

U.S. Highway 24/Memorial Bridge
Over Mississippi River
(S.N. 001-0019/Sequence No. 18642)
City of Quincy
Adams County
Illinois

HIER No. -A-2025-1

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic Illinois Engineering Record
State Historic Preservation Office
Springfield, Illinois

Prepared by the Illinois State Archaeological Survey
on behalf of the Illinois Department of Transportation

April 2026

HISTORIC ILLINOIS ENGINEERING RECORD
HIER No. -A-2025-1

U.S. Highway 24/Memorial Bridge
(TWO-SPAN CONTINUOUS TRUSS BRIDGE WITH THIRTY-FOUR APPROACH SPANS)

Location: U.S. Highway 24 over the Mississippi River
City of Quincy, Adams County, Illinois

USGS Quadrangle: USGS Quincy West, 7.5 minute, Illinois
Latitude 39° 55' 52" N Longitude 91° 25' 15" W

Universal Transverse Mercator Coordinates:
Zone 15 634940 Easting 4421109 Northing

Present Owner: Illinois Department of Transportation

Present Use: Vehicular Bridge (IDOT Structure No. 001-0019)

Significance: The U.S. Highway 24 bridge across the Mississippi River is a two-span, Continuous Truss bridge with seven post-and-beam approach spans to the east and twenty-seven such spans to the west. Continuous Truss bridges were not erected in the United States prior to 1916 and the construction of the Sciotoville (OH) bridge across the Ohio River. Thereafter were such bridges actively built in the country, at least into the 1960s. This structure was designed by bridge engineer Joseph B. Strauss and acknowledged in 1939 when the American Institute of Steel Construction identified it as one of the world's ten most notable Continuous Truss bridges. Additionally did this bridge become a notable economic asset for the City of Quincy as its construction, along with the development of U.S. Highway 24, increased the number of Missourians who could cross the Mississippi River and come to Quincy to shop and conduct business.

PART 1. HISTORICAL INFORMATION

A. Physical History:¹

1. Date of Erection: 1928-1930
2. Designer: Joseph B. Strauss
3. Original and subsequent owners: Illinois Department of Transportation

¹ The dates acknowledged in the Physical History summary are all discussed, and citations provided, in the Historical Context section of this report.

4. Builder or contractor: Kelly-Atkinson Company, The Foundation Company
5. Alterations and additions: The bridge's original sub and superstructure generally appear to be in fair condition. The tollbooth was removed when fees were discontinued in 1945. Thereafter was the bridge's pavement replaced in 1981 with an infilled, grated steel deck. It was then that the sidewalk was removed and the traffic lanes widened, each by two feet. Additional rehabilitation work was subsequently completed in 2002.

B. Historical Context:²

Bridge Development in Illinois

The earliest permanent bridges in Illinois include a few stone arches built in the 1830s when the National Road was extended west from Maryland. At least one other arch was built on the Chicago-Galena Road in the same period. Accounts of early travelers suggest that rudimentary ferries sometimes facilitated passage over larger streams in the region. Timber structures crossing small water courses also accommodated travel. Little is known of the pile trestles or half-submerged floating platforms used. All were subject to risks and washouts.³

As pioneers moving west established settlements, technicians were attracted to the frontier to erect bridges, many of them covered. Between 1820 and 1900, an estimated two to three hundred covered bridges were built in Illinois, only a handful of which are thought to remain today.⁴

Railroads helped drive the need to improve upon early timber structures. They required by the late 1850s stronger bridges that encouraged the development of iron fabrications. Those were followed in the 1870s by others made of steel which came to use wide flange beams as structural components. The use of steel contributed to the expansion of

² The "Bridge Development in Illinois," "Steel Bridge" and "Pratt and Warren Truss Bridge" context sections were initially prepared in circa 1990 by John R. Nolan of the Illinois Department of Transportation (IDOT). Most of that material has subsequently been reviewed against the sources cited and then edited, expanded, modified or rewritten as appropriate.

³ Keith A. Sculle and John A. Jakle, "From Terre Haute to Vandalia, Illinois," in *A Guide to the National Road*, ed. Karl Raitz (Baltimore, MD: The Johns Hopkins University Press, 1996): 277; Milo M. Quaife, *Chicago's Highways Old and New* (Chicago: D.F. Keller & Co., 1923): 187.

⁴ Russell M. Garrard, "Early Bridges in Central Illinois," in *Heritage of Mid-Illinois Engineering* (Springfield, IL: Capital City Chapter of the Illinois Society of Professional Engineers, c.a., 1976): 15.

railroads, settlement and industrialization in a growing America.⁵

Steel Bridges:

Cast iron was first used for bridge construction in England in 1776. The resulting structure spanned the River Severn and was 102 feet long. The material was subsequently used for other bridges on the island, as well as at least one in Germany, into the early years of the nineteenth century. Bridges of cast iron established a viable alternative to those of wood and stone. But it was the development of wrought iron, considered superior to that which was cast, that initiated bridge building in the modern era. Wrought iron's period of dominance was limited by the development of steel and the 1862 Bessemer process which removed impurities from the steel, thus improving its strength. Early United States bridges built of steel included the Eads Bridge in St. Louis (completed in 1874) and the Chicago & Alton Railroad Bridge across the Missouri River at Glasgow, Missouri (completed in 1879). Steel emerged as the dominant bridge building material in the last decades of the nineteenth century.⁶

Stone, brick and concrete arch bridges had to be constructed on site. It was impossible to build such a structure in a factory, disassemble it, transport it to its intended destination and then reassemble it. Yet that, in varying degrees, is what happened with iron and steel bridges. Approaches and abutments, stone or concrete, were often still built by local labor. The bridges themselves were not. Constructing the components for bridges, and then assembling those components, became a big business in the last quarter of the nineteenth century. Companies large and small were established to meet the growing demand for bridges across the country, the larger of which developed operations with a variety of function-related shops that included designing, forging necessary parts, machining those parts, riveting them, and so on. Bridges were at least partially assembled in the factory to make sure all parts fit properly, after which they were disassembled and sent to the site for final assembly by a crew of experienced builders, be they employees of the originating company or those of companies that simply specialized in putting together the bridges of others.⁷

⁵ Walter V. Voss, "How New Materials Increased Man's Building Ability," Paper No. 2631, in *Transactions of the American Society of Civil Engineers: Centennial Transactions*, Volume CT (New York: American Society of Civil Engineers, 1953): 829-830.

⁶ "The Developments of the Nineteenth Century in Bridge Design and Construction," *Engineering News* (Vol. XLIV, No. 24), 13 December 1900: 409-410; Daniel L. Schodek, *Landmarks in American Civil Engineering* (Cambridge, MA: MIT Press, 1987): 118-124; "Chicago and Alton Railway Bridge, Howard County, Missouri," Written Historical and Descriptive Data, Historic American Buildings Survey, National Park Service, U.S. Department of the Interior, no date, page 2, From Prints and Photographs Division, Library of Congress (HABS No. MO-1465).

⁷ Jeffrey A. Hess and Robert M. Frame, *Historic Highway Bridges in Wisconsin, Volume 2, Part 1: Truss Bridges* (Madison, WI: Wisconsin Department of Transportation, 1998): 65-67.

The State of Illinois claimed almost sixty bridge building companies that operated between 1849 and 1900, the vast majority of them being located in the Chicago area. Many were short-lived and either went out of business or were acquired by one of those larger. A moment in which the American bridge-building industry experienced a seismic shift occurred in 1900 when industrialist and financier J.P. Morgan created a new corporation. He acquired and combined twenty-four individual companies, including both the American Bridge Works and the Lassig Bridge and Iron Works in Chicago, and formed the American Bridge Company, a behemoth that soon dominated bridge design and construction in the United States.⁸

Notwithstanding the creation of Morgan's new company and the evolving maturation of the bridge building industry, early roadway structures of steel were often deficient. There had been a growing and significant effort to improve railroad bridges in the country in the post-Civil War years of the nineteenth century, but that effort had yet to reach those modest structures on the nation's growing roadway network. One problem was that local road commissioners often lacked the expertise to make appropriate bridge-related decisions. As well, when requests for bridge proposals were issued, they often lacked the specifics necessary to adequately describe the structure needed and the amount of traffic it might have to carry. Bridge companies were competitive. With few specifications offered, those entities often proposed structures that might be only nominally capable of addressing needs at a given location. Yet those shortcomings were easy to overlook since the bridges erected were of *steel*, a term that implied – though often erroneously – strength and longevity.⁹

The State of Illinois began to address the uncertainties experienced by local governments as they sought bridges sufficient to safely meet growing needs. A good example of the state's efforts is found in its publication *Modern Bridges for Illinois Highways*, published initially in 1910 with an expanded second edition issued in 1912. The publication explained that “whenever the township commissioners...have under consideration the construction of a particular bridge, and desires the assistance of the Highway Commission in preparing the plans, such assistance is furnished without expense to either county, township or municipality.” The state was committed to a highway system with bridges both well designed and constructed, be they concrete or steel

⁸ Victor C. Darnell, *Directory of American Bridge-Building Companies, 1840-1900*, Occasional Publication No. 4 (Washington, D.C.: Society for Industrial Archaeology, 1984): 7-13.

⁹ Henry S. Jacoby, “Recent Progress in American Bridge Construction,” *Engineering News* (Vol. XLVIII, No. 3), 17 July 1902: 44; *First Annual Report of the Illinois Highway Commission for the Year 1906* (Springfield, IL: State Printer 1907): 56.

(truss).¹⁰

Continuous Truss Bridges:

The plan for Quincy's new Mississippi River crossing was to construct a Continuous Truss bridge. Such structures had been built in Europe in the later years of the nineteenth century, as was one in Canada erected in 1888. That bridge-type was an option considered, though not selected, for use in the United States in the early years of the twentieth century as New York City's Hell's Gate Bridge was in its early stages of development. The lead engineer for the Hell's Gate effort, completed in 1914, was Gustav Lindenthal who lead the effort shortly thereafter to plan and construct Ohio's Sciotoville Bridge across the Ohio River. Lindenthal was a German who immigrated in the mid-1870s to the States and subsequently became one of the nation's most prominent bridge engineers. And while he did not select the Continuous Truss for his New York project, he thought it was appropriate for crossing the Ohio River at Sciotoville. Indeed, "...he decided on a two-span continuous-truss bridge as best suited to the conditions.... Since the Continuous Truss is practically unknown in American bridge practice...the radical character of the Sciotoville design is evident."¹¹

Despite Lindenthal's consideration of a Continuous Truss bridge in his early Hell's Gate deliberations, prominent American bridge engineer and author, J.A.L. Waddell, objected to the new structure-type in his two volume, 1916 work titled *Bridge Engineering*. He opined that writings regarding the use of continuous girders were "...simply a great waste of printer's ink." He continued that "few American engineers will countenance the building of continuous girder bridges...." At issue was that Continuous Truss bridge spans were statically indeterminant, as opposed to simple truss and cantilevered bridge spans that were statically determinate. Which is to say, as engineer Fred L. Plummer explained in a 1934 essay, that "statically indeterminate structures may be characterized by the fact that two or more parts [of the bridge] function to one and the same purpose while in statically determinate structures each part has a definite function to perform." This might seem a conundrum yet one that could be mathematically resolved, though at great effort. An example of a bridge component being affected in a statically

¹⁰ *Modern Bridges for Illinois Highways, Second Edition Revised and Enlarged* (Springfield, IL: State of Illinois Highway Commission, Bulletin No. 9, 1912): 8.

¹¹ Gustav Lindenthal, "The Continuous Truss Bridge over the Ohio River at Sciotoville, Ohio, of the Chesapeake and Ohio Northern Railway," Paper No. 1496, in *Transactions of the American Society of Civil Engineers*, Volume LXXXV (New York, NY: American Society of Civil Engineers, 1922): 912; O.H. Ammann, "The Hell Gate Arch Bridge and Approaches of the New York Connecting Railroad over the East River in New York City," Paper No. 1417, in *Transactions of the American Society of Civil Engineers*, Volume LXXXII (New York, NY: American Society of Civil Engineers, 1918): 865-868; Henry Petroski, *Engineers of Dream: Great Bridge Builders and the Spanning of America* (New York, NY: Alfred A. Knopf, 1995): 191-193; "Long-Span Continuous-Truss Bridge over the Ohio," *Engineering News* (Vol. 74, No. 2), 08 July 1915: 64.

indeterminant structure, but not a simple truss or cantilevered design, had to do with stress levels on the Continuous Truss caused by changes of temperature, which could vary significantly in the course of a day. Another example is the impact a single pier might have on a Continuous Truss bridge if it shifted or settled in a way that other piers in the bridge did not. Such movement might subject the entire bridge, which was structurally rigid, riveted and without joints, to additional levels of secondary stress and possible failure. This second example makes clear that a statically indeterminate bridge, because it is rigid, acts as a single and complete structure despite the number of piers it might have. That contrasts with a statically determinate crossing where each truss or cantilevered component of a bridge is a separate and complete structure in its own right. Thus is the overall statically determinate bridge a collection of individual, self-supporting spans, as opposed to one long, continuous structure as was the statically indeterminate crossing.¹²

The Continuous Truss bridge also had several attributes that helped to offset its perceived deficiencies. One of which was its rigidity. Lindenthal explained in 1922 that such a structure was comparable to a simple truss while it “...shows a decided advantage over the cantilever. Its deflections and amplitude of vibrations are smaller, and the elastic line smoother and devoid of local kinks such as occur at the hinges of cantilevers.” In the same article Lindenthal cited the economy of a Continuous Truss, the cost savings of which increased as the length of a structure grew, perhaps up to 25%! That point was reiterated in 1929 when a Continuous Truss bridge over the Missouri River was projected to cost about \$25,000 less than one of two simple spans. Despite the fact that it may seem counter-intuitive, given the Continuous Truss structure acts as one span, Lindenthal also reported that “when a member [of the truss] is seriously weakened, as may happen in the case of the derailment of a train and collision with the trusses, the probability of failure of the whole bridge is less than in the case of the statically determinate simple span or cantilever.”¹³

¹² J.A.L. Waddell, *Bridge Engineering*, Volume 1 (New York, NY: John Wiley & Sons, 1916): 482; Fred L. Plummer, *Statically Indeterminate Structures* (Ann Arbor, MI: Edwards Brothers, Inc., 1938): 1; David Plowden, *Bridges: The Spans of North America* (New York, NY: The Viking Press, 1974): 184-185.

¹³ Lindenthal, “The Continuous Truss Bridge,” 918, 920; L.J. Sverdrup, “Continuous Truss Highway Bridge over Missouri River,” *Engineering News-Record* (Vol. 102, No. 3), 17 January 1929: 100; “Long-Span Continuous-Truss,” *News*, 08 July 1915: 64.

Note that at the conclusion of Lindenthal’s paper, “The Continuous Truss Bridge,” engineers C.A.P. Turner, T. Kennard Thomson, Charles Evan Fowler, J.E. Greiner, D.B. Steinman and Henry H. Quimbey offered comments, pro and con, on matters raised and discussed by Lindenthal (954-975).

The Historic American Engineering Report (HAER) for the Lake Champlain Bridge (1928-1929), in Addison County, Vermont, provides a more general explanation of the continuous vs simple truss structural types: “Continuous Trusses... represent an important advance over simple span bridges because the latter, in order to achieve multiple spans, are designed as individual structures supported at each end by piers or abutments. In contrast, Continuous Truss bridges extended over

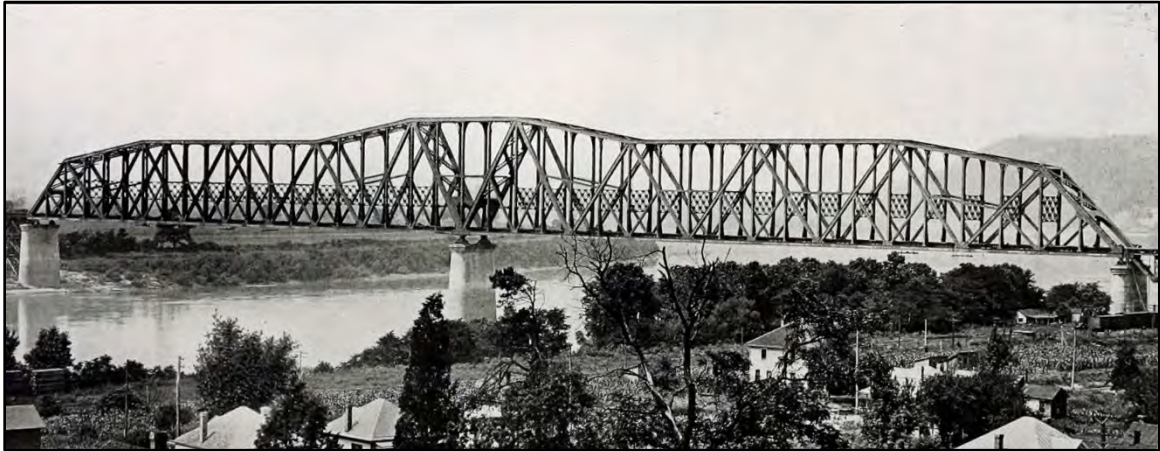


Figure 1: The Scioto River Bridge, the first Continuous Truss bridge constructed in the United States, as pictured in 1919 (“McClintic-Marshall Company: Steel Bridges and Buildings,” *The Epitome. A year book published annually by the Junior Class of Lehigh University* [–] *The Book of the Class of 1919*, Vol. XLIII, in the “Epitome Advertiser,” 5, Viewed at <https://preserve.lehigh.edu/digital-special-collections/university-publications/epitome-yearbooks/epitome-yearbook-1919> on 29 October 2025).

It seems likely the most fortuitous way to construct the first Continuous Truss bridge in the country was to opt for a location where bedrock was readily accessible, thereby obviating the circumstance where some subterranean condition might permit one pier to shift or settle while others did not. Indeed, bedrock was the foundation for the Scioto River Bridge, a two-track railroad structure across the Ohio River between the states of Ohio and Kentucky. It was reported to be “a structure virtually of new type for America,” and was 1,550 feet long, consisted of two, 775-foot spans, and completed in 1917 by Lindenthal. Thus started a period in which the number of Continuous Truss bridges in the country slowly grew. Experience with the bridge-type increased, as did knowledge about indeterminate structures and the various environments in which they were built. That point was made in a 1929 *Engineering News-Record* editorial which stated that “old prejudices against statically indeterminate steel structures are being dissipated in the face of new methods of mechanical analysis.” D.B. Steinman, a Lindenthal protégé, wrote in circa 1950 that “the Scioto River Bridge is still the most famous continuous bridge in the world. With its successful achievement, the continuous type of bridge became established in engineering practice.” J.K. Finch, Dean Emeritus of Columbia University’s School of Engineering, wrote about the same time that the “...continuous truss design was remarkable in several ways. It brought to the fore ideas that had been developing for many years in American practice. It seemed to nullify the

two or more spans as a single structure. The result is a bridge that distributes stresses more efficiently throughout the entire structure, increases overall rigidity, economizes the use of materials, and reduces costs proportionally.” (“Lake Champlain Bridge,” Written Historical and Descriptive Data, Historic American Engineering Record, National Park Service, U.S. Department of the Interior, 2009, From Prints and Photographs Division, Library of Congress [HAER No. NY-541]).

opinion...that, when difficult foundation conditions prevailed, some settlement of piers was inevitable and such settlement would vitally affect the stresses in continuous structures. It would, perhaps, be reasonable to argue that increasing confidence in the knowledge of foundation and soil mechanics has thus been a factor in the increase in continuous forms of construction.”¹⁴

The Sciotoville Bridge was acknowledged by an Ohio Historical Marker placed in 1965. Noted was that its “...construction marked a major advance in the art of bridge engineering and was a pioneer achievement in Continuous Truss analysis.” Similar bridges were constructed in the years following the opening of that in Sciotoville. One was the Chain of Rocks Bridge. It was finished in 1929 and carried Route 66 across the Mississippi River north of St. Louis (MO). Another was the subject Memorial Bridge situated in 1930 across the Mississippi River at Quincy (IL). A number of Continuous Truss structures were erected at least into the 1960s. The State of Missouri’s I-70/Rochport Bridge was built in 1960 and said in 1977 to be the longest Continuous Truss in the world. It carried the freeway across the Missouri River and was reportedly 2,500 feet long.¹⁵

Adams County (IL) & Marion County (MO)

The U.S. Highway 24 bridge spans the Mississippi River and links Marion County (MO) on its west side to Adams County (IL) immediately across the river to the east. Marion County dates to 1826, claimed a total of about 276,480 acres, and was largely agricultural. Adams County, organized in 1825, consisted of about 538,880 acres, and was also dominated by agriculture though the county additionally hosted the evolving regional metropolis of Quincy on its west, Mississippi River shoreline.¹⁶

The soil in both counties was reported as exemplary. That which was low-lying along Marion County’s river bottoms was said to be “...very fertile and on the prairie [beyond] is underlaid by a silicious marl, which contains all the elements necessary to

¹⁴ Plowden, *Bridges*, 184; “Continuous Bridges,” *Engineering News-Record* (Vol. 103, Number 16), 17 October 1929: 598; “Sciotoville Bridge Erection is Well Started,” *Engineering News* (Vol. 77, No. 1), 04 January 1917: 28; D.B. Steinman, *Bridges[-] D.B. Steinman* (New York, NY: Columbia University Libraries [?], n.d.): 20; J.K. Finch, ASCE, “A Hundred Years of American Civil Engineering, 1852-1952,” Paper No. 2576, *Transactions of the American Society of Civil Engineers, Centennial Transactions*, Volume CT (New York, NY: American Society of Civil Engineers, 1953): 83-84.

¹⁵ “Sciotoville Bridge, 1917,” State of Ohio Historical Marker, Viewed on line at <https://www.hmdb.org>, on 10 September 2025; National Register Nomination, Chain of Rocks Bridge, Madison County/St. Louis County, Illinois/Missouri, National Register Reference #06001091; *Evening Express* (Portland, ME), 18 November 1971: 40; “I-70 Bridge Distinct,” *The Lincoln Star* (Lincoln, NE), 13 July 1977: 42.

