



Maryland
Department of
the Environment

Wes Moore, Governor
Aruna Miller, Lt. Governor

Serena McIlwain, Secretary
Suzanne E. Dorsey, Deputy Secretary

July 12, 2024

Anne Arundel County Dept of Recreation and Parks
c/o Ryan Drabick
Bayland Consultants & Designers, Inc
7455 New Ridge Road, Ste T
Hanover, MD 21076

Via email: rdrabick@baylandinc.com

Re: Agency Interest Number: 179915
Tracking Number: 202361604
Tidal Authorization Number: 24-WQC-0011

Dear Anne Arundel County Dept of Recreation and Parks:

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 Mel Throckmorton at mel.throckmorton@maryland.gov with any questions.

Sincerely,

Tammy Roberson

Tammy Roberson
Chief
Tidal Wetlands Division



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



24-WQC-0011

EFFECTIVE DATE: **July 12, 2024**
CERTIFICATION HOLDER: **Anne Arundel County Dept of Recreation and Parks**
ADDRESS: **Jug Bay Wetlands Sanctuary
1361 Wrighton Rd
Lothian, MD 20711**
PROJECT LOCATION: **6032 Pindell Rd
Lothian, MD 20711**

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 JUG BAY LIVING SHORELINE AND AS DESCRIBED IN THE ATTACHED PLAN SHEETS DATED June 20, 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 the Environment satisfied the statutory and regulatory public notice requirements by placing the WQC on Public Notice from May 1, 2024 to June 1, 2024 on Maryland Department of the Environment's Public Notice webpage and advertising in the Capital Gazette on May 6, 2024.

PROJECT DESCRIPTION

1. Construct a living shoreline consisting of: one stone groin, measuring 65-feet long and 18-feet wide; and, three stone breakwaters, measuring 102-feet long by 34-feet wide, 106-feet long by 34-feet wide, and 104-feet long by 29-feet wide, sand containment structures; and, fill and grade with 2,011 cubic yards of sand/cobble mixture along 250 linear feet of eroding shoreline and plant with 11,728 square feet of low marsh and 13,156 square feet of high marsh vegetation; and, to incorporate coarse woody debris; and,
2. To create a 1,450 square foot sandy beach area using 50 cubic yards of sand fill.

3. All proposed work is to take place within a maximum of 120 feet channelward of the mean high water line.

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 authorization NAB-2023-61604 (Anne Arundel County Dept of Recreation and Parks – Jug Bay Wetlands Sanctuary) until such time that it 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:
 - a. The Certificate Holder shall use clean substrate fill material, no more than 10% of which shall pass through a standard number 100 sieve.
 - b. The marsh establishment area shall be planted within one year following completion of the filling operation.
 - c. 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.
 - d. If the fill is graded hydraulically, the licensee shall use a turbidity curtain around the perimeter of the instream work.
 - e. If the existing bank is to be cleared or graded:
 - i. 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
 - ii. 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 accept the terms of the marsh maintenance plan by signing and returning the standard plan to the Water and Science Administration, Tidal Wetlands Division prior to commencement of any work authorized under this License. If the Certificate Holder wishes to propose an alternative marsh maintenance plan, the alternative plan must be submitted to and approved by the Tidal Wetlands Division, Water and Science Administration, prior to commencement of any work authorized under the associated Tidal Wetlands License. Any alternative plan must provide assurances of success that are at least equivalent to those of the standard plan, in terms of the extent of native marsh plant coverage, elimination of invasive species and timeframe for plant establishment.
6. The Certificate Holder shall submit photographs on an annual basis for the first five growing seasons to the Tidal Wetlands Division, Water and Science Administration in order to document the success of the project in terms of the extent of native marsh plant coverage. Photographs shall be taken from at least two directions, as necessary to fully depict the living shoreline.

7. The Certificate Holder shall not perform any construction from November 15th through March 1st of any year to protect wintering waterfowl. The proposed project site is located in a Historic Waterfowl Concentration Area

CITATIONS 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 and Special Conditions 4, 5, 6: 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

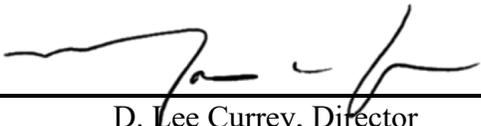
7. Statement of Necessity for Special Condition 7: A time of year restriction is necessary to maintain the designated use for support of estuarine and marine aquatic life and shellfish harvesting.

Citation: Federal and state laws which authorize this condition include but are not limited to: COMAR: 26.08.02.02B(1)(d); 26.08.02.02B(3); COMAR 26.08.02.02-16.

8. Statement of Necessity for Special Conditions 4, 5, 6: Tidal wetlands provide essential habitat, water quality, food, and movement corridors for wildlife, and support of estuarine and marine aquatic life and shellfish harvesting. Successful establishment is necessary to prevent discharges which interfere with designated uses, including growth and propagation of fish, other aquatic life, and wildlife through loss of stream channel habitat and wetlands. Required establishment, re-establishment, or enhancement and loss limits will maintain the designated use.

Citations: COMAR 26.08.02.02B(3); COMAR 26.08.02.03B(3) and B(4); COMAR 26.24.

