NPS Form 10-900
(Rev. 10-90)

OMB No. 1024-0018

077

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NAT. REGISTER OF HISTORIC PLACES
NATIONAL PARK SERVICE

United States Department of the Interior
National Park Service

NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM

1. Name of Property

historic name Opossum Creek Bridge

other names/site number Walker Bridge/Structure #53N4130E0040000

2. Location

street & number Carries County Road NS-413 over Opossum Creek not for publication N/A
city or town South Coffeyville vicinity x
state Oklahoma code OK county Nowata code 105
zip code 74072

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this x 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. I recommend that this property be considered significant ___ nationally _x__ statewide _ locally. (N/A See continuation sheet for additional comments.)

Signature of certifying official Date

Oklahoma Historical Society, SHPO
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 or other official Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby certify that this property is:

✓ entered in the National Register Edson H. Beall
___ 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): _____

for 3.4.09
Signature of Keeper Date of Action

5. Classification

Ownership of Property (Check as many boxes as apply)

_ private
x public-local
_ public-State
_ public-Federal

Category of Property (Check only one box)

_ building(s)
_ district
_ site
x structure
_ object

Number of Resources within Property

Contributing	Noncontributing	
___	___	buildings
___	___	sites
1	___	structures
___	___	objects
1	___	Total

Number of contributing resources previously listed in the National Register 0

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

6. Function or Use

Historic Functions (Enter categories from instructions)
Cat: TRANSPORTATION Sub: road-related (vehicular)

Current Functions (Enter categories from instructions)
Cat: TRANSPORTATION Sub: road-related (vehicular)

7. Description

Architectural Classification (Enter categories from instructions)
OTHER: Stone Arch Bridge

Materials (Enter categories from instructions)
foundation STONE: Limestone
roof
walls STONE: Limestone
other

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

8. Statement of Significance

Applicable National Register Criteria (Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing)

__ 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.

_x_ 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 is likely to yield information important in prehistory or history.

Criteria Considerations (Mark "X" in all the boxes that apply.)

____ A owned by a religious institution or used for religious purposes.

____ B removed from its original location.

____ C a birthplace or a 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.

Areas of Significance (Enter categories from instructions)

ENGINEERING

Period of Significance 1913

8. Statement of Significance (Continued)

Significant Dates 1913

Significant Person (Complete if Criterion B is marked above)
N/A

Cultural Affiliation N/A

Architect/Builder Enoch W. McCormick, contractor

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

9. Major Bibliographical References

(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 Record # _____

Primary Location of Additional Data
___ State Historic Preservation Office
___ Other State agency
___ Federal agency
___ Local government
___ University
_x_ Other
Name of repository: Oklahoma Department of Transportation Cultural Resources Program

10. Geographical Data

Acreage of Property Less than one acre

UTM References (Place additional UTM references on a continuation sheet)

	Zone	Easting	Northing		Zone	Easting	Northing
1	15	264760	4093140	3			
2				4			

N/A 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 Anna Marie Eddings, Historian/Architectural Historian

organization Oklahoma Department of Transportation Cultural Resources Program date October 20, 2008

street & number 111 East Chesapeake, room 102 telephone (405)325-8665

city or town Norman state OK zip code 73019

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 the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of the SHPO or FPO.)

name Nowata County

street & number 229 N. Maple St. telephone (918) 273-0175

city or town Nowata state OK zip code 74048

Description

Summary

The Opossum Creek Bridge, known historically as the Walker Bridge, is located in Nowata County approximately two miles southwest of the small town of South Coffeyville, Oklahoma. Enoch W. McCormick, a local contractor, constructed this single-span stone arch bridge in 1913. The bridge carries the unpaved County Road NS-413 over Opossum Creek, just south of the intersection with County Road EW-4. This intersection is approximately eight-tenths of a mile west of US Highway 169 and the Union Pacific Railroad. The setting of the bridge is rural, in a sparsely wooded stream valley surrounded by pasture and a few isolated oil storage tanks.