¹⁶ J.M. Greenwood and C.F. Marbut, *Dodge’s Geography of Missouri* (Chicago, IL: Rand, McNally & Company, 1906): ix; Douglas C. Ridgley, *The Geography of Illinois* (Chicago, IL: The University of Chicago Press, 1921): 14.

render it exceedingly fertile.” The quality of that in Adams County was noted in 1837 to be “...second to none in the state.” An early indication that regional agriculture was prospering can be found in the 1850 U.S. Census reports. Marion County (MO) had a total of 184,393 acres (both improved and unimproved) associated with farms, on which were found 3,697 horses, 3,837 milch cows, and 8,269 cattle, 18,833 sheep and 32,547 swine. Farm products included 105,841 bushels of wheat, 65,384 bushels of oats, and 668,653 bushels of Indian corn. Similarly, though in higher numbers since the county was almost twice the size of Marion County, did Adams County (IL) have 316,145 acres tied into agriculture. On those farms were 7,330 horses, 7,032 milch cows, 14,692 other cattle, 24,329 sheep, and 65,712 swine. And 502,634 bushels of wheat, 2,692,713 bushels of Indian corn, 277,201 bushels of oats were among the various crops grown.¹⁷

The city of Palmyra was, and is today, the Marion County seat of government while that of Adams County was, and remains, Quincy. Both communities had railroads by 1875, the key carrier being the Chicago, Burlington & Quincy (hereafter referred to as CB&Q) the route of which passed through each and tied them together. Palmyra was in Liberty Township, just south of Fabius Township, about fourteen miles distant from Quincy.¹⁸

Palmyra was platted in 1819, chartered in 1857, and grew significantly. It was acknowledged in an 1865 gazetteer as having 3,000 residents as well as about ninety-five businesses almost all of which were engaged with supporting both residents in the town and aspiring agriculturalists in the surrounding countryside. Some very light manufacturing, including milling, producing shoes and boots, and constructing furniture was also done in the town, though nothing more substantial. Little had changed ten years later. The population was consistent, as was the lack of anything but very light manufacturing. There were also, among many other merchants, six saloons, six grocers, five druggists, and three general stores. Population in the town had dropped to about 2,500 in 1881, a time in which improved land was selling for between \$10 and \$15 per acre, as were improved timber parcels selling for between \$50 and \$100 per acre. By 1893, Palmyra’s population had returned to 3,000, though the gazetteer continued to reflect the city functioning as an agricultural and community support center yet with virtually no manufacturing of consequence. Population continued to vary with the arrival of the twentieth century, all of which suggested that Palmyra’s greatest period of strength was

¹⁷ R.A. Campbell, ed., *Campbell’s Gazetteer of Missouri* (St. Louis, MO: R.A. Campbell, Publisher, 1874): 351; J.M. Peck, *A Gazetteer of Illinois in Three Parts* (Philadelphia, PA: Grigg & Elliot, 1837): 91; J.D.B. DeBow, Superintendent of the United States Census, *The Seventh Census of the United States: 1850... An Appendix Embracing Notes Upon the Tables of Each of The States, Etc.* (Washington, D.C.: Robert Armstrong, Public Printer, 1853): 657, 677, 680, 728, 730, Viewed on 13 October 2025 at https://www.nass.usda.gov/AgCensus/archive/census_year/1850-census/index.html.

¹⁸ T.M. Rogers, *Atlas Map of Marion County, Missouri* (Quincy, IL: T.M Rogers, 1875): 45, 51; *Atlas Map of Adams County, Illinois* (Davenport, IA: Andreas, Lyter & Co., 1872): 6.

the last half of the nineteenth century. Population had fallen to 1,967 by 1938, thereafter growing nominally to 2,285 in 1945, 2,295 in 1953, and 2,933 in 1962.¹⁹

Marion County's Fabius Township, immediately north of the City of Palmyra and Liberty Township, anchors in Missouri the west southwest end of Quincy's Memorial Bridge. Settlement in the township was generally consistent with that of the greater county, meaning that it was underway by the ca. 1820 period and largely "settled up" by 1850 with a population of 1,457. With the exception of a few locations where hamlets developed around railroad stations, the township claimed no significant settlements and was largely devoted to agriculture. It was reported in an 1884 publication that "the soil in this township being very rich and strong, is well adapted to the cultivation of hemp.... For some time hemp was the great staple of the township." Another author noted that "this township contains a variety of soil. The alluvial bottoms along the Mississippi River produce most abundantly. The land was originally swampy and marshy, and more or less covered with water, but now is enclosed by levees." Additionally was it observed that hogs, horses, sheep, and cattle were abundant in the township.²⁰

Immediately across the river from the northeast corner of Fabius Township and Marion County was the Illinois City of Quincy, the largest community along the Mississippi River between St. Louis (to the south) and the Quad Cities, a grouping of Davenport (IA), Rock Island (IL), Moline (IL), and Bettendorf (IA) (to the north). Quincy is located in Adams County, which was organized in 1825 and largely agricultural. It was selected as the county seat later that year, upon which a survey was completed and the new community platted. Quincy was subsequently incorporated in 1834 and had about 700 residents in 1835. The population grew rapidly thereafter with 2,319 residents in the city in 1840, 6,902 in 1850, 13,718 in 1860, and 24,052 in 1870. Shortly thereafter did growth slow down and start to level off. It was 27,268 in 1880, 31,494 in 1890, and 36,252 in 1900. It then fluctuated nominally before reaching 39,241 in 1930 and 40,469 in 1940. Quincy's peak in population occurred in 1970 when it was 45,288.²¹

¹⁹ Campbell, *Gazetteer of Missouri*, 356; *Missouri: A Guide to the "Show Me" State, Compiled by Workers of the Writers' Program of the Work Projects Administration in the State of Missouri* (Columbia, MO[?]: Missouri State Highway Department, 1941): 442; *Missouri State Gazetteer and Business Directory for 1876-7* (St. Louis: R.L. Polk & Co., Publishers, 1876): 361-363; *Missouri State Gazetteer, Shippers' Guide, and Business Directory, for 1866* (Indianapolis, IN: Geo. W. Hawes & Co., Publishers and Compilers, 1865): 28, 330-332; *Missouri State Gazetteer and Business Directory for 1881-1882* (St. Louis: R.L. Polk & Co., , 1881): 509; *Missouri State Gazetteer and Business Directory for 1893-94* (St. Louis: R.L. Polk & Co., Publishers, 1893): 781-782; *Missouri Official Highway Map* (Jefferson City, MO: Missouri State Highway Commission, 1938): map; *Missouri 1945-6 Highway Map* (Jefferson City, MO: Missouri State Highway Commission, 1945): map; *Official Missouri Map, 1953* (Jefferson City, MO [?]: Missouri State Highway Commission, 1953): map; *Missouri Official Highway Map, 1962* (Jefferson City, MO [?]: Missouri State Highway Commission, 1962): map.

²⁰ *History of Marion County, Missouri*, Volume 2 (St. Louis, MO: E. F. Perkins, 1884): 166, 778; Kate Ray Kuhn, *A History of Marion County* (No place of publication noted: Kate Ray Kuhn, 1963): 151.

²¹ *Illinois State Gazetteer and Business Directory, for the Years 1864-5* (Chicago, IL: J.C.W. Baily, 1864): 55, 528; "Quincy,

The city's business environment is thought to have initially focused on agricultural support. Quincy claimed in 1849 both hotels and 126 merchants. By the late 1850s there were a number of industries also operating in the community, examples of which include flour mills, corn and feed mills, saw mills, machine shops, stove manufacturers, furniture factories, wagon factories, boiler factories, and planing mills. Indeed, by 1883 as industrial growth continued, the city claimed two factories, the Quincy Paper Company and the J.W. Jansen & Son, Furniture Factory, that employed over 700 men each! At least two of the 1883 factories, Comstock, Castle & Co., Stove Manufacturers and the Excelsior Stove & Manufacturing Company continued in 1898 as did several others, all of which continued operations in 1926. In addition to Comstock and Excelsior, those that operated for at least the first quarter of the twentieth century included the Gem City Stove Manufacturing Company, J.J. Flynn & Company Steam Bottling Works, Quincy Foundry & Novelty Company, and Moller and Van Den Boom's Lumber Yard.²²

Despite the imposing and regional presence of the City of Quincy, the economic dominance of agriculture in Adams County continued well into the twentieth century, just as it did in Marion County immediately across the river. By 1880 Adams County had 4,026 farms with an average size of 118 acres. Marion County then had 1,787 farms with an average size of 138 acres. Twenty years later, in 1900, Adams County hosted 4,224 farms averaging a size of 117 acres while Marion County claimed 2,022 farms averaging a size of 132 acres. The number of farms had dropped in each county by 1930. Adams County then had 3,599 farms on 490,863 acres while Quincy Township, that which hosted the City of Quincy, had only nineteen farms on 244 acres which suggested how geographically dominant was the city. Marion County overall then had 1,581 farms on 244,989 acres while Fabius Township had 266 farms on 46,813 acres. Clearly farming remained a dominant economic activity in each county. And Quincy, with its rail and river connections was a primary shipping point for moving goods and produce both in and out of the immediate region, though Palmyra's CB&Q connection fourteen miles west southwest of Quincy was also a valuable asset.²³

Illinois: Demographics", viewed at [https://en.wikipedia.org/wiki/Quincy, Illinois](https://en.wikipedia.org/wiki/Quincy,_Illinois) on 24 October 2025.

²² George W. Hawes, Compiler, *Illinois State Gazetteer and Business Directory, for 1858 and 1859* (Chicago, IL: George W. Hawes, Publisher, 1858): 178-179; *Sanborn Fire Insurance Maps – Quincy* (New York, NY: Sanborn Map Company, 1883): 2, 3, 4, 20, 21, 22; *Sanborn Fire Insurance Maps – Quincy* (New York, NY: Sanborn Map Company, 1898): 1, 2, 23, 24, 25, 26, 53, 63, 85, 86; *W.H. Hoffman's City Directory of Quincy, Illinois, 1926-1927* (Quincy, IL: The Hoffman City Directories, 1926): 168, 203, 211, 223, 254, 351.

²³ United States Census Office, *Report of the Production of Agriculture as Returned at the Tenth Census* (Washington, D.C.: Government Printing Office, 1883): Tables 5, pp. 44 & 68, Table 9, pp 149, 161; William R. Merriam, Director, *Twelfth Census of the United States Taken in the Year 1900: Agriculture – Farm, Live Stock and Animal Products* (Washington, D.C.: United States Census Office, 1902): Table 10, pp. 72, 98; *Fifteenth Census of the United States: 1930-Agriculture Volume 1, Farm*

U.S. Highway 24

The nation's transportation network had improved significantly over time. Technology accommodated the improvement of railroads as well as the creation of automobiles, trucks, and airplanes. Not only did the vehicles themselves improve, the infrastructure that accommodated their growing use was bettered and modernized. Bridges of steel replaced those of wood or iron. Similarly were heavier rails improved to accommodate more substantial trains, as were dirt and gravel roads replaced by those constructed of macadam and concrete. With those enhancements as examples, a nationwide transportation system began to evolve, an important component of which was the U.S. Highway System that was implemented in 1926.

One of the highways that resulted in 1926 was U.S. Highway 24. It initially extended a distance of 763 miles, from Pontiac (MI), across the Mississippi River to Kansas City (MO). The roadway's initial crossing of the river was facilitated by the CB&Q railroad bridge which had added years earlier a vehicular lane on either side of its structure. But as the City of Quincy grew, as did the number of people living on either side of the river who relied on the city for supplies and support, demands on the bridge grew. Then, with the designation of U.S. Highway 24 and the additional need to accommodate an increasing volume of cross country traffic, a roadway bridge in its own right became necessary.²⁴

Quincy's Old Bridge, Planning for New Bridge and Its Start of Construction

The first bridge spanning the Mississippi River in the vicinity of Quincy (IL) was built in 1867 by the CB&Q. No sooner had the structure been erected than people started calling for a foot and wagon bridge across the river as well. Two companies, the Western Illinois Bridge Company and the Missouri Bridge Company, were soon established to study together the feasibility and character of such a connection. Their efforts fell victim to the Panic of 1873 and proceeded no further. In subsequent years, though a ferry did provide crossings between Quincy and the Missouri shore, there were recurring calls for a wagon bridge.²⁵

Acreage and Farm Values by Townships or Other Minor Civil Divisions (Washington, D.C.: Bureau of the Census Library, 1931): Chapter 4, Illinois-Michigan, pp. 145 & Chapter 5, Minnesota-New York, pp. 340. All census data accessed on 24 October 2025 at <https://agcensus.library.cornell.edu>.

²⁴ *Automobile Green Book*, Volume 2 (Boston, MA; Scarborough Motor Guide Company, 1928): 31.

²⁵ "Dream of Many Years Realized by City when New Memorial Bridge Opens to Traffic Without Ceremony: Old CB & Q Bridge Passed From Activity at Noon Saturday," *Quincy (IL) Herald-Whig*, 15 June 1930, 11; "Dream of Many Years Realized by City when New Memorial Bridge Opens to Traffic Without Ceremony: Quincy Has Hoped for Span Since Time of Its Founding," *Quincy (IL) Herald-Whig*, 15 June 1930, 11; "Ferry Quits," *Quincy (IL) Daily Journal*, 16 December 1899, 7.



Figure 2: This undated postcard illustrates the CB&Q's bridge at Quincy as well as the two, 1899 vehicular travel lanes that flank it. Those lanes generated tolls between 1919 and 1930 for the railroad valued at over \$250,000 ("Dream of Many Years Realized by City when New Memorial Bridge Opens to Traffic Without Ceremony: Old CB&Q Bridge Passed From Activity at Noon Saturday," *Quincy (IL) Herald-Whig*, 15 June 1930, 11; "Railway and Wagon Bridge over Mississippi River, Quincy, Ill" [Quincy, IL: C.H.P., Importers and Publishers, no date]: postcard, Viewed at www.ebay.com on 07 July 2021).

The railroad span across the Mississippi at Quincy was rebuilt in 1897-1898, an action that renewed calls for a wagon bridge. This time the CB&Q heard the call and in the summer of 1899 responded by attaching with brackets a vehicular lane on each side of its reconstructed structure (see Figure 2). The new lanes officially opened on Sunday, 10 September. Among details to be completed at the time were the toll booths on each side of the river. The tenth arrived and all was in order. The new lanes opened at 7:00 AM, though the morning weather was reportedly less than ideal. Despite that, the Quincy newspaper observed that 700 people, 123 vehicles and sixty bicycles used the bridge before noon that day. Those who experienced the structure were impressed and predicted its success. And no horses were frightened by passing trains. The ferry continued operating through the fall of 1899, but the arrival of cold weather and the resulting ice floes on the river ended its season. Thus was the scene set for the bridge's new appurtenances to pay significant dividends to both the railroad and the merchants of Quincy. The railroad saw its bridge-generated receipts quadruple after the ferry stopped with winter approaching. Quincy merchants hoped for a banner Christmas season since they were now accessible to new Missouri shoppers.²⁶

²⁶ "Dream of Many Years...Quincy Has Hoped for Span," *Herald-Whig*, 15 June 1930; "Wagon Bridge to Open Sept. 10," *Quincy (IL) Weekly Whig*, 07 September 1899, 3; "Dream of Many Years...Old CB & Q Bridge," *Herald-Whig*, 15 June 1930;

The 1899 wagon lanes served for thirty-one years and were an important component of Quincy's early twentieth century development. "It was the city's western gate, the only vehicular highway across the Mississippi. It has had a most important influence in building up Quincy for the tide of trade that has flowed from Missouri..." reported *The Quincy Herald-Whig* retrospectively in 1930. The state of Illinois began developing its roadway network in the years preceding 1920. Along with that development came renewed calls for a vehicular bridge across the Mississippi at Quincy. Then, with the 1926 implementation of the Federal Highway System, and the fact that U.S. Highway 24 was designated to pass through Quincy and cross the river on its alignment between Pontiac (MI) and Kansas City (MO), calls for a bridge at Quincy were again heard. The railroad was agreeable as demands for a new vehicular bridge increased! Which may have been surprising since in the eleven years preceding the opening of a new bridge in 1930 the CB&Q had collected more than \$250,000 in tolls for having simply added two vehicular lanes to an already extant bridge. The railroad generated about \$50,000 annually from bridge tolls by 1930. But as plans for a new vehicular bridge evolved in 1927 and 1928, the CB&Q agreed to accept a fee of \$5,000 a year for twenty years as compensation for closing the vehicular lanes of its railroad bridge.²⁷

Plans for a new bridge and its construction evolved. One of the first decisions was to honor the area's war veterans by designating the structure a Memorial Bridge. Another had to do with financing. Proposals for the new structure were sought and reviewed. The favoured plan was submitted by the Kelly-Atkinson Company of Chicago. It promised to build the bridge if the city of Quincy raised \$250,000 for the project via a stock subscription. If that condition was met, the firm would accept bonds for the remaining \$1,000,000 of anticipated construction costs. All agreed and "the deal was closed."²⁸

Quincy's specific obligation was to sell \$250,000 of preferred stock for the bridge at 6½% interest. That endeavour was led in late April 1928 by the city's Association of Commerce and city officials. It was directed by a three member Executive Council on which sat the mayor and the vice-president of the Association of Commerce's Division of Transportation. Groundwork was laid for the effort and sales work done. Meetings,

"Wagon Bridge Opening Day," *Quincy (IL) Daily Journal*, 11 September 1899, 8; "Ferry Quits," *Daily Journal*, 16 December 1899, 7; "How Glad We Are Now That We Have a Wagon Bridge," *Quincy (IL) Daily Journal*, 20 December 1899, 7.

²⁷ "Dream of Many Years...Old C.B.&Q Bridge," *Herald-Whig*, 15 June 1930; "Dream of Many Years...Quincy Has Hoped for Span," *Herald-Whig*, 15 June 1930.

²⁸ "Want New Bridge to be Memorial to War Veterans," *Quincy (IL) Herald-Whig*, 03 February 1928: 16; "Dream of Many Years...Quincy Has Hoped for Span," *Herald-Whig*, 15 June 1930.

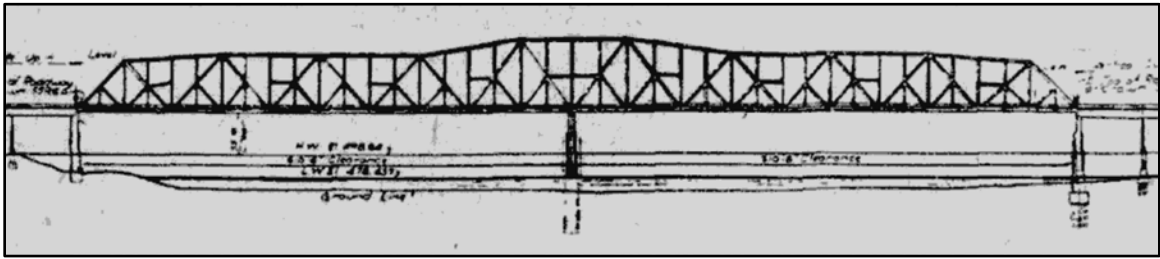


Figure 3: This picture of the proposed bridge, prepared as the city and the Association of Commerce were about to embark upon their fund raising effort in early May 1928, shows how the two, primary spans were envisioned to look when complete. This is very similar to the Sciotoville Bridge (see Figure 1, page 7). Note in this early conceptual image a rise in the top chord was anticipated over the center pier – an element in the structure’s design which would “not only be stronger, but adds to the beauty of the bridge” (“Quincy’s Memorial Bridge as Outlined by Engineer,” *Quincy (IL) Herald-Whig*, 06 May 1928: 1; “Early Monday Quincyans Go Out to Make Certain the New Bridge; Must be Done, So It Will be Done,” *Quincy (IL) Herald-Whig*, 06 May 1928: 1; “Way is Cleared to Hasten Work on City’s Bridge,” *Quincy (IL) Herald-Whig*, 20 July 1928: 16).

special meetings, and special conferences were held. The cumulative nature of the stock to be offered, which had to do with when interest was payable, was changed from ten years in the future to the time the bridge was opened in order to make it more marketable. Project details were established and explained to the Quincy constituency. The citizenry was told that the bridge would be twenty-eight feet wide consisting of two ten-foot lanes and two four-foot sidewalks. More fully developed financing plans confirmed that the bridge’s maximum price would not exceed \$1,250,000. Additionally would the Quincy Memorial Bridge Company be established to finance, hold and manage the structure. It was capitalized by 10,000 shares of common stock and 4,000 shares of preferred stock as well as bonds valued at \$800,000 to be underwritten by Chicago’s Stevenson & Company. The project’s toll-related income was predicted to pay all costs and repay all debts within twenty years, after which the city could buy the bridge for \$1,250,000 and eliminate the tolls. All fell into place. Planning continued and the start of construction was imminent.²⁹

Three companies were intimately involved with bridge’s design and construction. They were Kelly-Atkinson (hereafter referred to as KA), Joseph B. Strauss Engineering Company and The Foundation Company. KA was established by William L. Kelly³⁰ and Charles E. Atkinson. Kelly was born in 1864 in Waukegan (IL). Early jobs included laboring on his father’s farm as well as working for the Chicago, Milwaukee & St. Paul Railway. He returned to Chicago in 1892 and, partnering with Atkinson, started in 1894 the Kelly-Atkinson Construction Company, a firm closely tied to bridge projects.

²⁹ “Quincy Begins Organization to Sell Stock to Make Certain Building of Memorial Bridge,” *Quincy (IL) Herald-Whig*, 22 April 1928: 18; “A Catechism on the Plan and Cost of New Bridge,” *Quincy (IL) Herald-Whig*, 29 April 1928: 1.

³⁰ References were found to William L. Kelly as well as William O. Kelly. Based on the discussion associated with each, including the dates of their business and the periods of their death, it is assumed that William L. and William O. are in fact the same person.