CERTIFICATION APPROVED



D. Lee Currey, Director
Water and Science Administration

7/12/24

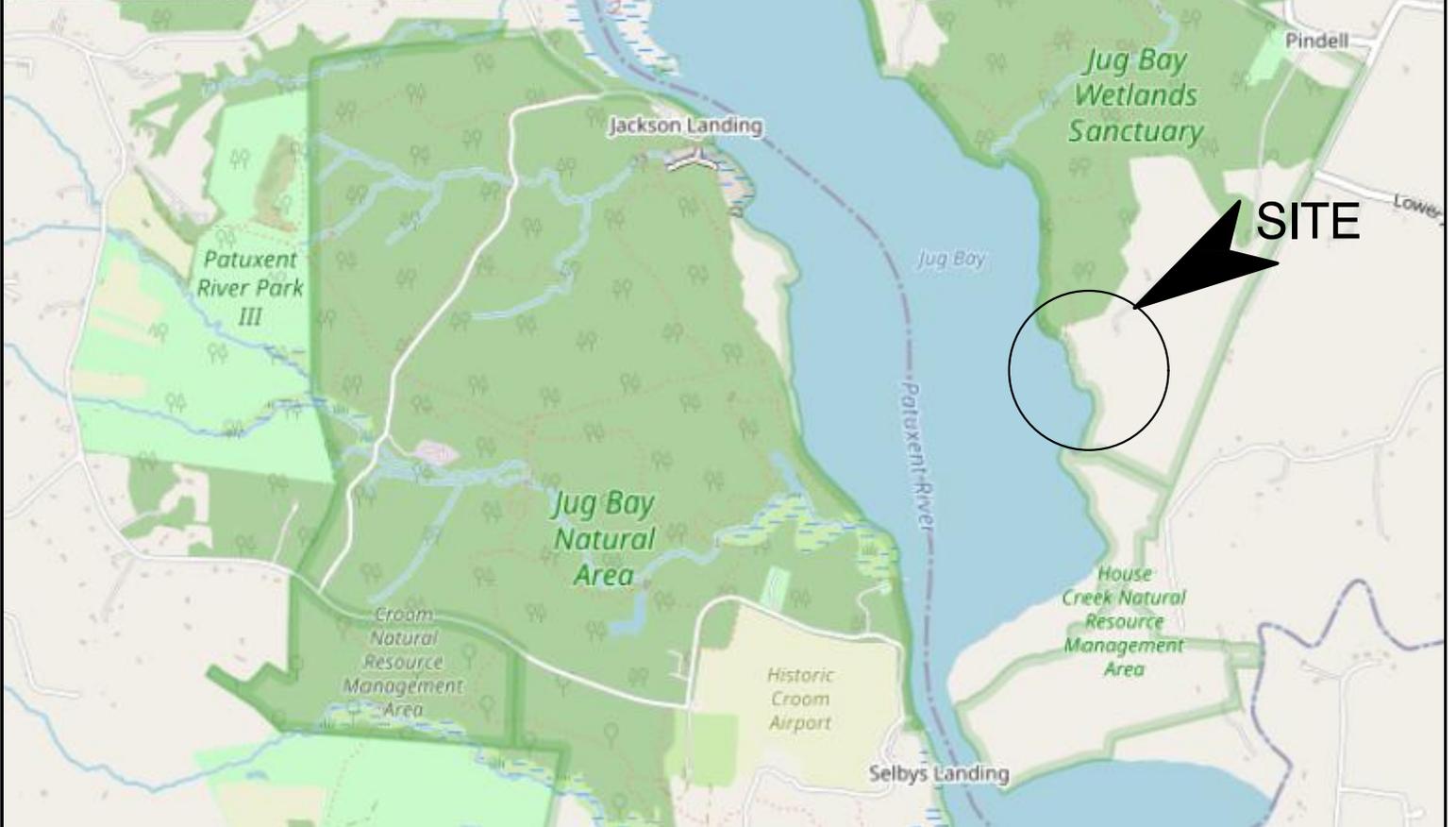
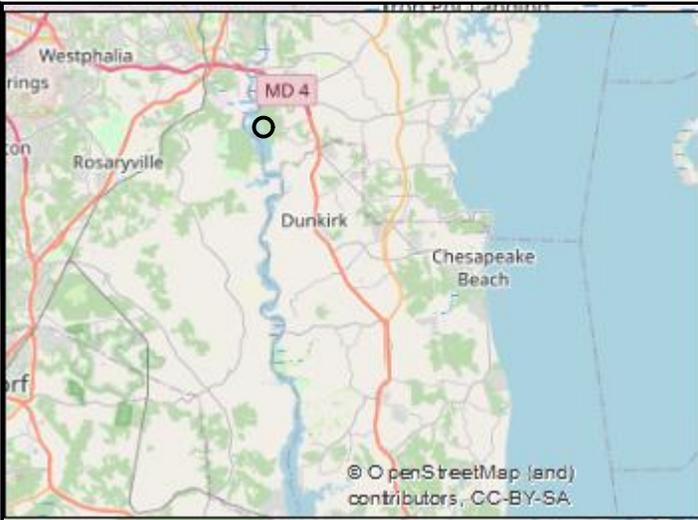
Date

Tracking Number: 202361604
Agency Interest Number: 179915

Effective Date: July 12, 2024

Enclosure: Plan Sheets dated June 20, 2024

cc: WSA Inspection & Compliance Program
Army Corps of Engineers



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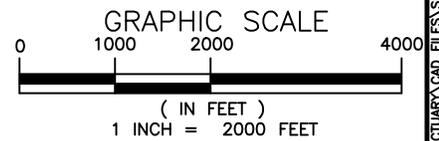
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202361604
179915
6/20/24
MT
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**JUG BAY SHORELINE RESTORATION
 AT
 JUG BAY WETLANDS SANCTUARY
 ANNE ARUNDEL COUNTY**

APPL. BY: ANNE ARUNDEL COUNTY (JUG BAY WETLANDS SANCTUARY)

