

**WATER AND SCIENCE ADMINISTRATION
TIDAL WETLANDS DIVISION**

Wetland Report and Recommendation

State Wetlands Case No:

24-WL-0607

Applicant: Maryland Transportation
Authority (MDTA)
C/o Brian Wolfe
Director of Project Development
2310 Broening Highway
Baltimore, MD 21224
bwolfe3@mdta.state.md.us

Agent: Rummel, Klepper & Kahl, LLP
C/o Justin Reel
700 East Pratt Street Suite 500
Baltimore, MD 21202
703-338-4139
jreel@rkk.com

Date Application Received: June 11, 2024 Public Notice Required? Yes

Comment Period Closing Date: August 15, 2024

Maryland Coordinates: 172339 x 440795

Location of Proposed Work: Francis Scott Key Bridge between Baltimore City and Dundalk, Baltimore County Maryland, Baltimore Harbor, Maryland 8-digit Watershed (02130903)

Purpose of Proposed Work: The purpose is to ratify 24-WL-0607 EX. The purpose of the removal of the remaining Francis Scott Key Bridge structures will allow for the planning and eventual construction of a replacement bridge at this location. The purpose of the temporary piles and buoys will assist with the removal of the structures. The purpose of the geotechnical investigations and other testing will provide the necessary testing needed for the planning of the new bridge.

Description of Authorized Work:

- Mechanically remove the remaining parapet, median, deck and six remaining girders over water spans;
- Emplace one hundred 36-diameter temporary piles;
- Emplace three temporary buoys,
- Conduct 60 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;
- Conduct the following temporary investigative in-water tests: 14 test piles, six drill shaft tests, and six static load tests.

Waterbody: Patapsco River

Requires Water Quality Certification?: No. USACE will be issuing both a Nationwide Permit and GP for the removal activities; The Coast Guard will also be issuing a permit

Qualifies for Maryland State Programmatic General Permit?: The soil borings/geotechnical activities will be covered under the GP-6. All other activities will be covered under NWP-3 and a Coast Guard Permit.

Area of Vegetated Wetland Impacts Requiring Mitigation: 0 s.f.

Area of Open Water Tidal Wetlands Requiring Mitigation: 0 s.f.

Area of Wetlands Created: 0 s.f.

Was the Applicant's Original Project Modified?: No.

Department Comment:

As required by § 5-204 (b) of the Environment Article, the Department drafted and issued a public notice by posting the public notice on its WEB site from July 15, 2024 to August 15, 2024 and publishing the public notice for the proposed project in the Baltimore Sun and Capitol Gazette on July 15, 2024 and also published in the Dundalk Eagle. In addition, the public notice was provided to adjacent property owners listed on Attachment A

A pre-scheduled public informational hearing was held on August 1, 2024, at the Baltimore County Public Library, North Point Branch, located at 1716 Merritt Blvd., Dundalk, MD 21222. The hearing was attended by approximately 30-40 people. Of that group, 23 interested parties signed the sign in sheet, and six elected officials and/or staff attended.

The elected officials and/or staff who attended included:

- Bob Metzgar, House of Delegates, 6th District
- Robert Long, House of Delegates; 6th District
- Johnny Sailing, State Senate, 6th District
- Dana Moore, Mayor Scott, Baltimore City
- Erica Crouch, County Executive's office, Baltimore County
- Rashard Singletary, Mayor's Office of Neighborhoods, Baltimore City

Of the elected officials, comments were provided by Delegate Long, Delegate Metzgar, Senator Sailing, Ms. Crouch, and Ms. Moore spoke. No one spoke in opposition.

In addition to the elected officials, there were six citizens who spoke. No one spoke in opposition.

Following the hearing, MDE staff received emailed comments from three additional citizens and comments from the Chesapeake Bay Foundation. No one emailed in opposition.

While no one was opposed, various questions and concerns were raised relating to the process of notification for the hearing, the use of explosives, trucks and equipment, community coordination, justification for the removal of the existing structures, the project timeline, existing utilities, an alternative bridge design, legacy contamination, sediment and erosion control, protection of marine life, and recycling of the existing bridge material.

MDE staff coordinated with MDTA consultants, RKK, to answer questions and provide feedback to all of the concerns. These answers have been prepared in a letter and have been attached to this R&R (Attachment B).

The Maryland Department of Natural Resources (DNR) reviewed the proposed project and determined

- There is an overwintering waterfowl staging/resting area adjacent to the portions of the Key Bridge and causeways. To minimize disturbance to wintering and staging waterfowl, no water dependent work should be conducted from November 15 through March 1 of any year within this area. This may be a consideration for the project depending on the location of *pile driving, mooring, test piles, geotechnical borings, and other test locations*. Operations on the deck of the bridge should not be impacted by this TOYR. Please coordinate with DNR if the applicant would like to request a TOYR waiver.
- FHWA, the natural resource agencies, and the project team are developing Proposed Best Management Practices for Implementation on the Demolition/Rebuild of the Francis Scott Key Bridge. DNR would expect that the BMPs described in this document would be applied *to all noise generating in-water activities* and will likely defer to NOAA regarding noise minimization practices.
- Additionally, in-water work in the Patapsco River would generally have an instream work time of year restriction of February 15 through June 15, inclusive, during any year. Based on the emergency basis of this application, it seems likely that piledriving will be completed prior to the start of the Feb 15 fisheries TOYR restriction. If installation of the temporary pilings *or work at test sites* will occur after February 15 - June 15, inclusive, please coordinate with DNR and the other agencies for minimization and avoidance measures.
- There is a colonial waterbird nesting site at Fort Carroll, delineated by an SSPRA (Attachment C). There are oyster restoration sites and an oyster sanctuary also within this SSPRA. Mooring, pile driving, and other demolition activities should be avoided within the delineated SSPRA. Please coordinate with DNR if activities overlap this Fort Carroll SSPRA area. The SSPRA over the Key Bridge can be disregarded, as the nest is believed to have been lost in the bridge collapse.
- BMPs should be strictly managed and maintained during demolition activities to prevent runoff and debris from entering surface waters and protect stream resources, to the extent possible.
- All temporary pilings *and in-water structures* should have appropriate hazard notification, visibility, and safety requirements.

DNR provided the following additional comments in July 2024 for the authorization of the emergency Wetlands License related to pile-driving activities:

- The project team has worked with the agencies to develop the "Proposed Best Management Practices for Francis Scott Key Bridge Demolition and Geotechnical Investigation Activities to be permitted under MDE's Emergency Authorization. (adapted from NMFS/GARFO BMP Manual)". Appropriate BMPs described in this document (i.e. "soft-starts" and using vibratory hammers) should be applied to all pile driving activities.
- Please prioritize completing the pile driving outside of the TOYR. DNR is available to provide support for developing a sequence of activities that minimizes potential impacts.
- A "hold point" for agency coordination and adaptive management will be implemented under the following conditions: 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:
 - 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);
 - One (1) stunned or dead sturgeon and/or dolphin (applicability: all impact hammer activities);
 - Ten (10) stunned or dead game fish or species considered to be in need of conservation per pile location, such as Sea Bass, Striped Bass/Rockfish, Alewife, Blueback Herring, and American Shad and others (applicability: all impact hammer activities);

- Forty (40) stunned or dead non-game fish per pile location (applicability: all impact hammer activities).
- 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:
 - One (1) stunned or dead sturgeon and/or dolphin (applicability: all impact hammer activities);
 - Thirty (30) stunned or dead game fish or species considered to be in need of conservation, such as Sea Bass, Striped Bass/Rockfish, Alewife, Blueback Herring, and American Shad and others (applicability: all impact hammer activities);
 - One hundred-twenty (120) stunned or dead non-game fish (applicability: all impact hammer activities).
- Please 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.
- DNR requests compensation for fish mortality if a Hold Point is issued. Monetary values can be based on the prices in Attachment D, "Fish Mortality Mitigation Cost Table" that have been previously coordinated with the project team.

The Maryland Historical Trust reviewed that proposed project and determined that there are no historic properties affected by this undertaking.

The work recommended for authorization in this R&R was previously authorized as an emergency license: 24-WL-0607 EX. The collapse of the Francis Scott Key (FSK) Bridge is a catastrophe, and the welfare of Maryland citizens would have been jeopardized by the time delay of a public notice. The emergency work is the first element of the overall demolition project and needed to be authorized as soon as possible to keep the project on schedule. The soil investigation and testing activities are also imperative to the timeline for upcoming construction of a new bridge, which will be jeopardized by the time delay of a public hearing.

The Department determined that the loss of the FSK bridge created emergency conditions and worked with the applicant to separate out only those activities that are necessary prior to an issued License from BPW. The issued emergency authorization from BPW, allowing the commencement of work in August, 2024, is required to abate this emergency.

As stated above, the entire project, including all of the work authorized in 24-WL-0607 EX went on public notice and was presented in the August 1, 2024 public hearing. However, the emergency authorization allows the critical timeline to be met prior to the ratification of 24-WL-0607 by BPW.

The other demolition activities, which were not determined to be activities requiring emergency authorization, will appear on the Report and Recommendation for 24-WL-0653.

The evaluation of this project has taken into account ecological, economic, recreational, developmental, and aesthetic considerations appropriate for this proposal as well as other requirements set forth in the Code of Maryland Regulations. To ensure that impacts to resources are avoided and minimized to the maximum extent possible and to ensure that all work is performed in accordance with critical area and local regulations, the Department has recommended a number of special conditions. Provided all general and special conditions are adhered to, the work proposed will not cause significant deleterious impacts to marsh vegetation, submerged aquatic vegetation, finfish, shellfish, or navigation.

Project Justification: In consideration of the site characteristics and the nature of the proposed work, the Department concludes that the application represents a reasonable exercise of riparian rights.

SPECIAL CONDITIONS:

- A. The Maryland Department of the Environment has determined that the proposed activities comply with, and will be conducted in a manner consistent with the State's Coastal Zone Management Program, as required by Section 307 of the Federal Coastal Zone Management Act of 1972, as amended.
- B. The Licensee shall comply with all Critical Area requirements and obtain all necessary authorizations from local jurisdiction. This License does not constitute authorization for disturbance in the 100-foot Critical Area Buffer. "Disturbance" in the Buffer means clearing, grading, construction activities, or removal of any size of tree or vegetation. Any anticipated Buffer disturbance requires prior written approval, before commencement of land disturbing activity, from local jurisdiction in the form of a Buffer Management Plan.
- C. 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 e-mail at MDE.MCLB@maryland.gov or by accessing the Maryland Department of the Environment, Environmental Boards webpage.
- D. The issuance of this license is not a validation or authorization by the Department for any of the existing structures depicted on the plan sheets on the subject property that is not part of the authorized work description, nor does it relieve the Licensee of the obligation to resolve any existing noncompliant structures and activities within tidal wetlands.
- E. The Licensee shall dispose of all demolition material at an approved facility or disposal site.
- F. 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.
- G. The Licensee shall strictly manage and maintain all in-water BMPs, including the placement of shielding barges, during demolition activities to prevent runoff and debris from entering surface waters, to the extent possible.
- H. 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.
- I. 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 Demolition and Geotechnical Investigation Activities to be permitted under MDE's Emergency Authorization. (adapted from NMFS/GARFO BMP Manual)*" document.

- J. 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.
- K. 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:
- 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);
 - One (1) stunned or dead sturgeon and/or dolphin (applicability: all impact hammer activities);
 - 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);
 - Forty (40) stunned or dead non-game fish per pile location (applicability: all impact hammer activities).
- L. 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:
- One (1) stunned or dead sturgeon and/or dolphin (applicability: all impact hammer activities);
 - 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);
 - One hundred-twenty (120) stunned or dead non-game fish (applicability: all impact hammer activities).
- M. 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.
- N. 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.
- O. The Licensee shall install appropriate hazard notification, visibility, and safety requirements on all temporary pilings.

