ALLOW FLOW TO PASS FREELY THROUGH THE CULVERT AT THE OUTLET OF THE POND FOR DISCHARGE.
5. IN ANY CASE, WHILE THE OUTLET CULVERT IS BLOCKED, WATER ELEVATION WITHIN THE POND SHALL NOT BE ALLOWED TO EXCEED AN ELEVATION OF 3 FT.

PHASE II: CULVERT REPLACEMENT

1. INSTALL TEMPORARY SANDBAG COFFERDAMS AROUND EACH END OF THE CULVERT TO ALLOW THE WORK TO BE EXECUTED WITHOUT INTERFERENCE FROM SURFACE WATER. ANY COFFERDAM SHALL BE CONSTRUCTED OF SUCH MATERIALS AND TO SUCH EXTENTS THAT IT WILL WITHSTAND THE FORCES AND PRESSURES EXERTED BY FLOWS AND DEPTHS OF A REASONABLE EXPECTED MAGNITUDE.
2. WATER IN THE POND SHALL BE PUMPED AROUND THE WORK AREA. CLEAR WATER MAY BE DISCHARGED TO THE CREEK ON THE DOWNSTREAM SIDE OF THE COFFERDAM. ANY DISCHARGE CONTAINING DISCERNIBLE TURBIDITY SHALL BE DISCHARGED TO A DEWATERING DEVICE TO BE SUPPLIED BY THE CONTRACTOR. THE DEWATERING PUMPING RATE SHALL NOT EXCEED THE TREATMENT RATE OF THE DEWATERING DEVICE. VELOCITY DISSIPATION DEVICES (E.G., CHECK DAMS, RIPRAP, GROUTED RIPRAP) SHALL BE USED TO PROVIDE A NON-EROSIVE FLOW VELOCITY AT ANY OUTLET WHERE DEWATERING WATER IS DISCHARGED. DISSIPATION DEVICES SHALL BE LOCATED OUTSIDE OF WETLANDS.
3. THE CONTRACTOR SHALL MAKE PROVISIONS TO SECURE OR REMOVE ANY COFFERDAMS EXPEDITIOUSLY IN THE EVENT OF A FLOOD WHICH THREATENS TO OVERWHELM THE SYSTEM, OR IN THE EVENT THAT THE SYSTEM COULD CAUSE WATER LEVELS IN THE POND TO EXCEED AN ELEVATION OF 3 FT, WHICH MIGHT LEAD TO FLOODING OF PROPERTY ALONG ORANGE AND/OR UNION STREETS.
4. IN ANY CASE, WHILE THE OUTLET CULVERT IS BLOCKED, WATER ELEVATION WITHIN THE POND SHALL NOT BE ALLOWED TO EXCEED AN ELEVATION OF 3 FT.

SEDIMENT AND EROSION CONTROL NOTES:

1. SEDIMENT BASINS AND TRAPS, PERIMETER BERMS, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.

2. THE CONTRACTOR SHALL CONSTRUCT ALL EROSION AND SEDIMENT CONTROL MEASURES PER THE SEDIMENT AND EROSION CONTROL (S&EC) PLAN PRIOR TO BEGINNING ANY OTHER LAND DISTURBANCES, SHALL ENSURE THAT ALL RUNOFF FROM DISTURBED AREAS IS DIRECTED TO THE SEDIMENT CONTROL DEVICES, AND SHALL NOT REMOVE ANY EROSION OR SEDIMENT CONTROL MEASURES UNTIL THE AREAS DRAINING TO THEM ARE FINAL STABILIZED. THE CONTRACTOR SHALL INSPECT DAILY AND MAINTAIN CONTINUOUSLY IN EFFECTIVE OPERATING CONDITION ALL EROSION AND SEDIMENT CONTROL MEASURES UNTIL SUCH TIME AS THEY ARE REMOVED. CONDUCT INSPECTIONS AND REPORTING IN ACCORDANCE WITH ALL PERMITS.

3. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE CONTRACTOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES (BMPs) TO ELIMINATE THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION. THE CONTRACTOR SHALL INSTALL AND MAINTAIN, AT NO ADDITIONAL COST TO THE OWNER, ANY ADDITIONAL EROSION CONTROL MEASURES DEEMED NECESSARY FOR PERMIT COMPLIANCE BY THE CONTRACTOR, THE OWNER AND/OR THEIR REPRESENTATIVES, OR BY FEDERAL/STATE/LOCAL GOVERNMENT INSPECTORS.

4. ALL EROSION CONTROL MEASURES SHALL BE CONSTRUCTED AND MAINTAINED IN ACCORDANCE WITH APPLICABLE PUBLISHED STANDARDS AND SPECIFICATIONS AND THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS: A GUIDE FOR PLANNERS, DESIGNERS, AND MUNICIPAL OFFICIALS" (MA DEP, MAY 2003).

5. CONSTRUCTION ENTRANCE(S) SHALL BE INSTALLED CONCURRENTLY WITH THE INITIATION OF CLEARING AND GRUBBING OPERATIONS. THE CONTRACTOR SHALL PROTECT ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS TO PREVENT THE DEPOSITION OF MATERIALS ONTO TRAVERSED PUBLIC THOROUGHFARES. ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARES SHALL BE REMOVED IMMEDIATELY.

6. ALL SEDIMENT BASINS, TRAP EMBANKMENTS, SWALES, PERIMETER DIKES, AND PERMANENT SLOPES STEEPER OR EQUAL TO 3:1 SHALL BE STABILIZED WITH SOD, SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES, WITHIN SEVEN (7) CALENDAR DAYS OF ESTABLISHMENT. NO AREAS OUTSIDE OF THE PERIMETER SEDIMENT CONTROL BARRIER OR LIMIT OF WORK SHALL BE DISTURBED.

7. THE CONTRACTOR SHALL APPLY SOD, SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES TO ALL DISTURBED AREAS WITHIN 14 CALENDAR DAYS AFTER STRIPPING AND GRADING ACTIVITIES HAVE CEASED ON THAT AREA. MAINTENANCE SHALL BE PERFORMED AS NECESSARY TO ENSURE CONTINUED STABILIZATION. ACTIVE CONSTRUCTION AREAS, SUCH AS BORROW OR STOCKPILE AREAS, ROADWAY IMPROVEMENTS, AND AREAS WITHIN 50 FEET OF A BUILDING UNDER CONSTRUCTION MAY BE EXEMPTED FROM THIS REQUIREMENT, PROVIDED THAT EROSION AND SEDIMENT CONTROL MEASURES ARE INSTALLED AND MAINTAINED TO PROTECT THOSE AREAS.

8. STOCKPILES WHICH HAVE NOT BEEN USED FOR 14 CALENDAR DAYS, SHALL BE STABILIZED THROUGH THE APPLICATION OF SOD, SEED AND ANCHORED STRAW MULCH, OR OTHER APPROVED STABILIZATION MEASURES.

9. ALL CATCH BASINS OR OTHER DRAIN INLETS WHICH MAY RECEIVE STORMWATER FROM DISTURBED AREAS SHALL BE PROVIDED WITH SUITABLE INLET PROTECTION CONSISTING OF AN OPEN-TOP FILTER FABRIC BAG THAT IS DESIGNED TO HANG UNDERNEATH A STORM GRATE TO FILTER SEDIMENT-LADEN STORMWATER. THESE FILTER SACKS/BAGS SHALL BE INSPECTED WEEKLY, AND AFTER EACH RAIN EVENT AND MAINTAINED AS NOTED IN THE DETAIL.

10. EFFLUENT FROM DEWATERING OPERATIONS AND LINE FLUSHING DISCHARGES SHALL BE DIRECTED INTO FIBER MATS, NETTING, RIPRAP, OR NATURALLY OCCURRING GROUND COVER TO MINIMIZE EROSION. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE PUMPED EITHER TO SEDIMENT TANKS, SEDIMENT BAGS, AND/OR SEDIMENT TRAPS FOR SEDIMENT REMOVAL. DEWATERING SHALL BE PERFORMED IN ACCORDANCE WITH THE "MASSACHUSETTS EROSION AND SEDIMENT CONTROL GUIDELINES FOR URBAN AND SUBURBAN AREAS: A GUIDE FOR PLANNERS, DESIGNERS, AND MUNICIPAL OFFICIALS" AND IN A MANNER THAT DOES NOT ADVERSELY AFFECT AREAS OUTSIDE OF THE LIMIT OF WORK.

11. TEMPORARY SEDIMENT TRAP(S) SHALL BE CLEANED OUT AND RESTORED TO ORIGINAL DIMENSIONS WHEN SEDIMENT HAS ACCUMULATED TO A POINT ONE HALF (1/2) THE DEPTH BETWEEN THE OUTLET CREST AND THE BOTTOM OF THE TRAP.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING, CALCIUM CHLORIDE, OR OTHER EFFECTIVE MEANS OF CONTROL.

13. ALL WASTE MATERIALS GENERATED AT THE SITE SHALL BE IMMEDIATELY REMOVED AND DISPOSED OF OR STORED IN A SECURELY-COVERED CONTAINER IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS. CONTAINER SHALL BE EMPTIED ON A REGULAR BASIS AND AS NECESSARY. NO CONSTRUCTION WASTE OR DEBRIS SHALL BE BURIED ONSITE.

14. PRIOR TO REMOVAL OF SEDIMENT CONTROL MEASURES THE CONTRACTOR SHALL STABILIZE ALL CONTRIBUTORY DISTURBED AREAS USING SOD OR AN APPROVED PERMANENT SEED MIXTURE WITH REQUIRED SOIL AMENDMENTS AND AN APPROVED ANCHORED MULCH. AREAS BROUGHT TO FINISHED GRADE DURING THE SEEDING SEASON SHALL BE PERMANENTLY STABILIZED WITHIN 14 CALENDAR DAYS OF ESTABLISHMENT. WHEN PROPERTY IS BROUGHT TO FINISHED GRADE DURING THE MONTHS WHEN PERMANENT STABILIZATION IS FOUND TO BE IMPRACTICAL, AN APPROVED TEMPORARY SEED AND STRAW ANCHORED MULCH OR OTHER ACCEPTABLE MEANS SHALL BE APPLIED TO DISTURBED AREAS.

15. TEMPORARY SEDIMENT CONTROL DEVICES SHALL BE REMOVED WITHIN (30) CALENDAR DAYS FOLLOWING ESTABLISHMENT OF PERMANENT STABILIZATION IN ALL CONTRIBUTORY DRAINAGE AREAS. STORMWATER MANAGEMENT STRUCTURES USED TEMPORARILY FOR SEDIMENT CONTROL SHALL BE CLEANED AND CONVERTED TO THEIR PERMANENT CONFIGURATION WITHIN THIS TIME PERIOD AS WELL. ALL STORM DRAINAGE STRUCTURES, SUMPS, AND PIPES SHALL BE CLEANED OF ALL SEDIMENTS PRIOR TO FINAL PAYMENT.

16. ALL STAGING AREAS SHALL BE RESTORED TO ORIGINAL CONDITION AT COMPLETION OF PROJECT.

GENERAL DEWATERING NOTES:

1. THE CONTRACTOR SHALL SUBMIT A DETAILED DEWATERING PLAN, CONSTRUCTION SEQUENCE, SHOP DRAWINGS, AND NARRATIVE DESCRIBING THE PROPOSED DEWATERING OPERATION FOR APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO INITIATING ANY WORK ON SITE.

2. THE CONTRACTOR IS RESPONSIBLE FOR SIZING THE DEWATERING PUMP, AND SHALL HAVE SUFFICIENT PUMPING CAPACITY ON SITE AVAILABLE 24 HOURS A DAY, 7 DAYS A WEEK. THE DEWATERING PUMP INTAKE SHALL BE SET IN A SUMP SURROUNDED BY WASHED STONE.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF WATER FOR THE DURATION OF CONSTRUCTION.

4. THE CONTRACTOR IS RESPONSIBLE FOR REMOVING SEDIMENT FROM THE DEWATERING DEVICE THROUGHOUT THE PROJECT AS REQUIRED TO ADEQUATELY TREAT DISCHARGE WATER.

5. THE CONTRACTOR SHALL REFER TO THE ENVIRONMENTAL PERMITS ISSUED FOR THE PROJECT FOR ANY ADDITIONAL REQUIREMENTS REGARDING POND DEWATERING.

0 15 30 60
SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

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CONSUE SPRINGS STORMWATER IMPROVEMENTS
AND TIDAL POND RESTORATION
PERMITTING PLAN SET

POND DEWATERING AND
EROSION & SEDIMENT CONTROL PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
TOWN OF NANTUCKET
PUBLIC WORKS DEPT.
188 MADAKET ROAD
NANTUCKET, MA 02554

PROJ MGR: SL	REVIEWED BY: TEJ	CHECKED BY: RS/STD	DRAWING
DESIGNED BY: RS/STD	DRAWN BY: EDM	SCALE: 1"=30'	5
DATE: MARCH, 2016	PROJECT NO. 15.0166274.00	REVISION NO. -	SHEET NO. 5 OF 8

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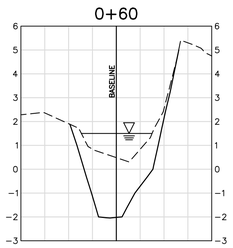

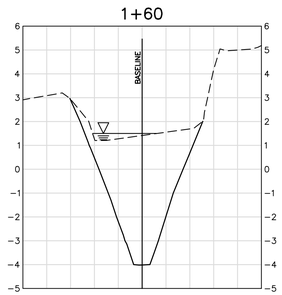

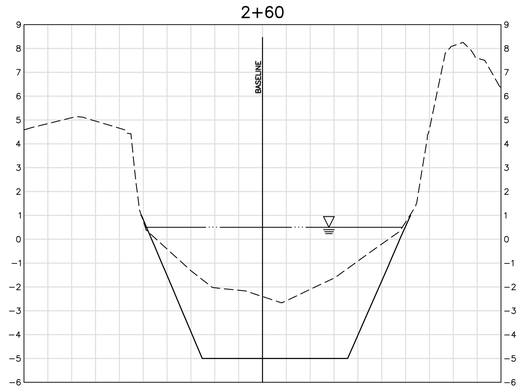

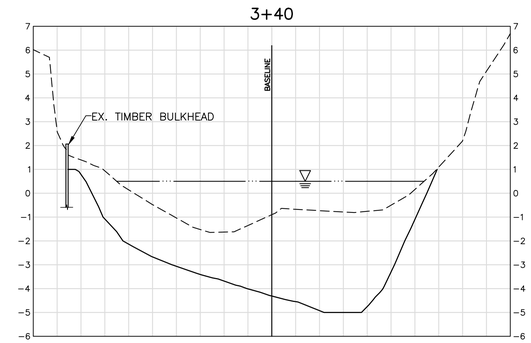

POND CROSS SECTIONS

VERT. 1"=3'
HOR. 1"=30'

LEGEND

- EXISTING LOW WATER SURFACE (0.5 FT.)
- EXISTING GROUND/POND BOTTOM
- PROPOSED POND BOTTOM

VERTICAL SCALE IN FEET
0 1.5 3 6
0 15 30 60
HORIZONTAL SCALE IN FEET

NO.	ISSUE/DESCRIPTION	BY	DATE

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CONSUE SPRINGS STORMWATER IMPROVEMENTS
AND TIDAL POND RESTORATION
PERMITTING PLAN SET

POND CROSS SECTIONS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
TOWN OF NANTUCKET
PUBLIC WORKS DEPT.
188 MADAKET ROAD
NANTUCKET, MA 02554

PROJ MGR: SLL	REVIEWED BY: TEJ	CHECKED BY: RS/STD	DRAWING 6
DESIGNED BY: RS/STD	DRAWN BY: EDM	SCALE: AS NOTED	
DATE: MARCH, 2016	PROJECT NO. 15.0166274.00	REVISION NO. -	SHEET NO. 6 OF 8

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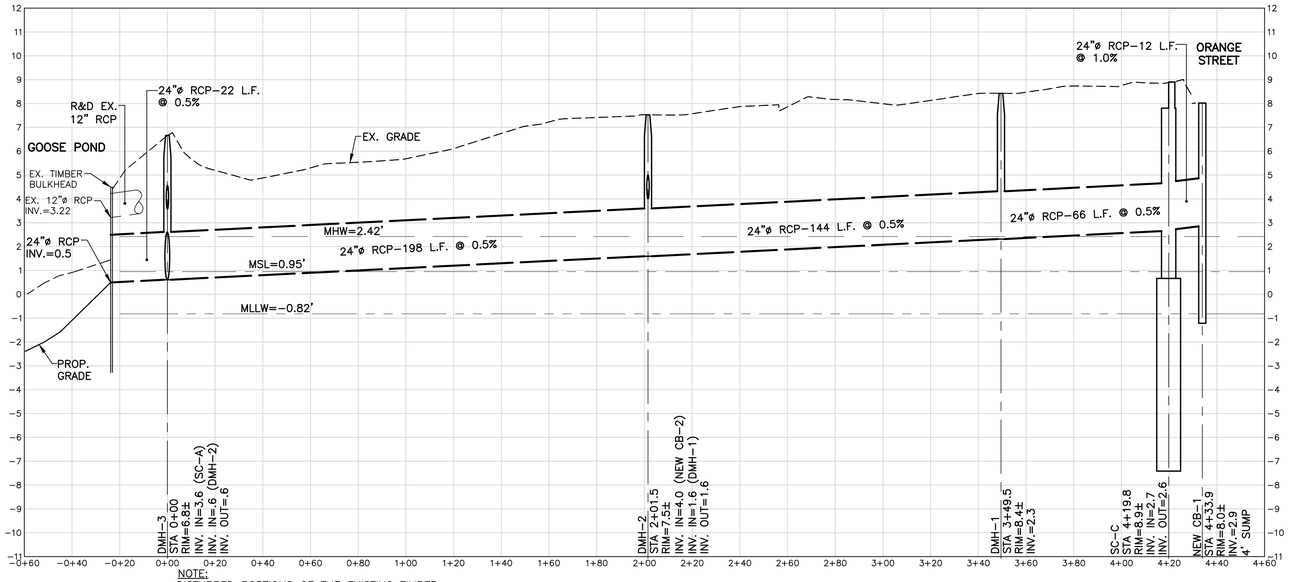


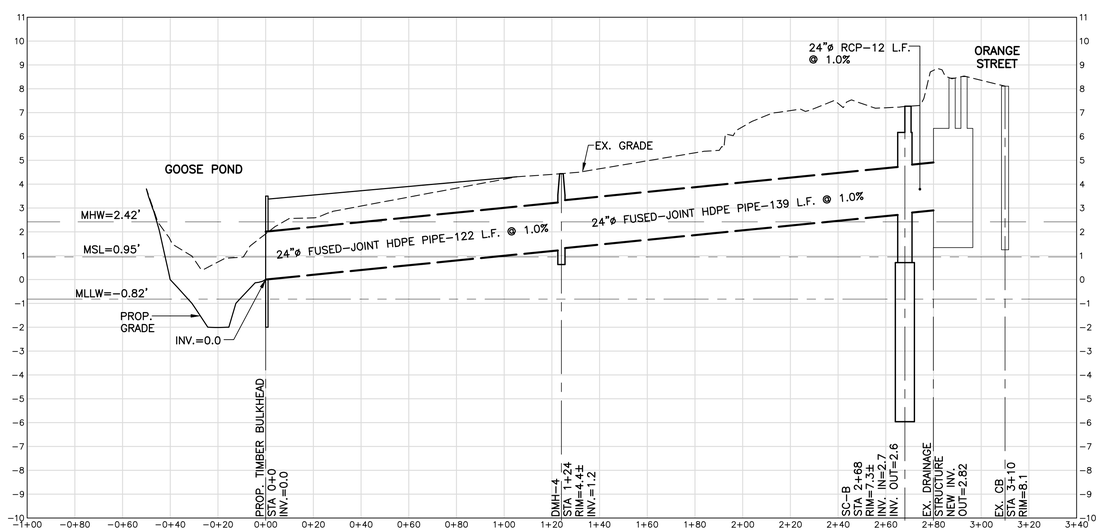
NOTE:
DISTURBED PORTIONS OF THE EXISTING TIMBER BULKHEAD ADJACENT TO UNION STREET SHALL BE REPLACED IN KIND.

PROFILE–ORANGE STREET TO GOOSE POND

VERT. 1"=3'
HOR. 1"=30'

LEGEND

MEAN HIGH WATER
MEAN SEA LEVEL
MEAN LOWER LOW WATER

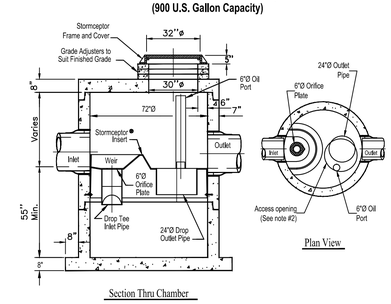


PROFILE–ORANGE STREET TO GOOSE POND

VERT. 1"=3'
HOR. 1"=30'

Rinker MATERIALS — Concrete Pipe Division

STC 900 Precast Concrete Stormceptor®
(900 U.S. Gallon Capacity)

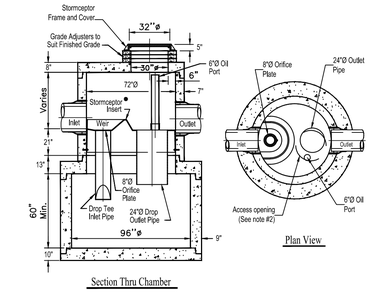


Notes:
1. The Use Of Flexible Connection is Recommended at The Inlet and Outlet Where Applicable.
2. The Cover Should be Positioned Over The Outlet Drop Pipe and The Oil Port.
3. The Stormceptor System is protected by one or more of the following U.S. Patents: #4985148, #5498331, #5725760, #5753115, #5849181, #6068765, #6371690.
4. Contact a Concrete Pipe Division representative for further details not listed on this drawing.

SC–A
NTS

Rinker MATERIALS — Concrete Pipe Division

STC 2400 Precast Concrete Stormceptor®
(2400 U.S. Gallon Capacity)



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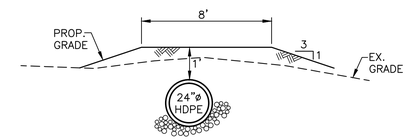
4. Contact a Concrete Pipe Division representative for further details not listed on this drawing.

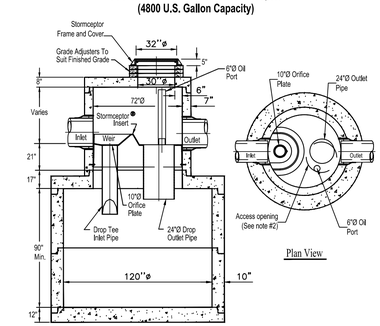
SC–B
NTS



PIPE COVER DETAIL
NTS

Rinker MATERIALS — Concrete Pipe Division

STC 4800 Precast Concrete Stormceptor®
(4800 U.S. Gallon Capacity)



Notes:
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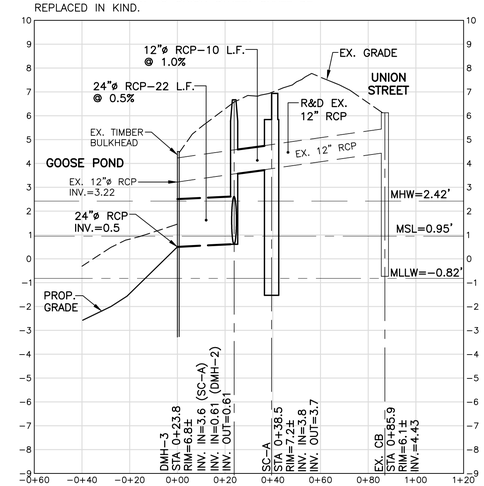
4. Contact a Concrete Pipe Division representative for further details not listed on this drawing.

SC–C
NTS

NOTE:
DISTURBED PORTIONS OF THE EXISTING TIMBER BULKHEAD ADJACENT TO UNION STREET SHALL BE REPLACED IN KIND.



PROFILE–UNION STREET TO GOOSE POND

VERT. 1"=3'
HOR. 1"=30'

NO.	ISSUE/DESCRIPTION	BY	DATE

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CONSUE SPRINGS STORMWATER IMPROVEMENTS
AND TIDAL POND RESTORATION
PERMITTING PLAN SET

STORM DRAIN
PROFILES & DETAILS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
TOWN OF NANTUCKET
PUBLIC WORKS DEPT.
188 MADAKET ROAD
NANTUCKET, MA 02554

PROJ MGR: SLL	REVIEWED BY: TEJ	CHECKED BY: RS/STD	DRAWING 7
DESIGNED BY: RS/STD	DRAWN BY: EDM	SCALE: AS NOTED	
DATE: MARCH, 2016	PROJECT NO. 15.0166274.00	REVISION NO. -	SHEET NO. 7 OF 8

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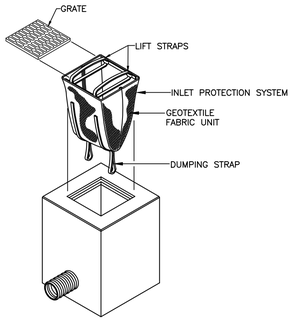
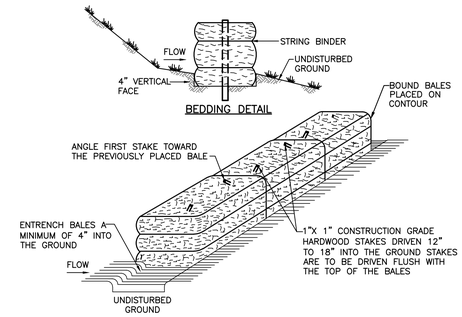


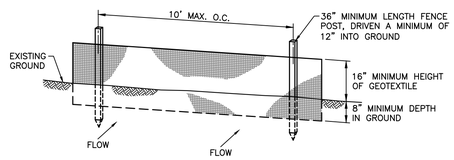
INSTALLATION: REMOVE THE GRATE FROM CATCH BASIN. IF USING OPTIONAL OIL ABSORBENTS; PLACE ABSORBENT PILLOW IN UNIT. STAND THE GRATE ON END. MOVE THE TOP LIFTING STRAPS OUT OF THE WAY AND PLACE THE GRATE INTO THE GEOTEXTILE FABRIC UNIT SO THAT THE GRATE IS BELOW THE TOP STRAPS AND ABOVE THE LOWER STRAPS. HOLDING THE LIFTING DEVICES, INSERT THE GRATE INTO THE INLET.

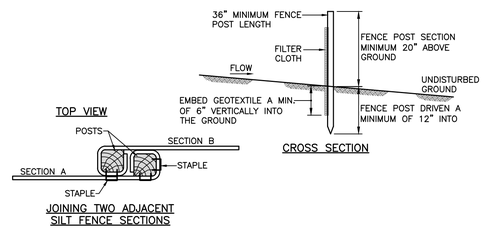
MAINTENANCE: REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF UNIT AFTER EACH STORM EVENT. AFTER EACH STORM EVENT AND AT REGULAR INTERVALS, LOOK INTO THE GEOTEXTILE FABRIC UNIT. IF THE CONTAINMENT AREA IS MORE THAT 1/3 FULL OF SEDIMENT, THE UNIT MUST BE EMPTIED. TO EMPTY UNIT, LIFT THE UNIT OUT OF THE INLET USING THE LIFTING STRAPS AND REMOVE THE GRATE. IF USING OPTIONAL OIL ABSORBENTS; REPLACE ABSORBENT WHEN NEAR SATURATION.

A/8 CATCH BASIN PROTECTION
NTS

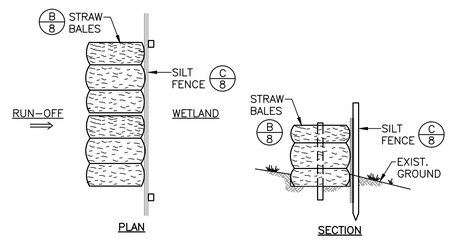


B/8 STRAW BALE SILT BARRIER
NTS

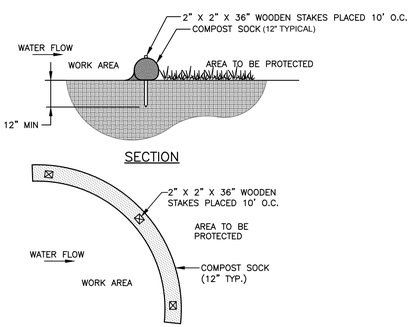




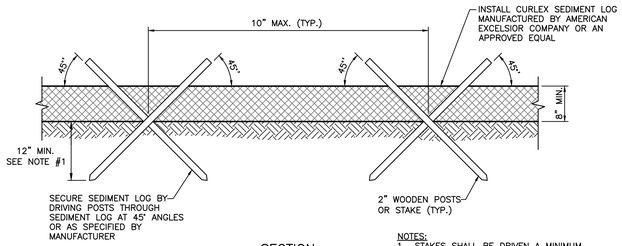
C/8 SILT FENCE DETAIL
NTS



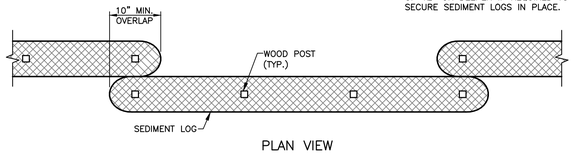
D/8 COMBINATION SILTFENCE/STRAW BALE EROSION CONTROL BARRIER
NTS



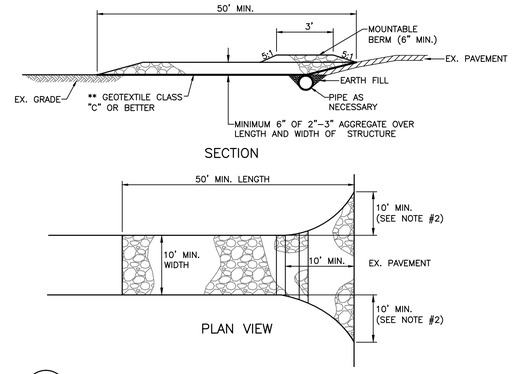
F/8 COMPOST FILTER LOG
NTS



NOTES:
1. STAKES SHALL BE DRIVEN A MINIMUM OF 12" OR DEEPER IF REQUIRED TO SECURE SEDIMENT LOGS IN PLACE.



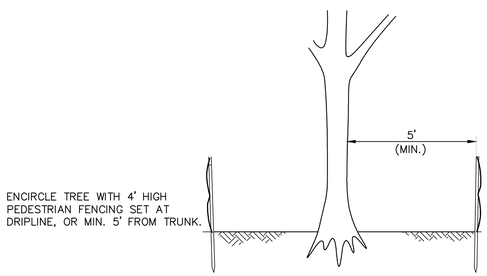
J/8 SEDIMENT LOG DETAIL
NTS



I/8 STABILIZED CONSTRUCTION ENTRANCE
NTS

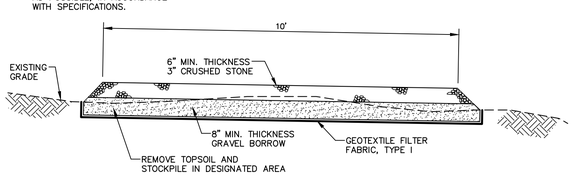
STABILIZED CONSTRUCTION ENTRANCE SPECIFICATIONS

1. LENGTH – MINIMUM OF 50'.
2. WIDTH – 10' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
3. GEOTEXTILE FABRIC (FILTER CLOTH) SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE.
4. STONE – CRUSHED AGGREGATE (2" TO 3") OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT SHALL BE PLACED AT LEAST 6" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
5. SURFACE WATER – ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM DIAMETER PIPE WILL BE REQUIRED.
6. LOCATION – A STABILIZED CONSTRUCTION ENTRANCE SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED CONSTRUCTION ENTRANCE.



