

**U.S. Army Corps
of Engineers**

Baltimore District
PN-24-27

Public Notice

**In Reply to Application Number
NAB-2021-60913 M52 (Jefferson Patterson Park &
Museum/Breakwater/Vegetative Stabilization/Oyster Bag
Sills)**

Comment Period: September 10, 2024 to October 10, 2024

THE PURPOSE OF THIS PUBLIC NOTICE IS TO INFORM INTERESTED PARTIES OF THE PROPOSED ACTIVITY AND TO SOLICIT COMMENTS. NO DECISION HAS BEEN MADE AS TO WHETHER OR NOT A PERMIT WILL BE ISSUED AT THIS TIME.

This District has received an application for a Department of the Army permit pursuant to Section 10 of the Rivers and Harbors Act (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344), as described below:

APPLICANT:

Jefferson Patterson Park & Museum
c/o: Mr. Greg Pierce
10515 Mackall Road
St. Leonard, Maryland 20685

WATERWAY AND LOCATION OF THE PROPOSED WORK:

The proposed work is located in St. Leonard Creek, at the Patuxent Environmental & Aquatic Research Laboratory at 10545 Mackall Road, St. Leonard, Calvert County, Maryland. (Project Latitude: 38.393889; Longitude: -76.503889, NAD83)

OVERALL PROJECT PURPOSE:

To provide shoreline erosion control and to establish marsh habitat at the Patuxent Environmental & Aquatic Research Laboratory, St. Leonard, Calvert County, Maryland.

PROJECT DESCRIPTION:

The applicant proposes, in accordance with the attached plans, to stabilize approximately 1,400 linear feet (lf) of eroding shoreline utilizing a living shoreline design by emplacing a series of six (6) shore connected headland control breakwater structures, all within an approximately 856 linear foot (lf)/23,990 square foot (sf) (0.55 acres) impact area.

The proposed project proposes impacts to an approximate 23,990 square foot (0.55 acre) area of tidal open water below the approximate MHW shoreline resulting from the placement of 13,635 sf of stone breakwaters and 10,355 sf of clean select sand fill to construct the intertidal marsh. High marsh creation would be incorporated into the proposed project through the establishment of approximately 2,107 sf of planting within two of the breakwater structures, 10,355 sf of *Spartina alterniflora* between the existing MHWL and the breakwater structures, and 13,702 square feet of *Spartina patens* between the MHWL and toe of bank.

All work will be completed in accordance with the enclosed plans dated January 2024.

Please refer to the table below for a summary of aquatic resource impacts.

EFFECTS ON AQUATIC RESOURCES:

Activity (i.e. culvert)	Open Water Impact (Sq. Ft.)	Authority (Section 10/404/408)
Construction of Stone Breakwater Structure	13,635	Section 10/404
Placement of Sand Fill	10,355	Section 10/404

LEAD FEDERAL AGENCY:

The United States Army Corps of Engineers, as the lead federal agency, is responsible for all coordination pursuant to applicable federal authorities.

APPLICANT'S PROPOSED AVOIDANCE, MINIMIZATION, AND COMPENSATORY MITIGATION:

As part of the planning process for the proposed project, steps were taken to ensure avoidance and minimization of impacts to aquatic resources to the maximum extent practicable based on the existing site conditions. The applicant removed the placement of cobble, placement of oyster sills, and a number of larger sized vegetated breakwater components over the overall project to reduce impacts. Alternative designs were considered by the applicant and include 1) reduced channelward encroachment that limits marsh establishment area and 2) greater channelward encroachment that increases marsh establishment areas, but also increases the volume of rock required and overall project impacts. As currently designed, the proposed project seeks to avoid and minimize impacts to shallow-water habitat by designing the headland breakwaters to be the minimum channelward encroachment necessary to provide reduced wave energy, erosion rates and provide for coastal resiliency.

No compensatory mitigation is currently proposed. No submerged aquatic vegetation (SAV) would be impacted as a result of the proposed project based on existing site conditions and Corps review of SAV mapping data. The proposed project upon completion would result in the establishment of approximately 10,355 sf of low marsh vegetation (*Spartina alterniflora*) and 13,702 sf of high marsh vegetation (*S. patens*).

CORPS EVALUATION REQUIREMENTS:

This project will be evaluated pursuant to Corps Regulatory Program Regulations (33 CFR Parts 320-332). The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit, which reasonable may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors, which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economic, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, and consideration of property ownership and in general, the needs and welfare of the people. The evaluation of the impact of this project will also include application of the Clean Water Act Section 404(b)(1) Guidelines promulgated by the Administrator, United States Environmental Protection Agency.

ENDANGERED SPECIES:

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

ESSENTIAL FISH HABITAT:

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 04-267), requires all federal agencies to consult with the National Marine Fisheries Service on all actions, or proposed actions, permitted, funded, or undertaken by the agency that may adversely affect Essential Fish Habitat (EFH), including species of concern, life cycle habitat, or Habitat Areas of Particular Concern. The project site lies in or adjacent to EFH as described under MSFCMA for managed species under the MSFCMA.

The Baltimore District has made a preliminary determination that the project will have no adverse effect on EFH. The Baltimore District has made a preliminary determination that mitigative measures are not required to minimize adverse effects on EFH at this time. This determination may be modified if additional information indicates otherwise.

HISTORIC RESOURCES:

Pursuant to Section 106 of the National Historic Preservation Act of 1966 and applicable guidance, the Corps has reviewed the latest published version of the National Register of Historic Places and initially determined that no registered properties listed as eligible for inclusion, therein, are located at the site of the proposed work. The Corps has made the preliminary determination that the proposed project would have no effect on historic properties. The Corps final eligibility and effect determination will be based on coordination with the State Historic Preservation Office as appropriate and required, and with full consideration given to the proposed undertaking's potential direct and indirect effects on historic properties within the Corps' identified permit area.

TRIBAL RESOURCES:

Section 106 of the National Historic Preservation Act also requires federal agencies to consult with federally recognized American Indian tribes that attach religious and cultural significance to historic properties that may be affected by the agency's undertaking. Corps Tribal Consultation Policy mandates an open, timely, meaningful, collaborative, and effective deliberative communication process that emphasizes trust, respect, and shared responsibility. The policy further emphasizes that, to the extent practicable and permitted by law, consultation works toward mutual consensus and begins at the earliest planning stages before decisions are made and actions taken. The Corps final eligibility and effect determination will be based on coordination with interested tribes, in accordance with the Corps current tribal standard operating procedures as appropriate and required, and with full consideration given to the proposed undertaking's potential direct and indirect effects on tribal resources.

MODIFICATION OF CIVIL WORKS PROJECTS: 33 USC 408 (SECTION 408):

All Section 408 proposals will be coordinated internally at the United States Army Corps of Engineers. The Section 408 decision will be issued along with the Section 404 and/or Section 10 decision. Please see the following link for more information regarding Section 408: <https://www.nab.usace.army.mil/Missions/Regulatory/Section-408-Requests/>.

WATER QUALITY CERTIFICATION:

The applicant is required to obtain a water quality certification in accordance with Section 401 of the Clean Water Act.

COASTAL ZONE MANAGEMENT PROGRAMS:

Where applicable, the applicant has certified in this application that the proposed activity complies with and will be conducted in a manner consistent with the approved Coastal Zone Management Program. By this public notice, we are requesting the State concurrence or objection to the applicant's consistency statement.

The applicant must obtain any state or local government permits which may be required.

SUBMISSION OF COMMENTS:

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

Written comments concerning the work described above related to the factors listed above or other pertinent factors must be received by the United States Army Corps of Engineers, Baltimore District within the comment period specified above through postal mail at the address below or electronic submission to the project manager email address below. Written comments should reference the Application Number NAB-2021-60913.

PUBLIC HEARING REQUESTS:

Any person who has an interest which may be adversely affected by the issuance of this permit may request a public hearing. The request, which must be in writing, must be received within the comment period as specified above to receive consideration. Also, it must clearly set forth the interest which may be adversely affected by this activity and the manner in which the interest may be adversely affected. The public hearing request may be submitted by electronic mail or mailed to the following address:

Kristen Rigney
kristen.l.rigney@usace.army.mil
United States Army Corps of Engineers, Baltimore District
Regulatory Branch
2 Hopkins Plaza
Baltimore, Maryland 21201-2930

It is requested that you communicate this information concerning the proposed work to any persons known by you to be interested, who did not receive a copy of this notice.

General information regarding the Corps' permitting process can be found on our website at <https://www.nab.usace.army.mil/Missions/Regulatory.aspx>. This public notice has been prepared in accordance with Corps implementing regulations at 33 CFR 325.3. If you have any questions concerning this specific project or would like to request a paper copy of this public notice, please contact Ms. Kristen Rigney at (410) 816-4205, or at kristen.l.rigney@usace.army.mil with NAB-2021-60913 M52 in the subject line. This public notice is issued by the Chief, Regulatory Branch.

Approval Block

Department of Planning

Name	Date
Department of General Services	
Project Manager	Date
Chief-Proj. Mgt. & Design	Date

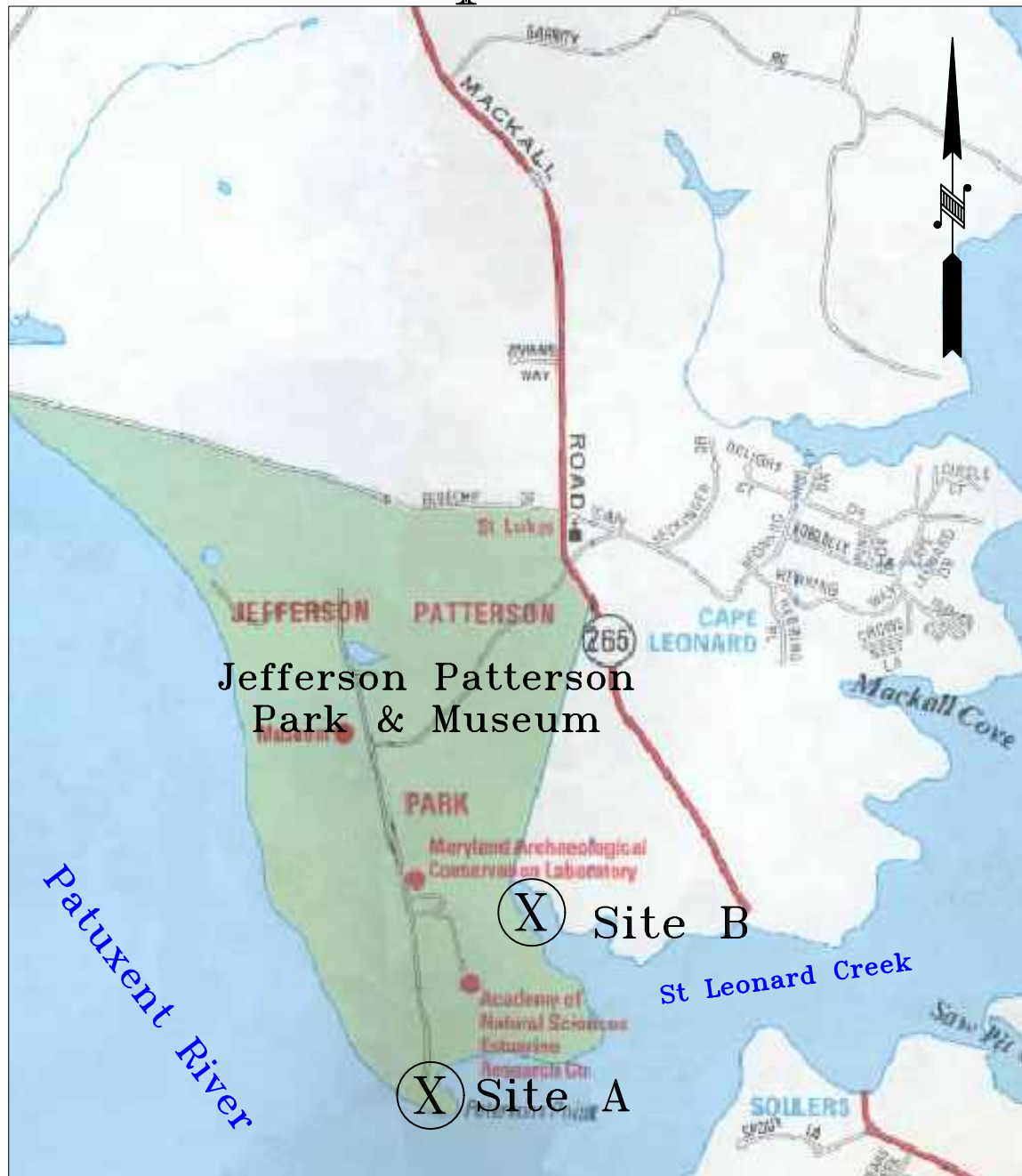


Know what's below.
Call before you dig.

"The Soil Conservation District makes no representation as to the existence or Non-existence of any utilities at the construction site. Shown on these construction drawings are those utilities which have been identified. It is the responsibility of the landowners or operators and contractors to assure themselves that no hazard exists or damage will occur to utilities"

It is suggested that Miss Utility be contacted at: 1-800-257-7777.

Location Map:
ADC Map 16-A-13



NTS

Jefferson Patterson Park & Museum
10515 Mackall Road St. Leonard, MD 20685

Calvert Soil Conservation District
Calvert County, Maryland
Maryland Historical Trust
Division of Historical and Cultural Programs
Division of Maryland Department of Planning

Department of General Services
Ellington Churchill, Jr., Secretary
301 W. Preston Street, Suite 1401,
Baltimore, MD. 21201

Board of Public Works
Larry Hogan, Jr. Governor
Peter Franchot, Comptroller
Nancy K. Kopp, Treasurer

Jefferson Patterson
Park & Museum
St. Leonard's Creek
Shoreline Erosion Control
Project Phase V
Project # HT-000-160-201
2021

Sheet Index:

- | | |
|-----------|---|
| Sheet 1: | Title Sheet |
| Sheet 2: | Site Overview |
| Sheet 3: | Area A – Existing Conditions |
| Sheet 4: | Area A – Proposed Conditions |
| Sheet 5: | Area A – Details & Cross Sections |
| Sheet 6: | Area A – Details & Cross Sections |
| Sheet 7: | Area A – Construction & Material Specifications |
| Sheet 8: | Area B – Existing Conditions |
| Sheet 9: | Area B – Proposed Conditions |
| Sheet 10: | Area B – Details & Cross Sections |
| Sheet 11: | Area B – Construction & Material Specifications |
| Sheet 12: | Area B – Construction & Material Specifications |
| Sheet 13: | Erosion & Sediment Control Notes |

Certification Block

DESIGN CERTIFICATION

"I hereby certify that this plan has been designed in accordance with the 2011 Standards and Specifications for Soil Erosion and Sediment Control or current revisions thereof, and Department of the Environment Stormwater Management Regulations."

Designer's Signature	Date
Md. Registration No.	
Printed Name	

Professional Certification

I hereby certify that these documents were prepared or approved by me, and that I am a duly Licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

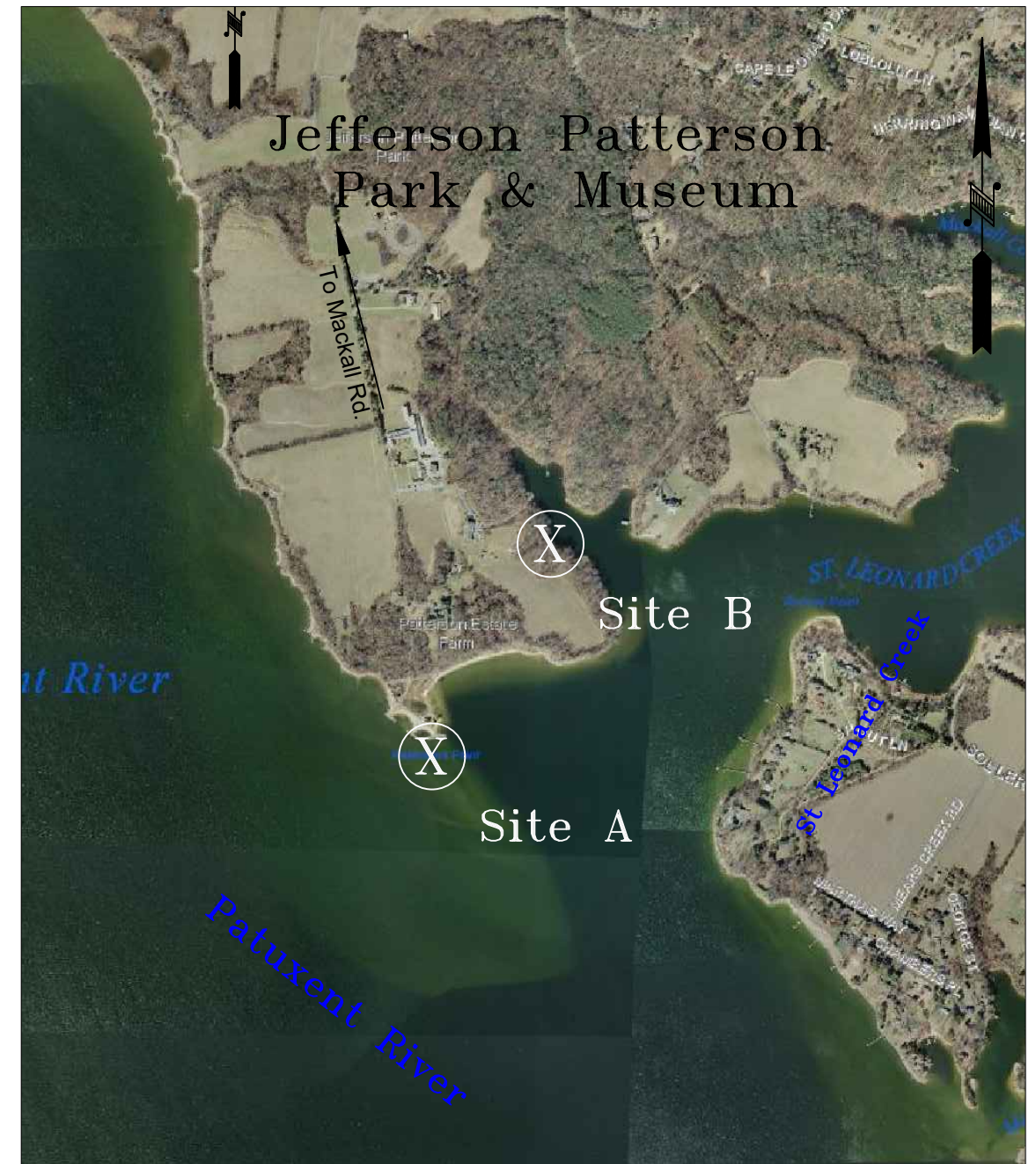
Glenn G. Gass	Date
---------------	------

AS BUILT CERTIFICATION

I hereby certify that the facilities shown hereon have been built in accordance with the approved plan unless otherwise noted. As Built changes are shown in red on these plans.

