

McDaniel Memorial Bridge

SALI03

GENERAL DATA

structure no.:	K 999R	city/town:	Miami
county:	Saline / Carroll	feature inters.:	Missouri River
		cadastral grid:	S11, T52N, R21W
		highway route:	State Highway 41
		highway distr.:	2
		current owner:	Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, rigid-connected cantilever through truss spans; five steel stringer approach spans; three deck truss approach spans

substructure: concrete abutments and piers

span number:	7	condition:	good
span length:	475.0'	alterations:	deck replaced, 1983
total length:	2072.0'	floor/decking :	concrete deck over steel stringers
roadway width:	23.0'	other features:	upper chord, lower chord, and inclined end posts: 2 built-up channels with cover plate and double lacing; vertical: 2 channels with lacing, 4 angles with batten plates; diagonal: 2 channels with double lacing, 4 angles with batten plates; lateral bracing: 2 angles with lacing; strut: 4 angles with lacing and braces; floor beam: steel I-beam; guardrail: 2 channels; upper builder's plate text: Federal Emergency Administration of Public Works; Franklin D. Roosevelt, President of the United States; Harold L. Ickes, Administrator of Public Works; McDaniel Memorial Bridge; 1939; lower builder's plate text: McDaniel Memorial Bridge; built by Saline County Missouri with the cooperation of Missouri State Highway Commission; county court of Saline County, Robert L. Hyatt - presiding judge, T. M. Smith - judge, O. Boyd Davis - judge; Sverdrup and Parcel, consulting engineers; Massman Construction Co., general contractors; 1939

HISTORICAL DATA

erection date:	1939
erection cost:	\$771,517.00
designer:	Sverdrup and Parcel, Consulting Engineers, St. Louis MO
fabricator :	Inland Steel Company, East Chicago IN
contractor :	Massman Construction Company, Kansas City MO

McDaniel Memorial Bridge

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal (Structure Number K-999R); Carroll County Court Record, Book 5: pages 527-539, 595 (5 July 1938 - 20 October 1938); Book 6: pages 1-16 (December 1938) - located at Carroll County Courthouse, Carrollton MO; **History of Carroll County** (Carrollton MO: Carroll County Historical Society, 1968), page 29; **Bridge Over Missouri River at Miami, Missouri**, P.W.A. Docket Missouri 1075-F, Contract No. 2, Saline County, Missouri (St. Louis MO: Sverdrup and Parcel, Consulting Engineers, no date); **Bridges, Missouri River: Data, History and Laws**, U.S. Engineer Office, Kansas City, Missouri, 1933; field inspection by Clayton Fraser, 9 October 1991.

sign. rating: 72

evaluation: NRHP eligible (outstanding, large-scale example of steel truss construction, located on important great river crossing)

inventoried by: Clayton B. Fraser 14 October 1992

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

McDaniel Memorial Bridge
MHTD: K 999R

CARR03

DATE(S) OF CONSTRUCTION

1939

LOCATION

State Highway 41 over Missouri River; S11, T52N, R21W
Miami; Carroll County, Missouri

USE (ORIGINAL / CURRENT)

highway toll bridge / highway bridge

RATING NRHP 23.0 (score: 2072.0)

CONDITION

good

OWNER

Missouri Highway and Transportation Department

span number: 1; 2; 3

span length: 475.0'; 416.0';

305.0'

total length: 2072.0'

roadway wdt.: 23.0'

superstructure: three steel, rigid-connected cantilever through truss spans; five steel stringer approach spans; three deck truss approach spans

substructure: concrete abutments and piers

floor/decking: concrete deck over steel stringers

other features: upper chord, lower chord, and inclined end posts: 2 built-up channels with cover plate and double lacing; vertical: 2 channels with lacing, 4 angles with batten plates; diagonal: 2 channels with double lacing, 4 angles with batten plates; lateral bracing: 2 angles with lacing; strut: 4 angles with lacing and braces; floor beam: steel I-beam; guardrail: 2 channels; upper builder's plate text: **Federal Emergency Administration of Public Works; Franklin D. Roosevelt, President of the United States; Harold L. Ickes, Administrator of Public Works; McDaniel Memorial Bridge; 1939;** lower builder's plate text: **McDaniel Memorial Bridge; built by Saline County Missouri with the cooperation of Missouri State Highway Commission; county court of Saline County, Robert L. Hyatt - presiding judge, T. M. Smith - judge, O. Boyd Davis - judge; Sverdrup and Parcel, consulting engineers; Massman Construction Co., general contractors; 1939**

