

NATIONAL STEEL BRIDGE ALLIANCE

2001 Prize Bridge Award

merit award: LONG SPAN

# Ford City Veterans Bridge

Ford City, PA



The Ford City Veterans Bridge in Armstrong County at Ford City, PA is a three-span continuous curved steel plate girder bridge with a total length of 323m (1060'), carrying S.R. 0128 over the Allegheny River and the Pittsburgh and Shawmut Railroad. The structure showcases Pennsylvania's longest curved girder to date and PennDOT's first use of grade 485W (70 ksi) high performance steel.

## Construction

The project was awarded on April 15, 1998, and traffic was placed on the new bridge on July 31, 2000. The bridge was completed in time for the dedication and naming ceremony on July 28, 2000, but many unique construction challenges had to be overcome in order to accomplish this.



The first significant challenge was the transportation of the 4.3m (14') deep girders to the project site by water and train. The girders were fabricated by PDM Bridge, of Eau Claire, WI. It took an enormous amount of manpower, equipment and coordination to accomplish this task. Another difficult challenge was the fabrication and erection of these same large girders. This task was also difficult because of the tight radius of 155m (509') in the curved section of the bridge.

### Project Success

The completion of the project marked two very significant accomplishments for the industry. First, by using one of the largest applications of curved high performance weathering steel in the nation to date, the project has paved-the-way for the construction industry to utilize this new material. Eventually, this will greatly reduce construction costs as the new steel becomes increasingly more popular and available. Second, this project was one

of the first projects in Pennsylvania to use "partnering" in the design phase to provide local input directly into the design of the new bridge. By implementing partnering during the design phase and working with the local community, PennDOT and its "stakeholders" were able to expedite the design schedule and deliver the best project possible to meet the community's needs.

### Significant Project Features

- 3-span, steel curved girder bridge with a main span length of 127.0m (416.67').
- Total bridge length of 323.0m (1059.71').
- The structure stands 29.2m (95.8') above water at the west pier.
- First use of high performance steel in Pennsylvania and one of the largest applications in the nation.
- Currently, Pennsylvania's longest curved girder with a length of 102.0m (334.87').
- The curved girder had an extremely tight radius of 155m (509').
- Construction of the new bridge used 9531 cubic meters (12,466 cubic yards) of concrete, 5 million pounds of structural steel and 1 million pounds of reinforcing bars.
- Built in 1914, the existing bridge was demolished in August of 2000.

### Owner

Pennsylvania Department of Transportation, Indiana, PA

### Structural Engineer

Michael Baker Jr., Inc., Coraopolis, PA

### Steel Fabricator

PDM Bridge, Eau Claire, WI (AISC member)

### Steel Detailer

Candraft Detailing, Inc., Port Coquitlam, BC Canada (NISD member)

### Steel Erector

Abate Irwin, Inc., Eighty Four, PA (NEA member)

### General Contractor

Trumbull Corporation, Pittsburgh, PA

### Software

Some in-house