Signature	SEAL	Date
Name (Printed)		Professional License #

Vicinity Map:



NTS

Approved by	Glenn G. Gass
Title	District Engineer
Project	#2081.CCG

DATE	1/21
Designed	Glenn G. Gass
Drawn	N. Cook
Revised	R. St Laurent
Checked	Glenn G. Gass

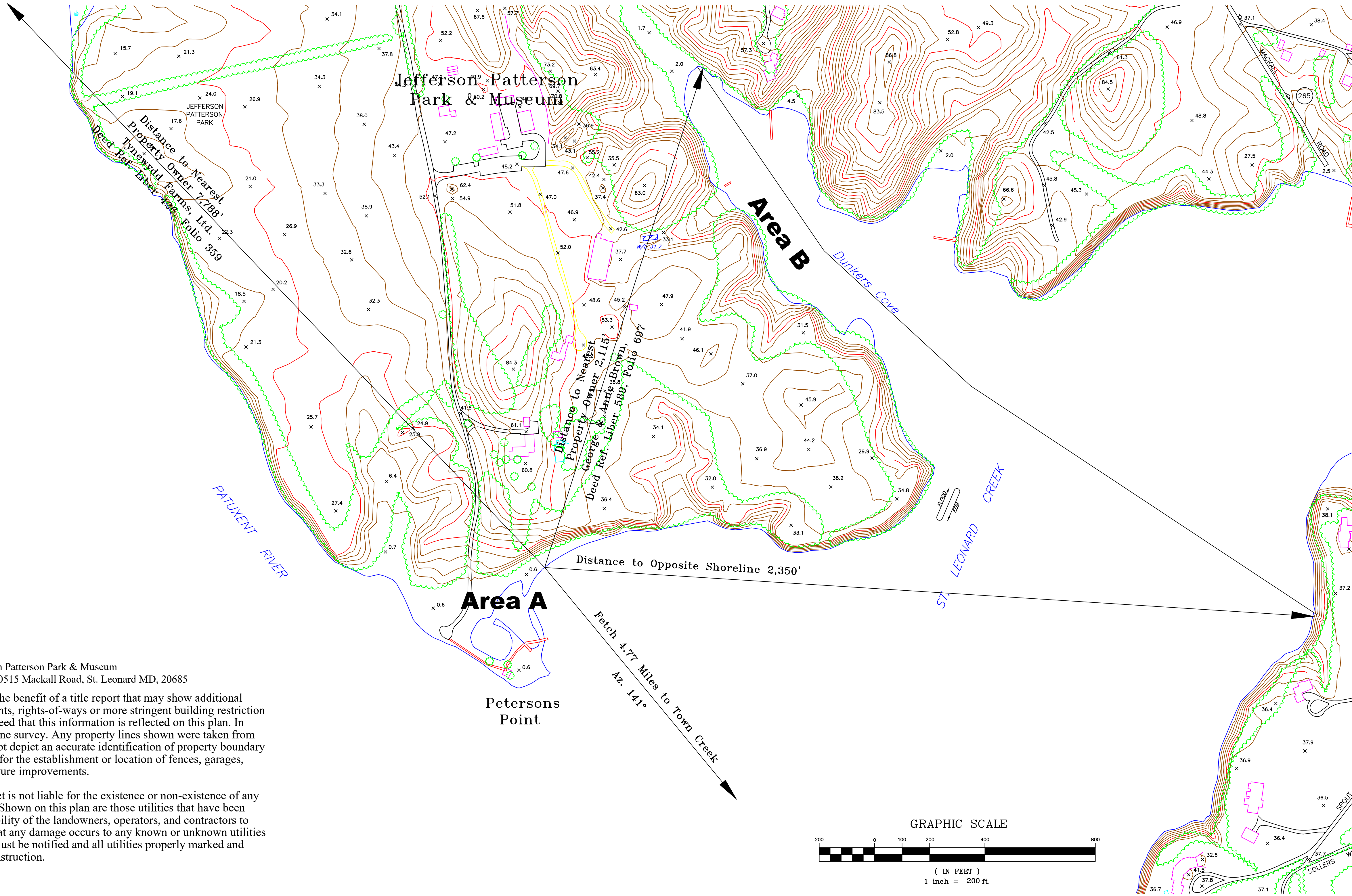
Jefferson Patterson Park & Museum
St. Leonard Creek Shoreline Erosion Control Project Phase V
Project # HT-000-160-201

Title Sheet
Calvert County, Maryland

Site Overview

Scale: 1" = 200'

Calvert County 2006 Topographic and Wetland Delineation Map

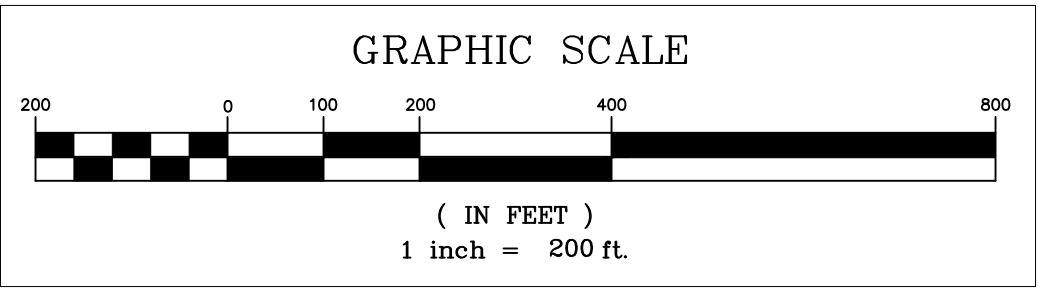


Legend

- Structures
- Road
- Property Line

Applicant: Jefferson Patterson Park & Museum
Mailing Address: 10515 Mackall Road, St. Leonard MD, 20685

- This plan was prepared without the benefit of a title report that may show additional conveyances, easements, covenants, rights-of-ways or more stringent building restriction lines. Therefore, it is not guaranteed that this information is reflected on this plan. In addition, this is not a boundary line survey. Any property lines shown were taken from available information and may not depict an accurate identification of property boundary lines. This plan is not to be used for the establishment or location of fences, garages, buildings, or other existing or future improvements.
- Calvert Soil Conservation District is not liable for the existence or non-existence of any utilities on the construction site. Shown on this plan are those utilities that have been identified. It is the sole responsibility of the landowners, operators, and contractors to insure that no hazard exists or that any damage occurs to any known or unknown utilities of any nature, and Miss Utility must be notified and all utilities properly marked and identified prior to the start of construction.



Engineers Approval

Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

Jefferson Patterson Park & Museum
St. Leonard Creek Shoreline Erosion Control Project Phase V
Project # HT-000-160-201
Site Overview
Calvert County, Maryland

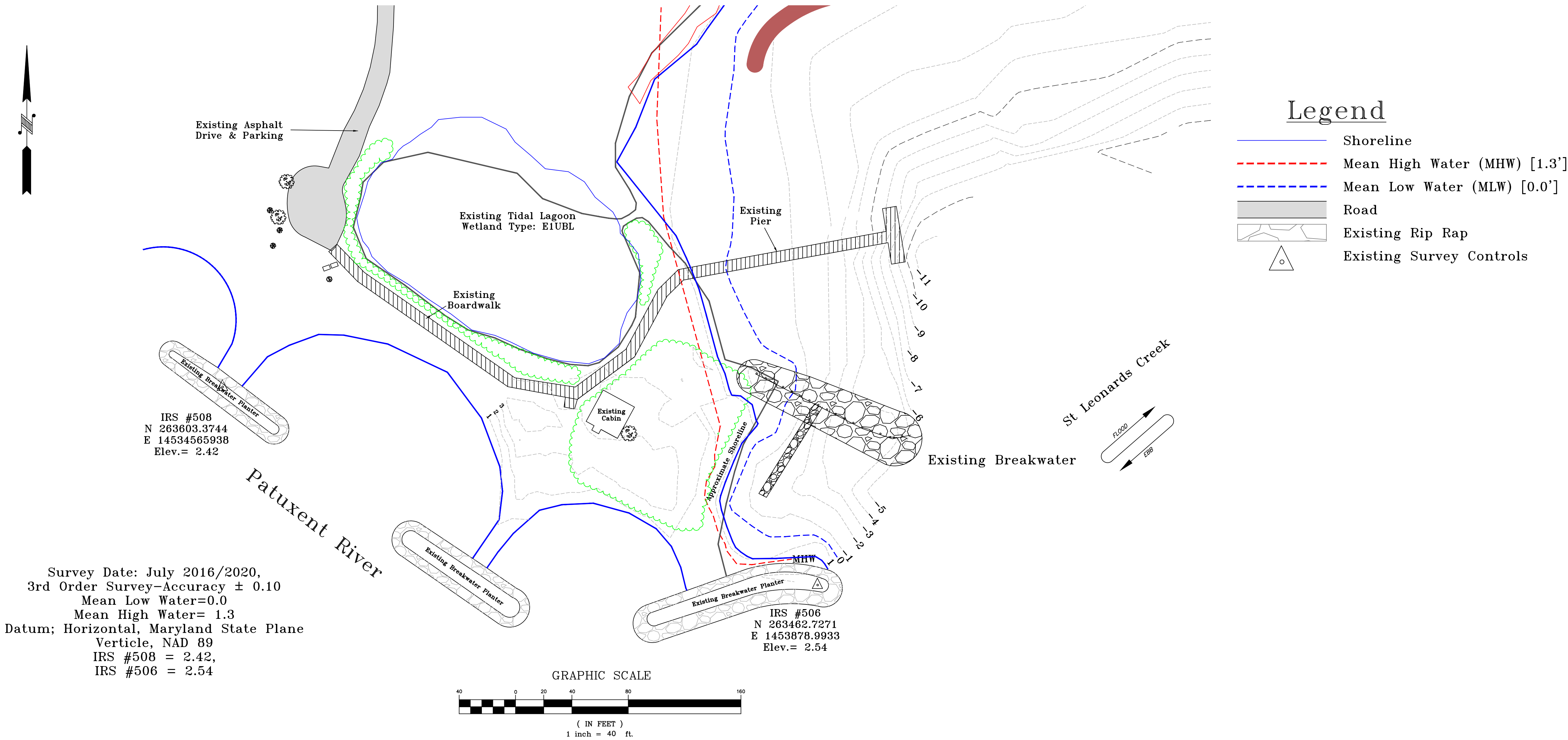
CAD FILE
JPP Phase V.dwg
LAYOUT NO.

2
NO 2 OF 13

DATE
Designed Glenn G. Goss 1/21
Drawn N. Cook 1/21
Revised R. St Laurent 1/24
Checked Glenn G. Goss 1/24
Approved by Glenn G. Goss
Title District Engineer
Project #2081.CCG

Area A Existing Conditions

Scale: 1" = 40'



Survey Date: July 2016/2020,
3rd Order Survey-Accuracy \pm 0.10
Mean Low Water=0.0
Mean High Water= 1.3
Datum; Horizontal, Maryland State Plane
Verticle, NAD 89
IRS #508 = 2.42,
IRS #506 = 2.54

Legend

- Shoreline
- Mean High Water (MHW) [1.3']
- Mean Low Water (MLW) [0.0']
- Road
- Existing Rip Rap
- Existing Survey Controls

Engineers Approval
Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

CAD FILE
JPP Phase V.dwg
LAYOUT NO.
3
NO 3 OF 13

Jefferson Patterson Park & Museum
St. Leonard Creek Shoreline Erosion Control Project Phase V
Project # HT-000-160-201
Area A Existing Conditions
Calvert County, Maryland

Designed Glenn G. Gass
Drawn N. Cook
Revised R. St Laurent
Checked Glenn G. Gass
DATE 1/21
1/21
1/24
1/24
Approved by Glenn G. Gass
Title District Engineer
Project #2081.CCG

Area A

Proposed Conditions

Scale 1" = 20'

Existing Asphalt
Drive & Parking

Existing Road
to Be Used as
Staging & Storage Area

Existing Tidal Lagoon
Wetland Type: E1UBL

Existing Pier

Legend

- Shoreline
- Mean High Water (MHW) [1.3']
- Mean Low Water (MLW) [0.0']
- Road
- Existing Rip Rap
- LOD/Filter Log
- Existing Survey Controls

IRS #508
N 263603.3744
E 14534565938
Elev.= 2.42

Breakwater Planting Schedule

Species	Amount	Size	Notes
Virginia Saltmarsh Mallow	78	1 gal	min 18-24" spacing
Early Lowbush Blueberry	19	18-24"	min 4' spacing
Spicebush	41	18-24"	min 18-24" spacing
Black Huckleberry	110	2" Plugs	min 4' spacing
Harlequin Blueflag	300	Plugs	min 2-3' spacing
Purple Gerardia	*		JPP Horticulturalist to Supply and Plant
Lavender Thrift	109	1 Gal	min 1-3' spacing
Seaside Goldenrod	220	Plant	min 18" spacing

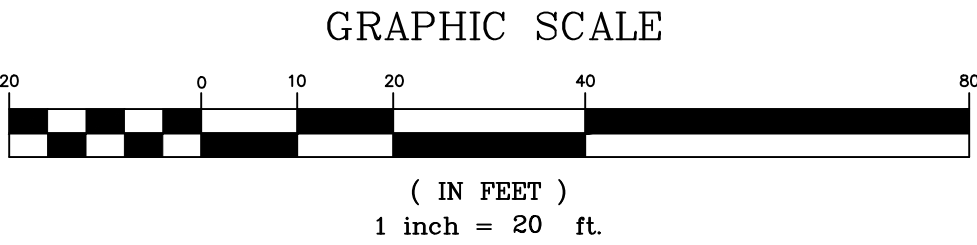
Patuxent River

Existing Breakwater Planters
to be replanted as per
Planting Plan on Sheet 6

Existing Breakwater Planter

Existing Breakwater Planter

IRS #506
N 263462.7271
E 1453878.9933
Elev.= 2.54



Engineers Approval

Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

Approved by Glenn. G. Gass
Title District Engineer
Project #2081.CCG

Designed Glenn G. Gass 1/21
Drawn N. Cook 1/21
Revised R. St Laurent 1/24
Checked Glenn G. Gass 1/24

Jefferson Patterson Park & Museum
St. Leonard Creek Shoreline Erosion Control Project Phase V
Project # HT-000-160-201
Area A Proposed Conditions
Calvert County, Maryland

CAD FILE
JPP Phase V.dwg

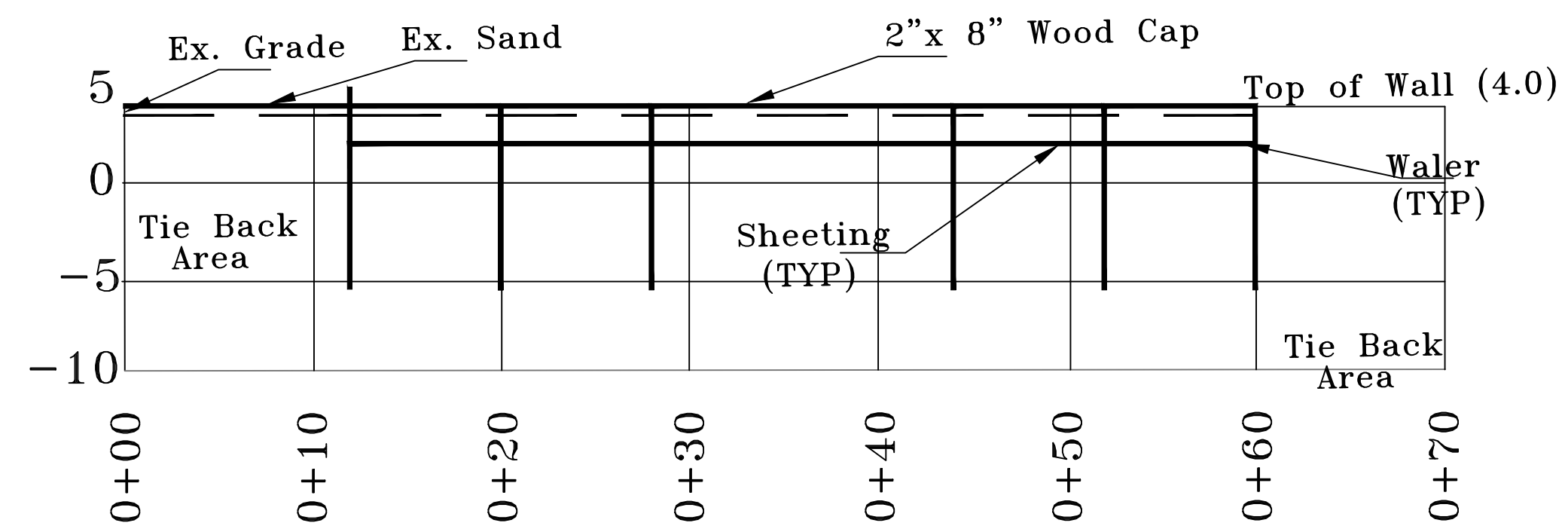
LAYOUT No.

