



Henryton Road Bridge Replacement Project

Howard County, Maryland



WALLACE
MONTGOMERY

Medium Project Category

County Project of the Year



September 18, 2025

Ashore Resort & Beach Club

Ocean City, Maryland

Our Presenters



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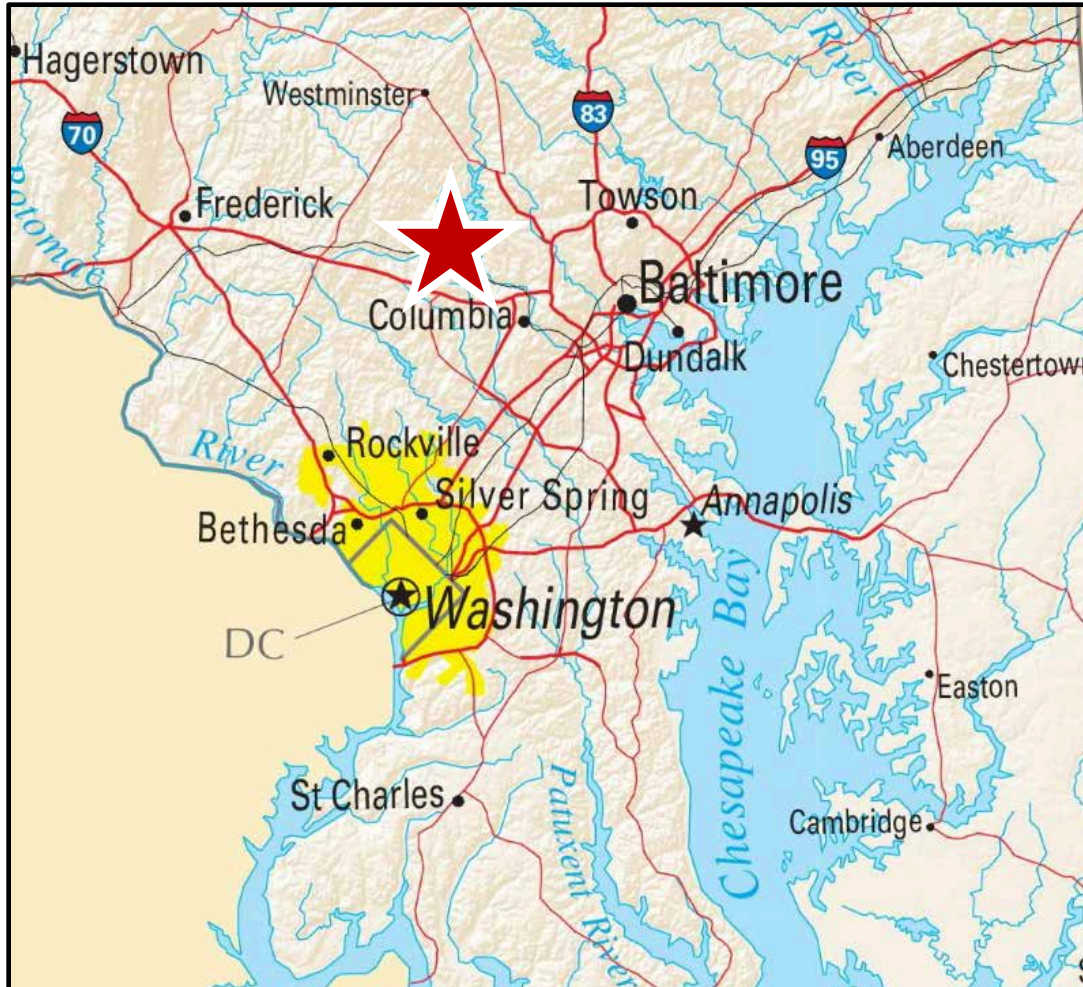
Agenda



- Project Background & Information
- Key Project Objectives
- Design Approach
- Construction Phase
- Questions & Answers



Project Location



Location Map



Vicinity Map



Existing Bridge Conditions



- **Constructed:** 1925 (No Plans or Details)
- **Bridge Type:** Single Span Concrete T-Beam
40'-0"± Span; 23'-4"± Clear Roadway
- **Weight Limit:** 12 Tons
- **Speed Limit:** 25 MPH
- **Average Daily Traffic :** 1200 VPD (Local Traffic)
- **Condition:** Poor Condition
Functionally Obsolete and Structurally Deficient