Opossum Creek Bridge

This single-span, stone arch bridge is 44 feet in length from abutment to abutment, while the length of the arch opening is 35 feet. The 15-foot wide bridge deck is gravel. The entire bridge (except the fill material) is constructed of rectangular-cut limestone blocks laid in regular courses. The blocks have a tooled finish.

The Opossum Creek Bridge has the standard components of a stone arch bridge. The arch ring is constructed of stone blocks called voussoirs, with a keystone in the center. The arch ring supports the spandrel walls, which reach from the arch ring up to the bridge deck. The area between the spandrel walls, above the arch ring, and below the deck contains fill material, helping distribute loads evenly. Although the precise fill material of the Opossum Creek bridge was not determined, fill is typically composed of earth, gravel, and/or larger stones. Unlike some stone arch bridges, the Opossum Creek Bridge does not have fill material at the crown (top) of the arch, so the bridge deck is directly on the topmost part of the arch ring. Neither does the Opossum Creek Bridge have curb or parapet at the outer edges of the deck. The abutments of a stone arch bridge are located at the base of the arch ring to counter the outward thrust which loads bearing down on the top of the arch transmit to the lower part of the arch ring. A bridge's wing walls extend out from the abutment/spandrel walls to retain roadway fill at each side of the abutment. The stone wing walls of the Opossum Creek Bridge are characterized as flared because they form an acute angle with the roadway leading to the bridge.

Alterations/Condition

The Opossum Creek Bridge appears to have only minimal alterations, and deterioration is minor. Because no historic photographs or plans were available to document the original appearance, the extent of alterations is uncertain, although none are apparent. There may have been more fill material on top of the arch ring. Affecting the setting more than the bridge itself, rip-rap consisting of large boulders has been placed at the southwest, southeast, and northeast corners of the bridge and extends some distance down the stream channel. This material helps protect the bridge by preventing erosion or scour, which could undermine the abutments and cause cracks. There are minor cracks and a few loose and missing stones. The most pronounced area of deterioration is at the base of the northwest

wing wall. Overall the bridge is in

satisfactory condition, with a sufficiency rating of 48.8 on a scale of 100 as determined by the state bridge inspection process.

Narrative Statement of Significance

Summary

The Opossum Creek Bridge, carrying County Road NS-413 over Opossum Creek in rural northern Nowata County, is eligible for inclusion in the National Register of Historic Places under Criterion C for Engineering because it is one of the best remaining stone arch bridges in Oklahoma. Stone arch bridges are rare in the state, and this 1913 structure displays distinctive engineering features and integrity.

Historical Background

Stone arches are probably some of the oldest bridges still extant in the United States because they are more lasting than timber bridges and were likewise built before fabricated metal became available. In Oklahoma, however, townships and counties began in earnest to construct the transportation infrastructure in the years around 1907 statehood, which coincided with the height in productivity and efficiency of companies that specialized in metal truss bridges. While the good roads movement and the growth of towns and cities was providing the impetus for road improvements, the economy and ease of construction that metal truss bridges afforded made them a popular choice. Stone arch bridges, in contrast, were labor intensive, required skilled masons, and were an economical option only if suitable building stone was located nearby. Nevertheless, stone arch bridges were favored for their low maintenance requirements, durability, and strength. Therefore, in areas were stone was abundant and there were skilled stone masons, county commissioners contracted with them to build a number of stone arch bridges, usually relatively small structures.[1]

