



Historic Bridge Foundation Facebook Archives

Focus Bridge: Bend Road “Withington Ford” Bridge

July 2015

Carrying Bend Road over the Maramec River in Franklin County, Missouri, the Bend Road Bridge, also called the Withington Ford Bridge, is a rare surviving example of a pin-connected Pennsylvania through truss, and as a multi-span example, this two-span bridge is particularly rare. Built in 1916-1917 by Miller and Borcharding of St. Louis, Missouri, the bridge has two 200 foot truss spans and an overall length of 422 feet, with a roadway width of 14 feet. Not uncommon among bridges of the period, steel from multiple mills was utilized to fabricate the bridge. Jones and Laughlin, Lackawanna, and Illinois (By 1916 a Subsidiary of US Steel) were three names found on the bridge steel. The bridge overall retains good historic integrity, although a few diagonal members have been replaced, and the portal bracing has been altered to increase vertical clearance.

Clayton Fraser, who conducted Missouri’s Historic Bridge Inventory stated that “As a rare multiple-span example of this configuration, the Withington Ford Bridge is one of the state's more noteworthy roadway trusses dating from the 1910s.” The bridge was also found noteworthy for its “longstanding role in the development of regional transportation.”

The future of this bridge is uncertain. Currently, a Section 106 Review is underway for this bridge, and as such, the final outcome is not yet known. However, locals are concerned that despite the plan to build a replacement bridge on a new alignment, the county still wishes to demolish the historic bridge. To that end, an effort to find a new owner and use for the historic bridge is underway. The proposal is for the bridge to carry non-motorized traffic on the proposed Pacific River Walk Trail, part of the Ozark Trail system. Information about the proposed trail system can be found at <http://pacificriverwalktrail.org/>

On July 24, 2015, the Missouri Alliance for Historic Preservation (Missouri Preservation) listed the Bend Road Bridge on its 2015 Historic Places in Peril list, which is an annual listing of historic structures whose future are threatened. James Baughn, webmaster of bridgehunter.com was responsible for preparing this successful nomination of the Bend Road Bridge.

Named after the Pennsylvania Railroad which popularized their use in the 19th Century, the truss design of the Bend Road Bridge was one that was used for long spans. It is one of the more complex variations

of the Pratt truss, featuring both the subdivided panels of a Baltimore truss, and the polygonal top chord design of a Parker truss. As such, Pennsylvania truss bridges offer a pleasingly complex visual geometry.

Very little is known about the history of Miller & Borcharding who built the bridge. Research by the Historic Bridge Foundation found the following tidbits of history.

A 1915 issue of *Engineering and Contracting* indicated that the company's offices were in the Frisco Building in St. Louis, a building which stands today and is on the National Register of Historic Places.

The *Proceedings of the American Society of Civil Engineers*, Volume 43 indicated that a contracting engineer, Richard Levi Miller of Miller & Borcharding was a new member of the American Society of Civil Engineers in 1917. His address was listed as 3806 Arsenal Street, St. Louis, Missouri.

Louis Borcharding was listed as a contractor with address at 305 Frisco Building (same address as the company) in a list of members of the Illinois Society of Engineers in the *31st Annual Report of the Illinois Society of Engineers*, dated 1916.

Missouri's Historic Bridge Inventory as prepared by Clayton Fraser, states that the two men went separate ways in 1917, which was also the year the Bend Road Bridge was completed. The inventory also notes that the Miller & Borcharding was an offshoot of the Stupp Brothers Bridge and Iron Company of St. Louis. A 1904 record of a court proceeding, "County of Mercer v. Stupp Bros. Bridge & Iron Co." stated that R. L. Miller was an agent for Stupp Brothers Bridge & Iron Company, providing support for the Inventory's statement.

Miller & Borcharding did build a number of unusual rivet-connected pony trusses in Missouri. Nearly all of these have been demolished. An article by Clayton Fraser in the Spring 1998 issue of the Society of Architectural Historians Missouri Valley Chapter Newsletter clearly states that although Miller & Borcharding built this unusual proprietary truss design, the company never held a patent for the design. Thanks to James Baughn for providing this research material.

Today, the Bend Road Bridge is distinguished as one of the last remaining examples of a bridge built by this local bridge builder.



