



REPLACEMENT OF BRIDGE NO. T-0001 ON TUNIS MILLS ROAD OVER LEEDS CREEK

Talbot County Council Meeting



Prepared By: W. Mark Ledebur, PE

Date: September 26, 2023

Contact Information



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PROJECT OVERVIEW

Project Overview – Purpose & Need



- **Existing Bridge**
 - Two-Lane Timber Bridge, 344'+/- Length
 - 20-Span Simply Supported Timber Beam Bridge
 - Timber Plank Decking on Timber Stringer - Steel Guard Railing
 - Timber Substructure & Abutments
- Built in 1960's - **Reaching End of Anticipated Service Life**
- **Load Posting Restriction** - Limiting Vehicle Weights & Configurations
- **New Structure Would Accommodate Current Legal Loads & Provide 60-80 Year Service Life**

Project Overview – Purpose & Need



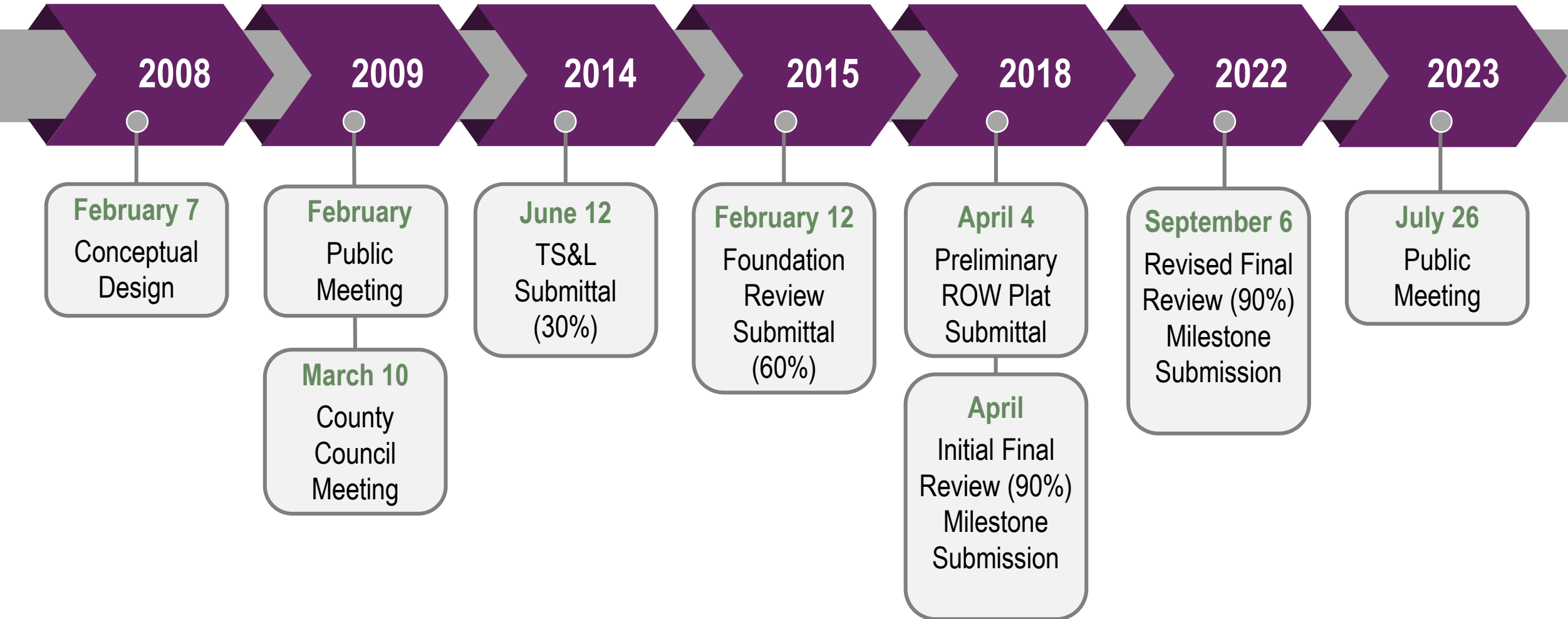
Project Overview – Purpose & Need



Project Overview – Purpose & Need



Project Overview – Timeline



NEW BRIDGE DESIGN

New Bridge – Context Sensitive Design



- Current Proposed Bridge Design Balances Multiple Needs/Requirements
 - **Safety** – Traveling Public, Vehicles & Pedestrians
 - **Community** – Sensitivity to Existing Structure Configuration And Importance of the Existing Bridge to the Community.
 - **Impacts** – Minimize Impacts to Adjacent Properties and Facilities. For Example; Ex. Sewer Force Main and Overhead Utilities Constrain Geometrics.
 - **Funding** – Federal & State Agency Support. Substantial Funding Sources.
 - **Service Life** – Structure Longevity.
 - **Maintenance** – Federal & State Agency Support. Substantial Funding Sources.

New Bridge – Key Design Decisions Made



- Key Design Decisions Made by County Council in 2009
 - **Profile/Underclearance** – Unanimous Vote for 2-foot Increase, Splitting Difference Between Raising as Much as 3' & Raising Only 15" (Rising Water Levels)
 - **Deck Materials** – Asphalt Deck Chosen for Financial/Maintenance Reasons. Timber Deterioration Cited. All Other County Timber Bridges Have Converted to Asphalt Decks.
 - **Water Access Platform** – Unanimously Decided to Keep This Feature Along the Bridge.
 - **Pedestrian Walkway** – Unanimously Decided a Pedestrian Walkway (Enhanced Shoulder) Would be Beneficial for Access/Safety to the Swimming Platform & Bridge Crossing. Doesn't Impact Neighbors' Property Rights
- Design Team Believes These Decisions are Still Valid & in the Best Interest of the Project Moving Forward

