COTTONWOOD CREEK WARREN THROUGH TRUSS
Spanning Cottonwood Creek
Guthrie Vicinity
Logan 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 2009

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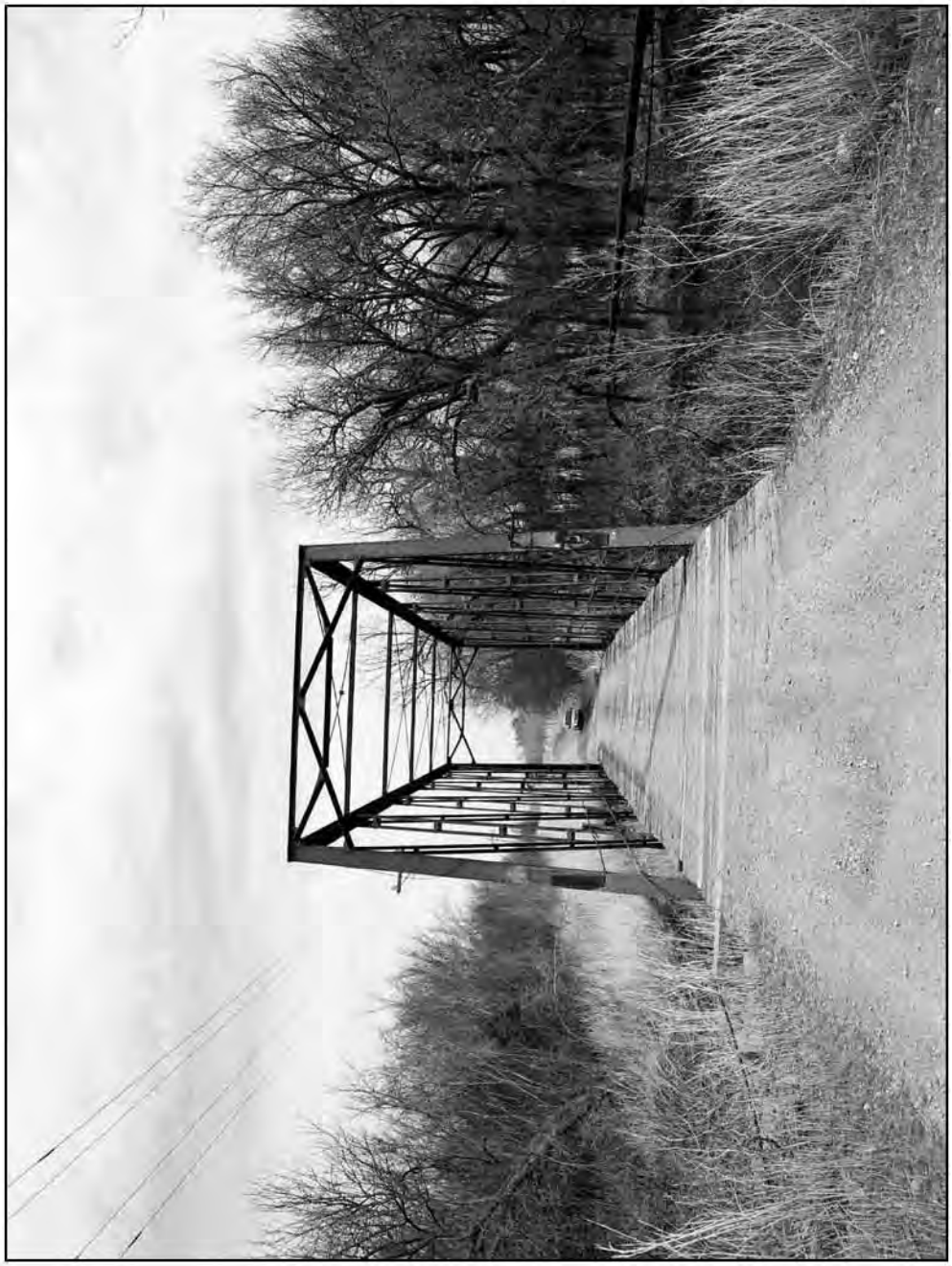

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HISTORIC AMERICAN ENGINEERING RECORD

COTTONWOOD CREEK WARREN THROUGH TRUSS

Location: Spanning Cottonwood Creek, at Road N3000, in the Guthrie vicinity, Logan County, Oklahoma.
UTM: 14/E621445/N3959028
Quad: Cashion

Legal Location: Sections 19 and 20, T15N, R4W

Present Owner: Logan County, Oklahoma
ODOT Structure Number 42N3000E0860001

Present Use: Vehicular Bridge

Significance: The Cottonwood Creek Warren Through Truss Bridge was constructed 1906–1908, as a one-lane vehicular bridge over Cottonwood Creek in Logan County, Oklahoma. With few examples of the Warren Through Truss design remaining in Oklahoma, the structure is a good representative example of its type. Furthermore, the structure demonstrates a pattern of rural development in Logan County during the early 1900s.

