

COAL CREEK MIXED TRUSS BRIDGE
Spanning Coal Creek
McAlester Vicinity
Pittsburg County
Oklahoma

PHOTOGRAPHS
AND
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
Submitted to:
Oklahoma State Historic Preservation Office
800 Nazih Zuhdi Drive
Oklahoma City, Oklahoma 73105

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Anna Eddings, Photographer, March 2010

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HISTORIC AMERICAN ENGINEERING RECORD

COAL CREEK MIXED TRUSS BRIDGE

Location: Spanning Coal Creek, at Road N4040, in the McAlester vicinity, Pittsburg County, Oklahoma.
UTM: 15/E242209/N242209
Quad: McAlester

Legal Location: Section 22, T6N, R14E

Present Owner: Pittsburg County, Oklahoma
ODOT Structure Number 61N4040E1402000

Present Use: Vehicular Bridge

Significance: The Coal Creek Mixed Truss Bridge is located on Road N4040, also known as Lake McAlester Road, over Coal Creek in Pittsburg County, Oklahoma. The bridge, constructed in 1927, was built to replace a previously existing bridge washed away by heavy flood waters in April of that year. The truss system exhibited on the Coal Creek bridge is a combination of a modified Pratt through truss flanked by Camelback (C-back) pony trusses, a combination not commonly found. Thus, as an unaltered structure, the Coal Creek Mixed Truss Bridge is a unique example of its type.

Project Information: Historic American Engineering Record (HAER) Level II equivalent documentation was performed in March 2010 and June 2012. Tanya McDougall, Architectural Historian, conducted an on-site visit and compiled the historical information in June 2012. Photo documentation was conducted in March 2010 by Anna Eddings, an Architectural Historian with the Oklahoma Department of Transportation. Photographs for this report have been digitally reproduced following National Park Service (NPS) standards for digital images. This HAER recordation serves as mitigation for the removal of the structure from vehicular traffic.

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PART I. HISTORICAL INFORMATION

A. Physical History:

- 1. Date of Construction:** 1927
- 2. Architect/Engineer:** Not Known
- 3. Builder/Contractor/Supplier:** The builder and contractor for the bridge are unknown; however, the steel used for its construction was supplied by Illinois-S-USA.
- 4. Original Plans:** Not Available
- 5. Alterations and Additions:** The Coal Creek Mixed Truss Bridge does not appear to have been altered since its construction in 1927.

B. Historical Context:

1. Introduction

The Coal Creek Mixed Truss Bridge, spanning Coal Creek along Road N4040, is located northeast of McAlester in Pittsburg County, Oklahoma. Early settlement of the land now encompassed by Pittsburg County began in 1831, when the Choctaw Tribe ceded their lands in eastern Mississippi and were relocated to the Indian Territory in what is now southeastern Oklahoma (Kidwell 2012). Through the mid-1800s, important transportation routes developed through the region, including one of the California mail routes and the Texas Road, which crossed at what was referred to as the “Cross Roads” and is now McAlester. By the 1870s, the arrival of the railroad and the commercialization of coal thrust the region into a coal boom that lasted into the 1920s (Sewell 2012).

In the early 1870s, the Missouri, Kansas, and Texas Railway (MK&T) became interested in constructing a north–south railroad through Indian Territory. It was at that same time that James J. McAlester, an early settler of the region, established a trading store in Bucklucksy, a town in the Cross Roads area. McAlester, familiar with the coal deposits in the region, was among the first to realize the financial potential of developing a local coal industry.¹ By providing samples of the coal, McAlester was able to successfully convince the railroad promoters to build the rail line through Bucklucksy. In 1872, the MK&T railroad was completed and the depot at Bucklucksy was named McAlester. That same year, James McAlester leased his land to the Osage Coal and Mining Company, and the Oklahoma coal boom was underway (Hoefling 2008:17; Shuller 2012).

