May 2, 2017

It's not just what you do. It's how you do it.

Cedar Street Bridge

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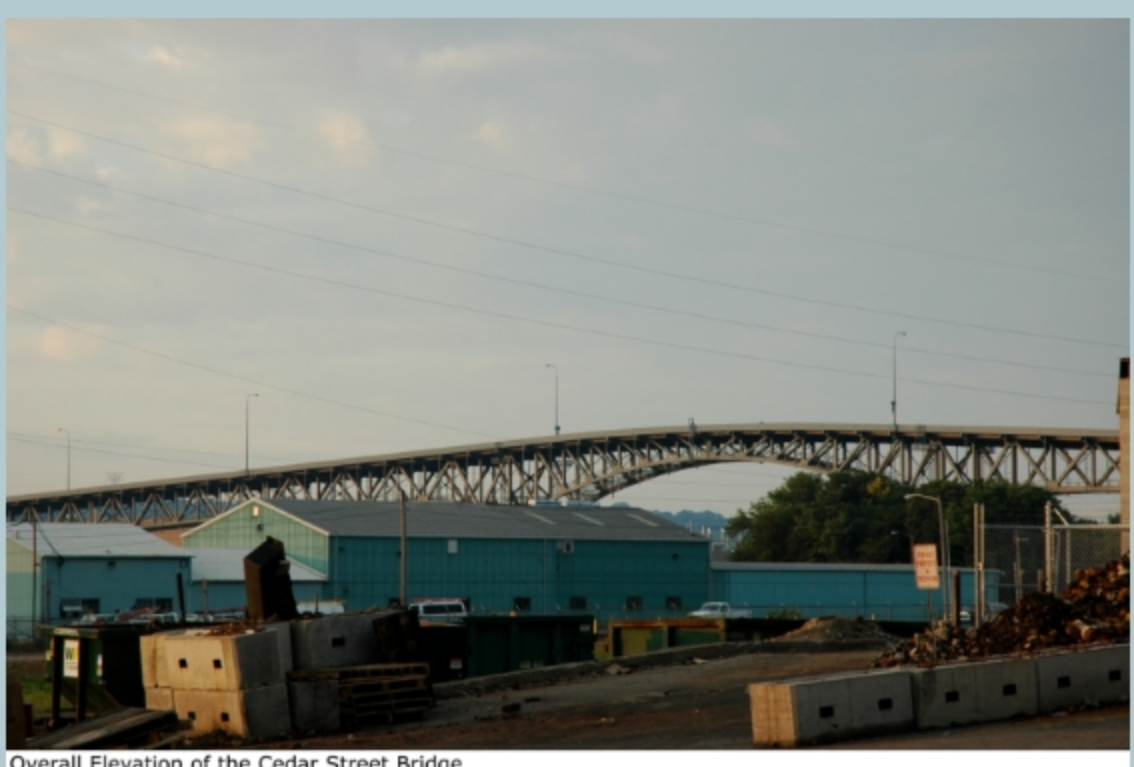
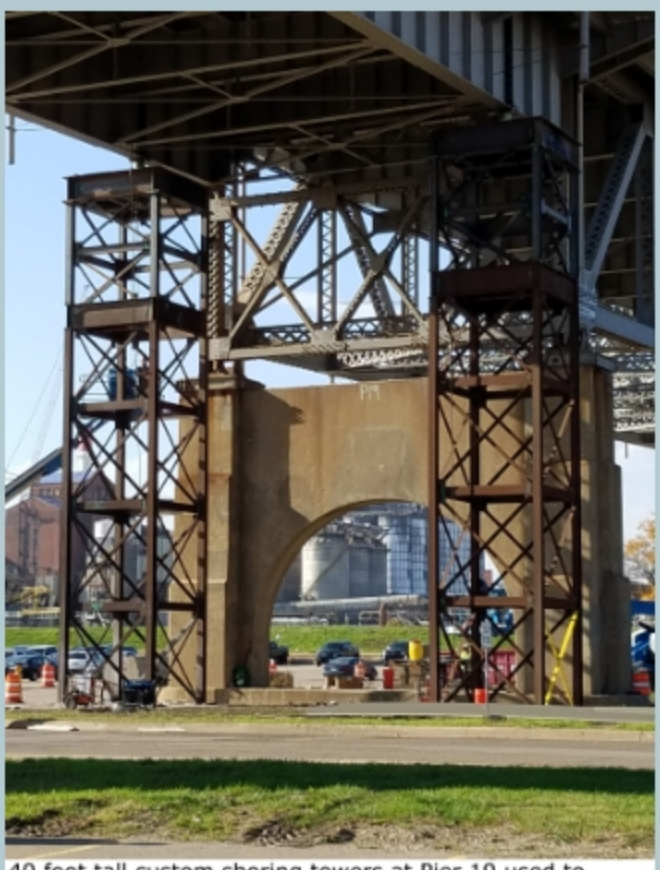


