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BENTON COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	MHTD	Bridge Name	Description	
BENT01	012000.3	Persimmon Fork Bridge	1- 24'	steel stringer
			1911	county work force
BENT02	021001.0	Flat Creek Bridge	1- 36'	riveted Warren pony truss
			1913	Kansas City Bridge Company
*BENT03	045000.2	County Line Bridge	1- 60'	pinned Pratt bedstead
			1907	Kansas City Bridge Company
*BENT04	079001.2	Culvert	2- 10'	**concrete arch culvert**
			c1930	
*BENT05	088001.6	Spangberg Ford Bridge	1- 48'	pinned Pratt bedstead
			1907	Kansas City Bridge Company
BENT06	093000.5	Barkers Creek Bridge	1- 48'	pinned Pratt bedstead
			1905	Kansas City Bridge Company
*BENT07	175000.1	Cole Camp Creek Bridge		(replaced)
BENT08	252000.4	Turkey Creek Bridge	1- 95'	pinned Pratt pony truss
			1904	Dildine Bridge Company
BENT09	356000.3	Bentonville Bridge	1- 80'	riveted Warren pony truss
			c1915	Kansas City Bridge Company
*BENT10	445500.2	Upper Bridge	1-**600'**	**steel cable suspension bridge**
			1928	Midland Erection Company; J.A. Dice

EXCLUDED:

Pratt pony truss
252000.4

Steel stringer / girder
004000.5 013000.1 015001.0 025001.2 028001.6 086001.0 195000.3
096000.1 097000.8 106002.4 115000.1 146000.5 148000.7 155000.6
191001.7 250001.5 254001.0 344002.2

Concrete girder
X 744

Concrete slab
Y 401 132000.8 138000.5 138000.6 140000.2 143002.0 144000.5
154001.0 161000.5 162000.1 172001.4 180002.5 203002.8 224000.3
224002.5 228001.0 235000.2 248001.2 253002.4 323000.1 325002.0
336001.4

BENTON COUNTY

EXCLUDED (cont.):

Concrete box culvert

H 773R	H 774	H 776	P 86	S 111	S 438	S 439
X 254	X 255	X 257	X 258	X 604	X 742	X 890
035000.8	357000.3					

Timber stringer
159000.8

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	0	9	0	0	9
Excluded	16	43	0	0	59
	16	52	0	0	68 structures

Persimmon Fork Bridge

BENT01

GENERAL DATA

structure no.: 012000.3
county: Benton

city/town: 6.2 miles southwest of Ionia
feature inters.: branch of Flat Creek
cadastral grid: S14/23, T43N, R23W
highway route: County Road 12
highway distr.: 5
current owner: Benton County

STRUCTURAL DATA

superstructure: steel stringer
substructure: concrete abutments and wingwalls

span number: 1
span length: 24.0'
total length: 25.0'
roadway width: 14.2'

condition: fair
alterations: unknown
floor/decking : concrete deck
other features: guardrail: none

HISTORICAL DATA

erection date: 1911
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: county work force

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 012000.3; Benton County Court Record, Book P, page 86 (27 September 1911), located at Benton County Courthouse, Warsaw MO.

sign. rating: 30
evaluation: NRHP non-eligible (undistinguished, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 26 February 1991

Flat Creek Bridge

BENT02

GENERAL DATA

structure no.:	021001.0	**city/town:**	1.6 miles southwest of Ionia
county:	Benton	**feature inters.:**	Flat Creek
		cadastral grid:	S16/21, T43N, R22W
		highway route:	County Road 21
		highway distr.:	5
		current owner:	Benton County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Warren pony truss, skewed
substructure: concrete abutments and wingwalls

span number:	1	**condition:**	fair
span length:	36.0'	**alterations:**	none
total length:	38.0'	**floor/decking :**	concrete deck over steel stringers
roadway width:	13.9'	**other features:**	guardrail: steel

HISTORICAL DATA

erection date: 1913
erection cost: $512.00 (superstructure)
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: county work force

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 021001.0; Benton County Court Record, Book P, page 394 (7 May 1913), page 456 (9 August 1913), located at Benton County Courthouse, Warsaw MO.

sign. rating: 61
evaluation: NRHP possibly eligible (well-preserved, atypically configured example of a standard truss type)

inventoried by: Clayton B. Fraser 26 February 1991

County Line Bridge

BENT03

GENERAL DATA

structure no.: 045000.2
county: Benton

city/town: 6.1 miles southwest of Cole Camp
feature inters.: Lake Creek
cadastral grid: S4, T43N, R20W
highway route: County Road 45
highway distr.: 5
current owner: Benton County

STRUCTURAL DATA

superstructure: steel, 4-panel, pin-connected Pratt truss-leg bedstead
substructure: steel bedstead legs with concrete abutments and wingwalls

span number: 1
span length: 60.0'
total length: 92.0'
roadway width: 14.0'

condition: fair
alterations: none
floor/decking : timber deck
other features: end post: 3 channels forming built-up H-column; top chord: 2 channels with cover and batten plates; lower chord: 2 looped square eyebars, 2 angles with batten plates; vertical: 4 angles with double lacing; diagonal: 1 or 2 looped square eyebars; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; steel guardrails

HISTORICAL DATA

erection date: 1907
erection cost: $998.00
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 045000.2; Benton County Court Record, Book N, page 463 (10 May 1907), page 530 (9 August 1907), located at Benton County Courthouse, Warsaw MO.

sign. rating: 46
evaluation: NRHP non-eligible (well preserved, but typically configured example of a common structural type)

inventoried by: Clayton B. Fraser 26 February 1991

Culvert

BENT04

GENERAL DATA

structure no.: 079001.2
county: Benton

city/town: 2.8 miles southwest of Ionia
feature inters.: South Flat Creek
cadastral grid: S27/34, T43N, R22W
highway route: County Road 79
highway distr.: 5
current owner: Benton County

STRUCTURAL DATA

superstructure: concrete arch culvert
substructure: concrete abutments, wingwalls and pier

span number: 2
span length: 10.0'
total length: 24.0'
roadway width: 12.3'

condition: fair
alterations: guardrails removed; concrete extensively patched
floor/decking : concrete deck over earth fill
other features: guardrail: steel pipe

HISTORICAL DATA

erection date: c1930
erection cost: unknown
designer: unknown
fabricator : none
contractor: county work force (probable)

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 079001.2; field inspection by Clayton Fraser, 10 May 1990.

sign. rating: 13
evaluation: NRHP non-eligible (poorly preserved example of exceedingly common structural type)

inventoried by: Clayton B. Fraser 26 February 1991

Spangberg Ford Bridge

BENT05

GENERAL DATA

structure no.: 088001.6
county: Benton
city/town: 7.5 miles northwest of Lincoln
feature inters.: Brush Creek
cadastral grid: S35, T43N, R23W
highway route: County Road 88
highway distr.: 5
current owner: Benton County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt truss leg bedstead
substructure: steel bedstead legs with concrete abutments and wingwalls

span number: 1
span length: 48.0'
total length: 62.0'
roadway width: 14.0'
condition: fair
alterations: none
floor/decking : timber deck over railroad rail stringers
other features: end post: 3 channels forming built-up H-columns; top chord: 2 channels with cover and batten plates; lower chord: 2 looped square eyebars (in center panel), 2 angles with batten plates (in outer panels); vertical: 4 angles with double lacing; diagonal: 1 or 2 looped square eyebars; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: none

HISTORICAL DATA

erection date: 1907
erection cost: $798.00
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 088001.6; Benton County Court Record, Book N, page 463 (10 May 1907), page 530 (6 & 9 August 1907), located at Benton County Courthouse, Warsaw MO; field inspection by Clayton Fraser, 10 May 1990. (See HAER Inventory Form for additional information.)

sign. rating: 43
evaluation: NRHP non-eligible (typical example of common structural type)

inventoried by: Clayton B. Fraser 26 February 1991

Barkers Creek Bridge

BENT06

GENERAL DATA

structure no.: 093000.5
county: Benton

city/town: 11.2 miles northwest of Lincoln
feature inters.: Barkers Creek
cadastral grid: S19/30, T43N, R23W
highway route: County Road 93
highway distr.: 5
current owner: Benton County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt truss-leg bedstead
substructure: steel bedstead legs with concrete abutments and wingwalls

span number: 1
span length: 48.0'
total length: 79.0'
roadway width: 14.0'

condition: fair
alterations: none
floor/decking : concrete deck over steel stringers
other features: guardrail: steel

HISTORICAL DATA

erection date: 1905
erection cost: $670.00
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 093000.5; Benton County Court Record, Book M, page 600 (2 February 1905), Book N, page 1 (6 March 1905), pages 21-22 (8 April 1905), located at Benton County Courthouse, Warsaw MO.

sign. rating: 43
evaluation: NRHP non-eligible (typical example of common structural type)

inventoried by: Clayton B. Fraser 26 February 1991

Turkey Creek Bridge

BENT08

GENERAL DATA

structure no.: 252000.4
county: Benton

city/town: 6.8 miles southeast of Warsaw
feature inters.: Turkey Creek
cadastral grid: S28, T40N, R21W
highway route: County Road 252
highway distr.: 5
current owner: Benton County

STRUCTURAL DATA

superstructure: steel, 5-panel, pin-connected Pratt pony truss
substructure: concrete abutments, wingwalls and pier

span number: 1
span length: 95.0'
total length: 112.0'
roadway width: 12.0'

condition: fair
alterations: concrete piers added under two panel points
floor/decking : concrete deck over steel stringers
other features: steel guardrails

HISTORICAL DATA

erection date: 1903-04
erection cost: $795.00
designer: Dildine Bridge Company, Cameron MO
fabricator : unknown
contractor: Dildine Bridge Company, Cameron MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 252000.4; Benton County Court Record, Book L, page 606 (9 May 1902), Book M, page 128 (5 March 1903), page 162 (8 May 1903), page 379 (8 April 1904), located at Benton County Courthouse, Warsaw MO.

sign. rating: 35
evaluation: NRHP non-eligible (typical example of common structural type)

inventoried by: Clayton B. Fraser 26 February 1991

Bentonville Bridge

BENT09

GENERAL DATA

structure no.:	356000.3	**city/town:**	8.3 miles northeast of Fristoe
county:	Benton	**feature inters.:**	branch of Little Pomme de Terre River
		cadastral grid:	S35, T39N, R23W
		highway route:	County Road 356
		highway distr.:	5
		current owner:	Benton County

STRUCTURAL DATA

superstructure: steel, 5-panel, rigid-connected Warren pony truss
substructure: concrete abutments and wingwalls

span number:	1	**condition:**	fair
span length:	80.0'	**alterations:**	unknown
total length:	80.0'	**floor/decking :**	timber deck
roadway width:	12.2'	**other features:**	guardrail: none

HISTORICAL DATA

erection date: c1915
erection cost: unknown
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 356000.3.

sign. rating: 40
evaluation: NRHP non-eligible (typical example of common structural type)

inventoried by: Clayton B. Fraser 26 February 1991

Upper Bridge

BENT10

GENERAL DATA

structure no.: 445500.2
county: Benton
city/town: Warsaw
feature inters.: Osage River
cadastral grid: S17, T40N, R22W
highway route: vacated county road
highway distr.: 5
current owner: Benton County

STRUCTURAL DATA

superstructure: wire cable suspension bridge
substructure: concrete abutments, tower pedestals and cable deadmen

span number: 1
span length: 600.0'
total length: 600.0'
roadway width: 12.0'
condition: good
alterations: maintenance-related repair and replacement of parts; bridge closed to traffic, 1979
floor/decking : timber deck over steel stringers
other features: steel tower column: 2 channels with cover plate and lacing (tower anchor-bolted to concrete pedestal); tower strut: 2 channels with batten plates; cable / suspender: parallel strand steel wires; cable cradle: cast steel or iron; floor beam: I beam; lateral bracing: 1 angle; guardrail: 2 channels with chain-link fencing

