



DEPARTMENT OF THE ARMY  
NEW YORK DISTRICT, CORPS OF ENGINEERS  
JACOB K. JAVITS FEDERAL BUILDING  
26 FEDERAL PLAZA  
NEW YORK, NEW YORK 10278-0090

Regulatory Division

SUBJECT: Permit Application Number NAN-2025-01009-MLO  
by New York State Office of Resilient Homes and Communities

Devon Shumate  
New York State RHC  
641 Lexington Avenue  
New York, NY 10022

Dear Ms. Shumate:

On November 13, 2025, the New York District of the U.S. Army Corps of Engineers received a request for Department of the Army authorization for the discharge of fill material into and/or the placement of structures in and over navigable waters of the United States. The proposed work includes the installation of approximately 4,494 seeded disks within 286 existing ecological concrete armor units. The armor units are located below the plane of Mean Higher High Water (MHHW) on Breakwaters D, F, G, and H. Additionally, three (3) in-situ trials of direct seeding of oyster larvae are proposed on the lee side of Breakwaters D, F, and G. The trials will involve the temporary use of turbidity curtains covering approximately 2,000 square feet per trial. Seeded droplock units, covering approximately 4,150 square feet below MHHW on Breakwaters F, G, and H, are proposed as a contingency option if the in-situ trials are canceled. The site is located in the Raritan Bay, along the Tottenville shoreline, Lat: 40.49399, Long: -74.246065, in Staten Island, Richmond County, New York.

This is a reverification of the above mentioned activities previously verified on February 26, 2026.

Based on the information submitted to this office, [and accomplishment of notification in accordance with the applicable federal requirements,] our review of the project indicates that an individual permit is not required. It appears that the activities within the jurisdiction of this office could be accomplished under Department of the Army Nationwide General Permit Number(s) 27 AQUATIC HABITAT RESTORATION, ESTABLISHMENT, AND ENHANCEMENT ACTIVITIES. The nationwide permits are prescribed as a Reissuance and Modification of Nationwide Permits in the Federal Register dated **January 8, 2026 (91 FR 768)**. The work may be performed without further authorization from this office provided the activity complies with the permit conditions listed in Section B, No(s). 27 AQUATIC HABITAT RESTORATION, ESTABLISHMENT, AND ENHANCEMENT ACTIVITIES, Section C, any applicable New York District regional conditions, the following special condition(s), and any applicable regional conditions added by the State of New York, copies enclosed. The **2026**

Regulatory Division

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nationwide general permits in the State of New York, including their regional conditions, water quality certifications, and coastal zone management concurrence statements are also available at: <https://www.nan.usace.army.mil/Missions/Regulatory/Nationwide-Permits/>.

#### Special Conditions

(A) 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.

(B) Within Essential Fish Habitat (EFH), if any work is proposed within areas identified as EFH for winter flounder eggs and larvae, in-water work shall be avoided from January 1 to May 31 of any year **except for the calendar year 2026**. A PCN is required if a variance of this seasonal work window is requested.

This determination covers only the work described in the submitted material. Any major changes in the project may require additional authorizations from the New York District.

Care should be taken so that construction materials, including debris, do not enter any waterway to become drift or pollution hazards. You are to contact the appropriate state and local government officials to ensure that the subject work is performed in compliance with their requirements.

This verification is valid until **March 15, 2031**, unless the nationwide permit is modified, reissued, or revoked. This verification will remain valid until **March 15, 2031**, if the activity complies with the terms of any subsequent modifications of the nationwide permit authorization. If the nationwide permits are suspended, revoked, or modified in such a way that the activity would no longer comply with the terms and conditions of a nationwide permit, and the proposed activity has commenced, or is under contract to commence, the permittee shall have 12 months from the date of such action to complete the activity.

**This authorization is conditional on the applicant's receipt of the required coastal zone management concurrence or waiver from the New York State Department of State (NYSDOS). No work may be accomplished until the required approval from NYSDOS has been obtained.**

Regulatory Division

SUBJECT: Permit Application Number NAN-2025-01009-MLO  
by New York State Office of Resilient Homes and Communities

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**Within 30 days of the completion of the activity authorized by this permit and any mitigation required by this permit, you are to sign and submit the attached compliance certification form to this office.**

In order for us to better serve you, please complete our Customer Service Survey located at <https://www.nan.usace.army.mil/Missions/Regulatory/Customer-Survey/>.

If any questions should arise concerning this matter, please contact Matthew Look, of my staff, at 917-790-8221

Sincerely,

Matthew Look  
Project Manager  
Metro NY/NJ Branch

Enclosures

# **NATIONWIDE GENERAL PERMIT** **COMPLIANCE CERTIFICATION** **AND REPORT FORM**

Permit File Number: NAN-2025-01009-MLO

Permittee: New York State Office of Resilient Homes and Communities

Location: Lat: 40.49399 Long: -74.246065, Tottenville Shoreline, Staten Island, Richmond County, New York

Date Permit Letter Issued: \_\_\_\_\_

Within 30 days of the completion of the activity authorized by this nationwide general permit and any mitigation required in the verification letter, please sign this certification and return it to the address at the bottom of this form.

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with the permit's terms and conditions you are subject to permit suspension, modification or revocation.

I hereby certify that the work authorized by the above referenced nationwide general permit has been completed in accordance with the terms and conditions of said permit, and required mitigation was completed in accordance with the permit conditions.

\_\_\_\_\_  
Signature of Permittee

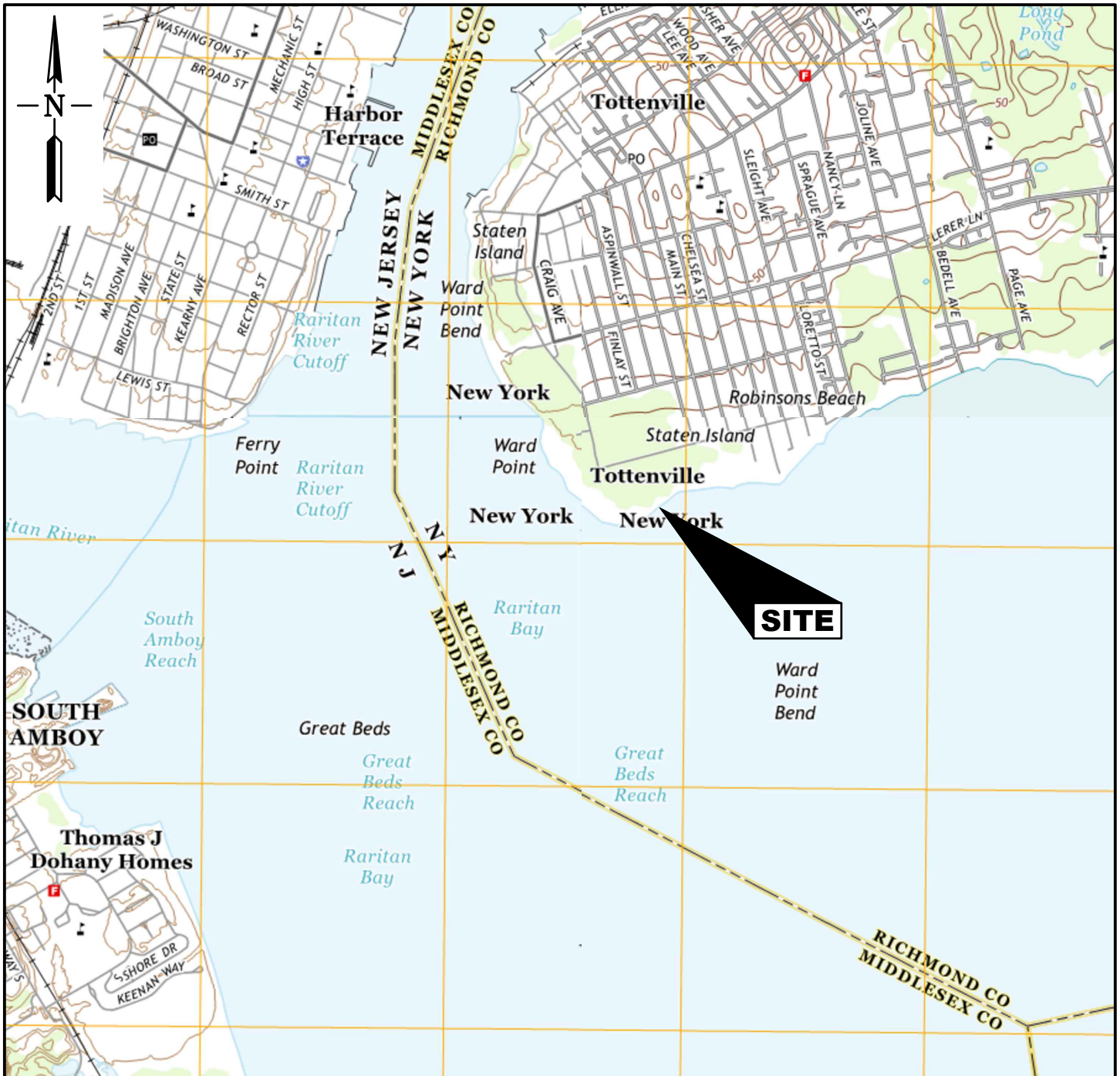
\_\_\_\_\_  
Date

FOLD THIS FORM INTO THIRDS, WITH THE BOTTOM THIRD FACING OUTWARD. TAPE IT TOGETHER AND MAIL TO THE ADDRESS BELOW OR EMAIL TO [CENAN-R-PERMIT-APP@USACE.ARMY.MIL](mailto:CENAN-R-PERMIT-APP@USACE.ARMY.MIL).