Project Information: Historic American Engineering Record (HAER) Level II equivalent documentation was performed in March 2009 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 2009 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:** 1906–1908

2. **Architect/Engineer:** Not Known

3. **Builder/Contractor/Supplier:** Not Known

4. **Original Plans:** Not Available

5. **Alterations and Additions:** Due to damages caused by flooding in 1908, the original bridge abutments were replaced in 1909. Furthermore, the structure shows signs of deterioration, including damaged metal and missing lateral bracing along the truss web connecting the top chords, due to age and exposure.

B. Historical Context:

1. Introduction

The Cottonwood Creek Warren Through Truss Bridge is located in the northwest corner of Logan County, Oklahoma. The county was formed after the opening of the "Unassigned Lands" in the Oklahoma District in 1889.[1] The land was opened for settlement on April 22, 1889, when the initial land run into the Oklahoma District was held. Participating in the land run were approximately 55,000 non-Native American

[1] During the U.S. Civil War (1861–1865), many of the Creek and Seminole people that were settled in what is now Logan County, supported the Confederacy. However, members of each tribe are also known to have fought for Union forces (Pennington 2012). Nonetheless, after the war, the tribes were viewed as Confederate supporters and as a result lost portions of their land in the Reconstruction Treaties of 1866 (Wilson 2012a). The lands ceded by the tribes were later dubbed "Unassigned Lands" due to the lack of assignment to a tribe in Indian Territory.

settlers, many of whom claimed land near waterways and/or established railroad lines.[2] The surge of new settlers into the district pushed Congress to pass the Organic Act of 1890, which established the district boundaries and created seven counties, including Logan County, then known as County One. Oklahoma's territorial capital was located in Guthrie, Logan County's county seat, and remained there through statehood in 1907. The state capital was moved in 1910 to Oklahoma City, Oklahoma County, where it remains today (Wilson 2012a).

After the opening of the unassigned lands and creation of the Oklahoma District, Logan County quickly filled with new settlers. By 1900, Logan County had a population of 26,563 and an economy primarily based in agriculture. The principal crops grown were cotton, corn, hay, alfalfa, wheat, forage sorghum, and Kaffir corn (Wilson 2012a). The county's economy flourished due to the establishment of several railroad lines, and by 1907, the county's population was 30,711 (Department of Commerce and Labor 1907:7). Through the early 1900s, agriculture remained the economic mainstay for most of the county; however, some manufacturing did develop in the larger cities such as Guthrie.

Although Logan County had several established railroad lines by 1907, its road system outside of the cities was little more than cleared dirt paths maintained by local citizen groups. Furthermore, the quality of an area's roads was often dependent on the knowledge local citizens had on road improvements (Burke 2011:4). In anticipation of providing road improvements, a commonly recognized factor in promoting economic growth, the new state provided for the establishment of a state highway department. However, due to the lack of state funding and personnel, the responsibility of maintaining roads was left at the county level for several years after statehood (Oklahoma Department of Highways 1970). It was during this transitional period that the Cottonwood Creek Warren Through Truss Bridge was constructed in Logan County.

2. Development of the Logan County, Cottonwood Creek Warren Through Truss Bridge

The Cottonwood Creek Warren Through Truss Bridge is located in Spring Creek Township, in far southwest Logan County, Sections 19 and 20 (Township 15N, Range 4W [T15N, R4W]). The bridge spans Cottonwood Creek north of the former town of Lockridge, Oklahoma, along Road N3000 (also known as Council Road). In 1873, the area was rural and unsettled (Bureau of Land Management [BLM] 1873). However, after the opening of the "Unassigned Lands" in 1890, settlers quickly moved into the area. By 1895, several dwellings were located in the area, and roads, including Road N3000, were established along section lines. Due to the path of Cottonwood Creek, however, when Road N3000 was first developed it curved east away from the section line at the north end of Sections 19 and 20, bypassing the corner of Sections 18, 17, 19,

[2] In 1887, the Southern Kansas Railway (later the Atchison, Topeka, and Santa Fe Railway) constructed a north-south rail line from the Kansas border to Purcell in McClain County, Oklahoma. This rail line's Deer Creek station is the present location of Guthrie, which was established due to the 1889 land opening (Wilson 2012b).

and 20. It appears this was done so the road could avoid having to cross the creek more than once (United States Geological Survey [USGS] 1895).

In 1903, the St. Louis, El Reno, and Western Railroad (SLER&W) constructed a rail line through Spring Creek Township in southwest Logan County. The railroad line connected in Guthrie, moved southwest through the southwest corner of Logan County, to El Reno in Canadian County (*Guthrie Daily Leader* [*GDL*] 19 March 1903). Soon after the SLER&W was completed, the town of Lockridge, located approximately 2.5 miles south of the bridge location, was established along the rail line on Sections 31 and 32, T15N, R4W.[3] By 1907, 585 people were living in Spring Creek Township, and the town of Lockridge had several stores, a train depot, two grain elevators, a cotton gin, post office, and two saloons (Department of Commerce and Labor 1907:17; Ellen 2012).

