



William Morgante, PWS
Wetlands Administrator

State of Maryland
Board of Public Works
Wetlands Administration
80 Calvert Street, Room 117, Annapolis, Maryland 21401
410-260-7791

Wes Moore
Governor

Dereck E. Davis
Treasurer

Brooke Lierman
Comptroller

John T. Gontrum, Esq.
Executive Secretary

WETLANDS LICENSE NO. 24-0607(R1)
MARYLAND TRANSPORTATION AUTHORITY

The Maryland Board of Public Works authorizes you to:

- I. Mechanically remove the remaining parapet, median, deck and six remaining girders over water spans
- II. Place one hundred 36-diameter temporary piles
- III. Place ~~three~~ **eight** temporary buoys
- IV. Conduct ~~60~~ **200** soil borings/geotechnical investigations using a maximum 12-inch diameter outer casing and an 8-inch diameter inner casing to a maximum depth of 275 feet below the mudline
- V. Conduct the following temporary investigative in-water tests: 14 test piles, ~~six drill shaft tests, and~~ **and 2,000 probe locations.**

Patapsco River, Francis Scott Key Bridge, Baltimore City and County, and Anne Arundel County, Maryland

Issuance of this Tidal Wetlands License constitutes the State's determination that the authorized activities are consistent with the Maryland Coastal Zone Management Program, as required by Section 307 of the Federal Coastal Zone Management Act of 1972, as amended [16 U.S.C. §1456].

THIS LICENSE AUTHORIZES YOU TO PERFORM THE WORK ONLY IF YOU COMPLY WITH THE FOLLOWING SPECIAL CONDITION(S):

- A. The Licensee shall dispose of all demolition material at an approved facility or disposal site.
- B. The Licensee shall strictly manage and maintain all above water erosion controls BMPs during demolition activities to prevent runoff and debris from entering surface waters and protect stream resources, to the extent possible.
- C. The Licensee shall strictly manage and maintain all in-water BMPs, including the placement of shielding barges, during demolition activities to minimize runoff and debris from entering surface waters, to the extent possible.
- D. If any in-water pile installation or testing activity occurs between February 15 through June 15, inclusive during any year, the Licensee shall coordinate with DNR for minimization and avoidance measures prior to activity commencement. The Licensee shall make every effort to complete pile driving activities outside of the above TOYR. The Licensee shall make every effort to complete pile driving activities outside of the above TOY restriction.

WL#24-0607(R1)

Maryland Transportation Authority

- E. The Licensee shall use appropriate BMPs for all pile driving activities that are identified in the *"Proposed Best Management Practices for Francis Scott Key Bridge pier Demolition to be permitted under MDE's Tidal Wetland License 24-WL-0653. (adapted from NMFS/GARFO BMP Manual)"* document.
- F. If any mooring, pile driving, and other demonstration activities overlap within the Fort Carroll Sensitive Species Project Review Area (SSPRA) area as depicted on Attachment C, the Licensee shall coordinate with DNR's Environmental Review Program for minimization and avoidance measures. *The SSPRA over the Key Bridge (green oval) can be disregarded, as the nest was lost in the bridge collapse.
- G. The Licensee shall implement a "hold point" for agency coordination and adaptive management if the following is observed during or immediately (approximately 1 hour) after pile driving activity:
 - a. Presence of dolphin, sea turtle, or sturgeon within the injury or behavioral modification zone- reference figures from Key Crossing Environmental Compliance Plan (applicability: all impact hammer activities);
 - b. One (1) stunned or dead sturgeon and/or dolphin (applicability: all impact hammer activities);
 - c. Ten (10) stunned or dead game fish or species considered to be in need of conservation per pile location, such as all Bass species, Alewife, Blueback Herring, and American Shad and others (applicability: all impact hammer activities);
 - d. Forty (40) stunned or dead non-game fish per pile location (applicability: all impact hammer activities).
- H. The Licensee shall implement a "hold point" for agency coordination and adaptive management if the following is observed cumulatively for all pile driving during 24-hour period when pile driving occurred:
 - a) One (1) stunned or dead sturgeon and/or dolphin (applicability: all impact hammer activities);
 - b) Thirty (30) stunned or dead game fish or species considered to be in need of conservation, such as all Bass species, Alewife, Blueback Herring, and American Shad and others (applicability: all impact hammer activities);
 - c) One hundred-twenty (120) stunned or dead non-game fish (applicability: all impact hammer activities).
- I. The Licensee shall submit a weekly report and a summary report at the end of pile driving activities documenting total injured/killed fish observed, approximate location relative to where the pile driving was occurring, and time/date.
- J. The Licensee shall provide compensation for fish mortality if a Hold Point is issued. The Licensee shall provide payment into a Maryland Department of Natural Resources (DNR) Special Fund as designated by DNR. Monetary values associated with fish kills shall be evaluated in accordance with the Fish Mortality Mitigation Cost Table depicted on Attachment D.
- K. The Licensee shall install appropriate hazard notification, visibility, and safety requirements on all temporary pilings.

WL#24-0607(R1)

Maryland Transportation Authority

**THIS LICENSE AUTHORIZES YOU TO PERFORM THE WORK ONLY IF
YOU COMPLY WITH THE FOLLOWING STANDARD CONDITIONS:**

1. Licensee shall conduct the authorized work in accordance with the plans and drawings dated as accepted by MDE on ~~July 12, 2024~~ **March 20, 2025**, which are hereby incorporated into this License.
2. Until the authorized work is complete, Licensee shall have available at the site a copy of this License including the plans and drawings.
3. This License constitutes Maryland's authorization to conduct the authorized work under the State Tidal Wetlands Law. This License does not bestow any other federal, State, or local government authorization.
4. Licensee shall have all proposed work above Mean High Water reviewed and authorized by the local county Department of Planning and Zoning or applicable agency.
5. Licensee shall notify MDE's Compliance Program by BOTH phone AND in writing of the following: (a) start date at least five business days before beginning work; and
(b) completion date no more than five business days after project completion.
Central Division: 410-537-3510, 1800 Washington Blvd, Baltimore, MD 21230
6. Licensee shall comply with any regulations, conditions, or instructions issued by MDE, including any Water Quality Certification issued with respect to the authorized work.
7. Licensee shall conduct the authorized work in accordance with Critical Area Commission requirements. The Critical Area Commission and MDTA have developed a Memorandum of Understanding approving the Key Bridge Rebuild and requiring Commission review prior to buffer disturbance. In accordance with the MOU, any anticipated Buffer disturbance shall be reviewed by the Critical Area Commission per the requirements of linear projects in Intensely Developed Area requires prior written approval, before commencement of land disturbing activity.
"Buffer" means the 100-foot Critical Area Buffer and any expanded area that is immediately landward of the mean high-water line of the tidal waters or is immediately landward of tidal wetlands. The Buffer includes expanded contiguous area if the contiguous area includes steep slopes, hydric soil, or highly erodible soil, or otherwise meets the criteria of COMAR 27.01.09.01.E(7). "Disturbance" means any alteration or change to the land including any amount of clearing. Clearing includes vegetation removal, grading, and construction activity.
8. Licensee may not fill, dredge, or otherwise alter or destroy tidal marsh or its vegetation unless this License specifically authorizes the activity.
9. Licensee may not stockpile material in State tidal wetlands/State tidal waters of the U.S.
10. Licensee shall allow unfettered public use of State wetlands/State tidal waters of the U.S.
11. This License does not transfer a property interest of the State.
12. Licensee shall file a Miss Utility ticket for the proposed work at least 10 days before beginning work. *Miss Utility: 800-257-7777*
13. Licensee shall ensure that structures (for example, piers and piles) removed from the site are taken to an upland disposal facility approved by MDE's Compliance Program.
14. If the authorized work impacts more than 5,000 square feet or includes 100 or more cubic yards of fill, Licensee shall conduct the authorized work in accordance with a locally approved Soil Erosion and Sediment Control Plan.