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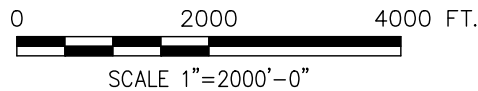
PLACE  
STAMP  
HERE

DEPARTMENT OF THE ARMY  
NEW YORK DISTRICT CORPS OF ENGINEERS  
USACE OPERATIONS/REGULATORY 16-406  
C/O PSC MAIL CENTER 26 FEDERAL PLAZA  
NEW YORK, NEW YORK 10278



TAKEN FROM MULTIPLE USGS MAPS:  
 ARTHUR KILL, PERTH AMBOY, SOUTH  
 AMBOY, & KEYPORT QUADRANGLE  
 NEW JERSEY-NEW YORK  
 7.5 MINUTE SERIES

### VICINITY MAP



FOR PERMIT USE ONLY NOT FOR CONSTRUCTION
REVISIONS:
05/24/2024 JOINT APPLICATION
11/20/2025 NOCA

DATUM: N.A.V.D. 88  
 APPLICATION NO.:

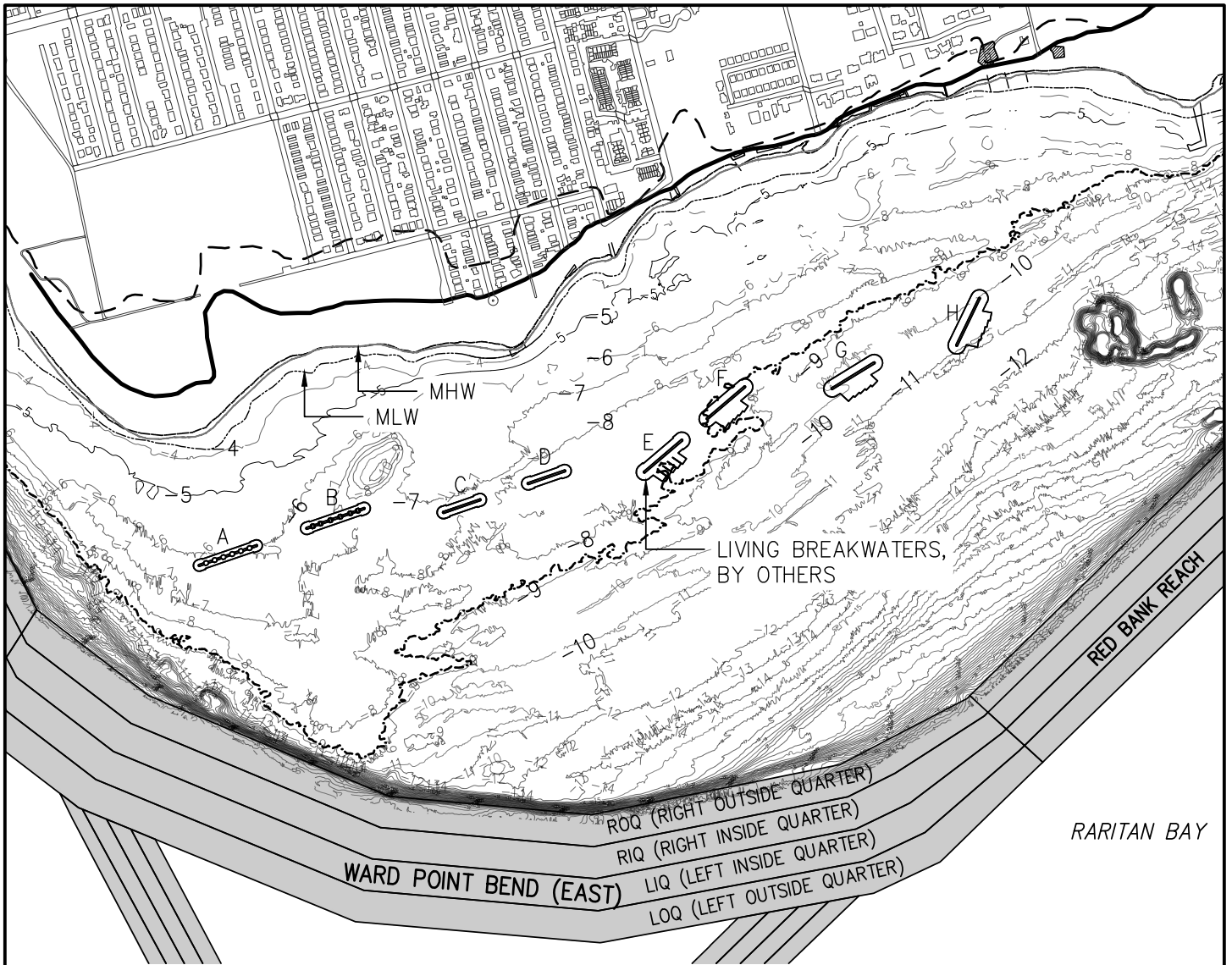
AGENT: NEW YORK OFFICE OF RESILIENT HOMES  
 AND COMMUNITIES, FORMERLY KNOWN AS  
 GOVERNOR'S OFFICE OF STORM RECOVERY.

PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC  
**SCAPE LANDSCAPE ARCHITECTURE DPC**  
**277 BROADWAY NINTH FLOOR NEW YORK**

PROPOSED OYSTER RESTORATION ON THE LIVING  
 BREAKWATERS

WARD POINT BEND, RARITAN BAY  
 TOTTENVILLE, STATEN ISLAND  
 COUNTY OF RICHMOND  
 STATE OF NEW YORK

DATE: 12/09/2025                      SHEET 1 OF 16



**LEGEND**

- MEAN HIGH WATER
- - - - MEAN LOW WATER
- FEMA V-ZONE
- - - - LIMWA
- - - - -6' MLW (NAVD88 EL. -8.62)
- ▭ FEDERAL NAVIGATION CHANNEL

TIDAL ELEVATIONS NAVD88	
MEAN HIGHER HIGH WATER	2.41
MEAN HIGH WATER	2.08
MEAN LOW WATER	-2.62
MEAN LOWER LOW WATER	-2.82

\*ALL ELEVATIONS ARE IN NAVD88

**EXISTING OVERALL SITE PLAN**

0 1200 2400 FT.



SCALE 1"=1200'-0"

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NOT FOR CONSTRUCTION

REVISIONS:

05/24/2024 JOINT APPLICATION

11/20/2025 NOCA

DATUM: N.A.V.D. 88  
APPLICATION NO.:

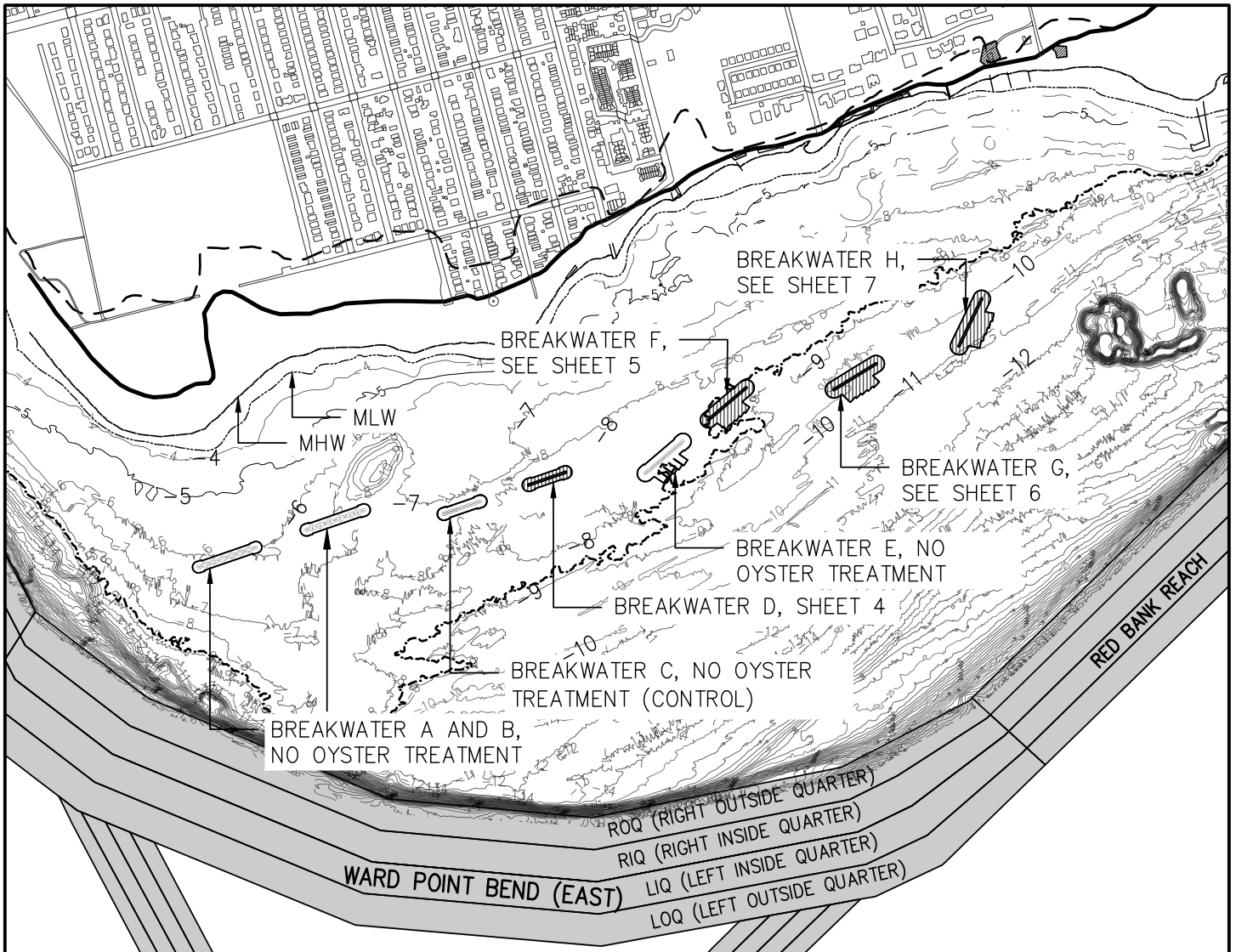
AGENT: NEW YORK OFFICE OF RESILIENT HOMES  
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**SCAPE LANDSCAPE ARCHITECTURE DPC**  
277 BROADWAY NINTH FLOOR NEW YORK

PROPOSED OYSTER RESTORATION ON THE LIVING  
BREAKWATERS

WARD POINT BEND, RARITAN BAY  
TOTTENVILLE, STATEN ISLAND  
COUNTY OF RICHMOND  
STATE OF NEW YORK

DATE: 12/09/2025 SHEET 2 OF 16



**LEGEND**

- BREAKWATERS WITH POTENTIAL OYSTER RESTORATION
- EXISTING BREAKWATERS
- FEDERAL NAVIGATION CHANNEL
- MEAN HIGH WATER
- MEAN LOW WATER
- FEMA V-ZONE
- LIMWA
- 6' MLW (NAVD88 EL. -8.62)

TIDAL ELEVATIONS NAVD88	
MEAN HIGHER HIGH WATER	2.41
MEAN HIGH WATER	2.08
MEAN LOW WATER	-2.62
MEAN LOWER LOW WATER	-2.82

\*ALL ELEVATIONS ARE IN NAVD88

**PROPOSED OVERALL SITE PLAN**

0 1200 2400 FT.