DEPARTMENT OF THE ENVIRONMENT APPROVAL:

Matthew Wallach

Matthew F Wallach, Natural Resource Planner
Tidal Wetlands Division

8/23/2024

DATE

Tammy Roberson

Tammy Roberson, Deputy Program Manager
Wetlands and Waterway Protection Program

8/23/2024

DATE

D Lee Currey

D. Lee Currey, Director
Water and Science Administration

8/23/2024

DATE

WETLANDS ADMINISTRATION CONCURRENCE:

William Morgante, Wetlands Administrator
Board of Public Works

DATE

Attachment A

FSK Demo Project - Adjacent Property Owner Notification Letter Mailing List

Local Government Representatives

Anne Arundel County

Mr. Steuart Pittman
County Executive
44 Calvert Street
Annapolis, MD 21401

Ms. Allison Pickard
Council Chairman
44 Calvert Street
1st Floor
Annapolis, MD 21401

Baltimore County

Mr. John Olszewski, Jr.
County Executive
400 Washington Ave
Mezzanine Level
Towson, MD 21204

Mr. Israel Patoka
Council Chairman
400 Washington Ave
Towson, MD 21204

Baltimore City

Mr. Brandon Scott
Office of the Mayor
100 Holliday Street
Baltimore, MD 21202

Mr. Nick Mosby
Council President
100 Holliday Street
Suite 400
Baltimore, MD 21202

Adjacent Property Owners

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

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

Maryland Port Authority
2700 Broening Highway
Dunmar Bld-So Ste 123
Baltimore, MD 21222

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



Attachment B

COMMENTS RESPONSE

August 22, 2024

Re: **Maryland Transportation Authority (MDTA) Francis Scott Key Bridge Demolition**
Agency Interest Number: 4229
Tracking Number: 202460906
Tidal Authorization Number: 24-WL-0607 & 24-WL-0653
Water Quality Certification Number: 24-WQC-0022

The Maryland Department of the Environment (“MDE” or “the Department”) received your comments regarding MDTA’s Joint Federal/State Application for the Alteration of Any Floodplain, Waterway, Tidal or Nontidal Wetland in Maryland (“Application”) received on June 11, 2024. The application proposes the demolition of the stable standing structures comprising the remaining Francis Scott Key Bridge in preparation for bridge reconstruction. The demolition will consist of two phases. The first phase, authorized in July 2025 under 24-WL-0607EX as an emergency authorization, allows for the mechanical removal of the remaining parapet, median, deck, and six remaining girders that are over water. The material will be removed by both truck and barge. This first phase of the project includes the placement of up to one hundred 36-diameter temporary piles, three temporary buoys, up to 60 soil borings/geotechnical investigations, and the following temporary investigative in-water tests: 14 test piles, six drill shaft tests, and six static load tests. The second phase, 24-WL-0653, will include the removal of the remaining four protective barrier structures (dolphins) and bridge pier structures, both above and below the water line. This removal will consist of both mechanical means and the use of blasting. Subaqueous blasting and blasting above the water line will be used on the remaining eleven in-water piers (piers 14 – 24) and four dolphins. The existing dolphins and piers will be removed to two feet below the mud line. The material will be removed via barge with both clamshell and excavators and will include the removal of buried pier segments and associated structures. The project will result in 8.29 acres of temporary impacts to the Patapsco River.

Comments were received during the Public Notice period which ended on August 15, 2024. Comments were grouped according to relevance. Those comments received specific to the subject applications are outlined below with the Department response.

1) **Hearing Notice Process. Comments included requests for better communication with the public about the hearing.**

Department Response: The Department conformed to regulatory and statutory requirements by placing the notification of the hearing in the Maryland Register on June 14, 2024, [dsd.maryland.gov/MDRIssues/5112/Assembled.aspx#_Toc168923490]. Notification of the Tidal Wetland License public hearing and the public comment period were also placed in the Baltimore Sun, Capitol Gazette, and Dundalk Eagle in the third week of July. In addition, the Department

placed the notice on MDE's website in the public notice section and in a new page dedicated to the project:

<https://mde.maryland.gov/programs/water/WetlandsandWaterways/Pages/FrancisScottKeyBridge.aspx>

Elected officials and riparian property owners within 0.5 miles from the project site were notified by direct mail. The Department's office of Communications also responded to press inquiries about the hearing and posted hearing information on social media.

MDTA Response: MDTA posted notification of the MDE Hearing, and live stream access on the Key Bridge Rebuild website: [Equity & Environment \(keybridgerebuild.com\)](https://www.keybridgerebuild.com).

MDTA participated in various community events where the hearing was publicized. MDTA will expand their notification efforts for the next MDE Public Hearing for the Water Quality Certification and Tidal Wetland License for construction of a new bridge to replace the Francis Scott Key Bridge to be held on September 17th at the Community College of Baltimore County, Dundalk Campus, 7200 Sollers Point Road, Baltimore, MD 21222. MDE's notification of this meeting was posted on the Maryland Register on July 25, 2024

[\[dsd.maryland.gov/MDRIssues/5115/Assembled.aspx#_Toc172634600\]](https://dsd.maryland.gov/MDRIssues/5115/Assembled.aspx#_Toc172634600). Newspaper notices for this hearing are scheduled the end of August or the first week in September in addition to elected officials notifications, social media posts, and an email to the project's interested parties list. Notification letters will also be sent to riparian property owners within three miles of the Key Bridge Rebuild per MDE's requirements.

Notification of the hearing is also included on MDE's Key Bridge Rebuild project website <https://mde.maryland.gov/programs/water/WetlandsandWaterways/Pages/FrancisScottKeyBridge.aspx> and MDTA's Key Bridge Rebuild website <https://www.keybridgerebuild.com/equity-and-environment>.

2) Explosives. Comments included concerns about use of explosives and the potential impacts to nearby homes.

MDTA Response: Explosive demolition is the fastest and safest way to remove the existing structure and allow construction of the replacement bridge to begin. MDTA will require the Contractor to perform pre-demolition surveys of existing structures nearest to the project site and will perform vibration monitoring during blasting events. The contractor will determine the zone of potential influence from the blasting event and develop the monitoring program accordingly. The blasting event will be designed so that homes and other private structures are not within the zone of influence.

3) Trucks and Equipment. Concerns were raised about construction truck traffic in neighborhoods and noise impacts during construction.

MDTA Response: The contractor will be required to submit to MDTA a traffic control plan showing all access and haul routes for review and approval. To the maximum extent practicable, MDTA will restrict construction truck traffic in neighborhoods. MDTA will coordinate with potentially affected neighbors regarding expectation for noise impacts during construction.

4) Community Coordination. Commentors expressed a desire to be included in the rebuild process.

MDTA Response: Throughout each phase of the Key Bridge Rebuild project, MDTA will conduct engagement activities to keep the public and stakeholders informed and to facilitate the exchange

of information on key project considerations. Once the Progressive Design Build (PDB) team is selected and the contract commences, MDTA will support the PDB's outreach plan and activities. As part of the ongoing stakeholder and public engagement, the MDTA will:

- *Establish and maintain collaborative relationships with stakeholder groups. The MDTA will communicate with communities to respond to questions brought by stakeholders and the public.*
- *Provide online information. All information provided during in-person engagement will also be available online. Additionally, surveys or comment forms will be available through the project website to collect insights. Social media posts will help drive project awareness and direct people to more information or engagement opportunities.*
- *Conduct pop-up events and on-street engagement. The MDTA will conduct small-scale engagement activities that provide opportunities to inform the public and exchange information, including through surveys, while people are at places of employment, shopping, or attending community events. These activities will be conducted across the project area, and additional locations will be guided by the ongoing monitoring of participation rates.*
- *Participate in community meetings. Project Team (MDTA & PDB) will attend community meetings across the project area to provide updates on the project, share information about upcoming engagement opportunities, and collect input on key considerations and project milestones. Hold stakeholder conversations. The MDTA will participate in stakeholder conversations to accept guidance on the public engagement approach and gather input on specific aspects of the project relevant to each individual stakeholder organization.*

5) Complete Removal of Existing Structures. Comments included questions asking why the existing structures could not be reused.

MDTA Response: MDTA has determined that the existing structures cannot be reused to rebuild the new bridge. At its highest point, the new bridge will be approximately 45 feet higher than the existing bridge and the new bridge will also be wider than the existing bridge to accommodate full outside shoulders. The existing bridge foundations are not designed to safely accommodate the taller and wider bridge.

6) Project Schedule/Timeline. Comments included questions relating to when the project will start and how long it will take.

MDTA Response: Demolition activities will be initiated shortly after a progressive design builder is identified and all permits and approvals have been secured in the fall/winter of 2024. Demolition activities could take up to a year to complete. A more detailed demolition schedule and project activity timeline will be developed by the progressive design builder.

7) Protection of Existing Utilities. Comments included concerns about impacts to existing utilities.

MDTA Response: The contractor will be required to accurately locate all utilities prior to construction and will be responsible for protecting the utilities in place. The contractor will submit a plan to MDTA demonstrating how the utilities will be protected. MDTA anticipates that

vibration monitoring will be included in the protection plan similar to protection during BGE Transmission Line construction. The plan will be provided to the utility owner for review and additional input/requirements to ensure the utility is adequately protected.

- 8) **Floating Swing Bridge.** One commenter suggested that a floating swing bridge could provide a cost effective and efficient replacement solution that would avoid full demolition of the existing structures since the pier bases could be reused as anchor points for the floating bridge structure and pivot points for the swing section of the bridge. The commenter indicated that the road would be closed to traffic for one hour twice a day to swing the bridge open and allow shipping movement in and out of Baltimore.

MDTA Response: This solution does not meet the needs of either roadway users or marine traffic. Two hour-long closures of I-695 would cause unacceptable delays for roadway users. The volume of marine traffic (commercial and recreational) in and out of Baltimore could not be safely passed through the swing bridge in just two hours a day and this limitation would significantly disrupt commercial operations in the Port of Baltimore. A floating swing bridge is not an acceptable solution because of the disruptions to roadway and marine traffic.

- 9) **Legacy Contamination.** Comments relating to the potential presence of legacy contamination and the potential for resuspension of that material. This included requests to conduct sediment testing around the remaining bridge supports and protective barriers to assess legacy contamination; and use turbidity curtains.

Department Response: Regarding sediment testing, the Board of Public Works provided an authorization to Maryland Port Administration (MPA) to conduct sampling at the site of the Francis Scott Key Bridge in April 2024. The results of this sampling showed no hazardous material or elevated legacy contamination; and that the material tested was consistent with material found throughout the Patapsco. The Department has been coordinating with Department of Natural Resources (DNR) and National Marine Fisheries Service (NMFS) and will require turbidity curtains based on the recommendation of these agencies. Special Condition L in the attached Report and Recommendation (R&R) for 24-WL-0653 references a BMP document that has been collaboratively created by DNR and NMFS. This document also is referenced in Special Condition I in the attached R&R for the 24-WL-0607. The Department further has coordinated with DNR on the potential impact to SAV, which is a resource of concern. It was determined that there are no SAV beds in the vicinity of the FSK Bridge. The locations of the nearest observed SAV beds in relation to the FSK Bridge location makes the proposed demolition activities less likely to affect these beds, due to both proximity and their location in relatively protected coves and upstream locations.

- 10) **Sediment and Erosion Control.** Comments concern relating to sediment and erosion control.

Department Response: The Department recommends to BPW that the Licensee is required to strictly manage and maintain all above water erosion control BMPs during demolition and to all in-water BMPs, including the placement of shielding barges to prevent runoff and debris from entering surface waters and protect stream resources, to the extent possible. These appear as Special Conditions F and G in the attached R&R for 24-WL-0607. The Department recommends to BPW that the Licensee is required to strictly manage and maintain all in-water BMPs to prevent sedimentation during blasting activities. This appears as Special Condition G in the attached R&R for 24-WL-0653; MDE Sediment & Stormwater Plan Review Division also issued a permit relating to removal activities; which also contains conditions to control sediment and erosion.

11) **Protection of Marine Life.** *Comments included concerns for both marine mammals and migratory fish and include request to enact appropriate time of year restrictions.*

Department Response: The Department coordinated with resource agencies including Department of Natural Resources (NDR) and National Marine Fisheries Service (NMFS). Due to this coordination, the Licenses will include conditions to protect marine life. In the attached R&R for 24-WL-0607 Special Condition H requires coordination for DNR if pile driving activity during the February 15 through June 15 time of year restriction. Special Conditions I through M all address BMPs, hold points, compensation and other requirements to protect marine lift. In the attached R&R for 24-WL-0653, Special Condition J requires 1mm mesh screens for intake, and Special Conditions E and L through O all address BMPs, compensation and other requirements to protect marine life..

12) **Recycling of Bridge Materials.** *Comments received included information about recycling concrete materials into reefs.*

Department Response: While the Department does not require specific disposal locations, such as reefs, Department staff will encourage coordination between MDTA, the design-build team, and DNR on potential reefing locations for the existing concrete that will be removed.

After reviewing the proposed activities, the Department determined that MDTA is within its riparian rights to demolish the stable standing structures comprising the remaining Francis Scott Key Bridge. The Department determined that the demolition activities outlined in the two phases of the project are consistent with State law and regulations and are a reasonable exercise of the Licensee's riparian rights. The applicant has demonstrated that alternatives to the proposed demolition are not feasible, and they have committed to conducting the demolition activities using best management practices that protect both the Citizens of the State of Maryland and the marine life of the Chesapeake Bay. They have further committed to robust community engagement to address concerns of community stakeholders throughout the process. The Department has decided to send a favorable report recommending the authorization for the proposed activities to the Maryland Board of Public Works (BPW). Please be aware that this report is only a recommendation to BPW for the issuance of a Wetlands License. The BPW will make the final State decision to issue or deny the Applicant's Wetlands License. If you would like to submit comments to the BPW, please contact the Wetlands Administrator, Bill Morgante, at 410-260-7791 or bill.morgante@maryland.gov. Thank you again for your comments. If you have any questions or if I can assist you in any way, please do not hesitate to contact Matt Wallach at matthew.wallach@maryland.gov or 410-207-0893 with any questions. A copy of the signed Report and Recommendation can be found on the following website:

mde.maryland.gov/programs/water/WetlandsandWaterways/Pages/FrancisScottKeyBridge.aspx

