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: 89002189 Date Listed: 1/4/90

Otter Creek Bridge — Property Name
Chautauqua — 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

==========

Amended Items in Nomination:

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

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

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

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

OMB No. 1024-0018

2189

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

NOV 2 8 1989

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 Otter Creek Bridge
other names/site number Same

2. Location

street & number 3 miles north of Cedar Vale on F.A.S. 95 ☐ not for publication
city, town Cedar Vale ☒ vicinity
state Kansas code KS county Chautauqua code 19 zip code 67024

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.

Ramon Powers — 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 Action

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: Camelback through truss	foundation walls roof other Metal: Steel

Describe present and historic physical appearance.

The Otter Creek bridge, erected in 1936, is a riveted steel camelback through truss. The single span is 122 feet long and 20 feet wide. The wooden deck rises 25 feet above the stream bed. The bridge is located on a right bend in the road on a northeast-southwest axis. This is often true as this alignment allows a right angle crossing of the stream.

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 Otter Creek bridge, as with all camelback trusses, the web members are alternately vertical and inclined. The inclined members are in tension and the verticals in compression.

As with all camelback trusses, the inclined endposts and top chord consist of exactly five slopes. In the Otter Creek bridge they are built up of sections consisting of two steel channels, a top plate and tied together with horizontal flat bars. The hip verticals, posts and main diagonals are all fabricated from angle stock with horizontal flat lacing bars. The portal bracing is fabricated from angle stock and flat bars. All connections are riveted. The bridge retains a high degree of 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	1936	1936
Transportation	1936	1936

Cultural Affiliation: n/a

Significant Person: n/a

Architect/Builder: W.P.A.

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 camelback, with its five slope-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 five slopes allowed for both greater standardization of its members and better stress distribution than other Pratt variants such as the Parker. It was also a more economical design in many situations.

The use of steel and solid rivited construction techniques were standard by 1936. 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. By 1936, the drawbacks of rivited construction, for the most part, been surmounted. The counters, vibration rods and struts needed for stability with the older pin connected designs were no longer found.

The Otter Creek bridge is important because it is an example of the work of depression era laborers and federal relief projects such as the K.E.R.A. and W.P.A. It is in good condition and retains an exceptional amount of its integrity. It is one of only four remaining camelback through trusses in Kansas.

☒ See continuation sheet

The Otter Creek bridge resulted from the destruction of the former structure by a flood in June 1935. The plans were drawn by the county engineer and as planned it was to be funded as a K.E.R.C. (Kansas Emergency Relief Committee) project. Construction was delayed due to the fact the K.E.R.C. was disbanded in the fall of 1935 and the W.P.A. took over the old projects. Unfortunately in the transfer, the W.P.A. office in Topeka lost the plans and new ones had to be prepared. Work finally began in late September under the supervision of county bridge foreman Dick Southwood. By January 3, 45 men were working on the project and work was progressing on the piers. A cold spell in early February and delayed steel work furtrher postponed the anticipated opening. In late March the steel arrived and the bridge was rushed to completion.

The Kansas Department of Transportation (KDOT) carried out a statewide inventory of historic birdges 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 Scribner'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, Chalottesville: Virginia Highway & Transportation Research Council, 1975.

"Planning New Otter Creek Bridge," Cedar Vale Messinger, July 5, 1935, p. 1.

[x] 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:

- [x] 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	14	722145	4114825
B			
C			
D			

[ ] See continuation sheet

Verbal Boundary Description

The nominated property is located on the NW 1/4, SW 1/4, NW 1/4, NE 1/4, section 20, township 33S, range 8E on a tract measuring 122' x 20' whose northeast corner is represented by the northeast corner of the bridge. Beginning at the northeast corner of the boundary proceed 122' southwest, 20' northwest, 122 northeast, and 20'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

"Asks Bridge Project Change," Cedar Vale Messinger, September 6, 1935. p. 1.

"Commissioner Brown Explains Relief Delay," Cedar Vale Messinger, September 13, 1935, p. 1.

"Start Work on Otter Creek Bridge," Cedar Vale Messinger, September, 20, 1935, p. 1.

"Few Men on WPA Project," Cedar Vale Messinger, October 4, 1935, p. 4.

"W.P.A. Summary," Cedar Vale Messinger, January 3, 1936, p. 1.

"Good Progress Reported on Otter Creek Bridge," Cedar Vale Messinger, January 24, 1936, p. 1.

"Bridge Work Halted," Cedar Vale Messinger, February 7, 1936, p. 1.

"Otter Creek Bridge Ready for Steel," Cedar Vale Messinger, March 20, 1936, p. 1.

"Steel for Otter Creek Bridge Arrives," Cedar Vale Messinger, March 27, 1936, p. 1.