WL#24-0607(R1)

Maryland Transportation Authority

15. If the authorized work is not performed by the property owner, all work performed under this Tidal Wetlands License shall be conducted by a marine contractor licensed by the Marine Contractors Licensing Board (MCLB) in accordance with Title 17 of the Environment Article of Annotated Code of Maryland. A list of licensed marine contractors may be obtained by contacting the MCLB at 410-537-3249, by email at MDE.MCLB@maryland.gov or by accessing the Maryland Department of the Environment, Environmental Boards webpage.
16. Licensee shall allow State officials and employees to make inspections at reasonable times and cooperate with those inspections.
17. This License is granted only to the Licensee. Licensee may transfer the license only with written approval from the Board of Public Works. If the Board of Public Works approves the transfer, the transferee is subject to all License terms and conditions.
18. Licensee shall indemnify, defend, and save harmless the State of Maryland, its officials, officers, and employees from and against any and all liability, suits, claims, and actions of whatever kind, caused by or arising from, the work this License authorizes.
19. The Board of Public Works or its Wetlands Administrator may modify, suspend, or revoke this License in its reasonable discretion. Licensee shall promptly comply upon notice of any such action.
20. This License expires October 9, 2027.
If the authorized work is not completed by the expiration date, all activity must stop.
Note: A three-year license may be renewed for one additional three-year term if the Licensee requests an extension before the expiration date and all other conditions are met. A six-year license may not be renewed; instead, Licensee must reapply to MDE for a new license. Contact the Board of Public Works to determine if this License may be extended. *Board of Public Works: 410-260-7791*
21. In conducting work authorized under this license, licensee may not cause injury to private property; invade the rights of others; or infringe any federal, state, or local laws or regulations.
22. Licensee shall maintain any authorize structure in good condition and perform the authorized activity in a workmanlike manner in accordance with this license.
23. In conducting work authorized under this license, licensee shall eliminate or minimize adverse effects on fish, wildlife, and the natural environment.

By the authority of the Board of Public Works:

DocuSigned by:



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William Morgante

Wetlands Administrator

Effective Date: October 9, 2024

Approved as: Secretary's Agenda Item: 4

Board of Public Works Meeting Date: October 2, 2024

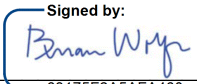
Revised: April 3, 2025 (R1)

WL#24-0607(R1)

Maryland Transportation Authority

I accept this License and all its conditions.

4/9/2025
Date

Signed by:

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Licensee (Signature)

Brian Wolfe
Name (Printed)

Director of Project Development
Title

bwolfe3@mdta.state.md.us
Email (To receive completed license.)

24-WL-0607 RI
202460906
3-20-2025
1 of 14

Temporary tidal water impacts associated with bridge demolition activities are authorized in WL-24-0653 and NAB-2024-60906-M46 (Demo Phase II)

Temporary Tidal Waters Impacts	
Sheet 3	3.10 Acres
Sheet 4	2.41 Acres
Sheet 5	2.76 Acres
Temporary Piles	0.02 Acres
Geotechnical Borings	0.05 Acres 0.15 Acre
Test Piles	0.01 Acres 0.02 Acre
Test Drilled Shaft	0.01 Acres
Static Load Test	0.04 Acres
Total	8.40 Acres 0.58 Acre

Mooring Buoys: 0.04 Acre*
Probe Locations: 0.32 Acre

Note: No Impacts on Sheets 1 & 6

- Limits of Disturbance

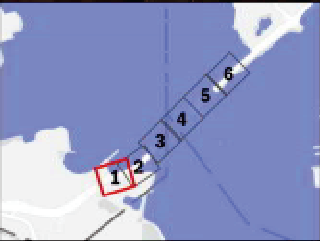
Potential Temporary Pile Area

Streams

Wetlands

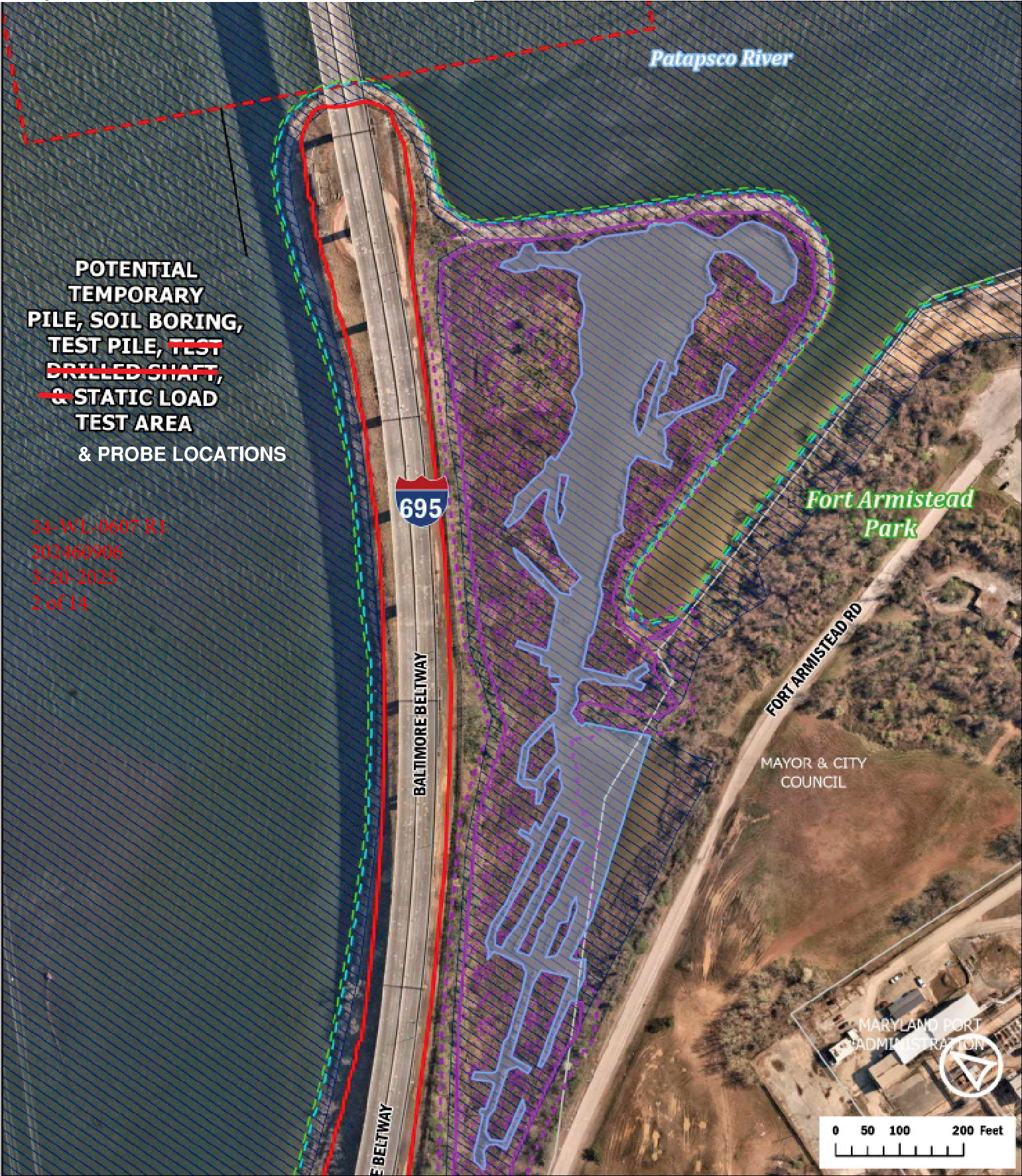
25ft Wetland Buffer

100-Year Floodplain
- Approximate MLW Line
- MHHW Line
- MHW Line
- Property Parcels
- Municipal Boundaries

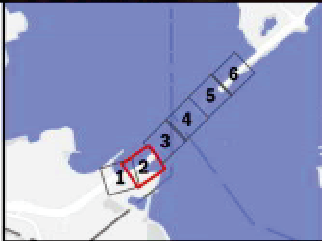


Francis Scott Key
Bridge
Demolition
Impact Plates
March 2025
Page 1 of 6
July 2024

