



**Maryland**  
Department of  
the Environment

Wes Moore, Governor  
Aruna Miller, Lt. Governor

Serena McIlwain, Secretary  
Suzanne E. Dorsey, Deputy Secretary

November 15, 2024

Baltimore City, Dept. of  
Recreation and Parks  
C/o GreenVest, LLC  
Attn: Andrew Forbes, PE  
4201 Northview Dr, Ste 202  
Bowie, Maryland 20716

Via email: [andrew@greenvestus.com](mailto:andrew@greenvestus.com)

Re: Agency Interest Number: 181301  
Tracking Number: 202460545  
Tidal Authorization Number: 24-WQC-0033

Dear Baltimore City, Dept. of Recreation and Parks and Medstar Hospital:

Your project did not qualify for approval under the Maryland State Programmatic General Permit (MDSPGP); therefore a separate review and issuance of the federal permit will be required by the U.S. Army Corps of Engineers. The federal permit is not attached.

Additionally, your project required a Wetlands License to be approved and issued by the Maryland Board of Public Works (BPW). The Wetlands License will be sent to you by BPW's Wetlands Administrator.

A project that does not qualify for approval under the MDSPGP requires an individual Water Quality Certification (WQC) to be issued by the Maryland Department of the Environment, which is attached. Please take a moment to read and review your WQC to ensure that you understand the limits of the authorized work and all of the general and special conditions.

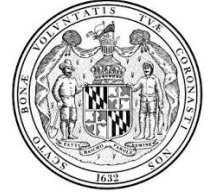
You should not begin any work until you have obtained all necessary State, local, and federal authorizations. Please contact Matthew Wallach at [matthew.wallach@maryland.gov](mailto:matthew.wallach@maryland.gov) or 410-207-0893 with any questions.

Sincerely,

Jonathan Stewart, Acting Chief  
Tidal Wetlands Division



STATE OF MARYLAND  
DEPARTMENT OF THE ENVIRONMENT  
WATER AND SCIENCE ADMINISTRATION  
WATER QUALITY CERTIFICATION



24-WQC-0033

EFFECTIVE DATE: **November 15, 2024**  
CERTIFICATION HOLDERS: **Baltimore City Dept. of Recreation and Parks**  
ADDRESS: **3001 East Drive**  
**Baltimore, MD 20716**  
PROJECT LOCATION: **Between the S. Hanover St embankment and**  
**Potee St. bridge, Brooklyn, MD 21215**

**UNDER AUTHORITY OF SECTION 401 OF THE FEDERAL WATER POLLUTION CONTROL ACT AND ITS AMENDMENTS AND IN ACCORDANCE WITH § 9-313 THROUGH § 9-323, INCLUSIVE, OF THE ENVIRONMENT ARTICLE, ANNOTATED CODE OF MARYLAND, THE MARYLAND DEPARTMENT OF THE ENVIRONMENT, WATER AND SCIENCE ADMINISTRATION HAS DETERMINED THAT THE REGULATED ACTIVITIES DESCRIBED IN THE REQUEST FOR CERTIFICATION FOR THE PROPOSED MARSH CREATION AND AS DESCRIBED IN THE ATTACHED PLAN SHEETS DATED AUGUST 2, 2024 AND ANY SUBSEQUENT MODIFICATIONS APPROVED BY THE DEPARTMENT WILL NOT VIOLATE MARYLAND'S WATER QUALITY STANDARDS, IF CONDUCTED IN ACCORDANCE WITH THE CONDITIONS OF THIS CERTIFICATION.**

THIS CERTIFICATION DOES NOT RELIEVE THE APPLICANT OF RESPONSIBILITY FOR OBTAINING ANY OTHER APPROVALS, LICENSES, OR PERMITS IN ACCORDANCE WITH FEDERAL, STATE, OR LOCAL REQUIREMENTS AND DOES NOT AUTHORIZE COMMENCEMENT OF THE PROPOSED PROJECT. A COPY OF THIS REQUIRED CERTIFICATION HAS BEEN SENT TO THE CORPS OF ENGINEERS. THE CERTIFICATION HOLDER SHALL COMPLY WITH THE CONDITIONS LISTED BELOW.

*The Maryland Department of Environment satisfied the statutory and regulatory public notice requirements by placing the WQC on Public Notice from August 15, 2024 to September 15, 2024 on Maryland Department of the Environment's Public Notice webpage and advertising in the Baltimore Sun on August 16, 2024.*

## **PROJECT DESCRIPTION**

1. Remove all existing phragmites.
2. Construct a 4,471-square foot sand/gravel stone sill and regrade entire site to create 15,691 square feet of shallow open water, 13,297 square feet of mudflat, 23,882 square feet of low marsh vegetation, 38,050 square feet of high marsh vegetation, and 127,072 square feet of supratidal marsh vegetation.

## **GENERAL CONDITIONS**

1. All water quality-related performance standards and conditions required by the Department in any state issued authorization for activities in tidal wetlands, nontidal wetlands, their 100-year floodplains, nontidal wetlands buffers, or nontidal wetland expanded buffers to ensure that any discharges will not result in a failure to comply with water quality standards in COMAR 26.08.02 or any other water quality requirements of state law or regulation shall be met.
2. This Certification does not obviate the need to obtain required authorizations or approvals from other State, federal or local agencies as required by law.
3. All additional authorizations or approvals, including self-certifying General Permits issued by the Department, shall be obtained and all conditions shall be completed in compliance with such authorizations.
4. The proposed project shall be constructed in accordance with the approved final plan by the Department, or, if Department approval is not required, the plan approved by the U.S. Army Corps of Engineers, and its approved revisions.
5. All fill and construction materials not used in the project shall be removed and disposed of in a manner which will prevent their entry into waters of this State.
6. This Certification does not authorize any injury to private property, any invasion of rights, or any infringement of federal, state, or local laws or regulations.
7. Authorized representatives of the Department shall be provided access to the site of authorized activities during normal business hours to conduct inspections and evaluations of the operations and records necessary to assure compliance with this Certification.
8. No stockpiles of any material shall be placed in Waters of the U.S. or state or private tidal wetlands.
9. Temporary construction trailers or structures, staging areas and stockpiles shall not be located within tidal wetlands, nontidal wetlands, nontidal wetlands buffers, or the 100-year floodplain unless specifically included on the Approved Plan.
10. This Certification is valid for the project identified herein and the associated U.S. Army Corps of Engineers NAB-2024-60545, until such time as that federal approval expires or is not administratively extended.

## **SPECIAL CONDITIONS**

1. All Critical Area requirements shall be followed and all necessary authorizations from the Critical Area Commission ("Commission") shall be obtained. This Certificate does not constitute authorization for disturbance in the 100-foot Critical Area Buffer. "Disturbance" in the Buffer means clearing, grading, construction activities, or removal of any size of tree or vegetation. Any anticipated Buffer disturbance requires prior written approval, before commencement of land disturbing activity, from local jurisdiction in the form of a Buffer Management Plan.

