State Route 89 Bridge
Spanning Snag Creek
Village of Washburn
Woodford County
Illinois

IL HAER No. WD-2010-1

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Illinois Historic American Engineering Record
Illinois Historic Preservation Agency
Springfield, Illinois

Prepared by
Cultural Resource Unit
Illinois Department of Transportation
Springfield, Illinois
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ILLINOIS HISTORIC AMERICAN ENGINEERING RECORD

STATE ROUTE 89 BRIDGE
(POST-AND-BEAM AND REINFORCED CONCRETE)

Location: State Route 89 over Snag Creek
Village of Washburn, Woodford County, Illinois

USGS Quadrangle: USGS Washburn, 7.5 minute, Illinois
Latitude 040° 54' 59.03" N Longitude 089° 17' 38.60" W

Universal Transverse Mercator Coordinates:
Zone 16 Easting 306810 Northing 4531798

Present Owner: Illinois Department of Transportation

Present Use: Vehicular Bridge (IDOT Bridge No. 102-0029)

Significance: The State Route 89 Bridge spanning Snag Creek is a two-span, post-and-beam structure built of reinforced concrete. It was erected in 1928 as a state roadway was constructed between Metamora, in Woodford County, and Dixon, in Lee County. It is a good example of a post-and-beam structural form executed in reinforced concrete.

PART 1. HISTORICAL INFORMATION

A. Physical History:

1. Date of Erection: 1928[1]

2. Original and subsequent owners: State of Illinois Highway Department[2]

3. Builder or contractor: Cameron-Joyce Co. (Keokuk, IA) and Ike Davis (Toluca, IL)[3]

4. Alterations and additions: The integrity of this bridge is good. No obvious

[1]"Contract No. 3016 for Federal Aid Work, SBI 89, Woodford County," (1 June 1927), Located in RG 242.028 (Department of Transportation), Contract Files, Illinois State Archives, Springfield, IL

[2]Ibid.

[3]Ibid.

alterations are apparent.

B. Historical Context:

Bridge Development in Illinois

The earliest permanent bridges in Illinois include a few masonry arches built in 1832, when the National Road was extended from Cumberland, Maryland, into Illinois. At least one other arch was built on the Chicago-Galena Road during the same period. Accounts of early travelers suggest that ferries operated by Indians and European settlers sometimes facilitated passage over larger streams in the region. Planks laid on the ice were also used to cross bodies of water in winter months. In warmer periods, expedient timber structures came to accommodate such travel. Little is known of the pile trestles or half-submerged floating platforms, both of which are mentioned in pioneer memoirs. All were subject to risks, as well as frequent wash-outs by high water.[4]

As settlers established permanent communities, "experienced mechanics" – either self-taught or from New England shipyards – were attracted to the frontier to erect covered bridges. Between 1820 and 1900, an estimated two hundred to three hundred covered bridges were built in Illinois, of which five remained in 2001.[5]

Railroads improved the early timber structures. But by the late 1850s, their need for stronger bridges encouraged the development of iron structures, which were followed after the 1870s by those made of steel. The development of steel trusses in the second half of the nineteenth century contributed to the rapid expansion of railroads, settlement and industrialization in a growing America.[6]

Post-and-Beam Bridges and Reinforced Concrete

The State Route 89 Bridge over Snag Creek utilizes a derivative of the post-and-beam structural form. This is the simplest method of bridge construction and it dates back to ancient times. Simply stated, the load created by the bridge deck and its supporting stringers (if they are used) is transferred to the deck beam, which is

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[4]John R. Nolen and the Illinois Department of Transportation (IDOT), *Ms. on file at IDOT* (1995), 310ff; Milo M. Quaife, *Chicago's Highways Old and New* (Chicago: D.F. Keller & Co., 1923), 69ff.

[5]Russell M. Garrard, "Early Bridges in Central Illinois," in *Heritage of Mid-Illinois Engineering* (Capital City Chapter of the Illinois Society of Professional Engineers, circa 1976), 15ff; IDOT, *Historic Bridge Survey List* (Springfield, IL: Bureau of Location and Environment, 1992), 7101a.