Kelly was president, Atkinson the vice-president and Mac R. Fife the secretary/treasurer. Sometime before 1912 Atkinson left the firm and moved to the University of Illinois at Urbana where he directed care of the university grounds. Kelly and Fife continued with KA in addition to establishing in 1917 a new firm, Mobile Shipbuilding, located in Mobile (AL). It built fourteen freighter hulls between 1918 and 1920. Kelly died in 1924 of injuries incurred when falling through a deficient sidewalk grate into a building basement in Cincinnati (OH). Despite his death, the firm, thereafter under the direction of W.J. Howard, expanded in 1925 with the creation of two subsidiaries, the Kelly-Atkinson Building Company and the Kelly-Atkinson Foundation Company. KA's onsite manager in Quincy was E.W. St. Onge who died in an October 1929 plane crash as he was flying out of the city. Thus was Howard generally onsite to manage the project.³¹

Working with KA on the design of the two, visually dominant truss spans was the Joseph B. Strauss Company. Strauss was born in Cincinnati in 1870 and graduated from the University of Cincinnati in 1892. He subsequently came to Chicago where he worked from 1897-1899 as a designer for the city's Sanitary District. He then established in 1904 the Strauss Engineering Corporation and was responsible for the design of more than 500 bridges across the United States. Strauss died of a heart attack in 1938. Perhaps his most prominent project in the country was San Francisco's Golden Gate Bridge for which he was appointed in 1929 Chief Engineer. That structure was at the time said to be the "world's longest single span bridge and [was] considered the finest from an architectural stand point." Additional Strauss bridges included the Arlington Memorial structure in Washington, D.C. and New York City's George Washington Bridge.³²

The last of the three firms associated with the construction of Quincy's Memorial Bridge was The Foundation Company, established in 1902 in New York City and which claimed assets exceeding \$5.5 million in 1919. Its objective was to build a body of knowledge and experience that addressed structural foundations and their construction in general, and the construction and use of pneumatic caissons in particular. In addition to caisson projects, it also worked on hydroelectric plants, power houses, mine shafts and harbor and river terminals, among others. Specific endeavours on which it worked included

³¹ Albert Nelson Marquis, ed. *The Book of Chicagoans: A Biographical Dictionary of Leading Living Men of the City of Chicago* (Chicago, IL: A.N. Marquis & Company, 1911): 381; Greg H. Williams, *The United States Merchant Marine in World War I: Ships, Crews, Shipbuilders and Operators* (Jefferson, NC: McFarland & Company, Inc., 2017): 357; "Supply Trade News," *Railway Age* (Vol. 79, No. 6), 05 September 1925: 456; "Injury Fatal to Chicagoan in Cincinnati," *Chicago (IL) Tribune*, 14 July 1924: 6; "Ferry Christens Completed Span of River Bridge," *Quincy (IL) Herald-Whig*, 10 November 1929: 22.

³² "Jos. B. Strauss, Famed Builder of Bridges, Dies," *Chicago (IL) Tribune*, 17 May 1938: 25.

buildings for Woolworth (which required caissons sunk to a depth of 110 feet), Bankers Trust and Cunard, all in New York City. The company subcontracted to KA and was responsible for the construction of all thirty bridge piers located in the river.³³

Much happened in June and July 1928 as the project got underway. KA project superintendent Ernst W. St. Onge arrived in Quincy in mid-June, as did I.L. Presses, resident engineer for Strauss, each planning to live in the city for the length of the project. Construction equipment next started to arrive. Also in mid-June was the project's ceremonial groundbreaking. Quincy Mayor Charles Weems was an officiant at the event attended by, among others, city officials and representatives from the KA and Strauss companies. The Quincy Memorial Bridge Corporation was also established, it to own and operate the bridge upon completion. Perhaps most significant were the plans for the bridge that were released in July (and thought to be consistent with the picture identified as Figure 3, page 15). They were approved by the new Memorial Bridge Corporation and the City Council thereafter. The plans were presented to the council by Association of Commerce President, W.F. Gerdes, who discussed a "graceful and ornamental structure" that would have a "cantilever continuous span...[which] adds to the beauty of the bridge."³⁴

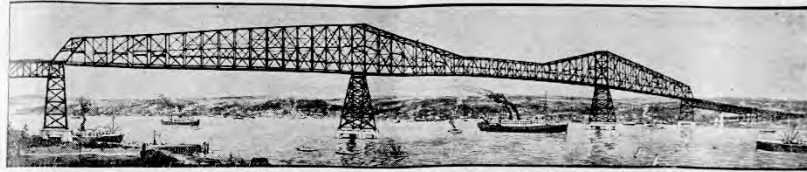
Construction was to consist of three components, fabricating the piers, erecting the steel trusses and laying the deck. In the case of the piers, there were two subcomponents. One was those anchored on land while the other was those set in the river, and of the latter there were also two types – the piers that carried the approach spans (of which there were twenty-seven) and the monumental piers that carried the two, 628-foot long trusses (of which there were three). Similarly were there also two sub-components when it came to placing the steel. The first was erecting the two, dominant truss spans while the other was placing the steel that carried the deck of the approach spans between the bridge's abutments and its various piers.

Less than half the 1928 construction season remained by the time work was fully

³³ "Guide to The Foundation Company Records, NMAH.AC.0974," On file at the Kenneth E. Behring Center, Smithsonian National Museum of American History, Washington, D.C. Viewed at <https://sirismm.si.edu/EADpdfs/NMAH.AC.0974.pdf> on 12 July 2021; "33 Days Ahead of Schedule," *Boston (MA) Record American*, 18 November 1961: 13; "Foundation Company a \$5,650,000 Concern," *The Philadelphia (PA) Inquirer*, 30 December 1919: 5; "The Foundation Company," *New York (NY) Tribune*, 06 October 1920: 15; "Work on Woolworth," *New York (NY) Tribune*, 25 February 1912: 46.

³⁴ "Activity Begins in Construction of Quincy Bridge," *Quincy (IL) Herald-Whig*, 20 June 1928: 2; "Bridge Has Made Steady Progress Despite Handicap," *Quincy (IL) Herald-Whig*, 16 June 1929: 7; "Bridge Aids Quincy's Progress," *Quincy (IL) Herald-Whig*, 01 January 1929: 1; "Way is Cleared to Hasten Work on City's Bridge," *Quincy (IL) Herald-Whig*, 20 July 1928: 16; "Work on Bridge Started Friday: Mayor Officiates," *Quincy (IL) Herald-Whig*, 15 June 1928: 22; "Construction of Memorial Bridge May be Started Early Next Week: Plans are Approved by Directors," *Quincy (IL) Herald-Whig*, 18 July 1928: 12.

BRIDGES by STRAUSS



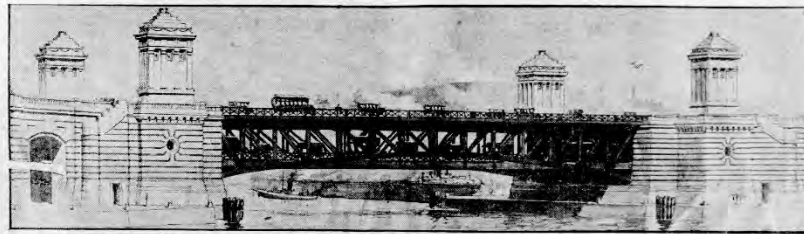
Longview-Rainier Bridge across the Columbia River at Longview, Wash., cost \$5,800,000.



Dear Street Bridge across Illinois River at Peoria, Ill., cost \$1,250,000.



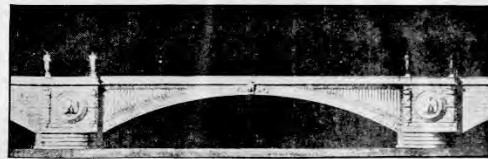
Quincy Memorial Bridge across Mississippi River at Quincy cost \$1,200,000.



The Lake Shore Outer Drive bridge across mouth of Chicago River at Chicago, Ill., cost \$10,000,000.



Missouri River Bridge at Independence, Mo., cost \$850,000.



*One Million Dollar Strauss Bascule
Central Span of
Arlington Memorial Bridge across Potomac River at Washington, D. C.*



Montreal South Shore Bridge across St. Lawrence River at Montreal, Canada, cost \$12,000,000.

The above notable series of bridges is now under construction under direction of the Strauss Engineering Corporation as engineers, except that on the Arlington Memorial Bridge the Corporation acts as Consulting Engineers to the U. S. Government on the Bascule Span only, costing in excess of \$1,000,000. On the Montreal South Shore

Bridge, Mr. Strauss and a local firm of engineers united to carry out the work as a Canadian enterprise the entire design being executed on Canadian soil. Mr. Strauss is also a member of the Board of Engineers in charge of the design and construction of the 179th Street Bridge across the Hudson River, New York, costing \$75,000,000, both now under construction.

STRAUSS ENGINEERING CORPORATION

307 N. Michigan Avenue
CHICAGO

Figure 4: This illustration identifies a number of high profile projects undertaken by Strauss, including the Columbia River Bridge at Longview (WA), the Arlington Memorial Bridge in the Washington, D.C., vicinity, Chicago's Lake Shore Outer Drive and Quincy's Memorial Bridge – highlighted in red ("Bridges by Strauss," *Longview [WA] Daily News*, 30 July 1929: 16).

engaged. Construction of the concrete land piers on the Illinois side of the river was the obligation of KA. It was the project's most straight forward, pier-related task since there were no water-related issues with which to deal and involved seven of the bridge's thirty-seven piers. Early work went well and piers 1-6 were complete before the end of the year. But pier 7 was very close to the water's edge. It was so close, in fact, that if the river flooded the location of the pier flooded. Ultimately was a coffer dam needed to complete that pier when post-winter work resumed in 1929. The Foundation Company assisted by making available to KA a derrick that it was otherwise using on pier 8.³⁵

The Foundation Company and the Memorial Bridge's Wet Piers:

Work on the wet piers (see Footnote 35) also started in 1928. The process of constructing them was relatively straight forward. A cofferdam of sheet metal piles was constructed around the location of each pier, water pumped out, multiple wooden piles on which to anchor the foundation of the pier driven some depth into the river bottom, a concrete foundation poured over the top of the piles atop which forms were set, and the piers themselves constructed – sometimes over a number of days depending on the height above water they needed to reach. Cofferdams were typically used when the water depth was no more than thirty feet. If greater depths were encountered, the process became more complicated. Caissons, essentially containers with sides and a top but an open bottom, were needed. They became the foundation for a pier and kept water and mud out of an excavation as men inside the caisson dug deep into the river bottom (since there is no bottom to a caisson) during construction in order to sink it. And the deeper into a river bottom a caisson went, compressed air for the safety of the men working inside – also known as “sand-hogs” – became necessary. Caissons were needed for pier 9 (see Figure 5, page 20 for an example of a caisson).³⁶

The Foundation Company arrived on 29 August 1928. Its employees immediately built a barge from which piles could be driven into the river bottom. The company's working

³⁵ The bridge had two abutments and thirty-seven piers. Numbered from east to west, and starting immediately west of the east abutment, piers 1-7 were on land on the Illinois side of the river (thus were they known as “land piers”) and carried approach spans. Piers 8, 9 and 10 were in the river and carried the two dominant, 628-foot truss spans while piers 11-37 carried the approach spans from pier 10 to the Missouri shoreline where the bridge ended with its west abutment. Since piers 8-37 carried spans over water, they were known as “wet piers.” “Work on Bridge Proceeding Well Despite Weather,” *Quincy (IL) Herald-Whig*, 13 January 1929: 18; “Quincy's Dream of Years for New Vehicular Bridge Came True in Last Year,” *Quincy (IL) Herald-Whig*, 27 January 1929: 30; “Work is Begun to Finish Last of Land Piers,” *Quincy (IL) Herald-Whig*, 09 May 1929: 18; “Work on Bridge May be Delayed by High Waters,” *Quincy (IL) Herald-Whig*, 27 February 1929: 14; “Bridge Aids Progress,” *Herald-Whig*, 01 January 1929.

³⁶ John S. Scott, *A Dictionary of Civil Engineering* (Baltimore, MD: Penguin Books, 1958; rev. 1965): 48, 49, 67. An extensive treatise on cofferdams was prepared by the US Army Corps of Engineers. Significant information on those structures, therefore, can be found in Patrick O'Bannon's, *Working in the Dry: Cofferdams, In-River Construction, and the United States Army Corps of Engineers* (Pittsburg, PA: U.S. Army Corps of Engineers, Pittsburg District, 2009).

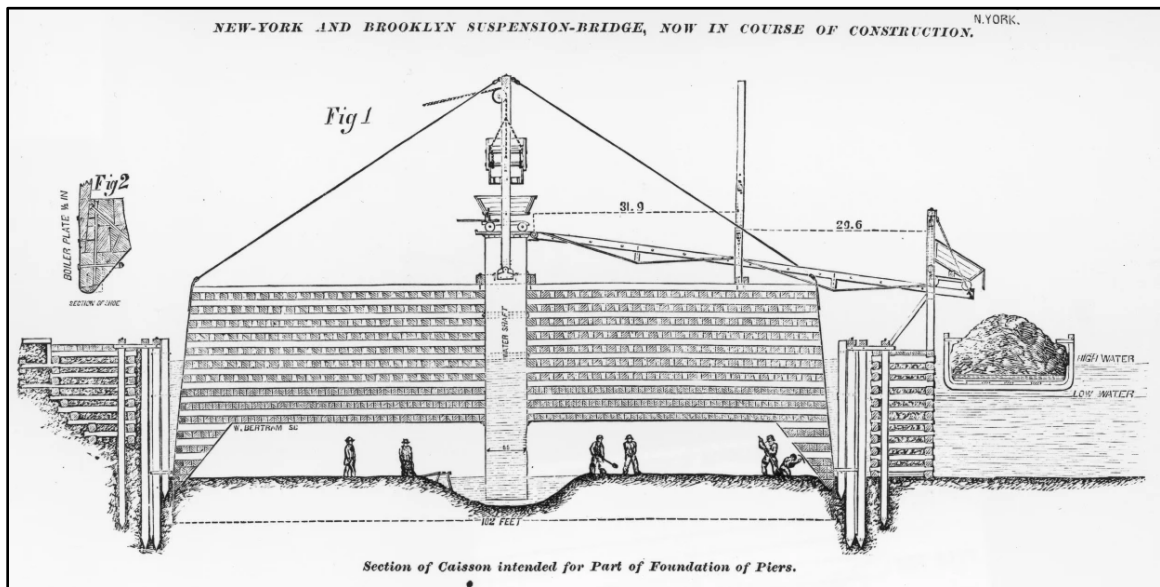


Figure 5: This image of a caisson being sunk illustrates the process as it was applied during construction of the Brooklyn Bridge in the 1870s. The principal remained the same almost 60 years later. Men worked inside the caisson, the weight of which drove it into the river bottom as the earth beneath was removed. Caissons were typically sunk to bedrock, thus providing an absolute foundation for a bridge or building (Christopher Klien, “Construction of Brooklyn Bridge Took 14 Years – and Multiple Lives,” Viewed on 13 January 2026 at <https://www.history.com/news/brooklyn-bridge-construction-deaths>).

fleet, a tow boat, concrete mixer boat and cement warehouse barge, next arrived on 23 September. In addition to initiating work on piers 8, 9 and 10 that would bear the structure’s two primary spans, work started right away on the construction of the piers needed to carry the bridge’s approach spans (piers 11-37). Indeed, by 23 October work was moving along on piers 15, 16, 17, 22, 27 and 28. And by the end of the year that number had grown to also include piers 19, 29, 30, 31, 32, 33, 34 and 37. It appeared a fine start.³⁷

But all was not completely well. Soon after Foundation Company non-union workers arrived, KA’s union carpenters walked off the job in protest, though only temporarily. They returned on 04 September. Then KA’s union hoisting engineers walked off the job in November, many of the Foundation Company’s non-union engineers complaining in December of intimidation by those on strike. There were also equipment problems on the river. A derrick boat sank in eight feet of water on 28 September, the cost of which was several days lost, and a concrete mixer boat had a fire on 11 November. Additionally that fall did the waters of the Mississippi rise, cresting at more than seventeen feet or a point at least eight feet above a safe working level of nine feet. The high water and its rapid flow, in fact, swept away a project barge and required much effort from workers to anchor and repair other equipment on the river. A worker on pier 8 was also knocked

³⁷ “Many Hazards Delay Quincy River Bridge,” *Quincy (IL) Herald-Whig*, 29 September 1929: 1, 3; “Bridge Aids Progress,” *Herald-Whig*, 01 January 1929.

into the water and never found. That was the first of three deaths attributable to the project over two years.³⁸

Efforts for the 1928 construction season concluded by the end of December, given that winter weather had by then arrived. Work on the unfinished approach piers continued the following spring and were completed in the late summer of 1929.

While the construction of piers 11 through 37 was critical to the bridge's success, it was the size, height and function of piers 8, 9 and 10 that made them exceptional in general, and pier 9 in particular. Labors on those three piers began in June 1928 with efforts to learn the depth of the bedrock at the locations proposed for them. That data was critical since it was the absolute nature of the bedrock, not timber piles driven into the river bottom, that supported the piers and the function for which they were designed. Piers 8 and 9 were anchored on bedrock which was not available to pier 10. Thus did it require piles.³⁹

Construction on the three piers started in the last half of the 1928 construction season, just as it had on the piers that supported the approach spans. The method to preparing the construction site for piers 8 and 10 was similar to that used on the other wet piers (11-37). The former were certainly larger than the latter, but the coffer dam methodology was consistent. In this case, however, no piles were needed to support piers 8 and 9 since they were anchored on the bedrock. Work on pier 8 went well. Its foundation was poured and its two legs rose above the water's surface in November. Pier 9 required two caissons, one for each of its legs. The *Herald-Whig* reported on only one of its caissons, nevertheless, and it was then sixty feet below the bottom of the river yet forty-five from bedrock. Nor had construction on pier 10 itself actually started, though work on the cofferdam was complete and 168 piles had been driven into the river bottom to provide the pier's foundation. Final work for the season on the three piers was finished by 23 December, after which was poured a concrete cap on the piles driven for pier 10. That took thirty-six hours and required 593 cubic yards of concrete to complete.⁴⁰

A new construction season's efforts started in early March 1929, only to be thwarted almost immediately by high water on the Mississippi. The river stage on 01 March was 12.4 feet and a threat to construction, though nominal work did resume on the 6th. Three days later ice entering the Mississippi from the Des Moines River to the north stopped it. Soon the river was rising even more significantly, consequently did all work cease

³⁸ "Many Hazards," *Herald-Whig*, 29 September 1929; "Bridge Aids Progress," *Herald-Whig*, 01 January 1929.

³⁹ "Bridge Has Made Steady Progress," *Herald-Whig*, 16 June 1929.

⁴⁰ "Many Hazards," *Herald-Whig*, 29 September 1929; "Bridge Aids Progress," *Herald-Whig*, 01 January 1929.

on 17 March. The situation did not improve. On 22 April it was reported that the river “...was exulting in its highest stage for more than half a century, and which gave promise of delay for further weeks as far as river pier construction for the bridge goes.” Work finally started again after 21 May 1929.⁴¹

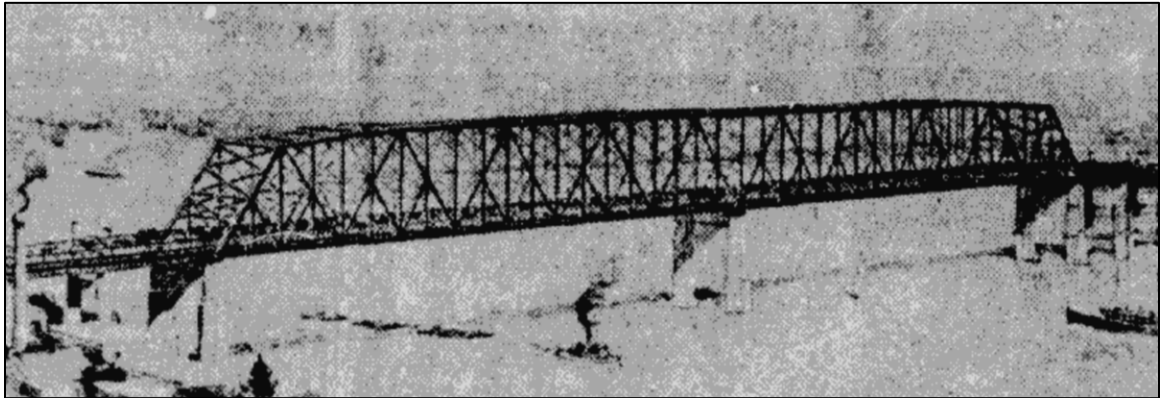


Figure 6: It is uncertain why the design of the Quincy Memorial Bridge was changed, yet it clearly was sometime in the last half of 1928. This image was published in the *Herald-Whig* on 01 January 1929. The nominal rise over the middle pier (see Figure 3, page 15) was eliminated and the bridge had a continuous and straight top chord, the slight incline/decline in the top chord at each end notwithstanding (“As New Bridge Will Look When it Links Illinois and Missouri Shores,” *Quincy (IL) Herald-Whig*, 01 January 1929: 1).

Pier 8, which was already above water, was completed rapidly once efforts were finally underway. The only task remaining as of mid-June was to remove the final 40% of its forms. Rapid progress was also made on pier 10. Its coffer dam, which was completely flooded by the high water of the winter and spring, required eight pumps to remove the water, sand, silt and mud that had accumulated. Then were forms for the concrete footing set by the end of June on the cap that had been poured the previous December to secure the 168 piles. Little more than a week later the footing was finished and the first thirteen feet of the two, vertical shafts (or legs) had been poured. That was significant since the shafts had broken the waterline and were visible to observers. Underway at the moment was the pouring of the three-foot thick concrete wall that tied together the base of the two shafts. Progress on pier 10 continued. It was fourteen feet short of its final height on 04 August. A week later, on 11 August, the *Herald-Whig* reported that “forms are nearly ready to receive [the] remaining six feet of concrete, and the big pier, which when complete will tower nearly sixty-five feet above the present river surface, will be finished early next week.”⁴²

⁴¹ “Many Hazards,” *Herald-Whig*, 29 September 1929; “Bridge Work Men See Long Delay as River Rises,” *Quincy (IL) Herald-Whig*, 22 April 1929: 12; “High, Cold Water Holds Up Work on New Bridge,” *Quincy (IL) Herald-Whig*, 10 February 1929: 24; “River Up to 12.4 Prevents Work on Bridge Piers,” *Quincy (IL) Herald-Whig*, 01 March 1929: 18.

