June 7, 2024

Mr. Jake Holness
Maryland Department of the Environment
Regulatory Services Section
Montgomery Park Business Center, Suite 430
1800 Washington Boulevard

Dear Mr. Holness,

The Maryland Transportation Authority (MDTA) is submitting an Abbreviated Joint Federal/State Permit Application for the alteration of any tidal wetland and/or tidal waters in Maryland (JPA) and supporting documentation for the I-695 Francis Scott Key Bridge Demolition project, located in Baltimore/Dundalk, Maryland. The project is within the Baltimore Harbor Maryland 8-digit Watershed (02130903). This application is submitted pursuant to the requirements of the Code of Maryland Regulations, Sections 26.17 and 26.23, and Section 404 of the Clean Water Act via MDE's E-collaboration tool. The application and supporting documentation include the following:

- Joint Permit Application
- Attachment A: Additional Information
- Attachment B: Figures
- Attachment C: Design Plans
- Attachment D: Impact Plates
- Attachment E: Natural Resources Inventory / Forest Stand Delineation (NRI/FSD)
- Attachment F: Rare Threatened and Endangered Species (RTE) Coordination

The Mean High Water (MHW), Mean Low Water (MLW), bridge foundation, and mudline elevations are shown on pier and dolphin cross-sections included in Attachment D.

The project will include demolition of the stable standing structures comprising the remaining portions of the FSK Bridge in preparation for bridge reconstruction. The project includes four distinct demolition activities.

1. Removal of remaining parapet, median, and deck over land and six water spans mechanically
2. Removal of remaining girders on the six water spans mechanically
3. Removal of land spans and land piers using explosives
4. Removal of remaining water piers and dolphins using explosives

The project activities above will be conducted sequentially, and we request determination if the first two activities may proceed without a tidal wetlands license. If these first two activities can proceed prior to the issuance of a tidal wetlands license we would be able to accelerate our demolition schedule and advance our mission to open the reconstructed bridge to traffic by October 2028.

MDTA anticipates a USACE Nationwide Permit will authorize the temporary impacts associated with the project. The project will not result in any temporary or permanent impacts to tidal or nontidal wetlands, or

nontidal waters and all impacts to tidal waters will be temporary, including temporary spudding for barges, potential temporary piles for barges, barge movement, and impacts from blasting and collecting concrete and construction debris. The project will result in 8.29 acres of temporary impacts to a tidal waterway, the Patapsco River. The limits of disturbance (LOD) and resource impacts were minimized to the greatest extent practicable while still achieving the goals of the project.

Due to the emergency nature of this project, we are asking for relief from the following time of year restrictions included in the regional conditions for NWPs in the State of Maryland.

- Regional Condition A. - Anadromous fish spawning restriction – February 15 to June 15
- Regional Condition B.4.b. - Pile driving in tidal waters – November 30 to March 15
- Regional Condition B.5. - Sediment disturbance – April 1 to June 30

The project will continue to coordinate with state and federal agencies protecting aquatic species, and follow aquatic species protection recommendations to the maximum extent practicable.

MDTA anticipates the need for a public hearing on the project and is providing the following hearing details for inclusion in the public notice.

Location:	North Point Branch, Baltimore County Public Library 1716 Merritt Boulevard, Dundalk, Maryland, 21222
Date:	August 1, 2024
Time:	4:30PM to 5:30PM Poster Session 5:30PM to 7:30PM Hearing

If you need further assistance, please contact our authorized agent Mr. Justin Reel at (703) 338-4139 or via email at jreel@rkk.com.

Sincerely,

Julie McCarthy
Natural Resources Lead, Maryland Transportation Authority

CC: Joseph DaVia, Nicole Nasteff, Kathy Anderson - US Army Corps of Engineers
Jitesh Parikh, Alex Bienko, Melissa Toni - FHWA
Hal Pitts - USCG
Karen Green, Brian Hopper, Jonathan Watson - NOAA Fisheries
Tammy Roberson, Danielle Spendiff, Matt Wallach - MDE
Melissa Williams, Brian Wolfe, Carl Chamberlin - MDTA
Eric Almquist, Rick Maddox, Justin Reel – RK&K
Scott Miller, Leyla Lange – JMT
Caryn Brookman, Stacy Hawver – Blackwater

Maryland
Department of the Environment

Wetlands and Waterways Program
Tidal Wetland Division
General Checklist

Please refer to the project specific guidelines available in the **INSTRUCTION BOOKLET for the Abbreviated Joint Federal/State Application for the Alteration of any Tidal Wetland and/or Tidal Waters in Maryland** and the **SAMPLE ACTIVITY GUIDELINES AND DRAWINGS** booklet. Detailed checklist and plan requirements for project specific activities can be found in both.

Minimum Guidelines:

- [x] Plan sheets should be on 8.5" x 11" paper, black and white, and single sided. Plans should be legible and not cluttered; proposed plan sheets should contain a written or visual scale no smaller than 1" = 50' (Use match lines if the entire project site cannot fit on one sheet at this scale); existing plan sheets should contain a written or visual scale no smaller than 1" = 100' (Use match lines if the entire project site cannot fit on one sheet at this scale)
- [x] All plan notes should be placed at the bottom of the page or on a separate page. The plan sheets should be numbered to reference the plan sheet in relation to the total number of plan sheets i.e. Page 1 of 3, Page 2 of 3, etc.
- [ ] Dimensions of all proposed structures must be represented. NOT APPLICABLE
- [x] **ALL** plan view sheets should include Mean High Water Line (MHWL) and Mean Low Water Line (MLWL; referenced to 0.0 feet). *If a project proposes to alter the MHWL and/or MLWL during construction then they should be depicted and labeled.*
- [x] Plan views should include water depths marked as either contours or spot depths that extend acrossthe width of the waterway.
- [x] Plan views should include the maximum channelward extent beyond mean high water of all proposed structures and impacts.
- [x] Plan views should include the distance across the waterway, perpendicular to the proposed worksite, to the opposite shoreline and maximum fetch for the project worksite; *include multiple bearings and/or summer-winter wind direction if possible.*
- [ ] Dredge material management plan (for dredging projects only) including type of dredging, location of dredged material placement site, handling and transport method for dredge material, the dimensions and detailed design of the proposed dredged material placement site including a plan and cross-sections drawing of dewatering area (if proposed), maximum volume of dredged material, and an acceptance letter from the operator of the dredged material placement site.

NOT APPLICABLE

- [x] Plan sheets should show parcel boundaries and ownership information for the riparian property as well as for adjoining properties. Property information, including waterfront status, may be found at https://sdat.dat.maryland.gov/RealProperty/Pages/default.aspx"

FOR AGENCY USE ONLY	ABBREVIATED JOINT FEDERAL / STATE APPLICATION FOR THE ALTERATION OF ANY TIDAL WETLAND AND/OR TIDAL WATERS IN MARYLAND	MDE Permit #:	
		Tracking #:	
MDSPGP Category:	☐ Major ☐ Minor ☐ 240-day ☐ 90-Day ☐ MHT ☐ WHD ☐ PN	MDE AI #:	
This abbreviated application should only be used for projects that are eligible for federal authorization under the Maryland State Programmatic General Permit (MDSPGP).		MDE Reviewer:	County:

Pre-Application Meeting Held? ☐ with MDE ☐ with USACE AI# (if given):

Reviewer's Name(s):

MAILING INSTRUCTIONS LOCATED ON 2ND PAGE OF THIS APPLICATION

Applying for: ☒ Authorization ☐ Modification

MDE APPLICATION REVIEW FEE REQUIRED: PLEASE REFER TO THE MDE WEBSITE: *http://mde.maryland.gov/programs/Water/WetlandsandWaterways/Documents/FeeSchedule.pdf*

(Applicant will be copied on all correspondence, unless they opt out, BY INITIAL AND SIGNATURE, in Section 12)

1. APPLICANT INFORMATION: (Please note that the applicant is not the contractor/agent applying on behalf of a property owner)

Name: Maryland Transportation Authority - Julie McCarthy **Home Telephone:** (410) 537-7861

Address: 300 Authority Drive **Email Address:** jmccarthy@mdta.maryland.gov

City: Baltimore **State:** MD **Zip:** 21222

2. PROPERTY OWNER INFORMATION: (If different from the Applicant)

Name: Same as applicant **Home Telephone:**

Address: **Email Address:**

City: **State:** **Zip:**

3. AUTHORIZED AGENT / PRINCIPAL CONTACT INFORMATION:

Name: RK&K - Justin Reel **Telephone:** (703) 338-4139

Address: 700 East Pratt Street, Suite 500 **Email Address:** jreel@rkk.com

City: Baltimore **State:** MD **Zip:** 21202

4. CONTRACTOR INFORMATION (If currently unknown, required to be provided to MDE's Tidal Wetland Division prior to construction of project)

Company Name: Currently Unknown

Principal Contact: **Email Address:**

Maryland Marine Contractor License #: **Telephone:**

5. PROJECT DESCRIPTION: (Attach additional pages if necessary)

See attached additional information sheet

6. PROJECT PURPOSE: (Check all that apply)

☐ Improve Navigable Access ☐ Shore Erosion Control ☐ Fill
☐ Beach Nourishment ☐ Create/Improve Habitat ☐ Erosion/Sediment Control ☐ Marina
☐ Create/Improve Infrastructure ☐ Utility Installation ☐ Residential/Commercial Development
☒ Other: (describe) Demolish infrastructure - All regulated impacts are temporary

7. PROJECT LOCATION: (If project site has no address, please include the lot # and/or nearest address with a clear description of the site)

County: Baltimore City, Baltimore County, Anne Arundel County Name of Waterway: Patapsco River

Site Address or Location: Due to the linear nature of the project, there is no specific project site address. The project site includes all remaining elements of and approaches to the I-695 FSK Bridge Latitude: 39.216833 Longitude: -76.528667

Directions from nearest intersection of two state roads: The project site includes all remaining elements of and approaches to the I-695 FSK Bridge.

8. FEDERALLY AUTHORIZED CIVIL WORKS PROJECTS: Is the project located in, on, or adjacent to a U.S. Army Corps of Engineers' federally authorized civil works project, structure, property, or easement (e.g., federal navigation channel, flood control levees, dams and reservoirs, lake property, etc.)? ☒Yes ☐No

If yes, has a review pursuant to 33 U.S.C. 408 (Section 408) been initiated? ☐Yes ☒No Section 408 coordination is ongoing

9.VERIFICATIONS: ***a*) Best Management Practices:** I verify that my project will meet all Endangered Species Act Best Management Practices applicable to work in tidal waters and wetlands as required by the MDSPGP (see Section VII.B.4.c.i-iii).

☐Yes ☐No ☒Unknown Coordination with NOAA under emergency procedures is on-going

***b*) Property Restrictions**: Is the proposed work located in an area encumbered by an existing site protection instrument such as a conservation easement, deed restriction, or declaration of restrictive covenants required as a condition of a prior U.S. Army Corps of Engineers', Maryland Department of the Environment, or Environmental Protection Agency

☐Yes ☒No ☐Unknown

10. TYPE OF PROJECT (check all that apply and provide all applicable information)**:**

This abbreviated application should only be used for projects that are eligible for federal authorization under the Maryland State Programmatic General Permit (MDSPGP). Please refer to the MDSPGP for eligible activities.

Work Proposed	Overall Length (Ft.)	Average Width (Ft.)	Volume of Fill Material (cu. yards.)	Total Area Impacted (Sq. Ft.) Permanent	Total Area Impacted (Sq. Ft.) Temporary	Maximum Distance Channelward from Mean High Water Line (Ft.)	New Work	Maintenance /Repair	Work Started/ Completed
☐ Bulkhead							☐	☐	☐*
☐ Revetment							☐	☐	☐*
☐ Breakwater							☐	☐	☐*
☐ Groins, Jetties, or Low Profile Sill							☐	☐	☐*
☐ Living Shoreline (vegetated area)							☐	☐	☐*
☐ Pier							☐	☐	☐*
☐ Finger Pier							☐	☐	☐*
☐ Platform							☐	☐	☐*
☐ Pile(s) (#:) ☐ Osprey Pole							☐	☐	☐*
☐ Boat Lift (including support piles)							☐	☐	☐*
☐ Boat Ramp							☐	☐	☐*
☐ Utility Line							☐	☐	☐*
☐ Construction Access/Mats							☐	☐	☐*
☐ Dredging (Maintenance or New Minor) ☐ Hydraulic / ☐Mechanical							☐	☐	☐*
☒ Other: Demolition of existing bridge and piers	See attachment A for additional information				360,905		☐	☐	☐*

***For any work started or completed, please clearly and accurately depict those portions of the project on the plans**

11. DESCRIPTION OF AVOIDANCE, MINIMIZATION, AND COMPENSATION: Please be advised that unavoidable losses of tidal wetlands and/or aquatic resources may require compensatory mitigation. Please provide a separate sheet(s) that addresses the proposed project's avoidance, minimization, and compensation (if required) which includes any clearing, grading, or excavation required before, during, and after the proposed project.

12. STATE CERTIFICATION AND FEDERAL PRIVACY ACT STATEMENT:

Application is hereby made for a permit or permits to authorize the work described in this application. I hereby designate and authorize the agent named above to act on my behalf in the processing of this application and to furnish any information that is requested. I certify that the information on this form and on the attached plans and specifications is true and accurate to the best of my knowledge and belief. I understand that any of the agencies involved in authorizing the proposed works may request information in addition to that set forth herein as may be deemed appropriate in considering this proposal. I grant permission to the agencies responsible for authorization of this work, or their duly authorized representative, to enter the project site for inspection purposes during working hours. I will abide by the conditions of all permit(s) or license(s) if issued and will not begin work without the appropriate authorization. I also certify that the proposed works are consistent with Maryland's Coastal Zone Management Plan.

Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers, 33 CFR 320-332. Principal Purpose: Information provided on this JPA will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice. Submission of requested information is voluntary, however, if information is not provided, the permit application cannot be evaluated nor can a permit be issued.

All information, including permit applications and related materials, submitted to MDE may be subject to public disclosure consistent with the Maryland Public Information Act, §4-101 *et seq.*, General Provisions Article of the Maryland Code.

☐ **I am the riparian property owner/applicant and do not want to be contacted by MDE.** All correspondence should occur with my authorized agent /principal contact designated in **Section 3,** located on the 1st page of this application. (By initializing the box, you are acknowledging that you will not receive any correspondence directly from MDE). I understand a copy of MDE's final decision regarding this application will be sent to me. This opt-out option does not apply to the U.S. Army Corps' correspondence, which will continue to be with the applicant/permittee.

RIPARIAN PROPERTY OWNER MUST SIGN: Julie McCarthy **Date:** 06/07/2024

IMPORTANT:

PLEASE MAIL SEVEN (7) COPIES OF THE APPLICATION, SITE PLAN, AND VICINITY MAP (WITH PROJECT LOCATION PINPOINTED) TO:

MDE/WATER AND SCIENCE ADMINISTRATION
REGULATORY SERVICES SECTION
MONTGOMERY PARK BUSINESS CENTER – STE 430
1800 WASHINGTON BOULEVARD
BALTIMORE, MD 21230-1708
(410) 537-3752

SEND THE APPLICABLE APPLICATION FEE AND A COPY OF THE FIRST PAGE OF THE APPLICATION TO:

MDE
P.O. BOX 2057
BALTIMORE, MD 21203-2057
PCA: 13910 OBJ: 4142

FOR FURTHER INSTRUCTIONS, PLEASE REFER TO OUR WEBSITE
http://mde.maryland.gov/programs/Water/WetlandsandWaterways

Attachment A: Additional Information in Support of the JPA Form

5. Project Description:

The project will include demolition of the stable standing structures comprising the remaining portions of the FSK Bridge in preparation for bridge reconstruction. The FSK Bridge was a 1.6-mile-long structure over the Patapsco River in Baltimore/Dundalk, Maryland, which was struck by a cargo ship leaving the Port of Baltimore resulting in the collapse of the bridge into the Patapsco River in March 2024. The project includes four distinct demolition activities.

1. Removal of parapet, median, and deck over land and water mechanically – working from the end of the existing structures towards the land, the parapet, median, and decking will be saw cut into manageable pieces, loaded onto trucks and trucked down the structure to an upland processing site.
2. Removal of existing girders on the six (6) remaining water spans mechanically – using barge mounted cranes, the existing girders will be cut into manageable pieces, lowered onto a barge, and transported to an existing marine terminal for off-loading and processing.
3. Removal of existing land spans and land piers using explosives – explosives will be used to demolish the piers over land, allowing the girders to fall to the ground, concrete and steel will be processed in place and loaded onto trucks for recycling.
4. Removal of water piers and dolphins using explosives - portions of piers located both above water and below water will be demolished with explosives and allowed to fall into the water, portions of dolphins located above water will be mechanically demolished and the portions below water will be demolished with explosives, following demolition all debris will be removed from the river bottom with excavators and clamshell dredge and the river bottom will be restored.

The project may also involve additional temporary impacts associated with the removal of buried piers. During the collapse, piers 19, 20, and 21 snapped at various elevations at or above the waterline. The snapped portions of the piers fell to the river bottom and sunk up to 30 feet below the mudline due to their significant size and weight. Portions or all of these buried pier segments may need to be removed from the river bottom to allow construction of the new bridge or as required by the regulatory agencies. The location of these buried piers is shown on the impact plates.

This application includes temporary impacts associated with the installation and subsequent removal of up to 100 temporary piles with a dimeter no greater than 36 inches. These temporary piles may be required to secure barges or facilitate demolition activities is other ways. These piles

are not shown on the impact plates since the location of the piles will not be known until they are needed to facilitate construction.

All of the demolition activities shall be undertaken with minimal disruption to the federal navigation channel. Temporary piles will not be located within the navigation channel, and construction barges will obstruct the federal navigation channel. There may be short duration closures of the navigation channel that may be necessary to maintain a safety zone around a blasting event. These short duration closures will be coordinated with the USCG to minimize disruptions to navigation and ensure the safety of the commercial and recreational river users.

10. Type of Project:

Individual impact areas for each pier and dolphin:

Activity Location	Overall Length (ft.)	Overall Width (ft.)	Total Impact Area (sq. ft.) Temporary
Pier 14	~150	~168	23,047
Pier 15	~140	~167	21,037
Pier 16	~147	~191	25,888
Pier 17	~186	~200	35,009
Pier 18	~186	~200	35,009
Pier 19	~147	~191	25,888
Pier 19-20 buried pier removal	~156	~90	14,208
Pier 20	~141	~170	21,653
Pier 21 buried pier removal	~76	~68	5,168
Pier 21	~150	~168	23,012
Pier 22	~135	~166	20,288
Pier 23	~135	~166	20,288
Pier 24 and girders	~268	~164	29,911
Dolphin 1	~138	~138	14,948
Dolphin 2	~138	~138	14,948
Dolphin 3	~138	~138	14,948
Dolphin 4	~138	~138	14,948
Temporary Piles (100)	~3	~3	707
Total			**360,905**

11. Description of Avoidance, Minimization, and Compensation:

Permanent impacts to nontidal wetlands, nontidal waterways, tidal wetlands and tidal waters have been avoided. Temporary impacts to tidal waters are unavoidable and have been minimized to the extent possible at this stage of design. Temporary disturbance of the Patapsco River bottom will

be restored to original grade and condition. To the extent practicable, fishery and benthic aquatic resource impacts will be avoided and minimized through the use of best practices and through coordination with NOAA Fisheries and MDNR Fisheries. The MDTA project team will work closely with NOAA Fisheries under emergency consultation procedures to avoid, minimize and document impacts to rare, threatened, and endangered species and to coordinate Essential Fish Habitat impact avoidance and minimization.

Adjoining Riparian Property Owner, Homeowners Association, and Appropriate Local Official Notification Certification Form

(COMAR 26.24.01.04C)

☐ I have notified, in writing, and provided a copy of the application and plan(s) of my proposal to perform work in tidal wetlands to all riparian property owners adjoining to my property located at the address listed below. **The property owners have been advised, in writing, that they have two weeks** from the receipt **of the application and plan(s) to direct any comments to the Maryland Department of theEnvironment.**

☐ In Person on _____ Date Delivered

☐ By Certified Mail on _____ Date Delivered

Riparian Property Owner Notifications are being coordinated and will be sent to the below addresses

☐ My property is part of and/or subject to a Homeowners Association (HOA) and my proposed work may be subject to their review and approval. I have notified, in writing, and provided a copy of the application and plans(s) of my proposal to the HOA representative. If HOA approval is required, I have provided the approval to MDE as part of my application.

☐ In Person on _____ Date Delivered

☐ By Certified Mail on _____ Date Delivered

☐ I have notified, in writing, and provided plans of my proposal to perform work in tidal wetlands to the Director of Planning in the County in which my project is located:

☐ In Person on _____ Date Delivered

☐ By Certified Mail on _____ Date Delivered

Project Site Riparian Owner and Address

MDTA

(Name of Riparian Property Owner)

Francis Scott Key Bridge

(Project Site Street Address)

Dundalk/Baltimore, MD

(City, State, Zip Code)

Please list below all the contiguous riparian property owners notified. Attach additional pages if necessary.

Names	Addresses
Baltimore Gas & Electric	110 W Fayette Street Baltimore, MD 21201
Maryland Port Administration	401 E Pratt Street Baltimore, MD 21202
State of Maryland Port Authority	6000 Dock Road, Baltimore, MD 21226
Baltimore City, Mayor & City Council	Fort Armistead Park, 4000 Hawkins Point Road Baltimore, MD 21226
Fort Carroll LLC, C/O M Eisenberg	2844 Old Court Road, Baltimore, MD 21208

Julie McCarthy

(Riparian Property Owner Signature)

Julie McCarthy

(Printed Name

Version: 2/2022

ATTACHMENT B: FIGURES

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MDTA Maryland Transportation Authority

Francis Scott Key Bridge Rebuild Project

Vicinity Map

Baltimore City and Baltimore County, Maryland
June 2024

N
W E
S

Study Area
County Boundaries

0 1,000 2,000
Feet

ATTACHMENT C: DESIGN PLANS

DEMOLITION PROCEDURE

FOR

MDTA BRIDGE NO. BCZ472
FRANCIS SCOTT KEY BRIDGE
I-695 OVER THE PATAPSCO RIVER

Project: Francis Scott Key Bridge Project
MDTA Contract No. KB-4903-0000

REVISION 1

June 5, 2024

TABLE OF CONTENTS:

DEMOLITION PROCEDURE

SCOPE:

The work consists of the demolition of the remaining portions of the Francis Scott Key Bridge carrying I-695 over the Patapsco River. The limits of removal include the bridge superstructure from the west abutment through Span 16 and from Pier 22 to the east abutment. The superstructure shall be fully demolished. The substructure removal includes both abutments, Piers 1 through 13 and 25 through 36 on land, and Piers 14, 15, 16, 17, 18, 22, 23, and 24 along with the remainders of Piers 19, 20 and 21 in the Patapsco River. The substructure shall also be removed to two (2) feet below grade or as directed by the United States Coast Guard (USCG) or the United States Army Corps of Engineers (USACE).

The existing bridge median barrier, parapet, and deck shall be removed utilizing hydraulic excavators operating on the bridge deck. The steel spans over the water shall be removed utilizing a ringer crane on a barge. The steel spans over land shall be removed by felling the piers and dropping the steel spans. The abutments shall be removed utilizing hydraulic excavators equipped with hydraulic hammers. The water piers shall be removed utilizing explosive demolition.

GENERAL OPERATIONS STATEMENT:

All work performed by Demolition Contractor will be done in strict accordance with local, state, and federal safety requirements. A Site-Specific Health and Safety Plan is required to be prepared by the Contractor for this demolition phase, and the Competent Person will convene a safety meeting prior to starting work at which all operatives shall be present. The Competent Person shall review the Site-Specific Safety Plan on a daily basis and ensure that all persons present understand the demolition procedure, all pertinent safety issues, including fall protection and what is required of them.

SITE MAINTENANCE:

During demolition operations, the site shall be maintained in a neat and orderly fashion. Truck drivers and on-site personnel shall coordinate deliveries and disposal operations to alleviate traffic issues.

Operations will be conducted in a manner that will minimize disturbance to the public in areas adjacent to the work.

At no time will unauthorized personnel be allowed in work areas. At no time will the work be left unattended without proper safety protection.

RECYCLING:

- All concrete and asphalt will be recycled at an approved facility.
- All steel and non-ferrous metals will be transported to an approved facility.
- All other demolition debris will be disposed of at an approved disposal site.

LIST OF PROPOSED RECYCLING FACILITIES:

Ferrous & Non-Ferrous Metals	TBD
Concrete	TBD

GENERAL NOTES:

- Demolition Contractor shall not allow debris, tools, or incidental equipment to swing over areas where there is vehicular or pedestrian traffic. Any debris or tools that enter the River shall be retrieved.
- Dust control shall be provided during demolition operations and consist of water hose(s) equipped with spray nozzles to wet down debris as required.

EQUIPMENT TO BE UTILIZED AND/OR AVAILABLE:

Excavator(s) Ringer Crane(s)
Crawler Crane(s)Ringer Triaxle Dump Trucks
Tractors and Dump Trailers Hydraulic Hammers
Hydraulic Shears
Core Cut or Husqvarna Walk-Behind Concrete Saw, Wall Saw & Wire Saw
Grapples, Slab Bucket, Universal Processer, Concrete Pulverizer, and Miscellaneous Small Tools

WORK REQUIRED PRIOR TO DEMOLITION:

Prior to demolition, the following work shall be completed:

- Communication will be established with the MDTA prior to the commencement of any demolition.
- Longitudinal and transverse cut lines will be laid out and painted on the deck.
- Prior to deck removal over the water, barges shall be placed beneath that portion of deck to act as a shield to eliminate any debris or slurry from entering the water.

DEMOLITION SEQUENCE:

1. Remove parapet, median, and deck over land and water.
2. Remove existing girders on the six (6) remaining water spans.
3. Remove existing land spans and land piers using explosives to fell the piers.
4. Remove water piers and dolphins using explosives.

NOTES:

- The equipment included in the demolition procedure below may be replaced by an alternative piece of equipment that has the capability to perform the intended

operation (subject to the Engineer's approval).

- No demolition work shall proceed without authorization by MDTA.
- Demolition Contractor personnel shall always utilize fall protection PPE when working at or near a leading edge where no barrier, handrails, or fall restraints are in place. Fall protection PPE will be in accordance with OSHA Standards and include the use of harnesses, self-retracting lifelines lanyards, concrete fall arrest anchors, and other approved means.
- At the end of each shift of work, Demolition Contractor will ensure that all leading edges are secured and protected.

REMAINDER OF FSK BRIDGE DEMOLITION

NOTES:

- Erosion controls shall be in place on both approaches prior to removing any deck or dropping any steel.
- Shielding barges will be positioned beneath span being removed to prevent any slurry or debris from entering the waterway.

Deck, Parapet, and Median Removal (Water)

1. The existing median barrier will be removed by hammering it every ten (10) feet to create sections. The barrier will then be hammered where it meets the deck. Cut any rebar and move each section down the bridge.
2. Parapet will be removed by sawcutting techniques.
3. Core holes in the parapet to allow rigging to be inserted.
4. Make plunge cuts every ten (10) feet to create sections.
5. Finally, make a longitudinal cut adjacent to the bottom of the barrier.
6. Lift the sections and place them on the deck.
7. Drag the sections out of the way to the laydown area.
8. Next, the concrete deck will be removed. The concrete deck is non-composite so sawcutting techniques will also be utilized for this removal operation.
9. The size of the deck panels shall be six (6) feet long and nine (9) feet wide (this is the spacing of the girders.)
10. Make the sawcuts in the span to be removed. Sawcut down the center of the existing girders.
11. Once the deck is sawcut, begin to remove the deck sections.
12. Deck sections shall be moved off the span and down to the laydown yard.
13. The concrete deck and parapet sections will be downsized and then shall be loaded into trucks for recycling at an approved recycling facility.

Deck, Parapet, and Median Removal (Land)

1. The existing median barrier will be removed by hammering it every ten (10) feet to create sections. The barrier will then be hammered where it meets the deck. Cut

any rebar and move each section down the bridge.
2. Parapet will be removed by sawcutting techniques.
3. Core holes in the parapet to allow rigging to be inserted.
4. Make plunge cuts every ten (10) feet to create sections.
5. Finally, make a longitudinal cut adjacent to the bottom of the barrier.
6. Lift the sections and place them on the deck.
7. Drag the sections out of the way to the laydown area.
   Next, the concrete deck will be removed. The concrete deck is non-composite so sawcutting techniques will also be utilized for this removal operation.
8. The size of the deck panels shall be six (6) feet long and nine (9) feet wide (this is the spacing of the girders.)
9. Make the sawcuts in the span to be removed. Sawcut down the center of the existing girders.
10. Once the deck is sawcut, begin to remove the deck sections.
11. Deck sections shall be moved off the span and down to the laydown yard.
12. The concrete deck and parapet sections will be downsized and then shall be loaded into trucks for recycling at an approved recycling facility.

Girder Removal (Water)

1. The existing continuous span girders shall be removed either in pairs or as a single unit (there are seven (7) beams in each span.)
2. Position the Ringer Crane into position and spud down. A material barge shall be placed alongside the crane barge.
3. Remove the first section of steel by cutting holes in the web to insert the chain through. A spreader bar will be utilized as these spans are 300 feet long.
4. Lift the section of steel with the crane and place it on the material barge.
5. Multiple material barges may be required due to the span length.
6. Continue in each span until all the beams are removed.
7. Move to the adjacent span and repeat the process.
8. The operation will then be moved to the opposite approach to remove those spans.
9. The material barges will be pushed to the laydown yard where they will be offloaded.
10. Once the steel is offloaded, it will be subsequently downsized with a combination of hydraulic shears and oxygen/propane torches.
11. Load steel into trucks to be recycled at facility listed above.

Girder & Pier Removal (Land) – Piers 1 through 13 & 25 through 36

1. The existing land spans and piers shall be removed by felling the piers and allowing the steel girders to drop.
2. The existing column legs, caps, and struts shall be drilled to allow charges to be placed.
3. One all charges are placed, explosive demolition shall fell the piers which will bring

the steel girders down to the ground.

4. Once the steel girders and piers are on the ground, process the materials. Any remaining portions of the piers shall be hammered with a hydraulic excavator equipped with a hydraulic hammer.
5. Multiple spans will be felled at once since the spans are continuous.
6. Repeat the process for the remaining land spans.
7. Load concrete and steel into trucks to be recycled at facility listed above.

Pier Above Water Removal – Piers 14 through 16 & 22 through 24

1. The portion of the piers above the water for the remaining piers (14, 15, 16, and 22, 23, 24) shall be removed using explosives.
2. The existing pier caps, columns, and struts shall be drilled to allow charges to be placed.
3. Once the charges are placed, the explosives will fail the piers and allow them to fall into the water.
4. They will be cleaned up with the portions of the piers that are below water.

Pier Below Water Removal – Piers 14 through 16 & 19 through 24

1. The portions of the existing piers that are below water (14, 15, 16, 19, 20, 21, 22, 23, and 24) shall be removed utilizing explosives.
2. The piers shall either be drilled from on top of the pier or from a barge.
3. Divers will be sent down to inspect the footing to check for any cofferdams that may have been left in place. If they are found, the sheets will be cut vertically every eight (8) feet.
4. Once the drilling is completed, the explosives will be placed and the piers will be imploded.
5. Once they are imploded, the river bottom will be cleaned up with a combination of hydraulic excavators and duty cycle cranes equipped with clamshell buckets.
6. Place material on barges and push to trestle or offloading yard.
7. Offload all the debris from the barges then move the barge back to each pier until the cleanup is complete.
8. Piers shall be removed to two (2) feet below existing mudline or as directed by the United States Coast Guard (USCG) or the United States Army Corps of Engineers (USACE). Approximate elevations of mudline:
    a. Pier 14 – EL -16
    b. Pier 15 – EL -16
    c. Pier 16 – EL -20
    d. Pier 19 – EL -25
    e. Pier 20 – EL -24
    f. Pier 21 – EL -24
    g. Pier 22 – EL -19
    h. Pier 23 – EL -13

   i. Pier 24 – EL -15
9. Load concrete into trucks to be recycled at facility listed above.

Abutment Removal

1. The existing abutments and wingwalls shall be completely removed.
2. Hammer the abutments and wingwalls with a hydraulic excavator equipped with a hydraulic hammer.
3. Load concrete into trucks to be recycled at an approved facility.

Pier 18 Strut & Column Removal (Above Water)

1. The portion of Pier 18 above the water shall be removed using explosives.
2. The existing pier caps, columns, and struts shall be drilled to allow charges to be placed.
3. Once the charges are placed, the explosives will fail the piers and allow them to fall into the water.
4. They will be cleaned up with the portions of the piers that are below water.

Pier 17 & 18 Lower Strut, Column, and Footing Removal (Below Water)

1. The portions of the existing Piers 17 and 18 that are below water shall be removed utilizing explosives.
2. The piers shall either be drilled from on top of the pier or from a barge.
3. Divers will be sent down to inspect the footings/tremies to check for any cofferdams that may have been left in place. If they are found, the sheets will be cut vertically every eight (8) feet.
4. Once the drilling is completed, the explosives will be placed and the piers will be imploded.
5. Once they are imploded, the river bottom will be cleaned up with a combination of hydraulic excavators and duty cycle cranes equipped with clamshell buckets.
6. Place material on barges and push to trestle or offloading yard.
7. Offload all the debris from the barges then move the barge back to each pier until the cleanup is complete.
8. Pier 17 and 18 shall be removed to the top of the (footing) foundation concrete unless otherwise directed by MDTA.
9. Load concrete into trucks to be recycled at facility listed above.

Dolphins A, B, C, & D Removal

1. The top portion of each of the dolphins from EL 4 to EL 0 shall be hammered in place utilizing hydraulic excavators equipped with hydraulic hammers operating on barges.
2. Concrete shall fall into water and will be cleaned up after the remainder of the dolphins are removed.
3. The dolphins shall be drilled from a barge.
4. Divers will be sent down to inspect the sheets. The sheets will be cut vertically

every eight (8) feet.

5. Once the drilling is completed, the explosives will be placed and the dolphins will be imploded.
6. Once they are imploded, the river bottom will be cleaned up with a combination of hydraulic excavators and duty cycle cranes equipped with clamshell buckets.
7. Place material on barges and push to trestle or offloading yard.
8. Offload all the debris from the barges then move the barge back to each dolphin until the cleanup is complete.
9. Dolphins shall be removed to two (2) feet below existing mudline. Approximate elevations of the mudline – A & C EL -40 – B & D EL -26
10. Load concrete into trucks to be recycled at facility listed above.

Salt Shed Removal

1. The existing wood framed salt shed shall be demolished systematically starting at the top and working towards the bottom.
2. Once the upper portion is removed, any existing slabs, foundations, or sonotubes shall be removed to two (2) feet below ground level.
3. Load concrete and construction/demolition debris into trucks to be recycled at an approved facility.

BLASTING PLAN EXAMPLE

Francis Key Scott Bridge Recovery Project

Piers 19-21 Conceptual Blast Plan

April, 2024

Francis Scott Key Bridge Piers 19-21 Removal

Conceptual Blast Plan

As part of the recovery of the collapsed Francis Scott Bridge and the opening of the navigable waterway piers 19, 20 and 21 will need to be removed. One option is to remove the piers to the top of the tremie concrete. The second option would be to remove the pier columns to the top of footing (foundation concrete) only. The drilling and blasting methodology for option 1, complete removal, is outlined in this conceptual plan. The piers will be drilled vertically from the top using a hydraulic drill rig with an onboard dust collection system and electronic hole alignment. The drill will be staged on a barge. A template will be constructed for each pier that will facilitate the use of casing pipes as guides for the drilling of the holes in the footings and foundations. Holes will be drilled to the required depths and will be spaced to miss the vertical steel piles.
Once the drilling of each hole is completed a liner pipe will be placed in the hole and the casing pipe will be removed to be re-used at adjacent hole locations. The liner pipes will facilitate loading of explosives from above water.

The loading of explosives will begin on a predetermined date. All agencies will be informed of the delivery date and time of the explosives by the explosive distributor. The explosives will be placed in magazines at an USCG approved temporary onload location, the magazines will then be placed on the USCG approved "powder barge" and pushed to the pier, where it will be secured. The loading of the blast will commence and will continue until the structure is loaded. All unused explosive material will be brought back to shore, placed back in the distributors approved truck and returned to their magazine site. Once all excess explosive material has been removed the hole to hole surface connections will be made and blast mats will be placed where the Blaster in Charge deems necessary.

There will be three separate blast events, one for each pier. The waterway will be secured for a 1500 foot radius ½ hour prior to the predetermined shot time. Once it has been secure and all unnecessary personnel are removed from the safety zone the final initiation hook up will be made. The Blaster will exit the safety zone to the dedicated barge from which the blast will be detonated. Five minutes prior to blast time the 5 minute warning will be sounded and the safety zone will be confirmed secure and clear the imminent blast warning will be sounded 1 minute prior to blast time. Once again the safety zone will be confirmed secure and clear. The Blaster will detonate the blast and upon feeling the blast detonated as planned the All Clear will be sounded allowing the waterway to be reopened.

5 minute warning = 3 short blasts of the air horn

Imminent blast warning = 2 short blasts of the air horn

All Clear = 1 long blast of the air horn.

As an alternative method the columns of each pier could be removed conventionally to the top of the footings and each pier could have a coffer dam constructed around it. Once constructed and de-watered the footing and foundation could be drilled in the “dry” by placing the drill rig on top of the footing inside the coffer cell. The loading of explosives could also be conducted inside the cell in the dry. Once the structure is loaded the cell could be flooded to allow the water to act as confinement for the blast debris.

All other drill / blast parameters would remain the same but there would be no requirement for templates, casing pipe or liner pipes.

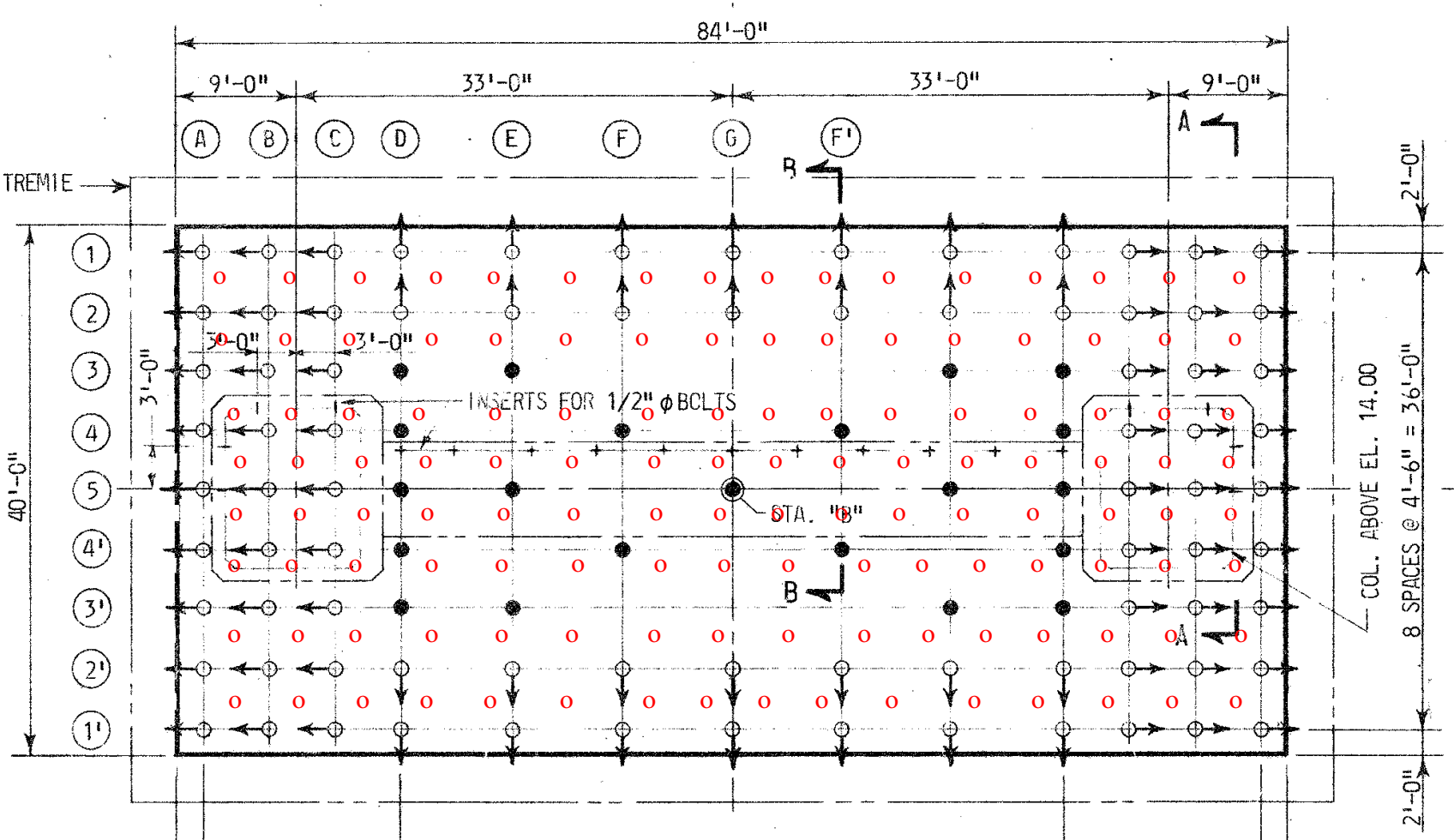
Piers 19-21 Blast Parameters

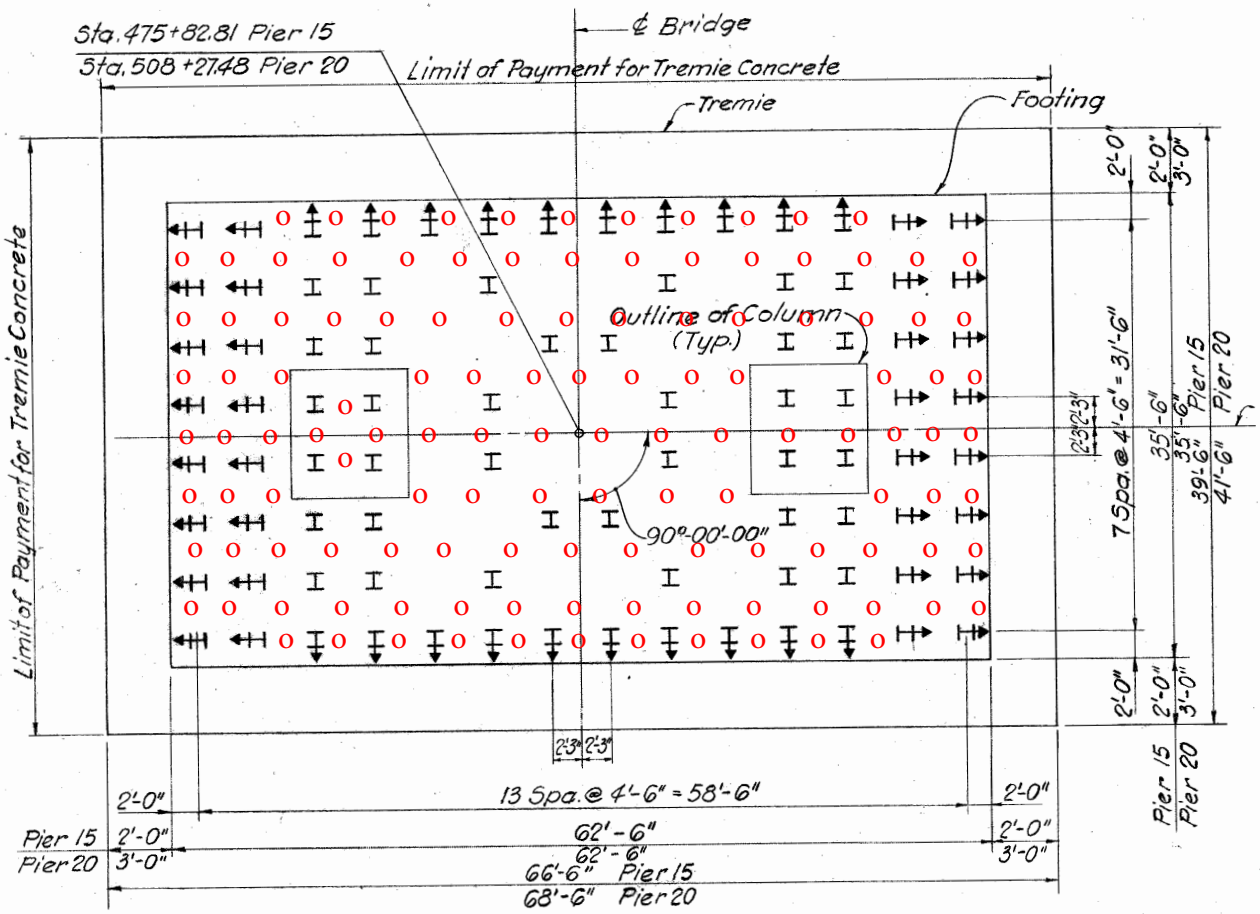
	P19	P20	P21
Number of holes	180	126	163
Hole depth (ft)	36	34	34
Hole diameter(in)	2.75	2.75	2.75
Spacing(ft)	5	4.5	4.5
Burden(ft)	4.5	4.5	4.5
Number of holes	180	126	163
Max. decks per hole	2	2	2
Max. explosives /delay(lb)	30	24	26
Approx. Total explosive(lb)	5500	3000	4300
Average powder factor	1.75	1.75	1.75
Minimum delay (ms)	9	9	9

Estimated Peak Particle Velocity (in/sec) at Utility Trench

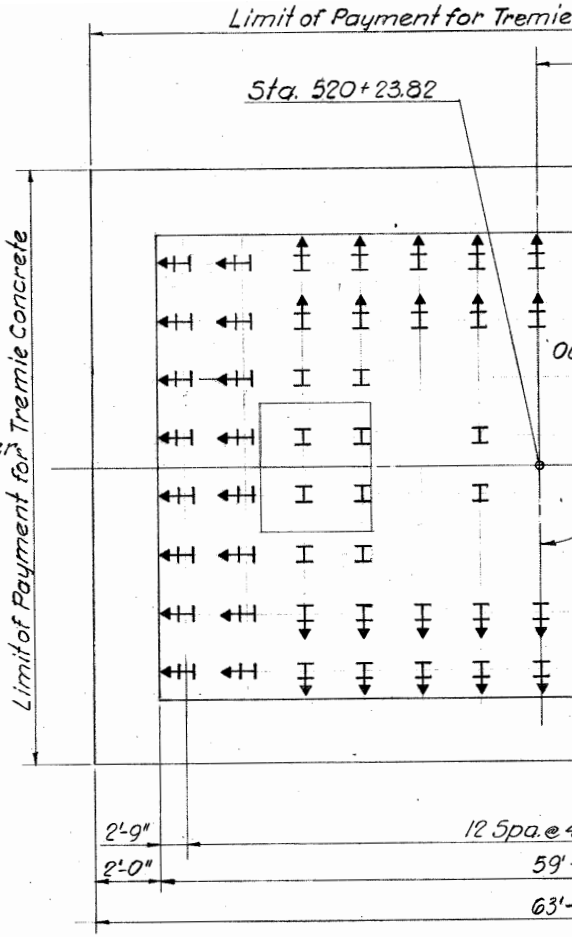
Structure	**Distance(ft)**	**lb/delay**	**K =**	**24.2**	**160**	**240**	**300**
Pier 19	~230	30		0.061	0.405	0.607	0.795
Pier 20	~230	24		0.051	0.338	0.508	0.635
Pier 21	~230	26		0.058	0.383	0.574	0.718

** K value indicates level of confinement of the blast with 24.2 being unconfined and 300 being extremely confined (as a sinking cut in solid bedrock).

