



US Army Hopson Jr. Memorial Bridge

Logan County, West Virginia

Client: West Virginia Department of Transportation – Division of Highways
 Contact: Tim Priddy, (304) 558-3505

Key Personnel:

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 Kunj Doshi, EIT
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 Matt Papesh, EIT
 Eric Gwinn
 Gowtham Yakkaluri

Project Cost:

\$4 Million Construction
 \$450,000 Design

Year Completed:

July 2021 Construction
 July 2020 Design

E.L. Robinson's Role:

Prime Consultant
 Roadway Design

The US Army Hopson Jr. Memorial Bridge Inspection and Rehabilitation Project, known locally as the Hoppy Hopson Bridge, is a dual bridge structure, each consisting of four, prestressed concrete beam spans. The project comprising of two phases includes structure inspection and design study and the preparation of contract rehabilitation plans.

ELR performed the inspection of the superstructure Hoppy Hopson Bridge to identify and prioritize the elements to be considered for inclusion in the design of renovation plans under Phase II of this project. Personnel collected information regarding crack locations and sizes while in the field. Applying the information collected helped develop cost estimates for Phase I. Four alternatives for jacking the US Army Hopson Jr. Memorial Bridge were studied. Developing these alternatives considered the use of pier frames and temporary towers for jacking and the use of a crossover and stage construction for Maintenance of Traffic (MOT).

ELR developed a 3-D finite element model of the existing structure. The analysis concluded that the use of stage construction would overstress the superstructure elements (beams, diaphragms, and deck). The design of the pier bearings, pier diaphragms, and the superstructure's behavior during the jacking operation was investigated using the 3-D models.