SCALE 1"=1200'-0"

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11/20/2025 NOCA

DATUM: N.A.V.D. 88  
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AND COMMUNITIES, FORMERLY KNOWN AS  
GOVERNOR'S OFFICE OF STORM RECOVERY.

PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC  
**SCAPE LANDSCAPE ARCHITECTURE DPC**  
277 BROADWAY NINTH FLOOR NEW YORK

PROPOSED OYSTER RESTORATION ON THE LIVING  
BREAKWATERS

WARD POINT BEND, RARITAN BAY  
TOTTENVILLE, STATEN ISLAND  
COUNTY OF RICHMOND  
STATE OF NEW YORK

DATE: 12/09/2025

SHEET 3 OF 16

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REVISIONS:  
05/24/2024 JOINT APPLICATION  
09/19/2024 REV 1  
11/20/2025 NOCA

DATUM: N.A.V.D. 88  
APPLICATION NO.:

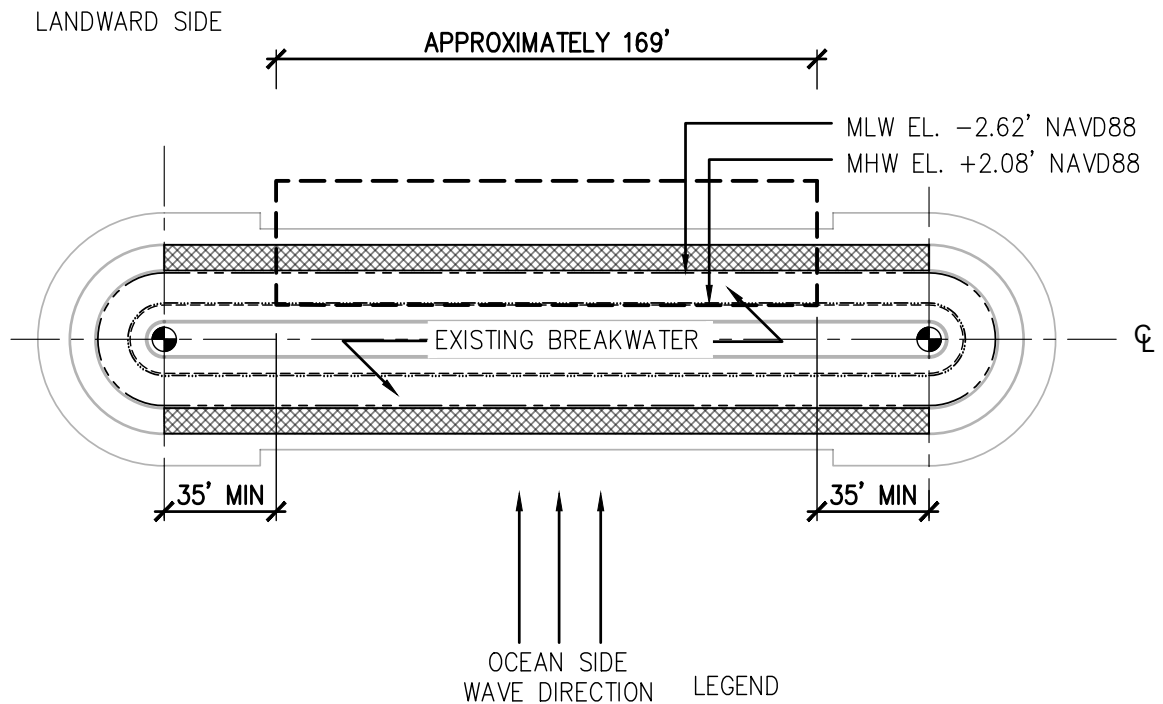
AGENT: NEW YORK OFFICE OF RESILIENT HOMES  
AND COMMUNITIES, FORMERLY KNOWN AS  
GOVERNOR'S OFFICE OF STORM RECOVERY.

PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC  
SCAPE LANDSCAPE ARCHITECTURE DPC  
277 BROADWAY NINTH FLOOR NEW YORK

PROPOSED OYSTER RESTORATION ON THE LIVING  
BREAKWATERS

WARD POINT BEND, RARITAN BAY  
TOTTENVILLE, STATEN ISLAND  
COUNTY OF RICHMOND  
STATE OF NEW YORK

DATE: 12/09/2025 SHEET 4 OF 16

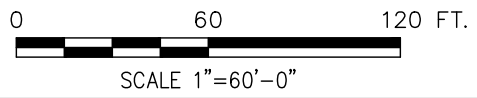


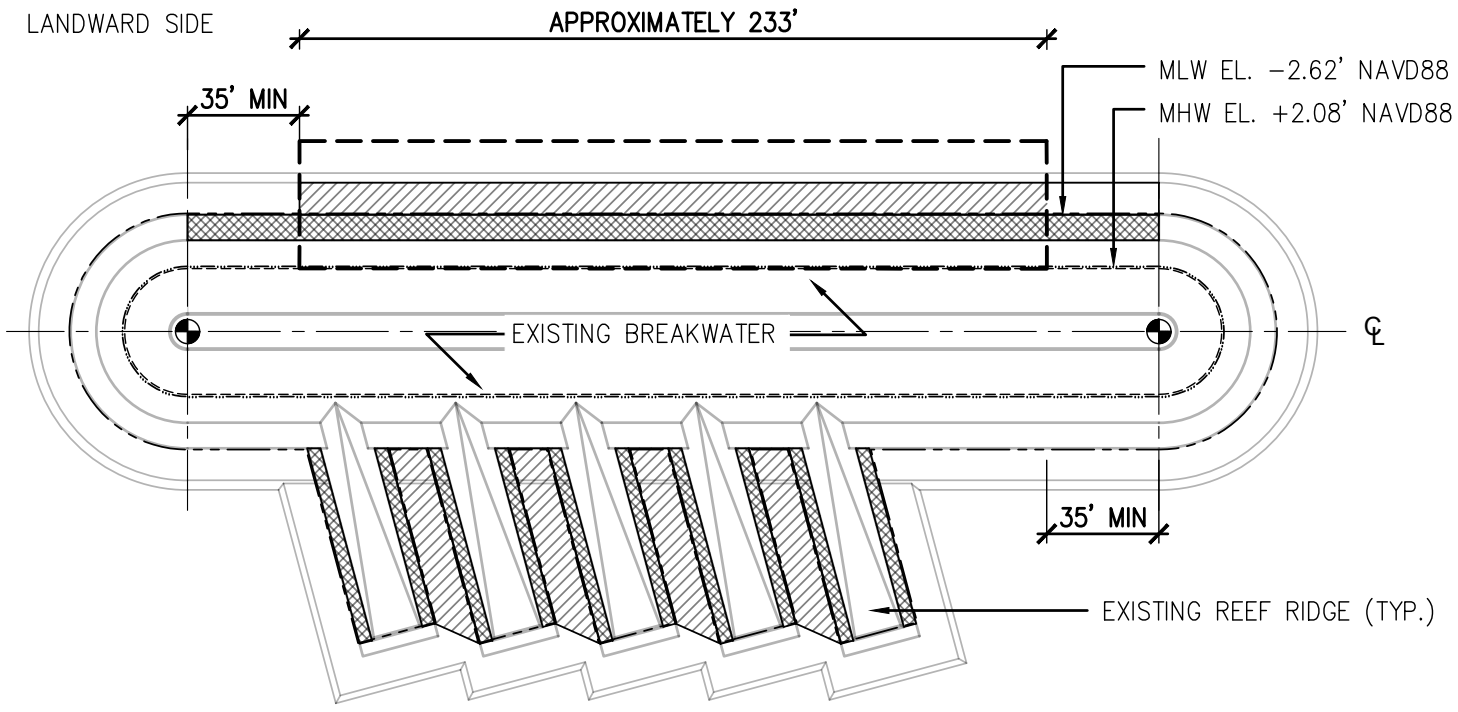
PROPOSED OYSTER DISK TREATMENTS	980
IN-SITU OYSTER LARVAE SETTING TREATMENT	1

TIDAL ELEVATIONS NAVD88	
MEAN HIGHER HIGH WATER	2.41
MEAN HIGH WATER	2.08
MEAN LOW WATER	-2.62
MEAN LOWER LOW WATER	-2.82

- LEGEND
- MHW
  - MLW
  - MHW SPRING
  - PROPOSED IN-SITU OYSTER LARVAE SETTING, SEE SHEET 13
  - PROPOSED OYSTER TREATMENTS ON ECOLOGICAL CONCRETE UNITS, SEE SHEET 8, 9, AND 14

## PROPOSED RESTORATION – BREAKWATER D

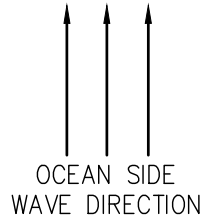




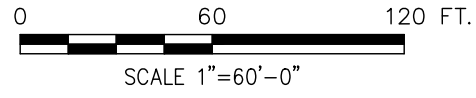
PROPOSED CONTINGENCY DROPLock WITH OYSTER SPATS	0
PROPOSED OYSTER DISK TREATMENTS	1,582
IN-SITU OYSTER LARVAE SETTING TREATMENT	1

TIDAL ELEVATIONS NAVD88	
MEAN HIGHER HIGH WATER	2.41
MEAN HIGH WATER	2.08
MEAN LOW WATER	-2.62
MEAN LOWER LOW WATER	-2.82

- LEGEND
- MHW
  - - - MLW
  - - - MHW SPRING
  - ▭ PROPOSED IN-SITU OYSTER LARVAE SETTING, SEE SHEET 13
  - ▨ PROPOSED CONTINGENCY DROPLock PLACEMENT AREA, SEE SHEET 10, 11, AND 12
  - ▩ PROPOSED OYSTER TREATMENTS ON ECOLOGICAL CONCRETE UNITS, SEE SHEET 8, 9, AND 14



## PROPOSED RESTORATION – BREAKWATER F



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REVISIONS:

05/24/2024	JOINT APPLICATION
09/19/2024	REV 1
12/09/2024	NOA #2 REVISION
11/20/2025	NOCA

DATUM: N.A.V.D. 88  
APPLICATION NO.:

AGENT: NEW YORK OFFICE OF RESILIENT HOMES  
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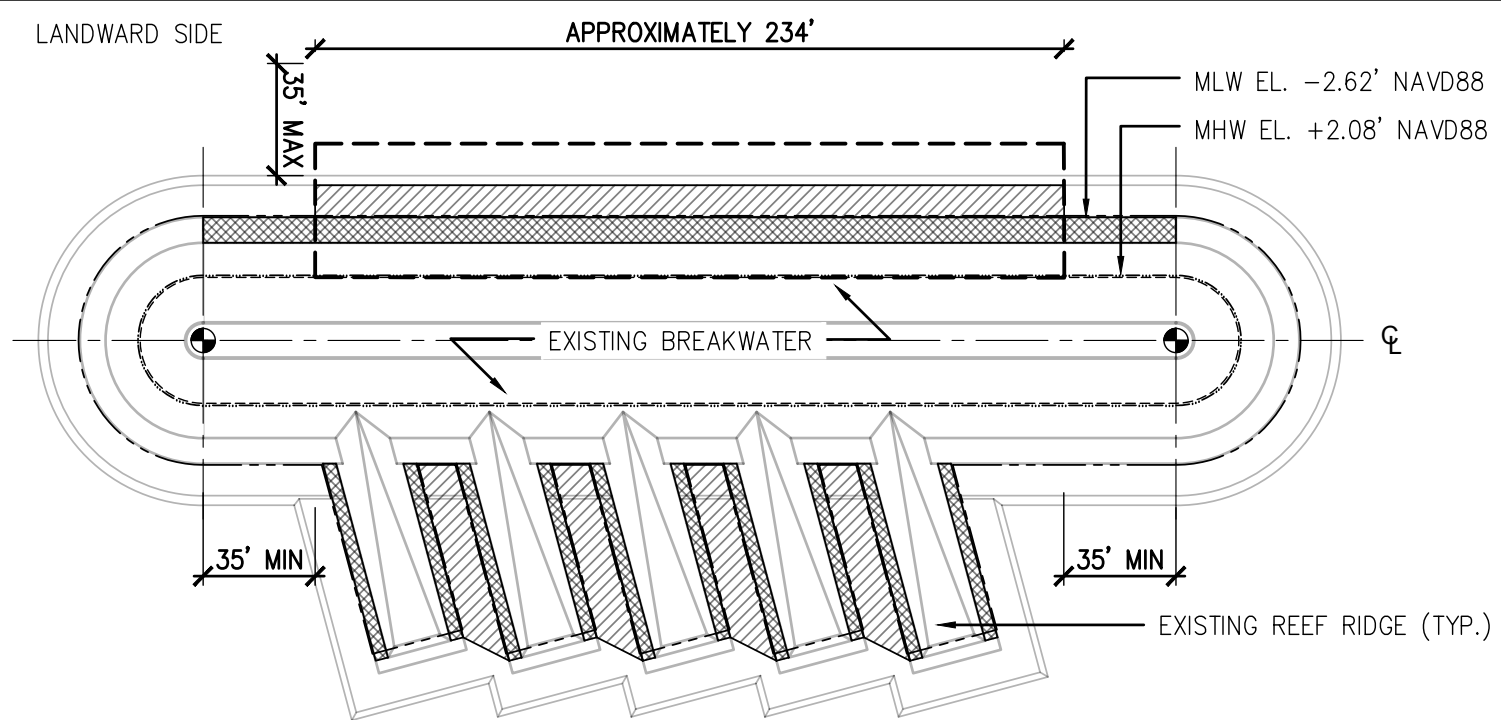
PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC  
SCAPE LANDSCAPE ARCHITECTURE DPC  
277 BROADWAY NINTH FLOOR NEW YORK

PROPOSED OYSTER RESTORATION ON THE LIVING  
BREAKWATERS

WARD POINT BEND, RARITAN BAY  
TOTTENVILLE, STATEN ISLAND  
COUNTY OF RICHMOND  
STATE OF NEW YORK

DATE: 12/09/2025

SHEET 5 OF 16



PROPOSED CONTINGENCY DROPLOCK WITH OYSTER SPATS (IF NEEDED, SEE SHEET 16)	0 TO 1387
PROPOSED OYSTER DISK TREATMENTS	938
IN-SITU OYSTER LARVAE SETTING TREATMENT	1

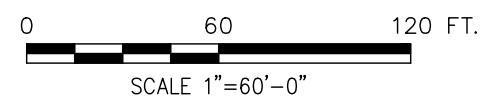
TIDAL ELEVATIONS NAVD88	
MEAN HIGHER HIGH WATER	2.41
MEAN HIGH WATER	2.08
MEAN LOW WATER	-2.62
MEAN LOWER LOW WATER	-2.82

LEGEND

- MHW
- MLW
- - - MHW SPRING
- PROPOSED IN-SITU OYSTER LARVAE SETTING, SEE SHEET 13
- ▨ PROPOSED CONTINGENCY DROPLOCK PLACEMENT AREA, SEE SHEET 10, 11 AND 12
- ▩ PROPOSED OYSTER TREATMENTS ON ECOLOGICAL CONCRETE UNITS, SEE SHEET 8, 9, AND 14

OCEAN SIDE WAVE DIRECTION

## PROPOSED RESTORATION – BREAKWATER G



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 REVISIONS:  
 05/24/2024 JOINT APPLICATION  
 09/19/2024 REV 1  
 12/09/2024 NOA #2 REVISION  
 11/20/2025 NOCA

DATUM: N.A.V.D. 88  
 APPLICATION NO.:  
 AGENT: NEW YORK OFFICE OF RESILIENT HOMES  
 AND COMMUNITIES, FORMERLY KNOWN AS  
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 PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC  
 SCAPE LANDSCAPE ARCHITECTURE DPC  
 277 BROADWAY NINTH FLOOR NEW YORK

PROPOSED OYSTER RESTORATION ON THE LIVING  
 BREAKWATERS  
 WARD POINT BEND, RARITAN BAY  
 TOTTEVILLE, STATEN ISLAND  
 COUNTY OF RICHMOND  
 STATE OF NEW YORK  
 DATE: 12/09/2025  
 SHEET 6 OF 16

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REVISIONS:  
05/24/2024 JOINT APPLICATION  
09/19/2024 REV 1  
12/09/2024 NOA #2 REVISION  
11/20/2025 NOCA

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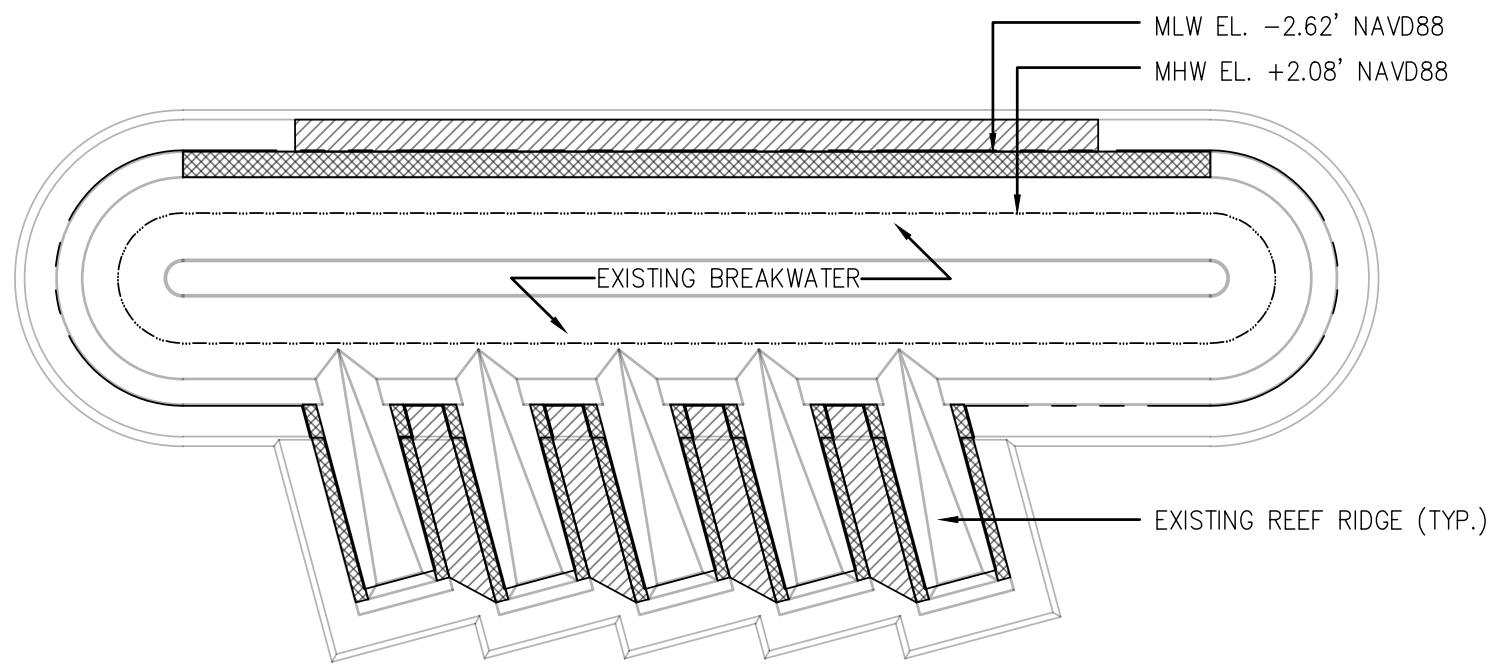
PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC  
SCAPE LANDSCAPE ARCHITECTURE DPC  
277 BROADWAY NINTH FLOOR NEW YORK

PROPOSED OYSTER RESTORATION ON THE LIVING  
BREAKWATERS

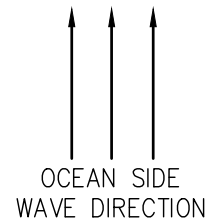
WARD POINT BEND, RARITAN BAY  
TOTTENVILLE, STATEN ISLAND  
COUNTY OF RICHMOND  
STATE OF NEW YORK

DATE: 12/09/2025 SHEET 7 OF 16

LANDWARD SIDE



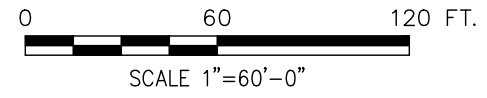
PROPOSED CONTINGENCY DROPLOCK WITH OYSTER SPATS (IF NEEDED, SEE SHEET 16)	0 TO 1388
PROPOSED OYSTER DISK TREATMENTS	994
IN-SITU OYSTER LARVAE SETTING TREATMENT	0