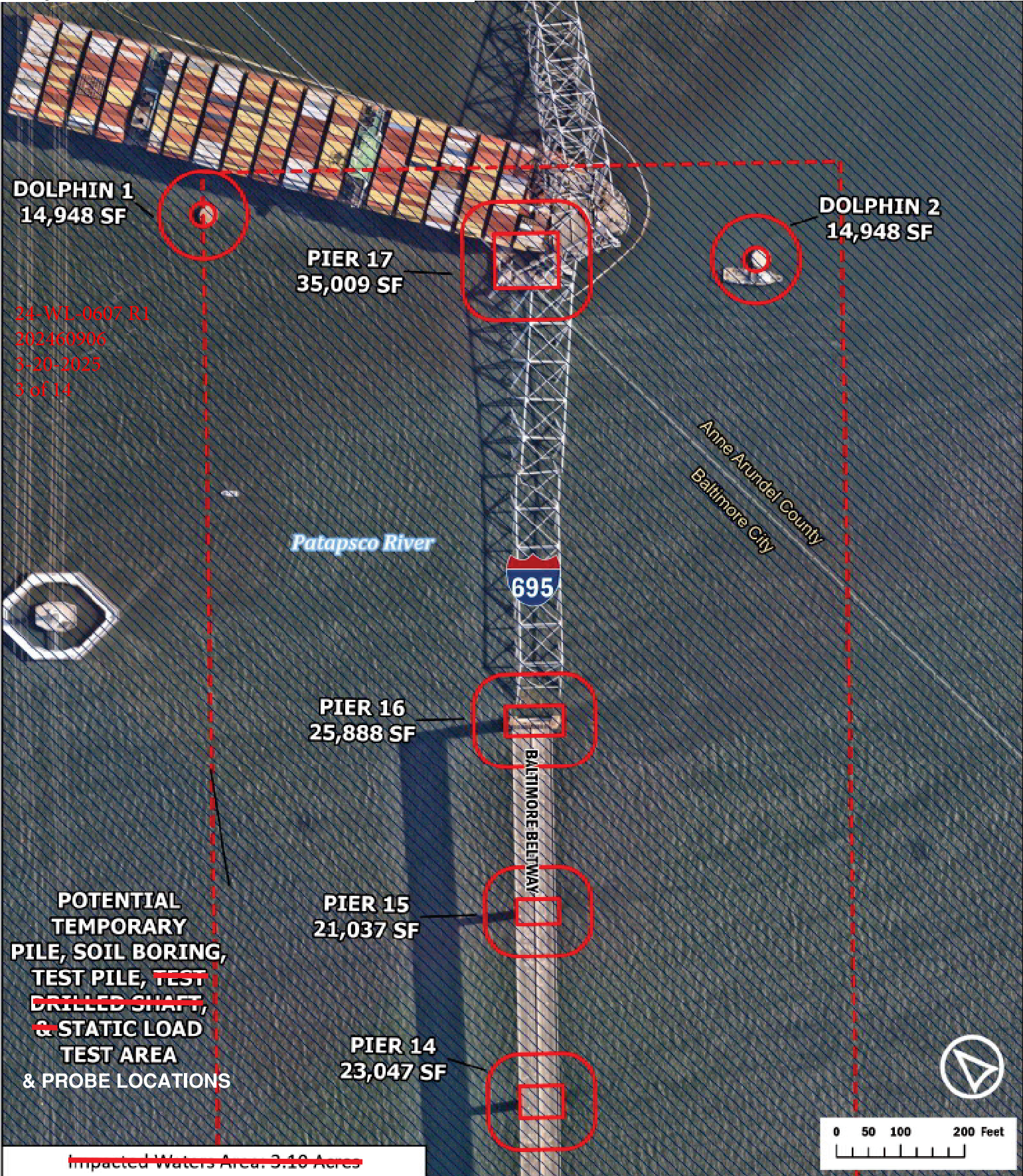
*See Sheet 6B for Temporary Tidal Waters Impacts associated with additional mooring buoys (0.04 AC / 1,600 sq. ft.)



- Limits of Disturbance
- Potential Temporary Pile Area
- Streams
- Wetlands
- 25ft Wetland Buffer
- 100-Year Floodplain
- Approximate MLW Line
- MHHW Line
- MHW Line
- Property Parcels
- Municipal Boundaries



**Francis Scott Key
Bridge
Demolition
Impact Plates**
March 2025
Page 2 of 6

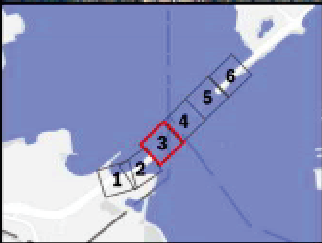


24-WL-0607 R.1
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3-20-2025
3 of 14

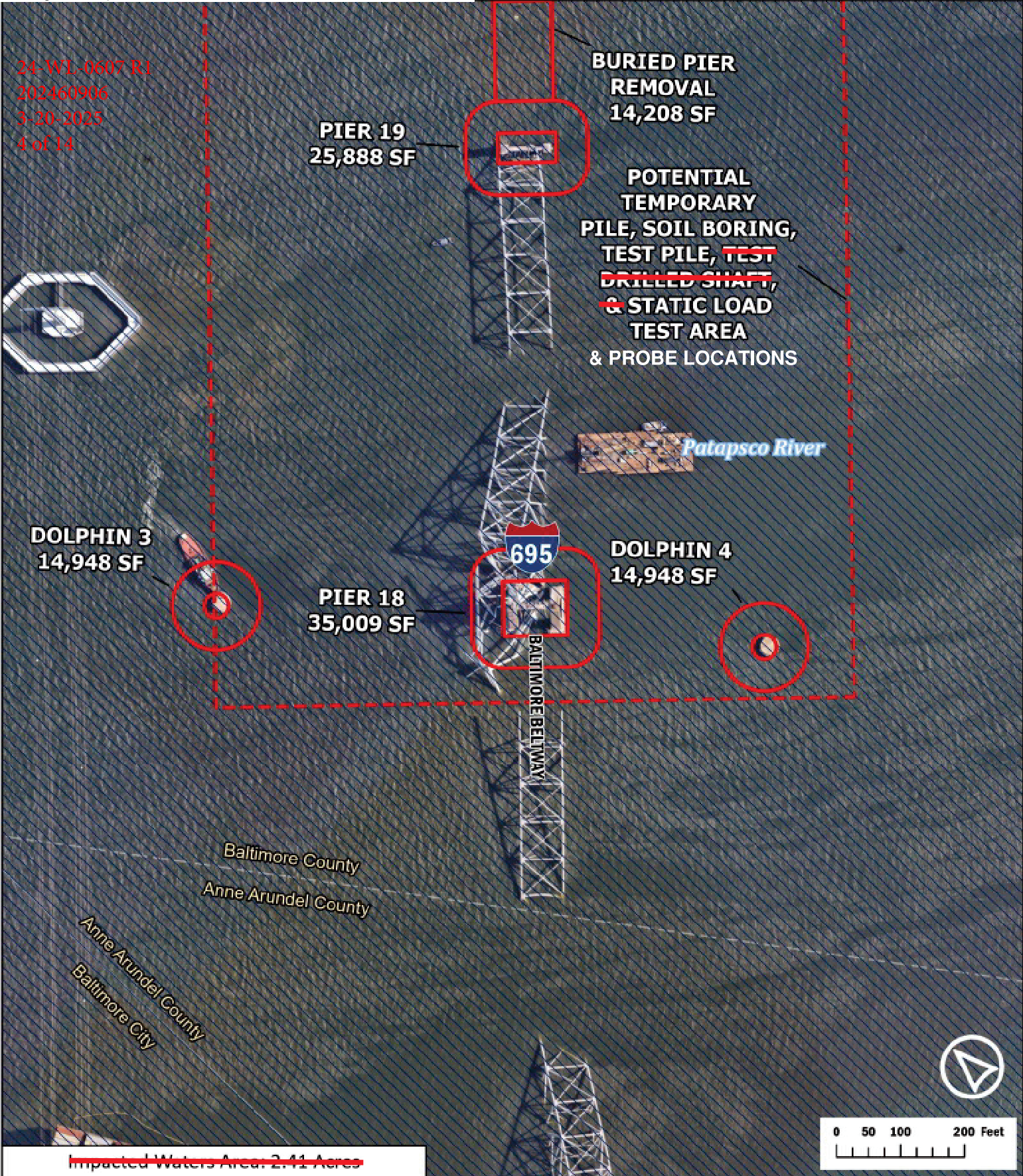
POTENTIAL
TEMPORARY
PILE, SOIL BORING,
TEST PILE, TEST
~~DRILLED SHAFT,~~
& STATIC LOAD
TEST AREA
& PROBE LOCATIONS