Sincerely,

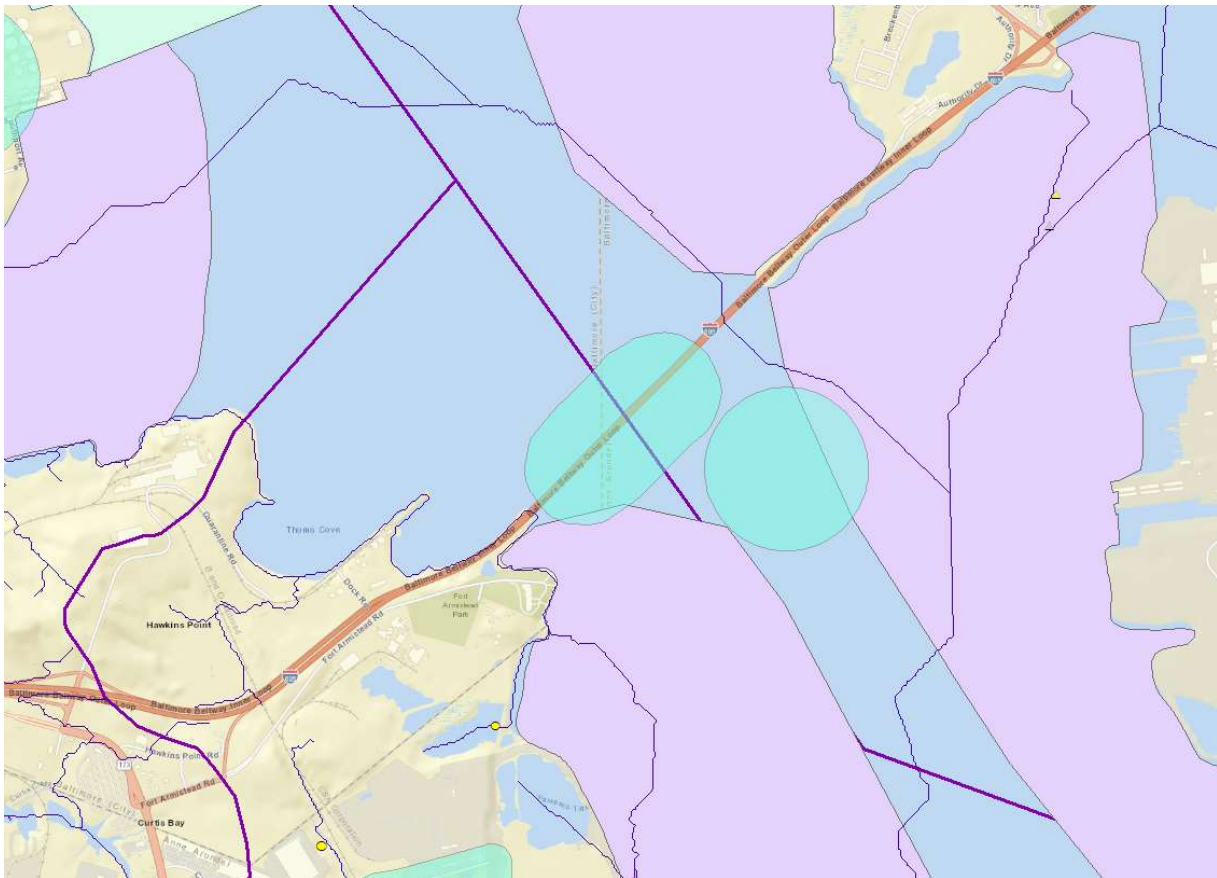
Matthew Wallach

Matthew Wallach
Tidal Wetlands Division
Maryland Department of the Environment

Cc: Bill Morgante, BPW

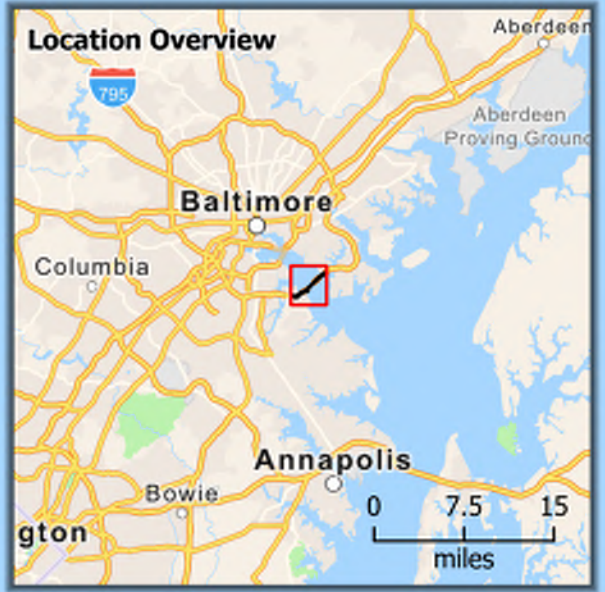
Attachment C:

Sensitive Species Project Review Area (SSPRA) for Fort Carroll



If any mooring, pile driving, and other demonstration activities overlap within the Fort Carroll SSPRA area depicted above, the Licensee shall coordinate with DNR 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.*



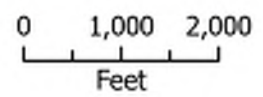
Francis Scott Key Bridge Rebuild Project

Vicinity Map

Baltimore City and Baltimore County, Maryland
June 2024



- Study Area
- County Boundaries



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.

Redlined items included in 24-WL-0653

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)	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

Redlined items included in 24-WL-0653

REDLINED ITEMS NOT INCLUDED IN EMERGENCY AUTHORIZATION.

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.

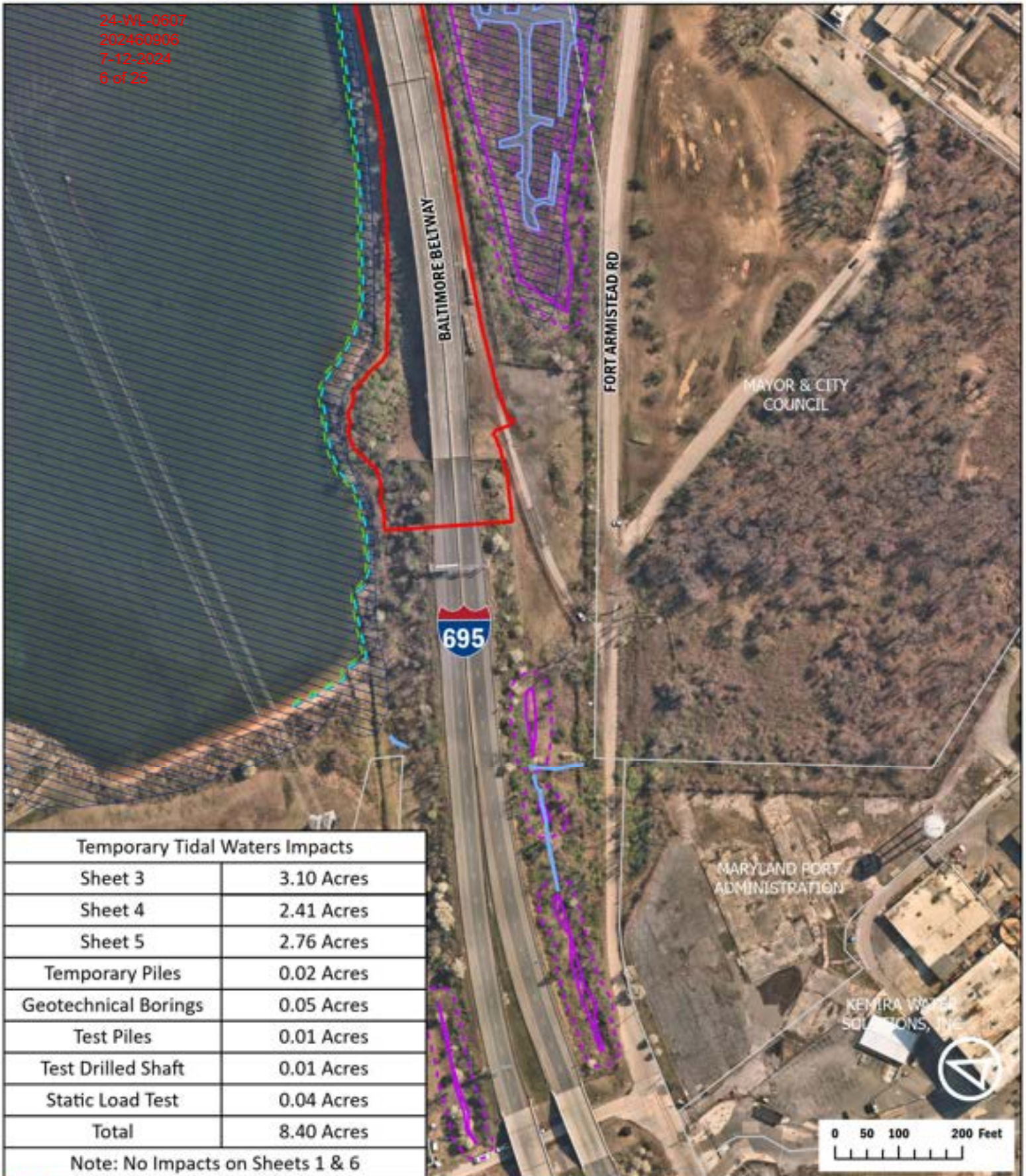
Girder Removal (Water)

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. Once all charges are placed, explosive demolition shall fell the piers which will bring

24-WL-0807
 20240808
 7-12-2024
 6 of 25



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
Test Piles	0.01 Acres
Test Drilled Shaft	0.01 Acres
Static Load Test	0.04 Acres
Total	8.40 Acres

Note: No Impacts on Sheets 1 & 6

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**

Page 1 of 6 July 2024

24-WL-0807
20240806
7-12-2024
7 of 25

Patapsco River

**POTENTIAL
TEMPORARY
PILE, SOIL BORING,
TEST PILE, TEST
DRILLED SHAFT,
& STATIC LOAD
TEST AREA**

695

Fort Armistead
Park




BALTIMORE BELTWAY

FORT ARMISTEAD RD

MAYOR & CITY
COUNCIL

MARYLAND PORT
ADMINISTRATION

0 50 100 200 Feet

- | | |
|--|--|
|  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**

DOLPHIN 1
14,948 SF

DOLPHIN 2
14,948 SF

PIER 17
35,009 SF

PIER 16
25,888 SF

PIER 15
21,037 SF

PIER 14
23,047 SF

Patapsco River

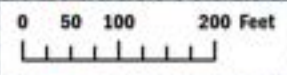
Anne Arundel County
Baltimore City



BALTIMORE BELTWAY

**POTENTIAL
TEMPORARY
PILE, SOIL BORING,
TEST PILE, TEST
DRILLED SHAFT,
& STATIC LOAD
TEST AREA**

Impacted Waters Area: 3.10 Acres

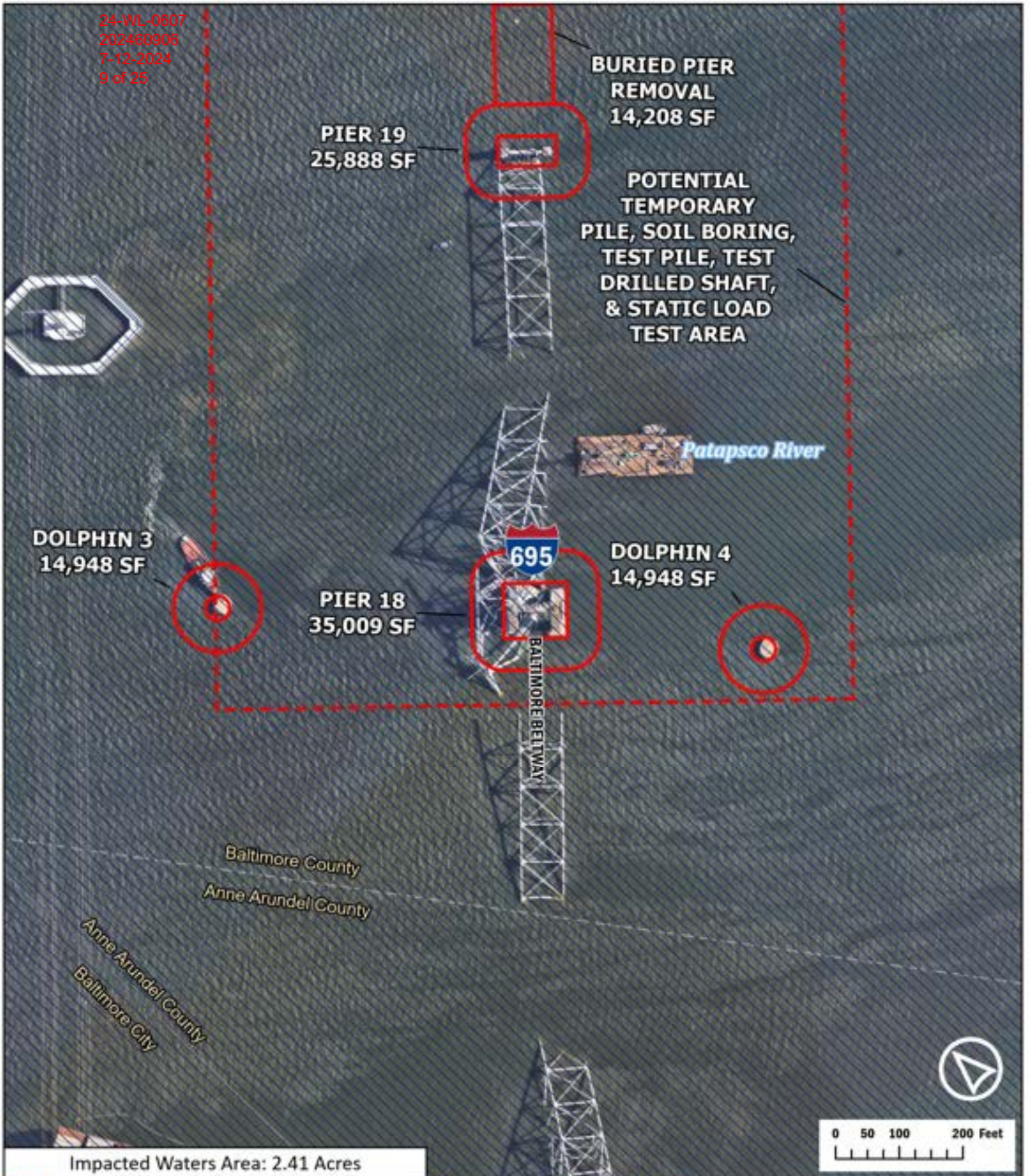


- Limits of Disturbance
- Potential Temporary Pile Area
- Streams
- Wetlands
- 25ft Wetland Buffer
- 100-Year Floodplain
- Approximate MLW Line
- MHHW Line
- MHW Line
- Property Parcels
- Municipal Boundaries