2. All work performed under this Water Quality Certificate shall be conducted by a marine contractor licensed by the Marine Contractors Licensing Board (MCLB) in accordance with Title 17 of the Environment Article of Annotated Code of Maryland. Licensing by MCLB shall occur prior to the beginning of construction activities. A list of licensed marine contractors may be obtained by contacting the MCLB at 410-537- 3249, by e-mail at MDE.MCLB@maryland.gov or by accessing the Maryland Department of the Environment, Environmental Boards webpage.
3. The issuance of this Certificate is not a validation or authorization by the Department for any of the existing structures depicted on the plan sheets on the subject property that is not part of the authorized work description, nor does it relieve the Certificate Holder of the obligation to resolve any existing noncompliant structures and activities within tidal wetlands.
4. The Certificate Holder shall construct the marsh establishment area in accordance with the following conditions:
  1. The Certificate Holder shall use clean substrate fill material, no more than 10% of which shall pass through a standard number 100 sieve.
  2. The marsh establishment area shall be planted within one year following completion of the filling operation.
  3. The marsh establishment project shall be maintained as a wetland, with non-nuisance species' aerial coverage of at least 85% for three consecutive years. If 85% coverage is not attained, the reasons for failure shall be determined, corrective measures shall be taken, and the area shall be replanted.
  4. Certificate Holder shall use a turbidity curtain around the perimeter of the instream work.
  5. If the existing bank is to be cleared or graded:
    - a. The Certificate Holder shall perform all work under and in accordance with an approved Soil Erosion and Sediment Control Plan from the applicable sediment and erosion control agency; and
    - b. The Certificate Holder shall perform all work under and in accordance with the Critical Area requirements of the local jurisdiction in the form of an approved Buffer Management Plan.
5. The Certificate Holder shall follow the requirements of the marsh maintenance plan as required by Wetlands License 24-WP-0387 and any subsequent modifications.
6. The Certificate Holder shall deploy and maintain a turbidity curtain tightly around and channelward of the project area prior to any excavation and backfilling along the shoreline through completion of any excavation and backfilling along the shoreline.
7. The Certificate Holder shall monitor the entire middle branch as outlined in the attached habitat monitoring plan dated June 5, 2023.
8. The Certificate Holder shall obtain a General Permit for Discharges from the Application of Pesticides from MDE by contacting the Industrial Discharge Permits Division at 410-537-3323 prior to the application of any herbicide to eradicate *Phragmites*. Toxic materials use permits are required for any homeowner, farmer, local government or other person who wants to control aquatic life in ponds, ditches or waterways by the deliberate use of chemical products.
9. The Certificate Holder shall plant the existing *Phragmites* area with the high marsh, supratidal, and maritime shrub species as depicted on page 10 of the existing plans, dated August 2, 2024.
10. The Certificate Holder shall not stockpile any material in State or private tidal wetlands.

# CITATIONS AND STATEMENTS OF NECESSITY

1. Statement of Necessity for General Conditions 1, 2, 3, 4, and Special Conditions 1, 3: These conditions are necessary to ensure that water quality standards are met, and designated uses are maintained.

Citations: Federal and state laws which authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.08.02.10G(3); COMAR 26.23.02.06; COMAR 26.17.01; COMAR 26.23; COMAR 26.24

2. Statement of Necessity for General Conditions 5, 8, 9: Fill or construction material within or adjacent to regulated resources may cause discharges resulting in turbidity in excess of water quality standards and interfere with designated uses of growth and propagation of fish, other aquatic life, wildlife; and other designated uses; and fail to meet general water quality criteria that waters not be polluted by substances in amounts sufficient to be unsightly or create a nuisance.

Citation: 26.08.02.03B(1)-B(2); COMAR 26.23; COMAR 26.24; COMAR 26.17.04

3. Statement of Necessity for General Condition 6: This condition is necessary to clarify the scope of this certification to ensure compliance with water quality regulations, without limiting restrictions through other requirements.

Citation: Federal and state laws which authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08, COMAR 26.08.02.10E; COMAR 26.23.02.06; COMAR 26.17.04; COMAR 26.23; COMAR 26.24

4. Statement of Necessity for General Condition 7: Conditions of certification involve precise actions to comply with water quality standards. Site inspection may be necessary to ensure that limits, methods, and other requirements are met to ensure that water quality standards are met and designated uses are maintained. These conditions are necessary to ensure that the activity was conducted, and project completed according to terms of the authorization/certification, while allowing for review of in-field modifications which may have resulted in discharges to ensure that water quality standards were met. Designated uses include support of estuarine and marine aquatic life and shellfish harvesting and for growth and propagation of fish, other aquatic life, and wildlife.

Citation: Federal and state laws that authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.08.02.03B(1)(b); COMAR 26.08.02.03B(2); COMAR 26.23.02.06; COMAR 26.23; COMAR 26.24; COMAR 26.17.04

5. Statement of Necessity for General Condition 10: This condition is necessary to qualify the period of applicability of the terms and conditions of this Certification to be protective of Maryland water quality standards.

Citations: Federal and state laws which authorize this condition include but are not limited to: 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; 40 C.F.R. 121, 15 C.F.R. 930, Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.17.04; COMAR 26.23; COMAR 26.24

6. Statement of Necessity for Special Condition 2: Expertise for conducting certain activities is required to ensure that there is no violation of water quality standards nor interference with designated uses. This condition is necessary to ensure that discharges will be conducted in a manner which does not violate water quality criteria nor interfere with designated uses.

Citation: COMAR 26.08.02.02B(2)- B(4); COMAR 26.08 02.03B(2)(d)-(e); COMAR 26.08.02.03B(1)(b); 26.08.02.03B(2); COMAR 23.02.04.04

7. Statement of Necessity for Special Conditions 4, 5: Stabilization of the site with vegetation is required to ensure that waters continue to meet designated uses. Loss of substrate fill material may result in discharges which reduce water quality and interfere with designated uses, including the support of estuarine and marine aquatic life, and the protection of shellfish harvesting, shallow water submerged aquatic vegetation, and migratory fish spawning and nurseries in tidal wetlands. Loss limits will maintain the designated use.

Citation: 1) COMAR 26.08.02.02.B.(3) 2) COMAR 26.08.02.03-3.C.(2)d.(5); 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.24

8. Statement of Necessity for Special Condition 6: The discharge and deposition of material within or adjacent to regulated resources may result in discharges that result in impacts to water quality and designated uses.

Citations: 1) 26.08.02.02.B.(3) 2) 26.08.02.03-3.C.(2)d.(5)

9. Statement of Necessity for Special Condition 7: Activities which discharge in regulated waters must be conducted according to certain procedures to maintain water quality. Monitoring the quality, characteristics, effects, and compensatory offsets may be necessary to ensure that water quality standards are met.

Citations: COMAR 26.08.02.10B(1)(f) COMAR 26.08.02.10B(1)(g) COMAR 26.24 COMAR 26.23 COMAR 26.17.04

10. Statement of Necessity for Special Condition 8: Issuance of water quality certification does not relieve the applicant of their responsibility to comply at all times with federal and State law. Discharges of toxic materials in toxic amounts violate water quality standards.