Overall Elevation of the Cedar Street Bridge

The need for repairs on the 80-year-old Cedar Street Bridge over the Illinois River in Peoria, IL was unquestioned and the designs were complete. But repair work on an old bridge exerts stresses and loads that the structure isn't designed to carry in everyday use. The effect of parking a 15-ton carry deck on the bridge in order to lift new structural steel into place must be taken into consideration.

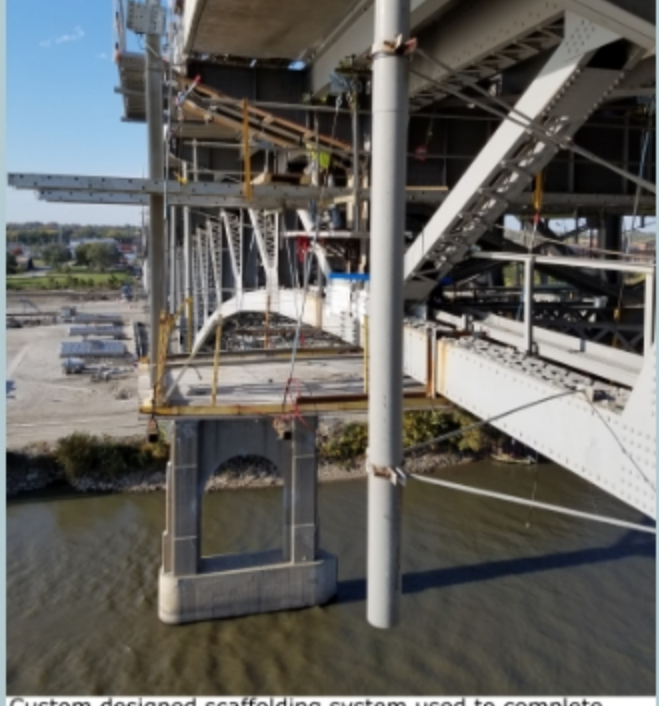


40 foot tall custom shoring towers at Pier 19 used to complete the end frame replacement

Halverson Construction asked WHKS to conduct a Structural Assessment Report to ensure that their means and methods used during the repairs wouldn't be too much for the bridge to handle. Rather than designing the repairs themselves, the SAR designs the means by which the repairs are to be carried out.

