



**US Army Corps  
of Engineers**  
Philadelphia District

Wanamaker Building  
100 Penn Square East  
Philadelphia, PA 19107-3390  
ATTN: CENAP-OP-R

# Public Notice

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Public Notice No.	Date
<b>CENAP-OP-R-2017-00042</b>	<b>September 7, 2017</b>

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Application No.	File No.
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In Reply Refer to:  
**REGULATORY BRANCH**

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This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) and Section 404 of the Clean Water Act (33 U.S.C. 1344).

The purpose of this notice is to solicit comments and recommendations from the public concerning issuance of a Department of the Army permit for the work described below.

**APPLICANT:** Tim Dillingham  
American Littoral Society  
18 Hartshorne Drive, Suite 1  
Highlands, New Jersey, 07732

**AGENT:** N/A

**WATERWAY:** UNT to Delaware Bay

**LOCATION:** The habitat restoration site and dredging are both located at Block 319, Lot 31 and Block 320, Lot 14, in Maurice River Township, Cumberland County, New Jersey. Dredging is not in a navigable channel.

**ACTIVITY:** The applicant, using Department of the Interior, and National Fish and Wildlife Foundation funds, proposes to perform habitat restoration within Thompson's Beach Marsh. This will be accomplished by dredging two existing creek channels and using the dredge sediment on two selected areas within the marsh: "The Eastern Project Site" at 3.75 acres, and "The Southern Project Site" at 9.95 acres. The total area of impact will be no greater than 18.50 acres including the area to be dredged.

The Eastern Project Site is 3.75 acres in size and primarily a mudflat, though 43% is vegetated with disassociated clumps of *Spartina alterniflora*. The site has an average elevation of 0.70', which is below the elevation at which *Spartina alterniflora* forms a continuous marsh with a stable marsh platform. The applicant proposes to raise the marsh plain to a target elevation range of 1.75' to 2.5' to restore a functioning low-marsh. An estimated 11,135 cubic yards of material are needed to reach the desired elevation. Coir logs will be placed along the perimeter of the placement area to contain sediments/runoff while the material dewater. The project objective for this area is a fully vegetated marsh platform that will increase marsh resiliency to sea level rise.

The Southern Project Site is 9.95 acres of low-marsh. The applicant proposes to use up to 8” of material to promote the growth of high marsh vegetation and improve the habitat availability for high marsh bird species. The applicant’s objective is to maintain a functioning marsh, with an appropriate mix of marsh elevations for the continued success of resident marsh birds and migratory birds. An estimated 9,160 cubic yards of material are needed to apply the 8” of sediment using a thin layer application. The project objective for this area is to maximize resiliency of the salt marsh to sea level rise and increase habitat diversity to benefit tidal marsh obligate birds.

Sediment for the proposed marsh elevation increase will come from man-made channels constructed in the late 1990’s. The channels were originally created to bring tides and silt into the sediment starved marsh. Portions of these creeks have since silted-in making them unnavigable during low tides. An estimated 20,295 cubic yards of dredge sediment would be needed for the proposed project. The two creeks proposed to be dredged are identified as “West Creek” and “East Creek.” West Creek and East Creek each are 10’ wide channel that will be dredged to a maximum depth of -5.5 feet below mean low water. Approximately 13,635 cubic yards will be dredged from West Creek, and 6,657 cubic yards will be dredged from East Creek.

**PURPOSE:** The applicants stated purpose of the project is to improve the resiliency and habitat value of the marsh at Thompson’s Beach.

A preliminary review of this application indicates that the proposed work would not affect listed species or their critical habitat pursuant to Section 7 of the Endangered Species Act as amended. As the evaluation of this application continues, additional information may become available which could modify this preliminary determination.

The decision whether to issue a permit will be based on an evaluation of the activity's probable impact including its cumulative impacts on the public interest. The decision will reflect the national concern for both protection and utilization of important resources. The benefits which reasonably may be expected to accrue from the work must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the work will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs and welfare of the people. A Department of the Army permit will be granted unless the District Engineer determines that it would be contrary to the public interest.

The Corps of Engineers is soliciting comments from the public; Federal, State, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Comments on the proposed work should be submitted, in writing, within 30 days to the District Engineer, U.S. Army Corps of Engineers, Philadelphia District, Wanamaker Building, 100 Penn Square East, Philadelphia, Pennsylvania 19107-3390.

Review of the National Register of Historic Places indicates that no registered properties or properties listed as eligible for inclusion therein are located within the permit area of the work.

The Magnuson-Stevens Fishery Conservation and Management Act, as amended by the Sustainable Fisheries Act 1996 (Public Law 104-267), requires all Federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH). A preliminary assessment of the species listed in the "Guide to Essential Fish Habitat Designations in the Northeastern United States, Volume IV: New Jersey and Delaware", dated March 1999, indicated that the project may have an adverse effect on EFH and the species of concern.

Analysis of the Effects: The office will be coordinating with the National Marine Fisheries Service to ensure that any action taken by this office will not have a substantial effect on EFH, or the species of concern.

Compensatory mitigation according to Federal regulation 33 CFR 325.1(d)(7), applicants wishing to discharge dredge and fill material into waters of the U.S. must include a statement on how they have avoided and minimized impacts as well as how they intend to compensate for unavoidable impacts. The applicant has avoided/minimized impacts to the aquatic environment by incorporating engineering/construction procedures into the process that will substantially reduce impacts to aquatic resources. Additionally, the applicant states that the underlying intent of this project is to enhance the marsh at this site using clean material taken from an adjacent man made creeks. The thin layer placement of material is one of the techniques that will be used to enhance marsh functions by raising the elevation of the marsh platform and increasing the marsh's resiliency, however, wetlands will not be converted to uplands through this technique. Different portions of the marsh will respond differently to sediment enrichment and such responses may change from year to year. By having the applicant commit to an adaptive management approach, the techniques to manage the vegetation community can be tailored to the specific area during that particular season. Based on the project's restorative objective to increase the functions and values of the marsh, no compensatory mitigation is required for this project.

In accordance with Section 307(c) of the Coastal Zone Management Act of 1972, applicants for Federal Licenses or Permits to conduct an activity affecting land or water uses in a State's coastal zone must provide certification that the activity complies with the State's Coastal Zone Management Program. The applicant has stated that the proposed activity complies with and will be conducted in a manner that is consistent with the approved State Coastal Zone Management (CZM) Program. No permit will be issued until the State has concurred with the applicant's certification or has waived its right to do so. Comments concerning the impact of the proposed and/or existing activity on the State's coastal zone should be sent to this office, with a copy to the State's Office of Coastal Zone Management.

In accordance with Section 401 of the Clean Water Act, a Water Quality Certificate is necessary from the State government in which the work is located. Any comments concerning

the work described above which relate to Water Quality considerations should be sent to this office with a copy to the State.