Citations: Title 16; Env. Article, Title 4, Subtitle 1 2) COMAR 26.08.02.02.B.(3) 3) COMAR 26.08.02.03-3.C.(2)d.(5) 4) COMAR 26.08.02.03.A.(1)(b) 5) COMAR 26.08.02.03.B.(1)-(5) 6) COMAR 26.08.02.10.E.(2) 7) COMAR 26.17.01

11. Statement of Necessity for Special Condition 9: Tidal wetlands provide essential habitat, store nutrients and sediment, maintain the health of coastal systems, control shoreline stabilization, and improve water quality. Aquatic life and wildlife often require specific habitats. A tidal plant community dominated by non-native vegetation may reduce the benefits associated with tidal wetlands and result in discharges that interfere with the designated use, including the support of estuarine and marine aquatic life, and the protection of shellfish harvesting, shallow water submerged aquatic vegetation, and migratory fish spawning and nurseries in tidal wetlands.

Citations: 1) Title 16; Env. Article, Title 4, Subtitle 1 2) COMAR 26.08.02.02.B.(3) 3) COMAR 26.08.02.03-3.C.(2)d.(5) 4) COMAR 26.08.02.03.A.(1)(b) 5) COMAR 26.08.02.03.B.(1)-(5) 6) COMAR 26.08.02.10.E.(2) 7) COMAR 26.17.01

12. Statement of Necessity for Specials Condition 10: This condition is necessary to ensure discharges related to the stockpiling of material does not result in additional discharges which may result in violations of water quality due to turbidity and other alterations which interfere with designated uses as well as designated use class for support of estuarine and marine aquatic life, and support of designated uses for growth and propagation of fish, shallow water submerged vegetation, other aquatic life and wildlife. Loss limits will maintain the designation use.

Citation: Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 5, Subtitles 5 and 9; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.24; COMAR 26.08; COMAR 26.08.02.10G(3); COMAR 26.08.02.06; COMAR 26.17.04; COMAR 26.23; COMAR 26.23.02.06; 33 U.S.C. § 1341(a), (b), & (d); 33 U.S.C. § 1251(b); 33 U.S.C. § 1370; Md. Ann. Code, Env. Article, Title 1, Subtitles 3 and 4; Md. Ann. Code, Env. Article, Title 9, Subtitle 3; Md. Ann. Code, Env. Article, Title 16; COMAR 26.08; COMAR 26.24

## **CERTIFICATION APPROVED**

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D. Lee Currey, Director  
Water and Science Administration

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Date

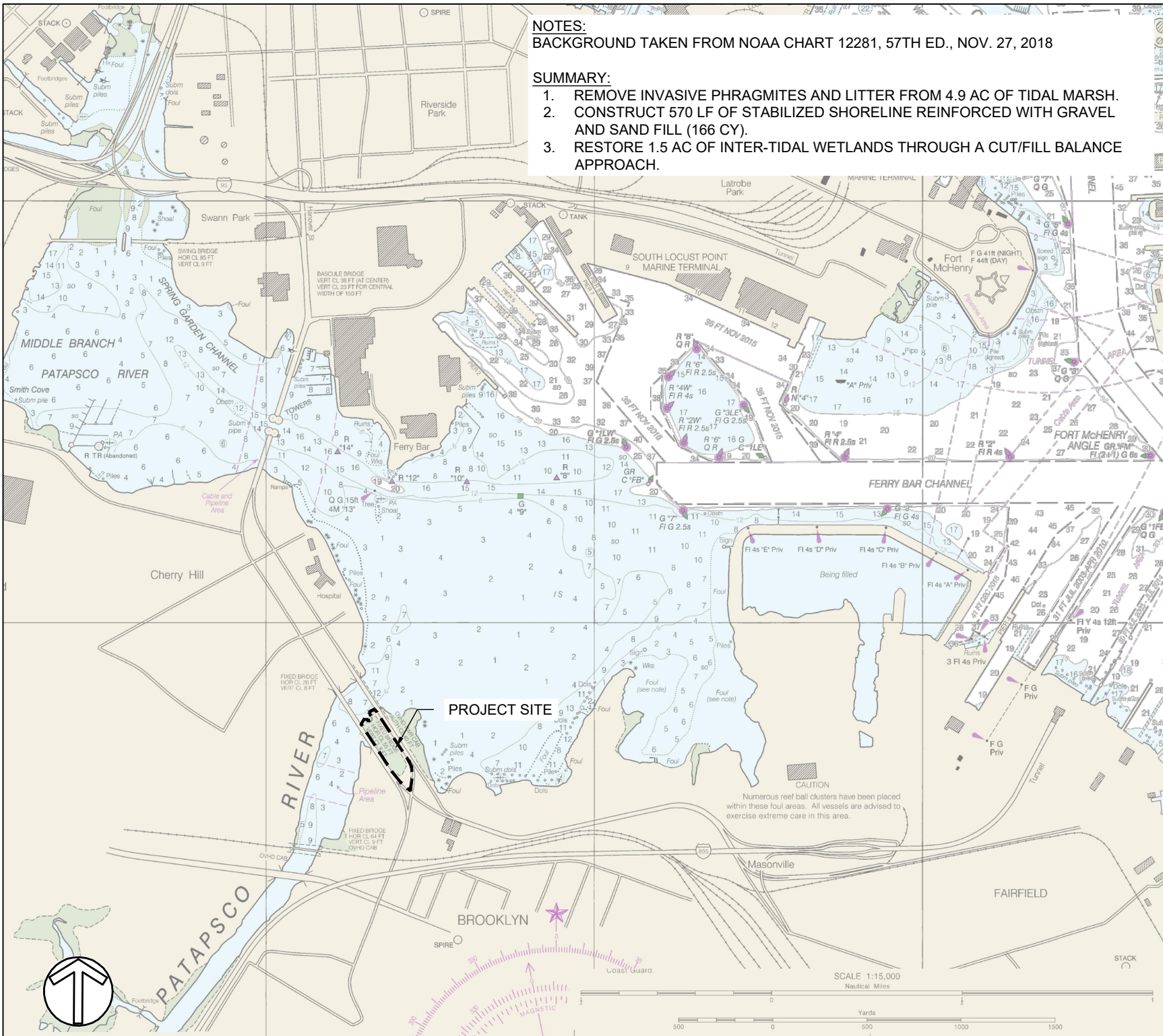
Tracking Number: 202460545

Agency Interest Number: 181301

Effective Date: November 15, 2024

Enclosure: Plan Sheets dated August 2, 2024

cc: WSA Inspection & Compliance Program  
Army Corps of Engineers



**NOTES:**  
 BACKGROUND TAKEN FROM NOAA CHART 12281, 57TH ED., NOV. 27, 2018

- SUMMARY:**
1. REMOVE INVASIVE PHRAGMITES AND LITTER FROM 4.9 AC OF TIDAL MARSH.
  2. CONSTRUCT 570 LF OF STABILIZED SHORELINE REINFORCED WITH GRAVEL AND SAND FILL (166 CY).
  3. RESTORE 1.5 AC OF INTER-TIDAL WETLANDS THROUGH A CUT/FILL BALANCE APPROACH.