4
NO 4 OF 13

Vinyl Wall Details

Scale: As- Shown

Wood Wall Details



Engineers Approval

Professional Certification

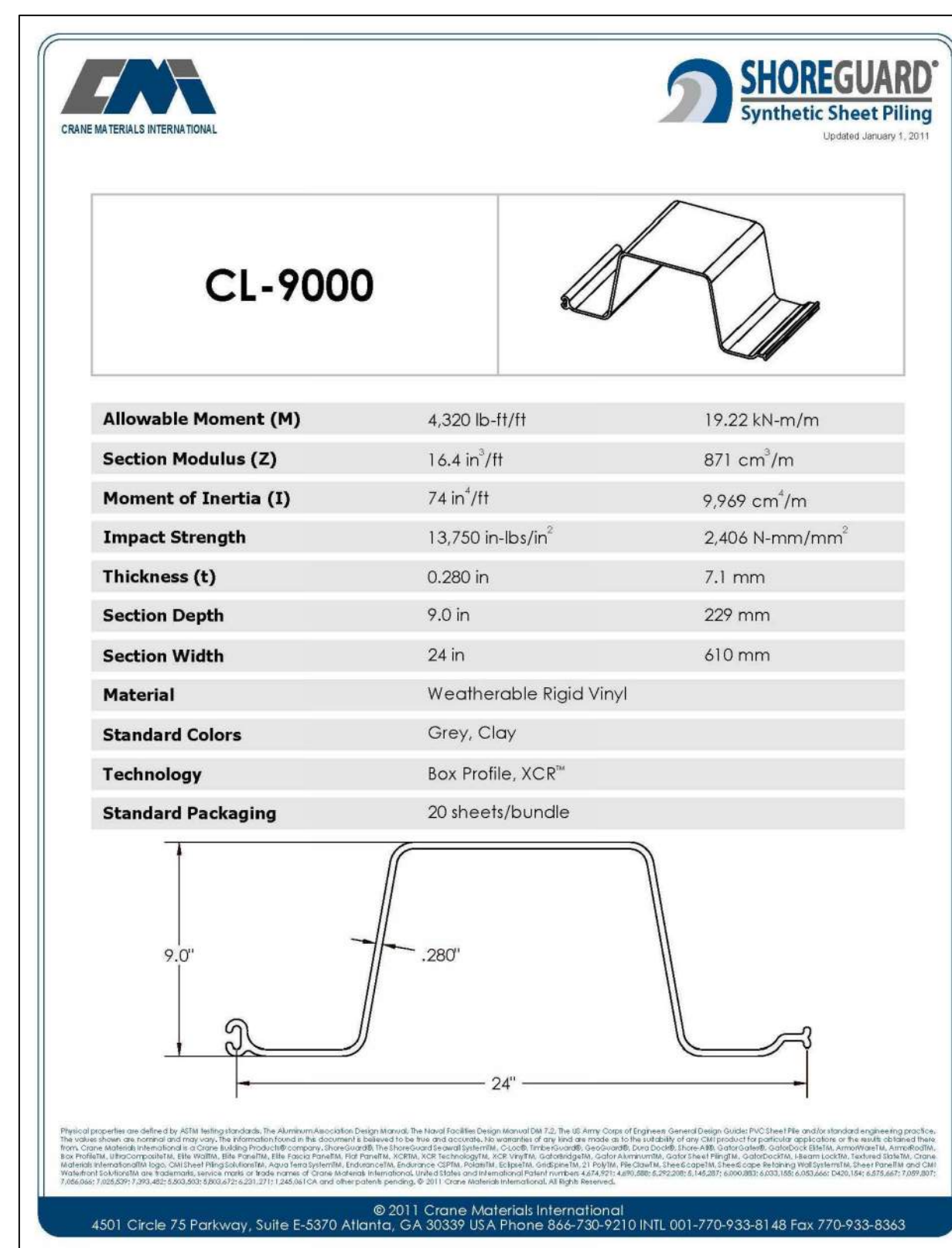
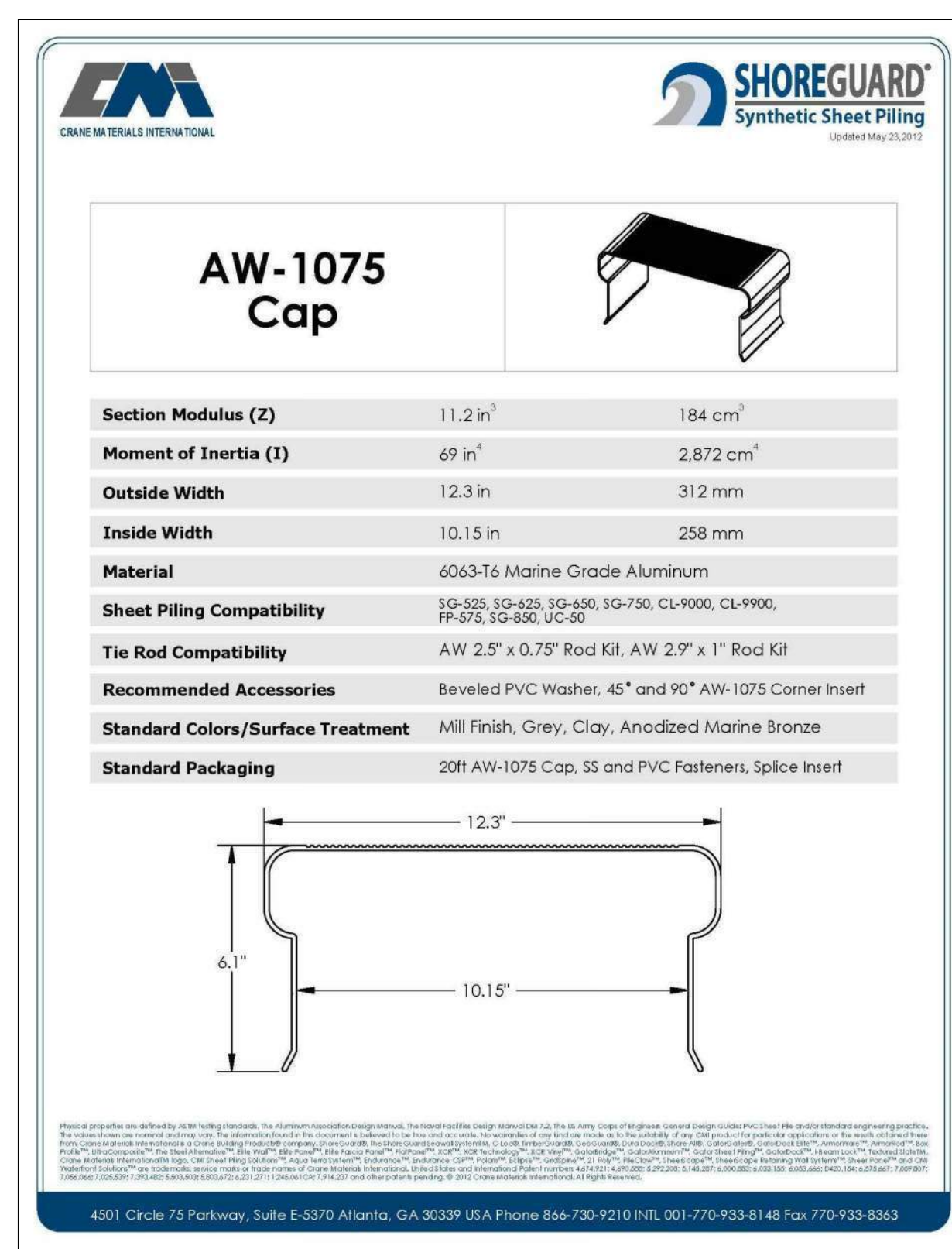
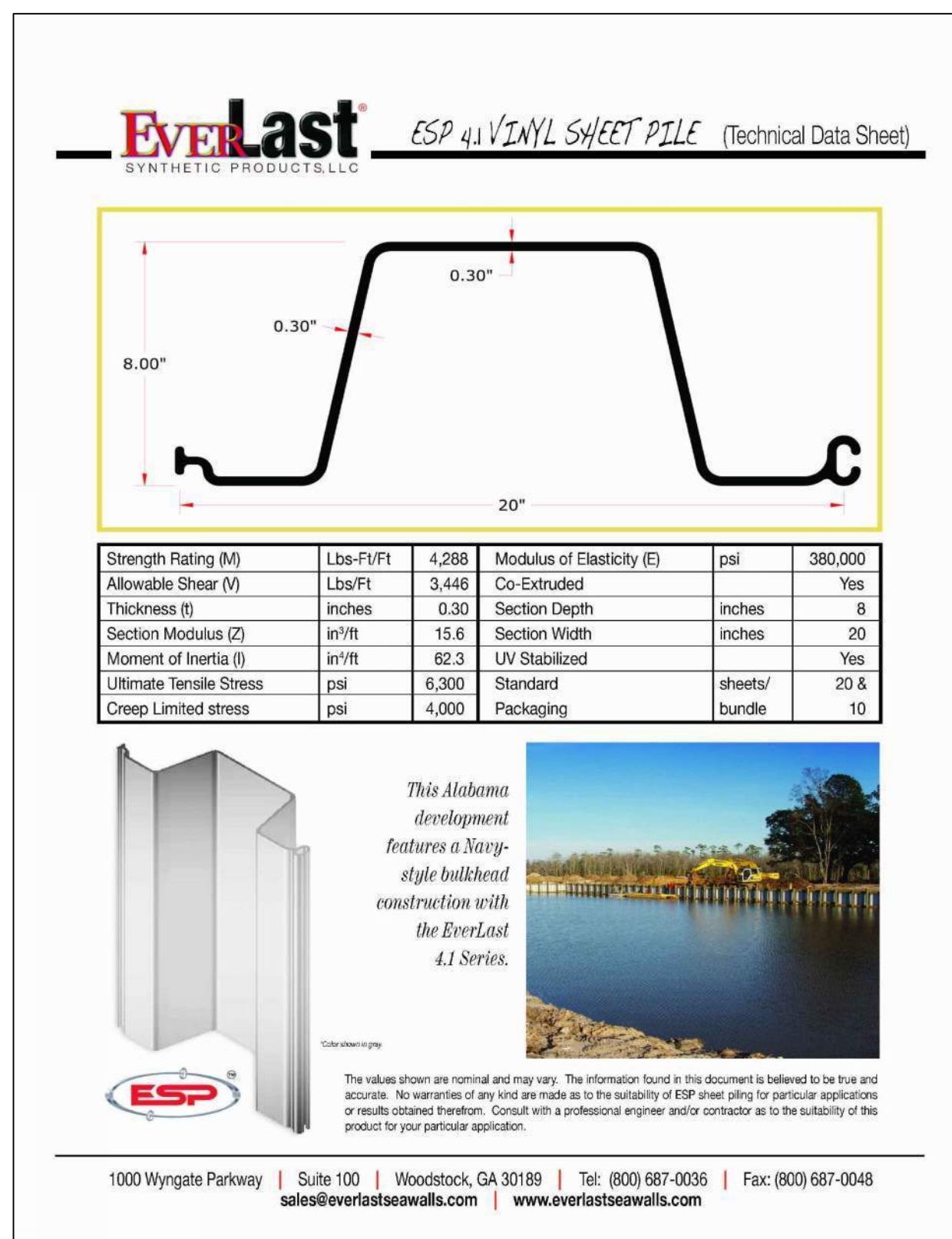
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

CAD FILE
JPP Phase V.dwg
LAYOUT NO.
5
NO 5 OF 13

NO 5 OF 13

Jefferson Patterson Park & Museum
St. Leonard Creek Shoreline Erosion Control Project Phase V
Project # HT-000-160-201

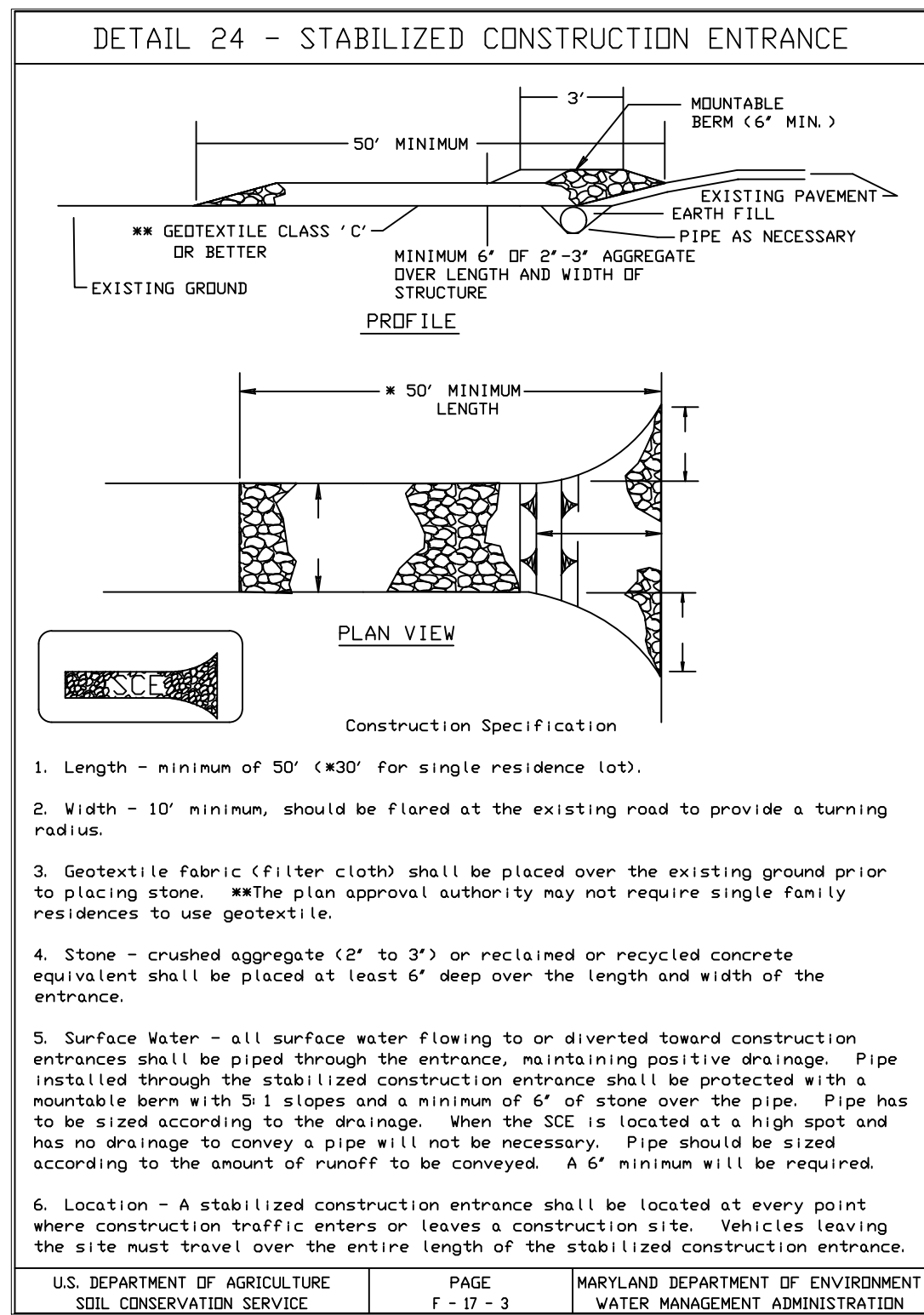
Area A Details and Cross Sections
Calvert County, Maryland



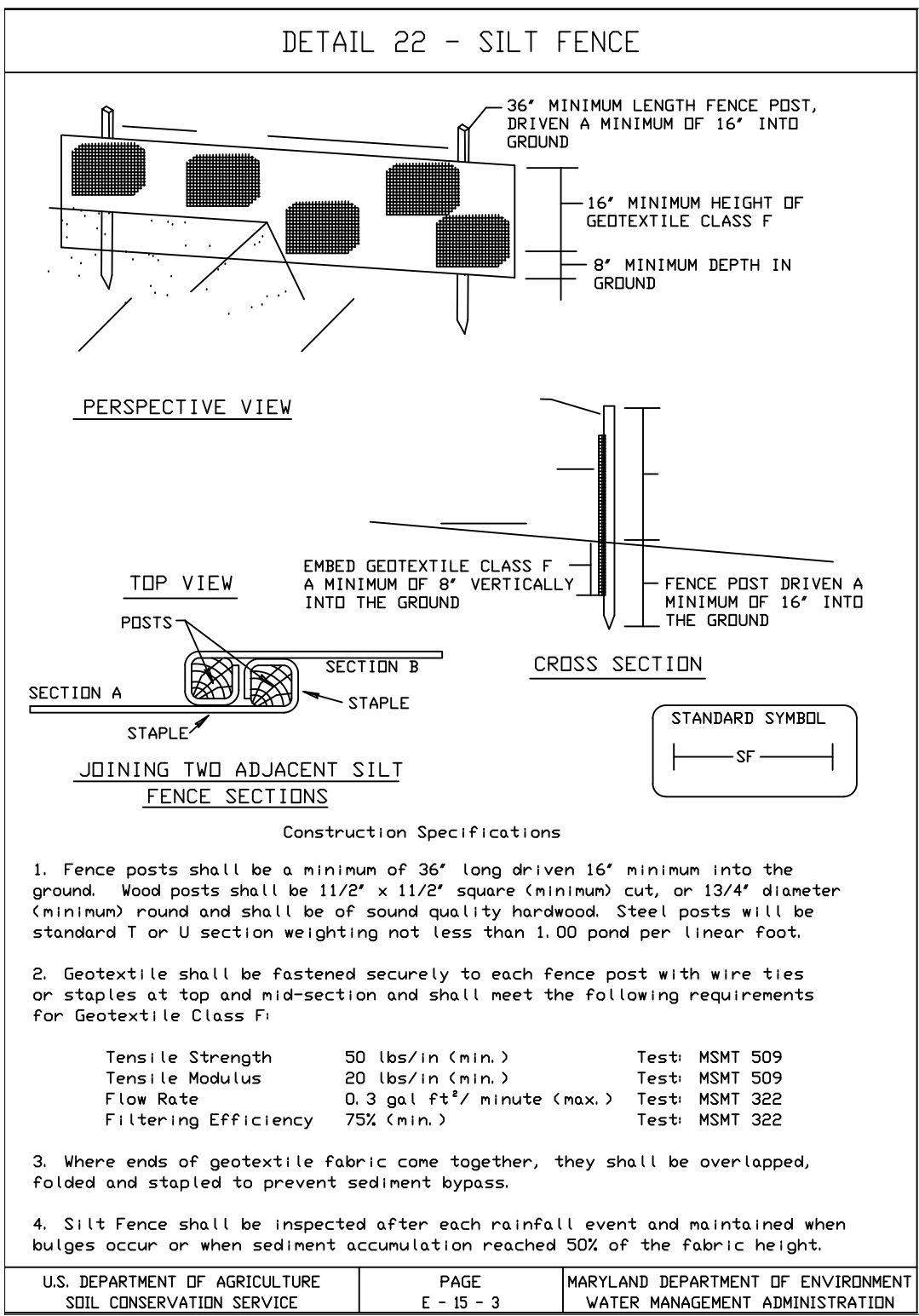
Area A Details and Cross Sections

Scale: As- Shown

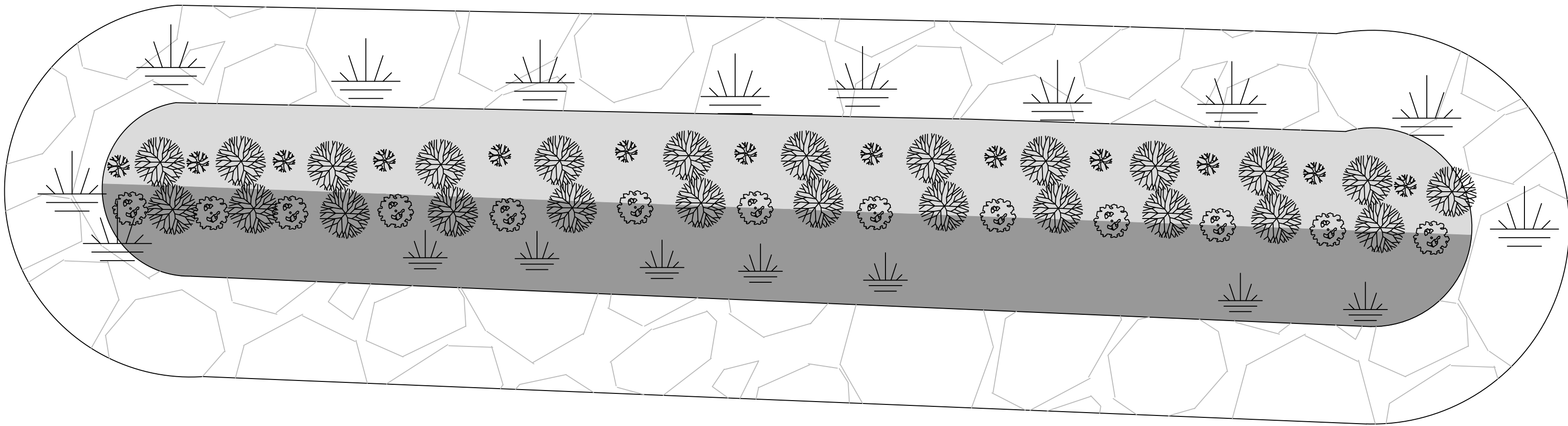
SCE (NTS)



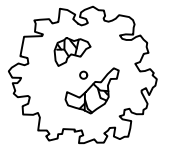
Silt Fence (NTS)



Peterson Point Breakwater Planter Typical Planting Plan (NTS)



