



**Bach Steel** is a fabricator that is most well-known for their work in relocating and restoring historic metal truss bridges. The company also does general structural steel fabrication and erection, hand-forged (wrought) iron/steel, ornamental art/furniture, stairs and rails, manufacturing, miscellaneous structural metal work, welding and repair. Bach Steel is run by owner Nels Raynor who has over 30 years of iron/steel fabrication and erection experience.

## Metal Truss Bridge Restoration Experts

Bach Steel specializes in the preservation of historic metal truss bridges, including rehabilitation, restoration, and relocation. Bach Steel is one of the only companies in the country to specialize in this area of work. In particular Bach Steel has experience with “in-kind” restoration where the goal is to return a bridge to a like-new condition including appearance, design, and condition, while also striving to maintain as much of the original material as possible. This type of restoration is in keeping with the Secretary of the Interior’s Standards for Rehabilitation which broadly outline best practices for historic preservation projects.



Central to in-kind restoration is the use of riveting. While many fabricators and engineers have dismissed riveting as a “lost art” that can no longer be performed by anyone today, at Bach Steel, riveting is a standard service that we have perfected through experience. We can drive rivets both efficiently and with the same quality of craftsmanship as the rivets that have safely held these historic truss bridges together often for well over a century. As such, we do not charge a premium for the service of riveting, allowing us to perform riveting as a cost that is competitive with using modern bolts as bridge fasteners.

Numerous other restoration techniques are used and perfected by Bach Steel such as pad welding for section loss and pneumatic pack rust removal. Additionally, Bach Steel prides itself in being able to exactly replicate portions of historic metal truss bridges, no matter how unusual the design details. The members of historic metal truss bridges often suffer from severe deterioration in portions of the member, while being in good condition in other locations. Rather than replace such members in their entirety, Bach Steel can remove the deteriorated section and weld an exact replica of that section back onto the truss member.

Bach Steel has experience restoring bridges in place over rivers, but also has extensive experience with carefully removing bridges from a river, non-destructively dismantling them into parts, and restoring them in a shop setting. The later method, particularly with pin-connected truss bridges, is usually more cost-effective by avoiding special procedures that are required when working over a river, and also allows for a more thorough cleaning and restoration.

Bach Steel is excited for an opportunity to be a part of any historic truss bridge preservation project across the country, and we can provide insight from project conception to project completion. In addition to our ability to restore historic metal truss bridges, we are always excited to lend our knowledge and insight during the project planning process. Our hands on experience with these bridges enables us to assess the condition of the bridge, help develop an appropriate scope of work for restoration, present different options for items such as deck and paint systems, and to help generate an accurate project cost estimate. Bach Steel would be happy to work with your project’s existing engineer, or if you are in need of an engineer for your project, we have engineering firms we have worked with and can recommend for you.

Owner Nels Raynor began working with iron and steel at 19, held several jobs at several companies, and started Bach Steel in 1997. He has over 30 years of professional experience working with iron and steel.

# Finding Bridges for Parks and Trails

Historic metal truss bridges originally built for highways are often today abandoned or find themselves up for replacement by a new bridge. These bridges are often made available to a third party for relocation and preservation. These bridges are outstanding options for non-motorized crossings such as park foot bridges or bike path bridges. Bach Steel can provide services to dismantle, restore, relocate, and re-erect these bridges. Show your commitment to history, sustainability, and beauty by choosing a historic metal truss bridge instead of a modern pre-fabricated bridge. A 100 year old bridge can readily be made ready for another century of service in a park or on a trail! While each bridge's restoration needs are different, our goal is to restore these bridges as cost-effectively possible, so that the decision to reuse a historic bridge can be competitive with the cost of buying a new pre-fabricated bridge. These unique bridges will provide a signature crossing that is both a functional crossing and an iconic destination. Bach Steel can help find a historic bridge that fits the needs of the crossing. We are aware of potentially available abandoned bridges, as well as the ever-changing list of historic bridges being made formally available by their owners for reuse before they are demolished and replaced. After a bridge has been selected, Bach Steel can then restore the bridge to like-new condition and erect it on-site in its new location.