New Bridge – Proposed Design



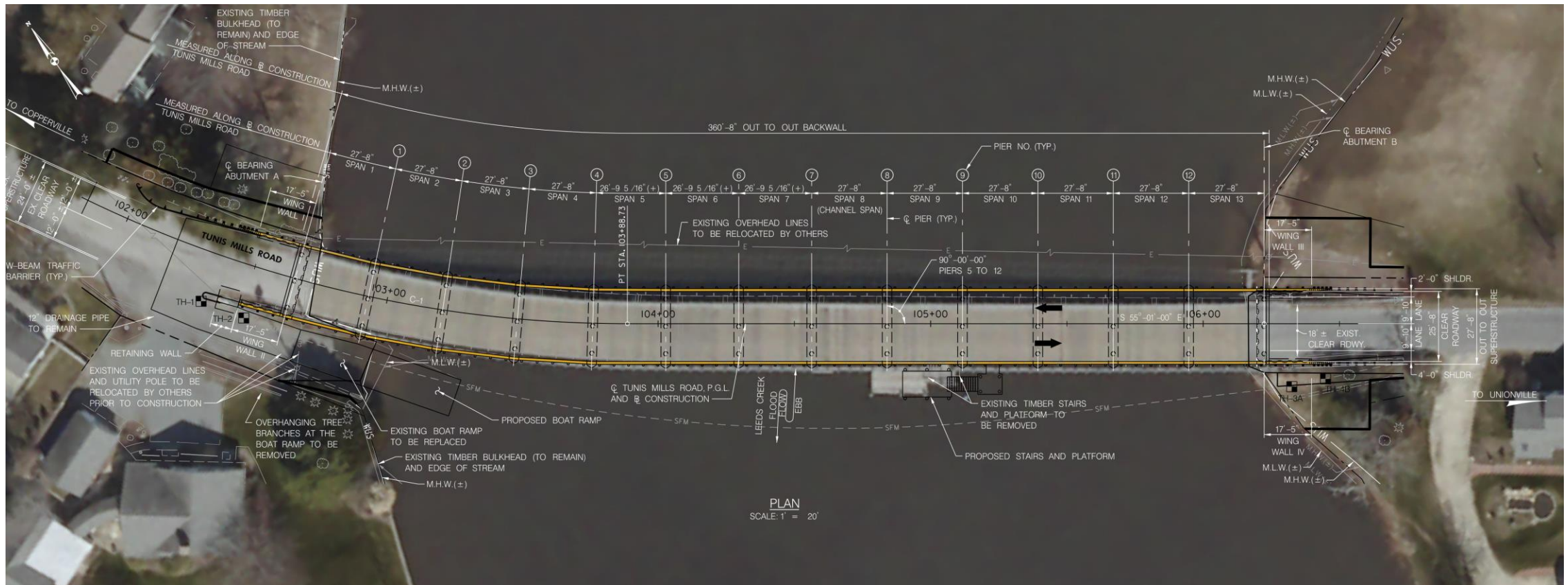
■ Proposed Bridge

- 13 Simply-Supported Spans, 357' Length (CL Bearing to CL Bearing)
- Bridge Width - 27'-8" Out-to-Out, 25'-8" Clear Roadway
- 2 – 9'-10' Travel Lanes, 2' Shoulder on North Side, 4' Enhanced Shoulder on South Side with Swimming Platform Access
- Glue-Laminated Timber Superstructure Bridge
- Supported by 2 Abutments and 12 Piers. Abutments & Piers are Reinforced Concrete Pier Caps
- Each Substructure Unit Supported by 3-20" Diameter Concrete Filled Steel Pipe Piles

New Bridge – Proposed Design



■ Proposed Bridge



New Bridge – Proposed Design



- Not A “Typical” Maryland Bridge Replacement – Efforts Made To Pay Homage to Existing Timber Bridge In The Proposed Configuration.
- Key Bridge Aspects Differ from “Typical” New Bridge Construction
 - **Deck** – Laminated Timber Vs. Concrete or Concrete/Steel
 - **Wearing Surface** – Asphalt Over Timber Vs. Concrete
 - **Railing** – Wood Railing on Timber Posts Vs. Steel Rail or Concrete Barrier
 - **Bridge Width** – Not Expanded To SHA Recommended Width of 32’-0”
 - Proposed out-to-out width: 27’-8”
 - SHA GPM D-85-32(G): Written Approval from the Office of Structures is Required for Less Than Minimum Recommended Width.

New Bridge – Proposed Design



■ Bridge Width