HISTORICAL DATA

erection date: 1928
erection cost: unknown
designer: Kansas City Bridge Company; J.A. Dice
fabricator : Illinois Steel Company, Chicago IL
contractor: Midland Erection Company, Kansas City MO; J.A. Dice, Warsaw MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 445500.2; Benton County Court Record, Book N, 8 February 1907, Book T, 28 March 1928, Book T, 2 August 1927, 7 September 1927, 3 & 4 October 1927, 8 October 1927, 28 March 1928, located at Benton County Courthouse, Warsaw MO; Robert Hayden, "Historical Resources Mitigation: Bridges over the Osage," report for U.S. Army Corps of Engineers, September 1980, pages 19-20; field inspection by Clayton Fraser, 10 May 1990.

sign. rating: 73
evaluation: NRHP eligible (outstanding example of engineered/vernacular bridge design)

inventoried by: Clayton B. Fraser 26 February 1991

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Flat Creek Bridge
MHTD: 021001.0

BENT02

DATE(S) OF CONSTRUCTION
1913

LOCATION
County Road 21 over Flat Creek; S16/21, T43N, R22W
1.6 miles southwest of Ionia; Benton County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 61)

CONDITION
fair

OWNER
Benton County

span number:	1	superstructure:	steel, 3-panel, rigid-connected Warren pony truss, skewed
span length:	36.0'	substructure:	concrete abutments and wingwalls
total length:	38.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	13.9'	other features:	guardrail: steel

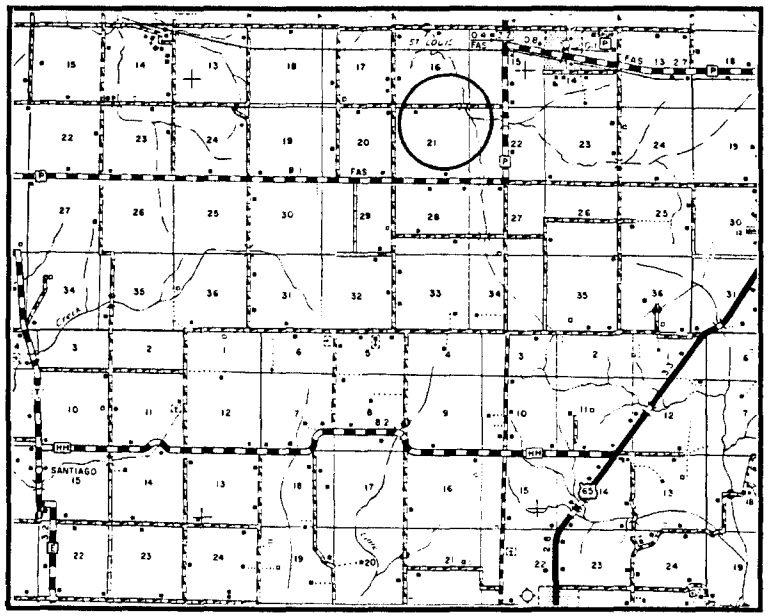
Located southwest of Ionia, this short-span steel truss carries a gravel-surfaced county road over Flat Creek. The Flat Creek Bridge is comprised of a single rigid-connected Warren pony truss, with a concrete deck and substructure. The bridge dates to 1913. That year the Benton County Court contracted with the Kansas City Bridge Company to supply and erect the structure for $512.00. Since its completion, the Flat Creek Bridge has carried vehicular traffic, with only maintenance-related repairs.

Patented in 1848 by Captain James Warren and Theobald Monzani, the Warren truss in its classic form features a web configuration that relies on simple triangulation for its rigidity. "The term Warren truss or Warren girder was originally applied only to the particular case of the Triangular truss in which the web triangles are all equilateral; but later writers generally use the name for any triangular truss," noted bridge engineer J.A.L. Waddell stated in his 1916 **Bridge Engineering**. "As there is no special advantage in making the web triangles equilateral, there does not appear to be any good raison d'etre for the use of the true Warren type." Warrens were built sparingly in the 19th century, a period in which the pin-connected Pratt dominated the bridge industry. After the turn of the century, however, rigid-connected Warren trusses began to supersede earlier pinned Pratt configurations for use on short- to intermediate-span highway bridges. The Flat Creek Bridge in Benton County is noteworthy as a well-preserved, relatively early, skewed example of the riveted Warren truss–a medium-span example of what would later become a mainstay structural type in the state.

NAME(S) OF STRUCTURE

Flat Creek 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 No. 021001.0; Benton County Court Record, Book P, page 394 (7 May 1913), page 456 (9 August 1913), located at Benton County Courthouse, Warsaw MO.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	26 February 1991

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Spangberg Ford Bridge
MHTD: 088001.6

BENT05

DATE(S) OF CONSTRUCTION
1907

LOCATION
county road over Brush Creek; S35, T43N, R23W
7.5 miles northwest of Lincoln; Benton County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 43)

CONDITION
fair

OWNER
Benton County

span number:	1	superstructure:	steel, 3-panel, pin-connected Pratt truss leg bedstead
span length:	48.0'	substructure:	steel bedstead legs with concrete abutments and wingwalls
total length:	62.0'	floor/decking:	timber deck over railroad rail stringers
roadway wdt.:	14.0'	other features:	end post: 3 channels forming built-up H-columns; top chord: 2 channels with cover and batten plates; lower chord: 2 looped square eyebars (in center panel), 2 angles with batten plates (in outer panels); vertical: 4 angles with double lacing; diagonal: 1 or 2 looped square eyebars; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: none

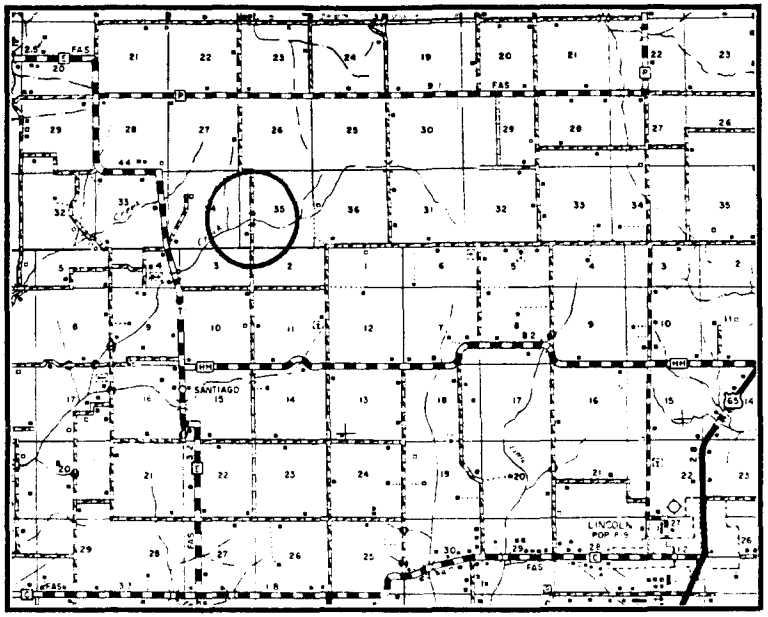
On August 6, 1907, the Benton County Court ordered County Road and Bridge Commissioner J.S. Kidwell to estimate the cost of a steel bridge at this crossing of Brush Creek northwest of Lincoln. Three days later adjacent landowner Earl Spangberg and others tendered a subscription of $325.00 and agreed to grade the approaches for the proposed bridge. That same day, the county court contracted with the Kansas City Bridge Company to fabricate and erect this and another small-scale steel span (**BENT03**). The contract cost of the Spangberg Bridge - a pin-connected bedstead - was $798.00. It was completed later that year and has carried traffic since, with only maintenance-related repairs.

In a bedstead truss, a single "leg" functioned as both end post and support at each corner of the structure. This combined super- and substructure reduced erection costs somewhat, but bedsteads were prey to flood and collision damage and suffered from inherent structural weaknesses relating to compression stress in the lower chords. Despite these weaknesses, numerous truss leg bedsteads were erected throughout Missouri in the late 1890s and early 1900s. Hundreds remain in place today - in fact, Missouri has probably more bedsteads than any other state. The Spangberg Ford Bridge is a well-preserved, though not particularly distinguished, example of this statewide bridge construction trend.

NAME(S) OF STRUCTURE

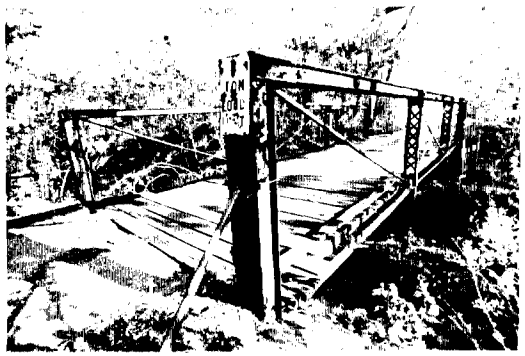
Spangberg Ford Bridge

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 No. 088001.6; Benton County Court Record, Book N, page 463 (10 May 1907), page 530 (6 & 9 August 1907), located at Benton County Courthouse, Warsaw, Missouri; field inspection by Clayton Fraser, 10 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	26 February 1990

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Upper Bridge
MHTD: 445500.2

BENT10

DATE(S) OF CONSTRUCTION
1928

LOCATION
county road over Osage River; S17, T40N, R22W
Warsaw; Benton County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / closed

RATING NRHP eligible (score: 73)

CONDITION
good

OWNER
Benton County

span number:	1	superstructure:	wire cable suspension bridge
span length:	600.0'	substructure:	concrete abutments, tower pedestals and cable deadmen
total length:	600.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	12.0'	other features:	steel tower column: 2 channels with cover plate and lacing (tower anchor-bolted to concrete pedestal); tower strut: 2 channels with batten plates; cable / suspender: parallel strand steel wires; cable cradle: cast steel or iron; floor beam: I beam; lateral bracing: 1 angle; guardrail: 2 channels with chain-link fencing

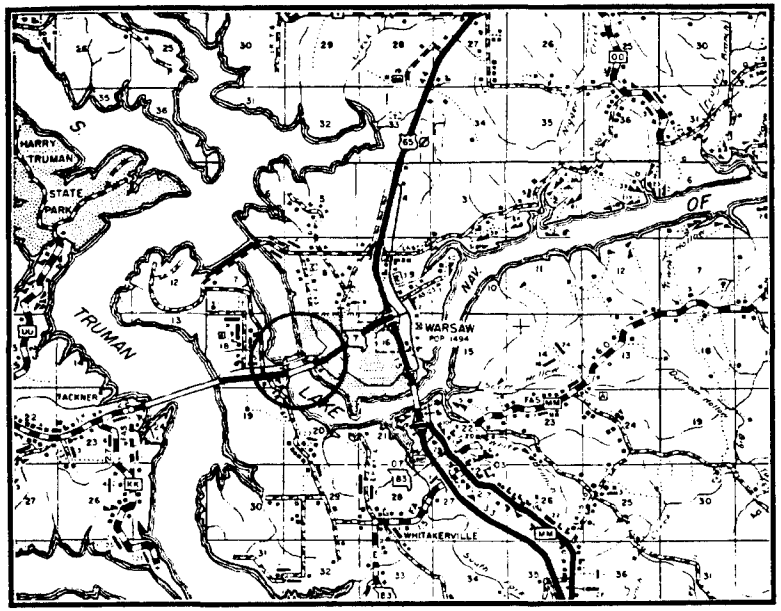
In 1904, J.A. Dice, local bridge contractor and Benton County road commissioner, formed the Warsaw Bridge Company with six others; the new holding company would build, and collect tolls from, a major suspension bridge over the Osage River at the west edge of Warsaw. Called the Upper Bridge to distinguish it from another nearby Osage River crossing, the structure was opened in September 1904. The Upper Bridge spanned 558 feet and cost $5500.00 to built. Like almost all of Dice's suspension bridges from the period, it consisted of two parallel-strand cables supported by timber towers. The Upper Bridge carried traffic until its destruction on June 27, 1924, by a cyclone. It was never rebuilt by the private bridge company. Instead, in August 1927 the Benton County Court ordered engineers E.W. Fristoe and W.H. Freeman of the Kansas City Bridge Company to prepare plans, specifications and estimates for a new structure here. In October the county contracted with the Midland Erection Company of Kansas City to reconstruct the bridge for $14,925.00.