VICINITY MAP

DATE: JUNE 2024 SHEET 1 OF 10



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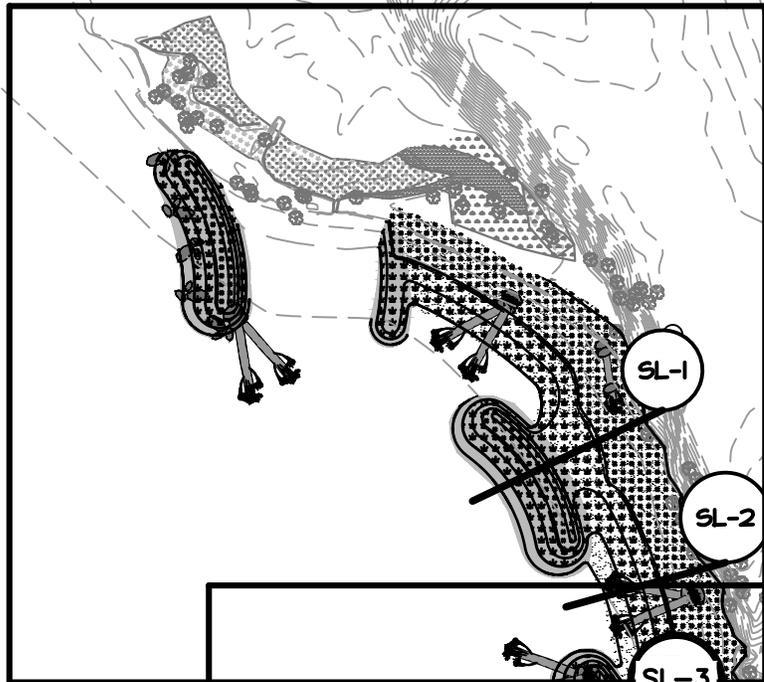
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 Hanover, Maryland 21076 Fax: (410) 694-9405
 www.baylandinc.com

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SHEET 3 & 5



ANNE ARUNDEL COUNTY
6032 PINDELL RD
LOTHIAN MD 20711
DEED: 14509/00215
PLAT: N/A
302.78 AC



PATUXENT RIVER
1602
188

SHEET 4 & 6

STATE OF MARYLAND
DEPT OF NATURAL
RESOURCES
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LOTHIAN MD 20711
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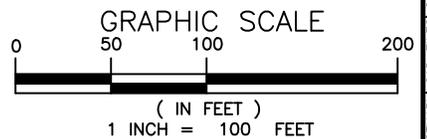
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**JUG BAY SHORELINE RESTORATION
AT
JUG BAY WETLANDS SANCTUARY
ANNE ARUNDEL COUNTY**

APPL. BY: ANNE ARUNDEL COUNTY (JUG BAY WETLANDS SANCTUARY)

KEY SHEET

DATE: JUNE 2024 SHEET 2 OF 10



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ANNE ARUNDEL COUNTY
6032 PINDELL RD
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EX. TREES

EX. TIDAL WETLAND

EX. PRIVATE TIDAL WETLAND

25' WETLAND BUFFER

EX. NONTIDAL WETLAND

EX. SIGN

25' WETLAND BUFFER

EX. MHW = +1.9'

EX. MLW = 0.0'

PATUXENT RIVER
EBS
FLOOD

TR 39

TR 40

TR 41

TR 42

TR 43

TR 44

TR 45

TR 12

MATCHLINE REFER TO SHEET 4

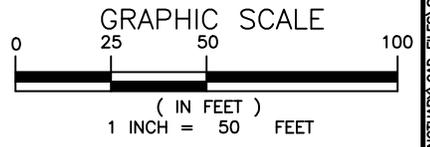
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**JUG BAY SHORELINE RESTORATION
AT
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APPL. BY: ANNE ARUNDEL COUNTY (JUG BAY WETLANDS SANCTUARY)