APPLICATION BY:  
 BRIAN CRAMER  
 GREENVEST, LLC  
 4201 NORTHVIEW DRIVE, SUITE 202  
 BOWIE, MD 20716

DATE ISSUES / REVISIONS

24-WP-0387  
 24-WQC-0033  
 202460545  
 8/2/2024  
 1 of 10

AGENT/ENGINEER:

**Biohabitats**  
 The Stables Building, 2081 Clipper Park Road  
 Baltimore, MD 21211 / ph: 410.554.0156  
 fx: 410.554.0168 / www.biohabitats.com  
*Restore the Earth & Inspire Ecological Stewardship*

**MIDDLE BRANCH  
 RESILIENCY  
 INITIATIVE**

TITLE:  
**VICINITY PLAN**

PROJECT NO. :  
 22002.04

SCALE:  
 AS SHOWN

BY: JP CHECK: CS

DWG. NO. :  
 1 OF 10





ADJACENT PROPERTY OWNERS:  
 MAYOR AND CITY COUNCIL  
 3300 S HANOVER ST  
 BALTIMORE, MD 21225

SITES 1, 2

Riparian Properties within 0.5 miles:  
 MAYOR AND CITY COUNCIL  
 3300 S HANOVER ST  
 BALTIMORE, MD 21225

SITES 3, 4, 5

APPLICATION BY:  
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 4201 NORTHVIEW DRIVE, SUITE 202  
 BOWIE, MD 20716  
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DATE	ISSUES / REVISIONS
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	202460545
	8/2/2024
	2 of 10

AGENT/ENGINEER:  
  
 The Stables Building, 2081 Clipper Park Road  
 Baltimore, MD 21211 / ph: 410.554.0156  
 fx: 410.554.0168 / www.biohabitats.com  
*Restore the Earth & Inspire Ecological Stewardship*

**MIDDLE BRANCH  
 RESILIENCY  
 INITIATIVE**

TITLE:  
**LOCATION PLAN**

PROJECT NO. :  
 22002.04

SCALE:  
 NTS

BY: JP	CHECK: CS
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DWG. NO. :  
 2 OF 10



39 - COMMON REED (*Phragmites australis*)  
 DOMINATED THE WETLAND AREA IN 1972  
 (McCormick, J. and Somes, H.A., 1982. The coastal  
 wetlands of Maryland.)

Maryland Wetlands - Maryland Wetland Maps 1972; Image Service Layer Link:  
[https://geodata.md.gov/imap/rest/services/Hydrology/MD\\_WetlandMaps1972/ImageServer](https://geodata.md.gov/imap/rest/services/Hydrology/MD_WetlandMaps1972/ImageServer)

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MIDDLE BRANCH  
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TITLE: MD TIDAL WETLAND  
 MAP

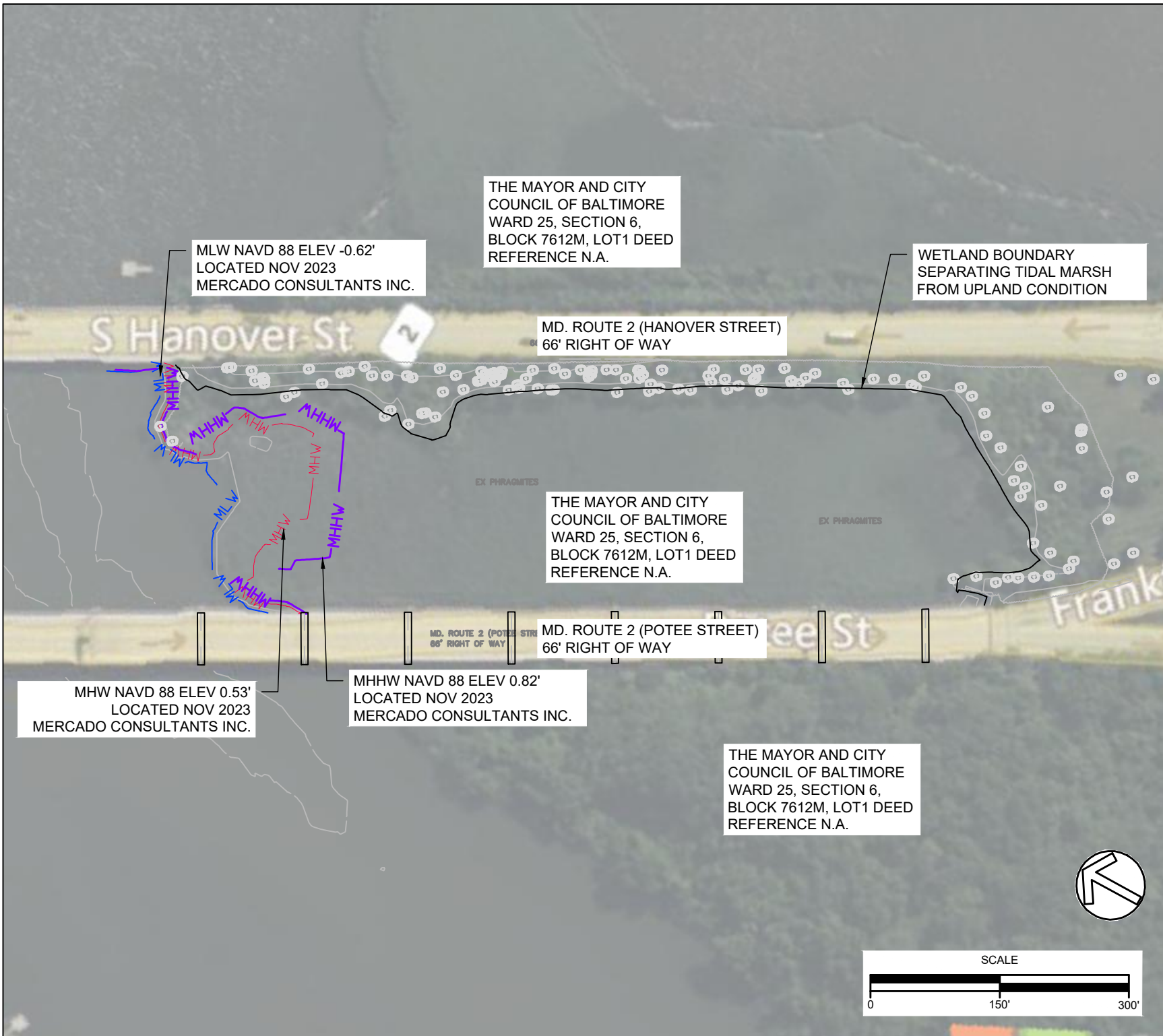
PROJECT NO. : 22002.04

SCALE: AS SHOWN

BY: JP CHECK: CS

DWG. NO. : 3 OF 10





APPLICATION BY:  
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DATE ISSUES / REVISIONS

24-WP-0387  
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**MIDDLE BRANCH  
 RESILIENCY  
 INITIATIVE**