L/8 TREE PROTECTION DETAIL
NTS

NOTES:
1. AT COMPLETION OF POND EXCAVATION, ALL ACCESS ROADS SHALL BE REMOVED, THE TOPSOIL SHALL BE REPLACED, AND ALL AREAS GRADED TO PRE-CONSTRUCTION CONDITIONS.
2. ALL DISTURBED AREAS SHALL BE SEEDED OR SODDED AS SOON AS POSSIBLE, IN ACCORDANCE WITH SPECIFICATIONS.

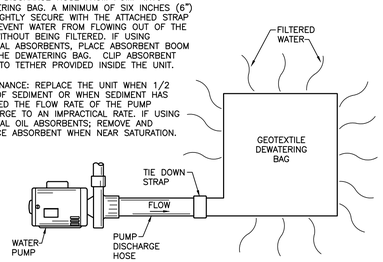


K/8 TEMPORARY CONSTRUCTION ACCESS ROAD TYPICAL SECTION
NTS

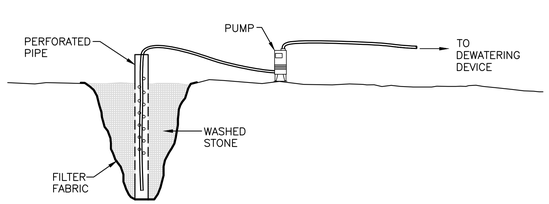
GEOTEXTILE DEWATERING BAG INSTALLATION AND MAINTENANCE GUIDELINES

INSTALLATION: PLACE LIFTING STRAPS (NOT INCLUDED) UNDER THE UNIT TO FACILITATE REMOVAL AFTER USE. UNFOLD GEOTEXTILE DEWATERING BAG ON A STABILIZED AREA OVER DENSE VEGETATION, STRAW, OR GRAVEL (IF AN INCREASED DRAINAGE SURFACE IS NEEDED). INSERT DISCHARGE HOSE FROM PUMP INTO DEWATERING BAG. A MINIMUM OF SIX INCHES (6") AND TIGHTLY SECURE WITH THE ATTACHED STRAP TO PREVENT WATER FROM FLOWING OUT OF THE UNIT WITHOUT BEING FILTERED. IF USING OPTIONAL ABSORBENTS, PLACE ABSORBENT BOOM INTO THE DEWATERING BAG. CLIP ABSORBENT BOOM TO TETHER PROVIDED INSIDE THE UNIT.

MAINTENANCE: REPLACE THE UNIT WHEN 1/2 FULL OF SEDIMENT OR WHEN SEDIMENT HAS REDUCED THE FLOW RATE OF THE PUMP DISCHARGE TO AN IMPRACTICAL RATE. IF USING OPTIONAL OIL ABSORBENTS; REMOVE AND REPLACE ABSORBENT WHEN NEAR SATURATION.



E/8 DEWATERING BAG DETAIL (TEMPORARY–TO BE USED FOR DEWATERING PURPOSES)
NTS



G/8 DEWATERING PUMP
NTS

NO.	ISSUE/DESCRIPTION	BY	DATE

UNLESS SPECIFICALLY STATED BY WRITTEN AGREEMENT, THIS DRAWING IS THE SOLE PROPERTY OF GZA GEOENVIRONMENTAL, INC. (GZA). THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY GZA'S CLIENT OR THE CLIENT'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY THE CLIENT OR OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA.

CONSUE SPRINGS STORMWATER IMPROVEMENTS
AND TIDAL POND RESTORATION
PERMITTING PLAN SET

DETAILS

PREPARED BY:
GZA GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR:
TOWN OF NANTUCKET
PUBLIC WORKS DEPT.
188 MADAKET ROAD
NANTUCKET, MA 02554

PROJ MGR: SLL	REVIEWED BY: TEJ	CHECKED BY: RS/STD	DRAWING 8
DESIGNED BY: STD	DRAWN BY: EDM	SCALE: AS NOTED	
DATE: MARCH, 2016	PROJECT NO. 15.0166274.00	REVISION NO. -	SHEET NO. 8 OF 8

©2015– GZA GeoEnvironmental, Inc. GZA-J:\0 166201 – 0 166300\15.0166274.00 Consue Springs Stormwater Improvements\15.0166274.00CAD\dwg\GZA BASE 9-12.dwg [DETAILS]

NEW INFORMATION FOR CURRENT HEARING

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

MassWildlife

Jack Buckley, *Director*

May 13, 2016

Town of Nantucket
16 Broad Street
Nantucket MA 02554

Nantucket Conservation Commission
37 Washington Street
Nantucket MA 02554

RE:	Applicant:	Kara Buzanoski, Town of Nantucket
	Project Location:	Union Street
	Project Description:	Consue Springs Stormwater Improvements Tidal Pond Restoration
	DEP Wetlands File No.:	048-2880
	NHESP Tracking No.:	**10-27890**

Dear Commissioners & Applicant:

The applicant listed above has submitted a Notice of Intent with site plans (dated March 2016) to the Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division"), in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.37, 10.59).

MA WETLANDS PROTECTION ACT (WPA)

Based on a review of the information that was provided and the information that is currently contained in our database, the Division has determined that this project, as currently proposed, will **not** adversely affect the actual Resource Area Habitat of state-protected rare wildlife species. Therefore, it is our opinion that this project meets the state-listed species performance standard for the issuance of an Order of Conditions.

Please note that this determination addresses only the matter of **rare** wildlife habitat and does not pertain to other wildlife habitat issues that may be pertinent to the proposed project.

MA ENDANGERED SPECIES ACT (MESA)

Based on a review of the information that was provided, the Division has determined that this project, as currently proposed, appears to be exempt from MESA review pursuant to 321 CMR 10.14 which states: "[t]he following Projects and Activities shall be exempt from the requirements of 321 CMR 10.18 through 10.23…"

> (15) The active management of State-listed Species habitat, including but not limited to mowing, cutting, burning, or pruning of vegetation, or removing exotic or invasive species, for the purpose of maintaining or enhancing the habitat for the benefit of rare species, provided that the management is carried

out in accordance with a habitat management plan approved in writing by the Division"

Any changes to the proposed activities or any additional work beyond that described in the approved management plan may require a filing with the Division pursuant to MESA. If you have any questions about this letter, please contact Emily Holt, Endangered Species Review Assistant at 508-389-6385.

Sincerely,

Thomas W. French, Ph.D.
Assistant Director

cc: Stephen Lecco, GZA Geoenvironmental, Inc.
MA DEP Southeast Region

Bell

13 C Willard Street

(42.4.1-15.3)

SE48-2887

NOTICE OF INTENT APPLICATION

For Work on A Single Family Dwelling

At

13C Willard Street

Nantucket, MA

April 2016

Prepared For

J MITCHELL & CYNTHIA BELL

20 Mary Ann Drive • Nantucket, MA 02554
508-825-5053 • www.NantucketEngineer.com

Locus Map - 13C Willard Street

Property Information

Property ID	42.4.1 15.3
Location	13C WILLARD ST
Owner	BELL J MITCHELL & CYNTHIA F

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated December, 2014
Properties updated January, 2015

April 28, 2016

Mr. Ernest Steinauer, Chair
Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

Re: Notice of Intent
13C Willard Street
Map 42.4 Parcel 15.3

Dear Mr. Steinauer:

On behalf of the property owners, J Mitchell & Cynthia Bell, Nantucket Engineering & Survey, P.C. is submitting this Notice of Intent (NOI) to the Nantucket Conservation Commission for proposed activities within Land Subject to Coastal Storm Flowage, and the Buffer Zone to a Bordering Vegetated Wetland at the above referenced properties (the "Site") in Nantucket, Massachusetts.

Proposed activities at the Site consist of picking up the existing structure, relocating it onto new flood-zone compliant foundation and landscaping. No fill is proposed. Attached are permit drawings, including plans showing a site locus, existing conditions including resource area locations, and proposed construction areas.

A completed WPA Form 3 – Notice of Intent is attached along with the NOI Wetland Fee Transmittal Form including checks for $42.50, $67.50, $25 and $200 to cover the WPA filing fee, Nantucket Wetland by-law fee and the Nantucket Expert Review fee. Also included is a check for $266.90 to the Inquirer & Mirror for publication of the notice of the public hearing. A waiver is required from the Town of Nantucket Bylaw Chapter 136 for the proposed project.

Notification of this NOI filing was provided to all abutting property owners by certified mail. This property owner listing was obtained from the Town of Nantucket Assessor's office. Documentation of the notification is provided including a copy of the notification letter, the property owner listing and certified mail receipts.

SITE DESCRIPTION

The subject property is approximately one-quarter of an acre in size and is located in the Brant Point section of Nantucket Island. The property is bounded to the north and south by existing residential-use properties. The westerly boundary is Willard Street, a paved traveled way, and to the east by a Bordering Vegetated Wetland. The property contains an existing residential-use structure served by municipal water and sewer. The defined resource areas on-site are Land Subject to Coastal Storm Flowage, and the Buffer Zones to a Bordering Vegetated Wetland that extend onto locus. A review of the October 1, 2008 "Massachusetts Natural Heritage Atlas", prepared by the Massachusetts Natural Heritage and Endangered Species Program (NHESP), indicates that the project area is not within the known range of state listed rare wildlife species.

WORK DESCRIPTION

Prior to commencement of work, a silt fence will be placed at the limit of work as shown on the site plan. This fence will be inspected regularly and kept in good repair until the work has been completed and the site has stabilized. The Applicant proposes to remove the structures. Excavation for the new foundation will then occur. If temporary dewatering is required, a permit will be obtained from the Department of Public Works to allow discharge to the Town stormwater system. Any excavated material will be trucked off site. The foundation will then be backfilled and the wood frame structure constructed. All disturbed areas will be covered with a minimum of 6" of topsoil and planted with Cape Cod Premium grass seed mix.

WAIVER REQUEST

A waiver is required from Section 3.02.B.1 to allow the footings within two-feet vertically of estimated seasonal high groundwater. Any dewatering activity will be temporary. Disturbed areas will be covered with topsoil and then be planted with Cape Cod Premium Grass Seed Mix. Waivers from the By-law can be granted for a number of reasons including:

- **Chapter 1.03 F.3.c** *The Commission may grant a waiver from these regulations when the Commission finds that a project will provide a long-term net benefit/improvement to the resource area, provided any adverse effects are minimized by carefully considered conditions. However, no such project may be permitted which could have an adverse effect on rare wildlife species.*

The structure will be lifted to conform with building code requirements within the flood zone. Lifting the structure results in an improvement from existing conditions as it will allow for the free flow of flood waters below the structure. The proposed project will not have any adverse impact to the interests protected in the resource area by the Commission.

CONCLUSION

The proposed installation of a foundation compliant with building codes within the flood zone of the existing residential-use of the property will not affect the ability of the Bordering Vegetated Wetland and Land Subject to Coastal Storm Flowage resource areas to function as they currently do, combined with a net-benefit that is recognized by elevating the structure. The project will not result in an adverse impact on the areas or the interests protected by the Commission including flood control, erosion control, storm damage prevention, prevention of pollution, wildlife, and wetland scenic views.

I plan to attend the Public Hearings for this application to address any questions, comments or concerns that the Commission may have.

Sincerely,

Arthur D. Gasbarro, PE, PLS, LEED AP

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

NANTUCKET
City/Town

A. General Information

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

13C Willard Street — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41d 17' 22"N — d. Latitude
70d 05' 49"W — e. Longitude

42.4.1 — f. Assessors Map/Plat Number
15.3 — g. Parcel /Lot Number

2. Applicant:

J. Mitchell & Cynthia F. — a. First Name
Bell — b. Last Name

c. Organization

2200 Ross Avenue – Suite 2800 — d. Street Address

Dallas — e. City/Town
TX — f. State
75201 — g. Zip Code

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

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

a. First Name
b. Last Name

c. Organization

d. Street Address

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

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

4. Representative (if any):

Arthur D. — a. First Name
Gasbarro, PE, PLS, LEED AP — b. Last Name

Nantucket Engineering & Survey, P.C. — c. Company

20 Mary Ann Drive — d. Street Address

Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code

508-825-5053 — h. Phone Number
i. Fax Number
art@nantucketengineer.com — j. Email address

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

$110 + $25 + $200 — a. Total Fee Paid
$42.50 — b. State Fee Paid
$67.50 + $25 + $200 — c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

The Applicant is proposing to lift an existing structure onto a new foundation on a residential-use lot with associated utilities and landscaping within Land Subject to Coastal Storm Flowage and the Buffer Zone to a Bordering Vegetated Wetland. A waiver from the regulations is required to allow the footings within two-feet vertically of estimated seasonal high groundwater. The structure is being lifted to meet building code requirements within the flood zone. Refer to the Site Plan for additional information.

7a. Project Type Checklist:

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

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

1. ☐ Yes ☒ No If yes, describe which limited project applies to this project:

2. Limited Project

8. Property recorded at the Registry of Deeds for:

NANTUCKET	C27-6
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

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

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

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

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

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

Waterways

3. cubic yards dredged

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available)	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

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

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

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

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

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

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

e. ☐ Coastal Dunes — 1. square feet — 2. cubic yards dune nourishment

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

	Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	2,700+/- 1. square feet	

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

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

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings — b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/online_viewer.htm.

a. ☐ Yes ☒ No **If yes, include proof of mailing or hand delivery of NOI to:**

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
Route 135, North Drive
Westborough, MA 01581

10/1/08
b. Date of map

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

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

1. c. Submit Supplemental Information for Endangered Species Review*

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

      (a) within wetland Resource Area _____ percentage/acreage

      (b) outside Resource Area _____ percentage/acreage

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

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

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

      (b) ☐ Photographs representative of the site

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

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

      (d) ☐ Vegetation cover type map of site

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

   d. OR Check One of the Following

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

---

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

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

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

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

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

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

a. ☐ Not applicable – project is in inland resource area only

b. ☐ Yes ☒ No If yes, include proof of mailing or hand delivery of NOI to either:

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

Division of Marine Fisheries - Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694

North Shore - Hull to New Hampshire:

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

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

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

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

b. ACEC

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

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

a. ☐ Yes ☒ No

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

a. ☐ Yes ☒ No

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

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

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

2. ☐ A portion of the site constitutes redevelopment

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

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

1. ☒ Single-family house

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

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

D. Additional Information

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

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

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

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

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

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

Site Plan of Land to Accompany A Notice of Intent
a. Plan Title

Nantucket Engineering & Survey, P.C.
b. Prepared By

Arthur Gasbarro, PE, PLS
c. Signed and Stamped by

d. Final Revision Date

1"=10'
e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

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

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

462	4/23/16
2. Municipal Check Number	3. Check date
461	4/23/16
4. State Check Number	5. Check date
J. Mitchel & Cynthia F.	Bell
6. Payor name on check: First Name	7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

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

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

AGENT	4/28/16
1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
	4/28/16
5. Signature of Representative (if any)	6. Date

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

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

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

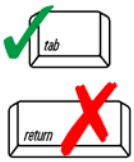
The original and copies must be sent simultaneously. Failure by the applicant to send copies in a timely manner may result in dismissal of the Notice of Intent.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

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



A. Applicant Information

1. Applicant:

J. Mitchell & Cynthia F. — a. First Name
Bell — b. Last Name
c. Organization
2200 Ross Avenue – Suite 2800 — d. Mailing Address
Dallas — e. City/Town
TX — f. State
75201 — g. Zip Code
h. Phone Number
i. Fax Number
j. Email Address

2. Property Owner (if different):

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

3. Project Location:

13C Willard Street — a. Street Address
Nantucket — b. City/Town

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

B. Fees

The fee should be calculated using the following six-step process and worksheet. **Please see Instructions before filling out worksheet.**

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

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Work on Single Family Dwelling Lot	1	$110	$110
Nantucket Wetland By-law Fee			$25
Nantucket Expert Review Fee			$200

Step 5/Total Project Fee: $110 + $25 + $200

Step 6/Fee Payments:

Total Project Fee:	$220 + $25 + $200 a. Total Fee from Step 5
State share of filing Fee:	$42.50 b. 1/2 Total Fee **less $**12.50
City/Town share of filling Fee:	$67.50 c. 1/2 Total Fee **plus** $12.50

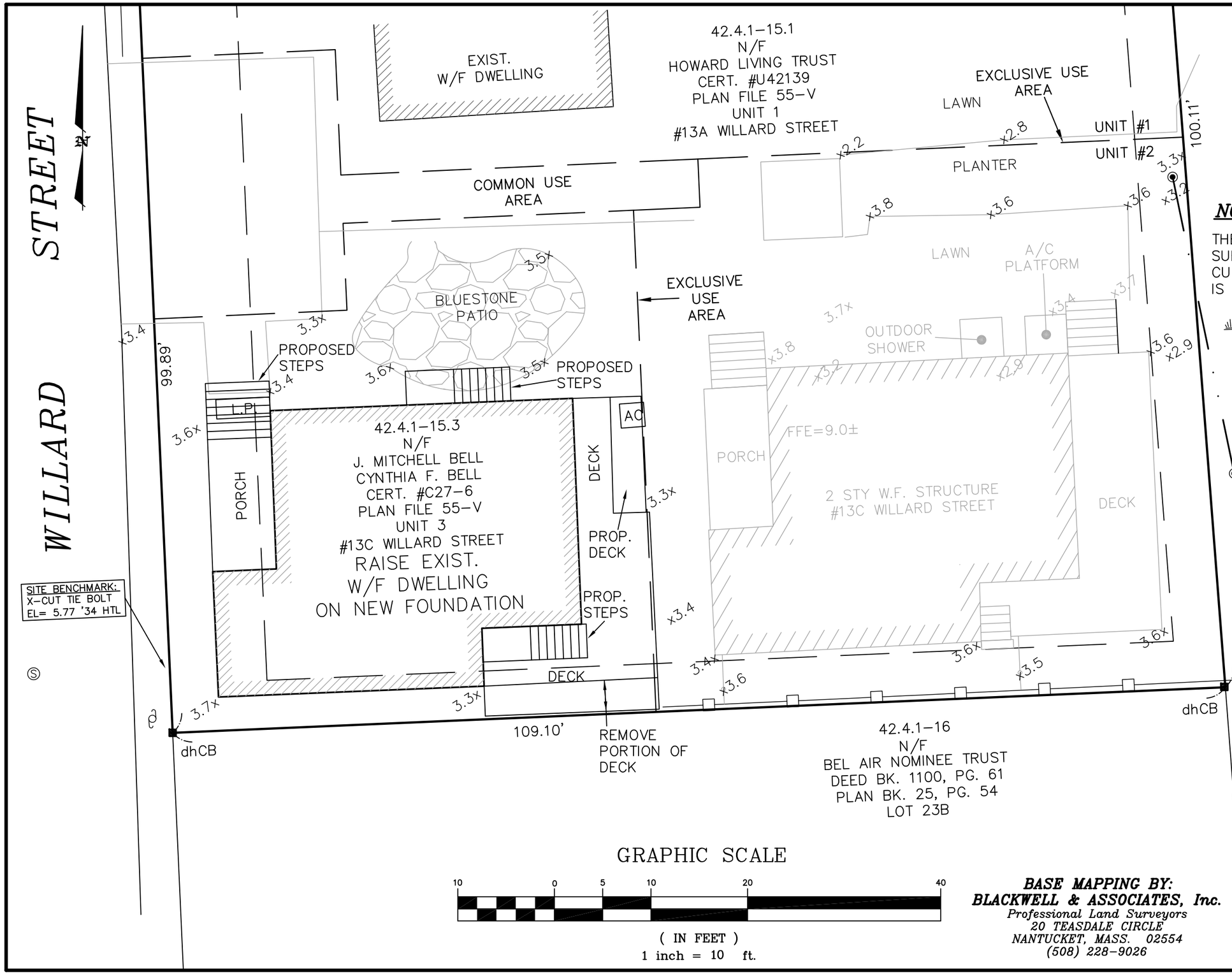
C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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



OWNER INFORMATION

J. MITCHELL BELL &
CYNTHIA F. BELL
CERT. OF TITLE #C27–6
L.C.C. 36963–A, LOT 1
MASTER DEED DOC. #87146
PLAN FILE 55–V, UNIT 3
ASSESSOR'S MAP 42.4.1 – 15.3
#13C WILLARD STREET

NOTE:

THE ENTIRE PROPERTY IS WITHIN LAND SUBJECT TO COASTAL STORM FLOWAGE. CURRENT F.E.M.A. BASE FLOOD ELEVATION IS 7.0' NAVD '88 (EL. 8.4 '34 H.T.L.).

GRAPHIC SCALE

10 0 5 10 20 40

(IN FEET)
1 inch = 10 ft.

BASE MAPPING BY:
BLACKWELL & ASSOCIATES, Inc.
Professional Land Surveyors
20 TEASDALE CIRCLE
NANTUCKET, MASS. 02554
(508) 228–9026

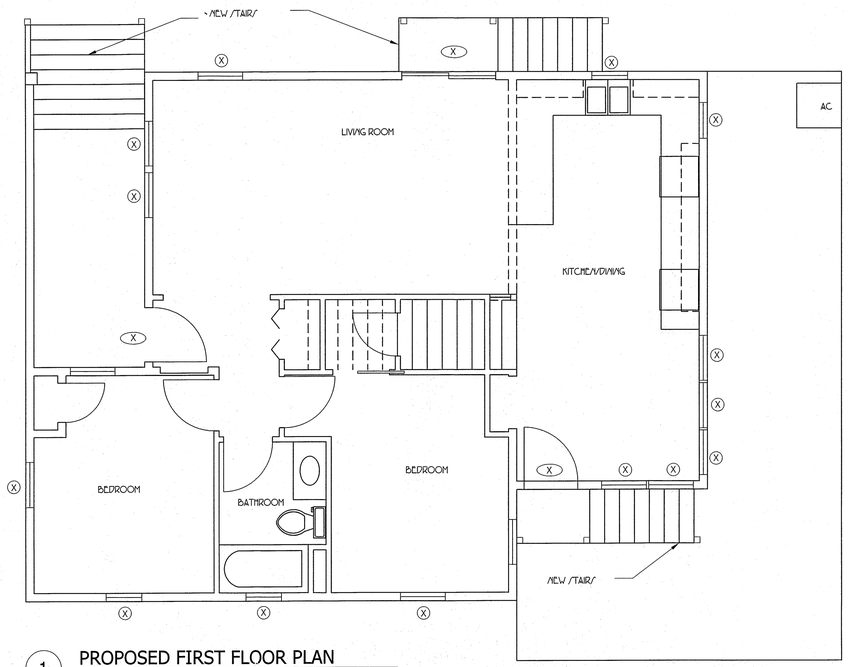
Site Plan of Land To Accompany A Notice of Intent

In Nantucket, MA
Prepared for

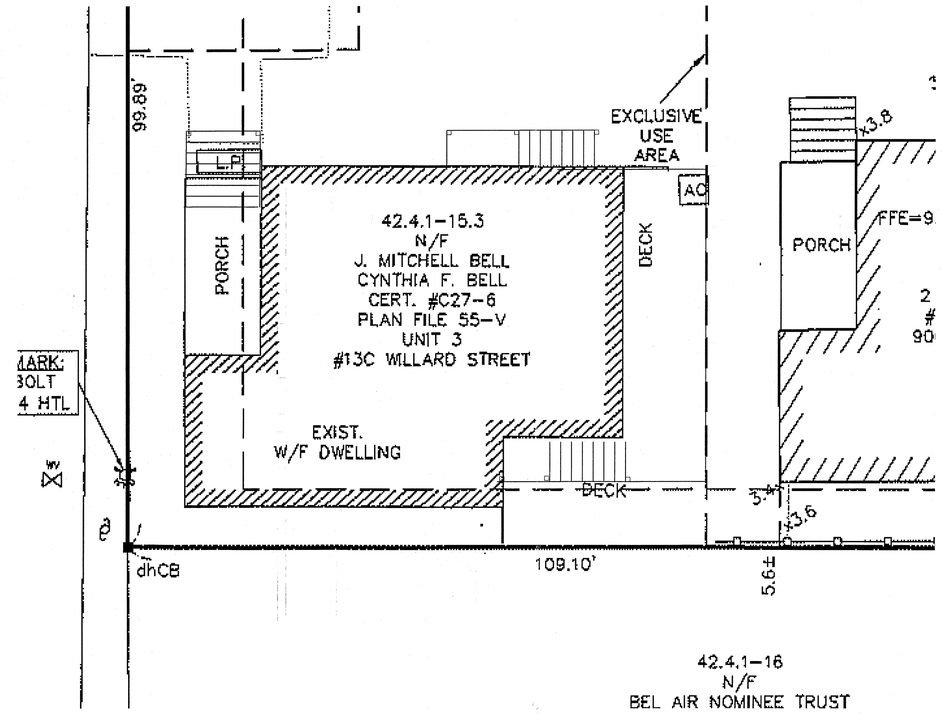
J. MITCHELL BELL & CYNTHIA F. BELL

#13C WILLARD STREET
MAP 42.4.1, PARCEL 15.3
CERT. OF TITLE #C27–6
Scale: 1"=10' April 27, 2016

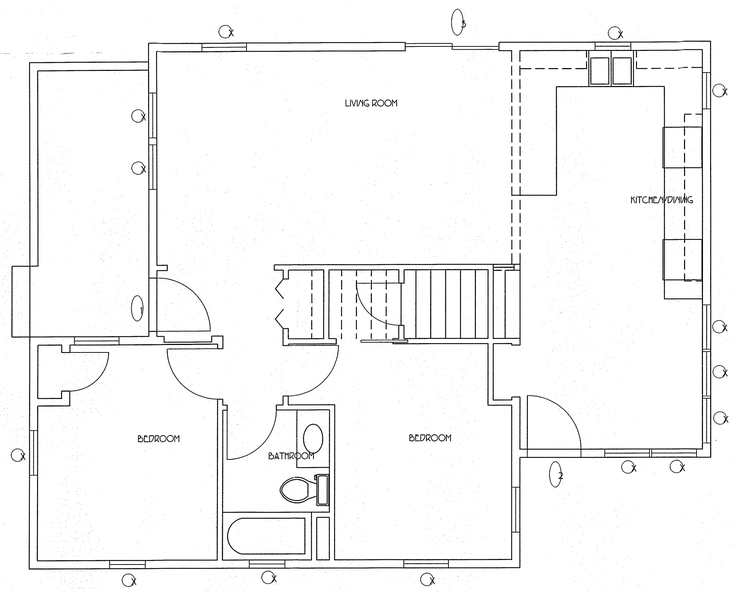
NANTUCKET ENGINEERING & SURVEY, PC
20 Mary Ann Drive Nantucket, MA 02554
NantucketEngineer.com 508-825-5053



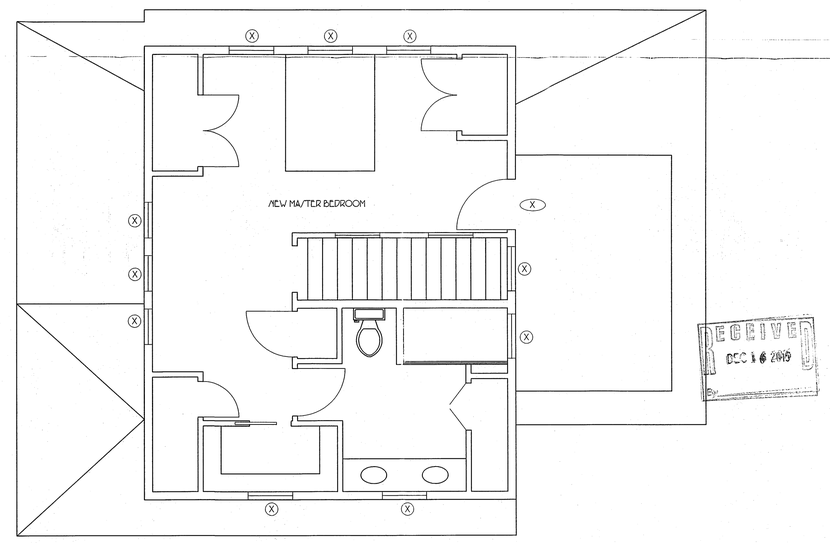
1 PROPOSED FIRST FLOOR PLAN
Scale: 1/4" = 1'-0"



4 SITE PLAN
NO SCALE



2 EXISTING FIRST FLOOR PLAN
Scale: 1/4" = 1'-0"



3 EXISTING SECOND FLOOR PLAN
Scale: 1/4" = 1'-0"

NANTUCKET ARCHITECTURE GROUP LTD.
POST OFFICE BOX 1814
NANTUCKET, MASSACHUSETTS, 02554
TELEPHONE 508.228.5631
WWW.NANTUCKETARCHITECTURE.COM

RENOVATION FOR:
MITCH BELL
13 C WILLARD STREET, NANTUCKET, MA, 02554

EXISTING FIRST AND SECOND FLOOR PLANS, ROOF AND SITE PLANS

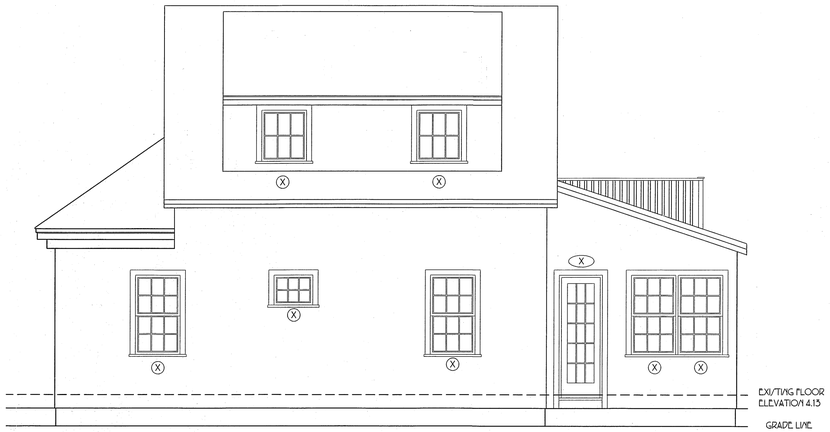
HDC: XX/XX/XX
BIDDING:
BLDG. DEPT:
REVISIONS:
REVISIONS:
REVISIONS:
REVISIONS:
D/B:

1510.15.1073

HDC 1

5 EXISTING WEST ELEVATION

Scale: 1/4" = 1'-0"

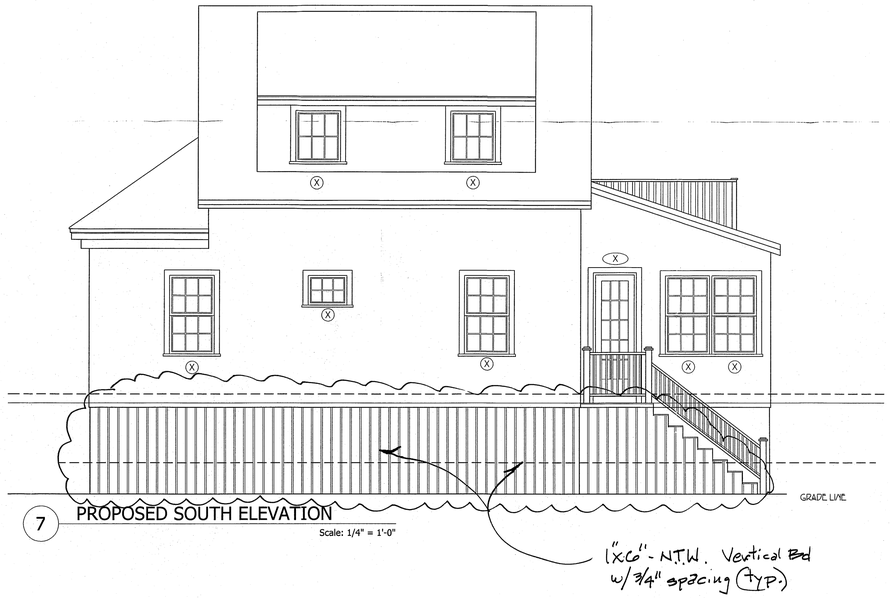


8 EXISTING SOUTH ELEVATION

Scale: 1/4" = 1'-0"

6 PROPOSED WEST ELEVATION

Scale: 1/4" = 1'-0"



7 PROPOSED SOUTH ELEVATION

Scale: 1/4" = 1'-0"

APPROVED

DEC 10 2015 #64949

NO EXTERIOR CHANGES WITHOUT HDC APPROVAL

RECEIVED

DEC 16 2015

By

NANTUCKET ARCHITECTURE GROUP LTD.
POST OFFICE BOX 1814
NANTUCKET, MASSACHUSETTS, 02554
TELEPHONE 508.228.5631
WWW.NANTUCKETARCHITECTURE.COM

RENOVATION FOR:
MITCH BELL
13 C WILLARD STREET, NANTUCKET, MA, 02554

EXISTING AND PROPOSED WEST AND SOUTH ELEVATIONS

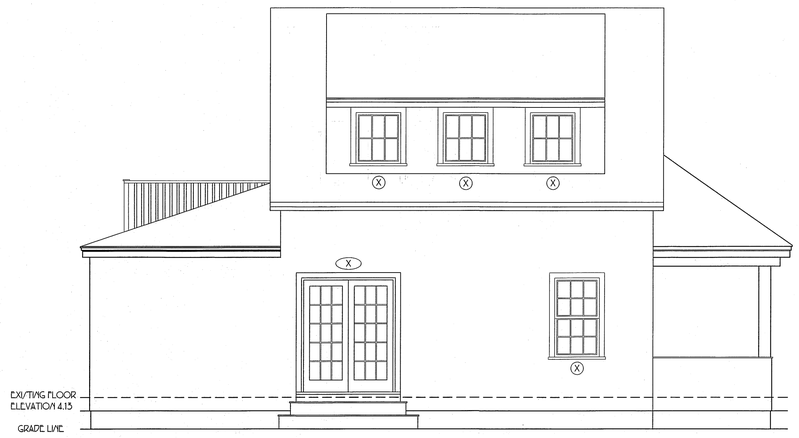
HDC: XX/XX/XX
BIDDING:
BLDG. DEPT:
REVISIONS:
REVISIONS:
REVISIONS:
REVISIONS:
D/B:

1510.15.1073

HDC 2

9 EXISTING EAST ELEVATION

Scale: 1/4" = 1'-0"



12 EXISTING NORTH ELEVATION

Scale: 1/4" = 1'-0"

10 PROPOSED EAST ELEVATION

Scale: 1/4" = 1'-0"

11 PROPOSED NORTH ELEVATION

Scale: 1/4" = 1'-0"

APPROVED
DEC 10 2015 #64949
NO EXTERIOR CHANGES
WITHOUT HDC APPROVAL

RECEIVED
DEC 16 2015
By

NANTUCKET ARCHITECTURE GROUP LTD.
POST OFFICE BOX 1814
NANTUCKET, MASSACHUSETTS, 02554
TELEPHONE 508.228.5631
WWW.NANTUCKETARCHITECTURE.COM

RENOVATION FOR:
MITCH BELL
13 C WILLARD STREET, NANTUCKET, MA, 02554

EXISTING AND PROPOSED EAST AND NORTH ELEVATIONS

HDC: XX/XX/XX
BIDDING:
BLDG. DEPT:
REVISIONS:
REVISIONS:
REVISIONS:
REVISIONS:
D/B:

1510.15.1073

HDC 3

Hilderbrand

60 Crooked Lane

(41-198)

SE48-2886

Nantucket SURVEYORS LLC

P.O. Box 3627, Nantucket, Massachusetts 02584-3627
Tel. (508) 228-0240 Fax (508) 228-9856
www.nantucketsurveyors.com
nsllcinfo@nantucketsurveyors.com

N-10672

April 29, 2016

Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, Massachusetts 02554

RECEIVED APR 29 2016 BY

Re: Notice of Intent
Applicant: Elin Hilderbrand
60 Crooked Lane, Map: 41 Parcel: 198
Nantucket, MA 02554

Dear Commission Members,

Enclosed please find the following:

- Two (2) copies of a Notice of Intent for the above-referenced project;
- One (1) Filing Fee to the Town of Nantucket - $25.00 (bylaw);
- One (1) Filing Fee to the Town of Nantucket - $200.00 (Consultant review fee);
- One (1) Check to the Inquirer & Mirror - $266.90 (publishing of the Public Notice).
- One (1) Check to the Town of Nantucket - $67.50 (WPA Fee)
- One (1) Check to the Commonwealth of MA – $42.50 (WPA Fee) Copy

This application is for the proposed construction of a pool/spa with associated infrastructure and a shed on the subject property within buffers to a Bordering Vegetated Wetland. The proposed work is shown on the included plan, "Site Plan to Accompany a Notice of Intent #60 Crooked Lane", Nantucket, MA prepared by Nantucket Surveyors, LLC dated April 29, 2016. This project requires waivers.

