# Historic Bridge Foundation Facebook Archives

## Did You Know: Ellis Bridge

**December 2016**

Did You Know...

…The Ellis Bridge in Ohio contains one span that was the only survivor of the Great 1913 Flood?

The Ellis Bridge was constructed, likely during the late 19th Century, to carry the Pennsylvania Railroad over the Muskingum River in Muskingum County, Ohio. This is a bridge with a story, and a very unusual one at that. It was originally built as a multi-span pin-connected Whipple deck truss. The construction date of the Whipple truss is not known.

Some years after this Whipple truss was built, a "slack water navigation" system was created on the river through a series of dams. At this time, to provide clearance for boats, one of the deck truss spans was raised up and turned into a through truss. This alteration would have required removing bracing inside the truss lines to allow for trains to pass through the truss, and installation of portal and sway bracing overhead where previously floorbeams had been located, while the floorbeams would have been installed between the bottom chords. Evidence of these changes remains today in the form of empty rivet holes that can be seen on the bridge. What is interesting is that the sway bracing shows empty rivet holes, so these elements probably were salvaged and reused from the deck truss.

These changes to the through truss actually saved this span from destruction in March of 1913 when a massive flood destroyed all the unaltered deck truss spans. The through truss span however was high enough that it was spared destruction, which was quite a feat considering that the flood in question was none other than the infamous Great Flood of 1913 which destroyed an enormous number of bridges in Ohio and beyond. Learn more about the flood at https://en.wikipedia.org/wiki/Great_Flood_of_1913

Immediately after the flood, a temporary system of spans was installed to replace the collapsed spans of the Ellis Bridge. Soon after this (still in 1913) riveted Warren through truss spans were

fabricated by the American Bridge Company and installed on new concrete piers. These 1913 spans have vertical end posts like the Whipple truss span, an unusual detail.

The present-day story of this bridge is no less unusual. The bridge and the old railroad line north of the bridge eastward to Ellis Dam Road have been turned into a rail-trail. It is a fully developed rail-trail (meaning its paved with asphalt, and the railroad bridge is fully redecked). Yet, this is the total extent of the rail-trail. The railroad grade east of Ellis Dam Road is posted with numerous "No Trespassing" signs. Similarly, the rail line immediately south of the bridge is not a rail-trail and is totally abandoned and overgrown. It is rather unusual to see such a short, isolated rail-trail like this. It is great in the sense that this rare, historic bridge is preserved and accessible to the public. But sadly, the orphaned section of rail-trail seems to have left this Ohio attraction largely undiscovered by the general public. The remains of the old Ellis Dam and locks are also separately viewable, at the end of Ellis Dam Road. From here, good views of the bridge can be had as well.

This bridge is historically significant as a rare example of a pin-connected Whipple railroad truss. It is also notable for its unusual story, much of which helps convey the impact of the infamous Great Flood of 1913.

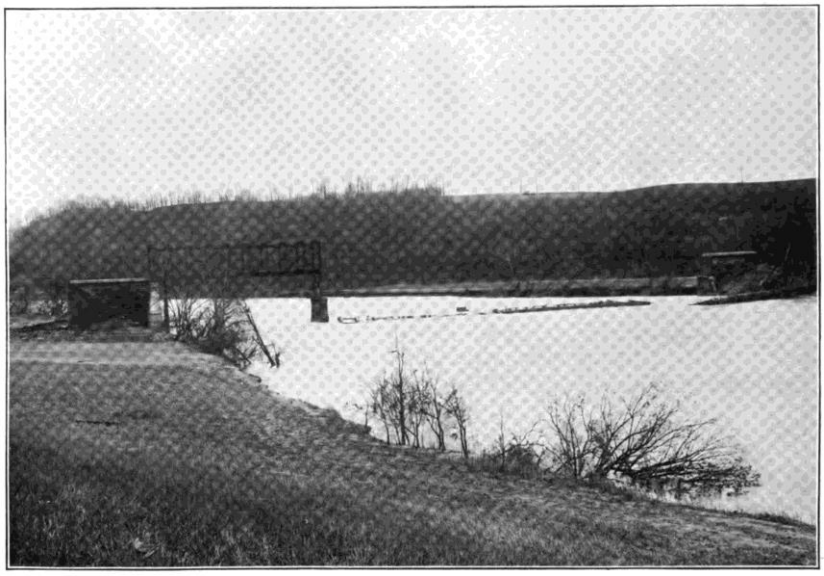

Photo of bridge in 1913 after the flood showing only the one Whipple through truss span still standing.

