

# US 460 CONNECTOR DESIGN/BUILD PROJECT



Presented By: Michael Lawler, PE  
2013 KYTC Partnering Conference



# US 460 Connector Design Build Project Highlight

**1** Project Background

**2** Design Build Team

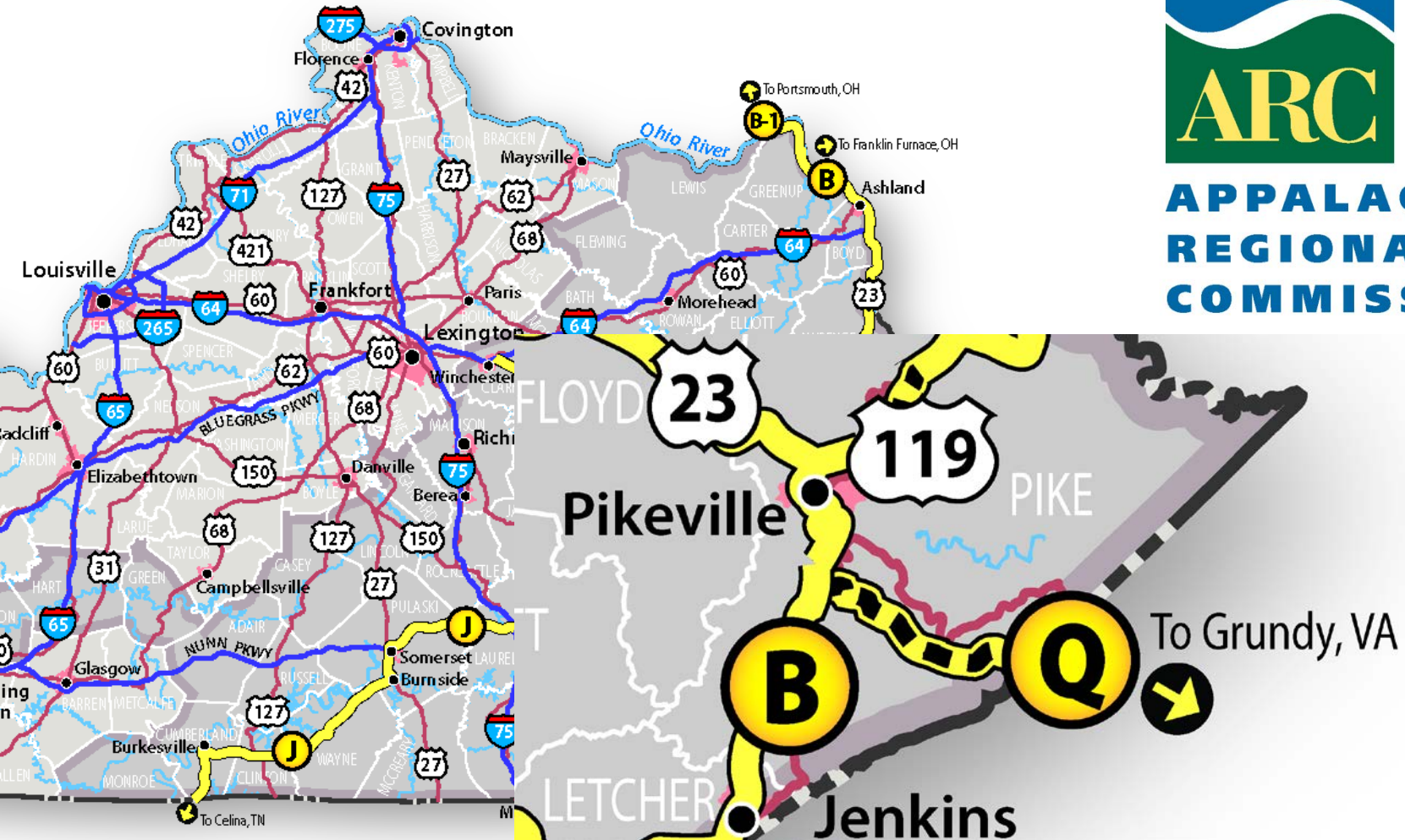
**3** Project Details

**4** Project Innovation

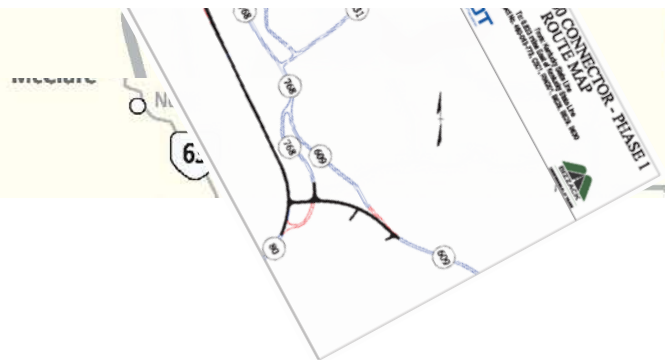
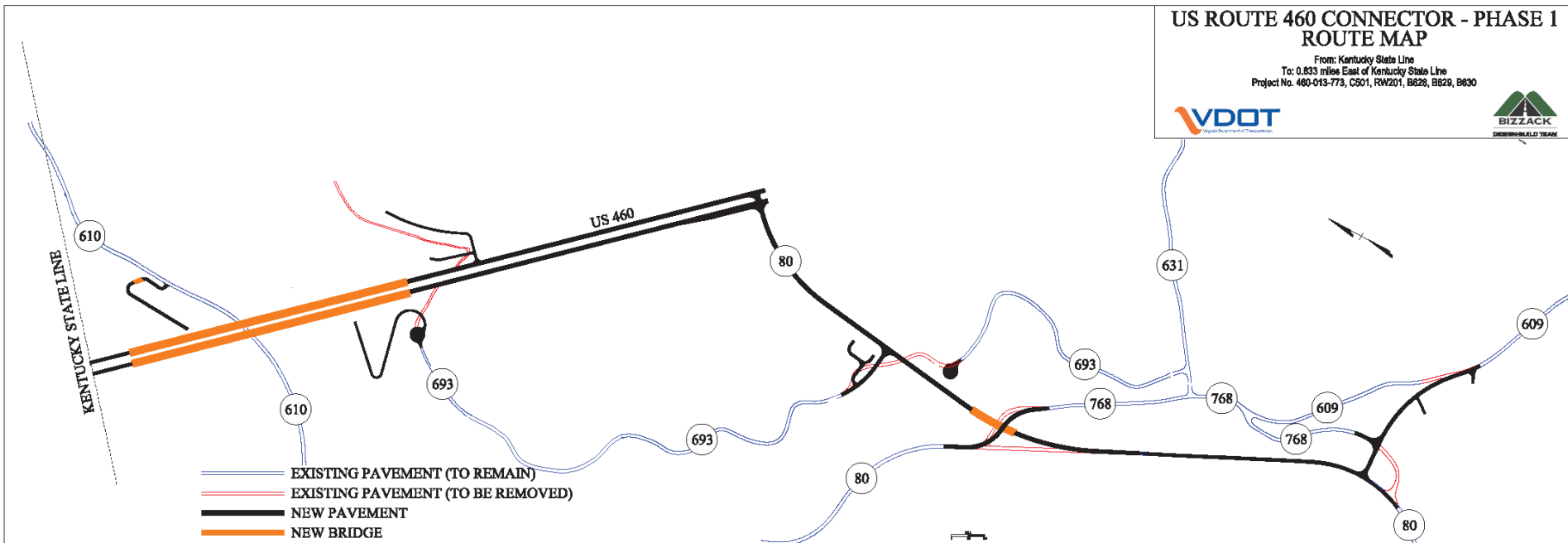
# Project Background



**APPALACHIAN  
REGIONAL  
COMMISSION**



# Project Background



# Project Background

## Timeline

- 1<sup>st</sup> RFP – 5/1/2008
- 1<sup>st</sup> Selection – 7/17/2008
- 2<sup>nd</sup> RFP – 4/24/2009
- 2<sup>nd</sup> Selection – 7/16/2009
- NTP – 8/7/2009
- Completion of Final Design  
5/12/2011 – 6/16/2011
- Start of Construction – 6/8/2011
- Projected Completion Date – 8/29/2014