TITLE: **EXISTING  
 CONDION**

PROJECT NO. :  
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SCALE:  
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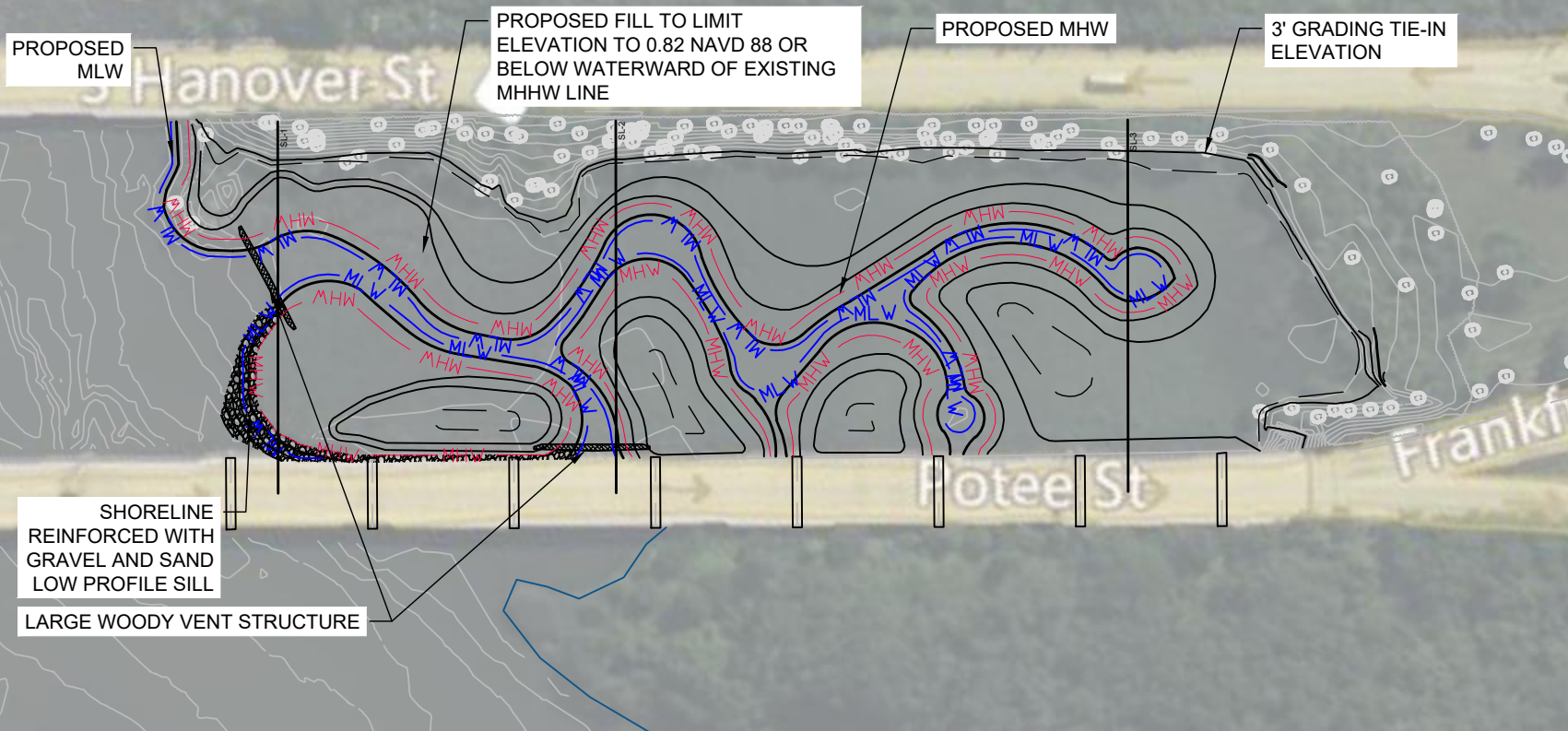
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DWG. NO. :  
 4 OF 10

APPLICATION BY:  
 BRIAN CRAMER  
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DATE ISSUES / REVISIONS

24-WP-0387  
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 202460545  
 8/2/2024  
 5 of 10



AGENT/ENGINEER:



**MIDDLE BRANCH  
 RESILIENCY  
 INITIATIVE**

TITLE: **PROPOSED  
 CONDITION**

PROJECT NO. :  
 22002.04

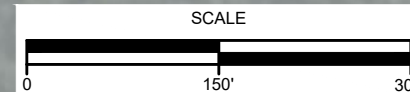
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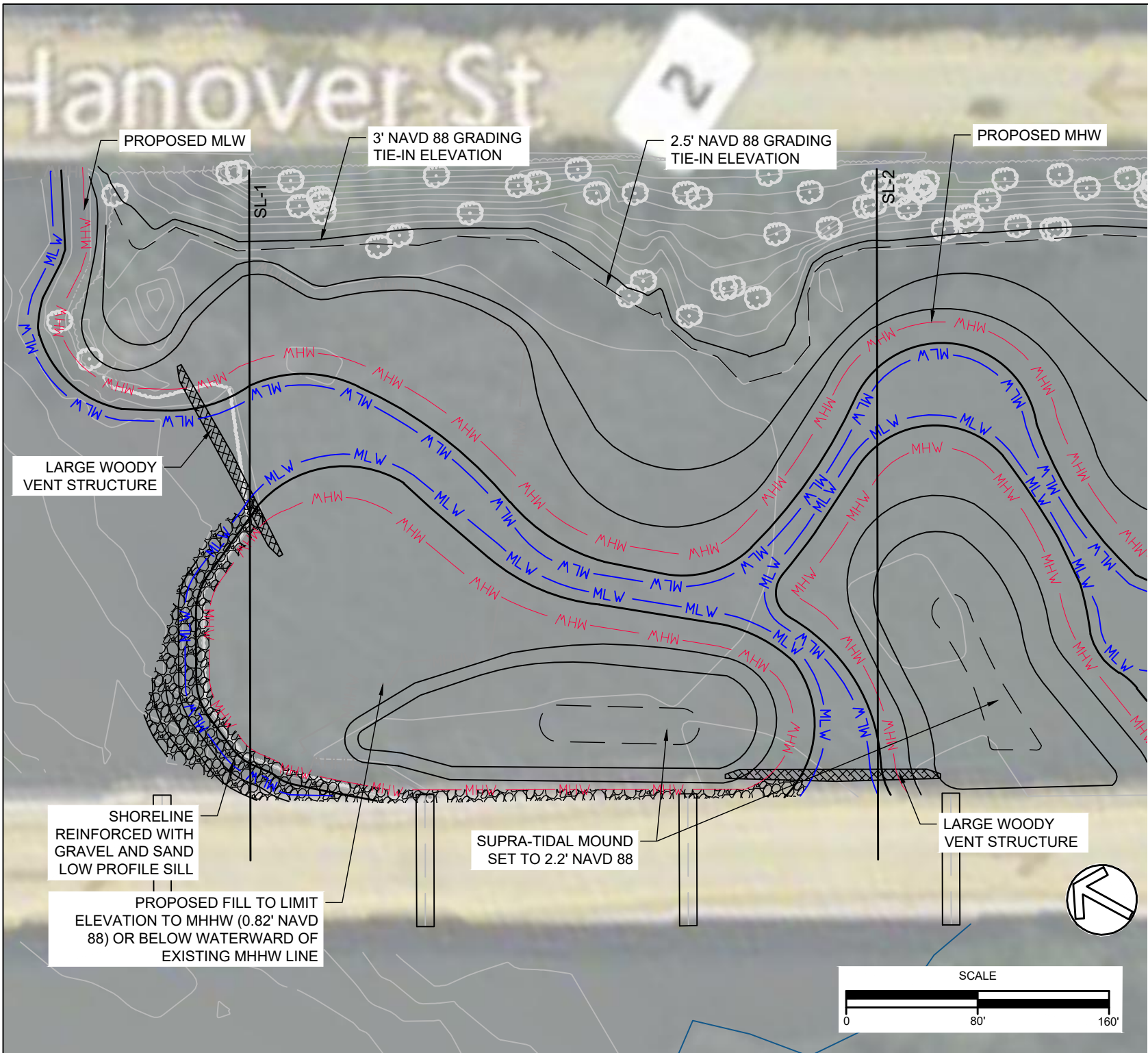
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 5 OF 10