Over the following years the success of the coal industry attracted new settlers and additional railroad companies to the McAlester area. In the late 1880s, the Choctaw Coal and Railway (later the Chicago, Rock Island, and Pacific Railway) offered to construct an east–west rail line through McAlester, provided the town pay the rail company \$10,000. The offer was rejected; thus, the rail company decided to build its railroad 1 mile south of the town. Construction of the new rail line, completed in 1889, spurred the development of a new town named South McAlester (Stallo 1998:3). The two towns remained separate until 1906, at which time they were combined and officially took the name McAlester (Shuller 2012). The following year, Oklahoma obtained statehood, and Pittsburg County was created with McAlester chosen as the county seat.

After statehood the coal industry continued to provide Pittsburg County, particularly McAlester, which was dubbed the coal mining capitol of Oklahoma, with a healthy economy. Between 1907 and 1910, the population in McAlester increased from 8,144 to 12,954, and in 1908–1909 approximately 731,298 tons of coal were extracted from the county (Department of Commerce and Labor 1907:32; O’Dell 2012). Additional economic contributors during that period included a thriving agricultural industry with cotton as the primary cash crop, and the establishment of the first state prison in McAlester, completed in 1914 (Hoefling 2008:79).

By the early 1920s, Pittsburg County was considered one of the wealthiest counties in Oklahoma.² However, at that time, the roads in northern Pittsburg County, including those around McAlester, were known as some of the worst in the state (*Indian Journal* 5 May 1921). In late 1921, the county passed a \$750,000 road bond to help remedy the situation (*Indian Journal* 15 December 1921). That same year, Bull Creek dam, northwest of McAlester, was approved for construction, which resulted in the creation of Lake McAlester (*Ada Evening News* 23 May 1921). By 1925, Pittsburg County had 42 miles of hard-surfaced roads, and Road N4040 (then known as Lake McAlester Road) was the primary access road from McAlester to the lake with a bridge crossing Coal Creek (*Indian Journal* 3 September 1925; *Muldrow Sun* 28 November 1924). In

¹ During the 1870s, land rights were only provided to citizens of the Chickasaw and Choctaw nations. Thus, McAlester married Rebecca Burney, a Chickasaw woman, which provided him with the necessary citizenship to own land in both the Chickasaw and Choctaw nations (O’Dell 2012).

² By the mid 1920s, however, the production of coal in Pittsburg County slowed, which was largely due to oil becoming the preferred energy source, and by 1930, the population in McAlester had dropped to 11,804 (Hoefling 2008:79; O’Dell 2012; Schuller 2012).

the spring of 1927, however, the area experienced heavy rain and severe flooding, which caused the bridge over Coal Creek to be washed away (*McAlester News-Capital* 14 April 1927). It was at that time the Coal Creek Mixed Truss Bridge was constructed, replacing the previously existing bridge.

2. Development of the Pittsburg County Coal Creek Mixed Truss Bridge

The Coal Creek Mixed Truss Bridge is located in the northwest quarter of Section 22, Township 6N, Range 14E, northeast of McAlester, Pittsburg County, Oklahoma. The bridge spans Coal Creek along Road N4040 (also known as Lake McAlester Road). As early as 1898, a road system leading northwest from McAlester through Section 22 was established. The roads included an irregular north-south road located west of Section 22, with an irregular spur extending east across the south half of the section (Bureau of Land Management 1898). By 1908, the road system was expanded due to the growth of McAlester, and several additional roads were constructed including a north-south road along the west side of Section 22 that appears to be an early version of the current Road N4040 (United States Geological Survey 1908).

After the creation of Lake McAlester between 1921 and 1924, Road N4040 (Lake McAlester Road) was the main access road from the city to the lake. At some point prior to 1927, a bridge over Coal Creek was constructed on Road N4040; however, in the spring of 1927, the McAlester area experienced heavy flooding causing over \$125,000 in road damages. Included in the damage was the destruction of the Lake McAlester Road bridge over Coal Creek (*McAlester News-Capital* 14 April 1927). According to the bridge plaque, the Pittsburg County Commissioners constructed a new bridge over Coal Creek in 1927. The bridge plaque reads:

Built 1927 By
Pittsburg County
Board of Commissioners
John P. Savage Chairman
W. E. McGowan
J. O. Pierce
W. E. Fisher County Clerk
J. F. Frazier County ENGR.