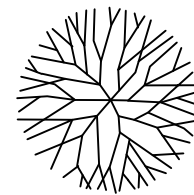
Flowering Shrubs



Virginia Saltmarsh Mallow

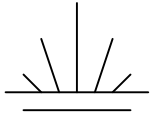


Blueberry/Huckleberry

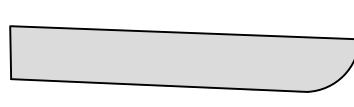


Spicebush

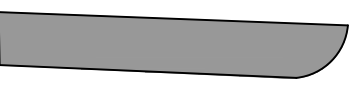
Flowering Perennials



Harlequin Blueflag

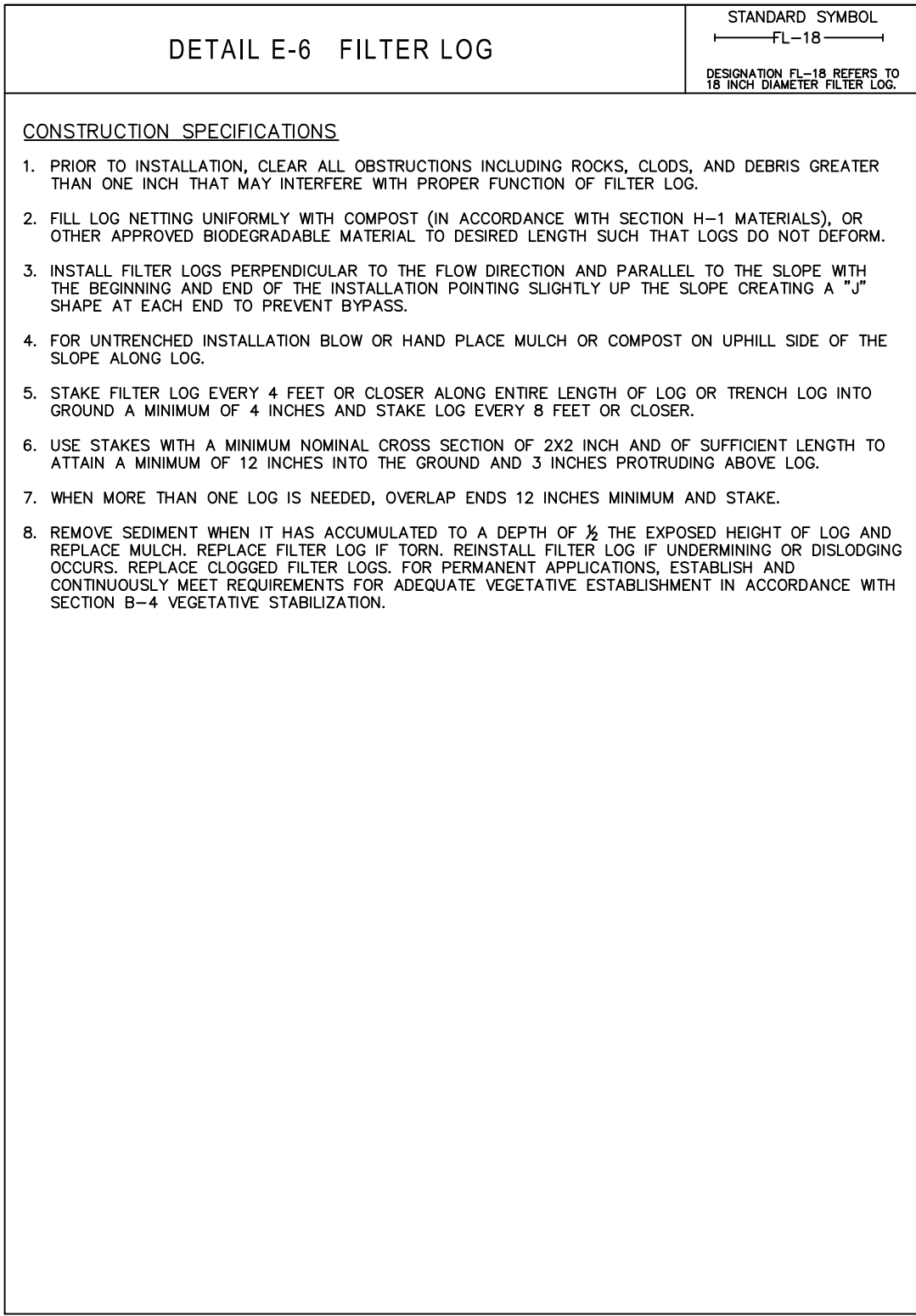
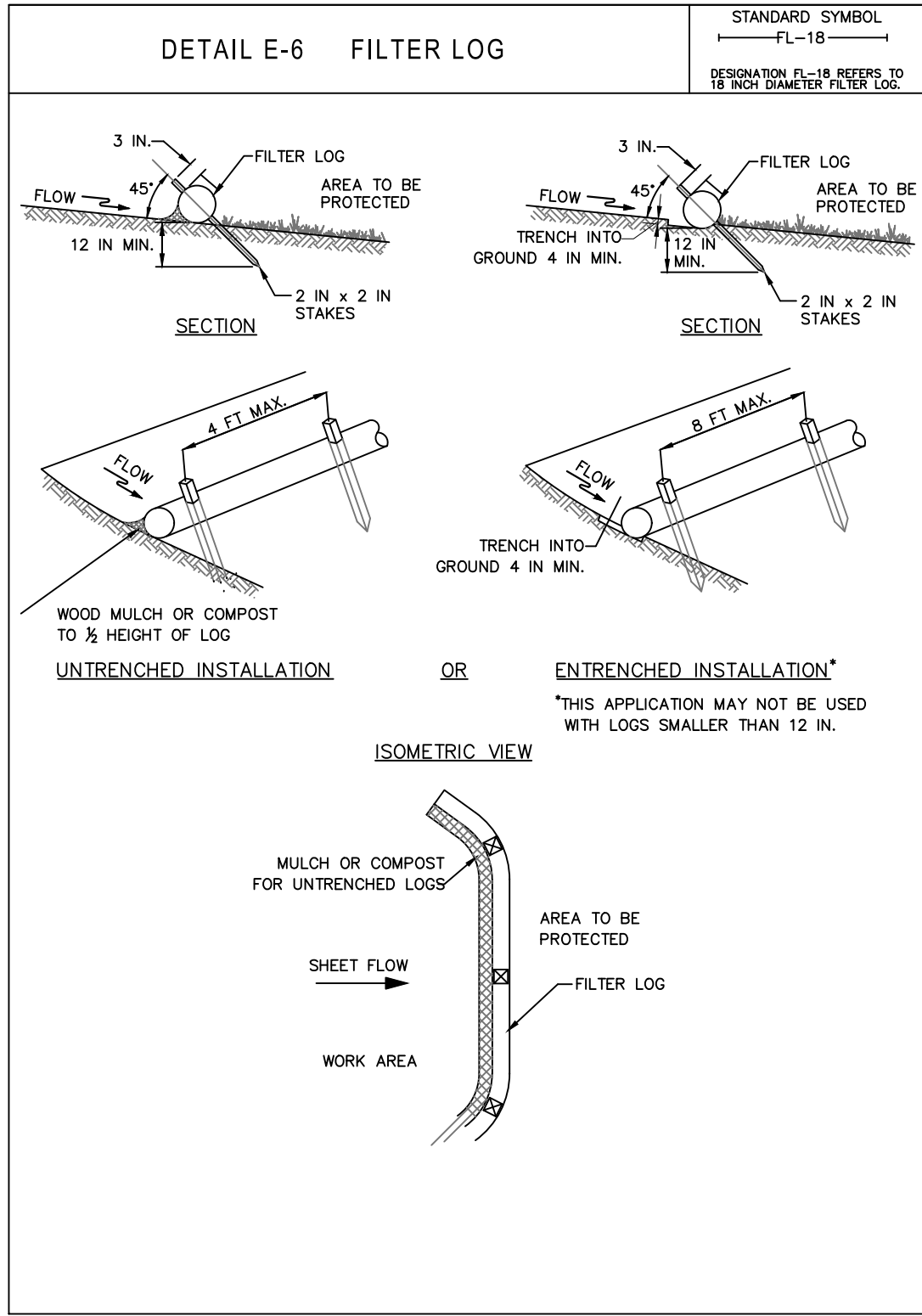


Gerardua/Thrift



Seaside Goldenrod

Filter Log Detail (NTS)



Engineers Approval

Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

CAD FILE

JPP Phase V.dwg

LAYOUT NO.

6

NO 6 OF 13

Jefferson Patterson Park & Museum

St. Leonard Creek Shoreline Erosion Control Project Phase V

Project # HT-000-160-201

Area A - Details and Cross Sections

Calvert County, Maryland

Approved by Glenn. G. Gass

Title District Engineer

Project #2081.CCG

DATE

1/21

1/21

1/24

1/24

1/24

1/24

Area A Construction and Material Specifications

Area A Construction Notes

- Mean tidal range is 1.3 feet.
- Vertical control is established using base datum where 0.0 feet = MLW and NAVD 88 0.0.
- Horizontal control is maintained using a Total Station using EDM (Electronic Distance Measurement).
- Topographic and hydrologic data was obtained June/July 2020.
- All dimensions and coordinates are given in feet.
- Filter log and Turbidity Curtain must be kept in good repair for duration of project. Filter log shall be inspected after each rain event.
- Contractor is responsible for locating and protecting all utilities. Contractor shall notify "Miss Utility" at 1-800-257-7777 prior to construction. The existing utilities and obstructions are from the best available records and shall be verified by the Contractor. Owner does not warrant or guarantee the completeness or the correctness of information given.
- The contractor is responsible for hiring a private utility location contractor to locate all electric and water lines in the vicinity of the work area. The contractor is responsible for insuring the integrity of these utility lines during construction.
- During construction contractor will maintain and dress all roads used to access the construction site within the confines of Jefferson Patterson Park. At conclusion of project all roads will be graded, shaped and surfaced, as necessary, to prior existing conditions within the confines of Jefferson Patterson Park.
- All debris, including brush, logs, stumps, woody vegetation within the Limits Of Disturbance shall be hauled off site and disposed of in accordance with applicable regulations. Except for woody debris behind Sill #1 & Sill #2
- Contractor to keep disturbance of vegetation to a minimum. Trees are to remain undisturbed unless absolutely necessary to the completion of the project. The landowner is required to replant any trees or vegetation to maintain compliance with Critical Areas Law.
- The Contractor shall be responsible for coordination of his construction with any construction by other contractors.
- The contractor shall coordinate with the Jefferson Patterson Park manager for access through the main park gate and the automatic gate, or alternate access routes.
- Prior to or during placement of the following materials the contractor shall obtain from the manufacturer, quarry, distributor, and/or geotechnical firm and submit to the district a certificate indicating the materials meet the criteria as indicated on the construction plans.

Seed Certification - Seed Bag Label

Wood Treatment Certification for all lumber and piles

Hardware and Tie Back Certifications

Concrete Certification

Stone Certification

Sand Certification

Vinyl Sheet Pile - Catalog Cuts

Plants - Delivery Tickets

Area A Sequence of Construction

- Contact the Calvert SCD to schedule the required pre-construction meeting, at least 72 hours in advance of the start of construction. The existing lanes shall be deemed adequate to serve as the stabilized construction entrance.
- Locate and mark all utilities in the limit of work.
- Install E&S Measures. All erosion and sediment installations are to be Inspected by MDE prior to commencement of work. Erosion & sediment controls are to be maintained for the duration of the project.
- Mobilize equipment and materials necessary to staging and laydown area.
- All equipment, supplies, and materials for Area A can be brought in using the existing roadway.
- Install vinyl sheet pile and wood wall in Area A.
- Grade and Stabilize all disturbed areas as per E&S Notes.
- Demobilize.
- After approval of the AHJ, remove all temporary erosion and sediment control.

Area A Material Specifications

- All timber should be marine grade southern pine preservative treated to american wood protection association (AWPA) standard use category UC5B.
- All face and anchor piles used in construction should be specified using tip circumference in accordance with ASTM D-25. Preservative treatment shall be to AWPA standard use category UC5B. 12" Class B, with 8" minimum tip, 12 feet in length. (12-3-B)
- Timber sheeting should be seawall or marine grades and of tongue-and-groove, wakefield or overlap design 3"x10"x8 feet in length. walers to be 6"x6". Use category UC5B.
- Anchor rods should be galvanized and a minimum 5/8" thickness.
- All fasteners and tie rods should be hot dipped galvanized per ASTM A-153 with 2 ounces of zinc per square foot or be corrosion resistant (Bitumastic coated or 300 series stainless steel). Tie rods shall be 5/8" diameter and a length of 12 feet.
- Backfill should be a free draining, clean, granular (sand) material from site salvage
- Returns must be provided at the ends of all bulkheads to prevent the possibility of flanking.
- All cuts, holes and injuries to the surface of treated wood should be protected by field treatment with copper naphthenate meeting AWPA standard P-8.
- All treated wood products should be handled and field fabricated in accordance with AWPA standard M4.
- CCA treated materials are not allowed for use in wall caps. Wall Caps (2" x 8") are to be 0.40 ACQ, 0.21 CA, 0.40 CCA, AWPA UC3B & C18 compliant materials.

Engineers Approval

Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

CAD FILE

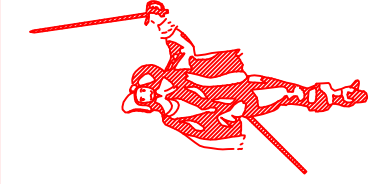
JPP Phase V.dwg

LAYOUT NO.

7
NO 7 OF 13



Jefferson Patterson Park & Museum
St. Leonard Creek Shoreline Erosion Control Project Phase V
Project # HT-000-160-201
Area A Construction & Material Specifications
Calvert County, Maryland

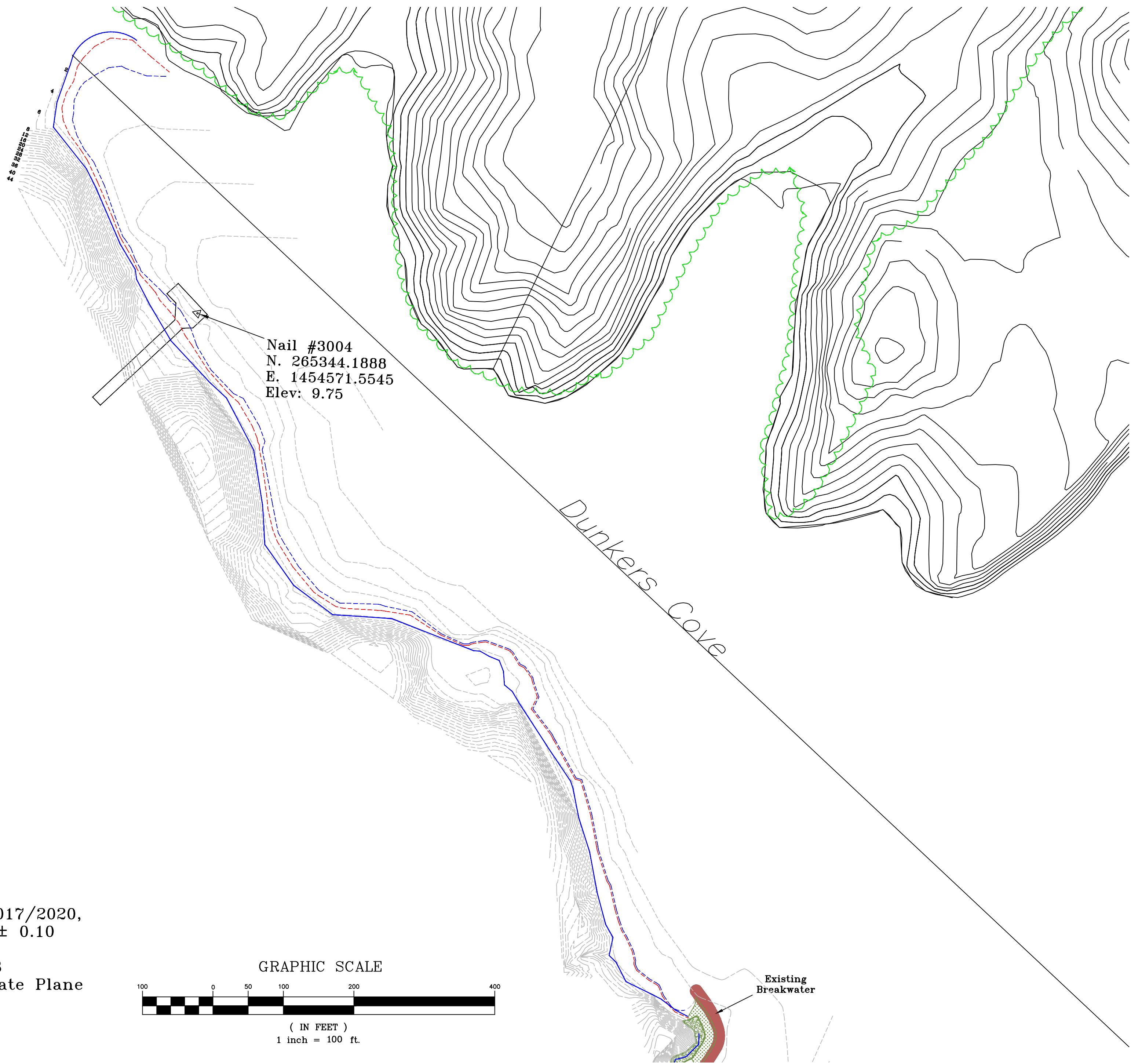
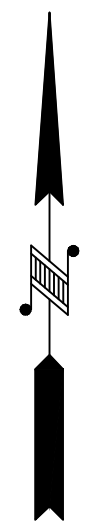


DATE
Designed Glenn G. Goss 1/21
Drawn N. Cook 1/21
Revised R. St Laurent 1/24
Checked Glenn G. Goss 1/24

Approved by Glenn G. Goss
Title District Engineer
Project #2081.CCG

Area B Existing Conditions

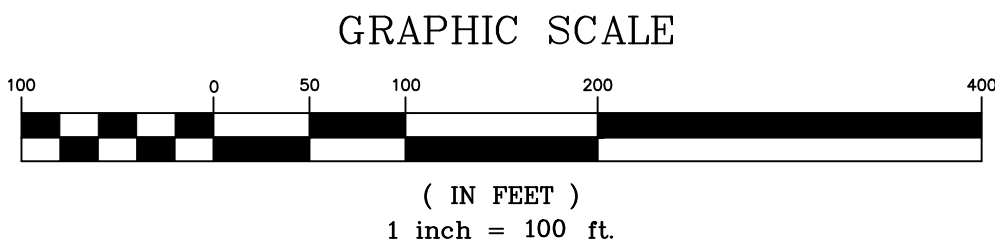
Scale 1" = 100'



Legend

- Shoreline
- Mean High Water (MHW) [1.3']
- Mean Low Water (MLW) [0.0']
- Existing Structure
- Property Line

Survey Date: July/September 2017/2020,
3rd Order Survey-Accuracy ± 0.10
Mean Low Water = 0.0
Mean High Water = 1.3
Datum; Horizontal, Maryland State Plane
Verticle, NAD 89



Engineers Approval

Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

CAD FILE JPP Phase V.dwg

LAYOUT No.