Midland began work on the substructure for the towers soon thereafter. When the county court caught the Midland construction crew trying to pour footings for the west tower on mud, rather than bedrock, it ordered the work halted. According to historian Robert Hayden: "A subsequent meeting with the county officials and the company's president and attorney resulted with the latter two trying to leave town with the plans and specifications. The sheriff stopped them, demanding the papers which they finally turned over at gun point." In March 1928 Midland informed the county that it refused to work further on the project and that its bonding company would also not complete the work. The county then hired J.A. Dice to build the bridge. The extent that Dice used the original engineered design or his own empirical design is not known; the bridge appears to combine elements of both. The reconstructed Upper Bridge carried traffic until its replacement and closure in 1979, with only maintenance related repairs and replacement of some of its components. It is now being maintained in place as a pedestrian span.

NAME(S) OF STRUCTURE

Upper 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 No. 445500.2; Benton County Court Record, Book N, 8 February 1907, Book T, 28 March 1928, Book T, 2 August 1927, 7 September 1927, 3 & 4 October 1927, 8 October 1927, 28 March 1928, located at Benton County Courthouse, Warsaw, Missouri; Robert Hayden, "Historical Resources Mitigation: Bridges over the Osage," report for U.S. Army Corps of Engineers, September 1980, pages 19-20; field inspection by Clayton Fraser, 10 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	26 February 1990

Ten suspension bridges built by Missouri bridge builder J.A. Dice remain in place in central Missouri. As a group, these spans comprise the state's most important examples of vernacular bridge construction, designed and built without benefit of detailed structural analysis or computation. The Upper Bridge is distinguished as the longest and one of the best-preserved among them. Moreover, its checkered history provides an illustration of the sometimes uneasy relationship between engineered and empirical design in civil engineering. A well-preserved example of an esoteric structural type - the best remaining of Dice's suspension bridges - the Upper Bridge is among Missouri's most important early vehicular spans.

BOONE COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	MHTD	Bridge Name	Description
*BOON01	008002.0	Butler Bridge	1-100' **pinned Pratt through truss** **1905** Missouri B&I Co., St. Louis
*BOON02	285000.7	County Line Bridge	1- 40' pinned Pratt bedstead **1904** Canton Bridge Co., Canton OH
BOON03	385001.1	Vaughn Bridge	1- 95' **pinned Pratt through truss** **1910** Stupp Brothers B&I Company
*BOON04	389002.8	County Line Bridge	1- 90' **pinned Pratt through truss** **1909** Missouri Bridge and Iron Co.
*BOON05	401000.4	Hart Creek Bridge	1- 80' **rivet 2-angle Camelback pony** c1930
*BOON06	093000.7	Moon Valley Bridge	1-**170'** **pinned Parker through truss** **1906** Kansas City Bridge Company
*BOON07	093000.8	Hinkson Creek Bridge	1-103' **pinned Pratt through truss** **1888** H.W. Sebastian Bridge Co.
*BOON08	093000.9	Rock Quarry Bridge	1-103' pinned Pratt through truss c**1905**

EXCLUDED:

Pratt pony truss
227001.4

Warren pony truss
033000.6

Lattice bedstead
286001.3

Steel stringer/girder
S 352 013000.2 093000.3 093001.0 093001.4 106002.3 212000.1
331000.4

Concrete girder
G 588A G 738 G 739 G 740 G 741R H 195 H 198
H 199 H 803R L 264R 010009.7

Concrete slab
G 589 G 742 H 196 H 197 H 219

Concrete box culvert
G 591R G 768R H 228 L 330R S 350 S 680 S 681
T 404 T 632 X 585 X 749 010030.0

BOONE COUNTY

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	0	8	0	0	8
Excluded	29	12	0	0	41
	29	20	0	0	49 structures

Butler Bridge

BOON01

GENERAL DATA

structure no.: 008002.0
county: Boone
city/town: 2.3 miles east of Harrisburg
feature inters.: Perche Creek
cadastral grid: S7, T50N, R13W
highway route: County Road 10
highway distr.: 5
current owner: Boone County

STRUCTURAL DATA

superstructure: steel, 6-panel, pin-connected Pratt through truss
substructure: stone abutments and wingwalls

span number: 1
span length: 100.0'
total length: 105.0'
roadway width: 12.0'
condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing (2 looped square eyebars at hip); diagonal: 2 looped rectangular eyebars; counter: 1 or 2 round eyerods with turnbuckles; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical (with newer I-beam welded underneath); guardrail: timber

HISTORICAL DATA

erection date: 1905
erection cost: $1495.00 (superstructure cost)
designer: Missouri Bridge and Iron Company, St. Louis MO
fabricator : Missouri Bridge and Iron Company, St. Louis MO; Cambria Steel Company, Pittsburgh PA
contractor: Missouri Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 008002.0; Boone County Court Record, Book X: page 114 (6 July 1891), page 146 (5 August 1891), page 179 (9 August 1891), page 194 (2 November 1891), page 199 (7 December 1891); Book 3: page 395 (11 May 1905), page 546 (4 January 1906), located at the Boone County Courthouse, Columbia MO; field inspection by Clayton Fraser, 16 July 1992.

sign. rating: 43
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

County Line Bridge

BOON02

GENERAL DATA

structure no.: 285000.7
county: Boone
city/town: 12.5 miles northeast of Columbia
feature inters.: Cedar Creek
cadastral grid: S10, T49N, R11W
highway route: County Road 10
highway distr.: 5
current owner: Boone County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt truss-leg bedstead, with steel stringer approach span
substructure: steel truss-leg pier, with timber back- and wingwalls

span number: 1
span length: 40.0'
total length: 52.0'
roadway width: 11.0'
condition: fair
alterations: backwalls recently replaced; bridge closed
floor/decking : timber deck over steel stringers
other features: upper chord and upright end post: 2 channels with cover and batten plates; lower chord: 2 looped rectangular eyebars, 2 angles with batten plates; vertical: 4 angles with lacing; diagonal: 2 looped square eyebars; counter: looped eyebar with turnbuckle; lateral bracing: square eyebar with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles with fencing added; cast iron hip blocks

HISTORICAL DATA

erection date: 1904
erection cost: $975.00
designer: Canton Bridge Company, Canton OH
fabricator : Canton Bridge Company, Canton OH;
Cambria Steel Company, Pittsburgh PA
contractor: Canton Bridge Company, Canton OH

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 285000.7; Callaway County Court Record, Book 31: page 78 (7 December 1903), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser and Sheila Bricher-Wade, 8 November 1990.

sign. rating: 39
evaluation: NRHP non-eligible (typical example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Vaughn Bridge

BOON03

GENERAL DATA

structure no.:	385001.1	**city/town:**	5.0 miles southeast of Ashland
county:	Boone	**feature inters.:**	Cedar Creek
		cadastral grid:	S31, T46N, R11W
		highway route:	County Road 10
		highway distr.:	5
		current owner:	Boone County

STRUCTURAL DATA

superstructure: steel, 6-panel, pin-connected Pratt through truss
substructure: concrete-filled steel cylinder piers

span number:	1	**condition:**	fair
span length:	95.0'	**alterations:**	none
total length:	137.0'	**floor/decking :**	timber deck over steel stringers
roadway width:	12.8'	**other features:**	steel angle guardrails

HISTORICAL DATA

erection date: 1910
erection cost: $1900.00 (superstructure only)
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO; county crew

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 385001.1; Boone County Court Record, Book 6: page 140 (18 April 1910), located at Boone County Courthouse, Columbia MO; Callaway County Court Record, Book 31: page 471 (9 June 1909), page 504 (May 1910), located at Callaway County Courthouse, Fulton MO.

sign. rating: 39
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

County Line Bridge

BOON04

GENERAL DATA

structure no.:	389002.8	**city/town:**	5.3 miles southeast of Ashland
county:	Boone	**feature inters.:**	Cedar Creek
		cadastral grid:	S6, T45N, R11W
		highway route:	County Road 10
		highway distr.:	5
		current owner:	Boone County

STRUCTURAL DATA

superstructure: steel, 5-panel, pin-connected Pratt through truss, with steel-stringer approach span at each end

substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers

span number:	1	**condition:**	fair
span length:	90.0'	**alterations:**	none
total length:	158.0'	**floor/decking :**	timber deck over steel stringers
roadway width:	12.0'	**other features:**	upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing, (2 looped square eyebars at the hip); diagonal: 2 rectangular eyebars; counter: 1 square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, U-bolted to lower chord pin; guardrail: 2 angles

HISTORICAL DATA

erection date: 1909

erection cost: $2250.00 (contract amount)

designer: Missouri Bridge and Iron Company, St. Louis MO

fabricator : Missouri Bridge and Iron Company, St. Louis MO; Jones and Laughlin Steel Company, Pittsburgh PA

contractor: Missouri Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 389002.8; Callaway County Court Record, Book 31: page 471 (8 June 1909), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser and Sheila Bricher-Wade, 8 November 1990.

sign. rating: 43

evaluation: NRHP non-eligible (typically configured, well-preserved example of mainstay structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Hart Creek Bridge

BOON05

GENERAL DATA

structure no.: 401000.4
county: Boone

city/town: 7.5 miles south of Ashland
feature inters.: Hart Creek
cadastral grid: S18/19, T45N, R12W
highway route: County Road 10
highway distr.: 5
current owner: Boone County

STRUCTURAL DATA

superstructure: steel, 5-panel, rigid-connected Camelback pony truss
substructure: steel pile bent abutments with timber back- and wingwalls

span number: 1
span length: 80.0'
total length: 82.0'
roadway width: 14.5'

condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 angles; lower chord: 2 angles; vertical: 2 angles; diagonal: 1 and 2 angles; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles

HISTORICAL DATA

erection date: c1930
erection cost: unknown
designer: unknown
fabricator : Inland Steel Company, East Chicago IN
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 401000.4; field inspection by Clayton Fraser and Sheila Bricher-Wade, 8 November 1990.

sign. rating: 45
evaluation: NRHP non-eligible (inadequately documented example of uncommon structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Moon Valley Bridge

BOON06

GENERAL DATA

structure no.: 093000.7
county: Boone
city/town: Columbia
feature inters.: Hinkson Creek
cadastral grid: none
highway route: Moon Valley Road
highway distr.: 5
current owner: Boone County

STRUCTURAL DATA

superstructure: steel, 8-panel, pin-connected Parker through truss
substructure: stone abutments and wingwalls; concrete-filled steel cylinder piers

span number: 1
span length: 170.0'
total length: 175.0'
roadway width: 13.8'
condition: fair
alterations: truss moved, 1938
floor/decking : asphalt over timber deck with steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing (2 angles with batten plates at hip); diagonal: 2 punched rectangular eyebars; counter: 1 square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 angles with continuous plate; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles with lattice

HISTORICAL DATA

erection date: 1906-07; moved 1938
erection cost: $8200 (original two-span bridge); $3800.00 (truss move)
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO; Carnegie Steel Company, Pittsburgh PA
contractor: Kansas City Bridge Company, Kansas City MO; Everett Stone, Columbia MO (move)

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 093000.7; Francis Pike, "Whatever Happened To...?" **Columbia Tribune**, 14 February 1988; Cooper County Court Record, Book X: pages 90-91 (9 May 1906), page 98 (6 June 1906), page 102 (9 July 1906), page 162 (4 December 1906), located at Cooper County Courthouse, Boonville MO; construction drawings for Turley Bridge, dated 4 June 1906, by Kansas City Bridge Company; completion report for Turley Bridge, dated 6 March 1907, by Cooper County Engineer, located at Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser and Sheila Bricher-Wade, 8 November 1990.