[6]Walter V. Voss, "How New Materials Increased Man's Building Ability," in *Centennial Transactions* (New York: American Society of Civil Engineers, 1953), 829ff.

perpendicular to the bridge deck and supported by one or more vertical posts. No truss system is present. In a single-span bridge the abutments act as the posts. In a multiple-span structure, such as the subject bridge, however, the intermediate piers also act as posts. Regarding this type of bridge, the introduction of steel and reinforced concrete allowed for longer spans, as well as spans that could carry more weight. While many post-and-beam bridges used steel girders as stringers to transfer the load to the abutments or intermediate piers, a reinforced concrete deck slab could be constructed to accomplish the same thing on shorter spans. This was the method utilized for the subject structure. Post-and-beam bridges are the cheapest form of bridge to build and maintain. They remain extremely popular for short crossings or for those places where long crossings can be divided into multiple spans, as exemplified by the subject two-span structure.[7]

Regarding the development of reinforced concrete, it emerged at the beginning of the twentieth century as a new building material and challenged the dominance of steel in bridge construction. Concrete, prepared with natural cement, had long been used as a substitute for massive gravity construction. With the improvement of manufactured cement and an understanding of reinforcement bar action for tensile strength, engineers advanced the use of concrete from gravity masonry type construction to the design of reinforced concrete slabs that were able to carry significant loads.

After the establishment of a State Highway Commission in 1905, Illinois became involved in the design and building of highway structures. In 1906, the commission warned local authorities of the dangerous condition of existing iron and timber bridges and offered plans for a 40-foot, thru-girder, reinforced concrete bridge. A test bridge of this type was built at the state penitentiary in Menard, Illinois, and carried 420 tons before it collapsed. While that particular bridge was a thru-girder bridge and not a post-and-beam example, the project did demonstrate the strength and potential of reinforced concrete for bridge construction. On the flat Illinois prairies, the increased use of reinforced concrete, load-bearing decks over small waterways meant that high-water clearance could be maintained, while the deck of a structure could be dropped – thus reducing the rise needed for the bridge approaches. This could be accomplished since no load-bearing girders existed beneath the deck.[8]

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[7]Charles S. Whitney, *Bridges: Their Art, Science & Evolution* (New York: Greenwich House, 1983), 203-04, 222-23; "Beam Bridges," Material online at www.icivilengineer.com.

[8]*Illinois Highway Commission, Second Report* (Springfield, IL: State of Illinois, 1907), 77ff; "Reinforced Concrete Bridge Test," *Illinois Good Roads Commission* (Springfield, IL: N.p., 1912[?]); "Only One in the World," *The Daily Republican* (Belvidere, IL), 28 July 1906; David Plowden, *Bridges: The Spans of North America* (New York: Viking Press, 1974), 297-300; IDOT, *Historic Bridge Survey List*, 1241m ff; IDOT, *Statement of Significance* (Springfield, IL: Bureau of Location and Environment, 1997), 21; A.N. Johnson, "Design and Cost of Reinforced-

Woodburn County and the Village of Washburn

The Snag Creek Bridge is located on Jefferson Street/Illinois State Highway 89 in the Village of Washburn. It crosses Snag Creek, an unassuming waterway in northern Washburn County, which generally evolved as an agricultural region. Snag Creek flows in a westerly direction to the Illinois River. The Village of Washburn traces its origins to the 1830s and an inn constructed by William Maxwell along a state road that connected Chicago with Springfield. Maxwell's attempt to attract others to a settlement named Auburn failed. A school constructed in 1846, however, attracted several families and the small hamlet took the name of Uniontown – which was changed in 1851 to Washburn. A railroad route was surveyed through the community as early as 1854, but trains did not reach the town until 1870 when the St. Louis, Jacksonville & Chicago Railroad was constructed. To accommodate the location of the railroad, the entire community was moved a short distance. It incorporated in 1871 with a population of approximately 270. The town claimed by 1880 around thirty businesses and 450 residents. Washburn was served by four trains a day and continued to grow. By 1920 it had a population of 830 people and 79 businesses.[9]

