

APPENDIX B

Agency Correspondence and Permits

Correspondence Log and copies of Correspondence, including SHPO concurrence

New Jersey Department of Environmental Protection, Division of Land Use Waterfront Development Act, Coastal Wetlands Act of 1970 and Coastal Zone Management Act Coastal Consistency Determination Permit No. 050-17-0030.2 CSW18001 & WFD18001

U.S. Army Corps of Engineers Clean Water Act Section 404 and Rivers and Harbors Act Section 10, Permit No. CENAP-OP-R-2018-00291

NEPA Environmental Assessment Correspondence Log

	A	B	C	D
1	DATE	CORRESPONDENCE		NOTES
2		NAME	AGENCY	
3	4/4/2018	Ms. Colleen Keller	NJDEP Division of Land Use Regulation (DLUR)	Submittal of Waterfront Development Act and Coastal Wetlands Act of 1970 permit application
4	4/4/2018		NJDEP, Bureau of Tidelands -	Submittal of application for Tidelands license to occupy State waters; application submitted per stamped receipt
5	4/5/2018	Ms. Genevieve Rybicki	U.S. Army Corps of Engineers	Submittal of Nationwide Permit 54 permit application
6	5/14/2018	G. Rybicki; Ms. Junetta Dix	USACE; Junetta N. Dix Consulting, Inc.	Email thread from 1:48 PM to 3:02 PM regarding design plan status & impacts.
7	5/25/2018	Ms. Kim Penrod	Delaware Nation	Section 106 Tribal consultation request, sent certified RR mail #7017 0190 0000 9475 3838. Green card returned verifying receipt.
8	5/25/2018	Ms. Bonney Hartley	Stockbridge Munsee Mohican	Section 106 Tribal consultation request, sent certified RR mail #7017 0190 0000 9475 3852. Green card returned verifying receipt.
9	5/25/2018	Dr. Brice Obermeyer	Delaware Tribe	Section 106 Tribal consultation request, sent certified RR mail #7017 0190 0000 9475 3845. Green card returned verifying receipt.
10	5/29/2018	Ms. Katherine Marcopul	New Jersey State Historic Preservation Office	Section 106 state historic preservation office consultation request, sent certified RR mail #7017 0190 0000 9475 3869. Green card returned verifying receipt.
11	6/5/2018	Ms. G. Rybicki	U.S. Army Corps of Engineers	Request to share any agency/division comments.
12	6/5/2018	Ms. Kara Turner	NJDEP DLURP	Request to share any agency/division comments.
13	6/12/2018	K. Turner	NJDEP DLURP	Email from DLUR forwarding SHPO comments confirming no further action / review required.
14	6/28/2018	Ms. Katherine Marcopul	New Jersey State Historic Preservation Office	Letter concurring there are no historic properties affected within the project's areas of potential effects.
15	9/24/2018	Mr. Keith Hanson	NOAA, Fisheries Resource	Meeting minutes included along with backup correspondence.

ACT ENGINEERS

Engineering, Planning and Surveying
1 Washington Boulevard - Suite 3
ROBBINSVILLE NEW JERSEY 08691
(609) 918-0200
FAX (609) 918-1411
www.actengineers.com
Offices in Robbinsville, NJ & Newtown, PA

LETTER OF TRANSMITTAL

TO: Ms. Colleen Keller
New Jersey Dept. of Environmental Protection
Division of Land Use Regulation
501 E. State Street
Trenton, NJ 08625-0439

DATE:	April 4, 2018
ACT Project No.	150709-01
ATTENTION:	Ms. Colleen Keller
RE:	Shooting Island Shoreline Restoration Wetlands ACT of 1970 & Waterfront Dev. Individual Permit Application Block 3350.03, Lots 1 & 2; Ocean City Cape May County, New Jersey

WE ARE SENDING YOU THE FOLLOWING ITEMS:

- | | | |
|---|---------------------------------------|---|
| <input type="checkbox"/> PRINTS | <input type="checkbox"/> PLANS | <input type="checkbox"/> COPY OF LETTER |
| <input type="checkbox"/> SPECIFICATIONS | <input type="checkbox"/> CALCULATIONS | <input type="checkbox"/> APPLICATION |
| <input type="checkbox"/> REPORT | <input type="checkbox"/> PERMITS | <input type="checkbox"/> OTHER |

COPIES	DATE	No.	DESCRIPTION
3	04/03/18	1	Application Cover Letter and Compliance Statements - Shooting Island Shoreline Restoration
1	04/03/18	2	NJDEP LURP Application Form (Signed Original)
1	04/02/18	3	Application Fee (Check # 93040-- \$18,000) & Purchase Order
2	03/22/18	4	Ocean City Resolution 18-54-136 Authorizing an MOA with DEP Div. of Fish & Wildlife
1	-	5	Location Map/Tax Map/Photos
1	04/03/18	6	Certified Mail Receipts and Air Bill to Ocean City Clerk
3	03/23/18	7	Plans - Shooting Island Restoration (30% Design)
1	03/2018	8	Basis of Design Report (30% Design Submittal)
1	-	9	Checklist Figures
1	12/2016	10	Hydrodynamic Modeling & Sediment Management Evaluation
1	06/2016	11	Improving Coastal Resiliency along America's Shorelines
1	04/03/18	12	Tidelands License Application Form and Cover Letter

THESE ARE TRANSMITTED AS CHECKED BELOW:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> FOR APPROVAL | <input checked="" type="checkbox"/> FOR REVIEW AND COMMENT | <input type="checkbox"/> FOR SIGNATURE |
| <input type="checkbox"/> FOR YOUR USE | <input type="checkbox"/> AS REQUESTED | <input type="checkbox"/> OTHER _____ |

If enclosures are not as noted, kindly notify us at once

REMARKS:

For your review and approval.

COPY TO: FILE
City of Ocean Clerk
(Complete Copy)

SIGNED:

NAME: Michael J. Countess



If enclosures are not as noted, kindly notify us at once

DIVISION OF LAND USE REGULATION

HAND CARRY RECEIPT

ISSUED BY: Division of Land Use Regulation

ISSUED TO: Colleen Reller / Application Support

COUNTY: Cape May

MUNICIPALITY: Ocean City

BLOCK(S):

LOT(S):

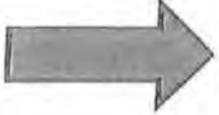
^{Block}
CHECK #: 3350.03

^{lot}
AMOUNT: 1,2

CHECK #: 93040

AMOUNT: 18,000.00

RECEIVED BY: [Signature]

DATE STAMP: 

PLEASE CONTACT THE DIVISION
AT (609) 777-0454 SHOULD YOU
HAVE ANY QUESTIONS





LETTER OF TRANSMITTAL

Engineering, Planning and Surveying
1 Washington Boulevard - Suite 3
ROBBINSVILLE NEW JERSEY 08691
(609) 918-0200
FAX (609) 918-1411
www.actengineers.com
Offices in Robbinsville, NJ & Newtown, PA

TO: NJ Department of Environmental Protection
Division of Land Use Regulation
501 E. State Street
Trenton, NJ 08625

DATE: August 14, 2017
ACT Project No. 150709-01
ATTENTION: Colleen Keller
RE: Tidelands License Application
Block 3350.03, Lots 1 and 2
Ocean City, Cape May County
New Jersey 08226
Shooting Island
Shoreline Restoration Project

WE ARE SENDING YOU THE FOLLOWING ITEMS:

- PRINTS, PLANS, COPY OF LETTER, SPECIFICATIONS, CALCULATIONS, APPLICATION, REPORT, PERMITS, OTHER

Table with 4 columns: COPIES, DATE, No., DESCRIPTION. Contains 7 rows of document details.

THESE ARE TRANSMITTED AS CHECKED BELOW:

- FOR APPROVAL, FOR REVIEW AND COMMENT, FOR SIGNATURE, FOR YOUR USE, AS REQUESTED, OTHER

REMARKS:

Enclosed, please find the aforementioned items in support of the City of Ocean City's Tidelands License Application. Should you have any questions or require additional information, please feel free to contact Eric Rosina...

COPY TO: FILE SIGNED: [Signature] NAME: Michael J. Countess

If enclosures are not as noted, kindly notify us at once



LETTER OF TRANSMITTAL

Engineering, Planning and Surveying
1 Washington Boulevard - Suite 3
ROBBINSVILLE NEW JERSEY 08691
(609) 918-0200
FAX (609) 918-1411
www.actengineers.com
Offices in Robbinsville, NJ & Norristown, PA

DATE: April 5, 2018
ACT Project No. 150709-03A
ATTENTION: Ms. Genevieve Rybicki
RE: Shooting Island Shoreline Restoration
Nationwide Permit No. 54 Application
Block 3350.03 Lots 1 and 2
City of Ocean City
Cape May County, New Jersey
Via FedEx Overnight Delivery

TO: Ms. Genevieve Rybicki
U.S. Army Corps of Engineers
Regulatory Branch
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

WE ARE SENDING YOU THE FOLLOWING ITEMS:

- PRINTS, PLANS, COPY OF LETTER, SPECIFICATIONS, CALCULATIONS, APPLICATION, REPORT, PERMITS, OTHER

Table with 4 columns: COPIES, DATE, No., DESCRIPTION. Contains 5 rows of item details.

THESE ARE TRANSMITTED AS CHECKED BELOW:

- FOR APPROVAL, FOR REVIEW AND COMMENT, FOR SIGNATURE, FOR YOUR USE, AS REQUESTED, OTHER

REMARKS:

Ms. Rybicki,
As referenced above, please find a copy of the USACE Shooting Island Nationwide Permit Application. If you have any questions, please do not hesitate to contact Eric B. Rosina or myself at our office.

COPY TO: FILE SIGNED: NAME: Michael J. Countess

junettanowell@comcast.net

From: junettanowell@comcast.net
Sent: Monday, May 14, 2018 3:02 PM
To: 'Rybicki, Genevieve CIV USARMY CENAP (US)'
Cc: 'Eric Rosina'; 'Travis Merritts'; 'Michael J. Countess'
Subject: RE: [Non-DoD Source] RE: CENAP-OP-R-2018-00291 Ocean City Shooting Island Shoreline Restoration Project

The easier answer first...the electric line is not 'live' but is staying in its current location in the event Atlantic City Electric wants to turn it back on. So, 0 disturbance proposed with letting the electric line stay as is.

Regarding the impact amounts, they were included on page 20 of 24 of our April 5, 2018 submission to you but admittedly, they're buried in the NJDEP statement of Compliance. As stated in that document,

SHORELINE RESTORATION SILL:

3,200 linear feet of proposed sill X a bottom maximum width of 25-feet of the trapezoid shaped structure = 80,000 SF of fill within open water (although it's less because of the trapezoid shape but we've provided the maximum footprint). The fill is listed in the submission as wetlands fill because the area was mapped as coastal wetlands by the State of NJ in 1970. As you are aware, that's a promulgated line, albeit inaccurate in the extreme for this project. The wetlands have eroded and are no longer wetlands but remain 'mapped'. In actuality, it's fill in open water.

OYSTER CASTLES:

1,900 linear feet of oyster castles are proposed X 10-foot wide footprint = 19,000 SF of open water fill.

TOTAL PROJECT IMPACT = 99,000 SF.

Do you also need volume? I'll have to ask engineers for that if you need it and, if you do, I expect you want volume as measured from substrate elevation to Spring High Tide line?

Best Regards,
Junetta

-----Original Message-----

From: Rybicki, Genevieve CIV USARMY CENAP (US) <Genevieve.Rybicki@usace.army.mil>
Sent: Monday, May 14, 2018 2:32 PM
To: junettanowell@comcast.net
Subject: RE: [Non-DoD Source] RE: CENAP-OP-R-2018-00291 Ocean City Shooting Island Shoreline Restoration Project

Okay that's fine. I also need impact amounts in acres or square feet for any discharge of fill material (that includes the sill and the oyster castles). I will also need to know what is going on with the electrical line. If that is being removed, I will need to know the square footage of the disturbance area when that line is pulled out.

Genevieve

-----Original Message-----

From: junettanowell@comcast.net [mailto:junettanowell@comcast.net]
Sent: Monday, May 14, 2018 2:01 PM

To: Rybicki, Genevieve CIV USARMY CENAP (US) <Genevieve.Rybicki@usace.army.mil>
Cc: 'Travis Merritts' <tmerritts@anchorqea.com>; 'Eric Rosina' <erosina@actengineers.com>; 'Michael J. Countess' <mcountess@actengineers.com>
Subject: [Non-DoD Source] RE: CENAP-OP-R-2018-00291 Ocean City Shooting Island Shoreline Restoration Project

These darn engineers. The project is 100% designed. The 30% refers to contract documents. The plans are final for permitting but need additional details, specifications, etc. before they're 100% complete for public bidding process. NJDEP had same question - I should have known better.

Best Regards,

Junetta

Junetta N. Dix Consulting, Inc.
213 E. Seaview Avenue
Linwood, NJ 08221
609.927.5580

-----Original Message-----

From: Rybicki, Genevieve CIV USARMY CENAP (US) <Genevieve.Rybicki@usace.army.mil>
Sent: Monday, May 14, 2018 1:48 PM
To: junettanowell@comcast.net
Subject: CENAP-OP-R-2018-00291 Ocean City Shooting Island Shoreline Restoration Project

Hey Junetta,

Do you have 100% design plans for the above referenced project yet? I noticed the engineering plans included in the application package are only 30% design plans.

Sincerely,

Genevieve T. Rybicki
Biologist
US Army Corps of Engineers
Regulatory Branch
Wanamaker Building
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390
Office: 215-656-8597
Cell: (215) 380- 1829



1 Washington Boulevard, Suite 3
Robbinsville, New Jersey 08691
Telephone No. (609) 918-0200
www.actengineers.com

May 25, 2018

Via Certified Mail Return Receipt #7017 0190 0000 9475 3838

Ms. Kim Penrod
Delaware Nation, Director of Cultural Resources/106
31064 State Highway 281, P.O. Box 825
Anadarko, OK 73005

**RE: TRIBAL CONSULTATION LETTER
SHOOTING ISLAND SHORELINE RESTORATION
BLOCK 3350.03, LOTS 1 & 2; CITY OF OCEAN CITY; CAPE MAY COUNTY
NATIONAL FISH & WILDLIFE FEDERATION (NFWF) GRANT NO. 44068**

Dear Ms. Penrod:

The National Fish and Wildlife Federation (NFWF) is considering funding Ocean City, New Jersey's Shooting Island shoreline restoration project with federal fund from the U.S. Department of the Interior.

ACT Engineers and the project team are performing environmental review responsibilities for the project, including soliciting consultation regarding potential impacts to tribal resources. Historic resources include, but are not limited to, archaeological sites, burial grounds, sacred landscapes or features, ceremonial areas, traditional cultural places and landscapes, plant and animal communities, and buildings and structures with significant tribal association.

The U.S. Department of the Interior will conduct a review of this project to comply with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR Part 800). On behalf of the U.S. Department of Interior, we are inviting you to be a consulting party in this review, to assist in identifying historic properties in the project area that may have religious, cultural and/or historic significant to your tribe. If such resources are found to be present, we also invite your Nation to assist in assessing potential impacts from the proposed project and possible ways to avoid, minimize or mitigate potential adverse impacts.

PROJECT PURPOSE

The purpose of the proposed project is to protect and enhance over 100 acres of wetlands in Great Egg Harbor Bay by restoring the current eroding shoreline of Shooting

Island to 1978 conditions. The project will reestablish and protect eroding shorelines and will aid in creating habitat and enhancing wetlands function via natural g accretion behind the 1978 shoreline location and potentially on the island, for resiliency and mitigation of future storm impacts.

The proposed project will restore the footprint of Shooting Island to the north and northwest with the construction of a living shoreline sill along the 1978 State of New Jersey-mapped coastal wetlands boundary line. The living shoreline (which will function as a low-crested breakwater) will be placed along the 1978 shoreline boundary line and constructed to a crest elevation equivalent to MHW level (+1.55 feet NAVD88).

PROJECT DESCRIPTION

The City of Ocean City proposes shoreline restoration to protect approximately 150-acres of mapped coastal wetlands on Shooting Island. Shooting Island is designated on the City tax maps as Block 3350.01, Lots 1 and 2 and is in the Great Egg Harbor back bay area of Ocean City, proximate to 17th to 25th Streets (refer to Attachment 2 – maps and photographs). The island contains mapped coastal wetlands, tidal creeks and a pre-existing upland Confined Disposal Facility (CDF).

Shooting Island has historically experienced erosion along the northwest and southwest shorelines. Shoreline erosion rates along the northern and western edges of Shooting Island vary between 1 and 6 feet per year since 1978. As a result of this process, the island features a vertical scarp along the shoreline of approximately 4 feet in height. The elevation of top of the marsh along the scarp is approximately at MHW (1.55 feet NAVD 88).

The project consists of two design elements: living shoreline and oyster castles.

The living shoreline element consists of the construction of the living shoreline sill structure, located offshore of the current Shooting Island shoreline. Approximately 3,200 linear feet of sill will be constructed at a height of 1.55 feet NAVD88 (0-foot MHW) with side slopes of 2:1. Sill materials will be transported to the installation locations via shallow-draft barges. A small crane or long-reach excavator positioned on a barge will be used to place the sill core materials, which are anticipated to comprise coarse-grained material, small rocks, or dredged material. The core material may be covered in a layer of geotextile material that will be identified at a later design stage. The sill would then be covered in a

Ms. Kim Penrod
Delaware Nation Section 106 Consultation
May 25, 2018
Page 3 of 3

larger stone layer that will provide erosion protection of the living shoreline and the underlying sill core.

The oyster castle component consists of the construction of Oyster breaks / Oyster castles installed offshore of the existing Shooting Island. Approximately 1,900 linear feet of Oyster breaks will be added to increase the overall shoreline restoration.

Enclosed please find maps, figures and site photographs of the project area.

To meet project timeframes, if you would like to be a consulting party on this project, please reply within 30 days and provide any initial concerns regarding proposed project impacts to religious or cultural resources. Conversely, if you do not wish to consult on this project, please advise as soon as possible. We value your assistance and look forward to consulting further, if needed.

Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely,

/ Eric Rosina /

Eric Rosina
Agent for the Applicant

Enclosures



1 Washington Boulevard, Suite 3
Robbinsville, New Jersey 08691
Telephone No. (609) 918-0200
www.actengineers.com

May 25, 2018

Via Certified Mail Return Receipt #7017 0190 0000 9475 3852

Ms. Bonney Hartley
Tribal Preservation Officer
Stockbridge Munsee Community – Band of Mohican Indians
65 1st Street
Troy, NY 12180

**RE: TRIBAL CONSULTATION LETTER
SHOOTING ISLAND SHORELINE RESTORATION
BLOCK 3350.03, LOTS 1 & 2; CITY OF OCEAN CITY; CAPE MAY COUNTY
NATIONAL FISH & WILDLIFE FEDERATION (NFWF) GRANT NO. 44068**

Dear Ms. Hartley:

The National Fish and Wildlife Federation (NFWF) is considering funding Ocean City, New Jersey's Shooting Island shoreline restoration project with federal fund from the U.S. Department of the Interior.

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PROJECT PURPOSE

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PROJECT DESCRIPTION

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Ms. Bonney Hartley
Delaware Tribe Historic Preservation Office
May 25, 2018
Page 3 of 3

place the sill core materials, which are anticipated to comprise coarse-grained material, small rocks, or dredged material. The core material may be covered in a layer of geotextile material that will be identified at a later design stage. The sill would then be covered in a larger stone layer that will provide erosion protection of the living shoreline and the underlying sill core.