As development in the area continued to progress, the issue of road improvement and access became an ever growing concern, particularly for Emmett M. Courtney, who owned the northeast quarter of Section 19, T15N, R4W (BLM 1895). Due to the curve on Road N3000, access south from the northeast corner of the Courtney property was difficult. Thus, in 1906, Courtney requested the roads adjacent to his property be opened as a public highway, which caused "controversy" between Courtney and his neighbor, Frank Nakvinda, who owned the southeast quarter of Section 18, T15N, R4W (BLM 1897; *GDL* 4 August 1906). To resolve the issue, the Board of County Commissioners ordered the section lines be opened for use as a public highway (*GDL* 4 August 1906).

After the county commissioners ruled to open the section for public use, Courtney petitioned the county commissioners board to resurvey the roads along his property. As a result of the survey, the commissioners found the original 1896 survey measurements to be wrong and ordered the records be corrected (Logan County Clerk [LCC] 1907: Commissioners Minutes [CM] Book 2:233). At some point between 1906 and 1908, the curve in Road N3000 was realigned to follow the section line and a steel span bridge, known as the "Courtney Bridge," was constructed over Cottonwood Creek. In 1908, soon after the bridge was constructed, the area was struck by heavy rains flooding Cottonwood Creek. The heavy flood waters moved the bridge off its abutments, damaging the structure. After assessing the damages, the county commissioners chose to retain and repair the structure, a decision partially based on the lack of county funds (*GDL* 19 December 1908). The following year, the county commissioners approved a bid for work on the "Courtney Bridge" abutments from William Loose, at a cost of $99.00 (LCC 1909:CM Book 2:337).

Information regarding the original contractor for the Cottonwood Creek Warren Through Truss Bridge was not found; however, onsite observation revealed the steel used to construct the bridge was obtained from the Jones and Laughlin Steel Company of Pittsburg, Pennsylvania. Furthermore, the Warren Through Truss design, a series of elongated Ws, is indicative of the bridge's period of construction and rural location. This design was known for being cost effective and economical to construct, which made it desirable to financially struggling counties during early statehood. Although

[3] The town of Lockridge obtained its name by combining the first letter of the four counties that join at the southwest corner of Logan County: Logan County, Oklahoma County, Canadian County, and Kingfisher County (*GDL* 31 October 1903).

the design never reached the popularity of the Pratt design (inward angled verticals), few example of the Warren Through Truss type bridge still exist in Oklahoma, making it a rare type of structure (King 1993).

PART II. STRUCTURAL/DESIGN INFORMATION

A. General Description:

The Cottonwood Creek Through Truss Bridge is a one-lane vehicular bridge carrying Road N3000 over Cottonwood Creek in far southwest Logan County, Oklahoma. The bridge runs north–south to accommodate the west–east drainage of Cottonwood Creek. The structure consists of two spans with a wood deck, and measures a total of 101 feet (ft) in length and 16 ft in width. The longest span, being the Warren Through Truss, measures 86 ft.

The bridge's truss walls each have inclined endposts and 10 diagonal members creating the design's character defining feature of elongated Ws. The endposts and top chord consist of channels with stay plates, and the diagonal members consist of paired angles connected with stay plates. The railing along the truss is two metal rods that extend the length of the truss walls. The web connecting the top chords consists of five panels, which are formed by the portal bracing and four struts. Within each panel is lateral bracing; however, the lateral bracing within the southcentral panel is missing. The structure is riveted together with gusset plates located at each connection.

The one-lane structure has a wood deck that measures approximately 16 ft wide and consists of perpendicular wood planks supported by a series of floor beams and deck stringers with lateral bracing. The entire structure is supported by two abutments, one located at each end. The abutments consist of concrete blocks topped with a layer of formed concrete.

1. **Character:** The Warren Through Truss design of the structure is indicative of its rural setting and period of construction. Although in general the Warren Truss design, first developed in 1848 by James Warren and Willoughby Monzoni, is considered one of the most common truss types, few examples of the Warren Through Truss type remain in Oklahoma, making it a rare type.

2. **Condition of Fabric:** The Cottonwood Creek Warren Through Truss Bridge retains its character and integrity. Due to damage caused by flooding in 1908, the original abutments were replaced in 1909. In addition, the structure shows evidence of normal deterioration due to age and exposure to the elements. Noted deterioration includes damaged metal and damage to the wood plank floor.

B. Site Information: The area surrounding the Cottonwood Creek Warren Through Truss bridge is mostly undeveloped. The area immediately north of the bridge is covered by heavy vegetation. Past the vegetation are cultivated fields. Cultivated fields are also present in the area southeast of the bridge, while the area to the southwest is cleared and has nonhistoric agricultural outbuildings.

PART III. SOURCES OF INFORMATION

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LOCATION MAP

COTTONWOOD CREEK WARREN THROUGH TRUSS
LOGAN COUNTY, OKLAHOMA
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