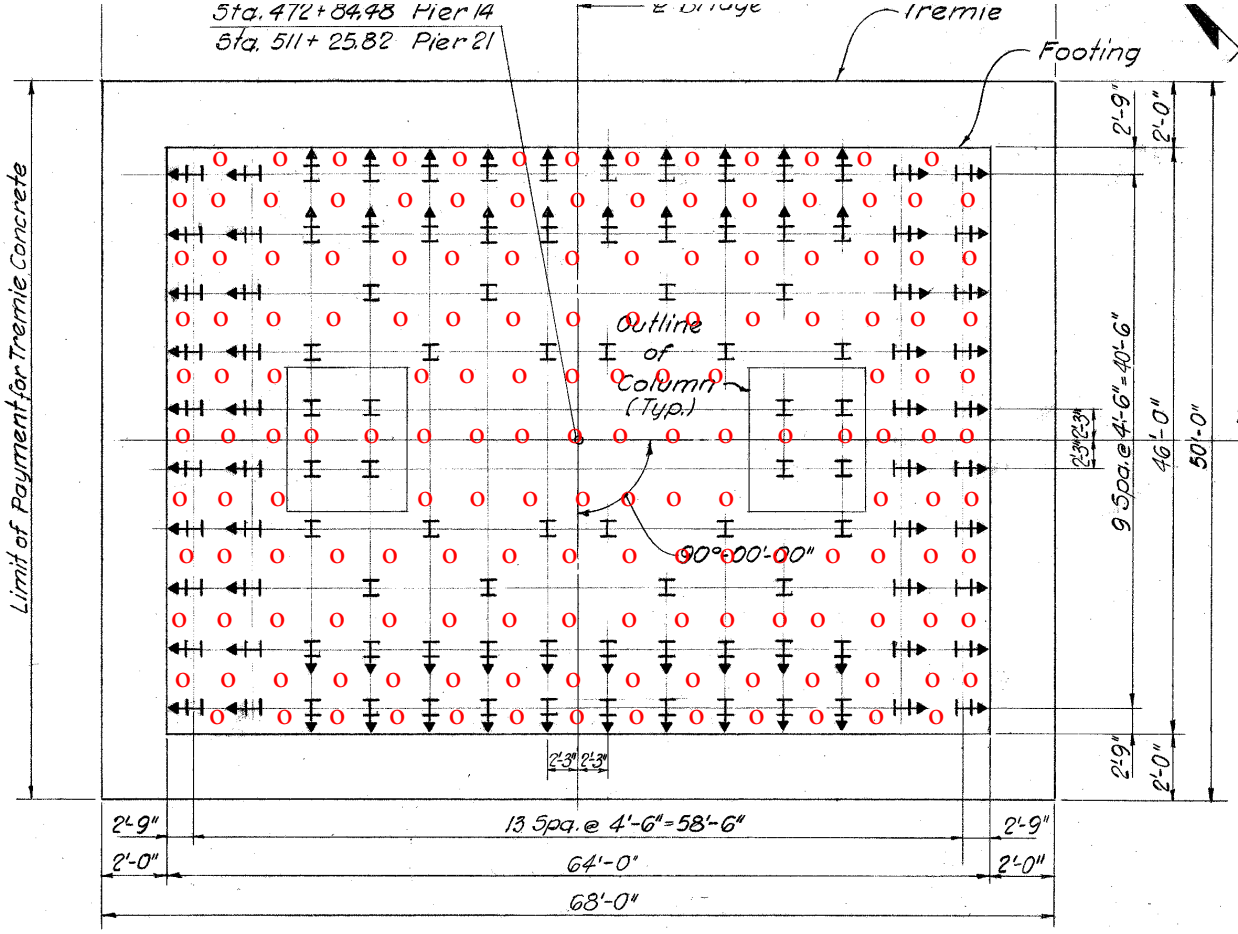

84'-0"
9'-0"
33'-0"
33'-0"
9'-0"
A
B
C
D
E
F
G
F'
TREMIE
1
2
3
4
5
4'
3'
2'
1'
40'-0"
3'-0"
30-0"
3'-0"
INSERTS FOR 1/2" ϕ BOLTS
STA. "B"
B
A
2'-0"
COL. ABOVE EL. 14.00
8 SPACES @ 4'-6" = 36'-0"
2'-0"
℄ PIER
2'-0"
3 SPA. @ 5'-0"
= 15'-0"
6 SPACES @ 8'-4" = 50'-0"
3 SPA. @ 5'-0"
= 15'-0"
2'-0"
SLOPE 1/4"/FT.
EL. 148.
1'-6"
#4
BC
APPR



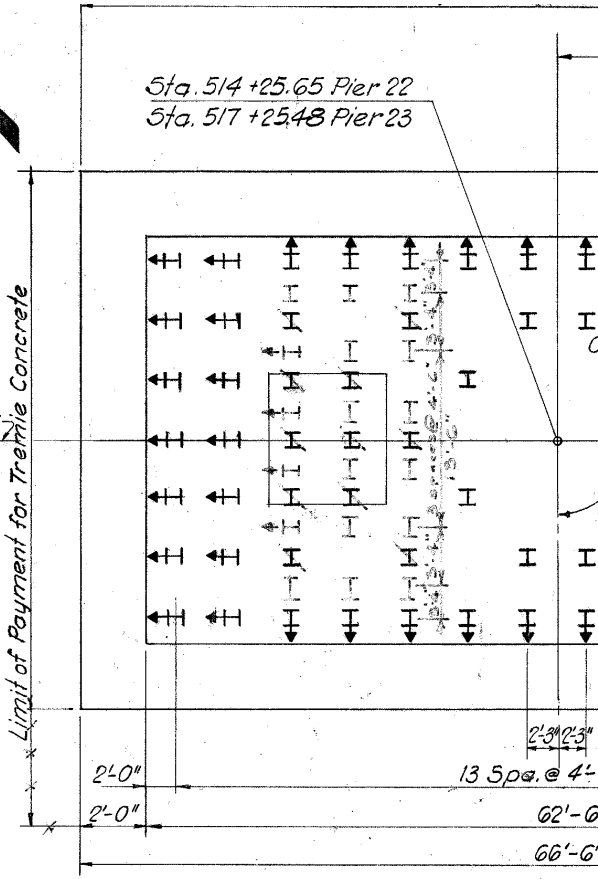
PILE PLAN PIERS 15 & 20



PILE PLAN

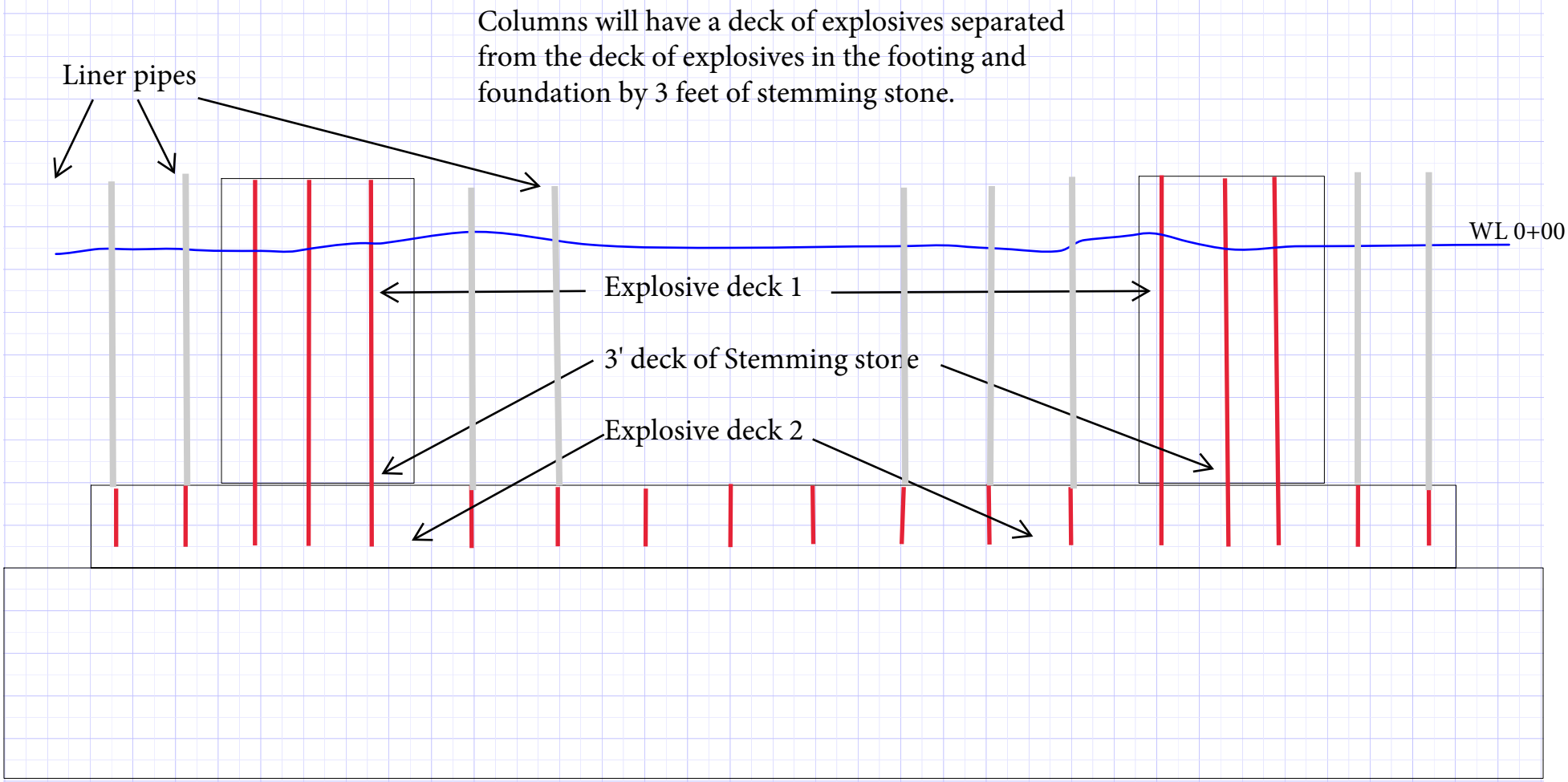


PILE PLAN PIERS 14 & 21



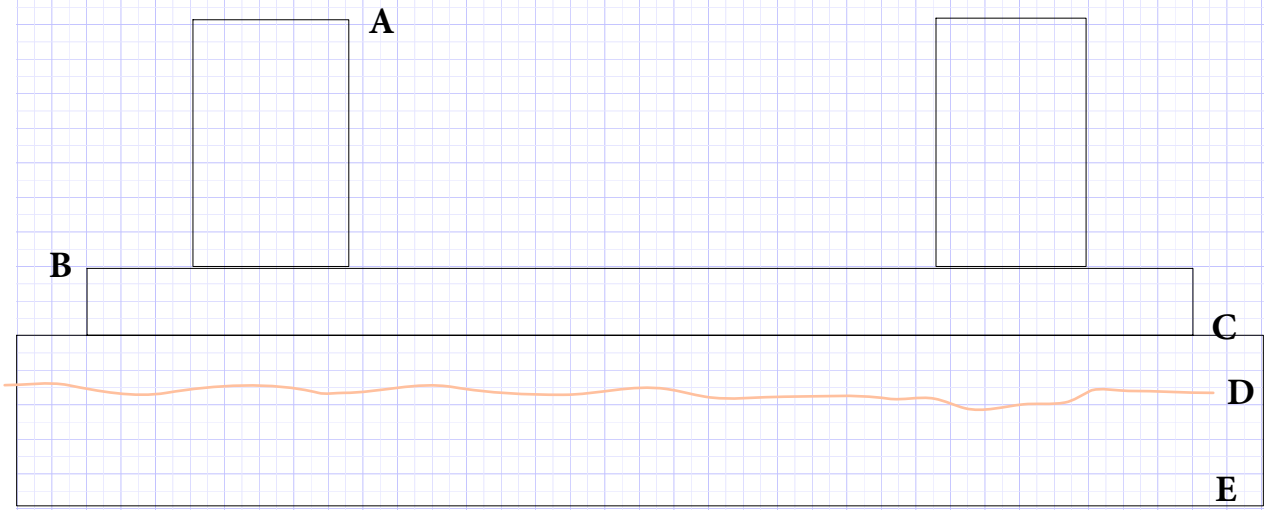
PILE PLAN PIERS

Typical cross sectional view of drilled piers



Holes in footing and foundation will be drilled using a template and casing pipes. Once the holes are drilled liner pipes will be placed in each hole to facilitate loading of explosives from above the water.

Typical Elevations



A - Top of pier
P19 = ~+4
P20 = ~+1
P21 = ~+1

B - Top of footing
P19 = -15
P20 = -15
P21 = -15

C - Top of foundation
P19 = -21
P20 = -23
P21 = -23

D - Mud line (per as builts)
P19 = -25
P20 = -24
P21 = -24

E - Bottom of foundation
P19 = -35
P20 = -26
P21 = -36

Francis Key Scott Bridge Recovery Project

Dolphin B Conceptual Blast Plan

April, 2024

Francis Scott Key Bridge Dolphin B Removal

Conceptual Blast Plan

As part of the recovery of the collapsed Francis Scott Bridge and opening a usable shipping channel Dolphin B must be removed. Conventional demolition methods and drilling and blasting will be employed to facilitate removal of the structure. Conventional demolition methods will be used to remove the reinforced and top section of the structure including the sheet pile leaving top of structure at elevation +4. The remaining sheet pile will be pre-cut by divers from +4 to mud line (-26) with vertical cuts on 6 ft spacings and horizontal cuts on 8 ft spacings. The Dolphin will be drilled vertically from the top using a Sandvik DX800 drill rig with an onboard dust collection system and electronic hole alignment. The drill will be staged on a barge. Holes will be drilled 32 feet from the top of the Dolphin and will be 2.75" in diameter. The holes in the outer most ring will be spaced to miss intercepting the vertical steel piles.

Once all drilling is complete the loading of explosives will begin on a predetermined date. All agencies will be informed of the delivery date and time of the explosives by the explosive distributor. The explosives will be placed in magazines at an USCG approved temporary onload location, the magazines will then be placed on the USCG approved "powder barge" and pushed to the Dolphin where it will be secured. The loading of the blast will commence and will be completed that day. All unused explosive material will be brought back to shore, placed back in the distributors approved truck and returned to their magazine site. Once all excess explosive material has been removed the surface connections will be made and blast mats will be b placed over the top of the Dolphin.

The waterway will be secured for a 1500' radius ½ hour prior to the predetermined shot time. Once it has been secure and all unnecessary personnel are removed from the safety zone the final initiation hook up will be made. The Blaster will exit the safety zone to the dedicated barge from which the blast will be detonated. Five minutes prior to blast time the 5 minute warning will be sounded and the safety zone will be confirmed secure and clear the imminent blast warning will be sounded 1 minute prior to blast time. Once again the safety zone will be confirmed secure and clear. The Blaster will detonate the blast and upon feeling the blast detonated as planned the All Clear will be sounded allowing the waterway to be reopened.

5 minute warning = 3 short blasts of the air horn

Imminent blast warning = 2 short blasts of the air horn

All Clear = 1 long blast of the air horn.

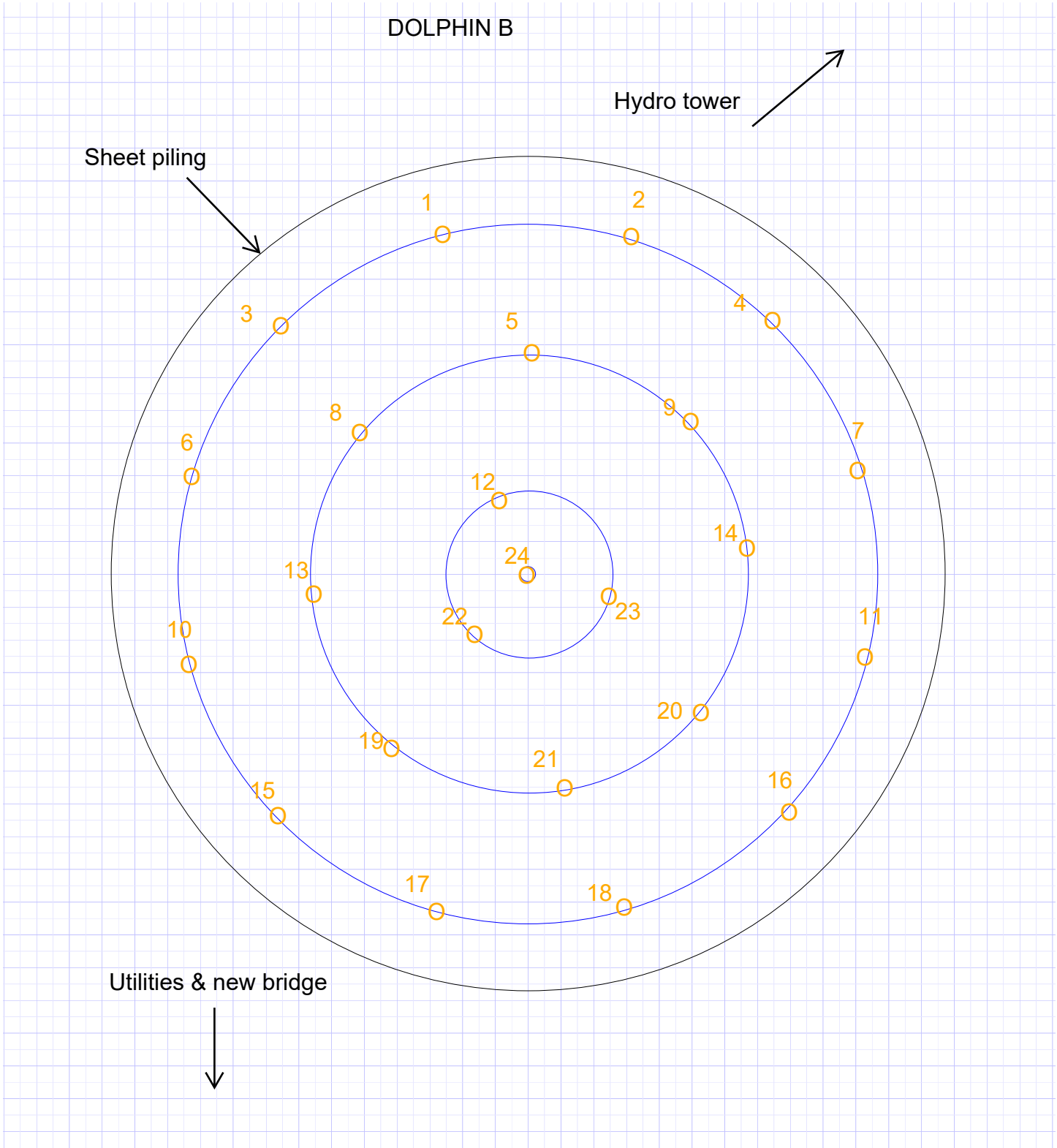
The blast will initiate at the furthest point away from the buried/submerged utilities to help minimize impact from blast induced ground vibrations. The Dolphin is essentially “free standing” and vibrations generated in the substrate will be much less than seen from blasting in situ rock. The predicted PPV for the maximum weight of explosives per delay are listed below. The K value is an indicator of confinement used in the established PPV prediction equation PPV = ((distance/explosive wt^0.5)^-1.6)*K.

Industry established K values:

24.2 = little or no confinement, 160 = typical confinement, 240 = heavy confinement

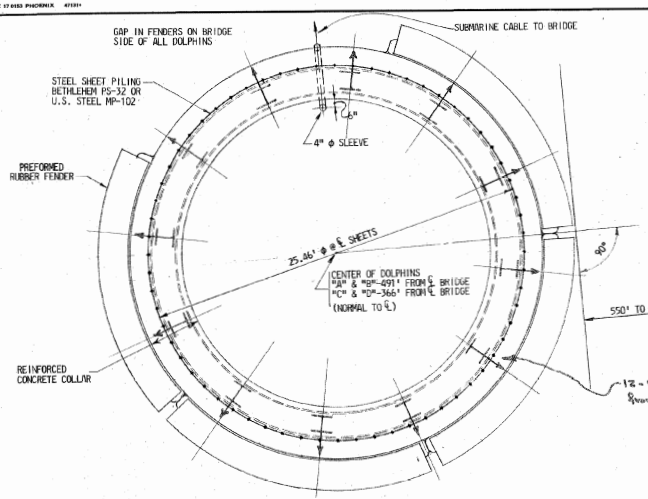
Predicted vibration for 49 lbs / delay

Structure	Distance from blast (ft)	PPV (ips)	K=24.2	K=160	K=240
Utility lines	150		0.187	1.187	1.781
Hydro tower base	450		0.031	0.250	0.307



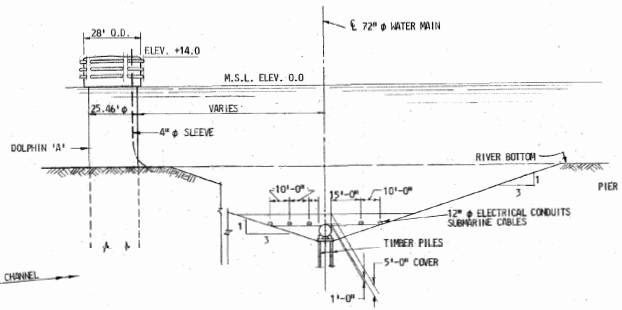
Blast Parameters

Number of holes = 24
Hole diameter = 2.75"
Hole depth = 32'
Spacing = 5.5'
Burden = 4 - 4.5'
Collar height = 4'
Explosive column = 28'
Approx. total explosives wt. = ~1123 lb
Max. explosive / delay = 47 lb
Overall powder factor = 1.8 (ranges 1 - 2)
Delay between detonations = 17ms Total shot duration = 391ms
Initiation - Nonel dual delay detonators.
Explosive - Dynomax Pro.
Shot sequence as numbered on sketch.
All explosive columns will be double primed, one detonator in bottom and one near the top for redundancy.
Sheet pile to be Pre-cut.



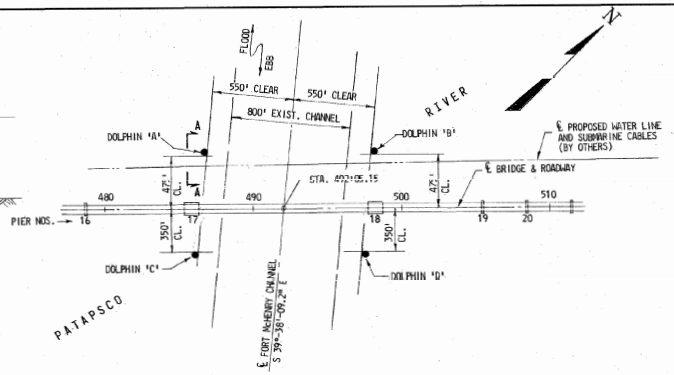
PLAN OF DOLPHIN

SCALE: 1/4" = 1'-0"



SECTION A-A

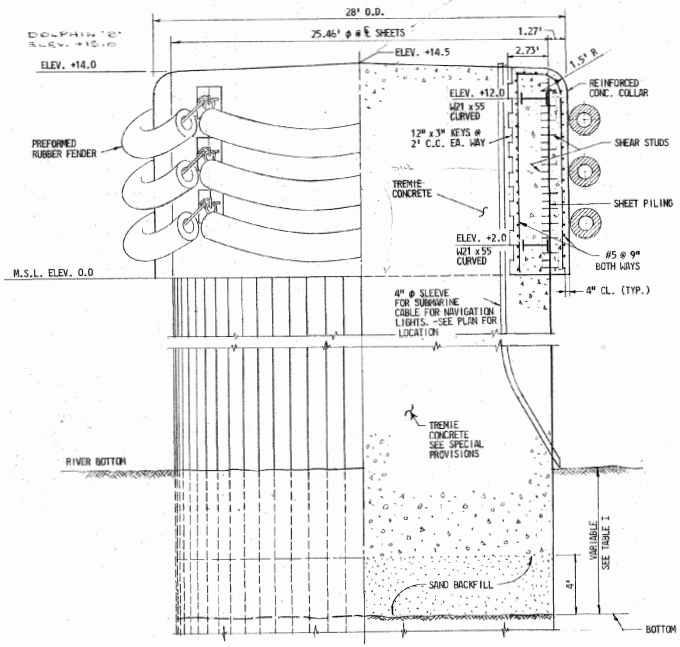
NO SCALE



LOCATION PLAN

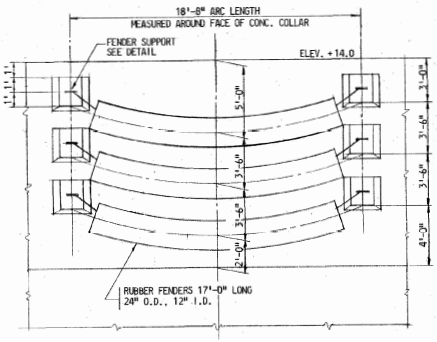
SCALE: 1" = 400'

NOTE: DOLPHIN 'B' SHOWN. DOLPHIN 'A' SIMILAR EXCEPT ELEV. FIG. 5



HALF ELEVATION HALF SECTION

SCALE: 1/4" = 1'-0"

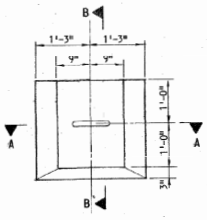


FENDER ARRANGEMENT

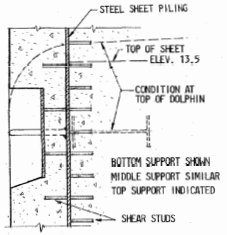
DEVELOPED VIEW

SCALE: 1/4" = 1'-0"

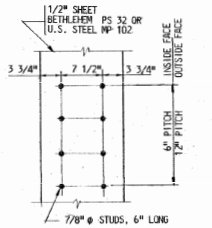
TABLE I			
DOLPHIN	ELEVATION		
	BOTTOM OF EXC.	BOTTOM OF TREMIE	RIVER BOTTOM
A	- 52	- 48	- 40
B	- 52	- 48	- 26
C	- 52	- 48	- 40
D	- 52	- 48	- 26



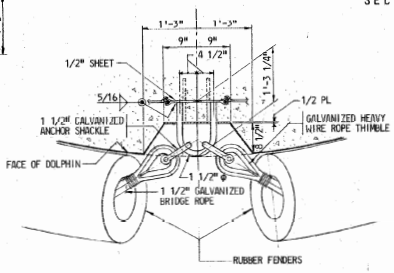
ELEVATION



SECTION B-B



SHEAR STUD PATTERN



SECTION A-A

FENDER SUPPORT DETAILS

TYPICAL EXCEPT AS NOTED

SCALE: 3/4" = 1'-0"

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-102.

THE SHEET PILING SHALL BE DRIVEN AS SPECIFIED.

MATERIAL INSIDE THE SHEETING SHALL BE EXCAVATED TO ELEVATIONS INDICATED IN TABLE I.

All elevations above shall be as per the U.S. Coast & Geodetic Survey datum.

AS BUILT

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION BALTIMORE, MD. BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE DOLPHINS

SCALE AS NOTED DATE JAN., 1972 CONTRACT OT-8

MADE BY E.B.M.

TRACED BY E.B.M.

CHECKED BY E.E.B.

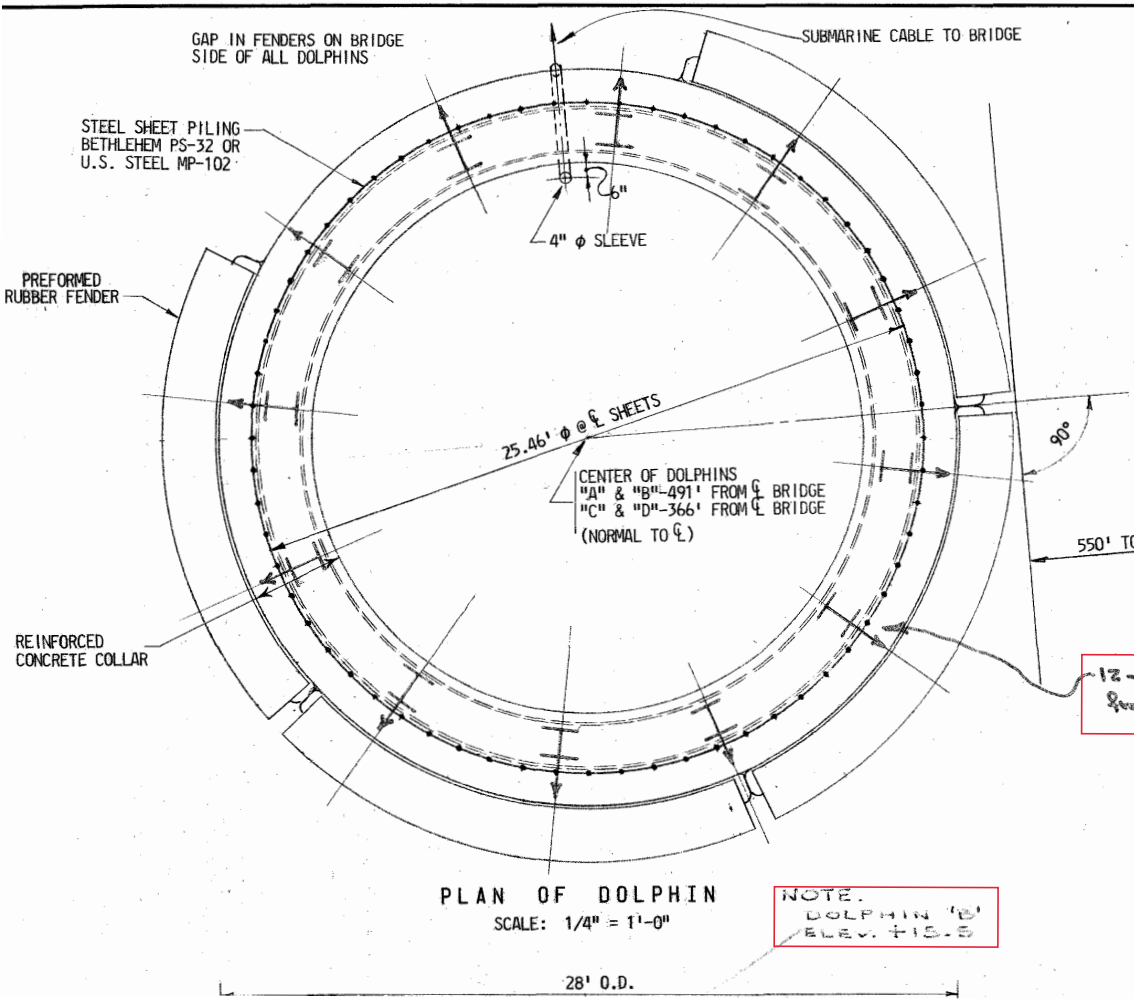
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-115

SHEET NO. 15 OF 24

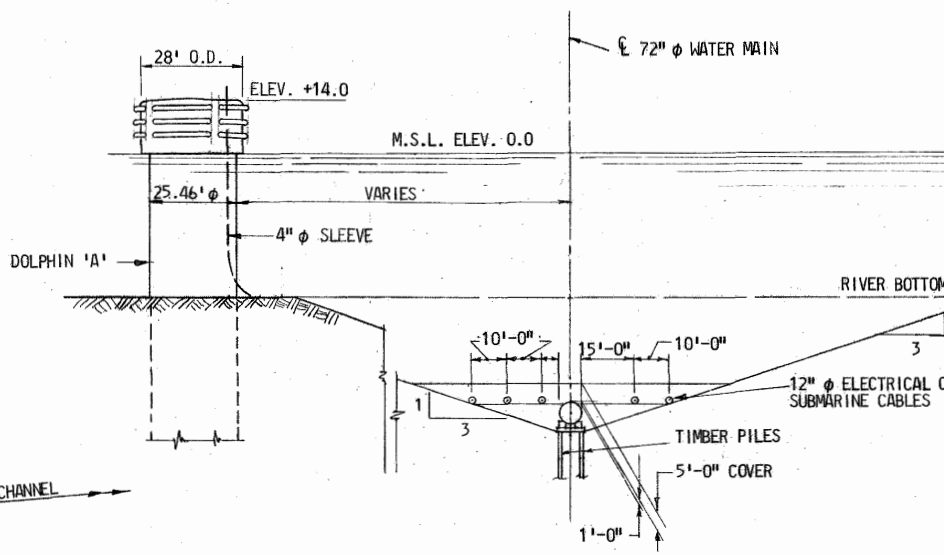
INDEX D

File No. Pocket No. Folder No.



PLAN OF DOLPHIN
SCALE: 1/4" = 1'-0"

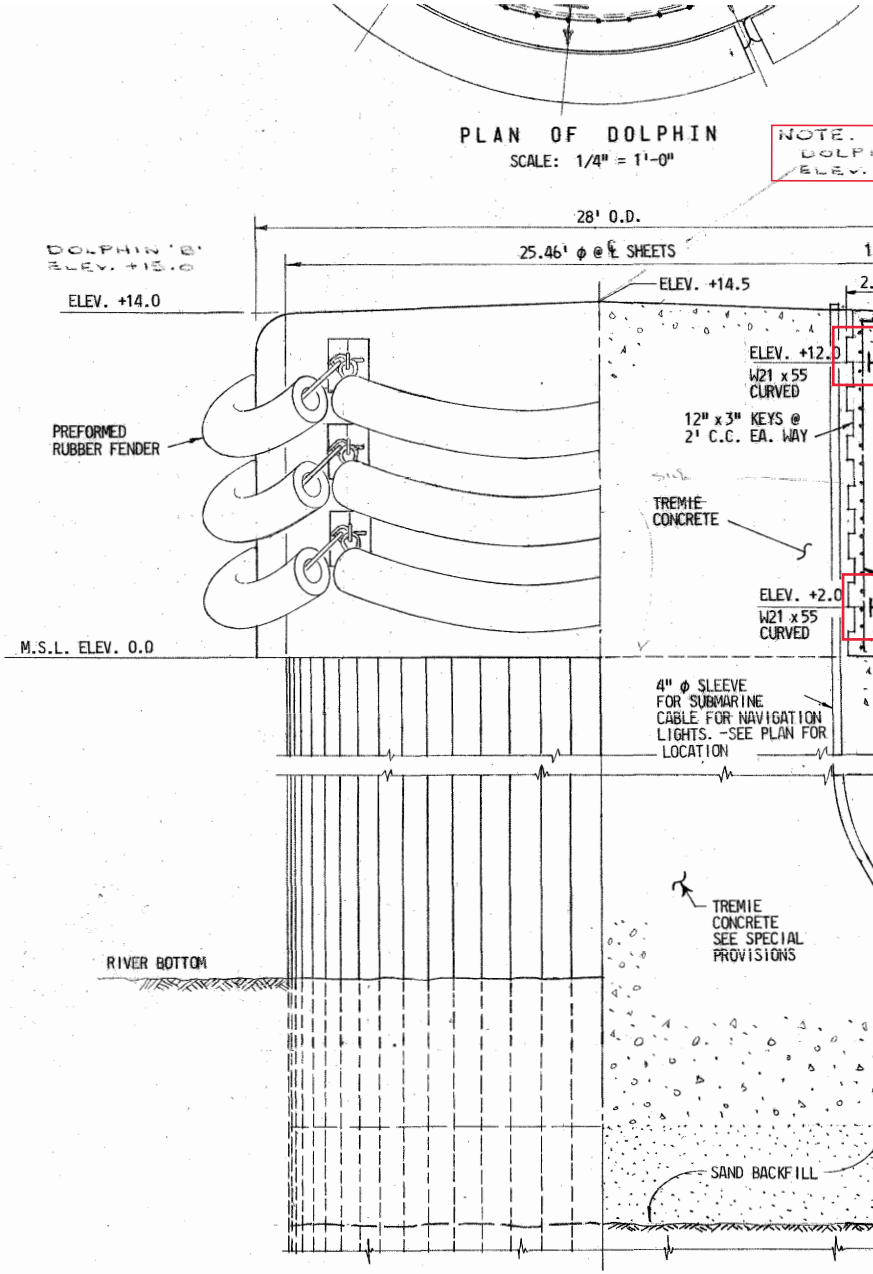
NOTE.
DOLPHIN 'B'
ELEV. +15.5

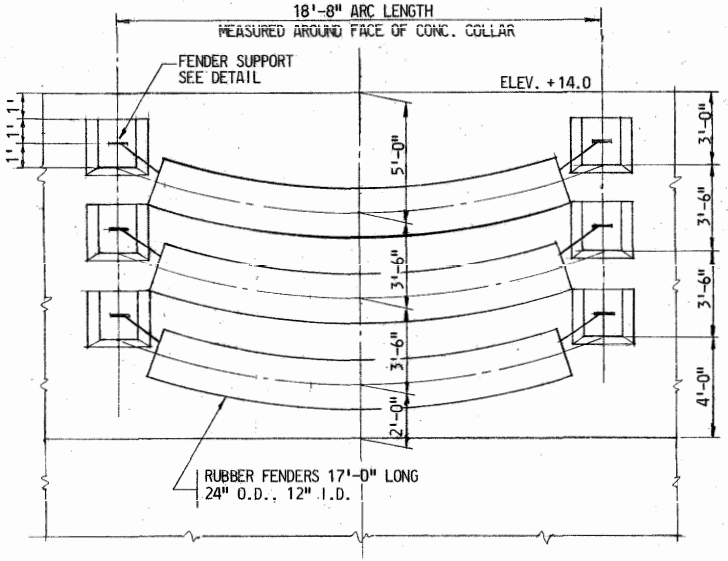


SECTION A-A
NO SCALE

28' O.D.

18'-8" ARC LENGTH





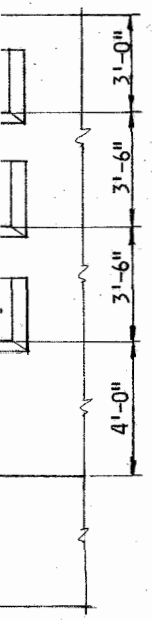
FENDER ARRANGEMENT
DEVELOPED VIEW
SCALE: 1/4" = 1'-0"

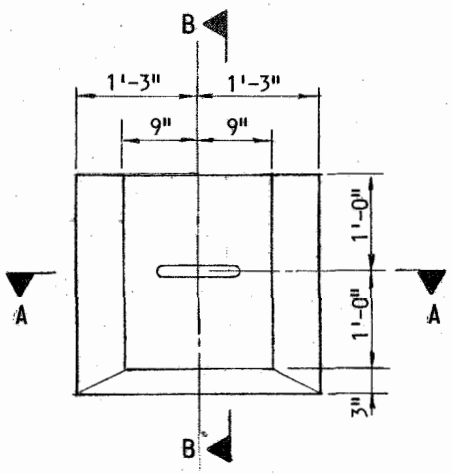
TABLE I

DOLPHIN	ELEVATION		
	BOTTOM OF EXC.	BOTTOM OF TREMIE	RIVER BOTTOM
A	- 52	- 48	- 40
B	- 52	- 48	- 26
C	- 52	- 48	- 40
D	- 52	- 48	- 26

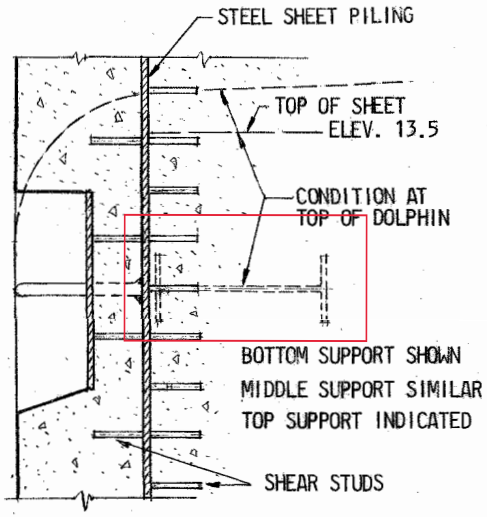
1 1/2"
ANCHOR

FACE OF DOLPH

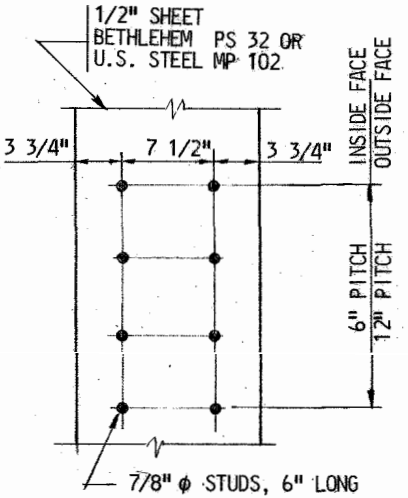




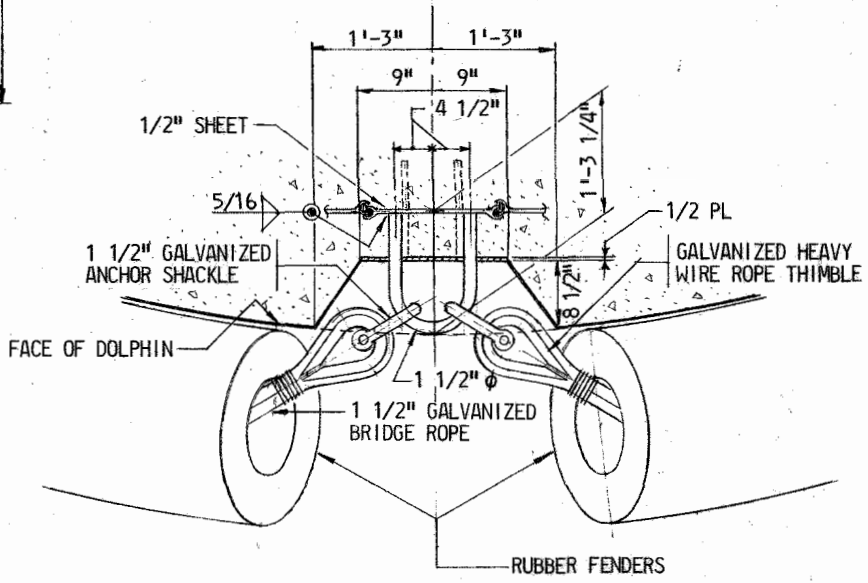
ELEVATION



SECTION B-B



SHEAR STUD PATTERN



SECTION A-A

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-102.

THE SHEET PILING SHALL BE DRIVEN AS SPECIFIED.

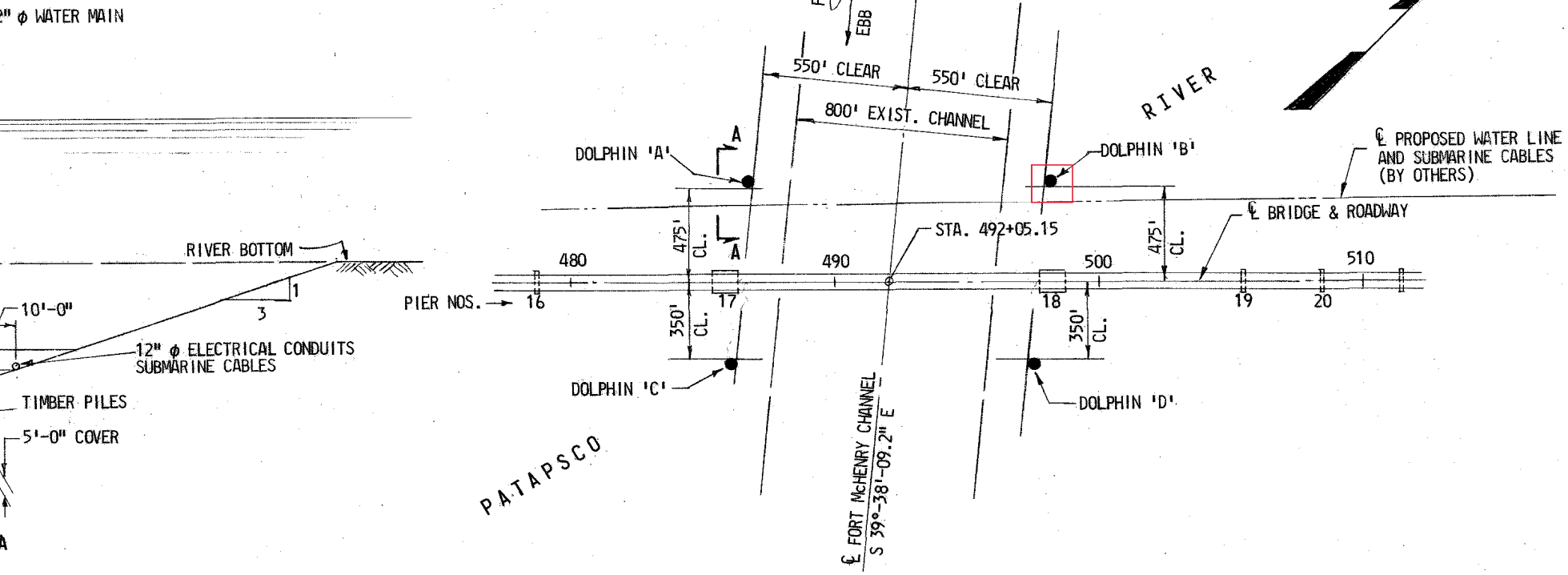
MATERIAL INSIDE THE SHEETING SHALL BE EXCAVATED TO ELEVATIONS INDICATED IN TABLE I.
All elevations this sheet subject to Note 12 Dwg. A-102 Contract ST-849.

AS BUILT

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

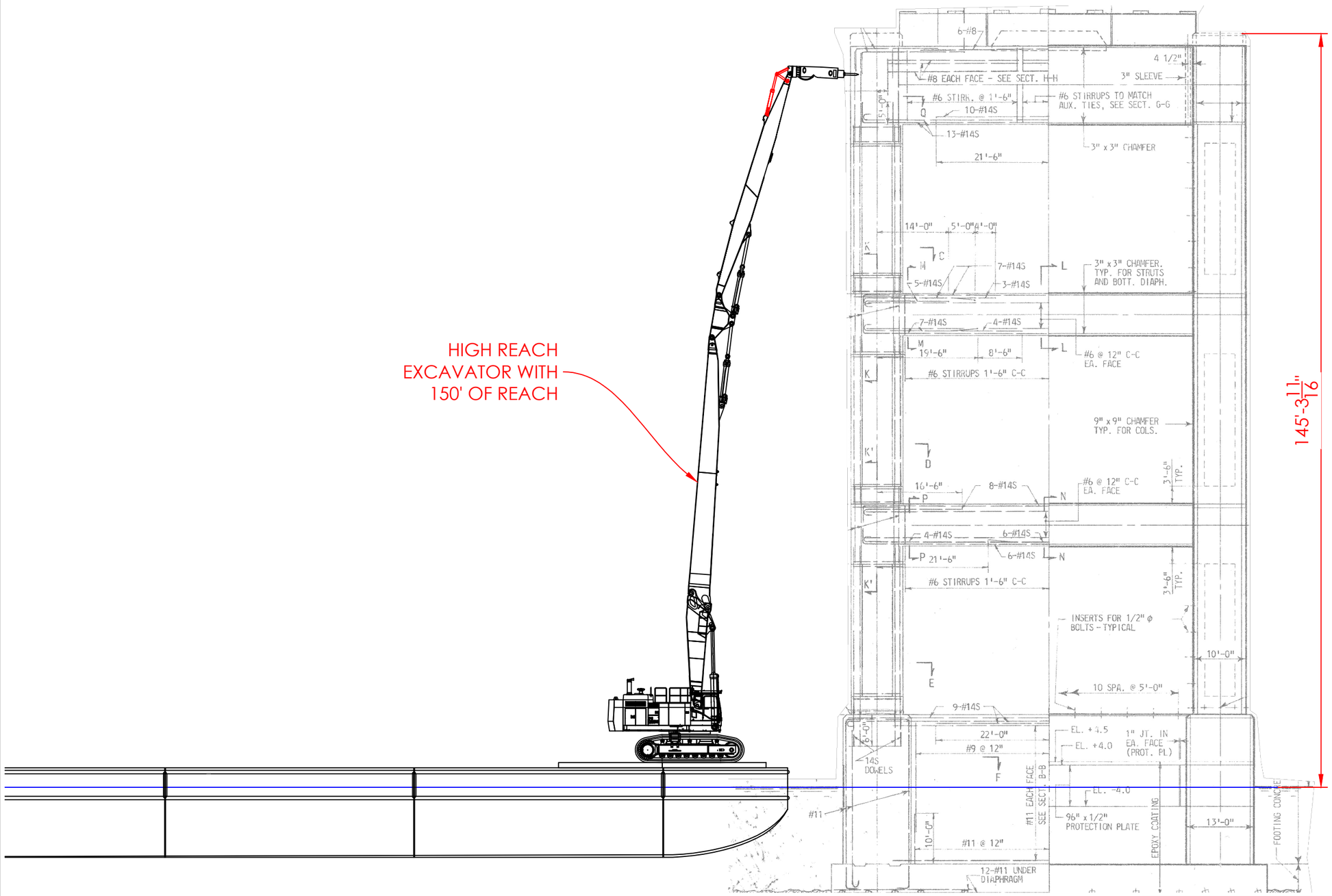
BALTIMORE HARBOR OUTER CROSSING



LOCATION PLAN

SCALE: 1" = 400'

PIER HAMMERING EXAMPLE



SCALE 1" = 20'

IT IS A VIOLATION OF THE PROFESSIONAL LICENSE LAW FOR ANY PERSON TO ALTER THE DRAWING IN ANY WAY, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER/ARCHITECT AS APPLICABLE. THE ALTERING ENGINEER/ARCHITECT SHALL AFFIX HIS/HER SEAL AND THE NOTATION 'ALTERED BY' FOLLOWED BY HIS/HER SIGNATURE AND DATE OF ALTERATION.	OWNER: MDTA 2310 BROENING HIGHWAY BALTIMORE, MD 21224	DEMOLITION CONTRACTOR:	DRAFTER		4		FRANCIS SCOTT KEY BRIDGE REMAINING DEMOLITION PIER 16 SHOWN	
			CHECKER		3			
			SUPERVISOR		2			
					1		PIER REMOVAL HAMMERING	DWG. NO. D-1
					0			
					NO.	DATE		

C:\Users\KINETIC\DEMO\Kinetic Demo Dropbox\AutoCAD\Key Bridge\Rigging.dwg

SAMPLE ENGINEERED WORK PLAN

KEY BRIDGE
KEY BRIDGE DEMOLITION

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REMARKS	BY
△			
△			
△			

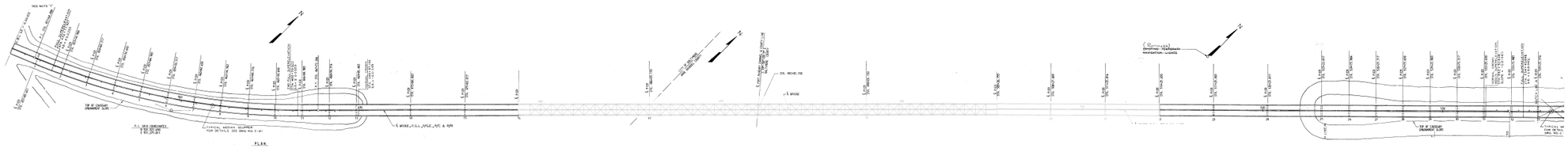
TITLE PAGE
KEY BRIDGE DEMOLITION

DRAWN BY CHCK'D BY

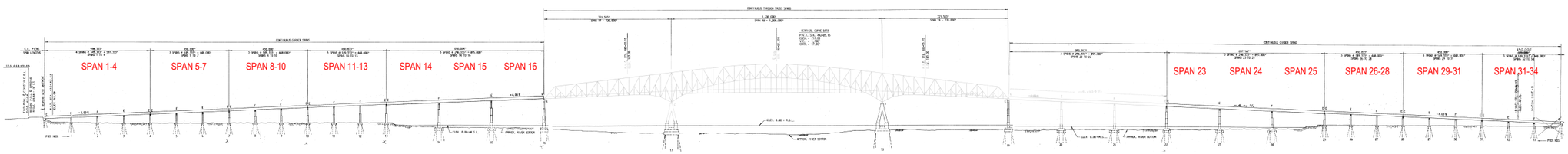
DATE

PROJECT

SHEET NO.