**Francis Scott Key
Bridge
Demolition
Impact Plates**

Page 3 of 6 July 2024



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 | |



**Francis Scott Key
 Bridge
 Demolition
 Impact Plates**

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

PIER 24
 & GIRDERS
 29,911 SF

PIER 23
 20,288 SF

PIER 22
 20,288 SF

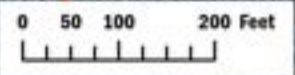
PIER 21
 23,012 SF

PIER 20
 21,653 SF

BURIED PIER
 REMOVAL
 5,168 SF

BALTIMORE BELTWAY

Patapsco River



Impacted Waters Area: 2.76 Acres

- 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



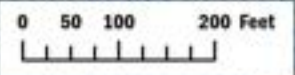
**Francis Scott Key
 Bridge
 Demolition
 Impact Plates**

Patapsco River

AUTHORITY DR

695

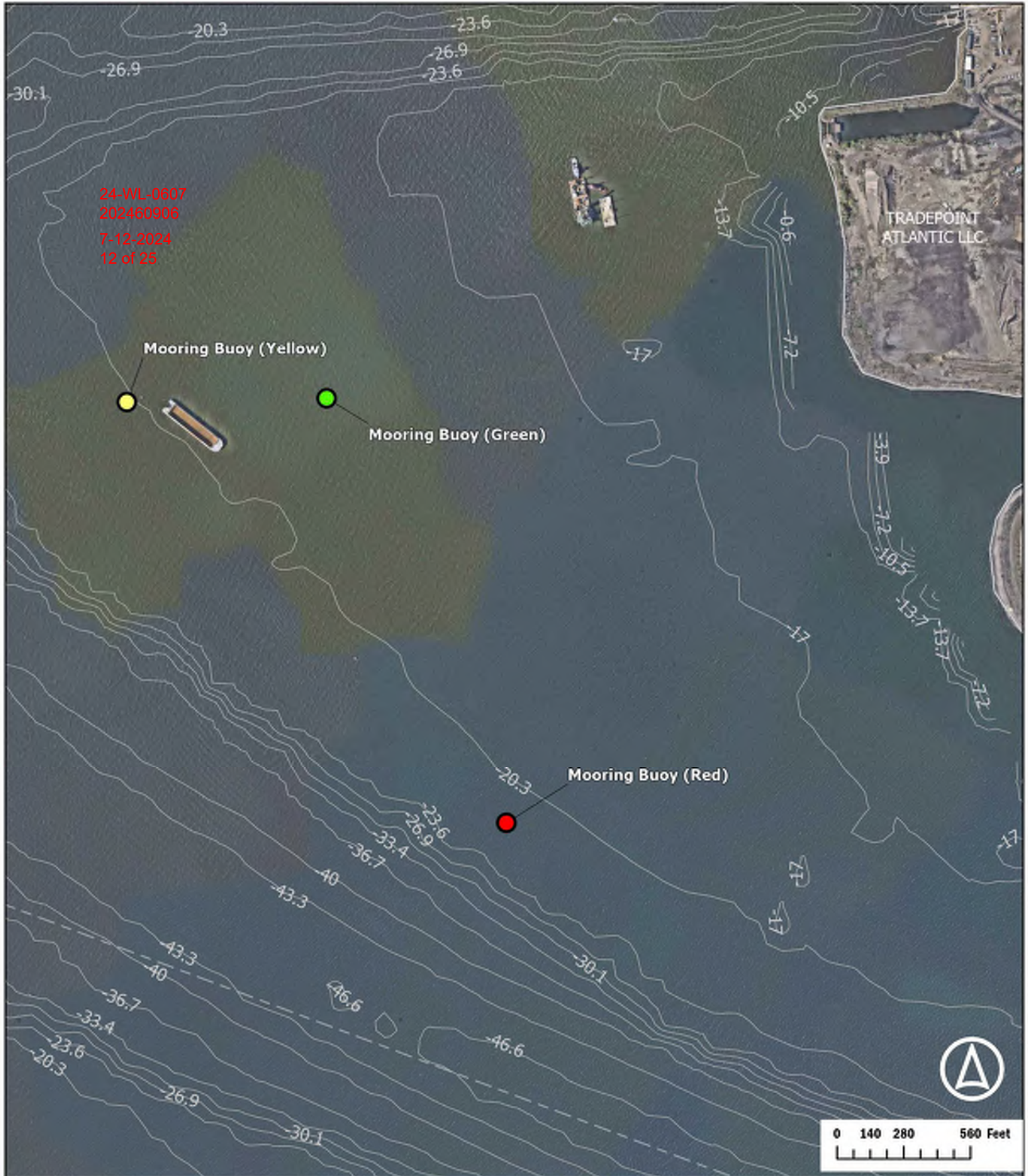
BALTIMORE BELTWAY



- 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
Page 6 of 6 July 2024

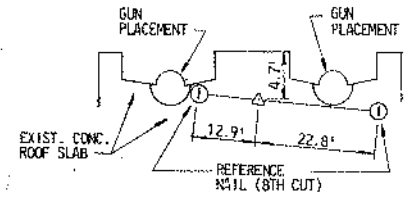


- Limits of Disturbance
- Temporary Pile Area
- Streams
- Wetlands
- 25ft Wetland Buffer
- Approximate MLW Line
- MHHW Line
- MHW Line
- Bathymetry Contours
- Property Parcels
- Municipal Boundaries
- Mooring Buoy Yellow
- Mooring Buoy Green
- Mooring Buoy Red



Francis Scott Key Bridge Demolition
Emergency Authorization Plates
 Page 6 of 6 June 2024

DEMOLITION LIMITS SHOWN IN RED

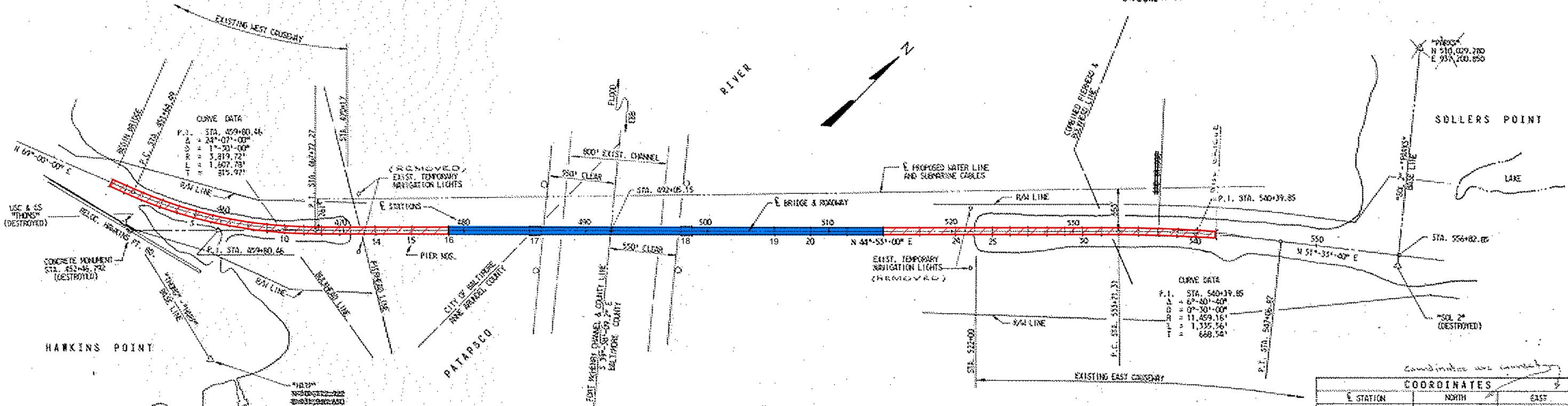
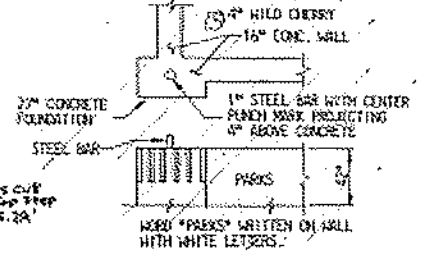
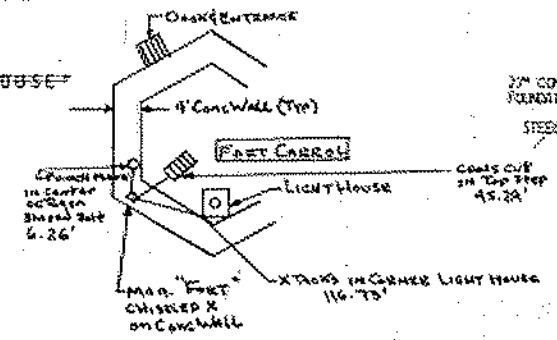


ENGINEER'S CUP TACK IN LEAD PLUG, FLUSH WITH CONC. ROOF SLAB

MONUMENT - "HARP"



MONUMENT - "FORT CARROLL" LIGHTHOUSE

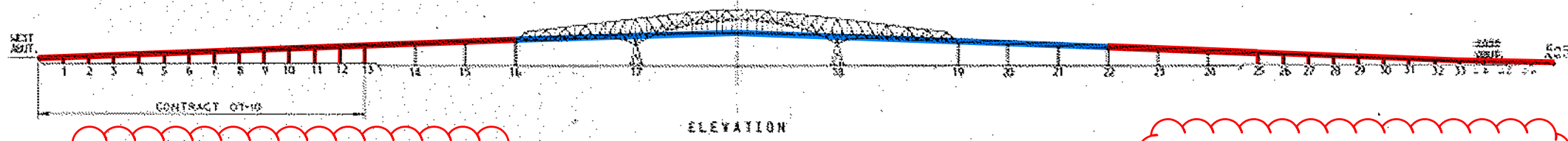


Bridge Deck and Piers 17 and 18 Salvage Operations/Demolition by Others

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 in feet

STATION	NORTH	EAST
P.C. 451+64.69	505,829.295	902,504.055
P.T. 459+80.46	507,921.698	931,775.111
P.Y. 467+72.27	502,999.847	931,831.614
P.O.T. 492+05.15	504,223.684	933,568.815
P.C. 535+71.31	507,175.567	936,508.332
P.T. 540+39.85	507,649.254	936,980.094
P.Y. 547+04.87	508,064.869	937,503.799



Demolition Limits Covered By Emergency Authorization include Bridge Superstructure from West Abutment through Pier 16, West Abutment, and Piers 1 through 13.

Demolition Limits Covered By Emergency Authorization include Bridge Superstructure from Pier 22 to East Abutment, Piers 25 through 36, and East Abutment.

STATE OF MARYLAND
DEPARTMENT OF TRANSPORTATION
STATE HIGHWAY ADMINISTRATION
BALTIMORE, MD.
BALTIMORE HARBOR OUTER CROSSING
PATAPSCO RIVER BRIDGE
BRIDGE DEMOLITION PLAN
(EMERGENCY AUTHORIZATION)