8
NO 8 OF 13

Jefferson Patterson Park & Museum
St. Leonard Creek Shoreline Erosion Control Project Phase V
Project # HT-000-160-201
Area B Existing Conditions
Calvert County, Maryland

Designed Glenn G. Gass
Drawn N. Cook
Revised R. St Laurent
Checked Glenn G. Gass
DATE 1/21 1/21 1/24 1/24
Approved by Glenn G. Gass
Title District Engineer
Project #2081.CCG

Area B

Proposed Conditions

Scale 1" = 50'

Legend

- Existing Mean High Water (MHW) [1.3']
- Existing Mean Low Water (MLW) [0.0']
- Existing Structure
- Property Line
- Proposed Breakwater Stone
- Proposed Planter
- Proposed Sand Fill
- Proposed Mean High Water (MHW) [1.3']
- Proposed Mean Low Water (MLW) [0.0']
- Turbidity Curtian
- Existing Survey Controls

Breakwater Planting Schedule

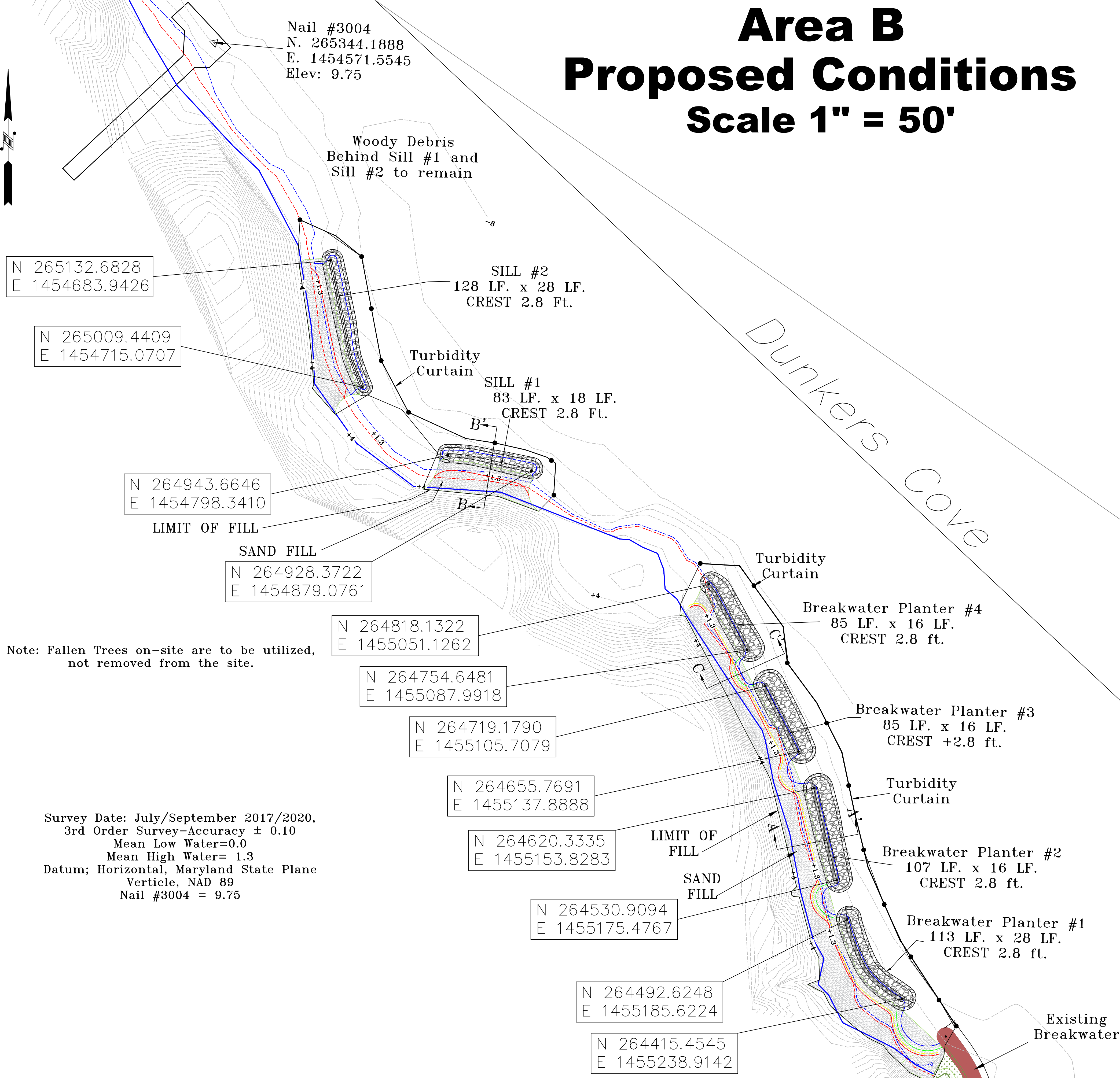
Species	Amount	Size	Notes
Virginia Saltmarsh Mallow	55	3-4'	Stagger Plantings Alternate w/ other shrubs
High Brush Blueberry	55	3-4'	Stagger Plantings Alternate w/ other shrubs
Spicebush	55	3-4'	Stagger Plantings Alternate w/ other shrubs
Wax Myrtle	55	3-4'	Stagger Plantings Alternate w/ other shrubs
Harlequin Blueflag	120	Plugs	Plants mixed w/ shrubs
Lavender Thrift	40	1 Gal	Plants mixed w/ shrubs
Seaside Goldenrod	120	Plugs	Plants mixed w/ shrubs
Salt Meadow Way	240	Plugs	Plants mixed w/ shrubs

Jefferson Patterson Park & Museum
St. Leonard Creek Shoreline Erosion Control Project Phase V
Project # HT-000-160-201
Area B Proposed Conditions
Calvert County, Maryland

Approved by Glenn. G. Gass
Title District Engineer
Project #2081.CCG
Designed Glenn G. Gass 1/21
Drawn N. Cook 1/21
Revised R. St. Laurent 1/24
Checked Glenn G. Gass 1/24

Engineers Approval
Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

CAD FILE
JPP Phase V.dwg
LAYOUT No.
9
NO 9 OF 13



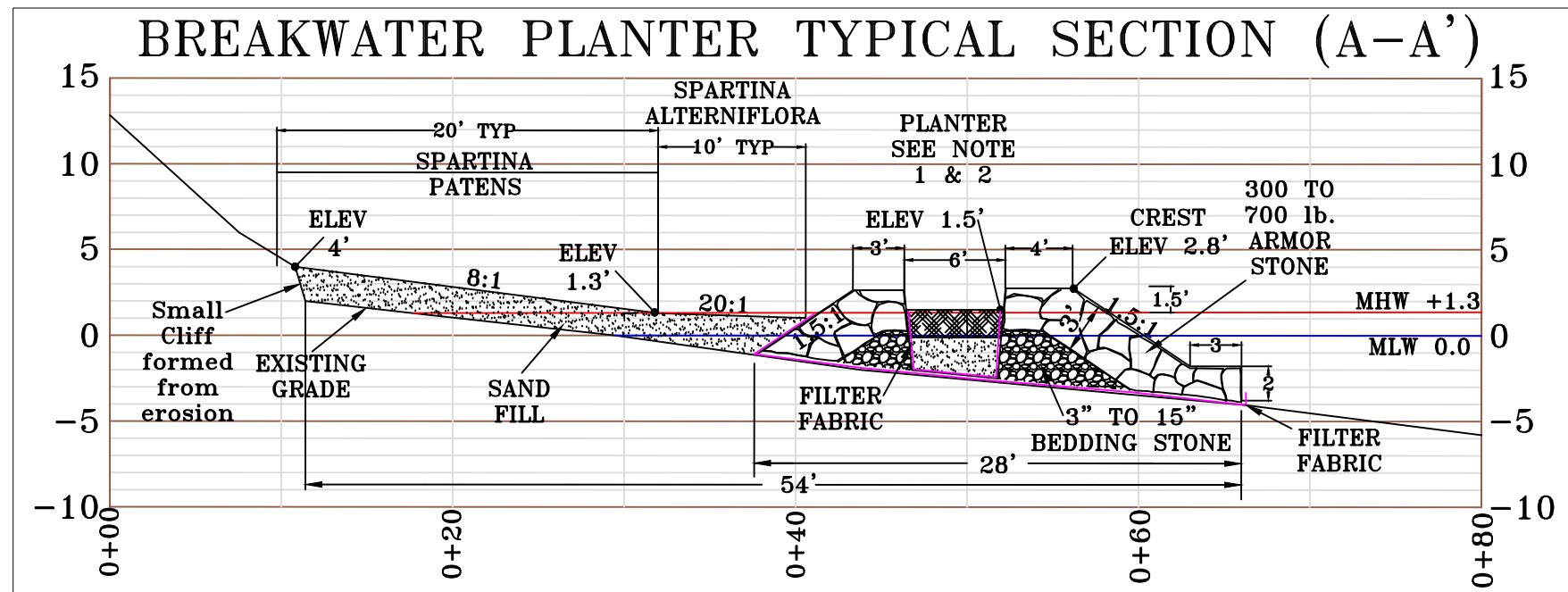
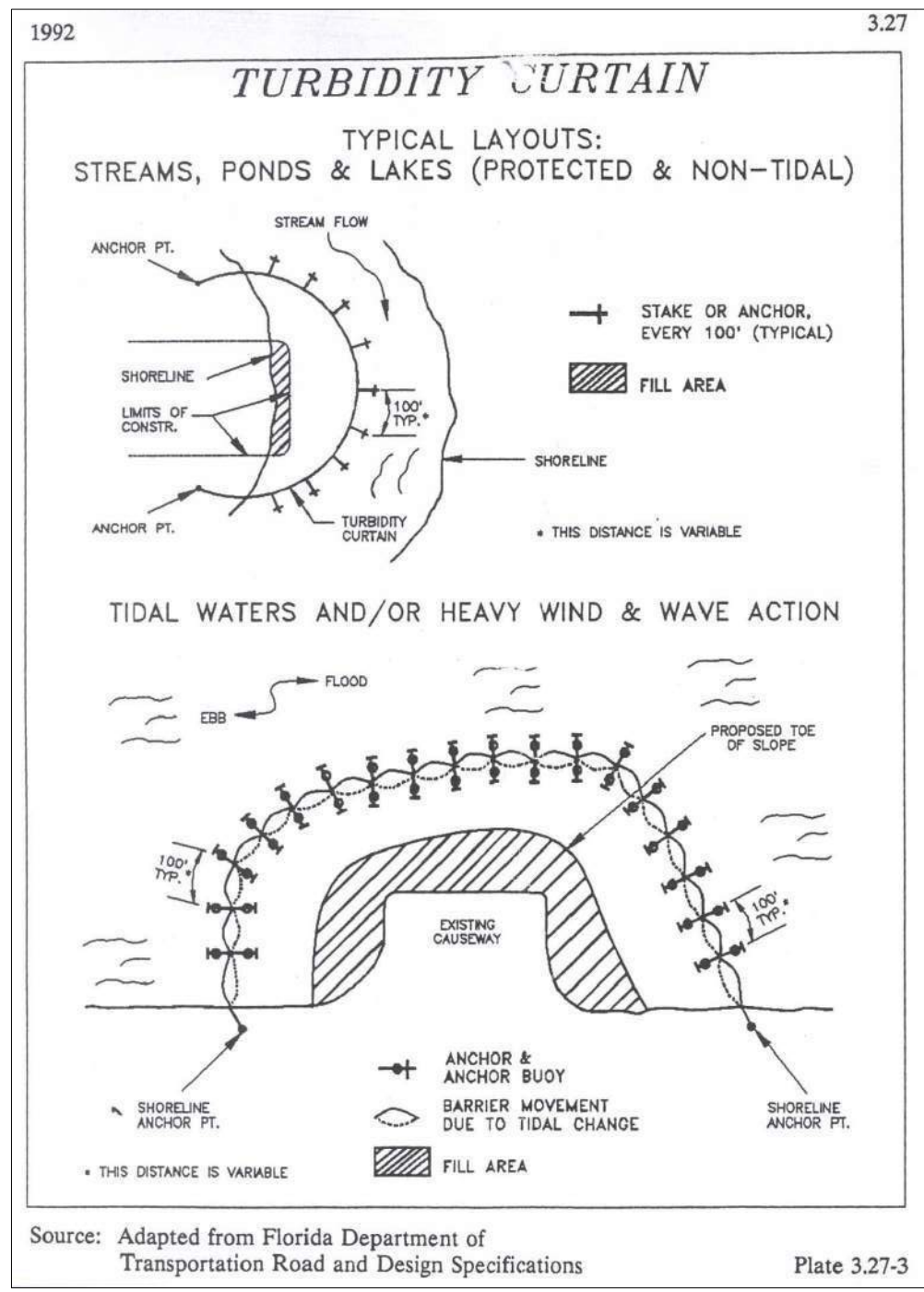
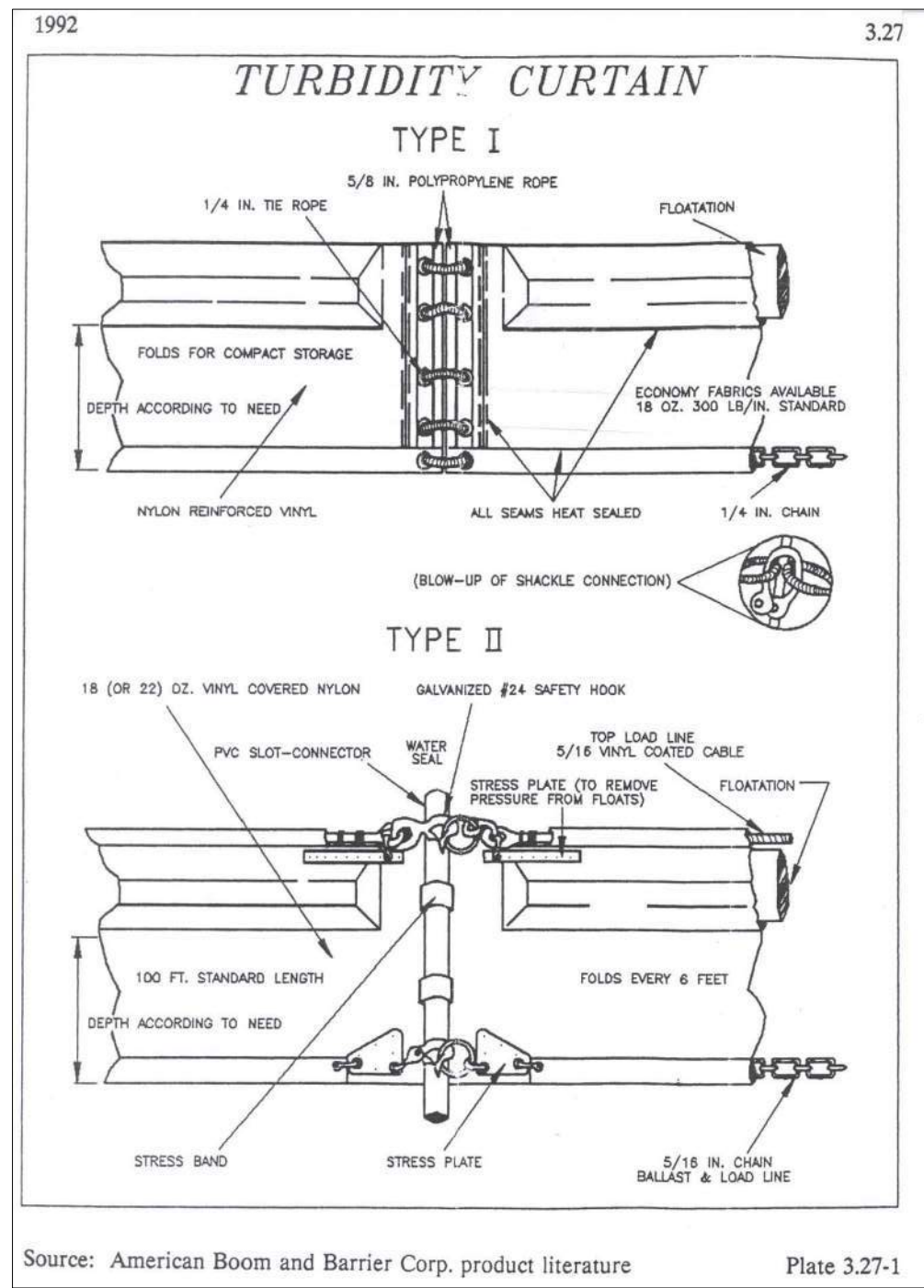
Note: Fallen Trees on-site are to be utilized, not removed from the site.

Survey Date: July/September 2017/2020,
3rd Order Survey-Accuracy ± 0.10
Mean Low Water=0.0
Mean High Water= 1.3
Datum; Horizontal, Maryland State Plane
Verticle, NAD 89
Nail #3004 = 9.75