PLAN



ELEVATION

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REMARKS	BY
△			
△			
△			

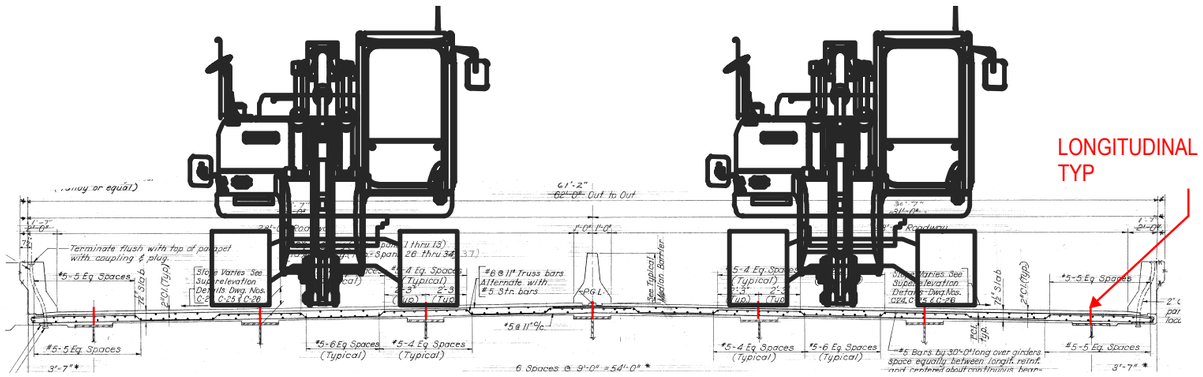
GENERAL LAYOUT
KEY BRIDGE DEMOLITION

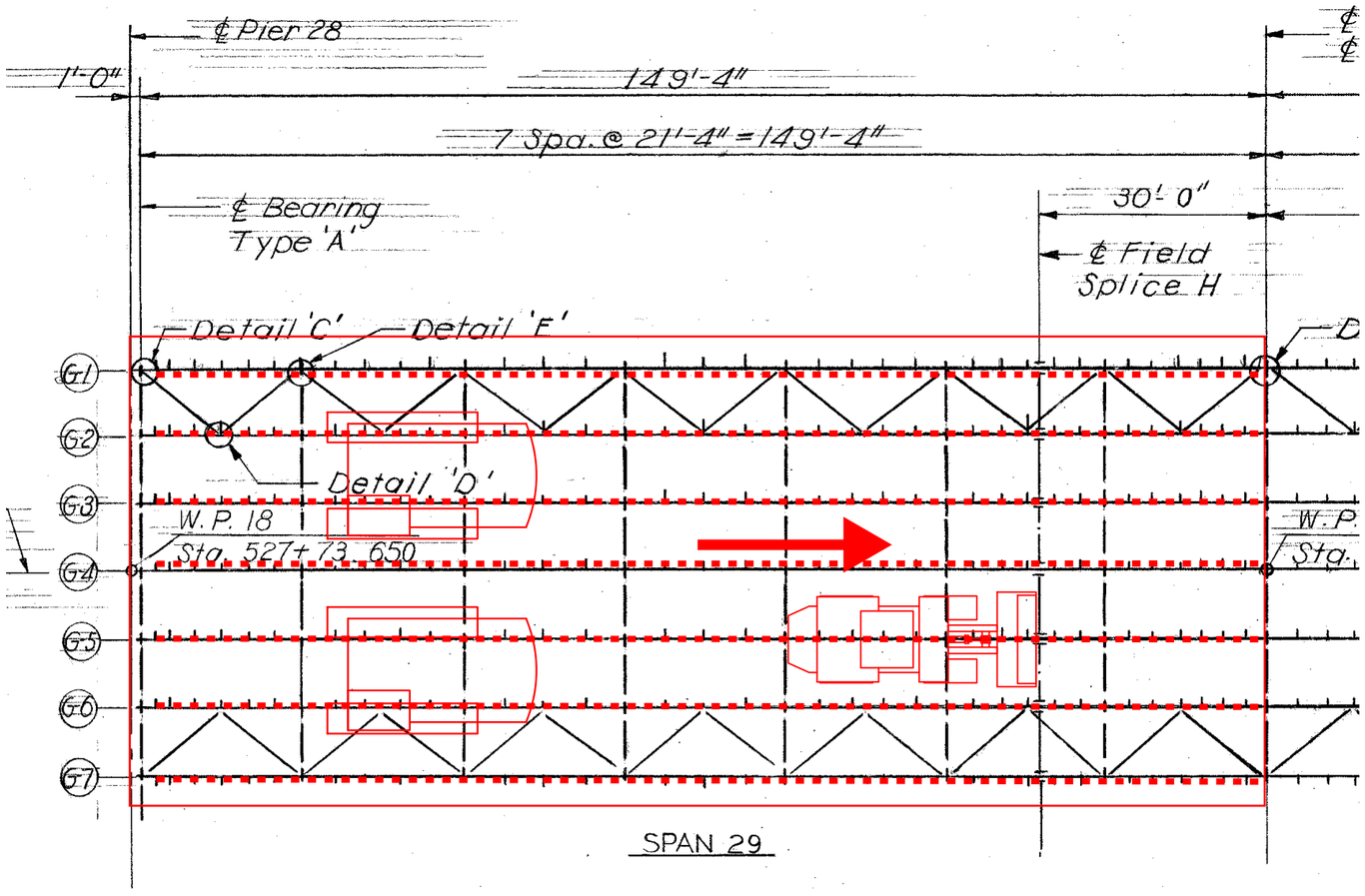
DRAWN BY CHCK'D BY

DATE

PROJECT

SHEET NO.





DECK DEMOLITION SEQUENCE
1. SAW AND REMOVE OVERHANG BARRIER AND DECK
2. LONGITUDINAL SAW DECK
3. WITH EXCAVATOR, PULL BACK SECTION OF DECK, CUT/BREAK REBAR, HAUL PANEL OFF DECK WITH LOADER

REPEAT FOR ENTIRE DECK

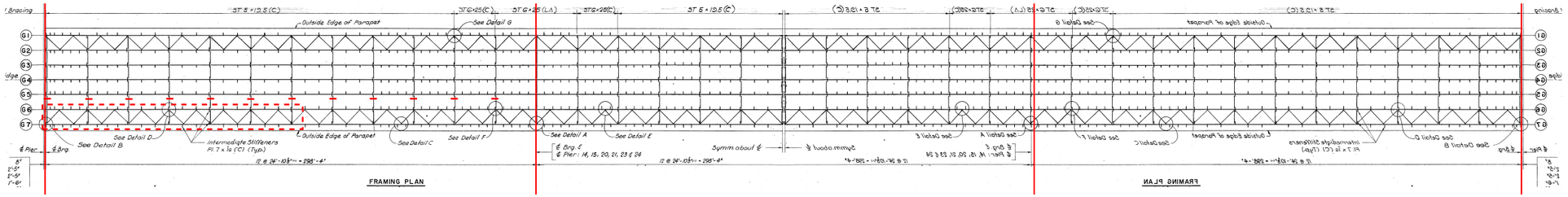
PRELIMINARY
NOT FOR CONSTRUCTION

GENERAL DECK DEMOLITION
KEY BRIDGE DEMOLITION

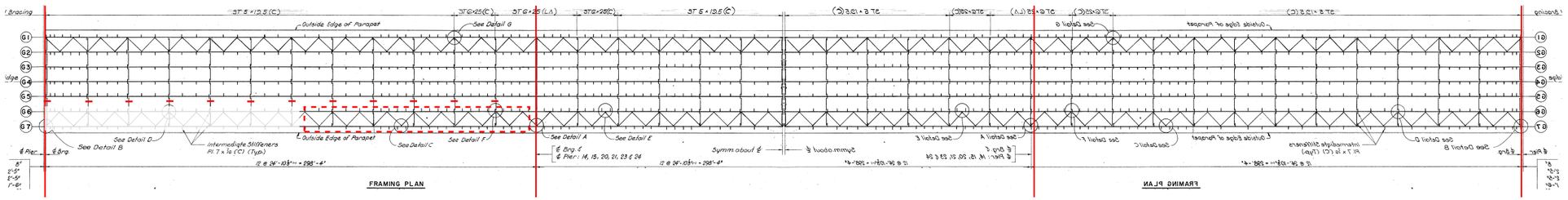
NO.	DATE	REMARKS	BY
△			
△			
△			

DRAWN BY CHCK'D BY
DATE
PROJECT
SHEET NO.

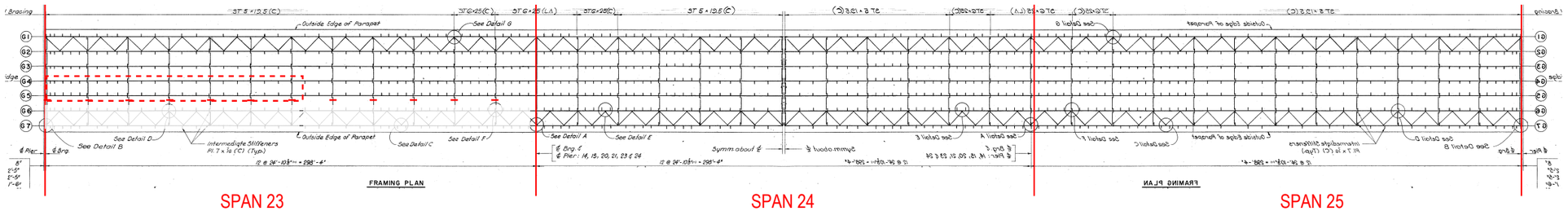
STEP 1 -
CUT CROSSFRAMES BETWEEN G6 & G5
HOIST G6&G7. APPROX WT = 100 TNS



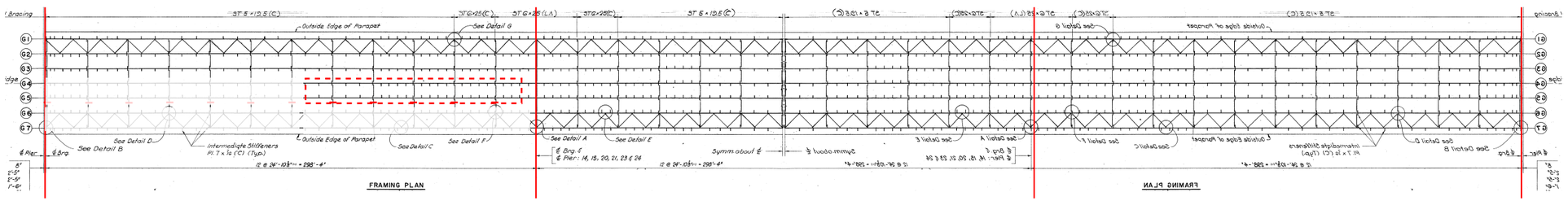
STEP 2 -
CUT CROSSFRAMES BETWEEN G6 & G5
HOIST G6&G7. APPROX WT = 75 TNS



STEP 3 -
CUT CROSSFRAMES BETWEEN G3 & G4
HOIST G4&G5. APPROX WT = 100 TNS



STEP 4 -
CUT CROSSFRAMES BETWEEN G3 & G4
HOIST G4&G5. APPROX WT = 75 TNS



PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REMARKS	BY
△			
△			
△			

STEEL DEMOLTIION SPANS 23-25
KEY BRIDGE DEMOLITION

DRAWN BY CHCK'D BY

DATE

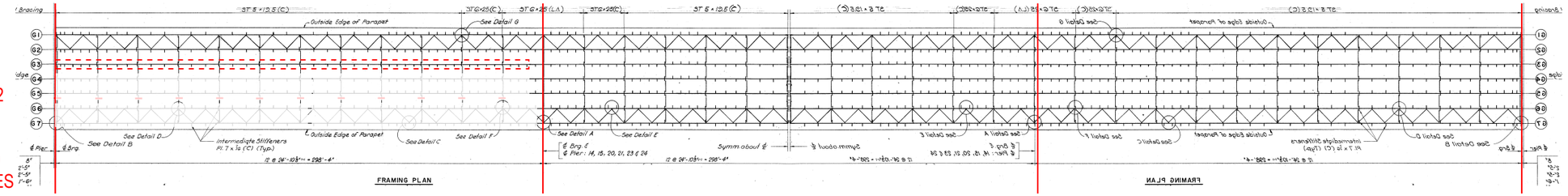
PROJECT

SHEET NO.

STEP 5 -
RIG TO G3 WITH SPREADER
CUT CROSSFRAMES BETWEEN G3 & G2
HOIST G3. APPROX WT = 90 TNS

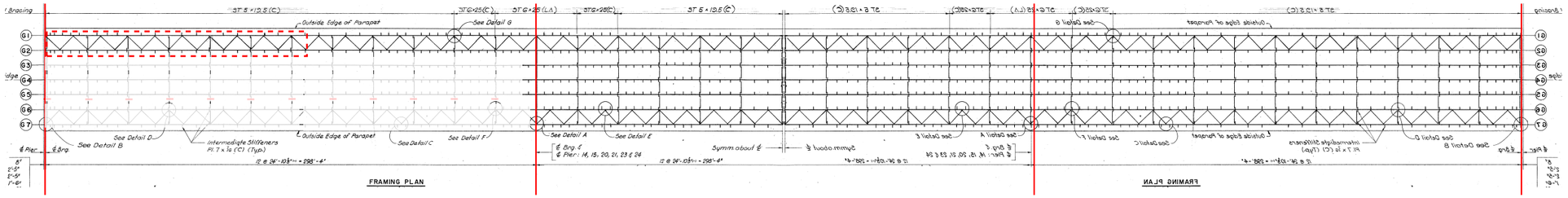
MAY ALSO TAKE PARTIAL LENGTH AND
KEEP CONNECTED WITH CROSSFRAMES

SPAN 23 SPAN 24 SPAN 25



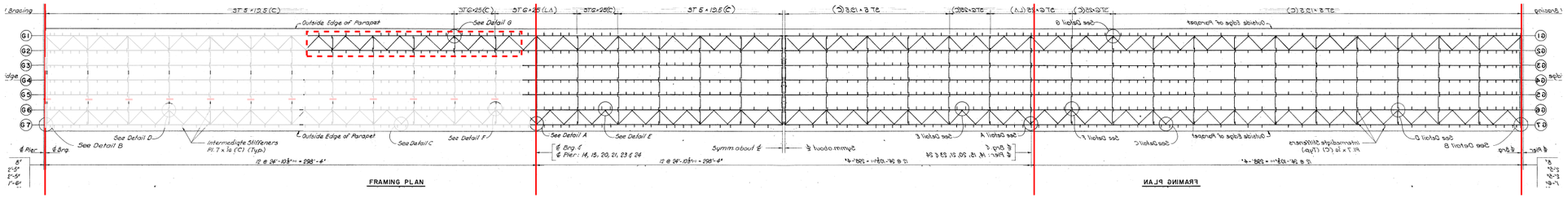
STEP 6 -
HOIST G1&G2. APPROX WT = 100 TNS

SPAN 23 SPAN 24 SPAN 25



STEP 7 -
HOIST G1&G2. APPROX WT = 75 TNS

SPAN 23 SPAN 24 SPAN 25



REPEAT SAME STEPS FOR SPAN 24

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REMARKS	BY
△			
△			
△			

STEEL DEMOLTIION SPANS 23-25
KEY BRIDGE DEMOLITION

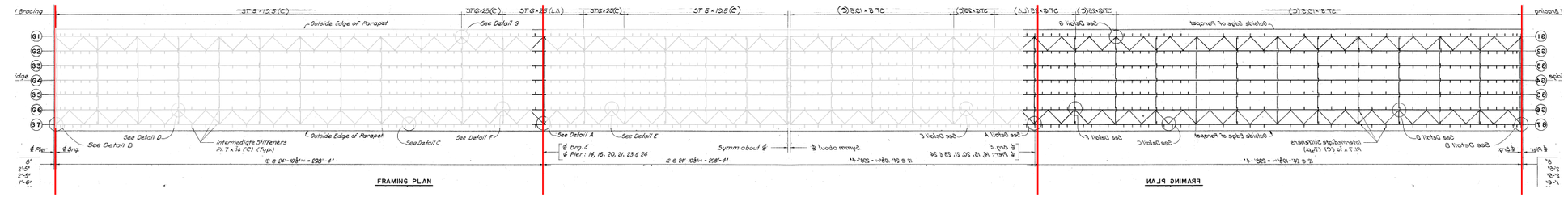
DRAWN BY CHCK'D BY

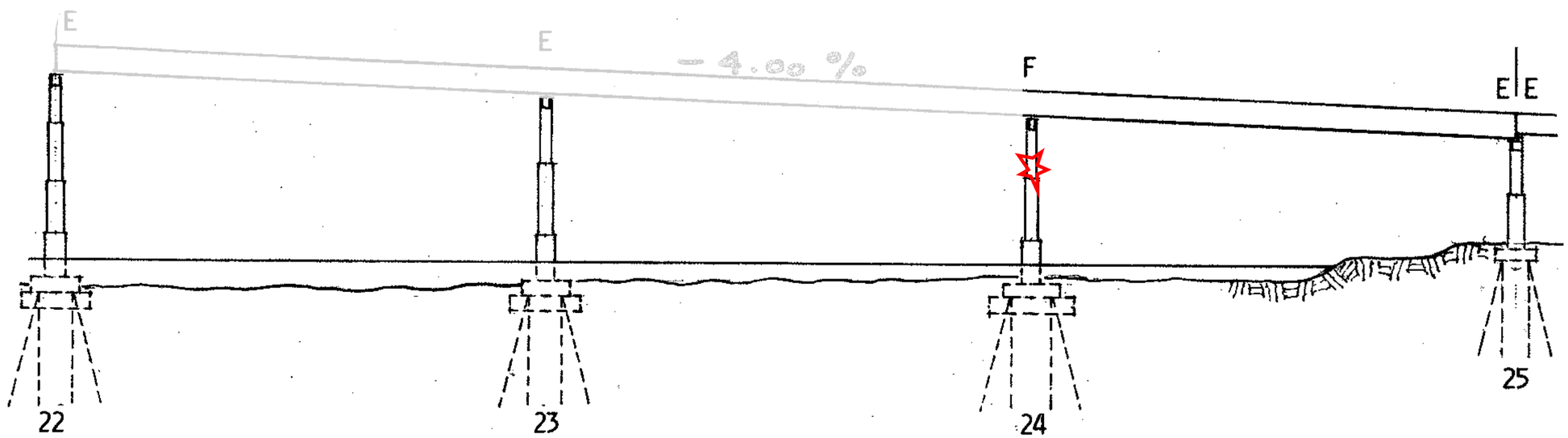
DATE

PROJECT

SHEET NO.

STEP 8-
BLAST PIER 24 AND DROP SPAN 25
RETRIEVE WITH DREDGE





PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REMARKS	BY
△			
△			
△			

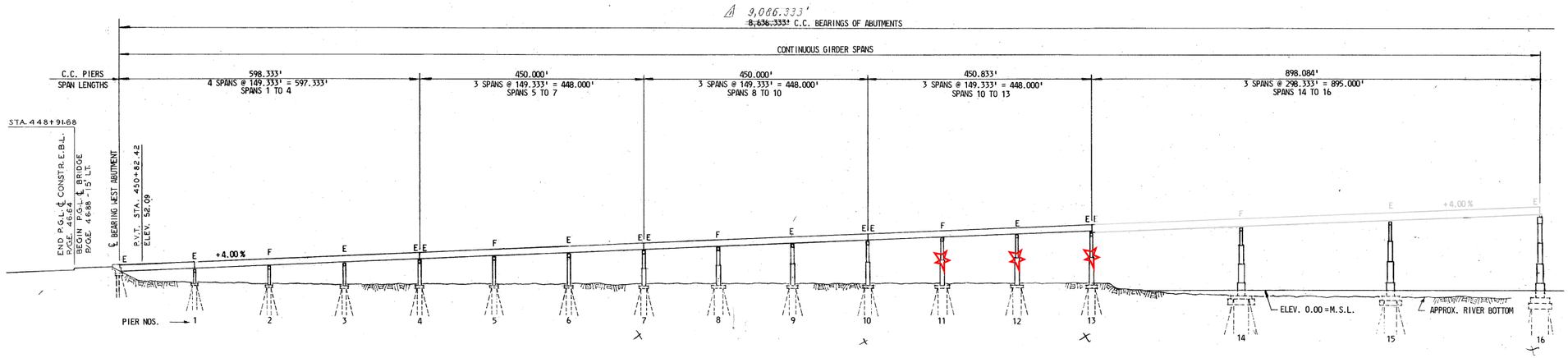
STEEL DEMOLTIION SPANS 23-25
KEY BRIDGE DEMOLITION

DRAWN BY CHCK'D BY

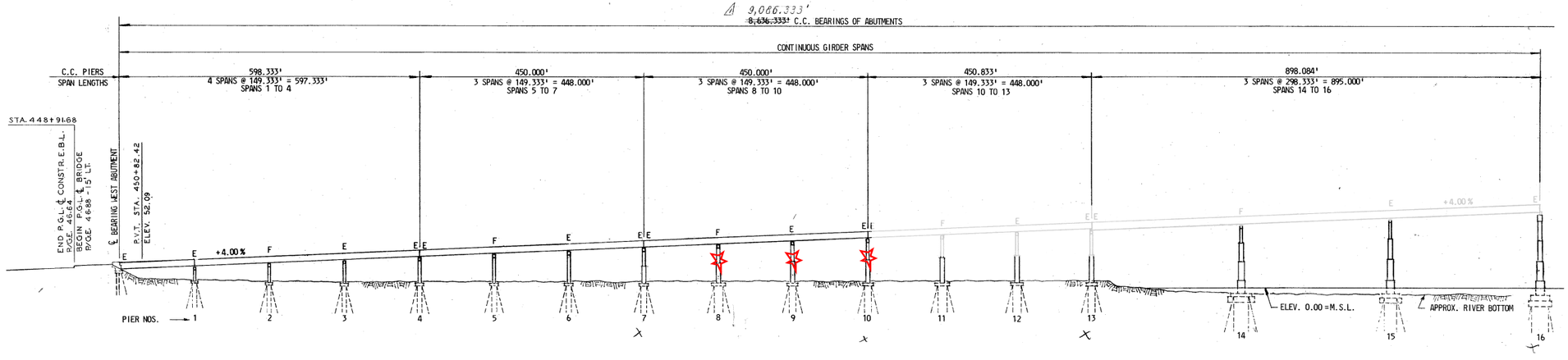
DATE

PROJECT

SHEET NO.



STEP 1
BLAST PIERS 11, 12, 13 TO
DROP SPANS 11, 12, & 13
RETRIEVE WITH DREDGE



STEP 2
BLAST PIERS 8, 9, 9 TO
DROP SPANS 8, 9, & 10
RETRIEVE WITH DREDGE

REPEAT FOR ALL REMAINING
APPROACH SPANS

SIMILAR FOR SPANS 26 - 34

PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REMARKS	BY
△			
△			
△			

STEEL DEMOLTIION SPANS 1-13
KEY BRIDGE DEMOLITION

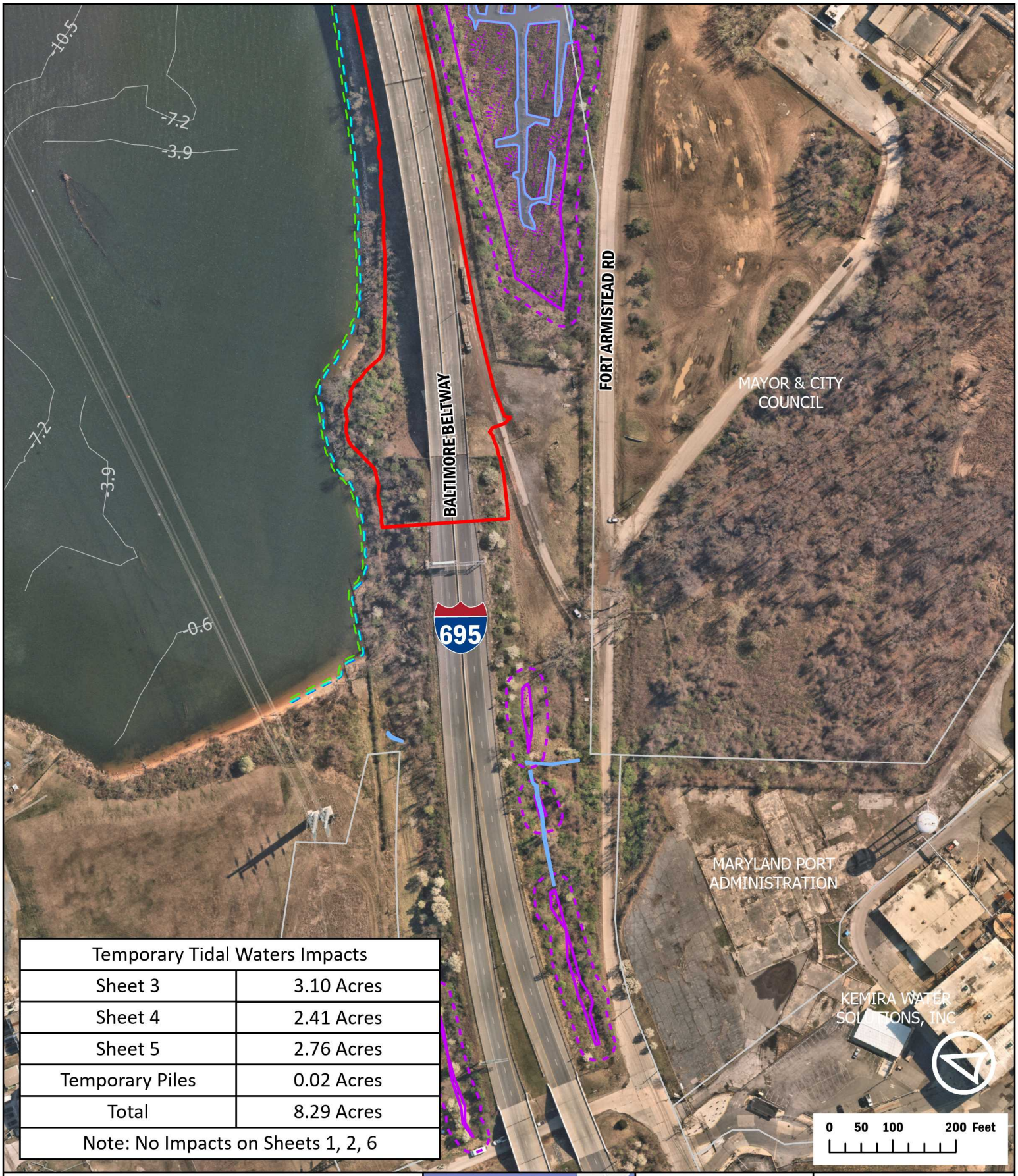
DRAWN BY CHCK'D BY

DATE

PROJECT

SHEET NO.

ATTACHMENT D: IMPACT PLATES



Temporary Tidal Waters Impacts	
Sheet 3	3.10 Acres
Sheet 4	2.41 Acres
Sheet 5	2.76 Acres
Temporary Piles	0.02 Acres
Total	8.29 Acres
Note: No Impacts on Sheets 1, 2, 6	

- Limits of Disturbance
- Property Parcels
- Streams
- Wetlands
- 25ft Wetland Buffer
- 25ft Wetland Buffer
- MHHW Line
- MHW Line
- Approximate MLW Line
- Bathymetry Contours

MDTA Maryland Transportation Authority

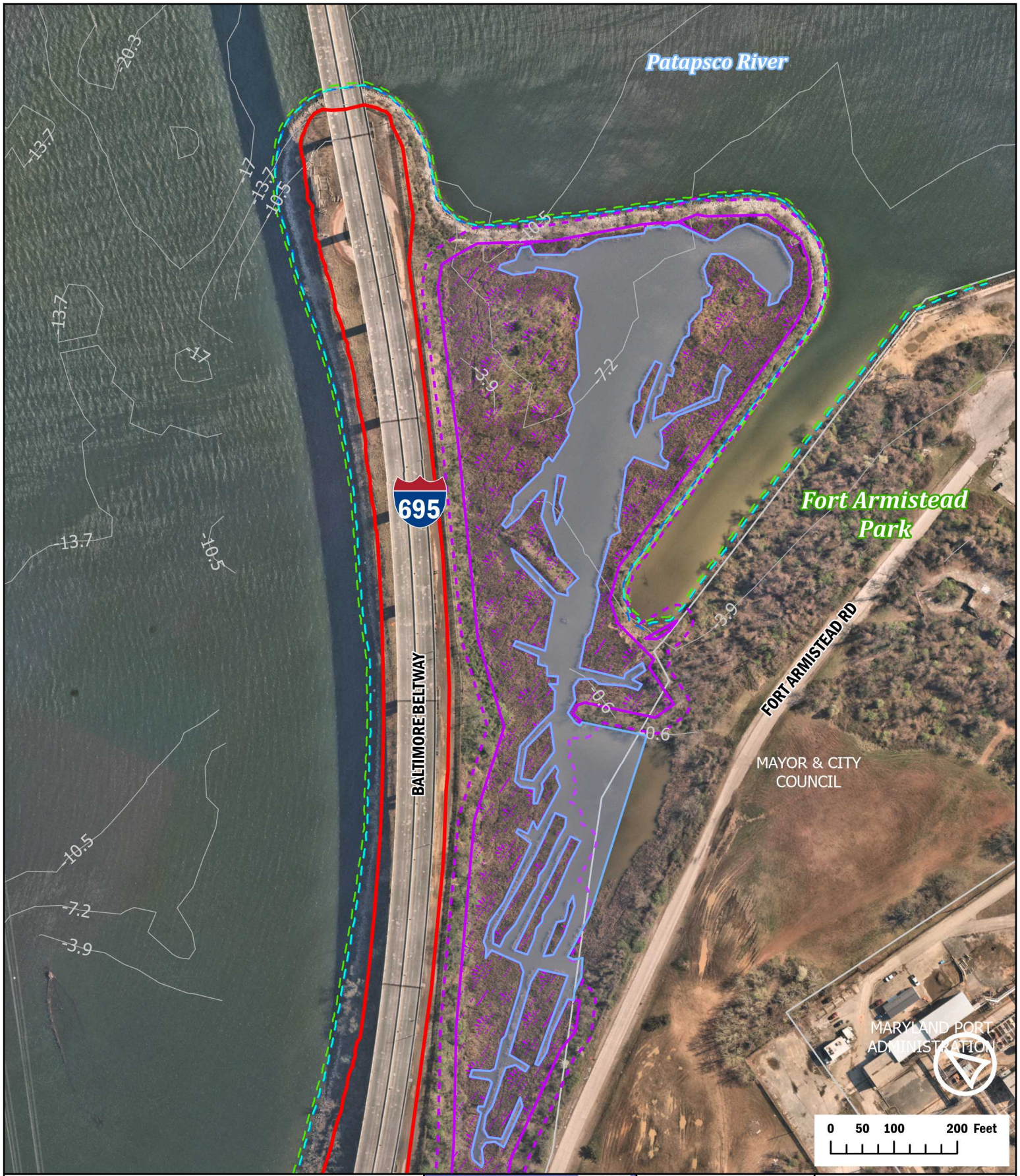
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

Francis Scott Key Bridge Demolition

Impact Plates

June 2024



- Limits of Disturbance
- Property Parcels
- Streams
- Wetlands
- 25ft Wetland Buffer
- 25ft Wetland Buffer
- MHHW Line
- MHW Line
- Approximate MLW Line
- Bathymetry Contours

MDTA Maryland Transportation Authority

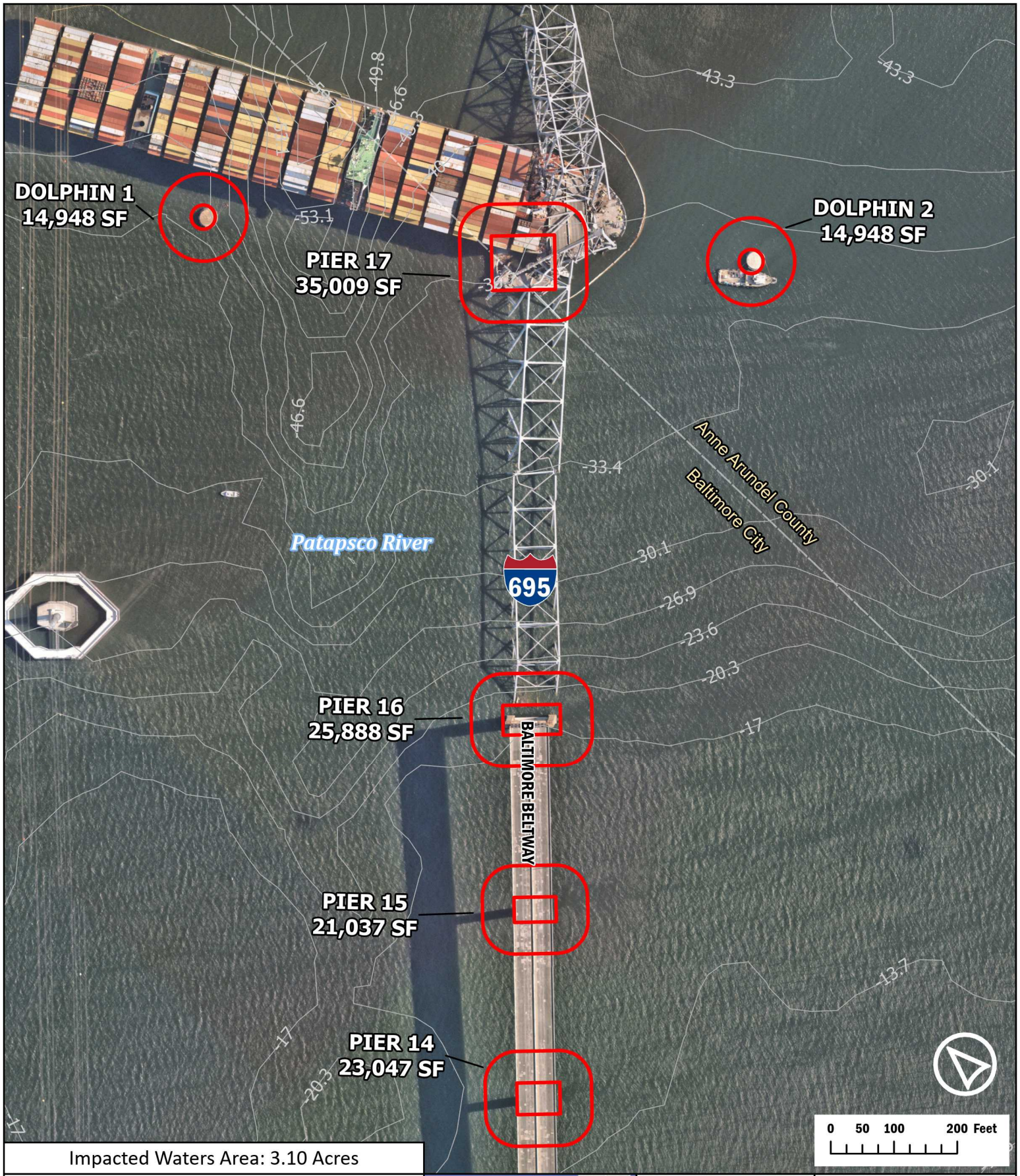
MDOT Maryland Department of Transportation State Highway Administration

U.S. Department of Transportation Federal Highway Administration

Francis Scott Key Bridge Demolition

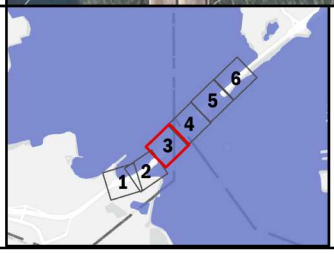
Impact Plates

June 2024



Impacted Waters Area: 3.10 Acres

- Limits of Disturbance
- Property Parcels
- Streams
- Wetlands
- 25ft Wetland Buffer
- 25ft Wetland Buffer
- MHHW Line
- MHW Line
- Approximate MLW Line
- Bathymetry Contours



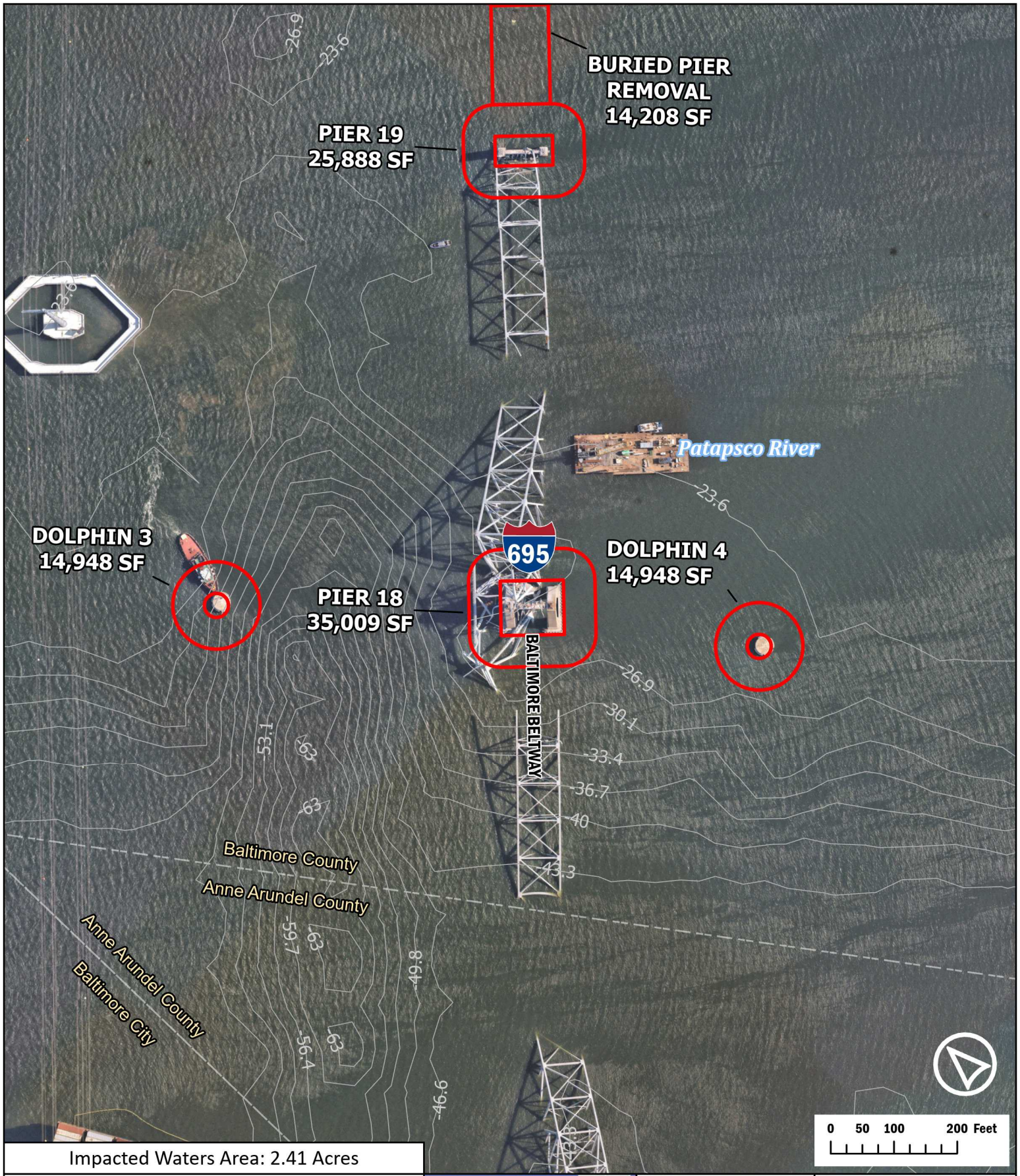
MDTA Maryland Transportation Authority

MDOT Maryland Department of Transportation State Highway Administration

Francis Scott Key Bridge Demolition

Impact Plates

June 2024



Impacted Waters Area: 2.41 Acres

- Limits of Disturbance
- Property Parcels
- Streams
- Wetlands
- 25ft Wetland Buffer
- 25ft Wetland Buffer
- MHHW Line
- MHW Line
- Approximate MLW Line
- Bathymetry Contours

MDTA Maryland Transportation Authority

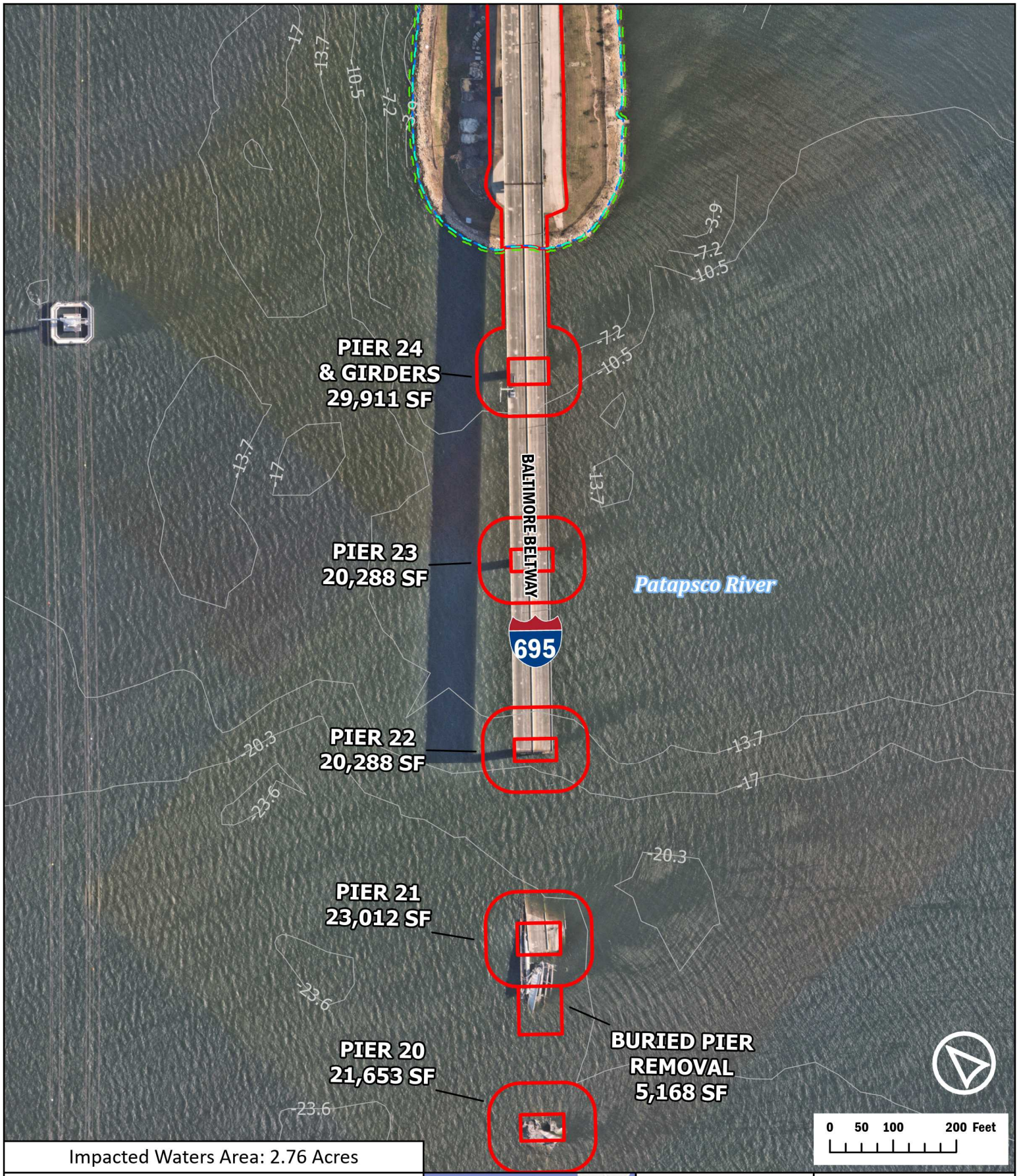
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

Francis Scott Key Bridge Demolition

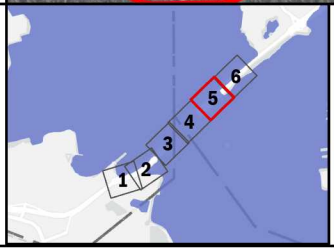
Impact Plates

June 2024



Impacted Waters Area: 2.76 Acres

- Limits of Disturbance
- Property Parcels
- Streams
- Wetlands
- 25ft Wetland Buffer
- 25ft Wetland Buffer
- MHHW Line
- MHW Line
- Approximate MLW Line
- Bathymetry Contours



MDTA Maryland Transportation Authority

MDOT Maryland Department of Transportation State Highway Administration

U.S. Department of Transportation Federal Highway Administration

Francis Scott Key Bridge Demolition

Impact Plates

June 2024

- Limits of Disturbance
- Property Parcels
- Streams
- Wetlands
- 25ft Wetland Buffer
- 25ft Wetland Buffer
- MHHW Line
- MHW Line
- Approximate MLW Line
- Bathymetry Contours

MDTA Maryland Transportation Authority

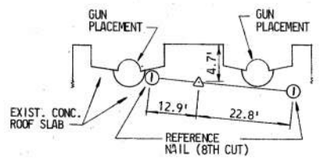
MDOT MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

Francis Scott Key Bridge Demolition

Impact Plates

June 2024



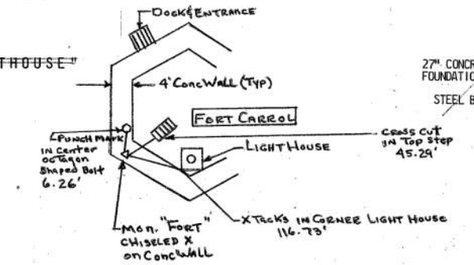
ENGINEER'S CUP TACK IN LEAD PLUG. FLUSH WITH CONC. ROOF SLAB

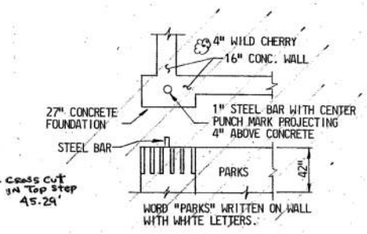
MONUMENT - "HARP"

~~CENTER OF SHARP SPIRE OF LIGHTHOUSE LOCATED ON FORT CARROLL~~
~~N 503,330.15~~
~~E 935,949.17~~

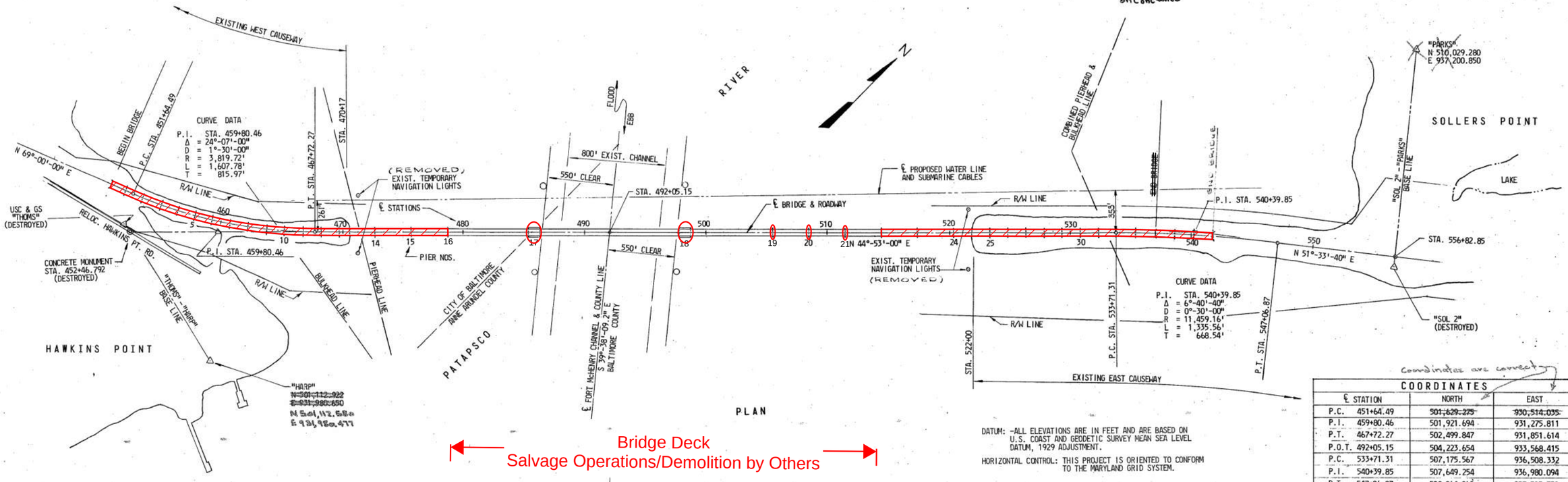
MONUMENT 'FORT'
+CUT IN TOP OF CONCRETE WALL.
BOOK # 1 PAGE 28
N 503450.54
E 935121.07

~~MONUMENT - "FORT CARROLL LIGHTHOUSE"~~





MONUMENT - "PARKS"
(DESTROYED)



PLAN

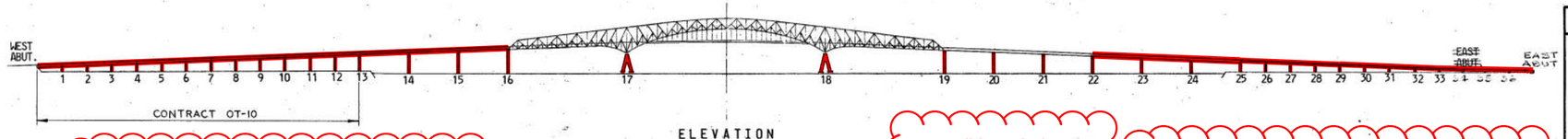
DATUM: -ALL ELEVATIONS ARE IN FEET AND ARE BASED ON U.S. COAST AND GEODETIC SURVEY MEAN SEA LEVEL DATUM, 1929 ADJUSTMENT.