SCALE: 1" = 400' DATE JAN. 1972 CONTRACT 07-10

MADE BY: ERA
TRACED BY: ERA
CHECKED BY: SJS

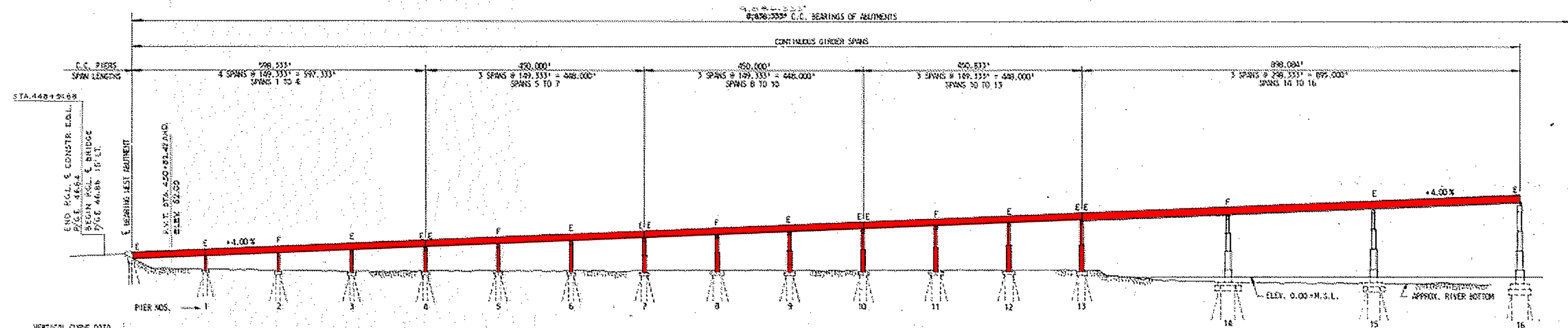
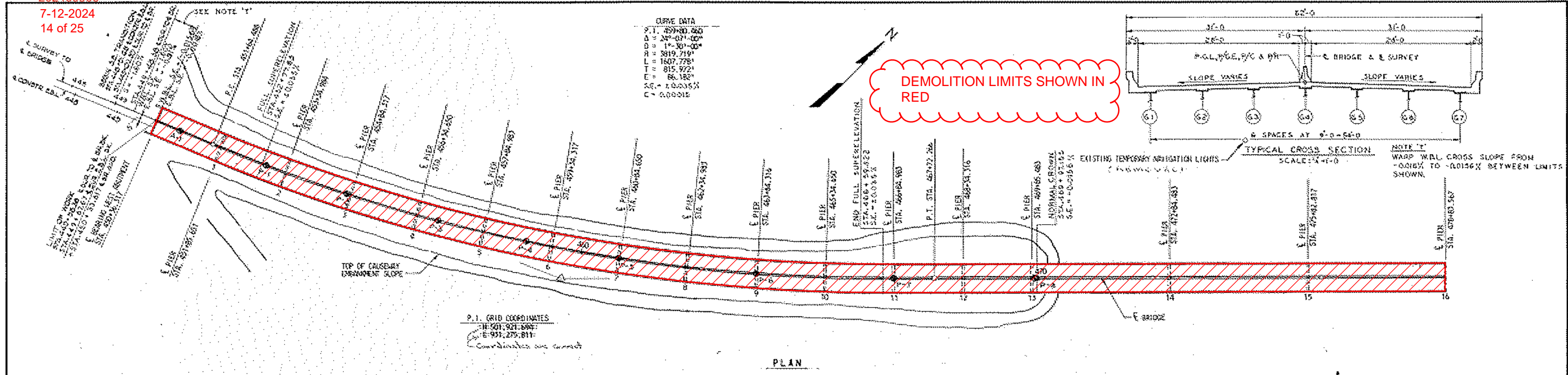
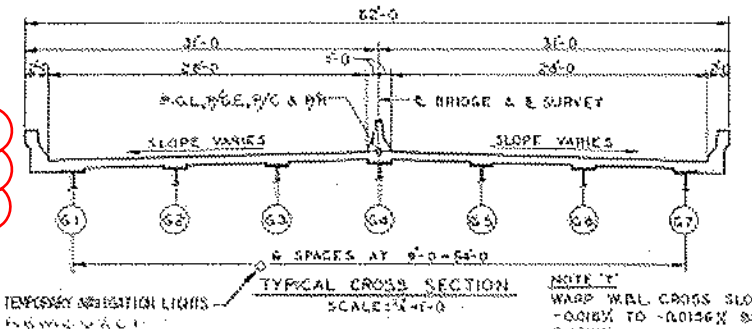
ZOLIMAN ASSOC. INC.
SINGSTAD, KEHART
NOVEMBER AND HURKA
A JOINT VENTURE
KOLLMERS, INC.

DRAWING NO. C-2
SHEET NO. 07
INDEXED

File No. _____ Pocket No. _____ Folder No. _____

CURVE DATA
 P.T. 459+80.860
 Δ = 24°-07'-00"
 D = 1°-30'-00"
 R = 3819.719'
 L = 1807.778'
 T = 815.972'
 E = 86.182'
 ΔG = 1.00000%
 C = 0.0002E

DEMOLITION LIMITS SHOWN IN RED



ESTIMATED PILE TIP ELEVATIONS

LOCATION	TIP ELEVATIONS
WEST ABUTMENT	-32.7
PIER 1	-32.0
PIER 2	-30.4
PIER 3	-31.0
PIER 4	-31.2
PIER 5	-31.3
PIER 6	-31.2
PIER 7	-31.0
PIER 8	-31.1
PIER 9	-31.0
PIER 10	-31.0
PIER 11	-31.0
PIER 12	-31.0
PIER 13	-31.0

Demolition Limits Covered By Emergency Authorization include Bridge Deck from West Abutment through Pier 16, West Abutment, and Piers 1 through 13.

Additional demolition is included in 24-WL-0653

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

**BALTIMORE HARBOR OUTER CROSSING
 PATAPSCO RIVER BRIDGE
 BRIDGE DEMOLITION PLAN
 (EMERGENCY AUTHORIZATION)**

SCALE: 1"=100' DATE: JAN 1972 CONTRACT: QT-10

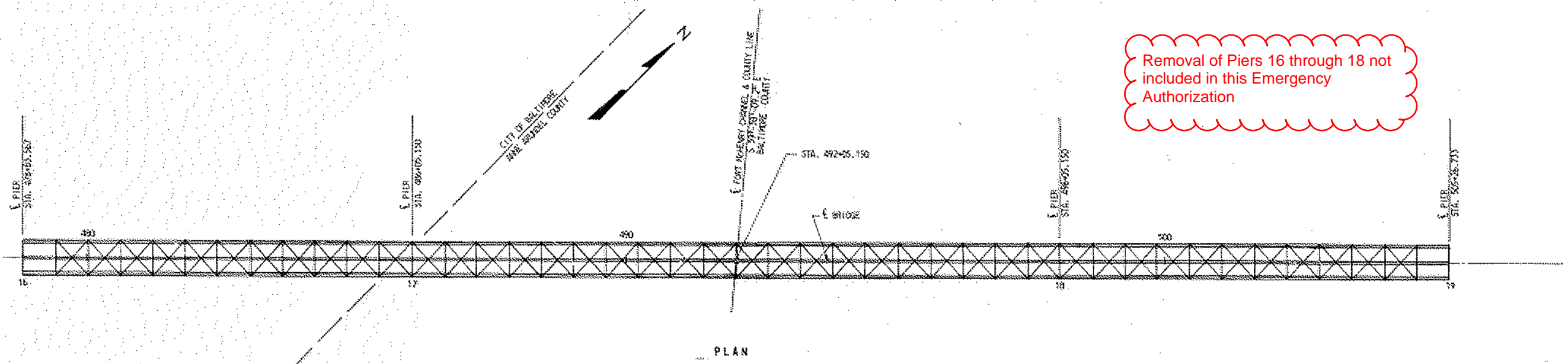
MADE BY: ERA
 TRACED BY: ERA
 CHECKED BY: SJS

ZOLLMAN ASSOC. INC.
 AND
 SINGSTAD, KEHART
 NOVEMBER AND MIRKA
 A JOHN SEIBERS
 BALTIMORE, MD.

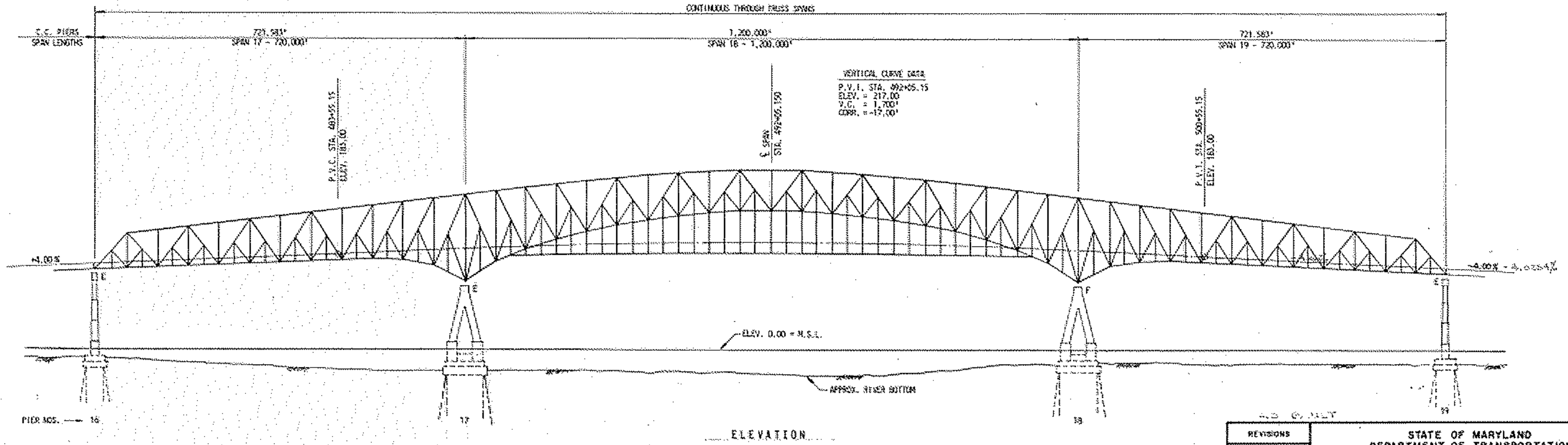
DRAWING NO. C-3
 SHEET NO. 07
 INDEXED

File No. _____ Pocket No. _____ Folder No. _____

Removal of Piers 16 through 18 not included in this Emergency Authorization



PLAN
1/4" = 1'-0"
3/32" C.C. BEARINGS OF ABUTMENTS

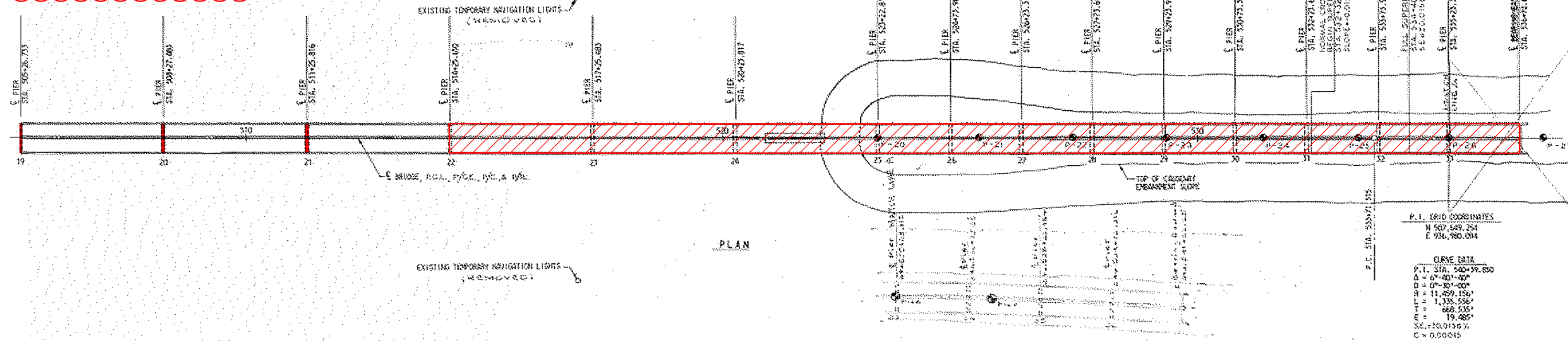


Salvage Operations for Continuous Truss Spans and Piers 17 and 18 By Others

NOTE:
ALL DIMENSIONS & SPAN LENGTHS SHOWN ARE HORIZONTAL.
ALL elevations here shall be subject to the 12 Day 2022 Contract at 544.

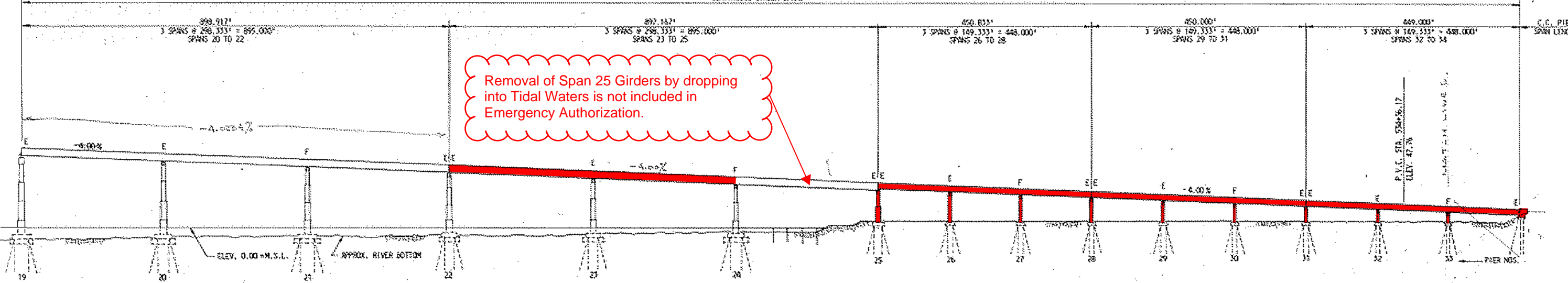
REVISIONS		STATE OF MARYLAND DEPARTMENT OF TRANSPORTATION STATE HIGHWAY ADMINISTRATION BALTIMORE, MD. BALTIMORE HARBOR OUTER CROSSING PATAPSCO RIVER BRIDGE BRIDGE DEMOLITION PLAN (EMERGENCY AUTHORIZATION)	
SCALE: 1" = 100'		DATE: JAN. 1972 CONTRACT: DT-10	
MADE BY: E.R.A.		ZOLEMAN ASSOC. INC. AND SINGSTAR, KEHART NOVEMBER AND BURKA A JOINT VENTURE BALTIMORE, MD.	
TRACED BY: E.R.A.		DRAWING NO. C-2	
CHECKED BY: S.J.S.		SHEET NO. OF	
INDEXED		FILE NO. PACKET NO. FOLDER NO.	

