STIDHAM CREEK DOUBLE INTERSECTION WARREN PONY TRUSS
Spanning Stidham Creek
Weleetka Vicinity
Okfuskee 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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HISTORIC AMERICAN ENGINEERING RECORD

STIDHAM CREEK DOUBLE INTERSECTION WARREN PONY TRUSS

Location: Spanning Stidham Creek, at Road N3900, in the Weleetka vicinity, Okfuskee County, Oklahoma.
UTM: 14/E766443/N3910187
Quad: Dustin

Legal Location: Between Sections 31 and 32, T10N, R12E

Present Owner: Okfuskee County, Oklahoma
ODOT Structure Number 54N3900E1180003

Present Use: Vehicular Bridge

Significance: The Stidham Creek Double Intersection Warren Pony Truss Bridge was constructed in 1910 by the Missouri Valley Bridge and Iron Company of Leavenworth, Kansas. The structure is a one-lane vehicular bridge crossing Stidham Creek in southeast Okfuskee County, Oklahoma. The design of the bridge truss, a Double Intersecting Warren Pony, is a rare type and the only known existing example in Oklahoma. Furthermore, the Stidham Creek Bridge is a good representative example of the bridge company and demonstrates a pattern of development in Okfuskee County during early statehood.

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:** 1910

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

3. **Builder/Contractor/Supplier:** Constructed by the Missouri Valley Bridge and Iron Company of Leavenworth, Kansas.

4. **Original Plans:** Not Available

5. **Alterations and Additions:** The structure remains mostly unaltered except for the addition of a floor beam on the north end of the deck and metal along the east top chord for added support. In addition, the structure exhibits deterioration due to exposure and age. Noted deterioration includes missing metal along the truss walls and damaged wood planks on the abutments.

B. Historical Context:

1. **Introduction**

The Stidham Double Intersection Warren Pony Truss Bridge is located in southeast Okfuskee County, Oklahoma. The nearest populated centers to the bridge are Weleetka, approximately 4.5 miles northwest in Okfuskee County, and Dustin, approximately 3 miles southeast in Hughes County. The area now encompassed by Okfuskee County was part of the Creek Nation between the 1830s and 1907, when Oklahoma was admitted as a state. During the 1830s, the Creek Tribe was removed from Georgia and Alabama by the U.S. government and relocated west of the Mississippi River to Indian Territory in what is now central Oklahoma. After relocation, the Creek Tribe established a tribal government, tribal towns, and an agricultural-based economy (Wilson 2012).

In 1861, development of the Creek Nation was disrupted by the onset of the U.S. Civil War. At that time, Union forces were withdrawn from Indian Territory, leaving the area vulnerable to the Confederacy. As a result, the Creek, Choctaw, Cherokee, Chickasaw, and Seminole tribes signed treaties with 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 lost portions of their land in the Reconstruction Treaties of 1866. In addition, slaves held by the tribes were freed; many chose to remain in the area and establish "All-Black" towns in Indian Territory.[1] Through the latter part of the 1800s, agriculture continued to drive the local economy with activities such as ranching and farming[2] (Wilson 2012).

By 1903, the St. Louis and San Francisco Railway (SL&SF) and the Fort Smith and Western Railroad (FS&W) had constructed rail lines through the region. The construction of the railroads encouraged growth and development of new towns along the rail lines; one such town was Weleetka, located at the junction of the SL&SF and FS&W railroads in south Okfuskee County (Folsom and Funchess 2007:25). In 1907, Oklahoma was admitted to the union as a state, and Okfuskee County was officially formed with Okemah chosen as the county seat. At statehood, the county had a population 15,595, which increased to 19,995 by 1910 (Department of Commerce and Labor 1907:23; Wilson 2012).

Although at statehood, Okfuskee County had an established transportation system, including two railroads and several roads, most roads at that time were little more than cleared dirt paths maintained by local citizen groups (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). During those years, however, Okfuskee County had little money to spend on road improvements. Thus, bonds, such as in 1909 when Okfuskee County passed a $100,000 bond for the construction of bridges, were issued to supplement the cost (*Muskogee County Democrat* 22 July 1909). It was during that period that the Stidham Creek Double Intersection Warren Pony Truss Bridge was constructed in Okfuskee County.

2. Development of the Okfuskee County Stidham Creek Double Intersection Warren Pony Truss Bridge

The Stidham Creek Double Intersection Warren Pony Truss Bridge is located on Road N3900 between Sections 31 and 32, Township 10N, Range 12E, in southeast Okfuskee County, Oklahoma. In 1897, this area was rural with cultivated fields, a few dwellings and structures, and an irregular system of roads (roads that did not follow the section lines). At that time, the nearest road to Sections 31 and 32 was a northwest–southeast road that passed through the north half of Section 31 and southeast through the south

[1] Two "All-Black" towns located near the Stidham Creek Bridge included Brookertree (Sections 6 and 8, Township 10N, Range 12E) and Northfork (Section 22, Township 10N, Range 12E; Folsom and Funchess 2007:140–142).

[2] By 1905, the Glenn Pool Oilfield had been discovered north in what would be Creek County, but oil and gas was not produced in Okfuskee County until 1914 (Wilson 2012). Furthermore, significant deposits, such as the Glenn Pool Oilfield, were never found in Okfuskee County (Guins and Goble 2006:28–29).

half of Section 32. An eastern spur of that road crossed the section line between Sections 31 and 32 and Stidham Creek (Bureau of Land Management [BLM] 1897). By 1900, the northwest–southeast road, along with the eastern spur, was shifted approximately .25 miles east of the section line (Sections 31 and 32). This change in the road system removed any roads from crossing Section 31(United States Geological Society [USGS] 1900). The current Road 3900 between Sections 31 and 32 was likely constructed between 1900 and 1910, when the Stidham Creek Bridge was constructed.

The partial bridge plaque found on the bridge shows that the structure was constructed by Missouri Valley Bridge and Iron Company in 1910. The plaque reads:

BUILT BY
MO VALLEY BRIDGE
AND IRON C[O]
LEAVENWORTH, [KANSAS]
1910

Construction of the Stidham Creek Bridge was initiated in 1909, when the Okfuskee County Commissioners Board approved the election of a $100,000 bond that would provide funding for the construction of 36 bridges throughout the county (Okfuskee County Clerk [OCC] 1909:County Commissioner Minutes [CCM] 1:64). The bond was necessary due to the lack of funds in the County Treasury (OCC 1909:CMM 1:66). The bridge bond was approved by popular vote later that same year, as was a second bond for road improvements in Weleetka Township[3] (OCC 1909:CMM 1:89; OCC 1909:CMM 1:93). In 1910, the Okfuskee County Commissioners awarded the contract for 24 of the 36 bridges to the Missouri Valley Bridge and Iron Company of Leavenworth, Kansas (OCC 1910:CMM 1:159). The original contract amount for the bridge work was $35,000; however, due to unspecified changes in the bridge plans, the contract was reduced to $32,000 (OCC 1910:CMM 1:160).

The Stidham Creek Bridge was constructed with a Double Intersecting Warren Pony Truss, which is a modified version of the standard Warren Truss design. The standard Warren Truss consists of a series of elongated Ws and was favored by bridge companies for its quick installation (King 1993). The Double Intersecting Warren Pony Truss, however, differs from the standard design in that the diagonals intersect and create a diamond shaped pattern along the center of the truss wall. The intersecting diagonals of the design provided the structure with added rigidity and a greater load-carrying capacity (Parsons Brinkerhoff and Engineering and Industrial Heritage 2005:3-43). Although the standard Warren Truss was commonly used to construct bridges during the early 1900s, the variation of this design found on the Stidham Creek Bridge was not used extensively in Oklahoma or throughout the U.S. Few examples of this type of truss still exist today, and the Stidham Creek Double Intersecting Warren Pony Truss Bridge is the only known example in Oklahoma (King 1993; Parsons Brinkerhoff and Engineering and Industrial Heritage 2005:3-43).

[3] Between 1907 and 1913, Okfuskee County was subdivided by local units of government known as townships. The Stidham Creek Double Intersection Warren Pony Truss Bridge was located in what was then known as Weleetka Township; however, in 1913, the township system of government was abolished by House Bill No. 206 (OCC 1914:CMM 1:441).

PART II. STRUCTURAL/DESIGN INFORMATION

A. General Description: The Stidham Creek Double Intersection Warren Pony Truss is a one-lane wood deck bridge along Road 3900 in southeast Okfuskee County, Oklahoma. The structure runs north and south to accommodate the west-to-east drainage of Stidham Creek. The bridge has two spans, which include one Double Intersection Warren Pony Truss and one approach span. In total, the bridge measures 56 feet (ft) in length and 15 ft in width. The longest span, the Double Intersection Warren Pony Truss, measures a total of 46 ft.

The bridge has two parallel truss walls with built-up vertical endposts, built-up top chords, and built-up bottom chords, all constructed of angles. Due to repairs, a non-original metal strip was added to the structure's east top chord. The web of each truss wall consists of alternating inward- and outward-angled diagonal members. The diagonals intersect at the center of each member creating a diamond-shaped pattern along the center of the truss wall. All of the diagonal members consist of angles. Outriggers, projecting from the truss walls away from the deck, provide the structure with additional support. The outriggers consist of angles forming a triangular shape. The entire structure is riveted together, and gusset plates are located at each connection.

The bridge's wood deck is constructed of wood floor planks running perpendicular to the bridge with two transverse rows of wood planks on top. The deck is supported by a series of metal floor beams and stringers with lateral bracing. A non-original floor beam was added to the north end of the structure's deck. An exposed metal stringer extends along the east side of the bridge. The structure as a whole is supported by metal piers positioned below the truss endposts and wood plank abutments located at each end of the bridge deck.

1. **Character:** The Double Intersection Warren Pony Truss design of the structure demonstrates a rare variation of a standard design used to construct bridges during the early 1900s.

2. **Condition of Fabric:** Alterations to the Stidham Creek Double Intersection Warren Pony Truss Bridge include the addition of a floor beam on the north end of the deck and metal to the east top chord. In addition, the structure shows evidence of deterioration due to exposure and age. Noted deterioration includes damaged or missing metal from the truss and damage to the wood plank forming the abutments.

B. Site Information: The immediate area surrounding the Stidham Creek Double Intersection Warren Pony Truss Bridge is undeveloped and covered by heavy vegetation. The nearest building is a dwelling located approximately 480 ft northeast of the bridge.

PART III. SOURCES OF INFORMATION

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LOCATION MAP

STIDHAM CREEK DOUBLE INTERSECTION WARREN PONY TRUSS
OKFUSKEE COUNTY, OKLAHOMA
LOCATION MAP