Thank you for your attention to this matter. If you have any questions, please do not hesitate to call our office.

Respectfully,
Nantucket Surveyors, LLC

Paul J. Santos, PLS

Enclosures
cc: DEP Southeast Regional Office
Elin Hilderbrand

Notice of Intent

Map 41 Parcel 198
60 Crooked Lane
Nantucket, Massachusetts

Prepared for: **Elin Hilderbrand**
60 Crooked Lane
Nantucket, MA 02554

Prepared by: **Nantucket Surveyors, LLC**
5 Windy Way, PO Box 3627
Nantucket, MA 02584

April 29, 2016

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

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

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

A. General Information

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

60 Crooked Lane — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41.280426 — d. Latitude
-70.117255 — e. Longitude

41 — f. Assessors Map/Plat Number
198 — g. Parcel /Lot Number

2. Applicant:/Owner:

Elin — a. First Name
Hilderbrand — b. Last Name
c. Organization
60 Crooked Lane — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
508-332-9443 — h. Phone Number
i. Fax Number
elinhilderbrand@yahoo.com — j. Email Address

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

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

4. Representative (if any):

Paul — a. First Name
Santos — b. Last Name
Nantucket Surveyors, LLC — c. Company
P.O. Box 3627 — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
508-228-0240 — h. Phone Number
508-228-9856 — i. Fax Number
psantos@nantucketsurveyors.com — j. Email address

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

$110 — a. Total Fee Paid
$42.50 — b. State Fee Paid
$67.50 — c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

This application is for the proposed construction of a pool/spa with associated infrastructure and a shed on the subject property within buffers to a Bordering Vegetated Wetland.

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

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

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

1. ☐ Yes ☒ No

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

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

a. County
b. Certificate # (if registered land)
1506
c. Book
313
d. Page Number

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

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

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

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced

f. ☐ Riverfront Area

1. Name of Waterway (if available) - **specify coastal or inland**

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

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

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

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

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

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

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

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

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

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

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

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings _____ b. number of replacement stream crossings _____

C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

   a. ☐ Yes ☒ No

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

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

   2008
   b. Date of map

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

   c. Submit Supplemental Information for Endangered Species Review*

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

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

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

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

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

   (b) ☐ Photographs representative of the site

---

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

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

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

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

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

(d) ☐ Vegetation cover type map of site

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

(f) OR Check One of the Following

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

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

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

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

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

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

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

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

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

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

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

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

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

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

   b. ACEC

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

   a. ☐ Yes ☒ No

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

   a. ☐ Yes ☒ No

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

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

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

      2. ☐ A portion of the site constitutes redevelopment

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

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

      1. ☒ Single-family house

      2. ☐ Emergency road repair

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

      or

D. Additional Information

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

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

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

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

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

D. Additional Information (cont'd)

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

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

Site Plan to Accompany a Notice of Intent #60 Crooked Lane
a. Plan Title

Nantucket Surveyors, LLC
b. Prepared By

Paul J. Santos, PLS
c. Signed and Stamped by

4/29/16
d. Final Revision Date

1"=20'
e. Scale

"Pool Application" #60 Crooked Lane, Newman Inc. Design/Build
f. Additional Plan or Document Title

2-12-16
g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

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

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

1316
2. Municipal Check Number

4/28/16
3. Check date

1318
4. State Check Number

4/28/16
5. Check date

Josiah
6. Payor name on check: First Name

Newman
7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

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

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

1. Signature of Applicant	2. Date April 28, 2016.
3. Signature of Property Owner (if different)	4. Date
5. Signature of Representative (if any)	6. Date

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

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

A. Applicant Information

1. Location of Project:

60 Crooked Lane	Nantucket
a. Street Address	b. City/Town
1318	$42.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Elin	Hilderbrand
a. First Name	b. Last Name

c. Organization

60 Crooked Lane
d. Mailing Address

Nantucket	MA	02554
e. City/Town	f. State	g. Zip Code

508-332-9443		elinhilderbrand@yahoo.com
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

a. First Name	b. Last Name

c. Organization

d. Mailing Address

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

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

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

B. Fees

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

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

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
This application is for the proposed construction of a pool/spa with associated infrastructure and a shed on the subject property within buffers to a Bordering Vegetated Wetland.	1	$110	$110

Step 5/Total Project Fee: $110

Step 6/Fee Payments:

Total Project Fee:	$110 a. Total Fee from Step 5
State share of filing Fee:	$42.50 b. 1/2 Total Fee **less** $12.50
City/Town share of filling Fee:	$67.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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

ATTACHMENT A

NOTICE OF INTENT

60 Crooked Lane
Nantucket, Massachusetts
Map: 41 Parcel: 198

List of Plans and Supporting Documents

APPENDIX A – Assessor's Map

APPENDIX B – Project Narrative

APPENDIX C – Nantucket Topography Map

APPENDIX D – NHESP Estimated and Priority Habitat Map

APPENDIX E– FEMA Flood Insurance Rate Map

APPENDIX F – Site Photographs

APPENDIX G – Abutter Notification Information

APPENDIX H– "Site Plan to Accompany a Notice of Intent #60 Crooked Lane"
Prepared by: Nantucket Surveyors LLC
Dated: April 29, 2016

"Pool Application" #60 Crooked Lane
Prepared by: Newman Inc. Design/Build
Dated: February 12, 2016

APPENDIX A

Assessors Map

Figure 1: ASSESSOR'S MAP

#60 CROOKED LANE
NANTUCKET, MASSACHUSETTS

SCALE: N.T.S. DATE: APRIL 29, 2016

ASSESSOR'S REFERENCE:
MAP: 41 PARCEL: 198

PREPARED FOR:
ELIN HILDERBRAND

NANTUCKET SURVEYORS LLC
5 WINDY WAY
NANTUCKET, MA. 02554

SOURCE: 2014 NANTUCKET GIS

N–10672

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APPENDIX B

Project Narrative

APPENDIX B PROJECT NARRATIVE

Introduction

This Notice of Intent is submitted to the Nantucket Conservation Commission ("the Commission") and the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Wetlands Protection Act, MGL c.131, s.40, for the proposed construction of a pool/spa with associated infrastructure and a shed on the subject property within buffers to a Bordering Vegetated Wetland.

Existing Site Conditions

The subject property is located on the north side of Crooked Lane, Nantucket Assessors Map: 41 Parcel: 198. Lot size is approximately 17,958 S.F. The surrounding land uses are residential.

This site contains resource areas subject to jurisdiction under the Nantucket Wetland Bylaw and Massachusetts Wetlands Protection Act. The resource area includes a Bordering Vegetated Wetland.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for this portion of Nantucket (Map No. 25019C0088G), dated June 9, 2014 shows that the property is not located within a Flood Hazard Zone.

The Massachusetts Natural Heritage Atlas, 13th Edition, dated October 2008 (Appendix D) shows that Priority Habitat and Estimated Habitat is not mapped with the project vicinity. The proposed work does not require a filing with NHESP.

Proposed Work

This application is for the proposed construction of a pool/spa with associated infrastructure and a shed on the subject property within buffers to a Bordering Vegetated Wetland. The proposed work is shown on the included plan, "Site Plan to Accompany a Notice of Intent #60 Crooked Lane", Nantucket, MA prepared by Nantucket Surveyors, LLC dated April 29, 2016.

This project requires waivers.

APPENDIX C

Nantucket Topography

Figure 2: Nantucket Topography Map

#60 CROOKED LANE
NANTUCKET, MASSACHUSETTS
N.T.S.
DATE: APRIL 29, 2016
ASSESSOR'S REFERENCE:
MAP: 41 PARCEL: 198

PREPARED FOR:
ELIN HILDERBRAND

NANTUCKET SURVEYORS LLC
5 WINDY WAY
NANTUCKET, MA. 02554

SOURCE: Nantucket GIS

N-10672

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APPENDIX D

NHESP Estimated and Priority Habitat Map

NHESP PRIORITY HABITATS OF RARE SPECIES

NHESP ESTIMATED HABITATS OF RARE WILDLIFE

Figure 3: NHESP MAP

#60 CROOKED LANE
NANTUCKET, MASSACHUSETTS

SCALE: N.T.S. DATE: APRIL 29, 2016

ASSESSOR'S REFERENCE:
MAP: 41 PARCEL: 198

PREPARED FOR:

ELIN HILDERBRAND

NANTUCKET SURVEYORS LLC
5 WINDY WAY
NANTUCKET, MA. 02554

N-10672

SOURCE: 2008 NHESP PRIORITY HABITAT & ESTIMATED HABITAT

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APPENDIX E

FEMA Flood Insurance Rate Map

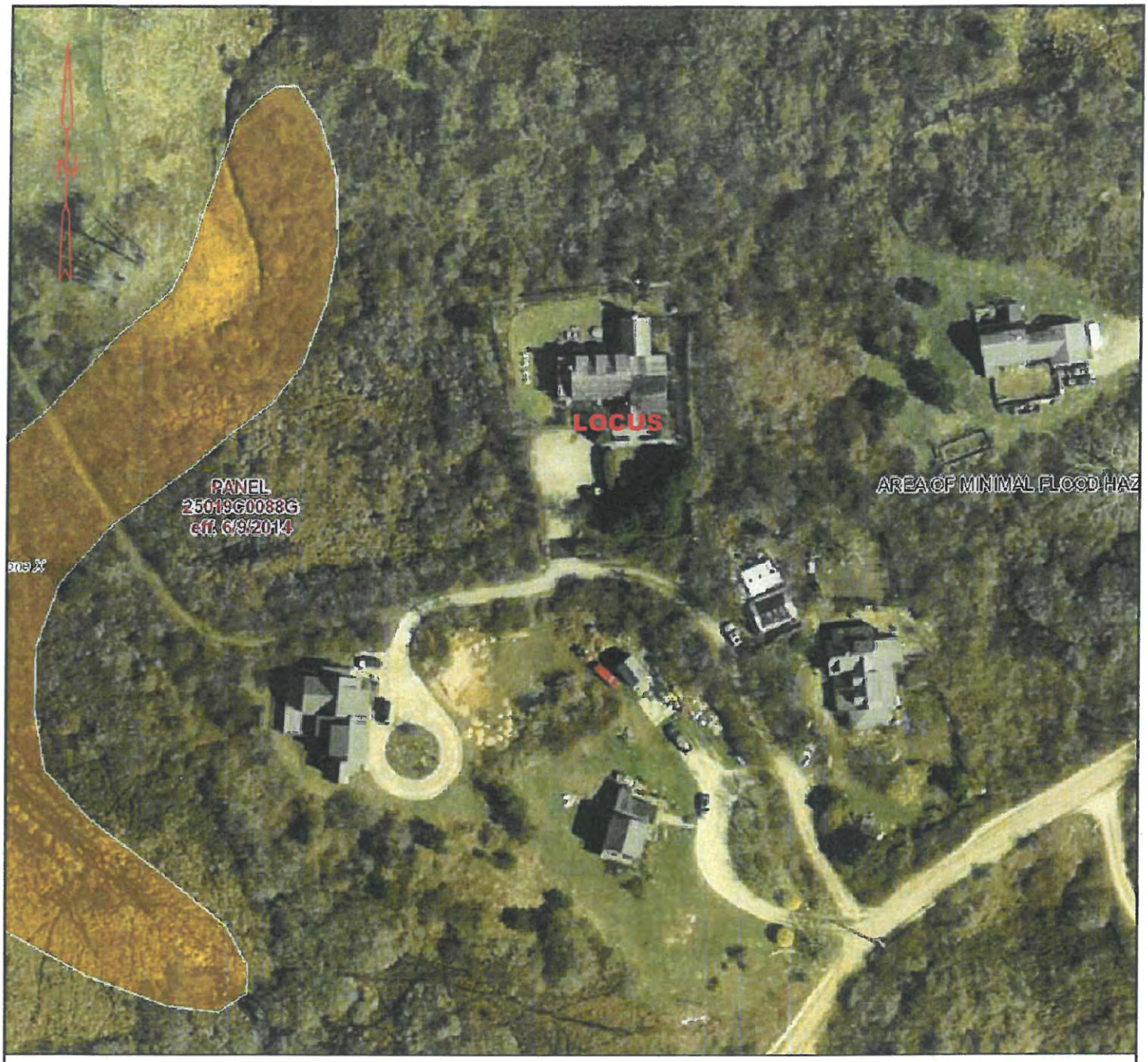

Figure 4: FIRM MAP

#60 CROOKED LANE
NANTUCKET, MASSACHUSETTS

SCALE: N.T.S. DATE: APRIL 29, 2016

ASSESSOR'S REFERENCE:
MAP: 41 PARCEL: 198
25019C0088G

PREPARED FOR:
ELIN HILDERBRAND

NANTUCKET SURVEYORS LLC
5 WINDY WAY
NANTUCKET, MA. 02554

SOURCE: FEMA MAP SERVICE CENTER

N-10672

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APPENDIX F

Site Photographs

60 Crooked Lane, Nantucket, MA
Applicant: Elin Hilderbrand

View of Proposed Shed Location

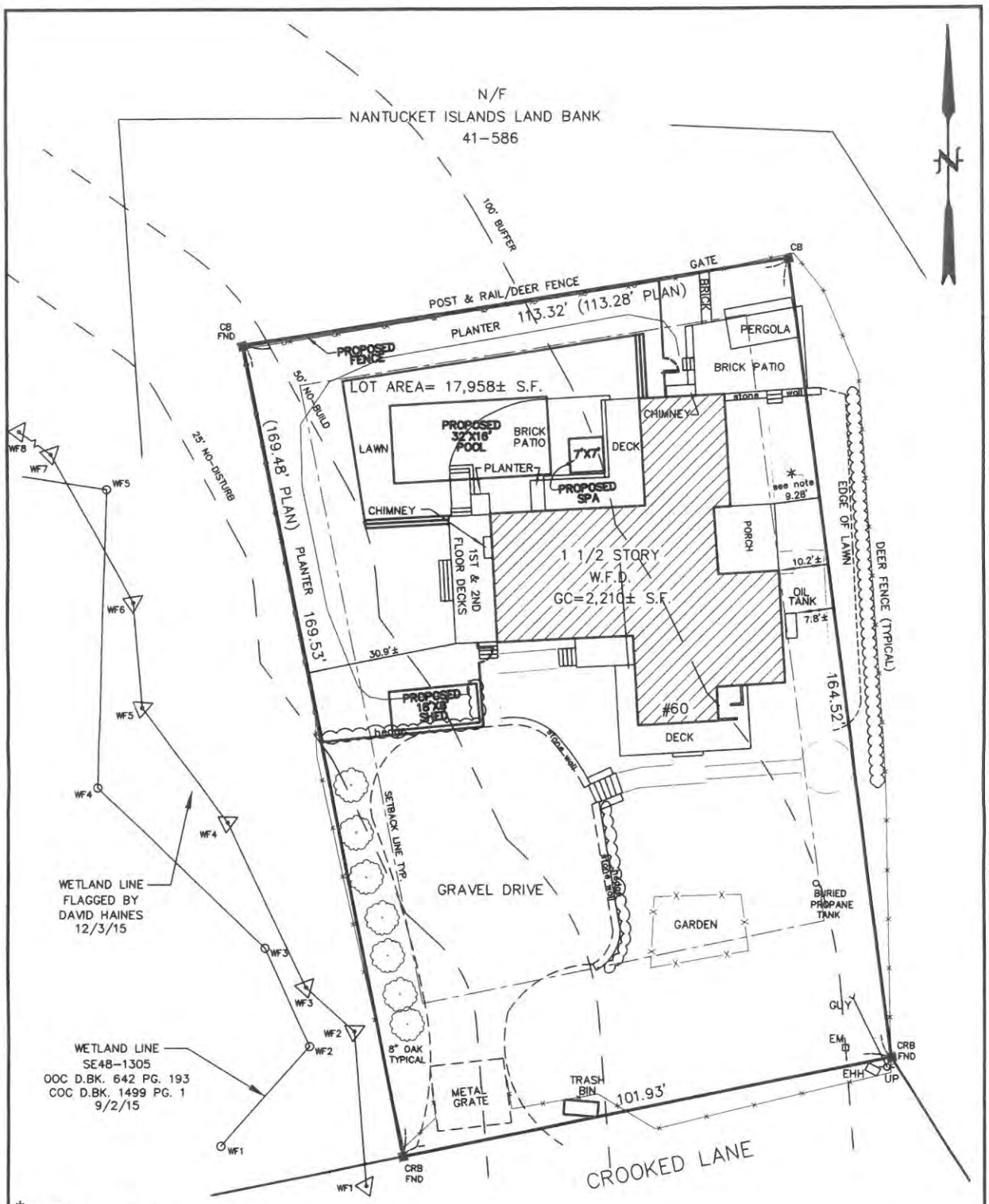
View of Proposed Shed Location

View of Proposed Pool/Spa Location

APPENDIX H

"Site Plan to Accompany a Notice of Intent #60 Crooked Lane"
Prepared by: Nantucket Surveyors LLC
Dated: April 29, 2016

"Pool Application" #60 Crooked Lane
Prepared by: Newman Inc. Design/Build
Dated: February 12, 2016



* NOTE:
LOT IS SUBJECT TO SPECIAL PERMIT RECORDED IN BK 703, PG 156.

LOT PREDATES ZONING JULY 27, 1972
SEE PL. BK. 15 PG. 110, DATED DECEMBER 11, 1961

CURRENT ZONING: R-20
MINIMUM LOT SIZE: 20,000 S.F.
MINIMUM FRONTAGE: 75 FT.
FRONTYARD SETBACK: 30 FT.
SIDE AND REAR SETBACK: 10 FT.
ALLOWABLE G.C.R.: 12.5% OR 2,245±S.F.
EXISTING G.C.R.: 12.3% ±

FOR PROPERTY LINE DETERMINATION THIS PLOT PLAN RELIES ON CURRENT DEEDS AND PLANS OF RECORD, VERIFIED BY FIELD MEASUREMENTS AS SHOWN HEREON. THIS PLAN IS NOT REPRESENTED TO BE A TITLE EXAMINATION OR A RECORDABLE SURVEY.

I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE THAT THE PREMISES SHOWN ON THIS PLAN IS NOT LOCATED WITHIN A FLOOD HAZARD ZONE AS DELINEATED ON "FIRM" MAP NO. 25019C0088G; EFFECTIVE DATE: JUNE 9, 2014. BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

N.B. 268/9-395/49-401/57

COMMONWEALTH OF MASSACHUSETTS
PAUL J. SANTOS
No. 36124
PROFESSIONAL LAND SURVEYOR

Paul J. Santos
4/29/16

SITE PLAN TO ACCOMPANY A
NOTICE OF INTENT
#60 CROOKED LANE
IN
NANTUCKET, MASSACHUSETTS

SCALE: 1"=20' DATE: 4/29/16

DEED REFERENCE: DD.BK. 1506 PG. 313
PLAN REFERENCE: PL.BK. 15 PG. 110
PL.BK. 21, PG. 88

ASSESSOR'S REFERENCE:
MAP: 41 PARCEL: 198
PREPARED FOR:
ELIN HILDERBRAND

NANTUCKET SURVEYORS, LLC.
5 WINDY WAY
NANTUCKET, MA. 02554

N-10672

MAP / PARCEL	41 - 198
ZONING	R - 20
ALLOWABLE G.C.R.:	12.5% or 2,245 +/- s.f.
EXISTING G.C.R.:	12.3%
MIN LOT SIZE	20,000 s.f.
MIN FRONTAGE	75'
FRONT SETBACK	30'
SIDE / REAR SETBACK	10'

NOTES.

-ALL WORK SHALL CONFORM WITH MASS STATE BUILDING CODES AND/OR IBC 2009.

-PROPOSED DECK TO FINISH BELOW 30" ABOVE FINISH GRADE AT LOWEST ELEVATION.

- ALL GATE OPENINGS WITHIN ENCLOSURE SHALL BE OUT-SWINGING, SELF-CLOSING/SELF-LOCKING CAPABLE OF KEEPING GATE SECURE AND LOCKED WHEN NOT IN USE.

- ALL DOORS OF DWELLING WITHIN ENCLOSURE SHALL BE EQUIPPED WITH SELF-CLOSING/SELF-LOCKING HARDWARE WITH INDICATOR WHEN OPENED OR AS REQUIRED BY MASS STATE CODE / IBC 2009.

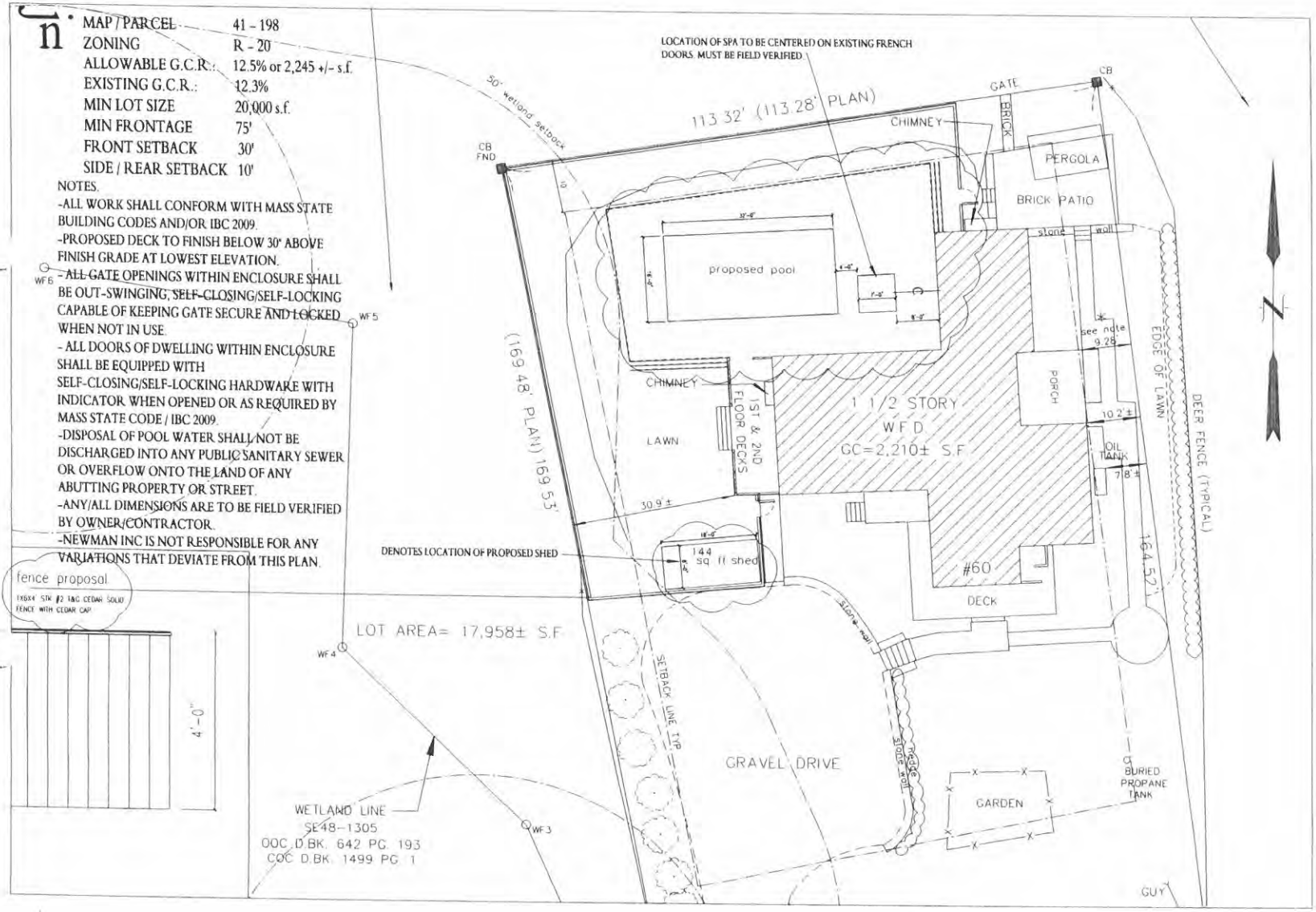
-DISPOSAL OF POOL WATER SHALL NOT BE DISCHARGED INTO ANY PUBLIC SANITARY SEWER OR OVERFLOW ONTO THE LAND OF ANY ABUTTING PROPERTY OR STREET.

-ANY/ALL DIMENSIONS ARE TO BE FIELD VERIFIED BY OWNER/CONTRACTOR.

-NEWMAN INC IS NOT RESPONSIBLE FOR ANY VARIATIONS THAT DEVIATE FROM THIS PLAN.

fence proposal

6X6X4' STK #2 T&G CEDAR SOLID FENCE WITH CEDAR CAP



newman inc.
design/build

DESCRIPTION OF WORK: pool application

Elin Hilderbrand
60 Crooked Lane
Nantucket, MA 02554

site plan
pool application

scale:
1/8" = 1'

2.12.16

1

Asness Realty Trust

3 Hulbert Ave

(29.2.3-6)

SE48-

Nantucket SURVEYORS LLC

P.O. Box 3627, Nantucket, Massachusetts 02584-3627
Tel. (508) 228-0240 Fax (508) 228-9856
www.nantucketsurveyors.com
nsllcinfo@nantucketsurveyors.com

N-10742

April 29, 2016

Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, Massachusetts 02554

RECEIVED APR 29 2016 By

Re: Notice of Intent
Applicant: Clifford S. & Laurel Asness, Trustees
Clifford S. Asness Revocable Trust
3 Hulbert Avenue, Map: 29.2.3 Parcel: 6
Nantucket, MA 02554

Dear Commission Members,

Enclosed please find the following:

- Two (2) copies of a Notice of Intent for the above-referenced project;
- One (1) Filing Fee to the Town of Nantucket - $25.00 (bylaw);
- One (1) Filing Fee to the Town of Nantucket - $200.00 (Consultant review fee);
- One (1) Check to the Inquirer & Mirror - $266.90 (publishing of the Public Notice).
- One (1) Check to the Town of Nantucket - $67.50 (WPA Fee)
- One (1) Check to the Commonwealth of MA – $42.50 (WPA Fee) Copy

This application is for the proposed addition of a Bay Window, Porch/Outdoor Shower, minor expansion of the building footprint, and placement of a generator within buffers to a Coastal Dune and within Land Subject to Coastal Storm Flowage. The proposed work is shown on the included plan, "Site Plan to Accompany a Notice of Intent #3 Hulbert Avenue", Nantucket, MA prepared by Nantucket Surveyors, LLC dated April 29, 2016. This project requires waivers.

Thank you for your attention to this matter. If you have any questions, please do not hesitate to call our office.