DEMOLITION LIMITS SHOWN IN RED



1.000:1.000
STATIONING: C.C. BEGINNING OF BRIDGES

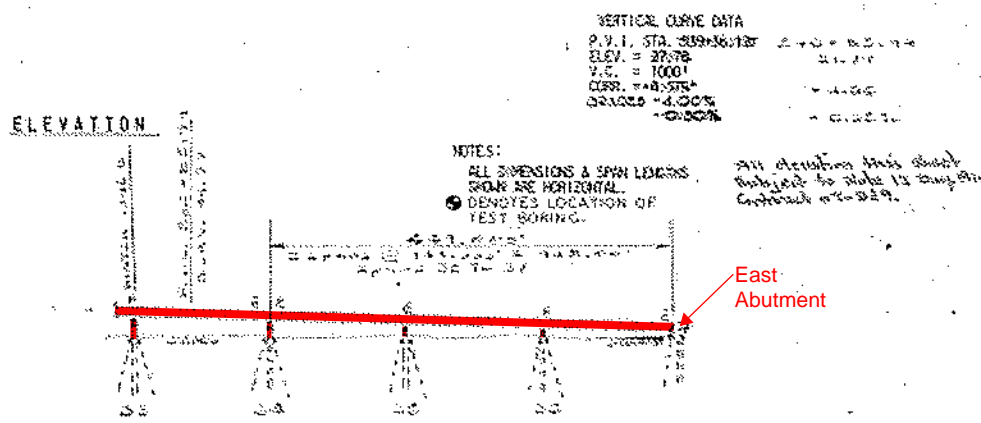
CONTINUOUS GIRDER SPANS



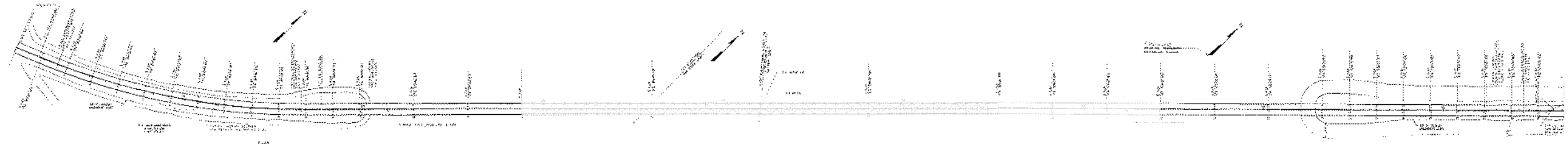
Removal of Span 25 Girders by dropping into Tidal Waters is not included in Emergency Authorization.

Demolition Limits Covered By Emergency Authorization include Bridge Superstructure (Parapets, Deck and Girders) from Pier 22 to East Abutment; Piers 25 through 36, and East Abutment.

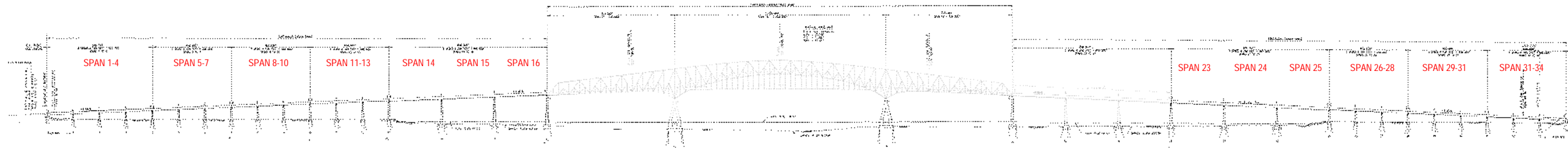
Additional demolition is included in 24-WL-0653



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



PLAN

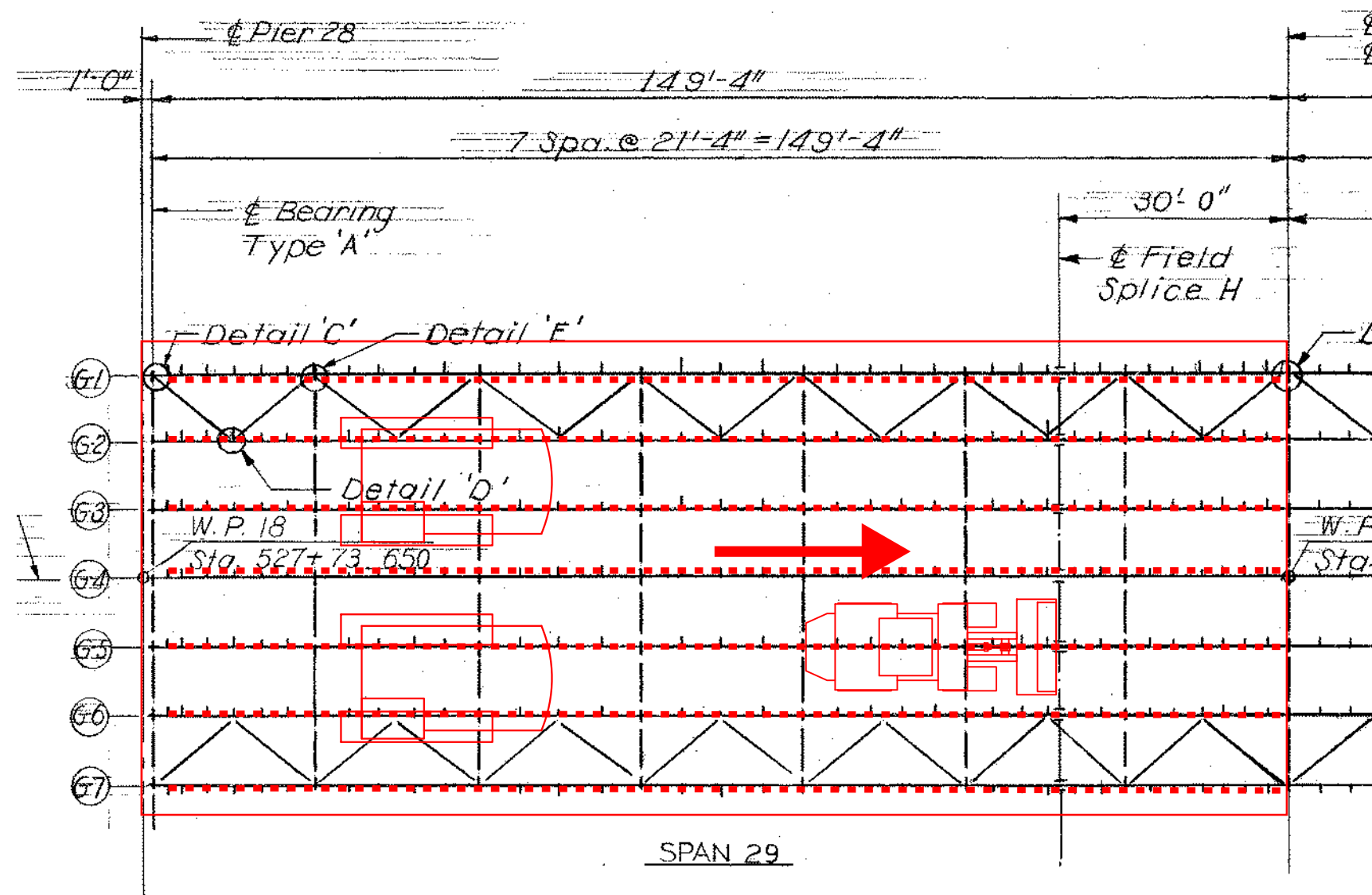
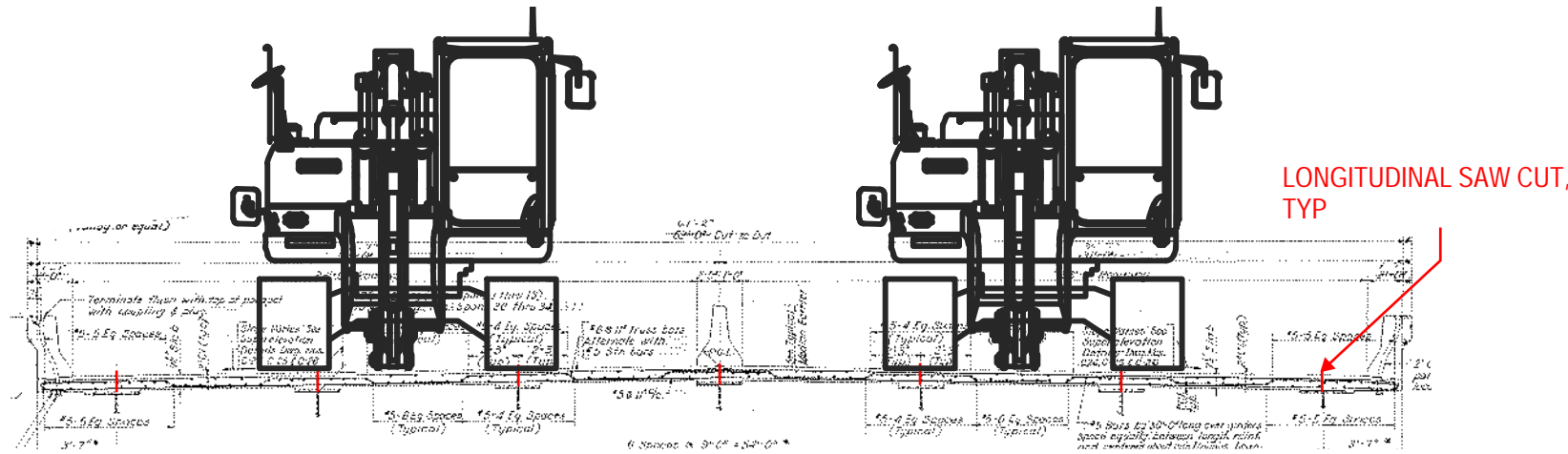


ELEVATION

PRELIMINARY
NOT FOR CONSTRUCTION

△			
△			
△			
NO.	DATE	REMARKS	BY

GENERAL LAYOUT KEY BRIDGE DEMOLITION	
	DRAWN BY CHK'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

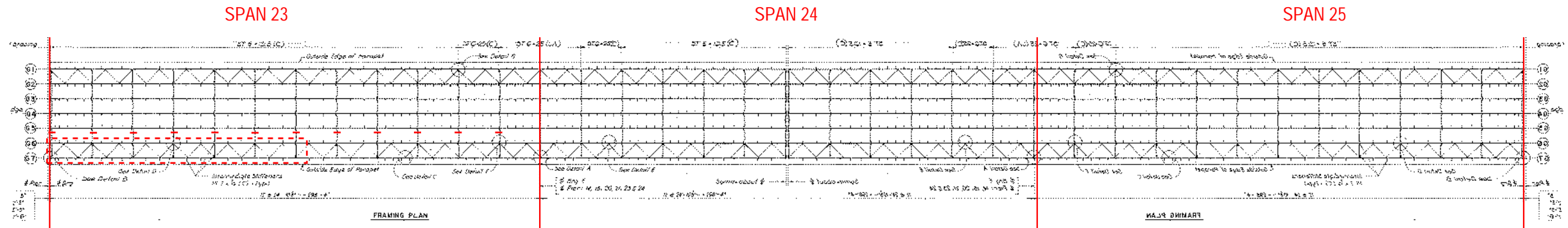
REPEAT FOR ENTIRE DECK

PRELIMINARY
NOT FOR CONSTRUCTION

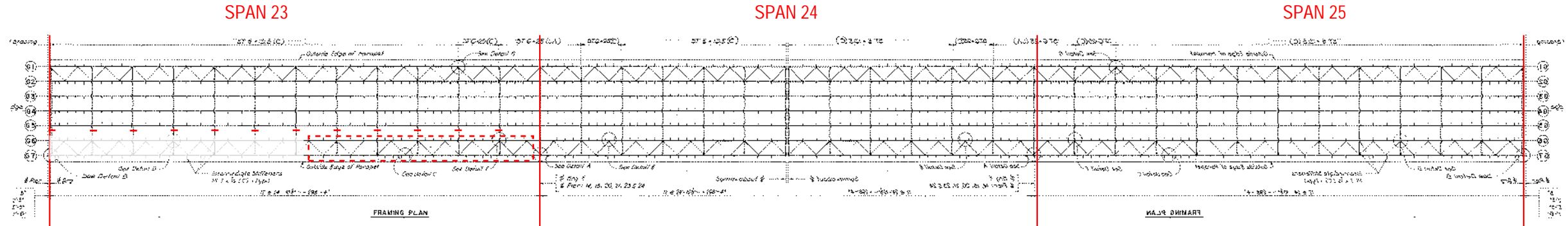
NO.	DATE	REMARKS	BY
△			
△			
△			

GENERAL DECK DEMOLITION KEY BRIDGE DEMOLITION	
DRAWN BY	CHK'D BY
DATE	
PROJECT	SHEET NO.