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Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely,

Eric Rosina
Agent for the Applicant

Enclosures



1 Washington Boulevard, Suite 3
Robbinsville, New Jersey 08691
Telephone No. (609) 918-0200
www.actengineers.com

May 25, 2018

Via Certified Mail Return Receipt #7017 0190 0000 9475 3845

Dr. Brice Obermeyer
Director, Delaware Tribe Historic Preservation Office
Roosevelt Hall, Rm 212
1200 Commercial St.
Emporia, KS 66801

**RE: TRIBAL CONSULTATION LETTER
SHOOTING ISLAND SHORELINE RESTORATION
BLOCK 3350.03, LOTS 1 & 2; CITY OF OCEAN CITY; CAPE MAY COUNTY
NATIONAL FISH & WILDLIFE FEDERATION (NFWF) GRANT NO. 44068**

Dear Dr. Obermeyer:

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The U.S. Department of the Interior will conduct a review of this project to comply with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR Part 800). On behalf of the U.S. Department of Interior, we are inviting you to be a consulting party in this review, to assist in identifying historic properties in the project area that may have religious, cultural and/or historic significant to your tribe. If such resources are found to be present, we also invite your Nation to assist in assessing potential impacts from the proposed project and possible ways to avoid, minimize or mitigate potential adverse impacts.

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Dr. Brice Obermeyer
Delaware Tribe Historic Preservation Office
May 25, 2018
Page 3 of 3

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Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely,

Eric Rosina
Agent for the Applicant

Enclosures



1 Washington Boulevard, Suite 3
Robbinsville, New Jersey 08691
Telephone No. (609) 918-0200
www.actengineers.com

May 29, 2018

Via Certified Mail Return Receipt #7017 0190 0000 9475 3869

Ms. Katherine Marcopul
New Jersey State Historic Preservation Office
Mail Code 501-04B
State of New Jersey
Department of Environmental Protection
Historic Preservation Office
PO Box 420
Trenton, NJ 08625-0420

**RE: DLUR FILE NO. 0508-17-0030.2 CSW180001 & WFD180001
SHOOTING ISLAND SHORELINE RESTORATION
BLOCK 3350.03, LOTS 1 & 2; CITY OF OCEAN CITY; CAPE MAY COUNTY
NATIONAL FISH & WILDLIFE FEDERATION (NFWF) GRANT NO. 44068**

Dear Ms. Marcopul:

An application for a Waterfront Development Act and Coastal Wetlands Act of 1970 has been recently submitted by the project team, for a proposed shoreline restoration project. The New Jersey Department of Environmental Protection (NJDEP) review officer is Ms. Kara Turner.

The National Fish and Wildlife Federation (NFWF) is considering funding Ocean City, New Jersey's Shooting Island shoreline restoration project with federal funds from the U.S. Department of the Interior (DOI). As a result of DOI funding, the project must comply with the National Environmental Policy Act (NEPA) guidelines. We understand SHPO will provide internal comments to the NJDEP Division of Land Use Regulation. We will ask Ms. Turner to share any/all internal review memos as supporting documentation for the NEPA review process. However, please accept this request for a direct consultation, to satisfy the NEPA requirements.

ACT Engineers and the project team are performing environmental review responsibilities for the project, including soliciting consultation regarding potential impacts to historic and/or archaeological resources.

The U.S. Department of the Interior will conduct a review of this project to comply with Section 106 of the National Historic Preservation Act and its implementing

regulations (36 CFR Part 800). On behalf of the U.S. Department of Interior, we are inviting you to be a consulting party in this review, to assist in identifying historic or archaeological properties in the project area that may have significance.

PROJECT PURPOSE

The purpose of the proposed project is to protect and enhance over 100 acres of wetlands in Great Egg Harbor Bay by restoring the current eroding shoreline of Shooting Island to 1978 conditions. The project will reestablish and protect eroding shorelines and will aid in creating habitat and enhancing wetlands function via natural g accretion behind the 1978 shoreline location and potentially on the island, for resiliency and mitigation of future storm impacts.

The proposed project will restore the footprint of Shooting Island to the north and northwest with the construction of a living shoreline sill along the 1978 State of New Jersey-mapped coastal wetlands boundary line. The living shoreline (which will function as a low-crested breakwater) will be placed along the 1978 shoreline boundary line and constructed to a crest elevation equivalent to MHW level (+1.55 feet NAVD88).

PROJECT DESCRIPTION

The City of Ocean City proposes shoreline restoration to protect approximately 150-acres of mapped coastal wetlands on Shooting Island. Shooting Island is designated on the City tax maps as Block 3350.01, Lots 1 and 2 and is in the Great Egg Harbor back bay area of Ocean City, proximate to 17th to 25th Streets (refer to Attachment 2 – maps and photographs). The island contains mapped coastal wetlands, tidal creeks and a pre-existing upland Confined Disposal Facility (CDF).

Shooting Island has historically experienced erosion along the northwest and southwest shorelines. Shoreline erosion rates along the northern and western edges of Shooting Island vary between 1 and 6 feet per year since 1978. As a result of this process, the island features a vertical scarp along the shoreline of approximately 4 feet in height. The elevation of top of the marsh along the scarp is approximately at MHW (1.55 feet NAVD 88).

The project consists of two design elements: living shoreline and oyster castles.

The living shoreline element consists of the construction of the living shoreline sill structure, located offshore of the current Shooting Island shoreline. Approximately 3,200 linear feet of sill will be constructed at a height of 1.55 feet NAVD88 (0-foot MHW) with side slopes of 2:1. Sill materials will be transported to the installation locations via shallow-draft barges. A small crane or long-reach excavator positioned on a barge will be used to place the sill core materials, which are anticipated to comprise coarse-grained material, small rocks, or dredged material. The core material may be covered in a layer of geotextile material that will be identified at a later design stage. The sill would then be covered in a larger stone layer that will provide erosion protection of the living shoreline and the underlying sill core.

The oyster castle component consists of the construction of Oyster breaks / Oyster castles installed offshore of the existing Shooting Island. Approximately 1,900 linear feet of Oyster breaks will be added to increase the overall shoreline restoration.

Enclosed please find maps, figures and site photographs of the project area.

To meet project timeframes, if you would like to be a consulting party on this project, please reply within 30 days and provide any initial concerns regarding proposed project impacts to religious or cultural resources. Conversely, if you do not wish to consult on this project, please advise as soon as possible. We value your assistance and look forward to consulting further, if needed.

Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely,

/ Eric Rosina /

Eric Rosina
Agent for the Applicant

Enclosures

C: Kara Turner, NJDEP-DLUR



1 Washington Boulevard, Suite 3
Robbinsville, New Jersey 08691
Telephone No. (609) 918-0200
www.actengineers.com

VIA ELECTRONIC MAIL ONLY

June 5, 2018

Ms. Kara Turner
State of New Jersey Department of Environmental Protection
Land Use Regulation Program
PO Box 420
Trenton, NJ 08625-0420

Ms. Genevieve Rybicki
U.S. Army Corps of Engineers
Regulatory Branch
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

**RE: DLUR FILE NO. 0508-17-0030.2 CSW180001 & WFD180001
USACE FILE NO. CENAP-OP-R-2018-00291
SHOOTING ISLAND SHORELINE RESTORATION
BLOCK 3350.03, LOTS 1 & 2; CITY OF OCEAN CITY; CAPE MAY COUNTY
NATIONAL FISH & WILDLIFE FEDERATION (NFWF) GRANT NO. 44068**

Dear Ms. Turner and Rybicki:

As you are aware, permit applications for approval of the proposed Shooting Island shoreline restoration project have been submitted to the New Jersey Department of Environmental Protection (NJDEP) and the U.S. Army Corps of Engineers.

The project is being funded by the National Fish and Wildlife Federation (NFWF) with federal monies from the U.S. Department of the Interior (DOI). Because of DOI funding, the project must comply with the National Environmental Policy Act (NEPA) guidelines.

The NEPA Environmental Assessment document being prepared by the project team must include any/all consultations and comments from State and Federal agencies. We understand various NJDEP Divisions may provide internal comments to the Land Use Regulation Program and the U.S. Army Corps of Engineers may solicit and/or receive comments from various federal agencies. We have been directed to request copies of any such consultations, comments, or reviews.

Ms. Kara Turner
Ms. Genevieve Rybicki
June 5, 2018
Page 2 of 2

Accordingly, please accept this request for copies of any/all internal memos or review letters you may receive from other Divisions and Agencies.

We greatly appreciate your assistance with this project. Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely,

/ Junetta Dix /

Junetta N. Dix
Environmental Scientist

C: ACT Engineers

From: Turner, Kara
To: junettanowell@comcast.net; "Rybicki, Genevieve CIV USARMY CENAP (US)"
Cc: [Eric Rosina](#); [Michael J. Countess](#)
Subject: RE: Ocean City Shooting Island Shoreline Restoration
Date: Tuesday, June 12, 2018 11:45:50 AM

Hi Junetta,

I have the email below from HPO regarding the project. I hope this helps.

Sincerely,

Kara

From: West-Rosenthal, Jesse
Sent: Tuesday, December 12, 2017 12:12 PM
To: Turner, Kara <Kara.Turner@dep.nj.gov>
Subject: Shooting Island Living Shoreline; DLUR File # 0508-17-0030.1; HPO Project # 18-0327-1

HPO Project # 18-0327-1
HPO-L2017-094

Cape May County, Ocean City
Shooting Island Living Shoreline
DLUR File # 0508-17-0030.1

Hi Kara,

Thank you for providing the Historic Preservation Office (HPO) with the opportunity to review and comment on the potential for the above-referenced project to affect historic and archaeological resources. Based upon the documentation submitted, there are no buildings, structures, sites, objects, or historic districts on or adjacent to the project location that are listed on, or that have been identified as eligible for listing on the New Jersey or National Registers of Historic Places. Although the project setting is sensitive for archaeological sites, based upon a review of information on file at the HPO, the project only has a low potential for archaeological remains. Consequently, the HPO does not recommend further consideration prior to permit issuance.

Thank you again for providing the opportunity to review this project.

If you have any questions, please feel free to contact me at 609-984-6019. If additional consultation with the HPO is needed for this undertaking, please reference the HPO project number 18-0327 in any future calls, emails, submissions or written correspondence to help expedite your review and response.

Sincerely,
Jesse

From: junettanowell@comcast.net [mailto:junettanowell@comcast.net]
Sent: Tuesday, June 5, 2018 5:12 PM

To: 'Rybicki, Genevieve CIV USARMY CENAP (US)' <Genevieve.Rybicki@usace.army.mil>; Turner, Kara <Kara.Turner@dep.nj.gov>

Cc: 'Eric Rosina' <erosina@actengineers.com>; 'Michael J. Countess' <mcountess@actengineers.com>

Subject: Ocean City Shooting Island Shoreline Restoration

Genevieve and Kara – Please see attached letter. I’m putting together the NEPA Environmental Assessment and have been advised by the Department of the Interior to include any/all consultations and comments from State and Federal Agencies. Thus, if you could kindly share any internal memos you receive, it would truly be appreciated.

Best Regards,

Junetta

Junetta N. Dix Consulting, Inc.
213 E. Seaview Avenue
Linwood, NJ 08221
609.927.5580



Janella M. Diaz Consulting

1 Washington Boulevard, Suite 3
Robbinsville, New Jersey 08691
Telephone No. (609) 918-0200
www.actengineers.com

May 29, 2018

Via Certified Mail Return Receipt #7017 0190 0000 9475 3869

18-0327-2 JWR
HPO - F2018-286

Ms. Katherine Marcopul
State of New Jersey Department of Environmental Protection
Historic Preservation Office
Mail Code 501-04B
PO Box 420
Trenton, NJ 08625-0420

**RE: DLUR FILE NO. 0508-17-0030.2 CSW180001 & WFD180001
SHOOTING ISLAND SHORELINE RESTORATION
BLOCK 3350.03, LOTS 1 & 2; CITY OF OCEAN CITY; CAPE MAY COUNTY
NATIONAL FISH & WILDLIFE FEDERATION (NFWF) GRANT NO. 44068**

Dear Ms. Marcopul:

An application for a Waterfront Development Act and Coastal Wetlands Act of 1970 has been recently submitted by the project team, for a proposed shoreline restoration project. The New Jersey Department of Environmental Protection (NJDEP) review officer is Ms. Kara Turner.

The National Fish and Wildlife Federation (NFWF) is considering funding Ocean City, New Jersey's Shooting Island shoreline restoration project with federal funds from the U.S. Department of the Interior (DOI). As a result of DOI funding, the project must comply with the National Environmental Policy Act (NEPA) guidelines. We understand SHPO will provide internal comments to the NJDEP Division of Land Use Regulation. We will ask Ms. Turner to share any/all internal review memos as supporting documentation for the NEPA review process. However, please accept this request for a direct consultation, to satisfy the NEPA requirements.

ACT Engineers and the project team are performing environmental review responsibilities for the project, including soliciting consultation regarding potential impacts to historic and/or archaeological resources.

The U.S. Department of the Interior will conduct a review of this project to comply with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR Part 800). On behalf of the U.S. Department of Interior, we are

inviting you to be a consulting party in this review, to assist in identifying historic or archaeological properties in the project area that may have significance.

PROJECT PURPOSE

The purpose of the proposed project is to protect and enhance over 100 acres of wetlands in Great Egg Harbor Bay by restoring the current eroding shoreline of Shooting Island to 1978 conditions. The project will reestablish and protect eroding shorelines and will aid in creating habitat and enhancing wetlands function via natural g accretion behind the 1978 shoreline location and potentially on the island, for resiliency and mitigation of future storm impacts.

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The project consists of two design elements: living shoreline and oyster castles.

The living shoreline element consists of the construction of the living shoreline sill structure, located offshore of the current Shooting Island shoreline. Approximately 3,200

Ms. Katherine Marcopul
New Jersey SHPO
May 29, 2018
Page 3 of 3

linear feet of sill will be constructed at a height of 1.55 feet NAVD88 (0-foot MHW) with side slopes of 2:1. Sill materials will be transported to the installation locations via shallow-draft barges. A small crane or long-reach excavator positioned on a barge will be used to place the sill core materials, which are anticipated to comprise coarse-grained material, small rocks, or dredged material. The core material may be covered in a layer of geotextile material that will be identified at a later design stage. The sill would then be covered in a larger stone layer that will provide erosion protection of the living shoreline and the underlying sill core.

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Enclosed please find maps, figures and site photographs of the project area.

To meet project timeframes, if you would like to be a consulting party on this project, please reply within 30 days and provide any initial concerns regarding proposed project impacts to religious or cultural resources. Conversely, if you do not wish to consult on this project, please advise as soon as possible. We value your assistance and look forward to consulting further, if needed.

Please do not hesitate to contact me should you have any questions or require additional information.

Sincerely,

Eric Rosina
Agent for the Applicant

Enclosures

C: Kara Turner, NJDEP-DLUR

I concur with your finding that there are **no historic properties affected** within the project's area of potential effects. Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during project implementation pursuant to 36 CFR 800.13.

Katherine J. Marcopul

Deputy State Historic Preservation Officer

Date

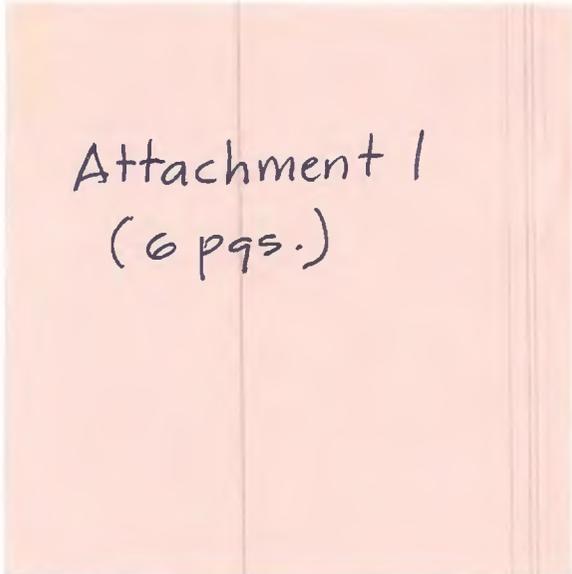
NP

junettanowell@comcast.net

From: Boyer, James N CIV USARMY CENAP (US) <James.N.Boyer@usace.army.mil>
Sent: Thursday, September 6, 2018 11:22 AM
To: Eric Rosina
Cc: Michael J. Countess; Travis Merritts; junettanowell@comcast.net; rinck@ocnj.us; gsavastano@ocnj.us
Subject: Shooting Island Letter from NMFS
Attachments: OceanCity_ShootingIsland_NAP-2018-291-86 .pdf

Eric (et al.) -- We received this scanned copy of a letter from NMFS by e-mail Aug. 31. Unfortunately, I have been out of the office, with no e-mail, since Aug. 30, so I just saw it this morning.

Jim Boyer
U.S. Army Corps of Engineers
Philadelphia District
Regulatory Branch
(215) 656-5826



Attachment 1
(6 pgs.)



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
GREATER ATLANTIC REGIONAL FISHERIES OFFICE
55 Great Republic Drive
Gloucester, MA 01930-2276

AUG 31 2018

Lt. Colonel Kristen N. Dahle
District Engineer
Philadelphia District
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390

**RE: CENAP-O-R-2018-291-86, City of Ocean City
Rock sill and oyster castles along Shooting Island shoreline in Beach Thorofare**

Dear Lt. Colonel Dahle:

We have reviewed Public Notice Number CENAP-O-R-2018-291-86, the essential fish habitat (EFH) assessment received on June 27, 2018 and supplemental information received on July 3, 2018, for an application by the City of Ocean City to restore the north and northwest footprint of Shooting Island in Ocean City, Cape May County, New Jersey. The proposed work includes the construction of a 2,270 linear foot (lf) rock sill and placement of approximately 985 lf of oyster habitat blocks along the north and northwest shorelines of the island. The applicant's stated project purpose is to "protect and enhance over 100 acres of wetlands in Great Egg Harbor Bay by restoring the current eroding shoreline of Shooting Island to 1978 conditions."

There are a number of significant outstanding issues associated with this project that need to be addressed before the full nature and scope of the project's impacts can be evaluated. These issues include a full evaluation of short- and long-term direct, indirect, synergistic, and cumulative effects of the proposed project on EFH and other aquatic resources including diadromous fish, measures to avoid and minimize impacts to wetlands and shallow water habitat, and whether or not compensatory mitigation is needed to offset impacts to aquatic habitats. It is also unclear how the proposed project design will achieve the applicant's stated project purpose, or if the proposed structures will be stable in the existing substrate. A complete monitoring plan has not been provided for review and it does not appear that adequate performance measures or success criteria have been established to evaluate the applicant's success in fulfilling their stated project purpose to protect and restore the wetlands of Shooting Island. In addition, information on the project impacts provided in the public notice is not consistent with the information in the EFH assessment, and the EFH assessment is not complete. A more clearly defined description of all components of the project, the exact acreages of aquatic habitat to be impacted, and an analysis of the alternatives considered to minimize these impacts also should be provided.



Based upon the limited information available to us at this time, we must conclude that the project as currently proposed will have substantial and unacceptable impacts to aquatic resources of national importance including EFH for bluefish (*Pomatomus saltatrix*), summer flounder (*Paralichthys dentatus*), black sea bass (*Centropristis striata*), and windowpane flounder (*Scophthalmus aquosus*). As a result, we recommend that you hold issuance of a permit for this project in abeyance in accordance with Part IV, Paragraph 3(b) of the Memorandum of Agreement (MOA) between our agencies until the outstanding issues are addressed and opportunities to avoid, minimize and offset the adverse effects of the proposed project are evaluated fully.

