Buchanan County, Iowa Saves Costs by Choosing Steel for 200th Street Bridge Replacement in Jesup

Project Overview

The 200th Street Bridge is located about 3.5 miles outside of Jesup, Iowa. During the summer of 2015, the old wooden bridge—built in 1956—was replaced with a new short span steel buried bridge system.

The timber piling for the old 32 foot X 20 foot bridge—a timber stringer/multi-beam or girder—was deteriorating, and the bridge was in need of replacement. The wooden bridge was demolished in June. Construction on the new bridge began in August.

Buried Bridge Specifications

The buried bridge system was constructed of deep corrugated galvanized steel plate with a corrugation profile of 15 inches wide (peak-to-peak) and 5.5 inches deep (peak-to-valley), with a bolt spacing of 16 inches center-to-center on the neutral axis around the periphery.

Each ring consists of three plates and has a nominal width of 30 inches. Section properties of the plates conform to ASTM A796-13, Table 34 and Tables A12-14 and A12-15 in Section 12 of the most current AASHTO LRFD Bridge Design Specifications.
The soft soil conditions of the bridge site required that the new buried bridge structure be supported by H-pile foundations. The completed 200th Street Bridge is 39 feet, 4 inches long and 45 feet wide.

According to Buchanan County Engineer Brian Keierleber, the buried bridge system offers several key benefits to county engineers. It is economical, simple to construct and can be built by local crews. It can also be constructed with excavation equipment and doesn’t require heavy equipment, such as a crane.

This buried bridge system uses a design comparable to those generated by eSPAN140, a complimentary web-based design tool which provides customized steel solutions for bridges up to 140 feet. eSPAN140 is available from the Short Span Steel Bridge Alliance and can be accessed at http://www.espan140.com.

The 200th Street Bridge was completed in September 2015 and is open to service.

**Project Team**

**County Engineer**  
Buchanan County, Iowa Secondary Roads Department  
Brian Keierleber, P.E.  
Tel: 319.334.6031  
Email: engineer@co.buchanan.ia.us  
http://www.co.buchanan.ia.us/

**Bridge Contractor**  
Zieser Construction  
Eric Zieser  
Tel: 319-238-9353

**Bridge Fabricator / Designer**  
Big R Bridge  
Joel Hahm, P.E., Senior Engineer  
Tel: 970-347-2208
Email: jahm@bigrbridge.com
www.bigrbridge.com

National Corrugated Steel Pipe Association (NCSPA)
Mike McGough, P.E., Technical Director
Tel: 877-339-4448
Email: mmcgough@ncspa.org
http://www.ncspa.org/

Short Span Steel Bridge Alliance
Dan Snyder, Director
Tel: 301-367-6179
Email: dsnyder@steel.org
http://www.shortspansteelbridges.org/