

United States Department of the Interior
National Park Service

NATIONAL REGISTER
LISTED

APR 16 2008

National Register of Historic Places
Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A) Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-9000a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

Historic name Beaver Creek Native Stone Bridge
Other name/site number Beaver Creek Native Stone Bridge - Barton County, Kansas

2. Location

Street & number NE 50 Ave. S & NE 230 RD - 1/4 mile S on NE 50 Ave. not for publication
City or town Beaver vicinity
State Kansas Code KS County Barton Code 009 Zip code _____

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, 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. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)
Patrick Zollner 2/29/08
Patrick Zollner, Deputy State Historic Preservation Officer Date
Kansas State Historical Society

State or Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria. (See continuation sheet for additional Comments.)

Signature of commenting official /Title Date

State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is

<input type="checkbox"/> entered in the National Register. _____ <input type="checkbox"/> See continuation sheet.	Signature of the Keeper	Date of Action
<input type="checkbox"/> determined eligible for the National Register _____ <input type="checkbox"/> See continuation sheet.		
<input type="checkbox"/> determined not eligible for the National Register _____		
<input type="checkbox"/> removed from the National Register _____		
<input type="checkbox"/> other, (explain): _____		

Beaver Creek Native Stone Bridge
Name of Property

Barton County, Kansas
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

Category of Property
(Check only one box)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
_____	_____	buildings
_____	_____	sites
1	_____	structures
_____	_____	objects
1	_____	total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

New Deal-era Resources of KS
Masonry Stone Arch Bridges of KS

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions
(Enter Categories from instructions)

Transportation: Road Related (Vehicular)

Current Functions
(Enter categories from instructions)

Transportation: Road Related (Vehicular)

7. Description

Architectural Classification
(Enter categories from instructions)

Other: Works Projects Administration (WPA)
Stone Arch Bridge

Materials
(Enter categories from instructions)

Foundation: STONE: limestone
Walls: STONE: limestone

Roof: _____
Other: _____

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

Beaver Creek Native Stone Bridge
Name of Property

Barton County, Kansas
County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "X" in one or more boxes for the criteria qualifying the property for National Register)

- A** Property is associated with events that have made a significant contribution to the broad patterns of our history
- B** Property is associated with the lives of persons significant in our past.
- C** Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D** Property has yielded, or likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- A** owned by a religious institution or used for religious purposes.
- B** removed from its original location.
- C** a birthplace or grave.
- D** a cemetery.
- E** a reconstructed building, object, or structure.
- F** a commemorative property.
- G** less than 50 years of age or achieved significance within the past 50 years

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

Areas of Significance

(Enter categories from instructions)

SOCIAL HISTORY

GOVERNMENT

ARCHITECTURE

Period of Significance

1941

Significant Dates

1941

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

N/A

Architect/Builder

Works Projects Administration

9. Major Bibliographical References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

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

Primary location of additional data:

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other

Name of repository:

Barton County

Beaver Creek Native Stone Bridge
Name of Property

Barton County, Kansas
County and State

10. Geographical Data

Acreage of Property Less than one.

UTM References

(Place additional UTM references on a continuation sheet.)

1

1	4	9	8	4	0	5	8	3	8	4	1	0	4	2
Zone		Easting						Northing						

2

Zone		Easting						Northing						

3

Zone		Easting						Northing						

4

Zone		Easting						Northing						

See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

Name/title Janet Crane , Financial Officer

Organization Barton County, Kansas Date 11/5/2007

Street & number 1400 Main Room 107 Telephone 620-793-1800

City or town Great Bend State KS Zip code 67530

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional items

(Check with SHPO or FPO for any additional items)

Property Owner

Name Barton County, Kansas

Street & number 1400 Main Room 107 Telephone 620-793-1800

City or town Great Bend State KS Zip code 67530

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503

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Beaver Creek Native Stone Arch Bridge
Beaver vicinity, Barton County, Kansas

NARRATIVE DESCRIPTION

Summary

This single arch native limestone bridge is located on a north-south rural County road, NE 50 Avenue, on the headwaters of Beaver Creek near Beaver, Kansas. It was completed in 1941 as a Works Projects Administration job as evidenced by the decorative arch keystones on the east and west sides of the bridge. On the top of the round arch on the east side of the bridge is a keystone inserted with the date, "1941". On the top of the west round arch is a keystone inserted with the initials, "WPA". The bridge is virtually unaltered since construction. Beaver Creek flows during seasonal rains and during dry periods, native vegetation grows in the creek bed. On both sides of the bridge is pasture land used for grazing. On the east side, limestone fencing is utilized. Limestone beds can be seen on the ridges of the hills dotting the countryside.

