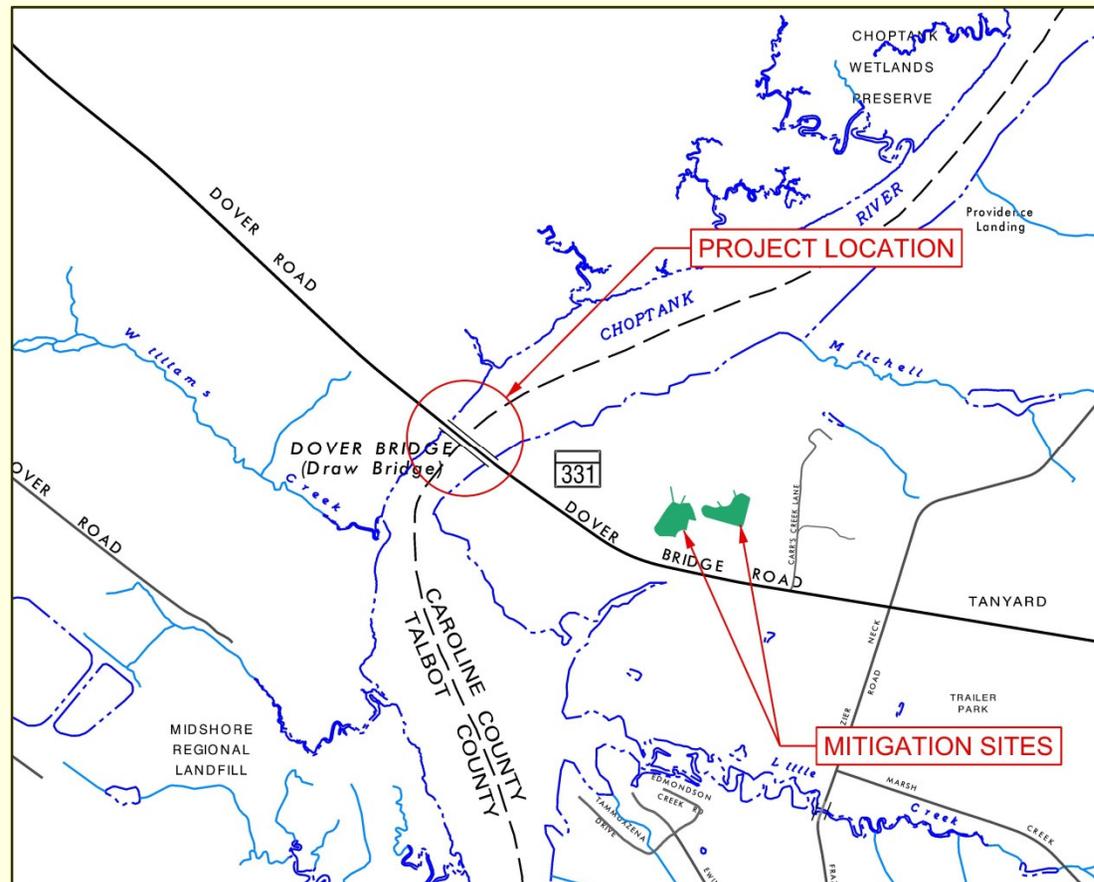


19TH ANNUAL MARYLAND CONCRETE CONFERENCE

REPLACEMENT OF THE BRIDGE ON MD 331 (DOVER ROAD) OVER THE CHOPTANK RIVER

Project Location



Located 6 miles east of Easton, Maryland

EXISTING BRIDGE



- Existing Dover Bridge, MD 331 over the Choptank River
- Two-lane metal through truss swing span

- 841 feet long
- Constructed in 1933
- National Register Eligible resource



EXISTING BRIDGE



EXISTING BRIDGE



EXISTING BRIDGE



LOST CITY OF DOVER



Purpose and Need

- Provide a safe and dependable MD 331 crossing of the Choptank River that will accommodate vehicular, marine, pedestrian and bicycle traffic and minimize impacts to environmental resources.
- Bridge is structurally sound but functionally obsolete
- MD 331 – the only direct link between the Preston and Easton/the nearest hospital Alternative routes, 27 to 31 mile detours



CONTRIBUTORS

DESIGNERS:

AECOM

Athavale, Lystad & Associates

Alvi Associates

Michael Baker International

PRIME CONTRACTOR:

McLean Contracting Company

SUB-CONTRACTORS:

David A. Bramble, Inc.

D.W. Kozera, Inc.

John W. Tieder, Inc.

Specialty Underwater Services

Multivista

Chesapeake Guardrails

U.S. Wick Drain, Inc.

D.T. Read Steel Co., Inc.

SMI Services of DE., LLC

Sunrise Safety Services, Inc.

Espina Stone Company

Wagman Heavy Civil, Inc.

Ecological Restoration & Management

Manolis Painting, Inc.