Respectfully,
Nantucket Surveyors, LLC

Paul J. Santos, PLS

Enclosures
cc: DEP Southeast Regional Office
Clifford S. Asness Revocable Trust

Notice of Intent

Map 29.2.3 Parcel 6
3 Hulbert Avenue
Nantucket, Massachusetts

Prepared for: **Clifford S. & Laurel Asness**
Clifford S. Asness Revocable Trust
28 Conyers Farm Drive
Greenwhich, CT 06831

Prepared by: **Nantucket Surveyors, LLC**
5 Windy Way, PO Box 3627
Nantucket, MA 02584

April 29, 2016

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

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

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

Nantucket
City/Town

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

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

A. General Information

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

3 Hulbert Avenue — a. Street Address
Nantucket — b. City/Town
02554 — c. Zip Code

Latitude and Longitude:
41.290678 — d. Latitude
-70.093826 — e. Longitude

29.2.3 — f. Assessors Map/Plat Number
6 — g. Parcel /Lot Number

2. Applicant:/Owner:

Clifford S. & Laurel — a. First Name
Asness — b. Last Name
Clifford S. Asness Revocable Trust — c. Organization
28 Conyers Farm Drive — d. Street Address
Greenwhich — e. City/Town
CT — f. State
06831 — g. Zip Code
203-979-2956 — h. Phone Number
i. Fax Number
laurel@clasness.com — j. Email Address

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

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

4. Representative (if any):

Paul — a. First Name
Santos — b. Last Name
Nantucket Surveyors, LLC — c. Company
P.O. Box 3627 — d. Street Address
Nantucket — e. City/Town
MA — f. State
02554 — g. Zip Code
508-228-0240 — h. Phone Number
508-228-9856 — i. Fax Number
psantos@nantucketsurveyors.com — j. Email address

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

$110 — a. Total Fee Paid
$42.50 — b. State Fee Paid
$67.50 — c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description:

This application is for the proposed addition of a Bay Window, Porch/Outdoor Shower, minor expansion of the building footprint, and placement of a generator within buffers to a Coastal Dune and within Land Subject to Coastal Storm Flowage.

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

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

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

1. ☐ Yes ☒ No

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

2. Limited Project Type

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

8. Property recorded at the Registry of Deeds for:

Nantucket	25644
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

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

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

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

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet 3. cubic feet of flood storage lost	2. square feet 4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet 2. cubic feet of flood storage lost	3. cubic feet replaced

f. ☐ Riverfront Area

1. Name of Waterway (if available) - **specify coastal or inland**

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

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

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

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

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

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
a. ☐ Designated Port Areas	Indicate size under Land Under the Ocean, below	
b. ☐ Land Under the Ocean	1. square feet 2. cubic yards dredged	
c. ☐ Barrier Beach	Indicate size under Coastal Beaches and/or Coastal Dunes below	
d. ☐ Coastal Beaches	1. square feet	2. cubic yards beach nourishment
e. ☐ Coastal Dunes	1. square feet	2. cubic yards dune nourishment
	Size of Proposed Alteration	**Proposed Replacement (if any)**
f. ☐ Coastal Banks	1. linear feet	
g. ☐ Rocky Intertidal Shores	1. square feet	
h. ☐ Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐ Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐ Land Containing Shellfish	1. square feet	
k. ☐ Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☒ Land Subject to Coastal Storm Flowage	110± 1. square feet	

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

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

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings | b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

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

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

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

   a. ☐ Yes ☒ No

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

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

   2008
   b. Date of map

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

   c. Submit Supplemental Information for Endangered Species Review*

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

         (a) within wetland Resource Area _____ percentage/acreage

         (b) outside Resource Area _____ percentage/acreage

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

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

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

   (b) ☐ Photographs representative of the site

---

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

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

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

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

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

(d) ☐ Vegetation cover type map of site

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

(f) OR Check One of the Following

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

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

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

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

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

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

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

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694
Email: DMF.EnvReview-South@state.ma.us

North Shore - Hull to New Hampshire border:

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

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

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

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

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

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

   b. ACEC

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

   a. ☐ Yes ☒ No

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

   a. ☐ Yes ☒ No

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

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

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

      2. ☐ A portion of the site constitutes redevelopment

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

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

      1. ☒ Single-family house

      2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

D. Additional Information (cont'd)

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

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

Site Plan to Accompany a Notice of Intent #3 Hulbert Avenue
a. Plan Title

Nantucket Surveyors, LLC
b. Prepared By

Paul J. Santos, PLS
c. Signed and Stamped by

4/29/16
d. Final Revision Date

1"=30'
e. Scale

f. Additional Plan or Document Title

g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

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

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

3195
2. Municipal Check Number

4/27/16
3. Check date

3196
4. State Check Number

4/27/16
5. Check date

Laurel E.
6. Payor name on check: First Name

Asness
7. Payor name on check: Last Name

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

F. Signatures and Submittal Requirements

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

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

1. Signature of Applicant	2. Date 4/27/16
3. Signature of Property Owner (if different)	4. Date 4/27/16
5. Signature of Representative (if any)	6. Date

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

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

A. Applicant Information

1. Location of Project:

3 Hulbert Avenue	Nantucket
a. Street Address	b. City/Town
3196	$42.50
c. Check number	d. Fee amount

2. Applicant Mailing Address:

Clifford S. & Laurel	Asness	
a. First Name	b. Last Name	
Clifford S. Asness Revocable Trust		
c. Organization		
28 Conyers Farm Drive		
d. Mailing Address		
Greenwhich	CT	06831
e. City/Town	f. State	g. Zip Code
203-979-2956		laurel@clasness.com
h. Phone Number	i. Fax Number	j. Email Address

3. Property Owner (if different):

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

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

B. Fees

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

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

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
This application is for the proposed addition of a Bay Window, Porch/Outdoor Shower, minor expansion of the building footprint, and placement of a generator within buffers to a Coastal Dune and within Land Subject to Coastal Storm Flowage.	1	$110	$110

Step 5/Total Project Fee: $110

Step 6/Fee Payments:

Total Project Fee:	$110 a. Total Fee from Step 5
State share of filing Fee:	$42.50 b. 1/2 Total Fee **less** $12.50
City/Town share of filling Fee:	$67.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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

ATTACHMENT A

NOTICE OF INTENT

3 Hulbert Avenue
Nantucket, Massachusetts
Map: 29.2.3 Parcel: 6

List of Plans and Supporting Documents

APPENDIX A – Assessor's Map

APPENDIX B – Project Narrative

APPENDIX C – Nantucket Topography Map

APPENDIX D – NHESP Estimated and Priority Habitat Map

APPENDIX E– FEMA Flood Insurance Rate Map

APPENDIX F – Site Photographs

APPENDIX G – Abutter Notification Information

APPENDIX H– "Site Plan to Accompany a Notice of Intent #3 Hulbert Avenue"
Prepared by: Nantucket Surveyors LLC
Dated: April 29, 2016

APPENDIX A

Assessors Map

Figure 1: ASSESSOR'S MAP

#3 HULBERT AVENUE
NANTUCKET, MASSACHUSETTS

SCALE: N.T.S. DATE: APRIL 29, 2016

ASSESSOR'S REFERENCE:
MAP: 29.2.3 PARCEL: 6

PREPARED FOR:
CLIFFORD S. & LAUREL ASNESS, TRUSTEES
CLIFFORD S. ASNESS REVOCABLE TRUST

NANTUCKET SURVEYORS LLC
5 WINDY WAY
NANTUCKET, MA. 02554

SOURCE: 2014 NANTUCKET GIS

N–10742

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APPENDIX B

Project Narrative

APPENDIX B PROJECT NARRATIVE

Introduction

This Notice of Intent is submitted to the Nantucket Conservation Commission ("the Commission") and the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Wetlands Protection Act, MGL c.131, s.40, for the proposed addition of a Bay Window, Porch/Outdoor Shower, minor expansion of the building footprint, and placement of a generator within buffers to a Coastal Dune and within Land Subject to Coastal Storm Flowage.

Existing Site Conditions

The subject property is located on the north side of Hulbert Avenue, Nantucket Assessors Map: 29.2.3 Parcel: 6. Lot size is approximately 26,600±S.F. The surrounding land uses are residential.

This site contains resource areas subject to jurisdiction under the Nantucket Wetland Bylaw and Massachusetts Wetlands Protection Act. The resource area includes Coastal Dune and Land Subject to Coastal Storm Flowage.

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for this portion of Nantucket (Map No. 25019C0086G), dated June 9, 2014 shows that the property is located within Zone AE (Elev. 9). Within area designated as moderate wave action.

The Massachusetts Natural Heritage Atlas, 13th Edition, dated October 2008 (Appendix D) shows that Priority Habitat and Estimated Habitat is not mapped with the project vicinity. The proposed work does not require a filing with NHESP.

Proposed Work

The proposed work is shown on the included plan, "Site Plan to Accompany a Notice of Intent #3 Hulbert Avenue", Nantucket, MA prepared by Nantucket Surveyors, LLC dated April 29, 2016.

APPENDIX C

Nantucket Topography

Figure 2: Nantucket Topography Map

#3 HULBERT AVENUE
NANTUCKET, MASSACHUSETTS
N.T.S.
DATE: APRIL 29, 2016
ASSESSOR'S REFERENCE:
MAP: 29.2.3 PARCEL: 6

PREPARED FOR:
CLIFFORD S. & LAUREL ASNESS, TRUSTEES
CLIFFORD S. ASNESS REVOCABLE TRUST

NANTUCKET SURVEYORS LLC
5 WINDY WAY
NANTUCKET, MA. 02554

HTL DATUM 1934
SOURCE: Nantucket GIS

N-10742

APPENDIX D

NHESP Estimated and Priority Habitat Map

Figure 3: NHESP MAP

NHESP PRIORITY HABITATS OF RARE SPECIES

NHESP ESTIMATED HABITATS OF RARE WILDLIFE

#3 HULBERT AVENUE
NANTUCKET, MASSACHUSETTS

SCALE: N.T.S. DATE: APRIL 29, 2016

ASSESSOR'S REFERENCE:
MAP: 29.2.3 PARCEL: 6

PREPARED FOR:
CLIFFORD S. & LAUREL ASNESS, TRUSTEES
CLIFFORD S. ASNESS REVOCABLE TRUST

NANTUCKET SURVEYORS LLC
5 WINDY WAY
NANTUCKET, MA. 02554

SOURCE: 2008 NHESP PRIORITY HABITAT & ESTIMATED HABITAT

N-10742

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APPENDIX E

FEMA Flood Insurance Rate Map

Figure 4: FIRM MAP

#3 HULBERT AVENUE
NANTUCKET, MASSACHUSETTS

SCALE: N.T.S. DATE: APRIL 29, 2016

ASSESSOR'S REFERENCE:
MAP: 29.2.3 PARCEL: 6
25019C0086G

PREPARED FOR:
CLIFFORD S. & LAUREL ASNESS, TRUSTEES
CLIFFORD S. ASNESS REVOCABLE TRUST

NANTUCKET SURVEYORS LLC
5 WINDY WAY
NANTUCKET, MA. 02554

SOURCE: FEMA MAP SERVICE CENTER

N-10742

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APPENDIX F

Site Photographs

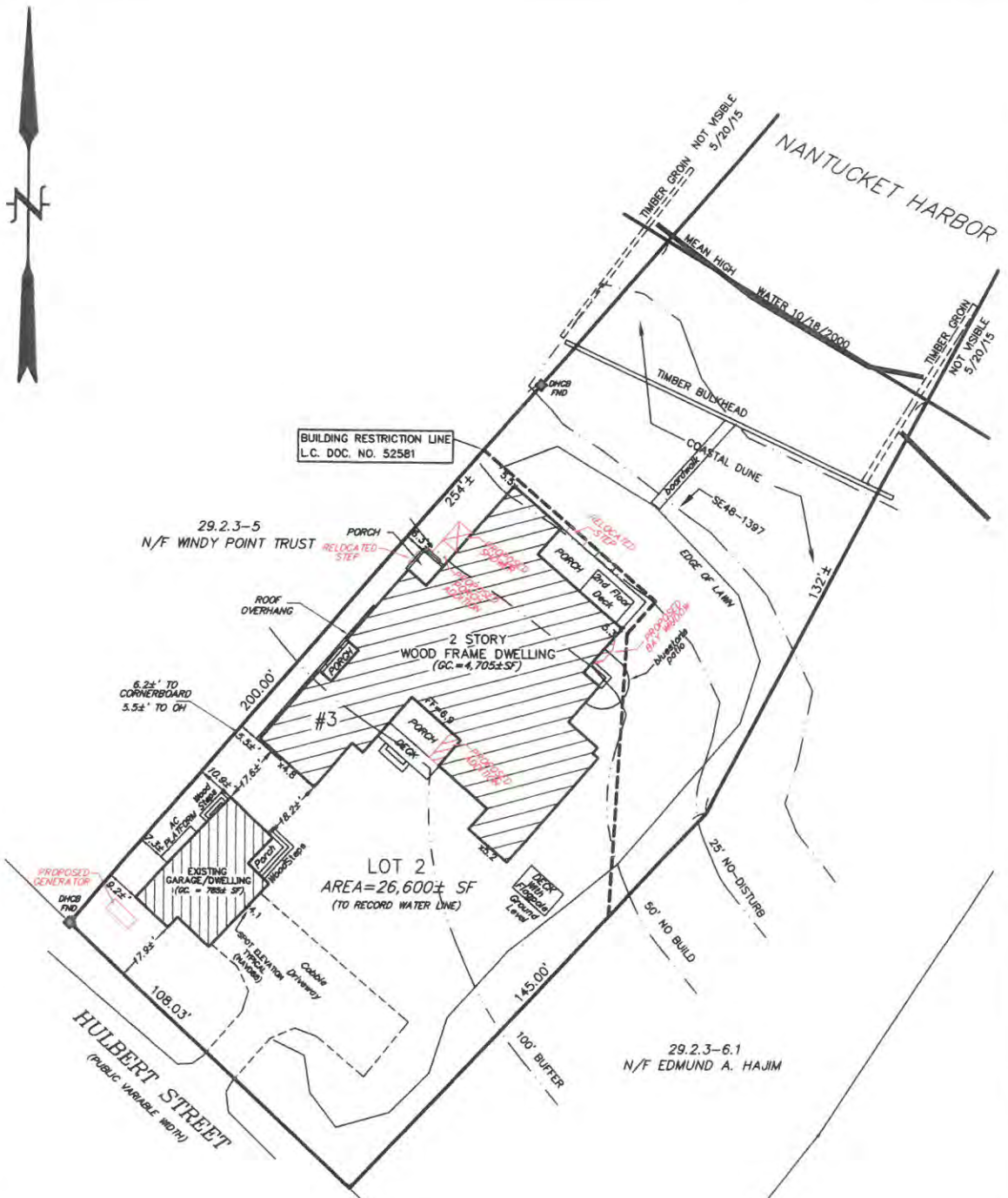
3 Hulbert Avenue, Nantucket, MA
Applicant: Clifford S. & Laurel Asness, Trustees of Clifford S. Asness Revocable Trust

Front View of Dwelling

Rear View of Dwelling

APPENDIX H

"Site Plan to Accompany a Notice of Intent #3 Hulbert Avenue"
Prepared by: Nantucket Surveyors LLC
Dated: April 29, 2016



I HEREBY CERTIFY TO THE BEST OF MY KNOWLEDGE THE PREMISES SHOWN ON THIS PLAN IS LOCATED WITHIN A FLOOD HAZARD ZONE "AE" (EL.9) WITHIN AREA DESIGNATED AS (MODERATE WAVE ACTION) AS DELINEATED ON THE "FIRM" MAP NO. 25019C0086G; EFFECTIVE DATE: JUNE 9, 2014 BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY.

CURRENT ZONING: RESIDENTIAL-1
MINIMUM LOT SIZE: 5,000 SF
MINIMUM FRONTAGE: 50 FT
FRONTYARD SETBACK: 10 FT
SIDE AND REAR SETBACK: 5 FT
ALLOWABLE G.C.R.: 30%
EXISTING G.C.R.: 20.6% ±

FOR PROPERTY LINE DETERMINATION THIS PLOT PLAN RELIES ON CURRENT DEEDS AND PLANS OF RECORD, VERIFIED BY FIELD MEASUREMENTS AS SHOWN HEREON. THIS PLAN IS NOT REPRESENTED TO BE A TITLE EXAMINATION OR A RECORDABLE SURVEY.

COMMONWEALTH OF MASSACHUSETTS
PAUL J. SANTOS
No. 35124
PROFESSIONAL LAND SURVEYOR

Paul J. Santos
4/29/16

SITE PLAN TO ACCOMPANY
A NOTICE OF INTENT
3 HULBERT AVENUE
IN
NANTUCKET, MASSACHUSETTS

SCALE: 1"=30' DATE: 4/29/16

DEED REFERENCE: L.C.CERT.#25644
PLAN REFERENCE: L.C.PL.14616-C
ASSESSOR'S REFERENCE:
MAP: 29.2.3 PARCEL: 6
PREPARED FOR:
CLIFFORD S. & LAUREL ASNESS, TRUSTEES
CLIFFORD S. ASNESS REVOCABLE TRUST

NANTUCKET SURVEYORS LLC
5 WINDY WAY
NANTUCKET, MA. 02554

N.B. 231/24 - 341/11

N-10742

Lindsay

15 Pippins Way

(43-94.3)

SE48-2888

NOTICE OF INTENT APPLICATION

For

The construction of a main house, cottage and garage.

At

15 Pippen's Way

Nantucket, MA

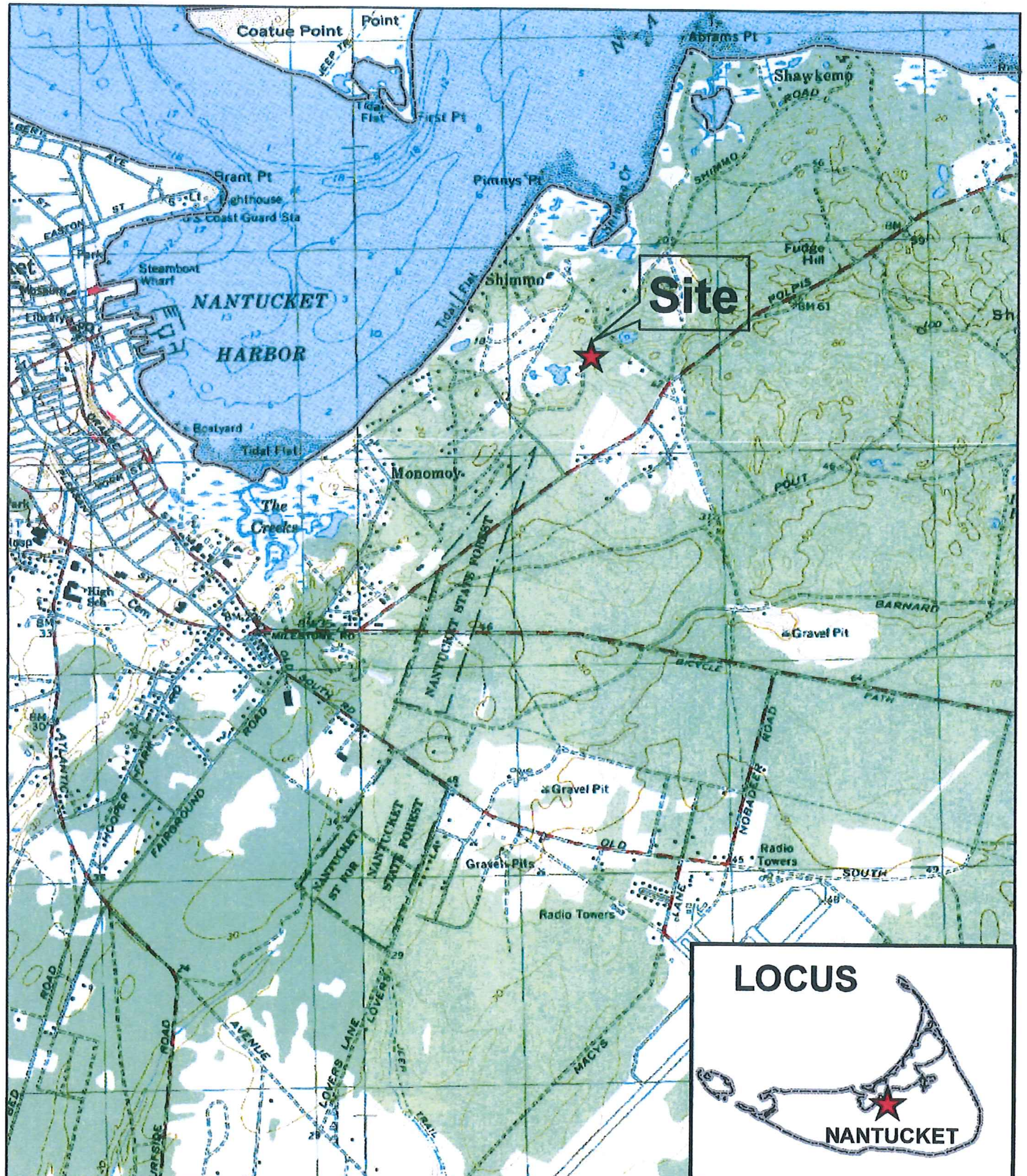
April 2015

Prepared For

Ronald M. & Nancy S. Lindsay

By

BLACKWELL & ASSOCIATES, Inc.
Professional Civil Engineers & Land Surveyors
20 Teasdale Circle
Nantucket, MA 02554
508-228-9026


Site
LOCUS
NANTUCKET
NANTUCKET HARBOR
Coatue Point
Abrams Pt
Shawkemo
Brant Pt
Lighthouse
Steamboat Wharf
First Pt
Pimnys Pt
Shimmo
Fudge Hill
POLPIS
Monomoy
The Creeks
Tidal Flat
Boatyard
MILESTONE RD
NANTUCKET STATE FOREST
Gravel Pit
Gravel Pits
Radio Towers
BARNARD
POUT
BICYCLE PATH
OLD SOUTH RD
NOBADEER ROAD
FAIRGROUND
HOOPER FARM
ATLANTIC
LOVERS LANE
MACYS
AVENUE
SOUTH

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

NANTUCKET
City/Town

A. General Information

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

15 Pippin's Way	Nantucket	02554
a. Street Address	b. City/Town	c. Zip Code
Latitude and Longitude:	41d 16' 54.44"	70d 04' 12.81"
	d. Latitude	e. Longitude
43	94.3	
f. Assessors Map/Plat Number	g. Parcel /Lot Number	

2. Applicant:

Ronald M. and Nancy S.	Lindsay	
a. First Name	b. Last Name	
c. Organization		
d. Street Address		
1041 Old Marlboro Rd. Concord	MA	01742
e. City/Town	f. State	g. Zip Code
508-246-2836		nanslin@comcast.net
h. Phone Number	i. Fax Number	j. Email Address

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

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

4. Representative (if any):

Jeffrey L.	Blackwell, PLS	
a. First Name	b. Last Name	
Blackwell & Associates, Inc.		
c. Company		
20 Teasdale Circle		
d. Street Address		
Nantucket	MA	02554
e. City/Town	f. State	g. Zip Code
508-228-9026 x13	508-228-5292	jeff@blackwellsurvey.com
h. Phone Number	i. Fax Number	j. Email address

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

$1,110 + $25 + $200	$537.50	$787.50
a. Total Fee Paid	b. State Fee Paid	c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description: Construction of a single family dwelling, cottage and garage.
The Applicant proposes to build the structures referenced above and to install landscaping.

Please refer to the attached Project Narrative and Site Plan for additional information.

7a. Project Type Checklist:

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

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

1. ☐ Yes ☒ No If yes, describe which limited project applies to this project:

2. Limited Project

8. Property recorded at the Registry of Deeds for:

NANTUCKET	25496
a. County	b. Certificate # (if registered land)
c. Book	d. Page Number

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

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

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

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

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available)	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

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

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

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

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

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

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

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

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

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

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

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings _____ b. number of replacement stream crossings _____

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/online_viewer.htm.

a. ☒ Yes ☐ No **If yes, include proof of mailing or hand delivery of NOI to:**

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
Route 135, North Drive
Westborough, MA 01581

2008
b. Date of map

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

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

1. c. Submit Supplemental Information for Endangered Species Review*

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

      (a) within wetland Resource Area _____ percentage/acreage

      (b) outside Resource Area _____ percentage/acreage

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

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

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

      (b) ☐ Photographs representative of the site

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

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

      (d) ☐ Vegetation cover type map of site

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

d. OR Check One of the Following

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

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

---

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

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

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

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

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

a. ☐ Not applicable – project is in inland resource area only

b. ☐ Yes ☐ No If yes, include proof of mailing or hand delivery of NOI to either:

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

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694

North Shore - Hull to New Hampshire:

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

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

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

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

b. ACEC

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

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

a. ☐ Yes ☒ No

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

a. ☐ Yes ☒ No

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

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

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

2. ☐ A portion of the site constitutes redevelopment

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

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

1. ☒ Single-family house

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

2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

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

Site Plan To Accompany A Notice of Intent
a. Plan Title

Blackwell & Associates, Inc.
b. Prepared By

Jeffrey L. Blackwell
c. Signed and Stamped by

4/15/2016
d. Final Revision Date

1'=20"
e. Scale

Lindsay Residence Landscape Plan by Edgewater Landscape Design
f. Additional Plan or Document Title

4/13/2016
g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

NANTUCKET
City/Town

E. Fees

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

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

22379	4/27/2016
2. Municipal Check Number	3. Check date
22378	4/27/2016
4. State Check Number	5. Check date
Blackwell & Assoc.,Inc.	
6. Payor name on check: First Name	7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

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

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

Agent	4/15/2016
1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
	4/15/2016
5. Signature of Representative (if any)	6. Date

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

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

A. Applicant Information

1. Applicant:

Ronald M. and Nancy S.	Lindsay
a. First Name	b. Last Name

c. Organization

1041 Old Marlboro Rd
d. Mailing Address

Concord	MA	01742
e. City/Town	f. State	g. Zip Code

508-246-2836		nanslin@comcast.net
h. Phone Number	i. Fax Number	j. Email Address

2. Property Owner (if different):

a. First Name	b. Last Name

c. Organization

d. Mailing Address

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

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

3. Project Location:

15 Pippen's Way	Nantucket
a. Street Address	b. City/Town

B. Fees

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

The fee should be calculated using the following six-step process and worksheet. **Please see Instructions before filling out worksheet.**

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

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
Cat 1	1	$110	$110
Cat 2	2	$500	$1,000
Nantucket Wetland By-law Fee			$25
Nantucket Expert Review Fee			$200

Step 5/Total Project Fee: $1,110 + $25 + $200

Step 6/Fee Payments:

Total Project Fee:	$1,110 + $25 + $200 a. Total Fee from Step 5
State share of filing Fee:	$542.50 b. 1/2 Total Fee **less** $12.50
City/Town share of filling Fee:	$567.50 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

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

Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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

BLACKWELL & ASSOCIATES, INC.
Professional Land Surveyors

INTRODUCTION

The proposed work at 15 Pippin's Way in Nantucket, Massachusetts involves construction of a single family dwelling, cottage, and garage within the Buffer Zone to a Vegetated Wetland Resource Area. Landscaping is proposed to restore the site. The existing path to an existing small dock will be maintained. A waiver is required from the Wetland Protection Regulations for Administering the Town of Nantucket By-law Chapter 136, to allow the footings within two-feet vertically of estimated seasonal high groundwater. A request for the waiver is included herewith.

SITE DESCRIPTION

The subject property is approximately 3.59 acres in size and is located in the Shimmo area of Nantucket Island. The property is bounded on the west and south by existing residential-use properties. The easterly boundary is Pippen's Way. The dwelling will be served by an on-site well and septic system, which is more than 100 feet from the resource area. The defined resource areas on-site are a Buffer Zone to a Bordering Vegetated Wetland and pond. Donald Schall of ENSR delineated the resource area boundary. A report and forms are included. The property and associated subdivision has been reviewed by Massachusetts Natural Heritage and Endangered Species Program (NHESP), file # 07-21275. The property is subject to a Conservation Restrict and a Defined Limit of Work which is shown on the attached site plan.

WORK DESCRIPTION

Prior to the start of work, a silt fence will be placed at the limit of work as shown on the site plan. The fence will be maintained throughout the project. If temporary dewatering is required, a temporary infiltration will be created outside the Buffer Zone. After construction is completed, all disturbed areas will be covered with a minimum of 6" of topsoil and planted with Cape Cod Premium grass seed mix.

20 TEASDALE CIRCLE - NANTUCKET, MA 02554
(508) 228-9026 - (508) 228-5292 FAX

BLACKWELL & ASSOCIATES, INC.
Professional Land Surveyors

CONCLUSION

The proposed construction and landscaping will not affect the Bordering Vegetated Wetland or pond. The project will not result in an adverse impact on the interests protected by the Commission including flood control, erosion control, storm damage prevention, prevention of pollution, wildlife, and wetland scenic views.

20 TEASDALE CIRCLE - NANTUCKET, MA 02554
(508) 228-9026 - (508) 228-5292 FAX

BLACKWELL & ASSOCIATES, INC.
Professional Land Surveyors & Civil Engineers

B8062

April 14, 2016

Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

RE: Waiver Request for 15 Pippin's Way

Dear Commission Members:

The purpose of this letter is to request and justify a waiver from the Wetland Protection Regulations for Administering the Town of Nantucket By-law Chapter 136 to allow footings within two-feet vertically of estimated seasonal high groundwater. Specifically a waiver is required from Section 3.02.B.1 to allow the footings within two-feet vertically of estimated seasonal high groundwater. If required, any dewatering activity will be temporary. Disturbed areas will be covered with topsoil and then be planted with Cape Cod Premium Grass Seed Mix.

The proposed project will not have any adverse impact to the interests protected in the resource area by the Commission.

Sincerely,
Blackwell & Associates, Inc.
By: Jeffery L. Blackwell, PLS

20 TEASDALE CIRCLE • NANTUCKET, MA 02554
PHONE (508)-228-9026 • FAX (508)-228-5292

D.E.P. Bordering Vegetated Wetland

Delineation Field Data Forms

By:

Donald Schall

APPENDIX G
DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: BLACKwell & Associates, Inc.	Transect No. One (Wet)
Project location: 15 Pippen's Way, Nantucket	DEP File No:
Prepared By: Don Schall	Date of Delineation: 4.27.2016

Check all that apply:

- ☐ Vegetation alone presumed adequate to delineate BVW: fill out Section I only
- ☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Strata	Plant Species	Scientific Name	Percent Cover	Percent Dominance	Dominant Plant?	Wetland Indictor Category*
Tree	Absent					
Sapl.	Absent					
SHRUB	Arrow-wood	Viburnum dentatum	6-15%	28%	YES	FAC
	Carolina rose	Rosa carolina	1-5%	8%	no	FAC
	Elderberry	Sambucus nigra	1-5%	8%	no	FACW
	Blackberry	Rubus sp.	16-25%	55%	YES	–
VINE	Poison ivy	Toxicodendron radicans	6-15%	100%	Yes	FAC
HERB	NL Cat-tail	Typha angustifolia	6-15%	25%	yes	OBL
	Rough Goldenrod	Solidago rugosa	6-15%	25%	yes	FAC
	Grass.	Poaceae Family	16-25%	49%	yes	–

* *Use an asterisk to mark wetland indicator plants: plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.*

Vegetation Conclusion

Number of dominant wetland indicator plants: 4	Number of dominant non-wetland indicator plants: 0
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? YES	
Percent of dominant wetland plants vs. non-wetland plants: 100%	

Transect No One (wet. plot)

APPENDIX G
DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Section II. Indicators of Hydrology Transect one

Soil Survey Wetland Soil PIOT

Is there a published soil survey for this site? 1993

Title/date: Soil Survey of Nantucket County

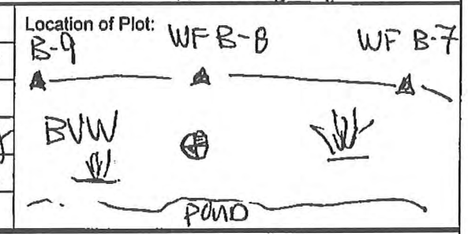
Map number: Sheet 4 and NRCS WEB Soil

Soil type mapped: EVCS Boro Sand Surrey

Hydric soil inclusions: Freetown + Swansea mucks,

Are field observations consistent with soil survey? YES.