The bridge is located on a well maintained township gravel road in Barton County. Due to the dimensions of the bridge, bridge repair and maintenance is the responsibility of the Barton County Road and Bridge Department.

Elaboration

The single arch bridge structure is made of native limestone blocks and concrete mortar joints. The limestone blocks have a rusticated face and many retain the tool markings from when they were quarried by skilled WPA construction workers. We do not know who specifically designed this single arch bridge. We do know that then-Barton County Engineer Harry Hunsley, II, designed many of the County's bridge structures. The only notation made in the Barton County Commission minutes was on July 8, 1941. It was a one-sentence statement; "It is the desire and intention of the County Commissioners of Barton County, Kansas to start work on WPA projects at once."

The bridge measures 25 feet wide from curb to curb and is 20 feet long. The arch measures 10 feet high from the ground to the keystone. The arch base measures 8 feet wide. The only features visible from the roadway are the stone sidewalls that serve as guardrails. These sidewalls, which are flush with the rest of the structure, are made of three courses of limestone topped by a fourth course of capstones. Stepped down from both sides of the sidewalls are slightly angled wingwalls built into the roadside embankment. These 6 feet wide wingwalls protect the structure from erosion during high water flows.

While showing some deterioration such as typical spalling, cracking and mortar failure, the bridge has remained in use for public vehicular traffic since its construction in 1941 to the present time. It is listed on

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Beaver Creek Native Stone Arch Bridge
Beaver vicinity, Barton County, Kansas

the bridge inventory of Barton County. Routine structural inspections are performed to evaluate the condition of the bridge.

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Beaver Creek Native Stone Arch Bridge
Beaver vicinity, Barton County, Kansas

STATEMENT OF SIGNIFICANCE

Summary

The Beaver Creek Native Stone Bridge is being nominated to the National Register of Historic Places under Criterion A for its construction under the supervision of the Works Projects Administration (WPA) and Criterion C for its architectural significance as a native limestone single arch bridge. The bridge, unique with a single arch design, spans Beaver Creek in northern Barton County, north of Beaver, Kansas. The bridge's native limestone construction is typical of structures built in this area and is representative of the master stone builders and craftsmanship of bridge construction workers trained by the Works Projects Administration. The bridge is being nominated as part of two multiple property nominations: the New Deal-Era Resources of Kansas MPS and the Masonry Arch Bridges of Kansas MPS.

History

Beaver, Kansas History

"During the summer of 1918, Mr. Piester was named as local sales agent for the sale of town lots for the present town of Beaver. During this summer, Mr. Piester assisted in the organization of a bank to be known as the Farmers National Bank, to be located in the future town of Beaver. The Board of Directors of the Farmers National Bank were also the owners of the Farmers State Bank at Redwing, including the building housing it. It was voted to move the building and business of the Bank of Redwing to a site eight miles north. The building was placed on a moving outfit and was placed in Block 10 of the new Town of Beaver, and opened for business on Monday, August 10, 1918. Thus, was born the Town of Beaver, Kansas."¹

*New Deal-era Historic Context*²

Through the Works Progress Administration (later reorganized as the Works Projects Administration), Kansas realized many new public building and recreational facilities. Between July 1, 1935 and June 1, 1939 the WPA either built or improved 619 buildings in the state. That figure includes 36 administrative buildings, 16 auditoriums, 45 barns and stables, 58 community buildings, 59 dormitories, three firehouses, 35 garages, 12 gymnasiums, two hospitals, three jails and reformatories, ten other institutional buildings, seven libraries, 142 schools, 52 stadiums, and 16 warehouses. In addition, there were 121 WPA recreational facilities, including 59 athletic fields, 91 parks, five fairgrounds, 92 playgrounds, 40

¹ Calvin Piester, *Family Heritage Album of Barton County, Kansas – Founding and Early History of Beaver, Kansas*. Written for the 1961 Diamond Jubilee of Hoisington.

² The following historic context regarding the Works Progress Administration is included in Elizabeth Rosin's "New Deal-era Resources of Kansas" Multiple Property Document, filed at the Kansas State Historic Preservation Office, Topeka, Kansas: p. 220-22

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Beaver Creek Native Stone Arch Bridge
Beaver vicinity, Barton County, Kansas

swimming and wading pools, 14 band shells, five outdoor theaters, and 140 golf courses, tennis courts, handball courts and horseshoe courts.³

In 1939, Clarence Nevins, the state WPA Administrator, commended the people of Kansas. He observed,

“Your attention is called to the fact that practically all of the projects in Kansas have been sponsored by your local governments, and we take this opportunity to commend the counties, the cities, boards of education and other local governmental units in the State for the high type of projects submitted to this agency...”