Moon Valley Bridge

sign. rating: 48
evaluation: NRHP possibly eligible (well-preserved example of relatively uncommon structural type, moved to this location)

inventoried by: Clayton B. Fraser 29 January 1992

Hinkson Creek Bridge

BOON07

GENERAL DATA

structure no.: 093000.8
county: Boone
city/town: Columbia
feature inters.: Hinkson Creek
cadastral grid: none
highway route: vacated county road
highway distr.: 5
current owner: Boone County

STRUCTURAL DATA

superstructure: wrought iron, 6-panel, pin-connected Pratt through truss
substructure: stone masonry abutments and wingwalls

span number: 1
span length: 103.0'
total length: 103.0'
roadway width: 12.0'
condition: fair
alterations: deck replaced; bridge closed
floor/decking : plywood deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing (2 punched square eyebars at the hip; diagonal: 2 punched rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; strut: I-beam; floor beam: I-beam, U-bolted to lower chord pins; guardrail: timber; portal builder's plate: **H.W. SEBASTIAN & Co. / BUILDERS / ST. LOUIS Mo.**

HISTORICAL DATA

erection date: 1888
erection cost: $1750.00 (superstructure cost)
designer: H.W. Sebastian and Company, St. Louis MO
fabricator : H.W. Sebastian and Company, St. Louis MO
contractor: H.W. Sebastian and Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 093000.8; Boone County Court Record, Book W: page 43 (7 May 1988), page 115 (4 December 1988), page 117 (17 December 1988), page 118 (7 January 1989), located at the Boone County Courthouse, Columbia MO; field inspection by Clayton Fraser and Sheila Bricher-Wade, 8 November 1990.

sign. rating: 56
evaluation: NRHP possibly eligible (oldest truss remaining in county; well-preserved example of mainstay structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Rock Quarry Bridge

BOON08

GENERAL DATA

structure no.: 093000.9
county: Boone
city/town: Columbia
feature inters.: Hinkson Creek
cadastral grid: none
highway route: County Road 93
highway distr.: 5
current owner: Boone County

STRUCTURAL DATA

superstructure: steel, 6-panel, pin-connected Pratt through truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 103.0'
total length: 105.0'
roadway width: 12.0'
condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: 1 round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, U-bolted to lower chord pins; guardrail: chain link fencing

HISTORICAL DATA

erection date: c1905
erection cost: unknown
designer: unknown
fabricator : Carnegie Steel Company, Pittsburgh PA
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 093000.9; field inspection by Clayton Fraser and Sheila Bricher-Wade, 8 November 1990.

sign. rating: 28
evaluation: NRHP non-eligible (typically configured, inadequately documented example of common structural type)

Inventoried by: Clayton B. Fraser 29 January 1992

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Butler Bridge
MHTD: 008002.0

BOON01

DATE(S) OF CONSTRUCTION
1905

LOCATION
County Road 10 over Perche Creek; S7, T50N, R13W
2.3 miles east of Harrisburg; Boone County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 43)

CONDITION
fair

OWNER
Boone County

span number:	1	superstructure:	steel, 6-panel, pin-connected Pratt through truss
span length:	100.0'	substructure:	stone abutments and wingwalls
total length:	105.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	12.0'	other features:	upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing (2 looped square eyebars at hip); diagonal: 2 looped rectangular eyebars; counter: 1 or 2 round eyerods with turnbuckles; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical (with newer I-beam welded underneath); guardrail: timber

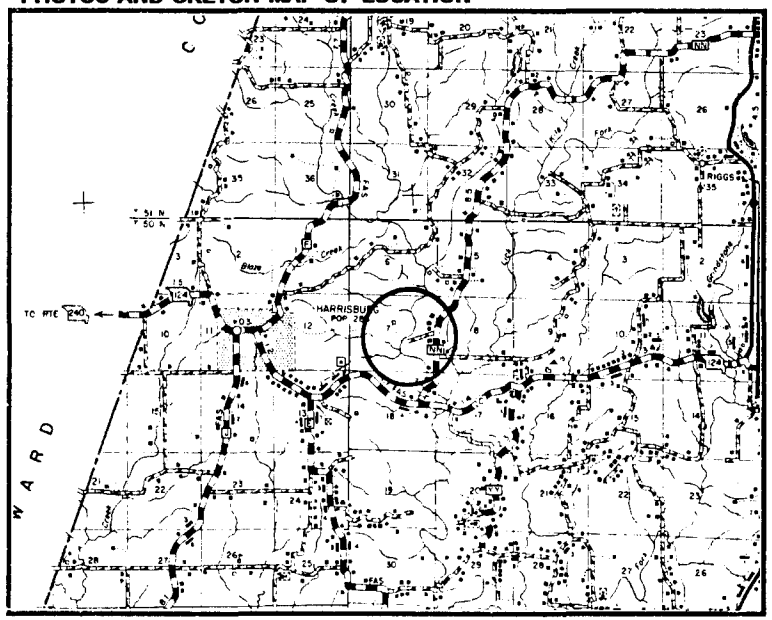
In July 1891 the Boone County Court received a petition from John Butler and others for a permanent bridge over Perche Creek near Butler's Store, east of Harrisburg. The court responded by directing county bridge commissioner George B. Flood to inspect the site of the proposed crossing. In his report to the court the next month, Flood stated that a 90-foot iron span would be required here, but that the increased cost of a 100-foot span would be offset by a decrease in the cost of the approaches. "I think this will be all that will be required to put up a good bridge and its substructures and approaches," he concluded. The county opted for the 100-foot span, hired local masonry contractor Henry C. Bergman to build the stone abutments and contracted with the Massillon Bridge Company of Ohio to fabricate and erect the wrought iron superstructure. The 1891 truss lasted less than fifteen years before it needed replacement. In June 1905 the county contracted with the Missouri Bridge and Iron Works of St. Louis for a 100-foot steel truss to replace the earlier iron structure. Like its predecessor, the new truss featured a Pratt configuration with pinned connections. MoB&I used steel components rolled by the Cambria mills in Pittsburgh to fabricate the truss, erecting it on the existing stone abutments later that year for $1495.00. The Butler Bridge has functioned in place since this time, with only minor maintenance-related repairs to its floor system.

Marketed extensively by virtually all of the major in-state bridge contractors and promoted in the form of standardized designs, the pinned Pratt through truss was used widely by Missouri's counties to carry roads over the state's myriad streams and creeks. Thousands of such small- to medium-scale trusses were erected across the state in the late 19th and early 20th centuries, and many remain today. The Butler Bridge is noteworthy as a well-preserved example of this mainstay structural type.

NAME(S) OF STRUCTURE

Butler Bridge (Perche Creek 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 010006.B; Boone County Court Record, Book X: page 114 (6 July 1891), page 146 (5 August 1891), page 179 (9 August 1891), page 194 (2 November 1891), page 199 (7 December 1891); Book 3: page 395 (11 May 1905), page 546 (4 January 1906), located at the Boone County Courthouse, Columbia MO; field inspection by Clayton Fraser, 16 July 1992.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	29 January 1992

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
County Line Bridge (Cedar Creek Bridge) BOON04
MHTD: 010021.9

DATE(S) OF CONSTRUCTION
1909

LOCATION
County Road 10 over Cedar Creek; S6, T45N, R11W
5.3 miles southeast of Ashland; Boone County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 43)

CONDITION
fair

OWNER
Boone County

span number: 1
span length: 90.0'
total length: 158.0'
roadway wdt.: 12.0'

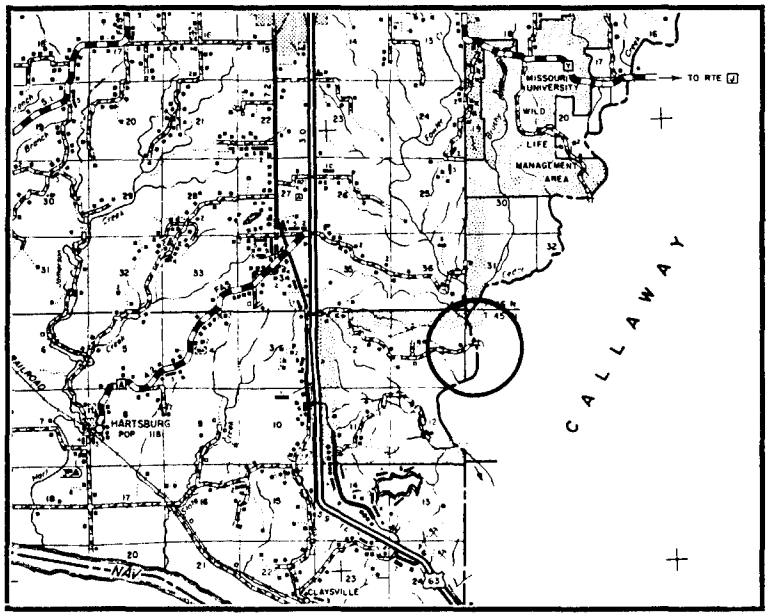
superstructure: steel, 5-panel, pin-connected Pratt through truss, with steel-stringer approach span at each end
substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers
floor/decking: timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing, (2 looped square eyebars at the hip); diagonal: 2 rectangular eyebars; counter: 1 square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, U-bolted to lower chord pin; guardrail: 2 angles

This short-span truss spans Cedar Creek on the line between Boone and Callaway Counties southeast of Ashland. The timber-decked structure consists of a single pinned Pratt through truss, supported by steel cylinder piers and approached on both ends by short steel stringer spans. The bridge dates to 1909. In the spring of that year, Boone and Callaway Counties agreed to share the cost of a permanent bridge at this location, as they had done on several earlier crossings of Cedar Creek. In June Callaway County Highway Engineer H.C.D. Halley awarded a contract to fabricate and erect the bridge on steel tubes. Low bidder at $2250.00, the Missouri Bridge and Iron Company of St. Louis received the contract. Using steel components rolled in Pittsburgh by Jones and Laughlin, MoB&I completed the bridge later that year. It has carried light traffic since at this rural crossing, in essentially unaltered condition. With modest dimensions and typical detailing, the County Line Bridge is a well-preserved example of a mainstay structural type: the pin-connected Pratt through truss.