Location of Plot:



Soil Profile Description

Soil Horizon	Depth - Inches	Color	Soil Texture	Soil Mottling	Comments
O	½" - 0	loose leaf litter + organic material			
A	0 - 11"	10YR 2.1	loamy sand, numerous roots		
B_1	11" - 13"	10YR 2.2	sand		
B_2	13" - 20"	7.5YR 3.2	sand		Free Water at 14"

Remarks: slight evidence of disturbance in A horizon

Other Indicators of Hydrology: check all that apply and describe

- ☐ Site inundated:
- ☒ Depth to free water in observation hole: 14"
- ☒ Depth to soil saturation in observation hole: 11"
- ☐ Water marks:
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Recorded data (stream, lake or tidal gauge; aerial photo; other):
- ☐ Other: low chroma color

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants?	yes	☒	no	☐
Hydric soil present?	yes	☒	no	☐
Other indicators of hydrology present?	yes	☒	no	☐
Sample location is in a BVW?	yes	☒	no	☐

Transect No one (wet plot)

APPENDIX G
DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Applicant: BLACKWELL & ASSOCIATES, INC	Transect No. One (upland)
Project location: 15 PIPPIN'S WAY, NANTUCKET	DEP File No:
Prepared By: DON SCHALL	Date of Delineation: 4.27.2016

Check all that apply:

- ☐ Vegetation alone presumed adequate to delineate BVW: fill out Section I only
- ☒ Vegetation and other indicators of hydrology used to delineate BVW boundary: fill out Sections I and II
- ☐ Method other than dominance test used (attach additional information)

Section I. Vegetation

Strata	Plant Species	Scientific Name	Percent Cover	Percent Dominance	Dominant Plant?	Wetland Indictor Category*
Tree	BLACK LOCUST	Robinia pseudoacacia	16-25%	87%	YES	FACU
	Red Cedar	Juniperus virginiana	1-5%	13%	no	
Sapl	BLACK cherry	Prunus serotina	6-15%	100%	yes	FACU
SHRUB	Bayberry	Morella pensylvanica	1-5%	9%	no	
	Morrow's Honeysuckle	Lonicera morrowii	6-15%	30%	yes	FACU
	Carolina rose	Rosa carolina	6-15%	30%	yes	FACU
	BLACKberry	Rubus sp.	6-15%	30%	yes	–
Vines	Virginia creeper	P. quinquefolia	1-5%	50%	yes	FACU
	Poison ivy	Toxicodendron radicans	1-5%	50%	yes	FAC
HERB.	Celandine	Chelidonium MAJUS	6-15%	28%	yes	UPL
	Rough goldenrod	Solidago rugosa	1-5%	9%	no	
	goldenrod	Solidago sp.	1-5%	8%	no	
	Grass	Poaceae family	16-25%	55%	yes	–

* *Use an asterisk to mark wetland indicator plants. plant species listed in the Wetlands Protection Act (MGL c.131, s.40); plants in the genus Sphagnum; plants listed as FAC, FAC+, FACW-, FACW, FACW+, or OBL; or plants with physiological or morphological adaptations. If any plants are identified as wetland indicator plants due to physiological or morphological adaptations, describe the adaptation next to the asterisk.*

Vegetation Conclusion

Number of dominant wetland indicator plants: 1	Number of dominant non-wetland indicator plants: 6

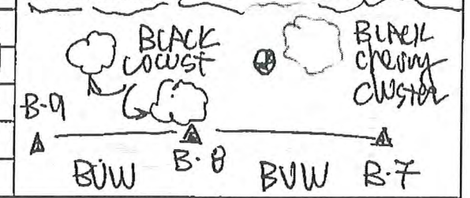
Is the number of dominant wetland plants equal to or greater than the number of dominant non-wetland plants? no.

Percent of dominant wetland plants vs. non-wetland plants: 1/7 = 14%

Transect No One (upland) plot

APPENDIX G
DEP Bordering Vegetated Wetland (310 CMR 10.55) Delineation Field Data Form

Section II. Indicators of Hydrology	transect One
Soil Survey	Upland Soil Plot
Is there a published soil survey for this site? Yes	Location of Plot: Lawn Area
Title/date: Soil Survey of Nantucket County	
Map number: Sheet 4 and NRCS Web Soil	
Soil type mapped: Evesboro Sand Survey	
Hydric soil inclusions: Freetown + Swansea mucks	
Are field observations consistent with soil survey? YES	



Soil Profile Description

Soil Horizon	Depth - Inches	Color	Soil Texture	Soil Mottling	Comments
O_1	½" - 0	loose leaf litter and organic material			
A	0 - 3"	10YR2.1	Sandy loam		
B	3" - 18"	10YR3.3	Sandy loam	None	
B_2'	18" - 20"	7.5YR3.3	Sandy loam	None	

Remarks: Both ≐ 22"

Other Indicators of Hydrology: check all that apply and describe

- ☐ Site inundated:
- ☐ Depth to free water in observation hole: none
- ☐ Depth to soil saturation in observation hole: none
- ☐ Water marks:
- ☐ Drift lines:
- ☐ Sediment deposits:
- ☐ Drainage patterns in BVW:
- ☐ Oxidized rhizospheres:
- ☐ Water-stained leaves:
- ☐ Recorded data (stream, lake or tidal gauge; aerial photo; other):
- ☐ Other:

Vegetation and Hydrology Conclusion

Number of wetland indicator plants ≥ number of non-wetland indicator plants?	yes	☐	no	☒
Hydric soil present?	yes	☐	no	☒
Other indicators of hydrology present?	yes	☐	no	☒
Sample location is in a BVW?	yes	☐	no	☒

Transect No One (upland plot)

Attachment A

PHOTOGRAPHIC LOG

Client: Blackwell & Associates, Inc.	**Site Location:** 15 Pippen's Way, Nantucket, MA	**Project No.** 4-27-16

Photo No. 1	**Date:** 4-27-16

Direction Photo Taken:

View Northerly

Description:

View of the herbaceous and shrub community in the BVW present along the margin of the pond.

WF B-8 is seen in the center of the photo with a pink flag marking the location of the wetland soil pit in the left corner of the photo.

Photo No. 2	**Date:** 4-27-16

Direction Photo Taken:

View Westerly

Description:

View of the wetland moderately dense woody community bordering the pond in the vicinity of WF B-8.

A band of narrow-leaf cat-tail is seen along the upper margin of the pond. The pink flag marks the location of the wetland soil pit.

Attachment A

PHOTOGRAPHIC LOG

Client: Blackwell & Associates, Inc.	**Site Location:** 15 Pippen's Way, Nantucket, MA	**Project No.** 4-27-16

Photo No. 3	**Date:** 4-27-16

Direction Photo Taken:

View Southerly

Description:

View of the vegetative community established at the upland soil pit in the vicinity of WF B-8.

Pink flag marks the location of the upland soil pit.

Photo No. 4	**Date:** 4-27-16

Direction Photo Taken:

View Southeasterly

Description:

View of the vegetative community established at the upland soil pit.

Woody species in the vegetative community included black cherry, black locust, Morrow's bush honeysuckle, bayberry, blackberry, and Carolina rose.

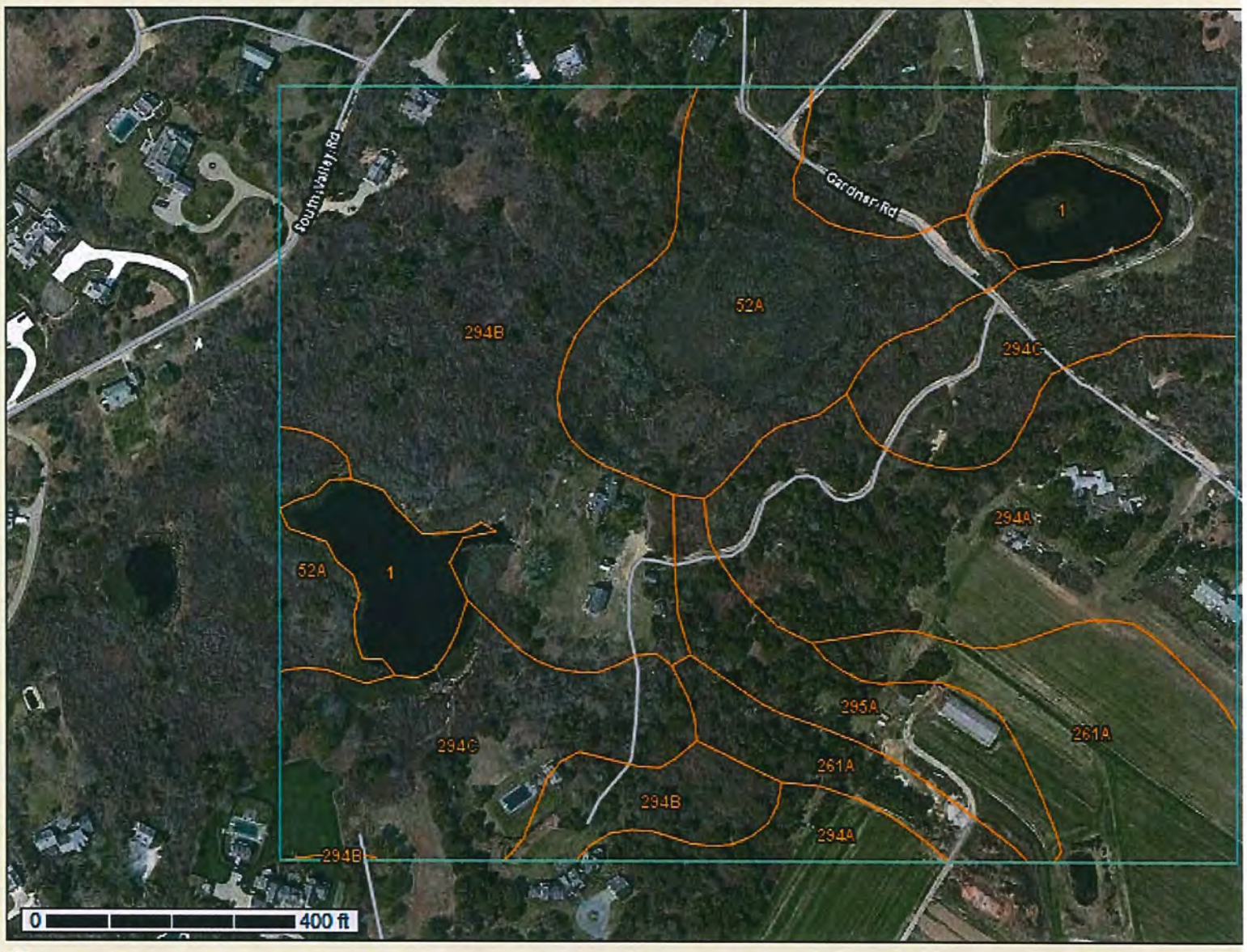
ssachusetts (MA019)

Name	Acres in AOI	Percent of AOI
	2.1	4.8%
ansea wland, 0 to	6.2	14.1%
sandy loam, pes	4.4	10.0%
to 3 percent	8.0	18.1%
to 8 percent	11.6	26.3%
to 15	9.6	21.8%
soils, 0 to 3	2.2	5.0%
st	44.2	100.0%

Legend

Soil Map

Scale (not to scale)



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

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. M done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:20,000. The and the level of detail shown in the resulting soil map are dependent on that map scale.

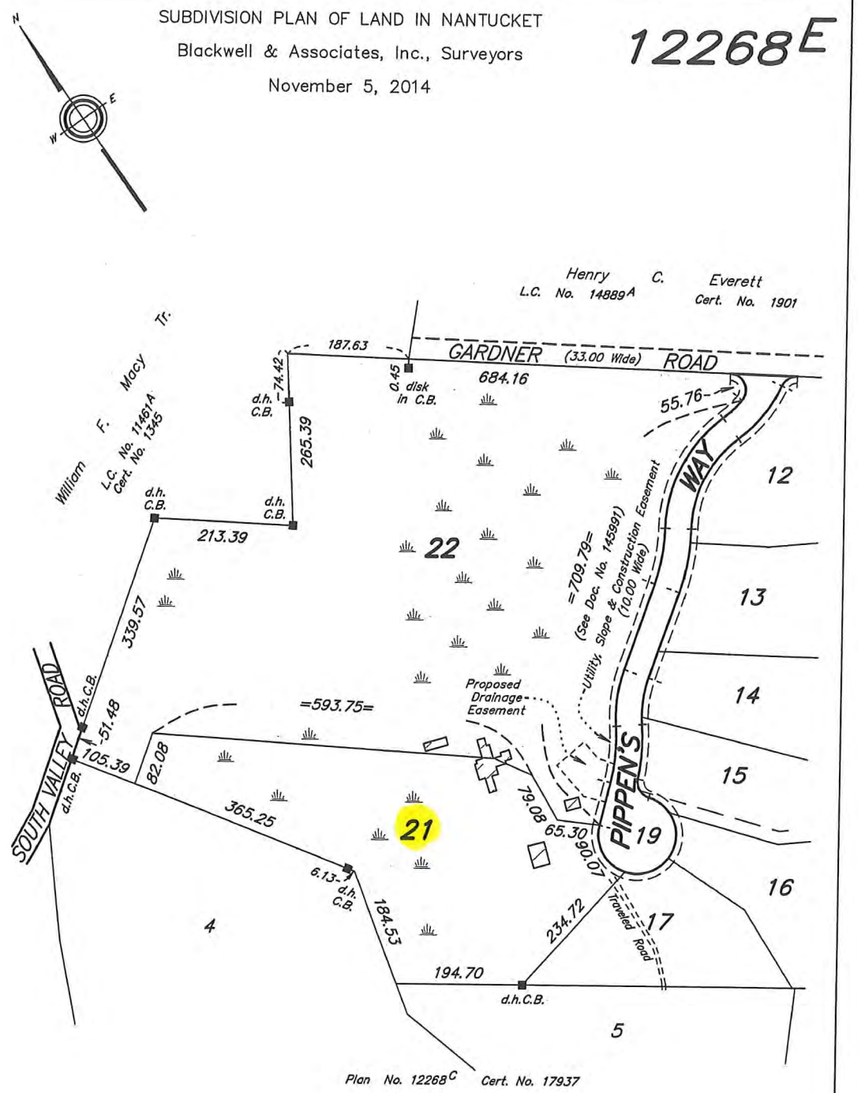
Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of ma

SUBDIVISION PLAN OF LAND IN NANTUCKET

Blackwell & Associates, Inc., Surveyors

November 5, 2014

12268E



Plan No. 12268C Cert. No. 17937

Subdivision of Lots 18 and 20
Shown on Plan 12268–D
Filed with Cert. of Title No. 21215
Registry District of Nantucket County

Separate certificates of title may be issued for land shown hereon as Lots 21 and 22 By the Court.

Deborah J. Patterson
Recorder

DEC. 4, 2014

JMF–0B9J

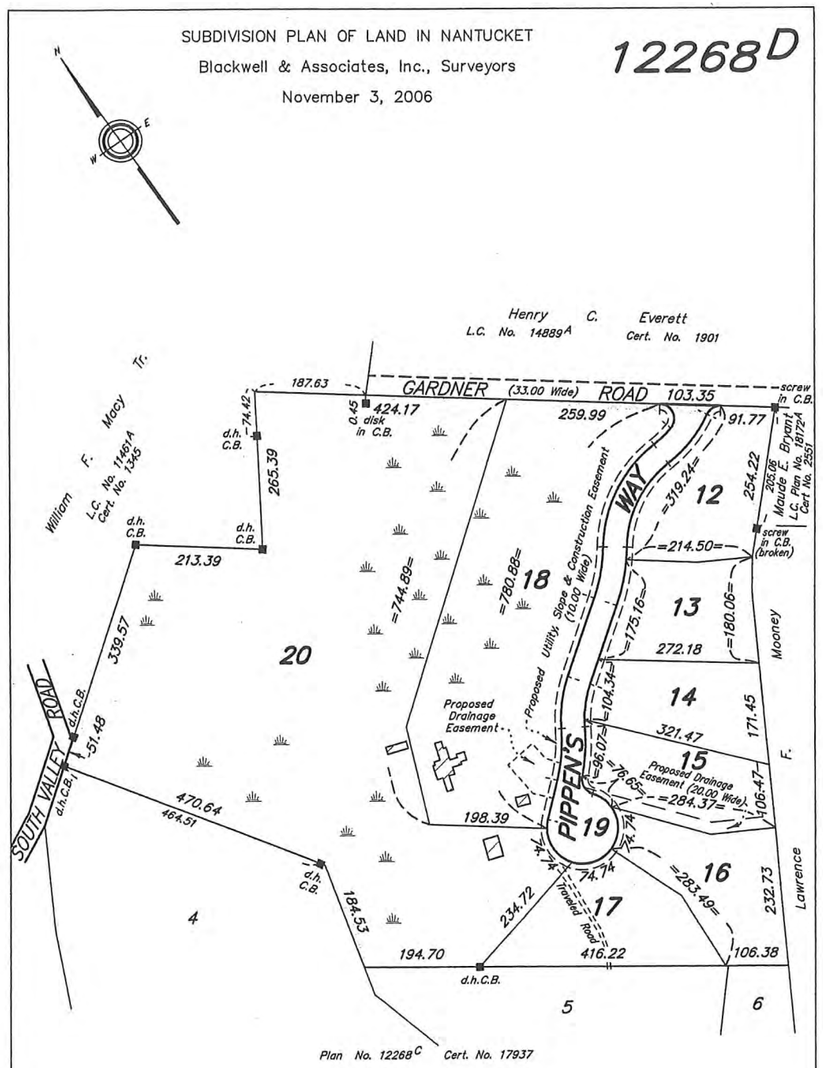
Copy of part of plan filed in
LAND REGISTRATION OFFICE
DEC. 4, 2014
Scale of this plan 160 feet to an inch
T.C. Pontbriand, Engineer for Court

SUBDIVISION PLAN OF LAND IN NANTUCKET

Blackwell & Associates, Inc., Surveyors

November 3, 2006

12268D



Plan No. 12268C Cert. No. 17937

Subdivision of Lot 2
Shown on Plan 12268-B
Filed with Cert. of Title No. 2104
Registry District of Nantucket County

Separate certificates of title may be issued for land shown hereon as Lots 12 through 20
By the Court.

Deborah J. Patterson...
Recorder

April 3, 2014

JMF-OAHL

Abutters are shown as on original decree plan.

Copy of part of plan filed in
LAND REGISTRATION OFFICE
April 3, 2014
Scale of this plan 160 feet to an inch
T.C. Pontbriand, Engineer for Court

THIS PLAN FILED WITH CERTIFICATE NO. 31215

Commonwealth of Massachusetts

Division of Fisheries & Wildlife

MassWildlife

Wayne F. MacCallum, *Director*

December 16, 2010

Diane Halm
Terrier Farms Trust
11809 Piney Meetinghouse Road
Potomac MD 20854

RE: Project Location: 12 Gardner Road
Project Description: Pippen's Way Subdivision
NHESP File No.: 07-21275

Dear Applicant:

The Natural Heritage and Endangered Species Program (NHESP) of the MA Division of Fisheries & Wildlife received the information packet, submitted by Rackemann Strategic Consulting, Inc., dated November 22, 2010, for review pursuant to the Massachusetts Endangered Species Act (MESA) (MGL c.131A) and its implementing regulations (321 CMR 10.00).

Based on a review of the information that was provided and the information that is currently contained in our database, the NHESP has determined that this project, as currently proposed, **will not result in a prohibited "take"** of state-listed rare species. This determination is a final decision of the Division of Fisheries & Wildlife pursuant to 321 CMR 10.18. Any changes to the proposed project or any additional work beyond that shown on the site plans may require an additional filing with the NHESP pursuant to the MESA. This project may be subject to further review if no physical work is commenced within five years from the date of issuance of this determination, or if there is a change to the project.

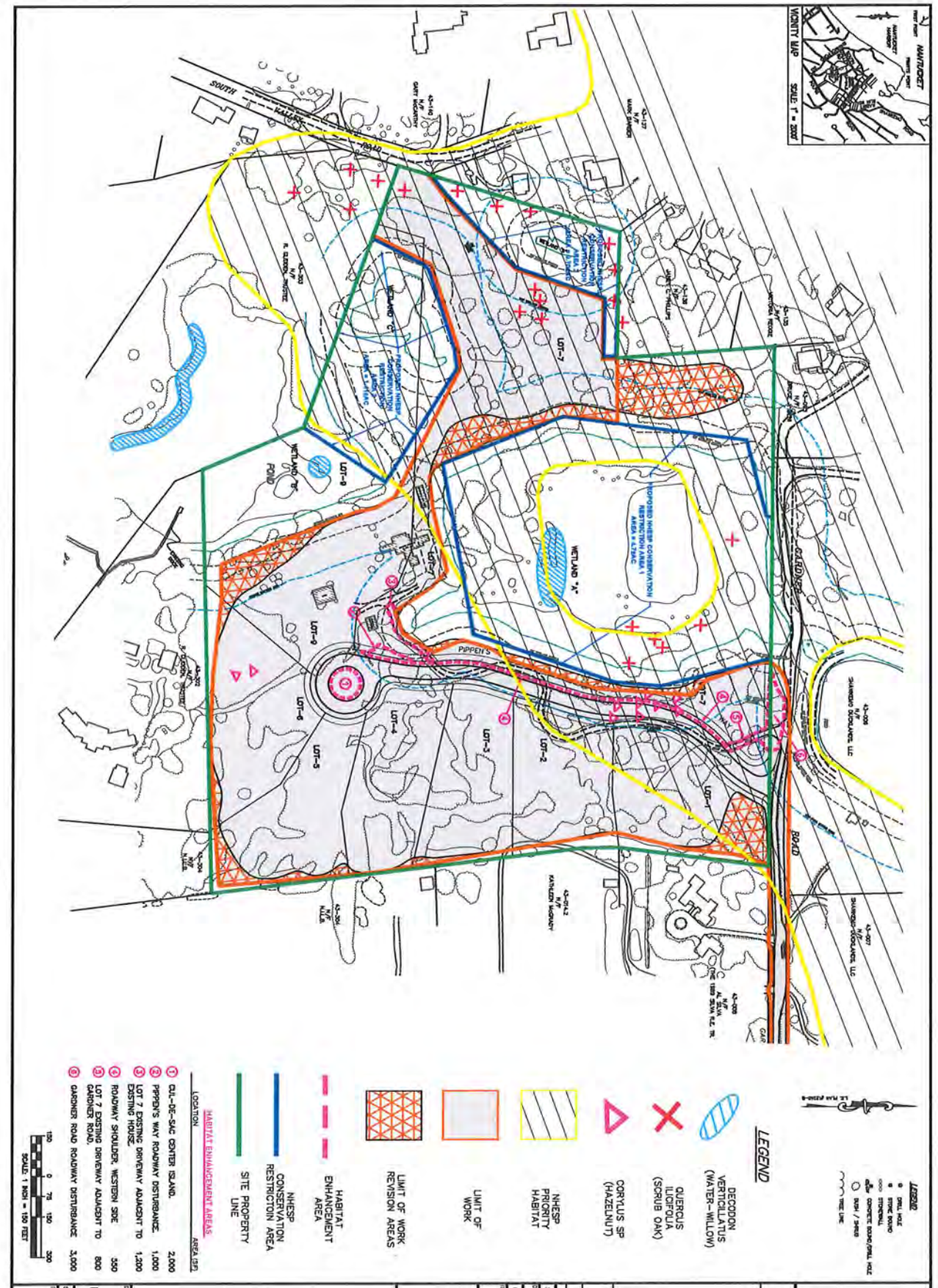
Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact Amy Coman, Endangered Species Review Assistant, at (508) 389-6364.

Sincerely,

Thomas W. French

Thomas W. French, Ph.D.
Assistant Director

cc: Steven Davis, Rackemann Strategic Consulting, Inc.
Nantucket Conservation Commission


VICINITY MAP
SCALE: 1" = 2000'
NANTUCKET
NANTUCKET HARBOR
SOUTH
ROAD
GARDNER
PIPPEN'S
WAY
WETLAND "A"
WETLAND "B"
WETLAND "C"
PROPOSED SHARED ACCESS DRIVEWAY
RESTRICTED AREA 1
AREA = 0.7 AC.
PROPOSED CONSERVATION RESTRICTION AREA 2
AREA = 1.7 AC.
PROPOSED CONSERVATION RESTRICTION AREA 3
AREA = 0.7 AC.
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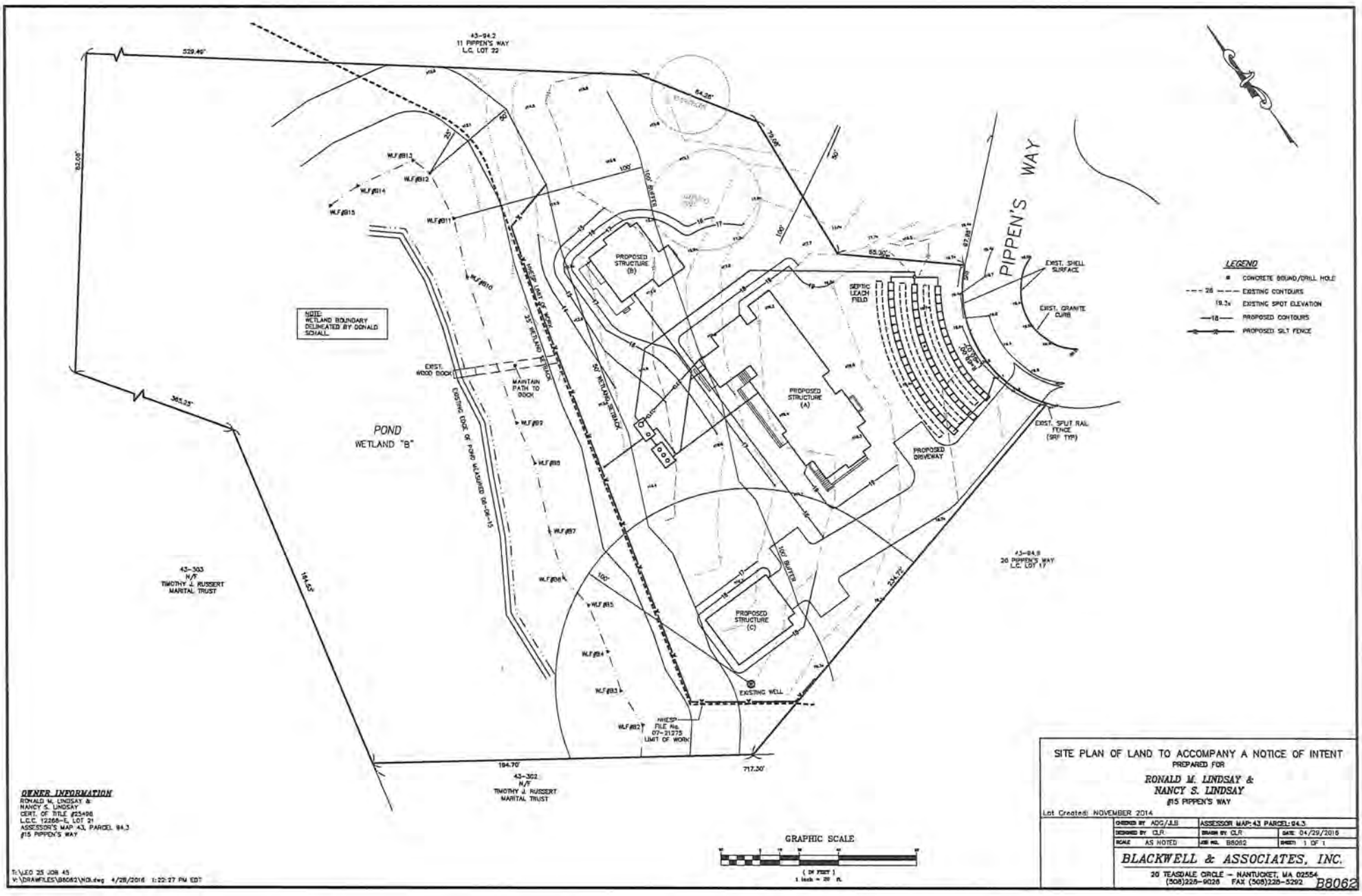
LEGEND
DRILL HOLE
DRILL HOLE
STONE BOUND
STONE BOUND
CONCRETE BOUND/PIPE/PIN HOLE
CONCRETE BOUND/PIPE/PIN HOLE
NEW / PAVED
NEW / PAVED
TREE LINE
TREE LINE
LEGEND
DECODON VERTICILLATUS (WATER-WILLOW)
QUERCUS ILICIFOLIA (SCRUB OAK)
CORYLUS SP. (HAZELNUT)
NHESP PRIORITY HABITAT
LIMIT OF WORK
LIMIT OF WORK REVISION AREAS
HABITAT ENHANCEMENT AREA
NHESP CONSERVATION RESTRICTION AREA
SITE PROPERTY LINE
HABITAT ENHANCEMENT AREAS
LOCATION
AREA (SF)
① CUL-DE-SAC CENTER ISLAND. 2,000
② PIPPEN'S WAY ROADWAY DISTURBANCE. 1,000
③ LOT 7 EXISTING DRIVEWAY ADJACENT TO EXISTING HOUSE. 1,200
④ ROADWAY SHOULDER, WESTERN SIDE 550
⑤ LOT 7 EXISTING DRIVEWAY ADJACENT TO GARDNER ROAD. 800
⑥ GARDNER ROAD ROADWAY DISTURBANCE 3,000
120 0 75 150 300
SCALE: 1 INCH = 150 FEET
SITE DESIGN ENGINEERING, LLC.
11 CHANDLER STREET
MIDDLEBORO, MA 02346
T: 508-947-0423 F: 508-947-0424
WWW.SITEDESIGNENGINEERING.COM
PLAN REVISIONS
1 3/21/14 REVISED LIMIT OF WORK LINE DCM
NO DATE DESCRIPTION APPROVED
DATE: NOVEMBER 2, 2010
DRAWN BY: ARTOCKA
DESIGN BY: ARTOCKA
CHECK BY: DCM
PROJECT NO: 6001
ISSUED FOR: CLIENT REVIEW
PIPPEN'S WAY SUBDIVISION
12 GARDNER ROAD, NANTUCKET, MA
BEING A SUBDIVISION OF LOT 2
SHOWN ON LAND COURT PLAN 12268-B
TAX MAP 43, PARCEL 94.2
PREPARED FOR SEE TERRIER FARMS TRUST
DRAWING TITLE
PROPOSED CONSERVATION RESTRICTION & HABITAT ENHANCEMENT PLAN
SCALE: 1" = 150'
SHEET NO.
1 OF 1