Existing Bridge Conditions



Looking South Along Henryton Road



11'x8' Restricted Hydraulic Opening

West Elevation

Temporary Bypass/Haul Road

- Allowed Overweight Vehicles to Cross
- No Available Plans or Details
- Unknown Hydraulic Impacts

Key Project Objectives



Howard County Desired Outcomes

- Eliminate 90+ Year Old Deficient Bridge
- Remove Load Posting
- Improve Functionality & Safety
 - Increase Width
 - Enhance Traffic Safety Features
- Minimize Future Maintenance
- Minimize or Mitigate Impacts
- Maintain Traffic



Key Project Objectives



Eliminate Existing Bypass/Haul Road

- Major Hydraulic Restriction
- Multiple Wash-Outs Occurred
- No H&H Studies/Permit Information
 - MDE Considered Existing Pipe Culvert to a Temporary Structure
 - Construction Date was Unknown
 - Requested it be Removed



August 2016 – Flood Event

Key Project Objectives



Eliminate Existing Bypass/Haul Road



August 2016 – Emergency Repair



August 2016 – Twin 48" RCP



Note: Emergency Repairs were Completed with Subsequent Permits Obtained through MDE

Key Project Objectives



Eliminate Existing Bypass/Haul Road



June 2018 - Washout



September 2020 – Emergency Repairs



Note: Emergency Repairs were Completed with Subsequent Permits Obtained through MDE

Key Project Objectives



Eliminate Existing Bypass/Haul Road



January 2021 – Washout and Pavement Failure



Key Project Objectives



Eliminate Existing Bypass/Haul Road



January 2021 –Twin 60" RCP with Headwall



Note: Emergency Repairs were Completed with Subsequent Permits Obtained through MDE

Key Project Objectives



Public Engagement Plan

- Multiple Public Meetings/Workshops
- Inform Residents of Potential Impacts
- Local School Board Coordination
- Emergency Responder Coordination



*Be sure to fill out
comment sheets!*



Public Requests

- Maintain Traffic at All Times
- Minimize Construction Duration
- Bridge Aesthetics/Context Sensitive
- Eliminate Weight Restriction

Key Project Objectives



Cost Saving Strategies

- FHWA Bridge Rehabilitation & Replacement Program
- 80/20 Federal Funding Contribution
- Oversight through SHA Office of Structures
- SHA Funding for Engineering Construction Phase Services

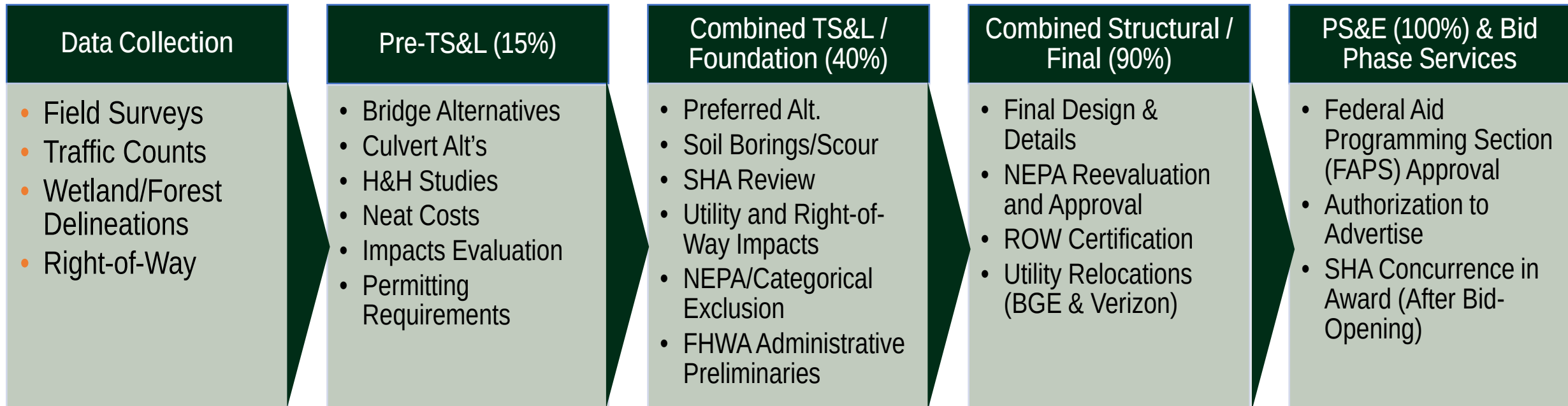


Design Approach



Design Procurement

- SHA Bridge Program Guidelines for Local Governments
- Wallace Montgomery - Engineer of Record