NAME(S) OF STRUCTURE

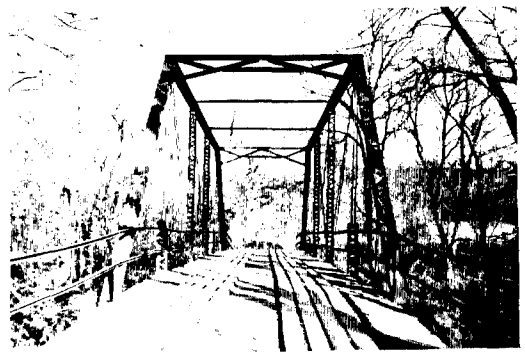
County Line Bridge (Cedar Creek Bridge)

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 010021.9; Callaway County Court Record, Book 31: page 471 (8 June 1909), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser and Sheila Bricher-Wade, 8 November 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	29 January 1992

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Moon Valley Bridge (Hinkson Creek Bridge) BOON06
MHTD: 093000.7

DATE(S) OF CONSTRUCTION
1906-07; moved 1938

LOCATION
Moon Valley Road over Hinkson Creek; none
Columbia; Boone County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 48)

CONDITION
fair

OWNER
Boone County

span number:	1	superstructure:	steel, 8-panel, pin-connected Parker through truss
span length:	170.0'	substructure:	stone abutments and wingwalls; concrete-filled steel cylinder piers
total length:	175.0'	floor/decking:	asphalt over timber deck with steel stringers
roadway wdt.:	13.8'	other features:	upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing (2 angles with batten plates at hip); diagonal: 2 punched rectangular eyebars; counter: 1 square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 angles with continuous plate; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles with lattice

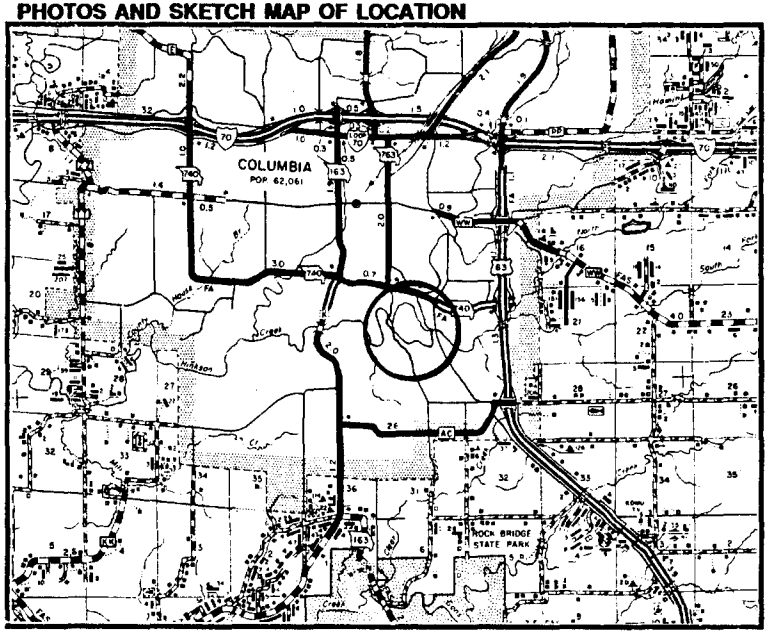
This long-span pinned Parker truss carries the Moon Valley Road over Hinkson Creek at the outskirts of Columbia, the Boone County seat. Supported by steel cylinder piers and concrete abutments, the bridge appears to have been built at this location originally, but in fact it was built as part of a two-span structure over the Lamine River in Cooper County, and moved to its present site in 1938. The truss on the Moon Valley Bridge dates to 1906. In May of that year the Cooper County Court declared "an urgent necessity for rebuilding the Turley Bridge across the Lamine River." The county solicited competitive proposals for the new bridge's construction, but when all twelve of the bids came in too high, county surveyor Eth Hale negotiated with all of the bridge contractors to secure a lower price. The Kansas City Bridge Company received the contract for $8200.00. Using steel components rolled in Pittsburgh by Carnegie, KCBCo fabricated the two 170-foot spans and erected them on stone abutments and piers. The Turley Bridge was reported complete in March 1907. It carried traffic at the rural Cooper County crossing for almost thirty years before it was replaced by the state highway department with a heavier bridge [**COOP03**]. One of the spans of the 1907 bridge was moved to another Cooper County crossing [**COOP04**]. The other was moved in 1938 to this crossing on the Moon Valley Road near Columbia. It replaced an earlier truss that was destroyed when two cars crashed through its floor on University of Missouri Homecoming night. In November 1938 the county hired Columbia contractor Everett Stone to move one of the Turley Bridge trusses and re-erect it on the existing steel tubes from the earlier truss. It has functioned in place since the move, in unaltered condition.

Pinned Pratt through trusses were erected by the thousands on Missouri's county road system in the late 19th and early 20th centuries. Parker trusses - polygonal-chorded Pratt variants -were built far less often. Less than three dozen pinned Parker trusses remain in use in Missouri today. With a construction date of 1906-07 and a span length of 170 feet, the Moon Valley Bridge typifies the remaining Parkers. Its locational integrity has changed considerably, due to the 1938 move, but the truss itself has retained a high degree of structural integrity, and it has acquired the patina of history in its more than 50 year service at this Boone County location.

NAME(S) OF STRUCTURE

Moon Valley Bridge (Hinkson Creek 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 093000.7; Francis Pike, "Whatever Happened To...?" **Columbia Tribune**, 14 February 1988; Cooper County Court Record, Book X: pages 90-91 (9 May 1906), page 98 (6 June 1906), page 102 (9 July 1906), page 162 (4 December 1906), located at Cooper County Courthouse, Boonville MO; construction drawings for Turley Bridge, dated 4 June 1906, by Kansas City Bridge Company; completion report for Turley Bridge, dated 6 March 1907, by Cooper County Engineer, located at Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser and Sheila Bricher-Wade, 8 November 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	29 January 1992

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Hinkson Creek Bridge
MHTD: 093000.8

BOON07

DATE(S) OF CONSTRUCTION
1888

LOCATION
vacated county road over Hinkson Creek
Columbia; Boone County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / abandoned

RATING NRHP possibly eligible (score: 56)

CONDITION
fair

OWNER
Boone County

span number:	1	superstructure:	wrought iron, 6-panel, pin-connected Pratt through truss
span length:	103.0'	substructure:	stone masonry abutments and wingwalls
total length:	103.0'	floor/decking:	plywood deck over steel stringers
roadway wdt.:	12.0'	other features:	upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing (2 punched square eyebars at the hip; diagonal: 2 punched rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; strut: I-beam; floor beam: I-beam, U-bolted to lower chord pins; guardrail: timber; portal builder's plate: **H.W. SEBASTIAN & Co. / BUILDERS / ST. LOUIS Mo.**

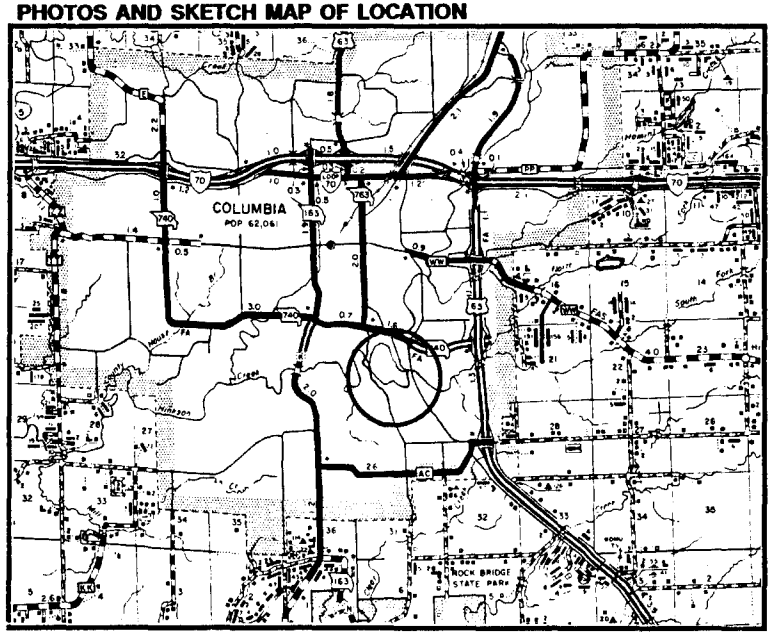
In May 1888, when J.D. Little and a large group of local citizens petitioned the Boone County Court for a new bridge over Hinkson Creek, the setting was a rural one. The city of Columbia has since grown up around the site, but the iron truss that was built that year remains much as it did when it was completed. Actually, the 1888 bridge here was preceded by an earlier structure that carried the Columbia and Providence Road; Little's petition was for a permanent iron span to replace the deteriorating timber structure. After reviewing the petition, the court directed county road and bridge commissioner W.E. Wright "to examine the old bridge and the site and report the necessity of a new bridge and the probable cost of erecting same." Wright inspected the old bridge, surveyed the site and reported back to the court that a 103-foot truss would be necessary to span the creek at this point. The county then contracted with St. Louis bridge builder H.W. Sebastian to fabricate and erect the wrought iron Pratt truss for $1750.00, and it hired local contractors Bergman and Nichols to build the stone abutments. The Hinkson Creek Bridge was completed by the end of November 1888. The truss first carried mainline wagon traffic, then later secondary car traffic, and now it is closed and barricaded. The original deck and guardrails have been replaced, but the structure otherwise remains unchanged.

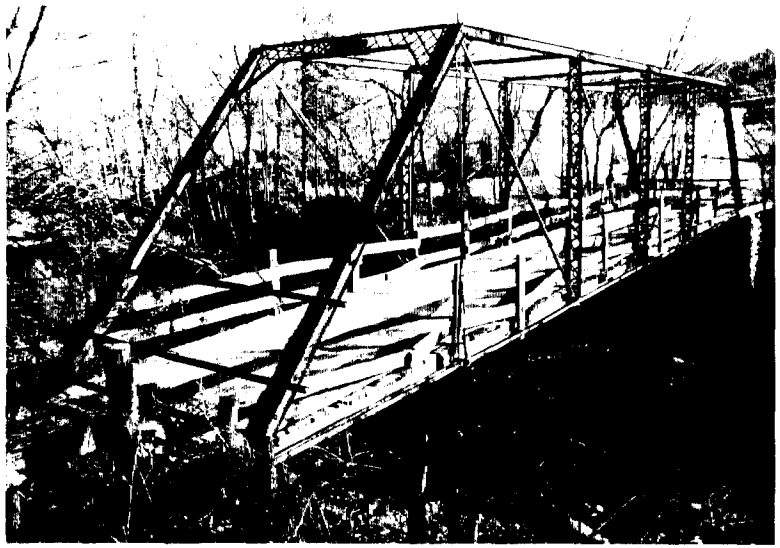
The Hinkson Creek Bridge is historically significant as the last remaining example from what was once an extensive group of wrought iron trusses in Boone County. It is technologically significant as an early, well-preserved example of what was a mainstay structural type in Missouri: the pin-connected Pratt through truss. The bridge is also noteworthy for its association with H.W. Sebastian. Henry Sebastian and William Vliet began building bridges from their Kansas City office in the 1870s. Sebastian split from Vliet sometime before 1879, forming H.W. Sebastian and Company in St. Louis. In 1888 - as the Hinkson Creek Bridge was under construction, in fact - he incorporated his firm as the St. Louis Bridge and Iron Works. The Hinkson Creek Bridge is the earliest remaining truss in Missouri attributable to this seminal in-state bridge builder. It is thus both historically and technologically significant.