HORIZONTAL CONTROL: THIS PROJECT IS ORIENTED TO CONFORM TO THE MARYLAND GRID SYSTEM.

Coordinates are correct

COORDINATES		
℄ STATION	NORTH	EAST
P.C. 451+64.09	~~501,629.275~~	~~930,514.035~~
P.I. 459+80.46	501,921.694	931,275.811
P.T. 467+72.27	502,499.847	931,851.614
P.O.T. 492+05.15	504,223.654	933,568.415
P.C. 533+71.31	507,175.567	936,508.332
P.I. 540+39.85	507,649.254	936,980.094
P.T. 547+06.87	508,064.869	937,503.739

Bridge Deck
Salvage Operations/Demolition by Others



ELEVATION

Demolition Limits include Bridge Deck and Piers from West Abutment through Pier 16

Demolition Limits include Remaining Portions of Piers 19, 20 and 21

Demolition Limits include Bridge Deck and Piers from Pier 22 to East Abutment

AS BUILT

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

BRIDGE DEMOLITION PLAN

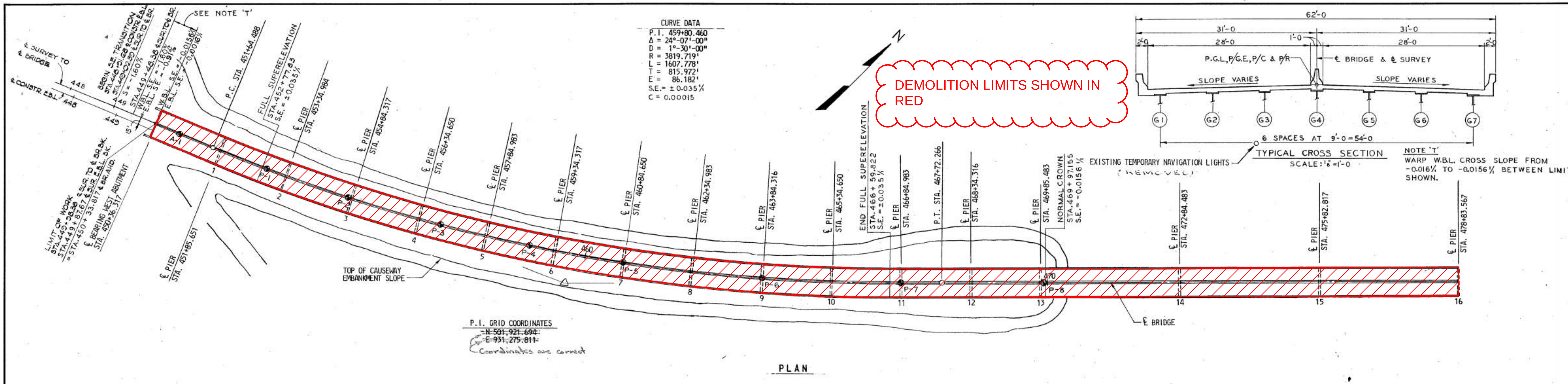
SCALE: 1" = 400' DATE JAN. 1972 CONTRACT OT-10

MADE BY E.R.A.
TRACED BY E.R.A.
CHECKED BY S.J.S.

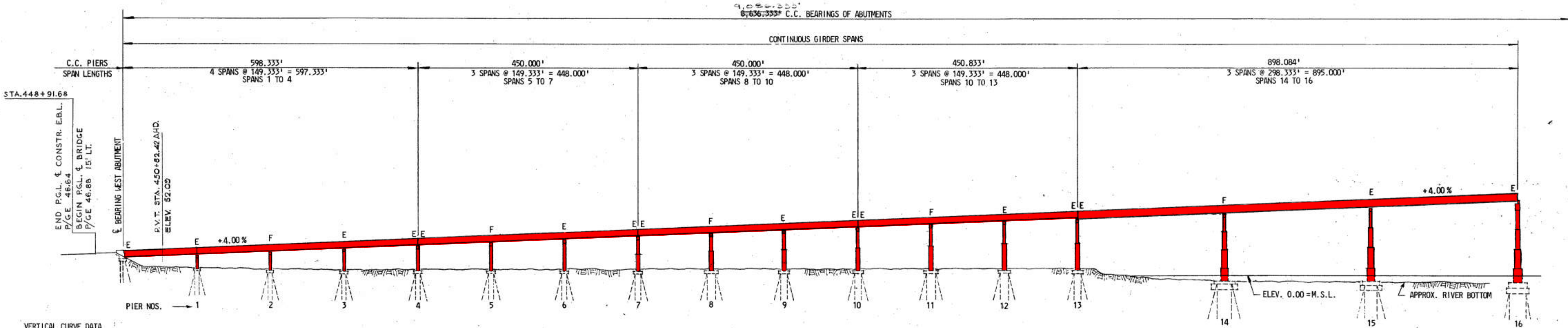
ZOLLMAN ASSOC. INC.
AND
SINGSTAD, KEHART NOVEMBER AND HURKA
A JOINT VENTURE
Baltimore, Md.

DRAWING NO. C-2
SHEET NO. OF
INDEXED

File No.____ Pocket No.____ Folder No.____



PLAN



VERTICAL CURVE DATA
P.V.I. STA. 445+36.27 BK.(STA. 445+82.42 AHD.)
ELEV. = 32.09
V.C. = 1000'
CORR. = +6.825'
GRADES -1.46%
+4.00%

ELEVATION

~~ESTIMATED~~ PILE TIP ELEVATIONS	
LOCATION	* TIP ELEVATIONS
WEST ABUTMENT	~~23~~ -12.7
PIER 1	~~30~~ -24.0
PIER 2	~~35~~ -30.4
PIER 3	~~38~~ -31.6
PIER 4	~~40~~ -29.2
PIER 5	~~39~~ -21.2
PIER 6	~~37~~ -25.2
PIER 7	~~32~~ -23.5
PIER 8	~~37~~ -22.9
PIER 9	~~38~~ -38.4
PIER 10	~~40~~ -40.3
PIER 11	~~43~~ -39.6
PIER 12	~~42~~ -25.4
PIER 13	~~41~~ -35.4

⊕ DENOTES LOCATION OF TEST BORING.
* EL. 0.00 = MEAN SEA LEVEL U.S.C. & G.S.

NOTE:
ALL DIMENSIONS & SPAN LENGTHS SHOWN ARE HORIZONTAL.
All elevations this sheet subject to Note 12 Dwg. A-102 Contract SE-889.

Demolition Limits include Bridge Deck and Piers from West Abutment through Pier 16

AS BUILTS

REVISIONS	
	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION BALTIMORE, MD. BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE BRIDGE DEMOLITION PLAN GENERAL PLAN & ELEVATION I
	SCALE: 1" = 100' DATE JAN. 1972 CONTRACT OT-10
	MADE BY ERA TRACED BY ERA CHECKED BY SJS

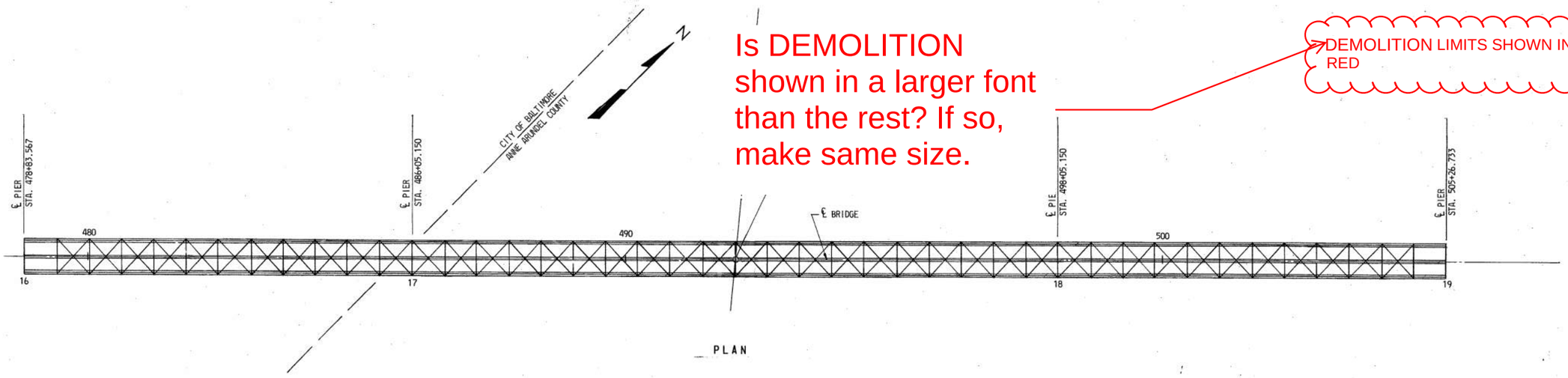
ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA – A JOINT VENTURE – Baltimore, Md.

DRAWING NO. C-3
SHEET NO. OF
INDEXED

File No.____ Pocket No.____ Folder No.____

Is DEMOLITION shown in a larger font than the rest? If so, make same size.

DEMOLITION LIMITS SHOWN IN RED



PLAN

9,086.333'
~~8,636.333'~~ C.C. BEARINGS OF ABUTMENTS

CONTINUOUS THROUGH TRUSS SPANS

C.C. PIERS SPAN LENGTHS

721.583'
SPAN 17 - 720.000'

1,200.000'
SPAN 18 - 1,200.000'

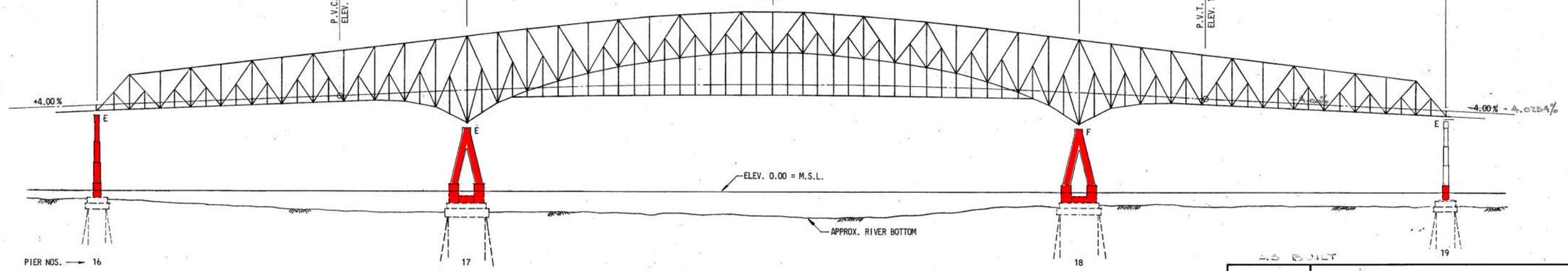
721.583'
SPAN 19 - 720.000'

VERTICAL CURVE DATA
P.V.I. STA. 492+05.15
ELEV. = 217.00
V.C. = 1,700'
CORR. = -17.00'

P.V.C. STA. 483+55.15
ELEV. 183.00

℄ SPAN STA. 492+05.150

P.V.T. STA. 500+55.15
ELEV. 183.00



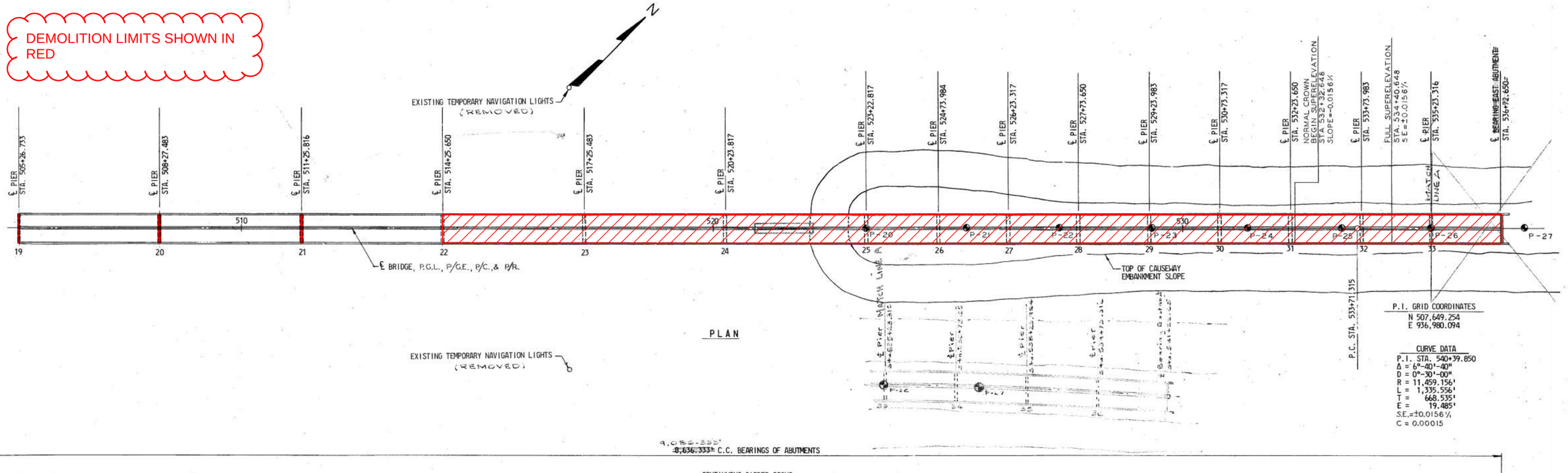
ELEVATION

Salvage Operations for Continuous Truss Spans By Others

NOTE:
ALL DIMENSIONS & SPAN LENGTHS SHOWN ARE HORIZONTAL.
All elevations this sheet subject to note 12 Dwg. B-102 Contract OT-849.

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION BALTIMORE, MD. BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE BRIDGE DEMOLITION PLAN GENERAL PLAN AND ELEVATION II
	SCALE: 1"= 100' DATE JAN. 1972 CONTRACT OT-10
	MADE BY E.R.A. TRACED BY E.R.A. CHECKED BY S.J.S.
	ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.
	DRAWING NO. C-4 SHEET NO. OF INDEXED
File No. Pocket No. Folder No.	

DEMOLITION LIMITS SHOWN IN RED



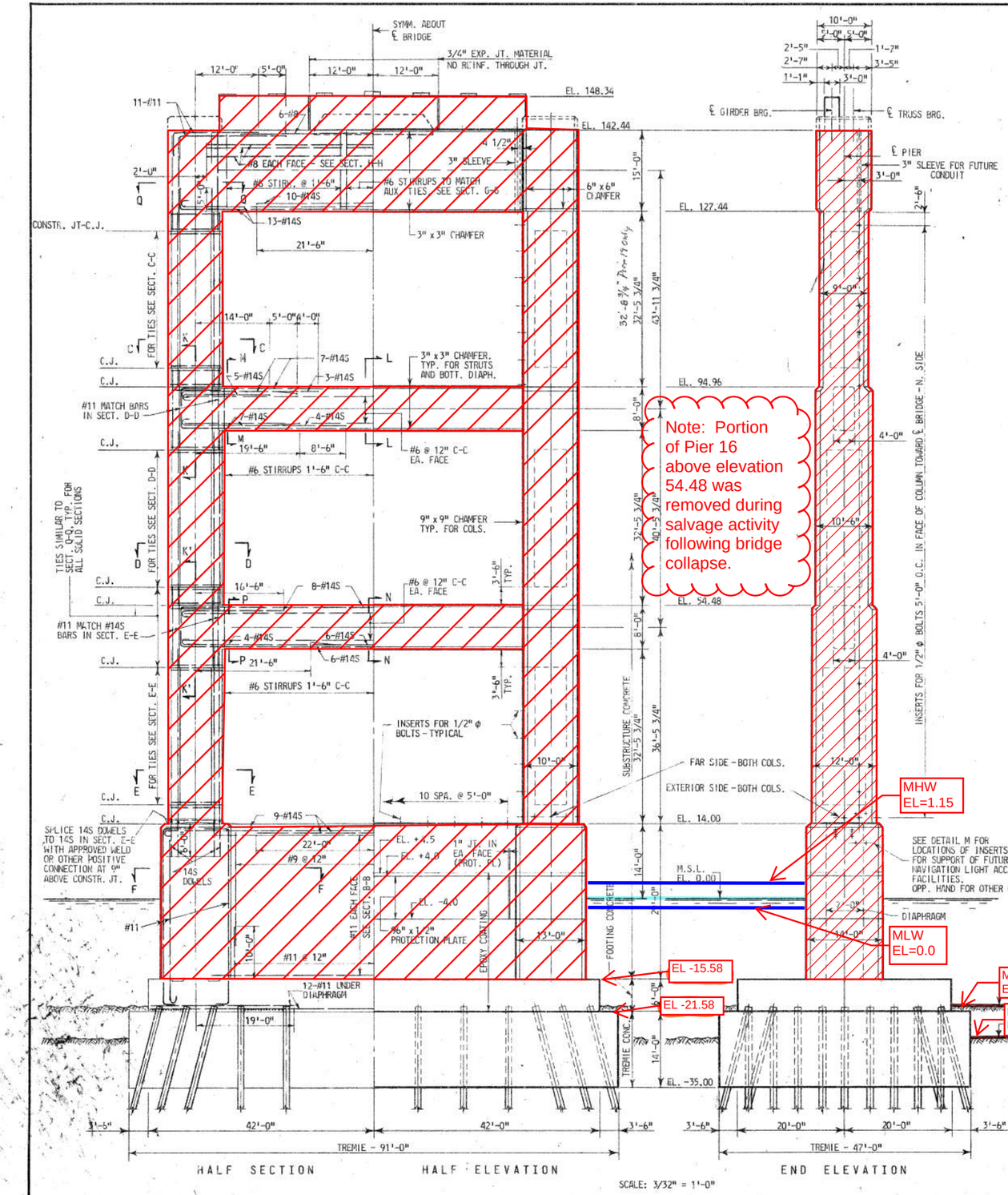
Demolition Limits include Remaining Portions of Piers 19, 20 and 21

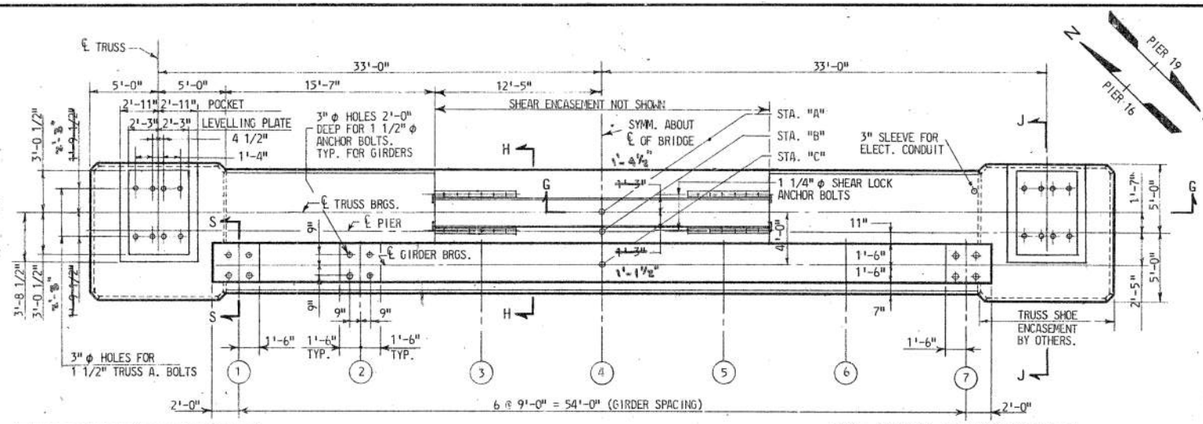
Demolition Limits include Bridge Deck and Piers from Pier 22 to East Abutment

AS BUILT

REVISIONS	STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION BALTIMORE, MD. BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE BRIDGE DEMOLITION PLAN GENERAL PLAN AND ELEVATION III
	SCALE: 1" = 100' DATE JAN. 1972 CONTRACT OT-10
	MADE BY E.R.A. TRACED BY E.R.A. CHECKED BY S.J.S.
	ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.
	DRAWING NO. C-5 SHEET NO. OF
	INDEXED

File No. Pocket No. Folder No.

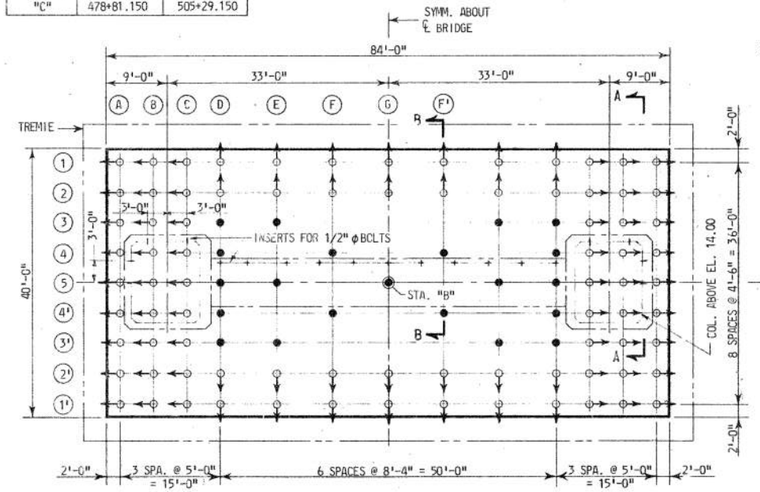




TOP PLAN
SCALE: 3/16" = 1'-0"

STATION	PIER	
	16	19
"A"	478+85.150	505+25.150
"B"	478+83.567	505+26.733
"C"	478+81.150	505+29.150

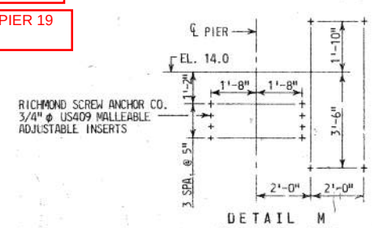
NOTE: PADS SHALL BE POURED 1/4" HIGH BY THE SUBSTRUCTURE CONTRACTOR AND GROUND TO THE CORRECT ELEVATION BY THE SUPERSTRUCTURE CONTRACTOR.



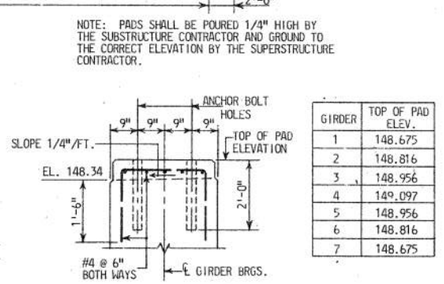
PILE PLAN
SCALE: 3/32" = 1'-0"

LEGEND :
● = PLUMB PILES
◄○ = BATTER PILES 1:4

NOTE:
ALL PILES HP 14 x 102.
DIMENSIONS OF PILES SHOWN ARE AT BOTTOM OF FOOTING, EL. - 21.00.
ORIENTATION: BATTERED PILES SHALL BE DRIVEN WITH THE WEBS IN LINE WITH THE DIRECTION OF BATTER.
PLUMB PILES SHALL BE DRIVEN WITH WEBS PARALLEL TO THE ℄ PIER
ESTIMATED PILE TIP EL.: PIER 16 - EL. -110 (AVERAGE)
PIER 19 - EL. -112 (AVERAGE)

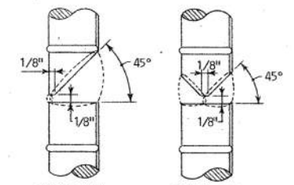


DETAIL M
SCALE: 3/8" = 1'-0"



SECTION S-S
GIRDER BRG. PAD DETAILS
SCALE: 1/2" = 1'-0"

GIRDER	TOP OF PAD ELEV.
1	148.675
2	148.816
3	148.956
4	149.097
5	148.956
6	148.816
7	148.675



APPROVED BUTT SPLICES FOR REINF. BARS
NOT TO SCALE
NOTE: AN APPROVED THERMIT WELDING PROCESS SPLICE WILL ALSO BE ACCEPTABLE.

NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-102.
FOR DETAIL OF CONSTRUCTION JOINT KEYS SEE SECT. J-J DWG. NO. A-108.
FOR TEST PILE AND LOAD TEST LOCATIONS, PILE SPLICE DETAIL AND STEEL PROTECTION PLATE DETAILS SEE DWG. NO. A-113.
All Elevations this Sheet Subject to Note 12 Dwg A-102 of Cont. OT-8-9

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE

PIERS 16 AND 19
PLANS AND ELEVATIONS

SCALE: AS SHOWN DATE JAN., 1972 CONTRACT OT-8

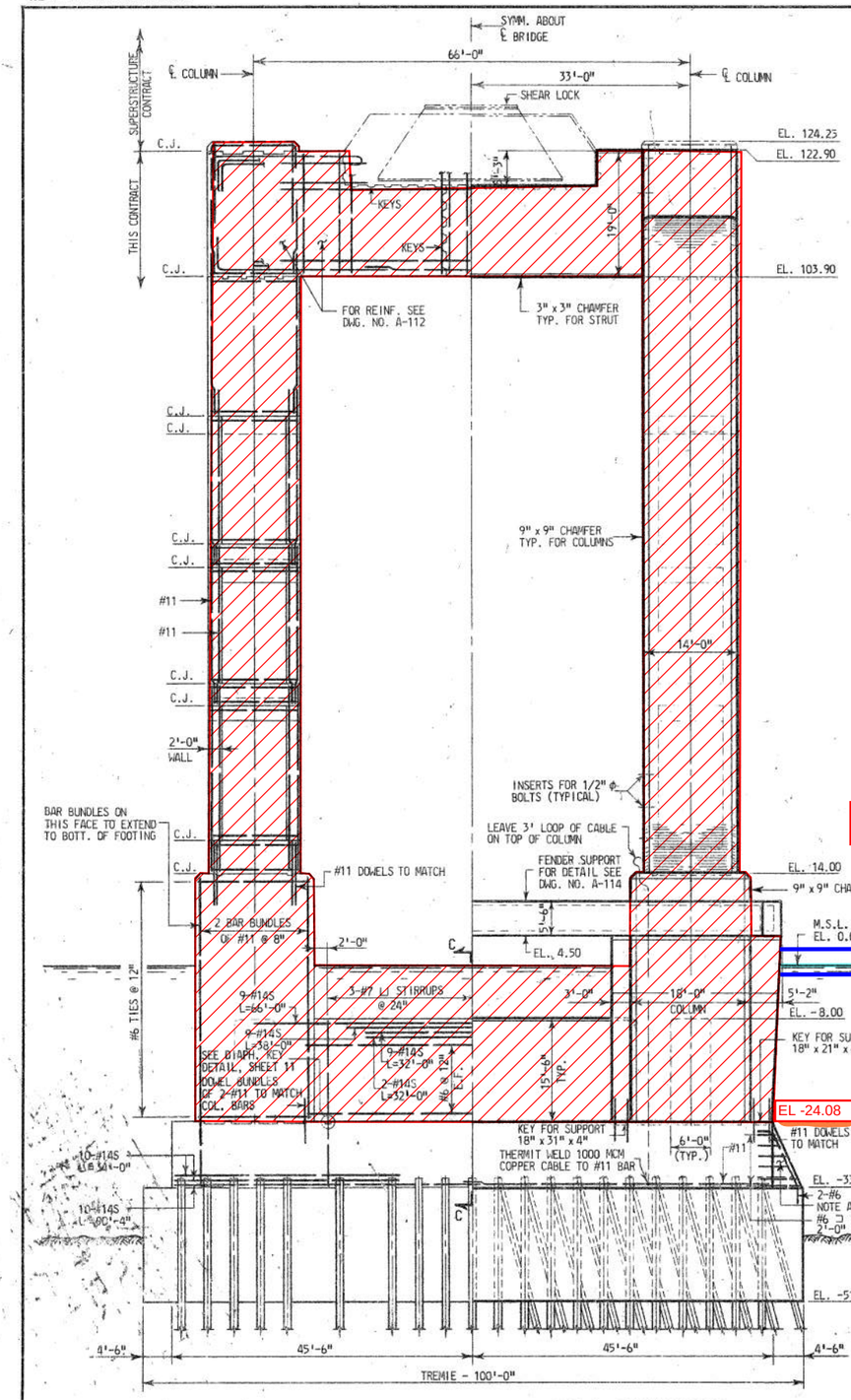
MADE BY H.E.K.
TRACED BY E.J.M.
CHECKED BY E.E.B.

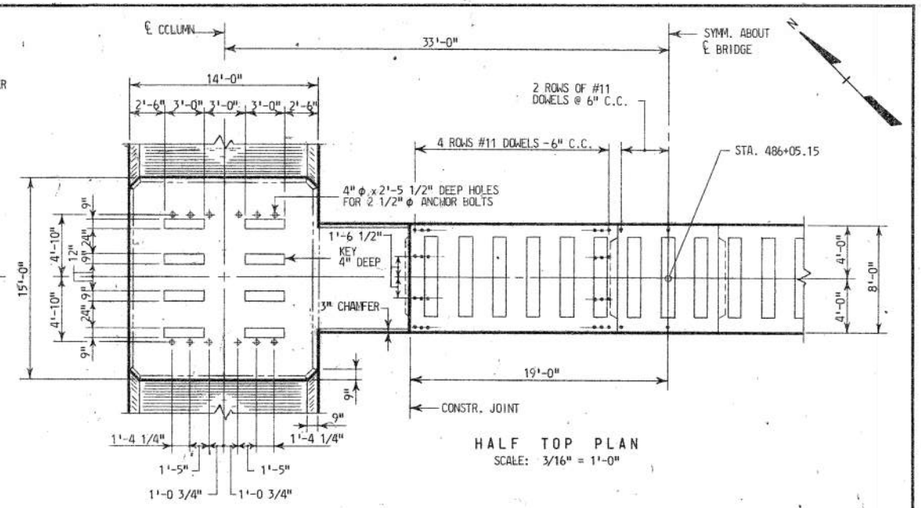
J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

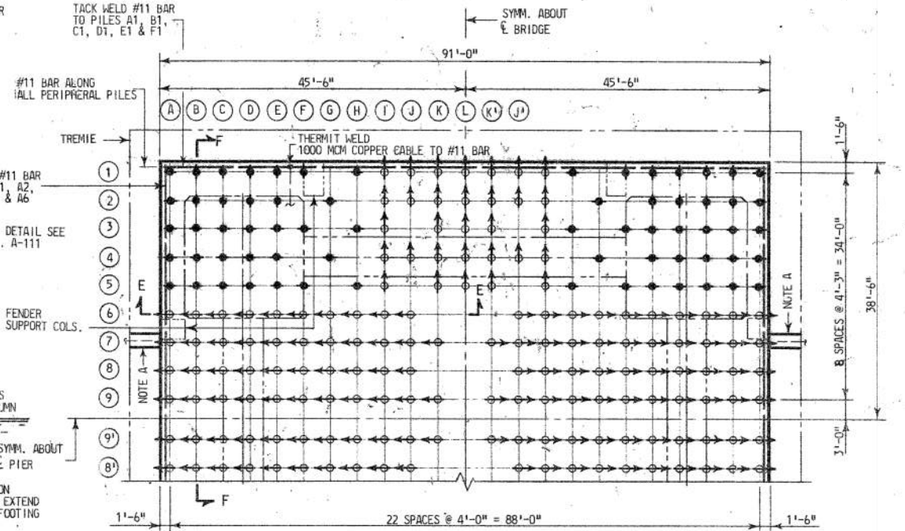
DRAWING NO. A-107
SHEET NO. 7 OF 24
INDEXED

File No.____ Pocket No.____ Folder No.____

ALL MARKUP ELEVATIONS RELATIVE TO MLW = 0.0







LEGEND:
♦ = PLUMB PILE
⊖ = BATTER PILE 1:4
THE LINE THRU THE PILE SYMBOL INDICATES THE DIRECTION OF THE WEB.

DIMENSIONS OF PILES ARE AT BOTTOM OF FOOTING, EL. - 33.50
ESTIMATED PILE TIP EL.: -137 AVERAGE.

All Elevations this sheet Subject to Note 12 Dwg A 102 of Cont. OT 8-9

NOTES:
FOR GENERAL NOTES SEE DWG. NO. A-102.
PILES: HP 14 x 102
FOR TEST PILE AND LOAD TEST LOCATIONS, PILE SPLICE, PROTECTION PLATE DETAILS AND SECT. L-L, SEE DWG. NO. A-113.
FOR SECTIONS TAKEN AND CONSTRUCTION JOINT DETAIL, SEE DWG. NO. A-111.
FOR DETAIL OF BUTT SPLICES OF REINF. BARS, SEE DWG. NO. A-107.

ALL MARKUP ELEVATIONS RELATIVE TO MLW = 0.0

REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE

PIER 17
PLANS AND ELEVATIONS

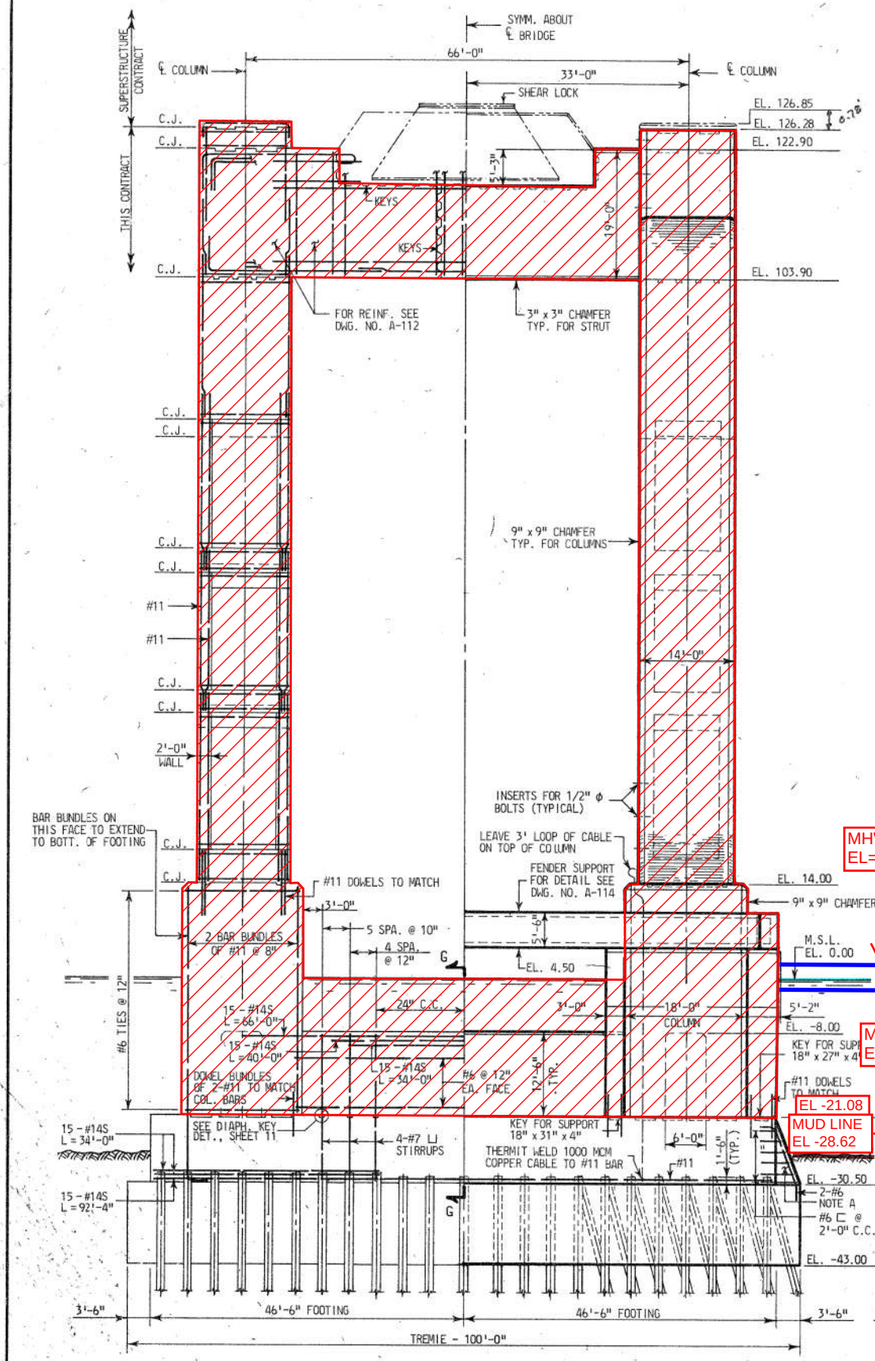
SCALE AS NOTED DATE JAN., 1972 CONTRACT OT-8

MADE BY E.E.B.
TRACED BY A.B.M.
CHECKED BY J.L.K.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-109
SHEET NO. 9 OF 24
INDEXED

File No. Pocket No. Folder No.



REVISIONS
As-Built

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE

PIER 18

PLANS AND ELEVATIONS

SCALE AS NOTED DATE JAN., 1972 CONTRACT OT-8

MADE BY E.E.B.
TRACED BY A.B.M.
CHECKED BY J.I.K.

J. E. GREINER COMPANY, INC.
CONSULTING ENGINEERS
BALTIMORE, MARYLAND

DRAWING NO. A-110
SHEET NO. 10 OF 24
INDEXED

File No. Packet No. Folder No.

For Location of Anchor Bolts and Pad Details see Dwg. B-8

PLAN

HALF SECTION

HALF ELEVATION

ELEVATION

Approximate elevation of pile tips = -65.0 Pier 14 -75.0 Pier 21

PAD ELEVATION SCHEDULE							
GIRDER No.	1	2	3	4	5	6	7
PIER 14	124.29	124.43	124.57	124.71	124.57	124.43	124.29
PIER 21	124.29	124.43	124.57	124.71	124.57	124.43	124.29

MHW EL=1.15

MLW EL=0.0

EL -12.58 (PIER 14)

EL -15.58 (PIER 21)

APPROX. MUD LINE EL -21.62 (PIER 21)

APPROX. MUD LINE EL -18.12 (PIER 14)

SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D

SECTION E-E

SECTION F-F

SECTION G-G

SECTION H-H

DETAIL A

SECTION J-J

NOTES:

1. For General Notes see Dwg. A-102
2. For Pile Plan see Dwg. B-6
3. Typical Const Joint & Key Detail see Dwg. B-8
4. For method of Cofferdam Construction see Dwg. I-1
5. For Protection Plate Details see Dwg. B-8
6. All elevations this sheet subject to Note Before Dwg. A-102 Contract OT-519.

ALL MARKUP ELEVATIONS RELATIVE TO MLW = 0.0

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

PIERS 14 AND 21

SCALE 3/32"=1'-0" & As Noted DATE Jan. 1972 CONTRACT OT-9

MADE BY J.D.
TRACED BY J.D.
CHECKED BY C.C.Y.

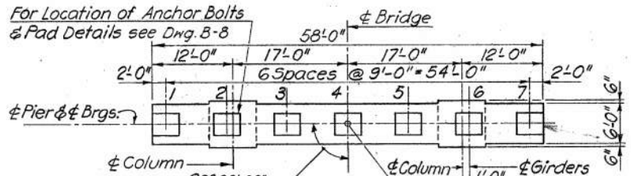
ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

DRAWING NO. B-1
SHEET NO. 16 OF 24
INDEXED

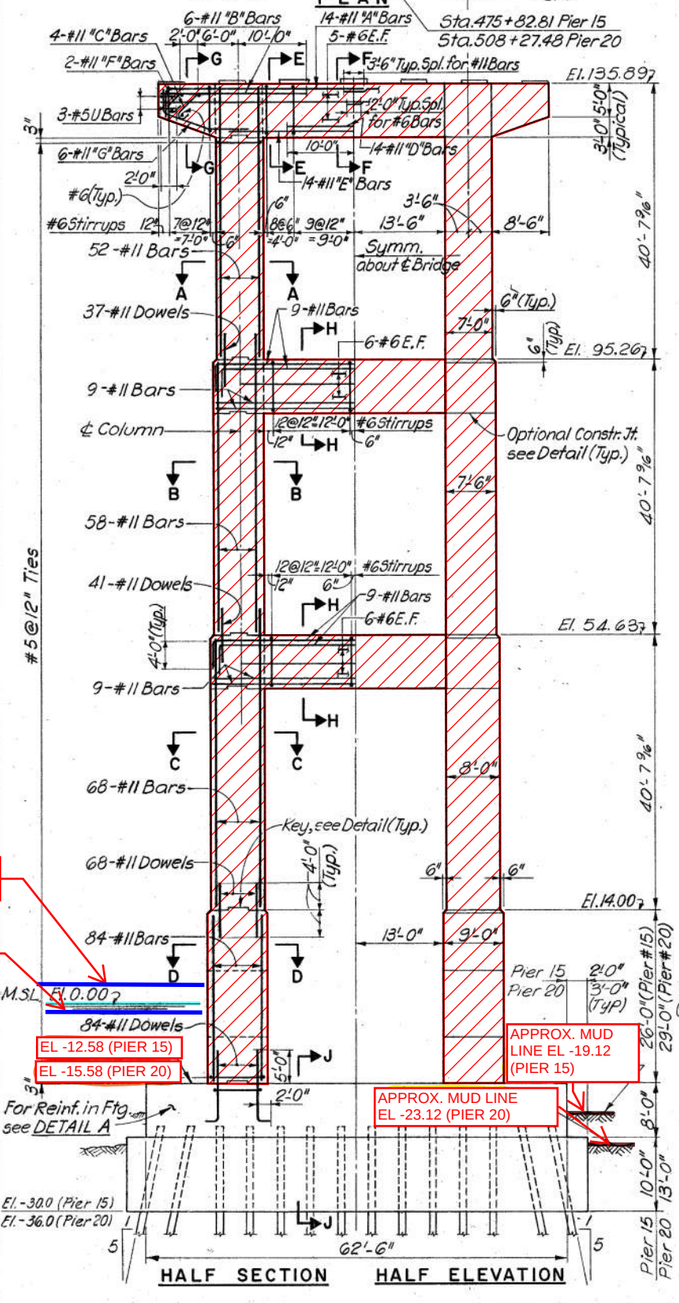
REVISIONS

File No. ____ Pocket No. ____ Folder No. ____

For Location of Anchor Bolts & Pad Details see Dwg. B-8



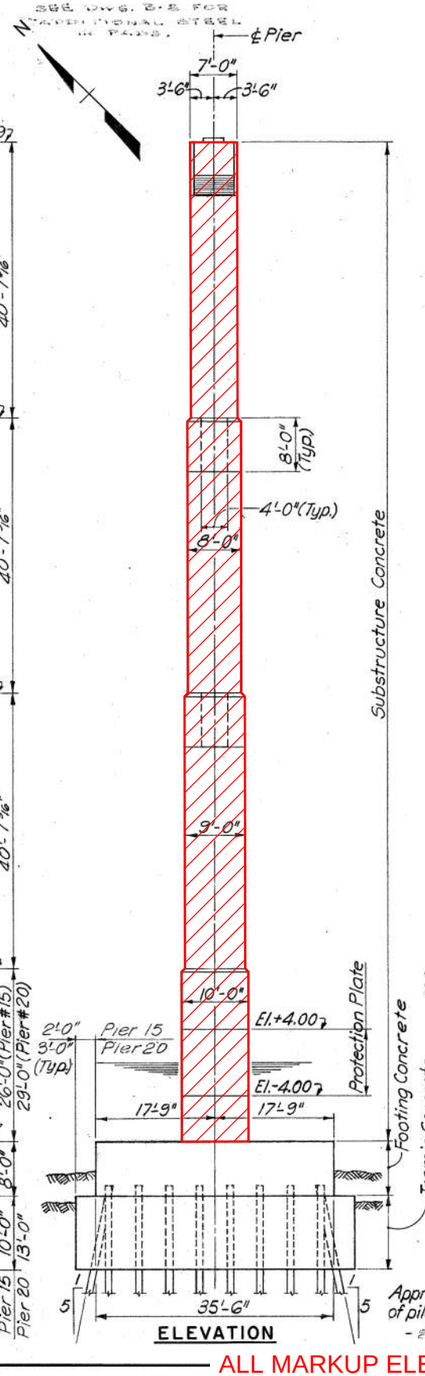
PLAN



HALF SECTION HALF ELEVATION

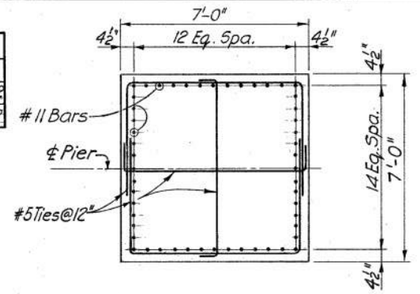
PAD ELEVATION SCHEDULE							
GIRDER No	1	2	3	4	5	6	7
PIER 15	136.22	136.37	136.51	136.65	136.51	136.37	136.22
PIER 20	136.22	136.37	136.51	136.65	136.51	136.37	136.22

SEE DWG. B-8 FOR [illegible] STEEL IN PADS.

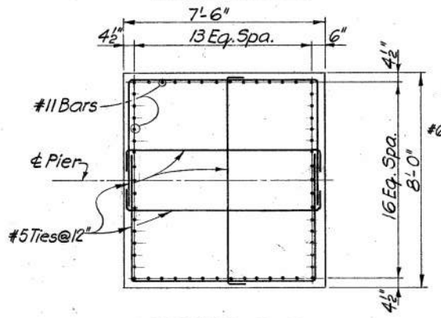


ELEVATION

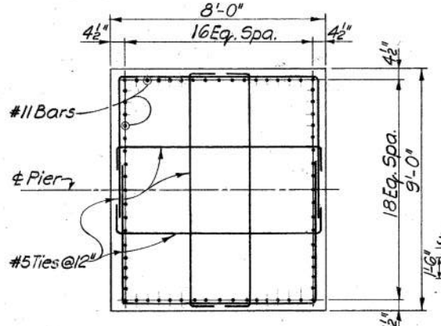
Approximate elevation of pile tips = ~~-75.0~~ Pier 15 - 80.2
~~-85.0~~ Pier 20 - 89.0



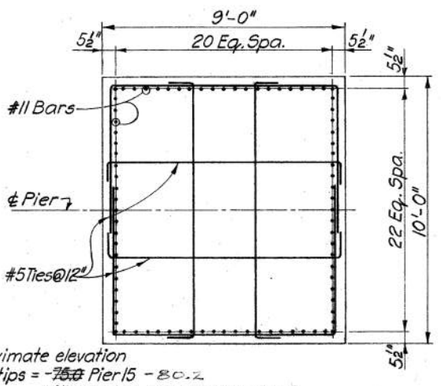
SECTION A-A



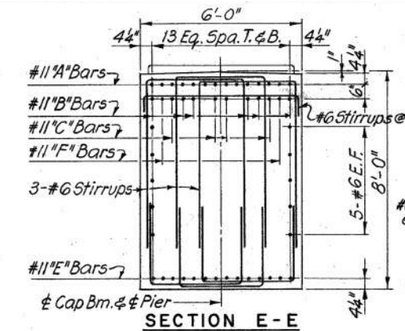
SECTION B-B



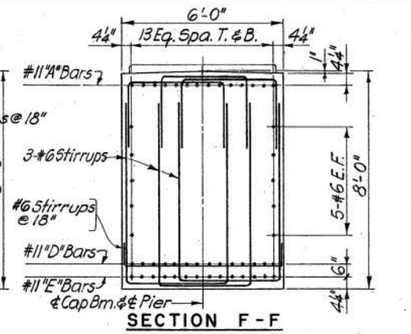
SECTION C-C



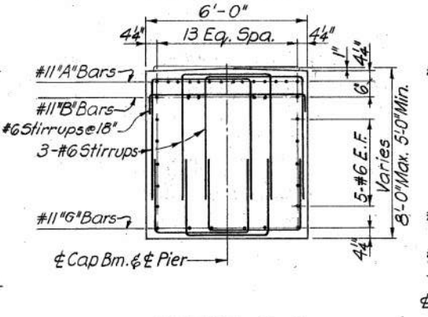
SECTION D-D



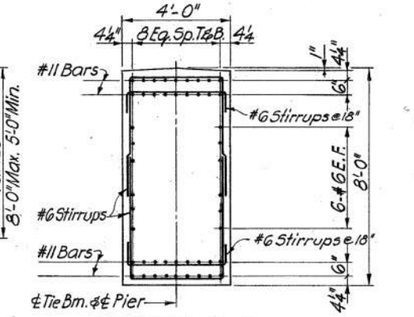
SECTION E-E



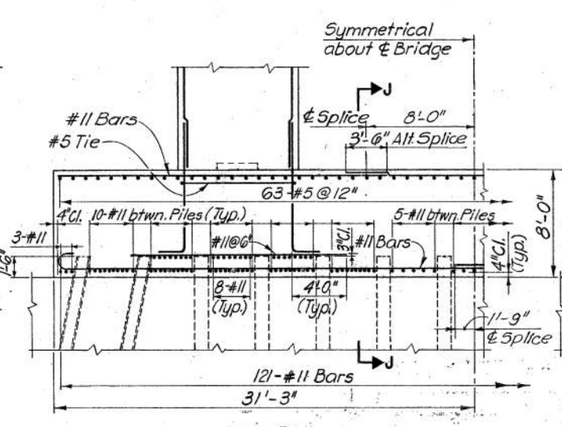
SECTION F-F



SECTION G-G

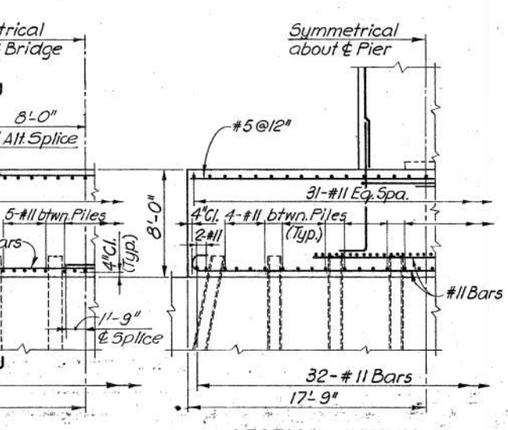


SECTION H-H



DETAIL A

Scale: 3/16" = 1'-0"



SECTION J-J

Scale: 3/16" = 1'-0"

NOTES:

1. For General Notes see Dwg. A-102
2. For Pile Plan see Dwg. B-6
3. For Typical Construction Joint and Key Detail see Dwg. B-8
4. For method of cofferdam Construction see Dwg. I-1
5. For Protection Plate Details see Dwg. B-8
6. All elevations this sheet subject to Note 12 Dwg. A-102 Contract OT-819.

