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Ironworkers snip portion of truss

Engineering feat may be first in state

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BY MATT BUEDEL

OF THE JOURNAL STAR

Slow, steady and with only the slightest pop, nearly 600,000 pounds of steel was sliced from supports and lowered Friday as the Murray Baker Bridge was partially dismantled.

The process - removing a portion of truss from a bridge, while leaving the remainder intact - appears to be the first of its kind in the state, and perhaps the nation, and is the centerpiece of the Interstate 74 overhaul.

"I don't know for sure if we've ever shortened trusses before," said Ralph Anderson, chief bridge engineer with the Illinois Department of Transportation. "It is very unique."

Aaron Winters, spokesman for the Upgrade 74 project, said he could find no other instances in which bridge refurbishment required a span of truss to be demolished, but no national databases exist to track such

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construction.

Murat Dicleli, a Bradley University engineering professor who specializes in structural engineering and bridges, also could not recall a similar project.

"It's one of a kind," he said. "That's quite challenging."

The 180-foot truss segment that was removed - spanning piers on either side of Water Street just off the Peoria shore of the Illinois River - will be replaced with a widened bridge deck, correcting an original design flaw that largely initiated the urban highway's revamp.

The widening will allow a longer eastbound on-ramp to replace the notorious Adams Street on-ramp. With the longer interstate entrance, the roadway itself will be raised about 10 feet, giving motorists a better view of merging traffic.

Contractors already had removed the bridge deck, horizontal beams and other steel supports, leaving only the skeleton to be removed Friday.

It came down in one piece, with cranes supporting the truss from the top while welders in cherry pickers cut beams with torches. Once the 1/2- to 2 1/2-inch thick steel separated, the cranes painstakingly lowered one side of the truss to the ground, then moved to the other end to repeat the process.

"It's going exactly as planned," IDOT resident engineer Nick Volk said.

Last week, however, was the real test of the bridge's integrity. It was then that contractors actually severed the beams that connected the truss to the rest of the bridge.

George Ryan, implementation engineer with IDOT, likened that procedure to cutting a piece out of a taught rubber band. If stretched and cut, the rubber band would fly out of control.

Bridge beams are under similar tension, Ryan explained. To avoid a rapid release of energy, the bridge was equipped with a load distribution device - a series of jacks that supported the bridge and slowly released energy, rebalancing it after some of the steel supports were cut.

That device is no longer there, but temporary anchors are in place to keep the structure from its natural tendency after losing so much support: wanting to lift up.

"It's a very unique way of building the structure," Ryan said. "We've been talking about this for at least 10 years."

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