

Diamond in the Sky — First of Two Ironton-Russell Bridge Towers Nearing Completion

The first of two 316-foot diamond-shaped towers to support the new Ironton-Russell Bridge over the Ohio River is nearing completion. The towers are founded on large diameter drilled shafts with rock sockets. When complete, the 900-ft (275m) main span will be the longest span the Ohio Department of Transportation has built.

A major crossing of the Ohio River between the towns of Ironton, OH, and Russell, KY, the 2,616-ft-long (275m) replacement bridge will be a cast-in-place concrete, cable-stayed crossing with structural steel approaches. The main span will have two side-approaches measuring approximately 370-ft (113 m) each.

The new structure will provide two 12-ft driving lanes and two 4-ft shoulders. Span lengths for the approaches vary widely as they cross six different rail lines, the Ohio River levee and various city streets.

The entire structure is cast-in-place with 22,500 cy of reinforced (5.8 million lbs. of rebar) concrete, utilizing the cable stays to construct the bridge by the balanced cantilever methodology. Two anchor piers will be located on the river's edge. This is the first known use in the USA of precast stay anchor blocks and the casting of the back spans in place using specially designed falsework. The unique approach to develop this alternative construction sequence ultimately saved ODOT \$15.2 million over the next closest bidder on the project.

The new bridge is replacing the now outdated original Ironton-Russell Bridge that opened in 1922 as the first highway bridge along the Ohio River between Parkersburg and Cincinnati. The original bridge will be removed once the new bridge is open to traffic.

Owner: Ohio Department of Transportation

Designer: **URS Corporation**

Contractor: **Brayman Construction Corporation**

Construction Engineering Services: **FINLEY Engineering Group, Inc.**

Precast Producer: Car Concrete/**Brayman Precast, LLC**

Form Travelers for Cast-in-Place Segments: **VSL**

Post-Tensioning Materials: **VSL**

Stay Cable Materials: **VSL**

Bearings: **D.S. Brown Company**

Expansion Joints: **Watson Bowman Acme**



*Deck Pans on the
Kentucky Backspan.
(Photo Courtesy of Brayman
Construction Corporation)*





*View from the Kentucky Backspan Deck Facing Upstation.
(Photo Courtesy of Brayman Construction Corporation)*



*View from the Ohio Riverbank Facing Down Station.
(Photo Courtesy of Brayman Construction Corporation)*



View of the Kentucky Backspan from River. (Photo Courtesy of Brayman Construction Corporation)