

BNSF Railroad Over Mississippi River West Approach Spans Replacement

West Memphis, AR & Memphis, TN



FISHER ARNOLD

**Winner of the American Council of Engineering Companies (ACEC) -Tennessee
Engineering Excellence Grand Award for Large Project Surveying and Mapping Technology and the
Engineering Excellence National Award for Surveying & Mapping Technology**

PROJECT EXPERIENCE

Fisher Arnold was contracted by Kraemer North America to provide construction phase engineering services for the \$49.7m replacement of the West Approach Spans of the BNSF Railroad over the Mississippi River near Memphis, TN. The original bridge was completed in 1892 and was the first bridge built to span the Mississippi River south of St. Louis, MO. The existing bridge was scheduled to remain under train traffic during the construction of the replacement west approach structures.

Fisher Arnold's construction engineering work began with a full pre-construction condition survey of the existing bridge. Following the field condition survey and written report of findings, Fisher Arnold developed and implemented a bridge movement monitoring plan. This monitoring plan involved establishment of project super-control and installation of over 100 target monitoring points on the steel and masonry towers of the existing structure. These points were monitored throughout construction and at multiple times throughout the days when deep foundation construction was ongoing. Fisher Arnold utilized ultra-high-precision robotic total station monitoring equipment in conjunction with software-based data analysis to detect bridge movements within 0.01 ft. Additionally, Fisher Arnold provided all construction survey layout, elevations, and staking for the general contractor.