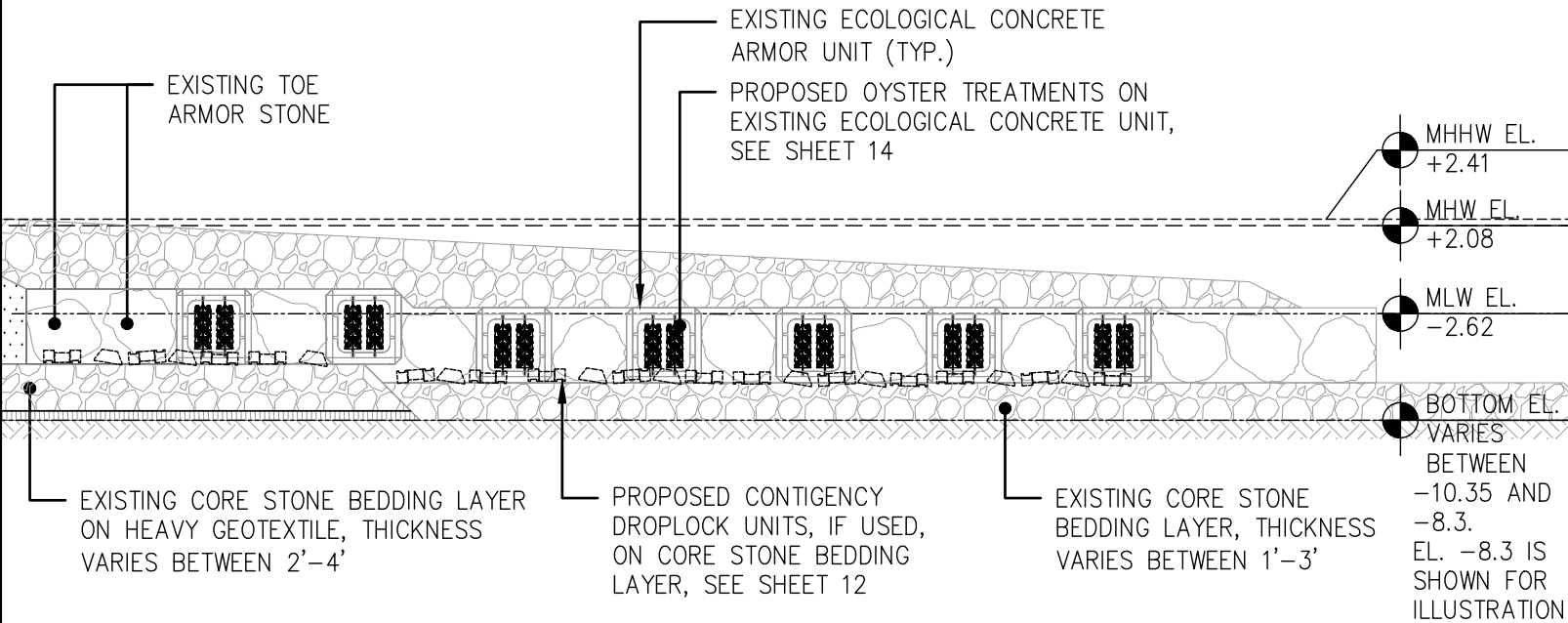


- LEGEND
- MHW
  - - - MLW
  - - - MHW SPRING
  - PROPOSED CONTINGENCY DROPLOCK PLACEMENT AREA, SEE SHEET 10, 11 AND 12
  - PROPOSED OYSTER TREATMENTS ON ECOLOGICAL CONCRETE UNITS, SEE SHEET 8, 9, AND 14

TIDAL ELEVATIONS NAVD88	
MEAN HIGHER HIGH WATER	2.41
MEAN HIGH WATER	2.08
MEAN LOW WATER	-2.62
MEAN LOWER LOW WATER	-2.82

## PROPOSED RESTORATION – BREAKWATER H

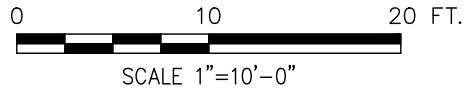




**NOTE:**

1. LOCATION OF OYSTER TREATMENTS IN ECOLOGICAL CONCRETE UNITS IS REPRESENTATIVE, SPECIFIC UNITS RECEIVING TREATMENT MAY VARY.
2. ELEVATION OF PROPOSED OYSTER TREATMENTS VARIES BASED ON SEABED DEPTH AND BUILT CONDITION OF BREAKWATERS, BUT THE TREATMENTS ARE ALWAYS LOCATED BELOW -0.2 NAVD88

## TYPICAL REEF RIDGE ELEVATION WITH OYSTER TREATMENTS



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**REVISIONS:**

- 05/24/2024 JOINT APPLICATION
- 09/19/2024 REV 1
- 12/09/2024 NOA #2 REVISION
- 11/20/2025 NOCA

DATUM: N.A.V.D. 88  
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AGENT: NEW YORK OFFICE OF RESILIENT HOMES  
AND COMMUNITIES, FORMERLY KNOWN AS  
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PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC  
SCAPE LANDSCAPE ARCHITECTURE DPC  
277 BROADWAY NINTH FLOOR NEW YORK

PROPOSED OYSTER RESTORATION ON THE LIVING  
BREAKWATERS

WARD POINT BEND, RARITAN BAY  
TOTTENVILLE, STATEN ISLAND  
COUNTY OF RICHMOND  
STATE OF NEW YORK

DATE: 12/09/2025

SHEET 8 OF 16

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05/24/2024 JOINT APPLICATION  
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11/20/2025 NOCA

DATUM: N.A.V.D. 88  
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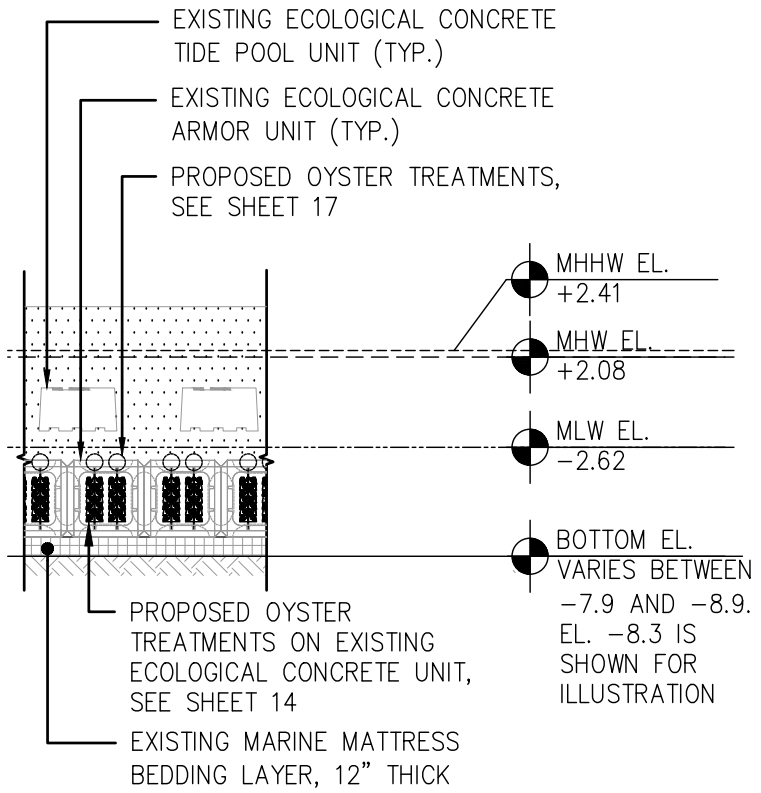
AGENT: NEW YORK OFFICE OF RESILIENT HOMES  
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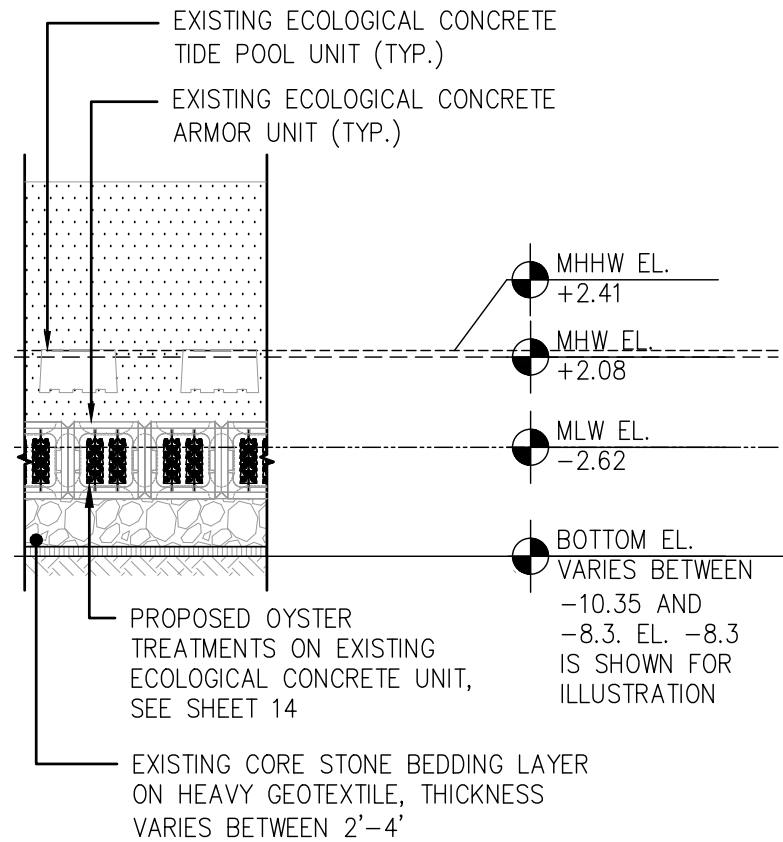
PROPOSED OYSTER RESTORATION ON THE LIVING  
BREAKWATERS

WARD POINT BEND, RARITAN BAY  
TOTTENVILLE, STATEN ISLAND  
COUNTY OF RICHMOND  
STATE OF NEW YORK

DATE: 12/09/2025 SHEET 9 OF 16



CONDITION 1: ARMOR UNITS ON MARINE MATTRESS (BW 'D')

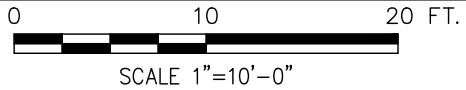


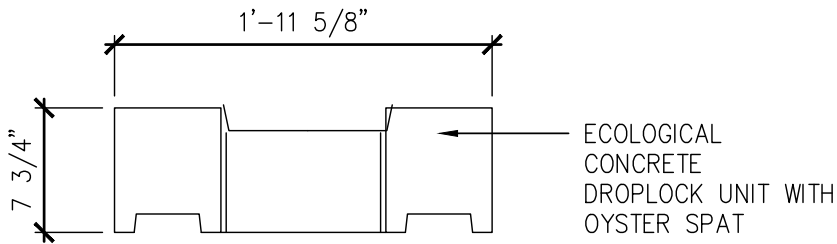
CONDITION 2: ARMOR UNITS ON CORE STONE BEDDING LAYER (BW 'F', 'G', AND 'H')

**NOTE:**

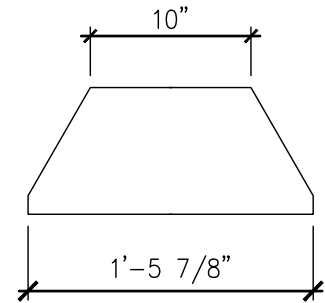
1. LOCATION OF OYSTER TREATMENTS IN ECOLOGICAL CONCRETE UNITS IS REPRESENTATIVE, SPECIFIC UNITS RECEIVING TREATMENT MAY VARY.
2. ELEVATION OF PROPOSED OYSTER TREATMENTS VARIES BASED ON SEABED DEPTH AND BUILT CONDITION OF BREAKWATERS, BUT THE TREATMENTS ARE ALWAYS LOCATED BELOW -0.2 NAVD88
3. WHERE ECOLOGICAL CONCRETE ARMOR UNITS SIT ENTIRELY UNDER MLW, OYSTER DISK TREATMENT WILL BE INSTALLED ON TOP FACE OF THE UNITS.

## TYPICAL BREAKWATER LANDWARD SIDE ELEVATION WITH OYSTER TREATMENTS

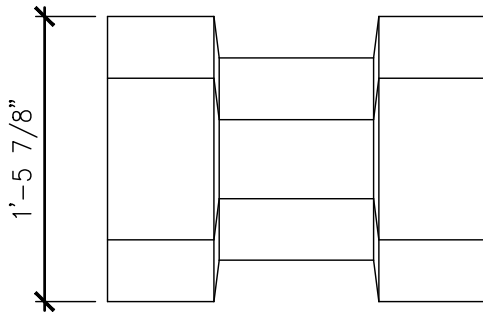




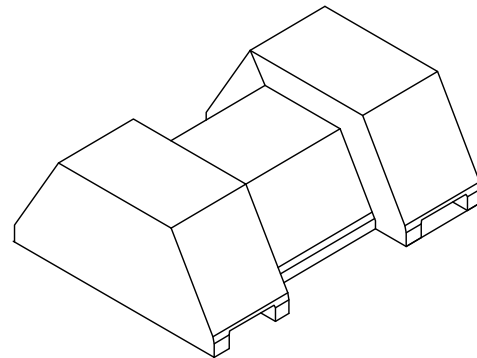
FRONT ELEVATION



SIDE ELEVATION



PLAN



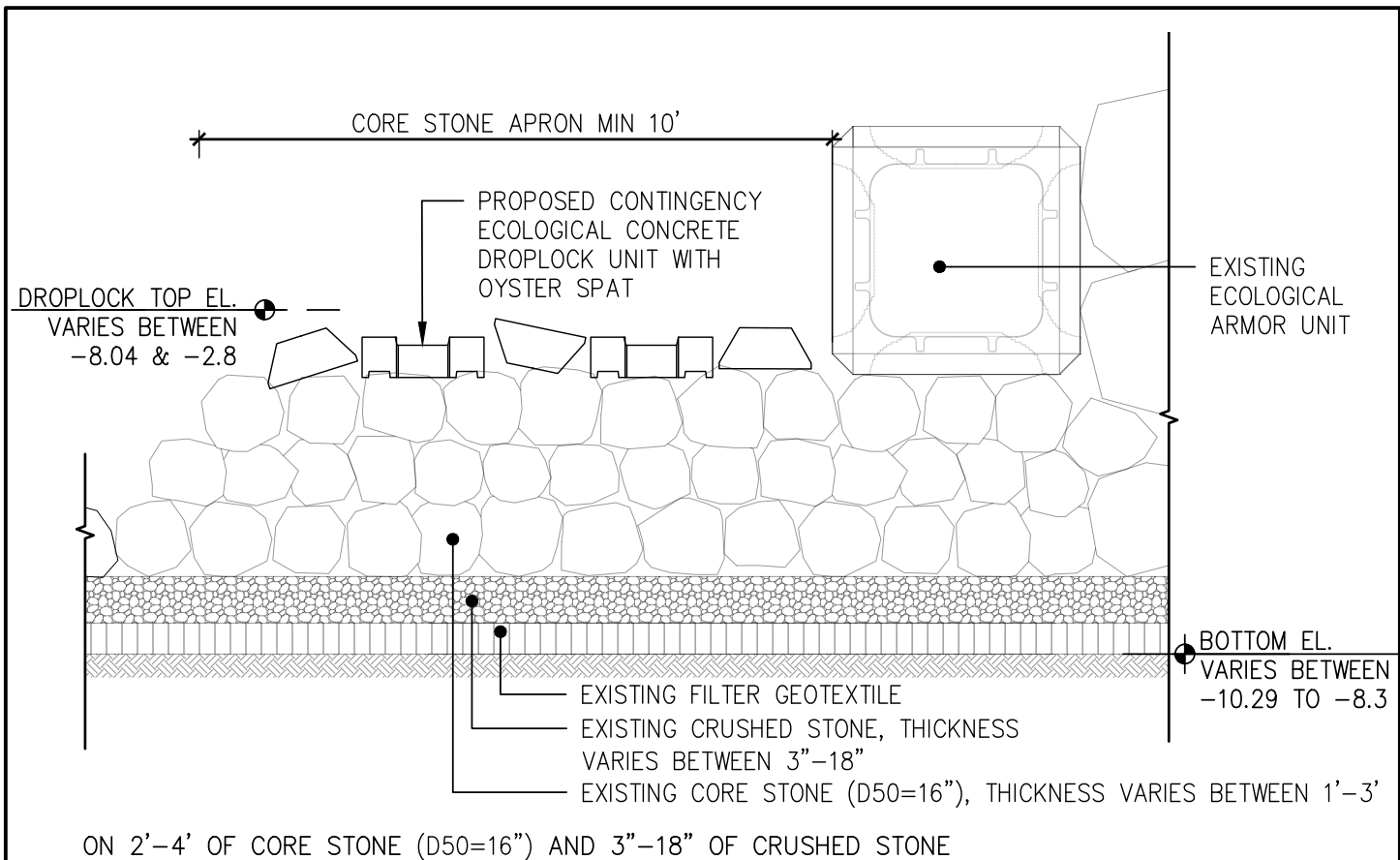
AXON

NOTES: DROPLock UNIT PROPERTIES (INFORMATION IS APPROXIMATE):  
 WEIGHT: 64-70 KG (140-155 LBS)  
 VOLUME: 0.033 M<sup>3</sup> (0.043 YD<sup>3</sup>)

## PROPOSED CONTINGENCY DROPLock ECOLOGICAL CONCRETE UNIT

SCALE: 1" = 1'

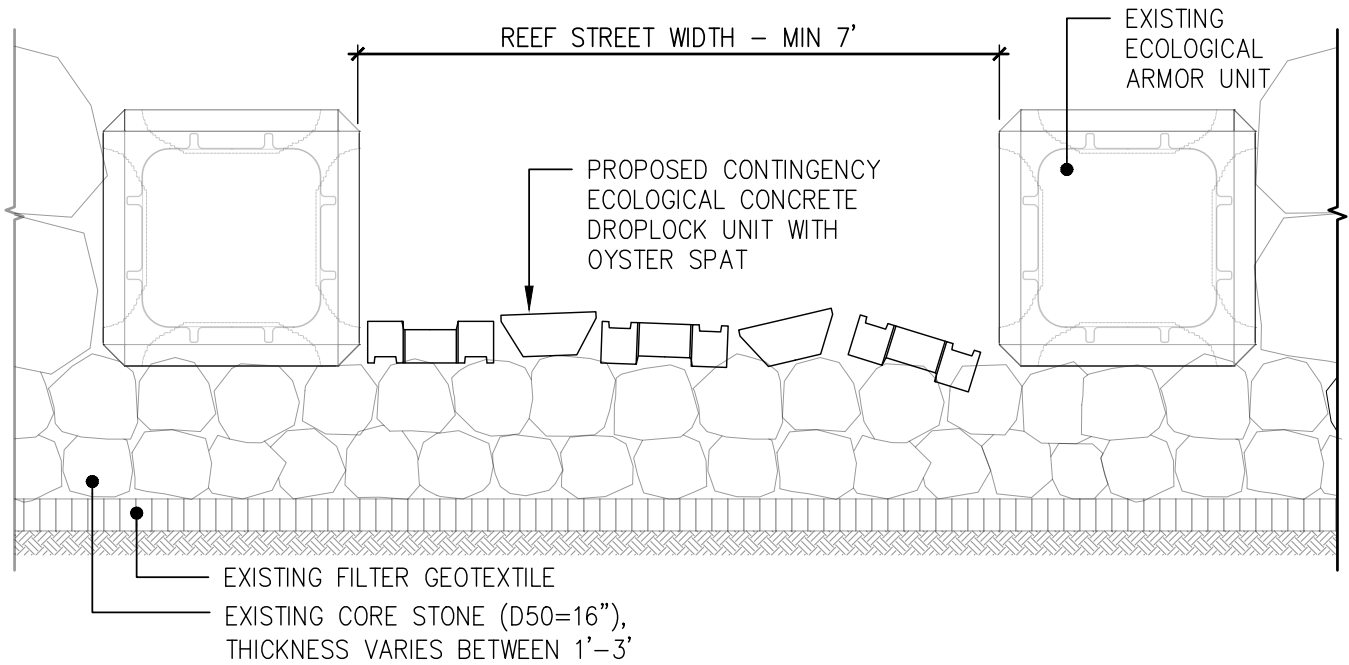
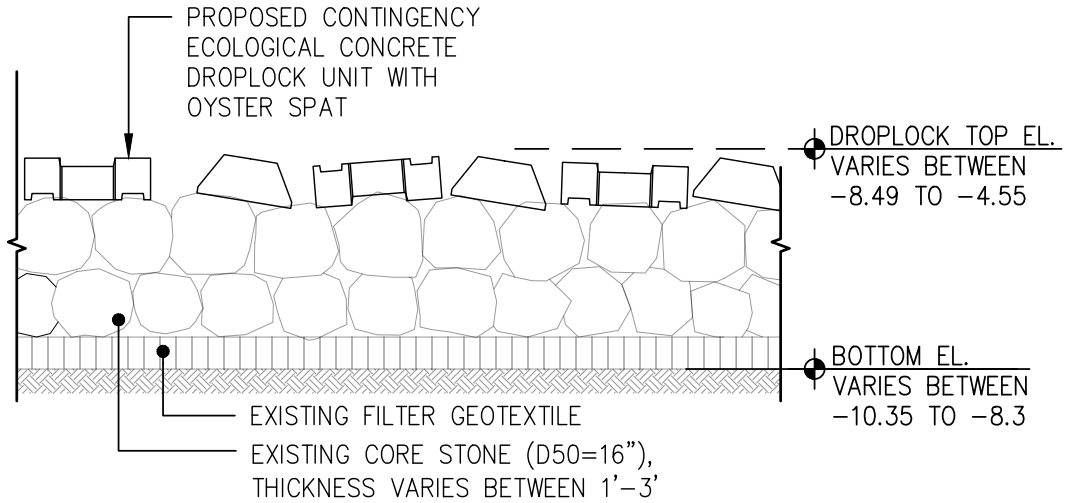
<p>FOR PERMIT USE ONLY NOT FOR CONSTRUCTION</p>	<p>DATUM: N.A.V.D. 88 APPLICATION NO.:</p>	<p>PROPOSED OYSTER RESTORATION ON THE LIVING BREAKWATERS</p>
<p>REVISIONS:</p>	<p>AGENT: NEW YORK OFFICE OF RESILIENT HOMES AND COMMUNITIES, FORMERLY KNOWN AS GOVERNOR'S OFFICE OF STORM RECOVERY.</p>	<p>WARD POINT BEND, RARITAN BAY TOTTENVILLE, STATEN ISLAND COUNTY OF RICHMOND STATE OF NEW YORK</p>
<p>05/24/2024 JOINT APPLICATION</p>	<p>PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC <b>SCAPE LANDSCAPE ARCHITECTURE DPC</b> <b>277 BROADWAY NINTH FLOOR NEW YORK</b></p>	<p>DATE: 12/09/2025</p>
<p>09/19/2024 REV 1</p>		<p>SHEET 10 OF 16</p>
<p>12/09/2024 NOIA #2 REVISION</p>		
<p>11/20/2025 NOCA</p>		