- Concerns About Vehicular Speed and Typical Section Have Been Noted and Considered
- Currently Proposed Bridge Has A Clear Roadway Width of 25'-8", a 3'-8" Increase Over Existing 22' Clear Roadway Width
- Design Provides A 2' Shoulder On North Side And A 4' Shoulder on the South Side (Platform Side), While Providing Approx. 10'-Wide Travel Lanes
- Further Reduction of the Bridge Width Has the Following Potential Impacts:
 - Lack of Dedicated Area For Pedestrian Access
 - Potential Issues With Funding Sources Due To Deviating From Design Requirements
 - Reduced Offset To Rail Opening/Water Access Platform, Reduces Safety
 - Significant Redesign Effort For Construction Plans.

15 ■ **Note: Separate Ped. Way/Structure → Increased Property Impacts & Costs**

New Bridge – Proposed Design



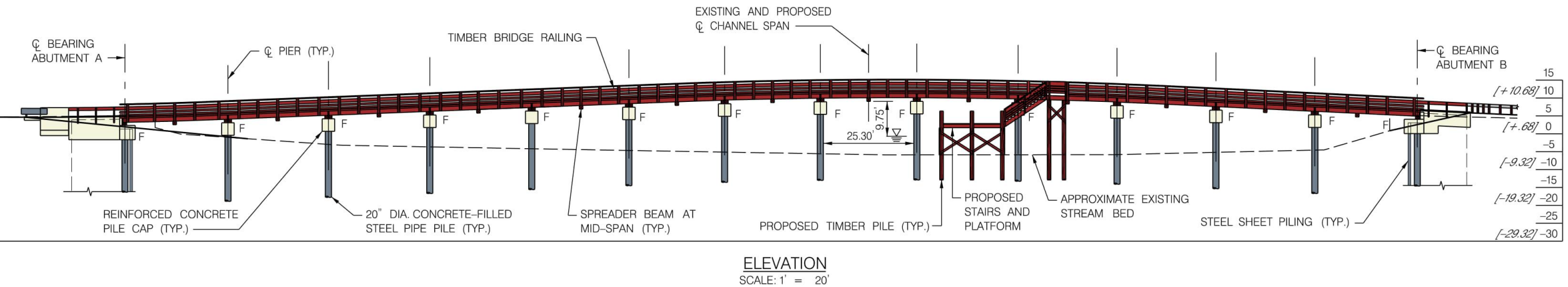
■ Bridge Underclearance

- Based Upon Decisions Of Previous County Council, The Proposed Bridge Design Provides An Additional Two Feet Of Underclearance Compared To The Existing Structure.
- Potential Impacts Of Increasing Underclearance Further:
 - Raising Bridge Profile Higher Would Increase Bridge Length. (Sight Distance)
 - Increased Property Impacts as Improvements Extend Beyond Ex. Bridge.
 - Approach Roadway Modifications Needed.
 - Significant Redesign Effort For Construction Plans.