~~Impacted Waters Area: 3.10 Acres~~

- | | |
|-------------------------------|----------------------|
| Limits of Disturbance | Approximate MLW Line |
| Potential Temporary Pile Area | MHHW Line |
| Streams | MHW Line |
| Wetlands | Property Parcels |
| 25ft Wetland Buffer | Municipal Boundaries |
| 100-Year Floodplain | |

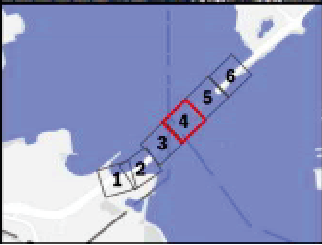


**Francis Scott Key
Bridge
Demolition
Impact Plates**
March 2025
Page 3 of 6



~~Impacted Waters Area: 2.41 Acres~~

Limits of Disturbance	Approximate MLW Line
Potential Temporary Pile Area	MHHW Line
Streams	MHW Line
Wetlands	Property Parcels
25ft Wetland Buffer	Municipal Boundaries
100-Year Floodplain	



MDTA
Maryland
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MDOT
MARYLAND DEPARTMENT
OF TRANSPORTATION
STATE HIGHWAY
ADMINISTRATION

**Francis Scott Key
Bridge
Demolition**

Impact Plates

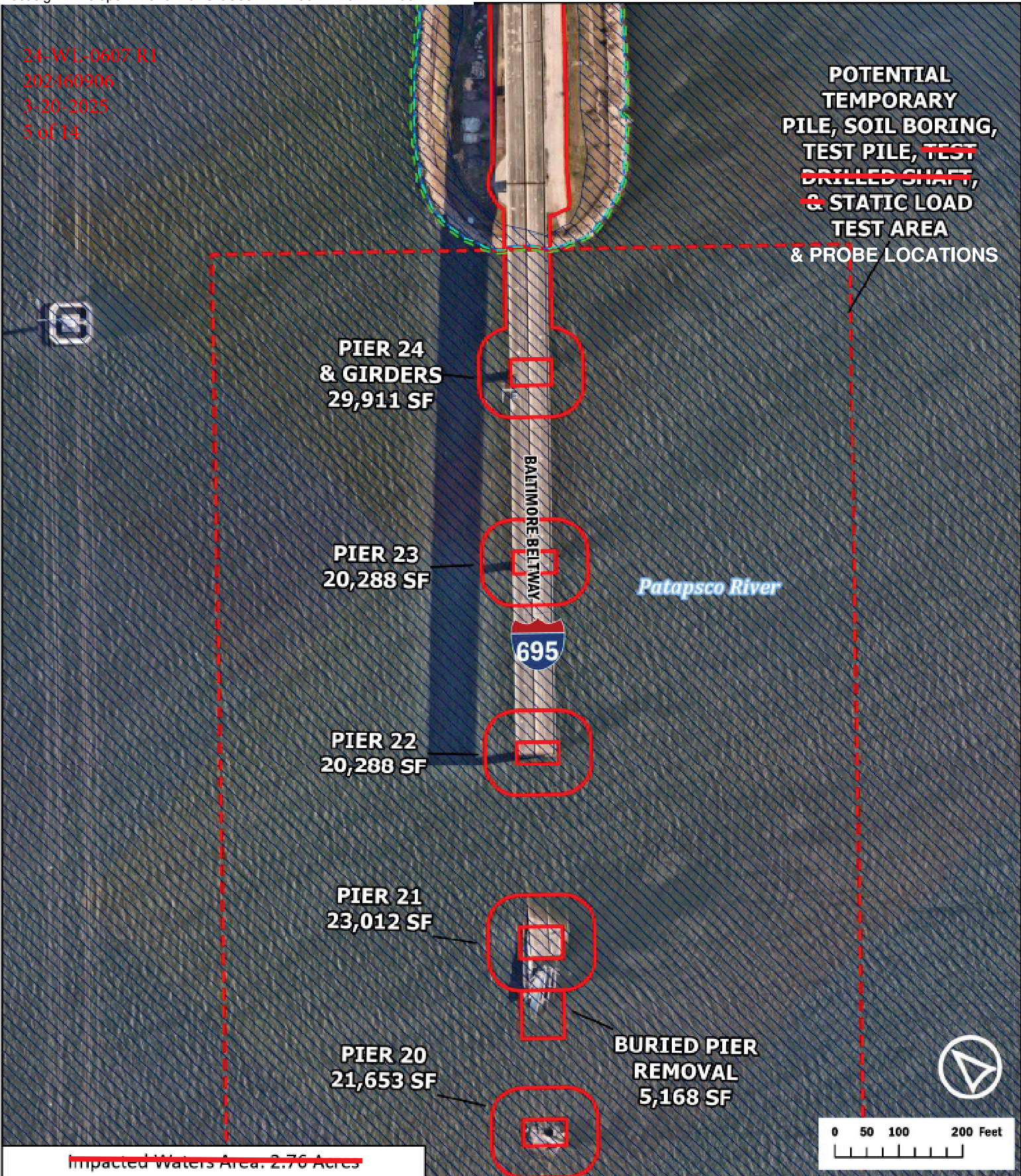
March 2025

July 2024

Page 4 of 6

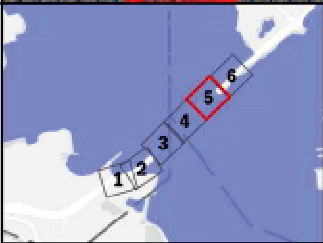
24-WL-0607 R1
202460906
3-20-2025
5 of 14

POTENTIAL
TEMPORARY
PILE, SOIL BORING,
TEST PILE, ~~TEST~~
~~DRILLED SHAFT,~~
~~& STATIC LOAD~~
TEST AREA
& PROBE LOCATIONS