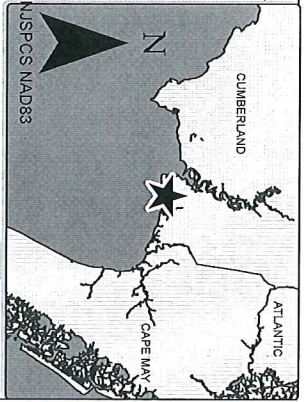
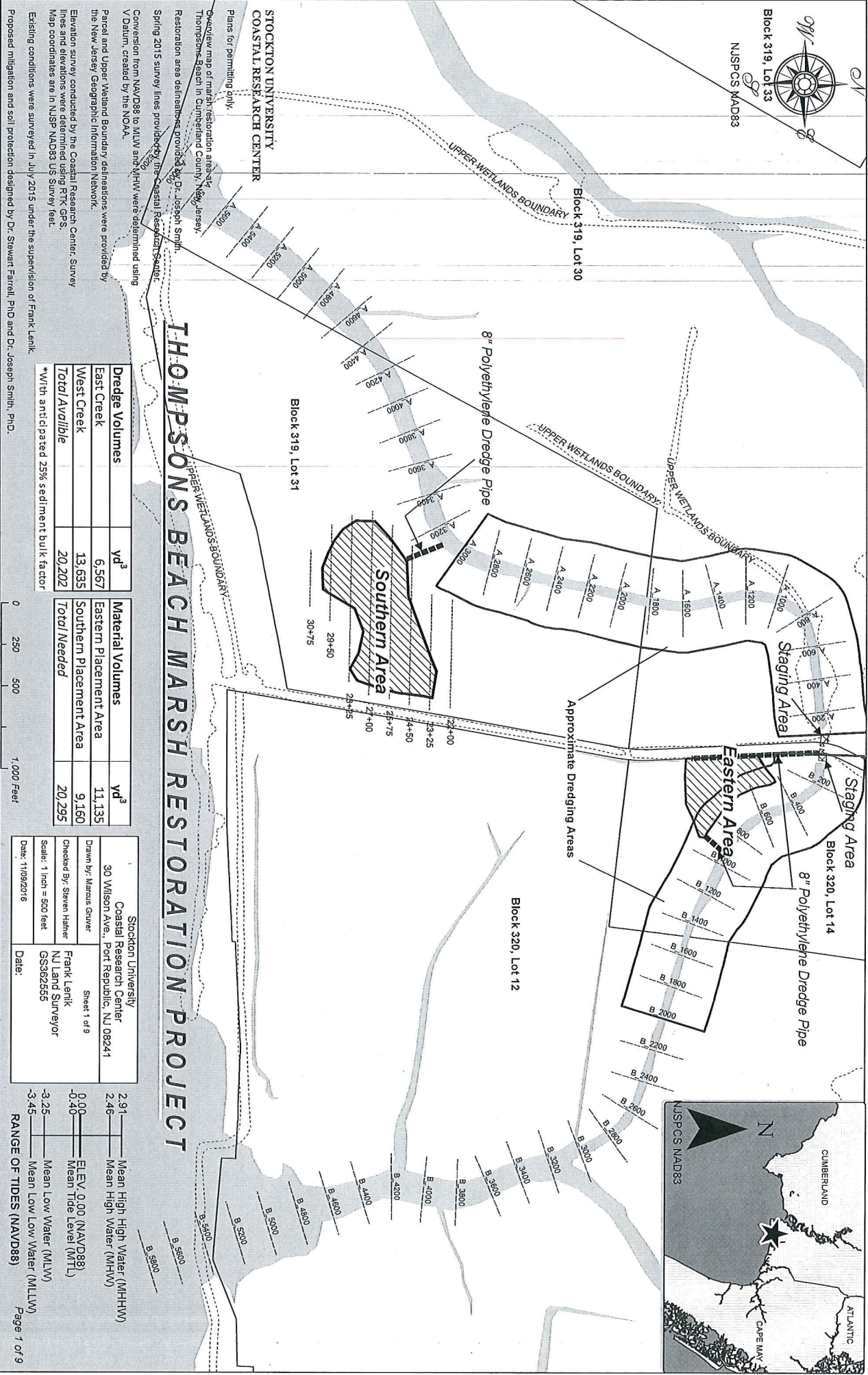
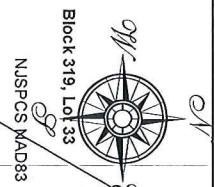
The evaluation of the impact of the work described above on the public interest will include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404(b) of the Clean Water Act.

Any person may request, in writing, to the District Engineer, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for a public hearing shall state in writing, with particularity, the reasons for holding a public hearing.

Additional information concerning this permit application may be obtained by calling Genevieve Rybicki at (215) 656-8597, via email at [Genevieve.T.Rybicki@usace.army.mil](mailto:Genevieve.T.Rybicki@usace.army.mil), or writing this office at the above address.



Edward E. Bonner  
Chief, Regulatory Branch



STOCKTON UNIVERSITY  
COASTAL RESEARCH CENTER

Plans for permitting only.

Overview map of marsh restoration areas in Thompsons Beach in Cumberland County, New Jersey.

Restoration area delineations provided by Dr. Joseph Smith.

Spring 2015 survey lines provided by the Coastal Research Center.

Conversion from NAVD88 to MLLW and MHW were determined using V Datum, created by the NOAA.

Parcel and Upper Wetland Boundary delineations were provided by the New Jersey Geographic Information Network.

Elevation survey conducted by the Coastal Research Center. Survey lines and elevations were determined using RTK GPS.

Map coordinates are in NAD83 US Survey feet.

Existing conditions were surveyed in July 2015 under the supervision of Frank Lenik.

Proposed mitigation and soil protection designed by Dr. Stewart Farrell, PhD and Dr. Joseph Smith, PhD.

**THOMPSONS BEACH MARSH RESTORATION PROJECT**

Dredge Volumes	yd <sup>3</sup>	Material Volumes	yd <sup>3</sup>
East Creek	6,567	Eastern Placement Area	11,135
West Creek	13,635	Southern Placement Area	9,160
<b>Total Available</b>	<b>20,202</b>	<b>Total Needed</b>	<b>20,295</b>

\*With anticipated 25% sediment bulk factor

Dredge Volumes	yd <sup>3</sup>	Material Volumes	yd <sup>3</sup>
East Creek	6,567	Eastern Placement Area	11,135
West Creek	13,635	Southern Placement Area	9,160
<b>Total Available</b>	<b>20,202</b>	<b>Total Needed</b>	<b>20,295</b>

Stockton University  
Coastal Research Center  
30 Wilson Ave., Fort Republic, NJ 08241

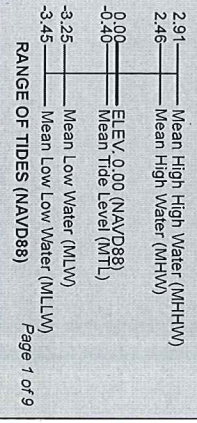
Drawn by: Marcia Guver

Checked by: Steven Hafner

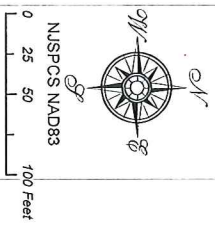
Date: 11/09/2016

Sheet 1 of 9  
Frank Lenik  
NJ Land Surveyor  
GS932555

Date:







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Restoration area delineations provided by Dr. Joseph Smith.

Spring 2015 survey lines and elevation points provided by the Coastal Research Center. Volume calculations were determined by using a Geographic Information System to compare Digital Elevation Models of the Spring 2015 survey by the CRC and of the proposed fill elevations.