⁴² “Bridge Has Made Steady Progress,” *Herald-Whig*, 16 June 1929; “Plan to Extend Steel of Bridge from Pier No. 6,” *Quincy (IL) Herald-Whig*, 27 June 1929: 22; “Steel Erection Being Resumed on New Bridge,” *Quincy (IL) Herald-Whig*, 07 July 1929: 7; “Caisson at Pier 9 Reaches Bed-Rock at 110-Foot Depth,” *Quincy (IL) Herald-Whig*, 11 August 1929: 20; “Bridge

The completion of piers 8 and 10 was notable, though pier 9 remained. It was the largest and perhaps the single-most complicated and significant component of the bridge. Technologically, it required the use of pneumatic caissons in order to reach and anchor the foundation on bedrock. In terms of its structural importance, pier 9 supported the west end of the 628-foot long east truss span and the east end of the 628-foot long west truss span. Which means that it was responsible for carrying the two primary spans and 1,256 feet of the bridge's length.

Work started on pier 9 with the rebuilding of construction platforms in the river that had been lost to the ice and highwater of the preceding winter. It then focused on sinking the south caisson which was reported on 07 July to be eighty-three feet below the river's surface within thirty-two feet of bedrock. Progress was slow for the "sand hogs" inside the caisson who did the digging, though they were helped by the cutting edge on the structure's four walls as it descended to bedrock (see again Figure 5, page 20). The caisson descended slowly, at about two feet a day. Estimates were that six more weeks might pass before both the south and north caissons were safely ensconced on bedrock.⁴³

The original plans for the season were apparently not to resume work on pier 9's north caisson until that to the south was on bedrock, yet efforts were again underway on that to the north by 22 July. The distance for it to reach bedrock was twenty-six feet six inches, and compressed air was needed for that effort. Work halted to install the necessary air lines and their related equipment. The south caisson was only twenty-one feet from reaching bedrock and still descending by its own weight and dredging, though it was thought unlikely that it would reach bedrock without compressed air as well.⁴⁴

The north caisson was only five feet six inches above bedrock on Saturday, 03 August, when it hit a layer of "hard, gummy clay." The targeted date for reaching bedrock had been 04 August, but the troublesome layer of clay pushed back touchdown by a week and occurred on 11 August. The bedrock landing point was reported to offer "...an excellent surface, level and sound." And the caisson was positioned within the margin of error, as planned, and then filled with concrete. Four days later, on 15 August, it was reportedly ready for construction to start on the north pier shaft. The pier 9 south caisson finally reached bedrock on Wednesday, 28 August, its landing point described as "...an ideal surface, level, solid and crossed with numerous ridges." The south caisson

Workers Encounter Layer of Gummy Clay," *Quincy (IL) Herald-Whig*, 04 August 1929: 18.

⁴³ "To Push Work on Pier No. 9 of New Bridge," *Quincy (IL) Herald-Whig*, 21 May 1929: 14; "Steel Erection," *Herald-Whig*, 07 July 1929.

⁴⁴ "25 Piers Finished by Bridge Crews: No. 9 Progresses," *Quincy (IL) Herald-Whig*, 22 July 1929: 12.

was then filled with concrete, soon after which construction on the second shaft was underway. It was noted on 10 September that the growing pier had risen sixteen feet above the river stage and that it would likely be finished with five more pourings, the last of which occurred on Wednesday, 25 September. The most significant component of the entire project, pier 9, was complete. With that pouring "...whistles began to shriek, a rain of hats splashed into the swiftly-moving river current around the pier, workmen and foremen alike sacrificing their headgear in their expressions of exuberance over the completion of the big pier."⁴⁵

Hard hats thrown into the river was not the only way completion of pier 9 was observed. Quincy merchants John Fick and C.L. Adams offered a celebratory dinner at the Elks Club the evening of the 24th, the day before the final pouring, that recognized completion of the piers as well as the looming departure of The Foundation Company. The latter's personnel were largely gone by 10 October though some equipment remained waiting for transportation. The company reportedly "...leaves with relief that the job is over, it having proved through the caprices of the Mississippi to be one of the most unfortunate jobs ever undertaken by [it]." Yet a mammoth project was successfully completed. In so doing, the company had poured for the piers about 10,000 cubic yards of concrete, approximately 3,300 of which went into pier 9 while 1,400 went into pier 10 and 760 went into pier 8. The final 4,540 yards went into the other twenty-seven wet piers.⁴⁶

Erecting the Truss Spans of the Memorial Bridge:

Steel deck beams had been laid in the fall of 1928 from the east abutment in Illinois west to pier 5. Thereafter was little deck-related work of consequence completed until the last of piers 8 through 37 were finished in the early fall of 1929. Then steelwork became the prominent project activity as the two, primary trusses were erected and girders and beams were laid between all the piers.

Rivets were the key component in the process of connecting one piece of steel to another. They were applied by riveting gangs, each consisting of four workers. The first was a "heater" who heated the rivets and then threw them to the "catcher" who caught in a

⁴⁵ "Bridge Workers Encounter," *Herald-Whig*, 04 August 1929; "Caisson at Pier 9 Reaches," *Herald-Whig*, 11 August 1929; "Work is Started on South Caisson of Pier 9," *Quincy (IL) Herald-Whig*, 15 August 1929: 16; "Bridge Underwater Work Completed With Pouring of Concrete of Pier No. 9," *Quincy (IL) Herald-Whig*, 29 August 1929: 20; "Steady Progress Made on Bridge Despite Weather," *Quincy (IL) Herald-Whig*, 08 December 1929: 22; "Last Bridge Pier to be Completed During This Week," *Quincy (IL) Herald-Whig*, 22 September 1929: 20; "Last Concrete Pier is Poured on Pier 9: Crews Celebrate," *Quincy (IL) Herald-Whig*, 25 September 1929: 14.

⁴⁶ "Many Hazards," *Herald-Whig*, 29 September 1929; "Last Concrete Pier," *Herald-Whig*, 25 September 1929; "First Main River Span Steel Here: Work is Hastened," *Quincy (IL) Herald-Whig*, 10 October 1929: 20; "Workmen Finish East Main Span of New Bridge," *Quincy (IL) Herald-Whig*, 22 October 1929: 18.

bucket the heated rivet and put it in the intended hole. The rivet was held in place by the “bucker-up” while the “driver” drove it in place. It was then inspected. A rivet could be removed and another applied if that driven was found to be inadequate. Each truss span of the Memorial Bridge required about 26,000 rivets and a gang could typically anchor about 200 rivets a day. Multiple riveting gangs were needed for a project like the Memorial Bridge.⁴⁷

Another important part of the truss building and steel beam laying process was the use of a traveling crane that operated on the steel beams and girders already laid for the purpose of supporting and carrying the bridge’s concrete deck. The crane was assembled on the steel beams between the east abutment and pier 5 that had been set in the fall of 1928. Assembly of the crane started in mid-January 1929 and was largely ready for use by the end of February. Its specific role included delivering to the bridge’s crews the steel needed for construction, including 3,200 tons of the material then in production by the American Bridge Company of Gary, IN.⁴⁸

Critical to the steel-laying process was the placement of temporary piers/working platforms in the river, also known as “falsework,” that helped support the bridge’s truss spans as they extended west from pier 8 to pier 9, and then from pier 9 to pier 10.⁴⁹ The falsework was of wood and anchored to timber piles driven into the river bottom. Soundings were generally taken every fifty feet to identify suitable locations for driving the piles, some of which had to be as much as sixty feet long. Twelve working platforms were erected for the construction of the east truss span.⁵⁰

Laying the remaining steel of the east approach spans in Illinois occurred in June and July. Pier 8 was reached by 22 July, to which the traveling crane was soon extended. Though dealing with a shortage of iron workers, KA immediately started working on the east truss span. By 29 August four panels, or about 125 feet of the span, had been finished. Iron work went well and half the structure was in place by 22 September, though there were some issues with the falsework and the piles to which it was anchored. Progress continued, it being reported on 10 September that pier 9, which was still under

⁴⁷ “East Main Span of New Bridge Swung in Place,” *Quincy (IL) Herald-Whig*, 30 October 1929: 14.

⁴⁸ “Work on Bridge Proceeding Well,” *Herald-Whig*, 13 January 1929; “Work on Bridge May be Delayed,” *Herald-Whig*, 27 February 1929; “High, Cold Water,” *Herald-Whig*, 10 February 1929.

⁴⁹ No documentation was found to specifically define a difference between “falsework” and a “working platform.” Given that each required the driving of piles, and that each was temporary and used only during construction, it is assumed they are one in the same and that the falsework was used as a working platform.

⁵⁰ “Soundings are Declared O.K. by Bridge Men,” *Quincy (IL) Herald-Whig*, 23 February 1929: 8; “Bridge Workers Encounter,” *Herald-Whig*, 04 August 1929; “25 Piers Finished,” *Herald-Whig*, 22 July 1929.

construction, would be completed by 28 September with the steel from pier 8 expected to reach it by 30 September. All riveting would be completed and the falsework removed in the three to four weeks following.⁵¹

Plans are necessary but they can change as was certainly evident in the first year of the bridge's construction. In the immediate instance steel from pier 8 reached pier 9 on Wednesday, 09 October 1929 – about nine days later than originally expected. The steel was that of the lower chord. Yet to reach pier 9 were the verticals, diagonals, top chord and inclined endposts, all of which were expected to be finished on Saturday, 12 October. Riveting then continued while plans were made to “swing” the bridge, meaning that the blocks enabling the falsework to support the span would be removed. The structure was swung Wednesday morning, 30 October. Upon the movement's completion the entire span relied only on piers 8 and 9 for support, the east and west ends of the structure being “...in the exact spot that the bridge builders had planned.” Remaining work largely consisted of completing the final 5% of riveting.⁵²

Swinging the east span and having it supported only by piers 8 and 9 raises another point of consideration, and that is the way the both the east and west sections of the bridge were tied to the piers. Every bridge needs the ability to compensate for expansion and contraction through the seasons and the various temperatures that comes with them. That ability is typically achieved by permanently fixing one end of the bridge to an abutment or pier while the other end slides on its abutment or pier. In the case of the Memorial Bridge, both the east and west spans were permanently tied to pier 9. The east span, consequently expanded or contracted thanks to rollers on its east end set atop pier 8. Similarly did the west span facilitate such movement with rollers on its west end set atop pier 10.⁵³

The U.S. War Department required that there be a 400-foot wide clear width under the east span before work could start on that to the west. Maintaining navigation on the river was the concern. Work started immediately to clear the falsework beneath the completed

⁵¹ “Steel Erection Being Resumed,” *Herald-Whig*, 07 July 1929; “Bridge Has Made Steady Progress,” *Herald-Whig*, 16 June 1929; “Plan to Extend Steel,” *Herald-Whig*, 27 June 1929; “25 Piers Finished,” *Herald-Whig*, 22 July 1929; “Caisson at Pier 9 Reaches Bed-Rock,” *Herald-Whig*, 11 August 1929; “Bridge Underwater Work Completed,” *Herald-Whig*, 29 August 1929; “Last Bridge Pier to be Completed,” *Herald-Whig*, 22 September 1929; “Steady Progress Made in Building of Quincy Bridge,” *Quincy (IL) Herald-Whig*, 10 September 1929.

⁵² “First Main River Span Steel Here,” *Herald-Whig*, 10 October 1929; “Workmen Finish East Main Span,” *Herald-Whig*, 22 October 1929; “East Main Span will be Swung by Monday Night,” *Quincy (IL) Herald-Whig*, 27 October 1929: 18; “New Bridge Swung in Place,” *Herald-Whig*, 30 October 1929; “Progress of Week on Memorial Span Pleases Engineers,” *Quincy (IL) Herald-Whig*, 03 November 1929: 22.

⁵³ “First Main River Span Steel Here,” *Herald-Whig*, 10 October 1929; “East Main Span will be ‘Swung,’” *Herald-Whig*, 27 October 1929; “Steady Progress Made on Bridge,” *Herald-Whig*, 08 December 1929.

east span. The plan for constructing the west half of the truss bridge was modified to use a cantilevered crane with a much longer reach that would only necessitate the construction of half the falsework piers as had the span to the east.⁵⁴

Construction on the first two panels of the west span was started almost immediately since they could be addressed with no falsework or other river impediments. Two weeks later Resident Engineer I.L. Presses reported that he saw “the best progress on steel erection since we have started.” There were two reasons for that. First, the unique pile-pulling mechanism then being used enabled the quick removal of piles and falsework from the completed east span which helped west span construction to start a week earlier than planned. And second was the cantilevered system of delivery being used in the construction of the west span. That on the east span required a falsework tower every sixty-two feet, or every two bridge panels. The new system enabled the distance between towers to expand from 62 feet to 125 feet, or from two to four panels. Also were the riveting gangs following more closely behind the erecting crews. A week later another 125 feet was complete, meaning that the span was one-half way to pier 10. That progress was made despite the Thanksgiving holiday as well as increasingly cold weather and ice. A week later engineer Presses reported that less than 200 feet remained to reach pier 10. He reported “satisfactory progress” despite the “numbing winds that howled over the river....” Riveters continued to follow the steelworkers closely.⁵⁵

West span steelwork reached pier 10 on Thursday, 12 December. The structure’s inclined endposts were set within a matter of days after which workers continued moving west installing the steel from pier 10 to 11. The Quincy newspaper applauded the workers “...engaged on the job [who] have shown a remarkable spirit in recent weeks, each seeming to take a great personal interest and pride in the job....” A winter storm hit the following Tuesday and Wednesday, 17 and 18 December, and stopped work. It resumed as soon as the storm passed so that riveters could finish their work and swing the bridge. The hope was to secure the structure on its piers and remove from the river as much of the falsework as possible before ice precluded it. The west span was swung

⁵⁴ “Workmen Finish East Main Span,” *Herald-Whig*, 22 October 1919; “East Main Span will be Swung,” *Herald-Whig*, 27 October 1929; “Ferry Christens Completed Span of River Bridge,” *Herald-Whig*, 10 November 1929.

The use of a cantilevered crane for pier 10 construction appears to have been confirmed in a 10 September 1929 article in the *Herald-Whig*. But an article in the 10 November issue of the newspaper seems to suggest that the plan to use a cantilevered system had been discarded, only to have an article a week later state that a cantilevered system of material delivery was being used. Therefore must it be concluded that a cantilevered delivery system WAS used for the construction of the west span. “Steady Progress Made in Building,” *Herald-Whig*, 10 September 1929; “Ferry Christens Completed Span,” *Herald-Whig*, 10 November 1929; “Best Progress is Made on Steel Work of Bridge,” *Quincy (IL) Herald-Whig*, 17 November 1929: 22.

⁵⁵ “Progress of Week,” *Herald-Whig*, 03 November 1929; “Best Progress is Made on Steel,” *Herald-Whig*, 17 November 1929; “Steel on Bridge Proceeding Well in Spite of Cold,” *Quincy (IL) Herald-Whig*, 01 December 1929: 20; “Steady Progress Made on Bridge,” *Herald-Whig*, 08 December 1929.

VISIT

Dooley's New Furniture House

Located at 725-727 Hampshire St.

SEE AND CROSS
QUINCY'S
NEW

Memorial Bridge

AT OUR EXPENSE

We Will
Refund
Bridge Toll
On Any Purchase
Made at our
Store up to
\$15.00

And Save Money

SPECIAL BARGAINS THE
BALANCE OF THIS MONTH

Four piece decorated Enamel Bed
Room Suite

\$65.00

Three piece decorated Enamel
Bed Room Suite

\$58.00

Fifty lb. refrigerator, 3 door
front icer

\$19.95

Five piece oak decorated Break-
fast Suite—35 piece decorated
Dinner Set

\$24.75

PORCH FURNITURE AT
GREATLY REDUCED PRICES

Lower
Overhead

DOOLEY'S

725-727 Hampshire St.

Better
Values

DOOLEY'S

QUINCY, ILL.

Figure 7: This newspaper advertisement for Dooley's Furniture, and the store's desire to tie itself to the new bridge and its anticipated success (red highlighting for emphasis), clearly demonstrates the draw of, and curiosity about, the dominant new structure crossing the Mississippi River (*The Palmyra [MO] Spectator*, 25 June 1930: 10).

on Friday, 27 December 1929, and three gangs of riveters completed the structure's assembly.⁵⁶

Yet to be laid were the remaining eighty-foot ($\pm$) girders that extended from pier 10 to pier 21. It was thought in December that all steelwork on the approach spans would be complete by 15 February. The plan was then to start laying the concrete deck on 01 March, assuming that the two week interlude would provide warmer weather for the concrete and avoid the need to cover and heat the concrete as it cured. The exact date pouring began is uncertain, but it was well underway by 13 April when it was reported that about 1,100 feet of the roadway was in place between the west abutment and pier 28. Laying the concrete from west to east continued with few apparent problems. By Saturday, 03 May, the bridge's deck and sidewalk had been laid as far east as pier 8, still over water of the Mississippi but rapidly approaching the Illinois shoreline. Plans were to open the bridge in a matter of weeks. Tuesday, 06 May, saw the concrete poured from piers 8 to 5. Next was it poured from the east abutment to pier 4. Finally, on Friday, 09 May, the distance from pier 4 to pier 5 was poured. Concrete work was complete, all having been planned by KA Concrete Construction Superintendent Henry Busching.⁵⁷

Details remained. Some painting needed to be finished, among which was about 900 feet of the 80-foot girder spans for instance. And lights needed to be installed on the bridge for which the Central Illinois Public Service Company held the contract. That firm placed 150 candle power lights on 160-foot centers across the bridge on alternate sides of the roadway. Lights were to be thirteen feet high with an arm that projected over the roadway. Similarly did ten navigation lights need to be hung. One was set on each side of the three primary piers (8, 9 & 10). All were red with 180° of visibility. The remaining four lights were green and hung on the north center and south center of each of the two truss spans. Those lights were visible for 360° since there was nothing to obscure a view of them. With work so nearly finished, KA started to dismantle some of its construction equipment on site as it prepared to leave.⁵⁸

⁵⁶ "Quincy Bridge to be Done May 1, Engineer Says," *Quincy (IL) Herald-Whig*, 15 December 1929: 22; "Memorial Bridge Work is Stopped by Cold Weather," *Quincy (IL) Herald-Whig*, 19 December 1929: 20; "Memorial Bridge West Span Swung: Nears Completion," *Quincy (IL) Herald-Whig*, 27 December 1929: 16.

⁵⁷ "Quincy Bridge to be Done," *Herald-Whig*, 15 December 1929; "Memorial Bridge West Span Swung," *Herald-Whig*, 27 December 1929; "540 Feet Added to Bridge Slab during the Week," *Quincy (IL) Herald-Whig*, 13 April 1930: 20; "Bridge Concrete Reaches Pier No. 8, End of East Span," *Quincy (IL) Herald-Whig*, 04 May 1930: 20; "Memorial Bridge Concrete Pouring Finished Friday," *Quincy (IL) Herald-Whig*, 09 May 1930: 18.

⁵⁸ "Bridge Concrete Pouring Finished," *Herald-Whig*, 09 May 1930; "Start to Install Lighting System for New Bridge," *Quincy (IL) Herald-Whig*, 12 May 1930: 12.

Opening of the Memorial Bridge:

Significant plans had been made to celebrate the bridge's opening at an appropriate time. But they were postponed, never to actually occur. Still, the bridge's opening was an important event. Among the first to experience the new structure and a drive across the river were Mayor Weems, I.L. Presses and three others. They were going to a meeting in Missouri on 19 May 1930 to discuss roadway approaches to the bridge on the west side of the river. The public's first chance to experience the structure occurred on Saturday and Sunday, 24 and 25 May. Only pedestrians were allowed on the bridge those two days, an opportunity of which over 2,500 took advantage by paying their nominal 10 cent toll.⁵⁹

Tolls generally mirrored those on the traffic lanes of the CB&Q railroad bridge, though roundtrip tickets – as opposed to one-way tickets – were required. Traffic on the bridge was differentiated by which of four ticket types were used. Type A was for automobiles and cost \$.50. Type B tickets were assigned to trucks, motorcycles and pedestrians. Tolls for trucks ranged from \$.50 to \$3.00, depending on the size of the vehicle. Motorcycles were \$.10 to \$.30, again depending on size and type. Pedestrians were \$.10, as previously noted. Type C tickets were for horses and riders, the charge for which depending on the number of horses making the crossing. It varied from \$.40 to \$1.20. A \$.20 cent toll was also charged for each horse or head of cattle that was led across the bridge. No loose horses or cattle were allowed. Finally, type D tickets were for busses. They paid \$1.00 for the vehicle and driver and \$.05 a passenger.⁶⁰

The bridge opened to traffic at 7:00 AM, Friday, 13 June 1930, a day earlier than planned. There were four toll-takers who worked eight hour shifts. All tolls were collected on the east side of the bridge. Some confusion resulted since the formal opening was to be on Saturday, 14 June. The traffic lanes on the CB&Q railroad bridge, which were to close Friday night, also remained open to noon on Saturday. The fact that the old bridge remained open may have accounted for the fact that only 200 vehicles used the new bridge on the 13th. Despite quibbles, the *Quincy Herald-Whig* took the long view and suggested that the bridge might well draw many northeast Missourians to the shopping panacea offered by Quincy. That was the hope of Quincy merchant Dooley's New Furniture House as evidenced by an advertisement the company ran on 25 June 1930 in

⁵⁹ "Bridge Dedication Schedule Planned: Chairman Selected," *Quincy (IL) Herald-Whig*, 18 April 1930: 20; "First Automobile Goes Across Memorial Bridge on Official Road Trip," *Quincy (IL) Herald-Whig*, 19 May 1930: 12; "2,000 Strolled on New Bridge During Sunday," *Quincy (IL) Herald-Whig*, 26 May 1930: 12; "Bridge Opened to Pedestrians: Tolls Announced," *Quincy (IL) Herald-Whig*, 25 May 1930: 22.

⁶⁰ "Vehicular Traffic Goes over Bridge First Time Friday," *Quincy (IL) Herald-Whig*, 13 June 1930: 18; "Bridge Opened to Pedestrians," *Herald-Whig*, 25 May 1930.

The Palmyra Spectator newspaper (see Figure 7, page 28).⁶¹



Figure 8: Pictured is the design of the Memorial Bridge toll houses **as proposed** in 1929 by Charles Behrensmeyer, Jr., an architecture student at the University of Illinois. Note that each house was to prominently bear the “Memorial Bridge” moniker (“Suggested Memorial Bridge Toll Houses,” *Quincy (IL) Herald-Whig*, 27 October 1929: 20).