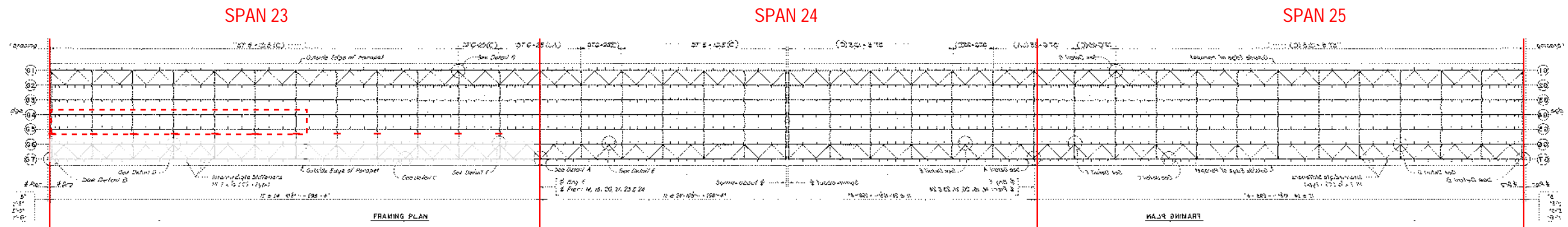
STEP 1 -
CUT CROSSFRAMES BETWEEN G6 & G5
HOIST G6&G7. APPROX WT = 100 TNS



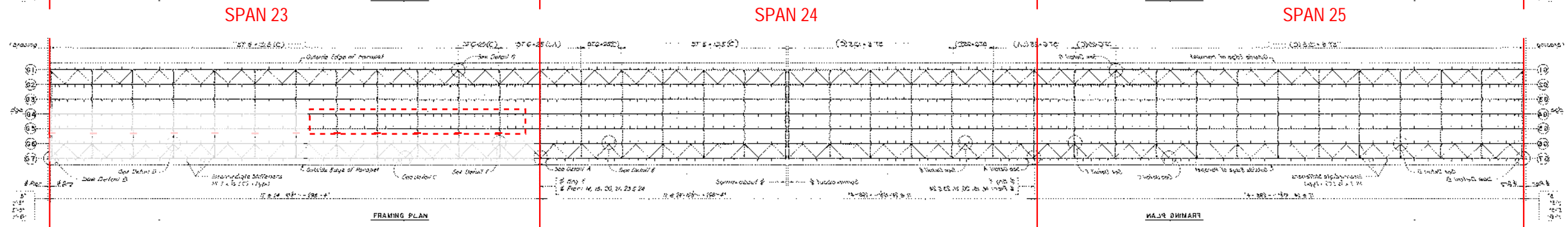
STEP 2 -
CUT CROSSFRAMES BETWEEN G6 & G5
HOIST G6&G7. APPROX WT = 75 TNS



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



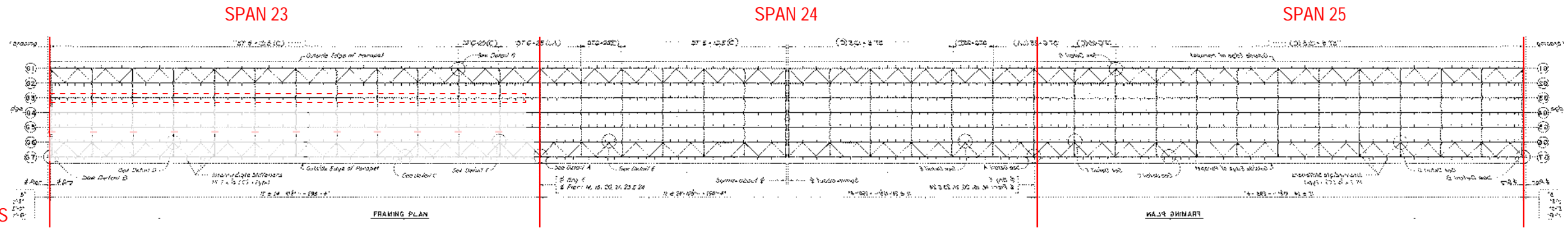
PRELIMINARY
NOT FOR CONSTRUCTION

NO.	DATE	REMARKS	BY

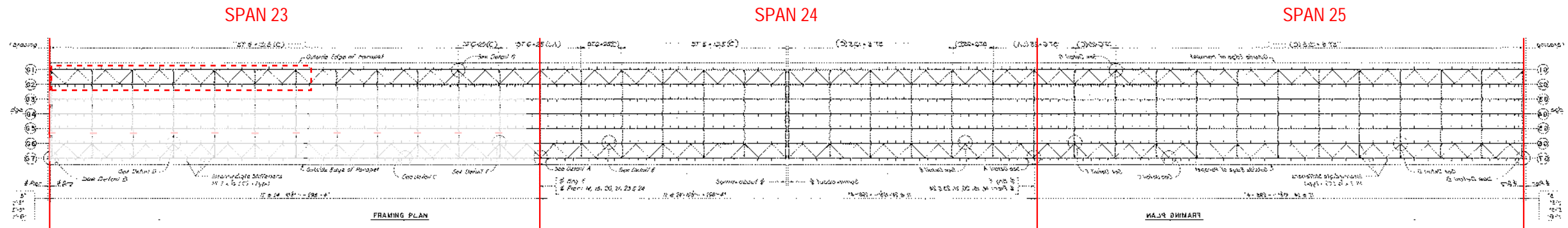
STEEL DEMOLITION SPANS 23-25 KEY BRIDGE DEMOLITION	
DRAWN BY	CHK'D BY
DATE	
PROJECT	SHEET NO.

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

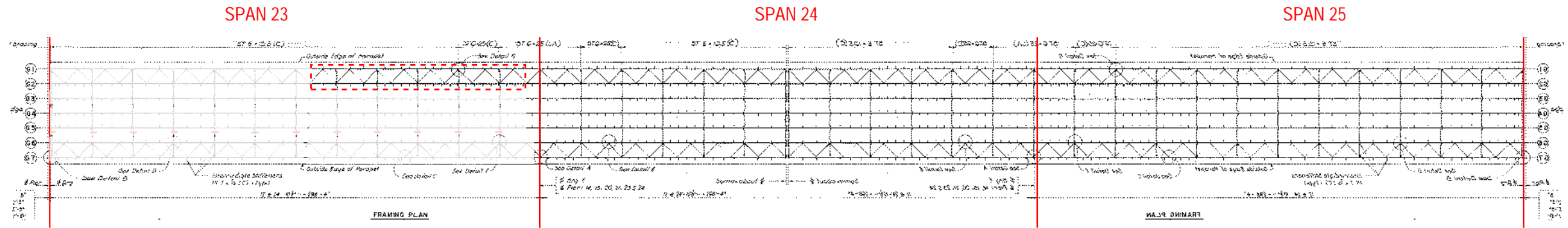
MAY ALSO TAKE PARTIAL LENGTH AND KEEP CONNECTED WITH CROSSFRAMES



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



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



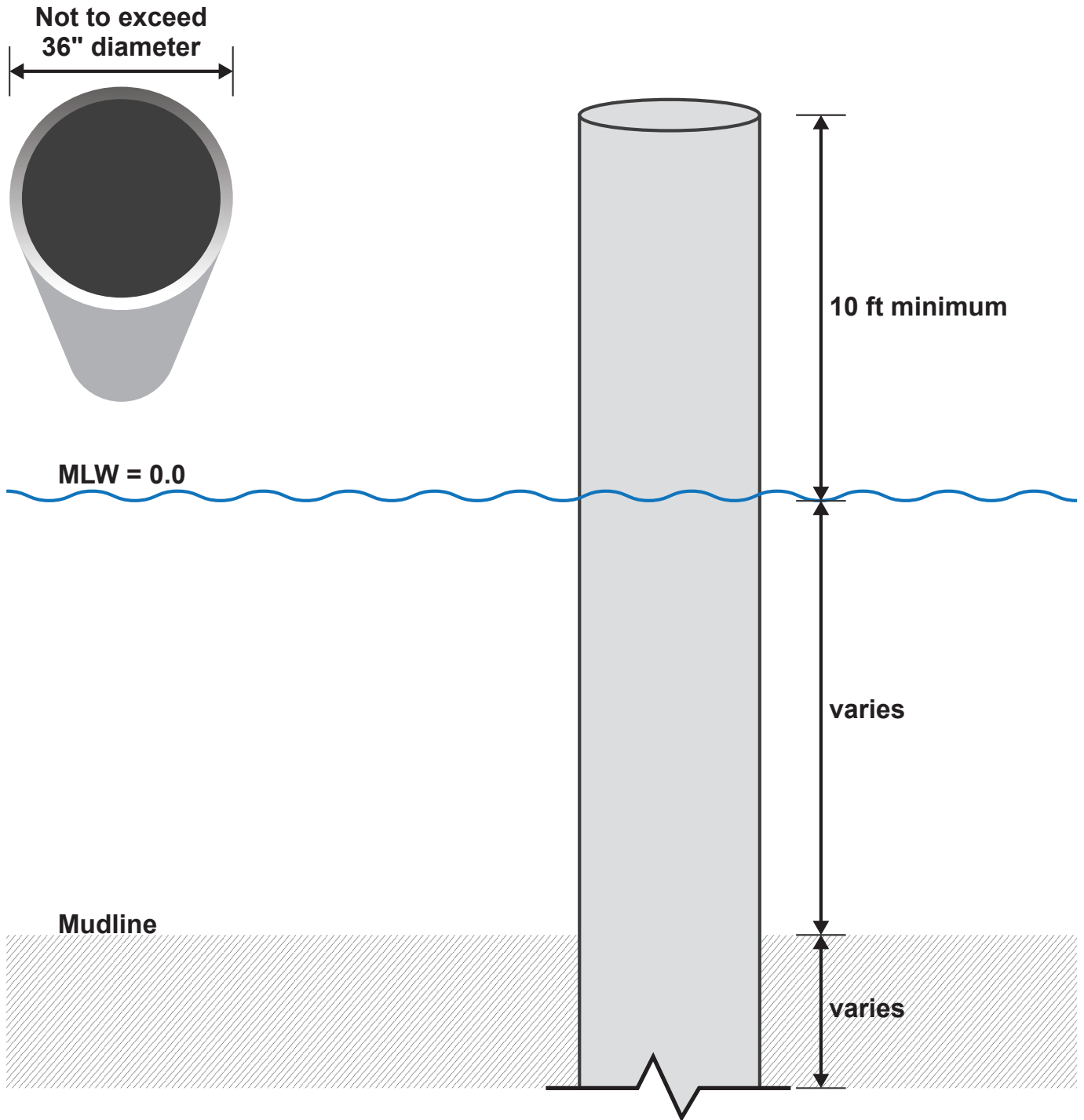
REPEAT SAME STEPS FOR SPAN 24

PRELIMINARY NOT FOR CONSTRUCTION

NO.	DATE	REMARKS	BY

STEEL DEMOLITION SPANS 23-25 KEY BRIDGE DEMOLITION	
DRAWN BY	CHK'D BY
DATE	
PROJECT	SHEET NO.

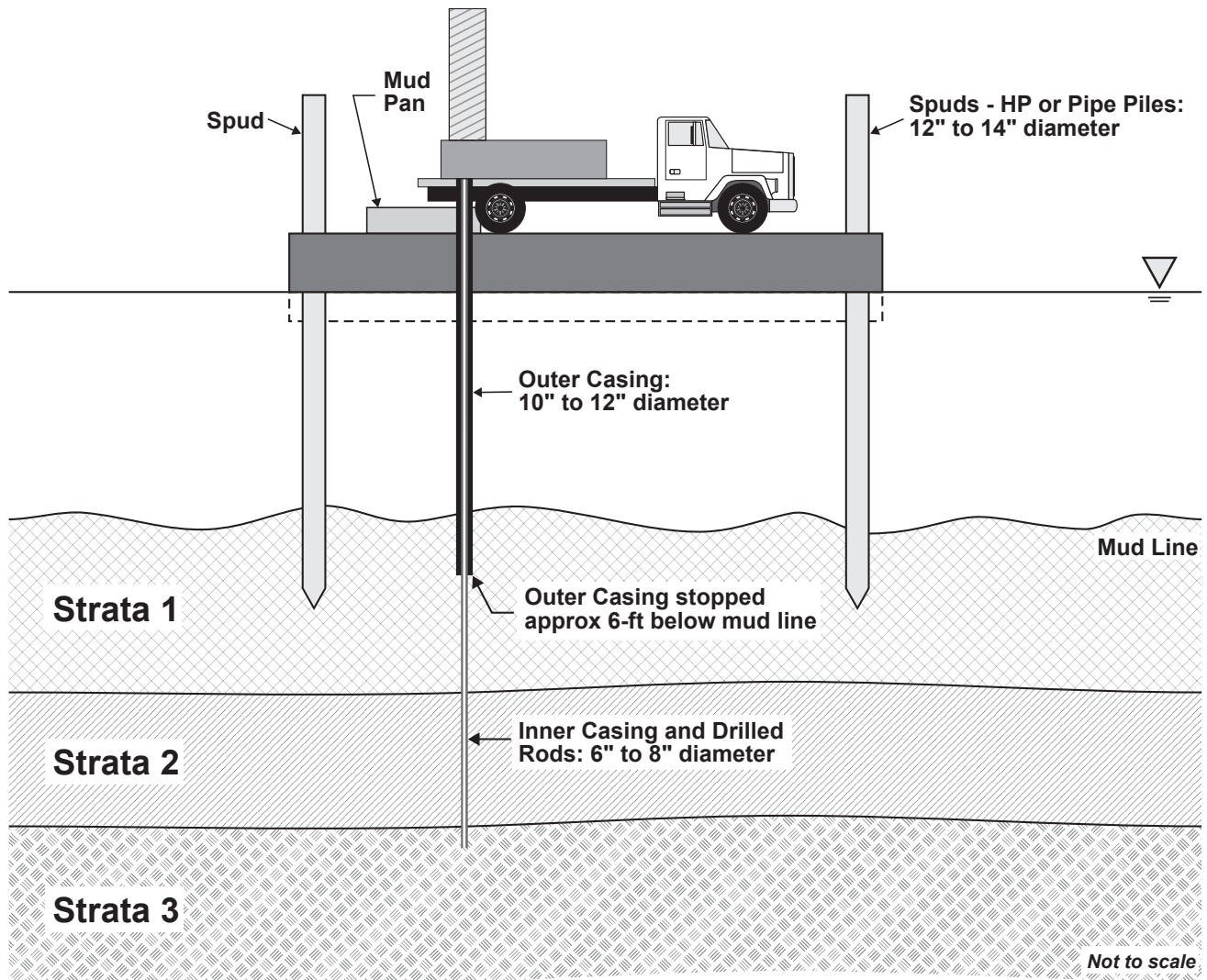
Temporary Pile Typical Section



**Francis Scott Key Bridge
Rebuild Project
Demolition Plan**

July 2024

Subsurface Exploration Cross-Section - Geotechnical Boring



33 sq. ft. impact/boring
Total impact not to exceed 1,980 sq. ft. (60 borings)

