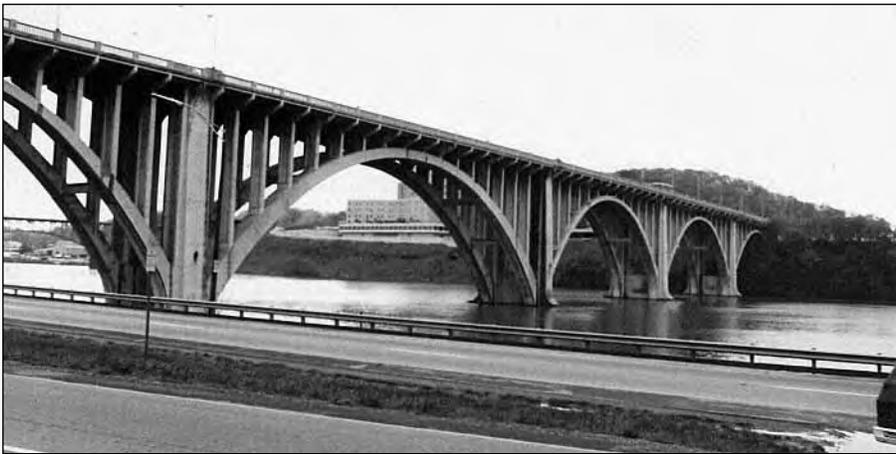
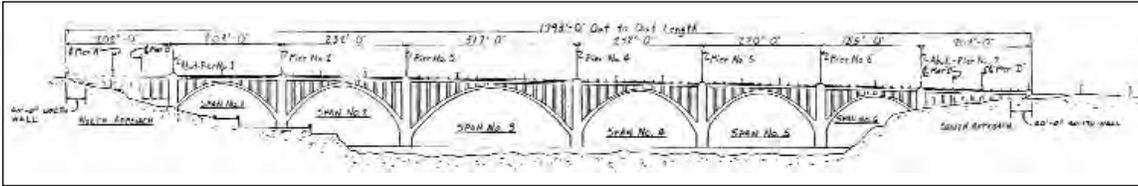


(#132) 47-SR033-06.72: Henley Street Bridge spanning the Tennessee River in downtown Knoxville in Knox County (Knoxville Quad, 147 NW).



Significant under Criterion A due to its associations with city planning efforts and under Criterion C as an outstanding open spandrel arch bridge design.

In 1923, the City of Knoxville selected a city manager and council form of government, and in a general reform movement typical of the City Beautiful movement, appointed several advisory boards. As a result, the city contracted with the planning consultant Harland Bartholomew and Associates of St. Louis to develop a comprehensive city plan that was completed in 1930. A major street plan for Knoxville, which the City Council adopted in 1927, was one element of this master plan. One of the major recommendations of this plan was a 54-foot wide bridge at Henley Street across the Tennessee River along with the widening and extension of Henley Street. The construction of this bridge was concurrent with much of the development of the Great Smoky Mountains National Park, and this bridge was on the main road many tourists would have used. A local newspaper article deemed it as the "gateway for millions who will turn their faces toward the Great Smokey [sic] Mountains National Park" (*Knoxville News Sentinel* 3 January 1932).

Controversy dogged the construction of the new bridge from the beginning. One of the earliest issues concerned whether the bridge should be of steel or concrete construction. Otto Roehl (formerly with the Steel and Roehl Bridge Company) was City Manager and he strongly favored concrete. The city first selected J. E. Griner and Company of Baltimore to build the new bridge, but Griner argued that a 36 foot bridge width was adequate. Debate raged for months over the width, and under a subsequent administration, the city hired a Chicago engineer to review plans for a 54-foot bridge. Based on his recommendation, the city chose in April 1930 a design by Marsh Engineering over that of the firm Harrington and Cortelyou, a decision primarily based on Marsh's center span design of structural steel covered with concrete.

James Barney Marsh (1856-1936) headed the Marsh Engineering Company of Des Moines, Iowa. After graduating in 1882 from Iowa State College of Agriculture and Mechanical Arts with a Bachelor of Mechanical Engineering degree, Marsh worked in the Des Moines office of the King Iron Bridge Company until about 1895. At King Iron, Marsh undertook a variety of jobs including design work, marketing metal truss bridges, and actual erection work. From 1887 to 1889, as he continued to work with King Iron, Marsh also worked as head of the Des Moines Office of the Kansas City Bridge and Iron Company. In the spring of 1896, Marsh formed his own company, the Marsh Bridge Company. In April of 1904, he incorporated it as the Marsh Bridge Company with himself as president and chief engineer. In 1909, Marsh reorganized the firm as the Marsh Engineering Company. In the early 1900s Marsh began to experiment with concrete arch bridges. From this work he began to specialize in reinforced concrete arch work and developed at least two patents for reinforced concrete arches, patent #1,035,026 in 1912 and patent #1,388,584 in 1921. Although Marsh did not work in the Tennessee area in the 1910s and early 1920s, his Rainbow Arch was widely constructed in the Mid-West and influenced other designers to build rainbow arches (Baldwin 1929; Iowa DOT 1981; Jochims 1980). It was this extensive experience and reputation with concrete designs that influenced the City of Knoxville to hire Marsh for the Henley Street Bridge project.

However, local opposition to Marsh, in part led by the *Knoxville News Sentinel*, continued. In July after a lengthy and bitter fight, the city hired local engineer L. M. Don as the supervising engineer, a position usually held by the designing firm (Marsh Engineering). The resident engineer was S. B. Goodsey. In another break from Marsh, in September, the city decided to erect a reinforced concrete center span, like the other spans, rather than use Marsh's steel and concrete design. Also in September, a councilman claimed that he had been offered a bribe, and by the time the bridge opened to traffic, a fellow councilman had been indicted on bribery charges.

Construction of the bridge began 30 September 1930, and the city held dedication ceremonies 2 January 1932. The city and county split the bridge cost of \$965,222. A bond issue from August 1928 funded the city's portion. Associated road improvements raised the total cost to \$1,149,000. The contractor for the bridge was Booth and Flinn of Pittsburgh (Bartholomew 1927; Bartholomew 1929; *Construction Methods* April 1932:16-19; Deaderick 1976:117; *Knoxville Journal* 28 January 1976, 28 March 1977; *Knoxville News-Sentinel* 16 April 20, 22, 24 September 1930, 2, 3 January 1932; McClung Photograph Collection).

The Henley Street Bridge is 1,793 feet long and contains six concrete open spandrel dual ribbed arches and six concrete deck girder spans, all on a concrete substructure. The arch spans are 203, 232, 317, 232, 220, and 185 feet in length. Lateral bracing connects the arch ribs. The spandrel ribs are plain vertical columns that form a "T-shape" at their intersection with the floor beams, creating a bracketed effect. The decorative treatment on the spindle railing, which has posts with a protruding circular motif above each spandrel column, enhances the visual verticality. While the piers are devoid of decorative designs, they do emphasize the vertical lines of the bridge through tapering molded lines. There are four traffic lanes with a curb-to-curb width of 54.4 feet; sidewalks and the railings increase the out-to-out width to 70.6 feet. The original light fixtures have been replaced.

The Tennessee Department of Transportation, in cooperation with the Federal Highway Administration, has scheduled this bridge for rehabilitation.