Project History

The proposed project was presented to us at an interagency Joint Permit Processing (JPP) Meeting on March 14, 2018. During this meeting, the applicant/agent indicated that a large rock sill, approximately 3,300 lf in length would be placed offshore of the northern shoreline and restoration material (e.g., sand) would be placed behind the sill (backfilled). Following settlement, the restoration fill area would then be planted with native vegetation, including *Spartina alterniflora*. Additionally, approximately 2,000 lf of oyster castles/habitat blocks would be placed offshore of the western shoreline. The applicant/agent was clear that the area behind the oyster blocks could potentially be backfilled with material and stabilized with coir logs in the future.

On June 27, 2018, we were provided with an EFH assessment for the proposed project. Later, on July 3, 2018, a pre-construction notification (PCN) was forwarded to us. At that time, the project was proposed for authorization under a Nationwide Permit 54 – Living Shorelines, with a waiver request for the length of the shoreline and distance from the existing shoreline. Upon review of the information in the EFH assessment and PCN, it became clear that the project had been changed in a number of ways since it was discussed at the JPP meeting. Most notably, the placement of fill material behind the rock sill and the wetland plantings were eliminated from the project plans. Furthermore, the EFH assessment was incomplete, as it did not fully analyze the potential impacts from the proposed project. The information in the PCN was also not sufficient to evaluate the suitability of the project design or its effects on aquatic resources.

We have discussed this project with your staff on a number of occasions. In our July 13, 2018, email to the Acting Section Chief, we requested additional information on a number of issues and questioned the use of NWP 54 due to the scope for the project, the lack of any living component and the need for waivers on the length and distance from the shoreline. Your staff subsequently determined that an individual permit would be required for the proposed project and a public notice was issued on August 6, 2018. On August 15, 2018, the applicant submitted responses to our initial questions and information request. Additionally, at request of the current Corps Project Manager, the applicant shared a draft monitoring plan on August 20, 2018, which the applicant stated was currently under review by New Jersey Department of Environmental Protection. We were not previously included in the development, review, or modification of the monitoring plan and only became aware of the plan through this recent email exchange with the Corps. We have reviewed the draft monitoring plan and find that it is inadequate to monitor the effects of the project on aquatic resources or its success. Furthermore, we have not yet received

adequate responses with supporting documentation to our previous requests for additional information, nor have we received a complete EFH assessment.

Project Description

The project site is located offshore of Shooting Island in Beach Thorofare, between Great Egg Harbor Bay and Peck Bay, on the back-bay side of the City of Ocean City. According to the public notice, the proposed activities include the construction of approximately 2,270 lf of rock sill, in three separate segments, within a 2,700 lf area just off the northern shoreline of the island. The sill would be approximately 30-33 feet (ft) wide at the base prior to estimated settlement, and approximately 22-25 ft wide following estimated settlement. The structure would be approximately 6.5-7.5 ft high above the base, with a design top elevation of +3.55 ft NAVD88 (5.78' mean low water [MLW]) prior to estimated settlement. With the anticipated 2 ft of settlement, the top elevation would be +1.55 ft NAVD88 (3.78' MLW). The proposed sill would also contain vents within each segment (9 total vents). The vents are approximately 50 ft wide, as measured across the top of the sill, and extend approximately 1 ft vertically from sill crest. The vents do not extend below the mean high water (MHW) line and would not be inundated during the tidal cycle. The sill would cover approximately 1.56 acres of area below the high tide line with a total volume of 11,530 cubic yards of material. A layer of geosynthetic fabric would be placed beneath the sill, geogrid on top of the fabric, followed by small core stone and then large armor stone.

The applicant also proposes to install approximately 985 lf of oyster habitat blocks, in multiple segments with gaps between, within a 1,525 lf area along the northwestern shoreline of Shooting Island. The design includes a 10-ft wide gravel base beneath a 3-ft wide arrangement of tiered oyster blocks. The block arrangement would be 2.5 ft high, with a top elevation of approximately 0 to -1 ft NAVD88 (2.23 to 1.23' MLW), depending on existing surface elevation. The total coverage by the base would be 0.23 acre below the high tide line, with a total volume of 240 cubic yards.

As stated above, there are a number of discrepancies between the information provided in the public notice and information contained in the EFH assessment and accompanying materials. For example, according to the EFH assessment and PCN, the proposed rock sill will be approximately 3,200 lf in length and oyster structures (with breaks) will be approximately 1,900 lf in length, the average design width of the proposed rock sill will be approximately 10-15 ft, and that the structures will be placed from 10-45 ft offshore of the existing shoreline. The EFH assessment also did not address settlement or changes in the shape, configuration or height of the structure over time. Furthermore, the applicant describes total area of disturbance within wetlands as 99,000 ft², or approximately 2.27 acres. However, it is unclear whether the applicant is referring to shallow water habitat, mudflats, saltmarsh, or a combination of these in this impact calculation. In order for a full and complete evaluation of the project's impacts to aquatic resources and the potential benefits, a more clearly defined project description is necessary. The project description should include a breakdown of the activities and the acres of habitat impacted by type from each action proposed, as well as a tabulation of the cumulative effects of the total project. This information would be most clearly and effectively presented in a table. In addition, our previous questions, including those about the load bearing capacity of the sediments where

the stone sill is proposed and the predicted rates of sediment accretion behind the proposed sill remain unanswered.

Magnuson-Stevens Fishery Conservation and Management Act (MSA)

The project area has been designated as EFH for a number of federally managed species, including black sea bass, bluefish, scup (*Stenotomus chrysops*), summer flounder, longfin inshore squid (*Loligo pealeii*), spiny dogfish (*Squalus acanthias*), clearnose skate (*Raja eglanteria*), little skate (*Leucoraja erinacea*), and winter skate (*Leucoraja ocellata*). The area is also designated EFH for several Atlantic highly migratory species, including the smoothhound shark complex (Atlantic stock), sand tiger shark (*Carcharias taurus*), and sandbar shark (*Carcharhinus plumbeus*). The sand tiger shark has been listed as a Species of Concern by NOAA. The goal of listing a species as a Species of Concern is to promote proactive conservation efforts for these species in order to preclude the need to list them in the future. The area of the proposed project has also been designated as shellfish habitat – “hard clam high - value commercial,” by the U.S. Department of the Interior, Fish and Wildlife Service.

The MSA requires federal agencies, such as the Army Corps of Engineers, to consult with us on any action or proposed action authorized, funded, or undertaken, by such agency that may adversely affect EFH identified under the MSA. This process is guided by the requirements of our EFH regulation at 50 CFR 600.905, which mandates the preparation of EFH assessments and generally outlines each agency’s obligations in the consultation process. The EFH final rule published in the *Federal Register* on January 17, 2002 defines an adverse effect as: "any impact which reduces the quality and/or quantity of EFH." The rule further states that:

An adverse effect may include direct or indirect physical, chemical or biological alterations of the waters or substrate and loss of, or injury to, benthic organisms, prey species and their habitat and other ecosystems components, if such modifications reduce the quality and/or quantity of EFH. Adverse effects to EFH may result from action occurring within EFH or outside EFH and may include site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

The EFH final rule also states that the loss of prey may be an adverse effect on EFH and managed species. As a result, actions that reduce the availability of prey species, either through direct harm or capture, or through adverse impacts to the prey species' habitat may also be considered adverse effects on EFH. For example, the placement of fill, geofabric, and rock sill material in areas mapped as shellfish beds may adversely impact the EFH for summer flounder, scup and little skate, which feed on benthic organisms including the siphons of shellfish. Additionally, placement of hardened shoreline structures, such as the rock sill and oyster castles, can cause increased energy seaward and adjacent to the structures, leading to erosion along the toe of the structures, erosion to adjacent shoreline areas and subsequent shoreline steepening, leading to further reductions in quality and quantity of EFH. Furthermore, as currently designed, the vents in the sill do not extend below the MHW line and would not allow for the movement of organisms, plant material and other usable nutrients, or sediments into the wetlands shallow water habitat landward of the sill.

As stated above, the EFH assessment provided for this project is incomplete and does not evaluate fully the potential short- and long-term effects of the project including those associated with the initial construction activities and future maintenance activities, as well as other direct, indirect, synergistic, and cumulative effects on EFH, federally managed species, their prey, and diadromous fish. The required components of an assessment include: (1) A description of the proposed action; (2) an analysis of the potential adverse effects of the action on EFH and the managed species; (3) the federal agency's conclusions regarding the effects of the action on EFH; and, (4) proposed mitigation, if applicable. If appropriate and depending on the scale of the proposed action, the assessment should also include the results of an on-site inspection, the views of recognized experts on the habitat or species affected, a literature review, an analysis of alternatives to the proposed action, and any other relevant information.

Missing from the EFH assessment provided to us is a clear description of the project, an evaluation of how the proposed actions will affect habitat and the federally managed species, information on project alternatives and the possible need for compensatory mitigation to offset adverse effects to EFH. Our website at <https://www.greateratlantic.fisheries.noaa.gov/habitat/index.html> has additional information on EFH and the preparation of EFH assessments. Habitat Conservation Division staff are also available to answer any questions your staff may have as the EFH assessment is developed.

Also lacking is a detailed monitoring plan with performance measures and success criteria that adequately addresses the stated purpose of the project and evaluates all relevant variables. According to the public notice, the applicants' stated project purpose is to protect and restore over 100 acres of wetlands in Great Egg Harbor Bay by restoring the shoreline of Shooting Island to its 1978 location. There appears to be little connection to how the proposed activities would restore the shoreline and the wetlands that have been lost since 1978, particularly since backfill and wetland planting is no longer proposed. It is unclear how the condition of the remaining wetlands on Shooting Island will be monitored and what criteria will be used to determine if the project achieved its stated purpose. Because the activities proposed will adversely affect EFH, this information should be provided before a decision on project authorization is made so that habitat tradeoffs can be evaluated and site-specific EFH conservation recommendations can be provided.

Conclusion

As discussed above, there are number of significant unresolved concerns regarding the nature and scope of the project impacts. The potential adverse effects to EFH and federally managed species were not fully evaluated and the EFH assessment is incomplete. As a result, we must conclude that the proposed project will have substantial and unacceptable impacts to aquatic resources of national importance in accordance with Part IV, Paragraph 3(b) of the MOA between our agencies. We recommend that you withhold a decision on permit issuance until the applicant provides additional information so that the effects of the project can be fully evaluated and the required EFH consultation is complete.

As always, we hope that these concerns can be resolved at the staff level. We look forward to continuing coordination with your staff so that this project can move forward. We are available

to attend additional interagency meetings to discuss the outstanding issues, as well as any site visit that may be scheduled. If you have any questions or need additional information, please do not hesitate to contact Keith Hanson in our Annapolis, MD, field office at (keith.hanson@noaa.gov or 410 573-4559).

Sincerely,



for Michael Pentony
Regional Administrator

cc: ACOE - E. Bonner, J. Boyer, M. Hayduk
FWS - S. Mars
DOI - A. Raddant
EPA Region II - R. Montgomerie
MAFMC - C. Moore
ASMFC - L. Havel

COORDINATION MEETING

Meeting:	City of Ocean City, New Jersey: Shooting Island Living Shoreline Restoration Project funded by National Fish and Wildlife Foundation (NFWF)
Meeting Location:	861 Asbury Avenue Ocean City, New Jersey

Date	Start	End	Meeting Notes Compiled by:	T. Merritts
09/24/2018	11:00 AM	13:15 PM		

Attendees:

- Steve Mars: USFWS
- Keith Hanson: NOAA, Fisheries Resource
- Rich Takacs: NOAA, Restoration Projects
- George Savastano: City of Ocean City
- Frank Donato: City of Ocean City
- Eric Rosina: ACT Engineers
- Carol Beske: ACT Engineers
- Travis Merritts: Anchor QEA

1. Introduction of meeting attendees. Eric Rosina circulates meeting sign-in sheet (**Attachment 1**).
2. Keith Hanson initiates the discussion with overview of NOAA concerns with current project design plans. Notes that goal of the meeting is discuss potential modifications which would allow NOAA to be supportive of the project moving forward. Informs group that NEPA EA will be completed out of the Department of Interior's Boston Office Andy Raddant.
3. Eric Rosina provides overview of current project status.
 - a. Project has been bid and low-bidder has been identified. Project award and authorization to proceed has been held pending resolution of pending agency comments.
 - b. Proposed living shoreline project is part of a larger City of Ocean City comprehensive back bay management strategy. Additional future improvement and monitoring programs are planned for Shooting Island to address ongoing shoreline erosion and degradation of marsh vegetation.
 - c. NEPA has been reviewed by NFWF. Finalization and resubmittal held pending resolution of agency comments.
 - d. NJDEP permit for construction has been issued. Ocean City has obtained dredging permit for entire back bay area – private, City, and State channels. ICWW is not included in the City's permit.
4. Keith Hanson leads discussion of oyster habitat block design.
 - a. Group notes that oyster recruitment is likely to be slow given location and current lack of oyster presence at the project site. Group notes that monitoring criteria should be established accordingly.
 - b. Steve Mars circulates photographs showing oyster recruitment from similar projects at Gandy's Beach, NJ and Ocean City/Somers Point, NJ (Rt. 52 Bridge). Notes that oyster recruitment shown in photographs took place over initial 2 years following placement.
 - c. K. Hanson and Rich Takacs note that preferred oyster habitat is subtidal and that current positioning of oyster blocks establishes majority of the habitat in the intertidal zone. Suggest modifying placement to deeper areas to increase portion of assembly in subtidal zone.
 - i. E. Rosina and T. Merritts note that the bathymetry in the vicinity of the island is relatively flat and relocating oyster blocks to deeper water may require moving blocks significantly away from shoreline.
 - ii. K. Hanson notes that design team should evaluate whether any oyster block sets can be relocated to deeper water in the vicinity of the current alignment. Suggest targeting placement in areas currently 1-foot deeper than current base elevation. T. Merritts and E. Rosina will evaluate.
 - iii. E. Rosina notes that relocation of oyster blocks to deeper water will necessitate placement beyond the 1978 tidal wetlands line. K. Hanson notes that his group would

Attachment 2
(4 pgs.)

- be supportive of placement beyond this limit for the oyster blocks only. E. Rosina will vet with NJDEP as permit has already been issued.
- d. K. Hanson and S. Mars suggest evaluating placement of an additional oyster habitat block set to fill the current gap between the northern-most oyster blocks and the southern end of the living shoreline rock sill. Note this placement could reduce erosion of the exposed shoreline and at the end of the sill.
5. K. Hanson leads discussion of living shoreline rock sill design.
 - a. K. Hanson inquires as to percentage of sill footprint positioned outside of the 1978 tidal wetlands line.
 - i. T. Merritts provides value of approximately 11.8% of the sill footprint outside the 1978 tidal wetlands line.
 - ii. 10-03-2018 Update: Exact calculations from AutoCAD determine value of approximately 12.5% of the sill footprint outside the 1978 tidal wetlands line.
 - iii. T. Merritts notes that the design establishes the exterior top-of-crest at, or shoreward of, the 1978 tidal wetlands line. The slope extends into the bay to establish the exterior slope of the sill. This configuration is in accordance with the 1978 tidal wetlands regulation.
 - iv. K. Hanson request modification of the sill alignment to limit the portion of the sill base to less than 10% of overall sill footprint extending beyond the 1978 tidal wetlands line. T. Merritts notes that design team will re-align sill to meet this goal.
 - v. 10-03-2018 Update: The portion of the sill outward of the 1978 tidal wetlands line following modifications to the sill alignment has been reduced to 10%. Less than 6% of the sill volume is located outward of the 1978 tidal wetlands line.
 - b. K. Hanson notes that sill termination points that tie back to island shoreline should be softened to provide a less perpendicular connection. Particular emphasis on sill connections in vicinity of Atlantic City electric easement.
 - i. E. Rosina provides background on negotiations with AC Electric. At current stage of negotiations, construction of sill or alternate shoreline protection within the easement is not practical. Negotiations will continue and this area will be monitored as part of the long-term project monitoring.
 - ii. 10-03-2018 Update: Negotiations with AC Electronic are continuing. Specific shoreline survey monitoring and visual observation of the shoreline conditions within the easement footprint will be added to the project Long-Term Monitoring and Adaptive Management Plan. Design and construction of shoreline erosion protection armoring with the easement footprint will be conducted if increased erosion is observed, pending finalization of agreement with AC Electric.
 - c. S. Mars verifies with T. Merritts that the sill design was developed in accordance with the Steven Institute Report for Living Shoreline Construction. T. Merritts also notes that portions of the sill design guidance with the Stevens report defer to the 2011 USACE Engineering Guidance Report and the sill was designed accordingly.
 - d. K. Hanson requests that sill vents currently positioned along the sill be deepened to MLW to allow for fish passage throughout the tidal cycle. Top of sill should be 50' long and approximately 8'-10' at the bottom of the vent.
 - i. T. Merritts discusses that the vents would typically be designed with the standalone sill structure, but given future plans for backfill placement have been minimized to reduce stone necessary to close the vents as part of future backfill efforts.
 - ii. K. Hanson notes that select vents may be deepened, as appropriate to provide fish passage and reduce quantity of stone necessary to fill during planned future filling efforts. T. Merritts and E. Rosina will evaluate and include modified vents in revised design plans.
 6. Group reviews proposed monitoring and adaptive management strategies. Monitoring tasks planned as part of this construction are primarily surveying-based.

- a. S. Mars inquires as to whether cross-section transects can be established using current bathymetric data to span open water, sill/oyster block, shoreline, and adjacent marsh. The transect would serve as project baselines for survey monitoring and can be compared to future survey data over these transects. K. Hanson and R. Takacs agree with approach.
7. T. Merritts and E. Rosina conclude meeting noting that design modifications discussed during meeting will be evaluated, vetted with NJDEP, and incorporated into revised construction plans as feasible. Modified plans will be distributed to meeting attendees for review.
 - a. Proposed modifications are not likely to trigger a re-bid of current contract. E. Rosina notes that possible exception is the inclusion of a new set of oyster blocks at northwestern corner of island between current oyster block and sill alignments. This work item was an alternate bid item and could be held from award, if necessary.
 - i. R. Takacs notes that NOAA would prefer to keep current oyster block placement as opposed to non-award of this work item, if additional oyster block set were to prove problematic from a legal/contracting standpoint.
8. 13:15: Meeting adjourns.

Action Items:

1. Evaluate discussed design modifications and revise construction plans (T. Merritts/E. Rosina)
 - a. 10-03-2018 Update: Modified design plans included with transmittal email for review by meeting attendees
2. Discuss potential relocation of select oyster block sets with NJDEP (E. Rosina)
 - a. 10-03-2018 Update: Site bathymetry was evaluated and the targeted -4' elevation contour was located upwards of approximately 900' from previous alignment. The oyster block alignment has been modified to target placement in deeper water, where practical. The revised locations allow placement of certain block segments at elevation -3.5'.
3. Distribute revised construction plans to meeting attendees for review (T. Merritts/E. Rosina)

Attachments:

1. Meeting Sign-In Sheet
2. Modified design plans included separately

SEPT. 24, 2018

SHOOTING ISLANDS Permit/DESIGN
Work Session

ERIC ROSINA	ACT ENG.	609-918-0200	erosina@actengineers.com
George Savastano	Ocean City	609-457-8893	gsavastano@ocnj.us
STEVEN MARS	USFWS-NRFO	609-382-5267	stevemars@fws.gov
Keith Hanson	NOAA-Fisheries	410-573-4559	keith.hanson@noaa.gov Keith.Hanson@noaa.gov
Rick Takacs	NOAA-Restoration Ctr.	410-573-4543	ricktakacs@noaa.gov
Carol Beske	ACT Eng.	609-918-2000	cbeske@actengineers.com
Travis Hearitts	Anchorage CQA	814-932-6732	thearitts@anchorageqa.com
Frank Donato	City of Ocean City	609-525-9350	fdonato@ocnj.us

junettanowell@comcast.net

From: Travis Merritts <tmerritts@anchorqea.com>
Sent: Thursday, October 11, 2018 11:58 AM
To: Michael Countess ; Junetta Dix; Ram Mohan; Matt Henderson
Cc: Eric Rosina
Subject: FW: FW: Shooting Island Revised Construction Drawings and Meeting Notes
Attachments: ~WRD030.jpg

FYI

Travis Merritts, P.E.