Development of Illinois State Highway 89

A state road between Chicago and Springfield passed through Woodburn County's Cazenovia Township as early as the 1830s. It was a crude affair that was barely maintained and ran on a northeast-southwest axis through the county to Metamora, Illinois, before turning west to Peoria. This road was known by 1917 as the Alton Way, which ran from LaSalle to East St. Louis via Peoria and Springfield. The route was marked by a sign consisting of two white horizontal stripes separated by a black stripe. The Alton Way meandered indirectly along the existing road network, its direction sometimes dictated by geographical features such as hills and streams.[10]

The State of Illinois passed in 1918 a $60 million bond issue to fund the paving of roads. This amount was augmented by funds allocated by the Federal Aid Road Act of 1916, which provided matching monies for paving state highways. A significant factor that dictated the selection of roadways for federal aid was the existence of a Rural Free Delivery mail route. In the late 1920s, the State of Illinois authorized the construction of State Highway 89. The route began in Metamora and proceeded

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Concrete Highway Bridges," *Engineering News* 63:6 (10 February 1910): 177.

[9]Roy L. Moore, ed. *History of Woodford County* (Eureka, IL: Woodford County Republican, 1910), 97, 116-18; *The Woodford County History* (Bloomington, IL: Pantagraph Printing & Stationary Company, 1968), 20-23, 27.

[10]*Map of Woodford County, Illinois* (Dundee, IL: M.H. Thompson & Bro., 1865); *Map Showing Marked Routes in Illinois* (N.p.: Illinois State Highway Department, 1917); *Illinois Automobile Road Map* (N.p." Rand McNally, 1918).

northward to Dixon. The state sponsored in 1927 the construction of State Highway 89 in Woodford County. The newly paved route coincided with the Alton Way highway. But the roadway was straightened as several bridges were constructed over the area's small streams, one of which was Snag Creek in the Village of Washburn.[11]

Snag Creek Bridge

The project to complete State Route 89 from Low Point to Washburn initially did not include a bridge over Snag Creek. A partial explanation is that the route through Washburn was not settled at the time the construction contract was issued in June 1927. Issues regarding right of way, and where Highway 89 would cross the railroad tracks, were not settled until the fall of 1927. An existing contract with Cameron-Joyce of Keokuk, Iowa, was amended to include the bridge and the firm subcontracted the work to Ike Davis of Toluca, Illinois. Work on the $9,000 bridge commenced in April 1928 and was completed by the end of June. The project required a significant amount of fill to align the bridge and the roadbed, as well as to give the bridge adequate clearance because Snag Creek was prone to springtime flooding. Its polished concrete appearance, according to the local newspaper, made it "quite an artistic crossing."[12]

PART II: ARCHITECTURAL INFORMATION

A. General Statement:

1. Architectural Character:

The two-span State Route 89 Bridge over Snag Creek was built in 1928 and employs the ancient post-and-beam form executed with reinforced concrete. It is a simple, two-span structure constructed of reinforced concrete with a load-bearing deck and concrete railings.

2. Condition of Fabric:

The condition of the historical fabric is good. Modern traffic warning signs

[11]Michael Wallis, *Route 66: The Mother Road* (New York: St. Martin's Press, 1990), 33-35; Susan Croce, Kelly and Quinta Scott, *Route 66: The Highway and Its People* (Norman, OK: University of Oklahoma Press, 1988), 7-9; "Hard Road Meeting," 12 March 1925; "Work Started on 89", 21 July 1927. Both articles in *Washburn* (IL) *Leader*.

