DESCRIPTIONS OF 15 CIVIL ENGINEERING FEATURES

The 15 civil engineering features that comprise this nomination package are discussed in this section of the nomination package. They are organized geographically by state and listed from east to west along Route 66.

Illinois and Missouri

Chain of Rocks Bridge (crossing Mississippi River)
The Chain of Rocks Bridge is listed on the National Register of Historic Places.

Source of the following photo and Overview is:
https://www.nps.gov/places/chain-of-rocks-bridge.htm#:~:text=The%20Chain%20of%20Rocks%20Bridge%20was%20listed%20in,MO%20and%20Illinois%203%20in%20Madison%20County%2C%20IL

NPS Photo courtesy of Rhys Martin

Overview of Chain of Rocks Bridge

Chain of Rocks Bridge is one of the more interesting bridges in America. It's hard to forget a 30-degree turn midway across a mile-long bridge more than 60 feet above the mighty Mississippi. For more than three decades, the bridge was a significant landmark for travelers driving Route 66.

The bridge's colorful name came from a 17-mile shoal, or series of rocky rapids, called the Chain of Rocks beginning just north of St. Louis. Multiple rock ledges just under the surface made this stretch of the Mississippi River extremely dangerous to navigate. In the 1960s, the Corps of Engineers built a low-water dam covering the Chain of Rocks. That's why you can't see them today. Back in 1929, at the time of the construction of the bridge, the Chain was a serious concern for boatmen.

A massive undertaking in its day, the Chain of Rocks Bridge had a projected cost of $1,250,000. The bridge was to be a straight, 40-foot wide roadway with five trusses forming 10 spans. Massive concrete piers standing 55 feet above the high-water mark were to support the structure. Plans called for a four-mile fill along the road leading to the bridge's north end.

All that proved true except for one major change--in direction. Riverboat men protested the planned bridge because it was to run near two water intake towers for the Chain of Rocks pumping station. Navigating the bridge piers and the towers at the same time, the river captains argued, would be extremely treacherous for vessels and barges. Besides, the initial straight line would have put the bridge over a section of the river where the bedrock was insufficient to support the weight of the piers. Either way, the bridge had to bend.

Construction started on both sides of the river simultaneously in 1927, and the piers were complete by August of 1928. A grand opening was planned for New Year's Day 1929. The Mississippi River had other plans. Floods and ice slowed the work, and the Chain of Rocks Bridge finally opened to traffic in July of 1929.

Then, as now, actual expenditures for construction often exceed projected costs. Chain of Rocks Bridge cost just over $2.5 million--twice its original estimate. Fortunately, the public got its money's worth. The bridge

had beautifully landscaped approaches. A park-like setting around a pool and a large, ornate toll booth anchored the Missouri end. On the Illinois side, 400 elm trees lined the approach. The bridge brought travelers into St. Louis by way of the picturesque Chain of Rocks amusement park on the Missouri hills overlooking the river. On a clear day, crossing the Chain of Rocks Bridge was a real pleasure. That pleasure became an official part of the Route 66 experience in 1936, when the highway was rerouted over the bridge.

During World War II, Chain of Rock's colorful red sections had to be painted green to make the bridge less visible from the air. At the same time, wartime gas rationing reduced traffic. To offset these costs, the City of Madison increased bridge tolls to 35 cents per car, with an additional five cents per passenger—a fee structure that sets on its head today's system of special high-speed lanes reserved for cars carrying more, not fewer, people.

In 1967, the New Chain of Rocks Bridge carrying Interstate 270 opened just 2,000 feet upstream of the old bridge, which closed in 1968. The bridge deteriorated, and during the 1970s, Army demolition teams considered blowing it up just for practice. In 1975, demolition seemed imminent. Fortunately for the bridge, a bad market saved the day. The value of scrap steel plummeted, making demolition no longer profitable. At that point, the Chain of Rocks Bridge entered 20 years of bridge limbo--too expensive to tear down, too narrow and outdated to carry modern vehicles. In 1980, film director John Carpenter used the gritty, rusting bridge as a site for his science fiction film, Escape from New York. Otherwise, the bridge was abandoned.

Today you might say that the Chain of Rocks Bridge has completed a historic cycle. Built at the beginning of America's love affair with the automobile, it is now a reflection of America's desire not to ride in cars so often. During the 1980s, greenways and pedestrian corridors became increasingly popular, and a group called Trailnet began cleanup and restoration of the bridge. Linked to more than 300 miles of trails on both sides of the river, the old Chain of Rocks Bridge reopened to the public as part of the Route 66 Bikeway in 1999.

Because the bridge has not been significantly altered over the years, a visit there today conveys a strong sense of time and place, an appreciation for early-20th-century bridge construction, and outstanding views of the wide Mississippi River. The Chain of Rocks Bridge was listed in the National Register of Historic Places in 2006.

1. **Historic Significance:** Chain of Rocks Bridge is listed on the National Register of Historic Places and has significance under National Register criteria A and C. Criterion A is that: Property is associated with events that have made a significant contribution to the broad patterns of our history. Criterion C is that: Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity who's components lack individual distinction.
   The Statement of Significance in the National Register Registration Form includes the following. The Chain of Rocks Bridge, which crosses the Mississippi River and connects St. Louis, Missouri, with Madison County, Illinois, is eligible for the National Register under Criteria A and C for its significance in transportation and engineering. Under Criterion A the Chain of Rocks Bridge reflects an important era in the nation's transportation history as a notable link in the US Route 66 corridor. Revered as the "Main Street of America," Route 66 is distinct in the American interstate system of the early twentieth century as one of the most well-traveled roads to the West.