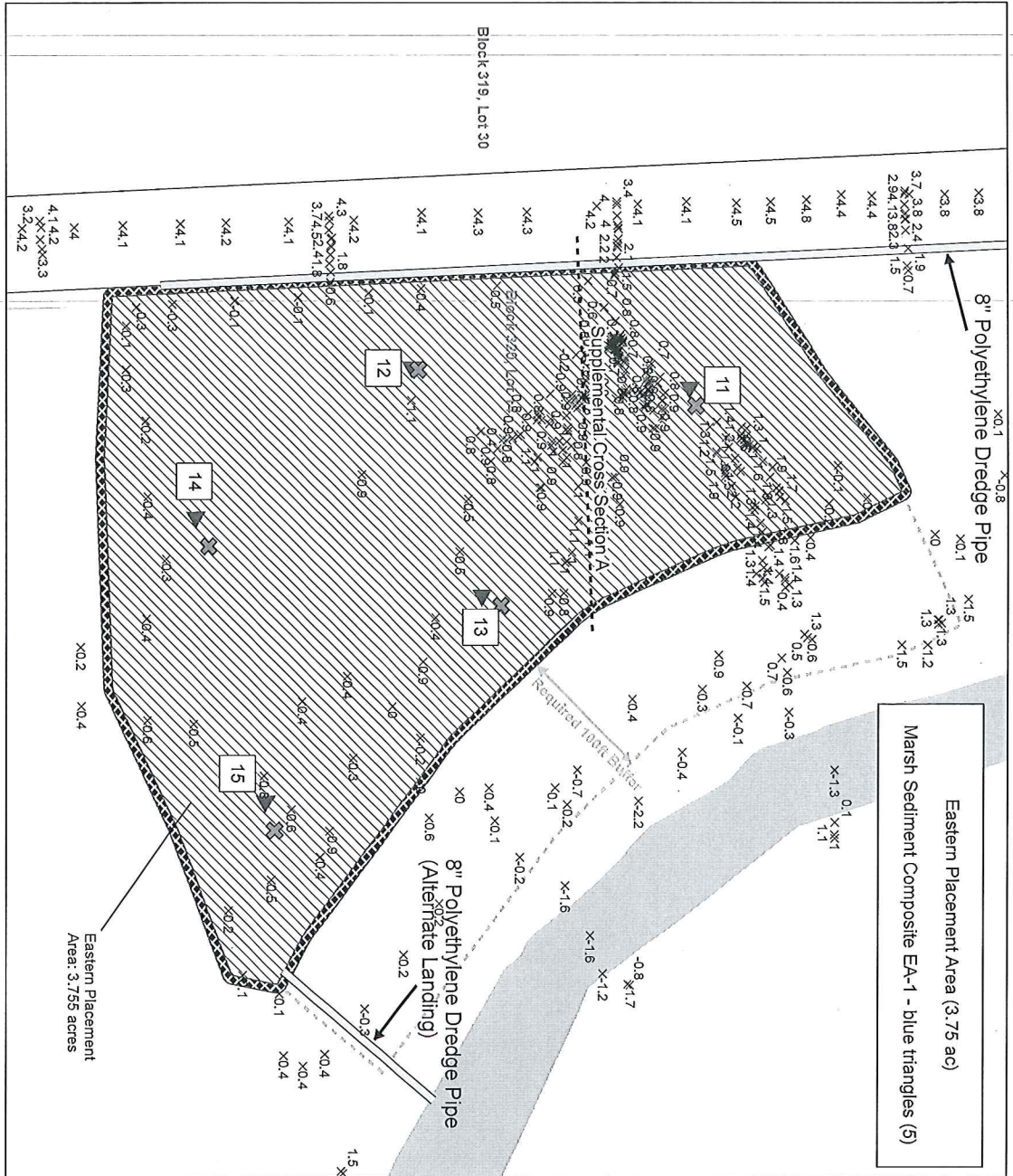
Parcel delineations were provided by the New Jersey Geographic Information Network.

Conversion from NAVD88 to MLW and MHW were determined using V Datum, created by the NOAA.

Core samples were collected September 20, 21 and 22, 2016. Core samples were collected using a piston core.

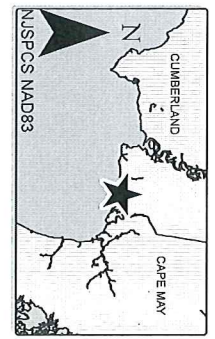
Core ID	Easting	Northing
PA11	352426.219	134858.960
PA12	352401.285	134845.323
PA13	352563.106	134402.965
PA14	352522.322	134189.884
PA15	352717.163	134245.910

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Coastal Research Center  
30 Wilson Ave., Port Republic, NJ 08241  
Sheet 3 of 6  
Drawn by: Marisa Guerer  
Checked by: Steven Halper  
Scale: 1 inch = 75 feet  
Date: 11/02/2016  
Frank Lenik  
NJ Land Surveyor  
GS382555  
Date:



**THOMPSONS BEACH MARSH RESTORATION PROJECT**

**Eastern Area**



This map shows the Eastern Area. This is a mudflat area to be raised to maximum elevation of 2.5 feet with dredge slurry.

An estimated 11,135 cubic yards of material are needed to reach target range elevation, 1.75-2.5 NAVD88. Sediment dredged from the Eastern Creek will only be utilized as needed in the Eastern Placement Area to raise existing elevations to specified target range.

Coir Logs will be located along the perimeter of the placement area. (Barrier features on map are not to scale.)

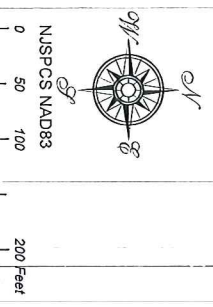
Note: Discharge Pipe will access containment at several points along the road. Discharge pipe will be moved as needed within the containment area using a low impact vehicle to evenly distribute sediment to achieve the targeted elevation range.

Elevation survey conducted by the Coastal Research Center. Survey lines and elevations were determined using RTK GPS. Map coordinates are in NAD83 US Survey Feet. Existing conditions were surveyed in July 2015 under the supervision of Frank Lenik.

Proposed mitigation and soil protection designed by Dr. Stewart Farrell, PhD and Dr. Joseph Smith, PhD.

- Legend**
- ✕ Actual Core Locations
  - ▶ Proposed Core Locations
  - ▨ Coir Logs
  - ▨ Placement Area





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 Plans for permitting only.

Restoration area delineations provided by Dr. Joseph Smith.  
 Spring 2015 survey lines and elevation points provided by the Coastal Research Center. Volume calculations were determined by using a Geographic Information System to compare Digital Elevation Models of the Spring 2015 survey by the CRC and of the proposed fill elevations.

Parcel delineations were provided by the New Jersey Geographic Information Network.  
 Conversion from NAVD88 to MLW and MHW were determined using V Datum, created by the NOAA.

Core samples were collected September 20, 21 and 22, 2016. Core samples were collected using a piston core.

