

**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: 89002180

Date Listed: 1/4/90

Independence Bowstring
Property Name

Montgomery
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 #6, Function: The current function is "Vacant/Not in Use."

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

Item #8, Significance: Applicable National Register criteria are A and C.

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

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 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 Independence Bowstring
other names/site number Independence Bowstring

2. Location

street & number Burns Street north of Myrtle not for publication
city, town Independence vicinity
state Kansas code KS county Montgomery code 125 zip code 67301

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
<input type="checkbox"/> private	<input type="checkbox"/> building(s)	Contributing	Noncontributing
<input checked="" type="checkbox"/> public-local	<input type="checkbox"/> district	_____	_____ buildings
<input type="checkbox"/> public-State	<input type="checkbox"/> site	_____	_____ sites
<input type="checkbox"/> public-Federal	<input checked="" type="checkbox"/> structure	<u>1</u>	_____ structures
	<input type="checkbox"/> object	_____	_____ objects
		<u>1</u>	_____ Total

Name of related multiple property listing: Metal Truss Bridges of 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 nomination request for determination of eligibility meets the documentation standards for registering property in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR 60.103. In my opinion, the property meets does not meet the National Register criteria. See continuation sheet.
[Signature] 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. Beth Boland 1/4/90
 See continuation sheet.
 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

6. Function or Use

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

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

7. Description

Architectural Classification
(enter categories from instructions)

Other: Bowstring Through Truss

Materials (enter categories from instructions)

foundation _____
walls _____

roof _____
other Metal: Wrought Iron

Describe present and historic physical appearance.

The Independence bowstring truss, erected in 1871, is 154 feet long and 18 feet wide. It is located approximately 25 feet above the level of the river.

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.

The Independence bowstring arch truss is a tubular wrought iron design, patented in 1873, by David Hammond, who was one of the most prolific designers of metal truss bridges during the 19th century and a principal of the Wrought Iron Bridge Company. The main feature of his patent was a tubular arch, made up of rivited wrought iron plates that improved the strength of the arch without adding to the weight.

The bridge is a tied arch with diagonal webs serving as bracing. The diagonal rods are threaded at both ends and pass through the upper and lower chord and are attached to the ends by nuts. The verticals consist of threaded wrought iron star bars which are attached to the upper and bottom chord in a similar manner with nuts. Deck beams, supporting the road, sit on top of the bottom chord members at the panel points.

The decking was removed from the bridge in the 1960s, and it is closed to any type of traffic. It does however retain a high degree of its structural integrity.

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)

Engineering
Transportation

Period of Significance

1871
1871

Significant Dates

1871
1871

Cultural Affiliation

n/a

Significant Person

n/a

Architect/Builder

Wrought Iron Bridge Builders

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. He was also one of the first in our history to manufacture and erect his iron bridge designs. The Whipple bowstring dotted the countryside. As the ultimate compliments was imitation, his plans were widely copied with "improvements" that would protect the competitor from patent infringement. When his patent expired in 1869, hundreds more appeared, many even copied down to the last detail.

In 1871, Wrought Iron Bridge Company was using proprietary wrought iron bridge sections as manufactured by the Phoenix Iron Company in its bowstring arches. This Philadelphia, Pennsylvania company became famous for manufacturing everything from the initial iron to erecting finished bridges.

The particular patent for the tubular columns used in the Independent bridge was granted to S. J. Reeves of Philadelphia on June 17, 1862. The Reeves family controlled Phoenix Iron Company.

According to the patent, Reeves claimed that he had found a new way of uniting together three or more pieces of wrought iron, "made with flanges in the direction of their length, so that they shall form a column or shaft to be used as posts and also as braces or compression chords in the construction of buildings, bridges, piers or other structures."

On February 22, 1871 the Kansas State Legislature authorized Montgomery county to issue up to \$35,000 in bonds to erect bridges in the county. Controversy quickly erupted as many believed the issue was pushed by a "ring" who hoped to locate the bridges without regard to the people's wishes. many felt the county was too young to incur such expenses. They barely had enough taxable property to cover incidentals. Elk City was

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particularly concerned and warned Independence that they were now weak but one day would be large enough to "pay her back in her own coin" if they were slighted. They advocated that wooden bridges be built to make the money go farther. The county commission decided on four locations. One at Parker, one at Liberty, one at Elk City and one at Independence.

Four companies entered bids, the Miller Bridge Company (\$29,235); King Bridge Company (\$29,585); Canton Wrought Iron Bridge Company (\$29,853); and the Ohio Bridge Company (\$31,250). Miller was unable to accept county bonds and King's masonry specifications were inferior to Wrought Iron Bridge Company so the latter was awarded the contract.

Work on the Independence bridge slowed in July 1871 because the approach work was not attended to. It was generally true in early Kansas bridge construction that although the county funded the bridge, the various townships were responsible for the approaches within their jurisdiction. Independence township was dragging their feet.

The King Iron Bridge Company filed suit over the letting of the bid and Wrought Iron Bridge was forced to give bond to King in case the matter was settled against them. King did not prevail.

By September 21, 1871, the main span was in position and adjusted and approach work was anticipated. Two months later it was completed. The local press considered it to be a work of "untold value to the people of our county, as well as to the hundreds of emigrants pushing through to the eastern counties."

The Independence bridge is the only identified, still remaining, example in Kansas of a bowstring through truss utilizing the Phoenix column. It also represents the optimism of the surrounding settlers and stands for the prosperity they saw in the future for their community and as such is worthy of listing.

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 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.

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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.

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, Charlottesville: Virginia Highway & Transportation 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:
KS State Historical Society

10. Geographical Data

Acreage of property _____

UTM References

A

1	5	2	6	1	0	2	0	4	1	2	3	0	1	0
Zone			Easting					Northing						

C

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

B

Zone		Easting					Northing							

D

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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 30, township 32S, range 16E, on a tract measuring 229' x 18' whose northeast corner is represented by the northeast corner of the bridge. Beginning at the northeast corner the boundary proceeds 229 feet southwest, 18 feet northwest, 229 feet northeast, and 18 feet southwest to the point of beginning.

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

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- "The Bridges," (Independence) Southern Kansas Tribune, March 8, 1871, p. 3.
- "Bridge Bonds," Ibid, p. 2.
- "Elk City," Ibid, March 15, 1871, p. 3.
- "Elk City," Ibid, March 22, 1871, p. 2.
- "Bridges," Ibid, May 3, 1871, p. 3.
- "Bridge Contracts Let," Ibid, May 24, 1871, p. 3.
- "Locals," Ibid, June 7, 1871, p. 3.
- "The Bridges," Ibid, July 26, 1871, p. 3.
- "The Bridges," Ibid, August 30, 1871, p. 3.
- "Locals," Ibid, September 27, 1871, p. 3.
- "The Iron Bridge," Ibid, November 22, 1871, p. 4.
- "An Imposition," Ibid, p. 4.
- "Free Iron Bridge," Ibid, December 20, 1871, p. 3.
- U.S. Patent Office, Gazette, Patent 35,582, June 17, 1862.