



# Christopher S. Bond Bridge Kansas City, Missouri

**DBA Client:** Parsons Transportation Group

**DBA Services:**

- Developed and supervised geotechnical exploration.
- Performed analyses and developed foundation recommendations.
- Developed drilled shaft load test program and reviewed the results.
- Provided QC and QA review for the geotechnical work on the other bridges and retaining walls on the remainder of the project corridor.
- Performed observation of drilled shaft construction for contractor joint-venture.

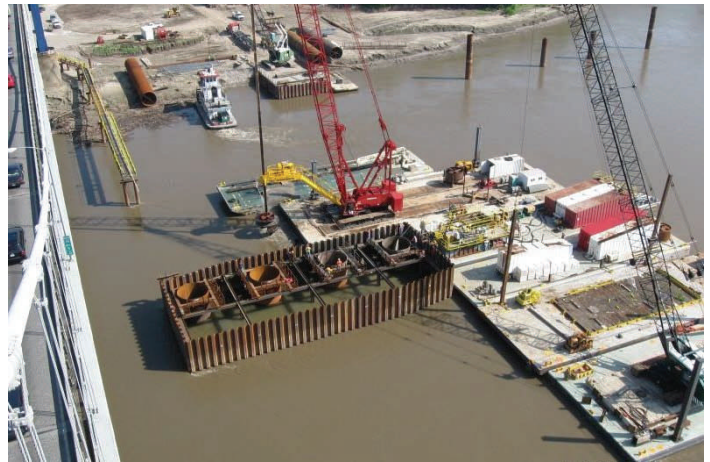
**Project Highlights:**

The kcICON project in Kansas City, Missouri was a \$245 million project to improve and upgrade about four miles of the I-29/35 Corridor through Kansas City. The project featured a landmark cable-stay Missouri River bridge and upgraded Interstate 29/35 to six lanes (expandable to eight lanes) from north of the Route 210/Armour Road interchange to Independence Ave. The centerpiece cable-stayed bridge across the Missouri River is approximately 1700 feet long, with the two cable-stayed spans supported by a single pylon.

Eight drilled shafts support the main pylon with rock sockets 10.5 feet in diameter drilled into the Pleasanton shale. The land-based bents are supported with drilled shafts bearing on rock (in what MoDOT called a "seating socket") ranging from 6.5 to 8 feet in diameter. Tip grouting was utilized to enhance the bearing resistance of the shafts at Bent 5 on the north side of the river. Steel H-piles were used to support the end bents (abutments).

A sacrificial test shaft was installed and tested in the center of the pylon using the O-Cell test device. The test results allowed an ultimate unit side shear resistance of 16 ksf and an ultimate unit end bearing resistance of 165 ksf to be used for rock socket design.

*Photo Credits: Missouri Department of Transportation*



**Owner:** Missouri DOT

**Designer:** Parsons Transportation Group

**PARSONS**

**Contractor Joint Venture:**

Massman Construction Company



Clarkson Construction Company

Kiewit Construction