STATE HIGHWAY
ADMINISTRATION

Spanning the River & Marshland



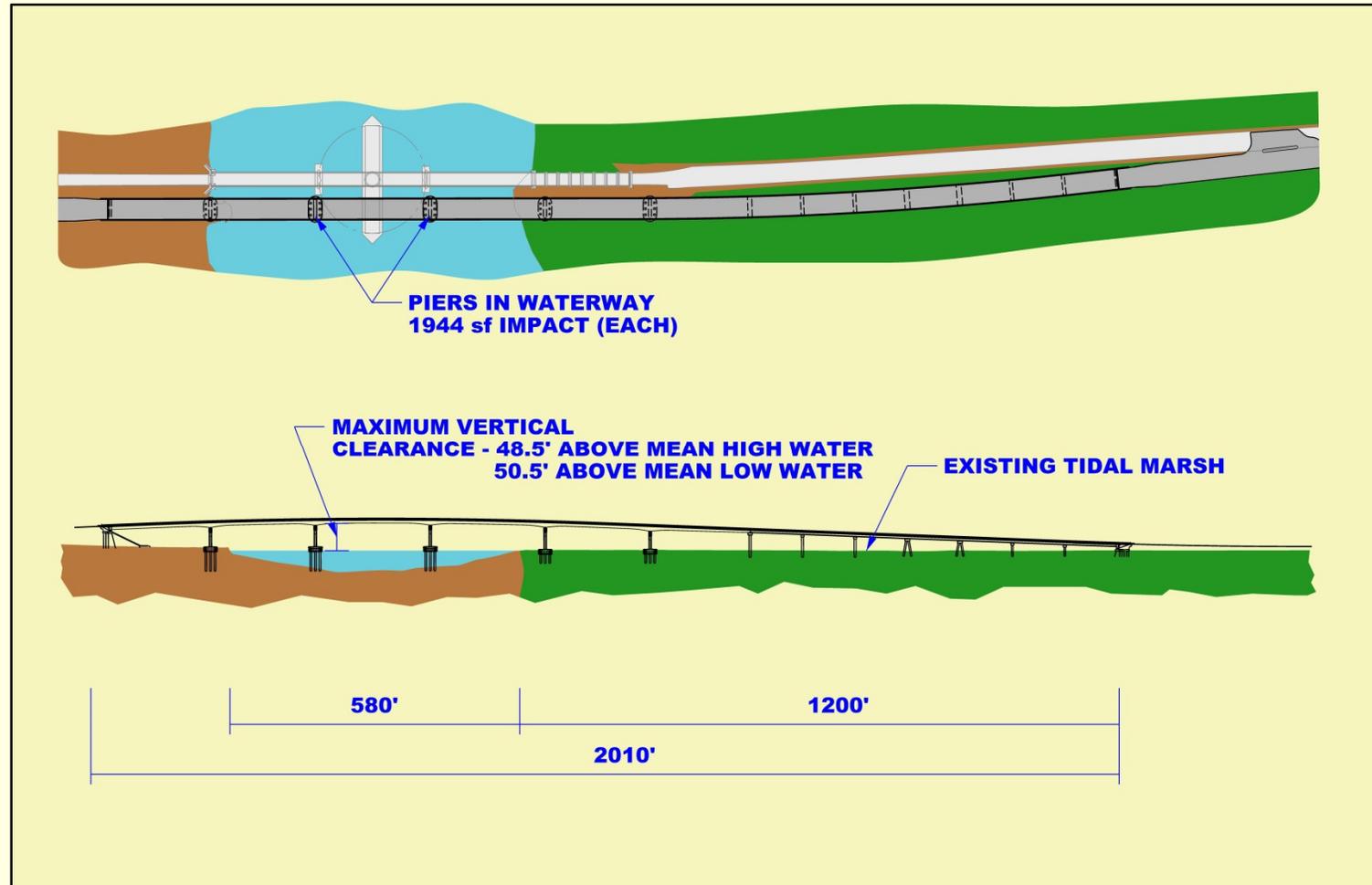
Spanning the River & Marshland

- minimize impacts to the tidal marshland
- stay within project budget
- develop a long term solution that minimize long term maintenance