# Design Build Project Team

## Owner

- Virginia Department of Transportation
- RS&H CS



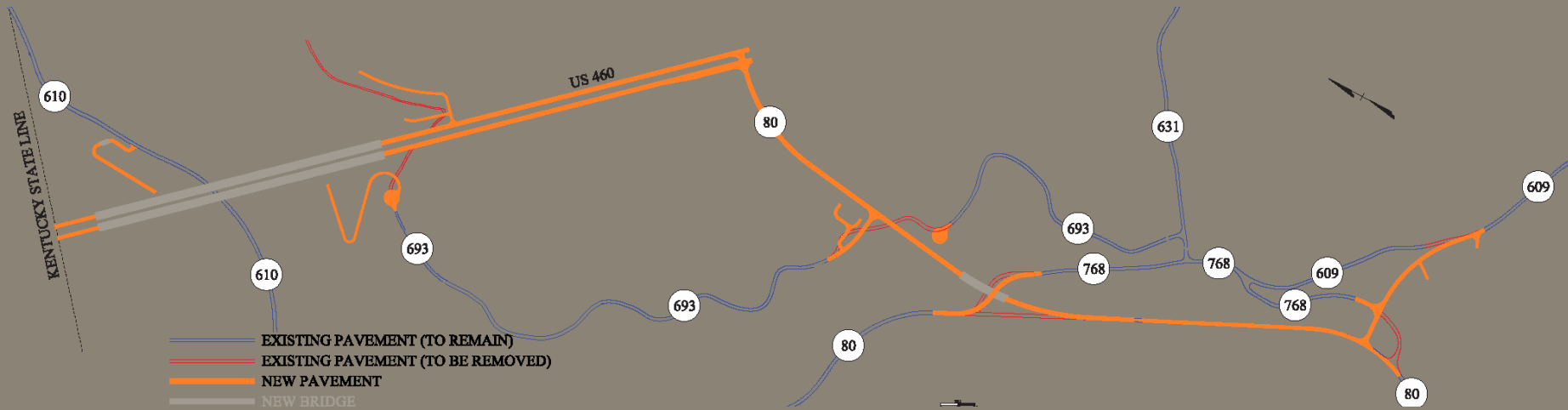
## Design Build Team

- Bizzack Construction LLC
- CJ Mahan Construction Co.
- Stantec
- Janssen Spaans Engineering Inc.
- AMEC Engineering
- AMT Engineering



# Project Details

## Roadway



# Project Details

## US 460 Connector

- 0.8 miles
- 4 lanes
- cuts
  - 70 to 170 ft
- fills up to 50 ft
- turning lane at Route 80 Connector