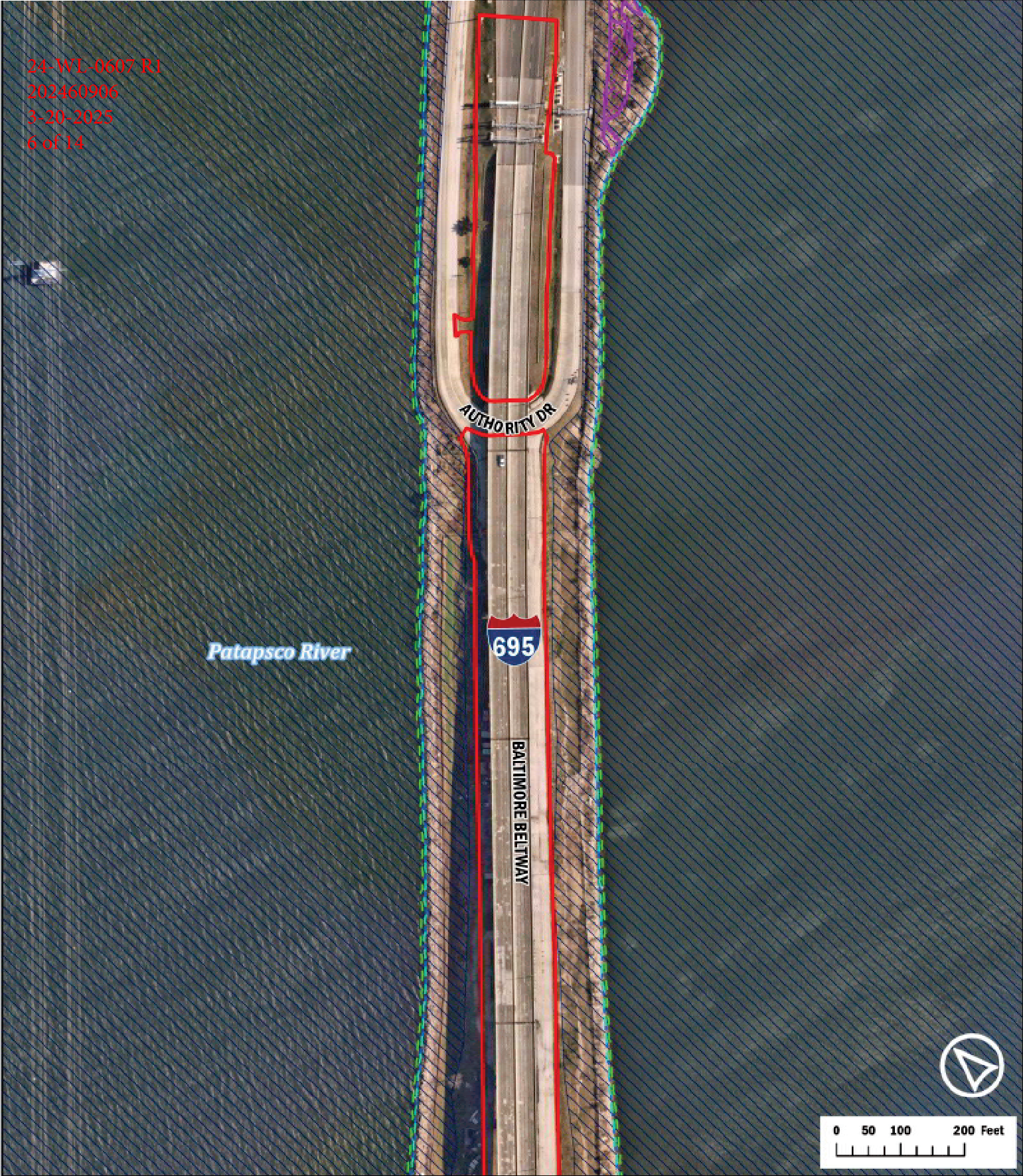


~~Impacted Waters Area: 2.76 Acres~~

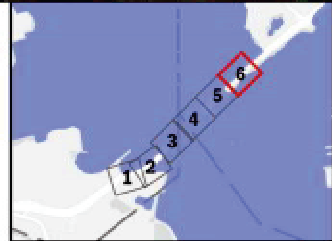
- | | |
|-------------------------------|----------------------|
| Limits of Disturbance | Approximate MLW Line |
| Potential Temporary Pile Area | MHHW Line |
| Streams | MHW Line |
| Wetlands | Property Parcels |
| 25ft Wetland Buffer | Municipal Boundaries |
| 100-Year Floodplain | |

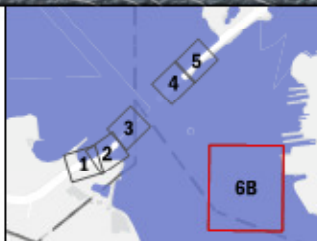
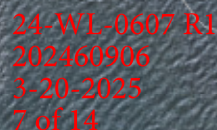


**Francis Scott Key
Bridge
Demolition**
Impact Plates
March 2025
July 2025



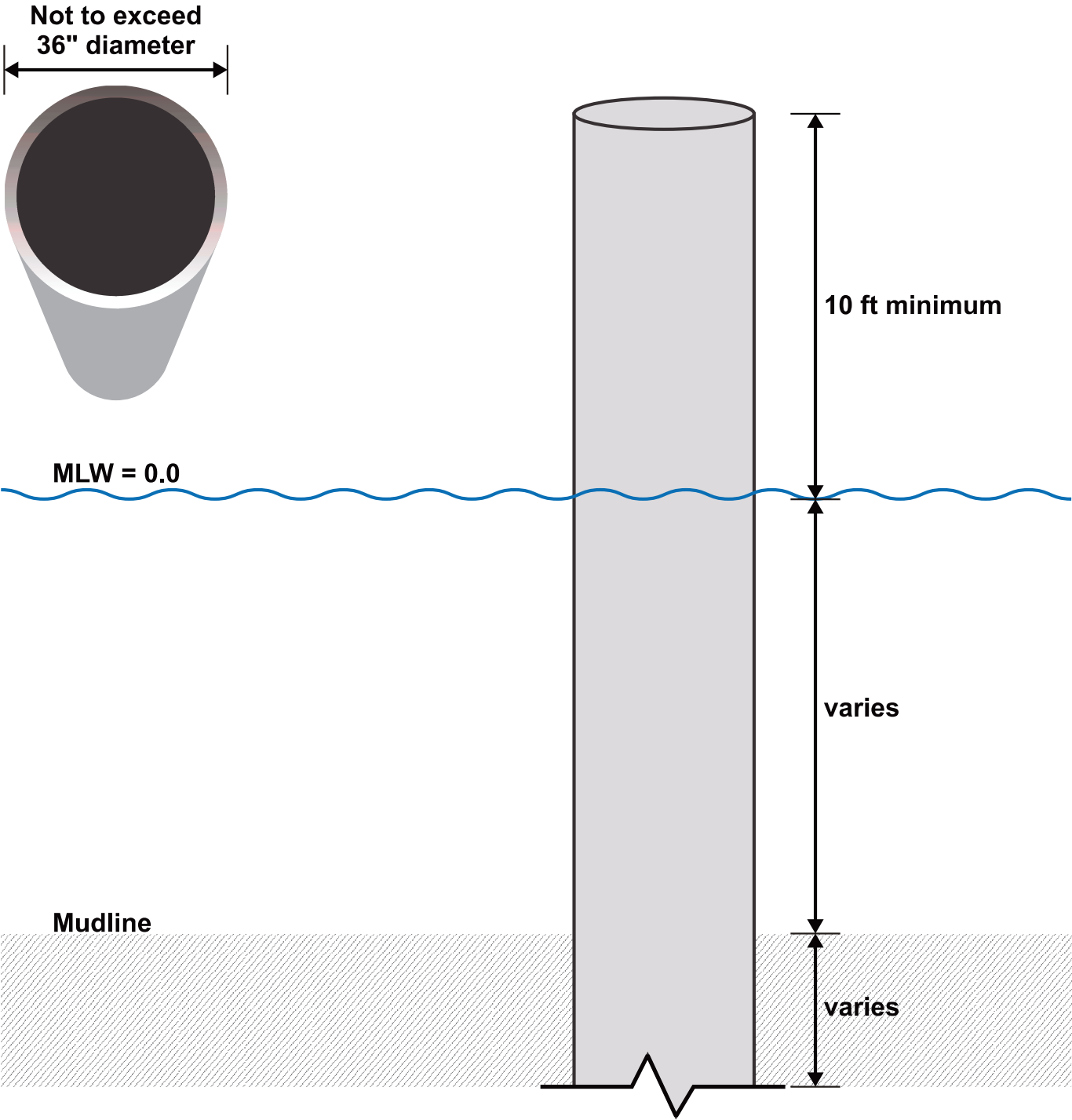
- Limits of Disturbance
- Potential Temporary Pile Area
- Streams
- Wetlands
- 25ft Wetland Buffer
- 100-Year Floodplain
- Approximate MLW Line
- MHHW Line
- MHW Line
- Property Parcels
- Municipal Boundaries