AS BUILT

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

PIERS 15 AND 20

SCALE 3/32"=1'-0" & As Noted | DATE Jan.1972 | CONTRACT OT-9

MADE BY O.S.
TRACED BY O.S.
CHECKED BY C.C.Y.

ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

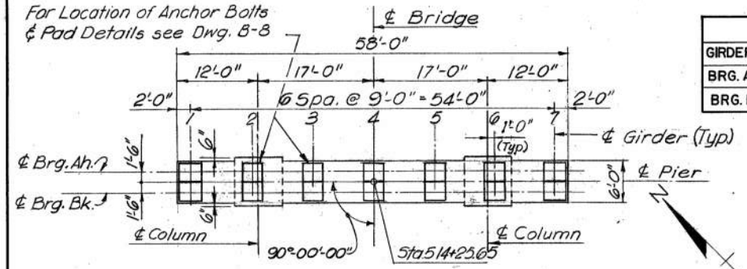
DRAWING NO. B-2
SHEET NO. 17 OF 24
INDEXED

File No. Pocket No. Folder No.

ALL MARKUP ELEVATIONS RELATIVE TO MLW = 0.0

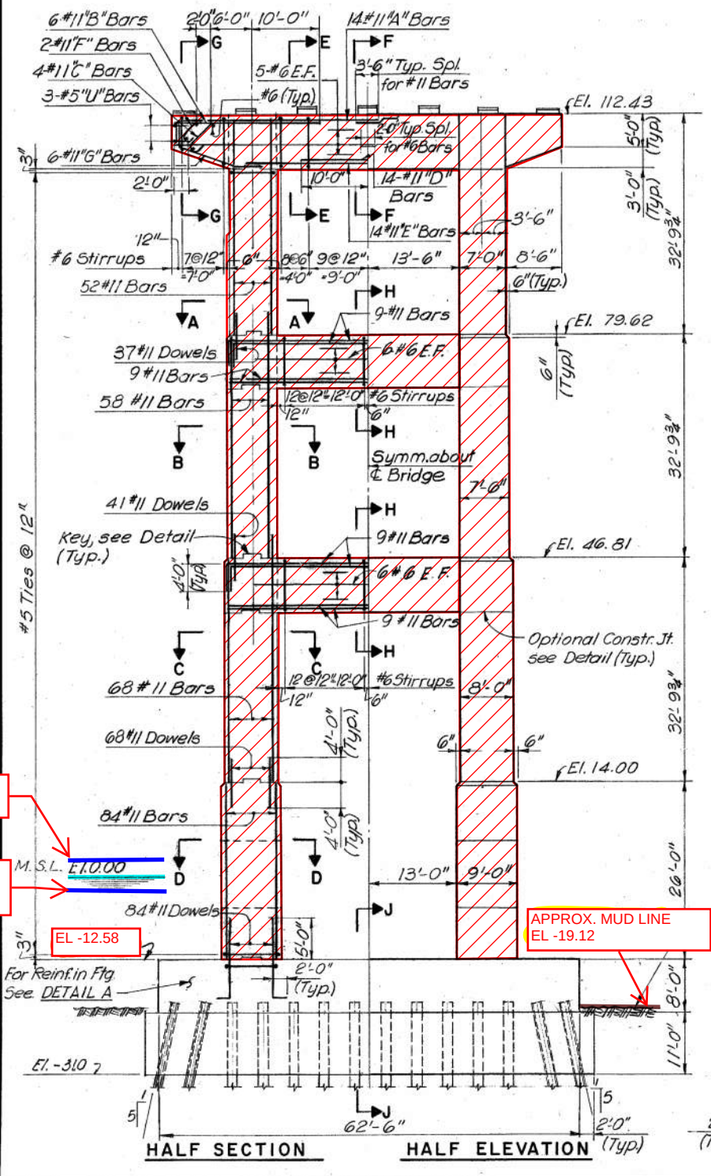
BALTIMORE 17 0133 PHOENIX 47131

For Location of Anchor Bolts & Pad Details see Dwg. B-8



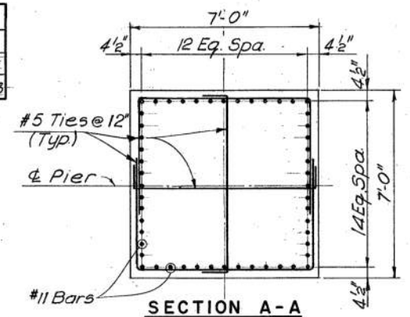
PLAN

PAD ELEVATION SCHEDULE							
GIRDER No.	1	2	3	4	5	6	7
BRG. Ah.	112.76	112.91	113.05	113.19	113.05	112.91	112.76
BRG. Bk.	112.88	113.03	113.17	113.31	113.17	113.03	112.88

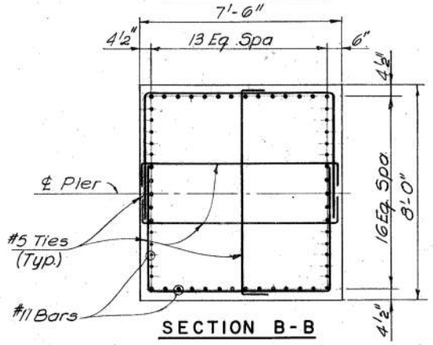


MHW EL=1.15

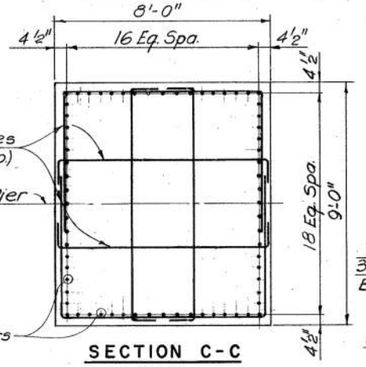
MLW EL=0.0



SECTION A-A



SECTION B-B



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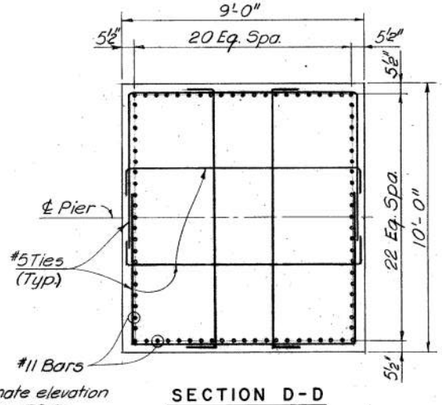

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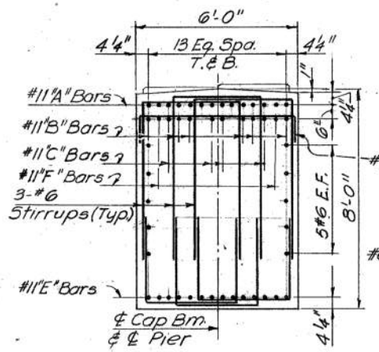

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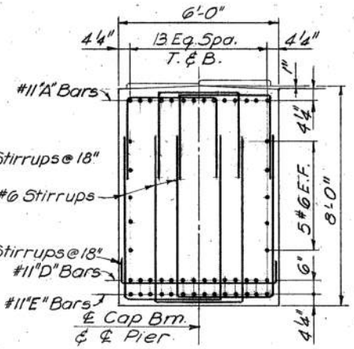
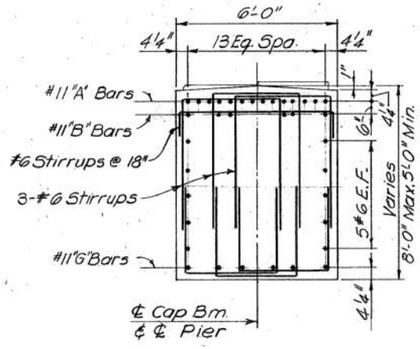
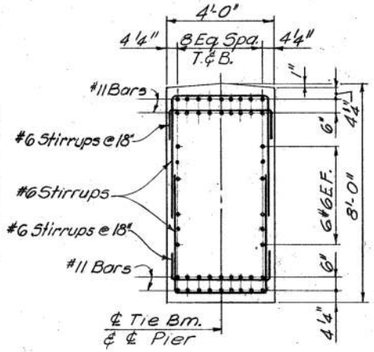


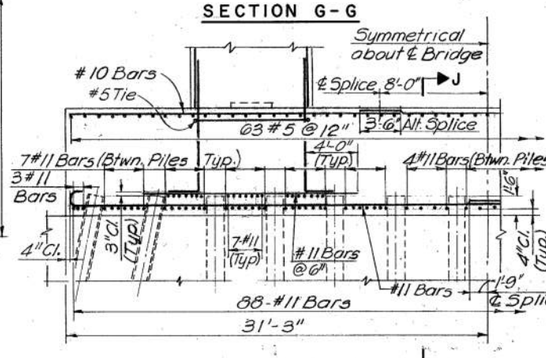
SECTION F-F



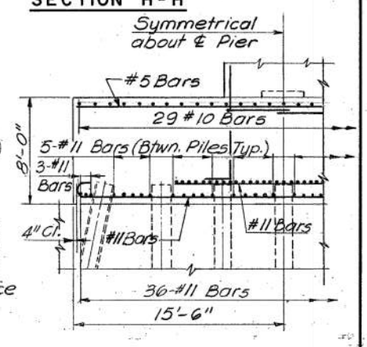
SECTION G-G



SECTION H-H



DETAIL A
Scale: 3/16" = 1'-0"



SECTION J-J
Scale: 3/16" = 1'-0"

AS BUILT

NOTES:

1. For General Notes see Dwg. A-102
2. For Pile Plan see Dwg. B-6
3. For Typical Construction Joint and Key Detail see Dwg. B-8
4. For method of cofferdam Construction see Dwg. I-1
5. For Protection Plate see Dwg. B-8
6. All elevations this sheet, subject to Note 12 Dwg. A-102 Cont. CT-819.

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

PIER 22

SCALE 3/32" = 1'-0" & As Noted DATE Jan. 1972 CONTRACT CT.-9

MADE BY R. R.
TRACED BY R. R.
CHECKED BY C.C.Y.

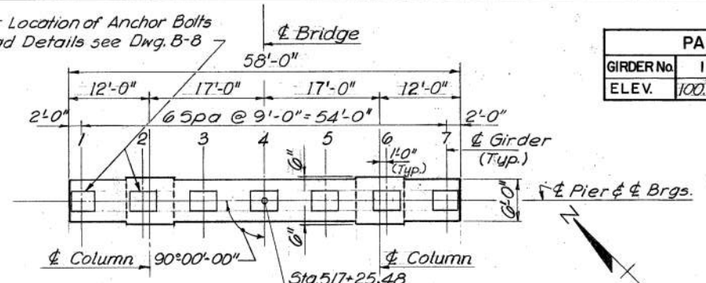
ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

DRAWING NO. B-3
SHEET NO. 18 OF 24
INDEXED

File No. ___ Pocket No. ___ Folder No. ___

ALL MARKUP ELEVATIONS RELATIVE TO MLW = 0.0

For Location of Anchor Bolts & Pad Details see Dwg. B-8



PLAN

PAD ELEVATION SCHEDULE							
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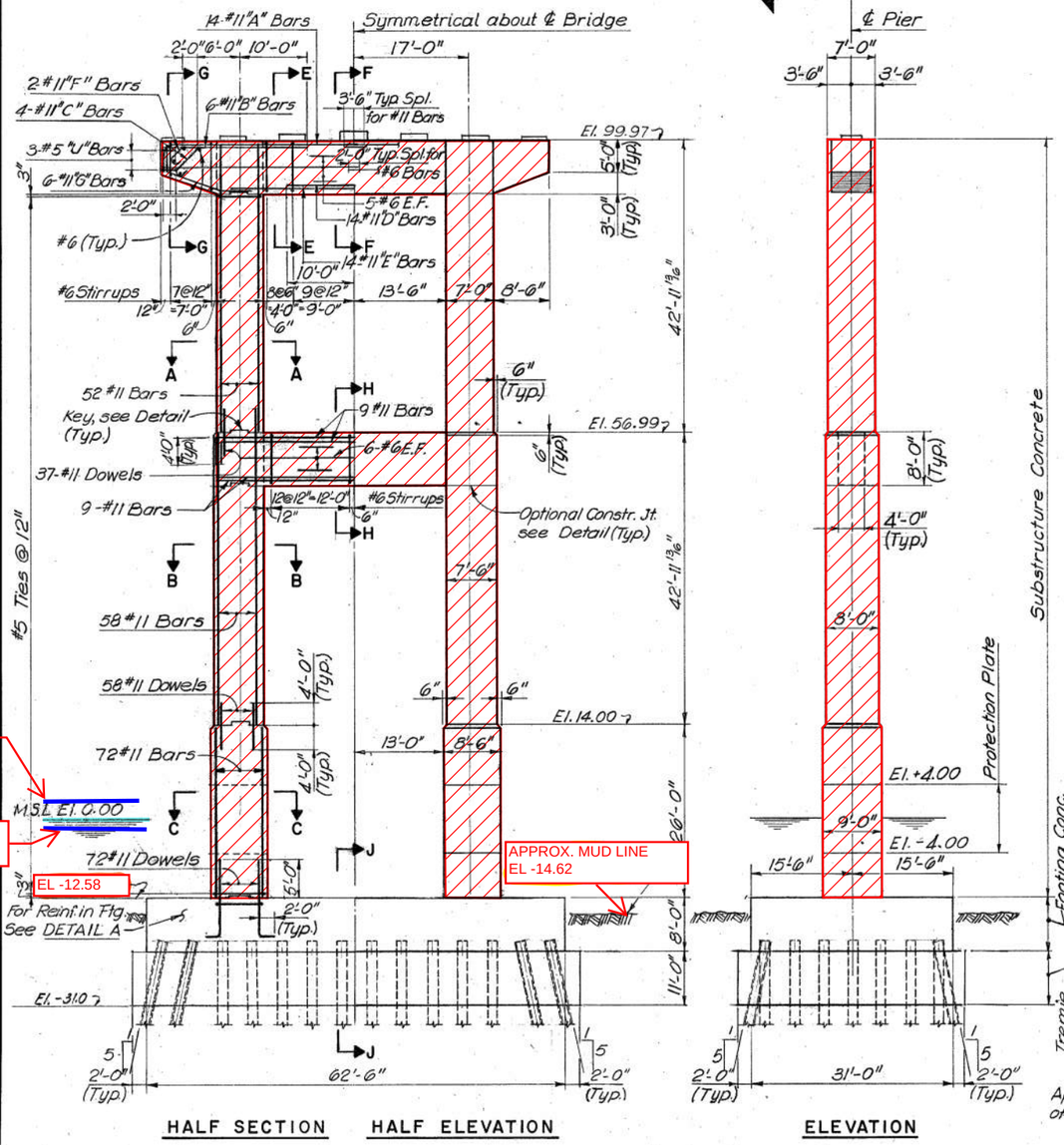
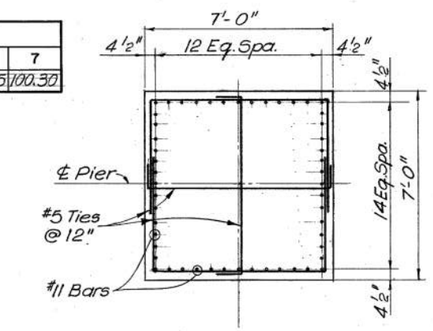
ELEV.	100.30	100.45	100.59	100.73	100.59	100.45	100.30

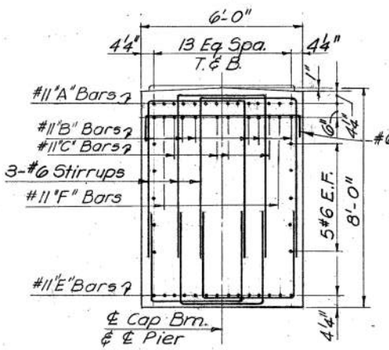


HALF SECTION HALF ELEVATION

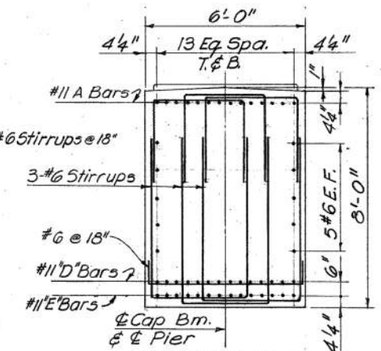
ELEVATION



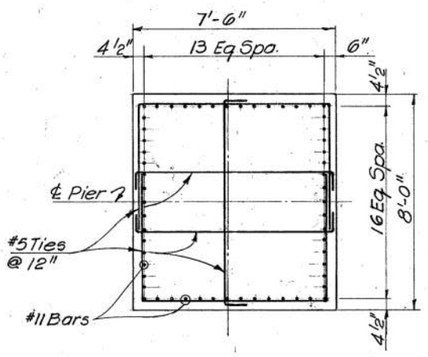
SECTION A-A



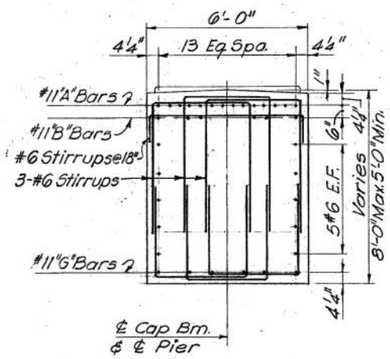
SECTION E-E



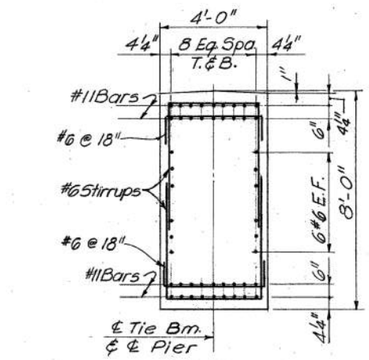
SECTION F-F



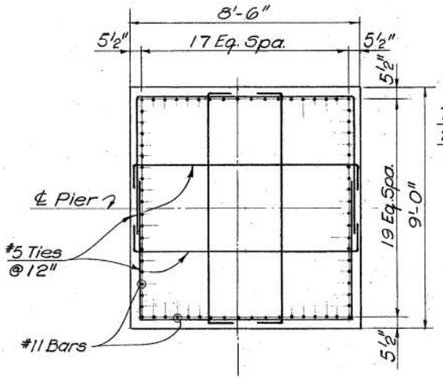
SECTION B-B



SECTION G-G

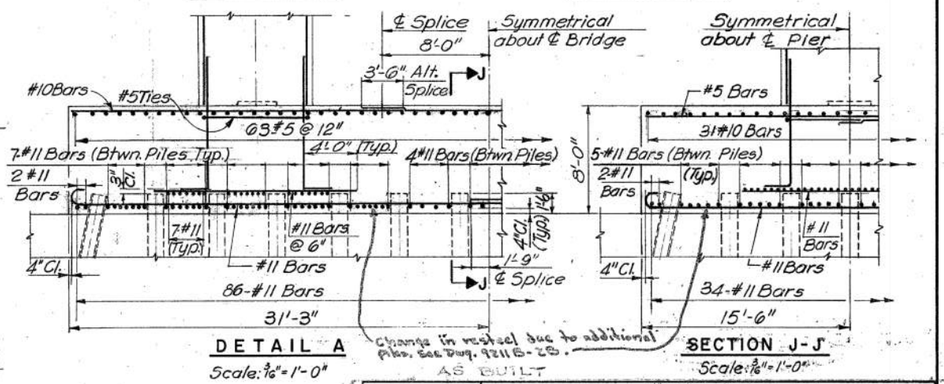


SECTION H-H



SECTION C-C

Scale: 3/8" = 1'-0"



DETAIL A

Scale: 3/16" = 1'-0"

Change in vertical due to additional Pile. See Dwg. 9211 B-29.

AS BUILT

SECTION J-J

Scale: 3/16" = 1'-0"

NOTES:

1. For General Notes see Dwg. A-102
2. For Pile Plan see Dwg. B-6
3. For Typical Construction Joint and Key Detail see Dwg. B-8
4. For method of cofferdam Construction see Dwg. I-1
5. For Protection Plate see Dwg. B-8
6. All elevations this sheet subject to Note 12 Dwg. A-102 Cont. of-B&B.

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

PIER 23

SCALE 3/32" = 1'-0" & As Noted | DATE Jan. 1972 | CONTRACT OT-9

MADE BY R.R.
TRACED BY R.R.
CHECKED BY C.C.Y.

ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

DRAWING NO. B-4
SHEET NO. 19 OF 24

INDEXED

File No. Pocket No. Folder No.

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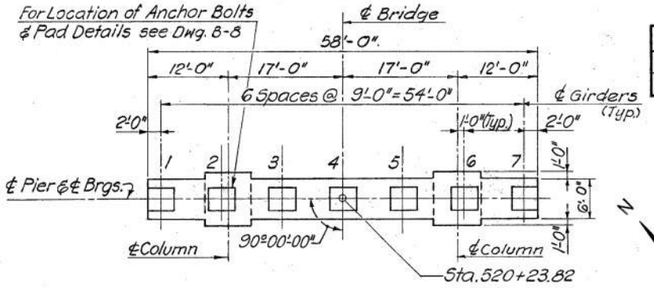
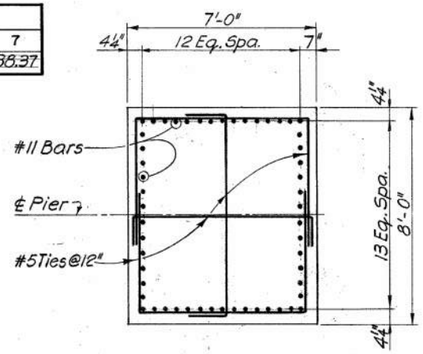
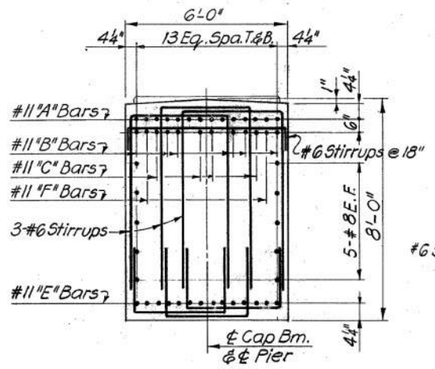


PLAN

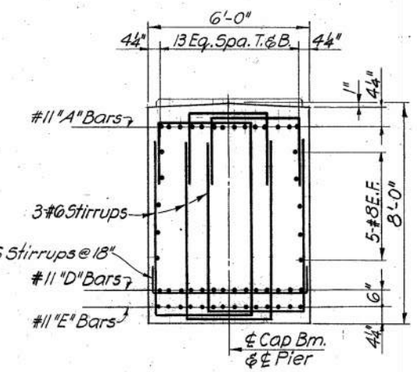
PAD ELEVATION SCHEDULE							
GIRDER No	1	2	3	4	5	6	7
ELEV.	88.37	88.51	88.65	88.79	88.65	88.51	88.37



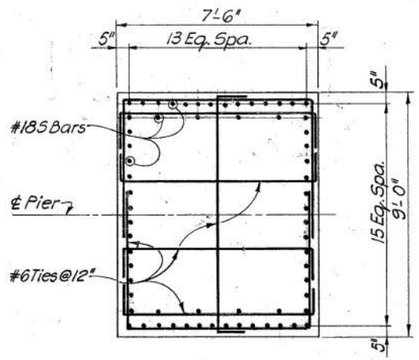
SECTION A-A



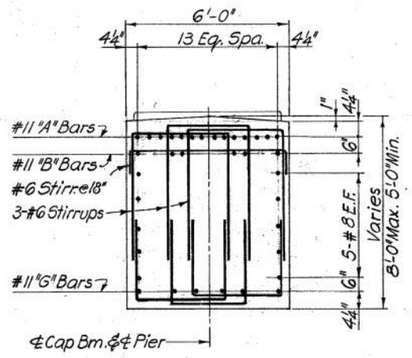
SECTION E-E



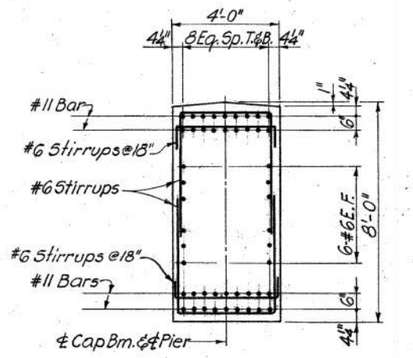
SECTION F-F



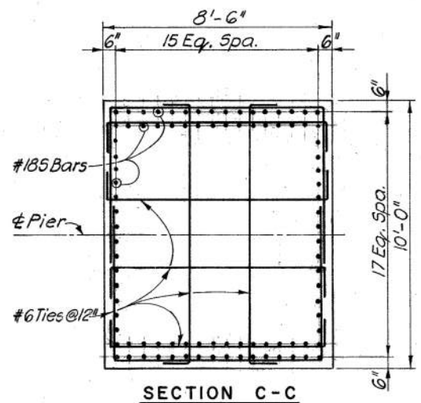
SECTION B-B



SECTION G-G

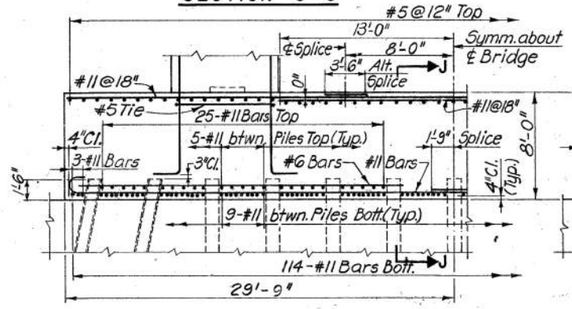


SECTION H-H



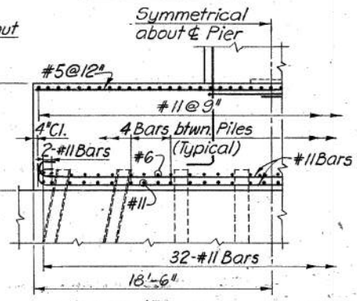
SECTION C-C

Scale: ⅜"=1'-0"



DETAIL A

Scale: ¾"=1'-0"

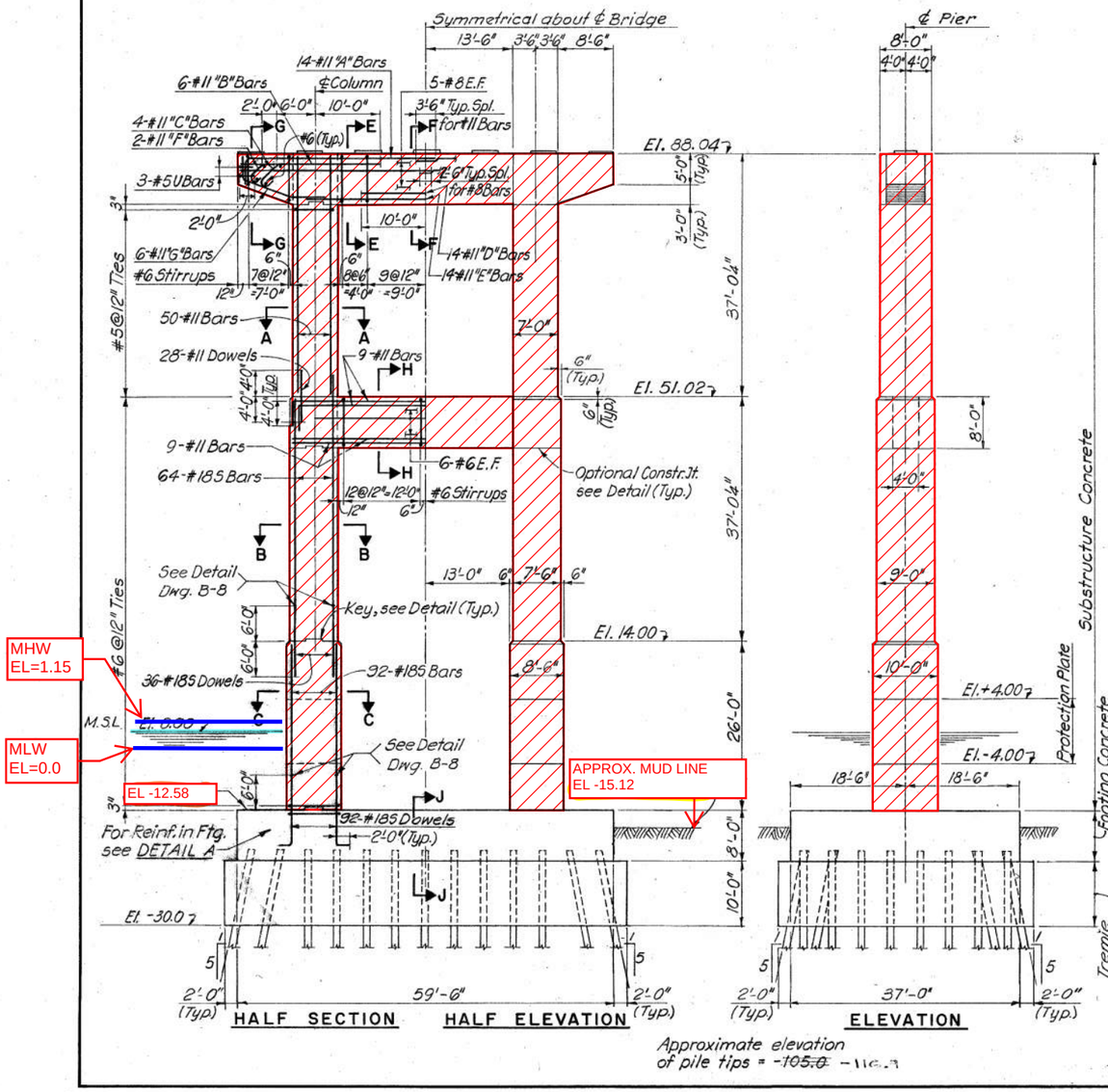


SECTION J-J

Scale: ⅜"=1'-0"

NOTES:

1. For General Notes see Dwg. A-102
2. For Pile Plan see Dwg. B-6
3. For Typical Construction Joint & Key Detail see Dwg. B-8
4. For method of cofferdam Construction see Dwg. I-1
5. For Protection Plate Details see Dwg. B-8
6. All elevations this sheet subject to Note 12 Dwg. A-102 Contract OT-829.



ALL MARKUP ELEVATIONS RELATIVE TO MLW = 0.0

AS BUILT

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

PIER 24

SCALE 3/32"=1'-0" & As Noted | DATE Jan. 1972 | CONTRACT OT-79

MADE BY O.S.
TRACED BY O.S.
CHECKED BY C.C.Y.

ZOLLMAN ASSOC. INC. AND SINGSTAD, KEHART NOVEMBER AND HURKA A JOINT VENTURE Baltimore, Md.

DRAWING NO. B-5
SHEET NO. 20 OF 24
INDEXED

File No. ____ Pocket No. ____ Folder No. ____

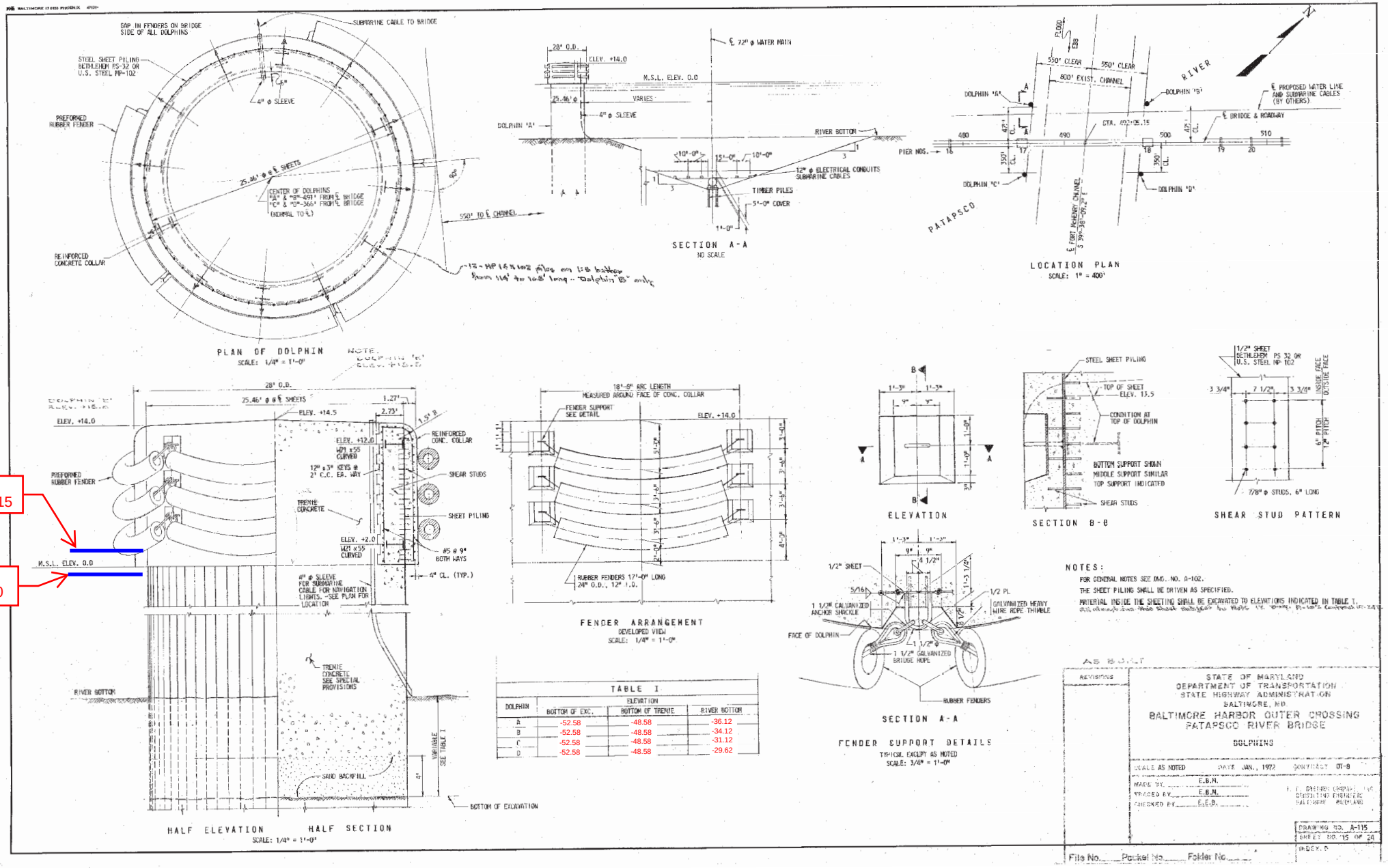


TABLE I			
DOLPHIN	ELEVATION		
	BOTTOM OF EXC.	BOTTOM OF TREMIE	RIVER BOTTOM
A	-52.58	-48.58	-36.12
B	-52.58	-48.58	-34.12
C	-52.58	-48.58	-31.12
D	-52.58	-48.58	-29.62

NOTES:

FOR GENERAL NOTES SEE DWG. NO. A-102.

THE SHEET PILING SHALL BE DRIVEN AS SPECIFIED.

MATERIAL INSIDE THE SHEETING SHALL BE EXCAVATED TO ELEVATIONS INDICATED IN TABLE I.

AS BUILT

REVISIONS

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD

BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE

DOLPHINS

SCALE AS NOTED | DATE JAN., 1972 | CONTRACT OT-8

MADE BY E.B.N.
TRACED BY E.B.N.
CHECKED BY E.E.D.

H. G. BRUNER COMPANY INC.
CONSULTING ENGINEERS
BALTIMORE MARYLAND

DRAWING NO. A-115
SHEET NO. 15 OF 24

File No. Packet No. Folder No. INDEX D

ALL MARKUP ELEVATIONS
RELATIVE TO MLW = 0.0

Department of the Environment
Water and Science Administration
Tidal Wetlands Division
1800 Washington Boulevard
Baltimore, Maryland 21230
(410) 537-3837

Protecting Maryland wetlands and waterways from loss and degradation

PUBLIC NOTICE BILLING APPROVAL FORM

I agree to pay all expenses associated with the publishing of a public notice for the wetland application of

MDTA **which is dated** 06/07/2024

(Riparian Property Applicant's Name)

Julie McCarthy

Riparian Property Applicant's Signature

Julie McCarthy

Printed Name of Riparian Property Owner

Applicant will be invoiced by MDE for the publication fee. As a convenience, MDE now accepts electronic invoice payments. The invoice will include instructions for online payment.

Riparian Property Owner's Billing Address:

Maryland Transportation Authority - Julie McCarthy

300 Authority Drive, Baltimore MD 21222

Telephone No.: (410) 537-7861

Please provide the names and mailing addresses of the adjacent riparian property owners. If my property is part of and/or subject to an HOA (Homeowners Association), please provide the HOA representative and mailing address in addition to the adjacent riparian property owners:

Baltimore Gas & Electric,110 W Fayette Street Baltimore, MD 21201

State of Maryland Port Authority, 6000 Dock Road, Baltimore, MD 21226

Maryland Port Administration, 401 E Pratt Street Baltimore, MD 21202

Baltimore City, Mayor & City Council, Fort Armistead Park, 4000 Hawkins Point Road Baltimore, MD 21226

Fort Carroll LLC, C/O M Eisenberg, 2844 Old Court Road, Baltimore, MD 21208

ATTACHMENT E: NATURAL RESOURCES INVENTORY / FOREST STAND DELINEATION (NRI/FSD)

NATURAL RESOURCES INVENTORY REPORT

FRANCIS SCOTT KEY BRIDGE REBUILD PROJECT

BALTIMORE CITY AND BALTIMORE COUNTY, MARYLAND

MAY 2024

U.S. Department of Transportation
Federal Highway Administration

MDTA
Maryland Transportation Authority

MDOT
MARYLAND DEPARTMENT OF TRANSPORTATION

Table of Contents

List of Appendices

1.0 Introduction, Study Area, and Project Description

On March 26, 2024, the Maryland Transportation Authority (MDTA) Francis Scott Key Bridge (Key Bridge), which carries I-695 over the Patapsco River, was struck by a cargo ship leaving the Port of Baltimore, resulting in the collapse of the bridge. The collapse prompted the immediate closure of I-695 between MD 173 (exit 1) and MD 157/Peninsula Expressway (exit 43) and halted vehicle traffic across the Patapsco River as well as marine shipping to and from the Port of Baltimore. Following the incident, Executive Order 01.01.2024.09 was released by the State of Maryland, declaring a State of Emergency as a result of the Key Bridge collapse. Immediate recovery and debris removal actions were conducted.

MDTA and Maryland State Highway Administration (SHA) are proposing to replace the collapsed Francis Scott Key Bridge in the same location as the original structure, which will help alleviate the high traffic demands and restore the connectivity of the transportation network between Curtis Bay and Dundalk. As a result, Rummel, Klepper, & Kahl (RK&K) and Coastal Resources, Inc. (CRI), under contract by the MDTA, has completed a natural resources inventory, in support of the Francis Scott Key Bridge Rebuild Project (FSK Rebuild) located in Baltimore City and Baltimore County, Maryland. RK&K and CRI completed a water of the U.S. (WOTUS), including wetlands, delineation, forest stand delineation, and tree survey within the project study area (see **Appendix A**). The study area is approximately 117 acres within the Patapsco River MDE 8-digit watershed (02130903). Land use classifications within and adjacent to the study area include forest and industrial. The project area is in the Northern Coastal Plain physiographic province. The project limits extend along I-695 from Quarantine Road in Curtis Bay to Broening Highway in Dundalk and are entirely within MDTA's existing right-of-way (ROW). CRI completed the natural resources inventory in the segment between Quarantine Road and the Patapsco River. RK&K completed the natural resources inventory between the Patapsco River and Broening Highway. A wetland delineation was conducted for a separate MDTA project in February 2024 and field verified as part of the FSK Rebuild project in May of 2024.

2.0 Methodology

Prior to the field investigation, the RK&K and CRI field teams reviewed existing potential forest and wetland data within the project area, including but not limited to the United States Fish & Wildlife Service (USFWS) National Wetland Inventory, the Maryland Department of Natural Resources (MDNR) Wetlands, the Natural Resource Conservation Service (NRCS) Soil Survey Data and National Hydrography Dataset (NHD) Streams.

During the field investigation, wetlands were assessed in accordance with the *Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0* (USACE 2010). This methodology requires interpretation of a three-parameter approach representing hydrology, vegetation, and soils, which are known indicators of a wetland. Soils were sampled using three-inch diameter Dutch augers and Munsell Color charts were used to identify color (Munsell 1975). The wetland indicator status of the observed vegetation was identified using the National Wetland Plant List (NWPL) (USACE 2020). Wetland data were collected on Wetland Determination Data Forms (USACE 2010, 2012). A Wetland Functions and Value Evaluation form was completed for all delineated wetlands greater than 0.5 acres (USACE 1999). Matching upland test plots were also established adjacent to the wetland boundary in conjunction with wetland plots. Delineated WOTUS were flagged and surveyed using a Global Navigation Satellite System (GNSS) unit. Nontidal WOTUS, other than wetlands, were set at the ordinary

high-water mark (OHW) which was determined in the field using physical characteristics established by the fluctuations of water. Tidal WOTUS were defined by mean high water (MHW) elevation from the nearest tidal gauge and by in-situ water observations. Stream characteristics were recorded for each identified watercourse on a WOTUS datasheet. Identified WOTUS, including wetlands, were classified according to a *Classification of Wetland and Deep-Water Habitats in the United States* (USFWS 1979). Each wetland and watercourse were photographed, and a photo log was compiled.

Forest stands, hedgerows, and woody vegetation clusters were delineated and characterized with the study area in accordance with the State Forest Conservation Technical Manual and MDNR Critical Area requirements. A walk-through forest stand analysis was conducted to obtain a general overview of the species present, successional stage, and stand condition. Forest stand and hedgerow boundaries were delineated on project mapping and all forest stand characteristics were recorded on stand datasheets. Stand-alone trees (1.5" DBH or greater) and specimen trees (> 30' DBH) were measured using a diameter at breast height (DBH) tape at 4.5 feet above the ground. The species, size, and condition of stand-alone and specimen trees were recorded, and their locations were surveyed using a GNSS unit. Within the Chesapeake Bay Critical Area (CBCA), woody vegetation clusters were mapped and characterized. Additionally, stand-alone trees and shrubs of any size were identified and GPS-located.

3.0 Results

3.1 Waters of the U.S., including Wetlands

During the field investigations, ten non-tidal wetlands, four tidal wetlands, and three watercourses were identified within the study area. Wetland classifications included ten palustrine emergent wetlands (PEM), two estuarine intertidal emergent wetlands (E2EM), and two estuarine intertidal scrub shrub wetlands (E2SS). Data were collected at a total of ten representative wetland test plots that characterize the identified wetland types and Cowardin classifications. Test plots 1WETA, 1WETB, 1WETC, 1WETD, 1WETE, 1WETF, 1WETG, 1WETH, 1WETI and 2WETD characterize the PEM portion of these systems. Test plots 1WETJ and 2WETB characterize the E2EM portion of these systems. Test plot 2WETA and 2WETC characterize the E2SS portions of these systems. Delineated watercourses include one perennial, two intermittent systems, as well as the Patapsco River.

The locations of these resources and test plot locations are shown on the detailed maps provided in **Appendix B**. Details regarding wetland cover type and delineated size can be found in the WOTUS Summary Table located in **Appendix C.** Detailed wetland characteristics including cover type, indicators of hydrology, dominant vegetation, and soils are included on the datasheets provided in **Appendix D**. Characteristics of each watercourse can also be found in **Appendix C** and **Appendix D**. Photographs of all delineated resources are included in **Appendix E**.

3.2 Forest Stand Characterization

A total of thirteen forest stands, 15 hedgerows, and 24 woody vegetation clusters were identified within the study area. The locations of the forest stands, hedgerows, and woody vegetation clusters are displayed on the Natural Resources Inventory Map in **Appendix B**. The identified forest stands are described below, and a hedgerow summary table is included in **Appendix F**.

Stand 1FS1 (NRI Map Sheets 2 and 3)

Stand 1FS1 is a disturbed early successional black locust forest. Canopy closure is approximately 30 percent. The canopy is dominated by Callery pear (*Pyrus calleryana)*, Siberian elm (*Ulmus pumila*), and black locust (*Robinia pseudoacacia*). Dominant size class is 2 to 6" DBH with a few 6 to11" DBH trees scattered throughout this layer and ash-leaf maple (*Acer negundo*) is present at the bottom of the slope. Dominant species in the understory include groundseltree (*Baccharis halimifolia),* amur honeysuckle (*Lonicera maackii)*, and smooth sumac (*Rhus glabra*). Dominant species in the herbaceous layer include a broomsedge (*Andropogon* sp.), Japanese honeysuckle (*Lonicera japonica),* common reed (*Phragmites australis*), and wand panic grass (*Panicum virgatum).* Overall, the forest stand is in poor condition with high invasive species cover and moderate vine cover.

Stand 1FS2 (NRI Map Sheets 1 and 2)

Stand 1FS2 is a disturbed early successional black locust forest. Canopy closure is approximately 40 percent with dominant size class between 6 and 20" DBH. The canopy is dominated by black locust, white mulberry (*Morus alba),* tree-of-heaven (*Ailanthus altissima)*, and Siberian elm. Dominant species in the understory include groundseltree*,* amur honeysuckle, tree-of-heaven (*Ailanthus altissima*), eastern poison ivy (*Toxicodendron radicans*), black locust, Asian bittersweet (*Celastrus orbiculatus),* and Japanese honeysuckle*.* Dominant species in the herbaceous layer include Japanese honeysuckle*,* English ivy (*Hedera helix)*, grape species (*Vitis* sp.) and great mullein (*Verbascum thapsus).* The understory and herbaceous layers are sparse in some areas with little herbaceous growth. Overall, the forest stand is in poor condition with high invasive species cover, moderate downed woody debris and high vine cover.

Stand 1FS3 (NRI Map Sheets 2 and 3)

Stand 1FS3 is a disturbed early successional black locust forest. Canopy closure is approximately 40 percent with a dominant size class of 2-6" DBH. The canopy is dominated by Callery pear and black locust. There is also one 18" DBH pin oak (*Quercus palustris*) within the stand. Dominant species in the understory include amur honeysuckle and rambler rose (*Rosa multiflora*)*.* Smooth sumac is also present on the edge of the forest stand. Dominant species in the herbaceous layer include Japanese honeysuckle and common reed. Overall, the forest stand is in poor condition with high invasive species cover, low downed woody debris, and moderate vine cover.

Stand 1FS4 (NRI Map Sheets 3 and 4)

Stand 1FS4 is an early successional black locust and tree-of-heaven forest. Canopy closure is approximately 75 percent with a dominant size class of 6-11" DBH. The canopy is dominated by black locust, tree-of-heaven, white mulberry, and sweetgum (*Liquidambar styraciflua) with* climbing vines present in this layer. Dominant species in the understory include amur honeysuckle, blackberry species (*Rubus* sp.), Japanese honeysuckle*,* eastern poison ivy, Asian bittersweet*,* and English ivy. Herbaceous species are lacking due to vines being dominant as ground cover. Overall, the forest stand is in fair condition with high invasive species cover, moderate downed woody debris, and high vine cover.