Please note new address

755 Business Center Drive
Horsham, PA 19044
Office Direct: (267) 751-4118
Mobile: (814) 932-6732
ANCHOR QEA, LLC

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From: Keith Hanson - NOAA Federal <keith.hanson@noaa.gov>
Sent: Thursday, October 11, 2018 11:48 AM
To: Travis Merritts <tmerritts@anchorqea.com>; Eric Rosina <erosina@actengineers.com>
Subject: Re: FW: Shooting Island Revised Construction Drawings and Meeting Notes

Hi Travis and Eric,

I have reviewed the newest revised plans and you have incorporated changes that will avoid and minimize impacts. I have no objection with you moving forward with the USACE Application, NEPA Documents, and NJDEP Permit mod.

Best,
Keith

On Thu, Oct 11, 2018 at 11:32 AM Travis Merritts <tmerritts@anchorqea.com> wrote:

Thank you for the confirmation.

Travis Merritts, P.E.

Please note new address

755 Business Center Drive

Attachment 6
(9 pgs.)

Horsham, PA 19044

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Mobile: (814) 932-6732

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From: Keith Hanson - NOAA Federal <keith.hanson@noaa.gov>

Sent: Thursday, October 11, 2018 11:32 AM

To: Travis Merritts <tmerritts@anchorgea.com>

Subject: Re: FW: Shooting Island Revised Construction Drawings and Meeting Notes

Travis,

I received 2 emails with attachments from you this morning at 10:16 and 10:19am regarding the Shooting Island project.

Thanks,

Keith

On Thu, Oct 11, 2018 at 11:27 AM Travis Merritts <tmerritts@anchorgea.com> wrote:

Hi Keith – Could you please confirm receipt of the 2-part email with modified plans that I sent you earlier this morning in response to this message? The attachments were quite large and I just want to make sure they didn't get caught in a filter.

Thank you very much,

Travis Merritts, P.E.

Please note new address

755 Business Center Drive

Horsham, PA 19044

Office Direct: (267) 751-4118

Mobile: (814) 932-6732

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From: Keith Hanson - NOAA Federal <keith.hanson@noaa.gov>

Sent: Thursday, October 11, 2018 10:01 AM

To: Travis Merritts <tmerritts@anchorage.com>

Cc: Eric Rosina <erosina@actengineers.com>

Subject: Re: FW: Shooting Island Revised Construction Drawings and Meeting Notes

Travis/Eric,

Just wanted to give you the heads up that I will be out for 3 weeks starting this weekend (i.e., Friday Oct. 12th is my last workday for 3 weeks). So, if you want to send any new/updated plans to me, the sooner the better. Following that, if things progress while I'm gone, my supervisor will fill in. Her name is Karen Greene and Jim Boyer/Andrew Raddant know her well.

Best,

Keith

On Tue, Oct 9, 2018 at 4:58 PM Travis Merritts <tmerritts@anchorage.com> wrote:

Thanks, Keith. Certainly understand the intent and benefits of the deeper features – was just curious on the initial construction elevation. We're working through the modifications now and should have revised drawings very shortly.

Thanks again,

Travis Merritts, P.E.

Please note new address

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Horsham, PA 19044

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From: Keith Hanson - NOAA Federal <keith.hanson@noaa.gov>

Sent: Tuesday, October 9, 2018 12:55 PM

To: Travis Merritts <tmerritts@anchorqea.com>

Cc: Ram Mohan <rmohan@anchorqea.com>; Eric Rosina <erosina@actengineers.com>

Subject: Re: FW: Shooting Island Revised Construction Drawings and Meeting Notes

Hi Travis,

The purpose for the windows/vents is to facilitate the movement of aquatic life, including various life stages of federally managed fish species, diadromous fish, and their prey. Various species use the water column in distinct ways; some species are demersal, or bottom-dwelling, while others are pelagic, or mid-water/near-surface dwelling. Furthermore, the windows/vents will facilitate the transport of sediments, plant material and other usable nutrients (both dissolved and particulate organic matter) into aquatic food webs that include federally managed fish species, diadromous fish, and their prey.

The maximum elevation of the vents/windows should be -2.23' NAVD88, but we are obviously comfortable if they are lower, as aquatic organisms would have unimpeded access to the area behind the sill throughout more of the water column. Though I understand the settlement issues, if vents are constructed at -0.23' NAVD88, there will be a temporal loss of habitat quantity and quality - organisms will not be able to access the habitat for significant portions of each tidal cycle. Additionally, there is also the strong likelihood that aquatic organisms will become trapped behind the sill as the tide passes below -0.23, during slack tide (around -2.23'), then the time it takes to crest over -0.23' again. This situation could lead to a "sink habitat" because of predator aggregation ("sinks" are areas where death rates exceed reproduction/production rates), where organisms such as shorebirds could congregate in behind the sill areas during periods of low tide (once the tide passes -0.23' on outgoing tides), preying on large numbers of trapped animals. Furthermore, if observed settlement does not equal the expected settlement, then we will have a major issue and intervention would be immediately necessary.

As I was unable to determine the expected settlement rate or time to final settlement, I recommended the elevation of -1.23' as an elevation that could facilitate the movement of the above-mentioned items (organisms, nutrients, etc.) for a *majority* of the tidal cycle, while limiting the *majority* of the temporal loss of habitat quality and quantity, and limiting the *majority* of the exposure of organisms to a "sink habitat," all while settlement is occurring.

This is all in the context of avoiding and minimize impacts to federally managed fish species, diadromous fish, and their prey pursuant to the authorities of the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), Fish and Wildlife Coordination Act, and Endangered Species Act.

Best,

Keith

On Mon, Oct 8, 2018 at 5:40 PM Travis Merritts <tmerritts@anchorqea.com> wrote:

Hi Keith – Eric forwarded me the below feedback you provided on Friday (10/5). I understand the goal of the proposed modifications detailed below to be construction of the sill windows so that the opening is ultimately positioned at MLW (-2.23' NAVD88). Our settlement calculations determined that the sill could be expected to settle approximately 2-feet from design elevation and we established the design elevations accordingly. The reduction in self-weight of the sill over the window areas was not sufficient to warrant modification of the settlement estimation and we therefore positioned the design elevation of the window crest at -0.23' NAVD88 to achieve a post-construction elevation of -2.23' NAVD88.

From your email below, you recommend positioning the design elevation of the window crest at -1.23' NAVD88. Can you provide some detail on how you arrived at that initial construction elevation and what the acceptable post-construction elevation range would be for the windows for monitoring purposes?

We are evaluating the modifications recommended below and will provide revisions as soon as possible.

Thank you,

Travis Merritts, P.E.

Please note new address

755 Business Center Drive

Horsham, PA 19044

Office Direct: (267) 751-4118

Mobile: (814) 932-6732

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From: Eric Rosina <erosina@actengineers.com>

Sent: Friday, October 5, 2018 6:15 PM

To: Travis Merritts tmerritts@anchorqea.com

Subject: Fwd: Shooting Island Revised Construction Drawings and Meeting Notes

Begin forwarded message:

From: Keith Hanson - NOAA Federal <keith.hanson@noaa.gov>

Date: October 5, 2018 at 4:55:26 PM EDT

To: Eric Rosina <erosina@actengineers.com>

Cc: Rich Takacs - NOAA Federal <rich.takacs@noaa.gov>, "Mars, Steve" <steve_mars@fws.gov>

Subject: Re: FW: Shooting Island Revised Construction Drawings and Meeting Notes

Hi Eric,

Thanks for the email and adjusted plans.

Most of the plans look good and are what we spoke about. A few issues remain. (Please note that in the rest of the email, the word "we" represents NOAA NMFS Greater Atlantic Regional Office Habitat Conservation Division).

We still have issues with the vents/windows, which are described below.

First, the sill and windows (3 | C-11) displayed on C-09 are close to what we discussed and were recommended as avoidance and minimization measures. There are still concerns that the windows displayed in C-09 do not extend all the way down to the Mean Low Water (MLW) line. We understand that you are expecting ~1 foot of settlement (according to the adaptive management plan, under "Elevation of the Sill"), but there will certainly be a temporal loss of habitat function in the interim without the windows extending down to MLW. Therefore, we recommend these windows (displayed on sheet C-09) be extended at least 1 foot deeper (to -1.23 NAVD88) for initial construction.

Additionally, is the expected ~1 foot of settlement still realistic in the area of the windows, since those areas will be much lighter in weight than the rest of the sill (due to the lack of stone/presence of the window)? This calculation may need to be adjusted. Regardless of settlement depth/rate, we recommend the final elevation of the windows displayed in C-09 should be -2.23 NAVD88.

Second, the remaining windows/vents displayed on C-05, C-06, C-07 and C-08 also do not extend far enough to/towards the MLW line. Based on the terminology used in sheets C-05 through C-08, it appears that "vents" are those openings where the top elevation is +2.55 NAVD88 and "windows" are those openings where the top elevation is -0.23 NAVD88. We recommend that all openings (both "windows" and "vents") extend to the MLW line or within one foot of the MLW line (which would be -1.23 NAVD88) at initial construction. This appears to be a reasonable and practicable avoidance and minimization measure. If this is not possible to include in the new design (justification would be necessary), then we recommend all "windows" displayed on plan sheets C-05 through C-08 be initially constructed at the MLW line (-2.23 NAVD88) and all "vents" be initially constructed at +1.00 NAVD88 (which is 0.55 below the Mean High Water line).

Lastly, regarding the Monitoring Plan, it is essential that all openings ("windows" and "vents") are included in parameters related to measurements of the structural integrity of the sill and elevation of the sill. The purpose of this is to ensure that the vents were initially constructed at the correct elevations and settle at the correct elevations. The measurement of these openings should be explicitly stated in the monitoring plan. We recommend including these measurements as their own parameter or including them explicitly into existing categories.

Provided the above recommendations are incorporated into the final design and monitoring plans, we have no objection to you moving forward with the USACE Application, NEPA Documents, and NJDEP Permit mod.

Please let me know if you have any questions.

I'm all finished for today, but I will be available Tuesday-Friday of next week if you have any questions/comments. Email is the best way to set up a time to chat over the phone.

Best,

Keith

On Thu, Oct 4, 2018 at 2:19 PM Eric Rosina <erosina@actengineers.com> wrote:

Keith and Rich –

Trying this again with a reduced file size on the drawings.

Eric

From: Eric Rosina

Sent: Thursday, October 4, 2018 2:12 PM

To: Mars, Steve <steve_mars@fws.gov>; Keith Hanson - NOAA Federal <keith.hanson@noaa.gov>; rich.takacs@noaa.gov; Boyer, James N CIV USARMY CENAP (US) <James.N.Boyer@usace.army.mil>

Cc: Hayduk, Michael H CIV USARMY CENAP (US) <Michael.H.Hayduk@usace.army.mil>; Frank Donato <FDonato@OCNJ.US>; George J. Savastano <GSavastano@OCNJ.US>; Travis Merritts <tmerritts@anchoragea.com>; Junetta Dix <junettanowell@comcast.net>; Michael J. Countess <mcountess@actengineers.com>

Subject: FW: Shooting Island Revised Construction Drawings and Meeting Notes

Steve, Jim, Keith and Rich –

Attached please find the meeting notes from our meeting in Ocean City regarding the Shooting Island restoration project. The notes have been updated to reflect plan modifications (attached) requested during the meeting. In addition a revised draft of the Adaptive Monitoring Plan which has been revised to reflect profile sectioning from the island to open water through the sill placement area. Please review and let us know if this is consistent with our discussion and we can move forward with resubmittal of the USACE Application and NEPA documents. These changes will additionally require a modification of the NJDEP permit which we believe can be obtained quickly.

From the City's side, we believe the plan modifications are within the scope of the existing bid documents so project award/construction is hanging on the permit and NEPA clearances. Ideally we would like to award within the next two weeks to assure construction can be completed by April.

All the best,

Eric Rosina

Vice President/Director of Environmental

ACT Engineers, Inc. SBE

1 Washington Boulevard, Suite 3

Robbinsville, NJ 08691

p. 609-918-0200 ext. # 230 | f 609-918-1411

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From: Travis Merritts <tmerritts@anchoragea.com>

Sent: Thursday, October 4, 2018 12:38 PM

To: Eric Rosina <erosina@actengineers.com>

Cc: Ram Mohan <rmohan@anchoragea.com>; Matt Henderson <mhenderson@anchoragea.com>; Steve Bagnull <sbagnull@anchoragea.com>; Carol Beske <clbeske@actengineers.com>; Michael J. Countess <mcountess@actengineers.com>; Junetta Dix <junettanowell@comcast.net>

Subject: Shooting Island Revised Construction Drawings and Meeting Notes

junettanowell@comcast.net

From: Eric Rosina <erosina@actengineers.com>
Sent: Wednesday, October 10, 2018 8:46 AM
To: Hayduk, Michael H CIV USARMY CENAP (US); Boyer, James N CIV USARMY CENAP (US); Mars, Steve; Keith Hanson - NOAA Federal; rich.takacs@noaa.gov
Cc: Frank Donato; George J. Savastano; Travis Merritts; Junetta Dix; Michael J. Countess
Subject: RE: Shooting Island Revised Construction Drawings and Meeting Notes

Mike, Jim and all –

This species is not listed in the NJDEP permit Special Conditions. However, as a first pass, it appears that breeding and nesting occur close to ground level and nests and eggs have been observed as soon as mid-April. Given the intertidal elevations of the island where the project is proposed, I would think the impact, if any, is limited based on regular island flooding. Further, the NJDEP permit has a timing restriction beginning April 1 through August 31 for Osprey, Common tern and Gull-billed tern which would likely be protective of the Eastern Black Rail as well. We can include this in our response letter.

Eric

From: Hayduk, Michael H CIV USARMY CENAP (US) <Michael.H.Hayduk@usace.army.mil>
Sent: Tuesday, October 9, 2018 4:29 PM
To: Boyer, James N CIV USARMY CENAP (US) <James.N.Boyer@usace.army.mil>; Eric Rosina <erosina@actengineers.com>; Mars, Steve <steve_mars@fws.gov>; Keith Hanson - NOAA Federal <keith.hanson@noaa.gov>; rich.takacs@noaa.gov
Cc: Frank Donato <FDonato@OCNJ.US>; George J. Savastano <GSavastano@OCNJ.US>; Travis Merritts <tmerritts@anchorqea.com>; Junetta Dix <junettanowell@comcast.net>; Michael J. Countess <mcountess@actengineers.com>
Subject: RE: Shooting Island Revised Construction Drawings and Meeting Notes

Considering the new listing of eastern black rail (*Laterallus jamaicensis jamaicensis*), has anyone given any thoughts to the effect of this project on this species?

Mike

Michael H Hayduk
Chief, Application Section II
Regulatory Branch
Philadelphia District
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390
(215) 656-5822
Michael.H.Hayduk@usace.army.mil

Attachment 7
(4 pgs.)

From: "Boyer, James N CIV USARMY CENAP (US)" <James.N.Boyer@usace.army.mil>
Sent: Tuesday, October 9, 2018 9:44 AM
To: Eric Rosina <erosina@actengineers.com>; "Mars, Steve" <steve_mars@fws.gov>; Keith Hanson - NOAA Federal

junettanowell@comcast.net

From: Mars, Steve <steve_mars@fws.gov>
Sent: Tuesday, October 9, 2018 5:13 PM
To: Hayduk, Michael H NAP
Cc: Boyer, James N NAP; Eric Rosina; Keith Hanson - NOAA Federal; rich.takacs@noaa.gov; Frank Donato; GSavastano@ocnj.us; tmerritts@anchorqea.com; junettanowell@comcast.net; Michael J. Countess
Subject: Re: [EXTERNAL] RE: Shooting Island Revised Construction Drawings and Meeting Notes
Attachments: image001.jpg

Hi Mike and thanks for the concerns. We will likely have more information out in the distand future. Bottom line is that these species is more associated with high marsh habitat and their presence in NJ is limited. With that said we are working on developing a strategy that is clear for everyone to understand. Steve

On Tue, Oct 9, 2018 at 4:30 PM Hayduk, Michael H CIV USARMY CENAP (US) <Michael.H.Hayduk@usace.army.mil> wrote:

Considering the new listing of eastern black rail (*Laterallus jamaicensis jamaicensis*), has anyone given any thoughts to the effect of this project on this species?

Mike

Michael H Hayduk

Chief, Application Section II
Regulatory Branch
Philadelphia District
U.S. Army Corps of Engineers
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107-3390
(215) 656-5822
Michael.H.Hayduk@usace.army.mil

From: "Boyer, James N CIV USARMY CENAP (US)" <James.N.Boyer@usace.army.mil>
Sent: Tuesday, October 9, 2018 9:44 AM
To: Eric Rosina <erosina@actengineers.com>,"Mars, Steve" <steve_mars@fws.gov>,Keith Hanson - NOAA Federal <keith.hanson@noaa.gov>,<rich.takacs@noaa.gov>
CC: "Hayduk, Michael H CIV USARMY CENAP (US)" <Michael.H.Hayduk@usace.army.mil>,Frank Donato <FDonato@OCNJ.US>,"George J. Savastano" <GSavastano@OCNJ.US>,Travis Merritts <tmerritts@anchorqea.com>,<junettanowell@comcast.net>,"Michael J. Countess" <mcountess@actengineers.com>
Subject: RE: Shooting Island Revised Construction Drawings and Meeting Notes

Eric -- I have attached the basic project description language as it was included in our public notice. Please check and correct anything that may have changed with these new plans, particularly coverage areas, linear feet and volume of material. Please highlight anything that you change. It looks like the indicated elevations did not change.

I have added language about the sill windows and vents (see second paragraph, highlighted in yellow). Please also check that.

Jim Boyer

U.S. Army Corps of Engineers

Philadelphia District

Regulatory Branch

(215) 656-5826

From: Eric Rosina [mailto:erosina@actengineers.com]

Sent: Thursday, October 04, 2018 2:12 PM

To: Mars, Steve <steve_mars@fws.gov>; Keith Hanson - NOAA Federal <keith.hanson@noaa.gov>; rich.takacs@noaa.gov; Boyer, James N CIV USARMY CENAP (US) <James.N.Boyer@usace.army.mil>

Cc: Hayduk, Michael H CIV USARMY CENAP (US) <Michael.H.Hayduk@usace.army.mil>; Frank Donato <FDonato@OCNJ.US>; George J. Savastano <GSavastano@OCNJ.US>; Travis Merritts <tmerritts@anchorqea.com>; Junetta Dix <junettanowell@comcast.net>; Michael J. Countess <mcountess@actengineers.com>

Subject: [Non-DoD Source] FW: Shooting Island Revised Construction Drawings and Meeting Notes

Steve, Jim, Keith and Rich –

Attached please find the meeting notes from our meeting in Ocean City regarding the Shooting Island restoration project. The notes have been updated to reflect plan modifications (attached) requested during the meeting. In addition a revised draft of the Adaptive Monitoring Plan which has been revised to reflect profile sectioning from the island to open water through the sill placement area. Please review and let us know if this is consistent with our discussion and we can move forward with resubmittal of the USACE Application and NEPA documents. These changes will additionally require a modification of the NJDEP permit which we believe can be obtained quickly.

From the City's side, we believe the plan modifications are within the scope of the existing bid documents so project award/construction is hanging on the permit and NEPA clearances. Ideally we would like to award within the next two weeks to assure construction can be completed by April.