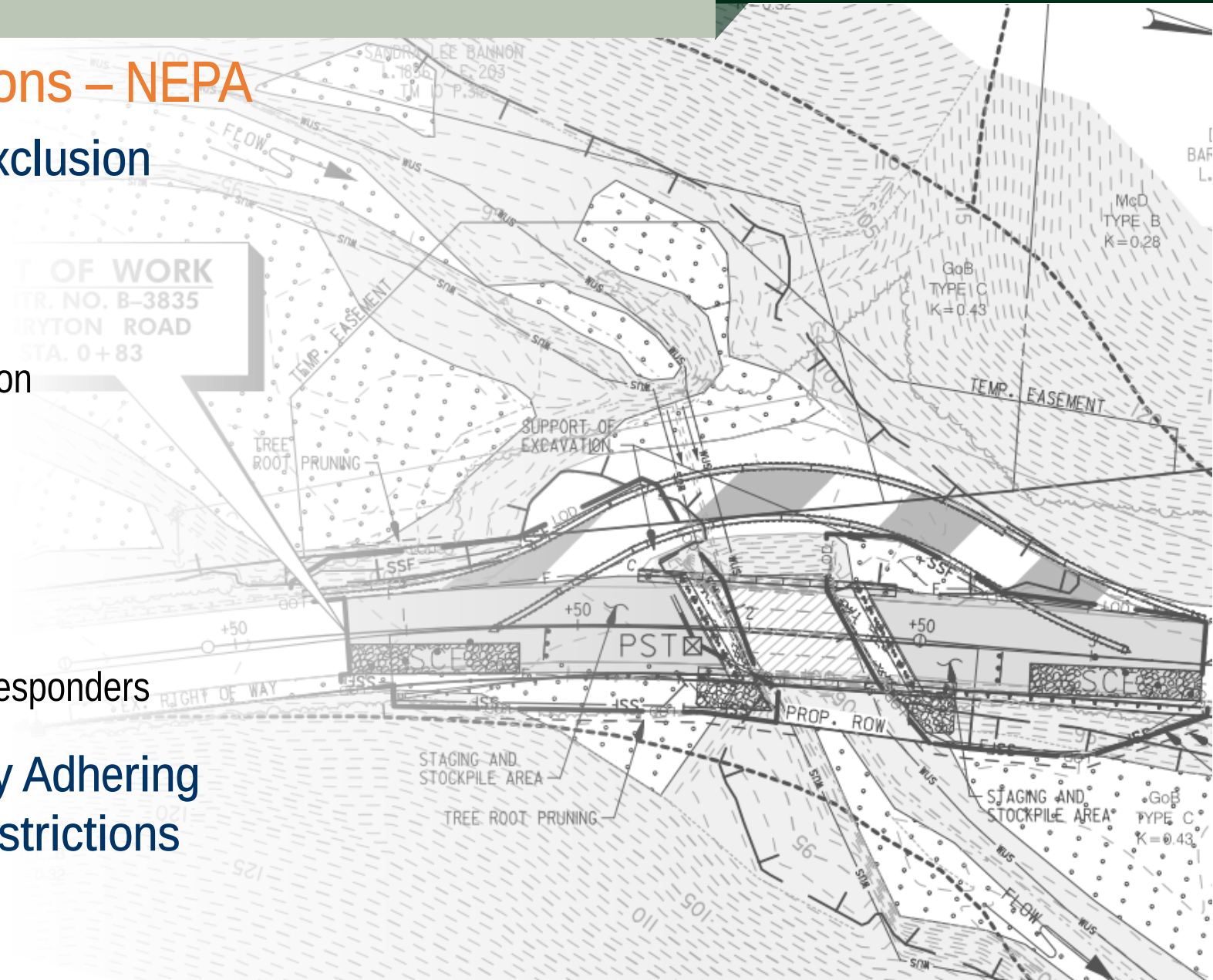


Design Approach



Environmental Considerations – NEPA

- Programmatic Categorical Exclusion
- Regulatory Compliance
 - Permits
 - Endangered Species Coordination
 - Historical Trust Approval
 - Public Outreach
 - Tree Permits
 - Stormwater Approvals
 - Coordination with Emergency Responders
- Protected Aquatic Species by Adhering to Seasonal Construction Restrictions

