

# HAER INVENTORY

Missouri Historic Bridge Inventory

**NAME(S) OF STRUCTURE**

Steel's Fish Trap Bridge  
MHTD: 351000.5

SAL31

**DATE(S) OF CONSTRUCTION**

1875 / 1882

**LOCATION**

County Road 351 over Salt Fork; S13, T49N, R20W  
9.9 miles southeast of Marshall; Saline County, Missouri

**USE (ORIGINAL / CURRENT)**

roadway bridge / roadway bridge

**RATING** NRHP eligible (score: 76)

**CONDITION**

fair

**OWNER**

Saline County

span number:	1	superstructure:	wrought iron, 10-panel, bolt-connected bowstring through arch-truss
span length:	100.0'	substructure:	stone masonry abutments and wingwalls
total length:	100.0'	floor/decking:	corrugated steel plate deck
roadway wdt.:	14.0'	other features:	upper chord: 2 channels with cover plate and double lacing; lower chord: 2 rectangular eyebars; vertical: star iron; diagonal: round rods with threaded ends; lateral bracing: round rod with threaded ends; strut: iron tube; floor beam: 2 channels with I-beams extended to star iron outriders; guardrail: 1 channel; chiseled into stone abutment: H. Murphy; chiseled into other stone abutment: 1875

Lacking the funds to build permanent bridges over larger rivers such as the Salt Fork and Blackwater, Saline County in its formative years licensed the operation of toll ferries during the 1820s, 1830s and 1840s. The Arrow Rock ferry across the Missouri River was clearly the region's earliest. Established in 1817 as the first ferry across the Missouri west of Franklin, it proved pivotal in the routing of the Santa Fe Trail through the county. In 1833 the county court authorized Richard Marshall to operate a ferry across the Blackwater at the mouth of Salt Fork. Other ferries and fords, notably the Hunt's Ferry across the Blackwater and the Jonesboro Ferry across Salt Fork, developed with need.

By the 1840s, however, it had become apparent that the ferries made poor river crossings and that permanent bridges were necessary for the developing road system. In May 1843 the court authorized construction of the county's first major bridge over the Salt Fork at Jonesboro. Completed two years later, the timber span lacked a wooden sheathing to protect the structural members. Leaving the superstructure exposed did not pose a serious threat to the small-scale timber pile spans, which rarely lasted long enough to suffer damage by rain and snow. But more complex and expensive timber trusses, left open to the weather, proved vulnerable to deterioration in their chord connections. The Jonesboro Bridge lasted only nine years before it needed replacement. For this reason, the county began covering its wooden trusses with shingle roofs and plank siding in the early 1850s. Structures such as the new Jonesboro Bridge [1854] and Kiser Bridge [1854] over Salt Fork and the Napton Bridge [1855] and Marshall Bridge [1856] over the Blackwater featured timber/iron Howe truss superstructures with wood housings.

Throughout the 1850s and 1860s, Saline County built only timber and timber/iron combination bridges at the major crossings. In the early 1870s, however, the court began contracting for all-iron structures as a more durable alternative to wood construction. Two of

these earliest iron trusses were an 80-foot span across Salt Fork at Walker's Ford and a 60-foot span across Salt Fork on the Marshall-Miami Road, both erected in 1875 by Farnsworth and Eaves of Kansas City. In the early 1880s the county began replacing some of its earliest covered bridges with iron spans. The Steel's Fish Trap Bridge is one of these replacement structures. The original bridge at this crossing southeast of Marshall was built in 1875. That February the Saline County Court appropriated funds, in the amount of \$1600.00, to build a bridge across the Salt Fork Creek at Steel's Trap, as petitioned by G.A. Munel and others. The court at that time appointed the county road commissioner to prepare the plans and specifications for the structure. The bridge contract was awarded a month later to W.L. Smiley for \$1550.00. After construction was underway in August, George W. Latimer, the Saline County Bridge Commissioner, reported to the road and bridge commission that "a portion of the masonry (fell) short of specs in some unimportant particulars." Nonetheless, the court accepted the bridge as complete, paying Smiley \$1507.50 for the masonry work and \$1550.00 for the combination truss superstructure.

It is not known whether the original bridge here was sheathed with siding. Seven years after its completion, the county began planning for its replacement—an indicator of either calamity or poor construction. The Missouri Valley Bridge and Iron Company of Leavenworth, Kansas, placed an \$880.00 bid in October 1882 to erect the replacement superstructure: a 100-foot wrought iron bowstring arch-truss using the firm's patented configuration. Since its 1882 completion, the Steel's Fish Trap Bridge continues to carry traffic in essentially unaltered condition.

The bowstring arch-truss was the iron span of choice for Missouri counties in the late 1860s and 1870s. Marketed extensively throughout the Midwest by such industry giants as the King Iron Bridge and Manufacturing Company, the Wrought Iron Bridge Company and the Missouri Valley Bridge and Iron Company, these often-patented bridge forms featured a wide range of span lengths, economical fabrication cost and relatively quick erection. The proliferation of the bowstring corresponded with the initial development of Missouri's road system. As a result, perhaps thousands of these prototypical iron spans were erected throughout the state.

The bowstring had some rather severe structural flaws, however, relating primarily to lateral stability of the arches, and it was largely superseded by the pin-connected truss in the early 1880s. Despite this, some bowstrings were still erected in Missouri in the 1880s, although the number dwindled precipitously by the decade's end. Through subsequent attrition, almost all of Missouri's bowstrings have since been replaced and demolished. Now only a half-dozen remain in place. With its excellent degree of physical integrity, the Steel's Fish Creek Bridge is both historically and technologically significant as one of the last remaining examples in the state of what was once a mainstay structural type.