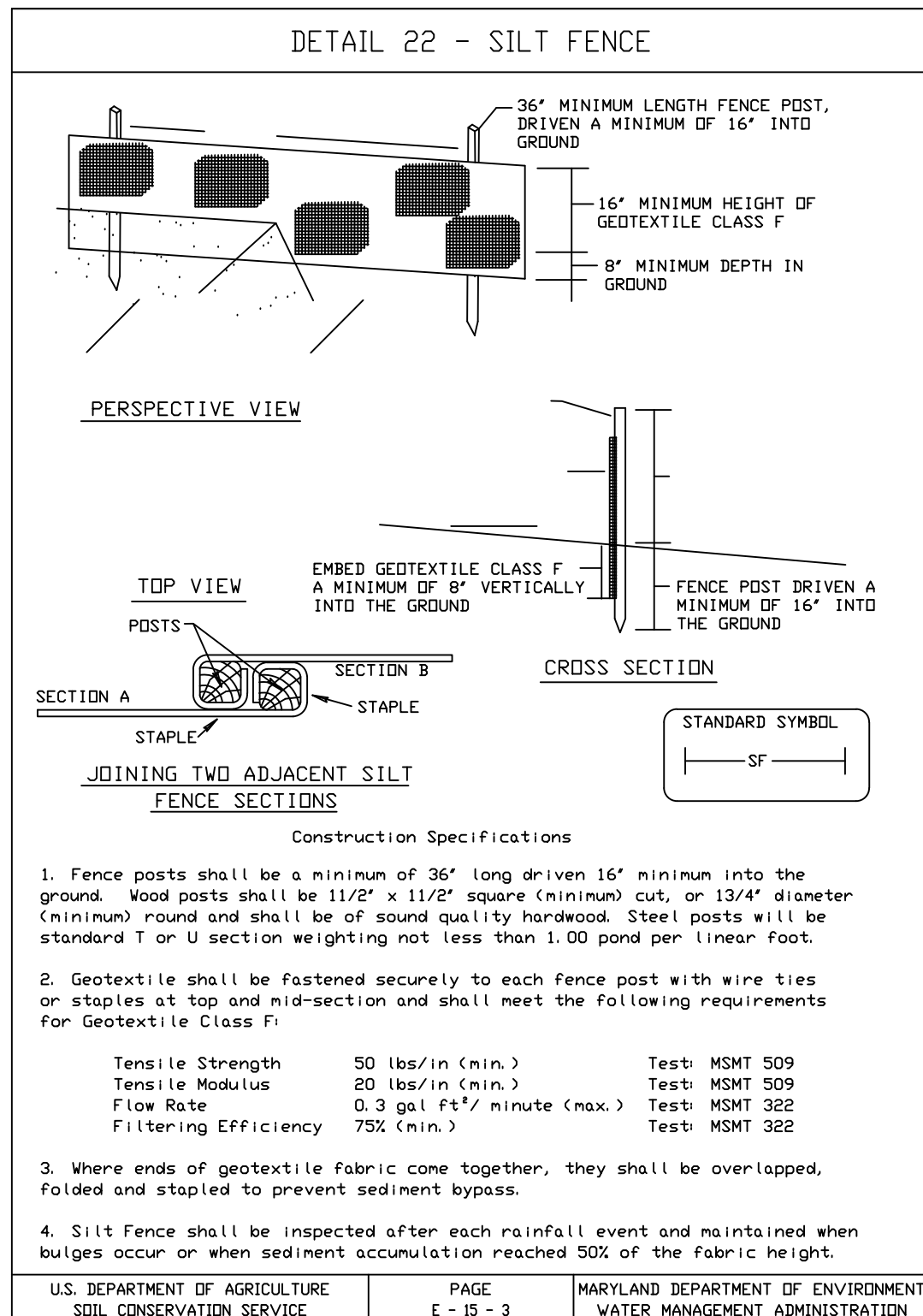
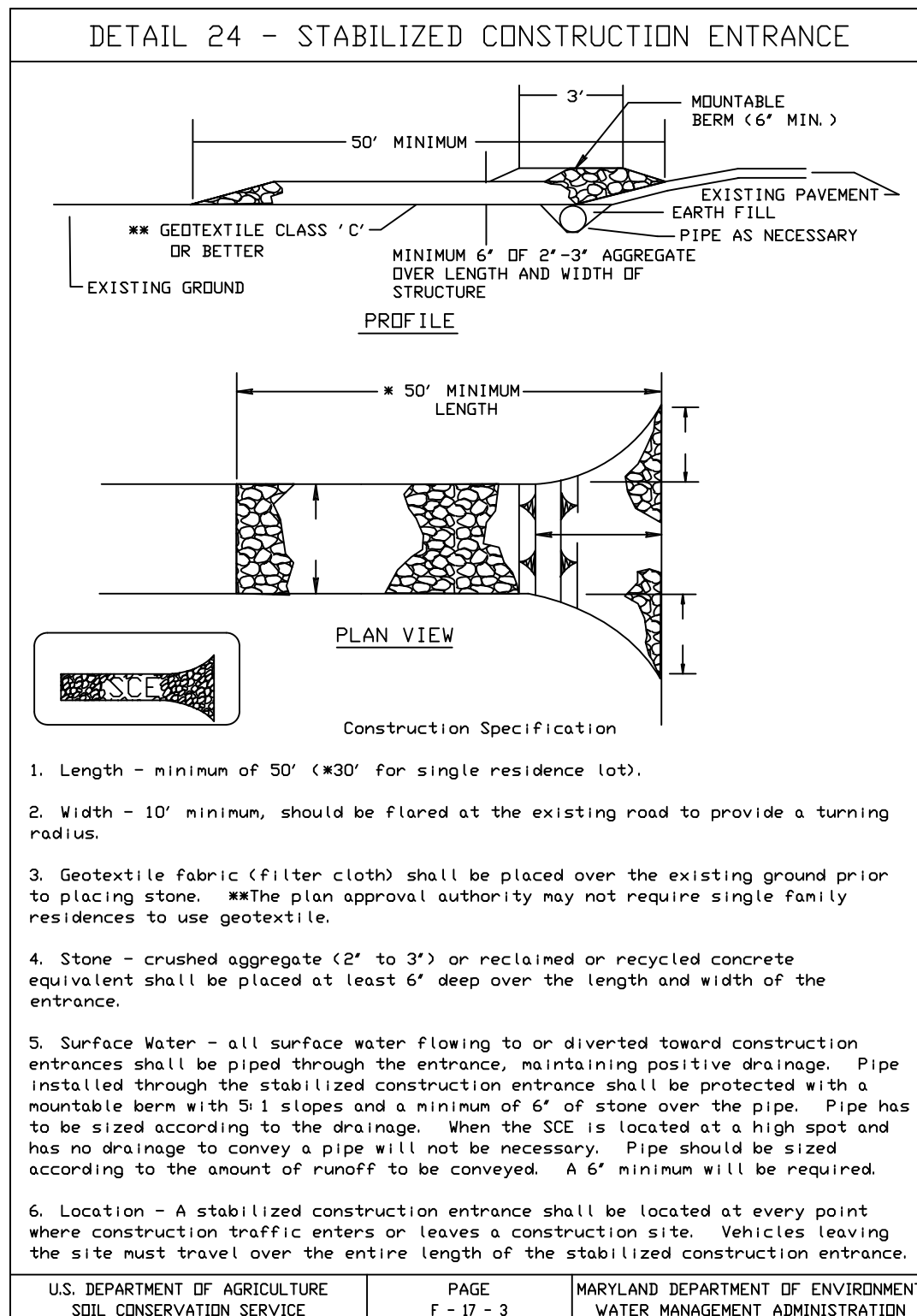
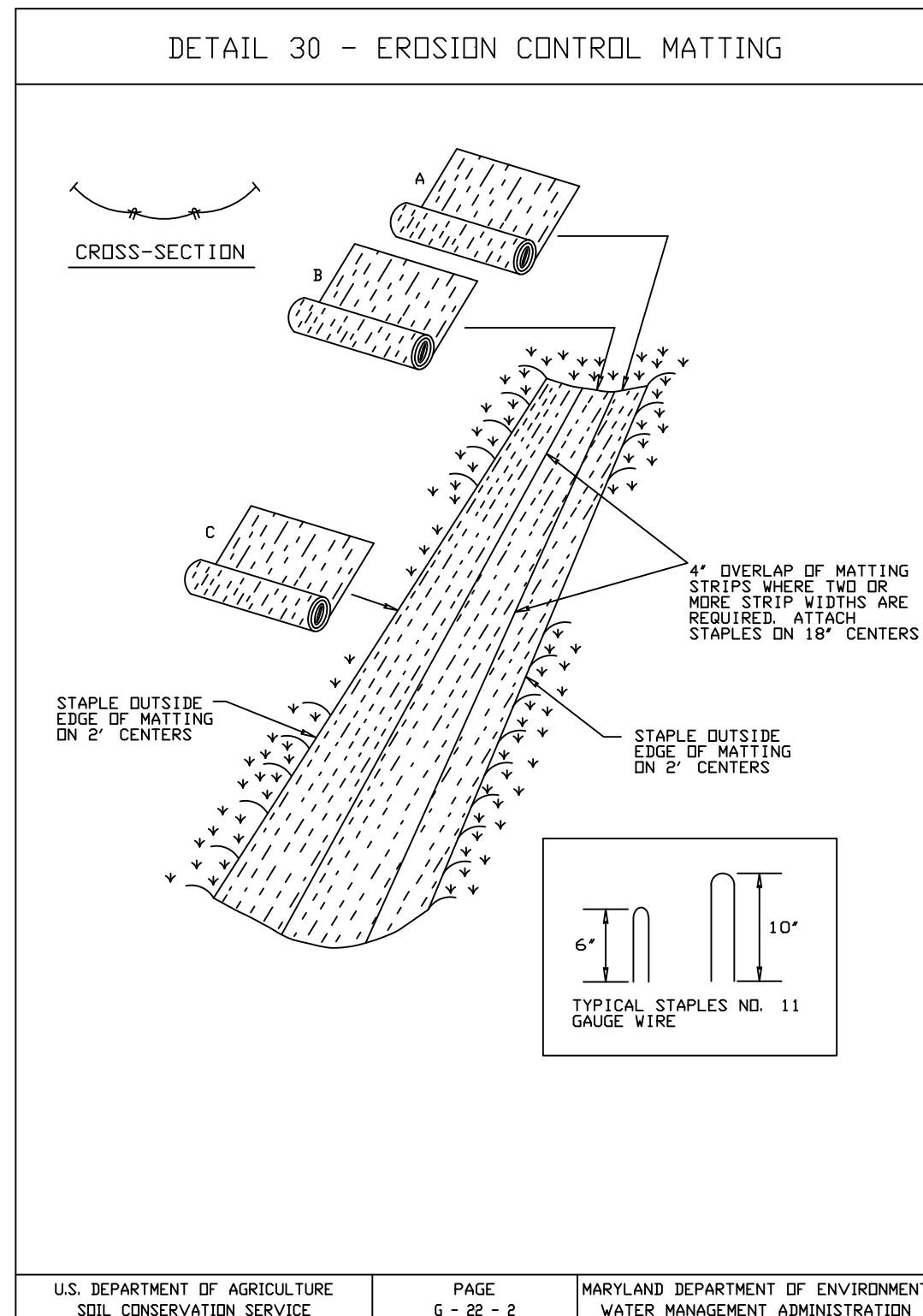
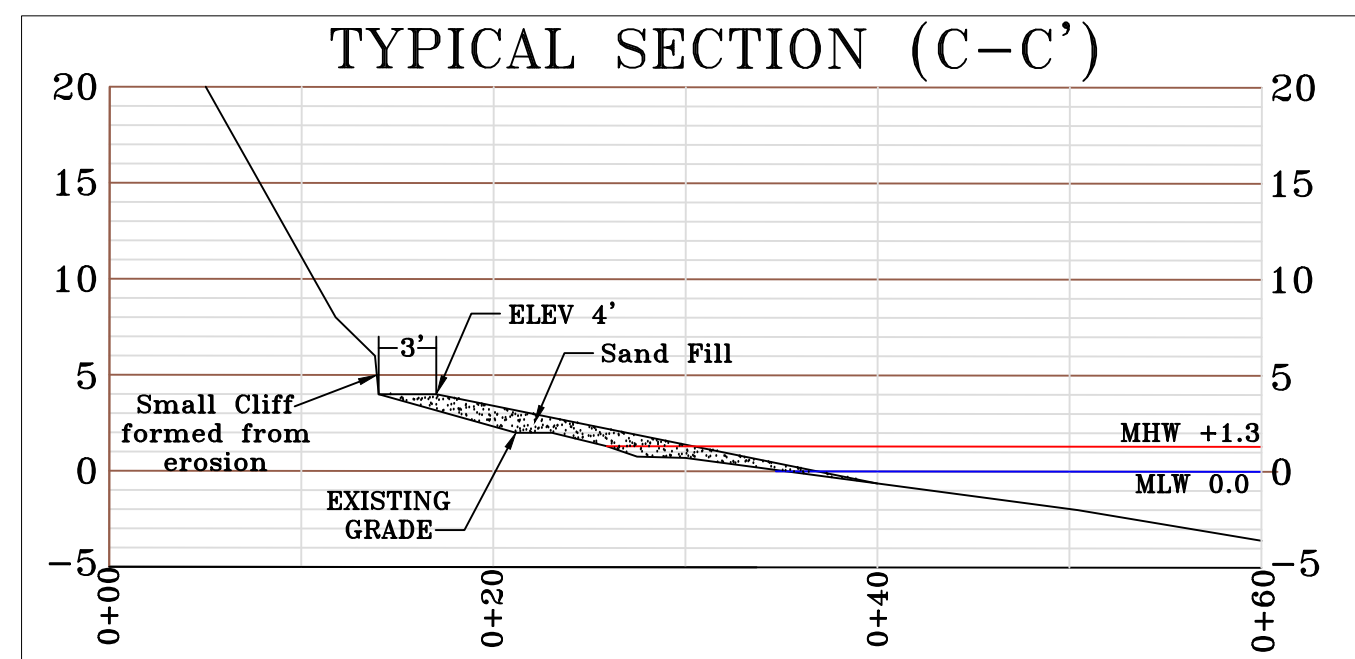
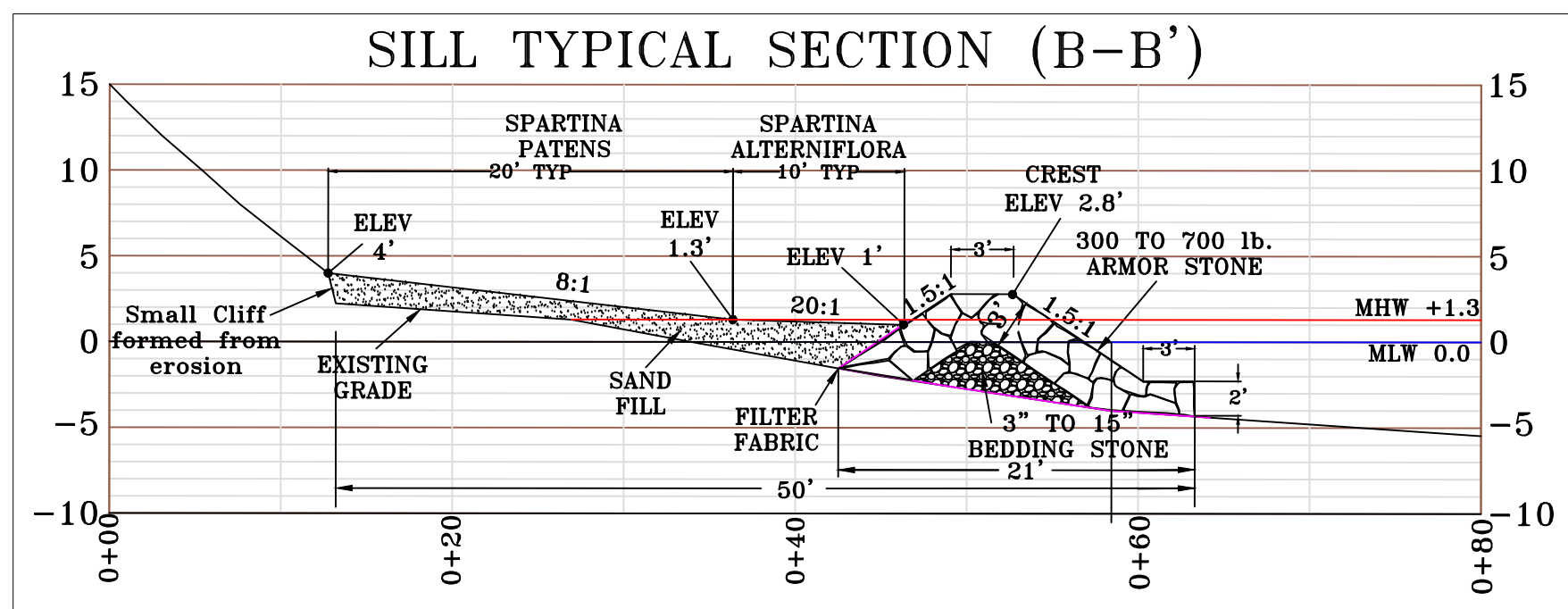
Area B

Details and Cross Sections

Scale: As- Shown



1. PLANTER BREAKWATER PLANTING SUBSTRATE SHALL CONTAIN A MIX OF 10% GRAVEL, 50% SAND, 20% SILT, 15% CLAY, 5% ORGANICS. BIOD-MAT 90 OR EQUIVALENT SHALL BE SECURED ACROSS SURFACE OF PLANTING SUBSTRATE BY TURNING DOWN MAT AT FILTER FABRIC INTERFACE AND ANCHORING.
2. PLANT SPECIES SHALL INCLUDE GROUNDSEL TREE ALONG THE RIVERSIDE ROW, THE LANDSIDE ROW SHALL INCLUDE ALTERNATING WAX MYRTLE, FALSE INDIGO, AND NORTHERN BAY. SPRIG S. PATENS AMONG SHRUBS ON 1'x1' MIN.



Jefferson Patterson Park & Museum
St. Leonard Creek Shoreline Erosion Control Project Phase V
Project # HT-000-160-201
Area B Details and Cross Sections
Calvert County, Maryland

Engineers Approval

Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

CAD FILE JPP Phase V.dwg

LAYOUT NO.

10

NO 10 OF 13

Approved by Glenn. G. Gass
Title District Engineer
Project #2081.CCG
Designed Glenn G. Gass 1/21
Drawn N. Cook 1/21
Revised R. St Laurent 1/24
Checked Glenn G. Gass 1/24

Area B

Construction & Material Specifications

Construction Notes

Material Specifications

1. Mean tidal range is 1.3 feet.
2. Vertical control is established using base datum where 0.0 feet = MLW. Horizontal control is maintained using a Total Station using EDM (Electronic Distance Measurement).
3. Topographic and hydrologic data was obtained July 2017.
4. All dimensions and coordinates are given in feet.
5. Filter log must be kept in good repair for duration of project. Filter log shall be inspected after each rain event and maintained when bulges occur or when sediment accumulates.
6. During construction contractor will maintain and dress all roads used to access the construction site. At conclusion of project all roads will be graded, shaped and surfaced to prior existing condition.
7. All debris, including brush, logs, and woody vegetation within the limits of disturbance shall be hauled off site.
8. Prior to placement of geotextile, the contractor shall obtain from the manufacturer and submit to the District a certificate indicating the filter cloth meets the criteria of Geotextile in the Construction Specifications.
9. Prior to placement of the armor stone, the contractor shall obtain from the quarry and submit to the District a certificate indicating the armor stone meets the criteria of stone in the Construction Specifications. Stone must be quarried from a certified quarry operation. Selectively place smaller range of armor stone on the backside of the structure and selectively place larger armor stone at toe and face of the structure.
10. Contractor is responsible for locating and protecting all utilities. Contractor shall notify "Miss Utility" at 1-800-257-7777 prior to construction. The existing utilities and obstructions are from the best available records and shall be verified by the Contractor. Owner does not warrant or guarantee the completeness or the correctness of information given.
11. Contractor to keep disturbance of vegetation to a minimum. Trees are to remain undisturbed unless absolutely necessary to the completion of the project. The landowner is required to replant any trees or vegetation to meet Critical Areas Law.
12. The Contractor shall be responsible for coordination of his construction with any construction by other contractors.
13. "The issuance of county permits or approvals is a local process and does not imply the applicant has met state and federal requirements for wetlands under COMAR 08.05.04: The Federal Water Pollution Control Act, Section 404: or The Rivers and Harbors Act, Section 10."
14. The sand fill cap in front and behind the breakwater is to meet MDE specification of no more than five percent (5%) passing the number 200 sieve and no more than ten percent (10%) passing the number 100 sieve. Prior to placement of the sand cap the contractor shall obtain from the supplier and submit to the District a certificate indicating the sand meets the criteria in the Construction Specifications.
15. Fill materials shall contain no frozen soil, sod, brush, roots or other perishable materials. Rock particles larger than 6" shall be removed prior to compaction.

Sequence of Construction

1. Contact Calvert Soil Conservation District (410) 535-1521 x 3 at 489 Main Street, Suite 101, Prince Frederick, Maryland 20678 to schedule a Preconstruction Meeting Ten (10) days prior to the beginning of any work.
2. Install SCE and perimeter Erosion and Sediment Control measures. Before proceeding with construction, contact MDE for inspection of Erosion and Sediment installation. Per Maryland 2011 Standards, and Specifications for Erosion and Sediment Control, all sediment controls shall be regularly inspected and maintained weekly, and after each rain event for the duration of the project.
3. Install stockpile and lay-down area.
4. Install turbidity curtain in areas of active fill placement to control sediment during construction. (Turbidity curtain can be moved with the current work area.)
5. Remove all debris interfering with shoreline construction.
6. Clear vegetation within designated areas as construction proceeds.
7. Install stone revetment. **All sand, rock, and core stone shall be brought in by barge.**

7.1. Coordinate installation and placement of gravel/sand in vegetated planting areas with revetment construction.

7.2. Install vegetative cover per specifications.
8. Stabilize and seed all upland disturbed areas as specified.
9. Remove and relocate turbidity curtain to active fill areas (continuous). Call for inspections after moving curtain.
10. After establishment of vegetative cover on-site, remove silt fence and other erosion and sediment control measures after the approval of the Agency Having Jurisdiction (AHJ).
11. Demobilization.