The Coal Creek Mixed Truss Bridge is three spans with a modified Pratt through truss flanked by C-back pony trusses. Both of the truss designs exhibited on this bridge are variations of the Pratt truss (diagonal members angled inward), and although complementary to one another other, they are distinctly different. The C-back truss uses exactly five inclined members to create an arched top chord, whereas the modified Pratt does not have an arched top chord. In addition, the center panels of the modified Pratt are subdivided by additional members (King 1993). The C-back and modified Pratt were both commonly used during the 1920s; however, it is uncommon to see them used in combination. Thus, as an unaltered structure, the Coal Creek Mixed Truss Bridge is a unique example of its type.

PART II. STRUCTURAL/DESIGN INFORMATION

- A. General Description:** The Coal Creek Mixed Truss Bridge carries Road N4040 over Coal Creek, located northwest of McAlester in Pittsburg County, Oklahoma. The structure runs north–south to accommodate the west–east drainage of Coal Creek. The Coal Creek bridge, which is three spans, exhibits a combination of a modified Pratt through truss flanked by C-back pony trusses. Lattice railing extends across each side of the three trusses. The bridge has a concrete slab deck that measures approximately 19 feet (ft) in width and accommodates one lane of traffic. The deck is supported by five stringers and multiple floor beams. The structure as a whole consists of three spans and has a total length of approximately 287 ft.

Located at the structure’s center span is the modified Pratt through truss, which consists of two parallel truss walls connected at the top chord by the portal web. Each of the truss walls is six panels and has five built-up vertical members and four built-up diagonal members. As a modified version of the Pratt truss, the two center panels of this truss exhibit two additional built-up members, one horizontal and one diagonal. These additional members provide the structure with added strength and create a diamond shape at the center of the truss. The portal web at the top of the truss consists of four panels with lateral bracing. All of the members of the modified Pratt through truss exhibit V-lacing and are riveted together with gusset plates located at each connection.

The C-back pony trusses, located at each end of the structure, are simple spans (individual spans) consisting of two parallel truss walls. The top chord of each wall is made up of five inclined built-up members with V-lacing, riveted together to create an arch. The use of five inclined members for the top chord is a defining characteristic of this design. The truss walls are each five panels wide and have four vertical members and four diagonal members. Two of the diagonal members cross at the center panel, forming an X. All of the members of these trusses are riveted together with gusset plates located at each connection.

The bridge substructure consists of two concrete piers with solid web walls. The piers are positioned at each end of the center span (modified Pratt through truss). Located at each end of the bridge are concrete abutments with straight wing walls and clipped corners.

- 1. Character:** The modified Pratt through truss and C-back pony truss types exhibited on the Coal Creek Mixed Truss Bridge were commonly used during the 1920s for bridge construction. However, the combination of the two truss types on a single structure was not common, making the Coal Creek Mixed Truss Bridge a rare example of its type.
 - 2. Condition of Fabric:** The Coal Creek Mixed Truss Bridge is an unaltered structure and is in good condition with little evidence of deterioration.
- B. Site Information:** The Coal Creek Mixed Truss Bridge is approximately 3 miles northwest of McAlester and approximately 2 miles south of Lake McAlester. The area immediately surrounding the bridge is lightly developed with a ca. 1960 domestic dwelling and agricultural outbuildings to the northwest, and a ca. 1995 domestic dwelling with agricultural outbuildings to the southeast.

PART III. SOURCES OF INFORMATION

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LOCATION MAP

COAL CREEK MIXED TRUSS BRIDGE
PITTSBURG COUNTY, OKLAHOMA
LOCATION MAP

