Prior Projects by Proposal Participants to Provided to Demonstrate Durability of the Restoration Methods

30 years ago Indiana was in the same place where Pennsylvania is now. The following are projects that are between 15 and 35 years old. Please view them from the perspective of durability of metalwork; the paint selected was INDOT/PENNDOT spec, which is insufficient for a historic bridge as it fades. The paint specified in this proposal exceeds PENNDOT spec AND will not fade for decades.

This demonstrates the level of workmanship

Wilson Bridge 1898 Lafayette Bridge Co. 122’ Restored 2007

Ross did the metalwork on this, Jim Barker was the engineer on the project (same core team members). This one was restored in 2007. Note: the paint has faded but there are no other issues. The 122' long bridge remains open to traffic with a 14 ton rating.

Rated at 14 tons, open to traffic and on the National Historic Register.

This shows the replicated bottom of an endpost (all new material, including rivets) that was spliced in (all four feet, which carry the entire bridge, were replaced in the restoration:

Note that after more that after 17 years of traffic the welds remain invisible. One of the elements not seen in the images are the 'Barker Diamonds.' These are diamond shaped reinforcement plates that are widest at the splice and taper above and below it. They are placed there the welded material has reduced strength compared to the pieces it is connecting. The reason for the taper is to have the material strength of the splice to gradually build up to the splice/weld then gradually diminish. This prevents stress concentrations caused by vibrations.

Note: The pain used on Bishop Bridge will not fade like this.

Brooks Bridge 1894 Lafayette Bridge Co. 383’ Restored 2009

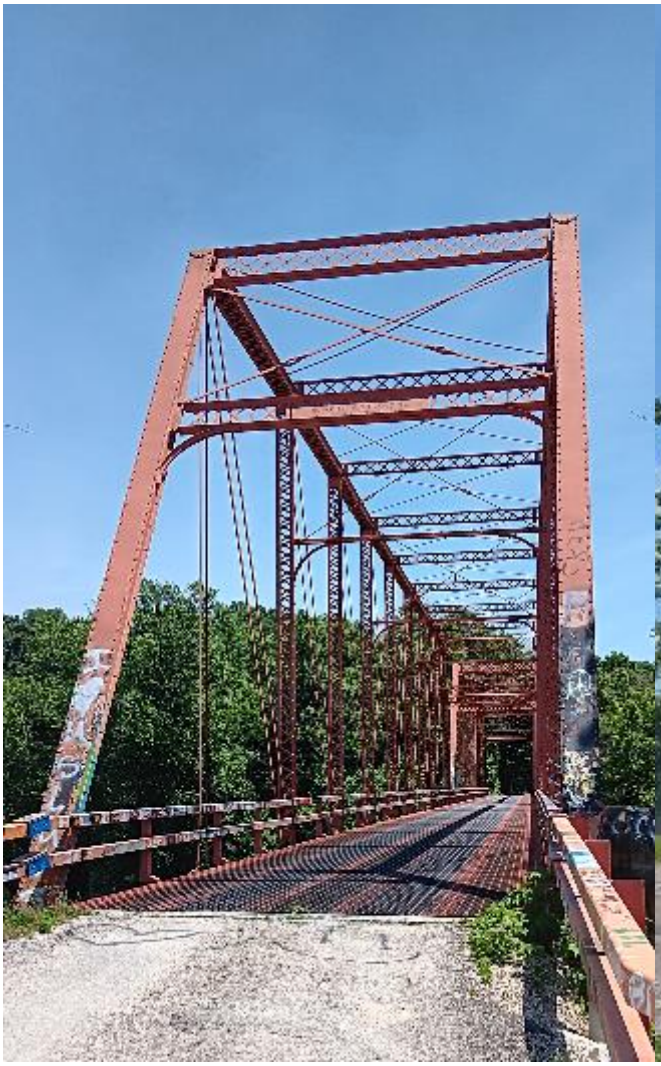
Here is a 2009 restoration. This involved both riveting and splicing and is a much larger bridge than yours. The restoration was in 2009, note that the paint is faded. Again, this is due to the INDOT / PENNDOT spec paint. The paint I am proposing exceeds this spec in that it meets the PENNDOT requirements but doesn't fade for much longer (estimated to look good for over 30 years).

Paint when restored.

https://www.youtube.com/watch?v=RipPZjg5yOs

Note: This bridge had badly deteriorated. Most areas near the connections, in this case between the arrows, had new material spliced in.

A close-up. Note the material on the piece running form lower left to upper right on this image is smooth between the arrows, this is new material. The welds are not visible, the new and 130 year old rivets look the same, the reinforcement is hidden within the ‘box’ of the endpost. The high quality of workmanship coupled good engineering design allow the loads and vibration stresses to pass the splice as if it wasn’t there.



Note that this is an older and longer bridge so is only rated at 9 tons (most ambulances and small school busses can cross). It suffers from paint fade and graffiti but still attracts artists and tourists.

Paint Creek Bridge 1873 Massillon Bridge Co. 67’ Restored in 1999

From this.

To this. Note, as this was all wrought iron, besides a lot of rivets, only 50 pounds of original material was replaced rather than restored.

Ross brown (in 1999), who will restore Bishop Bridge if we are allowed to.