Stand 1FS5 (NRI Map Sheet 2)

Stand 1FS5 is an early successional sweetgum and common persimmon forest. Canopy closure is approximately 25 percent with a dominant size class of 2-6" DBH. The canopy is dominated by sweetgum,

common persimmon (*Diospyros virginiana),* black locust, and Callery pear with inclusion of white mulberry. Dominant species in the understory include groundseltree, amur honeysuckle, Callery pear, white mulberry, Asian bittersweet, eastern poison ivy, and common persimmon. Autumn olive (*Elaeagnus umbellata),* grape species, blackberry species, and Virginia creeper (*Parthenocissus quinquefolia)* are also common in this layer. Dominant species in the herbaceous layer include Japanese honeysuckle, Callery pear, Asian bittersweet, and eastern poison ivy. Common reed and Virginia creeper are also present throughout this layer. Overall, the forest stand is in poor condition with high invasive species cover, moderate downed woody debris, and heavy vine coverage.

Stand 1FS6 (NRI Map Sheet 2)

Stand 1FS6 is an early successional black locust and sweetgum forest. Canopy closure is approximately 25 percent with dominant size class of 6-11" DBH. The canopy is dominated by sweetgum and black locust. Common persimmon, Callery pear, and tree-of-heaven are also common in this layer. Dominant species in the understory include Callery pear, black locust, amur honeysuckle, groundseltree, grape species, Asian bittersweet, and amur peppervine (*Ampelopsis brevipedunculata)*. Dominant species in the herbaceous layer include Asian bittersweet, Japanese honeysuckle, an unknown blackberry, Virginia creeper, and amur peppervine. Common reed, rambler rose*,* and common wormwood (*Artemisia vulgaris)* are also scattered throughout. Vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. Overall, this forest stand is in poor condition as invasive species are dominant throughout and trees are stressed and damaged from heavy vine coverage.

Stand 1FS7 (NRI Map Sheets 1 and 2)

Stand 1FS7 is a mid-successional black locust and sweetgum forest. Canopy closure is approximately 60 percent with a dominant size class of 6-11" DBH. The canopy is dominated by black locust, sweetgum, and willow oak (*Quercus phellos)*. Callery pear and common hackberry (*Celtis occidentalis)* are also common in this layer. A few larger trees are scattered throughout the stand. Dominant species in the understory include Callery pear, black locust, Japanese honeysuckle, rambler rose, grape species, Asian bittersweet, and Virginia creeper. Dominant species in the herbaceous layer include common reed, rambler rose, grape species, Japanese honeysuckle, Asian bittersweet, and amur peppervine. Common wormwood is present along the stand edges and vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. Overall, this stand is in poor condition as invasive species are dominant throughout and trees are stressed and damaged from heavy vine coverage.

Stand 1FS8 (NRI Map Sheet 1)

Stand 1FS8 is a mid-successional sweet gum and white pine forest. Canopy closure is approximately 50 percent with a dominant size class of 6-11" DBH. The canopy is dominated by black locust, sweetgum, eastern white pine (*Pinus strobus),* Callery pear, and common persimmon. White mulberry and a few larger eastern white pine are present in this layer. Dominant species in the understory include amur peppervine, groundseltree, amur honeysuckle, Japanese honeysuckle, grape species, Asian bittersweet, eastern poison ivy, blackberry species, and rambler rose. Autumn olive, staghorn sumac (*Rhus typhina),* and tree-of-heaven are also present in this stand. Dominant species in the herbaceous layer include common reed, eastern poison ivy, Japanese honeysuckle, Virginia creeper, grape species, and amur peppervine. Vines are dominant as ground cover in this layer. Overall, this stand is in poor condition with high invasive species cover and trees are stressed/damaged from heavy vine coverage.

Stand 1FS9 (NRI Map Sheet 1)

Stand 1FS9 is a mid-successional black cherry and black locust forest. Canopy closure is approximately 75 percent with a dominant size class of 6-11" DBH. The canopy is dominated by black cherry (*Prunus serotina)*, black locust, and Callery pear. Northern white oak (*Quercus alba)* and mockernut hickory (*Carya tomentosa*) are also common in this layer. Tree-of-heaven and princesstree *(Paulownia tomentosa)* are scattered along the forest stand edges. Dominant species in the understory include amur peppervine, Callery pear, black cherry, grape species, American holly (*Ilex opaca),* eastern poison ivy, rambler rose, Japanese honeysuckle, Asian bittersweet, Virginia creeper, and groundseltree. Dominant species in the herbaceous layer include Asian bittersweet, eastern poison ivy, Japanese honeysuckle, Virginia creeper, and rambler rose. Common reed is scattered along the stand edges. Vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. The eastern portion of the stand has slightly younger but similar species and condition. Overall, this stand is in fair condition as invasive species are dominant throughout and trees have climbing vines, but moderate species diversity is present.

Stand 1FS10 (NRI Map Sheet 1)

Stand 1FS10 is a mid-successional tuliptree and tree-of-heaven forest. Canopy closure is approximately 80 percent with a dominant size class of 12-20" DBH. The canopy is dominated by tuliptree (*Liriodendron tulipifera*), tree-of-heaven, sweetgum, and black cherry. princesstree (*Paulownia tomentosa*), common persimmon, white mulberry, and eastern red cedar (*Juniperus virginiana*) are also common in this layer. Dominant species in the understory include white mulberry, amur honeysuckle, Japanese honeysuckle, autumn olive, eastern poison ivy, Asian bittersweet, trumpet-creeper (*Campsis radicans)*, rambler rose, an unknown blackberry, English ivy, and tree-of-heaven. Dominant species in the herbaceous layer include Asian bittersweet, eastern poison ivy, Japanese honeysuckle, garlic-mustard (*Alliaria petiolata)*, and English ivy. Vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. Overall, this stand is in poor condition as invasive species are dominant throughout and trees are stressed and damaged from heavy vine coverage.

Stand 1FS11 (NRI Map Sheets 1 and 2)

Stand 1FS11 is a mid-successional black locust and Callery pear forest. Canopy closure is approximately 50 percent with a dominant size class of 2-6" DBH. The canopy is dominated by black locust, Callery pear, sweetgum, and common persimmon. Tree-of-heaven, princesstree, and eastern red cedar are also common, and willow oak is scattered throughout the stand. Dominant species in the understory include groundseltree, amur honeysuckle, Callery pear, grape species, sweetgum, amur peppervine, and eastern poison ivy. Autumn olive is also common in this layer. Dominant species in the herbaceous layer include Asian bittersweet, eastern poison ivy, Japanese honeysuckle, rambler rose, blackberry species, and common wormwood. Common reed is scattered throughout and along the forest stand edge. Vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. Overall, this stand is in poor condition as invasive species are dominant throughout and trees are stressed and damaged from heavy vine coverage.

Stand 1FS12 (NRI Map Sheet 2)

Stand 1FS12 is a mid-successional willow oak and black locust forest. Canopy closure is approximately 75 percent with a dominant size class of 20-30" DBH. The canopy is dominated by willow oak, black locust,

and sweetgum. Southern red oak (*Quercus falcata*), black cherry, Callery pear, northern red oak (*Quercus rubra)*, white mulberry, and red maple (*Acer rubrum)* are also common in this layer. Dominant species in the understory include eastern poison ivy, Japanese honeysuckle, rambler rose, groundseltree, horsebrier (*Smilax rotundifolia)*, American holly, Virginia creeper, Asian bittersweet, and blackberry species. Dominant species in the herbaceous layer include Japanese honeysuckle, English ivy, eastern poison ivy, Asian bittersweet, and goldenrod species (*Solidago* sp.). Common reed is scattered and along the forest stand edge. Vines are dominant as ground cover in this layer. Invasive species cover is high throughout this stand. Overall, this stand is in fair condition. Canopy trees are in good health, however, invasives species are prevalent throughout the stand with some climbing vines.

Stand 1FS13 (NRI Map Sheet 2)

Stand 1FS13 is a mid-successional willow oak and southern red oak forest. Canopy closure is approximately 90 percent and a dominant size class of 12-20" DBH. The canopy is dominated by willow oak, southern red oak, northern white oak, and sweetgum. Red maple and black cherry are also common in this layer. Dominant species in the understory include horsebrier, Virginia creeper, eastern poison ivy, trumpet-creeper, rambler rose, blackberry species, and highbush blueberry (*Vaccinium corymbosum*). The forest interior has a more open understory. Dominant species in the herbaceous layer include eastern poison ivy, Japanese honeysuckle, and Virginia creeper. Common reed is dominant along the forest stand edge. Invasive species cover is medium throughout this stand. Overall, this stand is in fair condition as the forest interior is diverse with an open understory, but the forest stand edge is more disturbed with heavier vine and invasive cover.

Tree Survey

A total of 120 trees were identified within the study area. This includes 112 stand-alone trees and 8 specimen trees located within forest stands. An additional 16 trees or shrubs with a DBH of less than 1.5" were identified within the CBCA. The locations of these trees are included on the maps in **Appendix B**. Information regarding the species, size, and condition of each identified tree is included on the table in **Appendix G**.

4.0 Conclusions

A total of 10 WOTUS features were identified within the study area. Impacts to these resources may require authorization from the United States Army Corps of Engineers (USACE) and/or the Maryland Department of the Environment (MDE). Thirteen forest stands, 15 hedgerows, 24 woody vegetation clusters, 112 stand-alone trees, 8 specimen trees, and 16 small trees or shrubs were identified within the study area. Impacts to trees and/or forest may require authorization from Maryland Department of Natural Resources (DNR).

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APPENDIX A: VICINITY MAP

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

MDTA Maryland Transportation Authority

Francis Scott Key Bridge Rebuild Project

Vicinity Map

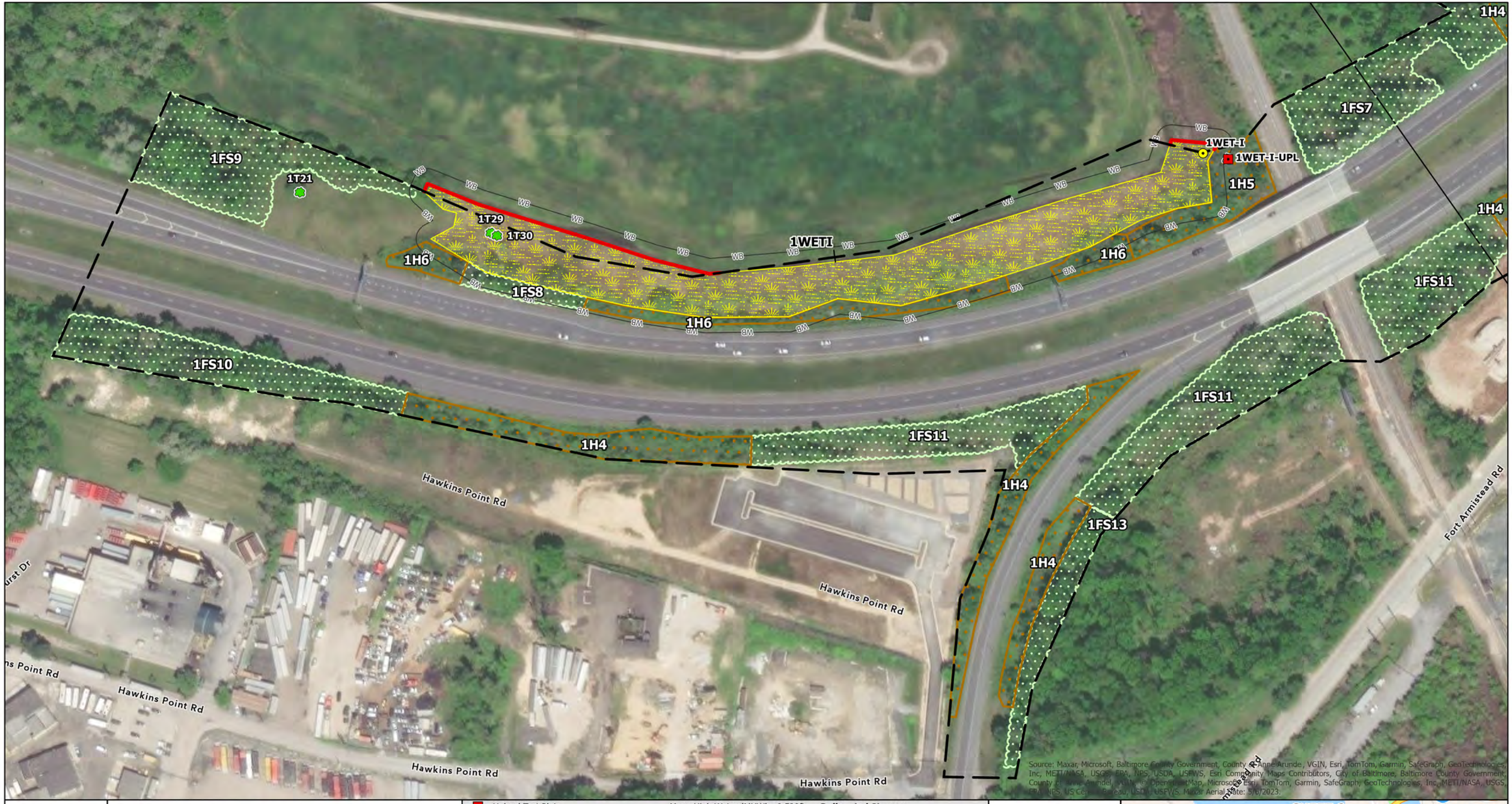
Baltimore City and Baltimore County, Maryland
June 2024

N
W E
S

Study Area
County Boundaries

0 1,000 2,000
Feet

APPENDIX B: NATURAL RESOUCES INVENTORY MAP



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Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 1 of 7

Baltimore City and Baltimore County, Maryland
June 2024

- Upland Test Plot
- Wetland Test Plot
- Specimen Tree
- Individual Tree
- Individual Shrub
- Feature Continues Beyond Study Area
- Map Sheet
- County Boundaries
- Study Area
- Mean High Water (MHW) - 0.528ft - NAVD88
- Mean Higher High Water (MHHW) - 0.827ft - NAVD88
- CBCA Chesapeake Bay Critical Area Boundary
- CRZ
- Forest Stand
- Hedgerow
- Woody Vegetation
- Field Idenified MDTA Planting Area

Delineated Streams
- Intermittent
- Perennial
- Estuarine Sub-Tidal

Delineated Wetlands
- Estuarine Emergent
- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- WB Non Tidal Wetland Buffer (25ft)

*Feature exists below bridge approach span, or portion of feature extends below bridge approach span.

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W E
S

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feet
1 inch = 150 feet

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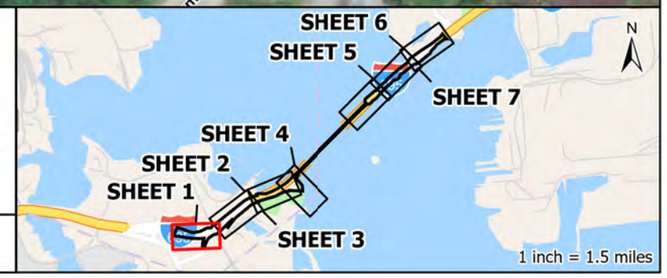

Source: Maxar, Microsoft, Baltimore County Government, County of Anne Arunde, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Esri Community Maps Contributors, City of Baltimore, Baltimore County Government, County of Anne Arundel, VGIN, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS. Maxar Aerial Date: 5/6/2023.

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MDTA Maryland Transportation Authority

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Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 2 of 7

Baltimore City and Baltimore County, Maryland
June 2024

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Delineated Wetlands
- Estuarine Emergent
- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- WB Non Tidal Wetland Buffer (25ft)

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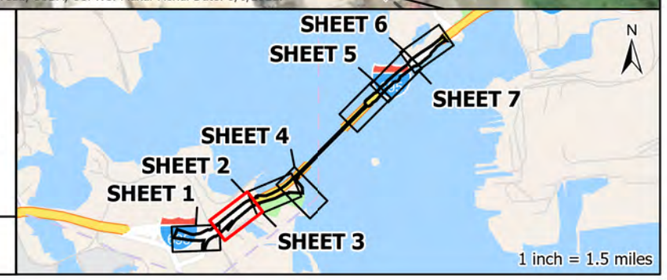

Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 3 of 7

Baltimore City and Baltimore County, Maryland
June 2024

MARYLAND DEPARTMENT OF TRANSPORTATION
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Project Area Within Chesapeake Bay Critical Area.

Source: Maxar, Microsoft, Baltimore County Government, County of Anne Arundel, VGIN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA, USFWS, Esri Community Maps Contributors, City of Baltimore, Baltimore County Government, County of Anne Arundel, VGIN, © OpenStreetMap, Microsoft, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, USFWS. Maxar Aerial Date: 5/6/2023.

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- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- WB Non Tidal Wetland Buffer (25ft)

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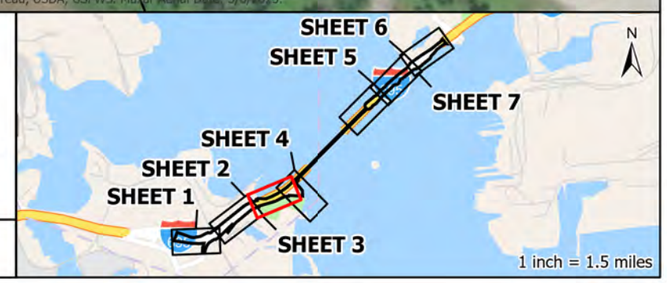

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

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Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 4 of 7

Baltimore City and Baltimore County, Maryland
June 2024

- Upland Test Plot
- Wetland Test Plot
- Specimen Tree
- Individual Tree
- Individual Shrub
- Feature Continues Beyond Study Area
- Map Sheet
- County Boundaries
- Study Area
- Mean High Water (MHW) - 0.528ft - NAVD88
- Mean Higher High Water (MHHW) - 0.827ft - NAVD88
- Chesapeake Bay Critical Area Boundary
- CRZ
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Delineated Streams
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Delineated Wetlands
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- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- Non Tidal Wetland Buffer (25ft)

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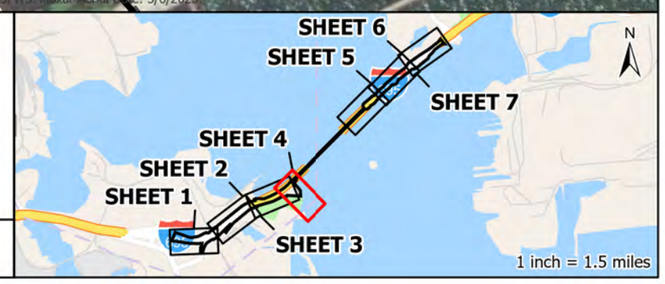

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STATE HIGHWAY ADMINISTRATION

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Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 5 of 7

Baltimore City and Baltimore County, Maryland
June 2024

- Upland Test Plot
- Wetland Test Plot
- Specimen Tree
- Individual Tree
- Individual Shrub
- Feature Continues Beyond Study Area
- Map Sheet
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Delineated Wetlands
- Estuarine Emergent
- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- WB Non Tidal Wetland Buffer (25ft)

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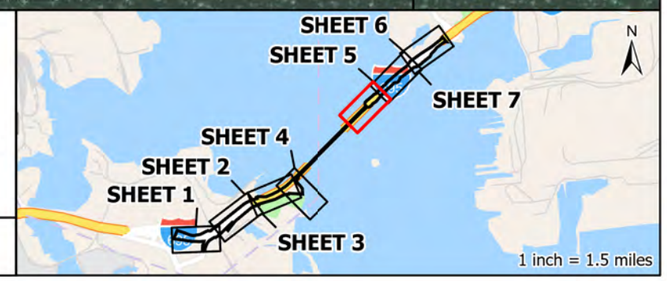

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STATE HIGHWAY ADMINISTRATION

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Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 6 of 7

Baltimore City and Baltimore County, Maryland
June 2024

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- Individual Shrub
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- Palustrine Open Water
- Non Tidal Wetland Buffer (25ft)

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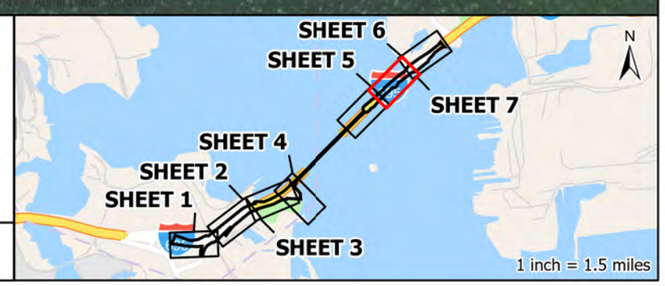

MARYLAND DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION

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U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION

Francis Scott Key Bridge Rebuild

Appendix B:
Natural Resources Inventory Maps
Sheet 7 of 7

Baltimore City and Baltimore County, Maryland
June 2024

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- Estuarine Scrub-shrub
- Palustrine Emergent
- Palustrine Open Water
- WB — Non Tidal Wetland Buffer (25ft)

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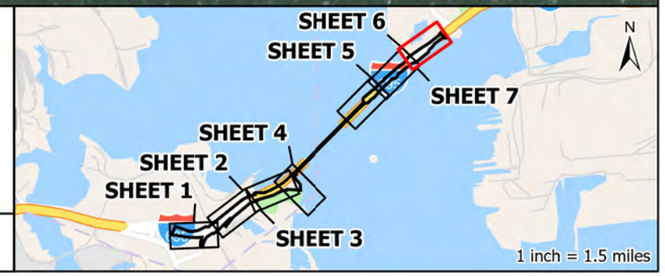


APPENDIX C: WOTUS SUMMARY TABLE

Appendix C: Francis Scott Key Bridge Rebuild Project
Wetland Summary Table

Wetland Number	Delineated Area (AC)	Cowardin Classification/Wetland Type	Hydrology	Dominant Vegetation			Soils
				Scientific Name	Common Name	Indicator Status	
1WETA (NRI Map Sheet 3)	0.02	PEM1C (Depression/Toe-of-Slope)	Surface Water, High Water Table, Saturation, Drainage Patterns, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, loamy, very deep, 0 to 8 percent slopes Depleted Below Dark Surface (A11) and Depleted Matrix (F3) 0-3 inches of 7.5YR3/2, clay, and 3-12 inches of 7.5YR 4/1, with 7.5YR5/8 redox concentrations, clay
1WETB (NRI Map Sheet 3)	0.003	PEM1C (Toe-of-Slope)	Surface Water, High Water Table, Saturation, Sediment Deposits, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, loamy, very deep, 0 to 8 percent slopes Depleted Below Dark Surface (A11), Depleted Matrix (F3), and Redox Dark Surface (F6) 0-6 inches of 2.5YR3/2 with 2.5YR4/8 redox concentrations, clay, and 6-12 inches of 2.5YR4/1 with 2.5YR4/8 redox concentrations, clay loam
1WETC (NRI Map Sheet 2 and 3)	0.05	PEM1C (Toe-of-Slope)	Surface Water, High Water Table, Saturation, Drainage Patterns, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, loamy, very deep, 0 to 8 percent slopes Redox Dark Surface (F6) 0-9 inches of 10Y 3/2 with 10Y 5/8 redox concentrations, clay loam
1WETD (NRI Map Sheet 2)	0.02	PEM1C (Toe-of-slope/Ditch)	Surface Water, High Water Table, Saturation, Sediment Deposits, Algal Mat or Crust, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Urban Land, 0 to 15 percent slopes Depleted Matrix (F3) 0-6 inches of 10YR 4/2 with 2.5 YR5/6 redox concentrations, clay
1WETE (NRI Map Sheets 3, 4 and 5)	6.21	PEM1F (Impoundment)	Surface Water, Water Marks, Inundation Visible on Aerial Imagery, Aquatic Fauna, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, smoothed, 0-35% slopes. Sandy Mucky Mineral (S1) 0-12 inches of 10YR3/2, loamy sand with organics
1WETF (NRI Map Sheet 2)	0.08	PEM1A/B (Depression)	High Water Table, Saturation, Saturation Visible on Aerial Imagery, Geomorphic Position, FAC-Neutral Test	*Diospyros virginiana* *Baccharis halimifolia* *Phragmites australis*	Common Persimmon Groundseltree Common Reed	FAC FAC FACW	Udorthents, clayey, very deep, 0-15% slopes. Redox Dark Surface (F6) 0-8 inches of 10YR 3/2 with 5YR 4/4 redox concentrations, fine sandy loam
1WETG (NRI Map Sheet 2)	0.70	PEM1A/B (Depression)	Surface Water, High Water Table, Saturation, Saturation Visible on Aerial Imagery, Geomorphic Position	*Baccharis halimifolia* *Phragmites australis* *Holcus lanatus* *Toxicodendron radicans* *Smilax rotundifolia*	Groundseltree Common Reed Common Velvet Grass Eastern Poison Ivy Horsebrier	FAC FACW FACU FAC FAC	Udorthents, clayey, very deep, 0-15% slopes Redox Dark Surface (F6) 0-4 inches of 10YR 3/2 with 5YR4/6 redox concentrations, silt loam
1WETH (NRI Map Sheet 2)	0.13	PEM1A/B (Depression)	Surface Water, High Water Table, Saturation, Saturation Visible on Aerial Imagery, FAC-Neutral Test	*Baccharis halimifolia* *Liquidambar styraciflua* *Phragmites australis*	Groundseltree Sweet-Gum Common Reed	FAC FAC FACW	Udorthents, clayey, very deep, 0-15% slopes Depleted Matrix (F3) 0-8 inches of 7.5YR4/2 with 5YR4/6 redox concentrations, sandy clay loam

Wetland Number	Delineated Area (AC)	Cowardin Classification/Wetland Type	Hydrology	Dominant Vegetation			Soils
				Scientific Name	Common Name	Indicator Status	
1WETI (NRI Map Sheet 1)	2.55	PEM1A/B (Depression/Swale)	High Water Table, Saturation, Water-Stained Leaves, Saturation Visible on Aerial Imagery	*Populus alba* *Baccharis halimifolia* *Phragmites australis*	White poplar Groudseltree Common Reed	N/A FAC FACW	Udorthents, clayey, very deep, 0-15% slopes Redox Dark Surface (F6) 0-4 inches of 10YR2/2 with 7.5YR4/4 redox concentrations, sandy clay loam
1WETJ (NRI Map Sheets 3 and 4)	0.01	E2EM1 (Intertidal)	Surface Water, High Water Table, Saturation, Water Marks, Sediment Deposits, Drift Deposits, Geomorphic Position, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, smoothed, 0-35% slopes Histosol (A1) 0-18+ inches of 10YR2/1, silt loam with organics, tidal muck
2WETA (NRI Map Sheet 6)	0.05	E2SS1 (Depression)	Surface Water, High Water Table, Saturation, Water Marks, Sediment Deposits, Drift Deposits, Algal Mat or Crust	*Baccharis halimifolia* *Phragmites australis*	Groundseltree Common Reed	FAC FACW	Udorthents, highway, 0 to 65 percent slopes Sandy Redox (S5) 3-16 inches of 2.5Y6/2 with 7.5YR4/6 redox concentrations, loamy sand
2WETB (NRI Map Sheet 6)	0.12	E2EM5 (Depression)	Surface Water, High Water Table, Saturation, Drift Deposits, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, highway, 0 to 65 percent slopes Sandy Redox (S5) 3-12 inches of 10YR5/2 with 5YR4/6 redox concentrations, loamy sand
2WETC (NRI Map Sheet 6)	0.14	E2SS1 (Shoreline)	Surface Water, High Water Table, Saturation, Water Marks, Sediment Deposits, Drift Deposits, Algal Mat or Crust, FAC-Neutral	*Baccharis halimifolia* *Spartina alternifolia*	Groundseltree Saltwater cord grass	FAC OBL	Udorthents, highway, 0 to 65 percent slopes Sandy Redox (S5) 0-4 inches of 2.5Y7/2 with 7.5YR4/6 redox concentrations, loamy sand
2WETD (NRI Map Sheet 7)	0.05	PEM5 (Toe-of-slope)	Oxidized Rhizospheres along Living Roots, FAC-Neutral Test	*Phragmites australis*	Common Reed	FACW	Udorthents, highway, 0 to 65 percent slopes Depleted Matrix (F3) 0-6 inches of 10YR4/1 with 2.5YR3/4 redox concentrations,

Francis Scott Key Bridge Rebuild Project
Watercourse Summary Table

Watercourse Number	Delineated Length (AC/LF)	Cowardin Classification	Nearest Downstream Named Stream	Use Class	Channel Characteristics		Comments
					Average Channel Width	Average Channel Depth	
1WA (NRI Map Sheet 3)	112 LF	R4UB1	Patapsco River	I	3’	1”-8”	Perennial stream that flows from a culvert to 1WC and abuts 1WETA and 1WB.
1WB (NRI Map Sheets 2 and 3)	187 LF	R4UB1	Patapsco River	I	1’-4’	1’4”	Intermittent stream that flows from 1WETC to 1WA and abuts 1WETB.
1WC (NRI Map Sheets 3, 4, 5, 6 and 7)	1.66 AC	E1UB	Chesapeake Bay	I	5,500’	0’-50’	Patapsco River. Begins and ends outside the study area.

APPENDIX D: DATASHEETS

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MDTA Inner Loop Rills City/County: Balt City Sampling Date: 2/20/24
Applicant/Owner: MDTA State: MD Sampling Point: 1WETA
Investigator(s): SLY/EH Section, Township, Range: —
Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): none Slope (%): 1
Subregion (LRR or MLRA): 149A Lat: 39.209177 Long: -76.54069 Datum: NAD1983
Soil Map Unit Name: 40B Udorthents, loamy, very deep, 0 to 8 percent slopes NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ✓, or Hydrology X significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: Wetland collecting sheet flow from east and toe of slope. Runs west to WB Photos 8087-88

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 2"	
Water Table Present?	Yes ✓	No ____	Depth (inches): 4"	
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 4"	**Wetland Hydrology Present?** Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 1WET-A

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: N/A)			
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5X1.0')			
1. Phragmites australis	65	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65 = Total Cover		

50% of total cover: 32.5 20% of total cover: 13

Woody Vine Stratum (Plot size: NA)			
1. NA			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1WETA

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	7.5YR3/2	100					clay	fine roots in upper inch
3-12	7.5YR4/1	90	7.5YR5/8	10	C	M	clay	gravel present

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MDTA City/County: Baltimore City Sampling Date: 2/20/24

Applicant/Owner: MDTA State: MD Sampling Point: 1WETB

Investigator(s): SLY ECH Section, Township, Range: —

Landform (hillslope, terrace, etc.): bottom of hillslopes Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): 149A Lat: 39.208999 Long: -76.541285 Datum: NAD 1983

Soil Map Unit Name: 40B Udorthents, loamy, very deep, 0 to 8 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

photos - 8100 - 8101

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ☐ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ✓ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 2
Water Table Present?	Yes ✓	No ____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 3

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 1WETB

Tree Stratum (Plot size: NA)	Absolute % Cover	Dominant Species?	Indicator Status
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover: ____ 20% of total cover: ____			
Sapling/Shrub Stratum (Plot size: NA)			
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover: ____ 20% of total cover: ____			
Herb Stratum (Plot size: 5' x 10')			
1. Phragmites australis	70	Y	FACW
2. Lonicera japonica	10	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80 = Total Cover		
50% of total cover: 40 20% of total cover: 16			
Woody Vine Stratum (Plot size: NA)			
1. NA			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover: ____ 20% of total cover: ____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1WETB

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5YR3/2	80	2.5YR4/8	20	C	M	clay loam	
6-12	2.5YR4/1	75	2.5YR4/8	25	C	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☑ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MDTA City/County: Baltimore City Sampling Date: 2/20/24

Applicant/Owner: MDTA State: MD Sampling Point: 1WETC

Investigator(s): SLY, ECH Section, Township, Range: —

Landform (hillslope, terrace, etc.): bottom of hillslope Local relief (concave, convex, none): concave Slope (%): 3

Subregion (LRR or MLRA): 149A Lat: 39.208546 Long: -76.542296 Datum: NAD1983

Soil Map Unit Name: 40B Udorthents, loamy, very deep, 0 to 8 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:

phragmites ditch at toe of slope,

photos – 8103-8104

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 1
Water Table Present?	Yes ✓	No ____	Depth (inches): 7
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 5

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 1WETC

Tree Stratum (Plot size: NA)	Absolute % Cover	Dominant Species?	Indicator Status
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: NA)			
1. NA			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5' x 10')			
1. Phragmites australis	85	Y	FACW
2. Lonicera japonica	10	N	FACU
3. Baccharis halimifolia	5	N	FAC
4. Rubus phoenicolasius	5	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105 = Total Cover		

50% of total cover: 52.5 20% of total cover: 21

Woody Vine Stratum (Plot size: NA)			
1. NA			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL Sampling Point: 1WETC

Profile Description: (Describe to the depth needed to document the Indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-9	10YR3/2	90	10YR5/8	10	C	M	clay loam	
9-13	10YR3/2	100					clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☒ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ____

Remarks:

wetland has hydric soils but areas w/ fill soils are disturbed

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: MDTA Inner Loop Bills City/County: Baltimore Sampling Date: 3/20/24

Applicant/Owner: MDTA ! State: MD Sampling Point: 1WETD

Investigator(s): SLY, LAP Section, Township, Range:

Landform (hillslope, terrace, etc.): fill of slope / ditch Local relief (concave, convex, none): concave Slope (%): 2%

Subregion (LRR or MLRA): MLRA 149A Lat: 39.209070 Long: -76.542730 Datum: NAD1983

Soil Map Unit Name: Urban land, 0 to 15 percent slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Photos : 6560 - 6561

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [X] Surface Water (A1)
- [X] High Water Table (A2)
- [X] Saturation (A3)
- [ ] Water Marks (B1)
- [X] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [X] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [X] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [✓] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 1"
Water Table Present?	Yes ✓	No _____	Depth (inches): 3"
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: • Standing water west end of wetland
• collects water from slope & road runoff

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 1WETD

Tree Stratum (Plot size: N/A)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: N/A)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5'x10')			
1. Phragmites australis	90%	Y	FACW
2. Lonicera japonica	5%	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95% = Total Cover		

50% of total cover: 47.5% 20% of total cover: 19%

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 4WETD

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 4/2	90%	2.5YR5/6	10%	C	M	clay	
6-14"	10YR 6/8	70%	5YR 5/8	30%	C	M	clay	fill soils

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☑ Depleted Below Dark Surface (A11)
- ☑ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

- evidence of fill material
- fill soils

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore City Sampling Date: 5/3/24

Applicant/Owner: MdTA State: MD Sampling Point: 1WETE-1

Investigator(s): D. Smith, K. Mathews Section, Township, Range:

Landform (hillslope, terrace, etc.): Impoundment Local relief (concave, convex, none): concave Slope (%): 1

Subregion (LRR or MLRA): MLRA 149A Lat: 39.211814 Long: -76.53388 Datum: NAD83

Soil Map Unit Name: Udorthents, smoothed, 0-35% slopes NWI classification: PEMICd

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:

Photo 1WETE-1 Upl. plot is same as for 1WETC

PEMIF

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ✓ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ✓ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ✓ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 6-12+
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Appears to be palustrine impoundment, with seasonal tidal influence

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETE-1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 15 ft)			
1. Phragmites Australis	100	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

50% of total cover: 50 20% of total cover: 20

Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WETF-1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					LS	w/ organics

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ✓ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Permanent inundation likely. Very little soil extracted in auger. Soil w/ considerable muck.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Bridge City/County: Baltimore City Sampling Date: 5/6/24
Applicant/Owner: MDTA State: MD Sampling Point: WETF
Investigator(s): EB, GS Section, Township, Range:
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR or MLRA): MLRA 149A Lat: 39.208284 Long: -76.544114 Datum: NAD83
Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ✓, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:
Soils disturbed from 695 + B&E ROW PEM1A/B

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ✓	No ____	Depth (inches): 0"
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Rain in past 24 hrs.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETF

Tree Stratum (Plot size: 20×50)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 20×50)			
1. Diospyros virginiana	5	✓	FAC
2. Baccharis halimifolia	5	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 10×25)			
1. Phragmites australis	90	✓	FACW
2. Lonicera japonica	3		FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	93 = Total Cover		
50% of total cover: 46.5	20% of total cover: 18.6		
Woody Vine Stratum (Plot size: 20×50)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WETF

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 3/2	95	5YR 4/4	5	C	M	Fine Sal	
2-8	10YR 3/2	80	5YR 4/4	20	C	M	Fine Sal	
8-12+	10YR 7/2	95	2.5YR 5/6	5	C	M	Sal	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Bridge City/County: AA Co Sampling Date: 5/6/2024

Applicant/Owner: MDTA State: MD Sampling Point: WETF-UPL

Investigator(s): EB, GS Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 3

Subregion (LRR or MLRA): MLRA 149A Lat: 39.208476 Long: -76.543899 Datum: NAD83

Soil Map Unit Name: Udorthents, clayey, very deep 0-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✓, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Upslope of wetland within depression that runs along the toe-of-slope of 695 embankment. Receives significant stormwater run off from highway. Soils disturbed from 695 + BGE ROW

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes ✓	No _____	Depth (inches): 4"
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Rain within past 24 hrs

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETF-UPL

Tree Stratum (Plot size: 20×50)	Absolute % Cover	Dominant Species?	Indicator Status
1. Robinia pseudoacacia	5	✓	UPL
2. Liquidambar styraciflua	2	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	7	= Total Cover	
50% of total cover: 3.5	20% of total cover: 1.4		

Sapling/Shrub Stratum (Plot size: 20×50)			
1. Baccharis haminifolia	15	✓	FAC
2. Liquidambar styraciflua	2		FAC
3. Rubus argutus	1		FAC
4.			
5.			
6.			
7.			
8.			
	18	= Total Cover	
50% of total cover: 9	20% of total cover: 3.6		

Herb Stratum (Plot size: 10×25)			
1. Phragmites australis	65	✓	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
50% of total cover: 32.5	20% of total cover: 13		

Woody Vine Stratum (Plot size: 20×50)			
1. Lonicera japonica	30	✓	FACU
2. Parthenocissus quinquefolia	20	✓	FACU
3.			
4.			
5.			
	50	= Total Cover	
50% of total cover: 25	20% of total cover: 10		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☐ No ✓

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1 NETF-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 3/3	98	7.5YR 4/4	2	C	M	Fine SaCl	
1-4	10YR 3/3	93	7.5YR 4/4	7	C	M	Fine SaCl	
4-12+	5YR 5/4	99	2.5YR 5/6	1	C	M	SaL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore City Sampling Date: 5/8/24
Applicant/Owner: MDTA State: MD Sampling Point: WETG
Investigator(s): EB, TT Section, Township, Range:
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR or MLRA): MLRA 149A Lat: 39.207451 Long: -76.545866 Datum: NAD83
Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ✓, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Soils disturbed from 695 + BGE ROW PEMIA/B

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 0.5"
Water Table Present?	Yes ✓	No ____	Depth (inches): 10"
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETG

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30')			
1. Baccharis halimifolia	10	✓	FAC
2. Sambucus nigra	2		FACW
3.			
4.			
5.			
6.			
7.			
8.			
	12 = Total Cover		
50% of total cover: 6	20% of total cover: 2.4		
Herb Stratum (Plot size: 15')			
1. Phragmites australis	40	✓	FACW
2. Holcus lanatus	30	✓	FACU
3. Toxicodendron radicans	10		FAC
4. Juncus effusus	5		OBL
5. Dichanthelium clandestinum	2		FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	87 = Total Cover		
50% of total cover: 43.5	20% of total cover: 17.4		
Woody Vine Stratum (Plot size: 30')			
1. Smilax rotundifolia	5	✓	FAC
2. Toxicodendron radicans	5	✓	FAC
3.			
4.			
5.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1WETG

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	95	5YR 4/6	5	C	M/PL	SiL	
4-8	10YR 5/3	80	7.5YR 5/6	20	C	M	C	
8-12+	2.5YR 4/6	95	7.5YR 5/8	5			SaCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: AA Co Sampling Date: 5/8/24

Applicant/Owner: MDTA State: MD Sampling Point: WETA

Investigator(s): EB, TT Section, Township, Range:

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): MLRA 149A Lat: 39.206596 Long: -76.547079 Datum: NAD83

Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ✓, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓ No ____	
Wetland Hydrology Present?	Yes ✓ No ____	

Remarks:
Soils disturbed from L695 + B6E

PEMIA/B

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ✓ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 1"
Water Table Present?	Yes ✓	No ____	Depth (inches): 0"
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: IWETH

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 30)			
1. Baccharis haminifolia	8	✓	FAC
2. Liquidambar styraciflua	5	✓	FAC
3. Sambucus nigra	2		FACW
4.			
5.			
6.			
7.			
8.			
	15 = Total Cover		

50% of total cover: 7.5 20% of total cover: 3

Herb Stratum (Plot size: 15)			
1. Phragmites australis	80	✓	FACW
2. Onoclea sensibilis	10		FACW
3. Toxicodendron radicans	5		FAC
4. Lonicera japonica	5		FACU
5. Smilax rotundifolia	3		FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	103 = Total Cover		

50% of total cover: 51.5 20% of total cover: 20.6

Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 1-WETH

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 4/2	98	5YR 4/6	2	C	M	SCL	
8-12+	5YR 4/4	95	2.5YR 4/6	5	C	M	SCL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☑ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☑ No ☐

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore City Sampling Date: 5/8/24

Applicant/Owner: MDTA State: MD Sampling Point: WETH-UPL

Investigator(s): EB, TT Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR or MLRA): MLRA 149A Lat: 39.206297 Long: -76.547577 Datum: NAD83

Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil ✓, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks:
Soils disturbed from 695 + BGE ROW

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): 0.25"*
Water Table Present?	Yes ✓	No _____	Depth (inches): 2"
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0-6"

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Even though there is a HWT, surface hydrology is perched over dense clay.

* Surface water in ~5% of plot

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WETA-UPL

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 15)			
1. Phragmites australis	50	✓	FACW
2. Holcus lanatus	5		FACU
3. Juncus effusus	8		OBL
4. Toxicodendron radicans	20	✓	FAC
5. Parthenocissus quinquefolia	5		FACU
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	88 = Total Cover		
50% of total cover: 44	20% of total cover: 17.6		
Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WETH-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	5YR 4/4	100					SaL	
7-12	2.5YR 4/6	93					C	
12-20+	7.5YR 5/8	7					C	
	WHITE PASTE N 8.5 (10)						C	
	2.5YR 2.5/1	40					C	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: AA Co Sampling Date: 5/8/24

Applicant/Owner: MDTA State: MD Sampling Point: WETI

Investigator(s): EB, TT Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression / Swale Local relief (concave, convex, none): Concave Slope (%): 5

Subregion (LRR or MLRA): MLRA 149A Lat: 39.205025 Long: -76.549892 Datum: NAD83

Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓ No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓ No _____	
Wetland Hydrology Present?	Yes ✓ No _____	

Remarks: PEM1A/B

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☑ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☑ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): _____
Water Table Present?	Yes ✓	No _____	Depth (inches): 11
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: INET I

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 30)			
1. Populus alba	5	✓	–
2. Baccharis hamimifolia	10	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	15 = Total Cover		

50% of total cover: 7.5 20% of total cover: 3

Herb Stratum (Plot size: 15)			
1. Phragmites australis	90	✓	FACW
2. Toxicodendron radicans	15		FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	105 = Total Cover		

50% of total cover: 54.5 20% of total cover: 21

Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

Populus alba does not have an indicator status but prefers more upland conditions. Plot meets dominance test at 67.7% if Populus alba assumed UPL.

SOIL

Sampling Point: WETI

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	95	7.5YR 4/4	5	C	M	SaCL	
4-10	7.5YR 5/3	95	5YR 5/4	5	C	M	SaCL	
10-16	CLAY FILL							

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: AA Co Sampling Date: 5/8/24

Applicant/Owner: MDTA State: MD Sampling Point: WETI-UPL

Investigator(s): EB, TT Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR or MLRA): MLRA 149A Lat: _____ Long: _____ Datum: NAD83

Soil Map Unit Name: Udorthents, clayey, very deep, 0-15% slopes NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No ✓	Depth (inches): _____
Water Table Present?	Yes ✓	No _____	Depth (inches): 14"
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETI-UPL

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus alba	10	✓	–
2. Populus deltoides	5	✓	FAC
3.			
4.			
5.			
6.			
7.			
8.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		

Sapling/Shrub Stratum (Plot size: 30)			
1. Populus alba.	50	✓	–
2. Baccharis haminifolia	20	✓	FAC
3. Diospyros virginiana	5		FAC
4.	0		
5.			
6.			
7.			
8.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		

Herb Stratum (Plot size: 15)			
1. Populus alba	10		–
2. Toxicodendron radicans	25	✓	FAC
3. Ampelopsis brevipedunculata	15		UPL
4. Phragmites australis	5		FACW
5. Lonicera japonica	20		FACU
6. Panicum virgatum	2		FAC
7. Solidago sp.	3		–
8. Poaceae sp.	40	✓	–
9.			
10.			
11.			
12.			
	120 = Total Cover		
50% of total cover: 60	20% of total cover: 24		

Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☐ No ☑

Remarks: (If observed, list morphological adaptations below).

Populus alba has no status, assumed UPL; unable to ID Poaceae sp., likely FACU or UPL species due to location and lack of wetland hydrology + hydric soils.

SOIL

Sampling Point: WETI-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 4/3	98	5YR 4/4	2	C	M	SaCL	
4-12	5YR 4/4	95	2.5YR 5/6	5	C	M	SaC	
12-16+	10YR 4/2	95	7.5YR 5/6	5	C	M	SaC	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore City Sampling Date: 5/3/24
Applicant/Owner: MdTA State: MD Sampling Point: 1WETJ-1
Investigator(s): D. Smith, K. Mathews Section, Township, Range:
Landform (hillslope, terrace, etc.): Intertidal Local relief (concave, convex, none): Concave Slope (%): 5
Subregion (LRR or MLRA): MLRA 149A Lat: 39.210446 Long: -76.535154 Datum: NAD83
Soil Map Unit Name: Udorthents, smoothed, 0-35% slopes NWI classification: E1UBL
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks:
Photo 1WETJ-1. Wetland is small patch of Phragmites between rocky shore areas. E2EM1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ✓ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ✓ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) (LRR U)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ✓ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) (LRR T, U)

Field Observations:

Surface Water Present?	Yes ✓	No ____	Depth (inches): 3*
Water Table Present?	Yes ✓	No ____	Depth (inches): 5
Saturation Present? (includes capillary fringe)	Yes ✓	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
*40% of plot on incoming tide. No recent rain, but wetland is hydrologically influenced by twice daily tidal flooding.

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WETJ

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 15')			
1. Phragmites australis	100	✓	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Woody Vine Stratum (Plot size: 30)			
1. None			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	_____	x 2 =	_____
FAC species	_____	x 3 =	_____
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

✓ 1 - Rapid Test for Hydrophytic Vegetation

✓ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL Sampling Point: WETLAND 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 2/1	100					silty clay	Tidal muck

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ✓ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No ___

Remarks:

Tidal muck.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore City Sampling Date: 5/3/24
Applicant/Owner: MDTA State: MD Sampling Point: WETJ-UPL
Investigator(s): D. Smith, K. Mathews Section, Township, Range:
Landform (hillslope, terrace, etc.): Terrace Local relief (concave, convex, none): Convex Slope (%): 3
Subregion (LRR or MLRA): MLRA 149A Lat: 39.21043 Long: -76.535253 Datum: NAD83
Soil Map Unit Name: Udorthents, smoothed, 0-35% slopes NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? N Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? N (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	Is the Sampled Area within a Wetland? Yes ____ No ✓
Hydric Soil Present?	Yes ____	No ✓	
Wetland Hydrology Present?	Yes ____	No ✓	

Remarks:
Upland plot for 1-WET-J + 1-WET
Photo 1WETJ-UPL-1

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No ✓	Depth (inches): ____
Water Table Present?	Yes ____	No ✓	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No ✓	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Above MHW line but w/in storm surge zone.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WETJ-UPL

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Ulmus americana	65	Y	FAC
2. Koelreuteria paniculata	10		
3. Robinia pseudoacacia	18		UPL
4. Morus alba	5		FACU
5. Prunus serotina	5		FACU
6.			
7.			
8.			
	103	= Total Cover	
50% of total cover: 30.6	20% of total cover: 51.5		

Sapling/Shrub Stratum (Plot size: 30')			
1. Baccharis halimifolia	5	Y	FAC
2. Lonicera maackii	3		FACU
3. Robinia pseudoacacia	5	Y	UPL
4. Acer negundo	3		FAC
5.			
6.			
7.			
8.			
	16	= Total Cover	
50% of total cover: 8	20% of total cover: 3.2		

Herb Stratum (Plot size: 15')			
1. Phragmites australis	15	Y	FACW
2. Clematis terniflora	12	Y	FACU
3. Phalaris arundinacea	7		FACW
4. Toxicodendron radicans	12	Y	FAC
5. Robinia pseudoacacia	5		UPL
6. Parthenocissus quinquefolia	3		FACU
7. Lonicera japonica	2		FACU
8.			
9.			
10.			
11.			
12.			
	56	= Total Cover	
50% of total cover: 11.2	20% of total cover: 28		

Woody Vine Stratum (Plot size:)			
1. Toxicodendron radicans	10	Y	FAC
2. Parthenocissus quinquefolia	5		FACU
3. Clematis terniflora	15	Y	FACU
4. Lonicera japonica	15	Y	FACU
5. Vitis sp.	5		
	50	= Total Cover	
50% of total cover: 10	20% of total cover: 25		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 55.5 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No ___

Remarks: (If observed, list morphological adaptations below).