Nevins concluded by commenting that in June of 1939 there were roughly 30,000 Kansans on the WPA rolls. He observed that over 47 percent were employed on highway or road and street projects; seven percent on public buildings; nine percent on recreational buildings; five percent on utility projects; three percent on road conservation projects; and two percent on airport and airway projects.⁴

Bridge History Context

As is noted in the “Masonry Arch Bridges of Kansas” MPS document, “Little historical information, such as the designer, builder, and date of construction, is available on many of small rural bridges. Often bridge plaques that may have contained historical information have been removed or the county’s records are not complete.”⁵

Although there is no record of who designed the Beaver Creek Native Stone Bridge, it is known that then-Barton County Engineer Harry Hunsley, II, was integrally involved in the planning and execution of this and other similar local bridge projects. Fortunately, this bridge retains its important decorative keystones noting its 1941 construction as part of a WPA project.

The “Masonry Arch Bridges of Kansas” MPS document also discusses the use of limestone arched bridges well before the New Deal programs of the 1930s: “Stone arch bridges were popular in Kansas for many reasons, a major one being that the stone was often available locally. Thus, a larger amount of the money expended for the construction could be retained within the area than would be true with the purchase of a metal structure. It was also often possible to use local workers on the project. This approach sometimes had its drawbacks as the quality of local stone and workers would vary widely.”⁶

Construction Process

³ Works Projects Administration, *Federal Works Agency*, (Topeka, KS: n.p., 1939), 1, 10. Kansas State Historical Society, Topeka, KS. This document provides only aggregate numbers of projects. While it is illustrated by photos of selected projects, there is no comprehensive list of projects for Kansas communities.

⁴ Eric Foner and John A. Garraty, *The Reader’s Companion to American History* (Boston: Houghton-Mifflin, 1991), 1168.

⁵ “Masonry Arch Bridges of Kansas.” National Register Multiple Property Documentation Form.

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Beaver Creek Native Stone Arch Bridge
Beaver vicinity, Barton County, Kansas

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The Barton County Engineer, Clark Rusco and Financial Officer, Janet Crane interviewed Harry Hunsley, III, about these historic bridges. The following excerpt on the construction process was compiled from this interview and Mr. Hunsley's personal notes:

During the late 1930's and early 1940's, the Work Projects Administration (WPA) began a massive public works program to provide living wages for the unemployed.³⁷ A part of this program was the construction of hundreds of small drainage structures of native limestone in Kansas. The stone arch bridges built throughout North Central Kansas during the WPA era were generally built close to the quarry. Evidence of these old quarries can normally be found within a half mile of the structure location. The difficulty of transporting stone by man and animal made it mandatory that quarries be located near the job site.

At the quarry, the limestone ledges would be stripped of overburden by use of mules/horses pulling a drag or "tumble bug"; the cleaned surface would then have a series of holes manually drilled at even spaces approximately 12" apart by use of a star drill. The holes would be carefully filled with water and allowed to freeze overnight. The freezing process would open a seam in the rock and men would carefully break out the rock using pry bars specially made for this operation.

The stones were sometimes cut into proper sizes at the quarry and transported to the job site by wagons. Other times, the stone would be taken to the job site in long (8'-10') lengths which were carefully attached to the undercarriage of wagons by block and tackle accompanied by serious physical labor. It is a general assumption that the decision as to whether to take cut stones or long slabs depended on where the stone masons wanted to perform the finish operation of dressing the individual stones to fit the plans for the structure.

Most of these structures were built as arches. Bridges employing only compression are relatively inefficient structurally, but may be highly cost efficient where suitable materials are available near the site and the cost of labor is low. For medium spans, trusses or box beams are usually most economical, while in some cases, the appearance of the bridge may be more important than its cost efficiency. This is very true of construction during the WPA era; the purpose was to create jobs for the unemployed, not the practicality of the project.

Stone is strong in compression and somewhat so in shear, but cannot resist much force in tension. As a result, masonry arch bridges are designed to be constantly under compression, so far as is possible. Each arch is constructed over a temporary falsework frame, known as a centering. In the first compression arch bridges, a keystone in the middle of the bridge bore the weight of the rest of the bridge. The more weight that was put onto the bridge, the stronger its structure became. Masonry arch bridges use a quantity of fill material (typically compacted rubble) above the arch in order to increase this dead-weight on the bridge and prevent tension from occurring in the arch ring as loads move across the bridge. When masonry (cut stone) is used the angles of the faces are cut to minimize shear forces. Where random masonry (uncut and

³⁷ For a complete historic context about New Deal Programs in Kansas, see Elizabeth Rosin's "New Deal-era Resources of

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Beaver Creek Native Stone Arch Bridge
Beaver vicinity, Barton County, Kansas

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unprepared stones) is used they are mortared together and the mortar is allowed to set before the falsework is removed.