What Will The Bridge Look Like?



Profile/Underclearance



What Will The Bridge Look Like?



■ Deck Materials & Timber Guardrails

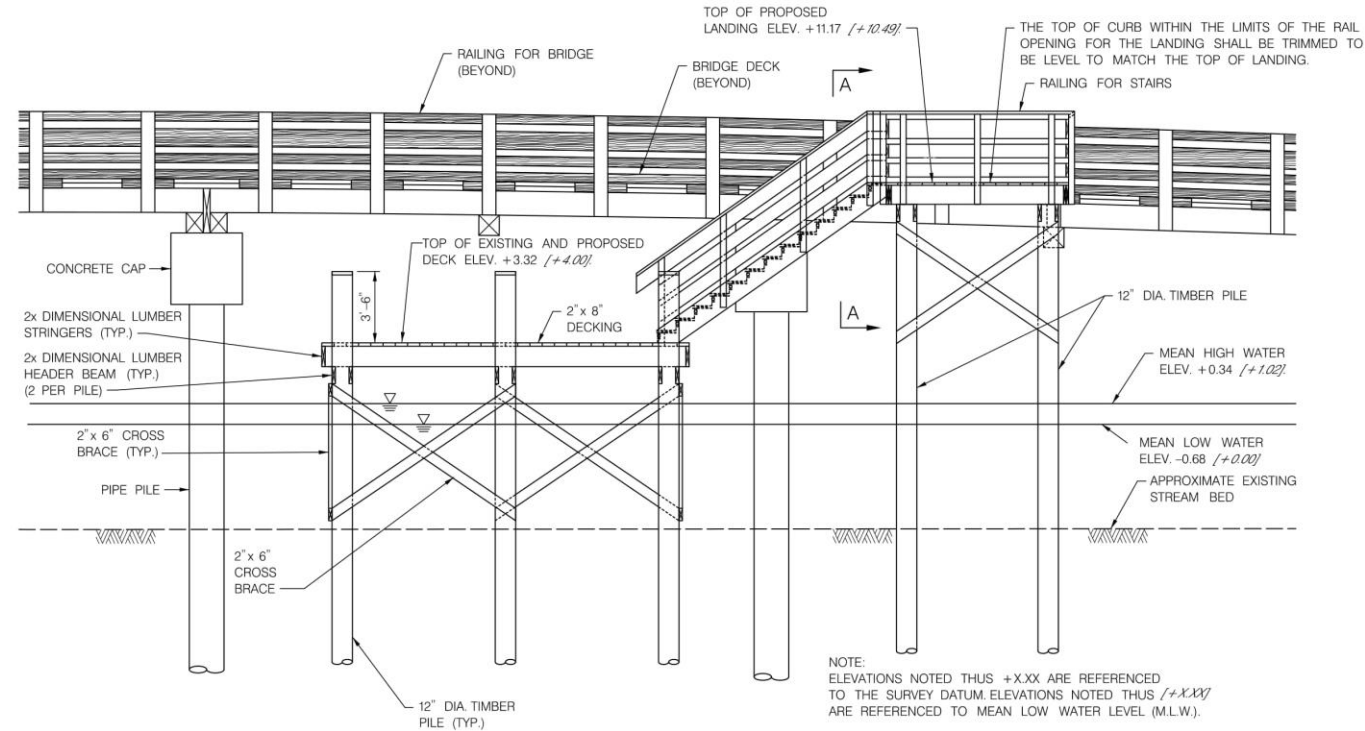
- County Has Been Consistently Using Asphalt Overlay When Replacing Existing Bridge Structures (Images Are From Bruceville)



What Will The Bridge Look Like?