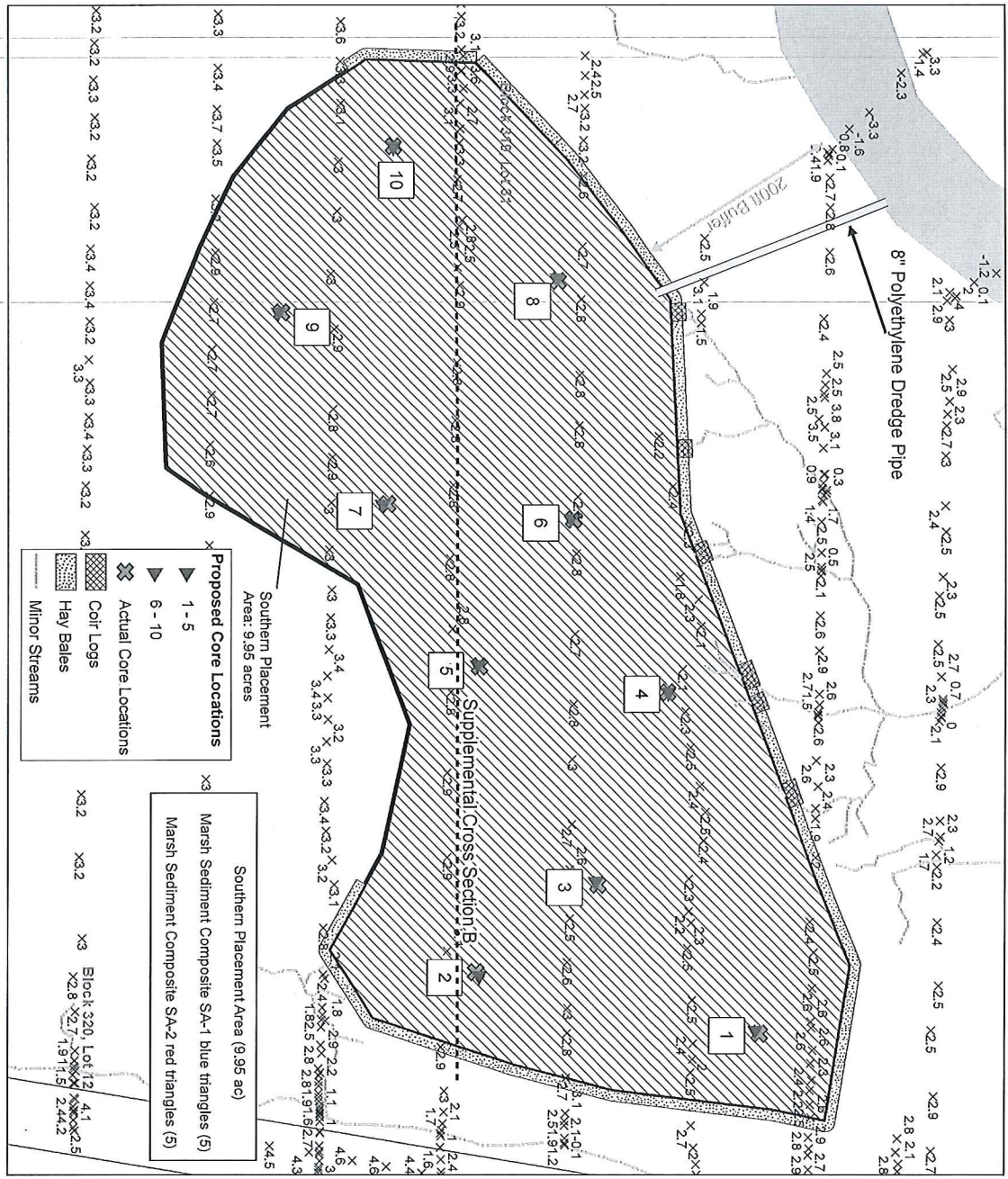
Core ID	Easting	Nothing
PA1	351891.892	132513.492
PA2	351829.968	132224.523
PA3	351742.129	132348.498
PA4	351548.810	132419.304
PA5	351522.674	132227.658
PA6	351375.515	132322.479
PA7	351359.984	132193.559
PA8	351135.984	132307.404
PA9	351167.271	132025.547
PA10	351000.434	132139.785

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Drawn by: Marcus Oliver  
 Sheet 3 of 9

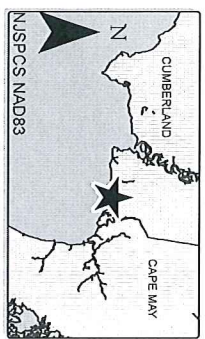
Checked By: Steven Hinder  
 NJ Land Surveyor  
 GS962555

Date: 11/09/2016



# Southern Area

## THOMPSONS BEACH MARSH RESTORATION PROJECT



This map shows the Southern Area. This area shall receive a thin layer application of a maximum thickness of 8" of dredge material, not to exceed 3.4 feet NAVD88. Placement will be in the shaded areas, which are determined to be the most deficient.

An estimated 9,160 cubic yards of material are needed to apply the 3" to 8" thin layer, not exceeding a maximum 3.4 feet NAVD88 elevation, in the placement area.

Sediment dredged from the lower Western Creek will only be utilized as needed in the Southern Placement Area to raise existing elevations to specified target range of 3ft to 3.4ft.

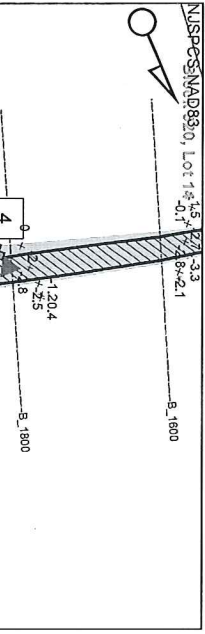
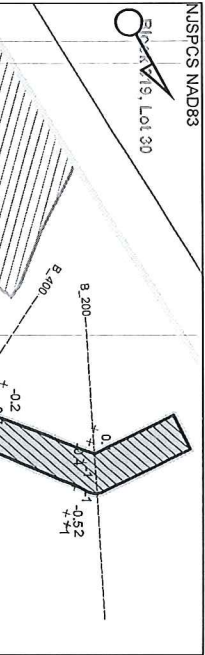
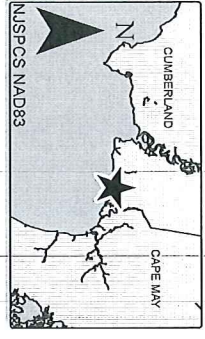
Based on slope analysis, hay bales will be placed in designated areas as a silt barrier. Coir logs will also be added to areas where streams are running out of the placement area. (Barrier features on map are not to scale.)

Discharge pipe will be moved as needed within the containment area using a low impact vehicle to evenly distribute sediment to achieve the targeted elevation range.

Elevation survey conducted by the Coastal Research Center. Survey lines and elevations were determined using RTK GPS. Map coordinates are in NAD83. US Survey feet. Existing conditions were surveyed in July 2015 under the supervision of Frank Lenik.

Proposed mitigation and soil protection designed by Dr. Stewart Farrell, PhD and Dr. Joseph Smith, PhD.





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Restoration area delineations provided by Dr. Joseph Smith.

Spring 2015 survey lines and elevation points provided by the Coastal Research Center. Volume calculations were determined by using a Geographic Information System to compare Digital Elevation Models of the Spring 2015 survey by the CRC and of the proposed fill elevations.

Parcel delineations were provided by the New Jersey Geographic Information Network.

Conversion from NAVD88 to MLW and MHW were determined using V Datum, created by the NOAA.

Core samples were collected September 20, 21 and 22, 2016. Core samples were collected using a piston core.