Emergency Authorization Plates


Temporary Pile Typical Section



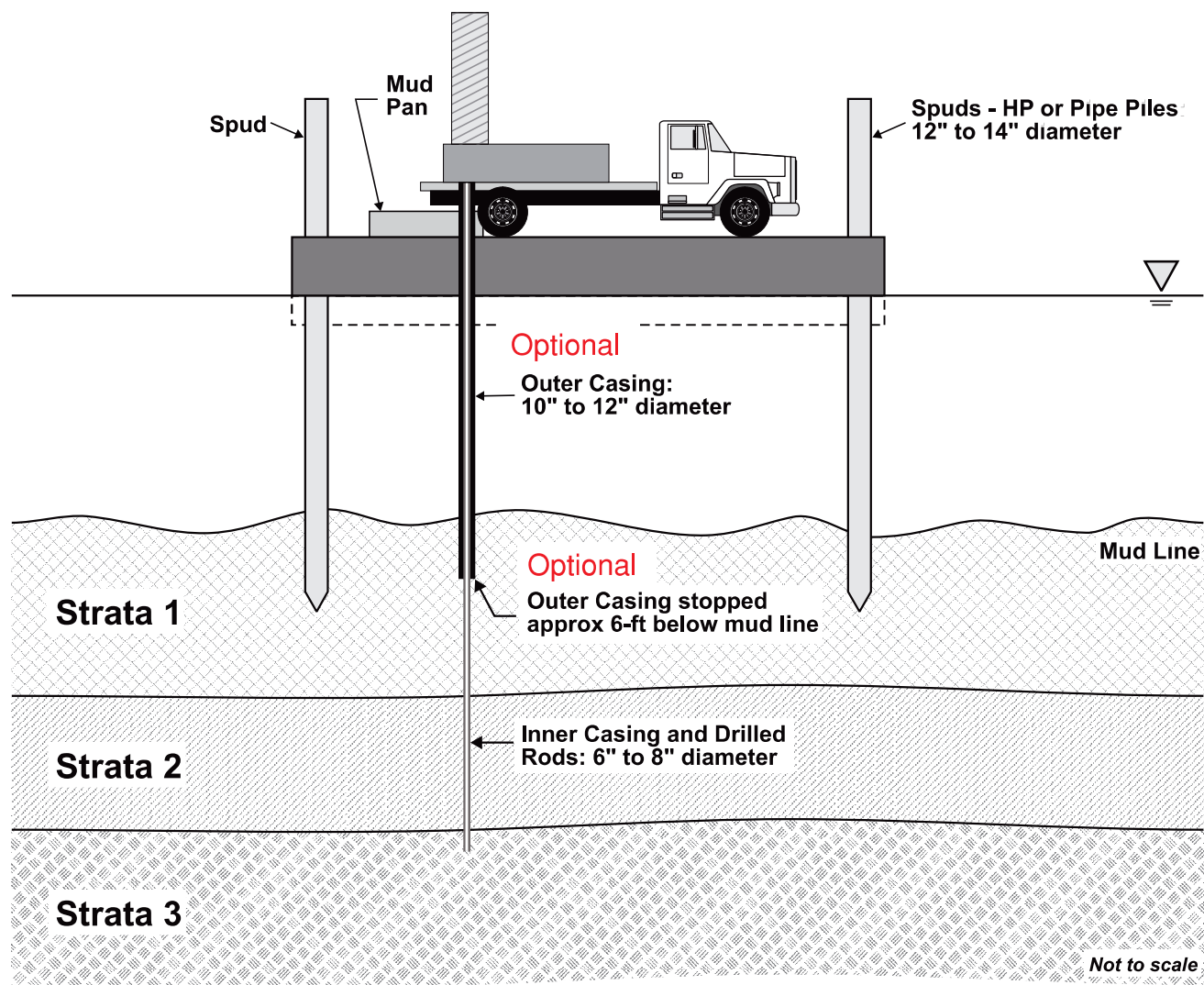
7 sq. ft. impact/temporary pile
Total impact not to exceed 707 sq. ft. (100 temporary piles)

24-WL-0607 R1
202460906
3-20-2025
8 of 14

Not to scale

 <div>Maryland Transportation Authority</div>	<div>Francis Scott Key Bridge Rebuild Project Demolition Plan</div> <div>March 2025 July 2024</div>
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Subsurface Exploration Cross-Section - Geotechnical Boring



33 sq. ft. impact/boring
Total impact not to exceed ~~4,000 sq. ft. (80 borings)~~
6,600 sq. ft. (200 borings)

24-WL-0607 R1
202460906
3-20-2025
9 of 14

Note: The subsurface exploration work will be conducted with a barge mounted drill rig to obtain Standard Penetration Test (SPT) samples. The field crew ~~will~~ may install an outer casing below the mudline to seat the borehole. Drill rods and inner casing will be run through the outer casing to obtain soil samples. Spuds on the four corners of the barge will be used to keep the barge in position. A mud pan will be used to minimize sedimentation in the river.

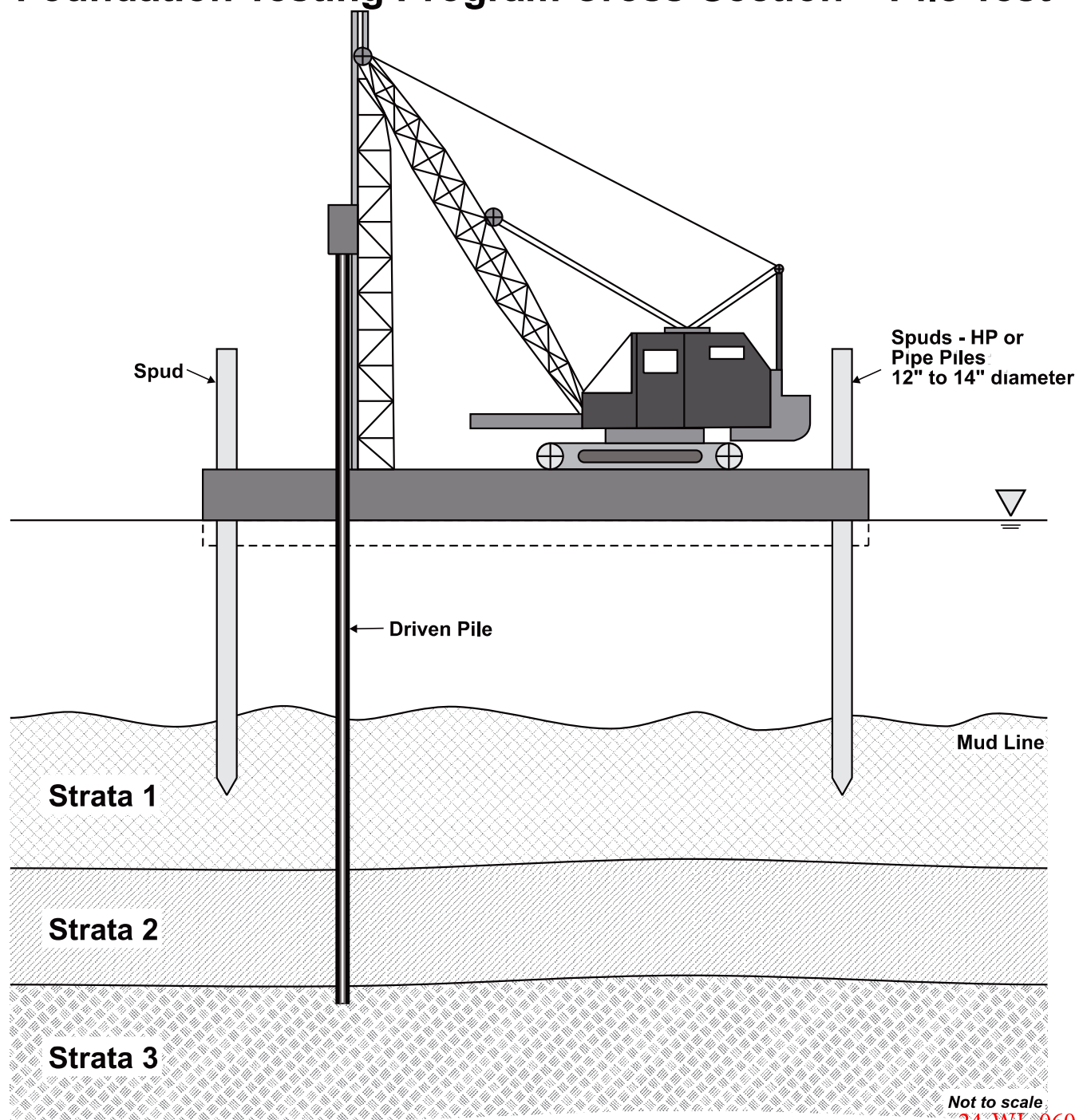


Maryland
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Francis Scott Key Bridge
Demolition

Preliminary Engineering
March 2025
~~July 2024~~


Foundation Testing Program Cross-Section – Pile Test



56 sq. ft. ~~33 sq. ft.~~ impact/pile test
Total impact not to exceed ~~462 sq. ft.~~ (14 pile tests)
784 sq. ft.

24-WL-0607 R1
202460906
3-20-2025
10 of 14

Note: Test piles will be driven into the substrata using an impact hammer for the purposes of evaluating pile foundation capacities and developing the hydro acoustic monitoring program. The pile driving equipment will be mounted on a barge, and spuds on the four corners of the barge will be used to keep the barge in position. Upon completion, all piles will be cut off below the mudline. Piles may also be subjected to load testing per ASTM D7383 "Axial Compressive Force Pulse (Rapid) Testing of Deep Foundations" (i.e. Statnamic or other tests allowed by the ASTM D7383), when allowed by the Authority.