EXISTING CONDITIONS

DATE: JUNE 2024 SHEET 3 OF 10



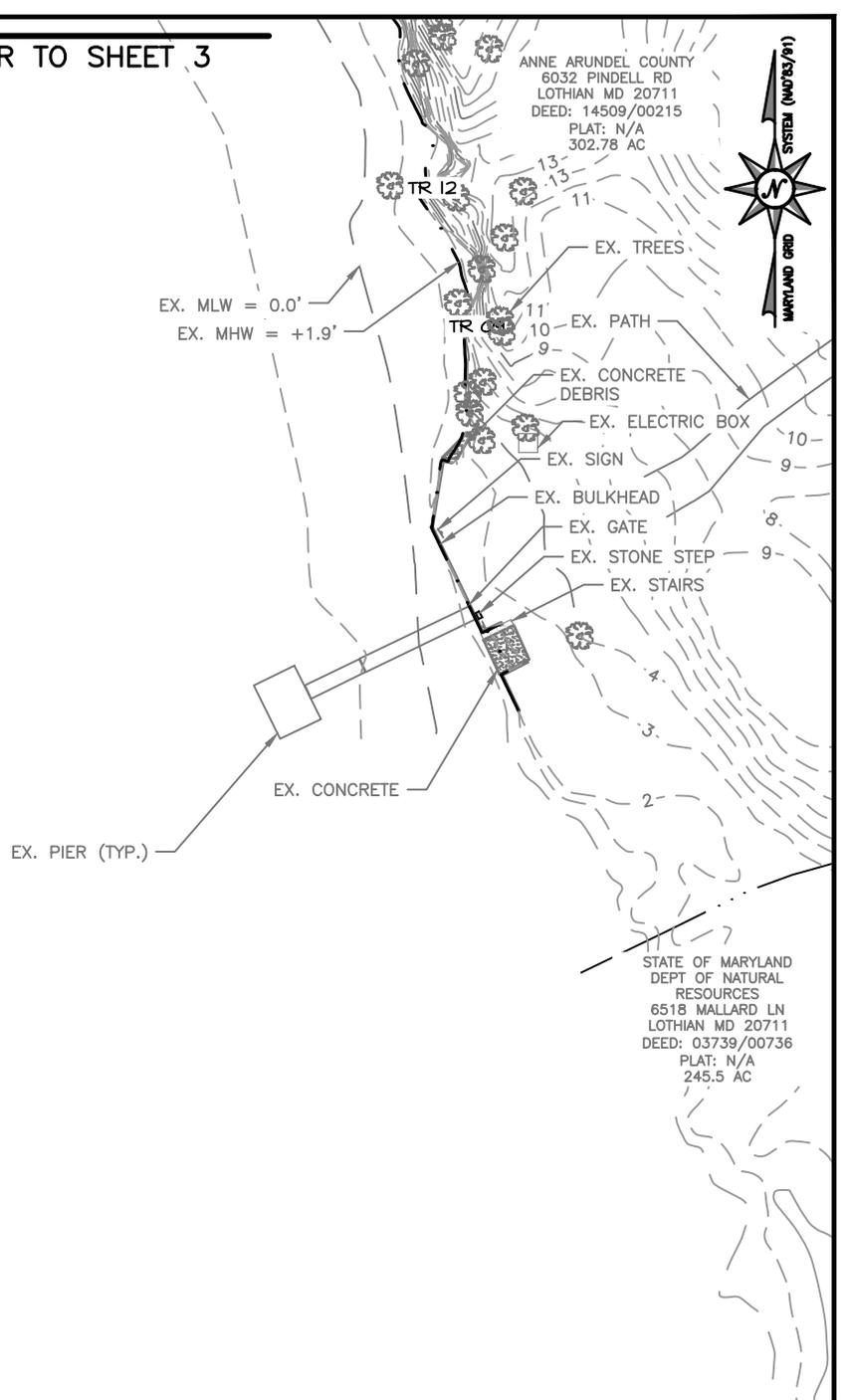
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MATCHLINE REFER TO SHEET 3

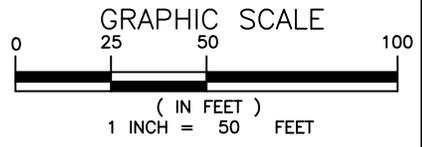
ANNE ARUNDEL COUNTY
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STATE OF MARYLAND
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JUG BAY SHORELINE RESTORATION
AT
JUG BAY WETLANDS SANCTUARY
ANNE ARUNDEL COUNTY



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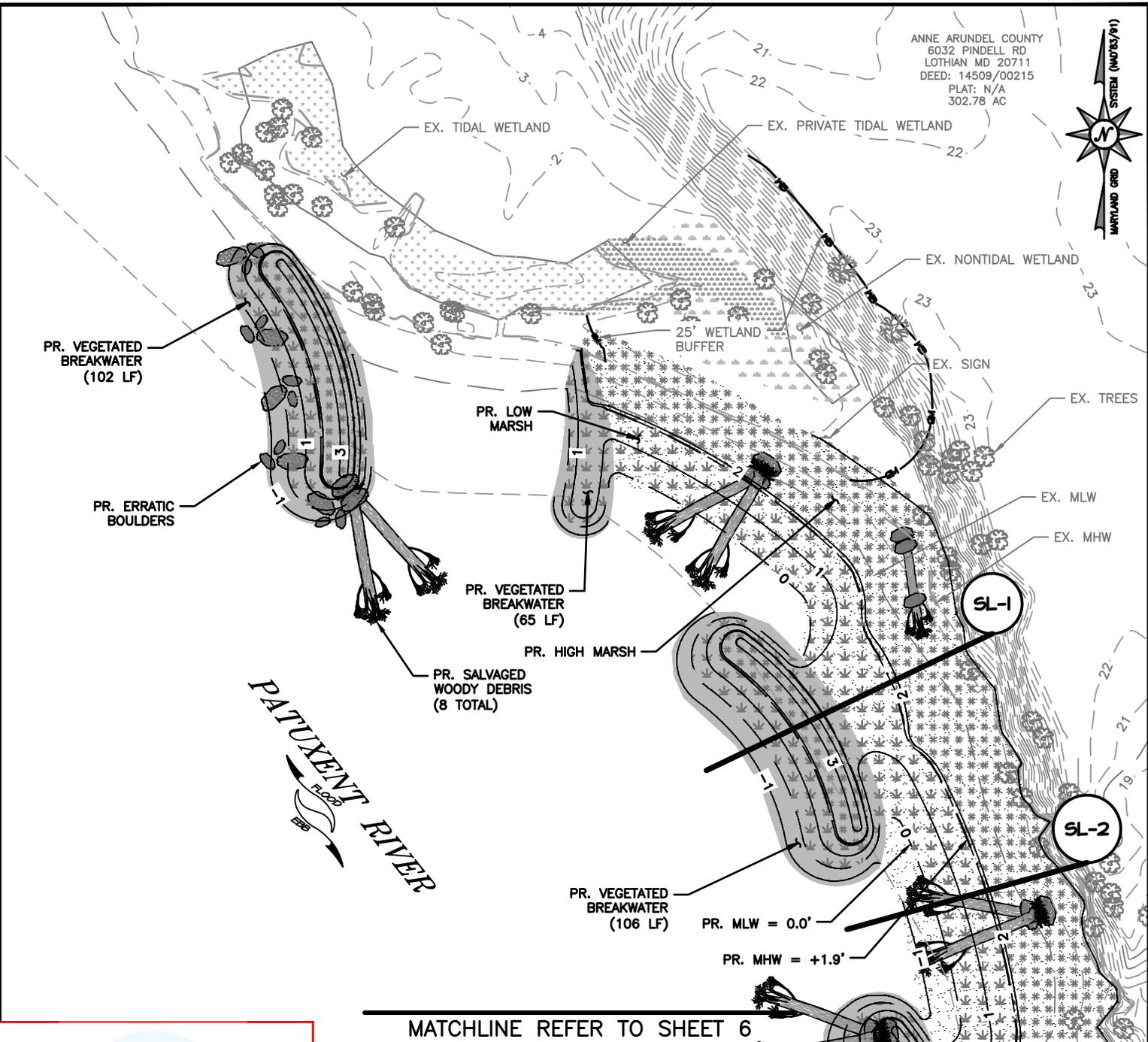
EXISTING CONDITIONS