The Memorial Bridge Post-Opening

The opening of the bridge did not mean that all was complete. An important remaining task was construction of the toll house. A plan had been proposed in October 1929 as a possibility. It required two structures, one serving travelers eastbound and the other for travelers westbound. There were many unanswered questions about the materials to be used for construction, but each was to prominently acknowledge the memorial nature of the bridge (see Figure 8 above).⁶²

An advantage to not building the toll houses prior to bridge’s opening was that some toll-taking experience using temporary facilities was accumulated in the first two-and-one-half months of use, experience that helped to inform the final location and design. Issues discovered included toll-takers standing in accumulating water when it rained. Or cars stopping to pay a toll and then having difficulty motoring up a steep hill. Or vehicles with faulty brakes going downhill to pay tolls and not being able to stop in time. Ultimately the City Council approved on Monday, 08 September, a plan for the bridge company to build a single, permanent toll house to be located 150 feet west of the east

⁶¹ ““Bridge Formally Opened Saturday Without Ceremony,” *Quincy (IL) Herald-Whig*, 15 June 1930: 20; “The Quincy Bridge Opens,” *Quincy (IL) Herald-Whig*, 15 June 1930: 10; “Vehicular Traffic Goes over Bridge,” *Herald-Whig*, 13 June 1930.

⁶² “Suggested Memorial Bridge Toll Houses,” *Quincy (IL) Herald-Whig*, 27 October 1929: 20.

abutment, between Front and Second streets. It was to be a three story, 13-foot 6-inch by 15-foot 6-inch structure rising from a stone foundation adjacent to the bridge's north side. The first floor was to accommodate storage, the second an office for the bridge manager and the third, which would be even with the bridge sidewalk, to be used by the toll takers. The structure was to "...be built sturdily and attractively, but not so lavishly as the originally planned stone toll houses." Excessive costs were to be avoided, in other words, since the bridge was to offer free passage in twenty years or less and the toll booth would likely then be removed. The completed building is portrayed in Figure 9, immediately below.⁶³



Figure 9: The toll house **actually built** was located on the north side of the bridge, between Front and Second streets. One reason a more practical, less expensive building was constructed was that it would likely be removed once the bridge no longer charged a toll. The house had a hipped roof, walls of brick, five-light-over-one-light windows and rose three stories from the ground ("Quincy Memorial Bridge and Toll Booth," Object ID P583, Photographs, Historical and Genealogical Research, Historical Society of Quincy & Adams County, Quincy, IL).

Early use of the bridge was encouraging. Having opened on 13 June 1930, tolls for the last seventeen days of the month amounted to \$5,165.80. Automobiles accounted for \$4,089.50 of that total, while trucks produced \$497.50, as did horse-drawn wagons \$9.40, buses \$54.00, pedestrians \$81.50 and extra passengers in trucks \$81.50. At the same time, connections to the bridge in Missouri were "wholly unsatisfactory" and no advertising had yet been done to make travelers aware of the structure and its through

⁶³ The procedure for collecting tolls from travelers going both directions from one facility on one side of the bridge seems a bit awkward. An explanation of how the facility operated has not yet been found. "Permission Given Bridge Company for Toll House," *Quincy (IL) Herald-Whig*, 09 September 1930: 14.

route. July was the structure's first full month of operation and it generated gross income of \$8,672.74. By the end of the year there had been of 233,582 bridge crossings of which 128,481 were trips where the toll for a round trip had been paid although only 105,101 round trips were made. Automobiles were the most common user followed, curiously, by pedestrians and trucks – in that order.⁶⁴

The first half of the 1930s included the hardest years of the Great Depression. That acknowledged, the gross income for the Memorial Bridge grew from \$93,017.50 in 1932 to \$108,577.60 in 1933 and \$117,058.85 in 1934 before regressing to \$114,706.75 in 1935. Net income for those years was \$10,112.30, \$31,826.89, \$42,534.50 and \$40,729.04 respectively, and it served the structure well. The Memorial Bridge was the rare one built in the last years of the 1920s on either the Mississippi or Ohio rivers that largely avoided Depression-related financial problems – at least based on usage. Illustrating that fact in the early 1930s is a comparison with the Champ Clark Bridge at Louisiana (MO). It had 81,818 crossings by automobiles for the year ending 01 May 1931. Quincy's Memorial Bridge, on the other hand had 299,494 passenger car crossings as of that date, the bridge having opened only slightly more than ten months before.⁶⁵

Plans for the bridge's future were always clear. Once indebtedness was paid off in twenty years or less, it was to be toll free. That was a crucial factor that helped determine the type of toll booth to be built. The city always had the right to acquire the bridge from the operating company at any time in those twenty years and eliminate the toll, the cost being the debt remaining at the time. The first talk of that occurred in September 1936. More conversations were held a year later and deliberations continued in 1938 through 1940. During this time the Mark Twain Memorial Bridge at Hannibal (MO) was sold to the city, as were talks being held to sell the Champ Clark Bridge to Louisiana (MO).⁶⁶ Discussions about the city's acquisition of the bridge from the Quincy Memorial Bridge Corporation continued for five more years. It finally happened in 1945. On 14 July, with World War II completed in Europe though still raging in the Pacific, a meeting was held at Quincy's Chamber of Commerce to discuss the bridge and its future. Seven and one-half weeks later, on 05 September, it was announced that in one week, on the 13th, the

⁶⁴ "Memorial Bridge Has Good Report on First Earnings," *Quincy (IL) Herald-Whig*, 03 July 1930: 14; "Our Bridge Seems Popular," *Quincy (IL) Herald-Whig*, 06 July 1930: 8; "Pleasure Car Yields Major Bridge Revenue," *Quincy (IL) Herald-Whig*, 03 August 1930: 2; "Memorial Bridge Had Busy Season; Not Open a Year," *Quincy (IL) Herald-Whig*, 25 January 1931: 10b.

⁶⁵ "Bridge Here One of Few to Avert Financial Trouble," *Quincy (IL) Herald-Whig*, 19 May 1935: 9; "Quincy Bridge Shows Up Well by Comparison," *Quincy (IL) Herald-Whig*, 14 May 1931: 16.

⁶⁶ "Proposed Bridge Purchase Will Be Discussed Friday," *Quincy (IL) Herald-Whig*, 22 September 1936: 12; "Concerted Action in Making Bridge Toll Free is Urged," *Quincy (IL) Herald-Whig*, 27 September 1937: 12; "Seek to Sell Bridge to City of Louisiana," *Quincy (IL) Herald-Whig*, 22 April 1940: 5.



COME AND BE THE GUEST OF QUINCY
AND OF HALBACH SCHROEDER DURING THE

BRIDGE OPENING CELEBRATION

THURSDAY, FRIDAY AND SATURDAY

The opening of the Quincy Memorial Bridge as a **FREE BRIDGE** marks another step in Quincy's progress . . . and just as Quincy continues to grow, so Halbach Schroeder strives to create an even greater department store to better serve its thousands of friends, neighbors and customers throughout the trading area of Illinois, Missouri, Iowa. We have made wonderful plans for this Fall Celebration . . . our buyers have shopped the fashion markets for the newest in fall merchandise . . . the entire store is beautifully decorated to emphasize the Fall Fashion Theme.

And today, as always, Halbach Schroeder lives up to its reputation of sponsoring only "First Quality" merchandise from America's leading manufacturers.

Quincy's Leading Department Store

Halbach-Schroeder

Figure 10: Eliminating the toll on the Memorial Bridge fifteen years after it opened was a significant event for the city of Quincy, as well as local merchants who wanted to tie themselves to the event – which the Halbach-Schroeder company clearly wanted to do (“Bridge Opening Celebration,” *The Palmyra [MO] Spectator*, 12 September 1945: 4).

Memorial Bridge would be toll free. The structure's remaining debt of \$469,000 was to be paid with \$325,000 received from the State of Illinois, \$50,000 from the CB&Q railroad, \$69,000 from the city of Quincy and \$25,000 from the Chamber of Commerce. An event celebrating the now toll-free bridge was held in Washington Park on the 13th, about a block away from the east abutment. Attending were representatives from both Illinois and Missouri who all heard Illinois Lt. Governor Hugh Cross recognize the efforts of the citizens of the city who "...never before have been more magnificent in their generosity than in aiding in the freeing of the Quincy Memorial Bridge." The city celebrated and sales were held (see Figure 10, page 34).⁶⁷

Conclusion & Postscript

The Memorial Bridge was constructed during something of a "bridge-building frenzy" along the Mississippi. Seven new vehicular structures had been built across the river between 1928 and 1930. They were located, from south to north, at Vicksburg (MS), Cairo (IL), Cape Girardeau (MO), St. Louis (MO), Alton (IL) and Louisiana (MO). The seventh, of course, was the Memorial Bridge at Quincy. Two of the bridges were cantilevered structures, two were of simple truss spans and three claimed continuous truss spans of which the Memorial Bridge was one. And of those latter three, the Quincy bridge was selected in 1939 by *The Steel Contractor*, a journal of the American Institute of Steel Construction, as one of the world's ten notable Continuous Truss bridges. High praise that was for the bridge jointly produced by the Kelly-Atkinson Company, Strauss Company and Foundation Company!⁶⁸

The bridge reliably served local and long-distance traffic for several decades. By the late 1970s, however, deficiencies became apparent. Some deteriorating structural steel and deck bearings had to be replaced in 1978, as was additional work, including the removal and replacement of the old traffic deck, anticipated in the early 1980s.⁶⁹

It was reported in January 1982 that the bridge's piers and general integrity were solid, but if certain deck joint repairs were not made within two years, among other things, the structure would need to be closed. Thus was a \$7.2 million package to rehabilitate the fabrication proposed. A Request for Proposals was issued, to which seven firms replied.

⁶⁷ "This Day," *Quincy (IL) Herald-Whig*, 14 July 1946: 10; "This Day," *Quincy (IL) Herald-Whig*, 05 September 1946: 8; "Quincy Now Owns River Bridge," *The Pantagraph* (Bloomington, IL), 06 September 1945: 1; *Decatur (IL) Daily Review*, 13 September 1945: 6.

⁶⁸ "Seven New Mississippi River Highway Bridges," *Engineering News-Record* (Vol. 105, No. 5), 31 July 1930: 181-184; "Quincy Bridge is Listed as Notable in Construction," *Quincy (IL) Herald-Whig*, 27 January 1939: 12.

⁶⁹ Paul Gottlieb, "Major Bridge Repairs Needed by Early 1980s," *Quincy (IL) Herald-Whig*, 05 October 1978: 10C.



Figure 11: This advertisement was published in the Palmyra Spectator, a town in Missouri west southwest of the bridge's touchdown on that state's Mississippi River shoreline. It is amusing because, while the piece is celebrating the opening of the Quincy Bridge, the image used is one of the Brooklyn Bridge in New York City. Perhaps comparison with the Brooklyn Bridge is intended to compliment the design and visual impact of the Quincy Memorial Bridge ("The Curtain Rises on Quincy's Great Achievement!" *The Palmyra (MO) Spectator*, 18 June 1930: 2-3).

The St. Louis Bridge Construction Company received the contract in March for its low bid of \$5.4 million. The firm planned to hire up to twenty-five Quincy-area employees for the project prior to the anticipated start date. Work was to include two important components, addressing the deck joints and replacing the deck itself. Significantly was the structure's original, four-foot sidewalk to be removed and the combined width of the two travel lanes increased from twenty feet to twenty-four feet. Work got underway and continued for about a year-and-a-half. Completion was reported on 27 September 1983 to be within a week. The bridge's reopening was acknowledged on Monday, 03 October 1983 (see Figure 12, page 37).⁷⁰

Thereafter did the Memorial Bridge serve commuters and travelers for another twenty

⁷⁰ Mark Hagan, "Kramer says Bridge Repairs Imperative: IDOT Secretary Reviews Choices," *Quincy (IL) Herald-Whig*, 03 January 1982: 10A; Mark Hagan, "Bridge Contract to Bring 25 Jobs," *Quincy (IL) Herald-Whig*, 09 March 1982: 8B; "Misty Morning," *Quincy (IL) Herald-Whig*, 27 September 1983: 8B; "Open Sesame," *Quincy (IL) Herald-Whig*, 03 October 1983: 8B.



Figure 12: This photograph acknowledges how happy local residents appeared to be at the reopening of the Memorial Bridge on Monday, 03 October 1983 (Kathy Walker, photographer, "Open Sesame," *Quincy (IL) Herald-Whig*, 03 October 1983: 8B).

years. By 2001 it was carrying 8,600 vehicles per day and needed additional work that included replacing the deck's driving surface as well as sandblasting and painting the entire structure. Repairs were undertaken by Springfield's (IL) Halverson Construction, Inc., and started about 13 April 2002. It was to be completed by 01 November, but there were unexpected problems. The need for additional structural repairs became apparent, for example, as the steel was sandblasted prior to painting, and inspected. Deficiencies were noted which required the preparation and installation of new steel components, which delayed painting. Work for the season concluded the week of 18 November 2002.⁷¹

Rehabilitation efforts on the \$5.3 million project resumed in April 2003. Completion was anticipated by the end of June. Painting was the primary task remaining. Once sandblasted, a process that required extensive efforts to capture and contain the paint

⁷¹ Doug Wilson, "Rain Sets Back Bridge Closing," *Quincy (IL) Herald-Whig*, 08 April 2002: 2A; "Concrete Crunchers," *Quincy (IL) Herald-Whig*, 27 April 2002: 1; Doug Wilson, "Memorial Bridge Project Behind Schedule," *Quincy (IL) Herald-Whig*, 05 September 2002: 9; Doug Wilson, "Traffic Running Smoothly on Memorial Bridge," *Quincy (IL) Herald-Whig*, 21 November 2002: 9.

removed, the bridge received three coats of new paint, a flat gray primer, an intermediate off-white coat, and the final blue finish. An almost immediate problem was encountered as painting got underway in 2003, and that was rain. Indeed, on 14 June it was announced that final work on the bridge was going to be delayed a month – to about the end of July and that weather was a factor causing the problem. Work was finally finished and the bridge completely reopened to traffic the week of 18 August 2003.⁷²

The ninety-five year old bridge receives regular maintenance and continues to serve traffic in 2025.

PART II: ARCHITECTURAL/ENGINEERING INFORMATION:

A. General Statement:

1. Architectural Character:

The Memorial Bridge is a thirty-seven span structure that carries U.S. Highway 24 over the Mississippi River, between Illinois and Missouri, and was opened to traffic in 1930. Its overall length is 3,511'-6¹/₄" and comprised of post-and-beam approach sections to the east northeast and west southwest, between which are two, Continuous Truss spans that extend a total of 1,255'-4" (627'-8" per span). It also facilitated the passage of commercial barge and boat traffic on the river below. The bridge's traffic deck is about 55'-0" above the river's high water mark.

2. Condition of Fabric:

The bridge continues to serve traffic after more than ninety-five years of service. Its character defining, two span Continuous Truss feature remains, the historical integrity of which is very good. Modifications, nevertheless, have been made. Perhaps the most significant was the replacement of the bridge's traffic deck that, in 1930, was constructed with two, 10-foot traffic lanes, each flanked by a 4'-0" sidewalk. It was replaced in 1982 by two, 12-foot traffic lanes and no sidewalks. Despite various rehabilitations and continued maintenance, the structure's deterioration continues. Its sufficiency rating in 2011 was 39.1, a number that had declined to 35.0 by 2024.⁷³

⁷² Doug Wilson, "Memorial Bridge to Close on Monday," *Quincy (IL) Herald-Whig*, 05 April 2003: 8C; Doug Wilson, "Bridge Opening Delayed a Month," *Quincy (IL) Herald-Whig*, 14 June 2003: 1; Doug Wilson, "Bayview Bridge to Close Friday," *Quincy (IL) Herald-Whig*, 21 August 2003: 7.

⁷³ "NationalBridges.org – National Bridge Inventory Data Sheet, 2011 Inventory," Viewed on 11 December 2025 at <https://historicbridges.org/bridges/browser/?bridgebrowser=missouri/quincy/>; "Illinois Department of Transportation Structures Information Management System", Viewed on 11 December 2025 at <https://apps1.dot.illinois.gov/bridgesinfosystem/>

Description:⁷⁴

To understand how a structure like the Memorial Bridge works, there are two particular terms to know: beam and girder. Consider that the function of a bridge is to transfer the load it carries to the ground. The order by which this is accomplished is as follows: the bridge's load is transferred from a beam to a girder to a pier/abutment to the ground. Beams normally convey lighter loads than girders, thus are they "secondary" load carriers while girders are larger, stronger structural members that carry "primary loads" (which includes multiple secondary loads). It is understood that the dead load consists of a structure itself and its parts, including beams and girders (but no traffic, that is a live load). The dead load acknowledges the length of a span, which suggests that a shorter span does not weigh as much as one longer. Thus may there be circumstances where beams can carry a primary load for shorter spans. This is important to consider since there are shorter approach spans on this bridge, the weight of which is carried by beams while there are longer and heavier approach spans carried by girders.⁷⁵

That said, Quincy's Memorial/USH 24 Bridge is a thirty-seven span fabrication with three unique span types: beam, girder, and truss. From east to west (Illinois to Missouri), spans 1 through 3 accommodate their loads on beams, while spans 4 through 8 use girders for that purpose. Spans 9 and 10 are trusses, followed by spans 11 through 21, all of which employ girders. Beams then carry spans 22 to 37 to the structure's Missouri abutment. All but the two trusses are approach spans that accommodate access to the trusses, beneath which pass the Mississippi River's boating and shipping traffic.

The bridge's overall length is 3,511'-6¼" and comprised of the easternmost grouping of beam spans at 138'-0" (spans 1 through 3), the adjacent grouping of girder spans at 419'-2" (spans 4-8), the east truss span at 627'-8" (span 9), the west truss span at 627'-8" (span 10), the western grouping of girder spans at 879'-8" (spans 11-21), and the far west grouping of beam spans at 815'-6" (spans 22-37). The overall width of the truss bridge

[search.aspx](#) .

⁷⁴ Measurements used to describe this bridge were taken from the original plans, as well as those from 1982 and 2002. They also came from the structure itself, components of which were measured during fieldwork. In the case of the former, please know that the quality of the original plan copies reviewed was poor and that many numbers were not discernable. Thus are many measurements missing, a fact acknowledged on the measurement summary tables. Regarding the latter, field measurements were limited to structural components that could be reached without aid of ladders, boats, or other equipment.

⁷⁵ William H. Atherton, M.Sc., *An Introduction to The Design of Beams, Girders and Columns in Machines and Structures with Examples in Graphic Statics* (London, England: Charles Griffin & Company, Limited, 1905): 1; SteelPro, "Girder vs Beam: Understanding the Differences and How to Choose the Right One" (03 March 2025), Viewed on 22 December 2025 at <https://peb.steelprogroup.com/steel-structure/components/girder-vs-beam/>.

(outer-edge-of-truss-to-outer-edge-of-truss) is 32'-8", while that of the roadway for the entire structure is 24'-8" (see Figure 13, page 41).

The US Highway 24 bridge has three distinct components, its piers, the structure carried by the piers, and the traffic deck carried by the structure. The efforts needed to anchor piers 1-7 and 11-36 were relatively simple. Starting with the eastern abutment in Illinois and continuing west to the river's east edge are piers 1-7, all carrying approach spans. The piers are dry and anchored to rock five to thirty feet below the earth's surface. The first three carry beams while the four piers that follow carry girders. The distance between piers varies (as measured pier center-to-center). It is 36'-0" from the east abutment to pier 1 and 52'-0" between piers 1 and 2 and piers 2 and 3. The distance separating piers 3 and 4 is 79'-1½" while that between piers 4 and 5 is 99'-3". The distance between piers 5 and 6, piers 6 and 7, and piers 7 and 8 is 80' plus varying inches. The grade for this approach is about 1%. The next two spans are trusses and account for piers 8, 9, and 10, as well as 35.75% of the bridge's length. Extending west to the Missouri shoreline, piers 10 through 36 continue to carry approach spans. Those supported by piers 10-21 are girder segments at a 4.95% grade while those between piers 21 and 36 are generally at an even grade and carried by beam spans. All western approach piers rise from concrete pile caps constructed on top of the eighteen to fifty piles for each driven into the river bottom. The distance from the center of pier 10 to that of pier 11 is 80'-8", while that between piers 11 and 20 is 80'-0". The reach from pier 20 to 21 is 79'-0". Beam spans 20 through 36 are 51'-0" long, center-to-center-of-pier, while that between pier 36 and the west abutment (also referred to as pier 37) is 51'-6".

Spans 8 and 9 are the two Continuous Truss components of the bridge and are carried by piers 8, 9, and 10. Those piers are unique in the design of the bridge because, while each consists of two columns that carry the load of the structure, a heavy curtain wall was constructed between the columns in order to minimize the scour that waterflow around the foundations could cause. For this project the wall does not reach from the foundation to the tops of the columns, rather it starts several feet above the foundation. In the case of pier 8 the foundation is anchored to rock about 20'-0" below the mean low water level. The wall, then, begins about 8'-0" above the foundation. Two coffer dams of sheet metal piles permitted the dewatering of the pier 8 site and subsequent erection of the concrete pier. It was difficult keeping dry the location for each pier column, but perseverance prevailed. The pier rose 75'-0" above the foundation.⁷⁶

⁷⁶ "Bridge Plans", Received from Bureau of Design & Environment, IDOT, Springfield, IL; Irving L. Presses, "Silicon Steel Used Liberally in 1,257-Ft Continuous Truss Bridge," *Engineering News-Record* (Vol. 105), 09 October 1930: 572-573. Note that the description of the piers and their construction presented in this document is rather broad and general. A reader seeking more detail about the construction of and various issues associated with piers 8, 9, and 10 is referred to the *Engineering News-Record* publication identified in this footnote.