Core ID	Easting	Northing
BZ1	352599.946	134779.802
BZ2	352724.369	134495.502
BZ3	353187.676	134228.948
BZ4	353739.003	134027.335
BZ5	354533.664	133773.486

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30 Wilson Ave., Port Republic, NJ 08241

Drawn by: Marissa Grever  
Checked by: Frank Lenik  
Scale: 1 inch = 100 feet  
Date: 11/09/2016

Stockton University  
Coastal Research Center  
30 Wilson Ave., Port Republic, NJ 08241

Drawn by: Marissa Grever  
Checked by: Frank Lenik  
Scale: 1 inch = 100 feet  
Date: 11/09/2016

# THOMPSONS BEACH MARSH RESTORATION PROJECT

## Eastern Creek Tidal Channel

This map shows the Eastern Creek tidal channel way. The dredge cut design shown, and the estimated volume calculations are based on an approximate 50ft wide cut with 4:1 sloped sides. Each side has a beginning elevation of -0.5ft and a maximum ending elevation at approximately -5.5ft NAVD88. A 10ft wide middle section at elevation -5.5ft NAVD88 completes the 50ft wide maximum hopper cut. The dark shaded areas show the location of available material that are within the cut design.

The Eastern Creek has an estimated 6,567 cubic yards, of a total of 20,202 cubic yards of material available for dredging. The length of the Eastern Creek to be dredged is approximately 3,000 feet. The total volume needed to meet the placement estimates are 20,295 cubic yards.

Sediment dredged from the Eastern Creek will only be utilized as needed in the Eastern Placement Area to raise existing elevations to specified target range.

Elevation survey conducted by the Coastal Research Center. Survey lines and elevations were determined using RTK GPS. Map coordinates are in NAD83 US Survey feet. Existing conditions were surveyed in July 2015 under the supervision of Frank Lenik.

Proposed mitigation and soil protection designed by Dr. Stewart Farrell, PhD and Dr. Joseph Smith, PhD.

- Legend**
- Actual Core Locations
  - Proposed Core Locations
  - GPS Elevation Points
  - Available Material





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Restoration area delineations provided by Dr. Joseph Smith.

Spring 2015 survey lines and elevation points provided by the Coastal Research Center. Volume calculations were determined by using a Geographic Information System to compare Digital Elevation Models of the Spring 2015 survey by the CRC and of the proposed fill elevations.

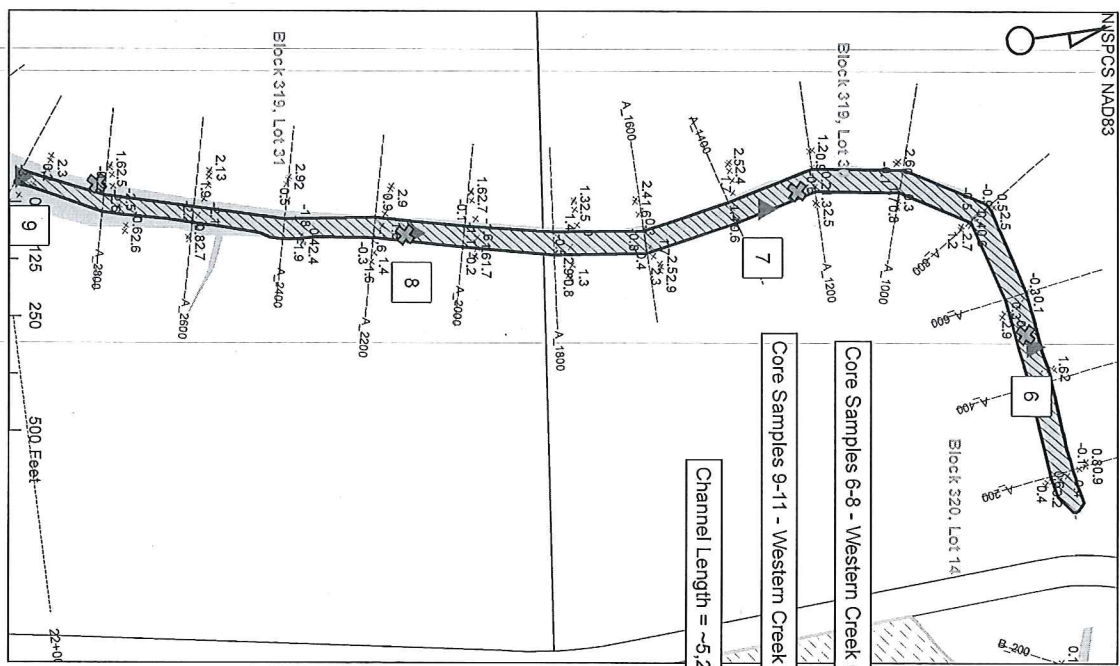
Parcel delineations were provided by the New Jersey Geographic Information Network.

Conversion from NAVD88 to MLW and MHW were determined using V Datum, created by the NOAA.

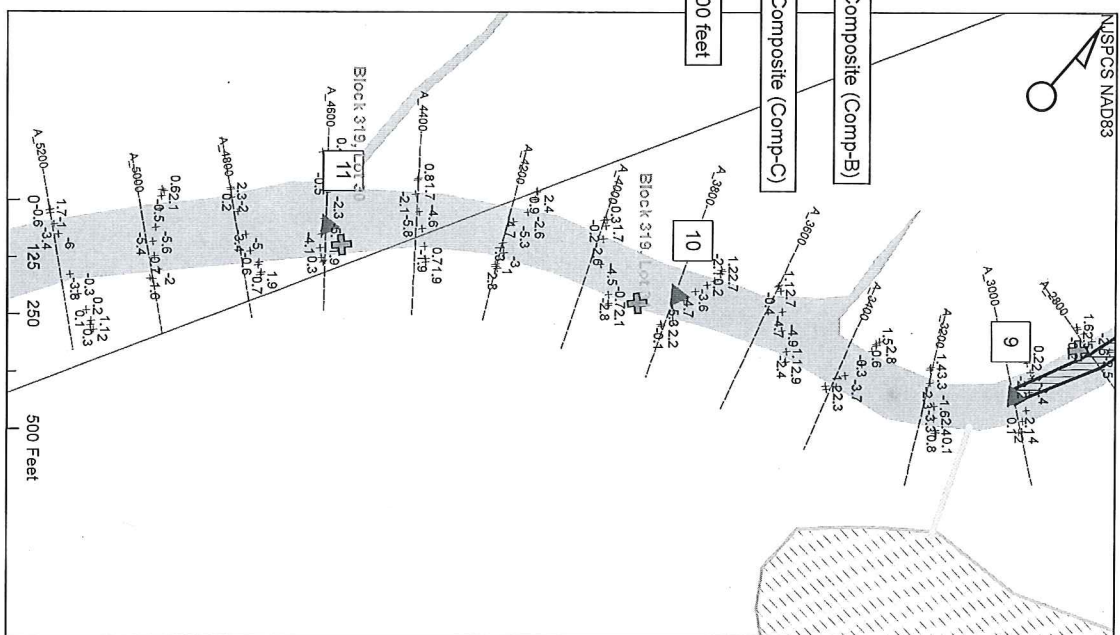
Core samples were collected September 20, 21 and 22, 2016. Core samples were collected using a piston core.