[12]"Contract No. 3016 for Federal Aid Work, SBI 89, Woodford County," (1 June 1927), Located in RG 242.028 (Department of Transportation), Contract Files,, Illinois State Archives, Springfield, IL; "Grading at Low Point," 22 September 1927; "News of the Roads," 10 November 1927; "Will Build Bridge", 15 December 1927; "Work on 89 Started," 12 April 1928; "Route 89 Now Here," 26 April 1928; "Bridge is Completed," 21 June 1928. All articles located in the *Washburn Leader*.

are apparent at each corner of the structure.

B. Description:

The State Route 89 Bridge is a post-and-beam fabrication that is 46'-10" long, a length evenly divided between two, 23'-5" spans. Its overall width is 42'-3", while that of the traffic deck is 30'. The roadway is flanked by 7" curbs, as well as a 4'-10" sidewalk on the south and a 4' sidewalk on the north. The abutments of the bridge are reinforced concrete, as is the solid intermediate pier which tapers slightly from bottom to top and extends 20" beyond the outer edge of the railing to the north and south. Wingwalls extend approximately 16' away from each of the four abutment corners, at an angle and decreasing in height. Each wingwall is 11¾" thick.

The bridge's railings appear to be of a type typically used in Illinois. Specifically, they are a Texas Classic Type 411, the base chord of which was obscured by the sidewalk, weeds and other debris. The balusters are approximately 6½" wide by 8" deep. They are generally on 14¾" centers and defined by 8¼" openings with round arches (also know as IDOT "Type B" windows). Above the arches is a 4" upper intermediate chord. The top chord of the railing is 8" high and 12" wide, the top of which is 37" above the sidewalk. There are 16 railing arches in each of the bridge's two spans. Finally, above the abutments and the intermediate pier are solid railing piers that are nominally higher than the railing itself. Each pier is 28" long and 12" wide, crowned with 30" long, 14" wide and 8" high coping, and embellished with a 1½" deep inset panel.

C. Setting:

The State Route 89 Bridge crosses Snag Creek and is located on the southwest side of Washburn. A municipal park is to the southeast, while commercial endeavours are situated to the northeast and northwest. A rural, residential property is to the southwest.

PART III: SOURCES OF INFORMATION

A. Bibliography

1. Primary and Unpublished Sources:

"Beam Bridges," Material online at www.icivilengineer.com.

Contract No. 3016 for Federal Aid Work, SBI 89, Woodford County," (1 June 1927), Located in RG 242.028 (Department of Transportation), Contract Files, Illinois State Archives, Springfield, IL.

IDOT. *Statement of Significance.* Springfield, IL: Bureau of Location and Environment, 1997.

Illinois Automobile Road Map. N.p." Rand McNally, 1918.

Illinois Highway Commission, Second Report. Springfield, IL: State of Illinois, 1907.

Map of Woodford County, Illinois. Dundee, IL: M.H. Thompson & Bro., 1865.

Map Showing Marked Routes in Illinois. N.p.: Illinois State Highway Department, 1917.

Nolen, John R. and the Illinois Department of Transportation (IDOT). *Ms. on file at IDOT* (1995).

"Only One in the World." *The Daily Republican* (Belvidere, IL), 28 July 1906.

"Reinforced Concrete Bridge Test." *Illinois Good Roads Commission.* Springfield, IL: N.p., 1912[?].

Washburn (IL) *Leader*, 1925-1928. See individual footnotes for citations.

2. Secondary and Published Sources:

Croce, Susan, Kelly and Quinta Scott. *Route 66: The Highway and Its People.* Norman, OK: University of Oklahoma Press, 1988.

Garrard, Russell M. "Early Bridges in Central Illinois," in *Heritage of Mid-Illinois Engineering* (Capital City Chapter of the Illinois Society of Professional Engineers (circa 1976).

Hess, Jeffrey A. and Robert M. Frame. *Historic Highway Bridges in Wisconsin.* Madison, WI: Wisconsin Department of Transportation, 1998.

IDOT. *Historic Bridge Survey List.* Springfield, IL: Bureau of Location and Environment, 1992.

Johnson, A.N. "Design and Cost of Reinforced-Concrete Highway Bridges." *Engineering News* 63:6 (10 February 1910): 177.