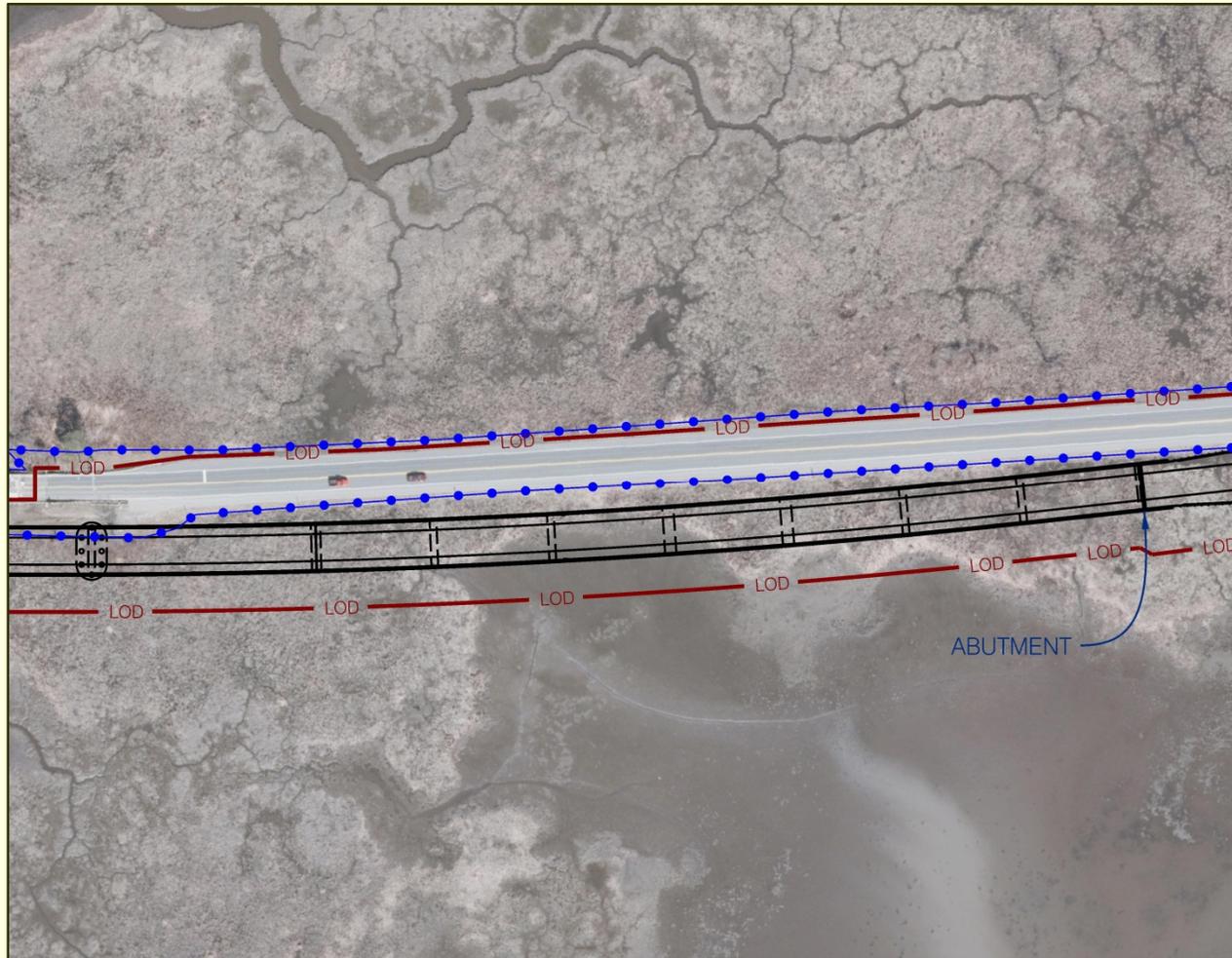
Spanning the River & Marshland



Spanning the River & Marshland



Construction Methods East Approach Bridge



Temporary Trestle

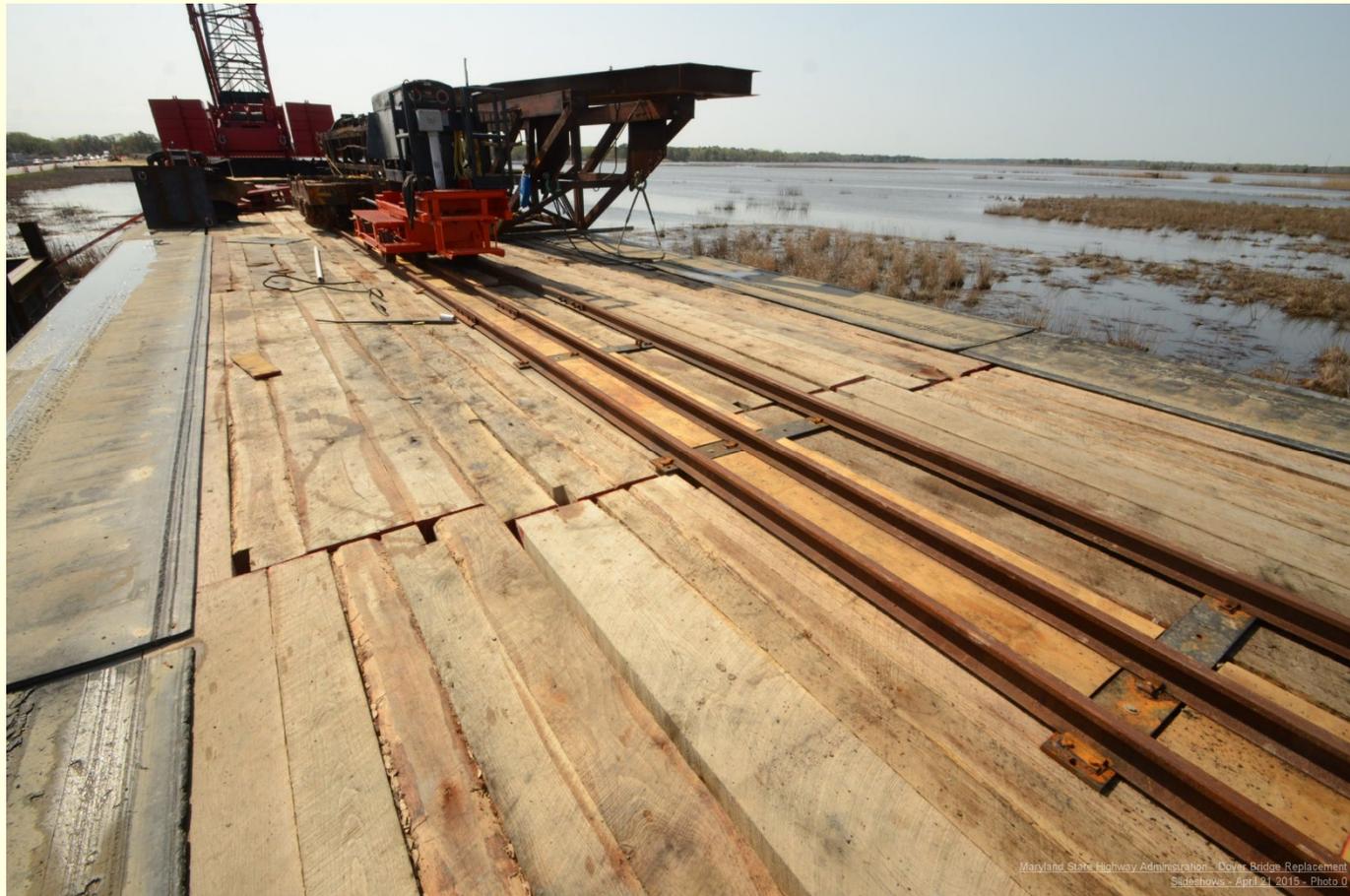


Maryland State Highway Administration - Dover Bridge Replacement
Slideshows - March 31 2015 - Photo 0

