

HISTORIC AMERICAN ENGINEERING RECORD

WYMAN BRIDGE

HAER No. AR-38

LOCATION: Spanning the White River on Washington County Road 48 near Fayetteville, Washington County, Arkansas.

UTM: 15/3992390/402650

Quad: Elkins, Arkansas

DATE OF CONSTRUCTION: 1908

CONTRACTOR: Vincennes Bridge Company, Vincennes, Indiana.

PRESENT OWNER: Washington County, Arkansas

PRESENT USE: Vehicular bridge

SIGNIFICANCE: Built in 1908, the Wyman Bridge is one of six Parker trusses in the state of Arkansas. With the exception of the 1956 addition of a concrete deck, the Wyman appears basically in its original state. At the time of construction, the contracting Vincennes Bridge Company was still in its early years. The company prospered by making standardized bridges simply and efficiently.

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DESCRIPTION BY: Corinne Smith

Arkansas Historic Bridge Recording Project, 1988.

WYMAN AREA HISTORY

The White River starts in the Ozarks of northwest Arkansas and meanders into southern Missouri before returning to Arkansas and running into the Mississippi River. Northwest Arkansas in general has been successful with agriculture since its settlement days in the early nineteenth century. Apples and apple-related industries, and also lumbering, have been economic forces in the region since before the turn of the century.(1)

Located in this scenic, rolling area is Washington County. Within the county, the area's main urban center is Fayetteville, home of the University of Arkansas. About ten miles east of Fayetteville, just north of Highway 16 and east of the White River, is situated Wyman Township. Today Wyman appears as a name without a town, but eighty years ago when the highway bridge was built, the little area was large enough for a post office.(2) Just downstream from the highway bridge are old rock abutments left over from the Pacific and Great Eastern Railway. The railroad was a twelve-mile spur out of Fayetteville that opened in 1886 and ran for just six years before financial difficulties and a burned engine house stopped the venture. The name Wyman predates the railroad.(3)

BRIDGE LETTING

In December 1907 the Washington County judge, W.E. Williams, let out a notice that bids would be taken for three bridges in the county, one of them being a "One Hundred and Fifty foot bridge over White River at Wyman ford."(4) On January 4, 1908, the low bid for the Wyman Bridge and one of the other two bridges went to the Vincennes Bridge Company of Vincennes, Indiana, with agent Albert Meekly. The bid was \$2150, which was for the Parker truss

superstructure only. Together, the stone substructure for the three bridges was expected to cost in the vicinity of \$2000.(5)

According to the bridge letting notice, the bridge commissioners appointed originally were E. Wilson and W.C. Allison. Perhaps Allison did not retain his post for long as his name appears neither in the Washington County Court Record nor on the plaque that is still on the bridge. Besides Wilson and Judge Williams, H.T. Murphy is the other bridge commissioner listed on the plaque. The County Record shows Wilson and Murphy earning \$3.00 per day for their duties as bridge commissioners. Another name that appears in the record, though not specifically in reference to the Wyman, is W.B. Rees as the supervising architect for county bridges.(6)

From June through August, 1908, the County Record shows Joe Lehman receiving a total of \$1178.50 for his efforts on the stone piers.(7)

VINCENNES BRIDGE COMPANY

Vincennes was founded in 1899 by brothers John and Frank Oliphant and Jacob L. Riddle. The company was very financially successful in its beginning years, which included 1908, the year of the Wyman construction. In the next decade the company could expect to make 1,200 spans per year. Part of Vincennes success was their use of "simplified, standardized" types, which "emphasized function and economy more than elegance and novelty."(8)

A comparison can be made with a similar bridge to show, in fact, that the Vincennes clearly offered an inexpensive alternative to the existing older bridge building firms. In 1907 a 180-foot Parker truss was erected over War Eagle Creek, twenty-five miles to the north, by the Illinois Steel Bridge Company at a cost of \$4,790, while the Wyman's cost was about \$3,400 for the

superstructure and substructure.(9) So great a cost difference would certainly give the Vincennes an advantage at the bidding table.

COMPLETION

According to the Washington County Court Record, Vincennes received a payment of \$1000 on October 3, 1908, for work on the Wyman Bridge. There is no further mention of payments specifically for the Wyman, but a payment to Vincennes is recorded on August 10, 1909, possibly covering the balance due for the Wyman, in addition to at least one other bridge.(10) An imprint in the concrete of the bridge deck gives a date of December 31, 1956, suggesting this is the date the concrete was laid. This new deck is apparently the only alteration to the bridge since 1908.

ENGINEERING DESCRIPTION

The Wyman Bridge is a single-span, steel Parker through truss, 170 feet in length, comprised of ten panels, with a north approach 120 feet long, and a road width of 14 feet. The bridge has built-up members, punched eyebars with pinned connections and turnbuckles, and stone and concrete piers.

The polygonal top chord, reaching a maximum height of 30 feet above the deck, is constructed with two channel sections riveted to a continuous top plate with single-bar lacing on the bottom of the chord. The compression forces in the top chord are resisted at the bearing blocks by the two rectangular eyebars of the bottom chord. Tension forces along the bottom chord of the bridge are passed through pinned connections at each panel point. The top chord is riveted throughout the bridge, but the bottom chord, verticals, and diagonals are all pin-connected.

The vertical members are channels, flanges turned outward, with single-bar lacing on two sides. One-inch-square or round eyebars, used as counters in the truss panels, have turnbuckles to allow the members to be adjusted as necessary. The single eyebar passes between two rectangular or square eyebar diagonals in each panel. The lateral stability of the bridge is maintained by portal bracing, upper lateral rods, sway bracing at each vertical, and floor rods. A 3-foot-tall double intersection Warren truss acts as the portal brace at each inclined impost. Curved brackets made from angle sections brace the bottom of these six panel trusses. A bridge plaque is bolted to the north portal approach. Sway bracing consists of a top lateral angle strut and round rods with turnbuckles which screw into a housing bolted to plates on an angle strut 4 feet below the top chord. The top and bottom chords are laterally braced with rods, two in each panel, running diagonally from each panel point.

The floor system consists of six I-beam stringers resting on I-beam girders at each panel point. The western most stringer is missing. It is likely that the bridge deck was originally timber, but on December 31, 1956, a concrete slab deck was poured on top of a wire mesh laid over the stringers.

A handrail of two angles is continuous from the main span to the approach. The rails are bolted to verticals on the main span or a third angle that serves as a post.

The seven span approach, bearing at one end on a concrete abutment and at the other on a stone pier, is supported in between by vertical posts, composed of two channels joined by lacing bars. Pairs of posts, connected across the road width by two diagonal bars and small I-beam near the ground, carry the load from I-beam floor girders down to concrete pads. The third and sixth span are braced with eyebars with turnbuckles and an I-beam near the ground.

ENDNOTES

1. Works Progress Administration, Arkansas: A Guide to the State (New York: Hastings House, 1941), p. 62.
2. Washington County Real Estate Atlas, 1900.
3. Robert G. Winn, Railroads of Northwest Arkansas (Fayetteville, Arkansas: Washington County Historical Society, 1986), p. 106. : Steven E. Wood, "The Development of Arkansas Railroads," Arkansas Historical Quarterly, Vol. 7, No. 3 (Autumn, 1948), p. 160.
4. "Notice," Fayetteville Democrat, Vol. 39, No. 24 (December 25, 1907), p. 4.
5. "Bridge Contracts Let," Fayetteville Democrat, Vol. 39, No. 26 (January 9, 1908), p. 4.
6. Washington County Court Record, Vol. S, June 26, 1908, p. 98; October 6, 1908, p. 201.
7. Washington County Court Record, Vol. S, August 3, 1908, p. 139; July 24, 1908, p. 127; June 8, 1908, p. 95.
8. James L. Cooper, Iron Monuments to Distant Posterity: Indiana's Metal Bridges 1870-1930 (Greencastle, Indiana: DePauw University, 1987), pp. 22,28-9.
9. Contract, Illinois Steel Bridge Company and Benton County, Arkansas for War Eagle Bridge, May 18, 1907 (located in Benton County Courthouse).
10. Washington County Court Record, Vol. S, October 3, 1908, p. 190; August 10, 1909, p. 388.

BIBLIOGRAPHY

"Bridge Contracts Let." Fayetteville Democrat. Vol. 39, No. 26 (January 9, 1908), p. 4.

Contract. Illinois Steel Bridge Company and Benton County Arkansas for War Eagle Bridge. May 18, 1907 (located in Benton County Courthouse).

Cooper, James L. Iron Monuments to Distant Posterity: Indiana's Metal Bridges 1870-1930. Greencastle, Indiana: DePauw University, 1987.

Washington County Real Estate Atlas, 1900.

Winn, Robert G. Railroads of Northwest Arkansas. Fayetteville, Arkansas: Washington County Historical Society, 1986.

Wood, Steven E. "The Development of Arkansas Railroads," Arkansas Historical Quarterly. Vol. 7, No. 3 (Autumn, 1948), p. 155-193.

Works Progress Administration. Arkansas: A Guide to the State. New York: Hastings House, 1941.