All the best,

Eric Rosina

Vice President/Director of Environmental

ACT Engineers, Inc. SBE

1 Washington Boulevard, Suite 3

Robbinsville, NJ 08691

p. 609-918-0200 ext. # 230 | f 609-918-1411



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<input type="checkbox"/> Adult Signature Required	\$0.00	
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00	
Postage	\$0.92	05/25/2018
Total Pos	\$7.12	

Sent To: Dr. Brice Obermeyer
 Director, DE Tribe Historic Pres. Office
 Street and: Roosevelt Hall, Rm 212
 City, State: 1200 Commercial St.
 Emporia, KS 66801

PS Form 3800, April 2015 PSN 7530-02-000-9053

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY												
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature <input checked="" type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) <i>Martene Swisher</i></p> <p>C. Date of Delivery</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No</p>												
<p>Dr. Brice Obermeyer Director, DE Tribe Historic Pres. Office Roosevelt Hall, Rm 212 1200 Commercial St. Emporia, KS 66801</p>  <p>9590 9403 0261 5155 0983 80</p> <p>2. Article Number (Transfer from service label) 7017 0190 0000 9475 3845</p>	<p>3. Service Type</p> <table border="0"> <tr> <td><input type="checkbox"/> Adult Signature</td> <td><input type="checkbox"/> Priority Mail Express®</td> </tr> <tr> <td><input type="checkbox"/> Adult Signature Restricted Delivery</td> <td><input type="checkbox"/> Registered Mail™</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail®</td> <td><input type="checkbox"/> Registered Mail Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail Restricted Delivery</td> <td><input type="checkbox"/> Return Receipt for Merchandise</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery</td> <td><input type="checkbox"/> Signature Confirmation™</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery Restricted Delivery</td> <td><input type="checkbox"/> Signature Confirmation Restricted Delivery</td> </tr> </table> <p>1 Mail 1 Mail Restricted Delivery (500)</p>	<input type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®	<input type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™	<input type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery	<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Return Receipt for Merchandise	<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Signature Confirmation™	<input type="checkbox"/> Collect on Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation Restricted Delivery
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Certified Mail Fee \$3.45 Extra Services & Fees (check box, add fee as appropriate) <input type="checkbox"/> Return Receipt (hardcopy) \$0.00 <input type="checkbox"/> Return Receipt (electronic) \$0.00 <input type="checkbox"/> Certified Mail Restricted Delivery \$0.00 <input type="checkbox"/> Adult Signature Required \$0.00 <input type="checkbox"/> Adult Signature Restricted Delivery \$0.00	
Postmark Here 0221 03 05/25/2013	
Sent To Ms. Bonney Hartley Tribal Preservation Officer Stockbridge Munsee Community 65 1st Street Troy, NY 12180	
PS Form 3811, April 2015 PSN 7530-02-000-9053 See reverse for instructions	

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1. Article Addressed to: Ms. Bonney Hartley Tribal Preservation Officer Stockbridge Munsee Community 65 1st Street Troy, NY 12180	B. Received by (Printed Name) KARIN HUDSON	C. Date of Delivery 5/29
2. Article Number (Transfer from service label) 7017 0190 0000 9475 3852	D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below: <input type="checkbox"/> No	
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<input type="checkbox"/> Certified Mail Restricted Delivery	\$0.00
<input type="checkbox"/> Adult Signature Required	\$0.00
<input type="checkbox"/> Adult Signature Restricted Delivery	\$0.00

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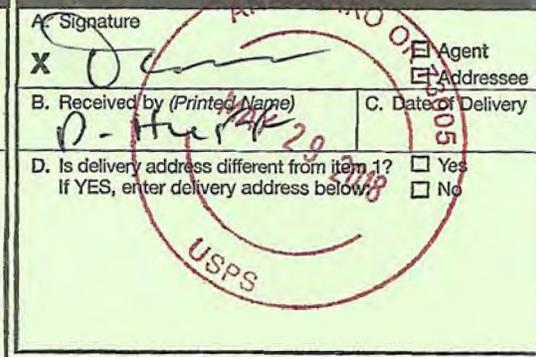
\$7.12

Sent to **Ms. Kim Penrod**
Delaware Nation, Director of Cultural
Resources/106
Street
City, State **31064 State Highway 281, P.O. Box 825**
Anadarko, OK 73005

PS Form 3800, April 2015 PSN 7530-02-000-9053

See Reverse for Instructions

SENDER: COMPLETE THIS SECTION	COMPLETE THIS SECTION ON DELIVERY														
<ul style="list-style-type: none"> Complete items 1, 2, and 3. Print your name and address on the reverse so that we can return the card to you. Attach this card to the back of the mailpiece, or on the front if space permits. 	<p>A. Signature X <i>[Signature]</i> <input type="checkbox"/> Agent <input checked="" type="checkbox"/> Addressee</p> <p>B. Received by (Printed Name) D. Hurst</p> <p>C. Date of Delivery 5/25/18</p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes If YES, enter delivery address below <input checked="" type="checkbox"/> No</p>														
<p>1. Article Addressed to:</p> <p>Ms. Kim Penrod Delaware Nation, Director of Cultural Resources/106 31064 State Highway 281, P.O. Box 825 Anadarko, OK 73005</p>	<p>3. Service Type</p> <table border="0"> <tr> <td><input type="checkbox"/> Adult Signature</td> <td><input type="checkbox"/> Priority Mail Express®</td> </tr> <tr> <td><input type="checkbox"/> Adult Signature Restricted Delivery</td> <td><input type="checkbox"/> Registered Mail™</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail®</td> <td><input type="checkbox"/> Registered Mail Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Certified Mail Restricted Delivery</td> <td><input type="checkbox"/> Return Receipt for Merchandise</td> </tr> <tr> <td><input type="checkbox"/> Collect on Delivery</td> <td><input type="checkbox"/> Signature Confirmation™</td> </tr> <tr> <td><input type="checkbox"/> Insured Mail Delivery Restricted Delivery</td> <td><input type="checkbox"/> Signature Confirmation Restricted Delivery</td> </tr> <tr> <td><input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)</td> <td></td> </tr> </table>	<input type="checkbox"/> Adult Signature	<input type="checkbox"/> Priority Mail Express®	<input type="checkbox"/> Adult Signature Restricted Delivery	<input type="checkbox"/> Registered Mail™	<input type="checkbox"/> Certified Mail®	<input type="checkbox"/> Registered Mail Restricted Delivery	<input type="checkbox"/> Certified Mail Restricted Delivery	<input type="checkbox"/> Return Receipt for Merchandise	<input type="checkbox"/> Collect on Delivery	<input type="checkbox"/> Signature Confirmation™	<input type="checkbox"/> Insured Mail Delivery Restricted Delivery	<input type="checkbox"/> Signature Confirmation Restricted Delivery	<input type="checkbox"/> Insured Mail Restricted Delivery (over \$500)	
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<p>2. Article Number (Barcode)</p> <p>7017 0190 0000 9475 3838</p>															



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New Jersey Department of Environmental Protection,
Division of Land Use Waterfront Development Permit

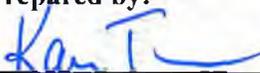


**STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF LAND USE REGULATION**

Mail Code 501-02A, P.O. Box 420, Trenton, New Jersey 08625-0420
Telephone: (609) 777-0454 or Fax: (609) 777-3656
www.state.nj.us/dep/landuse



PERMIT

<p>In accordance with the laws and regulations of the State of New Jersey, the Department of Environmental Protection hereby grants this permit to perform the activities described below. This permit is revocable with due cause and is subject to the limitations, terms and conditions listed below and on the attached pages. For the purpose of this document, "permit" means "approval, certification, registration, authorization, waiver, etc." Violation of any term, condition or limitation of this permit is a violation of the implementing rules and may subject the permittee to enforcement action.</p>		Approval Date JUL 19 2018
		Expiration Date JUL 18 2023
Permit Number(s): 0508-17-0030.2 WFD180001 CSW180001	Type of Approval(s): Waterfront Development IP In-Water Water Quality Certificate Coastal Wetlands	Enabling Statute(s): NJSA 12:5-3 et seq. WFD NJSA 13:9A-1 et seq. WA NJSA 13:9A-1
Permittee: City of Ocean City c/o James Mallon 861 Asbury Ave Ocean City, NJ 08226	Site Location: Block(s) & Lot(s): [3350.03, 2] [3350.03, 1] Municipality: Ocean City County: Cape May	
Description of Authorized Activities: <p>This permit authorizes the construction of a living shoreline which consists of a rock sill and oyster castles offshore of Shooting Island. The proposed rock sill consists of 3,200 linear feet constructed at a height of 1.55' NAVD88 with a 3' wide crest and side slopes of 2:1. The proposed oyster castles consist of 1,900 linear feet of oyster castle blocks placed on top of a thin gravel bedding layer. All work is being funded by a National Fish and Wildlife Foundation Grant.</p> <p><i>This permit is authorized under and in compliance with the Rules on Coastal Zone Management, N.J.A.C. 7:7-1.1 et seq., as amended through April 16, 2018.</i></p> <p>The drawings hereby approved are sixteen (16) sheets, prepared by ACT Engineers, dated June 20, 2018, with sheet 4 last revised July 18, 2018 and all others unrevised, entitled: "SHOOTING ISLAND RESTORATION CITY OF OCEAN CITY, NJ NATIONAL FISH AND WILDLIFE FOUNDATION GRANT".</p> <p>Prior to construction, the permittee must obtain a Department of the Army authorization.</p> <p>Prior to construction, the applicant shall apply for and receive a tidelands grant lease or license from the Bureau of Tidelands prior to construction. Issuance of this permit in no way relinquishes and shall not be construed as a relinquishment by the State of New Jersey of any tidelands right, title, ownership/interest in the subject property or in any land surrounding same.</p>		
Prepared by:  <hr/> Kara Turner	Received and/or Recorded by County Clerk:	
<p>If the permittee undertakes any regulated activity authorized under a permit, such action shall constitute the permittee's acceptance of the permit in its entirety as well as the permittee's agreement to abide by the permit and all conditions therein.</p>		
This permit is not valid unless authorizing signature appears on the last page.		

SPECIAL CONDITIONS:

1. Prior to construction the permittee must obtain a Department of the Army authorization.
2. Prior to construction, the applicant shall apply for and receive a tidelands grant lease or license from the Bureau of Tidelands prior to construction. Issuance of this permit in no way relinquishes and shall not be construed as a relinquishment by the State of New Jersey of any tidelands right, title, ownership/interest in the subject property or in any land surrounding same.
3. To protect breeding habitat for Osprey, Common tern and Gull-billed tern, the permittee shall adhere to a seasonal timing restriction on work from April 1 through August 31 of each calendar year.
4. A timing restriction from April 1 through June 30 is imposed on all in water work for each given year for the protection of anadromous fish.

STANDARD CONDITIONS:

1. The issuance of a permit shall in no way expose the State of New Jersey or the Department to liability for the sufficiency or correctness of the design of any construction or structure(s). Neither the State nor the Department shall, in any way, be liable for any loss of life or property that may occur by virtue of the activity or project conducted as authorized under a permit.
2. The issuance of a permit does not convey any property rights or any exclusive privilege.
3. The permittee shall obtain all applicable Federal, State, and local approvals prior to commencement of regulated activities authorized under a permit.
4. A permittee conducting an activity involving soil disturbance, the creation of drainage structures, or changes in natural contours shall obtain any required approvals from the Soil Conservation District having jurisdiction over the site.
5. The permittee shall take all reasonable steps to prevent, minimize, or correct any adverse impact on the environment resulting from activities conducted pursuant to the permit, or from noncompliance with the permit.
6. The permittee shall immediately inform the Department by telephone at (877) 927-6337 (Warn DEP Hotline) of any noncompliance that may endanger the public health, safety, and welfare, or the environment. In addition, the permittee shall inform the Division of Land Use Regulation by telephone at (609) 633-2289 of any other noncompliance within two working days of the time the permittee becomes aware of the noncompliance, and in writing within five working days of the time the permittee becomes aware of the noncompliance. Such notice shall not, however, serve as a defense to enforcement action if the project is found to be in violation of this chapter. The written notice shall include:
 - a. A description of the noncompliance and its cause;
 - b. The period of noncompliance, including exact dates and times;
 - c. If the noncompliance has not been corrected, the anticipated length of time it is expected to continue; and
 - d. The steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

7. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the authorized activity in order to maintain compliance with the conditions of the permit.
8. The permittee shall employ appropriate measures to minimize noise where necessary during construction, as specified in N.J.S.A. 13:1G-1 et seq. and N.J.A.C. 7:29.
9. The issuance of a permit does not relinquish the State's tidelands ownership or claim to any portion of the subject property or adjacent properties.
10. The issuance of a permit does not relinquish public rights to access and use tidal waterways and their shores.
11. The permittee shall allow an authorized representative of the Department, upon the presentation of credentials, to:
 - a. Enter upon the permittee's premises where a regulated activity is located or conducted, or where records must be kept under the conditions of the permit;
 - b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit; and
 - c. Inspect at reasonable times any facilities, equipment, practices, or operations regulated or required under the permit. Failure to allow reasonable access under this paragraph shall be considered a violation of this chapter and subject the permittee to enforcement action.
12. The permittee and its contractors and subcontractors shall comply with all conditions, site plans, and supporting documents approved by the permit. Any noncompliance with a permit constitutes a violation of this chapter and is grounds for enforcement action under, as well as, in the appropriate case, suspension and/or termination of the permit.
13. All conditions, site plans, and supporting documents approved by a permit shall remain in full force and effect so long as the regulated activity or project, or any portion thereof, is in existence, unless the permit is modified.
14. For Coastal Permits, Flood Hazard Permits and Flood Hazard Verifications, the permittee shall record the permit, including all conditions listed therein, with the Office of the County Clerk (the Registrar of Deeds and Mortgages, if applicable) of each county in which the site is located. The permit shall be recorded within 30 calendar days of receipt by the permittee, unless the permit authorizes activities within two or more counties, in which case the permit shall be recorded within 90 calendar days of receipt. Upon completion of all recording, a copy of the recorded permit shall be forwarded to the Division of Land Use Regulation at the address set forth in the rules.
15. If any condition or permit is determined to be legally unenforceable, modifications and additional conditions may be imposed by the Department as necessary to protect public health, safety, and welfare, or the environment.
16. A copy of the permit and all approved site plans and supporting documents shall be maintained at the site at all times and made available to Department representatives or their designated agents immediately upon request.
17. A permit shall be transferred to another person only in accordance with the regulations.

18. A permit can be suspended or terminated by the Department for cause.
19. The submittal of a request to modify a permit by the permittee, or a notification of planned changes or anticipated noncompliance, does not stay any condition of a permit.
20. Where the permittee becomes aware that it failed to submit any relevant facts in an application, or submitted incorrect information in an application or in any report to the Department, it shall promptly submit such facts or information.
21. The permittee shall submit written notification to the Bureau of Coastal and Land Use Compliance and Enforcement, 401 East State Street, 4th Floor, P.O. Box 420, Mail Code 401-04C, Trenton, NJ 08625, at least three working days prior to the commencement of regulated activities.
22. The permittee shall not cause or allow any unreasonable interference with the free flow of a regulated water by placing or dumping any materials, equipment, debris, or structures within or adjacent to the channel while the regulated activity(ies) is being undertaken. Upon completion of the regulated activity(ies), the permittee shall remove and dispose of in a lawful manner, all excess materials, debris, equipment, and silt fences and other temporary soil erosion and sediment control devices from all regulated areas.
23. The regulated activity shall not destroy, jeopardize, or adversely modify a present or documented habitat for threatened or endangered species, and shall not jeopardize the continued existence of any local population of a threatened or endangered species.

In accordance with the applicable regulations, any person who is aggrieved by this decision or any of the conditions of this permit may request an adjudicatory hearing within 30 calendar days after public notice of the decision is published in the DEP Bulletin. This request must include a completed copy of the Adjudicatory Hearing Request form. The DEP Bulletin is available through the Department's website at <http://www.nj.gov/dep/bulletin> and the form is available through the Division's website at http://www.nj.gov/dep/landuse/download/lur_024.pdf. In addition to requesting a hearing, a request may be filed with the Department's Office of Dispute Resolution to determine whether the matter is suitable for mediation. Information concerning the dispute resolution process is available at www.nj.gov/dep/odr.

If you need clarification on any section of this permit or conditions, please contact the Kara Turner at (609) 633-2289.

Approved By:

Ryan J. Anderson, Manager
Division of Land Use Regulation

7/19/18

Date

Original sent to Agent to record
c: Permittee
Construction Official

U.S. Army Corps of Engineers Permit

DEPARTMENT OF THE ARMY PERMIT

PERMITTEE AND PERMIT NUMBER:

OCEAN CITY SHOOTING ISLAND SHORELINE RESTORATION PROJECT CM
City of Ocean City
CENAP-OP-R-2018-291-86

ISSUING OFFICE:

Department of the Army
U.S. Army Corps of Engineers, Philadelphia District
Wanamaker Building - 100 Penn Square East
Philadelphia, Pennsylvania 19107-3390

NOTE: The term "you" and its derivatives, as used in this permit, means the permittee or any future transferee. The term "this office" refers to the appropriate district or division office of the Corps of Engineers having jurisdiction over the permitted activity or the appropriate official of that office acting under the authority of the commanding officer.

You are authorized to perform work in accordance with the terms and conditions specified below.

PROJECT DESCRIPTION:

This permit authorizes a two-part project along the northern and northwestern sides of Shooting Island. The first authorized activity is the construction of approximately 2,700 linear feet of rock sill, in three separate segments (with gaps between), within an area just off the northern shoreline of Shooting Island. The sill would be approximately 30-33 feet wide at the base prior to estimated settlement, and approximately 22-25 feet wide following estimated settlement (see below). It would be approximately 6.5 to 7.5 feet high above the base, with a design top elevation of +3.55 feet NAVD88 (5.78' MLW) prior to estimated settlement. With the anticipated 2 feet of settlement, the top elevation would be +1.55 feet NAVD88 (3.78' MLW). The sill would cover approximately 1.55 acres of area below the high tide line (HTL) with a total volume of 10,530 cubic yards (CY).

The sill would include nine (9) "windows" for enhanced tidal flow and fish passage. The sill windows would be 50 feet wide at the sill crest and would be approximately 31 feet wide at the bottom opening at a pre-settlement elevation of -1.23 feet NAVD88 (1.00' MLW), or 4.78 feet below the sill top elevation.

The sill would be installed using three different materials as follows: a) geosynthetic system installation; b) sill core stone construction; and c) sill armor stone construction. The sill has been designed to accommodate the estimated settlement described above while targeting a constructed crest height at MHW elevation following initial (Year 1) settlement.

The second authorized activity is the construction of approximately 1,450 linear feet of oyster habitat using concrete habitat blocks, in multiple segments with gaps between, within an area along, and up to 300 feet off-shore from, the northwestern shoreline of Shooting Island. The design includes a 10-foot wide gravel base beneath a 3-foot wide arrangement of tiered/stacked

oyster blocks. The block arrangement would be 2.5 feet high, with a top elevation of approximately 0 to -1 foot NAVD88 (2.23 to 1.23' MLW), depending on existing surface elevation. The total coverage by the base would be 0.23 acre below the high tide line (HTL), with a total volume of 240 CY.

All work is to be completed in accordance with the attached plans labeled E-1 through E-16 and any plans referenced in the Special Conditions of this permit.

