

June 12, 2018

Everybody Push!

Kankakee is a small city in the flat, prairie farming country of north-eastern Illinois. About two miles southwest of the city, IL 115 crosses a small, unassuming stream on a small, unassuming bridge. But each day almost 3,000 school buses, farm vehicles and miscellaneous traffic into Kankakee rely on the bridge to support critical local activities.

As with many of the nation's bridges, the original structure was past its 'best before' date and a routine inspection revealed the deck and superstructure to be in critical condition. The bridge had to be replaced.

A normal bridge replacement involves closing the road, demolishing the bridge and constructing a new one in its place. But the road closure in this case would have lasted several months and required a lengthy 30-mile detour or significant work and expense to upgrade the roads for a shorter local detour route. So, an alternative approach was desired.

The Illinois DOT chose Accelerated Bridge Construction for this project to see if the technique could reduce construction time and be successfully carried out by a contractor of modest means with average skill and staffing. The ABC technique chosen involves constructing the new bridge immediately adjacent and parallel to the old one. Once the new structure is complete, the old one is quickly demolished and the new one slid sideways into place. Instead of the road being closed for months, the shutdown can be completed over a few days.



Aerial Image of Superstructure Constructed on Temporary Bents

Of course, sliding a concrete bridge made of hundreds of tons of concrete and steel is a little more complicated than sliding a chair across a room. The contractor for the project retained WHKS to design temporary support bents and guideway system as well as detailed a jacking procedure to swap out the temporary rollers for the permanent load bearing structures. A specialty subcontractor, using hydraulic jacks and rollers ensured the lateral movement was accurate and controlled and inflicted no damage to the new structure.



Precast abutment cap being installed

With the new structure ready, the contractors, assisted in real time by WHKS engineers, worked round-the-clock over a 72-hour period to demolish the old bridge, slide the new structure into place and prepare the approaches and roadway for traffic.



Lateral slide in progress

With carefully coordinated teamwork the contractor, the WHKS engineers and IDOT came away with a number of lessons learned to apply on the next project. But they conclusively proved that the Accelerated Bridge Construction technique works.



Completed structure

[Click here to view a video time lapse of the project.](#)