Temporary Trestle



Temporary Trestle



Temporary Trestle



Temporary Trestle



Marshland Piers



Marshland Piers

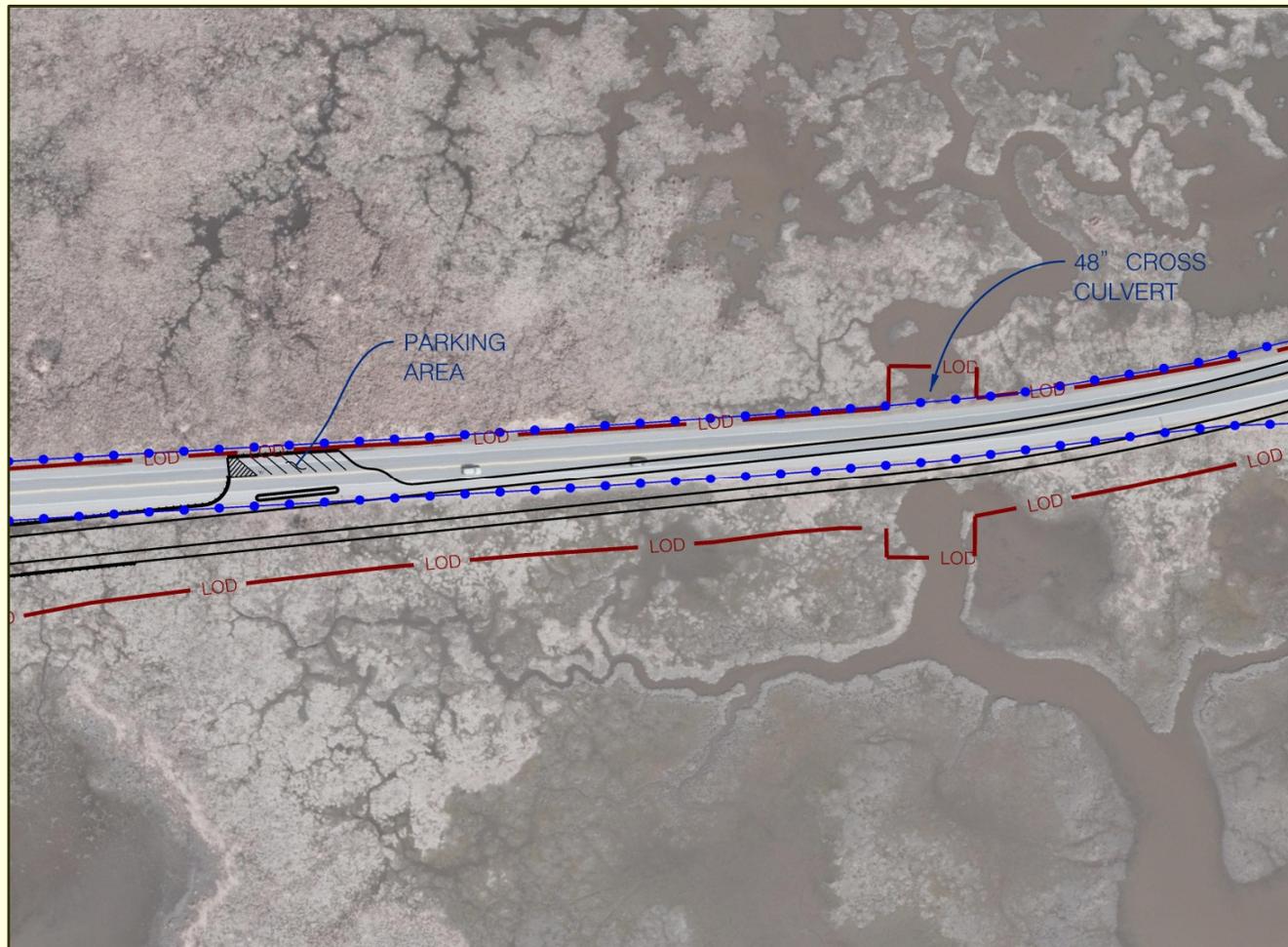


Marshland Piers

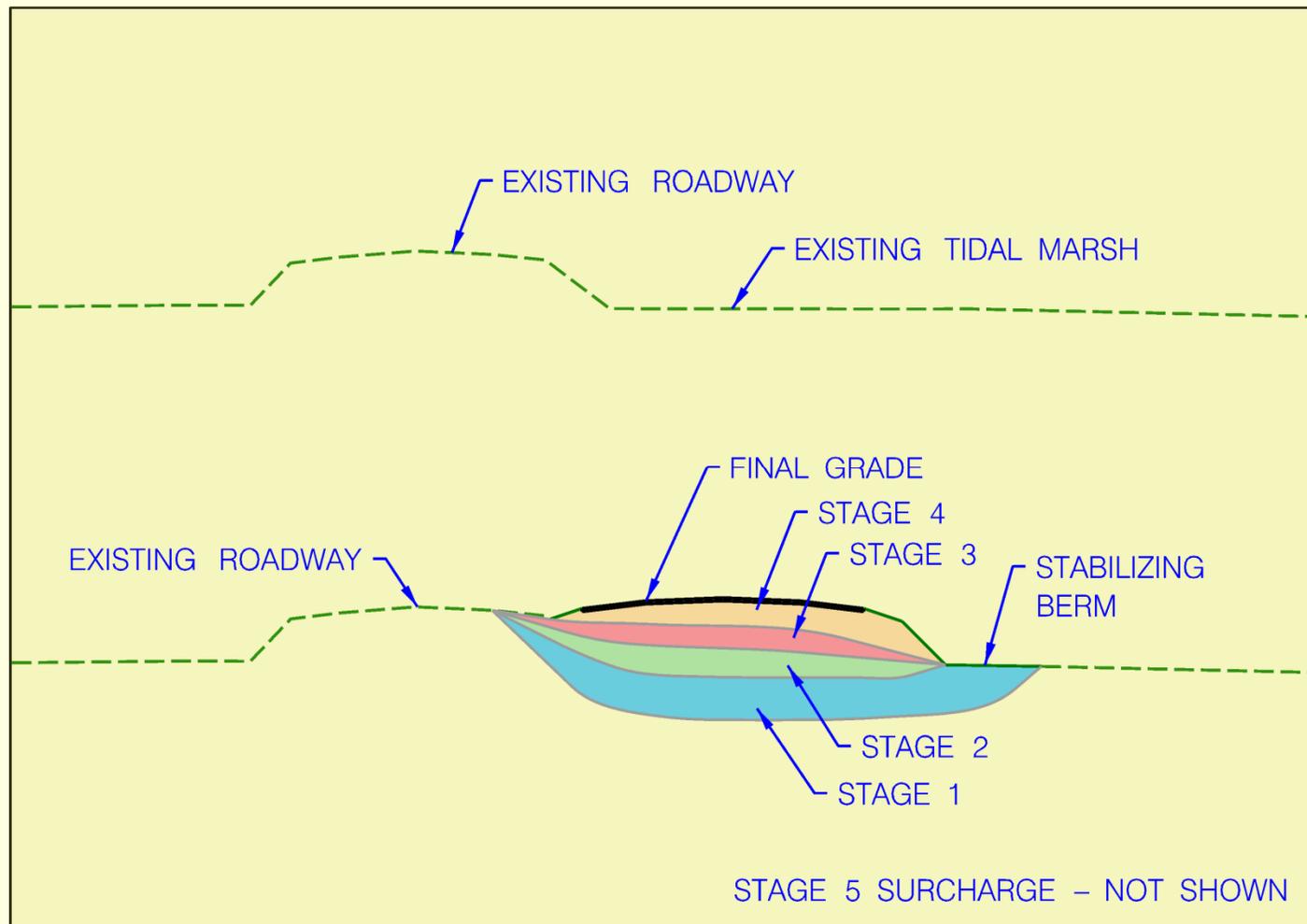


Construction Methods

East Approach Fill



Construction Methods East Approach Fill



Construction Methods

East Approach Fill



Construction Methods

East Approach Fill



Construction Methods

East Approach Fill

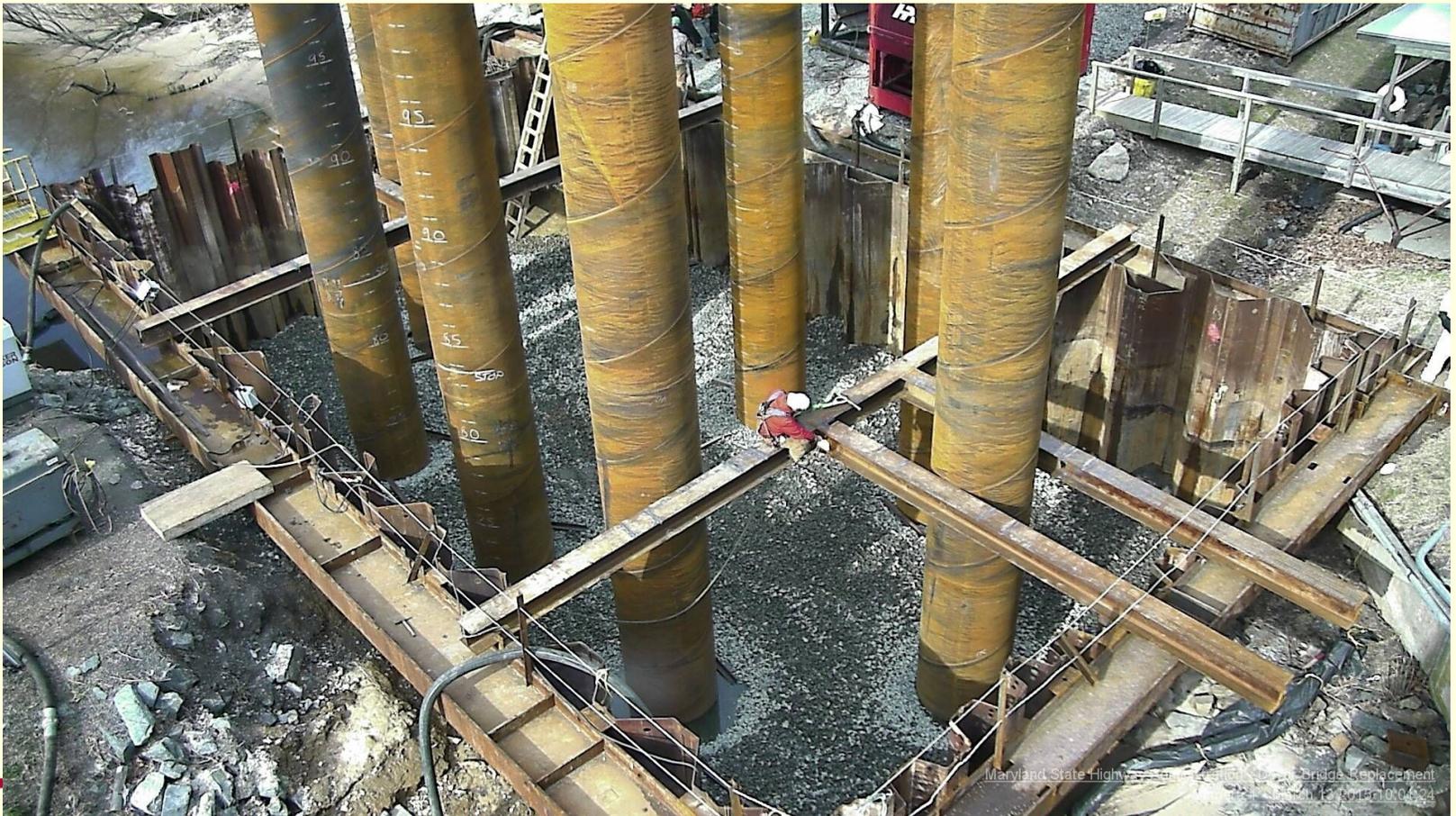


Construction Methods

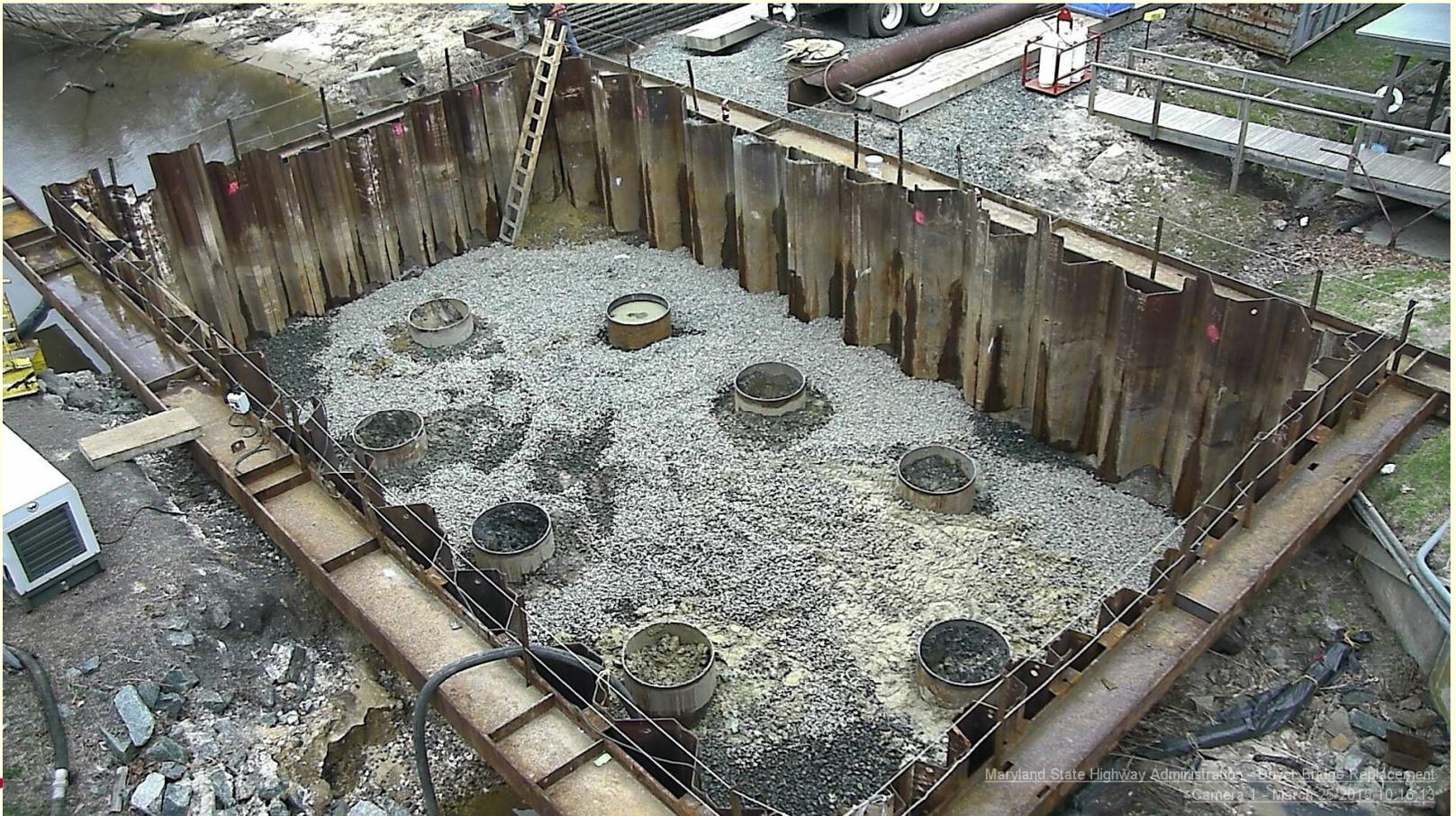
East Approach Fill



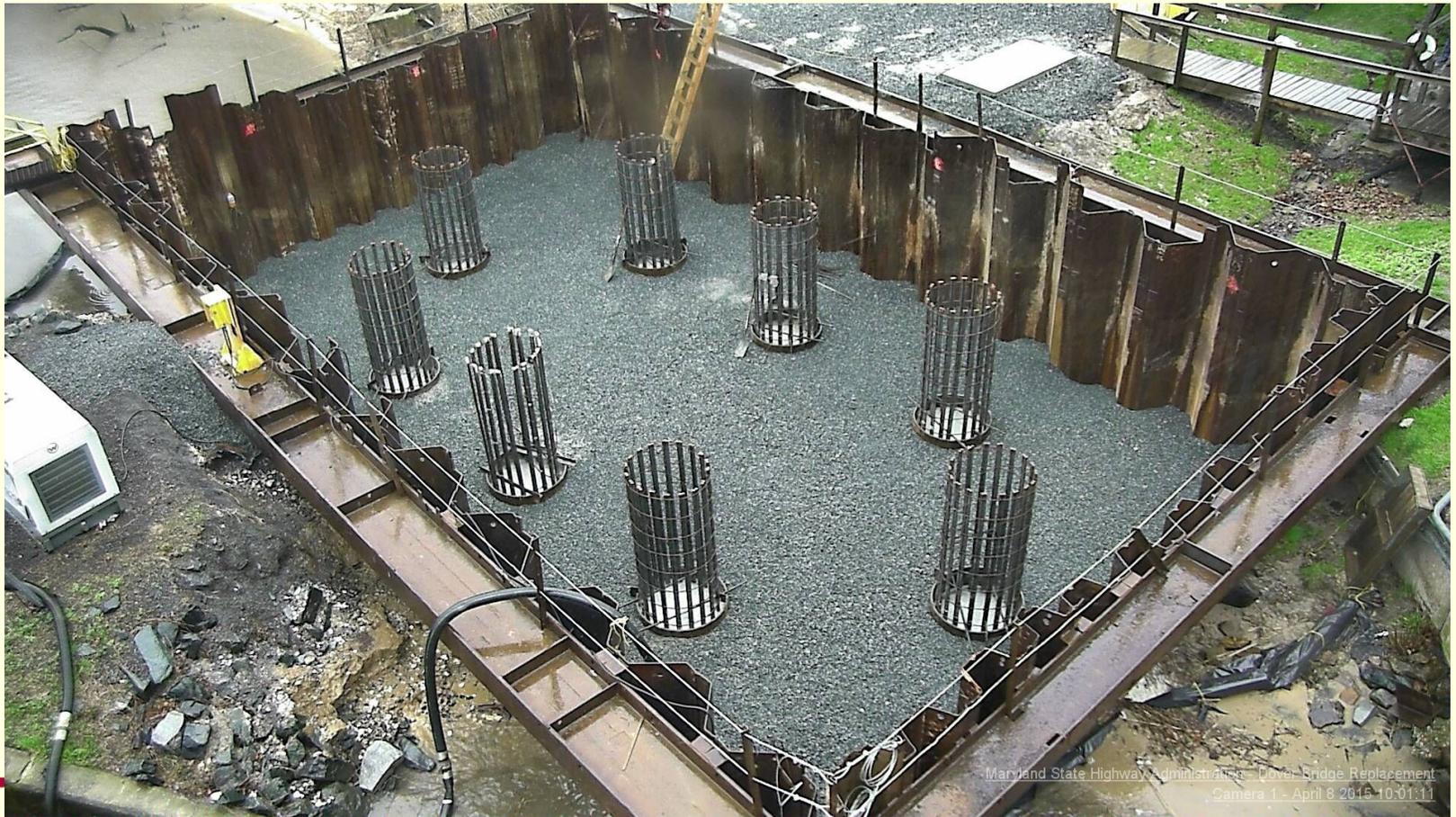
Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing

Mass Concrete

- **Concrete placements with at least a thickness of 6 ft or greater**
- **Contractor was required to submit a mix design for approval as well as a thermal control plan**
 - * **max. allowed temperature differential was 45 degrees F**
 - * **Peak temperature was limited to 160 degrees F**

Construction Methods Piers at River Crossing

Approved Thermal Control Plan

- To limit the temperature difference, insulation blankets was required on the exterior of the formwork and finished surfaces.

- Cooling pipes were installed within the pier cap and during curing water from the river was circulated through the concrete to help reduce internal temperature.

