

Free Web-Based Tool Defines Short-Span Steel Solutions

Of the 257 locally owned bridges in Buchanan County, Iowa, the Jesup South Bridge was one of 10 ranking the greatest need for replacement. The reconstruction could have been delayed another decade were it not for one thing—a tool that helps Buchanan County Engineer Brian Keierleber, P.E., design another bridge quickly and cost-effectively. “With the high demands on my time and limited funding, I would not be addressing this project yet without the help of eSPAN140,” he says.

eSPAN140 is a free, web-based design tool that houses standard designs and details for short-span steel bridges and for buried soil structures up to 140 ft long. It creates customized steel bridge design solutions, with results defined in less than five minutes. It provides rolled beam, plate girder, corrugated steel pipe and structural plate options.

The program was developed by members of the Short Span Steel Bridge

Alliance (SSSBA), with input from the National Association of County Engineers’ Structures Committee. With eSPAN140, the user enters information, such as the bridge span length, number of striped traffic lanes, roadway width and the skew angle. The web-based tool then creates a Solutions Book in PDF file format that offers options based on standard designs developed by more than 30 companies and organizations.



The Jesup South Bridge served as a demonstration project to affirm the value of the eSPAN140 tool for bridge design.

Revisions are quickly addressed in the program. For example, Keierleber realized that he needed to change the span length in his design, so he simply edited the information he had entered into eSPAN140. “A significant change like that, which could have resulted in a complete redesign, took just a few minutes to input and see the results,” he says.

The Jesup South Bridge opened in November 2013, and Keierleber said he’s now considering eSPAN140 for two other bridges.

“Why not spend a little time reviewing different design concepts to see if you can save some money,” Keierleber says. “eSPAN140 gives us the tool to compare the economics of different designs.” ■

By Mike Engstrom, Chairman of the Short Span Steel Bridge Alliance and Technical Marketing Director, Nucor-Yamato Steel

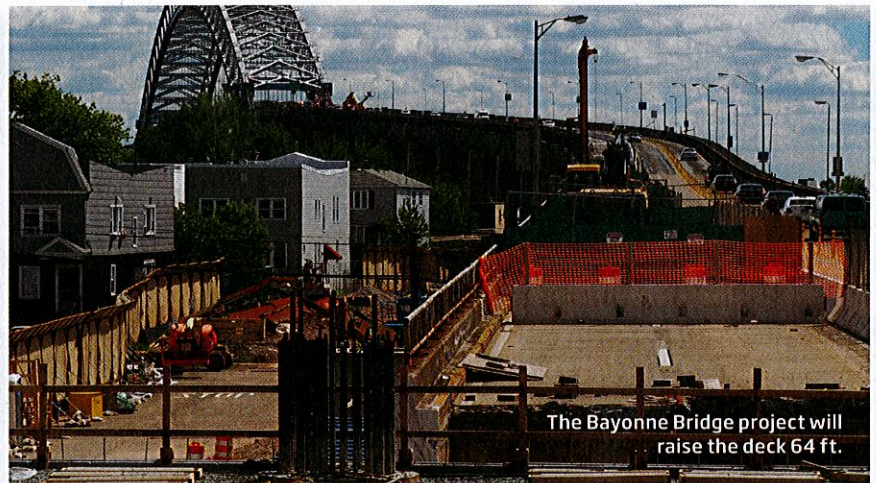
View www.espan140.com for more information.

PHOTO: NUCOR-YAMATO STEEL

New York Bridges Underway

The New York State Dept. of Transportation is investing \$555 million into the design and construction of the new Kosciuszko Bridge. The facility will carry the Brooklyn-Queens Expressway between Morgan Avenue in Brooklyn and the Long Island Expressway Interchange in Queens. In a Skanska-led venture with Kiewit and ECCO III Enterprises, Skanska will design and build new eastbound structures for the Kosciuszko Bridge. Skanska will also perform the demolition of the existing bridge structures and buildings on acquired properties to clear the right-of-way for construction activities. The project also includes the reconstruction and realignment of local at-grade streets impacted by new construction or demolition activities; relocation of existing utilities from impacted local streets; and construction of a new drainage system and sewer facilities to collect and discharge stormwater runoff from the new bridge structure.

In other news, the Port Authority of New York and New Jersey is undertaking



significant work on the Bayonne Bridge which connects Staten Island, N.Y. with Bayonne, N.J. As part of the Port Authority’s bridge construction program, their Board of Commissioners awarded a \$743.3-million contract to Skanska/Kiewit Infrastructure Co. (JV) team as part of a \$1.29-billion program to increase the navigational clearance of the Bayonne Bridge. The project will raise the deck 64 ft and provide drivers with a safer roadway with 12-ft lanes, shoulders, a median divider and a 12-ft bike and

pedestrian walkway. It also will provide the capability for future mass transit options across the span.

The Bayonne Bridge project is the first time in agency history that engineers will construct a bridge roadway deck above the existing roadway while traffic continues to flow on the deck below. Work began in 2013 with deck removal scheduled for late 2015. One lane of traffic will operate in each direction throughout the life of the project, with overnight and limited weekend closures. ■

PHOTO: SKANSKA