NAME(S) OF STRUCTURE

Hinkson Creek 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 093000.8; Boone County Court Record, Book W: page 43 (7 May 1988), page 115 (4 December 1988), page 117 (17 December 1988), page 118 (7 January 1989), located at the Boone County Courthouse, Columbia MO; field inspection by Clayton Fraser and Sheila Bricher-Wade, 8 November 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	29 January 1992

CALLAWAY COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	MHTD	Bridge Name	Description	
CALL01	F 485R	Auxvasse Creek Bridge	2- 80'	**riveted Warren deck truss**
			1921	Riley and Bailey Const. Co.
CALL02	019001.7	Bridge	1- 20'	steel stringer
			1910	Stupp Brothers B&I Company
CALL03	019002.2	Auxvasse Branch Bridge		(replaced)
CALL04	020000.1	Auxvasse Branch Bridge	1- 60'	pinned Pratt bedstead
			c**1905**	
CALL05	027001.4	Four Mile Creek Bridge	3- 25'	steel stringer
			1905	Illinois Bridge & Iron Co.
*CALL06	043001.0	Boyd Bridge Number 2	1- 50'	pinned Pratt bedstead
			1913	Missouri Bridge and Iron Co.
CALL07	057000.2	Kennon Bridge	1- 40'	riveted Warren pony truss
			1914	county work force
CALL08	071001.5	Bridge	1- 30'	steel stringer
			1910	Stupp Bros. / county force
CALL09	071002.2	Dunlap Bridge	1- 76'	riveted Warren pony truss
			1913	Stupp Brothers B&I Company
CALL10	094000.8	Stinson Creek Bridge		(replaced)
CALL11	103000.2	Bridge	2- 15'	steel stringer
			1910	Stupp Brothers B&I Company
CALL12	109000.5	Booker Bridge	1- 25'	steel stringer
			1912	Stupp Brothers B&I Company
CALL13	125000.3	Owl Creek Bridge		(replaced)
CALL14	151000.1	Dry Fork Bridge		(replaced)
CALL15	155500.2	West Seventh Street Bridge	1- 67'	**concrete open spandrel arch**
			c**1910**	
CALL16	155500.6	East Tenth Street Bridge	1- 25'	**concrete filled spandrel arch**
			c1925	
CALL17	155500.7	East Eighth Street Bridge	1- 21'	**concrete filled spandrel arch**
			c1925	
*CALL18	201001.3	Cedar Creek Bridge	1-112'	**pinned Pratt through truss**
			1910	Stupp Brothers B&I Company
*CALL19	211002.6	Dry Creek Bridge	1- 66'	pinned Pratt pony truss
			c**1910**	
*CALL20	237002.2	Murphy Bridge	1- 75'	pinned Pratt pony truss
			1911	Stupp Brothers B&I Company
*CALL21	250000.7	Wainscott Creek Bridge	1- 48'	pinned Pratt pony truss
			1910	Stupp Brothers B&I Company
CALL22	253000.7	Little Auxvasse Ck. Bridge	1- 68'	pinned Pratt pony truss
			c**1910**	
*CALL23	256000.3	Little Auxvasse Ck. Bridge		(replaced)
CALL24	265001.9	Bridge	1- 21'	steel stringer
			1907	Illinois Bridge and Iron Co.

CALLAWAY COUNTY

INCLUDED (cont.):

CALL25	304000.1	Youngs Creek Bridge	1- 46'	pinned Pratt pony truss
			1912	Stupp Brothers B&I Company
*CALL26	316002.2	Bryan Bridge	1-**180'**	**pin Pennsylvania through truss**
			1912	Missouri Bridge & Iron Co.
*CALL27	327000.2	Logan Creek Bridge	1- 50'	**riveted Pratt/Warren pony truss**
			1911	Stupp Brothers B&I (prob.)
*CALL28	340002.1	Berry's Ford Bridge	1-**153'**	**pinned Pratt through truss**
			1884	Missouri Valley B&I Company
CALL29	362001.9	Maddox Branch Bridge	1- 65'	riveted Pratt half-hip pony truss
			1910	Stupp Brothers B&I Company
CALL30	364000.7	Muir Bridge		(replaced)
CALL31	364001.9	Houfs Creek Bridge	1- 23'	steel stringer
			1910	Stupp Brothers B&I Company
*CALL32	375001.8	Vandiver Bridge		(replaced)
CALL33	387000.5	Buckner Bridge	1- 30'	steel stinger
			1913	MO B&I / county work force
CALL34	395000.8	McPheeters Bridge	1- 28'	steel stringer
			1913	MO B&I / county work force
CALL35	406001.8	Hunt Branch Bridge	1- 30'	steel stringer
			1910	Stupp Bros. / county force
CALL36	411000.8	Deardorff Bridge	1- 45'	riveted Pratt pony truss
			1911	Stupp Brothers B&I Company
*CALL37	443002.3	Loutre River Bridge	1- 80'	pinned Pratt pony truss
			1896	J.S. McCleary and Sons
*CALL38	444001.6	Loutre River Bridge	1- 76'	pinned Pratt pony truss
			1905	Illinois Bridge & Iron Co.
CALL39	444002.5	Covington Bridge	1- 23'	steel stringer
			1913	MO B&I / county work force
CALL40	454002.4	Loutre River Bridge		(replaced)
CALL41	465000.9	Bridge	1- 30'	steel stringer
			1910	Stupp Brothers B&I Company
CALL42	482000.6	Crows Fork Creek Bridge		(replaced)
CALL43	521000.6	Middle River Bridge	2- 50'	riveted Pratt pony truss
			1922	Riley & Bailey Constr. Co.
CALL44	521004.7	Little Auxvasse Ck. Bridge	1-100'	**riveted Pratt through truss**
			1922	Pope Construction Co.

EXCLUDED:

Pratt pony truss
G 416R G 488R 058002.0

Warren pony truss
T 562 090001.9 200000.2 235001.2 258000.2 283005.6 389000.5403000.2
443001.1 443001.9 482001.7 488001.5 489002.6

CALLAWAY COUNTY

EXCLUDED (cont.):

Lattice bedstead
047000.5 406000.2

Steel stringer
012001.3 018002.4 031001.0 040000.0 045002.2 068000.1 131000.2
131000.3 136000.4 182001.1 186000.9 277000.9 286000.1 294000.2376001.0
381000.9 395002.2 396000.7 427002.1 483001.1 497002.2

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	1	31	3	0	35
Excluded	3	36	0	0	39
	4	67	3	0	74

Auxvasse Creek Bridge

CALL01

GENERAL DATA

structure no.: F 485R
county: Callaway
city/town: 3.3 miles south of Auxvasse
feature inters.: Auxvasse Creek
cadastral grid: S2, T48N, R9W
highway route: U.S. Highway 54
highway distr.: 5
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 6-panel, rigid-connected Warren deck truss, with steel stringer approach spans
substructure: concrete abutments, wingwalls and piers

span number: 2
span length: 80.0'
total length: 283.0'
roadway width: 28.0'
condition: good
alterations: approach spans added, 1954
floor/decking : concrete deck over steel stringers
other features: steel guardrails

HISTORICAL DATA

erection date: 1921
erection cost: $12,410.82
designer: Missouri State Highway Department
fabricator : unknown
contractor: Riley and Bailey Construction Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F 485R; Missouri Highway and Transportation Department, Primary Bridge Files, located at Bridge Division, MHTD, Jefferson City MO; **Report of the State Highway Board of Missouri**: 1919-20, page 130; **Third Biennial Report of the Missouri State Highway Commission**: 1921-22, page 146; Callaway County Bridge Record (see entry for Vandiver Bridge); Callaway County Court Record, Book 32: page 195 (5 October 1914), located at Callaway County Courthouse, Fulton MO.

sign. rating: 55
evaluation: NRHP possibly eligible (early example of uncommon structural type, designed by the MSHD during its formative years)

inventoried by: Clayton B. Fraser 29 January 1992

Bridge

CALL02

GENERAL DATA

structure no.: 019001.7
county: Callaway

city/town: 9.2 miles west of Auxvasse
feature inters.: unnamed stream
cadastral grid: S29/32, T49N, R10W
highway route: County Road 19
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number: 1
span length: 20.0'
total length: 21.0'
roadway width: 12.5'

condition: fair
alterations: unknown
floor/decking : unknown
other features: unknown

HISTORICAL DATA

erection date: 1909-10
erection cost: $119.85
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 019001.7; Callaway County Court Record, Book 31: page 504 (1 February 1910), located at Callaway County Courthouse, Fulton MO.

sign. rating: 34
evaluation: NRHP non-eligible (technologically undistinguished, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Auxvasse Branch Bridge

CALL04

GENERAL DATA

structure no.:	020000.1	city/town:	7.8 miles west of Auxvasse
county:	Callaway	feature inters.:	Auxvasse branch
		cadastral grid:	S28, T49N, R10W
		highway route:	County Road 20
		highway distr.:	5
		current owner:	Callaway County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt truss-leg bedstead
substructure: concrete abutments and wingwalls

span number:	1	condition:	poor
span length:	60.0'	alterations:	pier added under one panel point
total length:	60.0'	floor/decking :	timber deck
roadway width:	12.9'	other features:	steel angle guardrails

HISTORICAL DATA

erection date: c1905
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 020000.1.

sign. rating: 22
evaluation: NRHP non-eligible (inadequately documented, poorly preserved example of relatively common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Four Mile Branch Bridge

CALL05

GENERAL DATA

structure no.: 027001.4
county: Callaway
city/town: 9.3 miles west of Auxvasse
feature inters.: Four Mile Branch
cadastral grid: S8, T49N, R10W
highway route: County Road 27
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number: 3
span length: 25.0'
total length: 46.0'
roadway width: 14.5'
condition: fair
alterations: unknown
floor/decking : unknown
other features: unknown

HISTORICAL DATA

erection date: 1905
erection cost: $284.00 (contract amount)
designer: Illinois Bridge and Iron Company, Sullivan IL
fabricator : Illinois Bridge and Iron Company, Sullivan IL
contractor: Illinois Bridge and Iron Company, Sullivan IL

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 027001.4; Callaway County Court Record, Book 31: page 142 (21 October 1904), page 162 (7 February 1905), located at Callaway County Courthouse, Fulton MO.

sign. rating: 33
evaluation: NRHP non-eligible (technologically undistinguished, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Boyd Bridge Number 2

CALL06

GENERAL DATA

structure no.:	043001.0	city/town:	6.2 miles west of Auxvasse
county:	Callaway	feature inters.:	Bynum Creek
		cadastral grid:	S10, T49N, R10W
		highway route:	County Road 43
		highway distr.:	5
		current owner:	Callaway County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt truss-leg bedstead
substructure: concrete abutments and wingwalls

span number:	1	condition:	fair
span length:	50.0'	alterations:	unknown
total length:	52.0'	floor/decking :	timber deck
roadway width:	10.7'	other features:	steel angle guardrails

HISTORICAL DATA

erection date: 1913
erection cost: $390.00 (contract amount)
designer: Missouri Bridge and Iron Company, St. Louis MO
fabricator : Missouri Bridge and Iron Company, St. Louis MO; Cambria Steel Works, Pittsburgh PA
contractor: Missouri Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 043001.0; Callaway County Court Record, Book 27: page 85 (4 February 1913); Book 32: page 39 (11 May 1912), page 91 (8 February 1913), located at the Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser and Sheila Bricher-Wade, 6 November 1990.

sign. rating: 42
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Kennon Bridge

CALL07

GENERAL DATA

structure no.:	057000.2	city/town:	4.4 miles west of Auxvasse
county:	Callaway	feature inters.:	Leeper Branch
		cadastral grid:	S24/25, T49N, R10W
		highway route:	County Road 57
		highway distr.:	5
		current owner:	Callaway County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Warren pony truss
substructure: concrete abutments and wingwalls

span number:	1	condition:	fair
span length:	40.0'	alterations:	unknown
total length:	43.0'	floor/decking :	concrete deck over steel stringers
roadway width:	12.6'	other features:	steel angle guardrails

HISTORICAL DATA

erection date: 1914
erection cost: $881.74
designer: Miller and Borcherding, St. Louis MO
fabricator : Miller and Borcherding, St. Louis MO
contractor: county work force

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 071001.5; Callaway County Bridge Record, Kennon Bridge, located at Callaway County Courthouse, Fulton MO.

sign. rating: 34
evaluation: NRHP non-eligible (typical, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Bridge