Moore, Roy L., ed. *History of Woodford County.* Eureka, IL: Woodford County Republican, 1910.

Plowden, David. *Bridges: The Spans of North America.* New York: Viking Press, 1974.

Quaife, Milo M. *Chicago's Highways Old and New.* Chicago: D.F. Keller & Co., 1923.

Voss, Walter V. "How New Materials Increased Man's Building Ability," in *Centennial Transactions.* New York: American Society of Civil Engineers, 1953.

Wallis, Michael. *Route 66: The Mother Road.* New York: St. Martin's Press, 1990.

Whitney, Charles S. *Bridges: Their Art, Science & Evolution.* New York: Greenwich House, 1983.

The Woodford County History. Bloomington, IL: Pantagraph Printing & Stationary Company, 1968.

PART IV: METHODOLOGY OF RESEARCH

A. Research Strategy

Research objectives were to place the bridge in its geographic, historic and engineering contexts. A strategy was developed to accomplish those goals that investigated both local and statewide documentary sources. Direct observation of the bridge itself was also part of the research plan.

B. Research Process

1. Visited bridge site to record and photograph structure.

2. Searched records in state repositories for historic background material relating to road and bridge development in general, and the historic development of the subject bridge in particular.

3. Prepared preliminary draft of report, noting needs for special historic and field attention.

4. Internal document review at Heritage Research, Ltd.

5. Completed all revisions and submitted to IDOT.

C. Archives and Repositories Used/Consulted:

Illinois Department of Transportation
2300 S. Dirksen Parkway
Springfield, Illinois 62764
(Bridge Plans)

Illinois State Archives
Norton Building
State Capitol Complex
Springfield, Illinois 62756
(IDOT Records and Maps)

Illinois State Historical Society Library
Abraham Lincoln Presidential Library
112 N. 6th Street
Springfield, Illinois 62701-1507
(Histories, Newspapers)

Illinois State Library
300 S. 2nd Street
Springfield, Illinois 62701-1796
(Maps, Plats and Histories)

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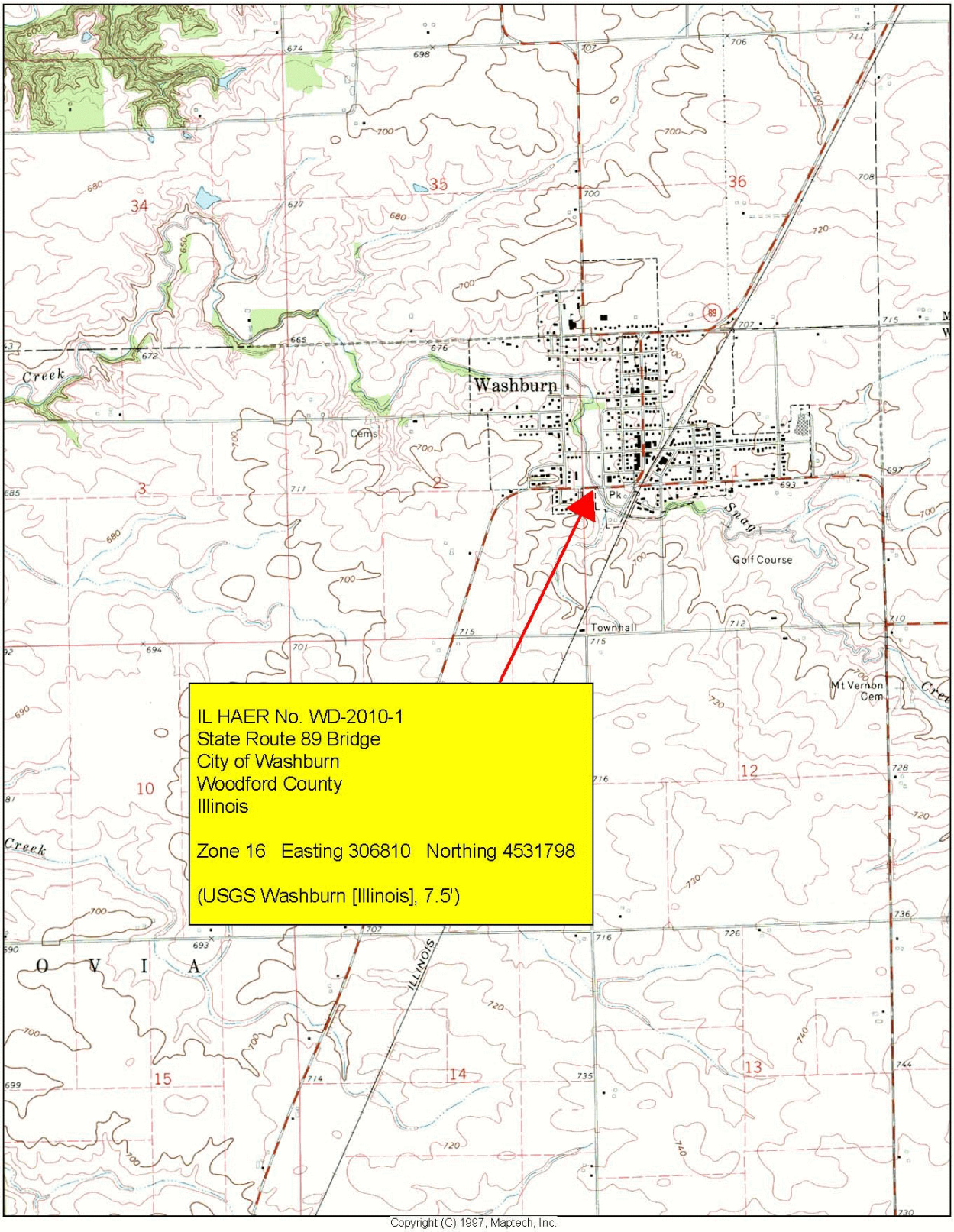
PART V: PROJECT INFORMATION