SOIL Sampling Point: WETS-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	7.5 yr 2.5/2	100					FSL	
5-12+	10R 5/6	100					C	Rejected by garbage

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No ✓

Remarks:

Considerable trash in boring

Tidal

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: ESK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETA

Investigator(s): LAP, ET Section, Township, Range: _____

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): Concave Slope (%): 1%

Subregion (LRR or MLRA): LRRS, MLRA 149A Lat: 39.2266665°N Long: -76.5148400°W Datum: NAD 83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: E2SS1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: Wetland visited at mid-tide, used visual indicators of tidal boundary in lieu of tidal elevation data
- indicators include: physical markings, wrack line

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ✓ Water Marks (B1)
- ✓ Sediment Deposits (B2)
- ✓ Drift Deposits (B3)
- ✓ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): varies	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0"	
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"	**Wetland Hydrology Present?** Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

tidal scrub-shrub wetland, abutting emergent tidal wetland to west and Patapsco River to east

- Tide nearly one foot above normal elevation on this day

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 2WETA

Tree Stratum (Plot size: 10X20')	Absolute % Cover	Dominant Species?	Indicator Status
1. N/A			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 10X20')			
1. Baccharis halimifolia	80%	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	80% = Total Cover		

50% of total cover: 40% 20% of total cover: 16%

Herb Stratum (Plot size: 10X20')			
1. Phragmites australis	40%	Y	FACW
2. Baccharis halimifolia	10%	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50% = Total Cover		

50% of total cover: 25% 20% of total cover: 10%

Woody Vine Stratum (Plot size: 10X20')			
1. N/A			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 3/3 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETA

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3"	10YR 2/2	80%					sandy loam	
	10YR 4/3	20%						
3-16"	2.5Y 6/2	95%	7.5YR 4/6	5%	C	M	loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETB

Investigator(s): LP, ET Section, Township, Range:

Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR or MLRA): LRRS, MLRA 149A Lat: 39.2264587°N Long: -76.515097° W Datum: NAD83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: E2EM5

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ✓ No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No ____	**Is the Sampled Area within a Wetland?** Yes ✓ No ____
Hydric Soil Present?	Yes ✓	No ____	
Wetland Hydrology Present?	Yes ✓	No ____	

Remarks: photos 9346-47
•emergent tidal wetland at mid-tide; use visual indicators of tidal boundary in lieu of tidal elevation data; indicators include physical markings, wrack line; precise limit of tide difficult to determine due to heavy litter & driftwood deposition & dense phrag rhizomes

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ✓ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ✓ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✓ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes ✓ No ____ Depth (inches): varies (tidal)

Water Table Present? Yes ✓ No ____ Depth (inches): 0"

Saturation Present? (includes capillary fringe) Yes ✓ No ____ Depth (inches): 0"

Wetland Hydrology Present? Yes ✓ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
* tide nearly one foot above normal elevation on this day

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 2WETB

Tree Stratum (Plot size: 20' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 20' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 20' radius)			
1. Phragmites australis	100%	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100% = Total Cover		

50% of total cover: 50% 20% of total cover: 20%

Woody Vine Stratum (Plot size: 20' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETB

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3"	7.5YR 3/2	100%					muck	
3-12"	10YR 5/2	95%	5YR 4/6	5%	C	M	loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

root masses

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/3/24
Applicant/Owner: MDTA State: MD Sampling Point: 2-UPLA
Investigator(s): ET, LP Section, Township, Range:
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): concave Slope (%): 1%
Subregion (LRR or MLRA): LRR S, MLRA 149A Lat: 39.2325554 °N Long: -76.5065712 Datum: NAD83
Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes No X
Hydric Soil Present?	Yes	No X	
Wetland Hydrology Present?	Yes X	No	

Remarks: photos - 9329, 9330

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☒ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present? Yes No X Depth (inches):
Water Table Present? Yes No X Depth (inches):
Saturation Present? (Includes capillary fringe) Yes No X Depth (inches):

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Roadside ditch constructed in dense fill material allowing water to pond.
No hydric soils observed.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 2 UPLA

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5x5)			
1. Ranunculus sceleratus	80%	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80% = Total Cover		

50% of total cover: 40% 20% of total cover: 16%

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2-10 PLA

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10"	10YR 5/3	75%					Silty clay loam	gravel refusal at 10"
	7.5YR 4/6	25%						fill material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: gravel

Depth (inches): 10"

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETA/B-UPL

Investigator(s): LP, ET Section, Township, Range: _____

Landform (hillslope, terrace, etc.): berm Local relief (concave, convex, none): convex Slope (%): 0%

Subregion (LRR or MLRA): LRR9, MLRA149A Lat: 39.2263219 °N Long: -76.5151510 °W Datum: NAD83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes _____	No ✓	**Is the Sampled Area within a Wetland?** Yes _____ No ✓
Hydric Soil Present?	Yes _____	No ✓	
Wetland Hydrology Present?	Yes _____	No ✓	

Remarks: photos: 9348-50
berm between 2WETA + 2WETB + Patapsco River

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): _____
Water Table Present?	Yes _____	No ✓	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 2WETLAND-UPL

Tree Stratum (Plot size: 10 x 20')	Absolute % Cover	Dominant Species?	Indicator Status
1. Morus alba	20%	Y	FACU
2. Ulmus parvifolia	30%	Y	FACU
3. Robinia pseudoacacia	30%	Y	UPL
4.			
5.			
6.			
7.			
8.			
	80% = Total Cover		
50% of total cover: 40%	20% of total cover: 16%		

Sapling/Shrub Stratum (Plot size: 10 x 20')			
1. Amorpha fruticosa	5%	N	FACU
2. Rosa multiflora	15%	Y	FACU
3. Ligustrum sinense	15%	Y	FAC
4.			
5.			
6.			
7.			
8.			
	35% = Total Cover		
50% of total cover: 17.5%	20% of total cover: 7%		

Herb Stratum (Plot size: 10 x 20')			
1. Toxicodendron radicans	10%	N	FAC
2. Rumex crispus	10%	N	FAC
3. Cinna arundinacea	80%	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100% = Total Cover		
50% of total cover: 150%	20% of total cover: 20%		

Woody Vine Stratum (Plot size: 10 x 20')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 2/4 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETA/B-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 3/3	100%					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETC

Investigator(s): LP, ET Section, Township, Range: _____

Landform (hillslope, terrace, etc.): shoreline Local relief (concave, convex, none): none Slope (%): 2%

Subregion (LRR or MLRA): LRRS, MLRA 149A Lat: 39.2278169 °N Long: -76.5139756 °W Datum: NAD83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: E2SS1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? NO Are "Normal Circumstances" present? Yes ✓ No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ✓	No _____	**Is the Sampled Area within a Wetland?** Yes ✓ No _____
Hydric Soil Present?	Yes ✓	No _____	
Wetland Hydrology Present?	Yes ✓	No _____	

Remarks: photos: 9353-56
*wetland visited at low tide.
-areas surrounding wetlands include rock shoreline with no vegetation or soils; no upland point was collected

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- [✓] Surface Water (A1)
- [✓] High Water Table (A2)
- [✓] Saturation (A3)
- [✓] Water Marks (B1)
- [✓] Sediment Deposits (B2)
- [✓] Drift Deposits (B3)
- [✓] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along Living Roots (C3)
- [ ] Presence of Reduced Iron (C4)
- [ ] Recent Iron Reduction in Tilled Soils (C6)
- [ ] Thin Muck Surface (C7)
- [ ] Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- [ ] Surface Soil Cracks (B6)
- [ ] Sparsely Vegetated Concave Surface (B8)
- [ ] Drainage Patterns (B10)
- [ ] Moss Trim Lines (B16)
- [ ] Dry-Season Water Table (C2)
- [ ] Crayfish Burrows (C8)
- [ ] Saturation Visible on Aerial Imagery (C9)
- [ ] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [✓] FAC-Neutral Test (D5)
- [ ] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ✓	No _____	Depth (inches): varies (tidal)	
Water Table Present?	Yes ✓	No _____	Depth (inches): 0"	
Saturation Present? (Includes capillary fringe)	Yes ✓	No _____	Depth (inches): 0"	**Wetland Hydrology Present?** Yes ✓ No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

* Tide nearly one foot above normal elevation on this day

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 2WETC

Tree Stratum (Plot size: 10x20')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling/Shrub Stratum (Plot size: 10x20')			
1. Baccharis hamlimifolia	50%	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	50% = Total Cover		
50% of total cover: 25%	20% of total cover: 10%		
Herb Stratum (Plot size: 10x20')			
1. Spartina alterniflora	60%	Y	OBL
2. Baccharis hamifolia	10%	N	FAC
3. Phragmites australis	10%	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	80% = Total Cover		
50% of total cover: 40%	20% of total cover: 16%		
Woody Vine Stratum (Plot size: 10x20')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 2/2 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ✓ No

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETC

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4"	2.5Y 7/2	80	7.5YR 4/6	20%	C	M	loamy sand	stone refusal

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☒ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☒ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: stone

Depth (inches): 4"

Hydric Soil Present? Yes ✓ No ____

Remarks:

deposited sediment atop of rocky shoreline

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETD

Investigator(s): LP, ET Section, Township, Range:

Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): concave Slope (%): 1%

Subregion (LRR or MLRA): LRRS, MLRA 149A Lat: 39.2286799°N Long: -76.5117316°W Datum: NAD 83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: PEMS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? NO Are "Normal Circumstances" present? Yes X No ____

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks: Photos: 9358-59
toe of slope wetland at storm drain outfall - likely provides primary hydrology; perched above clay fill

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☒ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☒ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 2WETD

Tree Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 5' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5' radius)			
1. Phragmites australis	85%	Y	FACW
2. Taxicodendron radicans	20%	N	FAC
3. Leersia oryzoides	20%	N	OBL
4. Lonicera japonica	5%	N	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	125 = Total Cover		

50% of total cover: 62.5% 20% of total cover: 25%

Woody Vine Stratum (Plot size: 5' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETD

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 4/1	95%	2.5YR 3/4	5%	D	PL/M	sandy clay loam	
6-12"	2.5Y 6/4	90%	10YR 5/8	10%	C	M	loamy sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: FSK Rebuild City/County: Baltimore Sampling Date: 5/7/24

Applicant/Owner: MDTA State: MD Sampling Point: 2WETD-UPL

Investigator(s): LP, ET Section, Township, Range: _____

Landform (hillslope, terrace, etc.): toe of slope Local relief (concave, convex, none): concave Slope (%): 17

Subregion (LRR or MLRA): LRRS, MLRA 149A Lat: 39.228829 Long: -76.511785° W Datum: NAD83

Soil Map Unit Name: Udorthents, highway, 0 to 65 percent slopes (UcF) NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? No Are "Normal Circumstances" present? Yes X No _____

Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? NO (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks: photo 9360

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: 2WETD-UPL

Tree Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 5' radius)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 5' radius)			
1. Phragmites australis	75%	Y	FACW
2. Toxicodendron radicans	5%	N	FAC
3. Parthenocissus quinquefolia	2%	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	82% = Total Cover		

50% of total cover: 41% 20% of total cover: 16.4%

Woody Vine Stratum (Plot size: 5' radius)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 1/1 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: 2WETD-UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6"	10YR 5/6	100%					sandy loam	
6-12"	5Y 8/1	80%	10YR 5/8	20%			silty clay	fill material

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

* Matrix color assumed to be a result of clay fill material rather than reducing conditions

Waters of the U.S. Data Sheet

Project: MDTA Inner Loop Rills	**Feature ID:** 1WC Patapsco River		**Cowardin Class:** E1UB
Date: 3/20/24	**State:** MD	**Last Flag Number:** N/A	**Stream Order:** N/A
Crew: SW/LAP	**County:** Balt City	**Photos:** 6568-69	**Use Class:** 1

Feature Hydrologic Class and Jurisdiction:

Hydrologic Class	USACE Jurisdiction	Jurisdictional Rationale			
		TNW	*Impoundment of:*	*Tributary*	*Other Waters*
✓ Tidal	TNW	Tidal	TNW	Relatively Permanent	Relatively Permanent
Perennial	Impoundment	Interstate	Tributary	Relatively Permanent Notes:	
Intermittent	✓ Tributary	✓ Navigable			
Ephemeral	Other Waters				
Other					

Hydrologic Connectivity	Upstream: outside SA	Downstream: outside SA	Adjacent/Abutting:

Feature Description: ***(check all that apply)***

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
✓ Natural Channel Shape	Width: 50 ft.	✓ Silts	✓ Sands	Muck	RB: Scrub/shrub
Artificial (man-made)	Depth: 0-50 ft.	✓ Cobbles	✓ Gravel	Other:	
Manipulated (man-altered)	Bank Erosion/stability: stable	Bedrock	Concrete		LB: Scrub/shrub
Other:		Side slope: ☐ ≥1:1 ☐ 2:1 ☐ 3:1 ☑ ≤4:1			
Notes:					

Weather/Precipitation Conditions:

During Field Visit	Inches of Rain Within Last Week	weather station Tanyard Springs - KMDGLENB25 Monthly Drought Condition NCDC Divisional PDSI State: MD Division: Upper Southern https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/mapping Month: Jan Year: 2024														
✓ No rain	✓ 0-0.5						✓									
Light rain	0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6		
Heavy Rain	>1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet				

Non-tidal tributary has: ***(check all that apply)***

Bed and Banks	Ordinary High Water Mark		
Yes	Clear, natural line impressed on the bank	Sediment deposition	Sediment sorting
No	Changes in the character of soil	Water staining	Scour
	Shelving	Presence of flood litter/debris	Observed/predicted flow events
	Vegetation matted down, bent, or absent	Destruction of terrestrial veg.	Abrupt change in plant community
	Leaf litter disturbed	Presence of wrack line	Other:

Tidal tributary has: ***(check all that apply)***

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
Oil or scum line along shore objects	✓ Survey to available datum	✓ Water is clear
✓ Fine shell or debris deposits (foreshore)	Physical markings	Water is discolored
Physical markings/characteristics	Vegetation lines/changes in types	Oily film
✓ Tidal gauges		Other:
Notes:		

WB-4, WB-103A/B

Waters of the U.S. Data Sheet

Project: MDTA Inner Loop Rills		**Feature ID:** 1WA	**Stream Order:** R4UB1
Date: 3/20/24	**State:** MD	**Last Flag Number:**	**Use Class:** I
Crew: SW/EH	**County:** Balt city	**Photos:** 8092-93; on 3/20/24 6566-67	

Feature Hydrologic Class and Jurisdiction:

Hydrologic Class	Jurisdiction	Reason			
	Tidal		TNW (a)(1)	*TNW*	*Impoundment of:*	✓ *Tributary*	*Other Waters*
✓	Perennial		Impoundment (a)(2)		Tidal		TNW (a)(1)	✓ Relatively Permanent		Relatively Permanent
	Intermittent	✓	Tributary (a)(3)		Interstate		Impoundment (a)(2)		Significant Nexus		Significant Nexus
	Ephemeral		Other Waters (a)(5)		Navigable		Tributary (a)(3)	Similarly Situated Waters:		Similarly Situated Waters:
	Other						Adj. Wetland (a)(4)			

Hydrologic Connectivity	Upstream: culvert	Downstream: 1WC	Adjacent/Abutting: 1WETA, 1WB

Feature Description: ***(check all that apply)***

Shape (with respect to OHW)			Substrate			Vegetation Cover Type (MBSS)
	Natural Channel Shape	Width: 3'	✓ Silts	✓ Sands	Muck	RB: Old field/disturbed
	Artificial (man-made)	Depth: 1-8"	✓ Cobbles	✓ Gravel	Other:	
✓	Manipulated (man-altered)	Bank Erosion/stability: Mod. unstable	Bedrock	Concrete		LB: Hedgerow
	Other:		Side slope: ☐ ≥1:1 ☑ 2:1 ☑ 3:1 ☐ ≤4:1			

Notes: Gaiam on either side of culvert going under I695, slow flow from culvert under road

Weather/Precipitation Conditions:

During Field Visit		Inches of Rain Within Last Week		Monthly Drought Condition NCDC Divisional PDSI https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/mapping	State: MD Division: Upper Southern Month: Jan Year: 2024											
✓	No rain		0-0.5					✓								
	Light rain		0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
	Heavy Rain	✓	>1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

Bed and Banks		Ordinary High Water Mark					
✓	Yes		Clear, natural line impressed on the bank		Sediment deposition		Sediment sorting
	No		Changes in the character of soil	✓	Water staining		Scour
			Shelving	✓	Presence of flood litter/debris	✓	Observed/predicted flow events
		✓	Vegetation matted down, bent, or absent		Destruction of terrestrial veg.		Abrupt change in plant community
			Leaf litter disturbed		Presence of wrack line		Other:

Tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

High Tide Line		Mean High Water Mark indicated by:		Chemical Characteristics	
	Oil or scum line along shore objects		Survey to available datum		Water is clear
	Fine shell or debris deposits (foreshore)		Physical markings		Water is discolored
	Physical markings/characteristics		Vegetation lines/changes in types		Oily film
	Tidal gauges				Other:

Notes:

HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (FRONT)

STREAM NAME IWA	LOCATION east of Dock Rd @ 1695
STATION # _____ RIVERMILE _____	STREAM CLASS 1
LAT 39.20900 LONG -76.541035	RIVER BASIN Patapsco / Baltimore Harbor
STORET #	AGENCY
INVESTIGATORS HT, TT	
FORM COMPLETED BY HT	DATE 5/16/24 TIME 1 AM (PM)	REASON FOR SURVEY FSK Rebuild

Parameters to be evaluated in sampling reach

Habitat Parameter	Condition Category			
	Optimal	Suboptimal	Marginal	Poor
1. Epifaunal Substrate/ Available Cover	Greater than 50% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are not new fall and not transient).	30-50% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	10-30% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 10% stable habitat; lack of habitat is obvious; substrate unstable or lacking. Substrate clay/sand w/ fine sediment, lacking cover
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 (2) 1 0
2. Pool Substrate Characterization	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged vegetation common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged vegetation present.	All mud or clay or sand bottom; little or no root mat; no submerged vegetation. some herb veg in channel	Hard-pan clay or bedrock; no root mat or vegetation.
SCORE 7	20 19 18 17 16	15 14 13 12 11	10 9 8 (7) 6	5 4 3 2 1 0
3. Pool Variability	Even mix of large-shallow, large-deep, small-shallow, small-deep pools present.	Majority of pools large-deep; very few shallow.	Shallow pools much more prevalent than deep pools.	Majority of pools small-shallow or pools absent. Small pool at culvert
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 (2) 1 0
4. Sediment Deposition	Little or no enlargement of islands or point bars and less than <20% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 20-50% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 50-80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 (2) 1 0
5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
SCORE 12	20 19 18 17 16	15 14 13 (12) 11	10 9 8 7 6	5 4 3 2 1 0

HABITAT ASSESSMENT FIELD DATA SHEET—LOW GRADIENT STREAMS (BACK)

Parameters to be evaluated broader than sampling reach

Habitat Parameter	Condition Category			
	Optimal	**Suboptimal**	**Marginal**	**Poor**
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.	Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely. flows through culvert - rip rap stabilized.
SCORE 4	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 (4) 3 2 1 0
7. Channel Sinuosity	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line. (Note - channel braiding is considered normal in coastal plains and other low-lying areas. This parameter is not easily rated in these areas.)	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	The bends in the stream increase the stream length 1 to 2 times longer than if it was in a straight line.	Channel straight; waterway has been channelized for a long distance.
SCORE 2	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 (2) 1 0
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.	Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods. stabilized w/ large gravel.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
SCORE 5 (LB)	Left Bank 10 9	8 7 6	(5) 4 3	2 1 0
SCORE 5 (RB)	Right Bank 10 9	8 7 6	(5) 4 3	2 1 0
9. Vegetative Protection (score each bank) Note: determine left or right side by facing downstream.	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.	50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining. mostly invasive species	Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.
SCORE 3 (LB)	Left Bank 10 9	8 7 6	5 4 (3)	2 1 0
SCORE 3 (RB)	Right Bank 10 9	8 7 6	5 4 (3)	2 1 0
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.	Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.	Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.	Width of riparian zone <6 meters: little or no riparian vegetation due to human activities. disturbed by recent construction activities
SCORE 2 (LB)	Left Bank 10 9	8 7 6	5 4 3	(2) 1 0
SCORE 2 (RB)	Right Bank 10 9	8 7 6	5 4 3	(2) 1 0

Total Score 51

Waters of the U.S. Data Sheet

Project: MDTA Inner Loop Rills		**Feature ID:** 1WB	**Stream Order:** R4UB1
Date: 8/20/24	**State:** MD	**Last Flag Number:** WC-8	**Use Class:** 1
Crew: SW/EH	**County:** Balt City	**Photos:** 8090-99	

Feature Hydrologic Class and Jurisdiction:

Hydrologic Class	Jurisdiction	Reason: *TNW*	Reason: *Impoundment of:*	Reason: *Tributary*	Reason: *Other Waters*
☐ Tidal	☐ TNW (a)(1)	☐ Tidal	☐ TNW (a)(1)	☑ Relatively Permanent	☐ Relatively Permanent
☐ Perennial	☐ Impoundment (a)(2)	☐ Interstate	☐ Impoundment (a)(2)	☐ Significant Nexus	☐ Significant Nexus
☑ Intermittent	☑ Tributary (a)(3)	☐ Navigable	☐ Tributary (a)(3)	Similarly Situated Waters:	Similarly Situated Waters:
☐ Ephemeral	☐ Other Waters (a)(5)		☐ Adj. Wetland (a)(4)		
☐ Other					

Hydrologic Connectivity	Upstream: 1WETC	Downstream: 1WA	Adjacent/Abutting: 1WETB

Feature Description: ***(check all that apply)***

Shape (with respect to OHW)		Substrate			Vegetation Cover Type (MBSS)
☑ Natural Channel Shape	Width: 1-4'	☑ Silts	☑ Sands	☐ Muck	RB: Hedgerow
☐ Artificial (man-made)	Depth: 1-4'	☐ Cobbles	☑ Gravel	☐ Other:	
☐ Manipulated (man-altered)	Bank Erosion/stability:	☐ Bedrock	☐ Concrete		LB: Hedgerow
☐ Other:	stable	Side slope: ☐ ≥1:1 ☐ 2:1 ☐ 3:1 ☑ ≤4:1			

Notes: 1WB flows toward 1WA, but stopped by debris jam @ gabion wall

Weather/Precipitation Conditions: adj. to WB. Red clay substrate

During Field Visit	Inches of Rain Within Last Week	Monthly Drought Condition — NCDC Divisional PDSI — https://www.ncei.noaa.gov/access/monitoring/climate-at-a-glance/divisional/mapping — State: MD, Division: Upper Southern, Month: Jan, Year: 2024												
☑ No rain	☐ 0-0.5					✓								
☐ Light rain	☐ 0.5-1	-6	-5	-4	-3	-2	-1	0	1	2	3	4	5	6
☐ Heavy Rain	☑ >1	Severe Drought			Moderate Drought		Normal			Moderately Wet		Severely Wet		

Non-tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

Bed and Banks	Ordinary High Water Mark		
☑ Yes	☐ Clear, natural line impressed on the bank	☐ Sediment deposition	☐ Sediment sorting
☐ No	☐ Changes in the character of soil	☐ Water staining	☐ Scour
	☐ Shelving	☐ Presence of flood litter/debris	☐ Observed/predicted flow events
	☐ Vegetation matted down, bent, or absent	☐ Destruction of terrestrial veg.	☐ Abrupt change in plant community
	☐ Leaf litter disturbed	☐ Presence of wrack line	☐ Other:

Tidal tributary has: ***(check all that apply; include photos for each & list photo #)***

High Tide Line	Mean High Water Mark indicated by:	Chemical Characteristics
☐ Oil or scum line along shore objects	☐ Survey to available datum	☐ Water is clear
☐ Fine shell or debris deposits (foreshore)	☐ Physical markings	☐ Water is discolored
☐ Physical markings/characteristics	☐ Vegetation lines/changes in types	☐ Oily film
☐ Tidal gauges		☐ Other:

Notes:

Modified Environmental Protection Agency Rapid Bioassessment Protocol (EPA RBP) Habitat Assessment Field Data Sheet (Low Gradient Ephemeral/Intermittent Streams)

RAPID HABITAT ASSESSMENT: LOW GRADIENT Ephemeral/Intermittent >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>

Station ID/ Stream Name	1WB			**LAT (DD)**	39.208974
Reach Length (m)	57	Date	5/16/24	**LONG (DD)**	-76.541337

HABITAT PARAMETER	CATEGORY			
	Optimal	**Sub-optimal**	**Marginal**	**Poor**
1. SUBSTRATE/ DIVERSITY **AVAILBLE COVER FOR AMPHIBIANS CRAYFISH** **SCORE:** 3	*Greater than 50% of substrate consisting of mix of snags, tree roots or other stable habitat providing cover for amphibians and aquatic or terrestrial invertebrates. LWD in moderate to advanced stage of decay and within- active channel; Substrate roughness capable of trapping lots of organic matter. If moss covered, rate high.*	*30 to 50% cover and mix of diverse stable habitat; well suited for full cover potential; adequate habitat for maintenance of populations; presence of additional LWD in the form of new fall. Substrate roughness still capable of trapping organic matter.*	*10 to 30% mix of stable cover; habitat availability less than desirable; substrate frequently disturbed or removed. LWD low in density and/or may be new fall or in early decay stage. Some areas suitable for trapping organic matter. If lg. wood is absent, score low.*	*Less than 10% stable cover; lack of habitat is obvious; substrate unstable or lacking. Few areas suitable for trapping organic matter.* clay/sand w/ fine inne
	Rate in Channel and Toe of Banks			
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 (3) 2 1 0
2. POOL SUBSTRATE CHARACTER-IZATION **In dry channels, pool areas should still be observable**	Mixture of substrate materials, with gravel and firm sand prevalent; root mats and submerged (or remnant) aquatic vegetation are common.	Mixture of soft sand, mud, or clay; mud may be dominant; some root mats and submerged (or remnant) vegetation are present.	All mud or clay or sand bottom; little or no root mat; no submerged (or remnant) vegetation.	Hard-pan clay or bedrock; no root mat or vegetation.
SCORE: 6	20 19 18 17 16	15 14 13 12 11	10 9 8 7 (6)	5 4 3 2 1 0
3. CHANNEL ALTERATION **SCORE:** 11	Channelization or dredging absent of minimal; stream with normal pattern.	Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging (>than past 20 years) may be present, but no evidence of recent channelization.	Channelization may be extensive; embankments or shoring structures present on both banks; 40 to 80% of the stream reach channelized and disrupted.	Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.
	20 19 18 17 16	15 14 13 12 (11)	10 9 8 7 6	5 4 3 2 1 0
4. SEDIMENT DEPOSITION **SCORE:** 6	Little or no enlargement of "islands" or point bars and less than 20% of the bottom affected by fine sediment deposition. Leaf packs and woody debris with minimal silt covering.	Some new increase in bar formation, mostly from sand, or fine sediment; 20 to 50% of the bottom is affected; slight deposition in pools. Leaf packs with moderate silt covering.	Moderate deposition of new sand, or fine sediment on old and new bars; 50 to 80% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent. Leaf packs with heavier silt covering.	Heavy deposits of fine material, increased bar development; more than 80% of the bottom changing frequently; pools almost absent due to substantial sediment deposition
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 (6)	5 4 3 2 1 0
5. CHANNEL SINUOSITY **SCORE:** 3	The bends in the stream increase the stream length 3 to 4 times longer than if it was in a straight line.	The bends in the stream increase the stream length 2 to 3 times longer than if it was in a straight line.	the bends in the stream increase the stream length up to 2 times longer than if it was in a straight line.	Channel is straight; waterway has been channelized for a long distance.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 (3) 2 1 0

Appendix 1: Modified Environmental Protection Agency Rapid Bioassessment Protocol (EPA RBP)
Habitat Assessment Field Data Sheet (Low Gradient Ephemeral/Intermittent Streams)

***RAPID HABITAT ASSESSMENT*: LOW GRADIENT >>>>>>>>>>>>>>>>>>>>>>>>>>>>**	**Reviewers Initials**	HT, JT

	Optimal	**Sub-optimal**	**Marginal**	**Poor**
6. BANK STABILITY (score each bank) *determine left/ right by facing downstream	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems (<5% of bank affected).	Moderately stable; infrequent, small areas of erosion mostly healed over; 5-30% of bank in reach has areas of erosion.	Moderately unstable; 30-60% of bank in reach has areas of erosion; high potential during floods.	Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.
LEFT: 6	10 9	8 7 (6)	5 4 3	2 1 0
RIGHT: 6	10 9	8 7 (6)	5 4 3	2 1 0
7. BANK VEGETATIVE PROTECTION **SCORE:** 14	More than 90% of the streambank surfaces and immediate riparian zones covered by vegetation including trees, understory shrubs, and non-woody plants (herbs, grasses, ferns, mosses); vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.	70-90% of the streambank surfaces are covered by vegetation, but one class of plants is not well represented; disruption evident, but not affecting plant growth potential to extent; more than one-half of the potential plant stubble height remaining. invasives dominant	50-70% of the streambank surfaces are covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less that one-half of the potential plant stubble height remaining.	Less than 50% of the streambank surfaces are covered by vegetation; disruption of streambank vegetation very high; vegetation has been removed to 2 inches or less in average stubble height.
	If assessed in winter or early spring look for remnants of herbs, and saplings.			
LEFT:	10 9	8 (7) 6	5 4 3	2 1 0
RIGHT:	10 9	8 (7) 6	5 4 3	2 1 0
8. WIDTH OF UNDISTURBED VEG. ZONE (undisturbed veg. Is trees, shrubs, and non-woody macro-phytes)	Width of undisturbed vegetative zone is >18 meters; human activities (parking lots, roadbeds, clearcuts, lawns, or crops) have not impacted this zone.	Zone width is between 12 and 18 meters; human activities have only minimally impacted this zone.	Zone width is between 6 and 12 meters; human activities have impacted the zone a great deal.	Width of zone is less than 6 meters; little or no undisturbed vegetation due to man-induced activities.
LEFT: 3	10 9	8 7 6	5 4 (3)	2 1 0
RIGHT: 3	10 9	8 7 6	5 4 (3)	2 1 0

TOTAL: (max=160)	**Max Pool Depth (if water is present; otherwise "NA")** 15 **cm**	**Total from front** 29 **+ Total from back** 32 **=** 61
	Average Channel Width (Toe of Banks) 1.5 **m**	**Score Percentage= Total Score /160 X 100** 38 **%**

Average Width Intact Rip Vegetative Zone (m)	**Left** m	**Right** m

→ What is the dominant vegetation type in the reach? ☒ **Deciduous** ☐ **Coniferous (pine/cypress)** ☐ **Mixed (>10%)**	**Estimated age of forest:** ___ *>50 yrs* ___ *25-50 yrs* X *5-25 yrs* ___ *<5 yrs* **Number of strata** *(e.g, canopy, subcanopy, shrub, herb (4 max))* 3

Stream Surface Shading (%) (average of lower, middle, upper reach)	**Indicate % based on cloudless day in summer at noon. Fill in square that applies.**		
☐ **Fully exposed (0-25%)**	☐ **Partly shaded (25-50%)**	☒ **Partly exposed (50-75%)**	☐ **Fully shaded (75-100%)**
-or- % Canopy (Densiometer)	**Compass Bearing (facing downstream) (0-360°)**		

Wetland Function-Value Evaluation Form

Total area of wetland 6.2 ac Human made? Y Is wetland part of a wildlife corridor? N or a "habitat island"? N

Adjacent land use Industrial Distance to nearest roadway or other development 50'

Dominant wetland systems present PEMIF Contiguous undeveloped buffer zone present N

Is the wetland a separate hydraulic system? Y If not, where does the wetland lie in the drainage basin? —

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. WetE

Latitude 39.211816 Longitude -76.53388

Prepared by: DRS, KM Date 5/3/21

Wetland Impact:
Type — Area —

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration		✓			
Fish and Shellfish Habitat	✓		2, 3, 4, 5, 6		Impoundment adjacent, but unable to determine if connected to Patapsco River
Sediment/Toxicant Retention	✓		1, 2, 3, 4, 5, 7, 8, 9	✓	See note above about water course connection Recives runoff from access roads + holds water year round
Nutrient Removal		✓			
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat	✓		3, 7, 9, 10, 11, 12, 13, 17, 18, 19, 20, 21,	✓	Large phrag marsh surrounded by forest + shrubs, Direct connection to Patapsco River
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 0.69ac Human made? Yes Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Utility ROW, Transportation Distance to nearest roadway or other development 50'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present 50'

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin? _____

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 1WET-G

Latitude 39.20745 Longitude -76.545864

Prepared by: EB Date 5/8/24

Wetland Impact:
Type — Area —

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N _____

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration		✓			
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1,2,4,5,7,9		
Nutrient Removal		✓			
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat		✓			
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

Wetland Function-Value Evaluation Form

Total area of wetland 2.56ac Human made? Yes Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use Transportation, Railroad, Industrial Distance to nearest roadway or other development 50'

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present 50'

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? High

How many tributaries contribute to the wetland? 0 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 1 WET-I

Latitude 39.205025 Longitude -76.549892

Prepared by: EB Date 5/8/24

Wetland Impact:
Type — Area —

Evaluation based on:
Office ✓ Field ✓

Corps manual wetland delineation completed? Y ✓ N

Function/Value	Suitability Y	Suitability N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge		✓			
Floodflow Alteration		✓			
Fish and Shellfish Habitat		✓			
Sediment/Toxicant Retention	✓		1,2,4,5,7,9		
Nutrient Removal		✓			
Production Export		✓			
Sediment/Shoreline Stabilization		✓			
Wildlife Habitat		✓			
Recreation		✓			
Educational/Scientific Value		✓			
Uniqueness/Heritage		✓			
Visual Quality/Aesthetics		✓			
ES Endangered Species Habitat		✓			
Other					

Notes:

* Refer to backup list of numbered considerations.

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1FS1		**Project:** MDTA Inner Loop Rails / FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Balt. City
Date: 2/20/24	**Prepared by:** SKY/EH	**Photos:** F081-84	

Type of Community: Black Locust Association	**Forest Stand Area:**
Stand Successional Stage: ☑ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 30%

Existing Vegetation

Dominant Species in Canopy:	**Size Class:**	**Notes:**
Bradford pear Siberian elm Black locust	☑ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	Few scattered 6-11" trees inclusion of box elder @ bottom of slope near WC

Dominant Species in Understory:	**Notes:**
Baccharis halimifolia Amur honeysuckle smooth sumac	

Dominant Species in Herbaceous Layer:	**Notes:**
Broomsedge bluestem, Japanese honeysuckle Phragmites Switchgrass	

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☑ Low	☑ High ☐ Medium ☐ Low	• Japanese honeysuckle • Siberian elm • Bradford pear • Phragmites australis • Amur honeysuckle

General Stand Conditions:

Disturbed roadside hedgerow on slope to I-695.

Overall Condition: POOR **Vines:** Moderate

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1FS2		**Project:** MDTA Inner Loop Rills/FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Balt City
Date: 8/20/24	**Prepared by:** SLY/EH	**Photos:** 8094-95, 805-06	

Type of Community: Black Locust Association	**Forest Stand Area:**
Stand Successional Stage: ☑ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 40%

Existing Vegetation

Dominant Species in Canopy:	**Size Class:**	**Notes:**
Black locust Tree-of-heaven White mulberry Siberian elm	☐ 2-6" ☑ 6-11" ☑ 12-20" ☐ 20-30" ☐ >30"	

Dominant Species in Understory:	**Notes:**
Amur honeysuckle, oriental bittersweet Tree-of-heaven, Poisonivy Baccharis halimifolia, Black locust, Japanese honeysuckle	

Dominant Species in Herbaceous Layer:	**Notes:**
English ivy, common mullein Japanese honeysuckle grape sp.	Very sparse understory in some areas little herbaceous growth

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☑ Medium ☐ Low	☑ High ☐ Medium ☐ Low	• White mulberry • Siberian elm • Amur honeysuckle • Japanese honeysuckle • Oriental bittersweet • English ivy

General Stand Conditions:

Disturbed forest on south side of WC. High level of invasive species

poor condition forest between fence + WC

Overall Condition: Poor **Vines:** High

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1FS3		**Project:** MDTA Inner Loop Rills Project / FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 3/20/24	**Prepared by:** [redacted], SLY, LP	**Photos:** 6554-55	

Type of Community: Pioneer Association	**Forest Stand Area:**
Stand Successional Stage: ☑ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 40%

Existing Vegetation

Dominant Species in Canopy:	**Size Class:**	**Notes:**
Bradford pear Black locust	☑ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	inclusion of 1 18" pin oak.

Dominant Species in Understory:	**Notes:**
Amur honeysuckle Multiflora rose	sumac on edge

Dominant Species in Herbaceous Layer:	**Notes:**
Phragmites australis Japanese honeysuckle	

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☑ Low	☑ High ☐ Medium ☐ Low	• Bradford pear • Amur honeysuckle • multiflora rose • phragmites australis • Japanese honeysuckle

General Stand Conditions:

Disturbed hedgerow north of 695 + south of powerlines.

High invasive species cover.

Poor condition

Vines = moderate

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 1H1		**Project:** MDTA Inner Loop Rills / FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Balt City
Date: 2/20/24	**Prepared by:** SWJEH	**Photos:** 8102	

Type of Community:	**Forest Stand Area:**
Stand Successional Stage: ☑ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 25%

Existing Vegetation

Dominant Species in Canopy: Bradford pear	**Size Class:** ☑ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:**
Dominant Species in Understory: Baccharis halimifolia		**Notes:**
Dominant Species in Herbaceous Layer: Japanese honeysuckle, Phragmites australis on edge		**Notes:**

Downed Woody Debris: ☐ High ☐ Medium ☑ Low	**Invasive Species Cover:** ☑ High ☐ Medium ☐ Low	**Invasive Species Present:**

General Stand Conditions:

Small hedgerow on highway slope

Overall Condition: Poor **Vines:** Moderate

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H1		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/8/24	**Prepared by:** LP, ET	**Photos:** 9335	

Type of Community: Hedgerow	**Forest Stand Area:** 3,119 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 30%

Existing Vegetation

Dominant Species in Canopy:	**Size Class:**	**Notes:**
• Tree of Heaven • white mulberry	☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	

Dominant Species in Understory:	**Notes:**
• poison ivy • tree of heaven • baccharis hamifolia • false indigo	

Dominant Species in Herbaceous Layer:	**Notes:**
• poison ivy • Japanese honeysuckle • fescue sp.	

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☒ Low	☒ High ☐ Medium ☐ Low	• Tree of heaven • white mulberry • Japanese honeysuckle

General Stand Conditions: high invasive sp. cover, poor quality, narrow hedgerow between road + river

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H2		**Project:** FSK Rebuild	
Owner/Applicant:		**State:** MD	**County:** Baltimore
Date: 5/3/24	**Prepared by:** LP, ET	**Photos:** 9339	

Type of Community: Hedgerow	**Forest Stand Area:** 1,574 ft 2
Stand Successional Stage: [X] Early [ ] Mid [ ] Mature	**Percent Canopy Closure:** 40 %

Existing Vegetation

Dominant Species in Canopy: • tree of heaven	**Size Class:** [X] 2-6" [ ] 6-11" [ ] 12-20" [ ] 20-30" [ ] >30"	**Notes:**
Dominant Species in Understory: • tree of heaven • poison ivy		**Notes:**
Dominant Species in Herbaceous Layer: • poison ivy • virginia creeper • japanese honeysuckle		**Notes:**

Downed Woody Debris: [ ] High [ ] Medium [X] Low	**Invasive Species Cover:** [X] High [ ] Medium [ ] Low	**Invasive Species Present:** • tree of heaven • Japanese honeysuckle

General Stand Conditions: high invasive cover, poor quality

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H3		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/3/24	**Prepared by:** LP, ET	**Photos:** 9340	

Type of Community: Hedgerow	**Forest Stand Area:** 1,159ft2
Stand Successional Stage: [X] Early [ ] Mid [ ] Mature	**Percent Canopy Closure:** 50%

Existing Vegetation

Dominant Species in Canopy: • Golden raintree	**Size Class:** [X] 2-6" [ ] 6-11" [ ] 12-20" [ ] 20-30" [ ] >30"	**Notes:**
Dominant Species in Understory: • Golden Raintree • Black cherry		**Notes:**
Dominant Species in Herbaceous Layer: • Golden Raintree • fescue sp. • japanese honeysuckle		**Notes:**

Downed Woody Debris: [ ] High [ ] Medium [X] Low	**Invasive Species Cover:** [X] High [ ] Medium [ ] Low	**Invasive Species Present:** • Golden Raintree • japanese honeysuckle

General Stand Conditions: high invasive cover, poor quality

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H4		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/3/24	**Prepared by:** LP, ET	**Photos:** photo # 9369	

Type of Community: Hedgerow	**Forest Stand Area:** 10,600 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 50%

Existing Vegetation

Dominant Species in Canopy: • White mulberry	**Size Class:** ☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:**
Dominant Species in Understory: • poison ivy • baccharis halimifolia • White mulberry		**Notes:**
Dominant Species in Herbaceous Layer: • poison ivy • virginia creeper • fescue sp. • japanese honeysuckle		**Notes:**

Downed Woody Debris: ☐ High ☐ Medium ☒ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** • white mulberry • japanese honeysuckle

General Stand Conditions: high invasive cover, poor quality

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H5		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/3/24	**Prepared by:** LP, ET	**Photos:** photo – 9370	

Type of Community: Hedgerow	**Forest Stand Area:** 2,100ft2
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 40%

Existing Vegetation

Dominant Species in Canopy: • Siberian elm	**Size Class:** ☐ 2-6" ☒ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:**
Dominant Species in Understory: • baccharis hamiltonia • Siberian elm • poison ivy		**Notes:**
Dominant Species in Herbaceous Layer: • common mugwort • poison ivy • japanese honeysuckle • virginia creeper		**Notes:**

Downed Woody Debris: ☐ High ☐ Medium ☒ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** • Siberian elm • japanese honeysuckle • common mugwort

General Stand Conditions: high invasive cover, poor quality

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H6		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/7/24	**Prepared by:** LP, ET	**Photos:** 9351 - 52	

Type of Community: Hedgerow	**Forest Stand Area:** 5,037 ft2
Stand Successional Stage: [X] Early [ ] Mid [ ] Mature	**Percent Canopy Closure:** 40%

Existing Vegetation

Dominant Species in Canopy: white mulberry, chinese elm, black locust	**Size Class:** [ ] 2-6" [X] 6-11" [ ] 12-20" [ ] 20-30" [ ] >30"	**Notes:**
Dominant Species in Understory: chinese privet, multiflora rose, false indigo,		**Notes:**
Dominant Species in Herbaceous Layer: curly dock, wood reed, poison ivy		**Notes:**

Downed Woody Debris: [ ] High [ ] Medium [X] Low	**Invasive Species Cover:** [X] High [ ] Medium [ ] Low	**Invasive Species Present:** · chinese elm · white mulberry · chinese privet · multiflora rose

General Stand Conditions:
poor condition hedgerow on berm between river & wetland.

