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: 89002172 Date Listed: 1/4/90

Onion Creek Bridge	Montgomery	KS
Property Name	**County**	**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 — 1/4/90

Signature of the Keeper **Date of Action**

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Amended Items in Nomination:

Item #7, Description: Materials include 1) Metal: steel; and 2) Concrete.

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

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

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

NOV 2 [illegible]

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 Onion Creek Bridge

other names/site number Same

2. Location .5 mile south on Overlook Drive from U.S. 166

street & number Unmarked county road [ ] not for publication

city, town Coffeyville [x] vicinity

state Kansas code KS county Montgomery code 125 zip code 67337

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
[ ] private	[ ] building(s)		buildings
[x] public-local	[ ] district		sites
[ ] public-State	[ ] site	1	structures
[ ] public-Federal	[x] 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 [x] meets [ ] does not meet the National Register criteria. [ ] See continuation sheet.

Signature of certifying official — Date: Nov. 16, 1989

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 Action

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: steel

Describe present and historic physical appearance.

The Onion Creek bridge, erected in 1911, is a pin connected Pratt through truss. It is 104 feet long and 144.5 feet wide. The concrete deck lies 20.5 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. Members between the chords are web members. They are called posts or ties if they sustain compression or tension respectively. In the instance of the Onion Creek 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 Onion Creek bridge, the top chords and endposts are fabricated from two steel channels, a top plate and tied together with single bar lattice. 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 spherical finial. All main connections are pinned. It retains a high degree of structural integrity.

☐ See continuation sheet

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	1911	1911
Transportation	1911	1911

Cultural Affiliation

n/a

Significant Person

n/a

Architect/Builder

Western 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 use of steel was growing in popularity in Kansas by 1911. The greater strength of steel over wrought iron allowed the use of fewer, though more massive members. Steel bridges make a definite first impression on the viewer. As David Weitzman reports in his Traces of the Past, the steel bridge appears "more massive, ponderous, more earthbound," than its wrought iron relative. In spite of this fact, the Onion Creek bridge retains a light and almost airy appearance. The counters, vibration rods and struts needed for stability with the older pin connected designs are not found on the Onion Creek bridge even though all main connections are made with the use of a pin.

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. It is also unique in the fact that it is the earliest found use of a concrete floor on a metal truss bridge in the state. Research into inventories of bridges conducted by various other states failed to locate any similar structures.

☒ See continuation sheet

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 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 less than one acre

UTM References

	Zone	Easting	Northing
A	15	263700	4101080
B			
C			
D			

☐ See continuation sheet

Verbal Boundary Description

The nominated property is located on the SE 1/4, SE 1/4, NE 1/4, SE 1/4, section 4, township 35S, range 16E, on a tract measuring 104' x 14.5' whose northeast corner is represented by the northeast corner of the bridge. Beginning at the northeast corner the boundary proceeds 104' southwest, 14.5' northwest, 104' northeast, and 14.5' 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
street & number 120 W. 10th telephone (913) 296-3251
city or town Topeka state KS zip code 66612

Letter, Eric N. Delony, to Richard Pankratz, April 30, 1985, located at Kansas State Historical Society, Topeka, Kansas.

Charles E. Greene, Trusses and Arches, Part II, New York: John Wiley and Sons, 1881, p. 47.

"Commissioner's Meeting," Independence, South Kansas Tribune, May 10, 1911, p. 4.

"Bridge Contracts Let," Coffeyville Weekly Journal, May 12, 1911, p. 8.