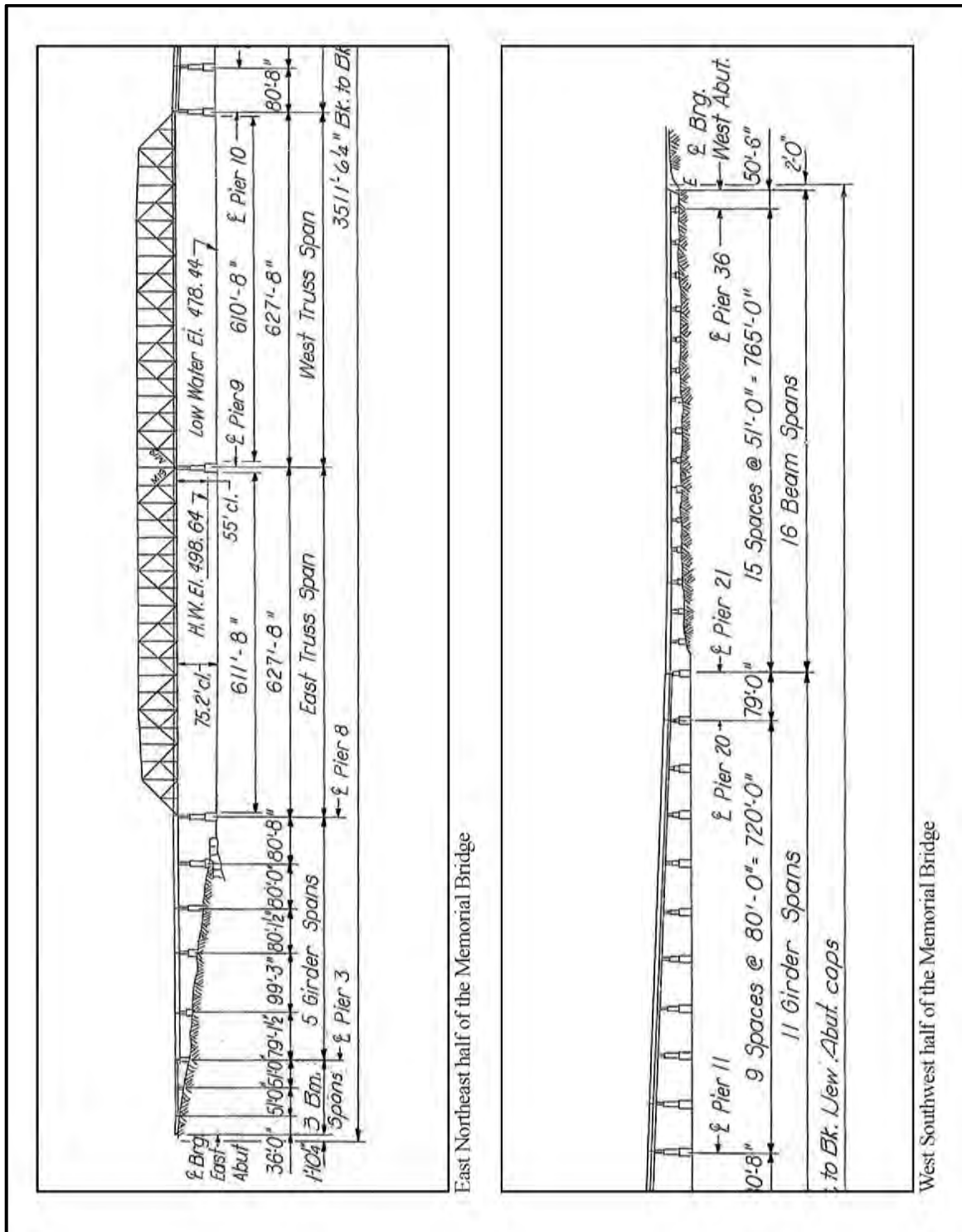


Figure 13: This 1982 diagram of Quincy’s U.S. Highway 24/Memorial Bridge is quite similar to an illustration included in the structure’s original plans, although this image has been broken in half and enlarged for the sake of clarity. Specifically does the illustration identify all the structure’s relevant, length-related measurements. It also clearly identifies the bridge’s beam, girder, and truss spans. Shipping traffic passes under the two primary, truss spans (“Bridge Plans”, Received from Bureau of Design & Environment, IDOT, Springfield, IL).

Rock for anchoring pier 9 was 105'-0" feet below the mean low water level. Thus did the combination caisson/foundation that carried the pier rise about that height, above which the two column pier and curtain wall continued to rise an additional approximately 77'-0". It took nineteen days to sink and anchor on the rock below the north caisson while efforts addressing the south caisson took fifteen days. Explained an article about the bridge and its foundation, "an inspection in both caissons showed the bedrock [at pier 9] to be exceptionally hard limestone with numerous deep ridges, forming a perfect key for the bottom of [the] pier." In contrast, the depth of bedrock under the pier 10 construction site was 121'-0", too deep to effectively anchor the pier foundation with caissons. Consequently was a coffer dam constructed and 168 timber piles, all 27 to 35 feet long, driven into the river bottom well above the bedrock in order to secure that pier's foundation. The heavy curtain wall between the columns for both piers 9 and 10 started 15'-0" above each foundation and continued to the top of each pier.⁷⁷

Construction next moved to the two individual spans that combined to create the continuous truss once the foundations and piers were complete. Spans 9 and 10 each consisted of forty panels, each panel being 31'-4½" long. The height of the truss, at the hip vertical (vertical 2 [V2] in Figure 16) was 62'-9" while that at intermediate vertical 4 was 66'-3". The full height of the truss was reached at vertical 6 and was 69'-9", or 7 feet above the height at the hip vertical. (Note that the dimensions of all Span 9 components are repeated in Span 10, only in reverse order). The two spans are framed by 34" x 27" inclined end posts and a continuous top chord (structurally tying together Spans 9 and 10). The lower chord, which breaks at pier 9 and is not continuous, is about 19½" wide by 26" high⁷⁸. Panel 1 (extending east to west) is defined by a truncated vertical that terminates at the mid-point of the inclined end post above and measures 19" x 10¾", while Panel 2 is delineated by the span's hip vertical (which is a component of that place where the inclined end post top chord meet) which is 20" x 15" and constructed of lacing and channels. Verticals V3 - V19 all employ lacing and angles or channels all of which are identified and described in Figure 16 (see page 45). While panels 1 through 19 in Span 9 progress east to west, those in Span 10 are reversed such that its panels 21 and 22, for example, mirror Span 9's panels 19 and 18. Vertical 20 is unique and carries the continuous top chord from Span 9 to Span 10. All diagonals in Span 9 are erected from lacing and channels or angles with the exceptions of diagonals G, I, E1, and I1. They measure 20" x 20" and are constructed of lacing and channels fabricated from plates and angles.

The final element of the bridge's construction was the deck and the roadway it carried.

⁷⁷ "Bridge Plans"; Presses, "Silicon Steel," *News-Record*, 573-574.

⁷⁸ The dimensions of the lower chord were scaled from the 1928 bridge plans.

USH 24 (Memorial) Bridge
HIER No. -A-2025-1 (Page 43)

Pier Number ¹	Component Carried by Pier ²	Wet/Dry ³	Pier Constructed by	Foundation on Rock or Piles ⁴	Foundation Dimensions (L x D x H) ⁵	Height of Pier ⁶
1	Beam	Dry	Kelly-Atkinson	Rock	5'-9" x 0'-0" x 2'-9" (2)	00'-00"
2	Beam	Dry	Kelly-Atkinson	Rock	5'-3" x 0'-0" x 2'-9" (2)	00'-00"
3	Beam/Girder	Dry	Kelly-Atkinson	Rock	20'-0" x 10'-0" x 3'-6"	00'-00"
4	Girder	Dry	Kelly-Atkinson	Rock	20'-0" x 10'-0" x 4'-0"	00'-00"
5	Girder	Dry	Kelly-Atkinson	Rock	9'-0" x 12'-0" x 4'-0" (2)	00'-00"
6	Girder	Dry	Kelly-Atkinson	Rock	9'-0" x 0'-0" x 4'-0" (2)	00'-00"
7	Girder	Dry	Kelly-Atkinson	Rock	20'-0" x 12'-0" x 4'-0"	ca. 51'-00"
8	Girder/Truss	Wet	Foundation Co.	Rock	15'-6" x 14'-0" x 9'-0" (2)	ca. 75'-00"
9	Truss	Wet	Foundation Co.	Rock	15'-1" x 14'-6" x 100'-8" (2)	ca. 77'-00"
10	Truss/Girder	Wet	Foundation Co.	Piles (168) ⁷	15'-6" x 14'-0" x 0'-0" (2)	ca. 75'-00"
11	Girder	Wet	Foundation Co.	Piles (50)	30'-0" x 18'-0" x 9'-0"	00'-00"
12	Girder	Wet	Foundation Co.	Piles (50)	30'-0" x 18'-0" x 9'-0"	00'-00"
13	Girder	Wet	Foundation Co.	Piles (50)	30'-0" x 18'-0" x 9'-0"	00'-00"
14	Girder	Wet	Foundation Co.	Piles (50)	30'-0" x 18'-0" x 9'-0"	00'-00"
15	Girder	Wet	Foundation Co.	Piles (50)	30'-0" x 18'-0" x 9'-0"	00'-00"
16	Girder	Wet	Foundation Co.	Piles (50)	30'-0" x 18'-0" x 9'-0"	00'-00"
17	Girder	Wet	Foundation Co.	Piles (45)	27'-0" x 15'-0" x 9'-0"	ca. 51'-00"
18	Girder	Wet	Foundation Co.	Piles (45)	27'-0" x 15'-0" x 9'-0"	ca. 47'-00"
19	Girder	Wet	Foundation Co.	Piles (45)	27'-0" x 15'-0" x 9'-0"	ca. 43'-00"
20	Girder	Wet	Foundation Co.	Piles (45)	27'-0" x 15'-0" x 9'-0"	ca. 39'-00"
21	Girder/Beam	Wet	Foundation Co.	Piles (45)	27'-0" x 15'-0" x 0'-0"	00'-00"
22	Beam	Wet	Foundation Co.	Piles (12/12)	8'-6" x 11'-6" x 7'-6" (2)	ca. 45'-00"
23	Beam	Wet	Foundation Co.	Piles (12/12)	8'-6" x 11'-6" x 7'-6" (2)	ca. 42'-00"
24	Beam	Wet	Foundation Co.	Piles (12/12)	8'-6" x 11'-6" x 7'-6" (2)	ca. 35'-00"
25	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
26	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
27	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
28	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
29	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
30	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
31	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
32	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
33	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
34	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
35	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
36	Beam	Wet	Foundation Co.	Piles (9/9)	8'-6" x 8'-6" x 6'-3" (2)	00'-00"
37	Beam	Wet	Foundation Co.	Piles (12/12)	8'-6" x 11'-6" x 7'-0" (2)	00'-00"

Note: Accurate measurement transcriptions are not discernable on the plans where bolded.

¹ As identified on the plans, piers are numbered east (IL) to west (MO).

² Piers carry either beams, girders, or trusses.

³ "Dry" piers are those built on land while "wet" piers are those constructed in the water.

⁴ The piers that carry girder components of the bridge typically use one, substantial foundation for each pier. However, those that carry the beam segments usually have two foundations, one for each leg that rises from the water and carries the beam above. The number of piles used to anchor the foundations is included within the parenthesis. Those numbers separated by a slash "/" indicate piers with two foundations, one number for each upright.

⁵ The occasional use of 0'-0" means that no readable measurement was available for inclusion.

⁶ As measured from the top of the pier foundation to that place where beams, girders, or trusses are situated.

⁷ Original plans identify an assumed elevation of the bedrock at Pier 10 which, once physically investigated, was too deep to effectively anchor the pier on it. Thus were piles used (Irving L. Pesses, "Silicon Steel Used Liberally in 1,257-Ft. Continuous Truss Bridge," *Engineering News-Record* [Vol. 105], 09 October 1930: 574).

Figure 14: This chart was compiled from data found on plans on file at IDOT and focuses on information regarding bridge piers and foundations ("Bridge Plans", Received from Bureau of Design & Environment, IDOT, Springfield, IL).

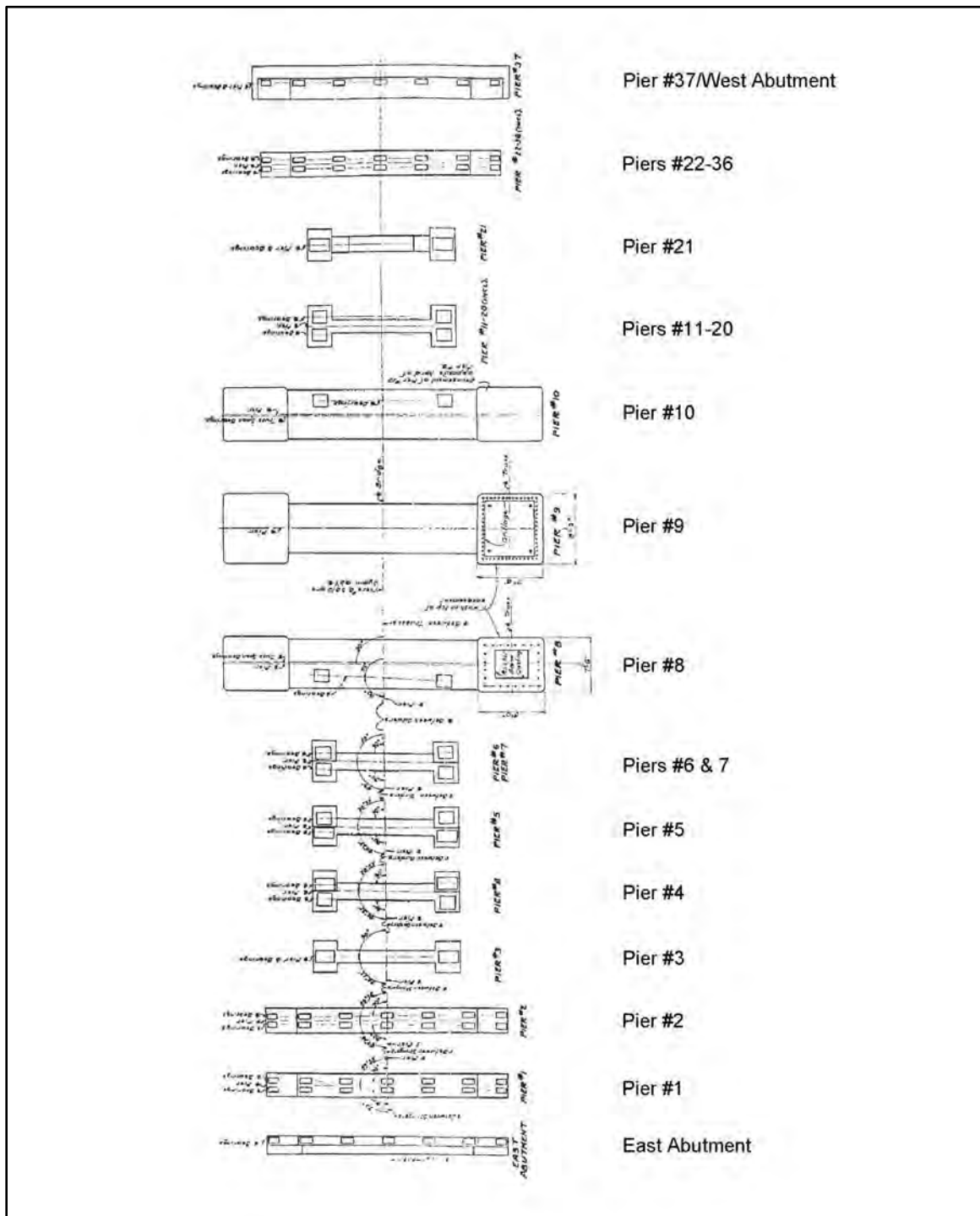


Figure 15: Offered here is a plan view illustration that identifies Memorial Bridge’s three types of piers and their sequential locations (turn right 90° for viewing). Piers 1, 2, and 22-37, as well as the east abutment, carried Beam spans. As well did piers 3, 4, 5, 6, 7 and 11-21 carry Girder spans. The three, massive center piers 8, 9, and 10 carried Continuous Truss Spans 9 and 10. The small rectangles found on the top of all piers but #9 identify the location of the bearings onto which the steel structural pieces carrying the bridge deck were tied (“Bridge Plans”, Received from Bureau of Design & Environment, IDOT, Springfield, IL).

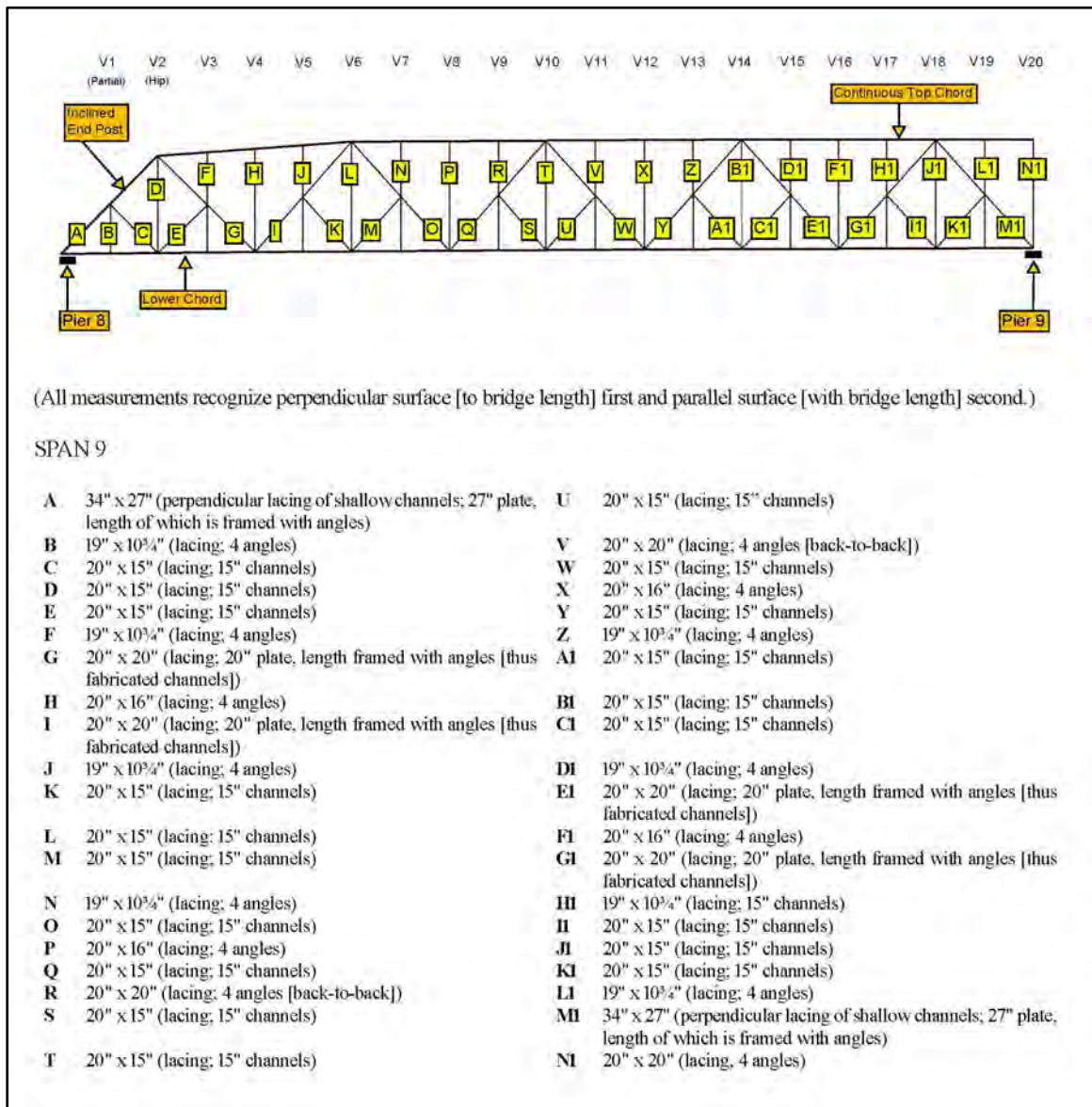


Figure 16: Span 9 is the east northeast component of the two span bridge. It is 627'-8" long. All measurements noted are the same in Span 10, only in reverse.

As previously observed, the original traffic deck with two 10-foot lanes and 4-foot sidewalks had an overall width of 28'-0" (face-to-face of hand rail). It was removed and reconstructed in 1982 with two 12'-00" lanes and a total width of 24'-0" (face-to-face of hand rail; see Figure 17, page 46). The dimensions of the entire bridge's roadway length were consistent despite the fact that the roadway was carried by three, structurally different span types: beam, girder, and truss (see Figure 13, page 41).

Regarding the beam spans, the 1982 deck was carried by five rolled "I" beams that extended from the east abutment to pier #2 and from pier #22 to #37. The beams were

parallel with the bridge's length. One beam was set in the middle of the span and flanked by two beams on each side, each beam being set on approximately 5'-00" centers. Consequently did the width of this deck component extend about 2'-00" beyond the outer beams. The 1930 deck and sidewalk had been carried by seven beams.

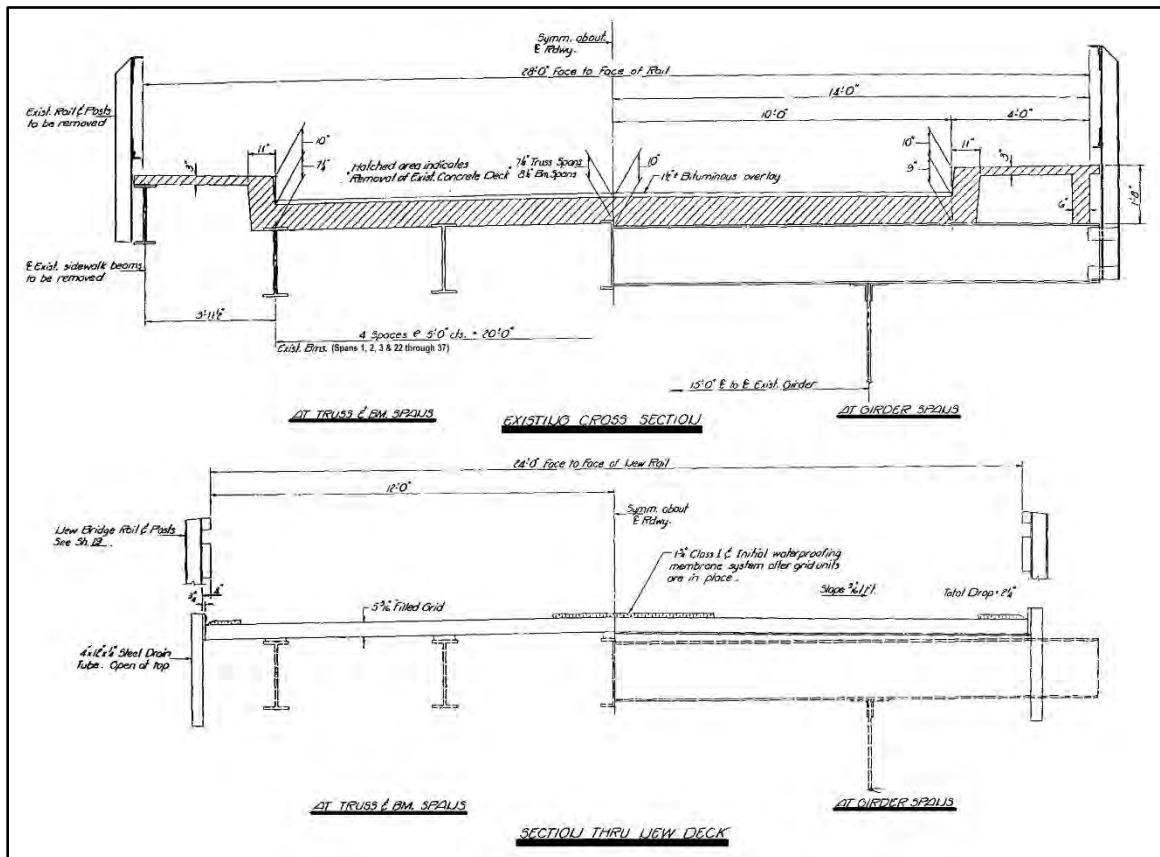


Figure 17: Shown in this diagram are two deck cross-sections. The upper image is of the 28-foot wide deck as originally constructed while the lower image is of the 24-foot wide deck as reconstructed in 1982. The most significant difference is the removal and replacement of the original sidewalks and traffic lanes and their support system (see upper cross-section) with the 1982 traffic lanes that are 2 feet wider than the original traffic lanes (lower cross-section). Note that the left hand side of the illustration shows the deck beams parallel to the bridge's length used to carry the deck in the beam and truss spans of the structure while the right hand side shows the perpendicular deck beams carried by the parallel girders in the girder spans ("Bridge Plans", Received from Bureau of Design & Environment, IDOT, Springfield, IL).