**NOTES:**

1. REMOVE INVASIVE PHRAGMITES AND TRASH DEBRIS FROM 4.9 AC OF TIDAL MARSH.
2. CONSTRUCT 570 LF OF STABILIZED SHORELINE REINFORCED WITH GRAVEL AND SAND FILL (166 CY, SHEET 9).
3. ACHIEVE CUT/FILL BALANCE BY EXCAVATING AND REGRADING APPROXIMATELY 3,495 CY OF MATERIAL.
4. INSTALL WETLAND PLANTS AND SHRUBS (SHEET 10).





APPLICATION BY:  
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 GREENVEST, LLC  
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24-WP-0387  
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 6 of 10

MATCHLINE - SEE SHEET 7

AGENT/ENGINEER:

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*Restore the Earth & Inspire Ecological Stewardship*

**MIDDLE BRANCH  
 RESILIENCY  
 INITIATIVE**

TITLE:  
 ENLARGED PROPOSED  
 CONDITION (1 OF 2)

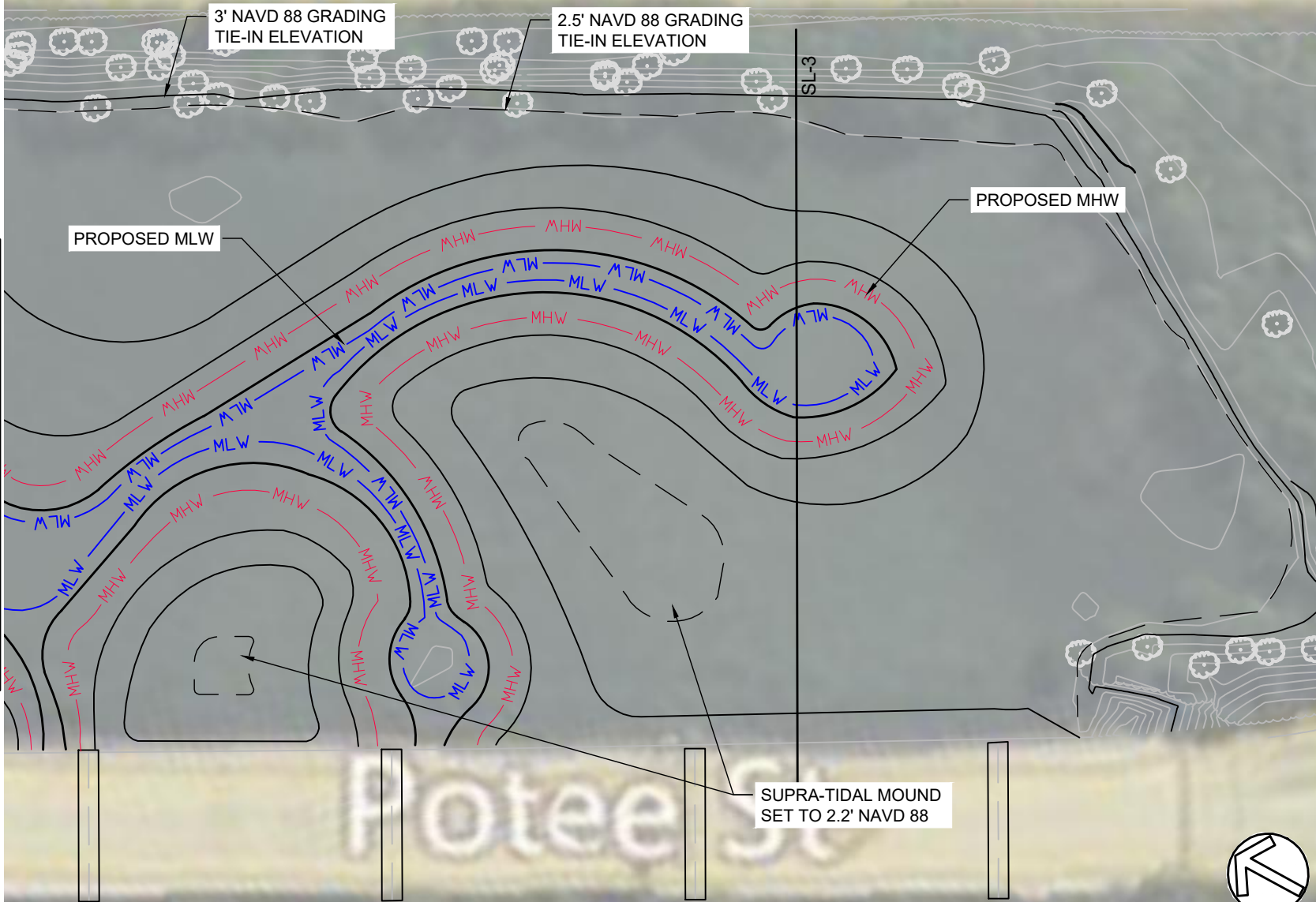
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SCALE:  
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BY: JP CHECK: CS