Water Access Platform

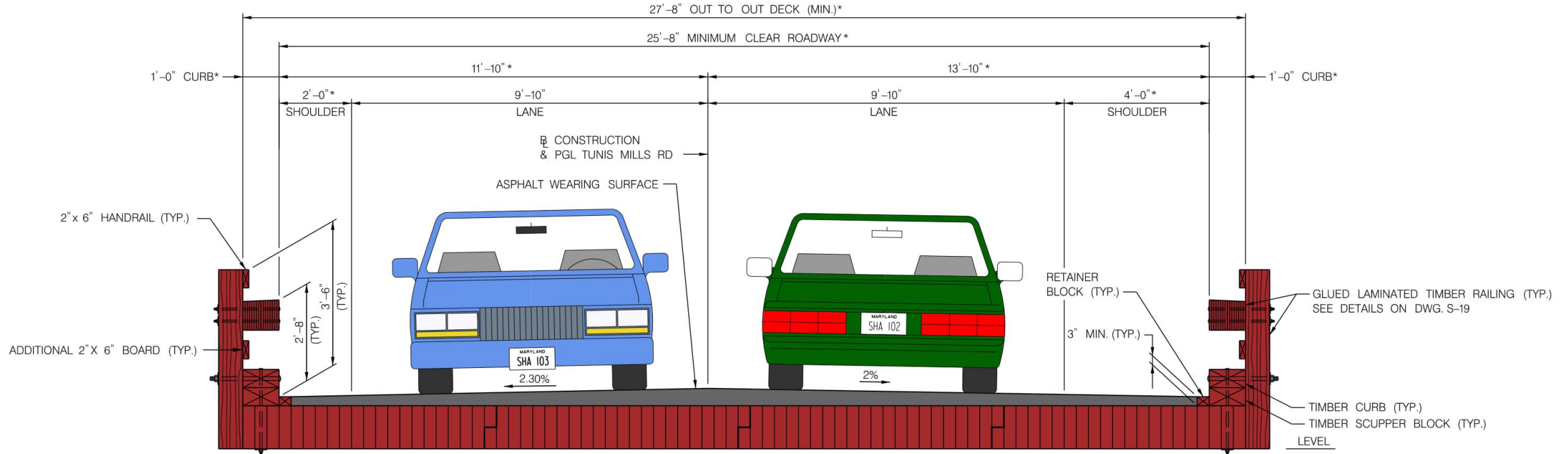


ELEVATION - STAIRS AND PLATFORM
SCALE: 1/4" = 1'-0"

What Will The Bridge Look Like?



■ Typical Section – Enhanced Shoulder



What Will The Bridge Look Like?



■ Bridge Structure – Reinforced Concrete Pier Caps & Substructure Units



- Image is Representative of How the Bridge Structural Supports Will Appear At The Proposed Bridge. Image is From Another project with Larger Bridge/Support Structure

NEXT STEPS



■ Many of Same Issues Raised

- Typical Section
- Bridge Materials
- Profile/Underclearance
- Vehicular Speed

■ No Unanimous Agreement of Attendees

- Residents Feel Passage of Time & Turnover in Community Residents Warrants **Reconsideration of Key Design Issues**

Impacts of Significant Scope/Design Changes



- Funding Sources (Non-County)
 - State/Federal Funding is Currently 80% of Total (20% County)
 - Funding Availability Could be Affected by Scope Changes if Design Deviates from Current/Standard Bridge Design Parameters
- Project Schedule - Further Delay in Replacing Bridge at End of Service Life
- Increased County Costs
 - Engineering Re-Design – Costs Increase If Funding Sources Change
 - Construction - Costs Increase if Established Funding Sources Change
 - Potential for Additional County Costs Related to Maintenance if Bridge Materials are Reconsidered
- Reduced Pedestrian Safety if Typical Section is Further Reduced

Project Schedule



***Schedule Based On Direction To Proceed with Current Design on 9/26**

- Public Meeting – July 26, 2023
- County Council Meeting – September 26, 2023
- Submit Joint Permit & PCE Documents – October 10, 2023
- NEPA Approval – October 24, 2023
- Utility Relocation & ROW Coordination - TBD
- PS&E Submittal to Fed. Aid Programming Section
- Submit Plans, Specs & Estimate for Advertisement
- Advertisement – Summer 2024

Thank You!