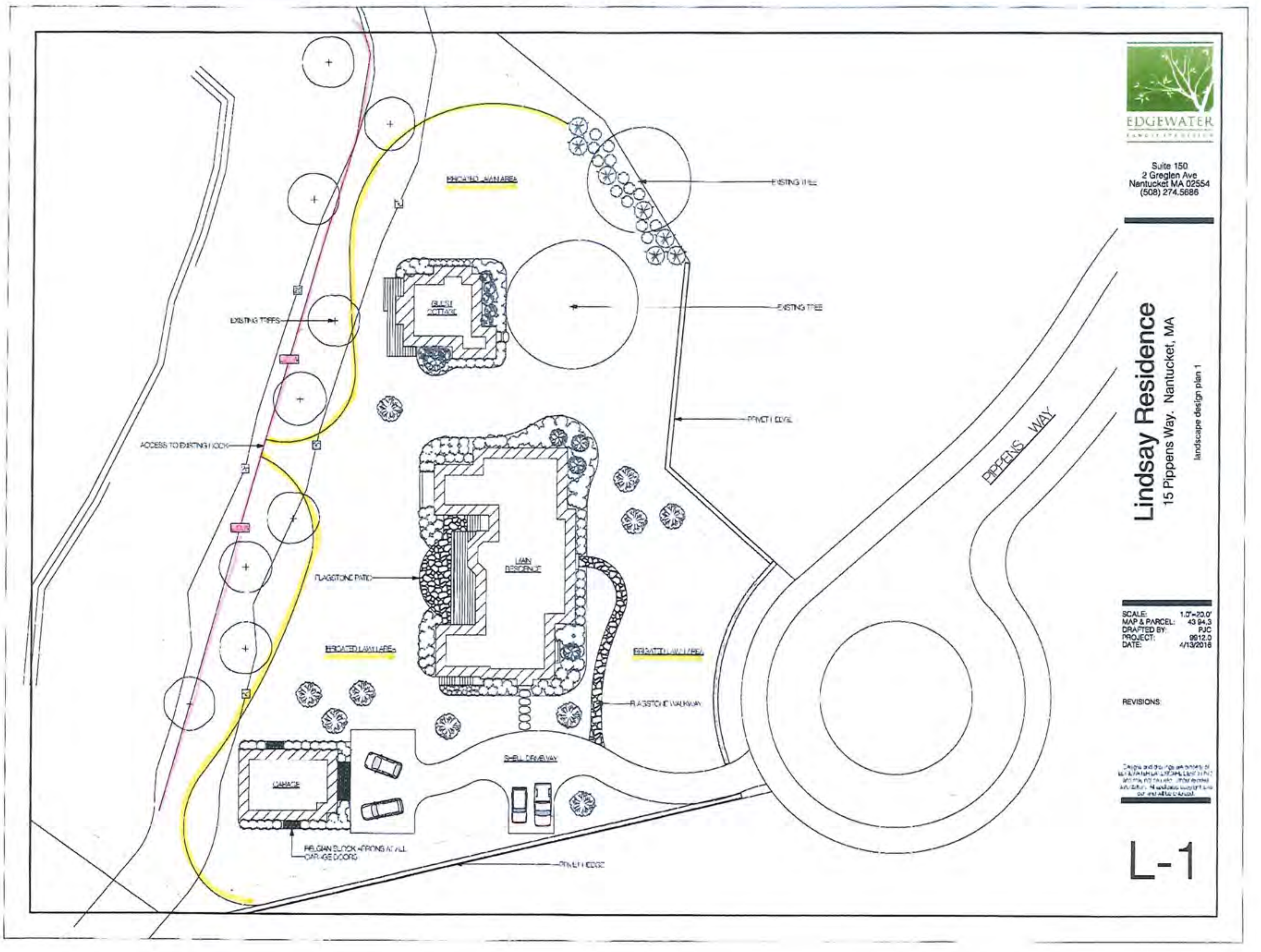
OWNER INFORMATION
RONALD M. LINDSAY &
NANCY S. LINDSAY
CERT. OF TITLE #25498
L.C.C. 12268-E, LOT 21
ASSESSOR'S MAP 43, PARCEL 94.3
#15 PIPPEN'S WAY

T:\LEO 25 JOB 45
V:\DRAWFILES\B8062\NOI.dwg 4/28/2016 1:22:27 PM EDT

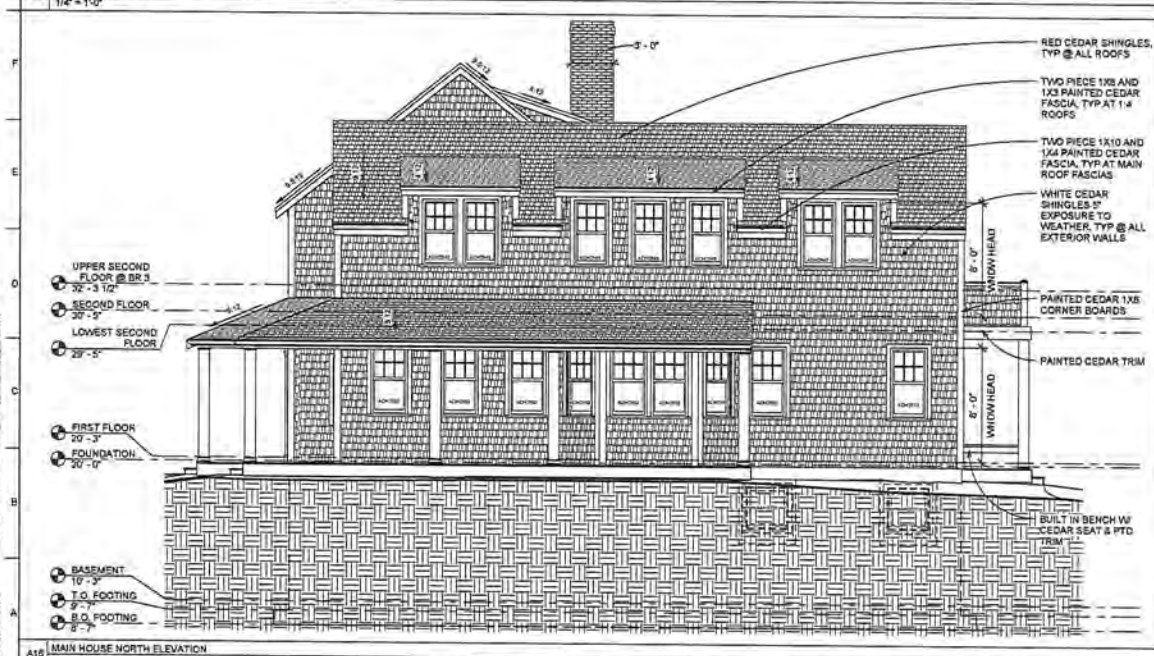
SITE PLAN OF LAND TO ACCOMPANY A NOTICE OF INTENT
PREPARED FOR
RONALD M. LINDSAY &
NANCY S. LINDSAY
#15 PIPPEN'S WAY
Lot Created: NOVEMBER 2014

CHECKED BY ADG/JJS	ASSESSOR MAP: 43 PARCEL: 94.3	
DESIGNED BY CLR	DRAWN BY CLR	DATE 04/29/2016
SCALE AS NOTED	JOB NO. B8062	SHEET 1 OF 1

BLACKWELL & ASSOCIATES, INC.
20 TEASDALE CIRCLE – NANTUCKET, MA 02554
(508)228-9028 FAX (508)228-5292
B8062


EXISTING TREES
EXISTING TREE
EXISTING TREE
GUEST COTTAGE
MAIN RESIDENCE
FLAGSTONE PATIO
FLAGSTONE WALKWAY
SHELL DRIVEWAY
GARAGE
PIPPENS WAY
EDGEWATER
Suite 150
2 Greglen Ave
Nantucket MA 02554
(508) 274.5686
Lindsay Residence
15 Pippens Way. Nantucket, MA
landscape design plan 1
SCALE: 1.0"=20.0'
MAP & PARCEL: 43 94,3
DRAFTED BY: PJC
PROJECT: 9912.0
DATE: 4/13/2016
REVISIONS:
L-1

G16 MAIN HOUSE WEST ELEVATION
1/4" = 1'-0"



A16 MAIN HOUSE NORTH ELEVATION
1/4" = 1'-0"

WINDOW SCHEDULE MAIN HOUSE

Designation	Rough Width	Rough Height	Model
AAN3030	3' - 0"	3' - 0"	A-Series Awning
ADH2440	2' - 4"	4' - 0"	A-Series Double Hung
ADH2648	2' - 6"	4' - 8"	A-Series Double Hung
ADH2850	2' - 8"	5' - 0"	A-Series Double Hung
ADH3054	3' - 0"	5' - 4"	A-Series Double Hung
APW2828	2' - 8"	2' - 8"	A-Series Picture Window

EXT ANDERSEN PATIO INSWING DOOR SCHEDULE - MAIN HOUSE

Door Number	Height	Width	Model	Comments
1	7' - 6"	3' - 0"	A-Series	Custom Door
3	6' - 11"	5' - 8"	A-Series	
4	6' - 11"	5' - 8"	A-Series	
5	6' - 11"	3' - 0"	A-Series	
6	6' - 11"	3' - 0"	A-Series	

ALL WINDOWS TO BE ANDERSEN A SERIES PLATINMUM GREY CLAD WINDOWS W/ SIMULATED DIVIDED LITES, UNO. ALL TRIM TO BE PLATINUM GREY.

1X4 CEDAR CASING AT ALL WINDOWS & DOORS OR UNLESS SHOWN AS CONTINUOUS BETWEEN OPENINGS

SEE ELEVATIONS FOR MUNTIN LAYOUTS

CONTRACTOR TO FABRICATE REMOVABLE PLYWD STORM PANELS AS REQUIRED BY LOCAL OFFICIALS AT ALL WINDOWS

ALL EXTERIOR DOORS TO BE ANDERSEN PATIO INSWING DOORS, UNO. DOUBLE DOORS TO HAVE ASTRAGAL ATTACHED TO DOOR LEAF

LINEA 5, inc.

LINDSAY RESIDENCE

#15 PIPPEN'S WAY

MAIN HOUSE ELEVATIONS 2

#	ISSUE	DATE
1	HDC RESUBMISSION	11.30.15
2	HDC RESUBMISSION 2	12.02.15
3	HDC RESUBMISSION 3	02.02.16
4	HDC RESUBMISSION 4	02.10.16
5	HDC RESUBMISSION 5	02.26.16

JMS No 11026

DRAWN BY LC | CHECKED BY HD

DATE 02.29.16 | SCALE 1/4" = 1'-0"

SHEET No A2.2

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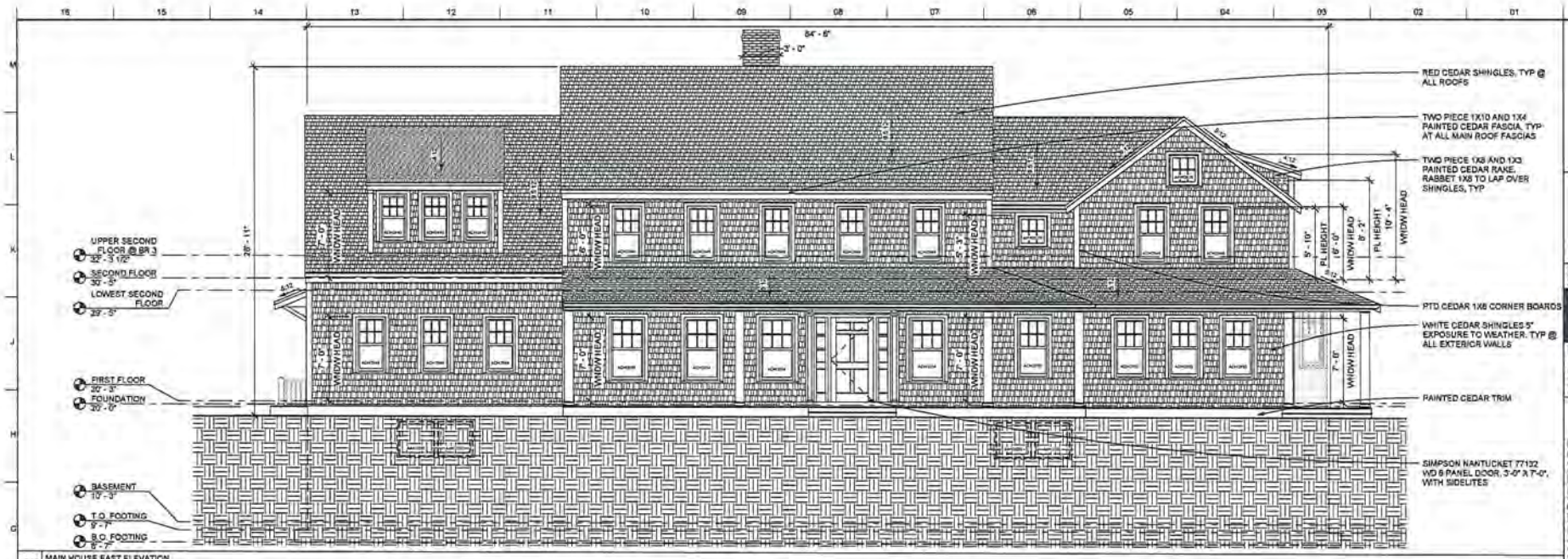
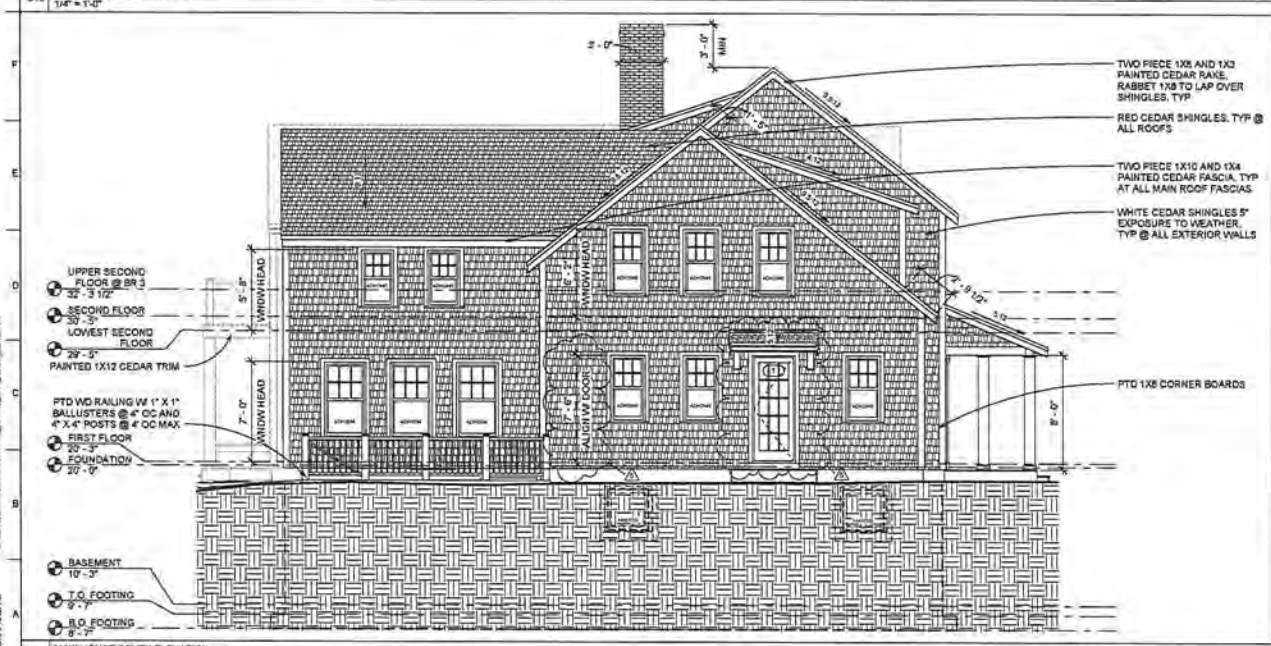


G15 MAIN HOUSE EAST ELEVATION
1/4" = 1'-0"



A16 MAIN HOUSE SOUTH ELEVATION
1/4" = 1'-0"

WINDOW SCHEDULE MAIN HOUSE			
Designation	Rough Width	Rough Height	Model
AAN3030	3' - 0"	3' - 0"	A-Series Awning
ADH2440	2' - 4"	4' - 0"	A-Series Double Hung
ADH2648	2' - 6"	4' - 8"	A-Series Double Hung
ADH2850	2' - 8"	5' - 0"	A-Series Double Hung
ADH3054	3' - 0"	5' - 4"	A-Series Double Hung
APW2628	2' - 6"	2' - 8"	A-Series Picture Window

EXT ANDERSEN PATIO INSWING DOOR SCHEDULE - MAIN HOUSE				
Door Number	Height	Width	Model	Comments
1	7' - 6"	3' - 0"	A-Series	Custom Door
2	6' - 11"	5' - 8"	A-Series	
4	6' - 11"	5' - 8"	A-Series	
5	6' - 11"	3' - 0"	A-Series	
6	6' - 11"	3' - 0"	A-Series	

ALL WINDOWS TO BE ANDERSEN A SERIES PLATINMUM GREY CLAD WINDOWS W/ SIMULATED DIVIDED LITES, UNO. ALL TRIM TO BE PLATINUM GREY.

1X4 CEDAR CASING AT ALL WINDOWS & DOORS OR UNLESS SHOWN AS CONTINUOUS BETWEEN OPENINGS

SEE ELEVATIONS FOR MUNTIN LAYOUTS

CONTRACTOR TO FABRICATE REMOVABLE PLYWD STORM PANELS AS REQUIRED BY LOCAL OFFICIALS AT ALL WINDOWS

ALL EXTERIOR DOORS TO BE ANDERSEN PATIO INSWING DOORS, UNO. DOUBLE DOORS TO HAVE ASTRAGAL ATTACHED TO DOOR LEAF

LINEA 5, inc.

LINDSAY RESIDENCE

#15 PIPPEN'S WAY

MAIN HOUSE ELEVATIONS 1

#	ISSUE	DATE
1	HDC RESUBMISSION	11.20.15
2	HDC RESUBMISSION 2	12.22.15
3	HDC RESUBMISSION 3	02.02.16
4	HDC RESUBMISSION 4	02.10.16
5	HDC RESUBMISSION 5	02.26.16

Job No. 1152B

DRAWN BY	CHECKED BY
LC	HD
DATE	SCALE
02.26.16	1/4" = 1'-0"

SHEET No

A2.1

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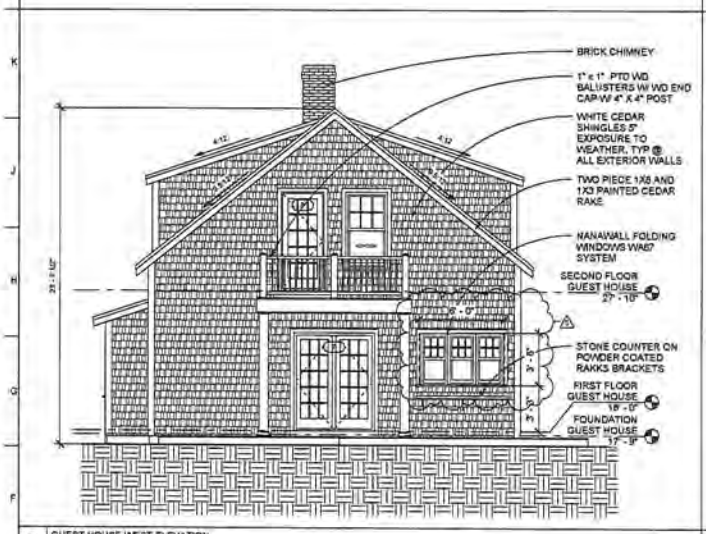
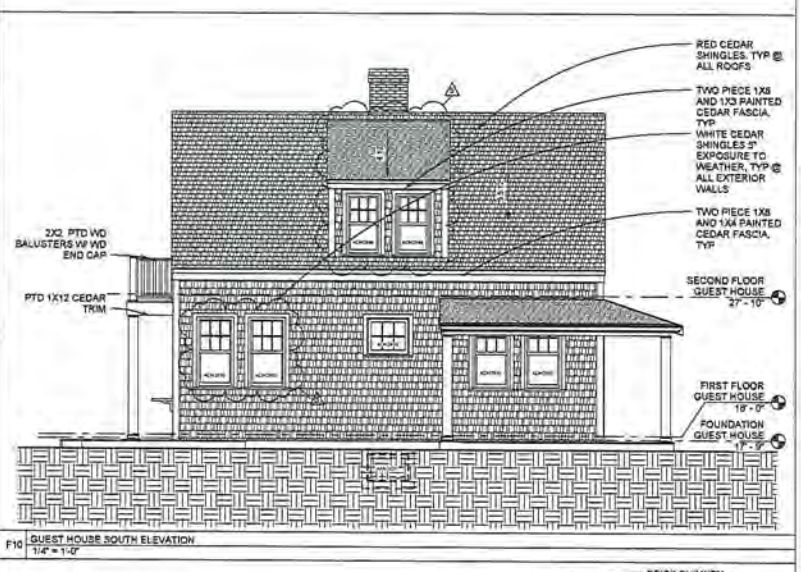
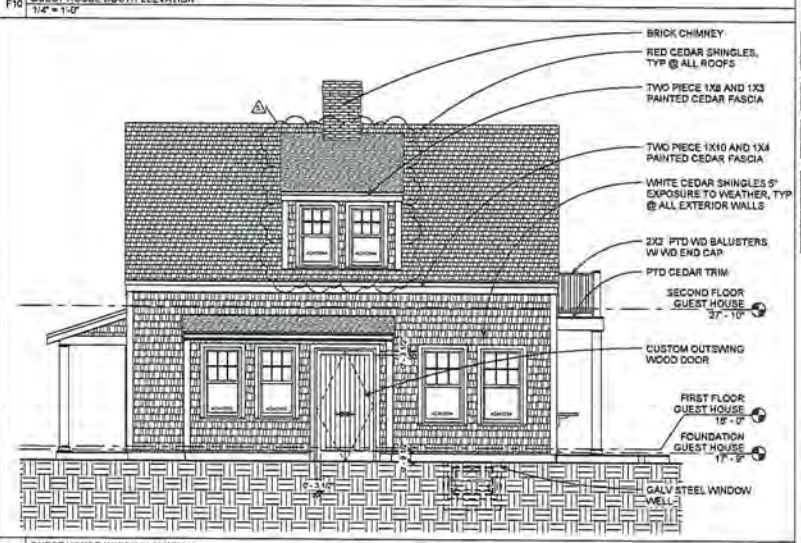


F16 GUEST HOUSE WEST ELEVATION
1/4" = 1'-0"



F10 GUEST HOUSE SOUTH ELEVATION
1/4" = 1'-0"

A16 GUEST HOUSE EAST ELEVATION
1/4" = 1'-0"



A10 GUEST HOUSE NORTH ELEVATION
1/4" = 1'-0"

EXT ANDERSEN PATIO INSWING DOOR SCHEDULE - GUEST HOUSE

Door Number	Height	Width	Model
7	6' - 11"	5' - 6"	A-Series
8	6' - 11"	3' - 0"	A-Series

WINDOW SCHEDULE GUEST HOUSE

Designation	Rough Width	Rough Height	Model
AAN3020	3' - 0"	2' - 0"	A-Series Awning
ADH2644	2' - 6"	4' - 4"	A-Series Double Hung
ADH2648	2' - 6"	4' - 8"	A-Series Double Hung
ADH2850	2' - 8"	5' - 0"	A-Series Double Hung
ADH3054	3' - 0"	5' - 4"	A-Series Double Hung
APW3028	3' - 0"	2' - 8"	A-Series Picture Window

ALL WINDOWS TO BE ANDERSEN A SERIES PLATINMUM GREY CLAD WINDOWS W SIMULATED DIVIDED LITES, UNO. ALL TRIM TO BE PLATINUM GREY.

1X4 CEDAR CASING AT ALL WINDOWS & DOORS OR UNLESS SHOWN AS CONTINUOUS BETWEEN OPENINGS

SEE ELEVATIONS FOR MUNTIN LAYOUTS

CONTRACTOR TO FABRICATE REMOVABLE PLYWD STORM PANELS AS REQUIRED BY LOCAL OFFICIALS AT ALL WINDOWS

ALL EXTERIOR DOORS TO BE ANDERSEN PATIO INSWING DOORS, UNO. DOUBLE DOORS TO HAVE ASTRAGAL ATTACHED TO DOOR LEAF

LINEA 5, inc.

LINDSAY RESIDENCE

#15 PIPPEN'S WAY

GUEST HOUSE ELEVATIONS

#	ISSUE	DATE
1	HDC RESUBMISSION	11.20.15
2	HDC RESUBMISSION 2	12.22.15
4	HDC RESUBMISSION 4	02.10.16
5	HDC RESUBMISSION 5	02.26.16

JOB No. 11026

DRAWN BY	CHECKED BY
LC	HD

DATE	SCALE
02.26.16	1/4" = 1'-0"

SHEET No

A2.4

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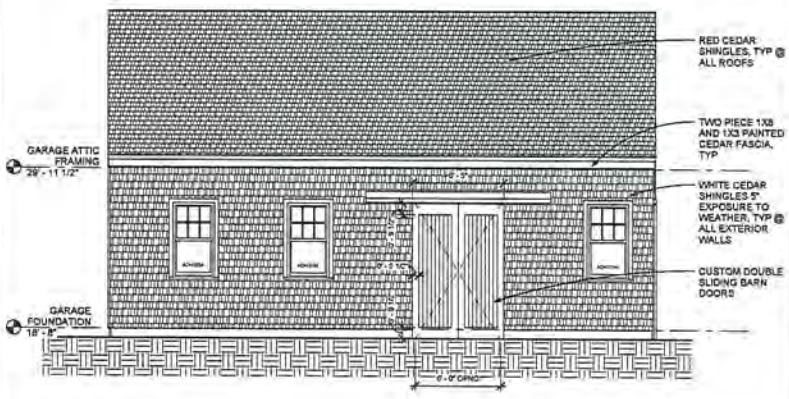
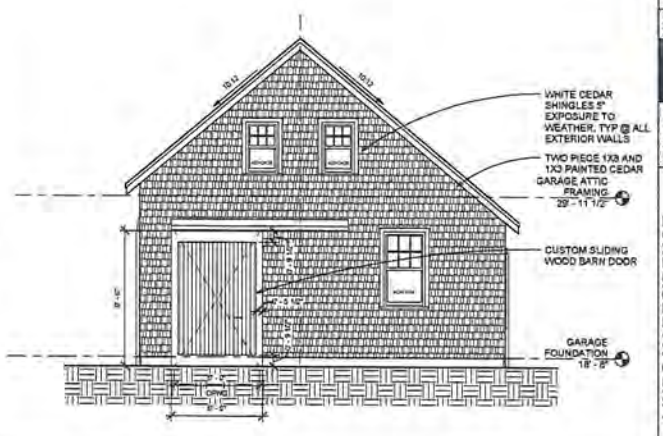


F13 GARAGE ELEVATION - NORTH
1/4" = 1'-0"



F06 GARAGE ELEVATION -WEST
1/4" = 1'-0"

WINDOW SCHEDULE - GARAGE			
Designation	Rough Width	Rough Height	Model
ADH2435	2' - 4"	3' - 8"	A-Series Double Hung
ADH3054	3' - 0"	5' - 4"	A-Series Double Hung

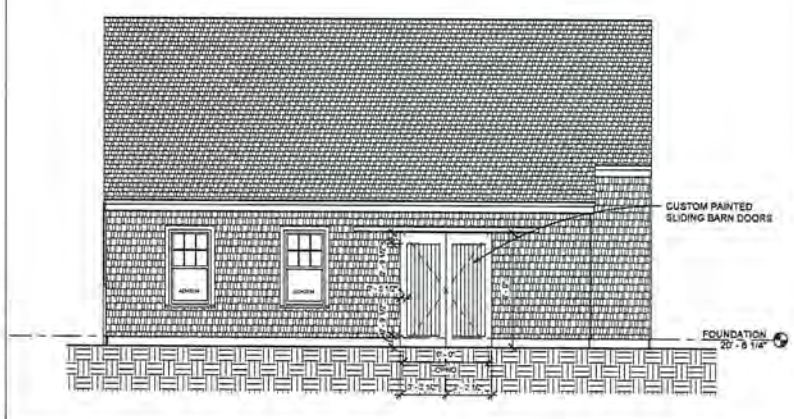
ALL WINDOWS TO BE ANDERSEN A SERIES PLATINMUM GREY CLAD WINDOWS W/ SIMULATED DIVIDED LITES, UNO. ALL TRIM TO BE PLATINUM GREY.

1X4 CEDAR CASING AT ALL WINDOWS & DOORS OR UNLESS SHOWN AS CONTINUOUS BETWEEN OPENINGS

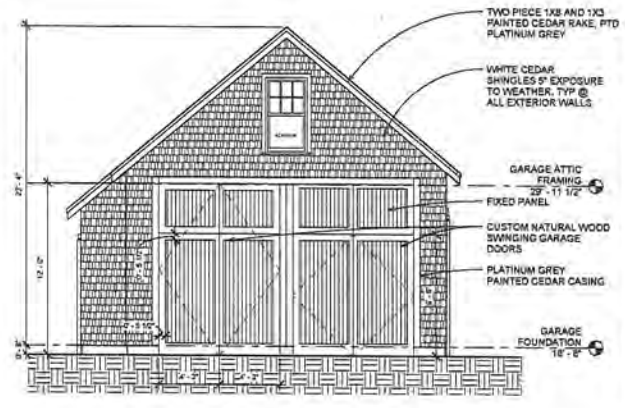
SEE ELEVATIONS FOR MUNTIN LAYOUTS

CONTRACTOR TO FABRICATE REMOVABLE PLYWD STORM PANELS AS REQUIRED BY LOCAL OFFICIALS AT ALL WINDOWS

ALL EXTERIOR DOORS TO BE ANDERSEN PATIO INSWING DOORS, UNO. DOUBLE DOORS TO HAVE ASTRAGAL ATTACHED TO DOOR LEAF



A13 GARAGE ELEVATION -SOUTH
1/4" = 1'-0"



A06 GARAGE ELEVATION - EAST
1/4" = 1'-0"

LINEA 5, inc.

LINDSAY RESIDENCE

#15 PIPPEN'S WAY

GARAGE ELEVATIONS

#	ISSUE	DATE
4	HDC RESUBMISSION 4	02.12.16

Job No	11528
DRAWN BY	CHECKED BY
LC	HD
DATE	SCALE
02.23.16	1/4" = 1'-0"

SHEET No

A2.3

Copyright © 2014 Linea 5, inc

43–94.2
11 PIPPEN'S WAY
L.C. LOT 22

529.49'
82.08'
365.25'
184.53'
194.70'
717.30'
234.72'
64.26'
79.06'
65.30'
67.96'
R=80.00'
R=90.00'
50'
25'
100'

EVERGREEN
MAPLE TREE

WLF#B2
WLF#B3
WLF#B4
WLF#B5
WLF#B6
WLF#B7
WLF#B8
WLF#B9
WLF#B10
WLF#B11
WLF#B12
WLF#B13
WLF#B14
WLF#B15

100' BUFFER
NHESP LIMIT OF WORK
25' WETLAND SETBACK
50' WETLAND SETBACK

PROPOSED STRUCTURE (B)
PROPOSED STRUCTURE (A)
PROPOSED STRUCTURE (C)
SEPTIC LEACH FIELD
PROPOSED DRIVEWAY
EXIST. WOOD DOCK
MAINTAIN PATH TO DOCK
EXISTING EDGE OF POND MEASURED 08-06-15
POND
WETLAND "B"
EXISTING WELL
NHESP FILE No. 07-21275 LIMIT OF WORK
EXIST. SHELL SURFACE
EXIST. GRANITE CURB
EXIST. SPLIT RAIL FENCE (SRF TYP)
PIPPEN'S WAY

NOTE:
WETLAND BOUNDARY DELINEATED BY DONALD SCHALL.