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MATCHLINE- SEE SHEET 6



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 INITIATIVE**

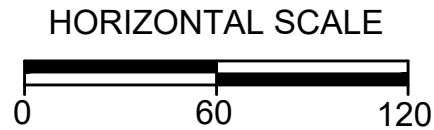
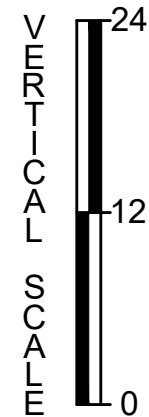
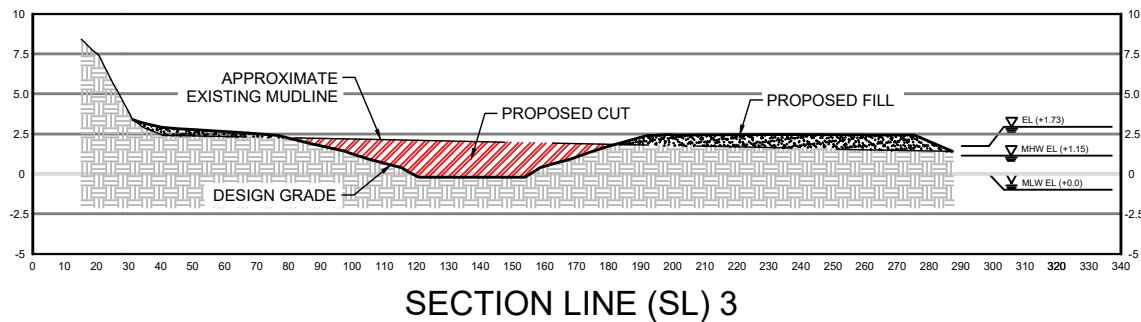
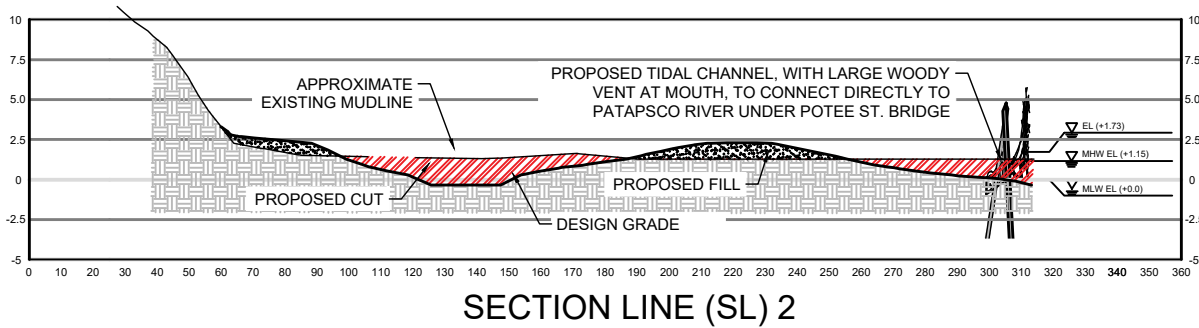
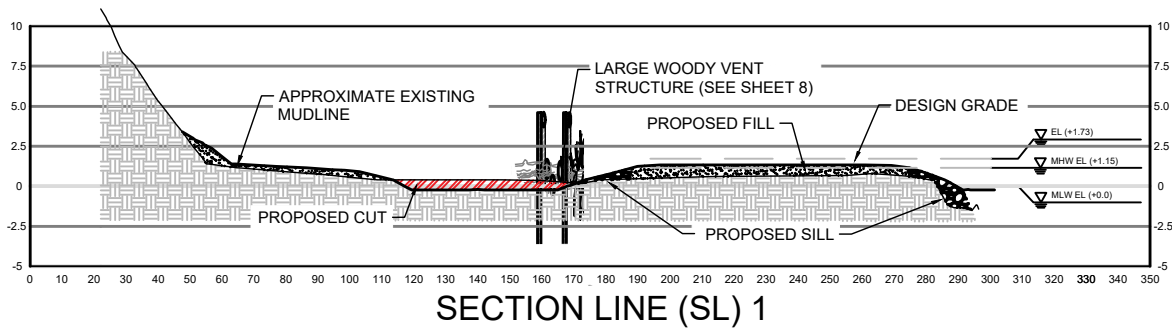
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 CONDITION (2 OF 2)

PROJECT NO. :  
 22002.04

SCALE:  
 AS SHOWN

BY: JP CHECK: CS

DWG. NO. :  
 7 OF 10



APPLICATION BY:  
 BRIAN CRAMER  
 GREENVEST, LLC  
 4201 NORTHVIEW DRIVE, SUITE 202  
 BOWIE, MD 20716  
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DATE	ISSUES / REVISIONS
	<b>24-WP-0387</b> <b>24-WQC-0033</b> <b>202460545</b> <b>8/2/2024</b> <b>8 of 10</b>

AGENT/ENGINEER:



The Stables Building, 2081 Clipper Park Road  
 Baltimore, MD 21211 / ph: 410.554.0156  
 fx: 410.554.0168 / www.biohabitats.com  
*Restores the Earth & Inspires Ecological Stewardship*

**MIDDLE BRANCH  
 RESILIENCY  
 INITIATIVE**

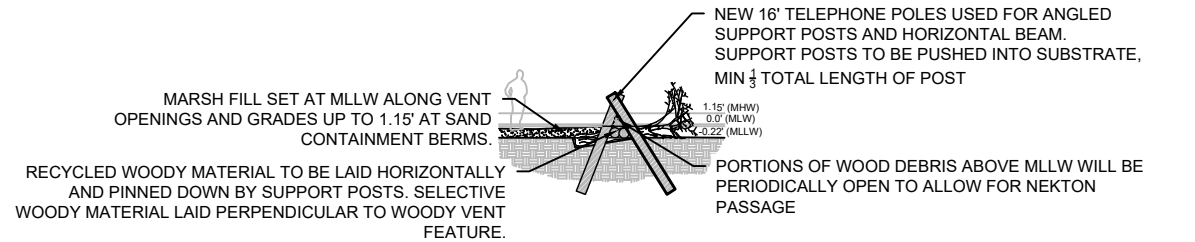
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**CROSS-SECTIONS**

PROJECT NO. :  
 22002.04

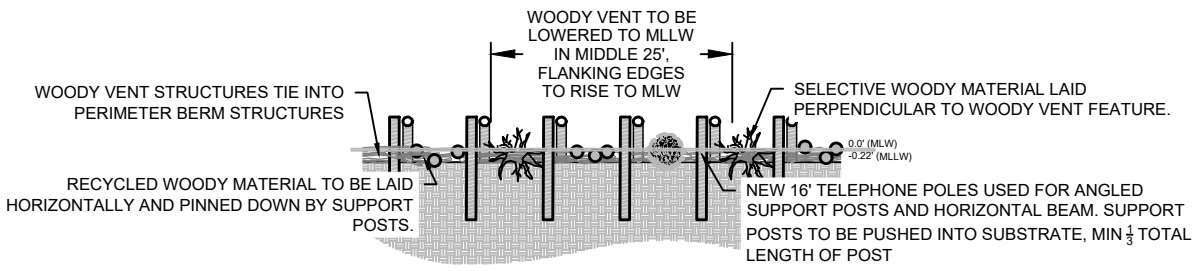
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 AS SHOWN

BY: JP	CHECK: CS
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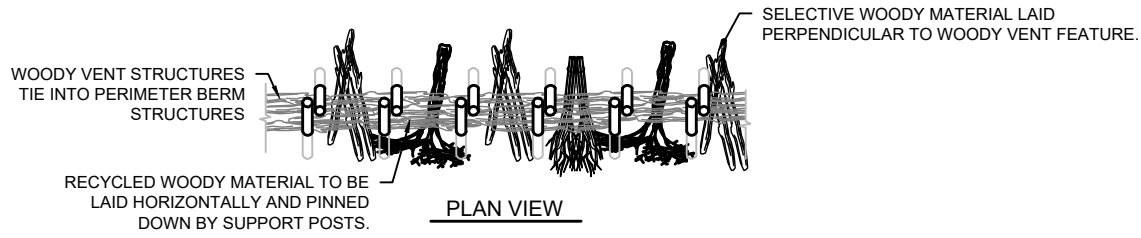
DWG. NO. :  
 8 OF 10