The rarity of stone arch bridges in Oklahoma is documented in the 2007 Oklahoma Historic Bridge Survey, a comprehensive survey that sought to document all metal truss and stone and concrete arch bridges on county/city roads as well as state and US highways throughout Oklahoma. This survey documented 1,061 bridges, which includes only 15 stone arch bridges. One of these, structure #3628 0101 X, has gone through environmental clearance to be replaced and presumably is no longer extant. The remaining 14, it is assumed, are still standing. The Opossum Creek Bridge, although not the most impressive of these, is one of the better examples of stone arch bridge technology in the state and was designated as NRHP-eligible as a result of the bridge survey. The Opossum Creek Bridge, as described above, is 44 feet long with a 35-foot arch opening, and has minimal deterioration. Four of the documented stone arch bridges are in Kay County in north-central Oklahoma, a county known for its limestone construction. Two of these, structure #36E0120N3270004 and structure #36N3385E0070002, are, like the Opossum

[1] "A Context for Common Historic Bridge Types," NCHRP Project 25-25, Task 15, prepared for the National Cooperative Highway Research Program, Transportation Research Council, National Research Council, by Parsons Brinckerhoff and Engineering and Industrial Heritage, October, 2005, pages 3-48, 3-49; Joseph E. King, *Spans of Time: Oklahoma's Historic Highway Bridges* (Oklahoma City, OK: Oklahoma Department of Transportation, 1993), 5, 67; "Indiana Bridges Historic Context Study, 1830s-1965," report prepared by M&H Architecture, Inc. for Indiana Department of Transportation, February, 2007, 65-66.

minimal deterioration and no curb or parapet, with arch lengths of 20 and 30 feet, respectively. The later, structure #36N3385E0070002, is NRHP-eligible. Structure #36N3390E0090002, a slightly more significant single-span structure at 45 feet long with a stone parapet, is also NRHP-eligible. Kay County also has a two-span stone arch bridge: structure # 36N3380E0060003, which has individual span lengths of 13 feet and much deterioration. The remaining stone arch bridges documented in the survey are not concentrated in any single county. Structure #57N3740E0240005, a NRHP-eligible, 166-foot, three-span bridge is particularly noteworthy. Structure 4314 0270 X is a 20-foot, single-span stone arch bridge that is a contributing resource in the NRHP-listed Lake Murray State Park (NR #01001097). Structure #59N3530E0410001 is skewed and has two circa 11-foot arches. Structure #41N3440E0910001 is a 21-foot stone arch with concrete spandrel walls and parapet. Structures #64N4095E1755000 (NRHP-eligible), #60N3460E0620009 and #49E0610N4390007 (NRHP-eligible) are all single-span structures ranging from approximately 30 to 20 feet in length, and all have some serious elements of deterioration. Structure #5602 1722 X is a 36-foot, single-span structure that is a contributing resource in the NRHP-listed Okmulgee Downtown Historic District (NR #92001693). It has been altered by the addition of layers of concrete to its arch ring. Structure #59E0530N3570009 is a two-span, 28-foot structure which also has concrete layers added to its arch rings.[2] When compared with these bridges, the Opossum Creek Bridge is among the longer-span structures retaining the best condition.

Opossum Creek Bridge

The Opossum Creek Bridge's construction reflects the combination of locally-available building stone and skilled stonemasons that brought about Oklahoma's relatively few stone arch bridges. Limestone is one of Nowata County's more abundant natural resources, with limestone formations in the western section where this bridge is located. The Nowata County Commissioners, in meetings in January and February of 1913, resolved to advertise for bids for construction of a stone arch bridge over Opossum Creek, giving a legal location that matches that of the nominated bridge. This location was the George Walker Ford and the bridge was to be known as the Walker Bridge. It would be built to plans and specifications at the office of the county engineer and surveyor, Charles T. Babb. On March 3, 1913, when the commissioners opened the bids, the lowest bid of $1,085 was from Enoch W. McCormick and they awarded him the contract. Some items in the *Lenapah Post* (a nearby town) newspaper around this time indicate that McCormick was a local contractor, and he had bid on another stone arch bridge that the Nowata County Commissioners were advertising. It is interesting that McCormick's bid for this project was lower than the bid of the

[2] Anna Marie Eddings, *Oklahoma Historic Bridge Survey, Phase I* (Oklahoma City, OK: Oklahoma Department of Transportation, 2007), 50-51; Bridge Survey Files, Oklahoma Department of Transportation Cultural Resources Program, Norman, Oklahoma.