## PROPOSED CONTINGENCY DROPLOCK ECOLOGICAL CONCRETE UNIT ON SCOUR APRON

SCALE: 1" = 3'

<p>FOR PERMIT USE ONLY NOT FOR CONSTRUCTION</p>	<p>DATUM: N.A.V.D. 88 APPLICATION NO.:</p>	<p>PROPOSED OYSTER RESTORATION ON THE LIVING BREAKWATERS</p>
<p>REVISIONS:</p>	<p>AGENT: NEW YORK OFFICE OF RESILIENT HOMES AND COMMUNITIES, FORMERLY KNOWN AS GOVERNOR'S OFFICE OF STORM RECOVERY.</p>	<p>WARD POINT BEND, RARITAN BAY</p>
<p>05/24/2024 JOINT APPLICATION</p>	<p>PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC</p>	<p>TOTTENVILLE, STATEN ISLAND</p>
<p>09/19/2024 REV 1</p>	<p>SCAPE LANDSCAPE ARCHITECTURE DPC</p>	<p>COUNTY OF RICHMOND</p>
<p>12/09/2024 NOIA #2 REVISION</p>	<p>277 BROADWAY NINTH FLOOR NEW YORK</p>	<p>STATE OF NEW YORK</p>
<p>11/20/2025 NOCA</p>	<p>DATE: 12/09/2025</p>	<p>SHEET 11 OF 16</p>

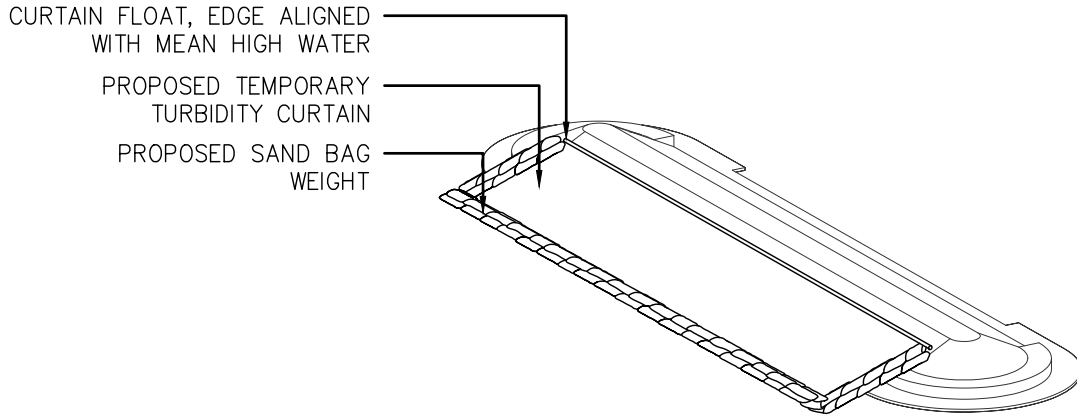


ON BW 'F', 'G', AND 'H'  
 BETWEEN REEF RIDGES, OCEAN SIDE ON 1'-3' OF CORE STONE (D50=16")

## PROPOSED CONTINGENCY DROPLOCK ECOLOGICAL CONCRETE UNIT ON REEF STREET

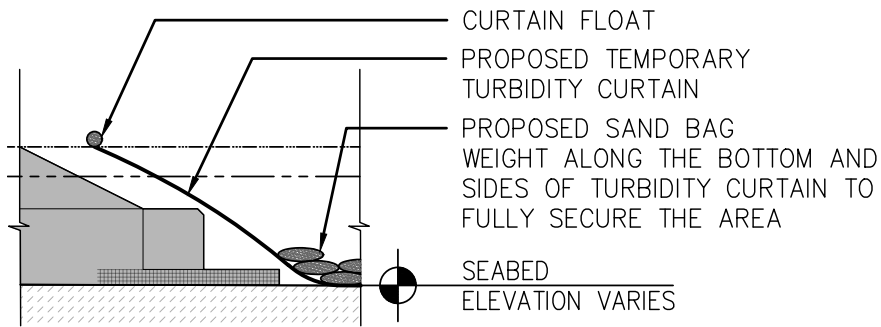
SCALE: 1" = 3'

<p>FOR PERMIT USE ONLY          NOT FOR CONSTRUCTION</p>	<p>DATUM: N.A.V.D. 88          APPLICATION NO.:</p>	<p>PROPOSED OYSTER RESTORATION ON THE LIVING          BREAKWATERS</p>
<p>REVISIONS:</p>	<p>AGENT: NEW YORK OFFICE OF RESILIENT HOMES          AND COMMUNITIES, FORMERLY KNOWN AS          GOVERNOR'S OFFICE OF STORM RECOVERY.</p>	<p>WARD POINT BEND, RARITAN BAY</p>
<p>05/24/2024 JOINT APPLICATION</p>	<p>PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC</p>	<p>TOTTENVILLE, STATEN ISLAND</p>
<p>09/19/2024 REV 1</p>	<p>SCAPE LANDSCAPE ARCHITECTURE DPC</p>	<p>COUNTY OF RICHMOND</p>
<p>12/09/2024 NOIA #2 REVISION</p>	<p>277 BROADWAY NINTH FLOOR NEW YORK</p>	<p>STATE OF NEW YORK</p>
<p>11/20/2025 NOCA</p>	<p>DATE: 12/09/2025</p>	<p>SHEET 12 OF 16</p>