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ANNE ARUNDEL COUNTY
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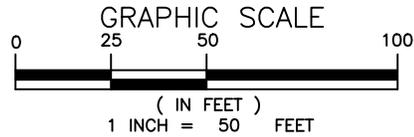


24-WQC-0011
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MATCHLINE REFER TO SHEET 6

LEGEND

	EX. LOW MARSH		PR. LOW MARSH
	EX. HIGH MARSH		PR. VEGETATED BREAKWATER
	PR. SAND		
	PR. HIGH MARSH		



**JUG BAY SHORELINE RESTORATION
 AT
 JUG BAY WETLANDS SANCTUARY
 ANNE ARUNDEL COUNTY**

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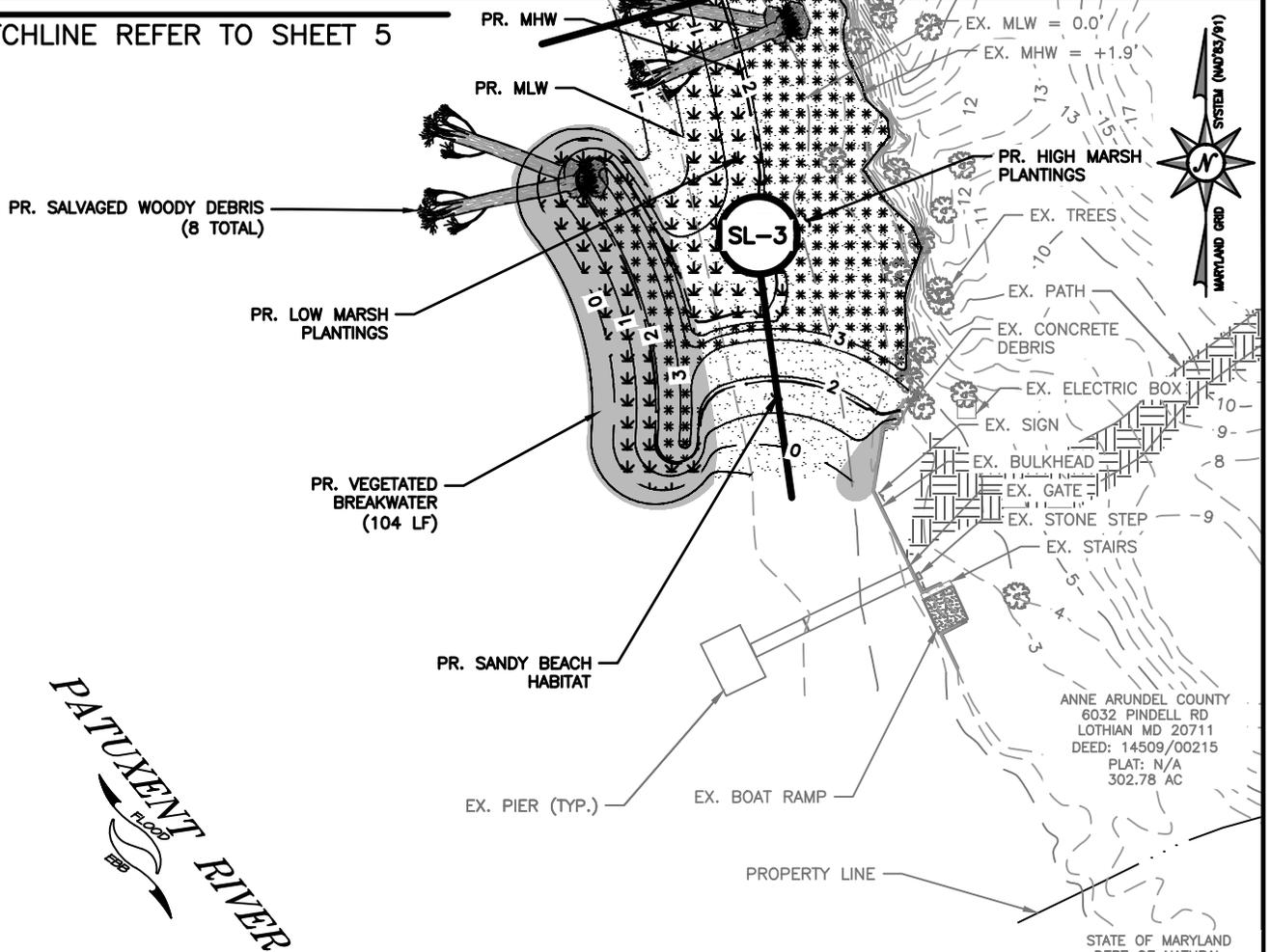
SITE PLANS