Canton Bridge Company, a company headquartered in Ohio that was better known for its metal truss bridges. The Opossum Creek Bridge must have been substantially complete by September 3, 1913, because at their meeting on this date, the commissioners inspected the

bridge and carried a motion to pay the balance of the contract price to McCormick.[3]

Summary

The Opossum Creek Bridge is significant under Criterion C in Engineering because it is one of the best remaining examples of stone arch bridge technology in Oklahoma. Of the fifteen documented stone arch bridges, the Opossum Creek Bridge's above-average span length and its good condition make it one of the most significant bridges of this type in the state.

[3] J. M. Cocke, "Stratigraphy and Coral Fauna of the Dewey Formation (Missourian) Washington and Nowata Counties, Oklahoma," (master's thesis, University of Oklahoma, 1962), 1, map in pocket; William R. Cronoble, "Petrology of the Hogshooter Formation (Missourian) Washington and Nowata Counties, Oklahoma," (master's thesis, University of Oklahoma, 1961), 1, map in pocket; Oklahoma Employment Security Commission, *Economic Base Report: Nowata County* (Oklahoma City, OK: Oklahoma Employment Security Commission, 1966), 31, 34; Felix M. Gay, *History of Nowata County* (Stillwater, OK: Redlands Press, 1957), 22; Nowata County Commissioners, *Commissioners Journal*, vols. 1, 4, 2, January 3, 1911, July 10, 1911, January 6, 1913, February 4, 1913, March 3, 1913, September 3, 1913, County Clerk's Office, Nowata County Courthouse, Nowata, Oklahoma; *The Lenapah Post*, March 6, 1913, March 13, 1913, June 19, 1913.

Bibliography

Bridge Survey Files. Oklahoma Department of Transportation Cultural Resources Program, Norman, Oklahoma.

Cocke, J.M. "Stratigraphy and Coral Fauna of the Dewey Formation (Missourian) Washington and Nowata Counties, Oklahoma," master's thesis. University of Oklahoma, 1962.

"A Context for Common Historic Bridge Types," NCHRP Project 25-25, Task 15. Prepared for the National Cooperative Highway Research Program, Transportation Research Council, National Research Council, by Parsons Brinckerhoff and Engineering and Industrial Heritage. October, 2005.

Cronoble, William R. "Petrology of the Hogshooter Formation (Missourian) Washington and Nowata Counties," master's thesis. University of Oklahoma, 1962.

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Gay, Felix M. *History of Nowata County.* Stillwater, OK: Redlands Press, 1957.

"Indiana Bridges Historic Context Study, 1830s-1965." Report prepared by M&H Architecture, Inc. for Indiana Department of Transportation. February, 2007.

, Joseph E. *Spans of Time: Oklahoma's Historic Highway Bridges.* Oklahoma City, OK: Oklahoma Department of Transportation, 1993.

The Lenapah Post (weekly) (some missing issues). January 9, 1913 through September 4, 1913.

Nowata County Commissioners. *Commissioners Journal*, Vols. 1,4,2 (scanned November 18, 1907 to September 3, 1913). County Clerk's Office, Nowata County Courthouse, Nowata, Oklahoma.

Oklahoma Employment Security Commission. *Economic Base Report: Nowata County.* Oklahoma City, OK: Oklahoma Employment Security Commission, 1966.

Verbal Boundary Description

The bridge is located at the center point where Sections 25, 26, 35, and 36 meet in Township 29 North, Range 15 East. It carries County Road NS-413 over Opossum Creek. The boundary of the nominated property extends twenty-five feet on either side of the centerline of the road as it crosses the bridge, and twenty feet from each end (abutment) of the bridge.

Boundary Justification

This boundary includes the area historically associated with the bridge.