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: T2H7		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/7/24	**Prepared by:** UP, ET	**Photos:** 9357	

Type of Community: Hedgerow	**Forest Stand Area:** 3,894 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 40%

Existing Vegetation

Dominant Species in Canopy: black locust, tree of heaven, Chinese elm,	**Size Class:** ☒ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:**
Dominant Species in Understory: tree of heaven, black cherry, baccharis halimifolia Chinese privet		**Notes:**
Dominant Species in Herbaceous Layer: virginia creeper, poison ivy, japanese honeysuckle		**Notes:**

Downed Woody Debris: ☐ High ☐ Medium ☒ Low	**Invasive Species Cover:** ☒ High ☐ Medium ☐ Low	**Invasive Species Present:** • Tree of heaven • Chinese elm • Chinese privet • Japanese honeysuckle

General Stand Conditions:
poor quality, high invasives

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H8		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/7/24	**Prepared by:** LP, ET	**Photos:** 9363-64	

Type of Community: Hedgerow	**Forest Stand Area:** 91,902 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 50%

Existing Vegetation

Dominant Species in Canopy: tree of heaven, white mulberry, bradford pear, sweet gum, black locust, cottonwood	**Size Class:** ☐ 2-6" ☒ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:**
Dominant Species in Understory: tree of heaven, false indigo, baccharis, hahmifolia, black locust, sweet gum		**Notes:**
Dominant Species in Herbaceous Layer: poison ivy, virginia creeper, japanese honeysuckle, phragmites australis, rice cut grass		**Notes:**

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☒ Low	☒ High ☐ Medium ☐ Low	• Tree of heaven • white mulberry • bradford pear • Japanese honeysuckle • Phragmites australis

General Stand Conditions: poor quality, high invasive, some MDTA planting areas excluded from hedgerow

- Tree density does not meet definition of forest

WALK-THROUGH FOREST STAND ANALYSIS

Forest Stand ID: 2H9		**Project:** FSK Rebuild	
Owner/Applicant: MDTA		**State:** MD	**County:** Baltimore
Date: 5/7/24	**Prepared by:** LP, ET	**Photos:** 9368	

Type of Community: Hedgerow	**Forest Stand Area:** 5,022 ft²
Stand Successional Stage: ☒ Early ☐ Mid ☐ Mature	**Percent Canopy Closure:** 50%

Existing Vegetation

Dominant Species in Canopy: Tree of heaven, black locust, persimmon,	**Size Class:** ☐ 2-6" ☐ 6-11" ☐ 12-20" ☐ 20-30" ☐ >30"	**Notes:**
Dominant Species in Understory: golden rain tree, tree of heaven, multiflora rose, false indigo bush, baccharis halimifolia		**Notes:**
Dominant Species in Herbaceous Layer: poison ivy, virginia creeper, japanese honeysuckle, catchweed bedstraw		**Notes:**

Downed Woody Debris:	**Invasive Species Cover:**	**Invasive Species Present:**
☐ High ☐ Medium ☒ Low	☒ High ☐ Medium ☐ Low	- Tree of heaven - Golden rain tree - Multiflora rose - Japanese honeysuckle

General Stand Conditions: poor quality, high invasive cover

APPENDIX E: PHOTOGRAPH LOG

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

WETLAND DELINEATION PHOTOGRAPHS

Photo 1 – Looking southwest at 1WETB

Photo 3 – Looking southwest at 1WETD

Photo 2 – Looking northeast at 1WETC

Photo 4 – Looking west at 1WETE

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 5 – Looking northeast at 1WETF

Photo 7 – Looking east at 1WETH

Photo 6 – Looking southwest at 1WETG

Photo 8 – Looking northwest at 1WETI

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 9 – Looking south at 1WETJ

Photo 11 – Looking southwest at 2WETB

Photo 10 – Looking southwest at 2WETA

Photo 12 – Looking northeast at Photo 2WETC

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 13 – Looking northeast at 2WETD

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

FOREST STAND PHOTOGRAPHS

Photo 1: Looking west at 1FS1

Photo 2: Looking southwest at 1FS2

Photo 3: Looking northeast at 1FS3

Photo 4: Looking east at 1FS4

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 5: Looking northwest at 1FS5

Photo 6: Looking northwest at 1FS6

Photo 7: Looking west at 1FS7

Photo 8: Looking south at 1FS8

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 9: Looking north at 1FS9

Photo 11: Looking east at 1FS11

Photo 10: Looking east at 1FS10

Photo 12: Looking southwest at 1FS12

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 13: Looking southwest 1FS13

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

HEDGEROW PHOTOGRAPHS

Photo 1: Looking north at 1H1

Photo 2: Looking west at 1H2

Photo 3: Looking north at 1H3

Photo 4: Looking northwest at 1H4

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 5: Looking southwest at 1H5

Photo 6: Looking west at 1H6

Photo 7: Looking at 2H1

Photo 8: Looking at 2H2

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 9: Looking at 2H3

Photo 11: Looking at 2H5

Photo 10: Looking at 2H4

Photo 12: Looking at 2H6

Appendix E: Francis Scott Key Bridge Rebuild Project
Photograph Log

Photo 13: Looking at 2H7

Photo 15: Looking at 2H9

Photo 14: Looking at 2H8

APPENDIX F: HEDGEROW SUMMARY TABLE

Appendix F: Francis Scott Key Bridge Rebuild Project
Hedgerow Summary Table

Hedgerow ID	Dominant Species in Canopy	Size Class	Dominant Species in Understory	Dominant Species in Herbaceous Layer	Comments
1H1 (NRI Map Sheets 2 and 3)	*Pyrus calleryana*	2-6”	*Baccharis halimifolia*	*Lonicera japonica* *Phragmites australis*	Small hedgerow on highway slope.
1H2 (NRI Map Sheets 3 and 4)	*Robinia pseudoacacia* *Morus alba* *Acer negundo* *Ailanthus altissima* *Pyrus calleryana* *Ulmus americana* *Quercus phellos* *Quercus palustris*	2-6”	*Baccharis halimifolia* *Rosa multiflora* *Amorpha fruticosa* *Koelreuteria paniculata* *Lonicera maackii* *Viburnum* sp. *Toxicodendron radicans* *Lonicera japonica* *Hedera helix* *Parthenocissus quinquefolia* *Celastrus orbiculatus*	*Toxicodendron radicans* *Lonicera japonica* *Hedera helix* *Parthenocissus quinquefolia* *Celastrus orbiculatus*	High invasive species cover in canopy and understory. Trees in fair health with many climbing vines.
1H3 (NRI Map Sheet 2)	*Robinia pseudoacacia* *Liquidambar styraciflua*	2-6”	*Baccharis halimifolia* *Lonicera maackii* *Ailanthus altissima* *Lonicera japonica* *Celastrus orbiculatus* *Toxicodendron radicans*	*Lonicera japonica* *Celastrus orbiculatus* *Toxicodendron radicans* *Parthenocissus quinquefolia*	Poor condition with high invasive cover; vines covering most of the woody vegetation and damaging native tree species
1H4 (NRI Map Sheets 1 and 2)	*Robinia pseudoacacia* *Liquidambar styraciflua* *Pyrus calleryana*	2-6”	*Rosa multiflora* *Baccharis halimifolia* *Ampelopsis brevipedunculata* *Liquidambar styraciflua* *Pyrus calleryana* *Lonicera maackii* *Elaeagnus umbellata* *Celastrus orbiculatus* *Toxicodendron radicans* *Lonicera japonica* *Parthenocissus quinquefolia*	*Phragmites australis* *Ampelopsis brevipedunculata* *Toxicodendron radicans* *Lonicera japonica*	Poor condition with high invasive species and vine coverage which are causing damage to trees.
1H5 (NRI Map Sheet 1)	*Pyrus calleryana* *Populus alba* *Robinia pseudoacacia* *Liquidambar styraciflua*	2-6”	*Rosa multiflora* *Baccahris halimifolia* *Lonicera maackii* *Toxicodendron radicans* *Lonicera japonica* *Parthenocissus quinquefolia* *Eleagnus umbellata* *Ampelopsis brevipedunculata* *Celastrus orbiculatus*	*Phragmites australis* *Ampelopsis brevipedunculata* *Lonicera japonica* *Toxicodendron radicans*	Did not qualify as a forest due to tree density. High invasive species and heavy vine coverage.
1H6 (NRI Map Sheet 1)	*Pyrus calleryana* *Liquidambar styraciflua* *Diospyros virginiana* *Prunus serotina*	2-6”	*Baccharis halimifolia* *Rosa multiflora* *Lonicera japonica* *Lonicera maackii* *Ampelopsis brevipedunculata* *Vitis* sp. *Rubus* sp.	*Vitis* sp. *Rosa multiflora* *Lonicera japonica* *Celastrus orbiculatus* *Phragmites australis* *Ampelopsis brevipedunculata*	Poor condition with high invasive species and vines covering most trees. Trees are scattered with saplings and shrubs throughout.
2H1 (NRI Map Sheet 6)	*Ailanthus altissima* *Morus alba*	2-6”	*Toxicodendron radicans* *Ailanthus altissima* *Baccharis halimifolia* *Amorpha fruticosa*	*Toxicodendron radicans* *Lonicera japonica* *Festuca* sp.	High invasive cover, poor quality, narrow hedgerow between road and the river
2H2 (NRI Map Sheet 5)	*Ailanthus altissima*	2-6”	*Ailanthus altissima* *Toxicodendron radicans*	*Toxicodendron radicans* *Parthenocissus quinquefolia* *Lonicera japonica*	High invasive cover, poor quality

Hedgerow ID	Dominant Species in Canopy	Size Class	Dominant Species in Understory	Dominant Species in Herbaceous Layer	Comments
2H3 (NRI Map Sheet 5)	*Koelreuteria paniculata*	2-6”	*Koelreuteria paniculata* *Prunus serotina*	*Koelreuteria paniculata* *Festuca* sp. *Lonicera japonica*	High invasive cover, poor quality
2H4 (NRI Map Sheets 5 and 6)	*Morus alba*	2-6”	*Toxicodendron radicans* *Baccharis halimifolia* *Morus alba*	*Toxicodendron radicans* *Parthenocissus quinquefolia* *Festuca* sp. *Lonicera japonica*	High invasive cover, poor quality
2H5 (NRI Map Sheet 6)	*Ulmus pumila*	6-11”	*Baccharis halimifolia* *Ulmus pumila* *Toxicodendron radicans*	*Artemisia vulgaris* *Toxicodendron radicans* *Lonicera japonica* *Parthenocissus quinquefolia*	High invasive cover, poor quality
2H6 (NRI Map Sheet 6)	*Morus alba* *Robinia pseudoacacia* *Ulmus parvifolia*	6-11”	*Ligustrum sinense* *Rosa multiflora* *Amorpha fruticosa*	*Cinna arundinacea* *Toxicodendron radicans* *Rumex crispus*	Poor condition hedgerow on berm between Patapsco River and wetland
2H7 (NRI Map Sheet 6)	*Robinia pseudoacacia* *Ailanthus altissima* *Ulmus parvifolia*	2-6”	*Ailanthus altissima* *Prunus serotina* *Baccharis halimifolia* *Ligustrum sinense*	*Parthenocissus quinquefolia* *Toxicodendron radicans* *Lonicera japonica*	High invasive cover, poor quality
2H8 (NRI Map Sheets 6 and 7)	*Ailanthus altissima* *Morus alba* *Pyrus calleryana* *Liquidambar styraciflua* *Robinia pseudoacacia* *Populus deltoides*	6-11”	*Ailanthus altissima* *Amorpha fruticosa* *Baccharis halimifolia* *Liquidambar styraciflua* *Robinia pseudoacacia*	*Toxicodendron radicans* *Parthenocissus quinquefolia* *Lonicera japonica* *Phragmites australis* *Leersia oryzoides*	High invasive cover, poor quality. MDTA planting areas were excluded from hedgerow. Tree density does not meet definition of a forest
2H9 (NRI Map Sheet 7)	*Ailanthus altissima* *Robinia pseudoacacia* *Diospyros virginiana*	2-6”	*Koelreuteria paniculata* *Ailanthus altissima* *Rosa multiflora* *Amorpha fruticosa* *Baccharis halimifolia*	*Toxicodendron radicans* *Parthenocissus quinquefolia* *Lonicera japonica* *Galium aparine*	High invasive cover, poor quality

APPENDIX G: TREE TABLE

APPENDIX G: FRANCIS SCOTT KEY BRIDGE REBUILD PROJECT
TREE AND SHRUB TABLE

Tree ID*	Common Name	Scientific Name	DBH	Condition	Comment
1T1	**Eastern cottonwood**	***Populus deltoides***	**30**	**Fair**	**Broken branches, heavy vines, twin trunks 30" & 29"**
1T2	White mulberry	*Morus alba*	14	Poor	Significant lean, growing partially horizontal, heavy vine load, dead branches
1T3	Tree of heaven	*Ailanthus altissima*	4	Fair	Lean, vines on lower trunk
1T4	Black cherry	*Prunus serotina*	11	Fair/Poor	Vines in lower crown, broken branches
1T5	Black cherry	*Prunus serotina*	6	Fair/Poor	Minor trunk decay, vines on trunk
1T6	Black cherry	*Prunus serotina*	8	Fair/Poor	Minor trunk decay, vines on trunk
1T7	Bradford pear	*Pyrus calleryana*	10	Fair/Poor	overtopped by vines, exposed roots on slope, twin trunks 10" & 7"
1T8	Common hackberry	*Celtis occidentalis*	16	Fair/Poor	Heavy vines in lower canopy, slight lean, exposed roots on slope
1T9	Siberian elm	*Ulmus pumila*	28	Fair/Poor	High vine load in lower crown, some broken branches, exposed roots on slope
1T10	White mulberry	*Morus alba*	8	Fair	Healed trunk wounds, dead branches
1T11	Black locust	*Robinia pseudoacacia*	23	Poor	Heavy vines on trunk and crown, significant broken branches, exposed roots on slope, dead secondary leader
1T12	Black locust	*Robinia pseudoacacia*	8	Fair/Poor	Heavy vines on trunk, broken branches, some bark damage
1T13	Black locust	*Robinia pseudoacacia*	2	Fair	Lean overtopped by adjacent vegetation
1T14	Black locust	*Robinia pseudoacacia*	8	Poor	Heavy vine load into crown, main tree tipped over
1T15	Black locust	*Robinia pseudoacacia*	14	Poor	Extensive vines into crown of tree, dead secondary trunk
1T16	Bradford pear	*Pyrus calleryana*	6	Fair	Vines in lower canopy, broken branches, growing on slope
1T17	Eastern cottonwood	*Populus deltoides*	12	Fair	Minor dead branches, minor vines on trunk
1T18	Common persimmon	*Diospyros virginiana*	2	Fair	Irregular trunk
1T19	Black cherry	*Prunus serotina*	4	Fair	Lean, broken branches
1T20	Black cherry	*Prunus serotina*	5	Poor	Overtopped by vines, trunk dammage
1T21	Callery pear	*Pyrus calleryana*	9	Fair	With vines, secondary leaders 7.5" & 2"
1T22	**Willow oak**	***Quercus phellos***	**32**	**Good**	
1T23	**Willow oak**	***Quercus phellos***	**30**	**Good/Fair**	**Fused with a sweetgum**
1T24	**Willow oak**	***Quercus phellos***	**32**	**Good**	
1T25	**Willow oak**	***Quercus phellos***	**35**	**Good**	
1T26	**Willow oak**	***Quercus phellos***	**32**	**Good**	
1T27	**Willow oak**	***Quercus phellos***	**31**	**Fair**	**Reduced canopy**
1T28	**Willow oak**	***Quercus phellos***	**34**	**Good**	
1T29	American elm	*Ulmus americana*	5	Good	
1T30	Persimmon	*Diospyros virginiana*	2	Good	
1T31	Siberian elm	*Ulmus pumila*	1	Good	
1T32	Siberian elm	*Ulmus pumila*	1	Fair	
1T33	Siberian elm	*Ulmus pumila*	1	Poor	Trunk rot
1T34	Siberian elm	*Ulmus pumila*	6	Fair	Trunk rot
1T35	Siberian elm	*Ulmus pumila*	6	Good	
1T36	Staghorn sumac	*Rhus typhina*	1	Fair	
1T37	Staghorn sumac	*Rhus typhina*	1	Fair	
1T38	Staghorn sumac	*Rhus typhina*	1	Fair	
2T1	Hawthorn sp.	*Crataegus* sp.	3	Good/Fair	deadwood
2T2	Hawthorn sp.	*Crataegus* sp.	3	Poor	half dead
2T3	Hawthorn sp.	*Crataegus* sp.	3	Good/Fair	deadwood
2T4	Willow Oak	*Quercus phellos*	10	Good/Fair	deadwood
2T5	Black Willow	*Salix nigra*	7	Fair	deadwood, vines, 6" and 5" secondary leaders
2T6	White Mulberry	*Morus alba*	3	Good	
2T7	Eastern Red Cedar	*Juniperus virginiana*	9	Good	
2T8	White Mulberry	*Morus alba*	6	Good	
2T9	White Mulberry	*Morus alba*	3	Good	
2T10	Common Yew	*Taxus baccata*	4	Good	pruned
2T11	Common Yew	*Taxus baccata*	4	Good	pruned
2T12	Common Yew	*Taxus baccata*	4	Good	pruned
2T13	Common Yew	*Taxus baccata*	4	Good	pruned
2T14	Common Yew	*Taxus baccata*	4	Good	pruned
2T15	Common Yew	*Taxus baccata*	4	Good	pruned
2T16	Small-Leaved Lime	*Tilia cordata*	15	Good	
2T17	Smokebush	*Cotinus coggygria*	2	Fair	deadwood
2T18	Bradford Pear	*Pyrus calleryana*	11	Good	
2T19	Red Pine	*Pinus resinosa*	10	Good	
2T20	Red Pine	*Pinus resinosa*	10	Good	
2T21	Red Pine	*Pinus resinosa*	8	Good	
2T22	Red Pine	*Pinus resinosa*	8	Good	
2T23	Red Pine	*Pinus resinosa*	8	Good	
2T24	Red Pine	*Pinus resinosa*	10	Good	
2T25	Red Pine	*Pinus resinosa*	12	Good	
2T26	Red Pine	*Pinus resinosa*	10	Good	
2T27	Red Pine	*Pinus resinosa*	6	Good	
2T28	Red Pine	*Pinus resinosa*	7	Good	
2T29	Small-Leaf Lime	*Tilia cordata*	14	Good	
2T30	Japanese Pagoda	*Styphnolobium japonicum*	17	Fair/Poor	extensive deadwood
2T31	Japanese Pagoda	*Styphnolobium japonicum*	11	Fair	deadwood
2T32	Japanese Pagoda	*Styphnolobium japonicum*	15	Fair	deadwood
2T33	Red Pine	*Pinus resinosa*	11	Fair	heavy vines
2T34	Red Pine	*Pinus resinosa*	13	Fair	10" secondary leader, heavy vines

Tree ID*	Common Name	Scientific Name	DBH	Condition	Comment
2T35	Tree of Heaven	*Ailanthus altissima*	6	Fair	heavy vines
2T36	Common Persimmon	*Diospyros virginiana*	7	Good	
2T37	Hackberry	*Celtis occidentalis*	6	Poor	extensive deadwood
2T38	Tree of Heaven	*Ailanthus altissima*	8	Fair	broken leader
2T39	Tree of Heaven	*Ailanthus altissima*	6	Fair	vines
2T40	Common Persimmon	*Diospyros virginiana*	2	Good	
2T41	Hackberry	*Celtis occidentalis*	3	Fair	heavy vines
2T42	Common Persimmon	*Diospyros virginiana*	6	Good	
2T43	Common Persimmon	*Diospyros virginiana*	3	Good	
2T44	Common Persimmon	*Diospyros virginiana*	3	Good	
2T45	Siberian Elm	*Umus pumilla*	24	Fair	heavy vines
2T46	Tree of Heaven	*Ailanthus altissima*	12	Fair	deadwood
2T47	Tree of Heaven	*Ailanthus altissima*	5	Good	
2T48	Tree of Heaven	*Ailanthus altissima*	8	Good/Fair	deadwood
2T49	Tree of Heaven	*Ailanthus altissima*	4	Good/Fair	deadwood
2T50	Tree of Heaven	*Ailanthus altissima*	3	Good/Fair	deadwood
2T51	Tree of Heaven	*Ailanthus altissima*	14	Good/Fair	deadwood
2T52	Tree of Heaven	*Ailanthus altissima*	4	Good	
2T53	Tree of Heaven	*Ailanthus altissima*	2	Good	
2T54	Black Locust	*Robinia pseudoacacia*	14	Fair/Poor	extensive trunk damage
2T55	Tree of Heaven	*Ailanthus altissima*	6	Fair	deadwood
2T56	Tree of Heaven	*Ailanthus altissima*	5	Fair	deadwood
2T57	Tree of Heaven	*Ailanthus altissima*	5	Fair	deadwood
2T58	Tree of Heaven	*Ailanthus altissima*	8	Fair/Poor	extensive deadwood
2T59	Tree of Heaven	*Ailanthus altissima*	13	Poor	extensive deadwood, broken leader
2T60	**Willow Oak**	***Quercus phellos***	**2**	**Fair**	**deadwood, sprouting**
2T61	**Willow Oak**	***Quercus phellos***	**2**	**Poor**	**mostly dead**
2T62	**Willow Oak**	***Quercus phellos***	**2**	**Fair/Poor**	**deadwood, sprouting**
2T63	**Red Maple**	***Acer rubrum***	**2**	**Poor**	**mostly dead**
2T64	**Bradford Pear**	***Pyrus calleryana***	**2**	**Good**	
2T65	**Red Maple**	***Acer rubrum***	**2**	**Fair/Poor**	**extensive deadwood**
2T66	**Red Maple**	***Acer rubrum***	**2**	**Fair/Poor**	**extensive deadwood**
2T67	**Kentucky Yellowwood**	***Cladrastris kentukea***	**2**	**Good**	
2T68	**Kentucky Yellowwood**	***Cladrastris kentukea***	**2**	**Fair**	**deadwood, trunk damage**
2T69	**Kentucky Yellowwood**	***Cladrastris kentukea***	**2**	**Fair**	**deadwood, trunk damage**
2T70	**Kentucky Coffee Tree**	***Gymnocladus dioicus***	**2**	**Good**	
2T71	**Kentucky Coffee Tree**	***Gymnocladus dioicus***	**2**	**Good**	
2T72	**Kentucky Coffee Tree**	***Gymnocladus dioicus***	**2**	**Good**	
2T73	**Kentucky Coffee Tree**	***Gymnocladus dioicus***	**2**	**Fair/Poor**	**extensive deadwood**
2T74	**Kentucky Coffee Tree**	***Gymnocladus dioicus***	**2**	**Fair/Poor**	**extensive deadwood**
2T75	Siberian Elm	*Ulmus pumila*	7	Good	
2T76	Tree of Heaven	*Ailanthus altissima*	3	Good	
2T77	Tree of Heaven	*Ailanthus altissima*	3	Good	
2T78	Tree of Heaven	*Ailanthus altissima*	4	Good	
2T79	Tree of Heaven	*Ailanthus altissima*	8	Good/Fair	deadwood
2T80	American Elm	*Ulmus americana*	6	Good	
2T81	Tree of Heaven	*Ailanthus altissima*	3	Good	
2T82	Black Locust	*Robina pseudoacacia*	4	Fair/Poor	extensive deadwood
1S1	Grounseltree	*Baccharis halimifolia*	<1.5	Good	
1S2	Groundseltree	*Baccharis halimifolia*	<1.5	Good	
1S3	Groundseltree	*Baccharis halimifolia*	<1.5	Good	
1S4	Groundseltree	*Baccharis halimifolia*	<1.5	Good	
1S5	White Mulberry	*Morus alba*	<1.5	Good	
1S6	Unknown Boxwood	*Buxus* sp.	<1.5	Good	
1S7	Japanese Pagoda	*Styphnolobium japonicum*	<1.5	Good	
1S8	False Indigo	*Amorpha fruticosa*	<1.5	Good	
1S9	False Indigo	*Amorpha fruticosa*	<1.5	Good	
1S10	False Indigo	*Amorpha fruticosa*	<1.5	Good	
1S11	Tree of Heaven	*Ailanthus altissima*	<1.5	Good	
1S12	Tree of Heaven	*Ailanthus altissima*	<1.5	Good	
1S13	Eastern Redbud	*Cercis canadensis*	<1.5	Good	
1S14	Eastern Redbud	*Cercis canadensis*	<1.5	Good	
1S15	Eastern Redbud	*Cercis canadensis*	<1.5	Good	
1S16	Eastern Redbud	*Cercis canadensis*	<1.5	Good	

*Specimen trees shown in bold.

ATTACHMENT F: RARE THREATENED AND ENDANGERED SPECIES (RTE) COORDINATION

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127

In Reply Refer To: 05/09/2024 14:28:59 UTC
Project code: 2024-0079302
Project Name: Francis Scott Key Bridge Rebuild

Federal Nexus: yes
Federal Action Agency (if applicable): Federal Highway Administration

Subject: Federal agency coordination under the Endangered Species Act, Section 7 for 'Francis Scott Key Bridge Rebuild'

Dear Sushmita Sarkar:

This letter records your determination using the Information for Planning and Consultation (IPaC) system provided to the U.S. Fish and Wildlife Service (Service) on May 09, 2024, for 'Francis Scott Key Bridge Rebuild' (here forward, Project). This project has been assigned Project Code 2024-0079302 and all future correspondence should clearly reference this number. **Please carefully review this letter. Your Endangered Species Act (Act) requirements may not be complete.**

Ensuring Accurate Determinations When Using IPaC

The Service developed the IPaC system and associated species' determination keys in accordance with the Endangered Species Act of 1973 (ESA; 87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.) and based on a standing analysis. All information submitted by the Project proponent into IPaC must accurately represent the full scope and details of the Project.

Failure to accurately represent or implement the Project as detailed in IPaC or the Northern Long-eared Bat Rangewide Determination Key (DKey), invalidates this letter. ***Answers to certain questions in the DKey commit the project proponent to implementation of conservation measures that must be followed for the ESA determination to remain valid.***

Determination for the Northern Long-Eared Bat

Based upon your IPaC submission and a standing analysis completed by the Service, your project has reached the determination of "May Affect, Not Likely to Adversely Affect" the northern long-eared bat. Unless the Service advises you within 15 days of the date of this letter that your

IPaC-assisted determination was incorrect, this letter verifies that consultation on the Action is complete and no further action is necessary unless either of the following occurs:

- new information reveals effects of the action that may affect the northern long-eared bat in a manner or to an extent not previously considered; or,
- the identified action is subsequently modified in a manner that causes an effect to the northern long-eared bat that was not considered when completing the determination key.

15-Day Review Period

As indicated above, the Service will notify you within 15 calendar days if we determine that this proposed Action does not meet the criteria for a “may affect, not likely to adversely affect” (NLAA) determination for the northern long-eared bat. If we do not notify you within that timeframe, you may proceed with the Action under the terms of the NLAA concurrence provided here. This verification period allows the identified Ecological Services Field Office to apply local knowledge to evaluation of the Action, as we may identify a small subset of actions having impacts that we did not anticipate when developing the key. In such cases, the identified Ecological Services Field Office may request additional information to verify the effects determination reached through the Northern Long-eared Bat DKey.

Other Species and Critical Habitat that May be Present in the Action Area

The IPaC-assisted determination for the northern long-eared bat does not apply to the following ESA-protected species and/or critical habitat that also may occur in your Action area:

- Monarch Butterfly *Danaus plexippus* Candidate
- Tricolored Bat *Perimyotis subflavus* Proposed Endangered

You may coordinate with our Office to determine whether the Action may affect the species and/or critical habitat listed above. Note that reinitiation of consultation would be necessary if a new species is listed or critical habitat designated that may be affected by the identified action before it is complete.

If you have any questions regarding this letter or need further assistance, please contact the Chesapeake Bay Ecological Services Field Office and reference Project Code 2024-0079302 associated with this Project.

Action Description
You provided to IPaC the following name and description for the subject Action.

1. Name

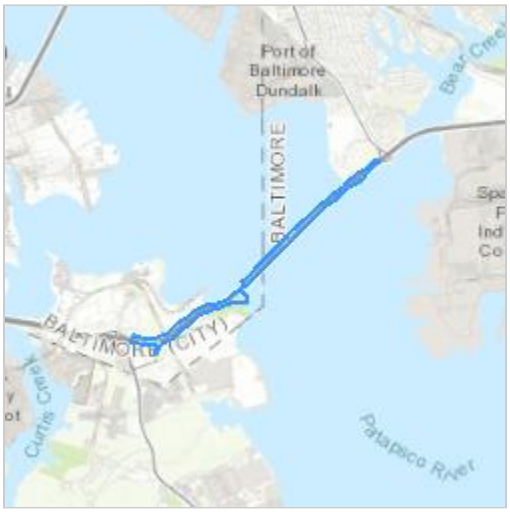
Francis Scott Key Bridge Rebuild

2. Description

The following description was provided for the project 'Francis Scott Key Bridge Rebuild':

> Reconstruction of the Francis Scott Key Bridge following the collapse. The bridge will be reconstructed on alignment and the approach roadways adjusted as needed to accommodate the new bridge structure.

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.2174299,-76.5278891271044,14z



DETERMINATION KEY RESULT

Based on the answers provided, the proposed Action is consistent with a determination of “may affect, but not likely to adversely affect” for the Endangered northern long-eared bat (*Myotis septentrionalis*).

QUALIFICATION INTERVIEW

1. Does the proposed project include, or is it reasonably certain to cause, intentional take of the northern long-eared bat or any other listed species?

   Note: Intentional take is defined as take that is the intended result of a project. Intentional take could refer to research, direct species management, surveys, and/or studies that include intentional handling/encountering, harassment, collection, or capturing of any individual of a federally listed threatened, endangered or proposed species?

   No

2. The action area does not overlap with an area for which U.S. Fish and Wildlife Service currently has data to support the presumption that the northern long-eared bat is present. Are you aware of other data that indicates that northern long-eared bats (NLEB) are likely to be present in the action area?

   Bat occurrence data may include identification of NLEBs in hibernacula, capture of NLEBs, tracking of NLEBs to roost trees, or confirmed NLEB acoustic detections. Data on captures, roost tree use, and acoustic detections should post-date the year when white-nose syndrome was detected in the relevant state. With this question, we are looking for data that, for some reason, may have not yet been made available to U.S. Fish and Wildlife Service.

   No

3. Does any component of the action involve construction or operation of wind turbines?

   Note: For federal actions, answer ‘yes’ if the construction or operation of wind power facilities is either (1) part of the federal action or (2) would not occur but for a federal agency action (federal permit, funding, etc.).

   No

4. Is the proposed action authorized, permitted, licensed, funded, or being carried out by a Federal agency in whole or in part?

   Yes

5. Is the Federal Highway Administration (FHWA), Federal Railroad Administration (FRA), or Federal Transit Administration (FTA) funding or authorizing the proposed action, in whole or in part?

   Yes

6. FHWA, FRA, and FTA have completed a range-wide programmatic consultation for transportation- related actions within the range of the Indiana bat and northern long-eared bat.

   Does your proposed action fall within the scope of this programmatic consultation?

   Note:If you have **previously consulted** on your proposed action with the Service under the NLEB 4dRule, answer 'no' to this question and proceed with using this key. If you have **not yet consulted** with the Service on your proposed action and are unsure whether your proposed action falls within the scope of the FHWA, FRA, FTA range-wide programmatic consultation, please select "Yes" and use the FHWA, FRA, FTA Assisted Determination Key in IPaC to determine if the programmatic consultation is applicable to your action. Return to this key and answer ‘no’ to this question if it is not.

   No

7. Are you an employee of the federal action agency or have you been officially designated in writing by the agency as its designated non-federal representative for the purposes of Endangered Species Act Section 7 informal consultation per 50 CFR § 402.08?

   Note: This key may be used for federal actions and for non-federal actions to facilitate section 7 consultation and to help determine whether an incidental take permit may be needed, respectively. This question is for information purposes only.

   Yes

8. Is the lead federal action agency the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC)? Is the Environmental Protection Agency (EPA) or Federal Communications Commission (FCC) funding or authorizing the proposed action, in whole or in part?

   No

9. Is the lead federal action agency the Federal Energy Regulatory Commission (FERC)?

   No

10. Have you determined that your proposed action will have no effect on the northern long-eared bat? Remember to consider the effects of any activities that would not occur but for the proposed action.

    If you think that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, answer “No” below and continue through the key. If you have determined that the northern long-eared bat does not occur in your project’s action area and/or that your project will have no effects whatsoever on the species despite the potential for it to occur in the action area, you may make a “no effect” determination for the northern long-eared bat.

    Note: Federal agencies (or their designated non-federal representatives) must consult with USFWS on federal agency actions that may affect listed species [50 CFR 402.14(a)]. Consultation is not required for actions that will not affect listed species or critical habitat. Therefore, this determination key will not provide a consistency or verification letter for actions that will not affect listed species. If you believe that the northern long-eared bat may be affected by your project or if you would like assistance in deciding, please answer “No” and continue through the key. Remember that this key addresses only effects to the northern long-eared bat. Consultation with USFWS would be required if your action may affect another listed species or critical habitat. The definition of Effects of the Action can be found here: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    No

11. [Semantic] Is the action area located within 0.5 miles of a known northern long-eared bat hibernaculum?

    Note: The map queried for this question contains proprietary information and cannot be displayed. If you need additional information, please contact your State wildlife agency.

    Automatically answered
    No

12. Does the action area contain any caves (or associated sinkholes, fissures, or other karst features), mines, rocky outcroppings, or tunnels that could provide habitat for hibernating northern long-eared bats?

    No

13. Is suitable summer habitat for the northern long-eared bat present within 1000 feet of project activities?
    (If unsure, answer "Yes.")

    Note: If there are trees within the action area that are of a sufficient size to be potential roosts for bats (i.e., live trees and/or snags ≥3 inches (12.7 centimeter) dbh), answer "Yes". If unsure, additional information defining suitable summer habitat for the northern long-eared bat can be found at: https://www.fws.gov/media/northern-long-eared-bat-assisted-determination-key-selected-definitions

    Yes

14. Will the action cause effects to a bridge?

    Yes

15. Has a site-specific bridge assessment following USFWS guidelines been completed?

    Note: For information on conducting a bridge/structure assessment, see Appendix D of the User's Guide for the Range-wide Programmatic Consultation for Indiana Bat and Northern Long-eared Bat and the associated Bridge/Structure Bat Assessment Form. Additional resources can be found at: https://www.fws.gov/media/bats-and-transportation-structures-references-and-additional-resources and a training video is located at: https://www.youtube.com/watch?v=iuFwkT7q8Ws.

    No

16. Will the proposed action result in the cutting or other means of knocking down, bringing down, or trimming of any trees suitable for northern long-eared bat roosting?

    Note: Suitable northern long-eared bat roost trees are live trees and/or snags ≥3 inches dbh that have exfoliating bark, cracks, crevices, and/or cavities.

    Yes

PROJECT QUESTIONNAIRE

Enter the extent of the action area (in acres) from which trees will be removed - round up to the nearest tenth of an acre. For this question, include the entire area where tree removal will take place, even if some live or dead trees will be left standing.

19.8

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the inactive (hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

0

In what extent of the area (in acres) will trees be cut, knocked down, or trimmed during the active (non-hibernation) season for northern long-eared bat? **Note:** Inactive Season dates for spring staging/fall swarming areas can be found here: https://www.fws.gov/media/inactive-season-dates-swarming-and-staging-areas

19.8

Will all potential northern long-eared bat (NLEB) roost trees (trees ≥3 inches diameter at breast height, dbh) be cut, knocked, or brought down from any portion of the action area greater than or equal to 0.1 acre? If all NLEB roost trees will be removed from multiple areas, select 'Yes' if the cumulative extent of those areas meets or exceeds 0.1 acre.

Yes

Enter the extent of the action area (in acres) from which all potential NLEB roost trees will be removed. If all NLEB roost trees will be removed from multiple areas, entire the total extent of those areas. Round up to the nearest tenth of an acre.

19.8

For the area from which all potential northern long-eared bat (NLEB) roost trees will be removed, on how many acres (round to the nearest tenth of an acre) will trees be allowed to regrow? Enter '0' if the entire area from which all potential NLEB roost trees are removed will be developed or otherwise converted to non-forest for the foreseeable future.

0

Will any snags (standing dead trees) ≥3 inches dbh be left standing in the area(s) in which all northern long-eared bat roost trees will be cut, knocked down, or otherwise brought down?

No

Will all project activities by completed by April 1, 2024?

No

IPAC USER CONTACT INFORMATION

Agency: Maryland Department of Transportation
Name: Sushmita Sarkar
Address: 707 North Calvert Street
City: Baltimore
State: MD
Zip: 21202
Email ssarkar@mdot.maryland.gov
Phone: 4105450392

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
Phone: (410) 573-4599 Fax: (410) 266-9127

In Reply Refer To: 05/01/2024 16:21:08 UTC
Project Code: 2024-0079302
Project Name: Francis Scott Key Bridge Rebuild

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

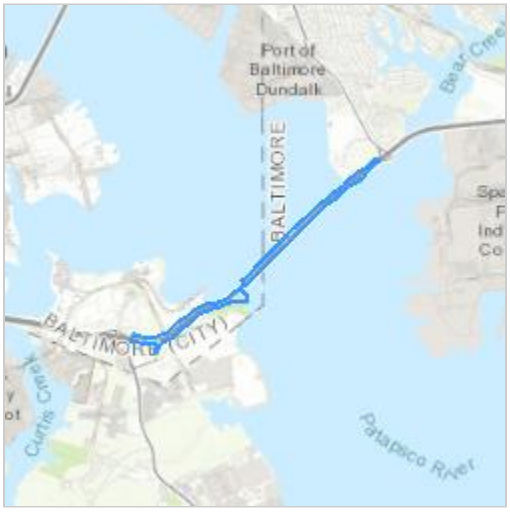
This species list is provided by:

Chesapeake Bay Ecological Services Field Office
177 Admiral Cochrane Drive
Annapolis, MD 21401-7307
(410) 573-4599

PROJECT SUMMARY

Project Code: 2024-0079302
Project Name: Francis Scott Key Bridge Rebuild
Project Type: Bridge - Replacement
Project Description: Reconstruction of the Francis Scott Key Bridge following the collapse. The bridge will be reconstructed on alignment and the approach roadways adjusted as needed to accommodate the new bridge structure.
Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@39.2174299,-76.5278891271044,14z



Counties: Anne Arundel , Baltimore , and Baltimore counties, Maryland

ENDANGERED SPECIES ACT SPECIES

There is a total of 3 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

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1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. This species only needs to be considered under the following conditions: ▪ This species only needs to be considered if the project includes wind turbine operations. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

WETLANDS

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER POND

- PUBHx

FRESHWATER EMERGENT WETLAND

- PEM1Cd
- PEM1C

ESTUARINE AND MARINE DEEPWATER

- E1UBL

ESTUARINE AND MARINE WETLAND

- E2USP

IPAC USER CONTACT INFORMATION

Agency: Maryland State Highway Administration
Name: Justin Reel
Address: 700 East Pratt Street, Suite 500
City: Baltimore
State: MD
Zip: 21202
Email jreel@rkk.com
Phone: 7033384139

LEAD AGENCY CONTACT INFORMATION

Lead Agency: Federal Highway Administration

June 3, 2024

Mr. Jeff Gring
Coastal Resources, Inc.
25 Old Solomons Island Road
Annapolis, MD 21401

RE: Environmental Review for Key Bridge Rebuild Project, Maryland Transportation Authority, I-695 over Patapsco River, Baltimore County, Anne Arundel County and Baltimore City, Maryland.

Dear Mr. Gring:

The Wildlife and Heritage Service has the following areas of potential concern for impacts to rare, threatened or endangered species and protected habitats in regard to this project:

The former Key Bridge supported a nesting structure used by a pair of American Peregrine Falcons (*Falco peregrinus anatum*), a species with In Need of Conservation status in Maryland. It is possible that individuals of this species could return to nest on structures here in the future. We generally recommend protecting any active nest sites for the American Peregrine Falcon by limiting work with a ¼-mile buffer around the nest site during the breeding season which is generally considered to be March 1 through June 30 of any given year.

The open waters of the Patapsco River shoreline that are adjacent to or part of the site are known historic waterfowl concentration and staging areas. Waterfowl concentration and staging areas are recognized areas of open water and wetlands adjacent to land that are utilized by significant numbers of ducks, geese, and swans for feeding and resting during the winter months. These areas in close proximity to the shore are vital, as they provide submerged aquatic vegetation (SAV), clams and other invertebrates that serve as primary food sources for many of these birds. A variety of waterfowl species can be found in such areas, building energy reserves for their upcoming migrations. If there is to be any construction of water-dependent facilities please contact Josh Homyack of the Wildlife and Heritage Service at (410) 827-8612 x100 or josh.homyack@maryland.gov for further technical assistance regarding waterfowl.

While it does not appear to fall within the study area as shown on your map, Fort Carroll Island is in close proximity to the proposed site and is known to support a colony of waterbirds of mixed species. Waterbird colonies are a rare resource that should be protected. Conservation of waterbird colonies that are located in the Chesapeake Bay Critical Area is required by state law. Significant mortality of chicks or eggs resulting from disturbance of the colony during the breeding season is a violation of the U.S. Migratory Bird Treaty Act. Disturbance includes actions such as cutting nest trees, cutting nearby trees or nearby construction that causes abandonment of chicks by the adults. Whenever possible, waterbird colony sites should be conserved as part of responsible land stewardship.

To protect waterbird colonies we use the following guidelines:

1. Establish a protection area of ¼ mile radius from the colony's outer boundary, and within that establish a 300’ foot boundary (Zone 1).
2. During the breeding season, all human entry into the colony and Zone 1 should be restricted to only that essential for protection of the colony. Human disturbance of colony sites that results in significant mortality of eggs and/or chicks is considered a prohibited taking under various state and federal regulations.
3. No land use changes, including development or tree removal, should occur in Zone 1.
4. Construction activities, including clearing, grading, building, etc., should not occur within Zone 1.
5. No construction or similar disturbance should occur within the ¼ mile protection area during the breeding season. The breeding season varies for each different waterbird species, but for the species known to nest at Fort Carroll Island, it is cumulatively from February 15 through 15 August of any given year.

The Wildlife and Heritage Service provides assistance to those interested in protecting these resources. The above guidelines are usually suitable for protection in most cases. Specific protection measures depend upon many factors. We look forward to continued coordination with you as this project moves forward.

Thank you for allowing us the opportunity to review this project. If you should have any further questions regarding this information, please contact me at lori.byrne@maryland.gov or at (410) 260-8573.

Sincerely,

Lori A. Byrne

Lori A. Byrne,
Environmental Review Coordinator
Wildlife and Heritage Service
MD Dept. of Natural Resources

ER# 2024.0810.ba/aa/bc
Cc: D. Brinker, DNR
J. Homyack, DNR
K. Harvey, DNR
G. Gibson, MES/SHA
L. Sestak, DNR
C. Jones, CAC

Coordination Sheet for MD DNR Environmental Review Related to Project Locations

June 3, 2024

Jeff Gring
Team Manager/Senior Environmental Scientist
Coastal Resources, Inc.
25 Old Solomons Island Road,
Annapolis, MD 21401

Re: Environmental Review Request: Rare, Threatened, and/or Endangered Species - Key Bridge Rebuild Project, Baltimore City, Baltimore County, and Anne Arundel County, Maryland

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The Maryland Department of Natural Resources (MDNR) completed the environmental review request from Coastal Resources, Inc on behalf of the Maryland Transportation Authority (MDTA) for the Francis Scott Key Bridge Rebuild Project in Baltimore City, Baltimore County, and Anne Arundel County Maryland.

To ensure that impacts to natural and living resources on the project site and vicinity are first avoided and then if unavoidable, minimized to the maximum extent possible, the Department requests that the following concerns and recommendations be fully incorporated into the review of the proposed activities:

Waterways
The prominent waterway in the project area is the tidal portion of the Patapsco River (Use Class II) which flows directly into the Chesapeake Bay. Adjacent to the project site, the Patapsco River forms confluences with Bear Creek (Use II) and Curtis Creek (Use II) and tributaries.

Avifauna
Historic Waterfowl Concentration Areas protected under Critical Area Law are present along the shorelines and in the open water of the Patapsco River around the Francis Scott Key Bridge. Generally, to minimize disturbance to wintering and staging waterfowl, no water dependent work should be conducted from November 15 through March 1 of any year. However, this time of year restriction may be waived when time of year restrictions related to other resource concerns are present and if threats to human health and safety exist.

There is potential presence of a multitude of migratory birds in the project area. The Patapsco River harbors various colonial nesting waterbirds including herons, cormorants, and gulls. These species can be seen nesting on the piers and other structures of the bridge.

Submerged Aquatic Vegetation (SAV)

In 2022, 176.8 acres of SAV were mapped in the Patapsco River (VIMS annual aerial SAV survey). This represents 45% of the 389-acre SAV restoration target for the Patapsco River. SAV in the Patapsco has been trending upward in acreage in the past decade, as seen in Fig. 1 below. SAV is located primarily in Old Road Bay and Bear, Swan, Cox, Stony, Nabbs, Rock, Back, Main, Bodkin, and Wharf Creeks and Boyd Pond (Fig. 2). SAV species composition is composed of several freshwater to mesohaline species, including *Zannichellia palustris* (Horned pondweed), *Elodea canadensis* (Common waterweed), *Ceratophylum demersum* (Coontail), *Vallisneria americana* (Wild celery), *Potamogeton perfoliatus* (Redhead grass), *Ruppia maritima* (Widgeongrass), *Potamogeton crispus* (Curly pondweed), *Myriophyllum spicatum* (Eurasian watermilfoil), *and Hydrilla verticillata* (Hydrilla) (https://www.vims.edu/research/units/programs/sav/access/maps/).

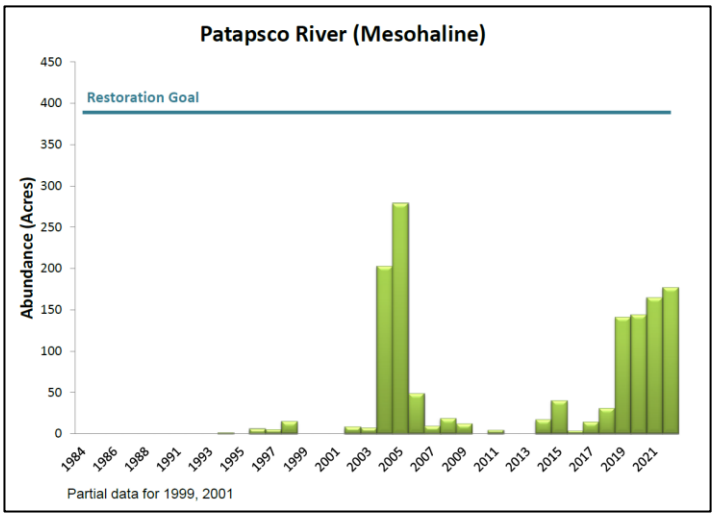

Figure 1. SAV Acres over

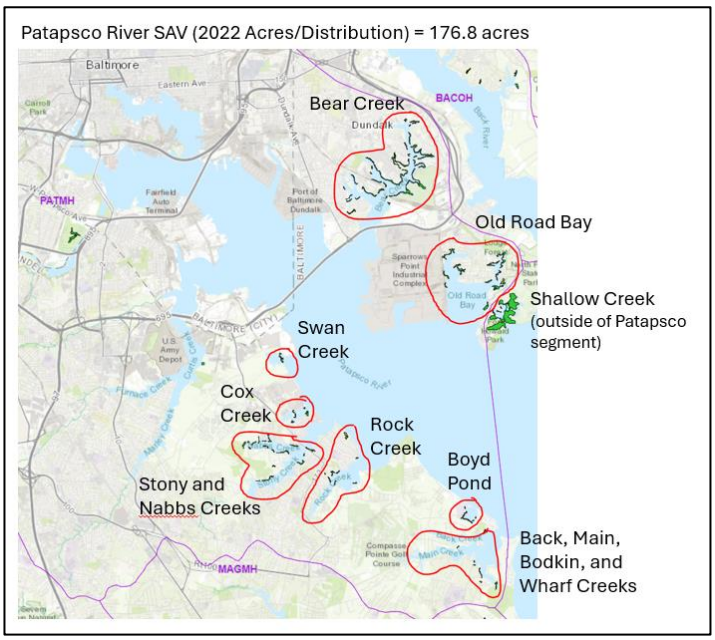

Figure 2. SAV Distribution

Key Bridge demolition, removal, and reconstruction has the potential to resuspend the thick layer of sediment on the bottom of the Patapsco River. This resuspension of sediments will create turbidity that reduces the light and conditions necessary for SAV survival, recruitment, and expansion and will limit our ability to progress toward the segment SAV restoration target of 389 acres.

To avoid impacts to SAV, all reasonable efforts should be made to reduce the resuspension of sediments during reconstruction and block the inevitable turbidity plumes from entering the creeks and bays where SAV is abundant. Time of year restrictions to ensure the majority of construction occurs outside of the SAV growing period from April 15 through October 15 will reduce impacts. Recognizing that this is an emergency situation where impacts to SAV will be inevitable, we recommend pro-actively planning to directly restore SAV (at a 3:1 ratio for acreage) when bridge reconstruction is complete in areas where distribution, density, or diversity is lost. The recommended species for restoration at this location would be *Vallisneria americana* (Wild celery).

Rare, Threated, and Endangered Species
Two Sensitive Species Project Review Areas (SSPRAs) have been documented in the project vicinity. At Fort Carroll there's a nesting colony of the State Rare (S3B) Black-crowned Night Herons (*Nycticorax nycticorax*). Additionally, there are nest records of the American Peregrine Falcon (*Falco peregrinus anatum*), a species with In Need of Conservation status in Maryland, documented on this site. The DNR Wildlife and Heritage Service will provide additional information on these RT&E species under separate cover.

Diadromous Fish
Anadromous fish species, including yellow perch, herring species, and white perch have been documented near this project site. The Patapsco River supports various resident warmwater species typical of the region as well. Where presence of yellow perch has been documented in the vicinity of an instream project area, generally no instream work is permitted in Use I and certain Use II waters during the period of February 15 through June 15, inclusive, during any year.

Important fisheries resources in this area include American Eel presence. American Eels migrate upstream through this region to smaller streams where they grow to adult stages. Some eels may reside within the project study area long term. Their spawning runs then take them back through this area as they migrate downstream as adults to a specific region of the Atlantic Ocean to spawn. Special attention has been given to American Eel management in recent years, due to their ecological and economic importance, and their declining numbers.

The project should be designed to maintain or enhance fish passage through the project area, particularly during low flow periods. Agencies will likely request a zone of safe passage for anadromous fish species be maintained for the project duration to ensure fish may travel to their preferred spawning areas further upstream in the Patapsco River and adjacent tributaries.

Recreational and Commercial Fisheries
DNR anticipates potential impacts to recreational and commercial fisheries and boating. Please coordinate with DNR Recreational and Commercial Fisheries to minimize any potential impacts from the removal and reconstruction of the Francis Scott Key Bridge.

The Patapsco River in recent years has harbored large schools of striped bass. It may be assumed most fishing activity is going to avoid the work area and will by default establish enough of a buffer for the bridge work. Lack of access to the Patapsco River near the project site for recreational fishing of striped bass and other recreationally important fish species could potentially impact the recreational sector**.**

DNR anticipates there could be impacts to the various organizations based on the Patapsco River that either fish from their property or take individuals out fishing. There are reef balls placed around Fort Carroll and it is common for companies to take trips out to fish in these areas. There are three designated license free fishing areas in Baltimore City located at Canton Recreation Pier, Broening Park, and Canton Waterfront Park. Retailers (i.e. Tochterman's) and fishing clubs are also present in this area. It is possible these groups could be impacted by this project.

Recreational crabbers use trotlines and traps around the Francis Scott Key Bridge, particularly on the north side near Sollers Point where there is an oyster bar. There are also concerns regarding the timing of boat passage for crabbers transiting in and out of the harbor.
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Oysters
A designated oyster sanctuary surrounds Fort Carroll. This oyster bar was utilized to provide stability for Fort Carroll when it was first built and is the most upstream bar in the Patapsco River. The viable bottom in this oyster sanctuary is focused on the northwestern side of Fort Carroll facing the bridge. This area contains shell habitat and a minimal amount of natural oyster from spatset that only occurs during extreme droughts when salinity offers the possibility of reproduction. This bar has been planted with hatchery spat for many years by local participants in the Marylanders Grow Oysters Program and others. Additionally, the oysters are sampled by environmental education groups during their field trips.

Additional Comments on BMPs:
The project area may be within or adjacent to mapped wetland areas, impacts from the use of heavy equipment, disposal of excavated material, or other construction activities should be avoided to the extent possible. When there is no reasonable alternative to the adverse effects on wetlands or other aquatic or terrestrial habitat, the applicant shall be required to provide measures to mitigate, replace, or minimize the loss of habitat.

This project is located in the Chesapeake Bay Critical Area and will need to conform to Critical Area laws and policies.

Best Management Practices should be stringently managed and maintained during bridge construction and demolition to prevent runoff and debris from entering surface waters and protect stream resources, given the presence of numerous sensitive species in the watershed.

The fisheries resources in the above area should be adequately protected by the instream work restrictions referenced above, stringent sediment and erosion control methods, and other Best Management Practices typically used for protection of stream resources.

Thank you for the opportunity to review and comment on this project. Please continue to coordinate with MDNR as this project progresses. If you have any questions concerning these comments, please feel free to contact Ms. Gwen Gibson of my staff at gwendolyn.gibson@maryland.gov.

Sincerely,

Tony Redman, Director
Environmental Review Program
Department of Natural Resources
Tawes State Office Building, B-3
Annapolis, MD 21401

EFH Mapper Report

EFH Data Notice

Essential Fish Habitat (EFH) is defined by textual descriptions contained in the fishery management plans developed by the regional fishery management councils. In most cases mapping data can not fully represent the complexity of the habitats that make up EFH. This report should be used for general interest queries only and should not be interpreted as a definitive evaluation of EFH at this location. A location-specific evaluation of EFH for any official purposes must be performed by a regional expert. Please refer to the following links for the appropriate regional resources.

Greater Atlantic Regional Office
Atlantic Highly Migratory Species Management Division

*** W A R N I N G ***

Please note under "Life Stage(s) Found at Location" the category "ALL" indicates that all life stages of that species share the same map and are designated at the queried location.

EFH

Link	Data Caveats	Species/Management Unit	Lifestage(s) Found at Location	Management Council	FMP
		Atlantic Butterfish	Adult, Eggs, Larvae	Mid-Atlantic	Atlantic Mackerel, Squid,& Butterfish Amendment 11
		Atlantic Herring	Adult, Juvenile	New England	Amendment 3 to the Atlantic Herring FMP
		Black Sea Bass	Adult, Juvenile	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Bluefish	Adult, Juvenile	Mid-Atlantic	Bluefish
		Clearnose Skate	Adult, Juvenile	New England	Amendment 2 to the Northeast Skate Complex FMP
		Red Hake	Adult, Eggs/Larvae/Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP
		Scup	Adult, Juvenile	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Summer Flounder	Adult, Juvenile, Larvae	Mid-Atlantic	Summer Flounder, Scup, Black Sea Bass
		Windowpane Flounder	Adult, Juvenile	New England	Amendment 14 to the Northeast Multispecies FMP

Pacific Salmon EFH

No Pacific Salmon Essential Fish Habitat (EFH) were identified at the report location.

Atlantic Salmon

No Atlantic Salmon were identified at the report location.

HAPCs

Link	Data Caveats	HAPC Name	Management Council
		Summer Flounder SAV	Mid-Atlantic Fishery Management Council

EFH Areas Protected from Fishing

No EFH Areas Protected from Fishing (EFHA) were identified at the report location.

Spatial data does not currently exist for all the managed species in this area. The following is a list of species or management units for which there is no spatial data.
****For links to all EFH text descriptions see the complete data inventory: open data inventory -->**

All EFH species have been mapped for the Greater Atlantic region,
Atlantic Highly Migratory Species EFH,
Bigeye Sand Tiger Shark,
Bigeye Sixgill Shark,
Caribbean Sharpnose Shark,
Galapagos Shark,
Narrowtooth Shark,
Sevengill Shark,
Sixgill Shark,
Smooth Hammerhead Shark,
Smalltail Shark