Where the arches are founded in a stream bed the water is diverted and the bed excavated to a good footing. From this foundation piers are raised to the base of the arches, a point known as the springing. Falsework centering is fabricated, typically from timbers and boards. Since each arch of a multi-arch bridge will impose a thrust upon its neighbors it is necessary that either all arches of the bridge be raised at the same time or that very wide piers are used. The thrust from the end arches is taken into the earth by footings at the walls or by large inclined planes forming ramps to the bridge, which may also be formed of arches. The several arches are constructed over the centering. Once the basic arch barrel is constructed, the arches are stabilized with infill masonry between the arches, which may be laid in horizontal running bond courses. These may form two walls known as the spandrels, which are then infilled with loose material and rubble. Parapet walls extend above the arches and confine traffic to the bridge roadway.⁸

Summary

Author Henry Tyrrell said in his book *Artistic Bridge Design* that "the bridges and structures created by a people or nation reveal their degree of aesthetic taste and are a measure of their culture and civilization. Bridges should be strong enough to last and beautiful enough to be worth preserving."⁹ The Beaver Creek Native Stone Bridge clearly reflects the use of local materials and craftsmanship that is worthy of preservation. The bridge remains a part of the public transportation system for Barton County and is used by typical rural traffic. It is routinely inspected and, with rehabilitation, should retain its structural integrity and be preserved as an example of local stone arch bridge building skill.

Barton County is the lead governmental agency for the Kansas Wetlands and Wildlife National Scenic Byway. There is an increased historic awareness of the architectural significance of projects built under the WPA. We realize that tourists and travelers enjoy the cultural and historic aspects of local communities. Developing a listing of historic WPA bridges will enhance the travelers' experience of our local region.

Our local citizens want to protect our historic resources to preserve our own cultural heritage for generations to come. Most importantly, the bridge is beautiful and aesthetically charming in the rural countryside setting.

⁸ Conversation with Harry Hunsley, III, Russell, Kansas.

⁹ "The Art of Bridge Building," *Artistic Bridge Design*, Henry Tyrrell, New York, 1914, p. 10.

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Beaver Creek Native Stone Arch Bridge
Beaver vicinity, Barton County, Kansas

BIBLIOGRAPHY

Barton County Commission Minutes dated July 8, 1941.

Conversations with Harry Hunsley, III - Russell, Kansas.

Harry Hunsley, III, is the son of a prior Barton County Engineer, Harry Hunsley, II. Harry Hunsley, II was the Barton County engineer during the WPA era. His work for the County spanned for the period 1936 – 1956.

Piester, Calvin. Family Heritage Album of Barton County, Kansas - Founding and Early History of Beaver, Kansas. Written for the 1961 Diamond Jubilee of Hoisington.

Jochims, Larry. "Masonry Arch Bridges of Kansas." National Register Multiple Property Documentation Form. 1985. Filed at the Kansas State Historic Preservation Office.

Rosin, Elizabeth, et. al. "New Deal-era Resources of Kansas." National Register Multiple Property Documentation Form. 2002. Filed at the Kansas State Historic Preservation Office.

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Section Number 10 & Photos Page 8 Beaver Creek Native Stone Bridge
Beaver vicinity, Barton County, Kansas

VERBAL BOUNDARY DESCRIPTION

The bridge is centered on a point whose longitude is 98° 40' 58" and latitude is 38° 41' 42". There is a 50-foot right-of-way width surrounding this area. The nominated property includes the entire right-of-way.

The legal description is as follows:

NW ¼ SEC 5, T 16 S, R 12 W

NE ¼ SEC 6, T 16 S, R 12 W

BOUNDARY JUSTIFICATION

These boundaries were selected to encompass the entire right-of-way surrounding the bridge.

PHOTOGRAPIC INFORMATION

Property: Beaver Creek Stone Arch Bridge

Location: Beaver vicinity, Barton Co., KS

Photographer: Clark Rusco, County Engineer

Date: January 3, 2008

Location of Digital Images or Negatives: Kansas State Historical Society

Photo 1: Overall view of bridge and NE 50 Avenue, facing S

Photo 2: East stone guardrail, facing NE

Photo 3: View from east ditch showing stone arch, facing W

Photo 4: View from east ditch, detail of stone arch with "1941" keystone, facing W