Mr. Jim Bradley
Town of Fairfield
Penfield Building Committee
June 19, 2014

Mr. Bradley,

This will confirm and expand on the comments I made at your Committee's 6/12/14 meeting regarding improvements to the existing timber bulkhead.

My comments referred to the conceptual drawings presented by Mr. Chamberlain and were 3 in nature:

- **A)** Extend the revised dune/bulkhead assembly to a height of 15 ft. (NAVD 1988)
- **B)** Connect the revised dune to the existing dune at Rickard's Beach
- **C)** Connect the revised dune/bulkhead to the existing stone wall at the western end of your project

My comments are consistent with those noted in the 3/13/14 letter to your Committee from Mr. Grauer, Chairman of the Flood & Erosion Control Board (F&ECB):

> 1. *IF YOU DO RAISE THE STRUCTURE*
>
> a. *Follow the 9.c. plan but extend the new rock wall up to the elevation of the now higher deck. This measure effectively continues the existing stone wall from behind the Sandy Ground playset all the way to the high dune at Rickard's Beach. I would comment that a probable target height for structural elements in the F&E board's Master Plan for Flood Protection, which is currently under development, is 17 ft. (NAVD 1988) recognizing the current FEMA VE Zone BFE requirement of 15 ft. and adding 2 ft. of freeboard.*

A) My simple explanation for the 15 ft. height is use the current FEMA flood zone classification and add 2 ft. for wave run up. The pavilion is in zone VE13, not zone VE15 as noted in Mr. Grauer's letter. Shore front exposure west of Reef Road is in zone VE15 while the sound facing properties east of Reef Road are VE13.
B) The new dune should continue easterly to the existing dune at Rickard's Beach at the 15 ft. height. The existing dune is lower than 15 ft. but in the town's 'Grand Plan' for protecting the beach area from Coastal Flooding that section of existing dune will be raised.
C) Similarly, the dune/bulkhead should continue and tie into the stone wall at the western end of your project at its full 15 ft. height. Improvements to the stone wall will be a future project.

Additional, expanded comments:

1. The face of the dune/bulkhead should slope upward to the crest and be planted with beach grass as recommended on RACE's drawing S-01 which is a part of the original, JM Albane pavilion failure analysis – see attachment #1.
2. For some additional background on the 'Grand Plan' see the attached section from the NFWF Grant Request to improve the dune/dike system at the easternmost town shorefront and Exhibit B.
3. Attachment #2 is a slide from the presentation made in April, 2014 to the Pine Creek Residents Association which shows the recommendation to raise the Sound facing portion of that existing dike to 17 ft. This is the common *formula* of ***BFE + 2 ft.***

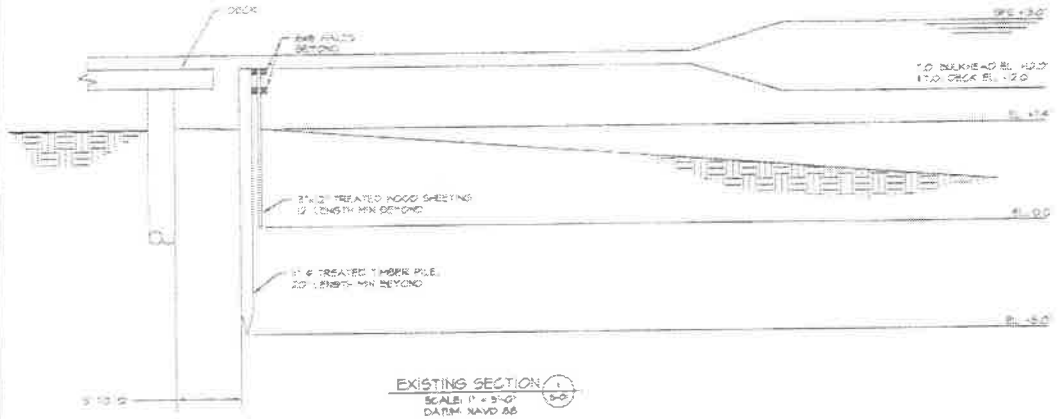
These comments are focused on your project establishing a robust dune that will substantially mitigate coastal flooding through the, approximately, 900 ft. of shore frontage to the neighborhood beyond.

This letter has been reviewed by the full F&ECB at our 6/18/14 meeting and is sent with the endorsement of the Board.