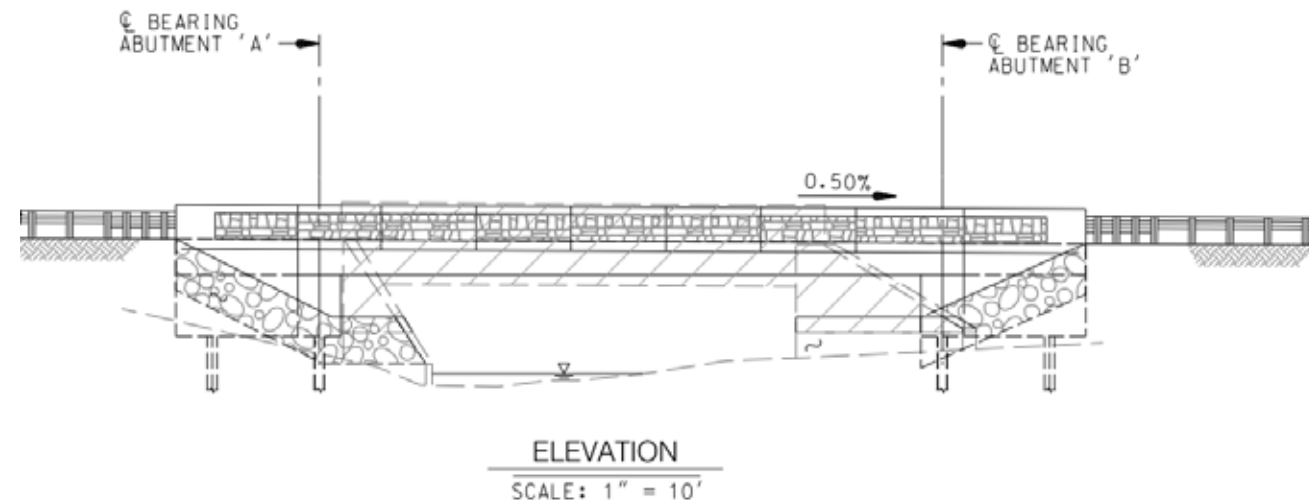
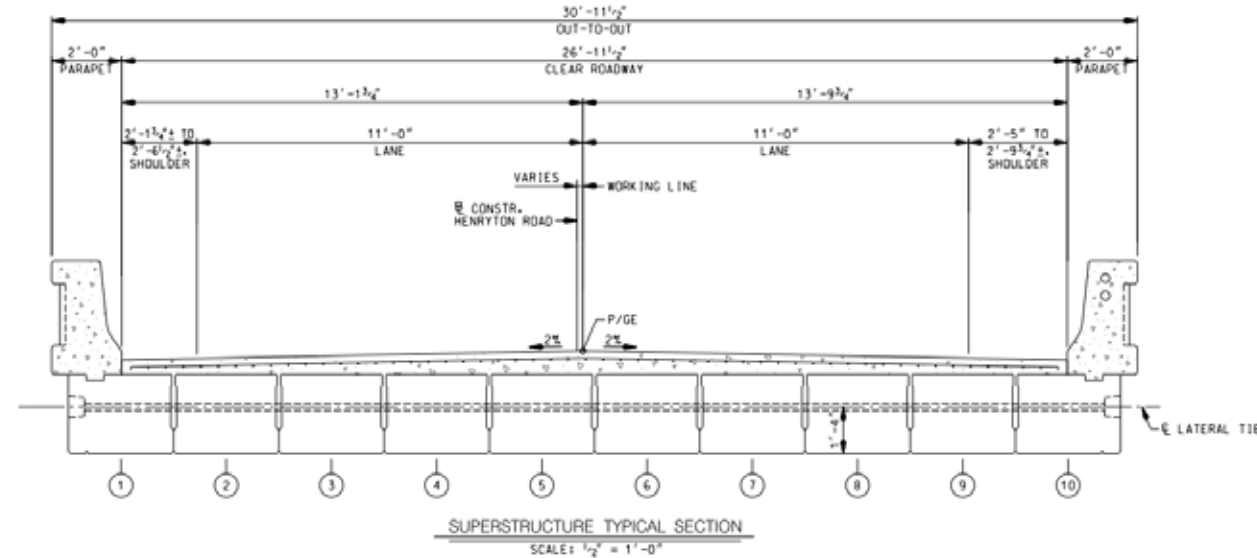