This IL-HAER archival documentation is submitted in compliance with a stipulation of a memorandum of agreement (MOA) between the Federal Highway Administration, Illinois Division, and the Illinois State Preservation Officer, dated with final signature on 19 March 2007. The MOA was executed in compliance with CFR 36 800.6(b)(1)(iv) of the National Historic Preservation Act of 1966, as amended.



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INDEX TO PHOTOGRAPHS

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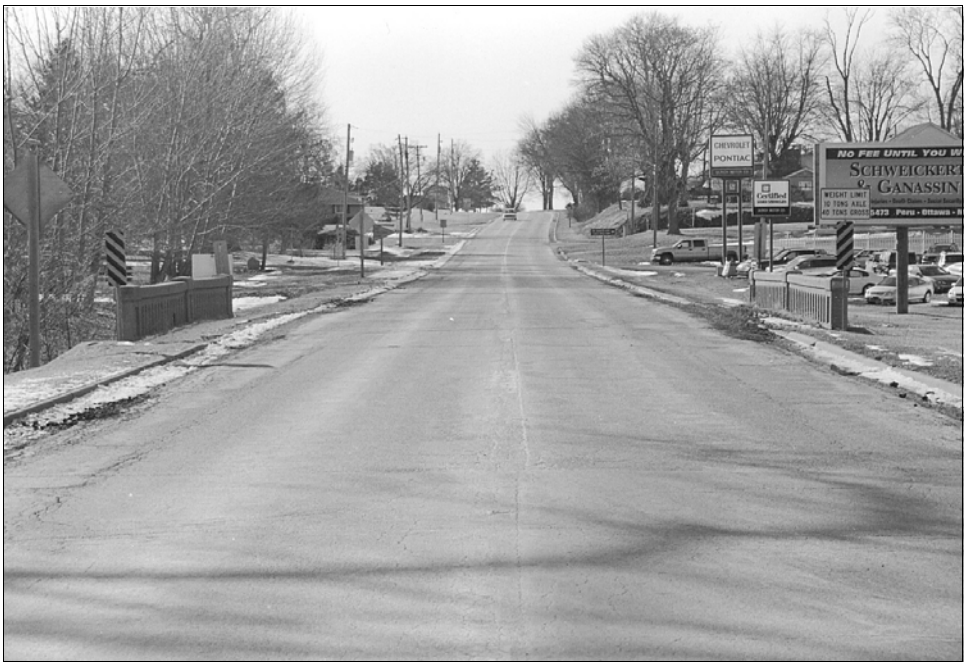
IL HAER No. WD-2010-1

