NPS Form 10-900-a
(8-86)

OMB Approval No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number _____ Page _____

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 89002182 Date Listed: 1/4/90

Long Shoals Bridge — Property Name
Bourbon — County
KS — State

Metal Truss Bridges in Kansas 1861--1939 MPS — Multiple Name

This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.

Beth Boland — Signature of the Keeper
1/4/90 — Date of Action

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Amended Items in Nomination:

Item #7, Description: Materials include 1) Metal: wrought iron; and 2) Wood.

Item #8, Significance: The applicable area of significance is engineering only.

Item #10, Geographical Data: The acreage is less than one.

DISTRIBUTION:
National Register property file
Nominating Authority (without nomination attachment)

NPS Form 10-900
(Rev. 8-86)

2182

OMB No. 1024-0018

NOV 2 8 1989

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name Long Shoals Bridge
other names/site number Same

2. Location

5 miles East and 1 mile South of Intersection 9 US 69 & F.A.S. 1741

street & number Unmarked County Road Z-3 ☐ not for publication
city, town Fulton ☒ vicinity
state Kansas code KS county Bourbon code 11 zip code 66738

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
☐ private	☐ building(s)		buildings
☒ public-local	☐ district		sites
☐ public-State	☐ site	1	structures
☐ public-Federal	☒ structure		objects
	☐ object	1	Total

Name of related multiple property listing:
Metal Truss Bridges in Kansas

Number of contributing resources previously listed in the National Register 0

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ☐ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☒ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

R. Cannon Pawnee — Nov. 16, 1989

Signature of certifying official — Date

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

☑ entered in the National Register. ☑ See continuation sheet. — Beth Boland — 1/4/90
☐ determined eligible for the National Register. ☐ See continuation sheet.
☐ determined not eligible for the National Register.
☐ removed from the National Register.
☐ other, (explain:) _____

Signature of the Keeper — Date of

6. Function or Use

Historic Functions (enter categories from instructions)	Current Functions (enter categories from instructions)
Transportation: Road related (Vehicular): Bridge	Transportation: Road related (Vehicular): Bridge

7. Description

Architectural Classification (enter categories from instructions)	Materials (enter categories from instructions)
~~Other: Parker Through Truss~~	foundation
	walls
	roof
	other Metal: Wrought Iron

Describe present and historic physical appearance.

The Long Shoals bridge, erected in 1902, is a pin connected Pratt through truss. It is 176 feet long and 14 feet wide. The wooden deck lies 14 feet above the water level.

The members of a truss bridge are designated either as chord members or web members. Chord members are those mainly defining the outlines of the structure and they are termed lower or upper chord members depending on whether they are found at the bottom or the top of the structure. Memberss between the chords are web members. They are called posts or ties if they sustain compression or tension respectively. In the instance of the Long Shoals bridge, as with all Parker trusses, the web members are alternately vertical and inclined. The inclined members are in tension and the verticals in compression.

As with all Parker trusses, the bridge features a polygonal top chord. It also features vertical end posts. In the Long Shoals bridge, the top chords and endposts are fabricated from two steel channels, a top plate and tied together with single bar lacing. The posts are fabricated from channel plate and single bar lattice. The ties consist of flat bars. The portal bracing is fabricated from angle stock and flat bars and forms a lattice design. Each end post is topped with a crown shaped finial. All main connections are pinned. The bridge has not been altered and retains a high degree of its structural integrity.

☐ See continuation sheet

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

☐ nationally ☒ statewide ☐ locally

Applicable National Register Criteria ☐A ☐B ☒C ☐D

Criteria Considerations (Exceptions) ☐A ☐B ☐C ☐D ☐E ☐F ☐G

Areas of Significance (enter categories from instructions)	Period of Significance	Significant Dates
Engineering	1902	1902
Transportation	1902	1902

Cultural Affiliation
n/a

Significant Person
n/a

Architect/Builder
Midland Bridge Company

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

The great evolution of truss bridge construction began in the United States soon after the publication of Squire Whipple's historic work on stresses in 1840. Prior to this the design work was essentially that of trial and error, experience and judgement. The Warren and Pratt trusses were rational designs and lent themselves readily to the system of analysis postulated by Whipple. They were therefore readily and rapidly accepted and formed the foundation for a greater part of American Truss design. The Parker polygonal top chord is a variant of the Pratt truss. This arched top chord made for a stronger bridge while using the same amount of material.

The vertical end posts or batter braces were generally deemed uneconomical to build in the late nineteenth century. Inclined braces, it was found, also contributed to the overall rigidity of the truss by facilitating a better distribution of stresses.

The bridge is unique in that it is one of only two vertical end post Parker trusses in Kansas, and retains a high degree of its integrity. Research into inventories of bridges conducted by various other states failed to locate any similar structures. It is also the most highly ornamented bridge in the state.