Core ID	Easting	Northing
BZ6	351753.942	134915.366
BZ7	351369.555	134458.902
BZ8	351336.491	133585.028
BZ9	351127.624	132928.706
BZ10	350321.879	132365.799
BZ11	349742.022	132032.761

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Coastal Research Center  
30 Wilson Ave., Port Republic, NJ 08241  
Drawn by: Marcus Gover Sheet 5 of 6  
Checked by: Steven Hellier Frank Lenik  
NJ State Surveyor  
Scale: 1 inch = 264 feet  
Date: 11/09/2016



Core Samples 6-8 - Western Creek Composite (Comp-B)  
Core Samples 9-11 - Western Creek Composite (Comp-C)  
Channel Length = ~5,200 feet



# Western Creek Tidal Channel

## THOMPSONS BEACH MARSH RESTORATION PROJECT

This map shows the Western Creek tidal channel way. The dredge cut design shown, and the estimated volume calculations are based on an approximate 50ft wide cut with 4:1 sloped sides. Each side has a beginning elevation of -0.5ft and a maximum ending elevation at approximately -5.5ft NAVD88. A 10ft wide middle section at elevation -5.5ft completes the 50ft wide maximum hopper cut. The dark shaded areas show the location of available material that are within the cut design.

The Western Creek has an estimated 13,635 cubic yards, of a total of 20,202 cubic yards of material available for dredging. The total volume needed to meet the placement estimates are 20,295 cubic yards.

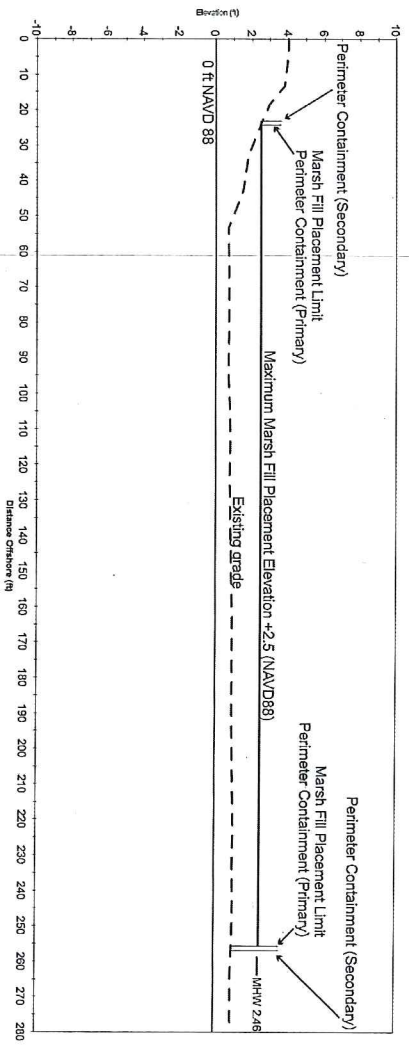
Sediment dredged from the Western Creek will only be utilized as needed in the placement areas to raise existing elevations to specified target range. Sediment dredged from the lower part of the Western Creek is to be utilized in the Southern Placement Area as needed to raise existing elevations to specified target range. Sediment dredged from the upper part of the Western Creek is to be utilized in the Eastern Placement Area as needed to raise existing elevations to specified target range.

Elevation survey conducted by the Coastal Research Center. Survey lines and elevations were determined using RTK GPS. Map coordinates are in NAD83 US Survey feet. Existing conditions were surveyed in July 2015 under the supervision of Frank Lenik.

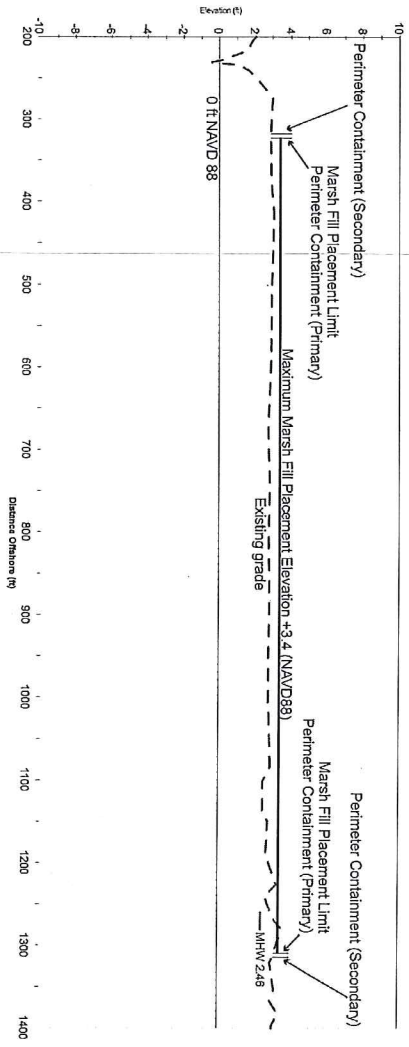
Proposed mitigation and soil protection designed by Dr. Stewart Farrell, PhD and Dr. Joseph Smith, PhD.

- Legend**
- ✖ Actual Core Locations
  - ▼ Proposed Core Locations
  - × GPS Elevation Points
  - ▨ Available Material

Thompsons Marsh - Eastern Area - Section A  
 Typical Marsh Fill Placement Area Cross Sections  
 Total Fill Volume: 13,133 cu.yd/ft.



Thompsons Marsh - Southern Area - Section B  
 Typical Marsh Fill Placement Area Cross Sections  
 Total Fill Volume: 13,095 cu.yd/ft.

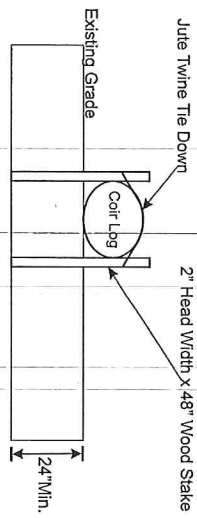


Stockton University Coastal Research Center 30 Wilson Ave., Port Republic, NJ 08241	
Drawn by: Brad Smith	Sheet 6 of 9
Checked by: Seven Hahn	Frank Lanik NJ Land Surveyor GS362555
Scale: As Shown	Date:
Date: 11/09/2016	

Plans for permitting only.  
 Existing conditions were surveyed in July 2015 under the supervision of Frank Lanik.  
 Proposed mitigation and soil protection designed by Dr. Stewart Farrell, PhD and Dr. Joseph Smith, PhD.