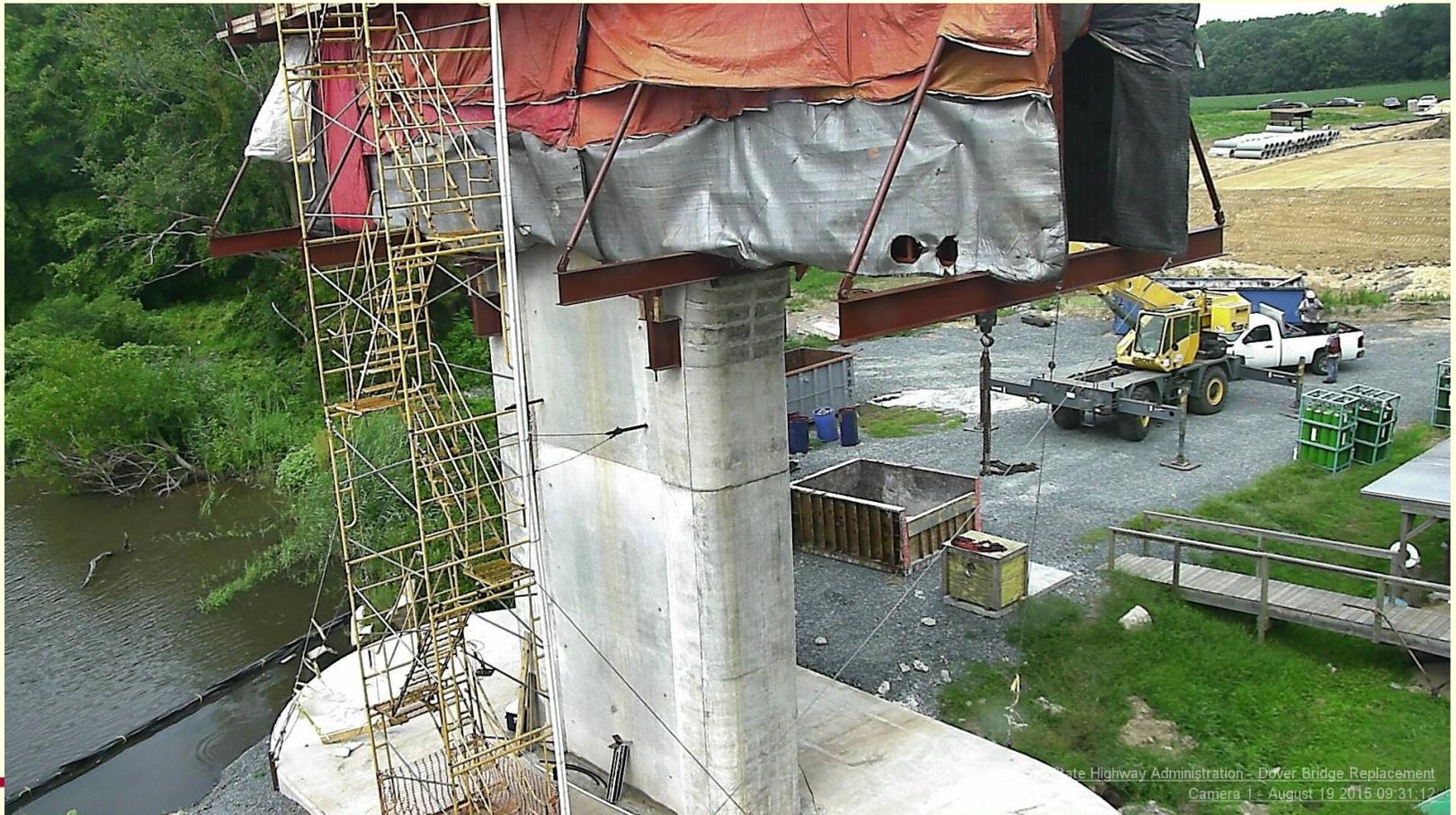
- Thermal sensors were placed within the concrete cap and temperature was continuously monitored.

Construction Methods Piers at River Crossing

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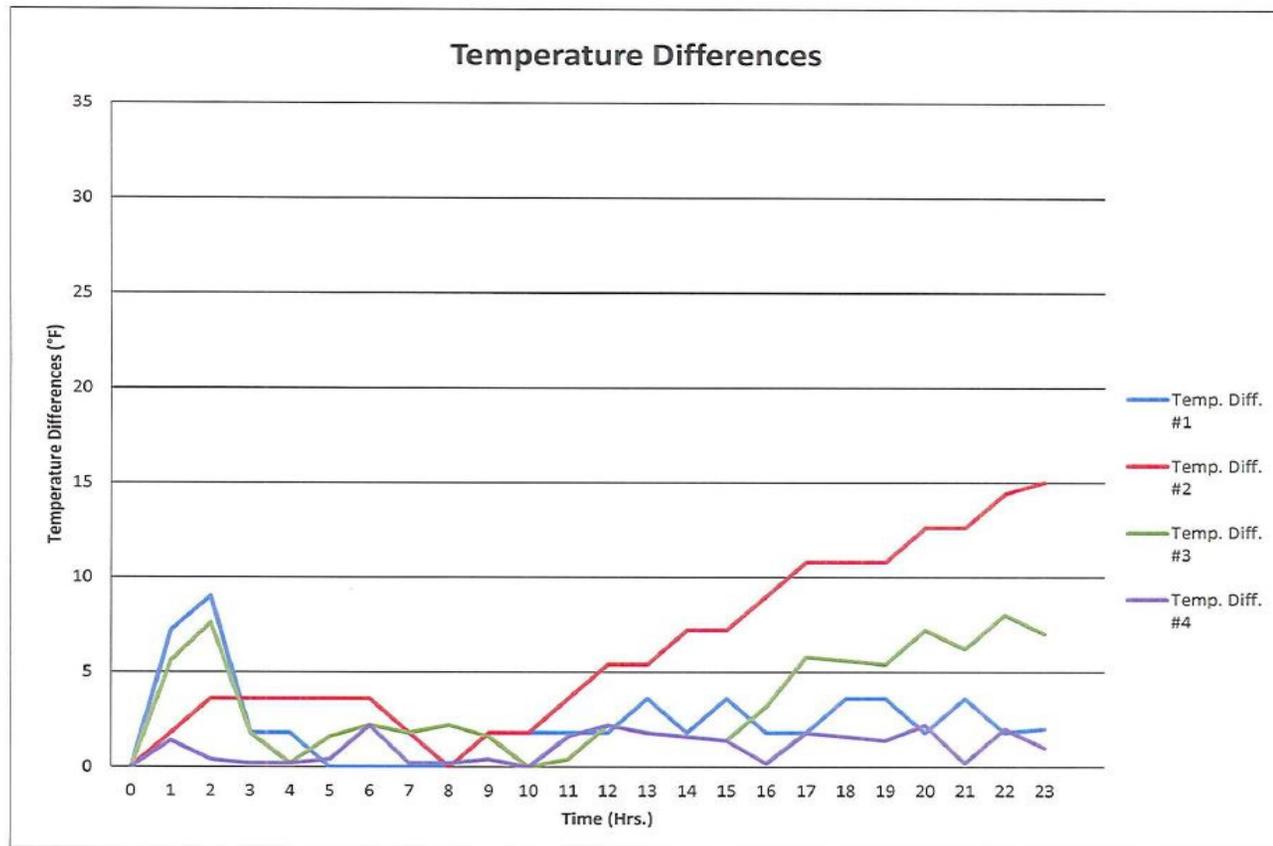
Construction Methods Piers at River Crossing



