



Ryan Jackson
Transportation Historian Associate
Georgia Department of Transportation
Office of Environmental Services
600 West Peachtree Street NW, 16th Floor
Atlanta, Georgia 30308

Re: Rogers Bridge at Chattahoochee River, Fulton and Gwinnett Counties

Dear Mr. Jackson:

The Historic Bridge Foundation appreciates the opportunity to comment on the eligibility determination for the Rogers Bridge, ca.1912 pin-connected Pennsylvania thru truss. It is the position of the Historic Bridge Foundation that the bridge is eligible under Criterion C: Embodiment of the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master or possesses high artistic values. Under Criterion C, a bridge may be eligible for its unique design and construction representing technological advances in bridge construction or design. This criterion applies to properties significant for their physical design or construction, including such elements as architecture, landscape architecture, **engineering**, and artwork.

In the latter part of the 19th Century, truss bridges were well established on rail lines and roads. But as the weight of trains grew, railroads needed crossings to withstand heavier loads. As a result the Pennsylvania truss type was developed, named after the Pennsylvania Railroad, whose engineers originated the design in 1875. The Pennsylvania truss style represents a design that filled a particular need, beginning in the 19th Century, for bridges that could span broad crossings and stand up under strong loads.

The design sprang from existing Pratt and Parker truss types, which placed full-length diagonal members in panels for the first time. The Pennsylvania truss introduced half-length struts for the bottom parts of panels or half-length ties for upper portions, and sometimes both. The sloping of the top chords saves materials and places the depths of the truss at the center of the span, while the shorter subdivided panels reduce the required length and weight of deck stringer, distribute the loads uniformly and handle secondary stresses well. The Pennsylvania truss was well suited to long spans and remained popular through the early decades of the 20th century. Pennsylvania trusses were used not only as single span crossings but also for wider river crossings as multiple spans, with spans ranging from 130 to 600 feet long or more, including the longest simple-span trusses in the world. Pennsylvania truss bridges were once used for hundreds of bridges in the United States, but fell out of favor in the 1930s. Less than 100 functioning Pennsylvania truss highway bridges remain. Their complex truss design and use for long spans are evidence of significant engineering achievements.

Most metal truss bridges constructed prior to 1900 used pinned connections. In a pin-connected bridge, a metal rod joins the truss members together. This method of connections requires holes in the end of each member so that a pin can be driven through all the holes when the members are aligned. Pinned connections were popular because they permitted the fast and easy erection of trusses with minimal training

PO Box 66245, Austin, Texas 78766

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for local laborers. However, pinned connections lacked rigidity and were prone to loosening, especially under the vibration caused by the speed of vehicular loads. As a result, pin-connected truss bridges fell from favor in construction in the United States starting around 1890.

A number of factors make pin-connected truss bridges historically significant as a whole. Truss bridges represent a period in the development of bridge technology. Significant experimentation and developments occurred during this period as bridge design moved toward a general standardization. During the 1860s and 1870s, bridge companies received numerous patents in the United States, testifying to this period of development. The classic pin-connected Pratt truss (from which the Pennsylvania truss bridge is derived) is what essentially came out of this by the 1880s. Pin-connected truss bridges are also a snapshot of materials used in the period. A truss bridge may be made of wrought or cast iron, steel, or a combination of these. Most truss bridges make use of built-up beams that feature rivets and v-lacing, lattice, or battens which hold metal parts together to form a larger, complete beam. As a result, truss bridges, especially pin-connected trusses, are historically important to preserve as representative examples of technology used in a period of history.

The *Context for Common Historic Bridge Types*, developed by the Transportation Research Board in 2005, provides the following direction for assessing the significance of the roadway bridges of the Pennsylvania truss type: "Highway bridges built using the Pennsylvania truss are not amongst the more common bridge types in this study." The summary of significance for the Rogers Bridge notes that the bridge is the only pin-connected Pennsylvania thru truss remaining in Georgia. Furthermore, the bridge is the longest truss span in the state. These two factors alone are justification for the Rogers Bridge to be eligible under Criterion C in the area of engineering, which applies to properties that are significant in their design (pin-connect Pennsylvania thru truss and the longest truss span in the state).

Based on the information provided to you above, the Historic Bridge Foundation finds the justification found in the Historic Bridge Inventory Report to be contradictory. Just because the bridge is a "traditionally composed" Pennsylvania thru truss does not suggested the Rogers Bridge is without significance. We recognize the bridge has some structural problems and has lost its deck (the deck is not the character defining feature of the bridge), changes have not affected the overall appearance of the bridge nor do these changes sufficiently detract from the original design so that it can no longer convey its significance as a Pennsylvania truss bridge. Our review of detailed photos of the bridge show that original eyebars and built-up beams remain unaltered on the bridge, continuing to form a functioning and what appears to be a largely unaltered pin-connected Pennsylvania truss span. Therefore, we see no reason that the bridge should not be eligible to the National Register of Historic Places.

Sincerely yours,



Kitty Henderson
Executive Director

Cc: Terri Lott
Barbara Fisher