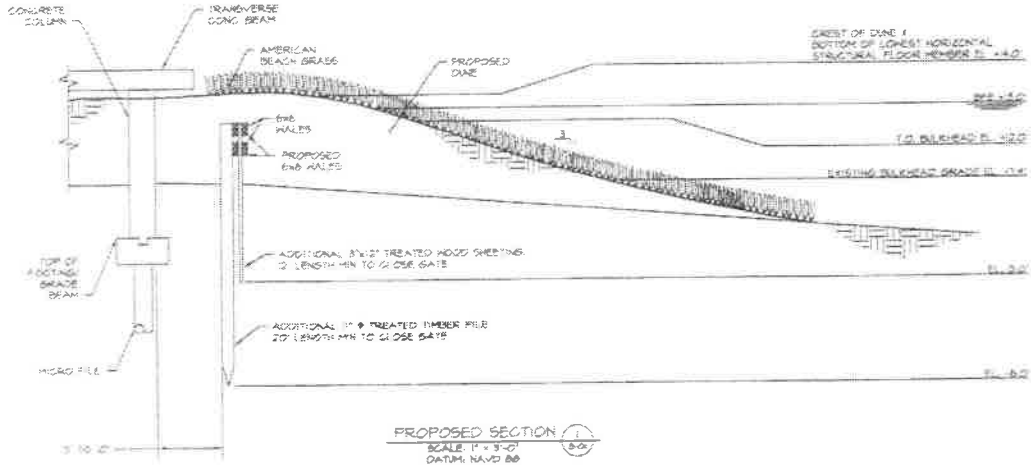
Respectfully Submitted,

Dick Dmochowski
Member, Flood & Erosion Control Board

Cc: Joe Michelangelo, Laura Pulie, Mike Tetreau, F&ECB members, Kyle Fournier



EXISTING SECTION (1 S-01)
SCALE: 1" = 5'-0"
DATUM: NAVD 88



PROPOSED SECTION (1 S-01)
SCALE: 1" = 5'-0"
DATUM: NAVD 88

ROBERGE ASSOCIATES
Coastal Engineers, LLC
217 Access Road, Stratford, CT 06615

REVISIONS

REV.	REVISION	BY	DATE

NOT VALID WITHOUT ENGINEER'S SEAL

DRAFT

PREPARED FOR:
JM ALBAINE
ENGINEERING, LLC

PROJECT:
PENFIELD PAVILION
FAIRFIELD, CT

DRAWING:
PROPOSED DUNE

Project Number: 201318	Date: 01-18-2013
Designed By: JAP	Scale: As Noted
Drawn By: JAP	Revision: 0
Checked By: JCR	Dwg No.: S-01
CAD File: 201318DRAWINGS	

ATTACHMENT #1

Grant Information

Title of Project
Ash Creek-Jennings Beach Coastal Resiliency Project

Total Amount Requested	$ 4,999,372.00
Matching Contributions Proposed	$ 125,000.00
Proposed Grant Period	07/01/2014 - 07/01/2016

Project Description
Increase elevation of 6700 linear feet of existing earthen dike to provide for increased flood protection and improve culverts and tidegates for tidal restoration, habitat improvements, flood relief.

Project Abstract
Super Storm Sandy hit the east coast with a vengeance causing massive destruction in NJ/NY totaling over a billion dollars in damage. Luckily, the CT shoreline was "spared" only causing damage in the hundreds of millions of dollars. The Town of Fairfield was one of the coastal communities receiving damage in the tens of millions of dollars. Spared? Not for the residents, but globally? Yes, spared. Should the storm have hit when predicted, Fairfield, CT would have looked much like the shoreline of NJ. Being "spared" has provided this town, a shoreline community of 55,000 residents, 31.3 square miles in size, 4 square miles in the coastal floodplain and vulnerable to the wrath of future storms like Sandy, much needed time to provide coastal resiliency needed to prevent devastating damage to this community. This proposal is to provide protection for 0.5 square miles of the coastal flood plain populated with approximately 600 single family homes. The town has taken measures in the past to provide protection from coastal flooding by constructing approximately 3.5 miles of earthen dikes. Storm Sandy revealed the vulnerability of our system. The proposal is to raise heights of existing berms, construct new earthen berms/walls to reduce flooding, use Boy Scout volunteers to revegetate berms and remove invasive species, and improve culverts/tidegates to restore 10-15 acres of choked-off marshes which will restore the habitat for species found in coastal estuarine embayments.