# Project Details

## Route 80 Connector

- 0.6 miles
- maximum cut  
130 ft
- maximum fill  
30 ft

## Route 609 Connector

- 0.2 miles
- minor cuts  
and fills



# Project Details

## Route 768 Realignment

- 0.3 miles
- at grade with minor cuts and fills



# Project Details

## Storm Water Management Basins

- 3 locations

## Erosion Sediment Control Basins

- 3 locations

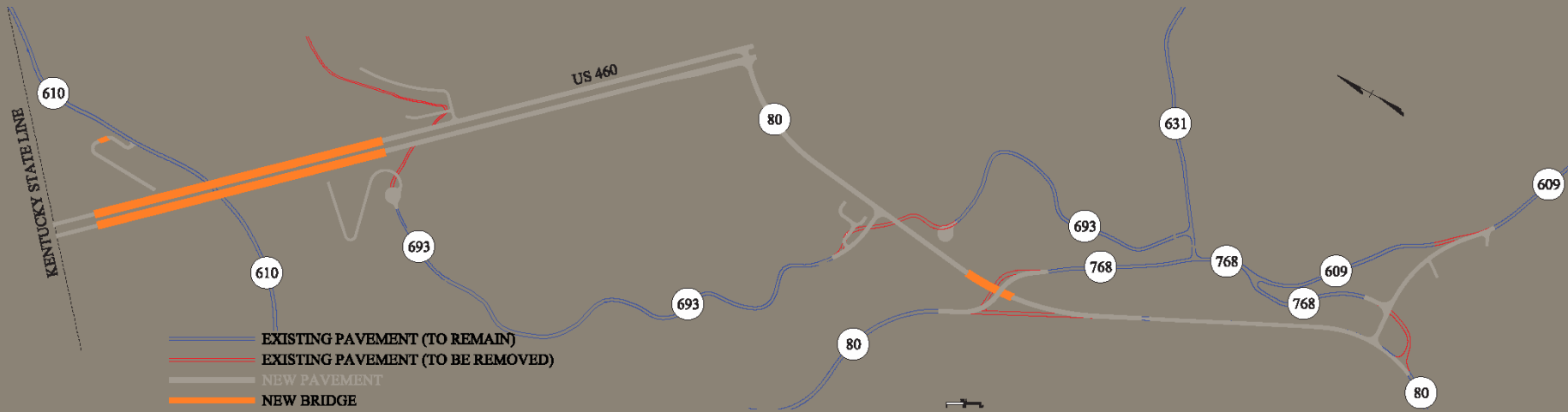
## Surplus Materials Area

- fill depth of 100 ft



# Project Details

## Bridges





# Project Details

## Route 80 over Hunt's Creek and Route 768

- 4' – 6" Drilled Shafts at Piers
- MSE Wall Faced P



# Project Details

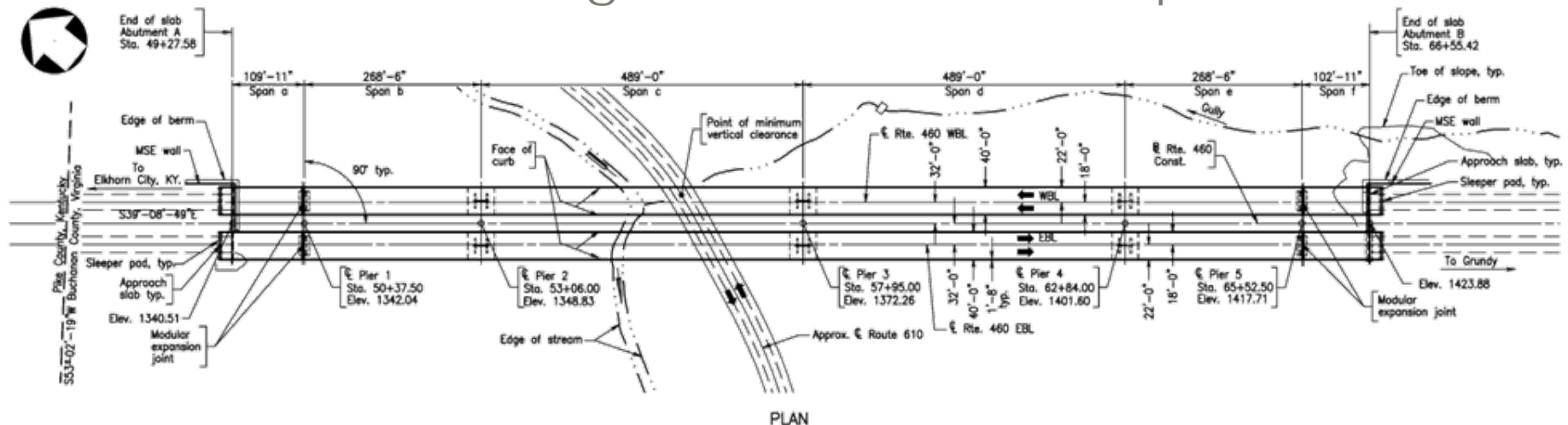
Route 80 over Hunt's Creek and Route 768



# Project Details

## US 460 over Grassy Creek and Route 610

- Twin Structures, 1727'-10" End of Slab to End of Slab
- Spread Footings, Micro-Pile Foundations, Steel Piles & MSE Walls
- Cast-In-Place Segmental Concrete Superstructure