The history of Route 66 reflects the country's social, economic, and cultural development during this era. The Chain of Rocks Bridge played a pivotal role in the highway's history. The bridge served as the widest river crossing along the route, and provided access to the largest city between the route's two termini. The Chain of Rocks Bridge continued to carry Route 66 traffic until the late 1960s. After a period of non-use, the bridge now serves as a pedestrian and bicycle corridor.

The Chain of Rocks Bridge is also eligible under Criterion C for its significance in engineering. The bridge's steel truss design is notable for its graceful, long-span trusses, which are cantilevered over tapered concrete piers. Over one mile in length, it is one of the longest bridges of this type in the country. The thirty degree bend in the middle of the structure also makes it quite distinctive. The original design of the bridge was altered to include this bend in an effort to better accommodate river navigation and to adequately maneuver the river's problematic geological formations. The Chain of Rocks Bridge is an excellent example of early highway design and construction. Its size, scale, and unique configuration make it an important resource of American transportation history. The Chain of Rocks Bridge is nationally significant and its period of significance extends from its construction date of 1929 to the fifty-year milestone of 1956 [50 years before National Register listing].

2. **Contributions:** The Chain of Rocks Bridge contributed to the development of the St. Louis region as described in the National Register Registration Form: 'In 1936, the Chain of Rocks bridge was designated part of US Route 66. In the St. Louis area, Route 66 was originally routed across the Mississippi and into the city over the McKinley Bridge. In 1934, the route was changed to the MacArthur Bridge. Each of these corridors channeled traffic into St. Louis's warehouse district. Both options resulted in congested downtown traffic, so the highway was rerouted a third time in 1936 to cross over the Chain of Rocks Bridge. This was a much preferred course as it brought travelers into the city from the north."

3. **Uniqueness:** The Statement of Significance in the National Register Registration Form includes the following. The Chain of Rocks Bridge was constructed in the late 1920s to help alleviate the rising traffic congestion across the Mississippi River. The sixth vehicular bridge to be built over the Mississippi River in the area, the Chain of Rocks structure connected Madison County, Illinois, and northem St. Louis, Missouri. The bridge takes its name from a rocky area that extends across the river. Known as the Chain of Rocks, this natural formation often made river navigation troublesome. St. Louis engineer Baxter L. Brown designed the structure, which was to cost $1.25 million. Brown's design called for a straight roadway with five continuous, rigid-connected trusses forming ten spans. Massive concrete piers supported the structure and stood approximately fifty-five feet above the high water mark. Approaches on both ends were to consist of simple trusses with the north end having a four-mile long fill.

   Brown's design for the bridge had to be slightly altered, however, due to the surrounding terrain and issues with existing structures. The bridge was to be built near the Chain of Rocks water pumping station, and its proposed location was upstream from two existing water intake towers associated with the station. Navigating around both the bridge and the tower would make river travel through the area difficult, and after riverboatmen strongly protested the plan, the War Department ordered the configuration of the bridge to be changed. Piers were repositioned to align with the water intake towers, thus easing navigation of barges and other vessels through the river's shoal area. In addition, the initial straight alignment would have put the bridge in a location where there was not sufficient bedrock to support it. The new design featured a thirty-degree bend in the road at a pier in mid-river [as shown in the photo at the beginning of this Chain of Rocks Bridge description].

4. **Date of original construction:** Constructed 1927 to 1929
   1936 – Route 66 routed over the bridge
   1968 – closed to vehicular traffic
   1999 – reopened to pedestrian and bicycle traffic
5. **Names of key engineers**: Designed by Baxter L. Brown.
6. **Photographs:** Included above.
7. **Additional documentation**: National Register of Historic Places Registration Form. Available at: https://catalog.archives.gov/id/28891353
8. **References:**

Cassity, Michael. "Route 66 Corridor, National Historic Context Study." Route 66 Corridor Preservation Program, National Trails System Office-Intermountain Region, National Park Service, Santa Fe, New Mexico, 2004.

Fraser, Clayton B. "Chain of Rocks Bridge." Historic American Engineering Record Inventory, Missouri Historic Bridge Inventory, Missouri Highway and Transportation Department, August 1994.

"The Old Chain of Rocks Bridge" Trailnet Brochure.

Seratt, Dorothy and Terri Rybum-Lamont, Route 66 Association of Illinois. Multiple Property Documentation Form, "Historic and Architectural Resources of Route 66 Through Illinois." 1997.

Location: 10820 Riverview Drive, St. Louis, MO 63137 38 45 51.8 N 90 10 52.9 W
Chain of Rocks Bridge parallels Interstate 270 along Chain of Rocks Rd. between Riverview Dr. in St. Louis, MO and Illinois Route 3 in Madison County, IL. Free parking is available in Illinois at the bridge entrance on Chain of Rocks Road and at Chain of Rocks Park, south of the bridge on Riverview Drive on the St. Louis side.

Local and vicinity maps: