



Acrow Box Bridge Serves as a Temporary Detour Over the Bacchiglione River in Northeast Italy

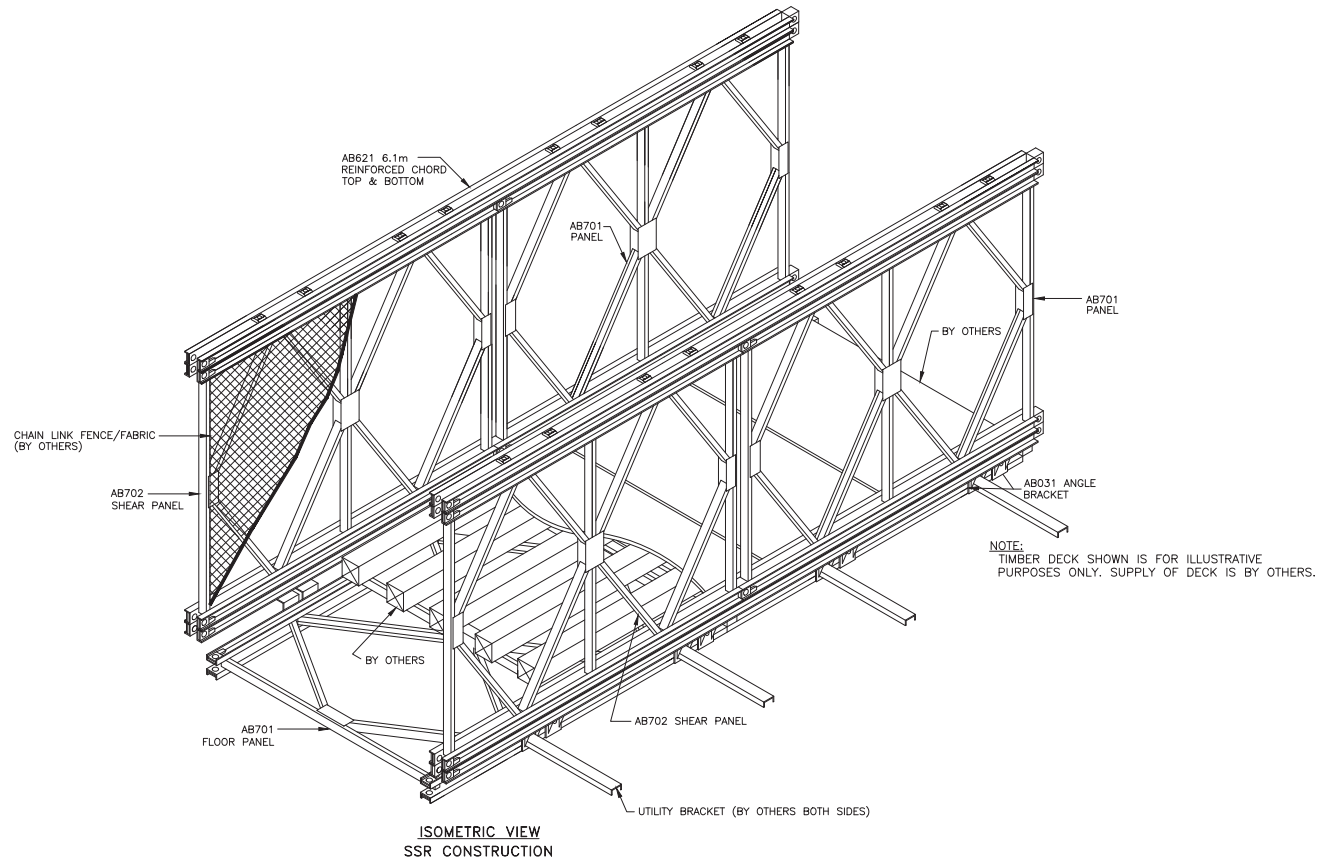
Modular structure carries pedestrians, cyclists and utilities during bridge reconstruction project

After many years, the bridge spanning the Bacchiglione River on Provincial Road 20 connecting the towns of Longare and Secula was no longer compliant with current Italian structural standards. Of particular concern was the bridge's vertical alignment and the numerous piers of the three-span structure, which could restrict the flow of water in the event of flooding. Because the route is considered critical, it was decided the best approach would be to demolish and replace the bridge. In addition to increasing the traffic capacity, a new single-span structure would be more resilient to the floodplain area than the original design. The inclusion of a walkway would provide a separate, safe route for pedestrians and cyclists.

Although there were alternate routes available for vehicles during the project, a detour bridge was considered necessary to provide access for the heavy volume of pedestrians and cyclists who used the old structure. A modular steel pedestrian box bridge from

Acrow was proposed to the local Road Authority and Municipality by project contractor Carraro and after evaluation, was determined to be the optimal solution for the project. Acrow's bridge is 48.77 metres (160') long with an internal width of 2.44 metres (8'). It was designed and equipped with external supports on both sides to carry relocated utility lines including water, sewage, natural gas, and telecoms.

Components arrived at the contractor's warehouse in late January 2024. After preassembly, the four 12-metre-long segments were transferred to the site and connected to create the full 48-metre bridge length several weeks later. The structure was installed on March 7 using two cranes to lift and place it on the bearings, and after live load testing and transfer of the utilities, the bridge opened to the public on April 24. It will remain in service until the new bridge and pathway are completed with all utilities repositioned.



Specifications

Bridge length:

48.77m (160')

Walkway width:

2.44m (8')

Deck surface:

Contractor provided Glass Fiber Reinforced Polymer (GFRP) anti-slip surface fixed on timber supports

Guide rails:

Contractor installed steel mesh fencing to internal panels and timber parapets (in compliance with Eurocode loading)

Bridge erection method:

Two-crane lift in

Design load:

90 PSF Pedestrian Load and services

Standard Acrow bridge finish:

- All major components galvanized to AASHTO M111-ASTM A123
- All bolts are hot-dip galvanized
- All pins are electrogalvanized

Standard Acrow bridge specification:

- (A) Panel chords, diagonals, verticals, reinforcing chords, rakers to AASHTO M223 GD 65
- (B) Raker braces, transoms, top chord braces, swaybraces, transom braces, diagonal chord braces, decking to AASHTO M223 GD 50
- (C) Panel pins to ASTM A 193 GD B7
- (D) Bolts to AASHTO M164M - A325