43–303
N/F
TIMOTHY J. RUSSERT
MARITAL TRUST

43–302
N/F
TIMOTHY J. RUSSERT
MARITAL TRUST

43–94.9
20 PIPPEN'S WAY
L.C. LOT 17

LEGEND

- CONCRETE BOUND/DRILL HOLE
- 28 EXISTING CONTOURS
- 19.3x EXISTING SPOT ELEVATION
- 18 PROPOSED CONTOURS
- PROPOSED SILT FENCE

OWNER INFORMATION
RONALD M. LINDSAY &
NANCY S. LINDSAY
CERT. OF TITLE #25496
L.C.C. 12268–E, LOT 21
ASSESSOR'S MAP 43, PARCEL 94.3
#15 PIPPEN'S WAY

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

SITE PLAN OF LAND TO ACCOMPANY A NOTICE OF INTENT
PREPARED FOR
RONALD M. LINDSAY &
NANCY S. LINDSAY
#15 PIPPEN'S WAY

Lot Created: NOVEMBER 2014

CHECKED BY ADG/JLB	ASSESSOR MAP: 43 PARCEL: 94.3	
DESIGNED BY CLR	DRAWN BY CLR	DATE 04/29/2016
SCALE AS NOTED	JOB NO. B8062	SHEET: 1 OF 1

BLACKWELL & ASSOCIATES, INC.
20 TEASDALE CIRCLE – NANTUCKET, MA 02554
(508)228–9026 FAX (508)228–5292

B8062

T:\LEO 25 JOB 45
V:\DRAWFILES\B8062\NOI.dwg 4/28/2016 1:22:27 PM EDT

Knight

12 E Lincoln Ave

(42.4.1-47)

SE48-2889

NOTICE OF INTENT APPLICATION

For

Construction of a

Single-Family Home

At

12 EAST LINCOLN AVENUE

Nantucket, MA

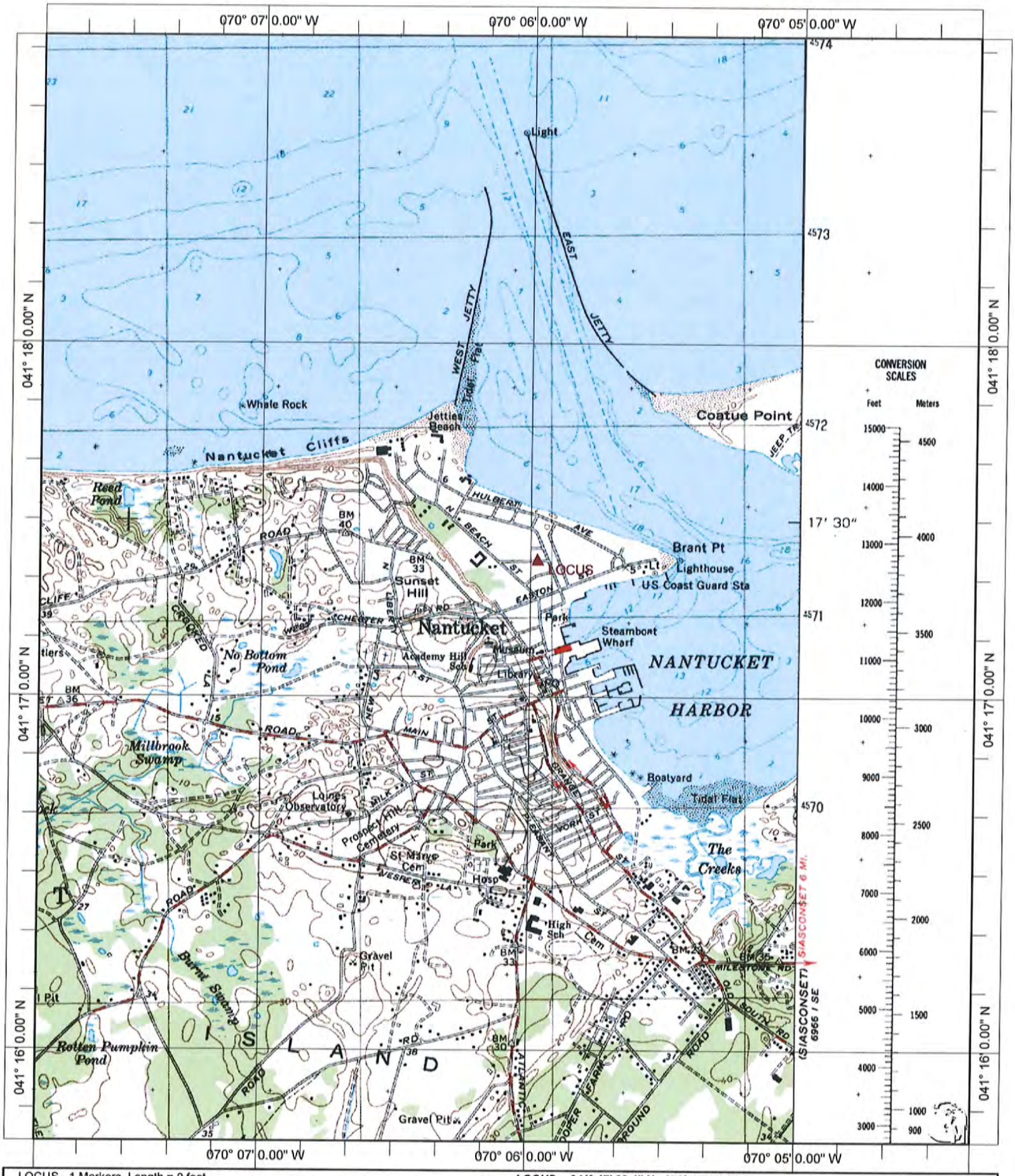
APRIL 2016

Prepared For

ROBERT A. KNIGHT

By

BLACKWELL & ASSOCIATES, Inc.
Professional Civil Engineers & Land Surveyors
20 Teasdale Circle
Nantucket, MA 02554
508-228-9026



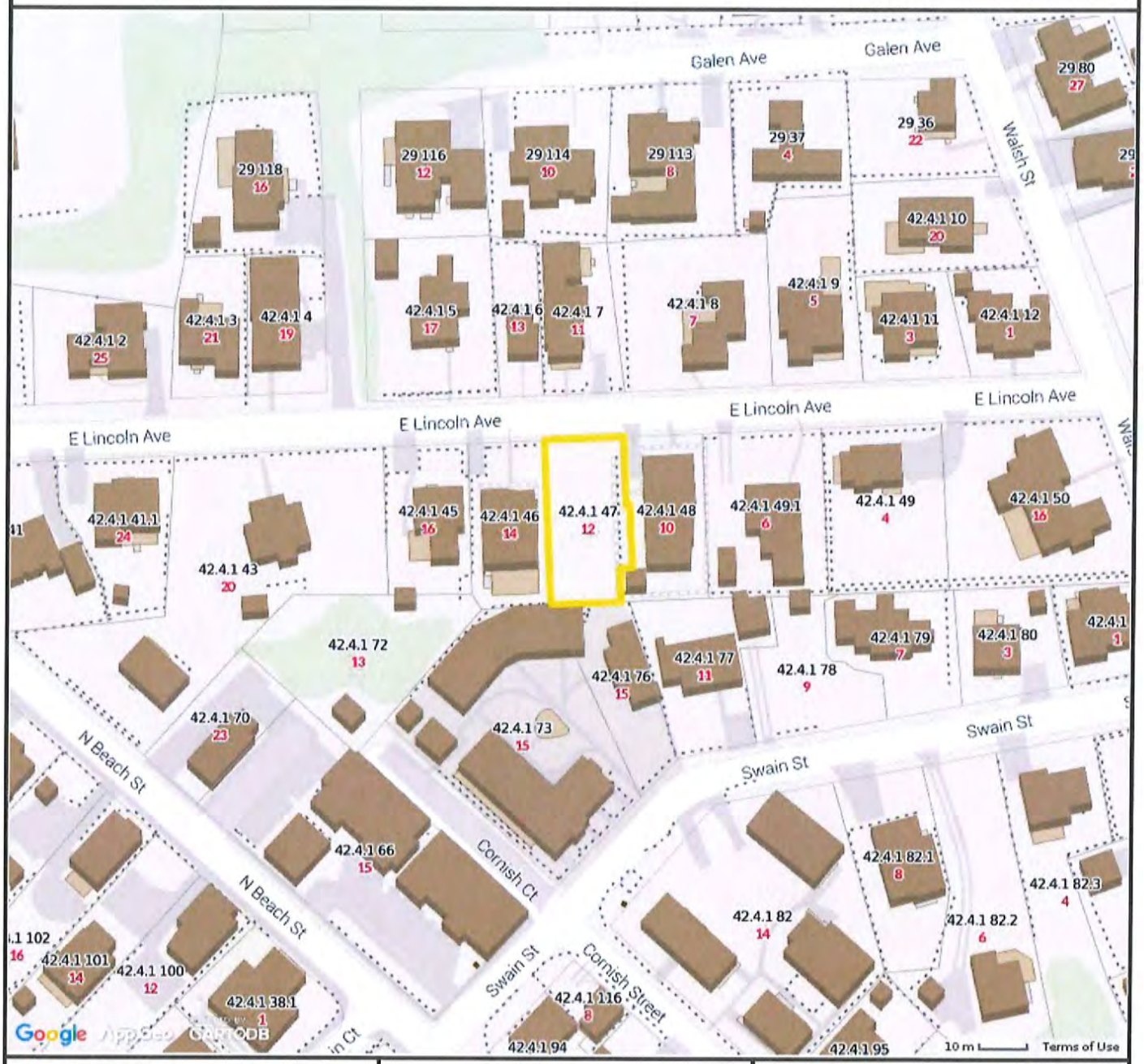
LOCUS - 1 Markers, Length = 0 feet

LOCUS - 041° 17' 23.1" N, 070° 05' 58.4" W

Name: NANTUCKET
Date: 4/28/116
Scale: 1 inch equals 2000 feet

Location: 041° 17' 18.4" N 070° 06' 05.0" W
Caption: #12 East Lincoln Ave.

Copyright (C) 1997, Maptech, Inc.



Property Information

Property ID	42.4.1 47
Location	12 E LINCOLN AV
Owner	KNIGHT ROBERT A ETAL TRUSTEES

MAP FOR REFERENCE ONLY
NOT A LEGAL DOCUMENT

Town and County of Nantucket, MA makes no claims and no warranties, expressed or implied, concerning the validity or accuracy of the GIS data presented on this map.

Parcels updated December, 2014
Properties updated January, 2015

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 3 – Notice of Intent

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
And the Town of Nantucket Wetlands Bylaw Chapter 136

Provided by MassDEP:

MassDEP File Number

Document Transaction Number

NANTUCKET
City/Town

A. General Information

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

12 E. Lincoln Avenue
a. Street Address

Nantucket
b. City/Town

02554
c. Zip Code

Latitude and Longitude:

41d 17' 22.93"
d. Latitude

70d 05' 58.33"
e. Longitude

42.4.1
f. Assessors Map/Plat Number

47
g. Parcel /Lot Number

2. Applicant:

Robert
a. First Name

Knight, Trustee of Knight Realty Trust
b. Last Name

c. Organization

63 Bay State Rd
d. Street Address

Boston
e. City/Town

MA
f. State

02115
g. Zip Code

781-254-0144
h. Phone Number

i. Fax Number

Rknight2@gmail.com
j. Email Address

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

a. First Name

b. Last Name

c. Organization

d. Street Address

e. City/Town

f. State

g. Zip Code

h. Phone Number

i. Fax Number

j. Email address

4. Representative (if any):

Jeffrey L.
a. First Name

Blackwell, PLS
b. Last Name

Blackwell & Associates, Inc.
c. Company

20 Teasdale Circle
d. Street Address

Nantucket
e. City/Town

MA
f. State

02554
g. Zip Code

508-228-9026 x11
h. Phone Number

508-228-5292
i. Fax Number

Jeff@blackwellsurvey.com
j. Email address

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

$500 + $25 + $200
a. Total Fee Paid

$237.50
b. State Fee Paid

$262.50 + $25 + $200
c. City/Town Fee Paid

A. General Information (continued)

6. General Project Description: Construction of a single family home.

   The Applicant proposes to build a home on a vacant lot, including associated landscaping.

   Please refer to the attached Project Narrative and Site Plan for additional information.

7a. Project Type Checklist:

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

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

1. ☐ Yes ☒ No If yes, describe which limited project applies to this project:

2. Limited Project

8. Property recorded at the Registry of Deeds for:

NANTUCKET	
a. County	b. Certificate # (if registered land)
642	01
c. Book	d. Page Number

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

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

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

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

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

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

Resource Area	Size of Proposed Alteration	Proposed Replacement (if any)
d. ☐ Bordering Land Subject to Flooding	1. square feet	2. square feet
	3. cubic feet of flood storage lost	4. cubic feet replaced
e. ☐ Isolated Land Subject to Flooding	1. square feet	
	2. cubic feet of flood storage lost	3. cubic feet replaced
f. ☐ Riverfront Area	1. Name of Waterway (if available)	

2. Width of Riverfront Area (check one):

☐ 25 ft. - Designated Densely Developed Areas only

☐ 100 ft. - New agricultural projects only

☐ 200 ft. - All other projects

3. Total area of Riverfront Area on the site of the proposed project: _____ square feet

4. Proposed alteration of the Riverfront Area:

a. total square feet _____ b. square feet within 100 ft. _____ c. square feet between 100 ft. and 200 ft. _____

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

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

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

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

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

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

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

		Size of Proposed Alteration	Proposed Replacement (if any)
f. ☐	Coastal Banks	1. linear feet	
g. ☐	Rocky Intertidal Shores	1. square feet	
h. ☐	Salt Marshes	1. square feet	2. sq ft restoration, rehab., creation
i. ☐	Land Under Salt Ponds	1. square feet 2. cubic yards dredged	
j. ☐	Land Containing Shellfish	1. square feet	
k. ☐	Fish Runs	Indicate size under Coastal Banks, inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above 1. cubic yards dredged	
l. ☒	Land Subject to Coastal Storm Flowage	1,496 1. square feet	

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

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

5. ☐ Project Involves Stream Crossings

a. number of new stream crossings | b. number of replacement stream crossings

C. Other Applicable Standards and Requirements

Streamlined Massachusetts Endangered Species Act/Wetlands Protection Act Review

1. Is any portion of the proposed project located in **Estimated Habitat of Rare Wildlife** as indicated on the most recent Estimated Habitat Map of State-Listed Rare Wetland Wildlife published by the Natural Heritage and Endangered Species Program (NHESP)? To view habitat maps, see the *Massachusetts Natural Heritage Atlas* or go to http://www.mass.gov/dfwele/dfw/nhesp/regulatory_review/priority_habitat/online_viewer.htm.

a. ☐ Yes ☒ No **If yes, include proof of mailing or hand delivery of NOI to:**

Natural Heritage and Endangered Species Program
Division of Fisheries and Wildlife
Route 135, North Drive
Westborough, MA 01581

2008
b. Date of map

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

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

1. c. Submit Supplemental Information for Endangered Species Review*

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

      (a) within wetland Resource Area _____ percentage/acreage

      (b) outside Resource Area _____ percentage/acreage

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

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

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

      (b) ☐ Photographs representative of the site

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

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

      (d) ☐ Vegetation cover type map of site

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

   d. OR Check One of the Following

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

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

---

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

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

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

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

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

a. ☒ Not applicable – project is in inland resource area only

b. ☐ Yes ☐ No If yes, include proof of mailing or hand delivery of NOI to either:

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

Division of Marine Fisheries -
Southeast Marine Fisheries Station
Attn: Environmental Reviewer
1213 Purchase Street – 3rd Floor
New Bedford, MA 02740-6694

North Shore - Hull to New Hampshire:

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

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

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

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

b. ACEC

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

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

a. ☐ Yes ☒ No

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

a. ☐ Yes ☒ No

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

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

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

2. ☐ A portion of the site constitutes redevelopment

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

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

1. ☒ Single-family house

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

2. ☐ Emergency road repair

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

D. Additional Information

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

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

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

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

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

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

Site Plan To Accompany Notice of Intent a. Plan Title	
Blackwell & Associates, Inc. b. Prepared By	Jeffrey L. Blackwell, PLS c. Signed and Stamped by
April 28, 2016 d. Final Revision Date	1"=10' e. Scale
Knight Residence by Emeritus Development Ltd. f. Additional Plan or Document Title	4/07/16 g. Date

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

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

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

8. ☒ Attach NOI Wetland Fee Transmittal Form

9. ☐ Attach Stormwater Report, if needed.

E. Fees

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

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

22383	04/28/2016
2. Municipal Check Number	3. Check date
22384	04/28/2016
4. State Check Number	5. Check date
Blackwell & Assoc., Inc.	
6. Payor name on check: First Name	7. Payor name on check: Last Name

F. Signatures and Submittal Requirements

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

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

Jeffrey L. Rhodes, Agent	04/29/2016
1. Signature of Applicant	2. Date
3. Signature of Property Owner (if different)	4. Date
Jeffrey L. Rhodes	04/29/2016
5. Signature of Representative (if any)	6. Date

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

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

A. Applicant Information

1. Applicant:

Robert A.	Knight, Trustee of Knight Realty Trust
a. First Name	b. Last Name

c. Organization

63 Bay State Road
d. Mailing Address

Boston	MA	02115
e. City/Town	f. State	g. Zip Code

781-254-0144		Rknight2@gmail.com
h. Phone Number	i. Fax Number	j. Email Address

2. Property Owner (if different):

a. First Name	b. Last Name

c. Organization

d. Mailing Address

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

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

3. Project Location:

12 East Lincoln Ave.1	Nantucket
a. Street Address	b. City/Town

B. Fees

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

The fee should be calculated using the following six-step process and worksheet. **Please see Instructions before filling out worksheet.**

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

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

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

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

NOI Wetland Fee Transmittal Form

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

B. Fees (continued)

Step 1/Type of Activity	Step 2/Number of Activities	Step 3/Individual Activity Fee	Step 4/Subtotal Activity Fee
2	1	500	500
Nantucket Wetland By-law Fee			$25
Nantucket Expert Review Fee			$200

Step 5/Total Project Fee: $500 + $25 + $575

Step 6/Fee Payments:

Total Project Fee:	$ + $25 + $575 a. Total Fee from Step 5
State share of filing Fee:	$237.50 b. 1/2 Total Fee **less** $12.50
City/Town share of filling Fee:	$267.50+$25+$200 c. 1/2 Total Fee **plus** $12.50

C. Submittal Requirements

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

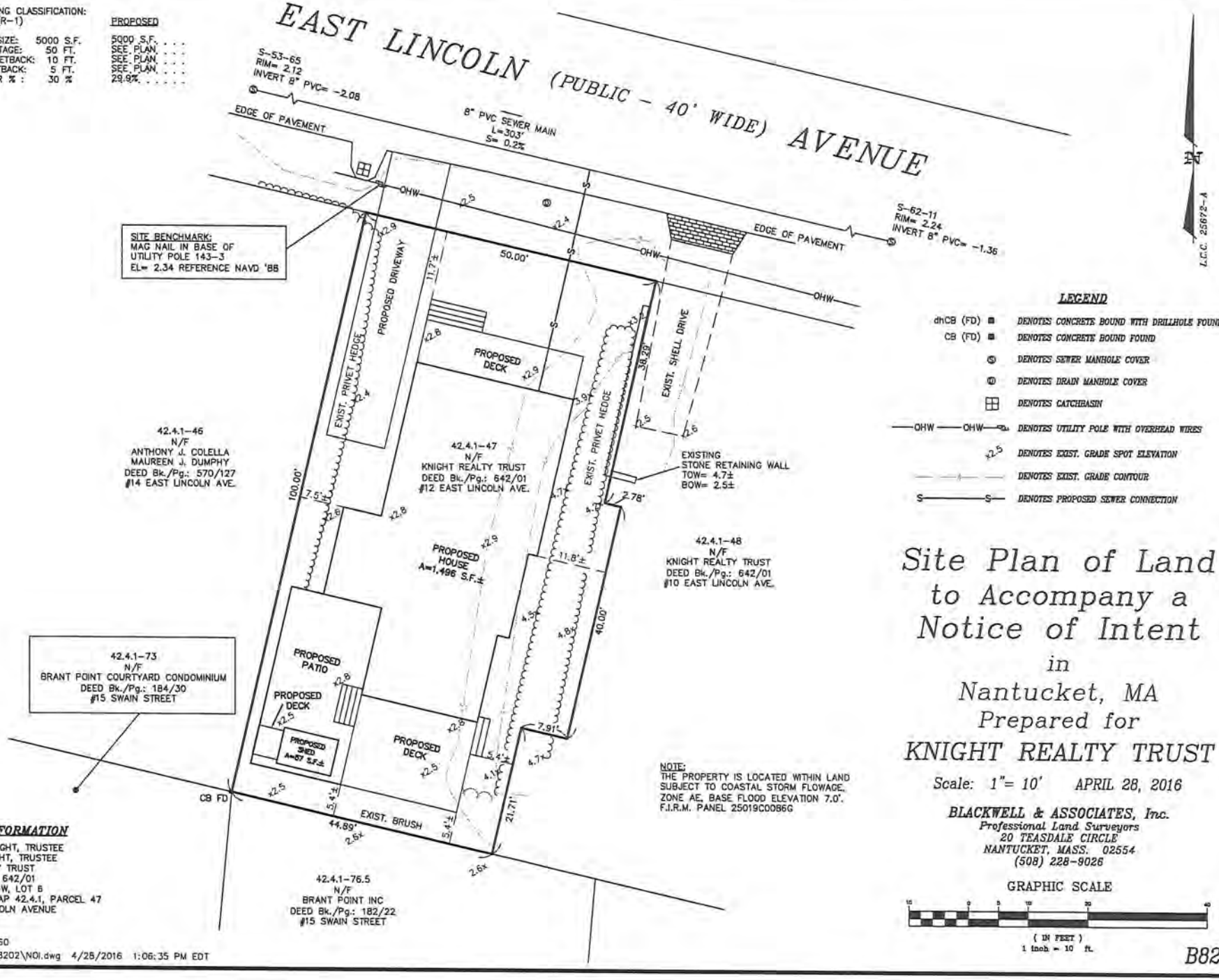
Department of Environmental Protection
Box 4062
Boston, MA 02211

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

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

CURRENT ZONING CLASSIFICATION:
Residential 1 (R-1)

		PROPOSED
MINIMUM LOT SIZE:	5000 S.F.	5000 S.F. . . .
MINIMUM FRONTAGE:	50 FT.	SEE PLAN. . . .
FRONT YARD SETBACK:	10 FT.	SEE PLAN. . . .
REAR/SIDE SETBACK:	5 FT.	SEE PLAN. . . .
GROUND COVER % :	30 %	29.9%. . . . .



NOTE:
THE PROPERTY IS LOCATED WITHIN LAND SUBJECT TO COASTAL STORM FLOWAGE, ZONE AE, BASE FLOOD ELEVATION 7.0'. F.I.R.M. PANEL 25019C0086G

OWNER INFORMATION

ROBERT A. KNIGHT, TRUSTEE
N. SCOTT KNIGHT, TRUSTEE
KNIGHT REALTY TRUST
DEED Bk./Pg.: 642/01
PLAN FILE 55-W, LOT 6
ASSESSOR'S MAP 42.4.1, PARCEL 47
#12 EAST LINCOLN AVENUE

LEGEND

dhCB (FD)	DENOTES CONCRETE BOUND WITH DRILLHOLE FOUND
CB (FD)	DENOTES CONCRETE BOUND FOUND
	DENOTES SEWER MANHOLE COVER
	DENOTES DRAIN MANHOLE COVER
	DENOTES CATCHBASIN
—OHW— —OHW—	DENOTES UTILITY POLE WITH OVERHEAD WIRES
2.5	DENOTES EXIST. GRADE SPOT ELEVATION
	DENOTES EXIST. GRADE CONTOUR
S—S	DENOTES PROPOSED SEWER CONNECTION

L.C.C. 25672-A

Site Plan of Land to Accompany a Notice of Intent in Nantucket, MA Prepared for KNIGHT REALTY TRUST

Scale: 1"= 10' APRIL 28, 2016

BLACKWELL & ASSOCIATES, Inc.
Professional Land Surveyors
20 TEASDALE CIRCLE
NANTUCKET, MASS. 02554
(508) 228-9026

GRAPHIC SCALE

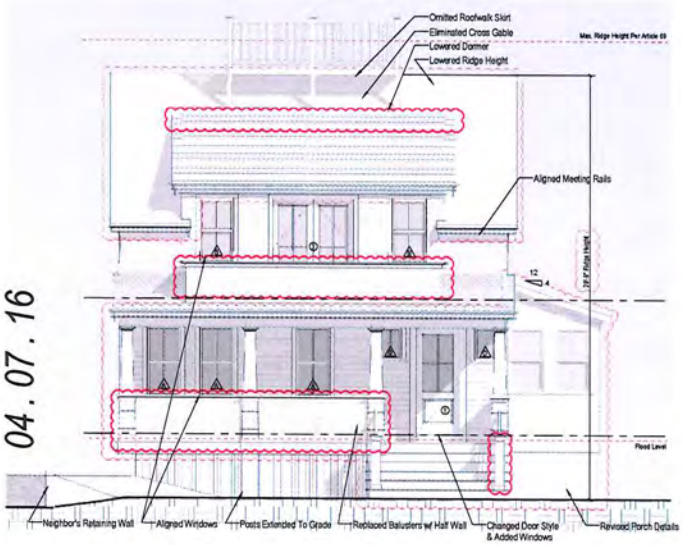
(IN FEET)
1 inch = 10 ft.

B8202

T:\PAJE 2 JOB 60
V:\DRAWFILES\B8202\NOI.dwg 4/28/2016 1:06:35 PM EDT

04 . 07 . 16

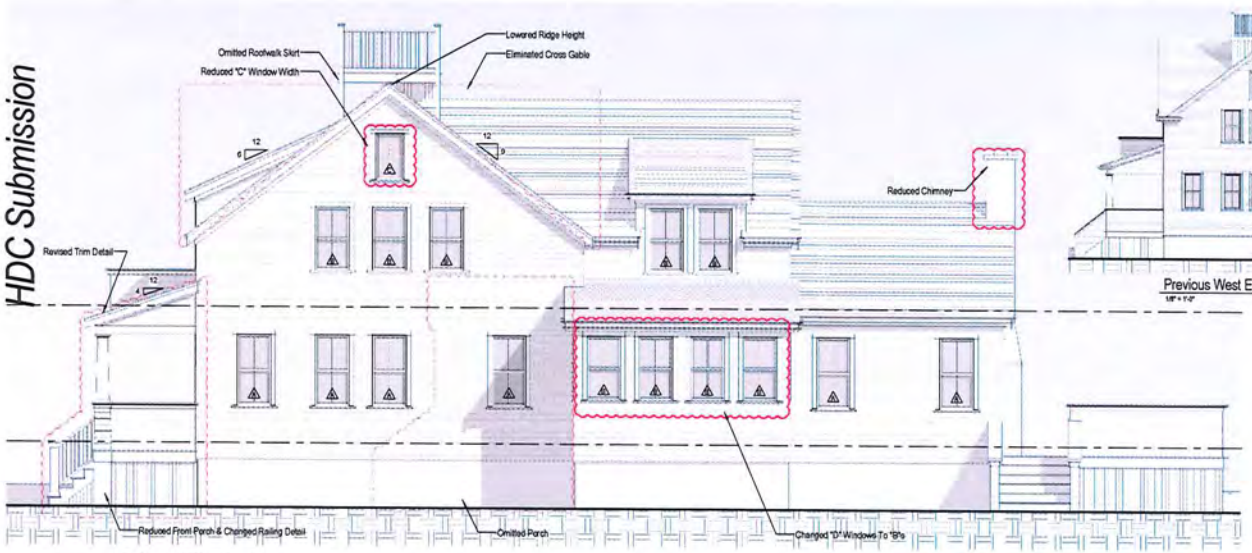
HDC Submission



1 Proposed North Elevation
1/4" = 1'-0"

Previous North Elevation
1/8" = 1'-0"

3 North West Perspective



2 Proposed West Elevation
1/4" = 1'-0"

Previous West Elevation
1/8" = 1'-0"

1528

Knight Residence

12 East Lincoln
Nantucket, MA 02554

cmcristua Development LLC
9 Williams Lane Nantucket, MA 02554
P 508.228.4840
F 508.228.4840
www.cmcristuadevelopment.com

Elevations

Site Information

Map & Parcel:	42.4.1 / 47
Current Zoning:	R1
Minimum Frontage:	50'
Front Setback:	10'
Side/Rear Setback:	5'
Lot Size:	5,000 S.F.
Min. Lot Size:	5,000 S.F.
Allowable G.C.:	1,500 S.F.
Proposed G.C.:	1,450 S.F.

Information for this site plan was taken from the Nantucket G.I.S. This drawing does not constitute a registered survey. All site work should be verified by a Registered Land Surveyor prior to and during construction.

SHEET INDEX

A.3.2 Facade Elevation Study
E.1.1 Electrical Plan
E.1.2 Unnamed
G.1.1 Site Plan, Locus Map
A.1.1 First Floor Plan
A.2.1 Elevations
A.2.2 Elevations

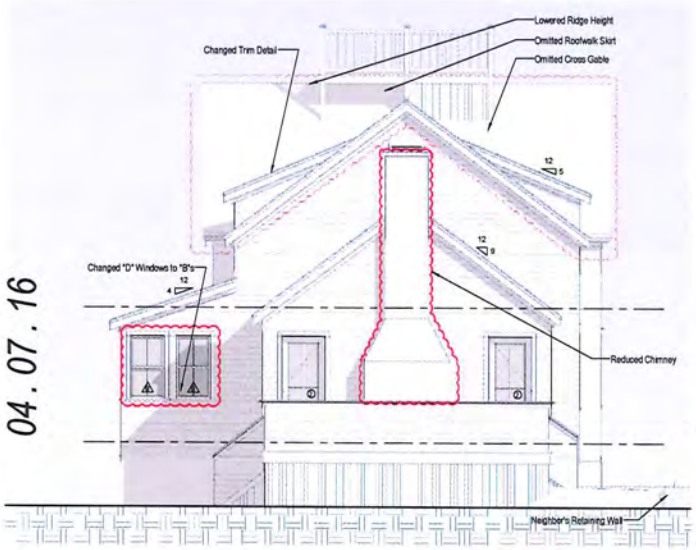
Revisions

THE DESIGNS ON THIS DRAWING ARE THE PROPERTY OF THE ARCHITECT AND MUST BE RETURNED UPON REQUEST. REPRODUCTION OF THESE DESIGNS IN WHOLE OR IN PART IS PROHIBITED WITHOUT WRITTEN PERMISSION OF THE ARCHITECT. ©2016 ALL RIGHTS RESERVED

A.2.1

1528

04 . 07 . 16



1 Proposed South Elevation
1/8" = 1'-0"

Previous South Elevation
1/8" = 1'-0"

2 South East Perspective

HDC Submission

3 Proposed East Elevation
1/8" = 1'-0"

Previous East Elevation
1/8" = 1'-0"

1528

Knight Residence

12 East Lincoln
Nantucket, MA 02554

cmcristua Development LLC

Elevations

Site Information

Map & Parcel:	42.4.1 / 47
Current Zoning:	R1
Minimum Frontage:	50'
Front Setback:	10'
Side/Rear Setback:	5'
Lot Size:	5,000 S.F.
Min. Lot Size:	5,000 S.F.
Allowable G.C.:	1,500 S.F.
Proposed G.C.:	1,450 S.F.

Information for this site plan was taken from the Nantucket G.I.S. This drawing does not constitute a registered survey. All site work should be verified by a Registered Land Surveyor prior to and during construction.

Revisions

A.2.2

1528

BLACKWELL & ASSOCIATES, INC.
Professional Land Surveyors

INTRODUCTION

The proposed work at 12 E. Lincoln Ave. in the Brant Point area of Nantucket, Massachusetts involves construction of a single family dwelling and associated landscaping within the Land Subject To Coastal Storm Flowage Resource Area. No change in the existing site grade is proposed. A waiver is required from the Wetland Protection Regulations for Administering the Town of Nantucket By-law Chapter 136, to allow the footings within two-feet vertically of estimated seasonal high groundwater. A request for the waiver is included herewith.

SITE DESCRIPTION

The subject property is 5,000 SF in size and is located in the Brant Point area of Nantucket Island. The property is surrounded by existing residential-use properties. The proposed dwelling will be connected to Town sewer and water services. The defined resource area on-site is Land Subject To Coastal Storm Flowage, LSCSF.

WORK DESCRIPTION

Prior to the start of work, a silt fence will be placed at the limit of work as shown on the site plan. The fence will be maintained throughout the project. If temporary dewatering is required, flows will be directed to the Town storm drain system. After construction is completed, all disturbed areas will be covered with a minimum of 6" of topsoil and planted with Cape Cod Premium grass seed mix.

CONCLUSION

The proposed construction and landscaping will not affect the LSCSF or result in an adverse impact on the interests protected by the Commission including flood control, erosion control, storm damage prevention, prevention of pollution and wildlife.