Girder spans were located immediately adjacent to, and inside the riverside ends of the beam spans. On the east, piers #3 through #7 carried girder spans, while to the west it was piers #11 through #21. The girder spans were typically 80'-0" long, though that length varied by up to 1'-00" on a few spans. Each pier carried two, 6'-6½" deep, fabricated girders that paralleled the bridge's length, the distance between which was 15'-00" as measured 7'-6" to either side of the span's center. The girders then carried perpendicularly placed beams that carried the traffic deck and extended about another 6'-5" beyond the girders on each side. Beneath the traffic deck, and situated between the

girders was both sway and bottom lateral bracing, all generally constructed of angles, some used as angles and others connected back-to-back.

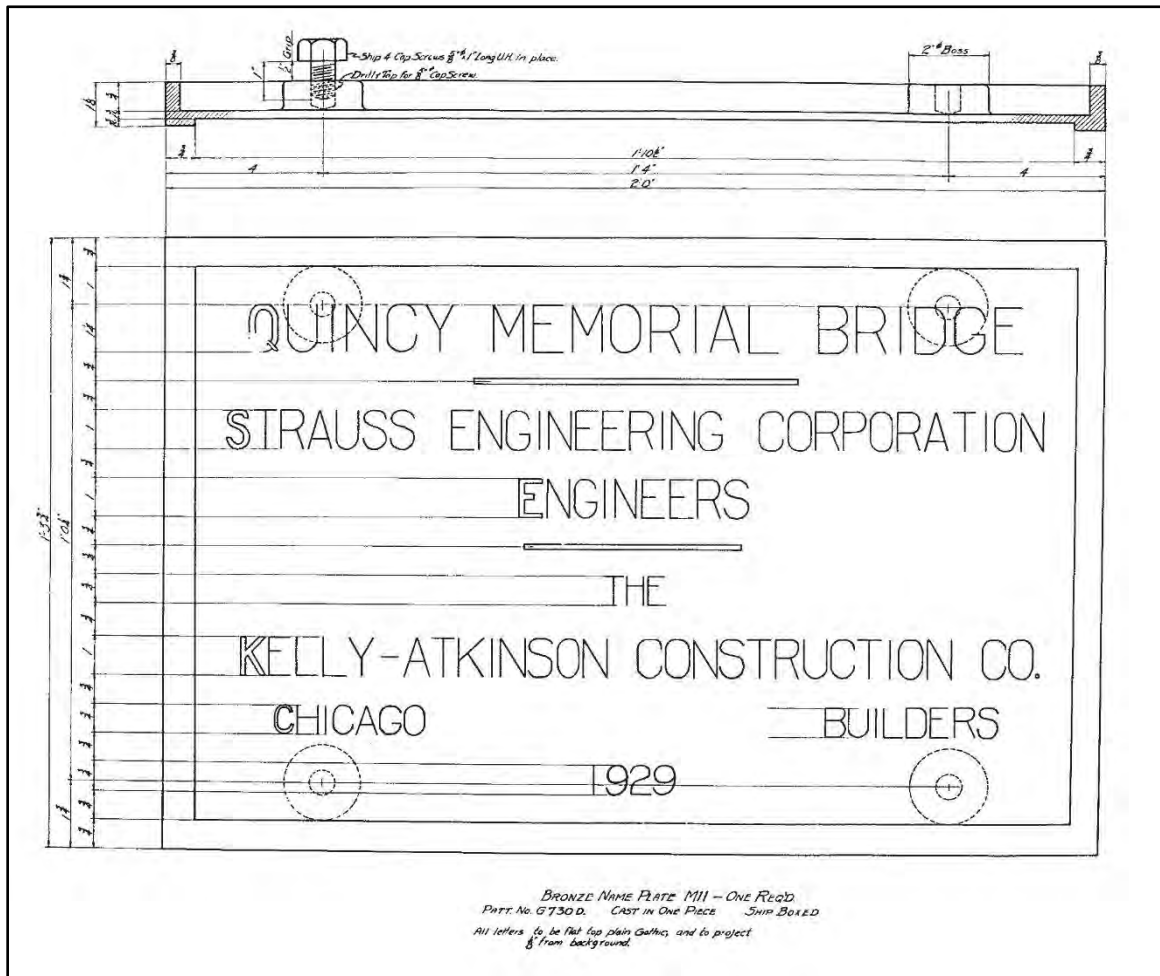


Figure 18: The absence of a bridge plate on the structure today suggests that one was likely removed sometime during maintenance or reconstruction. That absence notwithstanding, the plans for the bridge included the design of a plate, the image of which is illustrated in this illustration (“Bridge Plans”, Received from Bureau of Design & Environment, IDOT, Springfield, IL).

Between girder spans 8 and 11, and accommodating the river’s commercial shipping traffic below, was the Continuous Truss span consisting of individual spans 9 and 10. The composition and order of structural components in span 9 is the same as that in span 10, only the latter is in reverse. What is important to remember when discussing the deck of spans 9 and 10 is that it is hung from the nineteen verticals connected to the top chord in each span. That is as opposed to the beam and girder spans of the approaches where the deck is supported from the ground up by the piers. In this case, hung from the bottom of the verticals were floor beams, all 4'-6½" deep. The beams are perpendicular to the length of the bridge and extend from position L1 on one side of the bridge to position L1 on the other. Thus is it those beams (L1 through L19), also supported by the lower chords

(see Figure 16, page 45), that carry the load of the deck as tied to the bottom of the verticals hung from the top chord above. The distance between floor beams was 31'-4½", between which were five, symmetrically-placed "I" beam stringers placed on 5'-0" centers, beneath which was bottom lateral bracing tied to the bottom of the floor beam connections and lower chord.

The traffic deck is today a concrete-filled steel grid with seemingly a macadam overlay. On each side of the deck, as well as the approaches, had always been a railing. It was reconstructed in 1982 for the length of the bridge and its approaches. What resulted, and remains today, is a railing that rises 3'-6" above the deck. It has a 4" x 4" top chord below which is a 12" high by 4" wide intermediate chord, the top of which is 2'-3" above the deck. The bridge has no ornamentation, nor was an extant bridge plate observed.

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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 local, regional and statewide documentary sources. On-site observation and investigation of the bridge were also part of the research plan.

B. Research Process:

1. Visited bridge in November 2020 and May 2021 to review, photograph and measure it.
2. Searched resources at the Illinois Department of Transportation in general and in the Bureau of Design & Environment and the Transportation Library in particular. Digital sources consulted include the HathiTrust Digital Library, newspapers.com, and the Quincy Public Library, all for data relating to the development of U.S. Highway 24 in general, and the construction of the U.S. Highway 24/Memorial bridge across the Mississippi River in particular.
3. Completed research and prepared report draft.
4. Document draft internally reviewed.
5. Document draft reviewed by IDOT and SHPO.

6. Completed all revisions and submitted to IDOT.

C. Archives and Repositories Used/Consulted:

•Libraries and/or Other Repositories:

Bureau of Design & Environment
Illinois Department of Transportation
2300 S. Dirksen Parkway
Springfield, Illinois 62764
(U.S. Highway 24/Bridge Plans [initial construction & various rehabilitations])

Golda Meir Library
University of Wisconsin – Milwaukee
2311 E. Hartford Avenue
Milwaukee, Wisconsin 53211
(Engineering Journals that have not been digitized)

Historical Society of Quincy & Adams County
4255 S. 12th Street
Quincy, IL 62301
(Historical Photographs of Memorial Bridge)

•On-Line Sources:

HathiTrust Digital Library
(Digitized Books, Gazetteers & Business Directories, Engineering Journals and Other Resources)

newspapers.com
(Historic-period newspapers for surrounding communities)

historicmapworks.com
(Historic-period county plat maps)

Quincy Historical Newspaper Archive
Quincy Public Library
526 Jersey Street
Quincy, IL 62301
(Local Newspapers, 1883-2021, all accessed at www.quincylibrary.com)

D. Research Staff:

1. Researcher/Preparer/Editor:

John N. Vogel, Ph.D., Associate Degree - Professional Photography
Illinois State Archaeological Survey
Prairie Research Institute
University of Illinois
23 Stadium Drive
Champaign, Illinois 61820
jnvogel@hrltd.org

2. Photographer:

John N. Vogel, Ph.D., Associate Degree - Professional Photography
Illinois State Archaeological Survey
Prairie Research Institute
University of Illinois
23 Stadium Drive
Champaign, Illinois 61820
jnvogel@hrltd.org

3. Drone Operators (aerial photographs):

Michael E. Smith, M.A.
Senior Architectural Archaeologist
Illinois State Archaeological Survey
Prairie Research Institute
University of Illinois
23 Stadium Drive
Champaign, Illinois 61820
mesmith4@illinois.edu

John M. Lambert, M.A.
Archaeological Spatial Analyst
Illinois State Archaeological Survey
Prairie Research Institute
University of Illinois
23 Stadium Drive
Champaign, Illinois 61820
lambertj@illinois.edu

4. Additional Staff:

Emilie Land, M.S.
Architectural Historian/Cultural Resource Specialist
Bureau of Design & Environment
Illinois Department of Transportation
2300 S. Dirksen Parkway
Springfield, Illinois 62764
emilie.land@illinois.gov

PART V: PROJECT INFORMATION

This HIER 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, with final signature on 20 May 2021. The MOA was executed in compliance with CFR 36 800.6(b)(1)(iv) of the National Historic Preservation Act of 1966, as amended.

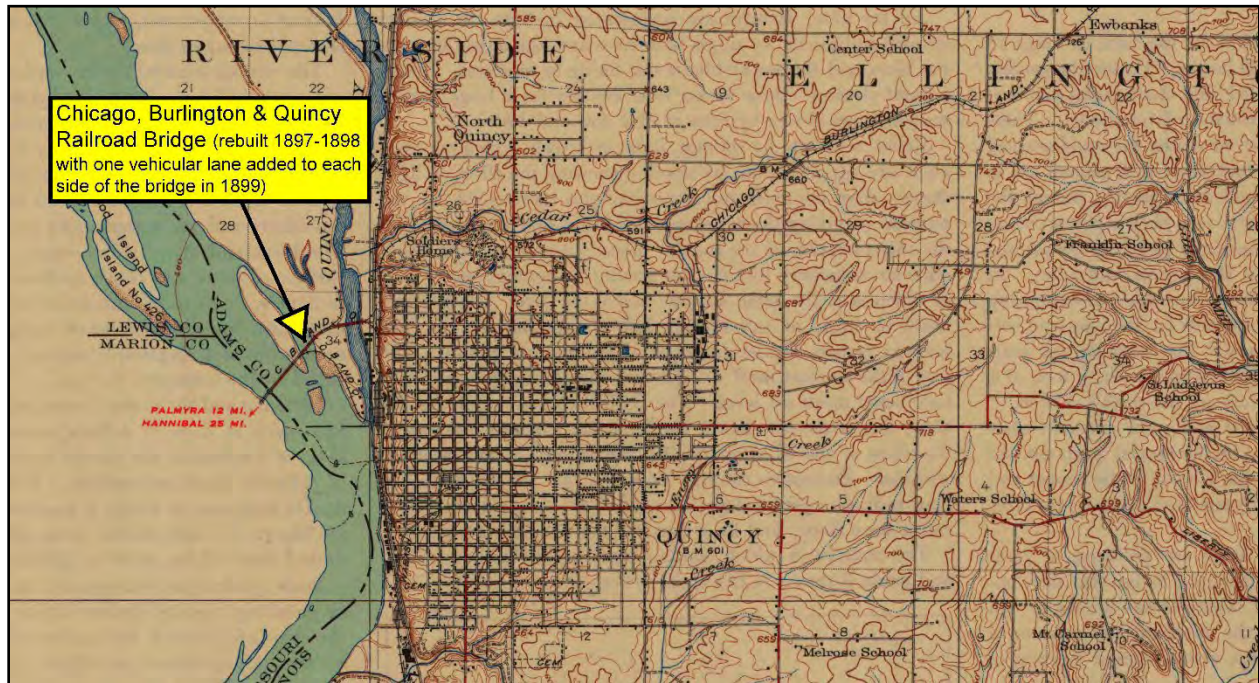


Figure 19: Pictured in this 1925 map image is the location of the 1897-1898 railroad bridge that, in 1899, also started accommodating the passage of vehicular traffic (U.S. Geological Survey, *Quincy Quadrangle* [map] 1925, 1:62500, 15 Minute Series [Reston, VA: United States Department of the Interior, USGS, 1925]).

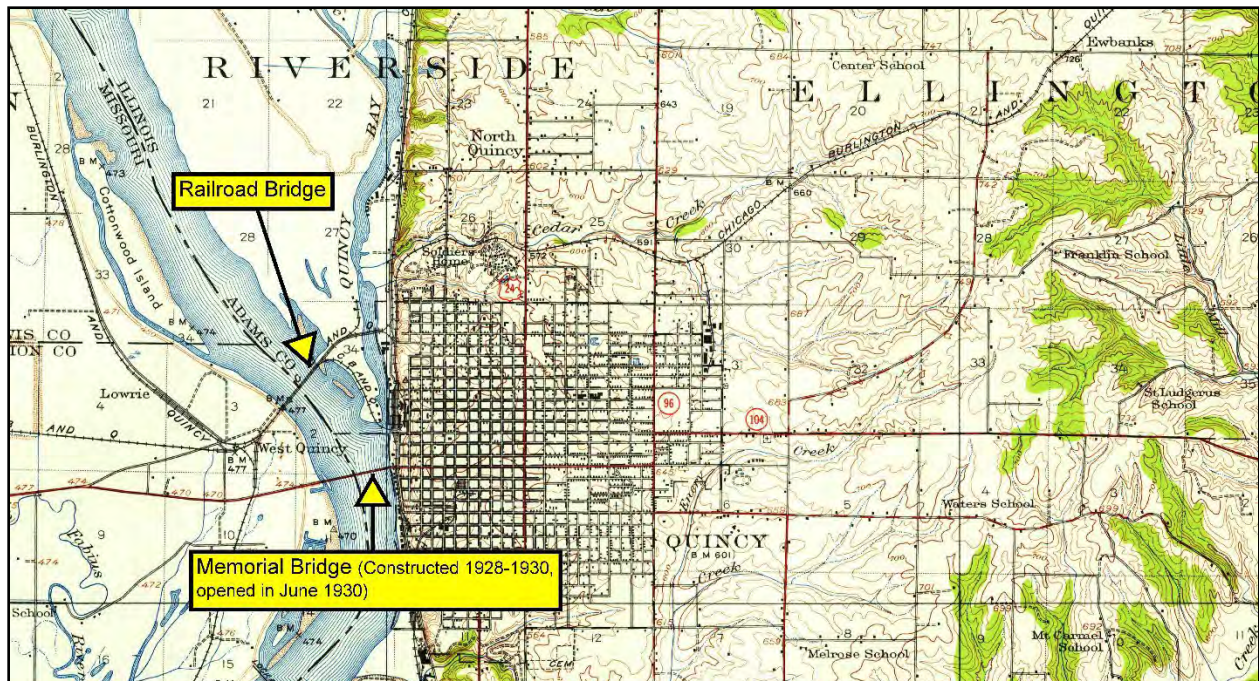


Figure 20: This 1944 map identifies the location of the then fourteen year old Memorial Bridge. Note the railroad bridge remains to the north (U.S. Geological Survey, *Quincy Quadrangle* [map] 1944, 1:62500, 15 Minute Series [Reston, VA: United States Department of the Interior, USGS, 1944]).

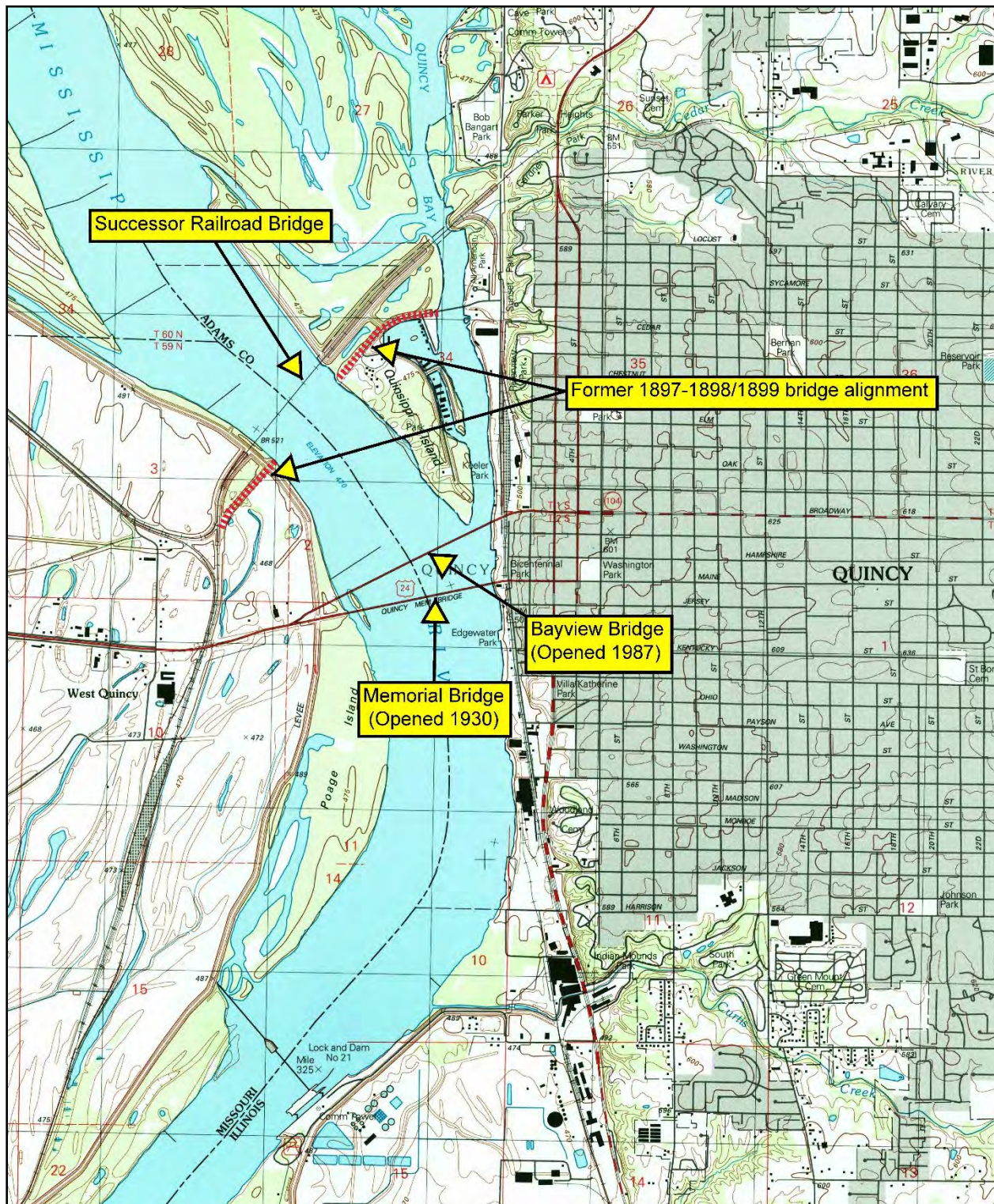


Figure 21: Located across the Mississippi River in 1996 were two vehicular bridges, the 1930 Memorial structure as well as the 1987 Bayview fabrication immediately to the north. A new railroad bridge was built immediately northwest of its predecessor, the alignment of the latter being noted in a dashed red line (U.S. Geological Survey, *Quincy West Quadrangle* [map] 1996, 1:24000, 7.5 Minute Series [Reston, VA: United States Department of the Interior, USGS, 1996]).



1938



1957

Figure 22: These pictures, taken nineteen years apart illustrate the bridge and its evolving setting. Note that the 1957 image is highlighted by the shadow that illustrates the structure's continuous top chord (Illinois Historic Aerial Photography, Image SA-16-1498, 15 July 1938 and Image SA-2T-115, 27 October 1957, Viewed on 09 December 2025 at <http://maps.isgs.illinois.edu/ilhap>).