PROJECT LOCATION:

Approximate center points, decimal latitude and longitude:

Rock sill:	39.278932°; -74.607272°
Oyster Castles:	39.276413°; -74.610164°

The authorized project sites are located along the northern and northwestern shoreline of Shooting Island, which is situated between the waters of Great Egg Harbor Bay (to the north) and Peck Bay (to the southwest), and across Beach Thorofare from the back-bay side of the City of Ocean City, Cape May County, New Jersey. The project limits are roughly off-shore of an area between 17th and 25th Streets. Shooting Island is designated on the City tax maps as Block 3350.01, Lots 1 and 2.

PERMIT CONDITIONS:

General Conditions:

1. The time limit for completing the work authorized ends on December 31, 2021. If you find that you need more time to complete the authorized activity, submit your request for a time extension to this office for consideration at least one month before the above date is reached.
2. You must maintain the activity authorized by this permit in good condition and in conformance with the terms and conditions of this permit. You are not relieved of this requirement if you abandon the permitted activity, although you may make a good faith transfer to a third party in compliance with General Condition 4 below. Should you wish to cease to maintain the authorized activity or should you desire to abandon it without a good faith transfer, you must obtain a modification of this permit from this office, which may require restoration of the area.
3. If you discover any previously unknown historic or archeological remains while accomplishing the activity authorized by this permit, you must immediately notify this office of what you have found. We will initiate the Federal and State coordination required to determine if the remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.
4. If you sell the property associated with this permit, you must obtain the signature of the new owner in the space provided and forward a copy of the permit to this office to validate the transfer of this authorization.

5. If a conditioned water quality certification has been issued for your project, you must comply with conditions specified in the certification as special conditions to this permit. For your convenience, a copy of the certification is attached if it contains such conditions.
6. You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished in accordance with the terms and conditions of your permit.

Special Conditions:

1. All work performed in association with the above noted project shall be conducted in accordance with the project plans prepared by ACT Engineers and Anchor QEA; Sheets 1 through 16 of 16; dated OCTOBER 9, 2018; entitled "SHOOTING ISLAND RESTORATION CITY OF OCEAN CITY, NJ NATIONAL FISH AND WILDLIFE FOUNDATION GRANT." Sheets 2, 15 and 16 have no revision indicated. Sheets 1 and 3 through 14 indicate last revision dates of "9/27/2018."

Reduced (8.5 x 11") copies of these plans are attached to this permit, labeled E-1 through E-16.

2. Construction activities shall not result in the disturbance or alteration of greater than 1.78 acres of waters of the United States (1.55 acres of waterway from placement of rock sill segments, and an additional 0.23 acre of waterway from placement of oyster habitat blocks, including the stone base.
3. Any deviation in construction methodology or project design from that shown on the above noted drawings must be approved by this office, in writing, prior to performance of the work. All modifications to the above noted project plans shall be approved, in writing, by this office. No work shall be performed prior to written approval of this office.
4. This office shall be notified prior to the commencement of authorized work by completing and signing the attached *Notification/ Certification of Work Commencement Form*. This office shall also be notified within 10 days of the completion of the authorized work by completing and signing the attached *Notification/Certification of Work Completion/Compliance Form*. All notifications required by this condition shall be in writing and shall be transmitted to this office by registered mail. Oral notifications are not acceptable. Similar notification is required each time maintenance work is to be done under the terms of this Corps of Engineers permit.
5. The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration. This special condition is applicable to Corps of Engineers permits that provide authorization under Section 10 of the Rivers and Harbors Act of 1899.

6. Representatives of the U.S. Army Corps of Engineers shall be permitted to inspect the project during construction, and to collect any samples, or to conduct any tests deemed necessary.

7. The permittee is responsible for ensuring that the contractor and/or workers executing the activity(s) authorized by this permit have knowledge of the terms and conditions of the authorization and that a copy of the permit document is at the project site throughout the period the work is underway.

8. The permittee shall implement the "Shooting Island Restoration Monitoring Plan," draft dated March 2018, prepared by Anchor QEA, LLC, ACT Engineers, Inc., and Junetta N Dix Consulting, Inc., together with the supplemental document "Shooting Island Adaptive Management Options – DRAFT," dated August 22, 2018 (one sheet). Annual monitoring reports shall be submitted to the Corps of Engineers, with copies to National Marine Fisheries Service and U.S. Fish and Wildlife Service, no later than December 31 of each year, beginning in 2019, for a minimum of five (5) years. If, after the first three (3) years of such monitoring, the permittee has demonstrated that the authorized rock sills and oyster blocks are stable and no further corrective actions are necessary, the permittee may request written release from this office for further monitoring. Any proposed corrective actions as a result of the monitoring shall be submitted to this office for written approval before they are conducted. Such additional work may require additional monitoring.

1. Congressional Authorities: You have been authorized to undertake the activity described above pursuant to:

Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403).

Section 404 of the Clean Water Act (33 U.S.C. 1344).

Section 103 of the Marine Protection, Research and Sanctuaries Act.

2. Limits of this authorization.

a. This permit does not obviate the need to obtain other Federal, State, or local authorizations required by law.

b. This permit does not grant any property rights or exclusive privileges.

c. This permit does not authorize any injury to the property or rights of others.

d. This permit does not authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

- b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public interest.
 - c. Damages to persons, property, or to other permitted or unpermitted activities or structures caused by the activity authorized by this permit.
 - d. Design or construction deficiencies associated with the permitted work.
 - e. Damage claims associated with any future modification, suspension, or revocation of this permit.
4. Reliance on Applicant's Data. The determination of this office that issuance of this permit is not contrary to the public interest was made in reliance on the information you provided.
5. Reevaluation of Permit Decision. This office may reevaluate its decision on this permit at any time the circumstances warrant. Circumstances that could require a reevaluation include, but are not limited to, the following:
- a. You fail to comply with the terms and conditions of this permit.
 - b. The information provided by you in support of your permit application proves to have been false, incomplete, or inaccurate (see 4 above).
 - c. Significant new information surfaces which this office did not consider in reaching the original public interest decision.

Such a reevaluation may result in a determination that it is appropriate to use the suspension, modification, and revocation procedures contained in 33 CFR 325.7 or enforcement procedures such as those contained in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring you to comply with the terms and conditions of your permit and for the initiation of legal action where appropriate. You will be required to pay for any corrective measures ordered by this office, and if you fail to comply with such directive, this office may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill you for the cost.

6. Extensions. General Condition 1 establishes a time limit for the completion of the activity authorized by this permit. Unless there are circumstances requiring either a prompt completion of the authorized activity or a reevaluation of the public interest decision, the Corps will normally give favorable consideration to a request for an extension of this time limit.

Your signature below, as permittee, indicates that you accept and agree to comply with the terms and conditions of this permit.



(PERMITTEE) 10/29/18
(DATE)

This permit becomes effective when the Federal official, designated to act for the Secretary of the Army, has signed below.



(District Engineer) 10/31/2018
(DATE)
Edward E. Bonner, Chief, Regulatory Branch

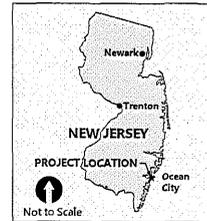
for Kristen N. Dahle
Lieutenant Colonel, Corps of Engineers
District Commander

When the structures or work authorized by this permit are still in existence at the time the property is transferred, the terms and conditions of this permit will continue to be binding on the new owner(s) of the property. To validate the transfer of this permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.

(TRANSFEE) _____
(DATE)

SHOOTING ISLAND RESTORATION: LIVING SHORELINE AND HABITAT CONSTRUCTION

CITY OF OCEAN CITY, NEW JERSEY CONTRACT NO. 18-32
NATIONAL FISH AND WILDLIFE FOUNDATION GRANT ID 44068



Sheet List Table		
Sheet Number	Sheet Description	Sheet Title
1	T-01	TITLE SHEET
2	G-01	SITE OVERVIEW
3	G-02	GENERAL NOTES AND ABBREVIATIONS
4	E-01	EXISTING CONDITIONS AND PROPOSED LIVING SHORELINE ALIGNMENT
5	C-01	WESTERN LIVING SHORELINE ALIGNMENT LAYOUT STA. 0+00 TO 5+00
6	C-02	WESTERN LIVING SHORELINE ALIGNMENT LAYOUT STA. 5+00 TO 9+00
7	C-03	WESTERN LIVING SHORELINE ALIGNMENT LAYOUT STA. 9+00 TO 12+00
8	C-04	WESTERN LIVING SHORELINE ALIGNMENT LAYOUT STA. 12+00 TO END
9	C-05	NORTHERN LIVING SHORELINE ALIGNMENT LAYOUT STA. 100+00 TO 105+00
10	C-06	NORTHERN LIVING SHORELINE ALIGNMENT LAYOUT STA. 105+00 TO 110+00
11	C-07	NORTHERN LIVING SHORELINE ALIGNMENT LAYOUT STA. 110+00 TO 115+00
12	C-08	NORTHERN LIVING SHORELINE ALIGNMENT LAYOUT STA. 115+00 TO 121+00
13	C-09	NORTHERN LIVING SHORELINE ALIGNMENT LAYOUT STA. 121+00 TO END
14	C-10	DETAILS AND CROSS SECTIONS 1 OF 2
15	C-11	DETAILS AND CROSS SECTIONS 2 OF 2
16	C-12	OYSTER HABITAT BLOCK DETAILS



0 30000 60000
SCALE IN FEET

ONE INCH
= 100 FEET
AT FULL SIZE. IF NOT ONE
INCH SCALE ASSUMED

DATE: 2018.11.16 AM 10:45:00 ACT Engineers Inc. (2018) Ocean City, NJ 08226-3200 (609) 325-4400 T-01



REVISIONS					
REV	DATE	BY	APPR	DESCRIPTION	
1	10/27/18	BM	SKM	ADDITION OF SIL WINGONS AND OYSTER HABITAT BLOCK MODIFICATIONS	

DESIGNED BY: A. CANNON
DRAWN BY: B. JURY
CHECKED BY: M. HENDERSON
APPROVED BY: E. MCHAL
SCALE: AS NOTED
DATE: OCTOBER 3, 2018

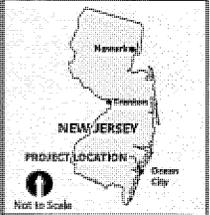
SHOOTING ISLAND RESTORATION
CITY OF OCEAN CITY, NJ
NATIONAL FISH AND WILDLIFE FOUNDATION GRANT

TITLE SHEET

T-01

SHEET NO. 1 OF 16

E-1



SOURCE: Aerial from Bing Maps, 2018
 HORIZONTAL DATUM: New Jersey State Plane, NAD83, U.S. Feet.
 VERTICAL DATUM: Vertical Datum of 1988 (NAVD83).




 NORTH
 SCALE IN FEET
ONE INCH = 1000 FEET
 AT THIS SCALE, 1 INCH REPRESENTS 1000 FEET



REV	DATE	BY	APPD	REVISION	DESCRIPTION

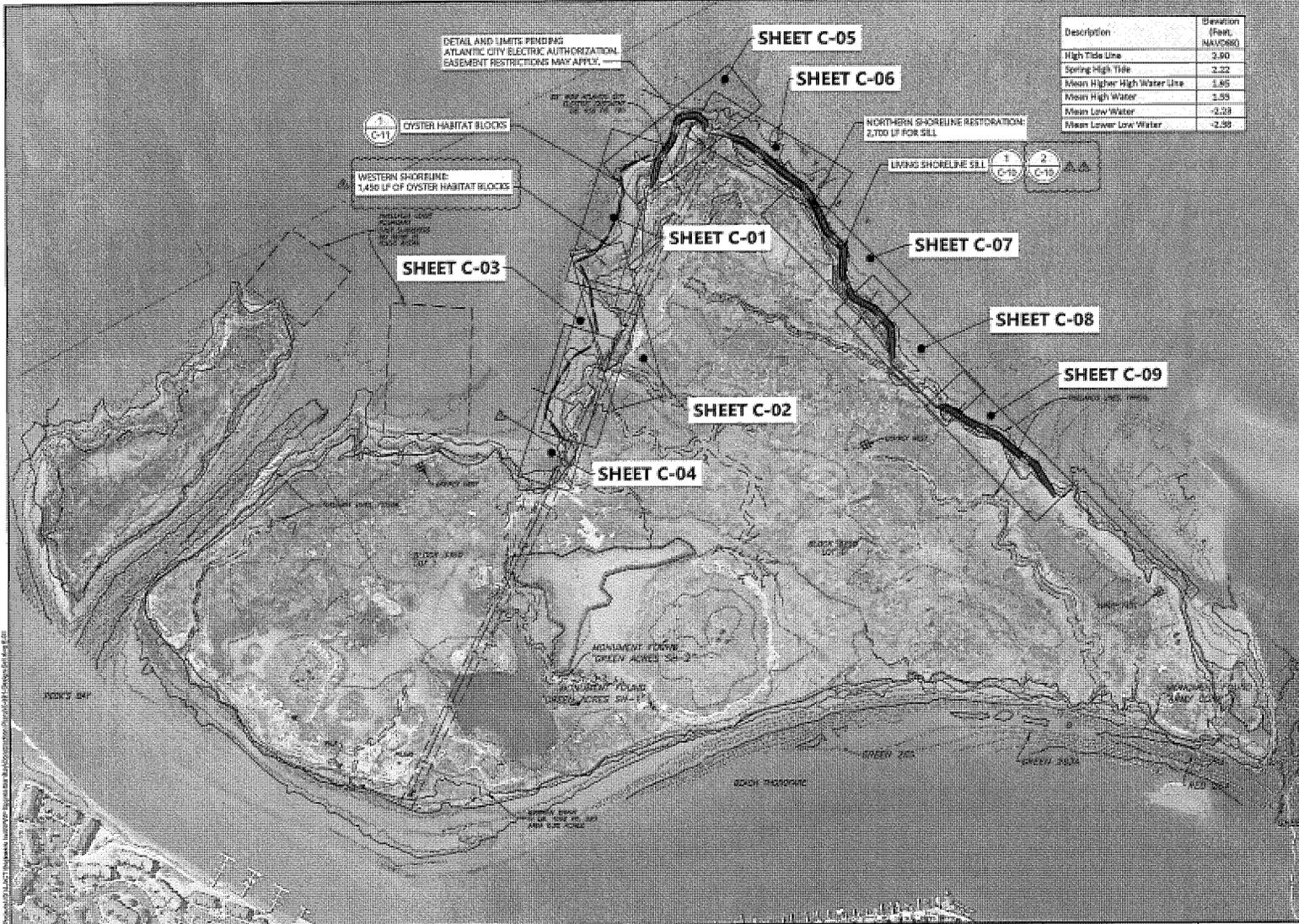
DESIGNED BY: J. SANDER
 DRAWN BY: A. SHERRY
 CHECKED BY: M. CHANDLER
 APPROVED BY: J. SANDER
 SCALE: AS SHOWN
 DATE: 02/20/2018, 2018

SHOOTING ISLAND RESTORATION
 CITY OF OCEAN CITY, NJ
NATIONAL FISH AND WILDLIFE FOUNDATION GRANT

 SITE OVERVIEW

G-01
 SHEET NO. 2 OF 16

E-2



Description	Elevation (Feet, NAVD83)
High Tide Line	-3.80
Spring High Tide	-2.72
Mean Higher High Water Line	-1.85
Mean High Water	-1.55
Mean Low Water	-2.28
Mean Lower Low Water	-2.58

- LEGEND:**
- PROPOSED LIVING SHORELINE SILL
 - - - - PROPOSED OYSTER HABITAT BLOCKS
 - 1978 SHORELINE
 - - - - 1978 TIDAL CREEK
 - 2017 SURVEY ELEVATION CONTOURS, 1 AND 5 FOOT, NAVD83
 - 2017 SURVEY SHORELINE (ELEVATION 0, NAVD83)
 - 2017 SURVEY OPEN WATER BOUNDARY
 - ⊙ 2017 SURVEY OSPREY NEST
 - ⊙ CHANNEL MARKER



- NOTES:**
- HORIZONTAL DATUM: NEW JERSEY STATE PLANE, NAD83, U.S. FEET.
 - VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD83)
 - AERIAL IMAGERY WAS OBTAINED FROM THE NEMA INFORMATION WAREHOUSE, DATED 2007.

REV	DATE	BY	APPROV	DESCRIPTION
1				REMOVE AND REACT OYSTER BLOCKS CLASSIFIED
2				ADDITION OF SILL SECTS
3				REVISION OF SILL BARRIERS AND OYSTER HABITAT BLOCKS ASSOCIATIONS

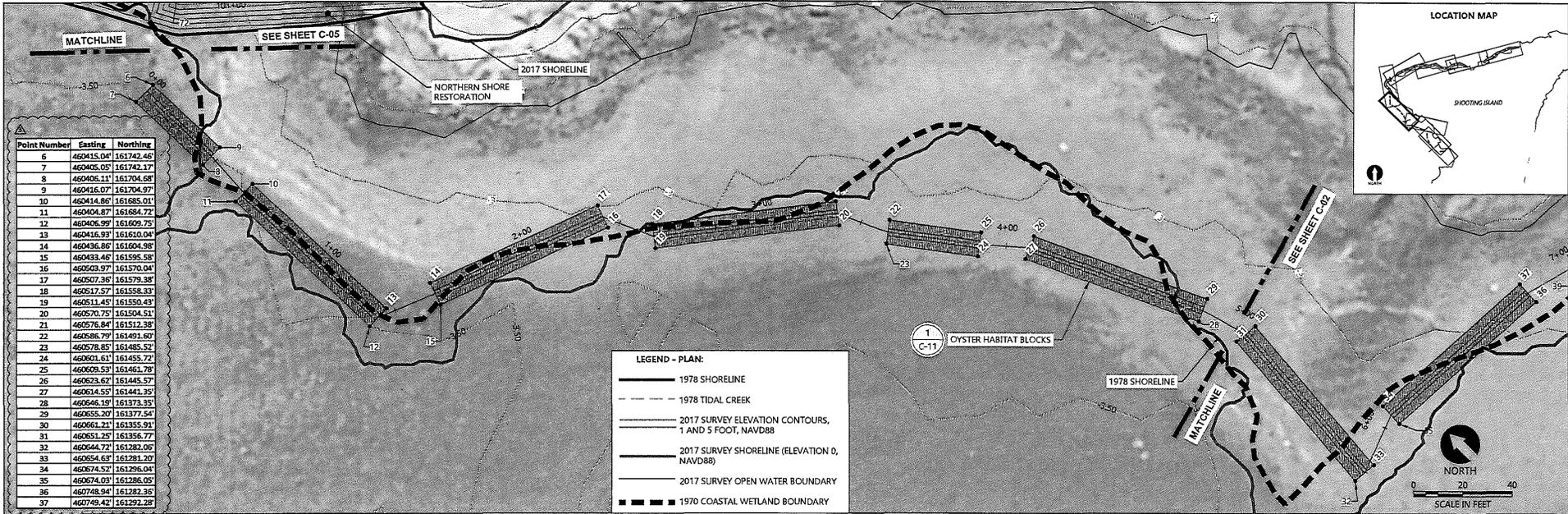
DESIGNED BY: J. CASHIN
 DRAWN BY: J. LIBBY
 CHECKED BY: J. WILKINSON
 APPROVED BY: J. WOSNY
 SCALE: AS SHOWN
 DATE: 06/27/2018