Documentation: 10 Exterior Photographs (2009)
10 Data Pages
01 7.5 Minute USGS Map

John N. Vogel, Ph.D., Photographer (February 2009)

IL HAER No. WD-2010-1.1	VIEW TO WEST.
IL HAER No. WD-2010-1.2	VIEW TO WEST NORTHWEST.
IL HAER No. WD-2010-1.3	VIEW TO NORTHWEST.
IL HAER No. WD-2010-1.4	VIEW TO NORTHEAST.
IL HAER No. WD-2010-1.5	VIEW TO SOUTHEAST.
IL HAER No. WD-2010-1.6	VIEW TO SOUTH.
IL HAER No. WD-2010-1.7	VIEW TO SOUTHWEST. CENTER PIER.
IL HAER No. WD-2010-1.8	VIEW TO NORTHWEST. RAILING.
IL HAER No. WD-2010-1.9	VIEW TO NORTH. RAILING AND CENTER, SOLID RAILING PIER.
IL HAER No. WD-2010-1.10	VIEW TO NORTHWEST. BRIDGE PLATE.



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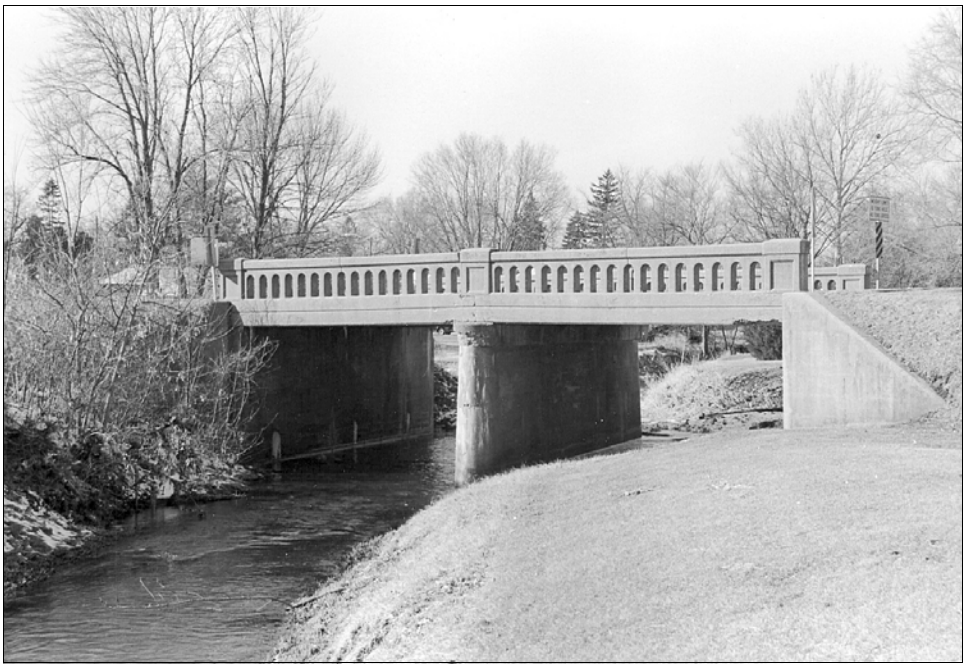