DATE: JUNE 2024 SHEET 5 OF 10

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MATCHLINE REFER TO SHEET 5



PATUXENT RIVER

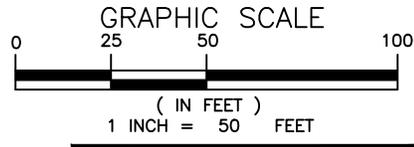
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LEGEND

-  EX. LOW MARSH
-  EX. HIGH MARSH
-  PR. SAND
-  PR. HIGH MARSH
-  PR. LOW MARSH
-  PR. VEGETATED BREAKWATER



JUG BAY SHORELINE RESTORATION
AT
JUG BAY WETLANDS SANCTUARY
ANNE ARUNDEL COUNTY

APPL. BY: ANNE ARUNDEL COUNTY (JUG BAY WETLANDS SANCTUARY)

SITE PLANS

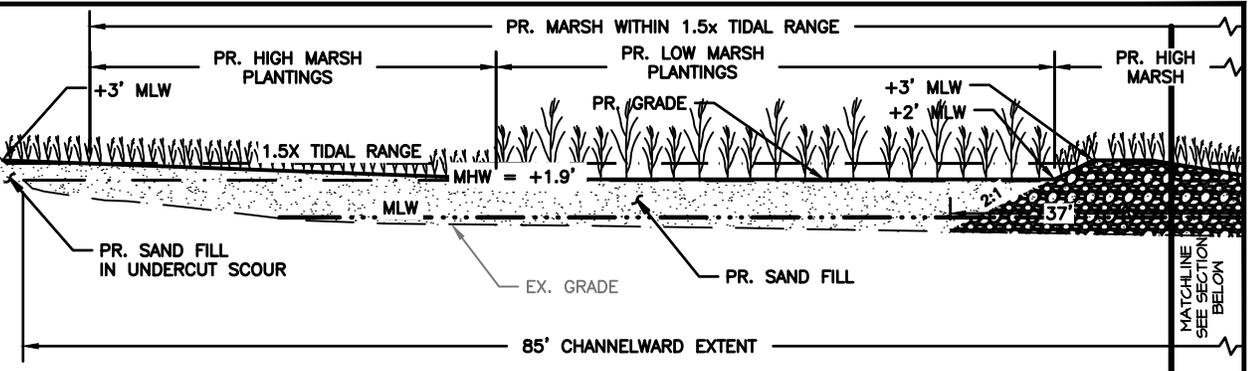
DATE: JUNE 2024 SHEET 6 OF 10



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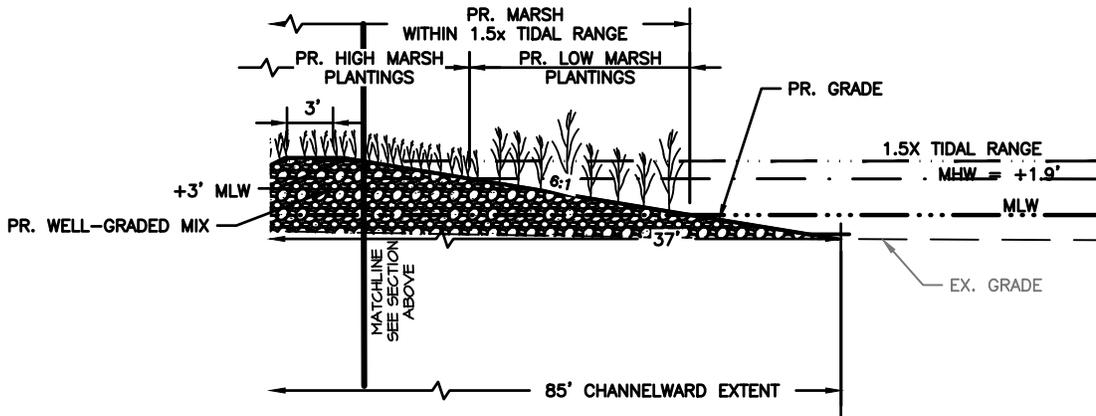
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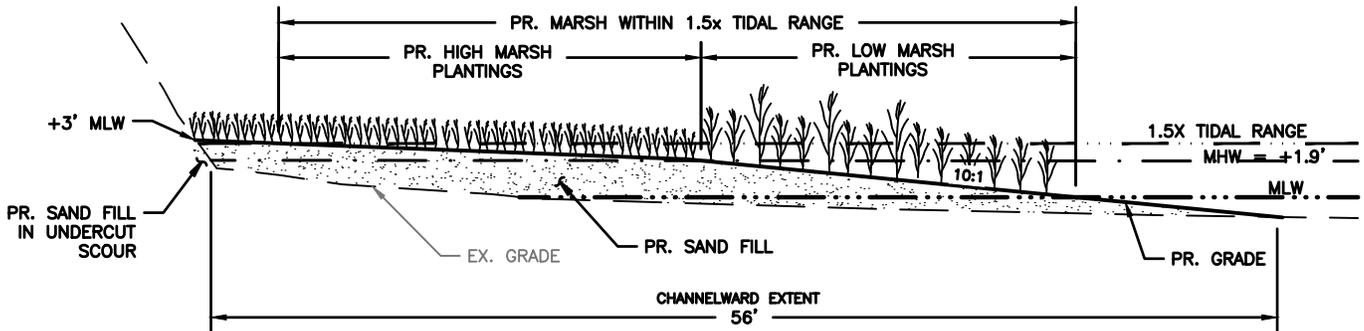
SECTION SL-1