Design Approach



Bridge Design Features

- **Superstructure Selection**
 - 56'-0" Span
 - 31-ft. Out-to-Out; 27-ft. Clear Roadway
 - Adjacent P/S Slab Panels (SHA Standard)
- **Substructure Selection**
 - Concrete Cap on Single Row Piles
 - Drilled Shaft Deep Foundations
 - Retain Existing Abutments - Scour Protection

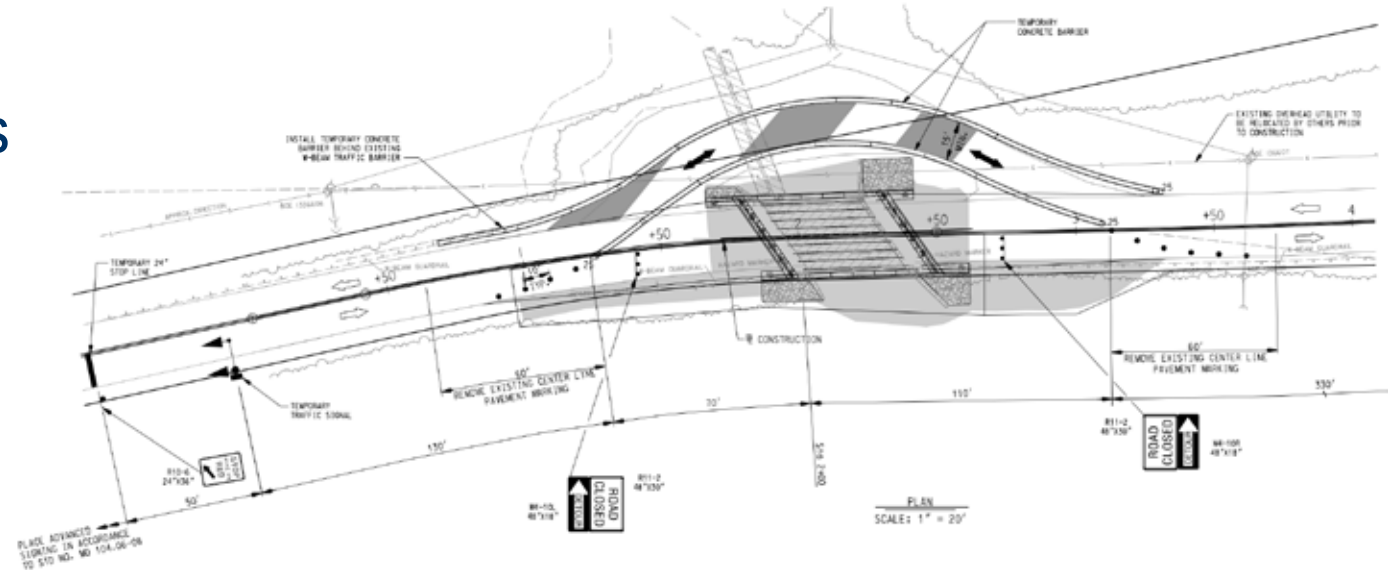
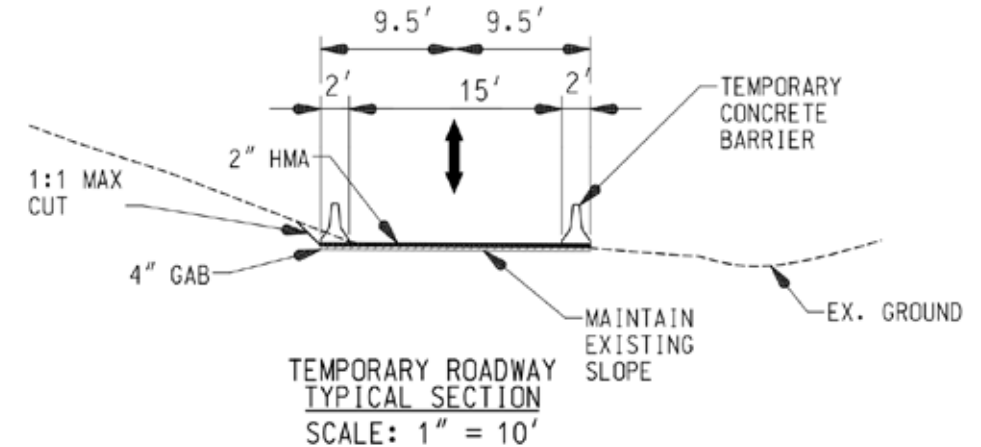