CALL08

GENERAL DATA

structure no.:	071001.5	**city/town:**	6.3 miles north of Fulton
county:	Callaway	**feature inters.:**	branch of Richland Creek
		cadastral grid:	S13, T48N, R10W
		highway route:	County Road 71
		highway distr.:	5
		current owner:	Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number:	1	**condition:**	fair
span length:	30.0'	**alterations:**	unknown
total length:	30.0'	**floor/decking :**	unknown
roadway width:	13.0'	**other features:**	unknown

HISTORICAL DATA

erection date: 1910
erection cost: $174.82
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: county work force

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 071001.5; Callaway County Court Record, Book 31: page 570 (4 January 1911), located at Callaway County Courthouse, Fulton MO.

sign. rating: 34
evaluation: NRHP non-eligible (typical, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Dunlap Bridge

CALL09

GENERAL DATA

structure no.: 071002.2
county: Callaway

city/town: 5.7 miles north of Fulton
feature inters.: Richland Creek
cadastral grid: S24, T48N, R10W
highway route: County Road 71
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 5-panel, rigid-connected Warren pony truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 76.0'
total length: 77.0'
roadway width: 11.8'

condition: fair
alterations: unknown
floor/decking : timber deck
other features: steel angle guardrails; endpost-mounted builder's plate

HISTORICAL DATA

erection date: 1912-13
erection cost: $1486.96
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 071002.2; Callaway County Court Record, Book 32: page 39 (11 May 1912), page 85 (4 February 1913), located at Callaway County Courthouse, Fulton MO.

sign. rating: 39
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Bridge

CALL11

GENERAL DATA

structure no.:	103000.2	city/town:	9.0 miles northwest of Fulton
county:	Callaway	feature inters.:	branch of Millers Creek
		cadastral grid:	S19/20, T48N, R10W
		highway route:	County Road 103
		highway distr.:	5
		current owner:	Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number:	2	condition:	fair
span length:	15.0'	alterations:	one span added
total length:	29.0'	floor/decking :	unknown
roadway width:	14.0'	other features:	unknown

HISTORICAL DATA

erection date: 1909-10
erection cost: $46.00
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 103000.2; Callaway County Court Record, Book 31: page 504 (1 February 1910), located at Callaway County Courthouse, Fulton MO.

sign. rating: 29
evaluation: NRHP non-eligible (undistinguished, small-scale example of common structural type, substantially altered)

inventoried by: Clayton B. Fraser 29 January 1992

Booker Bridge

CALL12

GENERAL DATA

structure no.: 109000.5
county: Callaway

city/town: 2.5 miles north of Millersburg
feature inters.: Sally Branch
cadastral grid: S15/22, T48N, R11W
highway route: County Road 109
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number: 1
span length: 25.0'
total length: 26.0'
roadway width: 11.0'

condition: fair
alterations: unknown
floor/decking : unknown
other features: unknown

HISTORICAL DATA

erection date: 1912
erection cost: unknown
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 109000.5.

sign. rating: 34
evaluation: NRHP non-eligible (typical, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

West Seventh Street Bridge

CALL15

GENERAL DATA

structure no.:	155500.2	city/town:	Fulton
county:	Callaway	feature inters.:	Stinson Creek
		highway route:	West Seventh Street
		highway distr.:	5
		current owner:	City of Fulton

STRUCTURAL DATA

superstructure: concrete, two-rib, open spandrel arch
substructure: concrete abutments and wingwalls

span number:	1	condition:	fair
span length:	67.0'	alterations:	roadway widened, sidewalk cantilevered from one side, guardrails replaced, 1977
total length:	68.0'		
roadway width:	25.3'	floor/decking :	concrete deck
		other features:	Armco guardrails; cantilevered sidewalk on one side

HISTORICAL DATA

erection date: c1930
erection cost: unknown
designer: unknown
fabricator : none
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 155500.2.

sign. rating: 20
evaluation: NRHP non-eligible (undistinguished example of relatively uncommon structural type, substantially altered)

inventoried by: Clayton B. Fraser 29 January 1992

East Tenth Street Bridge

CALL16

GENERAL DATA

structure no.: 155500.6
county: Callaway
city/town: Fulton
feature inters.: Smith branch of Stinson Creek
highway route: East Tenth Street
highway distr.: 5
current owner: City of Fulton

STRUCTURAL DATA

superstructure: concrete filled spandrel arch
substructure: concrete abutments and wingwalls

span number: 1
span length: 25.0'
total length: 31.0'
roadway width: 31.8'
condition: fair
alterations: roadway widened, one guardrail replaced, sidewalk cantilevered from one side, 1976
floor/decking : concrete deck
other features: cantilevered sidewalk on one side

HISTORICAL DATA

erection date: c1925
erection cost: unknown
designer: unknown
fabricator : none
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 155500.6.

sign. rating: 11
evaluation: NRHP non-eligible (undistinguished example of relatively common structural type, substantially altered)

inventoried by: Clayton B. Fraser 29 January 1992

East Eighth Street Bridge

CALL17

GENERAL DATA

structure no.: 155500.7
county: Callaway
city/town: Fulton
feature inters.: Smith Branch of Stinson Creek
highway route: East Eighth Street
highway distr.: 5
current owner: City of Fulton

STRUCTURAL DATA

superstructure: concrete filled-spandrel arch
substructure: concrete abutments and wingwalls

span number: 1
span length: 21.0'
total length: 24.0'
roadway width: 30.0'
condition: fair
alterations: roadway widened, sidewalks cantilevered from sides, 1973
floor/decking : concrete deck
other features: cantilevered sidewalks; steel pipe guardrails

HISTORICAL DATA

erection date: c1925
erection cost: unknown
designer: unknown
fabricator : none
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 155500.7.

sign. rating: 11
evaluation: NRHP non-eligible (poorly preserved example of relatively common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Cedar Creek Bridge

CALL18

GENERAL DATA

structure no.: 201001.3
county: Callaway
city/town: 6.8 miles northwest of Holts Summit
feature inters.: Cedar Creek
cadastral grid: S12, T45N, R12W
highway route: County Road 201
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 7-panel, pin-connected Pratt through truss
substructure: concrete-filled steel cylinder piers; concrete abutments and wingwalls

span number: 1
span length: 112.0'
total length: 162.0'
roadway width: 12.8'
condition: fair
alterations: unknown
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 looped rectangular eyebars; counter: 1 round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles; portal builder's plate: **1909 / Stupp Bros's Bridge & Iron Co / St. Louis MO**

HISTORICAL DATA

erection date: 1909-10
erection cost: $2460.00 (contract amount)
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 201001.3; Callaway County Court Record, Book 31: page 471 (9 June 1909), page 504 (1 February 1910), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser, 6 November 1990.

sign. rating: 43
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Dry Creek Bridge

CALL19

GENERAL DATA

structure no.: 211002.6
county: Callaway

city/town: 6.8 miles east of Cedar City
feature inters.: Dry Creek
cadastral grid: S21, T44N, R10W
highway route: County Road 211
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 4-panel, pin-connected Pratt pony truss
substructure: concrete-filled steel cylinder piers; steel pile bent abutments

span number: 1
span length: 66.0'
total length: 84.0'
roadway width: 12.1'

condition: fair
alterations: none
floor/decking : timber deck
other features: steel angle guardrails

HISTORICAL DATA

erection date: c1910
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 211002.6.

sign. rating: 30
evaluation: NRHP non-eligible (typically configured, inadequately documented example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Murphy Bridge

CALL20

GENERAL DATA

structure no.:	237002.2	city/town:	5.4 miles northeast of Holts Summit
county:	Callaway	feature inters.:	Hillers Creek
		cadastral grid:	S15, T45N, R10W
		highway route:	County Road 237
		highway distr.:	5
		current owner:	Callaway County

STRUCTURAL DATA

superstructure: steel, 5-panel, pin-connected Pratt pony truss, with steel stringer approach spans

substructure: concrete abutments; concrete-filled steel cylinder piers; steel pile bent piers at approach spans

span number:	1	condition:	fair
span length:	75.0'	alterations:	none
total length:	112.0'	floor/decking :	timber deck over steel stringers
roadway width:	12.8'	other features:	upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 looped rectangular eyebars; vertical: 4 angles with lacing; diagonal: 2 looped rectangular eyebars; counter: 1 square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles; endpost-mounted builder's plate: **Built by the Stupp Bro's Bridge & Iron Co St. Louis MO 1910**

HISTORICAL DATA

erection date: 1911

erection cost: $1687.00 (contract amount)

designer: Stupp Brothers Bridge and Iron Company, St. Louis MO

fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO

contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 237002.2; Callaway County Court Record, Book 31: page 564 (4 January 1911), page 608 (5 September 1911); Book 32: page 15 (9 February 1912) - located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser, 6 November 1990.

sign. rating: 46

evaluation: NRHP non-eligible (typically configured, well-preserved example of mainstay structural type, built by Missouri's most prolific bridge builder)

inventoried by: Clayton B. Fraser 29 January 1992

Wainscott Creek Bridge

CALL21

GENERAL DATA

structure no.:	250000.7	city/town:	9.8 miles east of Cedar City
county:	Callaway	feature inters.:	Wainscott Creek
		cadastral grid:	S13, T44N, R10W
		highway route:	County Road 250
		highway distr.:	5
		current owner:	Callaway County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt pony truss, with steel stringer approach spans

substructure: concrete-filled steel cylinder piers; concrete abutments and wingwalls

span number:	1	condition:	poor
span length:	48.0'	alterations:	bridge partially collapsed
total length:	81.0'	floor/decking :	timber deck
roadway width:	11.6'	other features:	steel angle guardrails

HISTORICAL DATA

erection date: 1909-10

erection cost: $1000.00

designer: Stupp Brothers Bridge and Iron Company, St. Louis MO

fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO

contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 250000.7; Callaway County Court Record, Book 31: page 504 (1 February 1910), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser, 6 November 1990.

sign. rating: 39

evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Little Auxvasse Creek Bridge

CALL22

GENERAL DATA

structure no.: 253000.7
county: Callaway

city/town: 3.9 miles southwest of Mokane
feature inters.: Little Auxvasse Creek
cadastral grid: S34, T45N, R9W
highway route: County Road 253
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 4-panel, pin-connected Pratt pony truss, with steel stringer approach spans
substructure: concrete-filled steel cylinder piers

span number: 1
span length: 68.0'
total length: 98.0'
roadway width: 13.9'

condition: fair
alterations: unknown
floor/decking : timber deck
other features: steel angle guardrails

HISTORICAL DATA

erection date: c1910
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 253000.7.

sign. rating: 28
evaluation: NRHP non-eligible (typically configured, inadequately documented example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Bridge

CALL24

GENERAL DATA

structure no.: 265001.9
county: Callaway

city/town: 7.2 miles southwest of Mokane
feature inters.: branch of Gallons Creek
cadastral grid: S16/21, T45N, R9W
highway route: County Road 265
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number: 1
span length: 21.0'
total length: 22.0'
roadway width: 13.0'

condition: fair
alterations: unknown
floor/decking : unknown
other features: unknown

HISTORICAL DATA

erection date: 1907
erection cost: $2800.00 (multiple-bridge contract)
designer: Illinois Bridge and Iron Company, Sullivan IL
fabricator : Illinois Bridge and Iron Company, Sullivan IL
contractor: Illinois Bridge and Iron Company, Sullivan IL

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 265001.9; Callaway County Court Record, Book 31: page 330 (3 March 1907), located at Callaway County Courthouse, Fulton MO.

sign. rating: 32
evaluation: NRHP non-eligible (undistinguished, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Youngs Creek Bridge

CALL25

GENERAL DATA

structure no.: 304000.1
county: Callaway

city/town: 3.2 miles south of Fulton
feature inters.: Youngs Creek
cadastral grid: S31, T47N, R9W
highway route: County Road 304
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt pony truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 46.0'
total length: 47.0'
roadway width: 12.9'

condition: fair
alterations: unknown
floor/decking : timber deck
other features: steel angle guardrails