SHOOTING ISLAND RESTORATION
CITY OF OCEAN CITY, NJ
NATIONAL FISH AND WILDLIFE FOUNDATION GRANT

EXISTING CONDITIONS AND PROPOSED LIVING SHORELINE ALIGNMENT

E-01
 SHEET NO. 4 OF 16

E-4

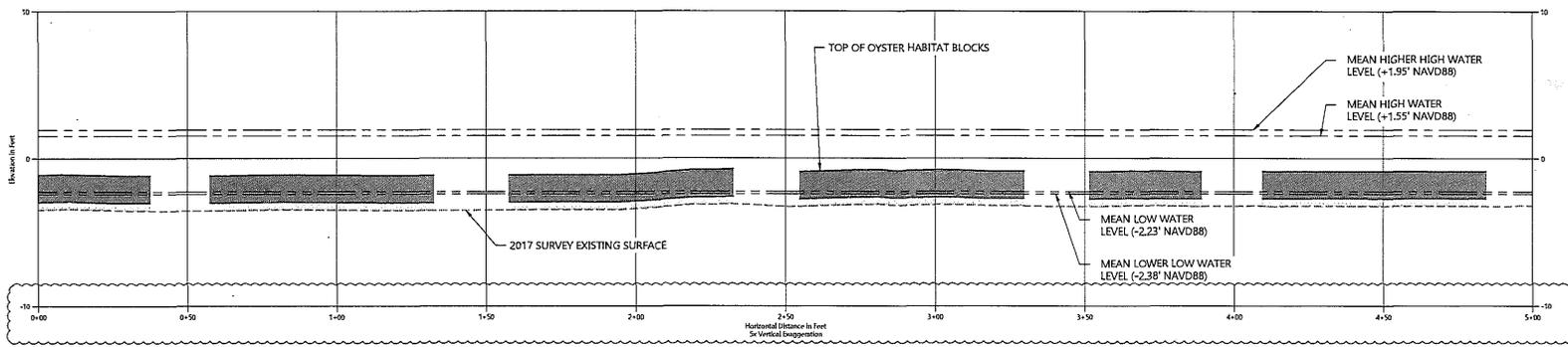


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7	460405.05	161742.17
8	460406.11	161704.58
9	460416.07	161704.97
10	460414.86	161685.01
11	460404.87	161684.72
12	460406.99	161609.75
13	460416.93	161610.04
14	460436.86	161604.98
15	460433.48	161595.58
16	460509.97	161570.04
17	460507.36	161579.38
18	460517.57	161558.33
19	460511.45	161550.43
20	460570.75	161504.51
21	460576.84	161512.38
22	460586.79	161491.80
23	460578.85	161485.52
24	460601.61	161455.72
25	460609.53	161461.78
26	460623.62	161445.57
27	460614.55	161441.35
28	460646.19	161373.35
29	460655.20	161377.94
30	460661.21	161355.91
31	460651.25	161356.77
32	460644.72	161282.00
33	460654.63	161281.20
34	460674.52	161296.04
35	460674.03	161286.05
36	460748.94	161292.35
37	460749.42	161292.28

LEGEND - PLAN:

- 1978 SHORELINE
- - - 1978 TIDAL CREEK
- 2017 SURVEY ELEVATION CONTOURS, 1 AND 5 FOOT, NAVD88
- 2017 SURVEY SHORELINE (ELEVATION 0, NAVD88)
- 2017 SURVEY OPEN WATER BOUNDARY
- 1970 COASTAL WETLAND BOUNDARY

PLAN



PROFILE

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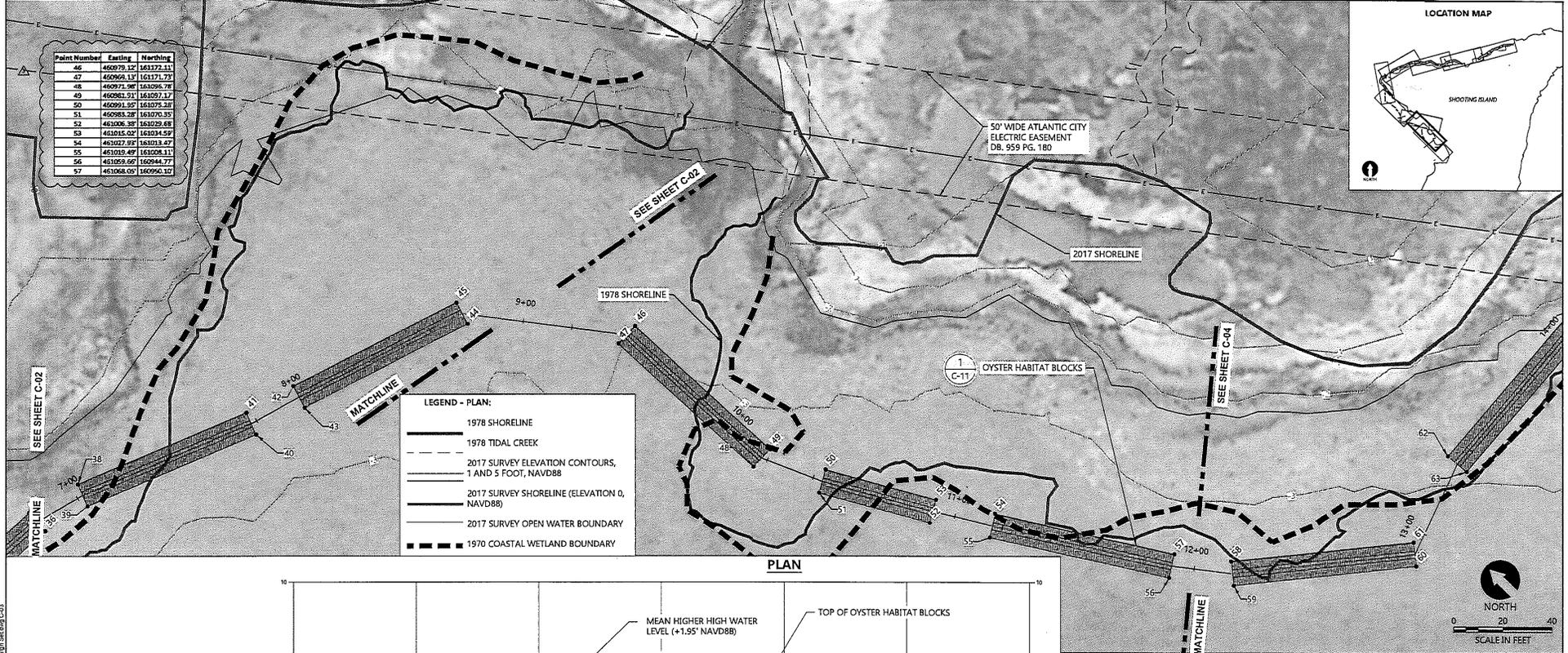
REV	DATE	BY	APPD	DESCRIPTION
1	02/20/18	BUH	SEM	ADDITION OF SILL WINDOWS AND OYSTER HABITAT BLOCK MODIFICATIONS

DESIGNED BY: A. CAIRNAN
 DRAWN BY: B. HULSEY
 CHECKED BY: J. HENDERSON
 APPROVED BY: B. BISHAM
 SCALE: AS NOTED
 DATE: OCTOBER 9, 2018

SHOOTING ISLAND RESTORATION
 CITY OF OCEAN CITY, NJ
 NATIONAL FISH AND WILDLIFE FOUNDATION GRANT
 WESTERN LIVING SHORELINE
 ALIGNMENT LAYOUT STA. 0+00 TO 5+00

C-01
 SHEET NO. 5 OF 16

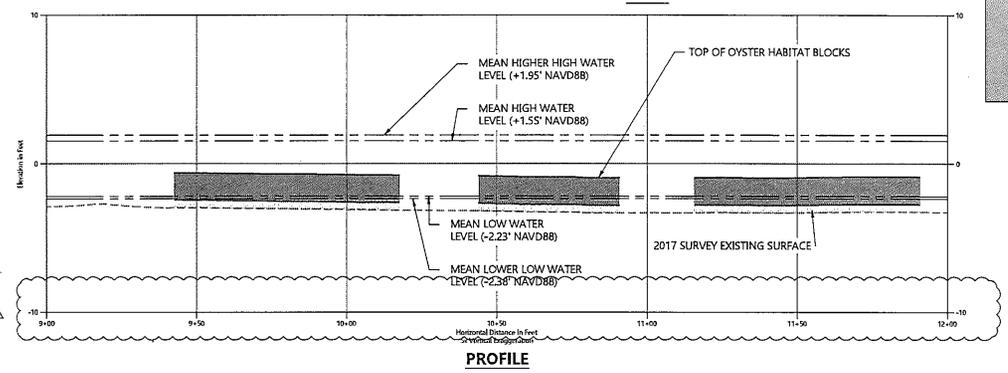
E-5



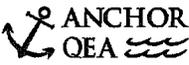
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47	460969.13	161171.73
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49	460983.51	161051.17
50	460991.97	161075.28
51	460883.28	161070.35
52	461006.38	161029.68
53	461015.04	161034.59
54	461027.97	161013.47
55	461019.49	161028.11
56	461059.07	160944.77
57	461058.00	160990.12

LEGEND - PLAN:

- 1978 SHORELINE
- - - 1978 TIDAL CREEK
- 2017 SURVEY ELEVATION CONTOURS, 1 AND 5 FOOT, NAVD88
- 2017 SURVEY SHORELINE (ELEVATION 0, NAVD88)
- 2017 SURVEY OPEN WATER BOUNDARY
- - - 1970 COASTAL WETLAND BOUNDARY



C:\Projects\114\ACT\Engineers\mch\WP_Egg\Water\By\Construction\Final\2-6-16\Design\ActEng-C-03



REV	DATE	BY	APPD	DESCRIPTION
1	10/27/2018	RM	RM	ARRIVAL OF 481 WARDING AND OYSTER HABITAT BLOCK MODIFICATIONS

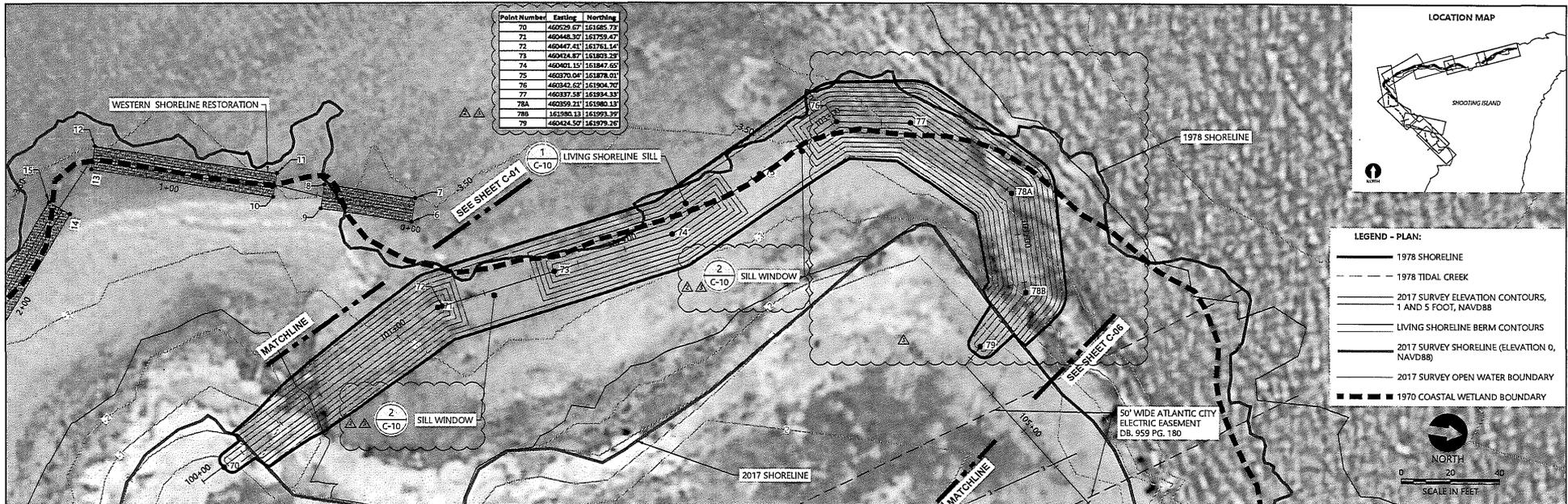
DESIGNED BY: A. CANNON
 DRAWN BY: B. HIBERY
 CHECKED BY: M. HENDERSON
 APPROVED BY: R. MICHAN
 SCALE: AS NOTED
 DATE: OCTOBER 9, 2018

SHOOTING ISLAND RESTORATION
CITY OF OCEAN CITY, NJ
NATIONAL FISH AND WILDLIFE FOUNDATION GRANT

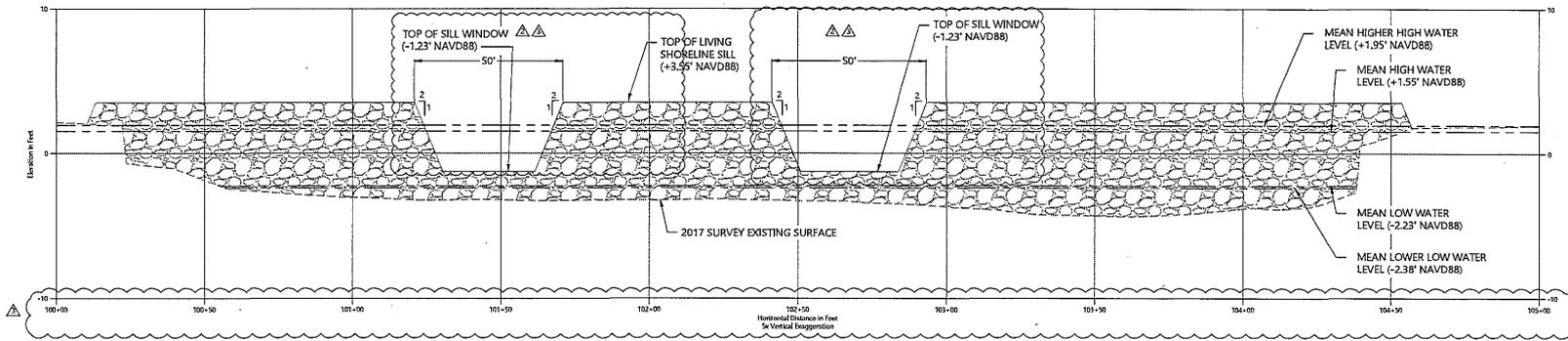
WESTERN LIVING SHORELINE
ALIGNMENT LAYOUT STA. 9+00 TO 12+00

C-03
 SHEET NO. 7 OF 16

E-7



PLAN



PROFILE

K:\projects\131-act\Engineers\incl\WF_Egg_Hollow_By_Construction_Plan\C-05_Design_SitePlan_C-05



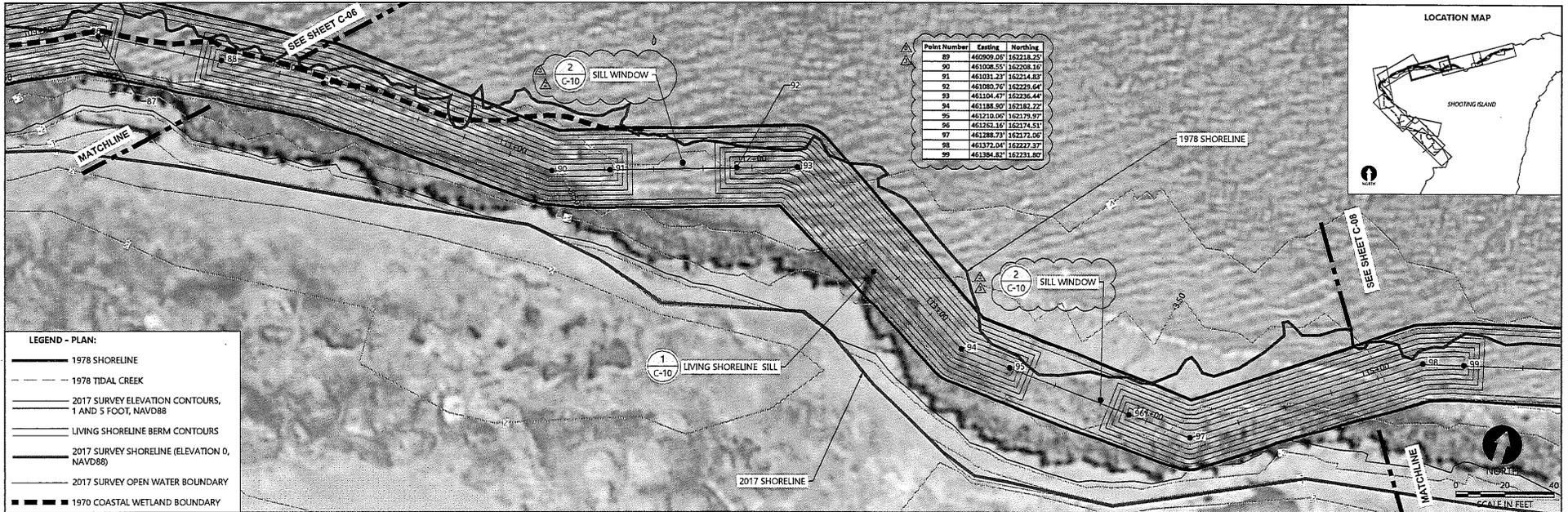
REV	DATE	BY	APP'D	DESCRIPTION
1	7/26/2018	BOH	BOH	ADDITION OF SILL VENTS
2	10/27/2018	BOH	BOH	ADDITION OF SILL WINDOWS AND CYSTER HABITAT BLOCK MODIFICATIONS

DESIGNED BY: A. CANNON
 DRAWN BY: B. HURRY
 CHECKED BY: M. HENDERSON
 APPROVED BY: R. MOHAN
 SCALE: AS NOTED
 DATE: OCTOBER 6, 2018

SHOOTING ISLAND RESTORATION
 CITY OF OCEAN CITY, NJ
NATIONAL FISH AND WILDLIFE FOUNDATION GRANT
 NORTHERN LIVING SHORELINE
 ALIGNMENT LAYOUT STA. 100+00 TO
 105+00

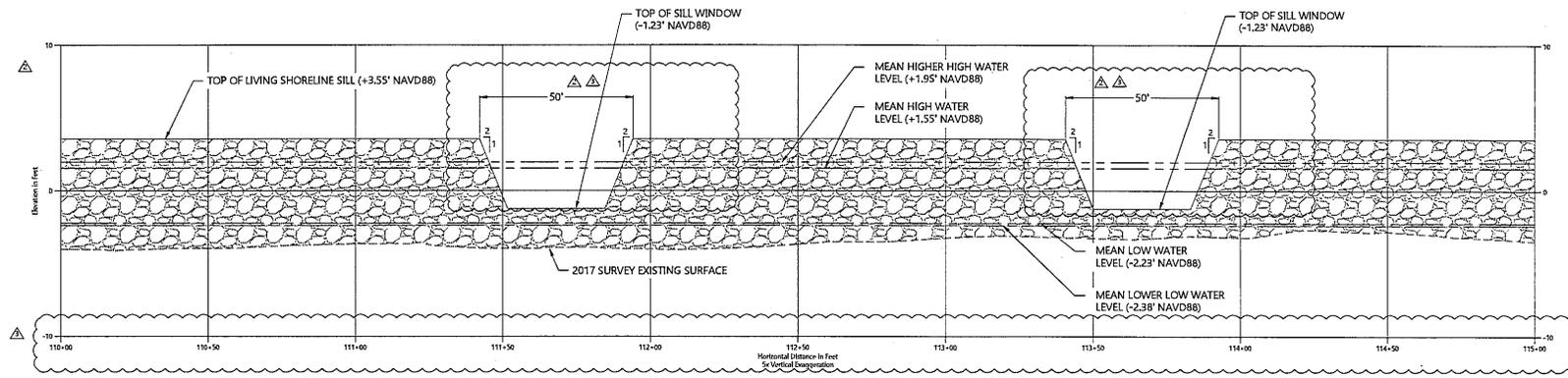
C-05
 SHEET NO. 9 OF 16

E-9



- LEGEND - PLAN:**
- 1978 SHORELINE
 - - - 1978 TIDAL CREEK
 - 2017 SURVEY ELEVATION CONTOURS, 1 AND 5 FOOT, NAVD88
 - LIVING SHORELINE BERM CONTOURS
 - 2017 SURVEY SHORELINE (ELEVATION 0, NAVD88)
 - 2017 SURVEY OPEN WATER BOUNDARY
 - - - 1970 COASTAL WETLAND BOUNDARY