SCALE: 1" = 10'



SECTION SL-1 (CONTINUED)

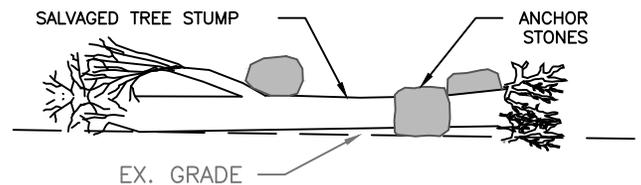
SCALE: 1" = 10'



SECTION SL-2

SCALE: 1" = 10'

24-WQC-0011
 202361604
 179915
 6/20/24
 MT
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TYPICAL WOODY DEBRIS SECTION

SCALE: 1" = 5'

JUG BAY SHORELINE RESTORATION
 AT
 JUG BAY WETLANDS SANCTUARY
 ANNE ARUNDEL COUNTY

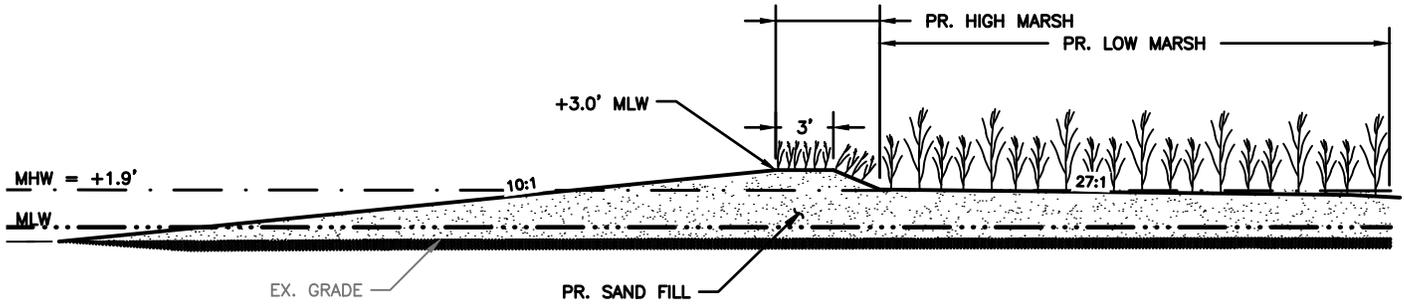
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CROSS SECTIONS & TYPICALS

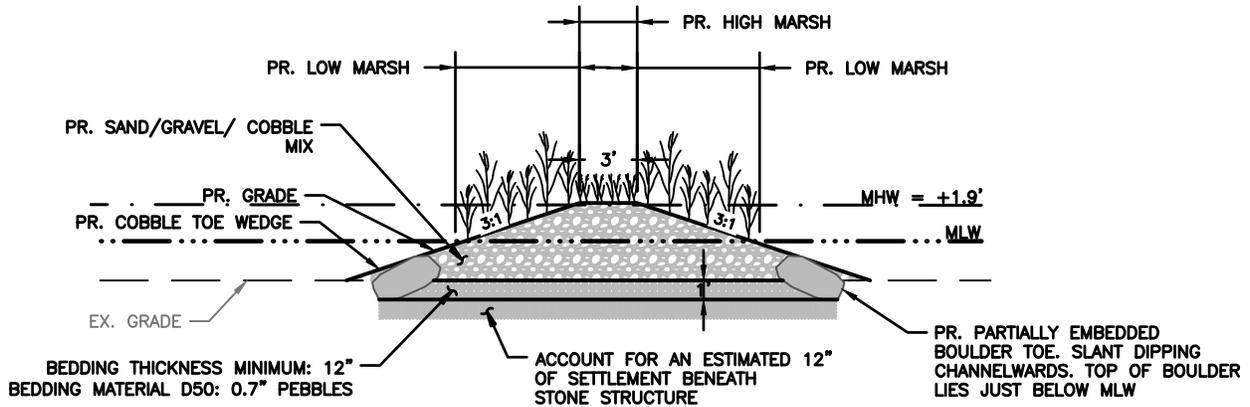
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Bayland
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SECTION SL-3
SCALE: 1" = 10'



VEGETATED HEADLAND DETAIL
SCALE: 1" = 10'

JUG BAY SHORELINE RESTORATION
AT
JUG BAY WETLANDS SANCTUARY
ANNE ARUNDEL COUNTY

APPL. BY: ANNE ARUNDEL COUNTY (JUG BAY WETLANDS SANCTUARY)

CROSS SECTIONS & TYPICALS

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PROJECT SUMMARY

PROPOSED STRUCTURES:

WOODY HABITAT STRUCTURE - (8 TOTAL)

LIVING SHORELINE - 28,418 SF (26,499 SF BELOW EX. MHW)
VEGETATED BREAKWATER - 13,974 SF (4 TOTAL) (13,903 SF BELOW EX. MHW)
TOTAL LENGTH : 411 LF
AVG. WIDTH : 34 LF
MAX. CHANNELWARD ENCROACHMENT - 120 LF
VOLUME - 837 CY (837 CY BELOW EX. MHW)
MARSH TERRACE - 14,444 SF (12,596 SF BELOW EX. MHW)
TOTAL LENGTH - 364 LF
AVG. WIDTH - 59 LF
VOLUME - 1,174 CY (1,127 CY BELOW EX. MHW)
MAX CHANNELWARD ENCROACHMENT - 68 LF