20 TEASDALE CIRCLE - NANTUCKET, MA 02554
(508) 228-9026 - (508) 228-5292 FAX

BLACKWELL & ASSOCIATES, INC.
Professional Land Surveyors & Civil Engineers

B8202 April 29, 2016

Nantucket Conservation Commission
2 Bathing Beach Road
Nantucket, MA 02554

RE: Waiver Request for 12 East Lincoln Ave., Robert A. Knight

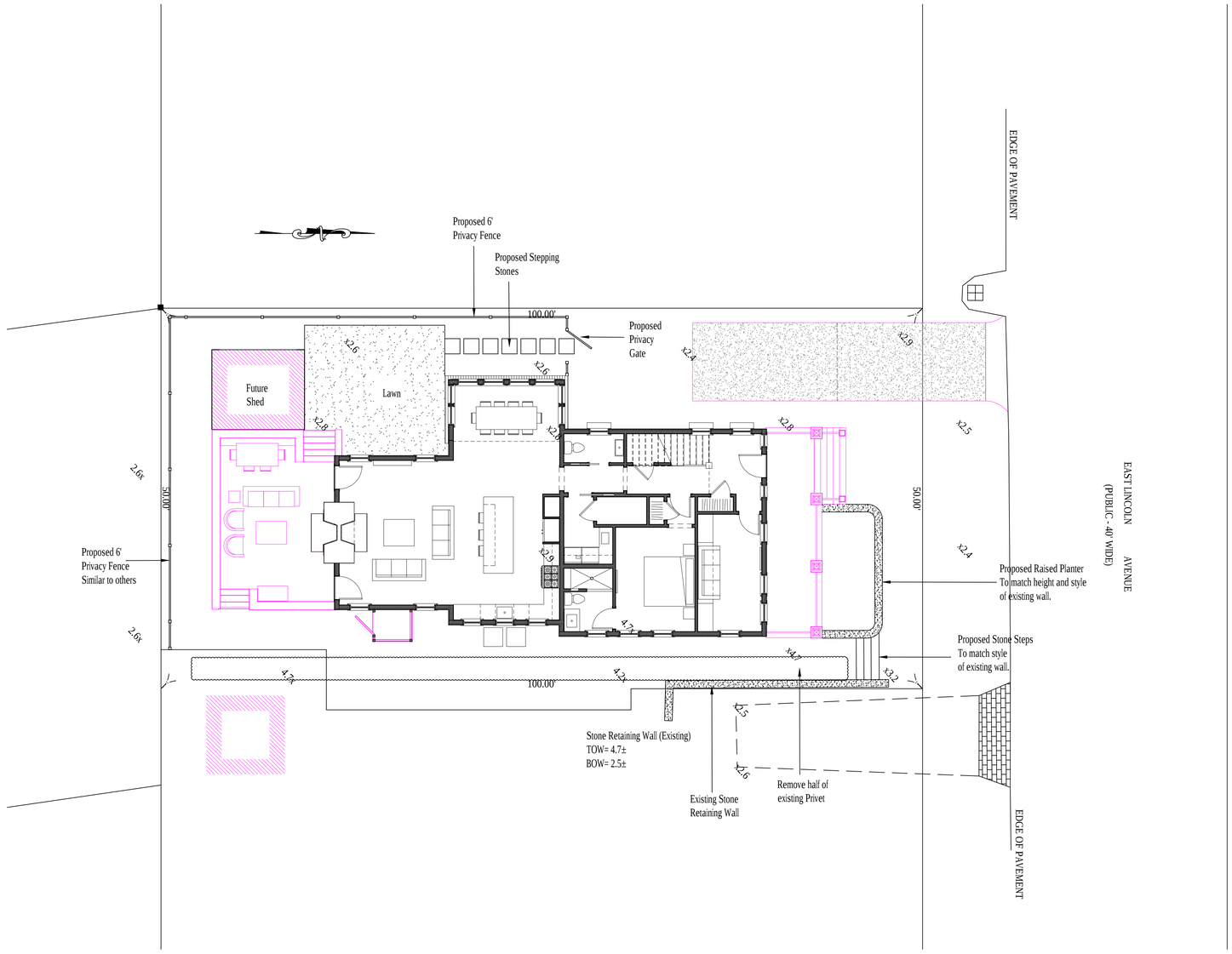
Dear Commission Members:

The purpose of this letter is to request and justify a waiver from the Wetland Protection Regulations for Administering the Town of Nantucket By-law Chapter 136 to allow footings within two-feet vertically of estimated seasonal high groundwater. Specifically a waiver is required from Section 3.02.B.1 to allow the footings within two-feet vertically of estimated seasonal high groundwater. If required, any dewatering activities will be temporary and flows will be directed to the municipal storm drain system in East Lincoln Ave. Disturbed areas will be covered with topsoil and then be planted with Cape Cod Premium Grass Seed Mix.

The proposed project will not have an adverse impact on the Land Subject To Coastal Storm Flowage resource area.

Sincerely,
Blackwell & Associates, Inc.
By: Jeffery L. Blackwell, PLS

20 TEASDALE CIRCLE • NANTUCKET, MA 02554
PHONE (508)-228-9026 • FAX (508)-228-5292



wingworks
LANDSCAPE
andrewwing

PROPOSED LANDSCAPE ENHANCEMENTS

REV.	DATE	BY	DESCRIPTION
#1			
#2			

DATE: 04.28.16
DRAWN: tbh
CHECKED: tbh
SCALE: 1"=8'

L1
DRAWING NO.

2137

REQUESTS FOR DETERMINATION

Jefferson LLC

40 Jefferson Ave

(30-119)

LEC WETLANDS WILDLIFE WATERWAYS

Request for Determination of Applicability

April 29, 2016

Subject Property
40 Jefferson Avenue
Assessor's Map 30, Parcel 119
Nantucket, Massachusetts

Applicant
40 JEFFERSON LLC
c/o Reade, Gullicksen, Hanley & Gifford, LLP
P.O. Box 2669
Nantucket, Massachusetts 02584

Property Owners
William R. Parks; Edwyna Strain Mulrow as Trustee
2 Sutton Place South, Apt 19D
New York, NY 10022

LEC Environmental Consultants, Inc.

12 Resnik Road
Suite 1
Plymouth, MA 02360
508-746-9491
508-746-9492 fax

www.lecenvironmental.com

LEC WETLANDS WILDLIFE WATERWAYS

April 29, 2016

Hand Delivery

Nantucket Conservation Commission
2 Bathing beach Road
Nantucket, Massachusetts 02584

Re: Request for Determination of Applicability [LEC File #: BrEI\14-409.01]
40 Jefferson Avenue
Assessor's Map 30, Parcel 119
Nantucket, Massachusetts

Dear Members of the Conservation Commission:

On behalf of the Applicant, 40 JEFFERSON, LLC, LEC Environmental Consultants, Inc., (LEC) is filing the enclosed *Request for Determination of Applicability* (RDA) with the Nantucket Conservation Commission to confirm that no Wetland Resource Areas occur on or within 100 feet of the project site as protected under the *Massachusetts Wetlands Protection Act* (M.G.L. c. 131, § 40, the *Act*), its implementing Regulations (310 CMR 10.00, the *Act Regulations*), and/or the *Town of Nantucket Bylaw* (Chapter 136) and *Wetlands Protection Regulations* (*Bylaw*).

LEC was retained to conduct a site evaluation to identify any Wetland Resource Areas and to prepare and submit this RDA Application. Details regarding the Coastal Wetland Resource Areas located in the vicinity of the site are further described in the attached report.

Enclosed please find two checks made payable to the Town of Nantucket: Two Hundred Dollars ($200.00) for the Town Consultant fee; and Twenty-Five Dollars ($25.00) for the *Bylaw* fee. A check made payable to the *Inquirer and Mirror* for Two Hundred Sixty-Six Dollars and Ninety Cents ($266.90) has also been submitted for the legal advertising fee.

Thank you for your consideration of this RDA Application. We look forward to further discussing this site at the May 18, 2016 Public Hearing. Should you have any questions, please do not hesitate to me in our Plymouth Office at 508-746-9491 or at shumphries@lecenvironmental.com.

Sincerely,

LEC Environmental Consultants, Inc.

Stanley M. Humphries

Stanley M. Humphries
Senior Coastal Geologist

cc: DEP, Southeast Region; Arthur I. Reade, Edwyna S. Mulrow, Bracken Engineering, Inc.

Request for Determination of Applicability

i. WPA Form 1 – Request for Determination of Applicability
ii. Copy of Filing Fees
iii. Affidavit of Service
iv. Letter to Abutters
v. Abutter Notification Form
vi. Certified List of Abutters

Coastal Wetland Resource Area Analysis

1. Introduction 1

2. General Site Description 1

3. Off-site Wetland Resource Areas 2

3.1 Coastal Beach 2
3.2 Land Subject to Coastal Storm Flowage 2
3.3 Coastal Dune 2
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4. Summary 4

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Appendix A

Locus Maps
Figure 1: USGS Topographic Map
Figure 2: Aerial Orthophoto
Figure 3: FEMA Flood Insurance Rate Map

Appendix B

Photographs

Appendix C

Existing Conditions Plan, prepared by Bracken Engineering, Inc., dated April 28, 2016

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 1- Request for Determination of Applicability

Nantucket
City/Town

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
and The Town of Nantucket Wetlands Bylaw Chapter 136

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

A. General Information

1. Applicant:

40 JEFFERSON LLC Name	air@readelaw.com E-Mail Address
c/o Reade, Gullicksen, Hanley & Gifford, LLP – P.O. Box 2669 Mailing Address	
Nantucket City/Town	MA State / 02584 Zip Code
508-228-3128 Phone Number	508-228-5630 Fax Number (if applicable)

2. Representative (if any):

LEC Environmental Consultants, Inc. Firm	
Stanley M. Humphries Contact Name	shumphries@lecenvironmental.com E-Mail Address
12 Resnik Road, Suite 1 Mailing Address	
Plymouth City/Town	MA State / 02360 Zip Code
508-746-9491 Phone Number	508-746-9492 Fax Number (if applicable)

B. Determinations

1. I request the Town of Nantucket Conservation Commission make the following determination(s). Check any that apply:

☒ a. whether the **area** depicted on plan(s) and/or map(s) referenced below is an area subject to jurisdiction of the Wetlands Protection Act.

☐ b. whether the **boundaries** of resource area(s) depicted on plan(s) and/or map(s) referenced below are accurately delineated.

☐ c. whether the **work** depicted on plan(s) referenced below is subject to the Wetlands Protection Act.

☒ d. whether the area and/or work depicted on plan(s) referenced below is subject to the jurisdiction of any **municipal wetlands ordinance** or **bylaw** of:

Nantucket
Name of Municipality

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

C. Project Description

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

40 Jefferson Avenue	Nantucket
Street Address	City/Town
Map 30	Parcel 119
Assessors Map/Plat Number	Parcel/Lot Number

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

See attached Report

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

Existing Conditions Plan, prepared by Bracken Engineering, Inc.	April 28, 2016
Title	Date
Title	Date
Title	Date

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

N/A

C. Project Description (cont.)

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

N/A

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

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

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

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

WPA Form 1- Request for Determination of Applicability

Nantucket
City/Town

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40
and The Town of Nantucket Wetlands Bylaw Chapter 136

D. Signatures and Submittal Requirements

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

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

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

Name and address of the property owner:

William R. Parks; Edwyna Strain Mulrow as Trustee
Name

2 Sutton Place South, Apt 19D
Mailing Address

New York
City/Town

New York — 10022
State — Zip Code

Signatures:

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

40 Jefferson, LLC
By: Arthur I. Reade, Jr. — 4-25-2016
Signature of Applicant — Date

Arthur I. Reade, Jr.
Authorized Signatory
Signature of Representative (if any) — 4/28/16
Date

1. Introduction

On behalf of the Applicant, 40 JEFFERSON, LLC, LEC Environmental Consultants, Inc., (LEC) is filing the enclosed *Request for Determination of Applicability* (RDA) with the Nantucket Conservation Commission to confirm that no Wetland Resource Areas occur on or within 100 feet of Parcel 119 (Map 30) as protected under the *Massachusetts Wetlands Protection Act* (M.G.L. c. 131, § 40, the *Act*), its implementing Regulations (310 CMR 10.00, the *Act Regulations*), and/or the *Town of Nantucket Bylaw* (Chapter 136) and *Wetlands Protection Regulations* (*Bylaw*). Specifically, no Coastal Bank occurs on or within 100 feet of the project site. Furthermore, the project site is located greater than 100 feet from Coastal Beach, Coastal Dune, and Land Subject to Coastal Storm Flowage (LSCSF).

This report provides a general site description and a description of the four Coastal Wetland Resource Areas in the vicinity of the site. LEC conducted a site evaluation on November 12, 2014 to identify the type and extent of Wetland Resource Areas present on the property and found none to exist. Bracken Engineering, Inc. conducted the site survey in the spring of 2016 and prepared the attached *Existing Conditions Plan* dated April 28, 2016 stamped by Alan M. Grady (see Appendix C).

2. General Site Description

The 0.47+/- acre site is improved with two dwellings, one garage and a concrete driveway, concrete walkways, concrete patios, picket and stockade fences and managed lawn areas with landscaped shrubs (see the *Plan*). The existing cottage (948 sf) is located in the northwest corner of the site (see Appendix B Photo 1) and the northern property line abuts the Cliffside Beach Club (see Appendix B Photos 2-4). An existing house (2,116 sf) is located in the southwest corner of the site (see Appendix B Photo 5). Jefferson Avenue separates the site from several single family dwellings located to the east (see Appendix B Photos 6 and 7).

The site's topography is generally flat at elevation 10' in the northern half and generally flat at elevation 14'in the southern half with these two areas separated by a vegetated slope of salt-spray rose (*Rosa rugosa*), bush honeysuckle (*Lonicera* spp.), and lawn. There are no natural hills, mounds or ridges on the site. Naturalized vegetation is

confined to the northeastern portion of the site consisting of black pine (*Pinus thunbergii*), salt-spray rose, northern bayberry (*Myrica pennsylvanica*), and seaside goldenrod (*Solidago semprivirens*).

3. Off-site Wetland Resource Areas

Four Coastal Wetland Resource Areas are located beyond 100 feet from the site. The regulatory definitions under the state 310 CMR 10.04, 10.27, 10.28 and 10.30 and under the town Section 1.02 for each of the Coastal Wetland Resource Areas and a general description for each coastal Wetland Resource Area are provided below.

3.1 Coastal Beach

According to 310 CMR 10.27(2), *Coastal Beach means unconsolidated sediment subject to wave, tidal and coastal storm action which forms the gently sloping shore of a body of salt water and includes tidal flats. Coastal beaches extend from the mean low water line landward to the dune line, coastal bankline or the seaward edge of existing human-made structures, when these structures replace one of the above lines, whichever is closest to the ocean.*

A Coastal Beach separates Nantucket Sound from the Cliffside Beach Club property and is beyond 175 feet north of the site.

3.2 Land Subject to Coastal Storm Flowage (LSCSF)

According to 310 CMR 10.04, *Land Subject to Coastal Storm Flowage means land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater.*

The 100-year floodplain and associated base flood elevations are published on the FEMA Flood Insurance Rate Maps for Nantucket County, Massachusetts Panel 25019C0086G) dated June 9, 2014. A Zone AE (elevation 9) is mapped to the west, north and east of the site, but does not extend onto the site (see Appendix A, Figure 3).

3.3 Coastal Dune

According to 310 CMR 10.28(2), *Coastal Dune means any natural hill, mound or ridge of sediment landward of a coastal beach deposited by wind action or storm overwash. Coastal dune also means sediment deposited by artificial means and serving the purpose of storm damage prevention or flood control.*

According to the *Bylaw Regulations* Section 1.02 Definitions, *Coastal Dune - any hill, mound, ridge, or field of ridges, hills, or mounds, composed of sediment, any portion or component of which over the course of a year touches upon, exchanges sediment with, and is landward of a coastal beach deposited by wind action, storm overwash, and/or is man-made.*

Coastal Dunes are located beyond 100 feet to the northwest, northeast and east of the site. North of the site, the flat, developed Cliffside Beach Club property that lies landward of the Coastal Beach does not meet the definition of Coastal Dune.

3.4 Coastal Bank

According to 310 CMR 10.30(2), *Coastal Bank is as the seaward face or side of any elevated landform, other than a Coastal Dune, which lies at the landward edge of a Coastal Beach, land subject to tidal action, or other wetland.*

The state has a Policy 92-1 which essentially requires the 100-year flood to intersect the seaward face of the landform in order for there to be a Coastal Bank. Since there is no 100-year flood mapped for the site, there is no state Coastal Bank on or within 100 feet of the site.

According to the *Bylaw Regulations* Section 1.02 Definitions, *Bank (coastal) - the seaward face or side of any elevated land form, other than coastal dune, which lies at the landward edge of a coastal beach, coastal dune, land subject to tidal action or coastal storm flowage, or other coastal wetland. Any minor discontinuity of the slope notwithstanding, the top of the bank shall be the first significant break in slope as defined by site specific topographic plan information, site inspection, wetland habitat evaluation, geologic origin, and/or relationship to land subject to coastal storm flowage. A bank may be partially or totally vegetated, or it may be comprised of exposed soil, gravel, stone, or sand. A bank may be created by man and/or made of man-made materials. A bank may or may not contribute sediment to coastal dunes, beaches and/or to the littoral drift system. A bank may be significant as a major source of sediment, as a vertical buffer, for wildlife habitat and for wetland scenic views.*

Under the *Bylaw* definition, the 100-year flood is not required to intersect a landform for there to be a Coastal Bank. Instead, the guiding language requires that a Coastal Bank lies at the *landward edge of a coastal beach, coastal dune, land subject to tidal action or coastal storm flowage, or other coastal wetland.* While an elevated landform occurs directly to the west, there is no other coastal wetland located at its landward edge.

Further to the west (approx. 250± feet) along the "Nantucket Cliffs" there is a *Bylaw*-protected Coastal Bank since it lies at the landward edge of a Coastal Dune. Additionally, a *Bylaw*-protected Coastal Bank exists further to the south between Lincoln Avenue and Jefferson Avenue (greater than 350± feet way) since flood Zone AE (elevation 9) lies at the landward edge of the landform.

4. Summary

On behalf of the Applicant, 40 JEFFERSON, LLC, LEC Environmental Consultants, Inc., (LEC) is filing the enclosed *Request for Determination of Applicability* (RDA) with the Nantucket Conservation Commission to confirm that no Wetland Resource Areas occur on or within 100 feet of the project site as protected under the *Massachusetts Wetlands Protection Act* (M.G.L. c. 131, § 40, the *Act*), its implementing Regulations (310 CMR 10.00, the *Act Regulations*), and/or the *Town of Nantucket Bylaw* (Chapter 136) and *Wetlands Protection Regulations* (*Bylaw*). The Applicant requests that the Commission issue a Negative 1 Determination of Applicability confirming that the area described in the Request is not an area subject to protection under the Act and the Bylaw or the Buffer Zone.

Massachusetts Wetlands Protection Act Regulations (310 CMR 10.00), www.state.ma.us/dep

Massachusetts Wetlands Protection Act (M.G.L. c. 131, §. 40), www.state.ma.us/dep

Federal Emergency Management Agency Flood Insurance Rate Map, Town of Nantucket (25019C0086G) effective June 9, 2014.

Town of Nantucket Bylaw (Chapter 136) and Wetlands Protection Regulations (Bylaw)

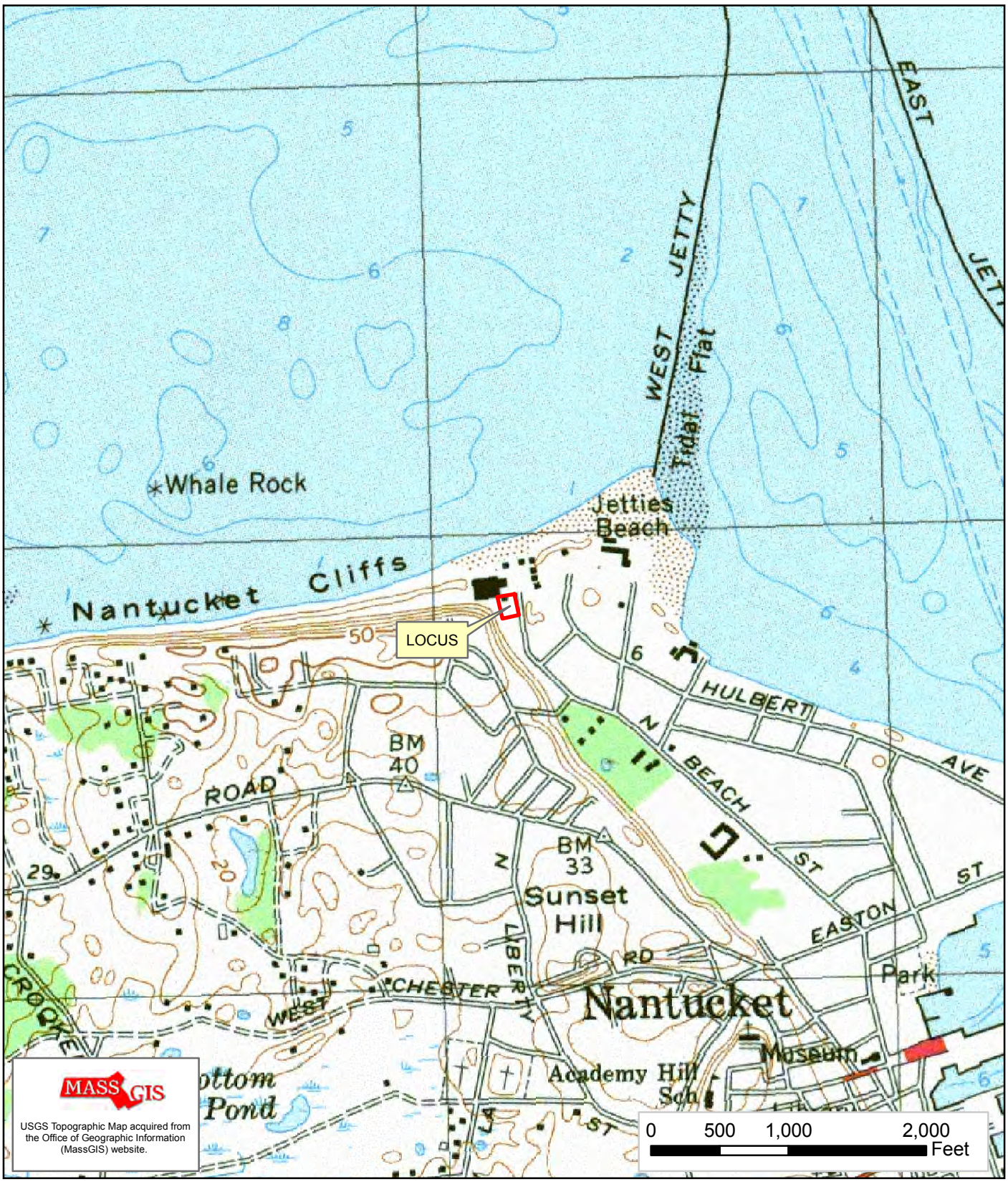
Appendix A

Locus Maps

Figure 1: USGS Topographic Map

Figure 2: Aerial Orthophoto

Figure 3: FEMA Flood Insurance Rate Map



LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 1: USGS Topographic Map

40 Jefferson Avenue
Map 30, Parcel 119
Nantucket, Massachusetts

N

April 29, 2016

LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 2: Aerial Orthophoto

40 Jefferson Avenue
Map 30, Parcel 119
Nantucket, Massachusetts

N

April 29, 2016

LEC Environmental Consultants, Inc.

Plymouth, MA
508.746.9491
www.lecenvironmental.com

Figure 3: FEMA Flood Insurance Rate Map
#25019C0086G
40 Jefferson Avenue
Nantucket, Massachusetts

N

Effective Date:
June 9, 2014

Appendix B

Photographs

Photo 1. Looking at existing dwelling in the northwest corner of the site adjacent to the Cliffside Beach Club.

Photo 2. Looking north adjacent to the Cliffside Beach Club separated by a stockade fence on the site.

Photo 3. Looking south from the Cliffside Beach Club (a reverse angle view of photo 2).

Photo 4. Looking from Cliffside B.C. at the north side of the dwelling in the northwest corner of the site.

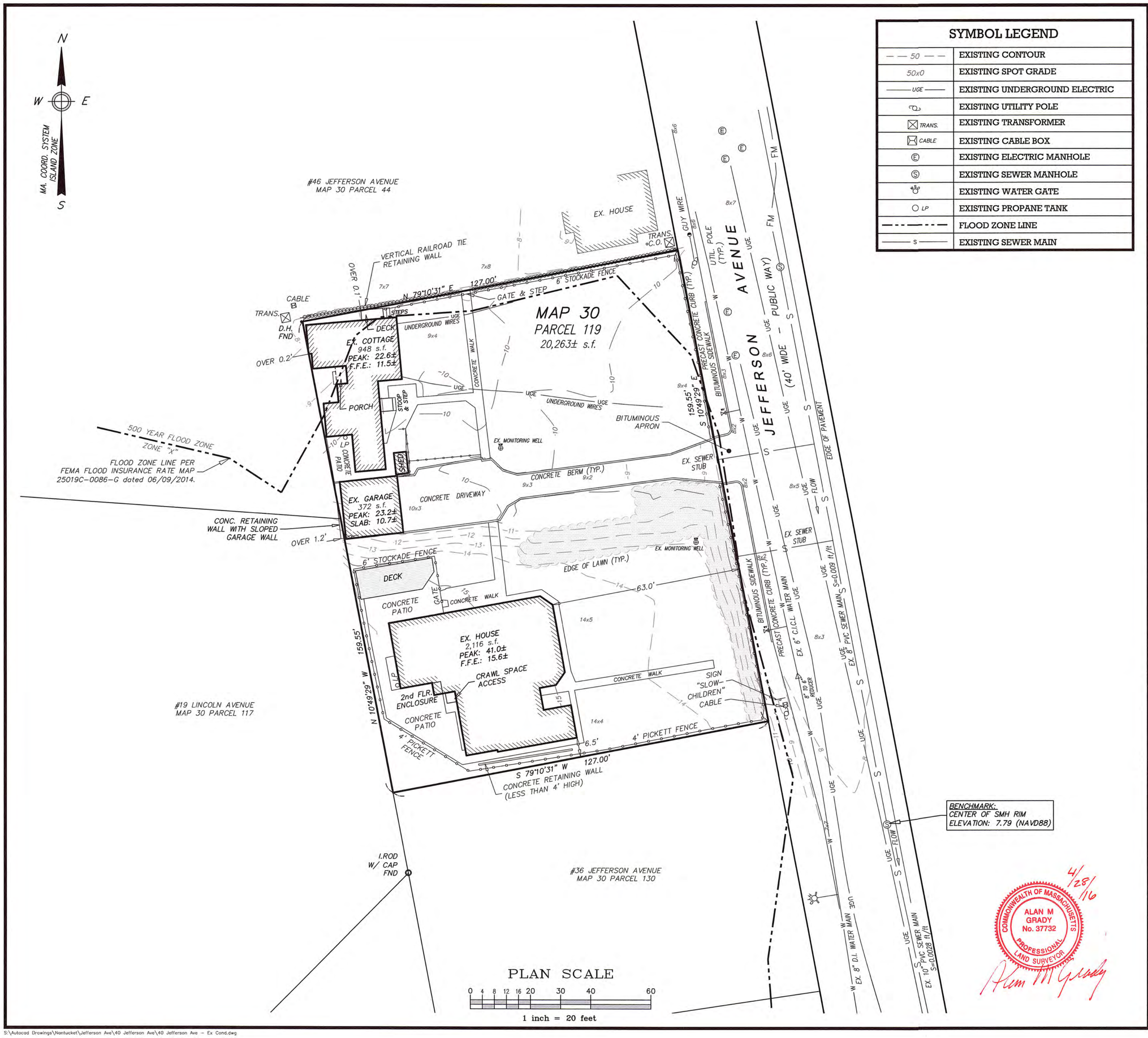
Photo 5. Looking at the existing dwelling in the southwest corner of the site.

Photo 6. Looking east from the site with a Coastal Dune in the distance.

Photo 7. Looking at the southeast corner of the site.

Appendix C

Existing Conditions Plan,
prepared by Bracken Engineering, Inc., dated April 28, 2016

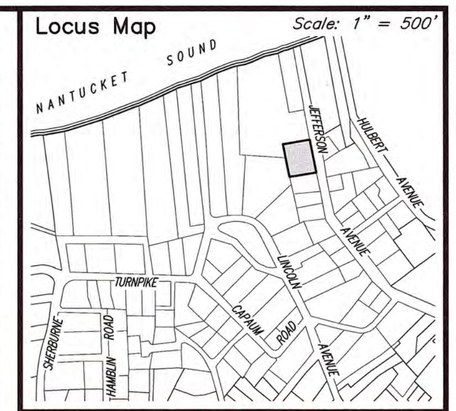


SYMBOL LEGEND

— — 50 — —	EXISTING CONTOUR
50x0	EXISTING SPOT GRADE
—— UGE ——	EXISTING UNDERGROUND ELECTRIC
	EXISTING UTILITY POLE
TRANS.	EXISTING TRANSFORMER
CABLE	EXISTING CABLE BOX
E	EXISTING ELECTRIC MANHOLE
S	EXISTING SEWER MANHOLE
	EXISTING WATER GATE
LP	EXISTING PROPANE TANK
— · — · —	FLOOD ZONE LINE
—— S ——	EXISTING SEWER MAIN

Locus Map

Scale: 1" = 500'



Notes

1. LOCUS: #40 JEFFERSON AVENUE MAP 30 PARCEL 119
2. OWNER: EDWYNA S. MULROW, ET AL 2 SUTTON PLACE SOUTH, APT. 19D NEW YORK, NY 10022
3. APPLICANT: 40 JEFFERSON, LLC c/o READE, GULLICKSEN, HANLEY, & GIFFORD, LLP 6 YOUNG'S WAY, P.O. BOX 2669 NANTUCKET, MA. 02584
4. DEED REF: CERT #14440 (DOC #104143)
5. PLAN REF: LCC #8751-G (LOTS A1 & F1) LCC #10879-B (LOTS A1 & F1)
6. LOCUS PARTIALLY FALLS WITHIN A 500-YEAR FLOOD HAZARD ZONE AS SHOWN ON FEMA FLOOD INSURANCE RATE MAP No. 25019C-0086-G dated 06/09/2014.
7. LOCUS DOES NOT FALL WITHIN THE NATURAL HERITAGE and ENDANGERED SPECIES PROGRAM (NHESP) AREAS OF ESTIMATED HABITATS OF RARE WILDLIFE and PRIORITY HABITATS OF RARE SPECIES.
8. SEWER, WATER, AND UNDERGROUND ELECTRIC INFORMATION WITHIN RIGHT OF WAY OF JEFFERSON AVENUE OBTAINED FROM AS-BUILT PLAN ENTITLED "BRANT POINT SEWER REHABILITATION AND WATER MAIN REPLACEMENT JEFFERSON AVE" dated MAY 2006 BY EARTH TECH.

ZONE: R-1

	REQUIRED	EXISTING
LOT AREA:	5,000 s.f.	20,263± s.f.
FRONTAGE:	50'	159.5'
FRONT YARD:	10'	63.0'
SIDE/REAR YARD:	5'	1.2' (OVER)
GROUND COVER:	30% (MAX) (6,078 s.f.)	17.0% (3,436 s.f.)

Prepared By:

BRACKEN ENGINEERING, INC.
49 HERRING POND ROAD
BUZZARDS BAY, MA 02532
(tel) 508.833.0070
(fax) 508.833.2282
19 OLD SOUTH ROAD
NANTUCKET, MA 02554
(tel) 508.325.0044
www.brackeneng.com

COMMONWEALTH OF MASSACHUSETTS
ALAN M GRADY
No. 37732
PROFESSIONAL LAND SURVEYOR
4/28/16
Alan M Grady

EXISTING CONDITIONS PLAN IN NANTUCKET, MASSACHUSETTS

Prepared For:

40 JEFFERSON, LLC

#40 JEFFERSON AVENUE
MAP 30 PARCEL 119

Date:	Drawn:	Checked:	Sheet:
APRIL 28, 2016	ERC/PCM/BEI	DFB/AMG	1 of 1

S:\Autocad Drawings\Nantucket\Jefferson Ave\40 Jefferson Ave\40 Jefferson Ave - Ex Cond.dwg