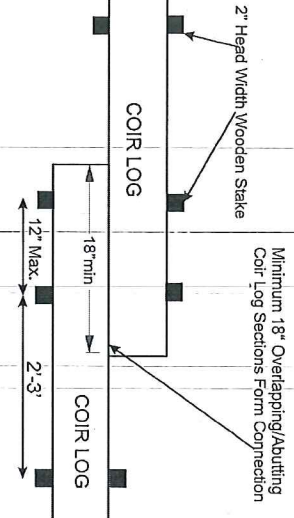
# THOMPSONS BEACH MARSH RESTORATION PROJECT





- Notes:
- 1) Crib All Coir Logs Using Wood Stakes to Stabilize
  - 2) 2"x2"x48" Wooden Stakes Recommended
  - 3) Notch Stakes Near Top for Twine
  - 4) Pound Stakes Tightly Next to Coir Logs, Leave Approximately 4" of Stake Above Log Surface
  - 5) Secure Twine in Notch, Tightly Knot Twine
  - 6) Pound Stake Approximately flush with Log Surface to Tighten Twine Tie Down

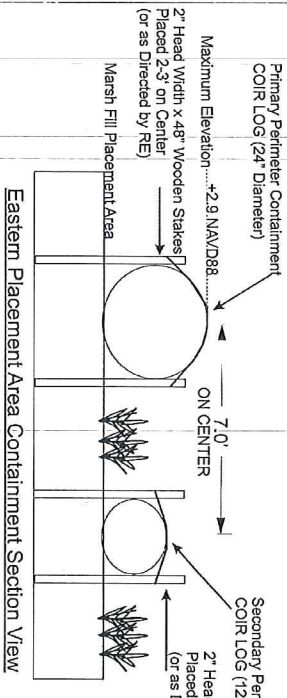
Coir Log Containment Cribbing - Profile View



- Notes:
- 1) Crib All Coir Log Using Wood Stakes
  - 2) 2"x2"x48" Wooden Stakes Recommended
  - 3) Min. 18" Overlap of Coir Log at Connection
  - 4) Max. 24" Crib Spacing at Connection Overlap
  - 5) Recommended Crib Spacing 3' for 12" Coir Log
  - 6) Recommended Crib Spacing 2' for 24" Coir Log
  - 7) Primary Containment 24" Coir Log
  - 8) Secondary Containment 12" Coir Log
  - 9) Biodegradable Twine for Cribbing Tie Downs
  - 10) Notch Stake Near Top for Twine Tightly Knot

Eastern Placement Area Containment Connection PLAN VIEW

Eastern Placement Area Primary & Secondary Connection/Attachment Detail

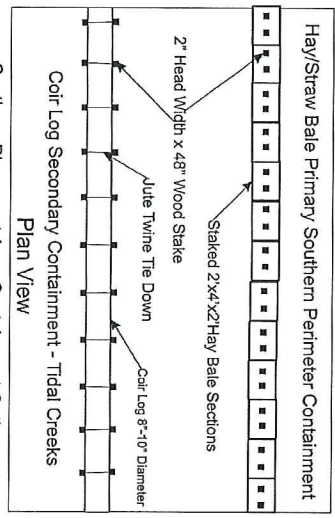


Eastern Placement Area Containment Section View

Stockton University Coastal Research Center 30 Wilson Ave., Port Republic, NJ 08241		Sheet 7 of 9	
Drawn by: Brad Smith	Checked by: Steven Haher	Scale: Not to Scale	Date: 11/09/2016
Date: 11/09/2016		Date:	

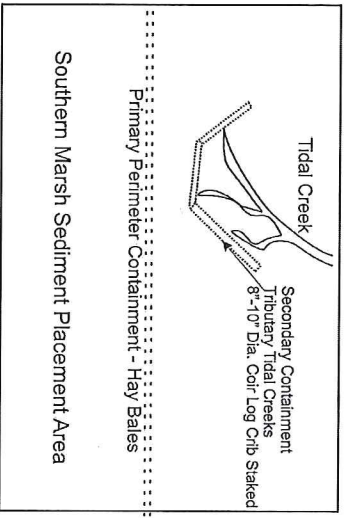
Plans for permitting only.  
Existing conditions were surveyed in July 2015 under the supervision of Frank Lenik.  
Proposed mitigation and soil protection designed by Dr. Stewart Farrell, PhD and Dr. Joseph Smith, PhD.

# THOMPSONS BEACH MARSH RESTORATION PROJECT



- Notes:
- 1) Southern Area Install Primary Containment Along Downslope Perimeter
  - 2) Install 2'x4'x2' Hay/Straw Bales Along Perimeter
  - 3) Tightly Abut Adjacent Bales End to End
  - 4) Face Binding Wire or Twine Out to Slow Decay
  - 5) Stake Each Bale in Two Points on Center
  - 6) 2'x2'x48" Wooden Stakes Recommended
  - 7) Angle First Stake Toward the Previously Laid Bale to Force Bales Together
  - 8) Chink any Small Gaps with Straw
  - 9) Sprinkle Loose Hay Over Immediate Area Up Flow
  - 10) Inspect Barrier After Rainfall or Flooding, Repair as Needed

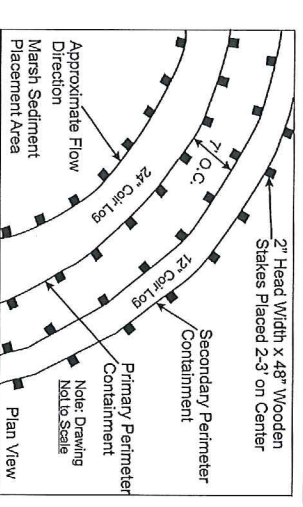
Southern Placement Area Containment Options



- Notes:
- 1) Secondary Containment Silt Barrier
  - 2) Use Coir Log at Adjacent Tributary Tidal Creeks
  - 3) Place Log Along Upper Bank of Tidal Creek
  - 4) Install 8'-10" Coir Log Cribbed Staked to Stabilize
- Note: Drawings Not to Scale