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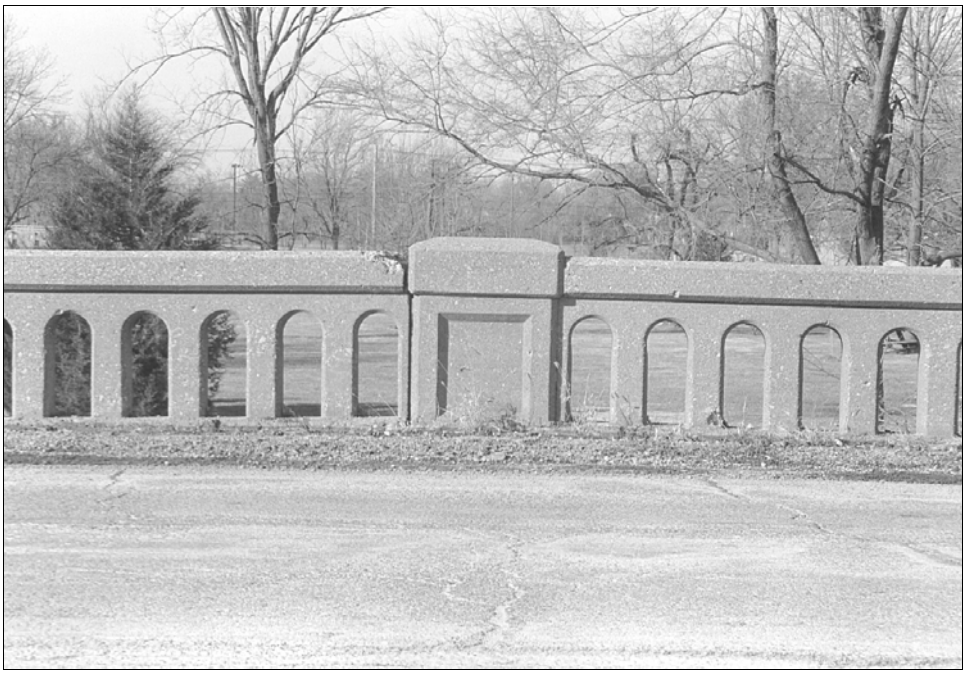

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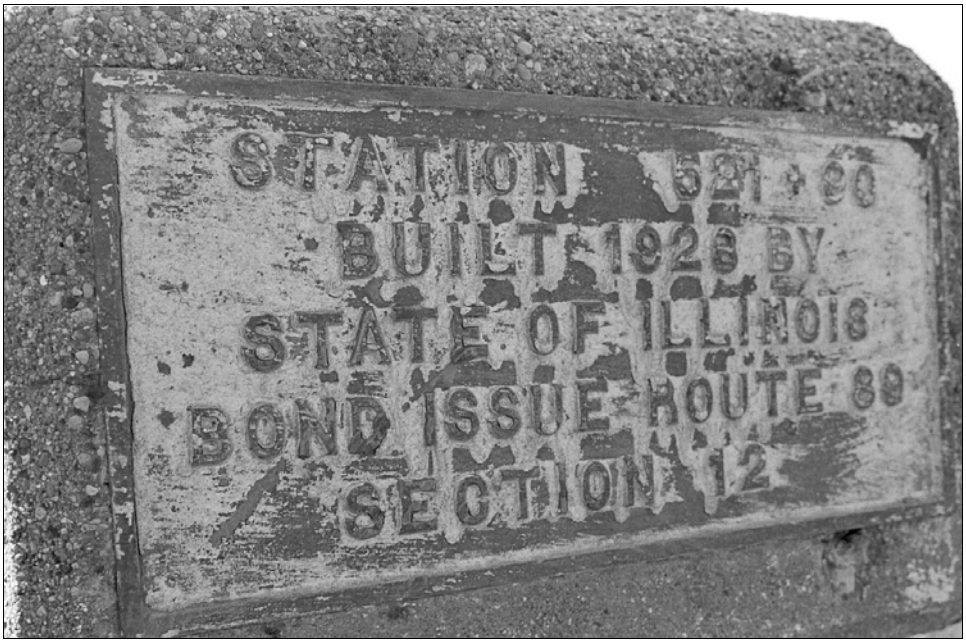

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