In a letter dated April 30, 1985, Eric N. DeLony, Principal Architect, Historic American Engineering Record, stated, "Until proven otherwise, we can assume that the high-portal, Parker truss type does not exist in other Great Plains states. We can conclude that the Long Shoals bridge (1902) and the Onion Creek bridge (1911) are two unusual and possibly unique variations of the Parker truss.

The Long Shoals bridge began making the news on July 3, 1902 when the Fort Scott Monitor reported its collapse before construction had even been completed. The article stated that there had been some concern about the

☐ See continuation sheet

condition of the abutments which "were built some time ago and the work on them was reported to have been in a very careless way."

It was believed that the stone used in the abutments was too soft to withstand the combined attacks of the weather and the river. By the time construction had begun on the bridge superstructure, cracks already began to appear in the masonry work.

The Monitor article went on to say that C. E. Stewart, the engineer in charge of the Midland Bridge Company's construction work, had told the county commissioners that the abutments were unsafe and would not even hold the dead weight of the bridge itself, but he was told to go ahead with the construction. Stewart continued under protest and was killed the morning of July 3, 1902 when the bridge collapsed. According to the Fort Scott Monitor of July 5, 1902, John Mozier, another contractor, was also killed and several other workmen had been injured. The article further stated, however, that the abutments were not to blame for the accident but that the "false piers on which the men were compelled to stand while at work were known to be unsafe."

Whatever the cause, the abutments were to be rebuilt. The Fulton Independent of July 18, 1902 reported that this time the county was to furnish the materials and the contractors, Griffith and Herman, would do the work without charge.

Several lawsuits followed the accident and on December 5, 1902 the Fulton Independent wrote, "The county authorities refuse to pay the bridge company for the Long Shoals bridge, so we learn, unless the bridge company will idemnify the county against certain damage suits now pending in the courts."

The Kansas Department of Transportation (KDOT) carried out a statewide inventory of historic bridges between 1980 and 1983. The bridges to be included were identified through computer printouts developed by KDOT, from information supplied by the counties (since almost all of the historic bridges were located on secondary rather than the primary road system), and by direct observation by field personnel. All bridges were inspected by KDOT personnel to verify the data on file. That information was jointly evaluated by representatives of KDOT, Kansas State Historical Society, and the State Historic Preservation Officer.

Each structure was evaluated using a points rating system adapted from the points evaluation rating developed by the Ohio Department of Transportation and Ohio Historic Preservation Office. Consideration was given to areas such as age, builder, number of spans, length, special features, history, integrity, surviving numbers, and preservation potential.

In many instances there is little information about individual structures. Often bridge plaques which may have contained information have been removed, or the county's records are not complete or have been destroyed. Due to the large numbers of similar structures there is often little to choose from in differentiating among individual bridges other than condition and the likelihood of preservation.

The purpose of the KDOT study and subsequent evaluation was to identify a representative selection of bridges of each class. Through this approach KDOT and KSHS hope to preserve for posterity some examples of each type.

9. Major Bibliographical References

Victor C. Darnell, American Bridge Building Companies, Washington, DC: Society for Industrial Archeology Occasional Publication 4, 1984.

David Weitzman, Traces of the Past: A Field Guide to Industrial Archeology, New York: Charles Schribner's Sons, 1980.

James L. Cooper, Iron Monuments to Distant Posterity, DePauw University, F.H.W.A., Indiana Dept. of Highways, Indiana Dept. Natural Resources, N.P.S., 1987.

Dan G. Deibler, A Survey and Photographic Inventory of Metal Truss Bridges in Virginia, Charlottesville: Virginia Highway & Transporation Research Council, 1975.

☐ See continuation sheet

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☐ recorded by Historic American Engineering Record # _____

Primary location of additional data:

- ☒ State historic preservation office
- ☐ Other State agency
- ☐ Federal agency
- ☐ Local government
- ☐ University
- ☐ Other

Specify repository: Kansas State Historical Society

10. Geographical Data

Acreage of property _____

UTM References

	Zone	Easting	Northing
A	15	357610	4206310
B			
C			
D			

☐ See continuation sheet

Verbal Boundary Description

The nominated property is located on the SE 1/4, SE 1/4, SE 1/4, SE 1/4, section 35, township 235, range 25E, on a tract measuring 176' x 14' whose northeast corner is represented by the northeast corner of the bridge. Beginning at the northeast corner the boundary proceeds 176' southwest, 14' northwest, 176' northeast, and 14' southeast to the point of beginning.

☐ See continuation sheet

Boundary Justification

The boundary includes only that area that is historically associated with the nominated property.

☐ See continuation sheet

11. Form Prepared By

name/title Larry Jochims
organization Kansas State Historical Society date September 20, 1989
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city or town Topeka state KS zip code 66612