CONSTRUCTION AND MATERIAL SPECIFICATIONS CONTENTS

- Division I Stone Protection
- Division II Filter Cloth
- Division III Wetlands Planting Terrace
- Division IV Fill and Grading
- Division V Restoration of Graded & Disturbed Areas
- Division VI Wetlands Vegetation

DIVISION I

STONE PROTECTION

1.1 Scope:

The work covered by this section consists of furnishing all labor, plant, equipment and materials, and performing all operations in connection with the hauling and placement of stone as shown on the Drawings, and in strict accordance with this Specification.

1.2 Materials:

All stone for the protection work shall be durable quarried stone. The stone shall be hard and angular, free from either laminations, weak cleavages or undesirable weathering, and of such character that it will not disintegrate from the action of air, salt water, or handling. Sedimentary stone will generally be unacceptable. Individual stones will be approximately rectangular in cross-section and free from thin slabby pieces having a maximum dimension of more than three and one-half times the least dimension. Existing rock may be reused as fill or armor if it meets size and material specifications. Existing on-site broken concrete maybe reused as fill material if it meets size specifications.

1.3 Size And Weight: Stone shall meet the following requirements:

1.3.1. Stone: Sizes for the following structures:

A. Breakwater:
Armor stone sizes shall be such that a minimum of 90% of the individual stones shall weigh from 300 lbs. to 700 lbs. and shall have a well graded distribution of these sizes through these limits. Not more than 10% of the individual stones shall weigh more than 700 lbs. No armor stones shall weigh less than 300 lbs. Core stone shall be approximately 3" up to 15" in size with an even distribution between these limits.

1.3.2. Unit weight:

The stone shall have a minimum unit weight of 165 lbs. per cubic foot.

1.4 Field Samples:

The Contractor shall supply samples of stone to be displayed at the site with appropriate weights marked for the minimum, maximum and one-half (50%) weight range specified. These samples of stone shall be from the same quarry and of the same type of stone as that to be supplied for the job, and shall be delivered to the site in advance of the time when placing the stone is expected to begin. The Contractor will not be granted an extension of time or extra compensation due to delay caused by sampling, testing, approval, or disapproval of stone protection material to complete the requirements of the Specifications.

1.5 Certification:

The Contractor shall obtain from the quarry and submit to the Agent for the Owner a certificate indicating the following:
A. Stone classification
B. Stone weight per cubic foot
C. The stone furnished will meet the requirement of Sections 1.2 and 1.3 of these Specifications

1.6 Placement:

Stone shall be placed in such a manner as to produce a well-graded mass of rock with a minimum percentage of voids, and shall be constructed to the specified lines and grades shown on the Drawings. Stones shall be placed such that there is a well-graded distribution of the various sizes throughout the structure. Any oversized stones shall be placed at the toe of the structure. The finished structure shall be free from pockets of small stones and clusters of large stones. Rearranging of individual stones by mechanical equipment or by hand will be required to the extent necessary to obtain a well-graded distribution of stone size, to obtain contact between adjacent armor stones, and to achieve the lines and grades shown on the Drawings. The Contractor shall maintain the structure until it is accepted and any material displaced by any cause shall be replaced at the Contractor's expense to the lines and grades shown on the Drawings. A tolerance of +/-0.30 feet measured normal to the faces will be allowed. No negative or positive tolerance will be allowed over an area greater than fifty (50) square feet.

FILTER CLOTH

2.1 Scope:

The work covered by this section consists of furnishing all labor, plant, equipment, and materials and performing all operations required to complete the installation of filter cloth as shown on the Drawings and in strict accordance with this Specification.

2.2 Materials:

2.2.1. Filter Fabric:

The plastic filter fabric shall be porous, plastic sheets woven, calendered and palmered filament yarn. The plastic yarn shall consist of a long-chain synthetic polymer composed of at least 85% by weight of propylene, ethylene, ester, amide or vinylidene chloride, and shall contain stabilizers and/or inhibitors added to the base plastic if necessary to make the filaments resistant to deterioration due to ultra-violet and heat exposure. The fabric shall conform to the following minimum requirements:

Property	Test Method	Criteria
Seam Breaking Strength	ASTM D-4884	>90%
Tensile Strength	ASTM D-4632	400 x 315 lbs.
Burst Strength	ASTM D-3786	800 psi
CBR Puncture Strength	ASTM D-6241	1,150 lbs.
Elongation@Break	ASTM D-4632	15 x 15%.
Wide Width Tensile	ASTM D-4595	250 x 230 lbs.
Trapezoidal Tear	ASTM D-4533	150 x 165 lbs.
AOS	ASTM D-4751	40 U.S. Sieve
Permittivity	ASTM D-4491	.90 Sec-1
Flow Rate	ASTM D-4491-85	70 gal/min/ft.
U.V. Resistance @ 500 hrs.	ASTM D-4355	90%

One material equal to the above requirement is "Mirafi FW 404" as manufactured by US Fabrics, Inc., 3904 Virginia Ave., Cincinnati, OH 45227

2.2.2. Seams:

Seams of fabric shall be sewn with thread meeting or exceeding specifications given for plastic yarn, and shall be bonded by cementing or calendaring. Seams shall be tested in accordance with method ASTM D-1683, and the seam strength shall meet the strength specified herein but shall not be less than 90% of the tensile strength of the imaged fabric in any principal direction.

2.2.3. Securing pins:

Securing pins shall be 3/16 inch in diameter, of steel pointed on one end, and fabricated such that the head retains a steel washer 1.5 inches in diameter or more. Pins shall be no less than 18 inches in length. In cases where stone protection will be placed adjacent to timber bulkheads, galvanized staples or roofing nails placed at 24 inch o.c.e.w. shall be used to fasten the filter cloth to the bulkhead. Alternate anchoring methods may be used, subject to approval by the Agent for the Owner.

2.2.4. Certification of fabric:

All plastic filter fabrics to be used shall be tested for compliance with the above Specifications. Before installing the filter cloth, the Contractor shall submit to the Agent for the Owner a certificate or affidavit signed by a legally-authorized representative of the company manufacturing the fabric. The certificate shall state that the chemical, physical, and manufacturing requirements of this Specification are met. In addition, a manufacturer's statement showing evidence of a service record of the filter cloth shall be submitted proving successful performance in projects of similar scope.

2.3 Installation:

2.3.1. Placement of filter cloth:

The strips of plastic filter cloth shall be spread parallel to the major axis of the structure on the prepared foundation as shown on the Drawings. The cloth shall be loosely laid (not stretched). Rolls of as great a length as it economical for the Contractor to handle shall be used whenever possible in order to minimize the number of overlaps perpendicular to the major axis of the structure. The cloth shall be securely fastened in place to prevent slippage during construction with securing pins placed thirty (30) inches apart each way.

2.3.2. Placement of stones on filter cloth:

Adequate precaution shall be taken to prevent damage to the plastic filter cloth from placement of overlaying materials. No stone will be dropped onto the filter cloth. Care shall be taken in placing plastic filter cloth onto prepared subgrade of rock or broken concrete. This subgrade shall be prepared to prevent cloth damage from below. Any filter cloth damaged or displaced before or during placement of overlaying materials or improper subgrade preparations shall be replaced or repaired to the satisfaction of the Agent for the Owner at the Contractor's expense.

Approved by

Glenn. G Gass

Title

District Engineer

Project

#2081.CCG

DATE

1/21

1/21

1/24

1/24

Designed

Glenn G. Gass

Drawn

N.Cook

Revised

R. St Laurent

Checked

Glenn G. Gass



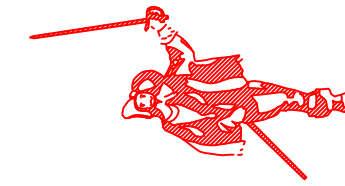
Jefferson Patterson Park & Museum

St. Leonard Creek Shoreline Erosion Control Project Phase V

Project # HT-000-160-201

Area B Construction & Material Specifications

Calvert County, Maryland



Engineers Approval

Professional Certification

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

CAD FILE

JPP Phase V.dwg

LAYOUT No.

11

No 11 of 13

Area B Construction & Material Specifications

DIVISION III

WETLANDS PLANTING TERRACE

3.1 **Scope:** The work covered in this section consists of furnishing all labor, plant, equipment, and materials, and performing all operations required to obtain, transport, place, and grade the beach fill material as shown on the Drawings and in strict accordance with this Specification.

3.2 **Satisfactory Fill Material for Wetlands/ Dune Planting Terrace:**

Medium-to-coarse-grained sandy soils classified as SW and SP in "ANSI/ASTM D-247-69, Classification of Soils for Engineering Purposes" are satisfactory. Crushed stone or slag will not be acceptable. The beach nourishment and wetlands/dune planting terrace material must contain no more than five percent (5%) passing the number 200 sieve and no more than ten percent (10%) passing the number 100 sieve. The material shall consist of rounded or semi-rounded grains having a median diameter of 0.6 mm (+/- 0.25mm).

3.3 **Inspection and Testing:**

Prior to constructing the wetlands planting terrace, the Contractor will furnish samples of the proposed fill material to the Agent for the Owner. The Contractor will also obtain from an inspection firm acceptable to the Agent for the Owner, and submit to the Agent for the Owner, a certificate indicating the following:

- A. Sand classification and gradation curves of the proposed fill material;
- B. Weight per cubic yard of the proposed fill material;
- C. The fill materials furnished will meet the requirements of Section 3.2 of these Specifications.

The cost for obtaining certifications and test results shall be included in the Lump Sum Price Bid for beach fill material on the Special Form of Proposal. Sand will be tested every 1,000 cubic yards by Contractor to confirm compliance. Test results will be supplied to the Agent for the Owner for approval.

3.4 **Placement of Wetlands Terrace:**

The proposed wetland planting terrace shall be constructed uniformly to the lines and grades indicated on the Drawings. The final surface shall be reasonably smooth graded, and free of irregular areas which can collect water or other debris. The Contractor shall remove, and properly dispose of, all excess waste materials, rubbish, construction debris, etc., from the area within the Limit of Contract prior to the placement of the fill.

3.5 **Acceptance:**

The final graded surface shall not vary from the lines and grades indicated on the Drawings by more than +0.2 feet or -0.2 feet (plus or minus two-tenths feet).

DIVISION IV

FILL AND GRADING

4.1 **Scope:**

The work covered in this section consists of furnishing all labor, plant, equipment, and materials, and performing all operations required to perform the upland fill and grading to the lines and grades shown on the Drawings, and in strict accordance with this Specification. Unsuitable or excess material shall be disposed of off-site.

4.2 **Fill:**

Where the depth of fill behind or above the proposed breakwater or sill substrate may exceed 3" the Contractor shall bring the area to 3" under-grade with sand fill. Sand Fill must meet MDE Specification of no more than ten percent (10%) passing through the number 100 sieve. Sand fill shall consist of earth materials, free from perceptible amounts of wood and debris. It shall be free of frost at the time of placement and shall not contain marl or other elements which tend to keep it in a plastic state. All backfill shall be placed from the bottom up in successive 8" horizontal layers and compacted to the approval of the Agent for the Owner. Upland berm fill shall contain enough silt and/or clay so as to be impervious and will be placed in 6 inch lifts and compacted to 90% density per ASTM 1557D.

4.3 **Grading:**

A. The Contractor shall grade all areas shown on the Drawings and all areas disturbed by construction activities, uniformly to the lines and grades shown on the Drawings. The finish surface shall be smooth, compacted, and free of irregular surface changes and areas which collect water.

B. The Contractor shall remove all excess stone and construction debris from the construction site prior to final grading to an approved disposal area. This shall include all waste larger than one inch in its largest dimension which may be embedded in the soil.

DIVISION V

RESTORATION OF GRADED AND DISTURBED AREAS

5.1 **Scope:**

The work covered in this section consists of furnishing all labor, plant, equipment, and materials, and performing all operations required to: (i) furnish, spread, and rake topsoil for seeding; and (ii) complete the restoration of all graded and disturbed areas within the Limit of Contract, as shown on the Drawings and in strict accordance with this Specification.

5.2 **Contractor's Responsibility:**

5.2.1. **The Contractor will accomplish the upland seeding and mulching operation:**

A. Within three (3) calendar days after completion of the fill and grading work or all slopes greater than 3:1;

B. Within seven (7) calendar days for all other disturbed areas within the Limit of Contract at the Project Site.

5.2.2. **The Contractor shall submit to the Agent for the Owner evidence of the type of seed used.**

5.2.3. **Once the finished project has been accepted, the Contractor shall be required to re-seed any areas which do not show the proper 85% density of grass.**

5.3 **Topsoiling (if necessary):**

5.3.1. **General:**

Upon completion and compaction of fill to subgrade (three inches below finished grade), three (3) inches of topsoil shall be placed, spread to a uniform thickness, graded, and raked to remove large stones (fist size or larger), root mat, and other foreign materials, and left ready for seeding.

5.3.2. **Material:**

Topsoil shall consist of natural surface soil from well-drained areas from which no topsoil has previously been stripped. The topsoil shall be homogeneous in nature, free from any material harmful to plant growth, and have an organic content of not less than 1.5% by weight. Testing results shall be supplied to the Agent for the Owner for approval. The Contractor shall strip and stockpile all existing topsoil in areas to be graded. The Contractor shall be responsible for supplying additional topsoil if needed.

5.4 **Seeding (if necessary):**

5.4.1. **Temporary Upland Seeding:**

The Contractor shall undertake temporary upland seeding to minimize soil loss when it is expected that the area within the Limit of Contract will be disturbed again before completion of construction.

Site preparation: The Contractor shall grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, and mulch application.

Seedbed preparation: The Contractor shall apply 4,000 pounds per acre of pulverized dolomitic limestone, and 1,000 pounds per acre of 10-10-10 or equivalent fertilizer. The lime and fertilizer shall be worked into the top three inches of topsoil by raking or use of other conventional equipment.

Seeding: The contractor shall apply forty-three (43) pounds per acre of annual rye. The seed shall be worked into the top ½ inch of topsoil by raking.

Planting season: Temporary seedbed preparation and seeding shall be accomplished between February 1 and April 30, and between August 15 and November 30, within fourteen (14) days after the completion of the fill, grading, and topsoiling operations, except when the ground is frozen. Between Fall and Spring seeding, the Contractor will only apply mulch in accordance with Section 5.5 of these Specifications.

5.4.2. **Permanent Upland Seeding:**

The Contractor shall undertake permanent upland seeding of any area within the Limit of Contract once all work has been completed according to the Drawings and Specifications and the area will not be disturbed again before the completion of construction activities.

Site preparation: The Contractor shall grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding and mulch application.

Seedbed preparation: The Contractor shall apply 4,000 pounds per acre of pulverized dolomitic limestone, and 1,000 pounds per acre of 10-10-10 or equivalent fertilizer. The lime and fertilizer shall be worked into the top three (3) inches of topsoil by raking or use of conventional equipment.

Seeding: The Contractor shall apply sixty (60) pounds per acre of tall fescue. The seed will be applied uniformly with cyclone seeder, drill, culti-packer seeder or hydro-seeder (slurry includes seed, fertilizer, lime, cellulose fibers with binder and water) preferably on a firm, moist seedbed. Normal coverage is 1/4 to ½ inch. Where feasible (except when a culti-packer seeder is used), the seedbed shall be firmed following seeding operations with a light roller.

Planting season: Permanent upland seedbed preparation and seeding shall be accomplished between February 1, and April 30, or between August 15 and November 30, within fourteen (14) days after completion of fill, grading, and topsoiling operations, except when the ground is frozen. Between Fall and Spring seeding, the Contractor will only apply mulch in accordance with Section 5.5 of these Specifications.

5.5 **Mulching:**

A. Mulch materials shall be unweathered, unchopped small grain straw (preferably wheat straw) applied at the rate of 1-1/2 to 2 tons per acre. Oat straw is less desirable, since it may contain viable seed which may provide serious competition for grass and legum seedlings unless clipped.

B. Mulch shall be spread uniformly by hand or mechanically so that approximately 85% of the soil will be covered.

C. Mulch anchoring shall be accomplished immediately after placement of mulch to minimize loss by wind or water. Liquid mulch binders, including synthetic mulch binders, may be used provided they receive advance approval by the Agent for the Owner. No asphalt shall be used for mulch anchoring. If synthetic mulch binders are used, the mixing procedures and method of application shall be in accordance with the manufacturer's latest technical bulletins. In lieu of liquid mulch binders, ground stabilization nets may be used provided they receive advance approval by the Agent of the Owner.

5.6 **Soil Stabilization Blanket:**

For slopes 3 ft horizontal to 1 ft vertical or steeper:

Material: Soil stabilization blanket material shall be a dense mate of curled and seasoned Aspen wood excelsior of which at least 80% shall be six inches or longer in fiber length with a consistent thickness. The fiber shall be evenly distributed over the entire area of the blanket. The top side of each blanket shall be covered with a photodegradable extruded plastic mesh. The blanket shall be made smolder resistant without the use of chemical additives.

One material equal to the above requirements is "Curlex Blankets" as manufactured by American Excelsior Company, P.O. Box 25, Annapolis Junction, Maryland 20701.

DIVISION VI

WETLANDS VEGETATION

6.1 **Scope:**

The work covered in this section will include furnishing all labor, plant, equipment and materials, and performing all operations required to complete the installation of the wetlands vegetation as shown on the Drawings and in strict accordance with this Specification.

6.2 **Contractor's Responsibilities:**

The Contractor will be responsible for replanting any areas which do not show the proper density of wetland vegetation for a period of one (1) year from the date of acceptance of the finished project. The minimum acceptable density of surviving wetland species vegetation will be 85% for every 25 linear feet measured along the shoreline. It is up to the Contractor to determine if they want to install goose exclusion fence to help meet the survival requirement of this specification.

6.3 **Wetlands Planting:**

6.3.1. **Spartina patens and Spartina alterniflora :**

A. **Materials:**

a. **Fertilizer:** Each transplant site will be fertilized with one ounce of "Osmocote 3 - 4 Month 19-6-21" (or equivalent slow-release) fertilizer placed in the planting hole at the time of planting.

b. **Plant Stock:** Plant stock will be **Spartina patens and Spartina alterniflora** grown in peat pots. Prior to installing plants at the project site, the Contractor will be required to show proof of a valid Maryland Nursery Inspection Certificate or Plant Dealers License (or comparable certification for out-of-state installers). All shipments of nursery stock into Maryland must be accompanied by a valid certificate of inspection issued at the state of origin, and acceptable to the Maryland Department of Agriculture Office of Plant Industries and Resource Conservation. Plants will be three to six months old and approximately 12 inches high. Individual pots will contain three or more plants.

c. It will be the responsibility of the Contractor to maintain the vigor of the plants held at the site during site preparation work and construction. Plants held at the site will be watered by sprinkling with fresh water at least once a day.

d. Planting will be done with moist, but not saturated, root masses. Plants will not be removed from the peat pots.