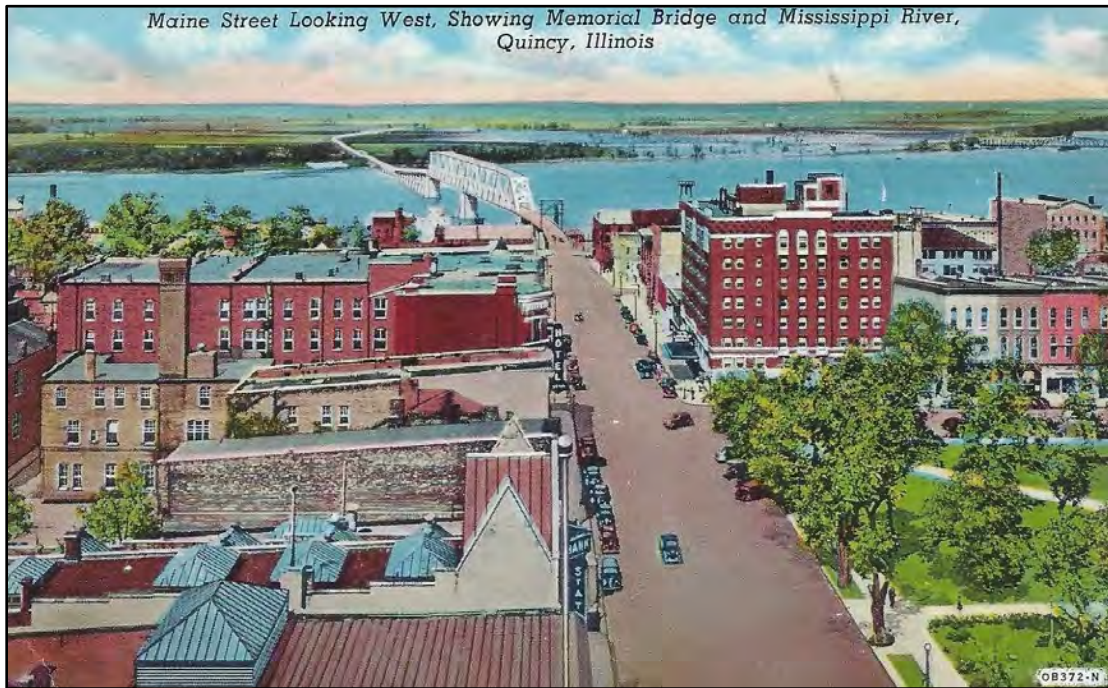


Figure 23: This perspective view is to the west. The bridge is immediately adjacent to downtown Quincy and crosses the Mississippi River to the west (“Main Street Looking West, Showing Memorial Bridge and Mississippi River, Quincy, Illinois,” Item #CB372-N [Curt Teich, Chicago; C.T. American Art, Post Marked 04 August 1948], Viewed at www.ebay.com on 08 December 2025).



Figure 24: View of Memorial Bridge to the west southwest from the east bank of the river (“New Soldiers Memorial Bridge Across Mississippi River, Quincy, Ill [Chas. E. Wetzel, Quincy, Illinois, C.T. American Art, Colored, Kurt Teich, Chicago, Post Marked on 21 November 1933], Viewed at www.ebay.com on 08 December 2025).

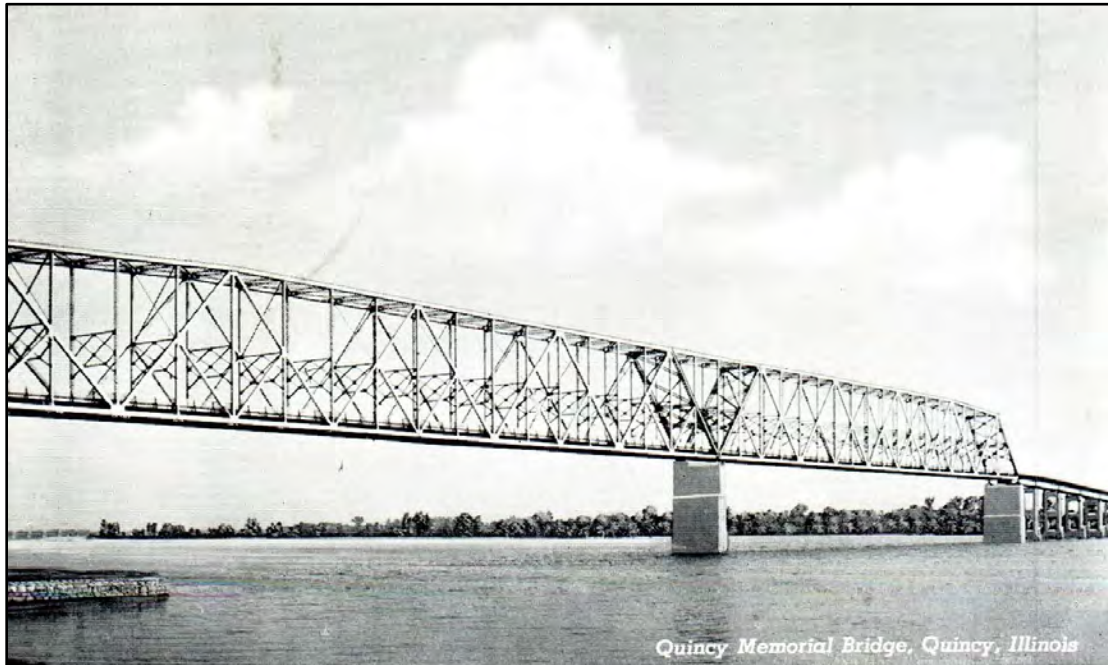


Figure 25: This view is to the southwest and similar to that shown in Figure 17 ("Quincy Memorial Bridge, Quincy, Illinois, Item #18120 [Curt Teigh, Chicago, C.T. American Art, Post Marked 1945], Viewed at www.ebay.com on 08 December 2025).

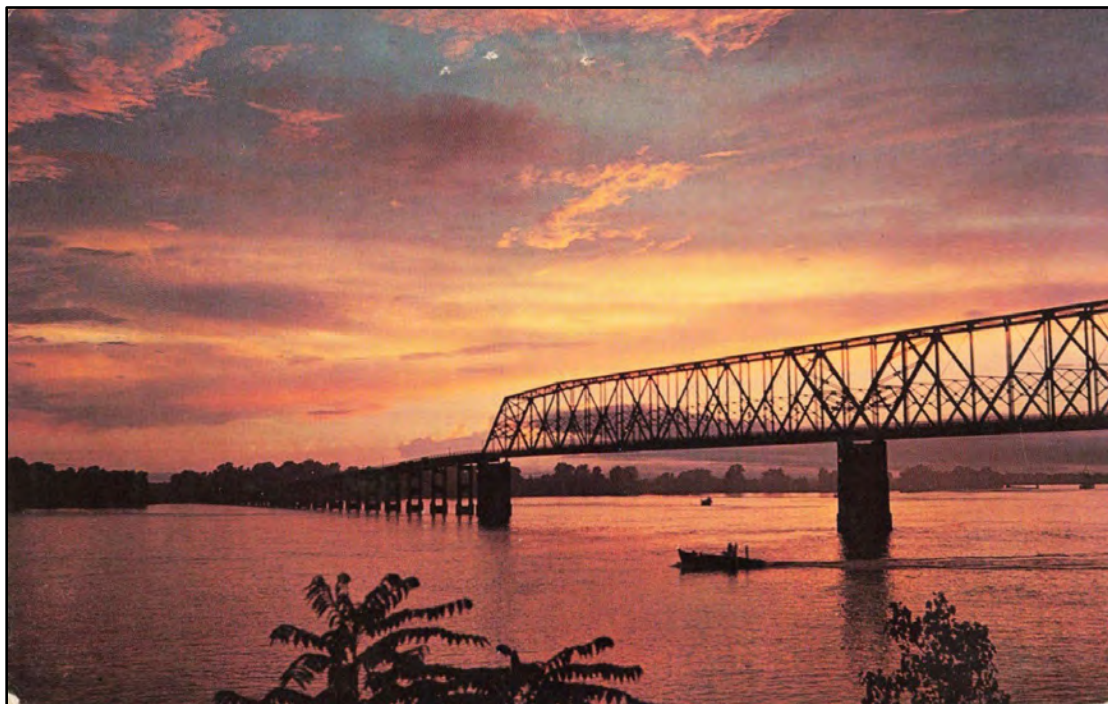


Figure 26: Viewed to the west northwest, this image is entitled "Sunset on the Mississippi River, Quincy, Illinois, As seen thru Memorial Bridge from one of Quincy's river front parks" (Ray E. White, 807 Broadway, Quincy, Illinois, copyright Ray E White, 1966), Viewed at www.ebay.com on 08 December 2025.

HISTORIC ILLINOIS ENGINEERING RECORD

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Over Mississippi River
City of Quincy
Adams County
Illinois

HIER No. -A-2025-1

Documentation: 50 Exterior Photographs (2020, 2021)
68 Data Pages
03 7.5 Minute USGS Maps (1925, 1944, 1996)

John N. Vogel, Ph.D., Associate Degree - Professional Photography, Photographer
Mike Smith, M.A. & John M. Lambert, M.A., Drone Operators (Photographs #1 - #12)

- | | |
|----------------------|--|
| HIER No. -A-2025-1.1 | VIEW TO NORTH. AERIAL PERSPECTIVE OF MEMORIAL BRIDGE AND ITS SETTING. BAYVIEW BRIDGE (1987) IN BACKGROUND. |
| HIER No. -A-2025-1.2 | VIEW TO NORTH. AERIAL PERSPECTIVE OF MEMORIAL BRIDGE TRUSS SPAN. BAYVIEW BRIDGE (1987) IN BACKGROUND. |
| HIER No. -A-2025-1.3 | VIEW TO NORTHWEST. AERIAL PERSPECTIVE OF MEMORIAL BRIDGE. BAYVIEW BRIDGE (1987) IN BACKGROUND. |
| HIER No. -A-2025-1.4 | VIEW TO SOUTHWEST. AERIAL PERSPECTIVE OF MEMORIAL BRIDGE. |
| HIER No. -A-2025-1.5 | VIEW TO SOUTH SOUTHWEST. AERIAL PERSPECTIVE OF MEMORIAL BRIDGE. BAYVIEW BRIDGE (1987) IN FOREGROUND. |
| HIER No. -A-2025-1.6 | VIEW TO SOUTH. AERIAL PERSPECTIVE OF CONTINUOUS TRUSS BRIDGE. BAYVIEW BRIDGE (1987) IN FOREGROUND. |
| HIER No. -A-2025-1.7 | VIEW TO SOUTHEAST. AERIAL PERSPECTIVE OF MEMORIAL BRIDGE AND ITS SETTING. BAYVIEW BRIDGE (1987) IN FOREGROUND. |

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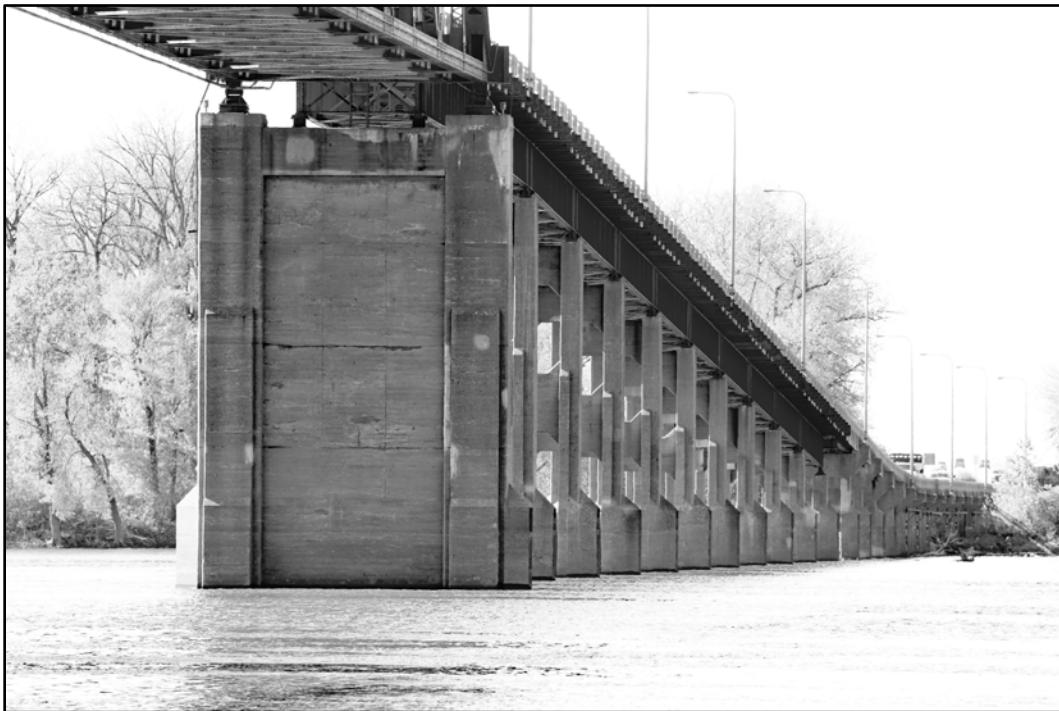


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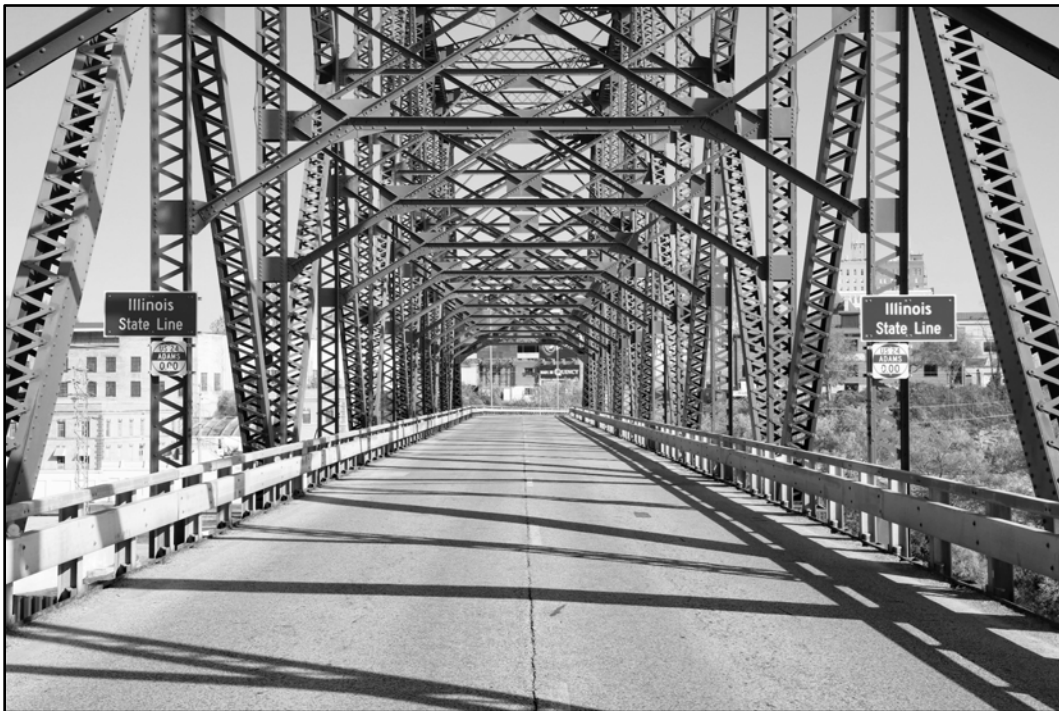


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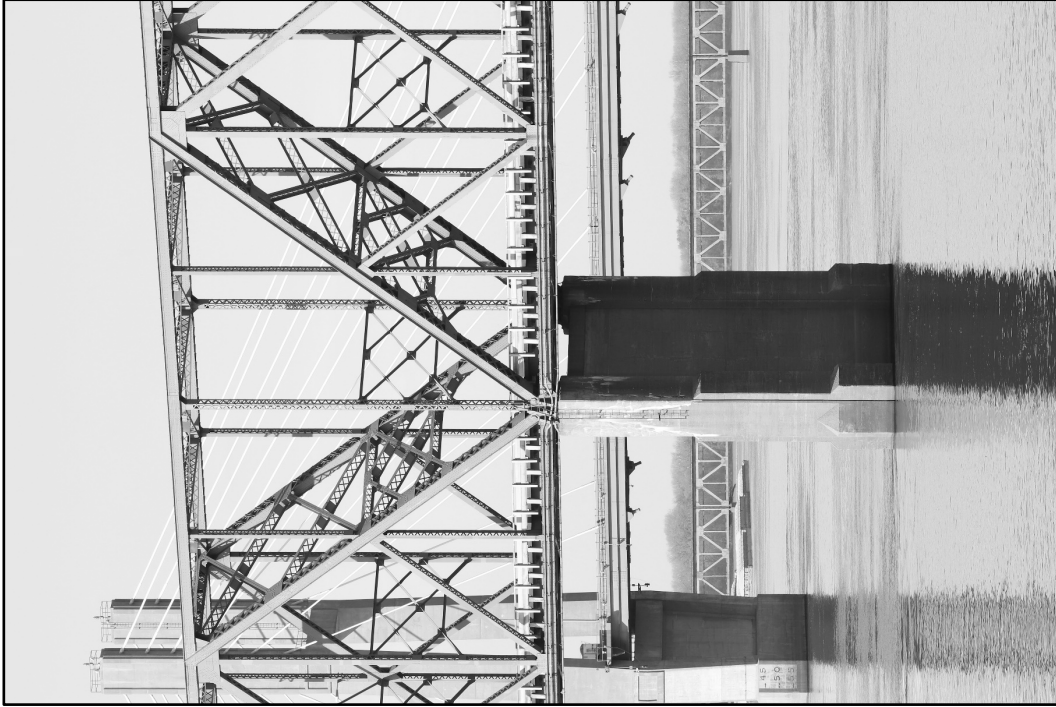


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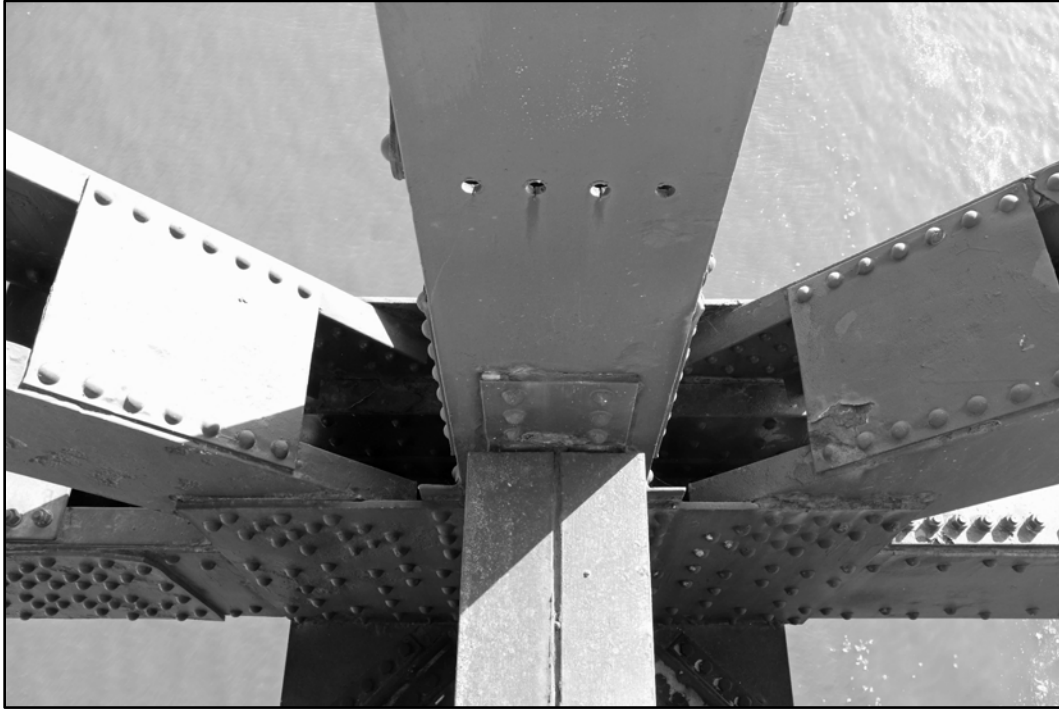


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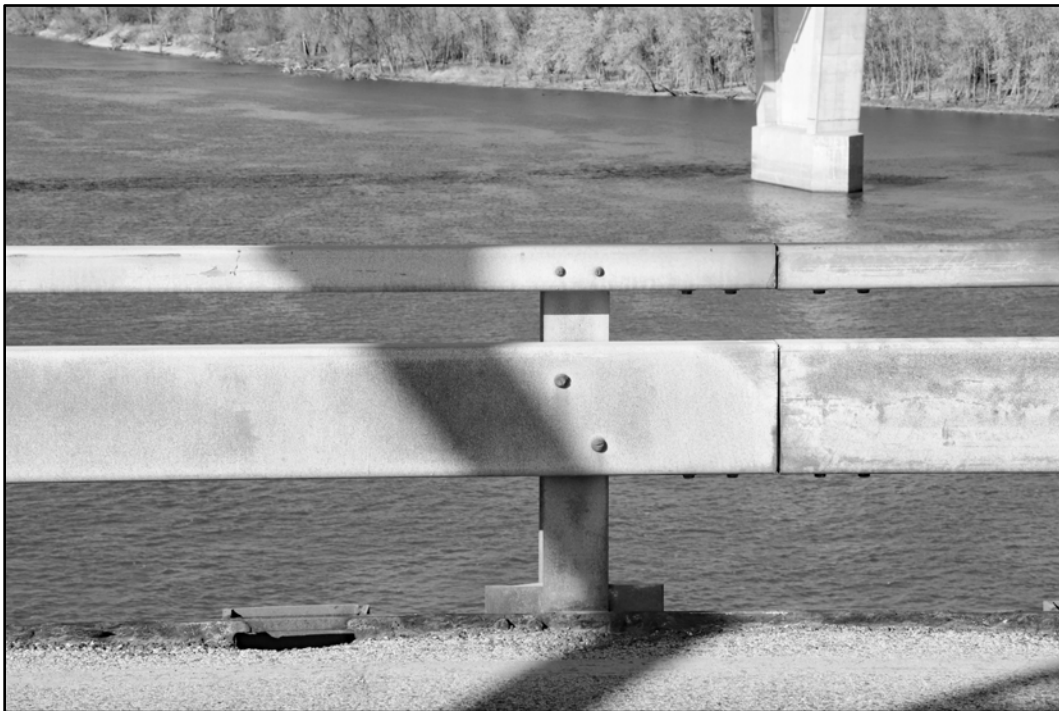


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