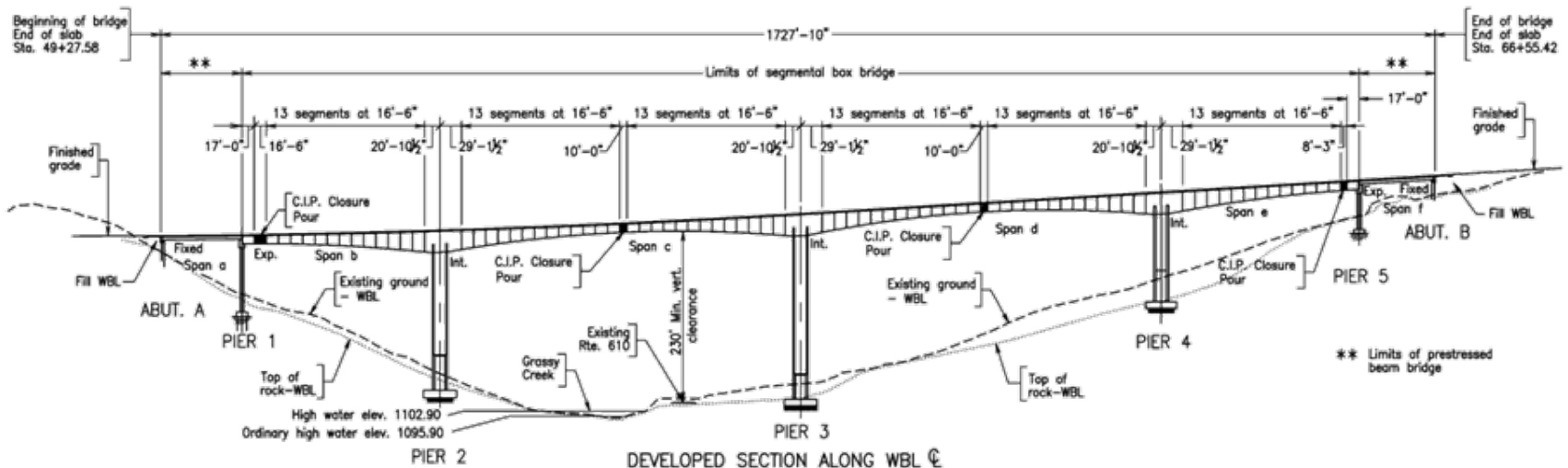




# Project Details

## US 460 over Grassy Creek and Route 610

- Maximum Height over Grassy Creek – 250'
- Width of Each Bridge – 43'
- Each Bridge Carries 2 Lanes of Traffic