## Example Projects

**State Street Bridge in Bridgeport, Saginaw County, Michigan** – Complete disassembly, restoration in the shop, and reassembly of this highly deteriorated through truss bridge for pedestrian use. This was an MDOT-let project that included funding from a Transportation Enhancement grant. The photo above is a photo of a new cover plate being riveted to the top chord of the bridge. Some of the highlights of the skills needed to restore this bridge included hot metal riveting, and replication of deteriorated sections of truss members, and welding plate to address areas of section loss.

Photos: [bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-bridgeport-bridge/](http://bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-bridgeport-bridge/)



**Kent Street Bridge in Portland, Michigan** – Restored, reassembled, and reinstalled this large 220 foot through truss span in a new location over the Grand River for pedestrian use on Portland's trail system. The restored bridge is pictured to the left. Due to the size of the bridge and restrictions on the type of work that could be performed in the water, a special tramway system was designed to erect and deploy the bridge over the river in sections.

Photos: [bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-kent-street-bridge/](http://bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-kent-street-bridge/)

**Sterling Road Bridge on trail in Morenci, Michigan** – Bach Steel's responsibility was the complete restoration of the truss parts for this bridge which was relocated to Morenci, Michigan for pedestrian use. The extensive deterioration on the bridge required hot metal riveting, and replication of deteriorated sections of truss members, and welding plate to address areas of section loss. Eyebars with section loss were pad welded to repair them. We also did selected repairs to the existing floor beams and installed new rivets where needed.

Photos: [bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-sterling-road-bridge/](http://bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-sterling-road-bridge/)

**Charlotte Highway Bridge formerly over Grand River in Ionia County, Michigan** – Bach Steel was responsible for the careful removal and disassembly of this large 173 foot span from the river and dismantling for relocation. The below webpage shows the bridge in its new location at Historic Bridge Park.

Photos: [historicbridges.org/bridges/browser/?bridgebrowser=truss/charlotte/](http://historicbridges.org/bridges/browser/?bridgebrowser=truss/charlotte/)

**Bauer Road Bridge, Historic Bridge Park, Calhoun County, Michigan** – Bach Steel re-erected this bridge in its new location within Historic Bridge Park. This is an 89 foot through truss. It is made of wrought iron (and thus more resistant to deterioration from rust than steel it) and so the park chose to not paint the bridge.

Photos: [historicbridges.org/bridges/browser/?bridgebrowser=truss/bauer/](http://historicbridges.org/bridges/browser/?bridgebrowser=truss/bauer/)



**Wildcat Bridge Road Bridge, Robertson County, Texas** – Bach Steel rehabilitated this bridge for vehicular use. A photo showing a replicated end post base and bearing for this bridge with newly driven rivets visible is shown to the left.

Photos: [bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-wildcat-bridge/](http://bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-wildcat-bridge/)

**Providence Road Bridge, Robertson County, Texas** – Bach Steel rehabilitated this bridge for vehicular use.

Photos: [bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-providence-road-bridge/](http://bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-providence-road-bridge/)

**Piano Bridge Fayette County, Texas** – Bach Steel rehabilitated this bridge for vehicular use. Bach Steel was the recipient of a 2012 Construction Award from Texas Department of Transportation “in recognition of exemplary cooperation and performance in the construction” of this bridge.

Photos: [bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-piano-bridge/](http://bachsteel.com/project-gallery/project-gallery-historic-bridge-restoration-piano-bridge/)

## Letter of Recommendation

Dec 7, 2010

Subject: Letter of Recommendation

To whom it may concern:

I have worked with Nels Raynor on numerous Michigan Department of Transportation projects. He has shown that he has an excellent working knowledge of structural steel, particularly in the preservation of historic bridges. He has disassembled, repaired, and reassembled multiple historic bridges for the Department of Transportation with a superb quality of workmanship which is hard to find. He is a craftsman in the sense of having the ability to restore antique components with modern equipment meeting today's standards and specifications. He has an unlimited all position welding qualification with the Michigan Department of Transportation and has shown an expertise in all the tools required for this type of construction including torch and saw cutting, rivet removal and installation, and repair of section loss. He has my recommendation for any type of structural steel work which you may require.

If you have any questions feel free to contact me at the number listed below or by E-mail at: [klopf@michigan.gov](mailto:klopf@michigan.gov)

My working title is "Steel Fabrication Specialist".

Thank you;

Brion Klopf

Bridge Operations

(517) 204-6701

# Contact Information

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