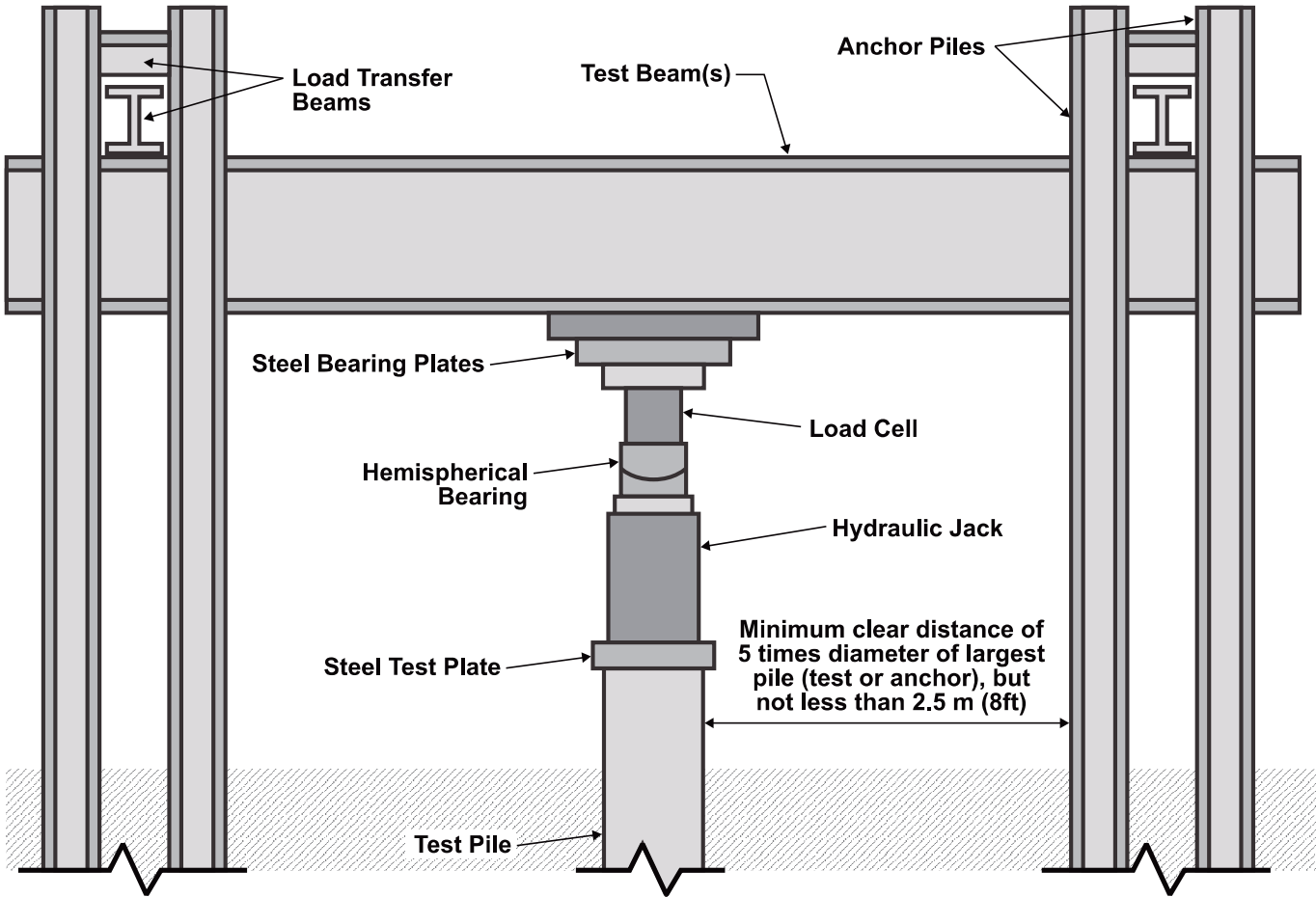


Maryland
Transportation
Authority

Francis Scott Key Bridge
Rebuild Project
Preliminary Engineering

March 2025
~~July 2024~~


Foundation Testing Program Cross-Section – Static Load Test



260 sq. ft. impact (1 shaft or pile)
Total impact not to exceed 1,560 sq. ft. (6 tests)

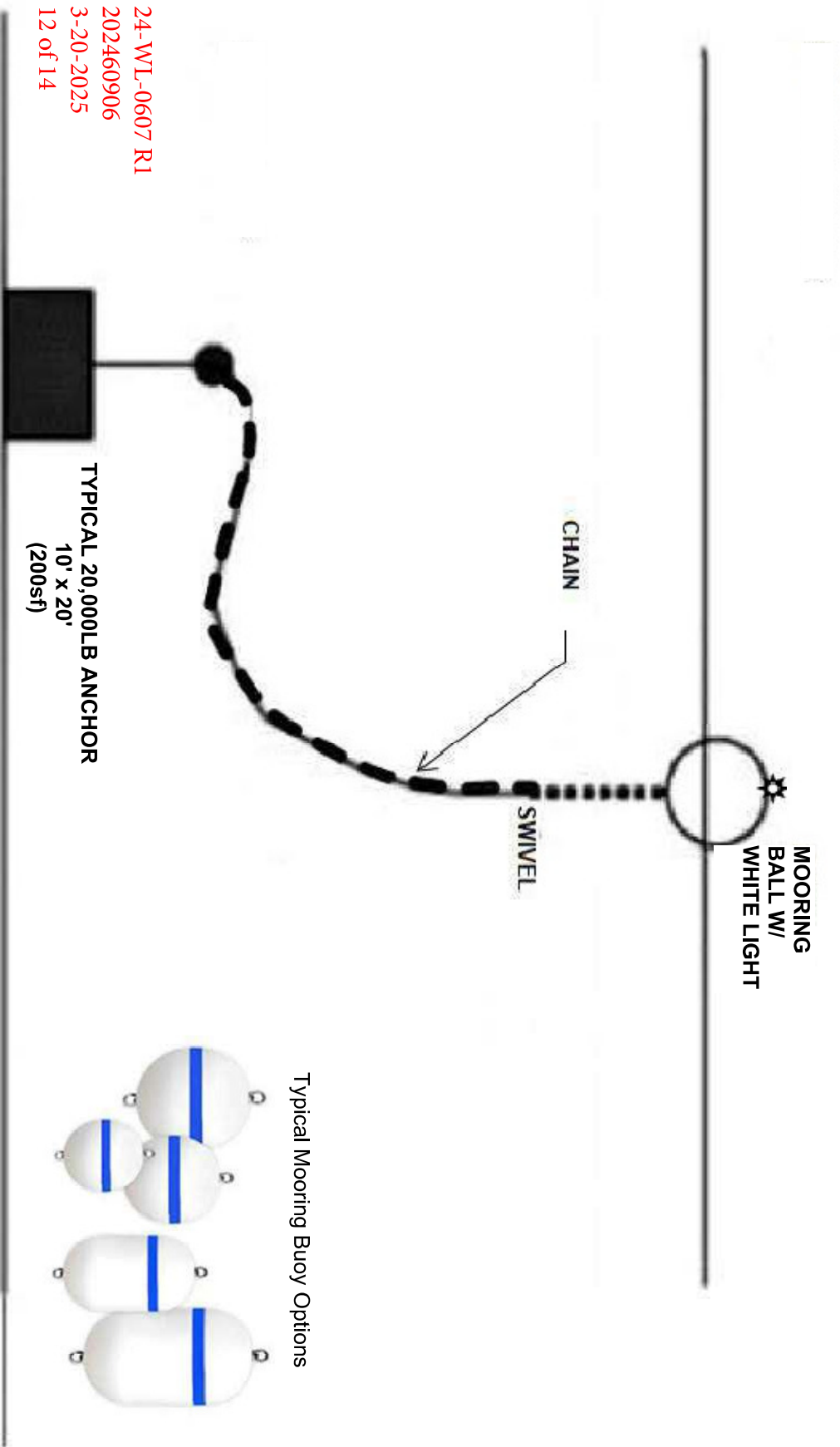
24-WL-0607 R1
202460906
3-20-2025
11 of 14

Note: Static load test includes one drilled shaft or pile, and a four reaction shaft pile array. Shaft and piles are installed in river bottom and loaded with weight. Then upon completion test shaft and reaction piles will be cut below the mudline.