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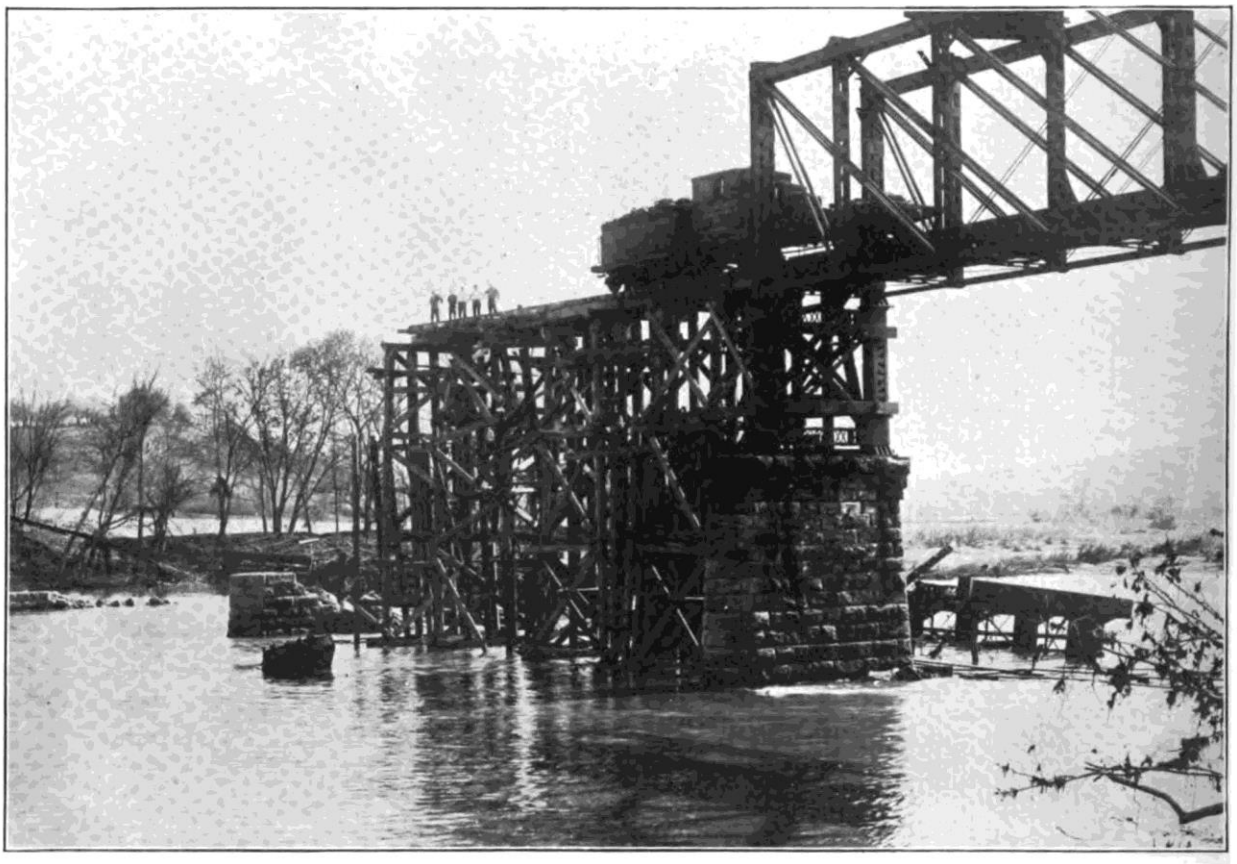
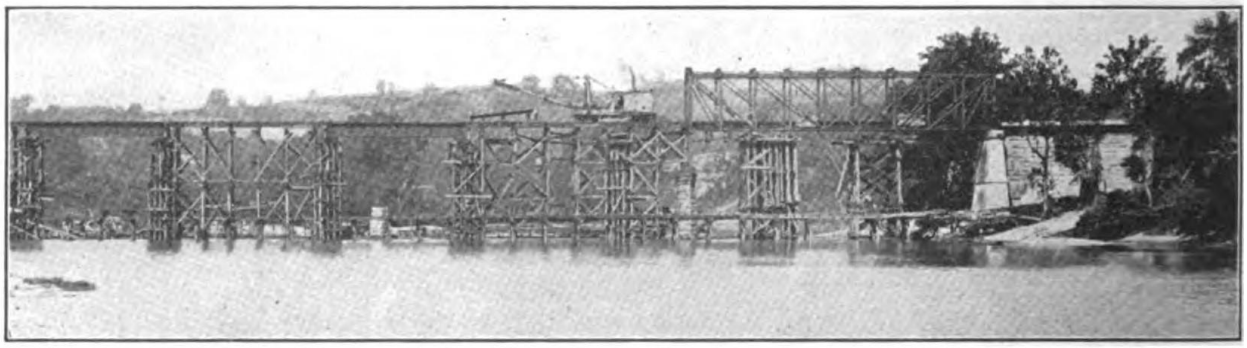
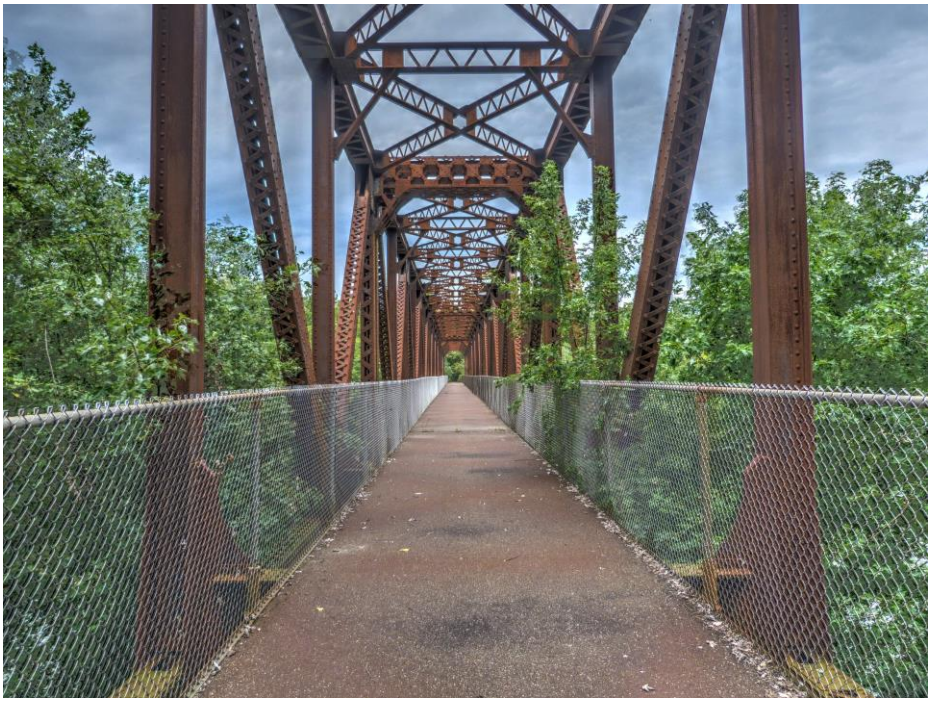


Photo of bridge in 1913 showing construction of a temporary timber structure after the flood. The Whipple truss span is visible to the right. Also to the right in the river is the remains of one of the metal truss spans.



Historical3_large - Photo of bridge in 1913 showing construction of a temporary timber structure after the flood. The Whipple truss span is visible to the right.

ellisbridge2190_1_2f – Elevation of bridge. The Whipple truss span is to the far right.



ellisbridge2165_6_7 – A view on one of the Warren truss spans, showing the heavy, all-riveted construction.

ellisbridge2104_5_6 – A view on the Whipple truss span showing the lightweight pin-connected construction. Note the sway bracing mounted on top of the upper chord.

ellisbridge2066 – Upper chord connection on the Whipple truss span. Note the empty rivet holes on the ends of the angles. Empty rivet holes are an indication of prior alteration, in this case likely the conversion from a deck truss to a through truss.