# Project Details

## US 460 over Grassy Creek and Route 610



# Project Details

US 460 over Grassy Creek and Route 610



# Project Details

US 460 over Grassy Creek and Route 610



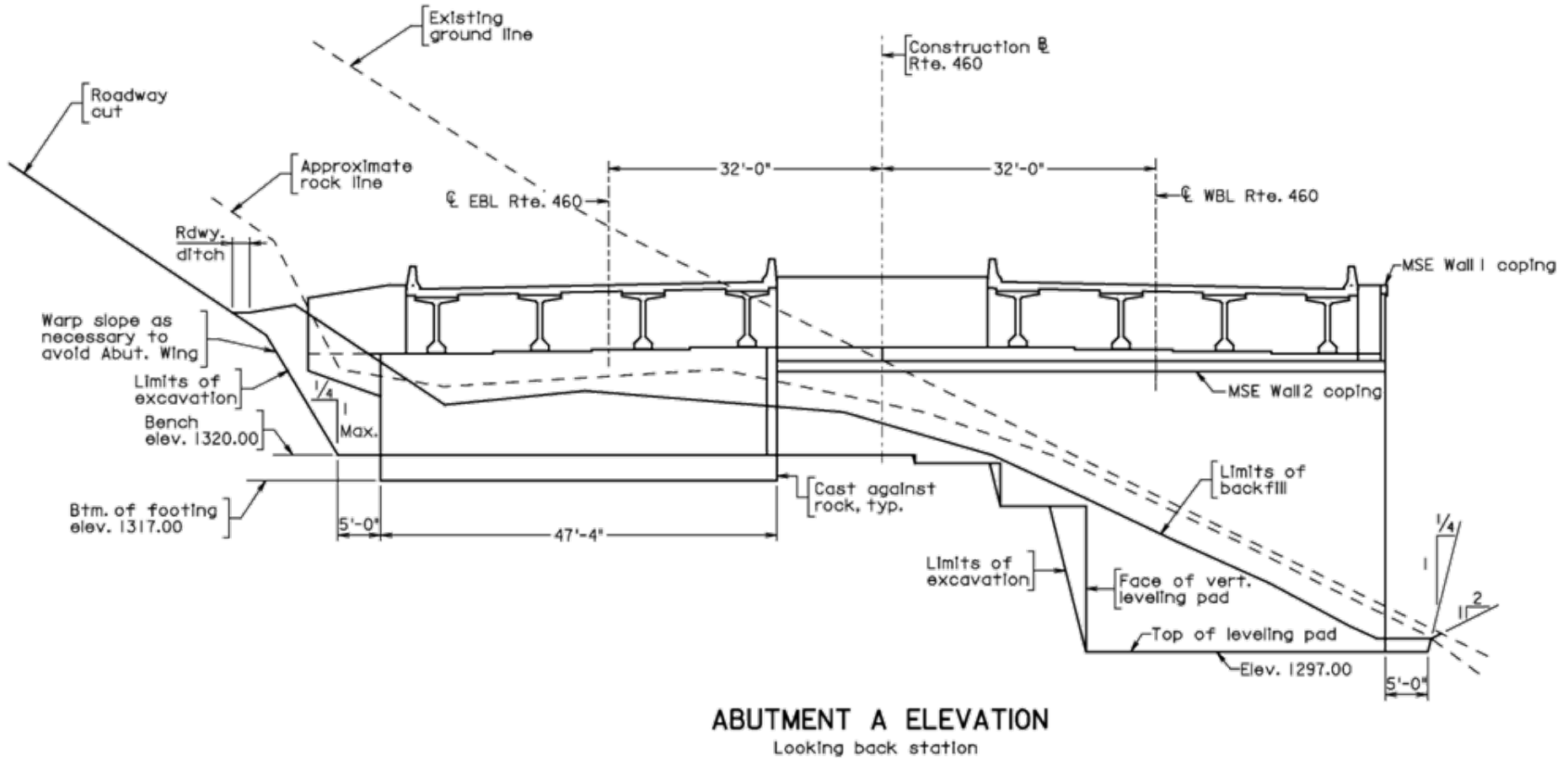
# Project Details

US 460 over Grassy Creek and Route 610



# Project Details

## US 460 over Grassy Creek and Route 610



# Project Details

## US 460 over Grassy Creek and Route 610



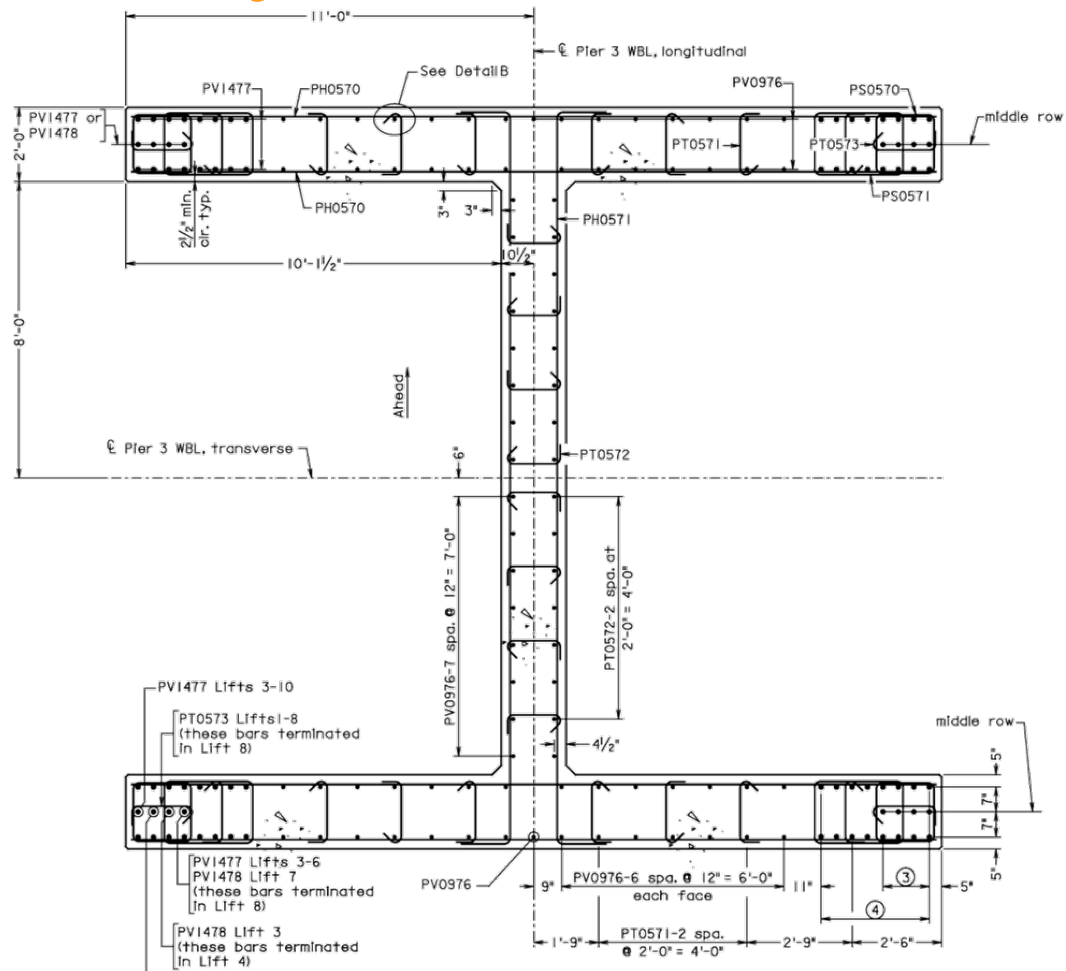
TYPICAL MICROPILE  
ELEVATION  
Looking ahead station