B. **Soil Preparation and Planting:**

a. Grass, weeds and debris will be cleaned from all areas to be planted, and the ground surface will be smoothed.

b. After grading, the Mid-tide and Mean High Water (MHW) lines will be marked on the ground, and plantings made in rows generally parallel to and between these lines, or according to the elevations as specified on the Drawings. Rows will be 1.5 feet apart, and plants will be 1.5 feet apart in the rows.

c. Plantings will be made by hand with dibble, spade or shovel by opening a hole at the planting site, placing the fertilizer and then the plant in the hole, closing the hole and firming the soil around the plant so that the surface soil is three to four inches above the top of the root mass.

6.4 **Planting Season:**

6.4.1. **Spartina patens and Spartina alterniflora:**

Stripping will be accomplished between August 15 and October 15 or between April 1 and June 30 during periods of low tide.

DATE	1/21
Designed	Glenn G. Gass
Drawn	N. Cook
Revised	R. St Laurent
Checked	Glenn G. Gass
Approved by	Glenn G. Gass
Title	District Engineer
Project	#2081.CCG

Jefferson Patterson Park & Museum

St. Leonard Creek Shoreline Erosion Control Project Phase V

Project # HT-000-160-201

Area B Construction & Material Specifications

Calvert County, Maryland

Engineers Approval

Professional Certification

I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland. License No. 14544, Expiration Date: August 16, 2025

CAD FILE

JPP Phase V.dwg

LAYOUT NO.

12

NO 12 OF 13

Erosion and Sediment Control Notes

MDE Standard Notes

- 1) The contractor shall notify the Administration (WMA) at (410)537-3510 seven (7) days before commencing any land disturbing activity and, unless waived by the Administration, shall be required to hold a preconstruction meeting between project representatives and a representative of WMA (Some counties policies may differ from State guidelines).
- 2) The contractor must notify WMA in writing and by telephone at the following points:
A.) The required preconstruction meeting.
B.) Following installation of sediment control measures.
C.) During the installation of sediment basins (to be converted into permanent stormwater management structures) at the required inspection points (see Inspection Checklist on plan). Notification prior to commencing construction of each step is mandatory.
D.) Prior to removal or modification of any sediment control structure(s).
E.) Prior to removal of all sediment control devices.
F.) Prior to final acceptance.
- 3) The contractor shall construct all erosion and sediment control measures per the approved plan and construction sequence and shall have them inspected and approved by the agency inspector or WMA Inspector prior to beginning any other land disturbances. Minor sediment control device location adjustments may be made in the field with the approval of the WMA Inspector. The contractor shall ensure that all runoff from disturbed areas is directed to the sediment control devices and shall not remove any erosion or sediment control measure without prior permission from WMA Inspector and agency inspector. The contractor must obtain prior agency and WMA approval for changes to the Sediment Control Plan and/or Sequence of Construction.
- 4) The contractor shall protect all points of construction ingress and egress to prevent the deposition of materials onto public roads. All materials deposited onto public roads shall be removed immediately.
- 5) The contractor shall inspect daily and maintain continuously in an effective operating condition all erosion and sediment control measures until such times as they are removed with prior permission from WMA Inspector and agency inspector.
- 6) All sediment basins, trap embankments and slopes, perimeter dikes, swales and all disturbed slopes steeper or equal to 3:1 shall be stabilized with sod or seed and anchored straw mulch, or other approved stabilization measures, as soon as possible but no later than seven (7) calendar days after establishment. All areas disturbed outside of the perimeter sediment control system must be minimized. Maintenance must be performed as necessary to ensure continued stabilization. (Requirement for stabilization may be reduced to three (3) days for sensitive areas.)
- 7) The contractor shall apply sod or seed and anchored straw mulch, or other approved stabilization measures to all disturbed areas and stockpiles within Seven (7) calendar days after stripping and grading activities have ceased in the area. Maintenance shall be performed as necessary to ensure continued stabilization. (Requirement may be reduced to Three (3) days for sensitive areas.)
- 8) Prior to removal of sediment control measures, the contractor shall stabilize and have established permanent stabilization for all contributory disturbed areas using sod or an approved permanent seed mixture with required soil amendments and an approved anchored mulch. Wood fiber mulch may only be used in seeding season where the slope does not exceed 10% and grading has been done to promote sheet flow drainage. Areas brought to finished grade during the seeding season shall be permanently stabilized as soon as possible, but not later than fourteen (14) calendar days after establishment. When property is brought to finished grade during the months of November through February, and permanent stabilization is found to be impractical, temporary seed and anchored straw mulch shall be applied to disturbed areas. The final permanent stabilization of such property shall be applied by March 15 or earlier if ground and weather conditions allow.
- 9) The site's approval letter, approved Erosion and Sediment Control Plans, daily log books, and test reports shall be available at the site for inspection by duly authorized officials of WMA and the agency responsible for project.
- 10) Surface drainage flows over unstabilized cut and fill slopes shall be controlled by either preventing drainage flows from traversing the slopes or by installing protective devices to lower the water downslope without causing erosion. Dikes shall be installed and maintained at the top of a cut or fill slope until the slope and drainage area to it are fully stabilized, at which time they must be removed and final grading done to promote sheet flow drainage. Protective methods must be provided at points of concentrated flow where erosion is likely to occur.
- 11) Permanent swales or other points of concentrated water flow shall be stabilized with sod or seed with an approved erosion control matting, riprap, or by other approved stabilization measures.
- 12) Temporary sediment control devices may be removed, with permission of WMA Inspector and agency inspectors, within thirty (30) calendar days following establishment of permanent stabilization in all contributory drainage areas. Stormwater management structures used temporarily for sediment control shall be converted to the permanent configuration within this time period as well.
- 13) No permanent cut or fill slope with a gradient steeper than 3:1 will be permitted in lawn maintenance areas. A slope gradient of up to 2:1 will be permitted in nonmaintenance areas provided that those areas are indicated on the erosion and sediment control plan with a low-maintenance ground cover specified for permanent stabilization. Slope gradient steeper than 2:1 will not be permitted with vegetative stabilization.
- 14) For finished grading, the contractor shall provide adequate gradients to prevent water from ponding for more than twenty four (24) hours after the end of a rainfall event. Drainage courses and swale flow areas may take as long as forty-eight (48) hours after the end of a rainfall event to drain. Areas designed to have standing water shall not be required to meet this requirement.
- 15) Sediment traps or basins are not permitted within 20 feet of a foundation that exists or is under construction. No structure may be constructed within 20 feet of an active sediment trap or basin.
- 16) The WMA Inspector has the option of requiring additional safety or sediment control measures, if deemed necessary.
- 17) All trap depth dimensions are relative to the outlet elevation. All traps must have a stable outfall. All traps and basins shall have stable inflow points.
- 18) Vegetative stabilization shall be performed in accordance with the Standards and Specifications for Soil Erosion and Sediment Control. Refer to appropriate specifications for temporary seeding, permanent seeding, mulching, sodding, and ground covers.
- 19) Sediment shall be removed and the trap or basin restored to its original dimensions when the sediment has accumulated to one quarter of the total depth of the trap or basin. Total depth shall be measured from the trap or basin bottom to the crest of the outlet.

- 20) Sediment removed from traps (and basins) shall be placed and stabilized in approved areas, but not within a floodplain, wetland or tree-save area. When pumping sediment laden water, the discharge must be directed to a sediment trapping device prior to release from the site. A sump pit may be used if sediment traps themselves are being pumped out.
- 21) All water removed from excavated areas shall be passed through a WMA approved dewatering practice or pumped to a sediment trap or basin prior to discharge to a functional storm drain system or to stable ground surface.
- 22) Sediment control for utility construction for areas outside of designed controls or as directed by engineer or WMA Inspector:
A.) Call "Miss Utility" at 1-800-257-7777 48 hours prior to the start of work.
B.) Excavated trench material shall be placed on the high side of the trench.
C.) Trenches for utility installation shall be backfilled, compacted, and stabilized at the end of each working day.
No more trench shall be opened than can be completed the same day, unless;
D.) Temporary silt fence shall be placed immediately downstream of any disturbed area intended to remain disturbed for more than one day.
- 23) Where deemed appropriate by the engineer or inspector, sediment basins and traps may need to be surrounded with an approved safety fence. The fence must conform to local ordinances and regulations. The developer or owner shall check with local building officials on applicable safety requirements. Where safety fence is deemed appropriate and local ordinances do not specify fencing sizes and types, the following shall be used as a minimum standard: The safety fence must be made of welded wire and at least 42 inches high, have posts spaced no farther apart than 8 feet, have mesh openings no greater than 2 inches in width and 4 inches in height with a minimum of 14 gauge wire. Safety fence must be maintained and in good condition at all times.
- 24) Off-site spoil or borrow areas on State or federal property must have prior approval by WMA and other applicable State, federal, and local agencies; otherwise approval must be granted by the local authorities. All waste and borrow areas off-site must be protected by sediment control measures and stabilized.
- 25) Sites where infiltration devices are used for the control of stormwater, extreme care must be taken to prevent runoff from unstabilized areas from entering the structure during construction. Sediment control devices placed in infiltration areas must have bottom elevations at least two (2) feet higher than the finish grade bottom elevation of the infiltration practice. When converting a sediment trap to an infiltration device, all accumulated sediment must be removed and disposed of prior to final grading of infiltration device.
- 26) When a storm drain system outfall is directed to a sediment trap or sediment basin and the system is to be used for temporarily conveying sediment laden water, all storm drain inlets in non-sump areas shall have temporary asphalt berms constructed at the time of base paving to direct gutter flow into the inlets to avoid surcharging and overflow of inlets in sump areas.
- 27) Site Information Block

a. Total area of Facility (base, campus, park, etc.)	_____ 560 _____ Acres
b. Area Disturbed	_____ 6.50 _____ Acres
c. Area to be Roofed or Paved	_____ -0- _____ Acres
d. Total Cut	_____ -0- _____ Cubic Yards
e. Total Fill	_____ -0- _____ Cubic Yards
f. Off-Site Waste / Borrow Area Location	_____ N/A _____

Soil Conservation District Standard Notes

- 28) All erosion and sediment control measures, including practice application, installation, maintenance, and plan approvals, modifications, and project termination shall be in accordance with the following regulations, ordinances, and guidelines.
- COMAR 26.17 and all other current, approved, or additional Maryland Regulations pertaining to erosion and sediment control.
 - "2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control," including all addendums, updates, and revisions.
 - Current "Calvert County Erosion and Sediment Control Ordinance," including all addendums, updates, and revisions.
 - Current "Guidelines used by Calvert Soil Conservation District for erosion and sediment control plan reviews," including all addendums, updates, and revisions.
 - In addition, all site work shall comply with the Maryland Stormwater Management Act of 2007, including compliance with Environmental Site Design (ESD) criteria.
- 29) The scope of work shall consist of installing measures or performing work to control erosion and minimize the production of sediment and other pollutants to water and air during construction operations.
- 30) All materials furnished shall meet the requirements of the Material Specifications.
- 31) The measures and works shall include, but are not limited to the following:
- The excavation and moving of soil materials shall be scheduled so that the smallest possible areas will be unprotected from erosion for the shortest time feasible.
 - Seeding to protect disturbed areas.

- c. Mulching to provide temporary protection of soil surfaces from erosion.
- d. Diversions to divert water away from work areas and to collect runoff from work areas for treatment and safe disposition. These works are temporary and shall be removed and the area restored to its original state when they are no longer needed or permanent measures are installed.
- e. There shall be culverts or bridges where equipment must cross streams. These works are temporary and shall be removed and the area restored to its original state when they are no longer needed or permanent measures are installed.
- f. Sediment traps shall be used to settle and filter out sediment from eroding areas to protect properties and streams below the construction site. These works are temporary and shall be removed and the area restored to its original state when they are no longer needed or permanent measures are installed.
- g. Geotextile Silt Fences shall be used to trap sediment from areas of limited runoff. Sediment filters shall be properly keyed in to prevent erosion under them. These works are temporary and shall be removed and the area restored to its original state when they are no longer needed or permanent measures are installed.
- h. Waterways shall be used for the safe disposal of runoff from fields, diversions, and other structures or measures. These works are temporary and shall be removed and the area restored to its original state when they are no longer needed or permanent measures are installed.
- 32) To dispose of chemical pollutants such as drained lubricating or transmission oils, greases, soaps, concrete mixer wash water, asphalt, etc., produced as a by-product of the construction work, the Contractor shall provide watertight tanks or barrels or construct a sump sealed with plastic sheets to be used. At the completion of the construction work, sumps shall be voided without causing pollution as specified.
- 33) Sanitary facilities such as chemical toilets, or septic tanks shall not be placed adjacent to live streams, wells, or springs. They shall be located at a distance sufficient to prevent contamination of any water sources. At the completion of construction work, facilities shall be disposed of without causing pollution.
- 34) The burning of brush or slash or disposal of other materials shall adhere to local and state regulations.

- Fire prevention measures shall be taken to prevent the start or the spreading of wild fires, which result from project work. Firebreaks or guards shall be constructed at locations shown on the drawings.
 - All public access or haul roads used by the contractor during construction of the project shall be sprinkled or otherwise treated to fully suppress dust. All dust control methods shall ensure safe operations at all times. If chemical dust suppressants are used, the material shall be a commercially available product specifically designed for dust suppression and the application shall follow manufacturer's requirements and recommendations. A copy of the product data sheet and manufacturer's recommended application procedures shall be provided to the Engineer five working days before use.
- 35) All pollution control measures and works shall be adequately maintained in a functional condition as long as needed during the construction operation. All temporary measures shall be removed and the site restored to as nearly original conditions as practicable.
- 36) Temporary Seeding and Mulching Specifications:
- All temporary seeding and mulching shall comply with 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control, standards and specifications for vegetative stabilization. Seeding shall conform to the "Temporary Seeding For Site Stabilization, depths, and dates" - Table B.1. This includes the planting of Barley, Oats, Rye, Foxtail Millet, Wheat, and Annual Rye Grass in rates as prescribed.
- 37) Permanent Seeding Specifications:

- Seedbed Preparation: Apply 90 lbs. per 1,000 sq. ft. of pulverized dolomitic limestone and 12 lbs. per 1,000 sq. ft. of 10-10-10 equivalent fertilizer. Harrow or disc on the contour into the soil to a depth of 3 to 4 inches. Continue tillage until a reasonably fine seedbed has been prepared. Slope areas (greater than 3:1) should be raked, leaving the surface in an irregular condition with ridges running parallel to the contours.
- Seeding: Use Kentucky 31 tall fescue at the rate of 5 to 7 lbs. per 1,000 sq. ft. on a moist seedbed with a minimum coverage of ¼ inch. Stabilize by mulching with unweathered, unchopped, small grain straw spread at the rate of 2 tons per acre. Mulch to be anchored by asphalt tie-down method. Seeding to be done only between February 15 to April 30 or August 15 to October 20. Temporary seeding to be done on completion of construction.
- Sodding: Use rooted Kentucky 31 tall fescue. Sod shall be transplanted within 36 hours of harvesting. Each strip of sod is to be placed with long edges parallel to contours and staked with at least 2 stakes spaced not more than 2 feet apart.
- Application for Approval of Erosion and Sediment Control Plans require the applicant to submit details of temporary and permanent stabilization measures including placement of the following statement on the plan:

Following initial soil disturbance or re-disturbance, permanent or temporarily stabilization shall be completed within:

(aa) Three (3) calendar days as to the surface of all perimeter control dikes, swales, ditches, perimeter slopes and all slopes greater than 3 horizontal to 1 vertical (3:1) and;

(bb) Seven (7) days as to all other disturbed or graded areas on the project site.

(v) The requirements do not apply to those areas that are shown on the plan and are currently being used for material storage, or for those areas where construction activities are currently being performed or to interior areas of a surface mine site where the stabilization material would contaminate the recoverable resource. Maintenance shall be performed as necessary to ensure that stabilized areas continuously meet the appropriate requirements of the 2011 *Standards and Specifications for Erosion and Sediment Control*, or the latest revision, which is incorporated by reference in Regulation.

As construction proceeds, additional measures may be employed with the Engineer's approval, if conditions warrant, to ensure effective erosion and sediment control on site.

- 38) Utility Installation: All trenches or holes created for utility installation shall be backfilled, compacted, and stabilized at the end of each working day. Excavated trench material shall be placed on the high side of the trench or hole. No more trench/hole shall be opened than can be stabilized the same day. If an area must be left unstabilized

- 39) Utility Notification: Calvert Soil Conservation District makes no representation as to the existence or nonexistence of any utilities at the construction site. Shown on these construction drawings are those utilities that have been identified. It is the responsibility of the landowners or operators and contractors to assure themselves that no hazard exists or damage will occur to utilities. It is suggested that Miss Utility be contacted at 1-800-257-7777.
- 40) Best Management Practices for working in nontidal wetlands, wetland buffers, waterways, and 100-year flood plain:
- No excess fill, construction material, or debris shall be stockpiled or stored in the wetlands buffer.
 - Place materials in a location and manner that does not adversely impact surface or subsurface water flow into or out of the nontidal wetland.
 - Do not use the excavated material as backfill if it contains waste metal products, unsightly debris, toxic material, or any other deleterious substance. If additional backfill is required, use clean material free of waste metal products, unsightly debris, toxic material, or any other deleterious substance.
 - Place heavy equipment on mats or suitably operate the equipment to prevent damage to the nontidal wetlands or buffer.
 - Repair and maintain any serviceable structure or fill so there is no permanent loss of nontidal wetlands in excess of nontidal wetlands lost under the original structure or fill.
 - Rectify any nontidal wetlands temporarily impacted by any construction.
 - All stabilization in the wetland and buffer shall be of the following recommended species: Annual Rye Grass (*Lolium multiflorum*), Millet (*Setaria Italica*), Barley (*Hordeum sp.*), Oats (*Uniola sp.*), and/or Rye (*Secale cereale*). These species will allow for the stabilization of the site while also allowing for the voluntary revegetation of natural wetland species. Other nonpersistent vegetation may be acceptable, but must be approved by the District. Kentucky 31 fescue shall not be utilized in the wetland or buffer areas. The area should be seeded and mulched to reduce erosion after construction activities have been completed.
 - After installation has been completed, make postconstruction grades and elevations of nontidal wetlands the same as the original grades and elevations in temporarily impacted areas.
 - To protect aquatic species, in-stream work is prohibited as determined by the classification of the stream. Class I Waters: in-stream work shall not be conducted during the period March 1 through June 15, inclusive, during any year.
 - Stormwater runoff from impervious surfaces shall be controlled to prevent the washing of debris into the waterway.
 - Culverts shall be constructed and any riprap placed so as not to obstruct the movement of aquatic species, unless that purpose of the activity is to impound water.

Engineers Approval

Professional Certification
I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed Professional Engineer under the laws of the State of Maryland, License No. 14544, Expiration Date: August 16, 2025

CAD FILE

JPP Phase V.dwg

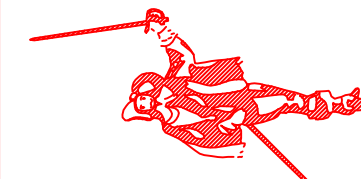
LAYOUT No.

13

NO 13 OF 13



Jefferson Patterson Park & Museum
St. Leonard Creek Shoreline Erosion Control Project Phase V
Project # HT-000-160-201
Erosion and Sediment Control Notes
Calvert County, Maryland



DATE
Designed Glenn G. Gass 1/21
Drawn N. Cook 1/21
Revised R. St Laurent 1/24
Checked Glenn G. Gass 1/24
Approved by Glenn G. Gass
Title District Engineer
Project #2081.CCG