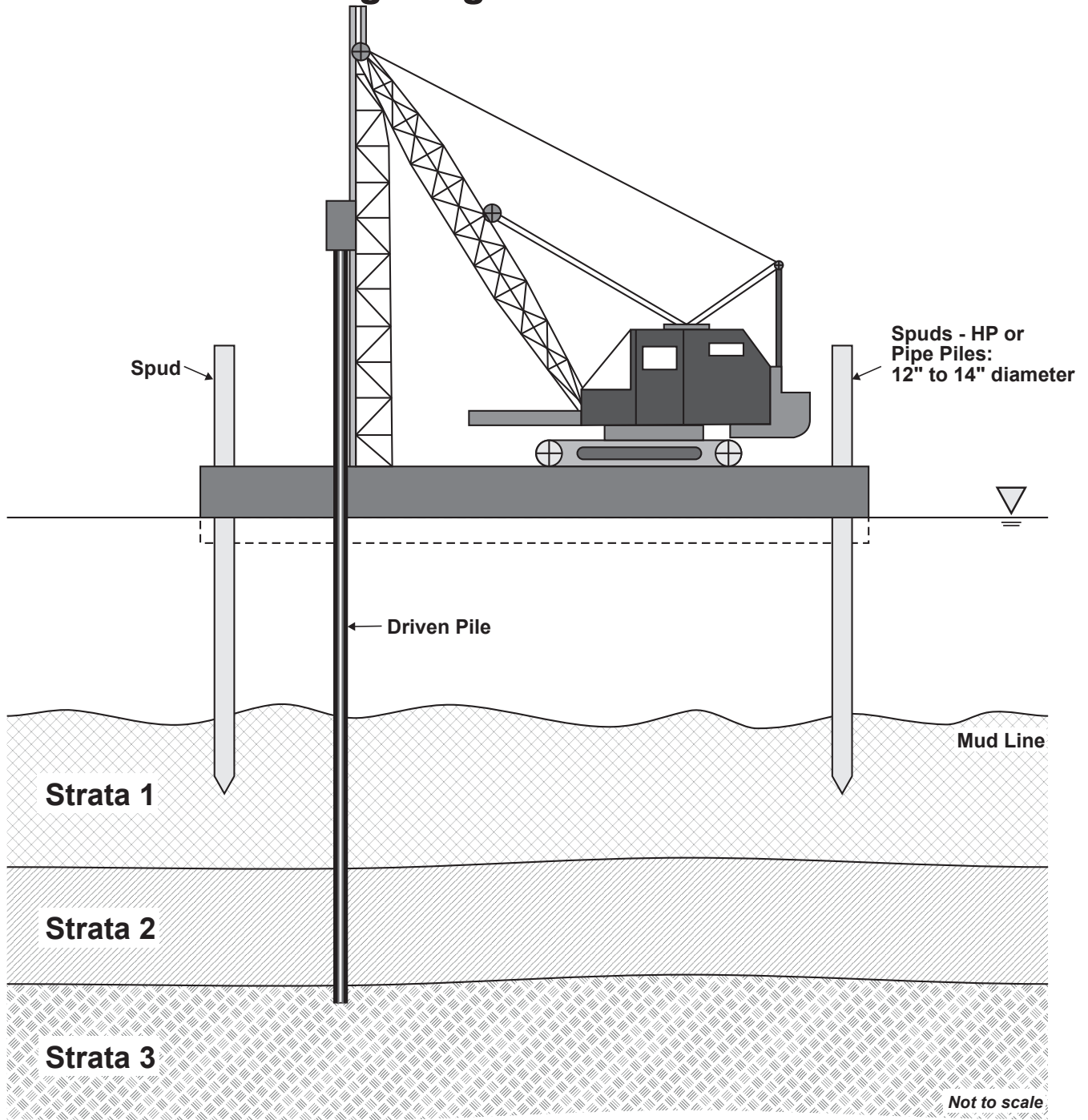
Note: The subsurface exploration work will be conducted with a barge mounted drill rig to obtain Standard Penetration Test (SPT) samples. The field crew will install an outer casing below the mudline to seat the borehole. Drill rods and inner casing will be run through the outer casing to obtain soil 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.



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**Francis Scott Key Bridge
Demolition**
Preliminary Engineering
July 2024

Foundation Testing Program Cross-Section – Pile Test



33 sq. ft. impact/pile test

Total impact not to exceed 462 sq. ft. (14 pile tests)

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.

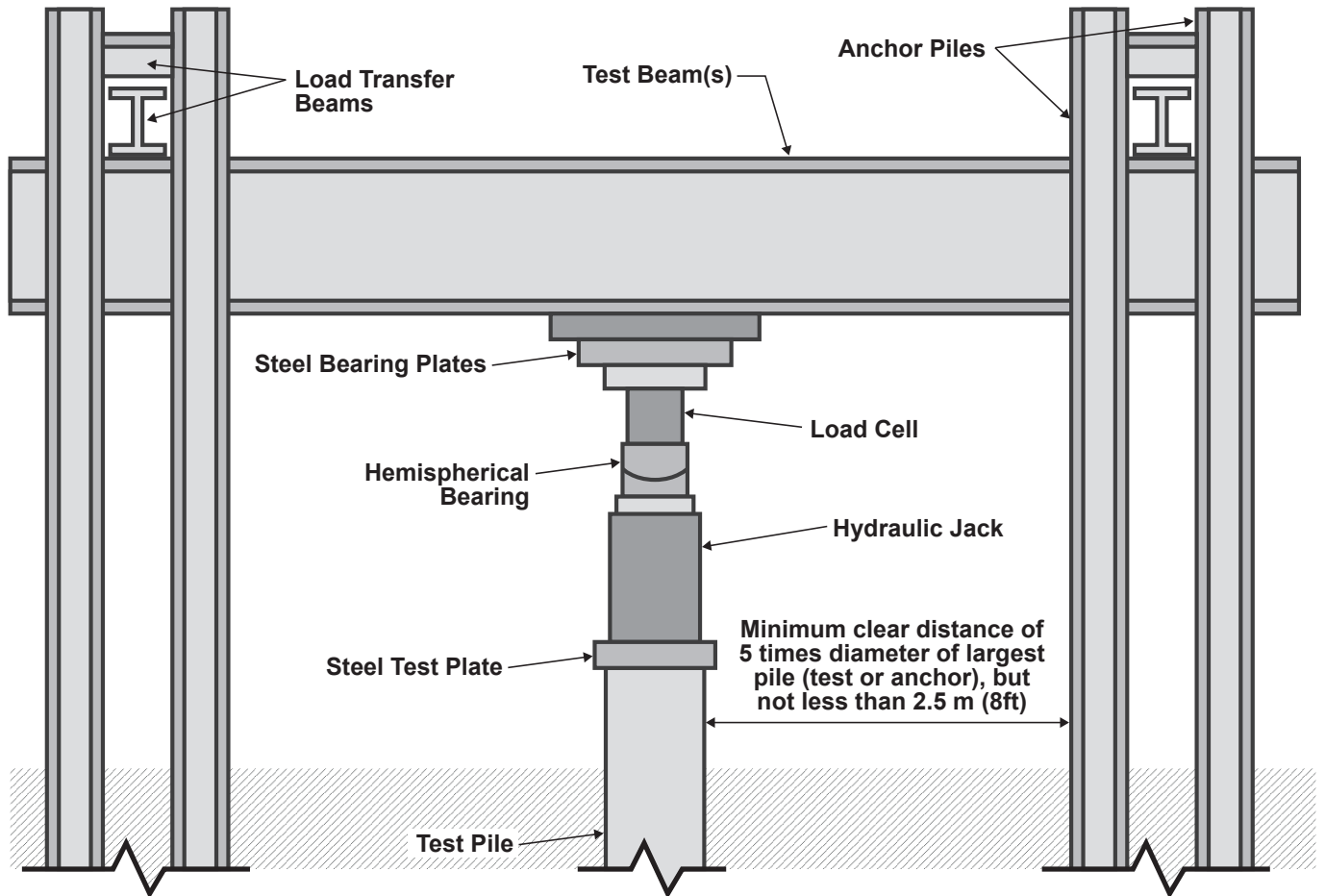


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**Francis Scott Key Bridge
Rebuild Project
Preliminary Engineering**

July 2024

Foundation Testing Program Cross-Section – Static Load Test



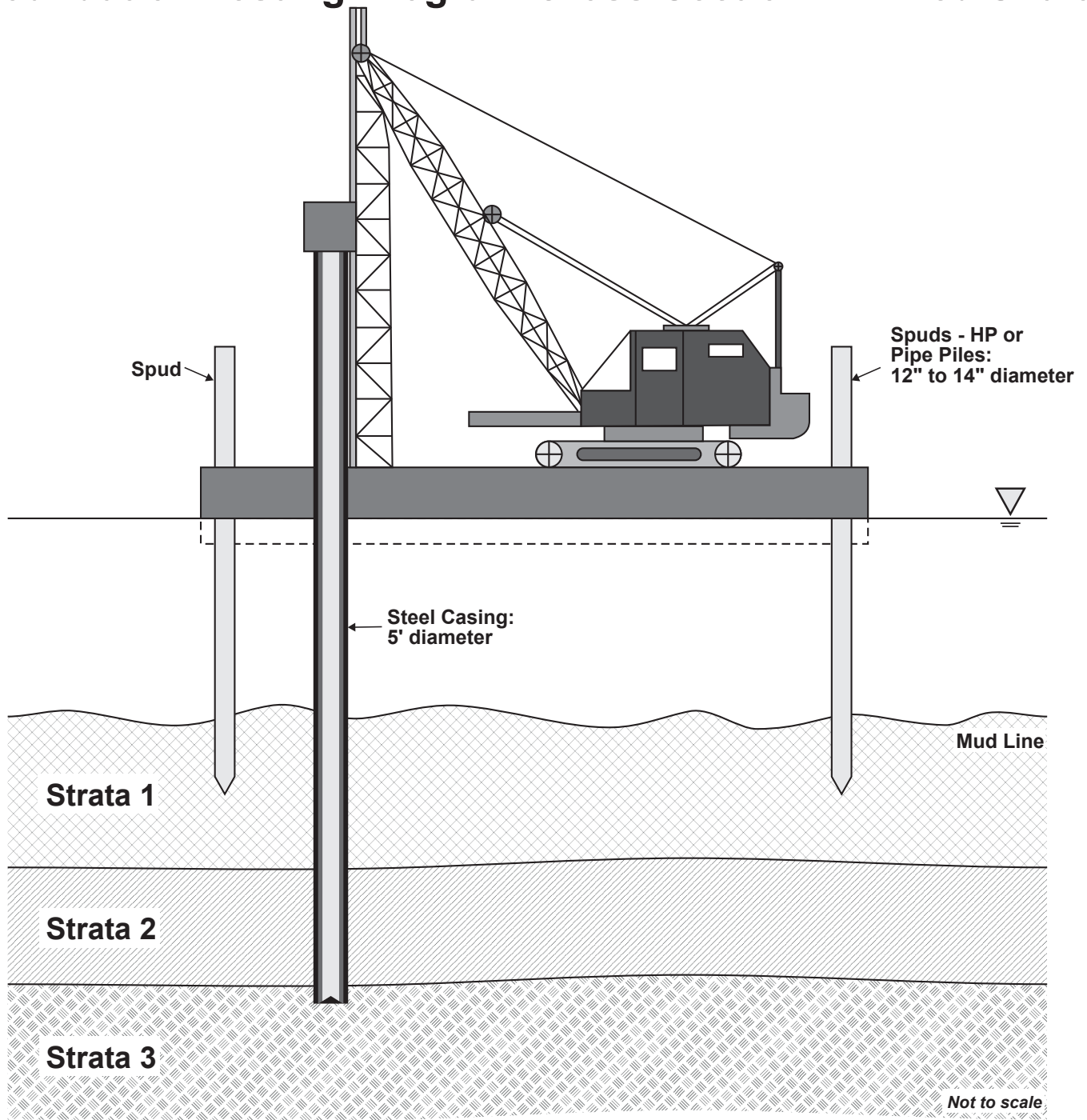
260 sq. ft. impact (1 shaft or pile)
Total impact not to exceed 1,560 sq. ft. (6 tests)

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.



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

Foundation Testing Program Cross-Section – Drilled Shaft



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

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.



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