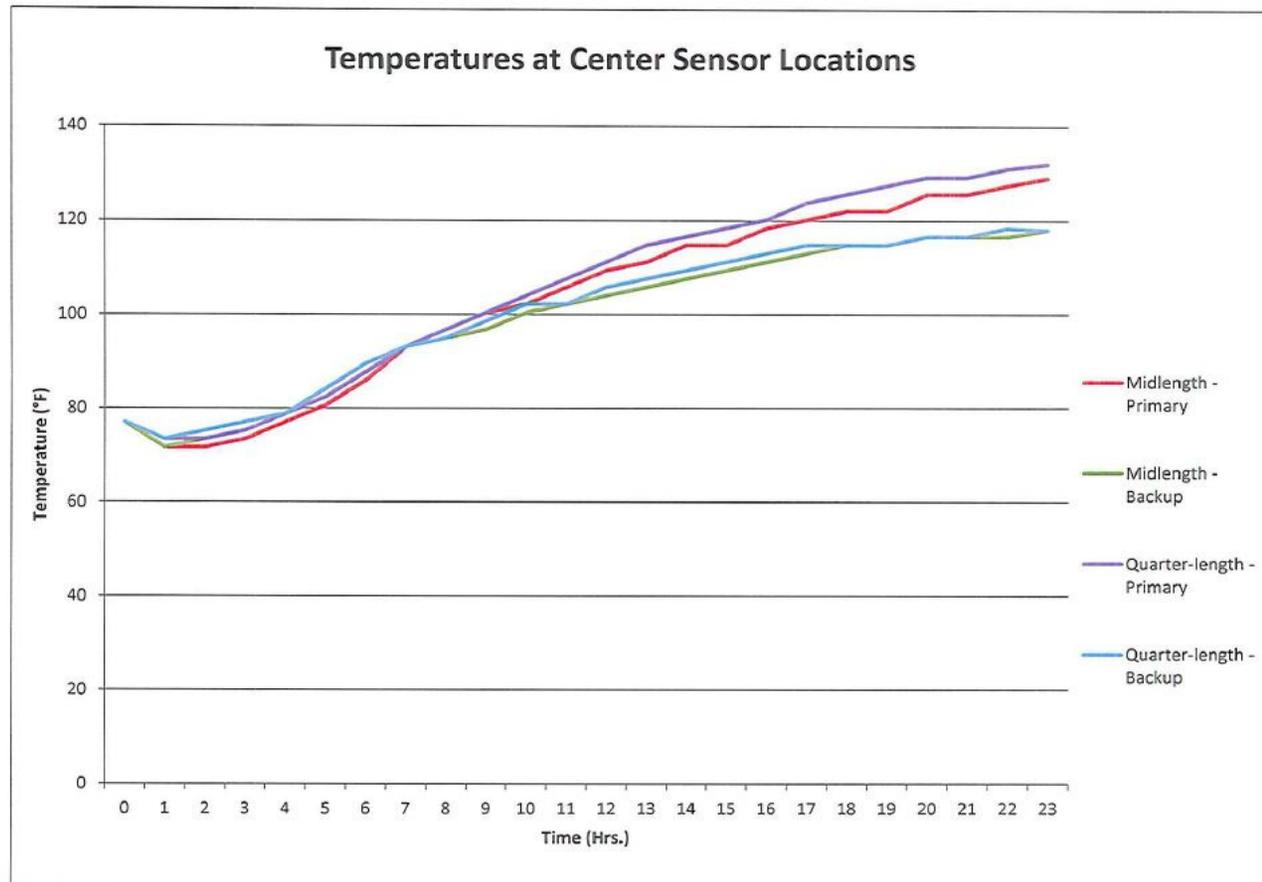
Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing



