

Prefabricated Modular Steel Bridging from Acrow Bridge Provides Temporary Access in Lusk, Wyoming

Reusable steel system allows for rapid replacement of structure



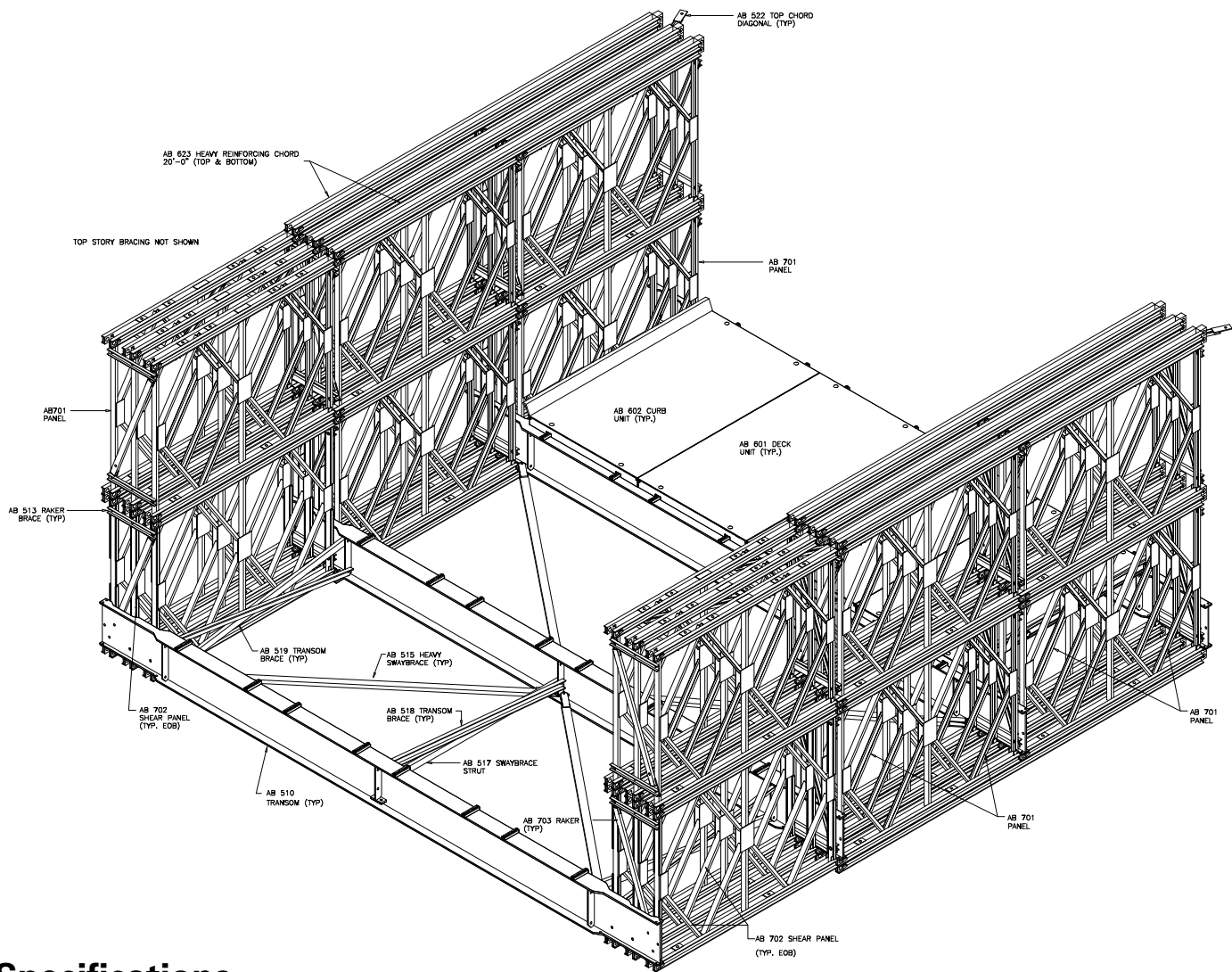
In late June 2015, an overpass on U.S. Route 85 in Lusk, Wyoming collapsed onto railroad tracks as a result of heavy rains and flooding of the nearby Niobrara River. The collapse created an immediate stop to the passage of daily Union Pacific Railroad freight trains, up to 12 coal trains per day, as well as vehicular traffic on Route 85.

The US 85 overpass was an elevated structure using an MSE TYPE design where layers of earth and a Geotextile material are combined to build the ramps with Concrete fascia walls. The deluge of water from the rains cut out the bottom of the MSE wall structures on either side of the structure causing the bridge to collapse.

There was an urgency to reopen the roadway because of the annual Sturgis Motorcycle rally in Sturgis South Dakota, which takes place in early August. 2015 was the 75th anniversary of the Harley Davidson event and over 1 million people were expected to converge on Sturgis for the festivities. It was projected that 40% to 50% of these visitors would travel through Lusk on Route 85, the main artery from both Interstates 80 and 25.

The WYDOT engineering team assessed the site and a decision was made to install an Acrow bridge. Once the design and plan for installation of the Acrow Bridge was complete, Acrow modular components, most already owned by the state of Wyoming, were mobilized to the site. (Additional components were purchased for the specifications of this very long span.) The Wyoming Department of Transportation began to cut back the original ramps and develop a grade profile for Acrow designers, however, the plans for installation were made more difficult owing to the grade difference from one side to the other. The 200' by 24' span bridge was assembled and installed by WYDOT employees and in place on July 22nd, with decking and approaches completed for its opening on July 25th.

"The three week turnaround time on this project proves that the modular design of Acrow bridges make them a perfect choice when rapid replacement is required," said Bill Killeen, President and CEO of Acrow Bridge. "Because the state of Wyoming already maintained an inventory of our components, this bridge was able to be replaced quickly and in a cost-effective manner."



Specifications

Bridge length:

Acrow supplied the additional 60 ft. of parts to expand the 140 ft. long State owned structure to now 200 linear feet (61.1M) of bridging to build one clear span.

Bridge width:

24 feet wide (7.3M) bridge, two lanes

Live Load:

HS-20/44

Deck surface:

2.5 inches of Asphalt overlay

Bridge erection:

The Bridge structure was installed using a full cantilevered launching method provided by Acrow.

Bridge design:

- (A) Panel chords, diagonals, verticals, panel reinforcing chords, rakers to AASHTO M223 GD 65
- (B) Raker brace, transom, top chord brace, swaybrace, transom brace, diagonal chord brace to AASHTO GD 50
- (C) Panel pins to ASTM A 193 GD b7
- (D) Bolts to AASHTO M164M – A325

Bridge finish:

- All major components galvanized to AASHTO M111 – ASTM A 123
- All bolts are hot dipped galvanized
- All Pins are electro galvanized