# Project Details

## US 460 over Grassy Creek and Route 610



# Project Details

US 460 over Grassy Creek and Route 610



# Project Details

US 460 over Grassy Creek and Route 610



# Project Details

US 460 over Grassy Creek and Route 610



# Project Details

US 460 over Grassy Creek and Route 610



# Project Details

## US 460 over Grassy Creek and Route 610



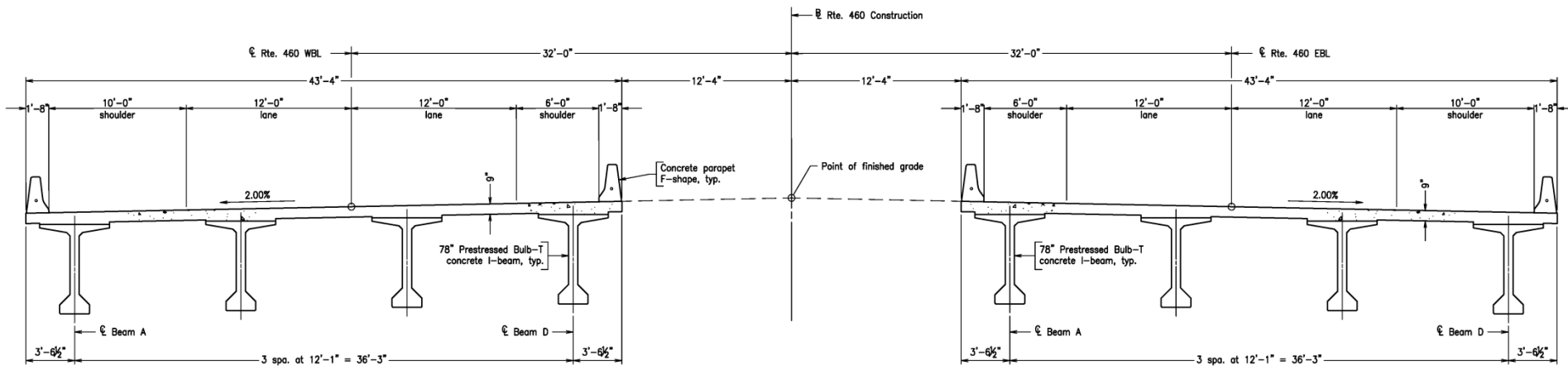
# Project Details

US 460 over Grassy Creek and Route 610



# Project Details

## US 460 over Grassy Creek and Route 610



TRANSVERSE SECTIONS - PRESTRESSED BEAM BRIDGE  
Typical Span a and Span f



# Project Details

## US 460 over Grassy Creek and Route 610



TYPICAL CROSS SECTIONS - SEGMENTAL  
Typical Spans b thru e

# Project Details

US 460 over Grassy Creek and Route 610



# Project Details

US 460 over Grassy Creek and Route 610



# Project Details

US 460 over Grassy Creek and Route 610



# Project Details

## US 460 over Grassy Creek and Route 610



# Project Innovation

## US 460 over Grassy Creek and Route 610

- H Columns  
vs Hollow
- Micropiles
- MSE Walls  
at Abutments
- CRR Steel
- 75 ksi Column Steel  
Reinforcement
- Cast In Place  
Segmental Superstructure