Design Approach



Maintenance of Traffic

- Use of Bypass/Haul Road – Single Lane
- Temporary Traffic Signal
- Temporary Paving/Widening with Concrete Traffic Barrier
- Confirm Auto-Turn Truck Movements



Design Approach



Accelerated Bridge Construction

- Prefabricated Bridge Elements
- Temporary Traffic Signal
- Foundation Design
 - Drilled Shafts with Rock Sockets
 - Reuse of Abutments for Scour Protection
 - Minimized Stream Excavation



***Accelerated Bridge Construction Avoided Staged Construction
and Reduced Duration from 20 months to 8 Months!***



Project Overview



Construction Phase

- Bid Type: Traditional Design-Bid-Build/Low Price
- Construction Start Date: January 8, 2024
- Construction Complete Date: August 16, 2024
- Contractor: Kinsley Construction
- Construction Management and Inspection: KCI Technologies
- Construction Cost: \$1,349,722.16



Construction Phase



Temporary Traffic Signals for Maintenance of Traffic



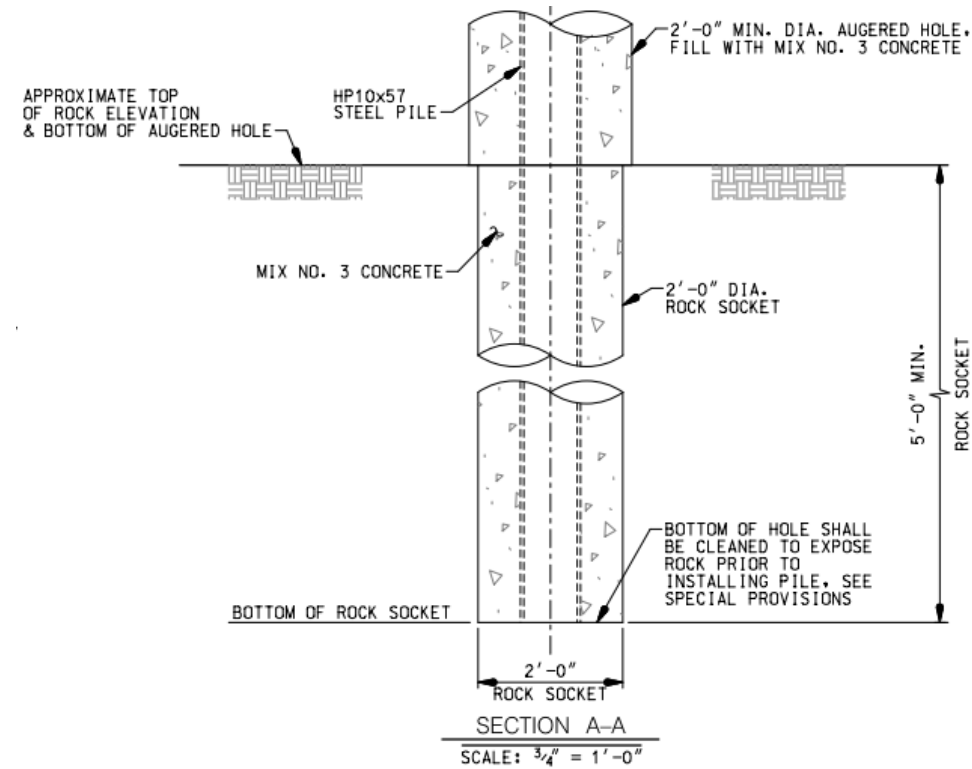