Organization and Primary Contact Information

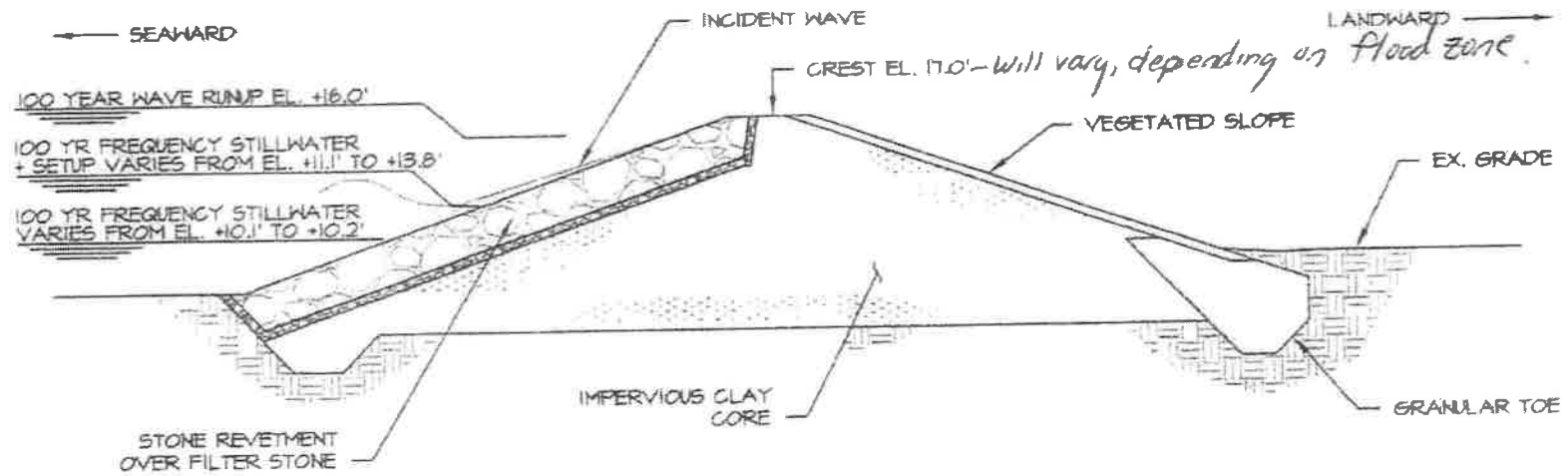
Organization	Town of Fairfield Public Works Department
Organization Type	State or Local Government
Organization Web Address	www.fairfieldct.org
Organization Phone	
Street Line 1	
Street Line 2	
City, State, Country, Postal Code	Fairfield,Connecticut,North America - United States
Region (if international)	
Organization Congressional District	District 4 (CT)
Primary Contact	Laura Marie Pulie

Additional Excerpts from the NFWF Grant Request prepared by Fairfield Public Works Dept. January, 2014

page 15:
The Natural Hazard Mitigation Plan was developed by the Greater Bridgeport Regional Planning Agency, and adopted by the Town of Fairfield but expired in January 2012. Currently a new Natural Hazard Mitigation Plan is in the final stages of completion and should be adopted by the Town in 2014. This document identifies coastal hazards and the need for creating a coastal resiliency plan. This grant,if approved, is in keeping with the methods of protection outlined, discussed and recommended in this plan.

Proposal narrative, A.) :
The local residents of this area will see a direct
benefit from this project, as the earthen berms/floodwalls will prevent the tidal surge from inundating their neighborhoods and homes and greatly eliminate the damage that these residents incurred during Hurricane Sandy. The remaining dike system located to the west of this area is not part of this proposal. However the Town of Fairfield is seeking funding from other sources to fortify the existing berms and construct new berms and floodwalls to provide a continuous flood protection system throughout this coastal community.

Proposal narrative, B.b.) :
This area has been protected by a series of berms and tide gates but Hurricane Sandy proved how vulnerable this area now is. The current berm/flood protection system was designed for the 100 yr. flood elevation determined in the late 1970's. With the sea level rise and the increase in the 100 year flood elevation per the 2013 FEMA's FIRMS, the current earthen berms are obsolete in protecting this community from future 100 year storm events. It is the intent to provide the residents with the protection from the newly adopted 100 year flood elevations. New earthen dikes will be constructed where none existed,(high ground provided the protection needed) and existing earthen berms will be raised. The project was designed using the new flood elevations adopted by the Town Of Fairfield in July of 2013 prescribed by FEMA.



GRAPHIC SCALE

0 5 10

1" = 10'

DATUM: NAVD 88

Town of Fairfield
Dept. of Public Works

Typical Levee Section

DRAWN BY: RACE, LLC
DATE: 11/20/2013
SCALE: 1" = 10'-0"

CHK'D BY:
FILE NO:
MAP NO:

Figure C-2

EXHIBIT B FROM GRANT REQUEST JANUARY, 2014

Coastal Engineering Assessment

- Base Flood Elevation (BFE) = El. 15.0 NAVD 88
- FEMA Flood Hazard Mapping Criteria: 2' freeboard above BFE for coastal flood control structures
- Dike elevation would need to be raised to El. 17 to meet FEMA criteria (4.5' above existing on south side, 7.5' above existing on east side)

ATTACHMENT #2 FROM 4-16-14