

Madison County Bridge No. 90  
Spanning Killbuck Creek on County Road 600 North  
Moonsville Vicinity  
Madison County  
Indiana

HAER No. IN-90

HAER  
IND  
48-MOON.V)  
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**PHOTOGRAPHS**

**WRITTEN HISTORICAL AND DESCRIPTIVE DATA**

Historic American Engineering Record  
National Park Service  
Great Lakes System Support Office  
1709 Jackson Street  
Omaha, Nebraska 68102

HISTORIC AMERICAN ENGINEERING RECORD

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Madison County Bridge No. 90

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I. INTRODUCTION

Location: On County Road 600 N over Killbuck Creek,  
Approximately .4 mile east of Moonsville  
Madison County, Indiana

Quad: Gilman, Indiana

UTM: 16. 619690. 4450000

Date of Construction: 1930

Engineer: Probably Marvell A. Steele, County Surveyor during  
this era.

Contractor: James A. Crosbie

Present Owner: Indiana Department of Transportation  
Indiana Government Center  
Indianapolis, Indiana

Present Use: Vehicular bridge to be replaced by a new vehicular  
bridge expected to be approximately three to five  
feet above the existing roadway to eliminate over  
the road flooding. If no agencies, groups or  
individuals come forward to relocate the existing  
bridge it will be demolished.

Significance: Madison County Bridge No. 90 is an unusual  
variation of a Warren Pony truss, and the second  
longest survivor of its type in Indiana. The bridge  
was surveyed and highly rated by historian James  
L. Cooper, Ph.D., as part of a comprehensive  
inventory of concrete bridges in Indiana.

Historian: Camille B. Fife, The Westerly Group, Inc., May,  
1996.

II. DESCRIPTION:

The bridge on County Road 600 North over Killbuck Creek is a 100 foot, single span, Warren pony truss with a polygonal top chord. The top chord changes slope from one midpanel point to the next and is never parallel with the lower one. The roadway is 17.5 feet wide.

The abutments are cast concrete. The bridge seat is slightly recessed, forming a platform for the inclined end post. The concrete backwall angles outward. The deck of the bridge is of concrete with an asphalt surface, supported by four steel "I" sections as stringers, butted to the steel floor beams. The latter are approximately twice as deep as the former and are tied to a bottom chord comprised of two "L" sections riveted to a channel and supported, on the underside of the bridge by narrow steel bottom lateral bracing, in each panel of the bridge. A steel "C" section forms the outer panel supporting the floor deck.

The bridge trusses are riveted, with diagonal bracing as the major support system, typical of the Warren truss. These members are comprised of two "L" sections with spacer plates along their length, and large plates which join the truss to the upper chord. The verticals which add strength to the bridge are placed only between the panels, thus allowing a relatively open view in elevation. These vertical members, fabricated like the diagonals, are further supported by wide, outboard steel sway bracing. Further strength is added to this simple span through a horizontal lattice attached to the inner face of the bridge. The lattice panel extends just beyond the end of the bridge and is supported by a vertical member connected to the chord which contains the bridge deck.

As previously mentioned, the upper chord of the bridge is polygonal, with no member parallel to the lower chord. There are five panels plus the inclined end post. As is typical for this era, the upper chord is made of two "C" sections riveted together with a top plate.

The bridge is set in a rural scene, over Killbuck Creek. North of the bridge, the creek divides to form a small island, and meanders gently as it moves south of the span. The banks, dotted with small deciduous trees, are relatively shallow. Although the roadbed has been elevated to discourage flooding, this is inadequate during periods of high water.

### III. HISTORY:

Bridge no. 90 is located in Richland Township, a rural, sparsely populated section of Madison County in central, northeast Indiana. The County was organized in 1823 and, after some changes, achieved its present boundaries in 1838. The county seat was established at Anderson after 1827 and several frame courthouses were erected to house the county's courts and offices. A courthouse, probably built in 1850 was destroyed by fire in 1880 and some of the records were damaged.<sup>1</sup> A new courthouse replaced this structure by 1885, but this building was lost earlier this century. Thus, records of the county commissioners and other entities are sparse and contain many lacunae.

Bridge No. 90 is located on a secondary county road, in a section which was not heavily traveled during the first quarter of the twentieth century. Information has not become available regarding a previous span across this waterway. Although it is possible that it was traversed via a ford, it is more likely that a simple wooden span preceded the present structure, given the size of the creek.

An act of Congress in 1916, which appropriated \$75 million for rural post roads, spurred Indiana to establish a highway commission. By 1919 the Indiana State Highway Commission was in business, charged with identifying a system of roads to connect all

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<sup>1</sup> *An Inventory of the County Archives of Indiana, #48, Madison County*, Indianapolis, Indiana: Historical Records Survey, Division of Women's & Professional Programs, WPA, March, 1937., P. 7.

county seats and towns with populations of more than 5,000. <sup>2</sup> In Indiana as in many other states, the State Highway Commission, and its later manifestations, gradually assumed responsibility for bridge construction. Activity grew quickly in the Hoosier state. In 1924, the Highway Commission reported that only three other states had built more bridges than Indiana, and it expected to lead all others the following year. <sup>3</sup>

Nonetheless, a considerable number of bridges were still being constructed under the supervision and control of County Highway Superintendents, Surveyors and Commissioners. Such was the case with Bridge No. 90. In Madison County, in 1930, the Board of Commissioners who received the bids for this bridge consisted of Adolphus L. Vestal, Wilson Newton and Edward H. Matthew. The Highway Superintendent was William Dillon and the Surveyor was Marvell A. Steele. <sup>4</sup> The latter was probably responsible for providing specifications for the construction of the 12 bridges bid in the letting of July/August 1930.