PLAN



PROFILE

04.10.2018 12:01:04 - C:\projects\11-11-18\ACT Engineers\act\11-11-18\Shooting Island\Construction Plans\C-07\Layout-Plan.dwg



REV	DATE	BY	APPD	DESCRIPTION
1	7/26/2015	BNH	BNH	ADDITION OF SILL VENTS
2	9/27/2016	BNH	BNH	ADDITION OF SILL WINDOWS AND OYSTER HABITAT BLOCK MODIFICATIONS

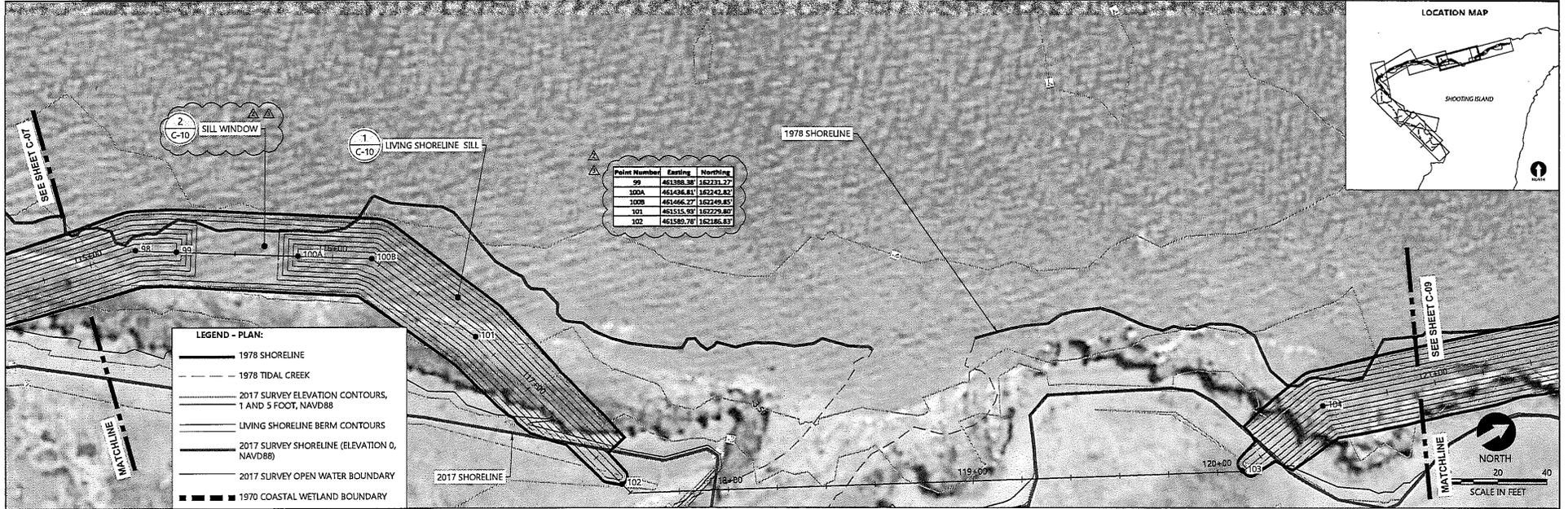
DESIGNED BY: A. CANNON
 DRAWN BY: B. HURRY
 CHECKED BY: M. HENDERSON
 APPROVED BY: B. MICHAN
 SCALE: AS NOTED
 DATE: OCTOBER 9, 2018

SHOOTING ISLAND RESTORATION
 CITY OF OCEAN CITY, NJ
 NATIONAL FISH AND WILDLIFE FOUNDATION GRANT
 NORTHERN LIVING SHORELINE
 ALIGNMENT LAYOUT STA. 110+00 TO
 115+00

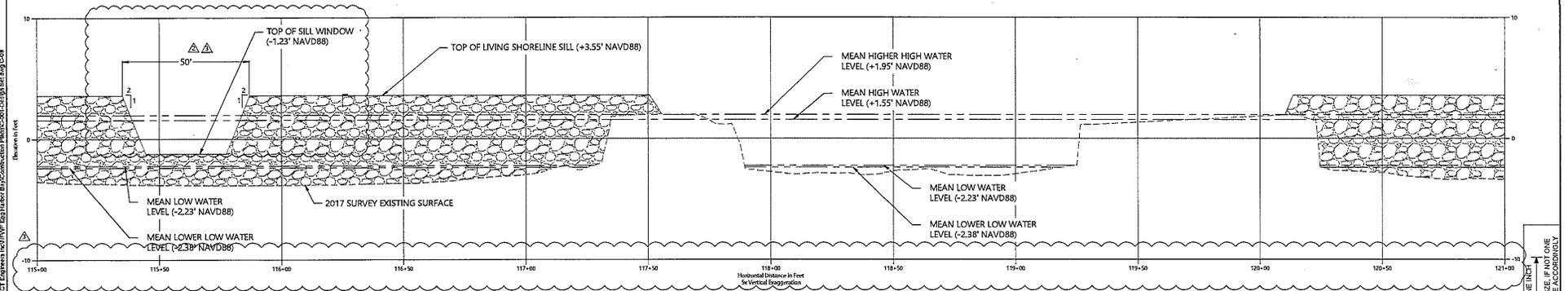
C-07

SHEET NO. 11 OF 16

E-11



PLAN



PROFILE

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 Date: 10/9/2018 10:00:00 AM
 Plot Scale: 1/8" = 10'-0"



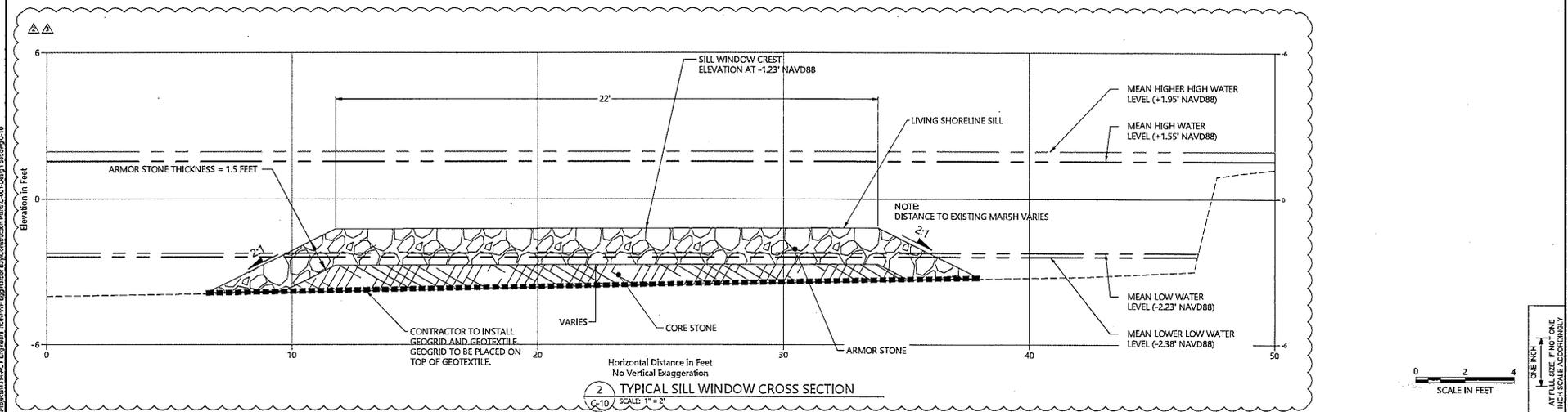
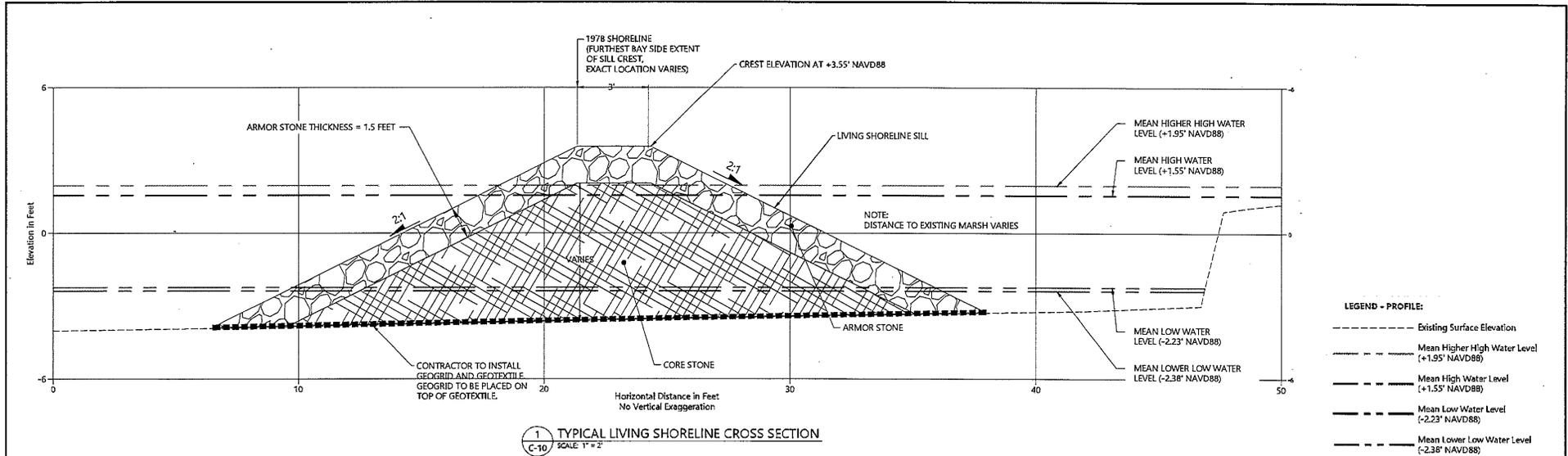
REV	DATE	BY	APP'D	REVISIONS	DESCRIPTION
1	7/26/2018	BJA	BJA		ADDITION OF SILL WEIRTS
2	9/27/2018	BJA	BJA		ADDITION OF SILL WEIRTS AND OYSTER HASTAY BLOCK MODIFICATIONS

DESIGNED BY: A. CANNON
 DRAWN BY: B. JUREY
 CHECKED BY: M. HENDERSON
 APPROVED BY: M. MOCHAN
 SCALE: AS NOTED
 DATE: OCTOBER 9, 2018

SHOOTING ISLAND RESTORATION
 CITY OF OCEAN CITY, NJ
 NATIONAL FISH AND WILDLIFE FOUNDATION GRANT
 NORTHERN LIVING SHORELINE
 ALIGNMENT LAYOUT STA. 115+00 TO
 121+00

C-08
 SHEET NO. 12 OF 16

E-12



ONE INCH =
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY

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REV	DATE	BY	APP'D	DESCRIPTION
1	1/26/2018	BMH	RMH	ADDITION OF SILVENTS
2	1/27/2018	BMH	RMH	ADDITION OF SILL WINDOWS AND Oyster HABITAT BLOCK MODIFICATIONS

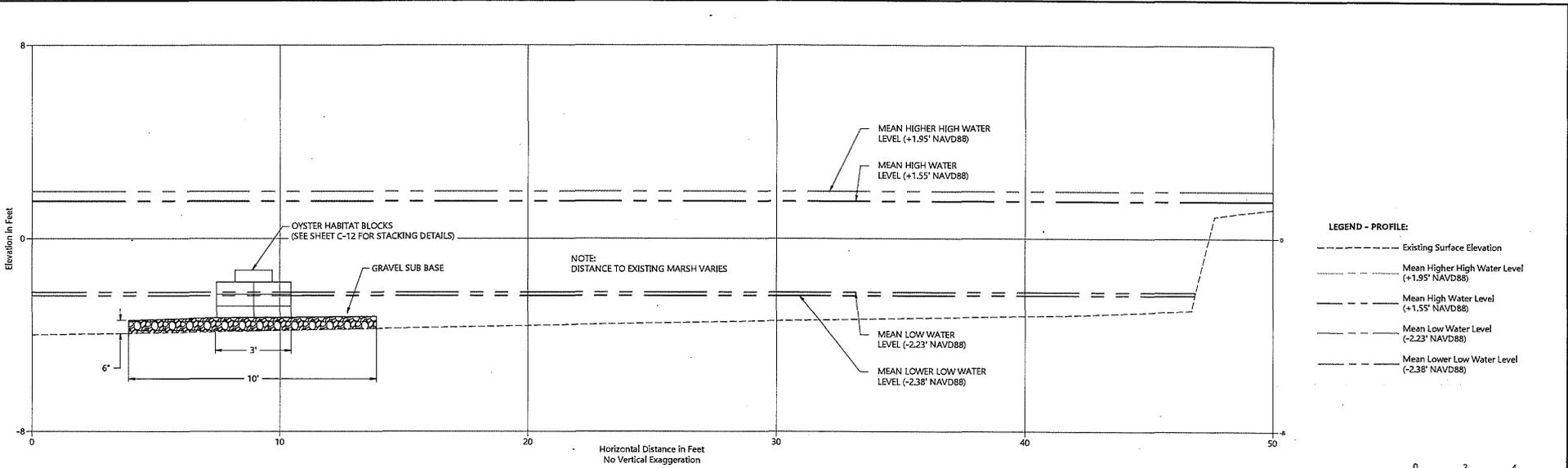
DESIGNED BY: A. CANNON
DRAWN BY: B. HURRY
CHECKED BY: M. HENDERSON
APPROVED BY: P. MOHAN
SCALE: AS NOTED
DATE: OCTOBER 9, 2018

SHOOTING ISLAND RESTORATION
CITY OF OCEAN CITY, NJ
NATIONAL FISH AND WILDLIFE FOUNDATION GRANT

DETAILS AND CROSS SECTIONS 1 OF 2

C-10
SHEET No. 14 of 16

E-14



1 TYPICAL LIVING SHORELINE CROSS SECTION
 C-11 SCALE: 1" = 2'

0 2 4
 SCALE IN FEET

ONE INCH
 AT FULL SIZE, IF NOT ONE
 INCH SCALE ACCORDINGLY

Oct 10, 2018, 12:07pm cymf K:\Projects\113\ACTE Engineers\IN\WF_Eng\Shoreline_Bay\Construction Plans\C-11\Drawings\C-11



REVISIONS				
REV	DATE	BY	APPD	DESCRIPTION

DESIGNED BY: A. CANNON
 DRAWN BY: B. HURRY
 CHECKED BY: M. HENDERSON
 APPROVED BY: R. NICHAN
 SCALE: AS NOTED
 DATE: OCTOBER 9, 2018

SHOOTING ISLAND RESTORATION
 CITY OF OCEAN CITY, NJ
 NATIONAL FISH AND WILDLIFE FOUNDATION GRANT

DETAILS AND CROSS SECTIONS 2 OF 2

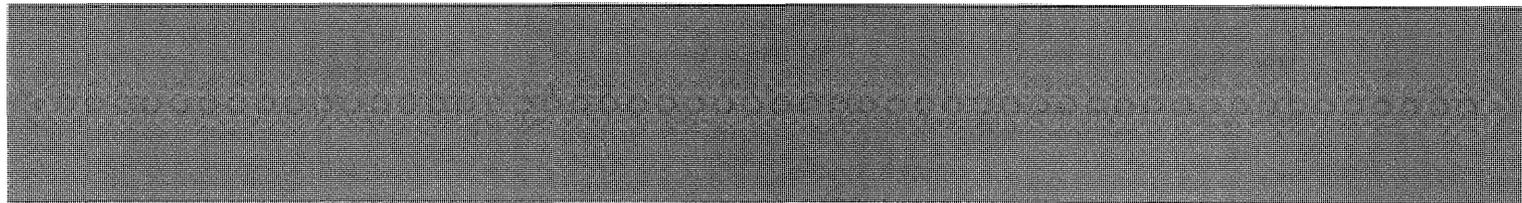
C-11

SHEET NO. 15 OF 16

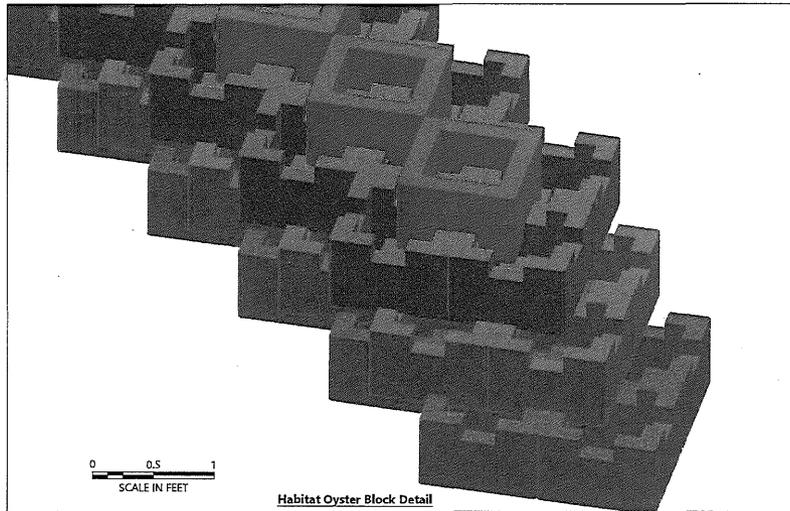
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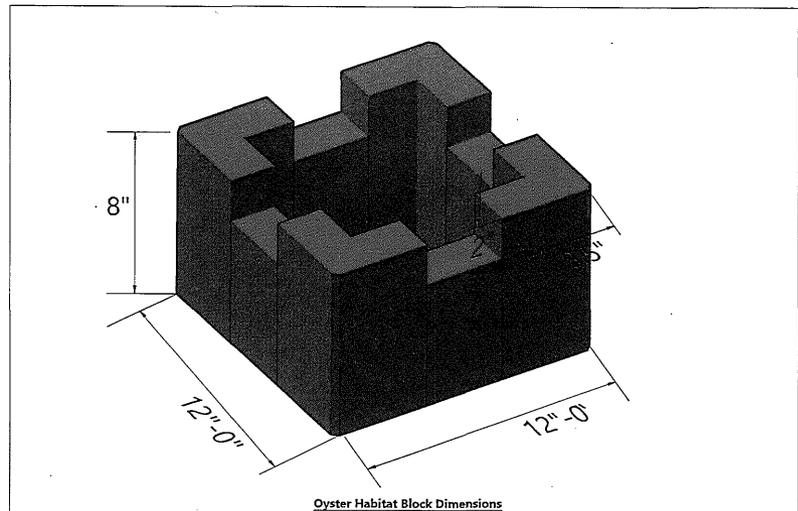
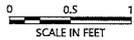
Isometric View 1



Plan View



Habitat Oyster Block Detail



Oyster Habitat Block Dimensions

ONE INCH = 12 FEET
 AT FULL SIZE IF NOT ONE INCH SCALE ACCORDINGLY

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REVISIONS				
REV	DATE	BY	APPD	DESCRIPTION

DESIGNED BY: A. GANNON
 DRAWN BY: B. HURRY
 CHECKED BY: M. HENDERSON
 APPROVED BY: R. NICHAN
 SCALE: AS NOTED
 DATE: OCTOBER 9, 2016

SHOOTING ISLAND RESTORATION
 CITY OF OCEAN CITY, NJ
 NATIONAL FISH AND WILDLIFE FOUNDATION GRANT

OYSTER HABITAT BLOCK DETAILS

C-12

SHEET NO. 16 OF 16

E-16