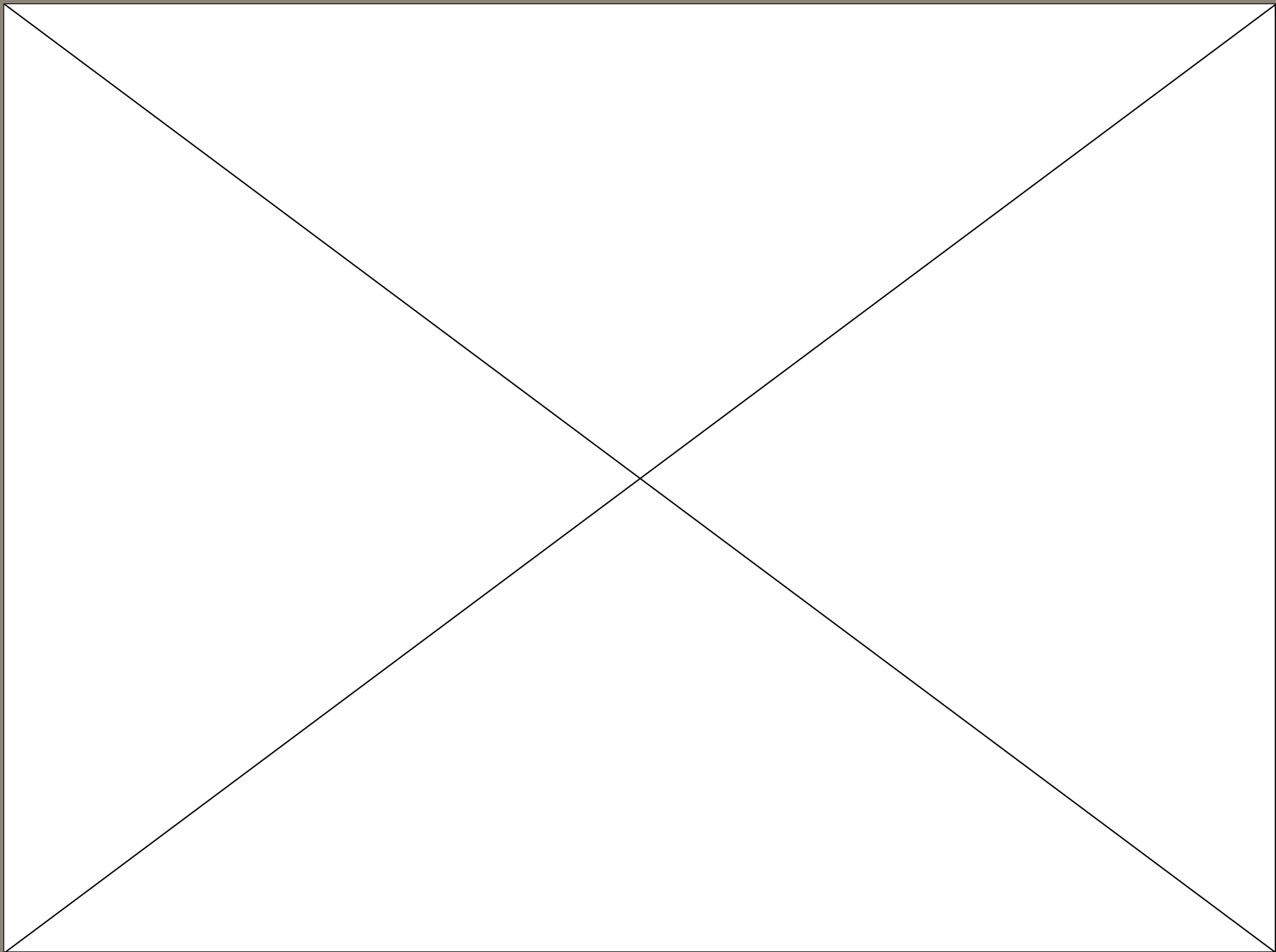


# Project Innovation

## Project Webcam

The screenshot displays the OxBlue Construction Camera interface. The main window shows a live video feed of a bridge under construction in a mountainous area. The interface includes a top navigation bar with the OxBlue logo, the project name 'VDOT US460 Connector Phase I', and camera details 'Cellular Camera - 09-04-13'. Control buttons for 'Time-Lapse', 'Fullscreen', and 'Normal Mode' are visible. On the left, there is a calendar for September 2013, a 'Most Recent' gallery, and an 'Image Zoom' slider set to 100%. The bottom status bar shows a temperature of 77° F and a copyright notice for 2013 OxBlue.

<http://oxblue.com/open/bizzack/vdotus460connector>





# Questions



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2013 KYTC Partnering Conference