**SECTION VIEW**



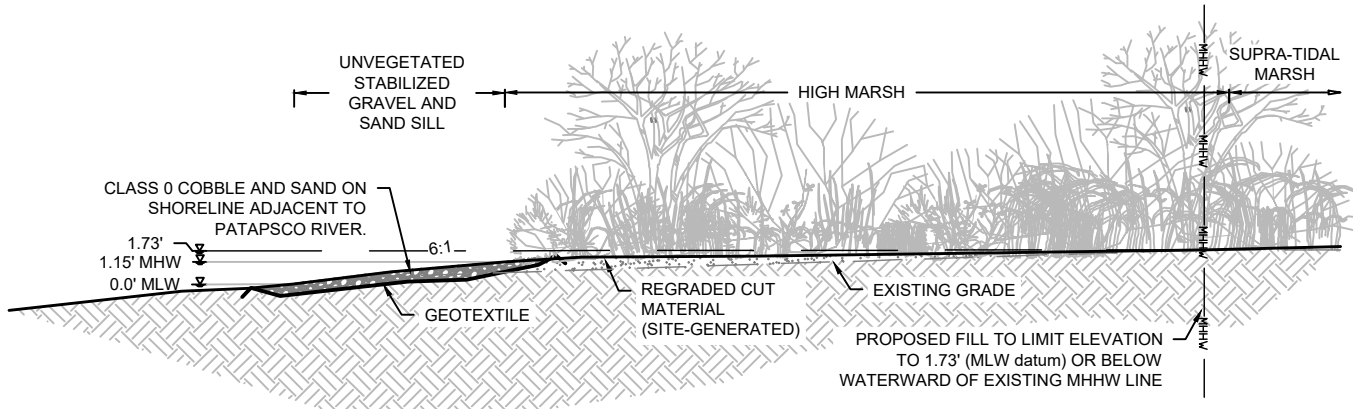
**ELEVATION VIEW**



**PLAN VIEW**

**LARGE WOODY VENT STRUCTURE**

NOT TO SCALE



**REPRESENTATIVE 6:1 SHORELINE PROTECTION**

NOT TO SCALE

APPLICATION BY:  
 BRIAN CRAMER  
 GREENVEST, LLC  
 4201 NORTHVIEW DRIVE, SUITE 202  
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DATE ISSUES / REVISIONS

24-WP-0387  
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 9 of 10

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**MIDDLE BRANCH  
 RESILIENCY  
 INITIATIVE**

TITLE:  
**GENERAL DETAILS**

PROJECT NO. :  
 22002.04

SCALE:  
 AS SHOWN

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DWG. NO. :  
 9 OF 10





APPLICATION BY:  
 BRIAN CRAMER  
 GREENVEST, LLC  
 4201 NORTHVIEW DRIVE, SUITE 202  
 BOWIE, MD 20716  
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 10 of 10

**LOW MARSH** (Tidal range: 0.67' - 1.15' MLW)

- |                      |                                 |
|----------------------|---------------------------------|
| Smooth cordgrass     | <i>Sporobolus alterniflorus</i> |
| Soft-stemmed bulrush | <i>Scirpus validus</i>          |
| Sturdy bulrush       | <i>Bolboschoenus robustus</i>   |







**HIGH MARSH** (Tidal range: 1.15' - 1.73' MLW)

- |                              |                                  |
|------------------------------|----------------------------------|
| Groundsel tree               | <i>Baccharis halimifolia</i>     |
| Marsh hibiscus               | <i>Hibiscus moscheutos</i>       |
| Marsh elder                  | <i>Iva frutescens</i>            |
| Sturdy bulrush               | <i>Bolboschoenus robustus</i>    |
| Saltgrass                    | <i>Distichlis spicata</i>        |
| Common three-square bulrush  | <i>Schoenoplectus pungens</i>    |
| Big Cordgrass                | <i>Sporobolus cynosuroides</i>   |
| Tidalmarsh amaranth          | <i>Amaranthus cannabinus</i>     |
| Olney's three-square bulrush | <i>Schoenoplectus americanus</i> |
| Virginia saltmarsh mallow    | <i>Kosteletzkya pentacarpos</i>  |
| Saltmeadow cordgrass         | <i>Sporobolus pumilus</i>        |
| Seaside Goldenrod            | <i>Solidago sempervirens</i>     |
| Perennial saltmarsh aster    | <i>Symphotricum undulatum</i>    |
| Saltgrass                    | <i>Distichlis spicata</i>        |

**SUPRA-TIDAL MARSH** (Tidal range: 1.73' - 3.13' MLW)

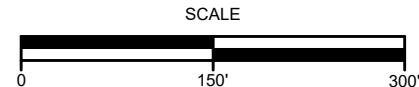
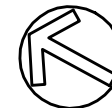
- |                           |                                       |
|---------------------------|---------------------------------------|
| Groundsel tree            | <i>Baccharis halimifolia</i>          |
| Marsh hibiscus            | <i>Hibiscus moscheutos</i>            |
| Elderberry                | <i>Sambucus nigra ssp. Canadensis</i> |
| Marsh elder               | <i>Iva frutescens</i>                 |
| Switchgrass               | <i>Panicum virgatum</i>               |
| Saltmeadow cordgrass      | <i>Sporobolus pumilus</i>             |
| Tidalmarsh amaranth       | <i>Amaranthus cannabinus</i>          |
| Virginia saltmarsh mallow | <i>Kosteletzkya pentacarpos</i>       |
| Seaside goldenrod         | <i>Solidago sempervirens</i>          |
| Perennial saltmarsh aster | <i>Symphotricum undulatum</i>         |

**HABITAT LEGEND**

	SHALLOW OPEN WATER	Area: 15,691 sf / 0.36 ac
	MUDFLAT ZONE	Area: 13,297 sf / 0.31 ac
	LOW MARSH ZONE	Area: 23,882 sf / 0.55 ac
	HIGH MARSH ZONE	Area: 38,050 sf / 0.87 ac
	SUPRATIDAL ZONE	Area: 127,072 sf / 2.92 ac
	RIPARIAN BUFFER ZONE	Area: 95,950 sf / 2.20 ac

Total Area: 313,942 sf / 7.21 ac

Total Area (without upland Riparian Buffer): 217,992 sf / 5.00 ac



AGENT/ENGINEER:



**MIDDLE BRANCH  
 RESILIENCY  
 INITIATIVE**

TITLE:  
**PLANTING PLAN**

PROJECT NO. : 22002.04

SCALE: AS SHOWN

BY: JP CHECK: CS

DWG. NO. : 10 OF 10