Although Saline County had been promoting construction of a highway bridge over the Missouri River at Miami for some time, the process that led to the bridge's actual building began early in 1938, when the Saline County Court applied for Congressional approval for the bridge. The authorization was given on June 16, and the Federal Emergency Administration of Public Works immediately offered to pay 45 percent of the project's cost, up to \$334,517.00. The county accepted the money and decided to sell toll revenue bridge bonds, totaling \$460,000.00, to raise its portion of the necessary funds (the bonds would be retired through toll collected from the bridge itself). On July 5, 1938, the county accepted an offer from Stifel, Nicolaus & Company, Inc., of St. Louis, to purchase all of the revenue bonds, thus effectively financing the county's financial obligation. The Missouri State Highway Commission also agreed to contribute a sum of \$125,000.00, to be used for payment of bonds and interest. The county hired St. Louis consulting engineers Sverdrup and Parcel to design the bridge. Sverdrup used a rigid-connected truss configuration similar to the one that the firm had employed on large-scale bridges at Nebraska City, Hannibal, Hermann and Gasconade, among others. As delineated by Sverdrup in 1938, the Miami Bridge consisted of three cantilevered through spans over the river's navigation channel, with a series of riveted deck truss and steel stringer

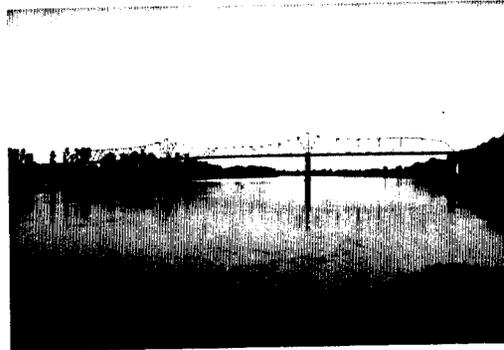
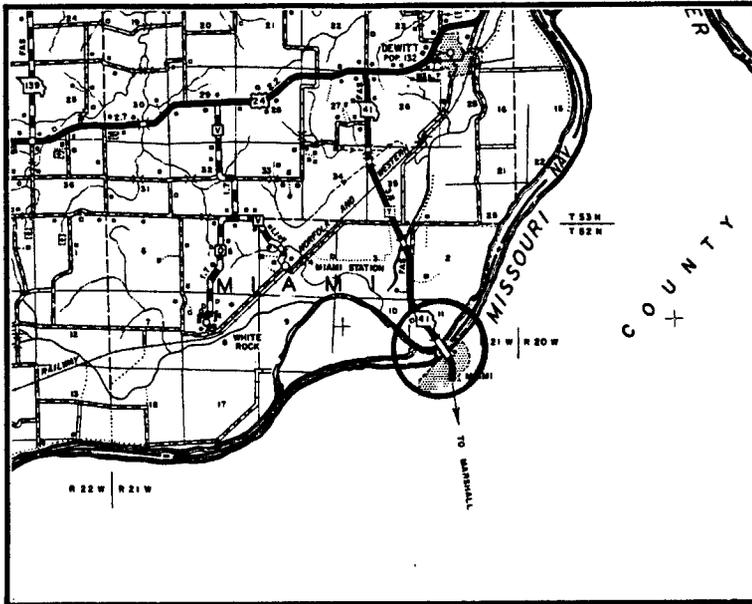
approach spans, all supported by concrete piers and abutments. In early July, the county court approved Sverdrup's plans for the bridge and sent an application for approval to the Secretary of War in Washington, D.C. In mid-December 1938, Saline County then accepted a bid from the Massman Construction Company of Kansas City, Missouri, to construct the bridge for \$493,788.00. Work began almost immediately on the substructural excavation; on June 27, 1940, the Miami Bridge was opened to traffic. Since that time the Waverly Bridge has functioned in place, with the replacement of its original concrete deck with the present open steel grid in 1983-84 as the only serious alteration to its historic fabric.

Situated between the Waverly Bridge and the Glasgow Bridge, the Miami Bridge has not significantly altered traffic patterns in western Missouri. It has, however, functioned as a regionally important crossing of a major river for which crossings are relatively scarce. The Miami Bridge is perhaps more noteworthy as a superlative example of long-span truss construction. Employing rigid-connected Warren trusses that cantilever from the channel piers, the bridge is one of several such spans based on what Sverdrup and Parcel had developed as a trademark design. With its 475-foot main spans, the Miami Bridge fits well within the mainstream of great river highway bridge construction in Missouri.

NAME(S) OF STRUCTURE

Miami Bridge (McDaniel Memorial Bridge)

PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT
GENERAL HIGHWAY MAP

SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal (Structure Number K-999R); Carroll County Court Record, Book 5: pages 527-539, 595 (5 July 1938 - 20 October 1938); Book 6: pages 1-16 (December 1938) - located at Carroll County Courthouse, Carrollton MO; History of Carroll County (Carrollton MO: Carroll County Historical Society, 1968), page 29; Bridge Over Missouri River at Miami, Missouri, P.W.A. Docket Missouri 1075-F, Contract No. 2, Saline County, Missouri (St. Louis MO: Sverdrup and Parcel, Consulting Engineers, no date); Bridges, Missouri River: Data, History and Laws, U.S. Engineer Office, Kansas City, Missouri, 1933; field inspection by Clayton Fraser, 9 October 1991.

INVENTORIED BY

Clayton B. Fraser

AFFILIATION

Fraserdesign, Loveland CO

DATE

23 October 1992