Historic Bridge Foundation Facebook Archives

Did You Know… That Florida has a cast and wrought iron swing bridge?

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Crossing the Suwannee River in a rural location northeast of Mayo, this bridge has been abandoned in the open position since around 1920 and no deck remains on the bridge. Very little formal research or documentation has been compiled on this bridge.

The bridge is a relocated and reused bridge that was erected here in 1899 during construction of a new stretch of railroad line for the Suwannee and San Pedro Railroad. The railroad company was associated with George Franklin Drew, who also was Florida's governor from 1877-1881. Local residents claim that Drew purchased the bridge in Brazil, but the validity of this is uncertain. The design details do make it clear that the truss span is far older than 1899 however. Communication with the Florida Historic Preservation Office revealed that the bridge had been noted as a resource that was potentially eligible for the National Register of Historic Places by a consultant in 2002, but the bridge was never evaluated further.

The design details of this bridge indicate that it is part of a very small, elite group of bridges that include a combination of cast and wrought iron members. These bridges are among the earliest surviving metal bridges in the country. They tend to have very unusual, distinctive design details, a reflection of the fact that they were built during a period of experimentation in metal bridge design. A "Wadsworth Buffalo NY" brand was identified on rolled wrought iron channel on the bridge. Initial research indicates that Wadsworth was apparently a different name briefly used by the Union Iron Company from roughly 1869 to 1871. This would appear to suggest that the bridge might be dated ca. 1870.

The bridge is a pin-connected Warren through truss, with a symmetrical rim-bearing swing design. It rests on a riveted steel caisson that appears to be filled with concrete and is deteriorating near the water level. While the truss webs of this bridge are composed of wrought iron members only, transverse struts that run between the upper chords and lower chords of the bridge are cast iron beams. Cast iron blocks are found between the upper lower chord channels. On the lower chord, these blocks also act as guides for the vertical members, which at each panel point consist of three rods. Lateral bracing

between the lower chord are held in place by way of nuts and castings attached to the channel. Overhead lateral bracing is an unusual clevis rod design, with the two eyes at each end fitting around the cast iron strut. The hand-turned swing truss rests on cast iron rollers, some of which appear to slowly tipping outward, presenting a possible risk to the future of the bridge. The toothed swing rack rests on an unusual cast iron circular rim. No evidence of approach spans or abutments remain, only the main through truss span is in place today. It appears to be largely unaltered and despite the potential issues with the rollers and the pier, the truss itself shows very little deterioration, likely a testimony to the corrosion-resistant properties of iron.

More research is needed, but this bridge has the potential to be the oldest surviving bridge in Florida, the oldest swing bridge in the country, and the only surviving movable bridge in the country with major cast iron elements.

Elevation showing Warren truss configuration and the caisson pier.

Detail of the rollers which appear to be tipping outward. The top of the cast iron rim can be seen at the bottom of the photo.

Upper chord connection detail. A cast iron strut is visible at the top of the photo, and to the left and right of the strut, a clevis rod functioning as lateral bracing is visible.

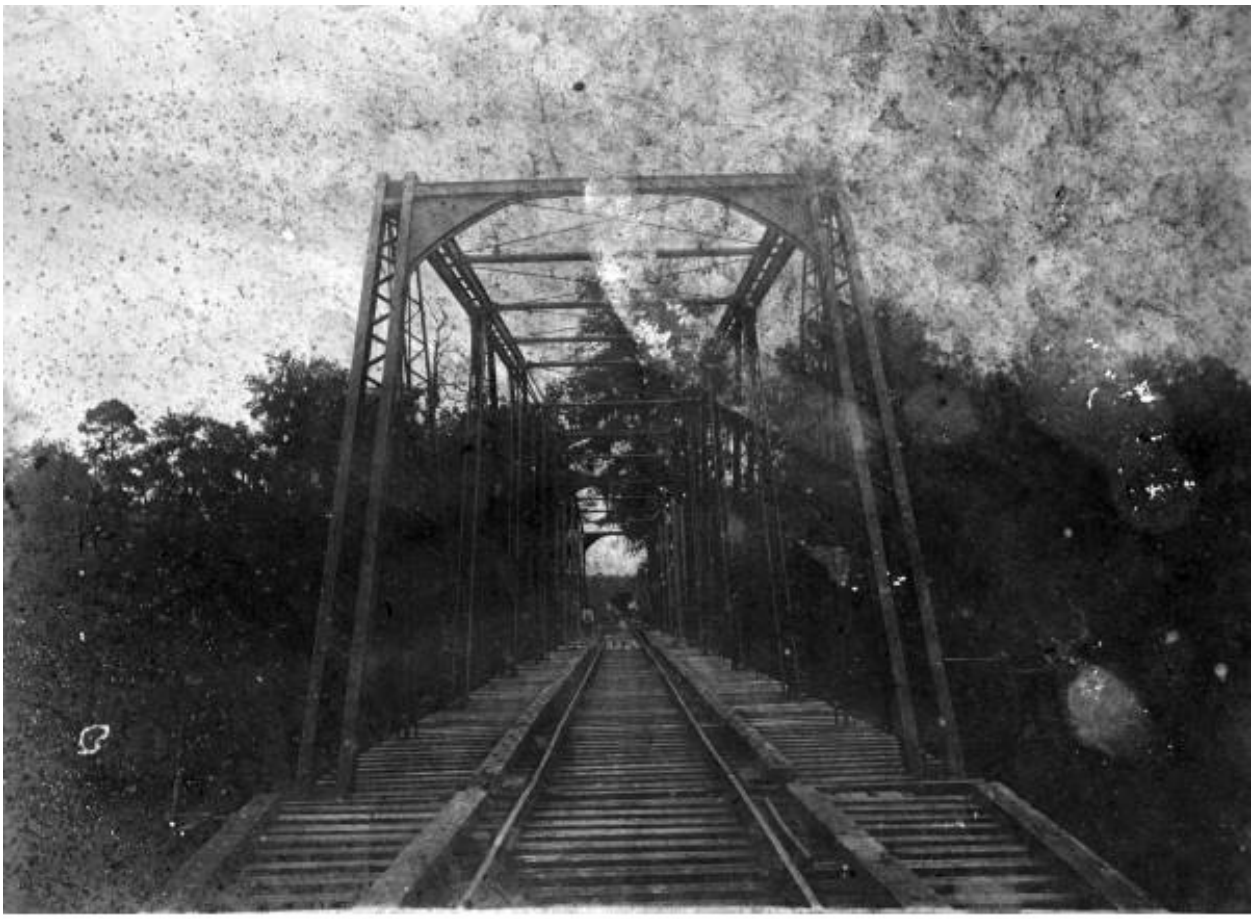
Lower chord connection detail, showing the nuts and casting which hold the lateral bracing in place, as well as the paired channels and nuts which hold the verticals in place.

Looking up at the upper chord of the bridge.

Lower chord connection detail. A cast iron spacer and vertical member guide can be seen between the channels, and a cast iron strut is visible to the left.

Overview of bridge.

Looking up at the portal of the bridge. — in Mayo, Florida.



Historical Photo of Bridge. Source: State Archives of Florida, Florida Memory, http://floridamemory.com/items/show/138093

This historical photo shows the bridge when it still had a deck on it.

Historical Photo of Bridge. State Archives of Florida, Florida Memory, http://floridamemory.com/items/show/35323

This historical photo shows the bridge in the closed position with a train on it.