It is likely that one of the bridge fabricating companies active in the region designed the bridge from the specifications provided by the County Surveyor (although no drawings for Bridge No. 90 have been found to date.) Another Madison County bridge, located south of the city of Anderson, has been documented as the design of the Elkhart Bridge and Iron Company, of Elkhart, Indiana. This structure is also a Warren Pony, although it is very skewed and does not contain a polygonal top chord. The

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<sup>2</sup> James L. Cooper, *Iron Monuments to Distant Posterity, Indiana's Metal Bridges, 1870-1930*, Greencastle, Indiana: DePauw University, FHA, etc., 1987, p.11.

<sup>3</sup> *Ibid.*, pp. 12-13.

<sup>4</sup> *Caron's Anderson City Directory 1930-31*, Anderson, Indiana, 1930, pp. 12 & 631.

construction of the truss members and the design of the sway braces are quite similar. <sup>5</sup>

Other Hoosier companies also contributed to the evolution of the Warren Pony truss bridge in Indiana. The American Bridge Company provided a series of partially pinned Warren railroad overpasses around the turn of the century and the Indiana Bridge Company experimented with all-riveted Warren trusses as early as 1894. A number of other Indiana firms also contributed to the later design of Warren truss spans including the Attica Bridge Company, the Bedford Foundry and Machine Company, the Central States Bridge Company, the HIPCO (Ligonier), International Steel and Iron Company (Evansville), the Rochester Bridge Company, and the Vincennes Bridge Company. A few Ohio firms also built similar bridges in Indiana. <sup>6</sup>

In June of 1924, heavy floods had undermined bridge structures throughout Madison county. Several were damaged, although only one in Richland township, some distance from the site of Bridge No. 90. Nonetheless, the high water was especially vigorous on Killbuck Creek and the White River. The former runs northeast from the town of Anderson. Due east of the tiny hamlet of Moonsville, where Killbuck Creek is intersected by County Road 600 North, one encounters the site of Bridge No. 90. This bridge, for obvious reasons, was also occasionally referred to as the Moonsville bridge.

Local newspaper accounts detailed the damage caused in 1924 to buildings and structures, especially at the juncture of the Killbuck and the White, in northeastern Anderson, and other parts of the county, stating:

Damage estimated at between \$15,000 and \$20,000 was done to the roads and bridges of Madison county by the rains of Saturday and

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<sup>5</sup> Cooper, p. 87.

<sup>6</sup> Ibid., pp. 85-87.

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Sunday nights, according to the county superintendent of highways, A. P. Jones. The greatest damage is found in the northern and eastern parts of the county, Mr. Jones said last night. <sup>7</sup>

Six years after this incident, contracts for twelve county bridges were awarded, including a contract for the present Bridge No. 90. In the list of bridge projects recorded in the Commissioners minutes, it is referred to as Project #11, "Moonsville Bridge."

It is interesting to note that among the ten bidding contractors appears the name of the Luten Engineering Company. This company was well-known in the midwest for pioneering economical designs for bridges, and for the extensive patents held by the founder. The bid of the Luten Company, for Project #11 was based on a "Luten Design", and was several thousand dollars cheaper than the next lowest bidder. Nonetheless, the Commissioners, "after being well advised in the matter", declined to award the bid to Luten. The record is silent regarding the source of their advise or the rationale for their decision.<sup>8</sup>

Three contractors were each awarded four bridge projects. None of the Luten Engineering Company's bids were selected. James A. Crosbie was awarded the contract for Project #11, the Moonsville Bridge for a total price of \$6,577. A local account of the awards stated: "It is the largest of the bridges which will be built under contracts let yesterday." Mr. Crosbie's firm also won contracts for two bridges over Mud Creek and a bridge over the Shay Ditch. The newspaper

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<sup>7</sup> "County Hard Hit by Flood Damage", *Anderson Herald*, Tuesday, June 10, 1924, p.l.

<sup>8</sup> *Madison County Board of Commissioners Minutes, Vol. 36,, pp. 478-9.*

account also defined Project #11 as "...the bridge over Killbuck Creek at Moonsville ..." <sup>9</sup>

As was the custom, an inspector was assigned and bonded to serve for each of the twelve projects. Mr. Henry R. Marrs was named to serve in this capacity for the bridge over Killbuck Creek in Richland Township. <sup>10</sup>

Bridge No. 90, over Killbuck Creek, near Moonsville was constructed late in the era of county bridge supervision. The Warren pony had become clearly favored for bridges on less traveled roads, such as County Road 600 North after 1905. By 1910, spans of more than 100 feet had become possible, within this simple truss design. The bridge demonstrates several elements which are indicative of the latter forms of the Warren truss design, including riveted connections, the use of verticals integrated with a sway brace and the placement of floor beams above the lower chord. <sup>11</sup> Its spare design and polygonal top chord allowed its designers to create a graceful span in a quiet rural setting.

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<sup>9</sup> "City Board Orders Four New Vote Machines, Let Bridge Contracts", *Anderson Herald*, August 5, 1930, pp.1-2.

<sup>10</sup> *County Commissioners Minutes, Vol. 36*, pp. 478-9, 481.

<sup>11</sup> Cooper, p. 87.

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