Construction Methods Piers at River Crossing



Barge arriving to Superstructure



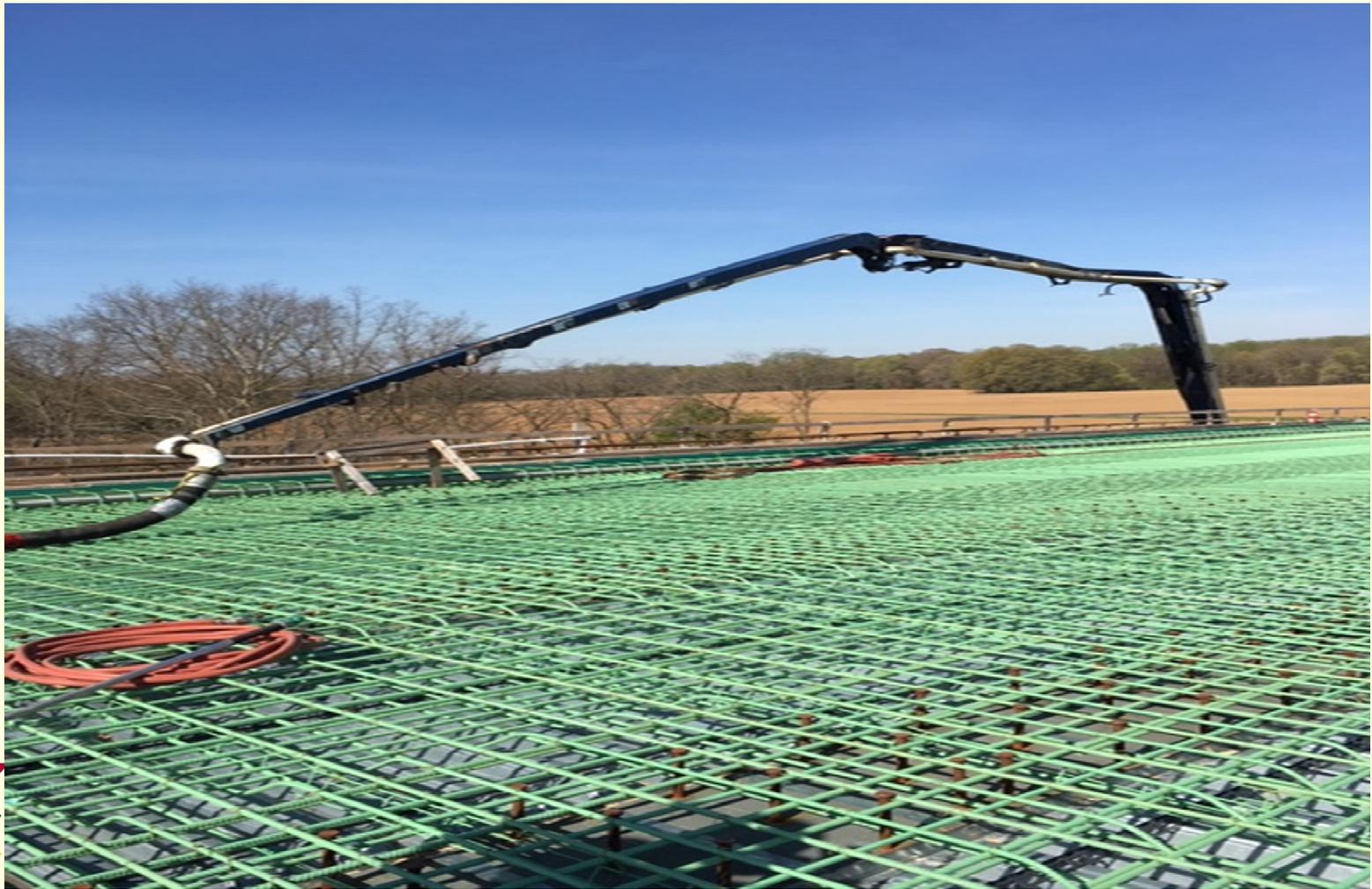
First Column Pour



Panoramic View of Jobsite



Anticipation of First Bridge Deck Pour



First Deck Pour 8-19-16



Tony Adams Concrete Field Technician



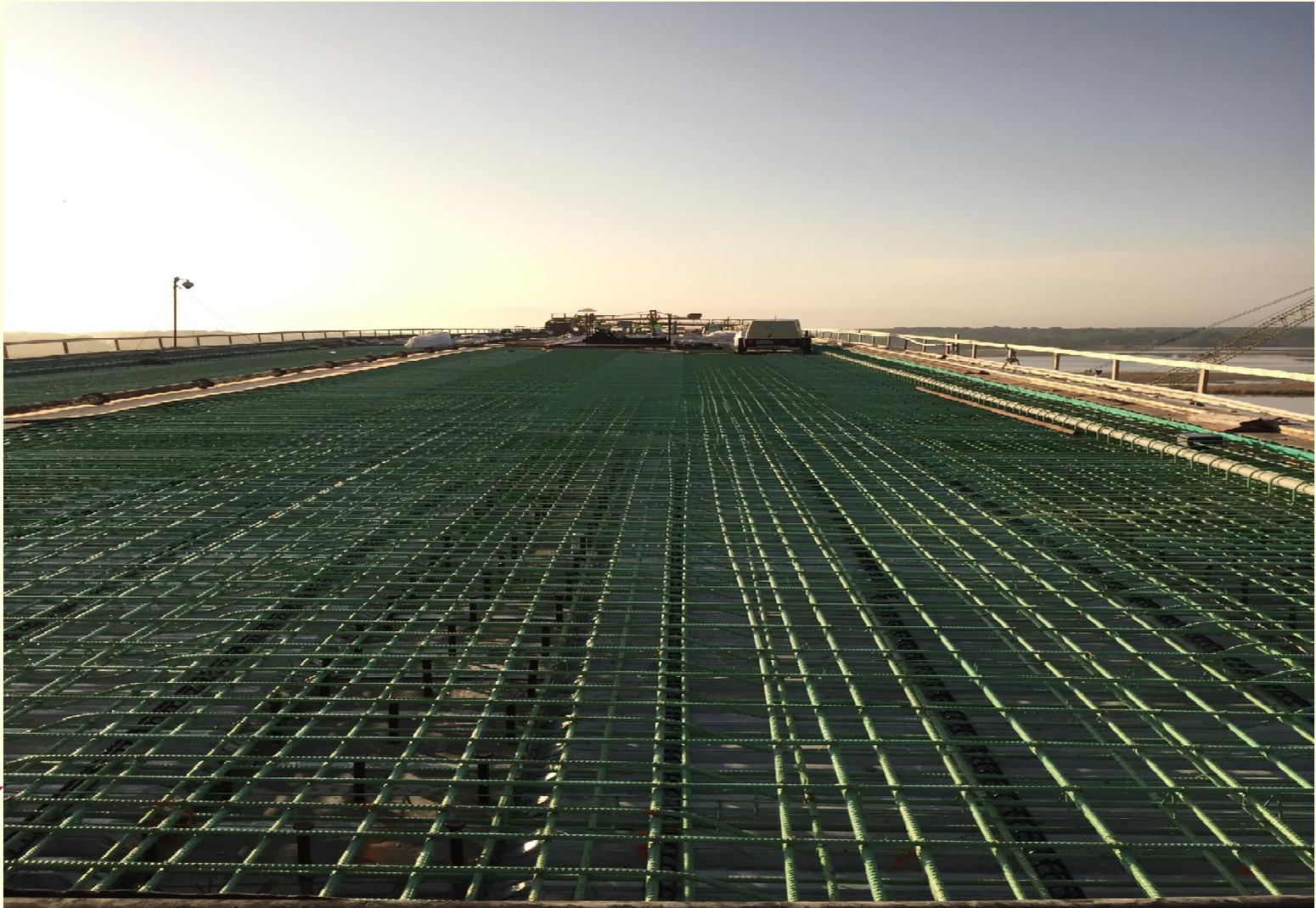
View of Old Span From New Span



Old Span In Open Position To Allow Boat Traffic



Rebar In Place



Curing Process



Spider & Slickline



Close Up of Spider With Weight Disbursement



Bidwell & Operation



Pump Moved Into Place For Final Deck Pour



One of The Final Deck Pours

12-5-2017



Minor Cracking Issues



Deck Grooves For Drainage



2018 Bridge Stencil & Last 4 Concrete Cylinders



Drone View of Old Span vs. New Span



Drone View of New Span and Surrounding Marsh



New Span Completion Before Traffic



View of Extra Wide Shoulder For Safety



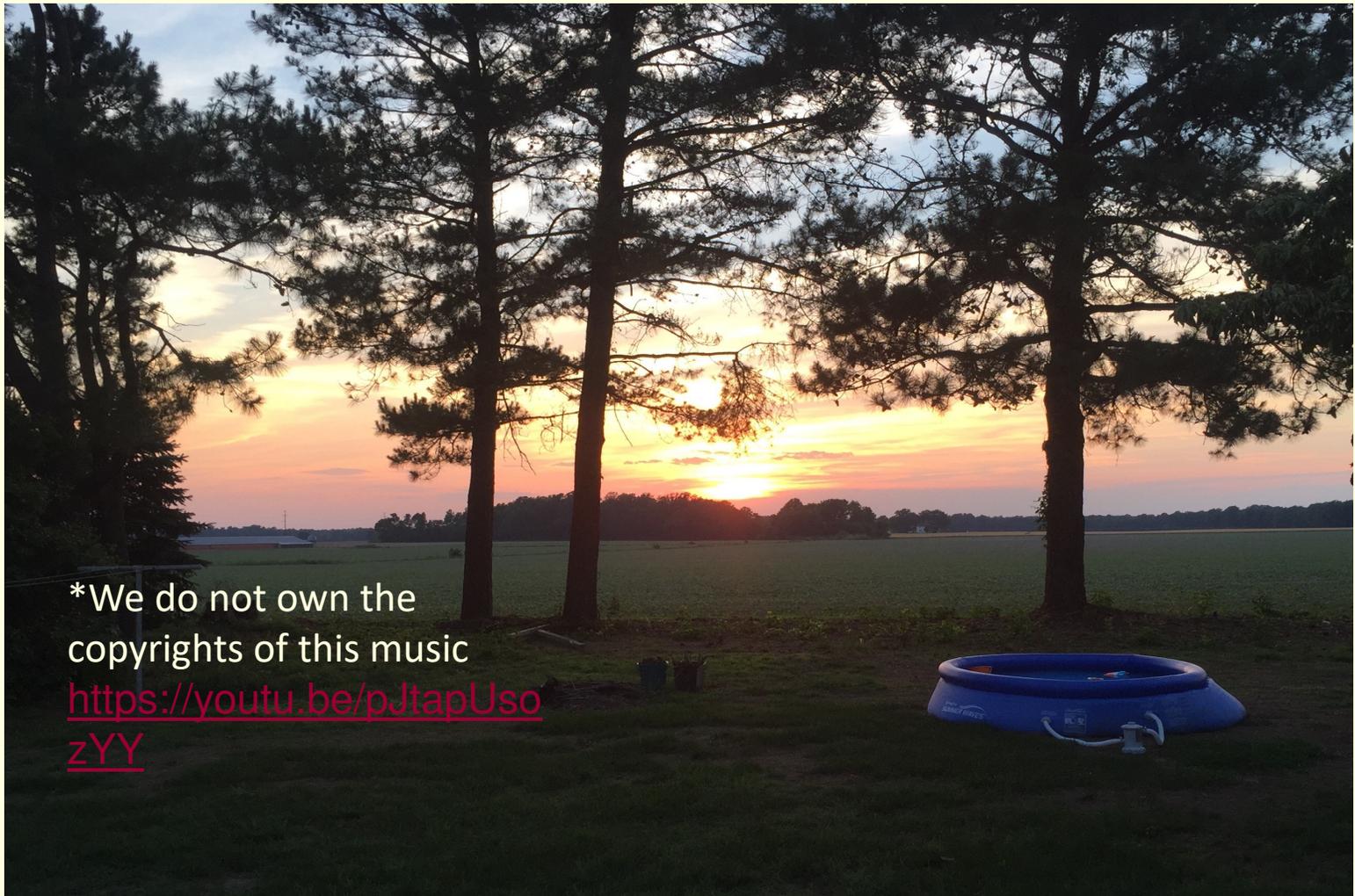
Ribbon Cutting With Governor Larry Hogan, SHA Administrator Greg Slater



Ribbon Cutting 6-13-18



Finally...



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zYY](https://youtu.be/pJtapUsozYY)