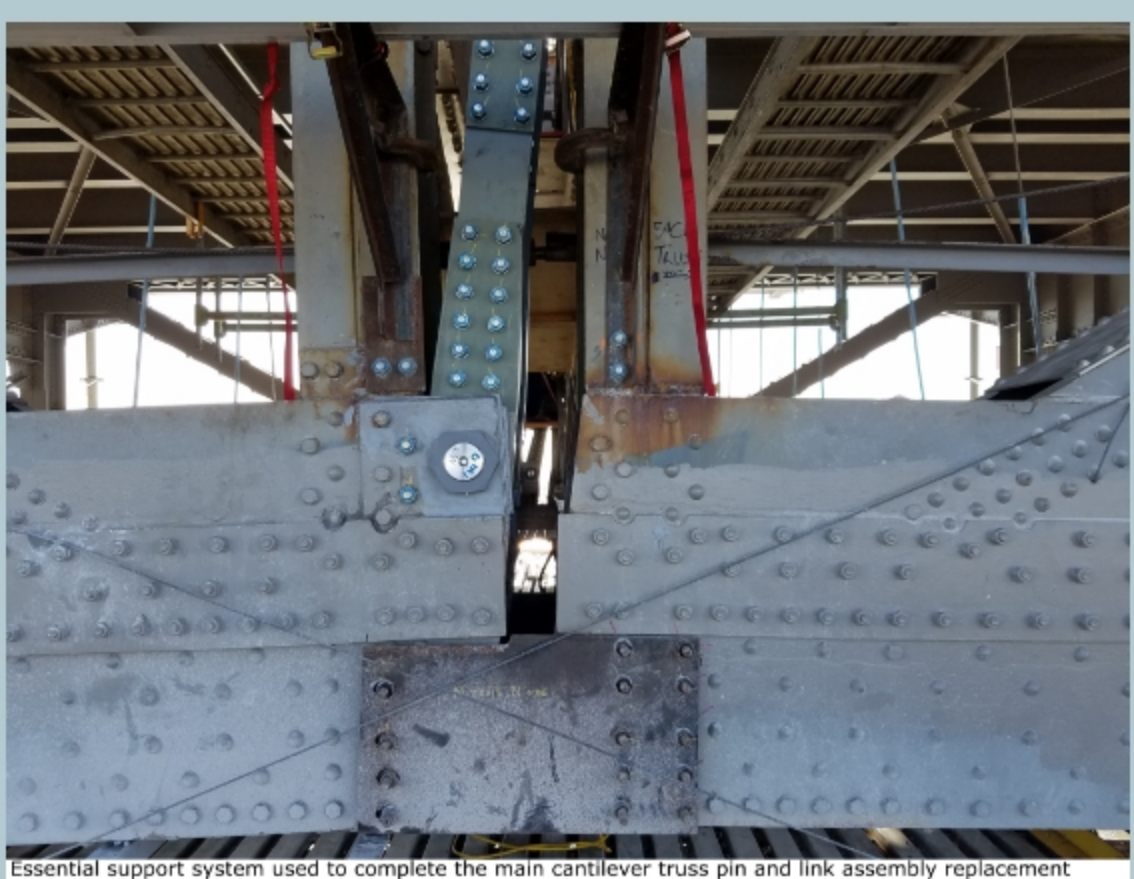
To look at it, you'd think the Cedar Street Bridge over the Illinois River in Peoria, IL was just one bridge. But in fact, this 3,700 foot long structure consists of 34 spans and 3 different bridges types, all connected together. And each had different structural conditions, levels of deterioration and engineering challenges.

For example, the team designed a custom scaffolding platform using specially designed structural steel brackets to allow workers to repair the deck slab, parapet and expansion joints. Two 40 foot tall shoring towers were built to temporarily support the east approach span, so contractors could remove and replace an entire bridge end frame. And a temporary support system held up the main truss cantilever, allowing workers to replace the main span pin and link assemblies, which allow the bridge to transfer heavy traffic loads and accommodate thermal expansion.



Custom designed scaffolding system used to complete miscellaneous overhead bridge repairs

In a classic chicken-and-egg dilemma, the design team couldn't know the details (and weights) of the construction equipment the contactor would be using until it was specified. But it couldn't be specified until the means and methods were known. But good communication and cooperation smoothed the process and the project was completed successfully and ahead of schedule.



Essential support system used to complete the main cantilever truss pin and link assembly replacement

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