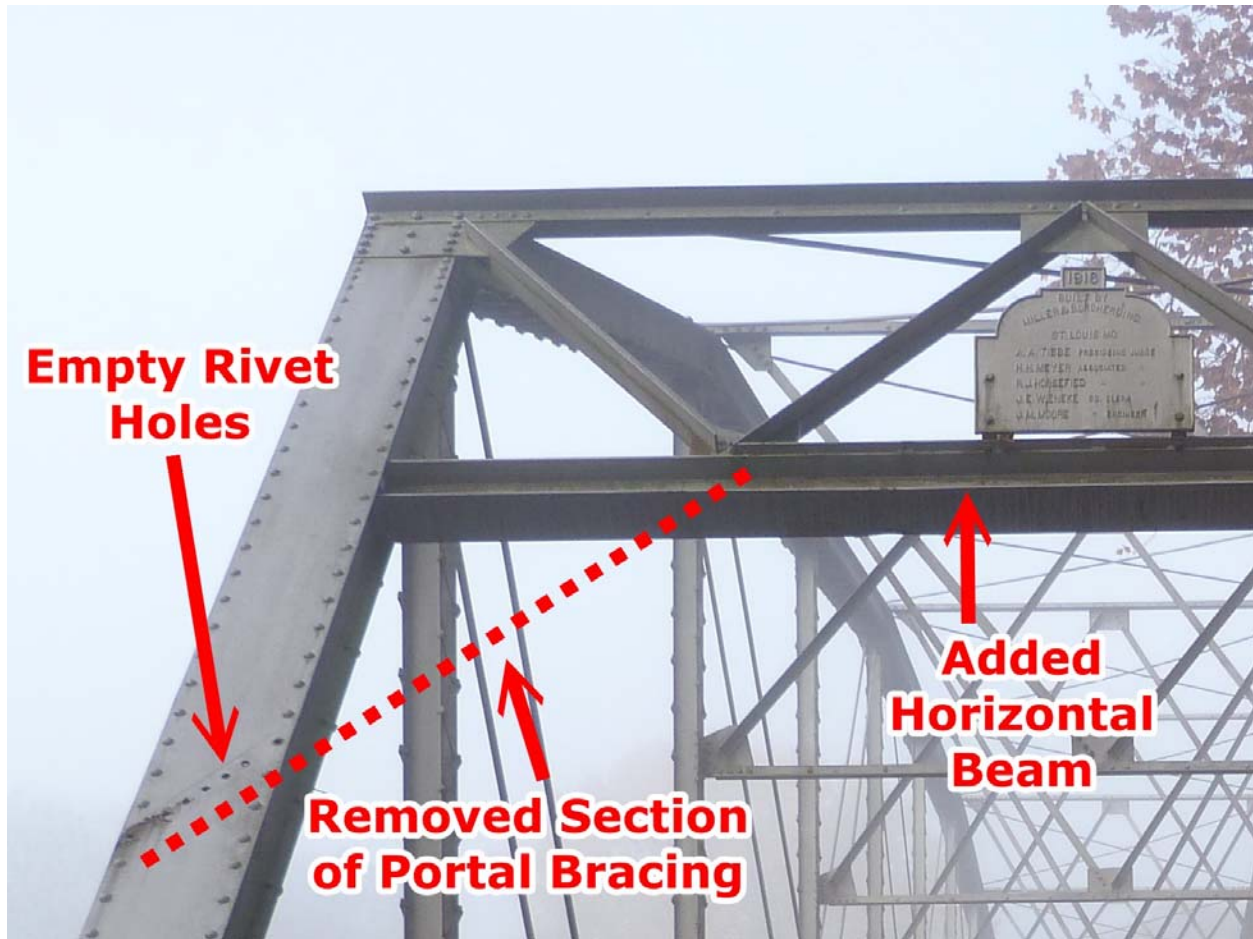
1 – Oblique view of the bridge.



2- Portal view of the bridge.



3- Elevation of bridge.



4- This diagram shows how the portal bracing of the Bend Road Bridge has been altered by removing the knee braces and adding a horizontal beam.



5- This photo shows the three steel mill names found on the bridge's steel.



6- Bottom chord connection on bridge. Here, the bottom chord is composed of up-set eyebars, while the diagonal member is composed of loop-forged eyebars.



7- A spider web on a vertical member of the bridge.



8 – Standing on the bridge deck.

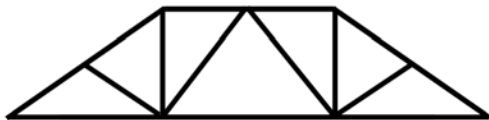


9 - Richard Levi Miller (of Miller and Borcharding) had an address in 1917, the year the Bend Road Bridge was built, as 3806 Arsenal Street, St. Louis, Missouri. According to Google, the circled house is this address.

R. L. MILLER,
CONTRACTOR AND BUILDER
OF ALL KINDS OF
BRIDGES,
ROOM 45, McLEAN'S BUILDING
St. Louis, Mo.

10- This 1884 advertisement lists Richard Levi Miller as a contractor and builder of bridges, suggesting he had been in the business of building bridges for decades when the Bend Road Bridge was built.

**Sketch of Miller & Borcharding's
Proprietary Pony Truss Design**



11 – This sketch shows the unusual proprietary truss design that Miller and Borcharding built. The company used this design for short spans, not longer spans like the Bend Road Bridge.