

Fast Action Saves Burlington's Steamboat Days Festival

On Thursday, May 7th, a truck driving down Main Street in Burlington, Iowa came to an abrupt stop as the boom truck crashed into the side of the US 34 Ramp B bridge.



Ramp B south girder collision damage close-up

While high trucks have driven under low bridges previously, this incident created a particular urgency because, in just 40 days, Burlington's annual Steamboat Days Festival was due to begin.

For more than 50 years, upwards of 20,000 people have been descending on Burlington for a week of music and good times. This isn't some county fair, featuring the local garage band, either. Over the years, acts such as Poison, Sugarland, ZZ Top, 3 Doors Down, Zac Brown Band, Lady Antebellum, Alice Cooper, Twisted Sister, Luke Bryan and Blake Shelton have performed during Steamboat Days.

Ramp B is the main point of entry to the festival and it HAS TO BE available.

On Monday, May 11th, the Iowa DOT put their heads together with engineers from WHKS and decided that the bridge should be repaired in two phases. The first phase would be a temporary fix allowing full festival access. The second phase would make permanent repairs.

After considering a number of solutions, the team decided to install a temporary support known as a strong back beam. Normally, this approach is used to hold up the weight of a bridge alone, not the traffic rolling across it. Some fast analytical modeling and an innovative, 'pre-tensioning' of the connecting rods created a hybrid structural system of the existing (although damaged) bridge and the temporary strong back beam to support the loads of the free-flowing traffic.



Installation of strong back beam over south girder of Ramp B, Phase 1

In case things were going too smoothly, the construction company found themselves without enough of the heavy angle iron needed for bracing. Instead of waiting for a supplier more than three hours away, the WHKS team designed an alternate approach on the fly that allowed the use of local steel supplies to meet the deadline.

On June 16th, the Steamboat Days Festival opened to cheering crowds, pounding music and flashing carnival lights. Thanks to the quick and innovative thinking of the WHKS team, Ramp B, under the weight of thousands of festival-goers, didn't make a sound.



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