POCKET BEACH - 1,450 SF (1,450 SF BELOW EX. MHW)
TOTAL LENGTH - 50 LF
AVG. WIDTH - 29 LF
VOLUME - 50 CY (50 CY BELOW EX. MHW)
MAX CHANNELWARD ENCROACHMENT - 45 LF

MARSH PLANTINGS - 24,884 SF (23,036 SF BELOW EX. MHW)
LOW MARSH PLANTINGS - 11,728 SF
HIGH MARSH PLANTINGS - 13,156 SF
MARSH PLANTINGS IN 1.5X TIDAL RANGE SEAWARD OF EX. MHW (+0.0' TO +2.9') - 23,036 SF
MARSH PLANTINGS ABOVE EX. MHW - 1,848 SF
AREA OF IMPACTS OUTSIDE 1.5X TIDAL RANGE SEAWARD OF EX. MHW - 5,633 SF
MARSH IN TIDAL RANGE IMPACTS RATIO - 4:1 (23,036 : 5,633)

IMPACT SUMMARY

TOTAL AREA OF IMPACT FROM EX. MHW INTO TIDAL WATERS = 27,949 SF (0.64 AC)
TOTAL AREA OF IMPACT FROM EX. MHW INTO TIDAL WATERS (STRUCTURES ONLY) = 13,903 SF (0.32 AC)
TOTAL AREA OF PERMANENT IMPACT TO SHALLOW WATER HABITAT = 27,949 SF (0.64 AC)
TOTAL AREA OF IMPACT TO PRIVATE TIDAL WETLANDS = 0 SF

NOTES

1. BASEMAP COMPILED FROM ANNE ARUNDEL COUNTY 2018 PLANIMETRICS AND AERIAL PHOTOGRAPHY.
2. SOUNDINGS AND CONTOURS ARE IN FEET AND REFER TO MLW.
3. TIDAL RANGE IS 1.9'
4. BATHYMETRIC & TOPOGRAPHIC SURVEY PERFORMED BY BAYLAND CONSULTANTS & DESIGNERS MAY 22, 2023 AND JUNE 19, 2023.
5. THESE ARE PERMIT DRAWINGS ONLY AND SUBJECT TO CHANGE DURING THE PERMIT PROCESS. DESIGN DRAWINGS ARE TO BE PREPARED SEPARATELY.

JUG BAY SHORELINE RESTORATION
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APPL. BY: ANNE ARUNDEL COUNTY (JUG BAY WETLANDS SANCTUARY)

SITE NOTES

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PLANTING SCHEDULE

Planting Zone	Total Area (SF)	Common Name	Scientific Name	Type	Indicator Status	Minimum Size & Heights	Distribution	Avg Spacing (ft)	Quantity	Description
Low Marsh	4,877	Arrow Arum	<i>Peltandra virginica</i>	Herb.	OBL	Plug	Random	1.5	450	Between MLW and MHW
		Duck Potato	<i>Sagittaria latifolia</i>	Herb.	OBL	Plug	Random	1.5	450	
		Rice Cutgrass	<i>Leersia oryzoides</i>	Herb.	OBL	Plug	Random	1.5	450	
		American Bur-reed	<i>Sparganium americanum</i>	Herb.	OBL	Plug	Random	1.5	450	
		Pickerelweed	<i>Pontederia cordata</i>	Herb.	OBL	Plug	Random	1.5	450	
High Marsh	15,427	Lizard's Tail	<i>Saururus cernuus</i>	Herb.	NI	Plug	Random	1.5	700	Above MHW to Elev. 3 FT
		Virginia Wild Rye	<i>Elymus virginicus</i>	Herb.	FACW	Plug	Random	1.5	700	
		Halberd-leaved Smartweed	<i>Persicaria arifolia</i>	Herb.	OBL	Plug	Random	1.5	700	
		Swamp Rose-mallow	<i>Hibiscus moscheutos</i>	Herb.	OBL	Plug	Random	1.5	700	
		Cardinalflower	<i>Lobelia cardinalis</i>	Herb.	FACW	Plug	Random	1.5	700	
		Buttonbush	<i>Cephalanthus occidentalis</i>	Shrub	OBL	Gal, 18"	Near Cliff Toe	5	62	
		Sweet Pepperbush	<i>Clethra alnifolia</i>	Shrub	FAC	Gal, 18"	Near Cliff Toe	5	62	
		Common Winterberry	<i>Ilex verticillata</i>	Shrub	FACW	Gal, 18"	Near Cliff Toe	5	62	
		Broadleaf Cattail	<i>Typha latifolia</i>	Herb.	OBL	Plug	Random	1.5	700	
		Narrowleaf Cattail	<i>Typha angustifolia</i>	Herb.	OBL	Plug	Random	1.5	700	
Phragmites Replacement Seeds	350	Fringed Sedge	<i>Carex crinita</i>	Herb.	OBL	Plug	Random	1	50	Seed area after phragmite removal
		Virginia Wild Rye	<i>Elymus virginicus</i>	Herb.	FACW	Plug	Random	1	50	
		Rice Cutgrass	<i>Leersia oryzoides</i>	Herb.	OBL	Plug	Random	1	50	
		American Bur-reed	<i>Sparganium americanum</i>	Herb.	OBL	Plug	Random	1	50	
		Lizard's Tail	<i>Saururus cernuus</i>	Herb.	NI	Plug	Random	1	50	
		American Bur-reed	<i>Sparganium americanum</i>	Herb.	OBL	Plug	Random	1	50	
		Pickerelweed	<i>Pontederia cordata</i>	Herb.	OBL	Plug	Random	1	50	

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PLANTING SCHEDULE

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