## PROPOSED IN-SITU OYSTER LARVAE SETTING TREATMENT

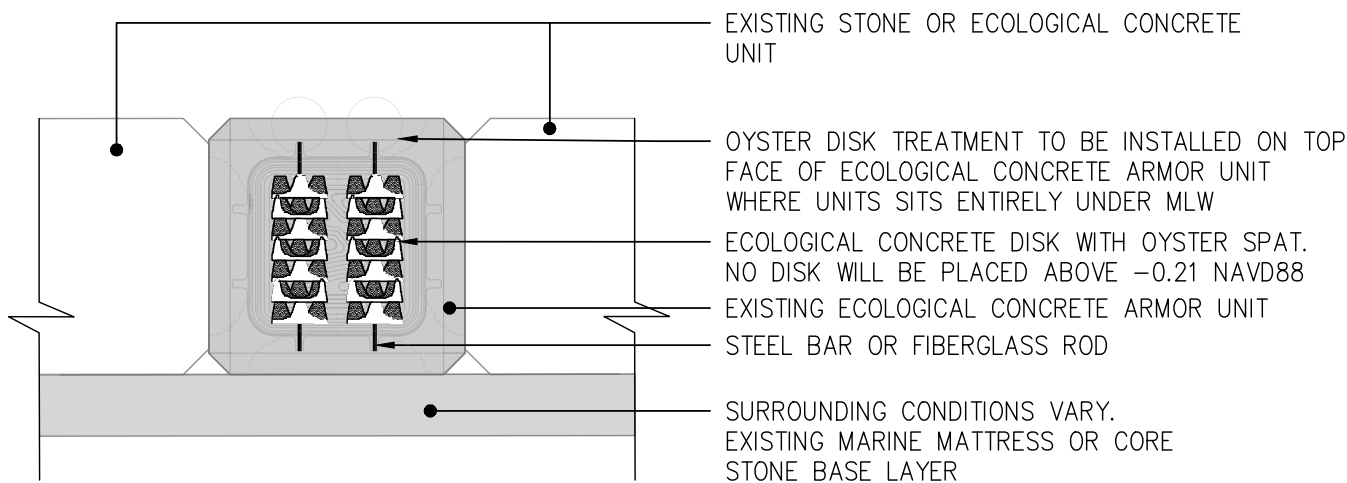
NOT TO SCALE



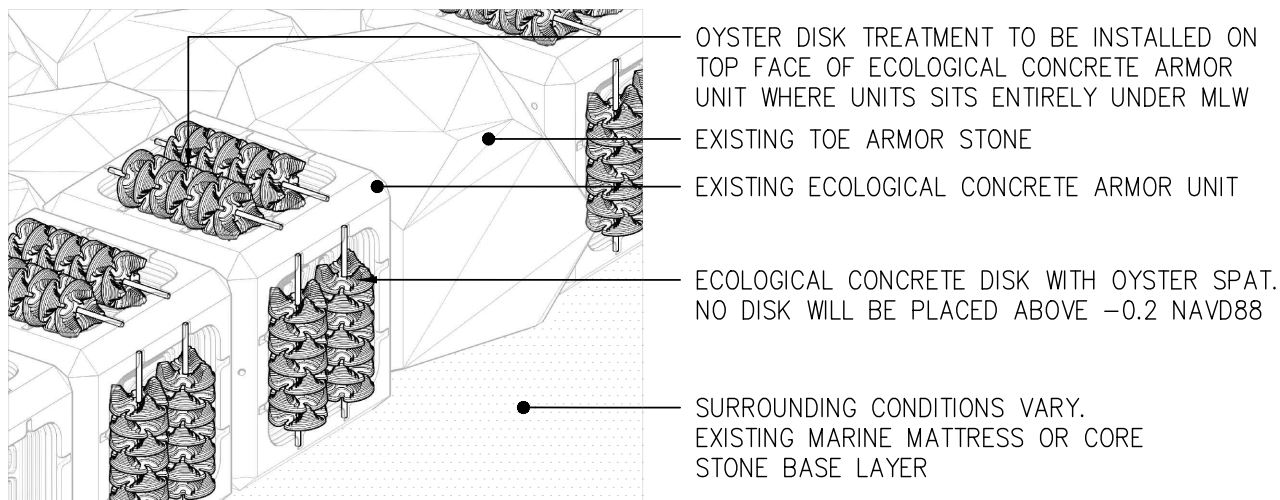
## PROPOSED IN-SITU OYSTER LARVAE SETTING TREATMENT BARRIER ANCHORING TECHNIQUES

1" = 5'

<p style="text-align: center; font-weight: bold; font-size: small;">FOR PERMIT USE ONLY NOT FOR CONSTRUCTION</p>	<p style="font-size: x-small;">DATUM: N.A.V.D. 88 APPLICATION NO.:</p> <p style="font-size: x-small;">AGENT: NEW YORK OFFICE OF RESILIENT HOMES AND COMMUNITIES, FORMERLY KNOWN AS GOVERNOR'S OFFICE OF STORM RECOVERY.</p> <p style="font-size: x-small;">PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC <b>SCAPE LANDSCAPE ARCHITECTURE DPC</b> <b>277 BROADWAY NINTH FLOOR NEW YORK</b></p>	<p style="font-size: x-small;">PROPOSED OYSTER RESTORATION ON THE LIVING BREAKWATERS</p> <p style="font-size: x-small;">WARD POINT BEND, RARITAN BAY TOTTENVILLE, STATEN ISLAND COUNTY OF RICHMOND STATE OF NEW YORK</p>
<p style="font-size: x-small;">REVISIONS:</p> <p style="font-size: x-small;">05/24/2024 JOINT APPLICATION</p> <p style="font-size: x-small;">11/20/2025 NOCA</p>		<p style="font-size: x-small;">DATE: 12/09/2025</p>
		<p style="font-size: x-small;">SHEET 13 OF 16</p>



ELEVATION  
(NUMBER OF DISKS PER FACE VARIES, MAXIMUM 14 DISKS)



AXON

## PROPOSED OYSTER DISK TREATMENT ON EXISTING ECOLOGICAL CONCRETE ARMOR UNITS

SCALE: 1" = 3'

<p>FOR PERMIT USE ONLY NOT FOR CONSTRUCTION</p>	<p>DATUM: N.A.V.D. 88 APPLICATION NO.:</p>	<p>PROPOSED OYSTER RESTORATION ON THE LIVING BREAKWATERS</p>
<p>REVISIONS:</p>	<p>AGENT: NEW YORK OFFICE OF RESILIENT HOMES AND COMMUNITIES, FORMERLY KNOWN AS GOVERNOR'S OFFICE OF STORM RECOVERY.</p>	<p>WARD POINT BEND, RARITAN BAY TOTTENVILLE, STATEN ISLAND COUNTY OF RICHMOND STATE OF NEW YORK</p>
<p>05/24/2024 JOINT APPLICATION</p>	<p>PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC <b>SCAPE LANDSCAPE ARCHITECTURE DPC</b> <b>277 BROADWAY NINTH FLOOR NEW YORK</b></p>	<p>DATE: 12/09/2025</p>
<p>11/20/2025 NOCA</p>		<p>SHEET 14 OF 16</p>

OVERALL SUMMARY OF TREATMENTS, OYSTER QUANTITIES, FOOTPRINT, AND VOLUME WITHIN THE PROJECT AREA (BASE CASE)

TREATMENT	BREAKWATERS	TOTAL UNITS	SPAT PER UNIT	TOTAL SPATS	FOOTPRINT (SQFT)	VOLUME (CUBIC YARD)
ARMOR UNIT: OYSTER DISK TREATMENT	D, F, G, H	4,494 DISKS (286 ARMOR UNITS)	2,150	9,662,100	NA	12.48
IN-SITU OYSTER LARVAE SETTING TREATMENTS	D, F, G	3	7,200,847	30,860,773	NA	NA
			11,829,963			
			11,829,963			
TOTAL				40,522,873	NA	12.48

CONTINGENCY ONLY FOR CANCELED TRIALS

SEEDED DROPLOCK UNIT	F, G, H	2,775	11,121	30,860,775	NA	NA
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NOTE:

- NO STRUCTURE IS ON THE BAY BOTTOM. ALL PROPOSED TREATMENTS ARE ATTACHED TO OR PLACED ON TOP OF EXISTING STRUCTURES.
- PLACEMENT OF APPROXIMATELY 12.48 CYS FOR THE 4,494 DISKS AND 57.04 CYS FOR THE 1,426 ECO-CONCRETE DROPLOCK UNITS. IF USED, CONTINGENCY SEEDED DROPLOCK UNITS WOULD IMPACT ADDITIONAL VOLUME WITHIN THE WATER COLUMN. SEE SHEET 16 FOR CONTINGENCY DROPLOCK QUANTITIES
- THE DROPLOCK UNITS HAVE A FOOTPRINT AREA OF 2.91 SQUARE FEET (SF) EACH, RESULTING IN A TOTAL PROJECT FOOTPRINT OF 4,150 SF ON THE EXISTING BREAKWATERS, IF THE CONTINGENCY DROPLOCKS ARE USED.

## SUMMARY OF QUANTITIES AND FOOTPRINTS OF PROPOSED OYSTER RESTORATION

<p>FOR PERMIT USE ONLY NOT FOR CONSTRUCTION</p> <p>REVISIONS:</p> <p>05/24/2024 JOINT APPLICATION</p> <p>09/19/2024 REV 1</p> <p>11/01/2024 REV 2</p> <p>12/09/2024 NOIA #2 REVISION</p> <p>11/20/2025 NOCA</p>	<p>DATUM: N.A.V.D. 88 APPLICATION NO.:</p> <p>AGENT: NEW YORK OFFICE OF RESILIENT HOMES AND COMMUNITIES, FORMERLY KNOWN AS GOVERNOR'S OFFICE OF STORM RECOVERY.</p> <p>PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC <b>SCAPE LANDSCAPE ARCHITECTURE DPC</b> <b>277 BROADWAY NINTH FLOOR NEW YORK</b></p>	<p>PROPOSED OYSTER RESTORATION ON THE LIVING BREAKWATERS</p> <p>WARD POINT BEND, RARITAN BAY TOTTENVILLE, STATEN ISLAND COUNTY OF RICHMOND STATE OF NEW YORK</p> <p>DATE: 12/09/2025</p> <p style="text-align: right;">SHEET 15 OF 16</p>
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ALT 1: TWO IN-SITU TREATMENTS, ONE CONTINGENCY DROPLOCK DEPLOYMENT						
TREATMENT	BREAKWATERS	TOTAL UNITS	SPAT PER UNIT	TOTAL SPATS	FOOTPRINT (SQFT)	VOLUME (CUBIC YARD)
ARMOR UNIT: OYSTER DISK TREATMENT	D, F, G, H	4,494 DISKS (286 ARMOR UNITS)	2,150	9,662,100	*N/A	12.48
IN-SITU OYSTER LARVAE SETTING TREATMENTS	D, F	2	7,200,847	19,030,810	*N/A	*N/A
			11,829,963			
CONTINGENCY SEEDED DROPLOCK UNIT	G, H	1,063	11,121	11,821,623	*N/A	*N/A
TOTAL				40,514,533	0	12.48

ALT 2: ONE IN-SITU TREATMENTS, TWO CONTINGENCY DROPLOCK DEPLOYMENT						
TREATMENT	BREAKWATERS	TOTAL UNITS	SPAT PER UNIT	TOTAL SPATS	FOOTPRINT (SQFT)	VOLUME (CUBIC YARD)
ARMOR UNIT: OYSTER DISK TREATMENT	D, F, G, H	4,494 DISKS (286 ARMOR UNITS)	2,150	9,662,100	*N/A	12.48
IN-SITU OYSTER LARVAE SETTING TREATMENTS	D	1	7,200,847	7,200,847	*N/A	*N/A
CONTINGENCY SEEDED DROPLOCK UNIT	G, H	2,127	11,121	23,654,367	*N/A	*N/A
TOTAL				40,517,314	0	12.48

## SUMMARY OF QUANTITIES OF CONTINGENCY DROPLOCK UNITS

FOR PERMIT USE ONLY NOT FOR CONSTRUCTION	DATUM: N.A.V.D. 88 APPLICATION NO.:	PROPOSED OYSTER RESTORATION ON THE LIVING BREAKWATERS
REVISIONS:	AGENT: NEW YORK OFFICE OF RESILIENT HOMES AND COMMUNITIES, FORMERLY KNOWN AS GOVERNOR'S OFFICE OF STORM RECOVERY.	WARD POINT BEND, RARITAN BAY TOTTENVILLE, STATEN ISLAND COUNTY OF RICHMOND STATE OF NEW YORK
05/24/2024 JOINT APPLICATION	PREPARED BY: SCAPE LANDSCAPE ARCHITECTURE DPC	DATE: 12/09/2025
09/19/2024 REV 1	<b>SCAPE LANDSCAPE ARCHITECTURE DPC</b> <b>277 BROADWAY NINTH FLOOR NEW YORK</b>	SHEET 16 OF 16
11/01/2024 REV 2		
12/09/2024 NOIA #2 REVISION		
11/20/2025 NOCA		