Southern Marsh Sediment Placement Area

Southern Placement Area Primary & Secondary Containment

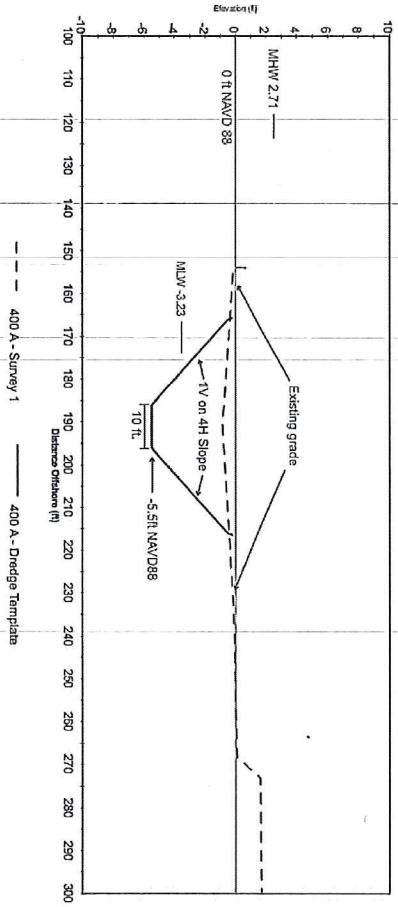


Eastern Placement Area Primary & Secondary Containment Plan View

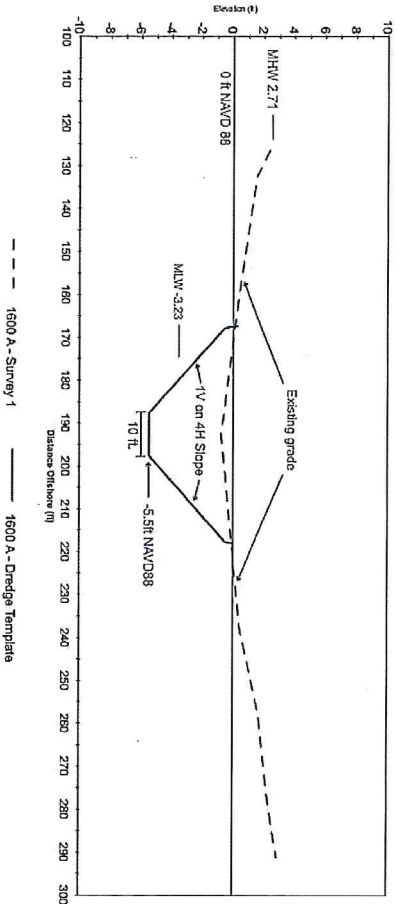
Note: Drawings Not to Scale



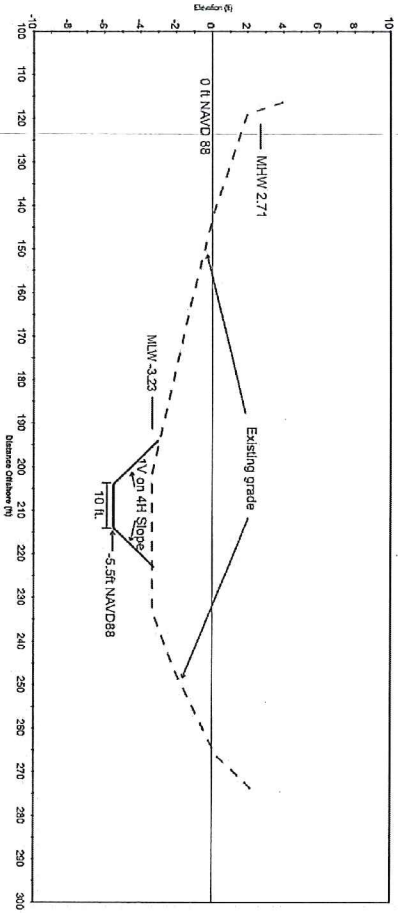
Thompsons Creek A  
 Typical Line: 4400 A  
 Proposed Maintenance Dredge Cut  
 Total Dredge Volume: 5,257 cu.yd/ft.



Thompsons Creek A  
 Typical Line: 16500 A  
 Proposed Maintenance Dredge Cut  
 Total Dredge Volume: 5,737 cu.yd/ft.



Thompsons Creek A  
 Typical Line 30+400 A  
 Proposed Maintenance Dredge Cut  
 Total Dredge Volume: 1,501 cu.yd/ft.

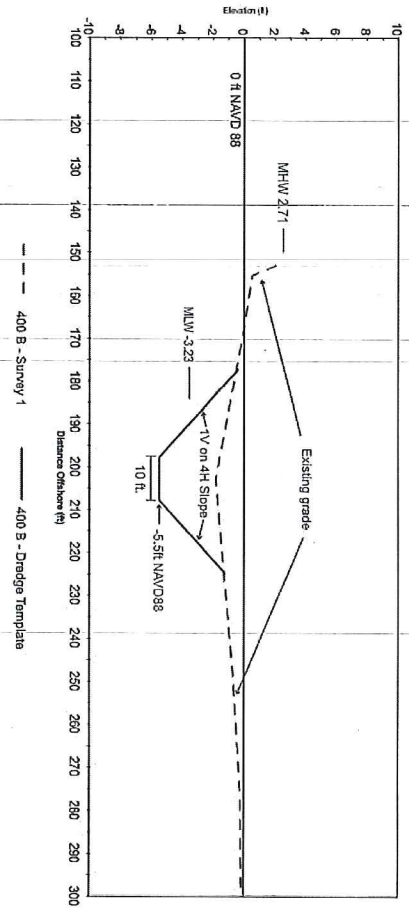


Stockton University/ Coastal Research Center 30 Wilson Ave., Port Republic, NJ 08241	
Drawn by: Brad Smith	Sheet 8 of 9
Checked By: Seven Hamer	Frank Lenik NJ Land Surveyor GS362555
Scale: AS Shown	Date:
Date: 11/09/2016	

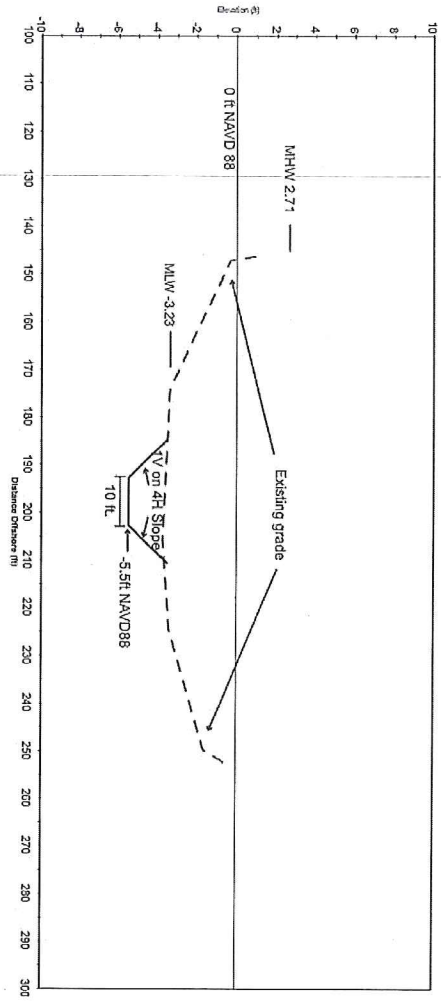
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# THOMPSONS BEACH MARSH RESTORATION PROJECT

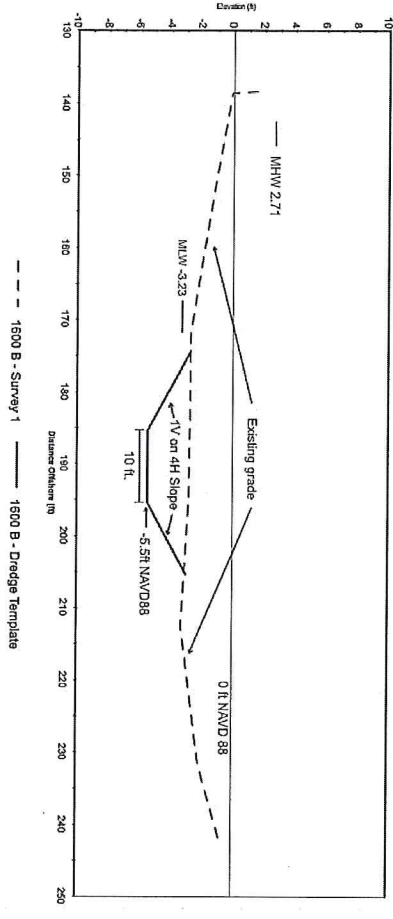
Thompsons Creek B  
 Typical Line: 4+00 B  
 Proposed Maintenance Dredge Cut  
 Total Dredge Volume: 4,009 cu.yd/ft.



Thompsons Creek B  
 Typical Line 28+00 B  
 Proposed Maintenance Dredge Cut  
 Total Dredge Volume: 1,773 cu.yd/ft.



Thompsons Creek B  
 Typical Line: 16+00 B  
 Proposed Maintenance Dredge Cut  
 Total Dredge Volume: 2,025 cu.yd/ft.



Stockton University Coastal Research Center 30 Wilson Ave., Port Republic, NJ 08241	
Drawn by: Brad Smith	Sheet 9 of 9
Checked By: Steven Hafner	Frank Lanik NJ Land Surveyor GSS62859
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Date: 11/09/2016	

Plans for permit!!  
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# THOMPSONS BEACH MARSH RESTORATION PROJECT