Maryland
Transportation
Authority

**Francis Scott Key Bridge
Rebuild Project**
Preliminary Engineering
July 2024



Francis Scott Key Bridge
Demolition
Impact Plates



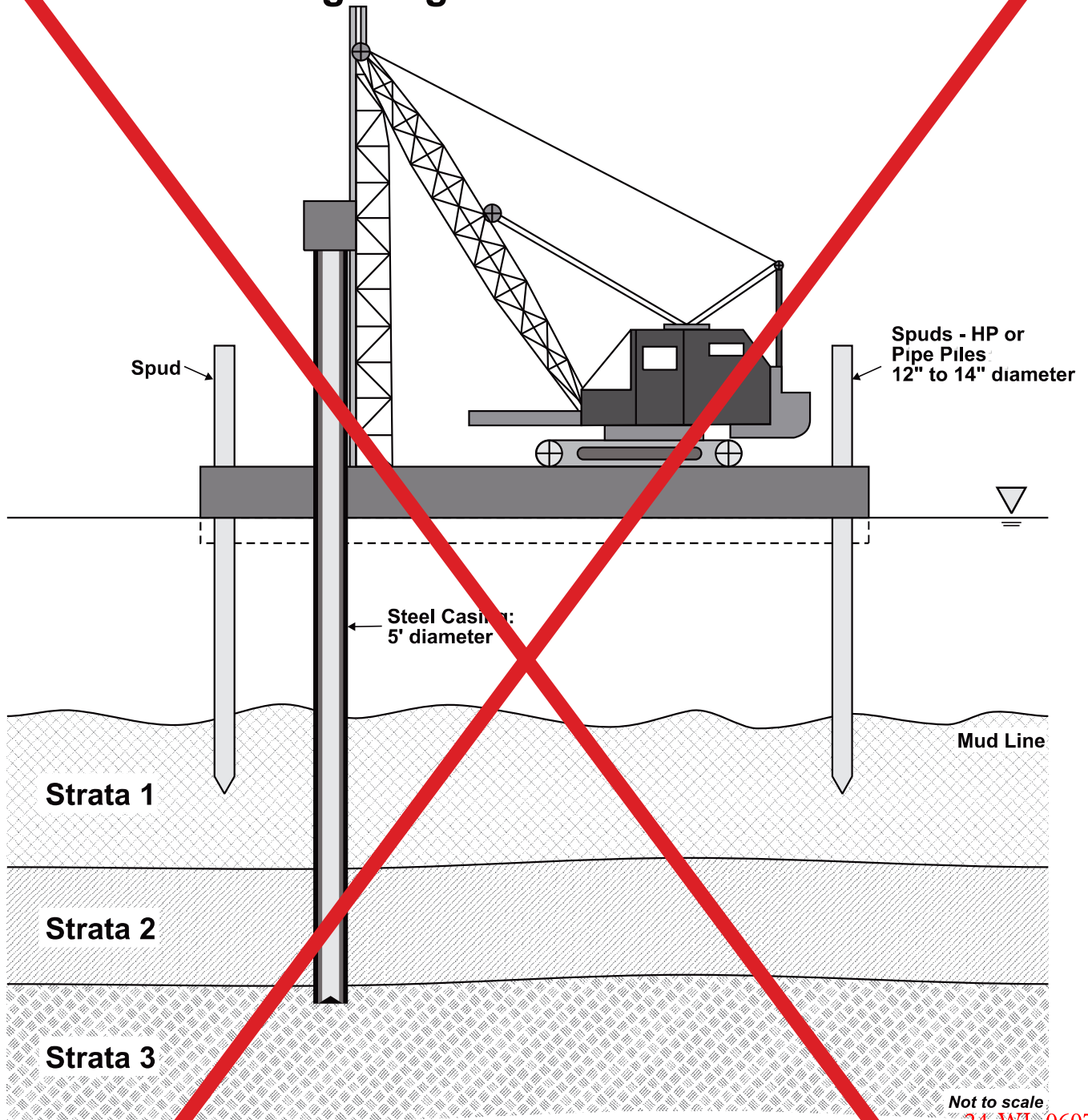
Typical Mid-Line Float Mooring Ball Detail

Date: March 2025

Scale: NTS

~~24-WL-0607~~
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~~7-12-2024~~
~~25 of 25~~

Foundation Testing Program Cross-Section – Drilled Shaft



~~50 sq. ft. impact (1 shaft)~~
~~Total impact not to exceed 300 sq. ft. (6 shafts)~~

24-WL-0607 R1
 202460906
 3-20-2025
 13 of 14

Note: A 5-foot diameter drilled shaft will be constructed to determine the capacity of this foundation type. A steel casing will be installed into the substrata for construction of the shaft. Upon reaching the appropriate depth; testing equipment, rebar and concrete will be installed within the steel casing. The drilled shaft rig will be mounted on a barge, and spuds on the four corners of the barge will be used to keep the barge in position. Upon completion, the drilled shaft will be cut off below the mudline.



Maryland
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**Francis Scott Key Bridge
Rebuild Project
Preliminary Engineering
July 2024**

WL# 24-0607 & NAB-2024-60906-M46 (Demo Phase I)
Permit Modification Tracking Table

24-WL-0607 R1
202460906
3-20-2025
14 of 14

Francis Scott Key Bridge Rebuild Project – WL# 24-0607 & NAB-2024-60906-M46 (Demo Phase I) Tidal Water Impact Modifications			
Work Activity	Authorized in WL# 24-0607 NAB-2024-60906-M46 (Demo Phase I)	Modification Request	Modified Total
Geotechnical Borings	Authorized borings - 60 (33 sq. ft. per impact/boring)	Additional borings – 40 soil borings and 100 waste characterization borings (33 sq ft per impact/boring)	Modified Total – 200 borings (33 sq ft per impact/boring)
	Tidal Water Authorized Impact – 1,980 square feet (0.05 acre)	Additional Tidal Water Impact – 4,620 square feet (0.11 acre)	Modified Tidal Water Impact - 6,600 square feet (0.15 acre)
Mooring Buoys	Authorized – 3 buoys*	Additional new buoys – 8 buoys (200 square feet per buoy)	Modified Total – 8 buoys (200 square feet per buoy)
	Tidal Water Authorized Impact – N/A	Additional Tidal Water Impact – 1,600 square feet (0.04 acre)	Modified Tidal Water Impact - 1,600 square feet (0.04 acre)
Test Drill Shaft	Tidal Water Authorized Impact 300 square feet (0.01 acre)	Removal of Test Drill Shaft – -300 square feet (-0.01 acre)	Modified Tidal Water Impact - 0 square feet (0.0 acre)
Temporary Piles (36”)	Tidal Water Authorized Impact – 707 square feet (0.02 acre)	N/A	707 square feet (0.02 acre)
Probe Operations	Tidal Water Authorized Impact – N/A	2,000 probes (7.07 sq ft per impact/probe)	Modified Total – 2,000 probes
		Additional Tidal Water Impact – 14,140 square feet (0.32 acre)	Modified Tidal Water Impact - 14,140 square feet (0.32 acre)
Test Piles	Tidal Water Authorized Impact 462 square feet (0.01 acre)	Confirmation of Test Pile diameter – 96”	Modified Tidal Water Impact - 784 square feet (0.02 acre)
		Additional Tidal Water Impact – 322 square feet (0.0 acre)	
Static Load Tests	Tidal Water Authorized Impact 1,560 square feet (0.04 acre)	N/A	1,560 square feet (0.04 acre)
Total Tidal Water Impact (Temporary)	5,009 sq. ft. / 0.12 Acre**	20,382 sq. ft. / 0.47 Acre**	25,391 sq. ft. / 0.58 Acre **

*Three (3) authorized mooring buoys were removed following emergency operations and are unavailable for Demo Phase I construction activities. Eight (8) total mooring buoys and their associated impacts are requested for authorization in this modification. See Impact Sheet 6B.
**Total Tidal Water Impact totals included in table sum to 0.13, 0.47, and 0.59 acre, respectively, due to rounding of impacts associated with each authorized activity in tracking table and reflected on approved impact plates. Total square footage is included to provide more granularity to impact data.