Construction Phase



Bypass Road for Maintenance of Traffic / Temporary Support of Excavation



Construction Phase



Drilled Shaft Foundations with Rock Sockets

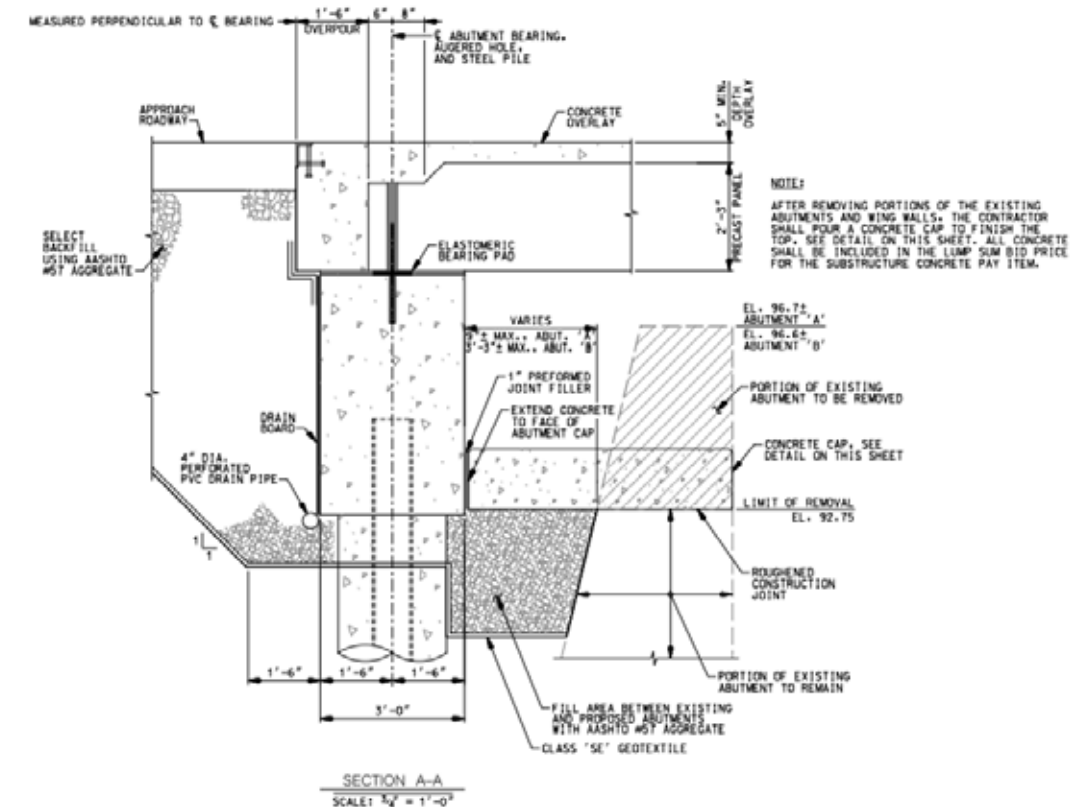
Construction Phase



Foundation Construction

***Retained Existing Abutments with
Concrete Caps for Scour Protection***

Construction Phase



Abutment Formwork

Construction Phase



Prestressed Slab Erection

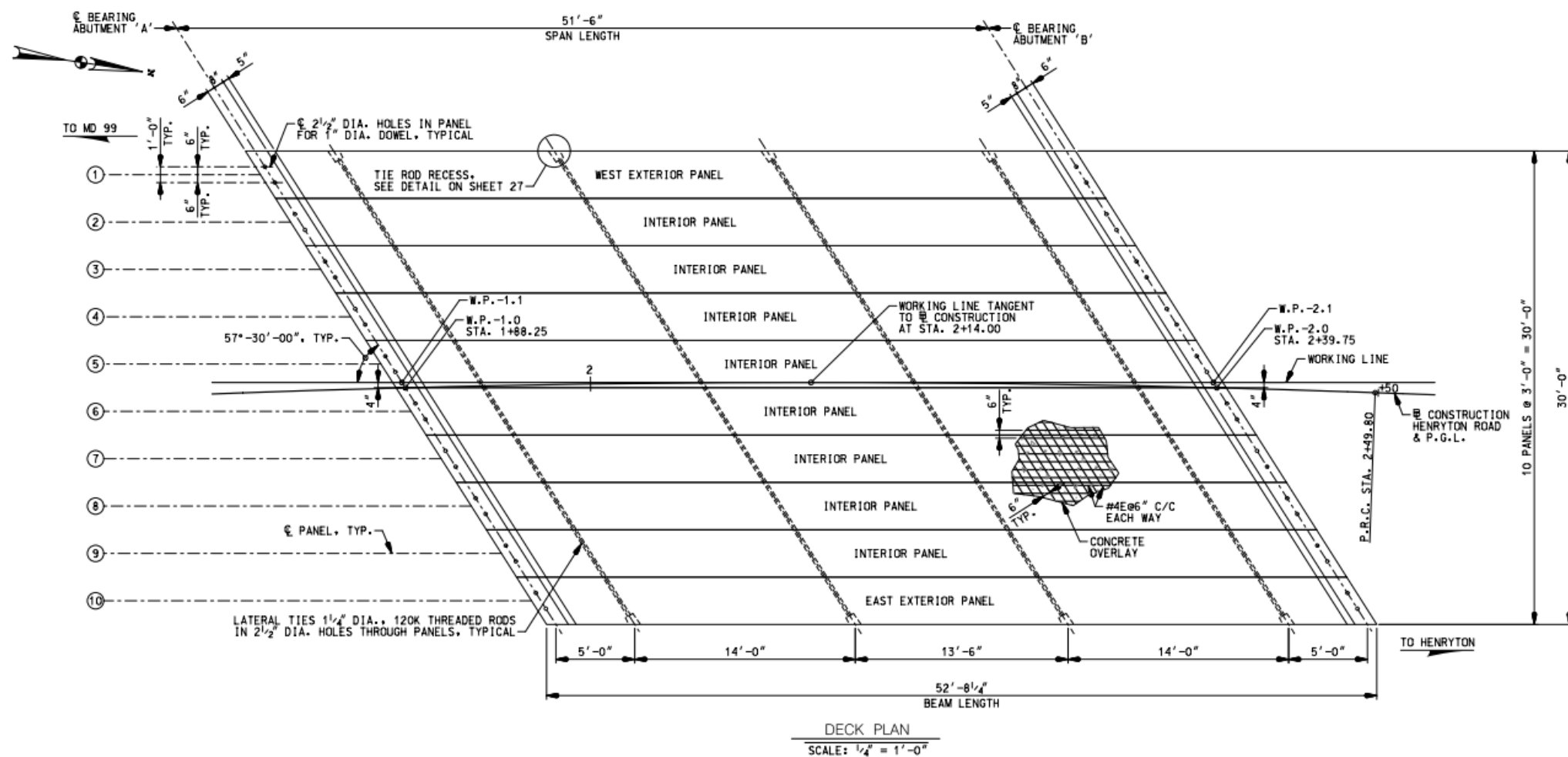


Construction Phase



Prestressed Slab Erection

Construction Phase



Prestressed Slab Panel Plan



Construction Phase



Construction Phase



Concrete Overlay Construction



Construction Phase



Concrete Overlay Construction

Construction Phase



Simulated Stone Formliner



Construction Phase



Bypass Road and Culvert Removal / Stream Grading and Stabilization



Construction Phase



Final Paving and Line Striping



Construction Phase





Partnering During Construction

- Extensive Collaboration Between County, Engineer, Contractor & SHA
- Monthly Progress Meetings – Ensured Quick Issue Resolution
- Field Meetings to Address Changed Site Conditions

Through Partnering and Cooperation, the Construction Duration was Limited to 7 Months

Henryton Road Bridge Replacement



- Replaced a Deteriorated 90+ Year Old Bridge with a New Prestressed Concrete Adjacent Slab Beam Bridge - Providing a Safer, More Resilient, and Context Sensitive Structure
- Eliminated an Impactful 12-ton Weight Restriction
- Incorporated Accelerated Bridge Construction(ABC) Techniques with Prefabricated Superstructure Elements Supported by Drilled Shaft Foundations
- Utilized Innovative MOT Approach to Minimize Traffic Impacts and Significantly Reduce Construction Duration
- Funded through FHWA's Highway Bridge Replacement Program Saving the County over \$1M

Team Focus



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Thank You



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