HISTORICAL DATA

erection date: 1912
erection cost: $780.00 (engineer's estimate)
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 304000.1; Callaway County Court Record, Book 32: page 14 (9 February 1912), page 53 (10 August 1912), located at Callaway County Courthouse, Fulton MO.

sign. rating: 34
evaluation: NRHP non-eligible (typically configured example of common structural type)

Inventoried by: Clayton B. Fraser 29 January 1992

Bryan Bridge

CALL26

GENERAL DATA

structure no.: 316002.2
county: Callaway
city/town: 1.2 miles northwest of Steedman
feature inters.: Auxvasse Creek
cadastral grid: S32, T46N, R8W
highway route: County Road 316
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 10-panel, pin-connected Pennsylvania through truss, with steel-stringer approach spans
substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers

span number: 1
span length: 180.0'
total length: 232.0'
roadway width: 16.0'
condition: fair
alterations: none
floor/decking : asphalt over corrugated steel deck, with steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: 2 square eyebars with turnbuckles; lateral bracing: round rod with threaded ends; strut: 2 angles, braced; portal strut; A-frame; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles; portal builder's plate: **1912 / BUILT BY MISSOURI BRIDGE & IRON CO.**

HISTORICAL DATA

erection date: 1912
erection cost: $5875.00 (contract amount)
designer: Missouri Bridge and Iron Company, St. Louis MO
fabricator : Missouri Bridge and Iron Company, St. Louis MO; Cambria Steel Company, Pittsburgh PA
contractor: Missouri Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 316002.2; Callaway County Court Record, Book 32: page 65 (10 October 1912), page 135 (7 October 1913), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser, 6 November 1990.

sign. rating: 65
evaluation: NRHP possibly eligible (well-preserved example of uncommon truss type)

inventoried by: Clayton B. Fraser 29 January 1992

Logan Creek Bridge

CALL27

GENERAL DATA

structure no.: 327000.2
county: Callaway
city/town: 6.7 miles northeast of Mokane
feature inters.: Logan Creek
cadastral grid: S31, T46N, R7W
highway route: County Road 327
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Warren/Pratt pony truss, with steel stringer approach spans
substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers; steel pile bent piers under approach spans

span number: 1
span length: 50.0'
total length: 134.0'
roadway width: 12.0'
condition: fair
alterations: deep I-beam added to north abutment for height
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: wide flange; lower chord: 2 angles with batten plates; vertical: 1 channel; diagonal: 1 channel; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles

HISTORICAL DATA

erection date: 1911
erection cost: unknown
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO (probable)
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO (probable)
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO (probable)

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 327000.2; Callaway County Court Record, Book 31, page 520 (8 June 1910), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser, 6 November 1990.

sign. rating: 54
evaluation: NRHP possibly eligible (well-preserved, early example of uncommon, indigenous structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Berry's Ford Bridge

CALL28

GENERAL DATA

structure no.:	340002.1	**city/town:**	8.5 miles southeast of Fulton
county:	Callaway	**feature inters.:**	Auxvasse Creek
		cadastral grid:	S17, T46N, R8W
		highway route:	County Road 340
		highway distr.:	5
		current owner:	Callaway County

STRUCTURAL DATA

superstructure: wrought iron, 8-panel, pin-connected Pratt through truss, with steel stringer approach spans

substructure: stone abutments and piers; steel pile bent piers under approach spans

span number:	1	**condition:**	fair
span length:	153.0'	**alterations:**	none
total length:	249.0'	**floor/decking :**	timber deck over steel stringers
roadway width:	13.5'	**other features:**	upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing (2 round eyebars at the hip); diagonal: 2 punched rectangular eyebars; counter: 1 round eyebar with turnbuckle; lateral bracing: round eyebar with turnbuckle; strut: 4 angles with double lacing; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles

HISTORICAL DATA

erection date: 1860/84

erection cost: $2600.00 (superstructure cost)

designer: Missouri Valley Bridge and Iron Company, Leavenworth KS

fabricator : Missouri Valley Bridge and Iron Company, Leavenworth KS

contractor: Missouri Valley Bridge and Iron Company, Leavenworth KS

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 340002.1; Callaway County Court Record, Book O: page 163 (23 June 1859), page 218 (19 August 1859), page 321 (25 November 1859), page 339 (21 December 1859), page 536 (22 May 1860), page 752 (19 December 1860), page 768 (23 January 1861); Book W: page 127 (5 May 1882), page 316 (3 July 1883), page 329 (9 August 1883), page 512 (10 October 1884), page 549 (5 January 1885); Book 27: page 448 (7 June 1897); Book 31: page 526 (5 May 1909), page 570 (9 June 1909); Callaway County Court Record 32: page 85 (4 February 1913), page 91 (8 February 1913), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser, 6 November 1990.

sign. rating: 56

evaluation: NRHP possibly eligible (well-preserved, early example of mainstay structural type, built on the abutments of earlier covered bridge)

inventoried by: Clayton B. Fraser 29 January 1992

Maddox Branch Bridge

CALL29

GENERAL DATA

structure no.: 362001.9
county: Callaway

city/town: 5.8 miles northeast of Fulton
feature inters.: Maddox Branch
cadastral grid: S23/26, T48N, R9W
highway route: County Road 362
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 4-panel, rigid-connected Pratt half-hip pony truss
substructure: unknown

span number: 1
span length: 65.0'
total length: 67.0'
roadway width: 12.8'

condition: fair
alterations: unknown
floor/decking : timber deck
other features: steel angle guardrails; endpost-mounted builder's plate

HISTORICAL DATA

erection date: 1910
erection cost: unknown
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 362001.9.

sign. rating: 42
evaluation: NRHP non-eligible (undistinguished example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Houfs Creek Bridge

CALL31

GENERAL DATA

structure no.: 364001.9
county: Callaway

city/town: 5.0 miles north of Fulton
feature inters.: Houfs Creek
cadastral grid: S22/27, T48N, R9W
highway route: County Road 364
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number: 1
span length: 23.0'
total length: 24.0'
roadway width: 12.4'

condition: fair
alterations: unknown
floor/decking : unknown
other features: unknown

HISTORICAL DATA

erection date: 1910
erection cost: $139.50
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 364001.9; Callaway County Court Record, Book 31: page 504 (1 February 1911), located at Callaway County Courthouse, Fulton MO.

sign. rating: 34
evaluation: NRHP non-eligible (undistinguished, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Buckner Bridge

CALL33

GENERAL DATA

structure no.: 387000.5
county: Callaway

city/town: 1.6 miles north of Auxvasse
feature inters.: Jesse Creek
cadastral grid: S11, T49N, R9W
highway route: County Road 387
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number: 1
span length: 30.0'
total length: 32.0'
roadway width: 13.3'

condition: fair
alterations: unknown
floor/decking : unknown
other features: unknown

HISTORICAL DATA

erection date: 1913
erection cost: $582.29
designer: Missouri Bridge and Iron Company, St. Louis MO
fabricator : Missouri Bridge and Iron Company, St. Louis MO
contractor: county work force

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 387000.5; Callaway County Bridge Record, see entry for "Buckner Bridge"; Callaway County Court Record, Book 32: page 112 (8 May 1913), located at Callaway County Courthouse, Fulton MO.

sign. rating: 34
evaluation: NRHP non-eligible (undistinguished, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

McPheeters Bridge

CALL34

GENERAL DATA

structure no.: 395000.8
county: Callaway

city/town: 4.4 miles northeast of Auxvasse
feature inters.: Harrison Creek
cadastral grid: S9, T49N, R8W
highway route: County Road 395
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number: 1
span length: 28.0'
total length: 31.0'
roadway width: 13.0'

condition: fair
alterations: unknown
floor/decking : unknown
other features: unknown

HISTORICAL DATA

erection date: 1913
erection cost: $390.00 (superstructure cost)
designer: Missouri Bridge and Iron Company, St. Louis MO
fabricator : Missouri Bridge and Iron Company, St. Louis MO
contractor: county work force

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 395000.8; Callaway County Court Record, Book 32: page 91 (8 February 1913), located at Callaway County Courthouse, Fulton MO.

sign. rating: 34
evaluation: NRHP non-eligible (undistinguished, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Hunt Branch Bridge

CALL35

GENERAL DATA

structure no.: 406001.8
county: Callaway

city/town: 4.9 miles southeast of Auxvasse
feature inters.: Hunt Branch
cadastral grid: S33, T49N, R8W
highway route: County Road 406
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number: 1
span length: 30.0'
total length: 32.0'
roadway width: 13.0'

condition: fair
alterations: unknown
floor/decking : unknown
other features: unknown

HISTORICAL DATA

erection date: 1910
erection cost: $196.48
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: county work force

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 406001.8; Callaway County Court Record, Book 31: page 570 (4 January 1911), located at Callaway County Courthouse, Fulton MO.

sign. rating: 34
evaluation: NRHP non-eligible (undistinguished, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Deardorff Bridge

CALL36

GENERAL DATA

structure no.: 411000.8
county: Callaway

city/town: 7.8 miles southeast of Auxvasse
feature inters.: tributary of Whetstone Creek
cadastral grid: S2, T48N, R8W
highway route: County Road 411
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Pratt pony truss
substructure: unknown

span number: 1
span length: 45.0'
total length: 46.0'
roadway width: 10.5'

condition: fair
alterations: unknown
floor/decking : timber deck
other features: steel angle guardrails, endpost-mounted builder's plate

HISTORICAL DATA

erection date: 1911
erection cost: $280.19
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 411000.8; Callaway County Court Record, Book 32: page 15 (9 February 1912), located at Callaway County Courthouse, Fulton MO.

sign. rating: 36
evaluation: NRHP non-eligible (typically configured, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Loutre River Bridge

CALL37

GENERAL DATA

structure no.: 443002.3
county: Callaway

city/town: 7.3 miles north of Williamsburg
feature inters.: Loutre River
cadastral grid: S14, T49N, R7W
highway route: County Road 443
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 5-panel, pin-connected Pratt pony truss, with rigid-connected lattice truss approach span
substructure: concrete-filled steel cylinder piers; concrete abutments and wingwalls

span number: 1
span length: 80.0'
total length: 125.0'
roadway width: 10.3'

condition: fair
alterations: lattice truss approach added, 1911
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 looped rectangular eyebars; vertical: 4 angles with lacing; diagonal: 2 looped rectangular eyebars; counter: 1 round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, U-bolted to lower chord pin; endpost-mounted builder's plate: **BUILT BY J.S. McCLEARY & SON**

HISTORICAL DATA

erection date: 1896
erection cost: $1035.00
designer: unknown
fabricator : Jones and Laughlin Steel Company, Pittsburgh PA
contractor: J.S. McCleary and Son, Montgomery City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 443002.3; Callaway County Bridge Record: page 444; Callaway County Court Record, Book Z: page 521 (4 February 1895); Book 27: page 153 (6 February 1896), page 210 (4 May 1896), page 224 (7 May 1896); Book 31: page 585 (8 March 1911), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser and Sheila Bricher-Wade, 6 November 1990.

sign. rating: 48
evaluation: NRHP possibly eligible (typically configured, well-documented example of mainstay structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Loutre River Bridge

CALL38

GENERAL DATA

structure no.: 444001.6
county: Callaway

city/town: 7.4 miles north of Williamsburg
feature inters.: Loutre River
cadastral grid: S14/15, T49N, R7W
highway route: County Road 444
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 4-panel, pin-connected Pratt pony truss, with steel-stringer approach spans
substructure: steel pile bent abutments and piers with timber back- and wingwalls

span number: 1
span length: 76.0'
total length: 107.0'
roadway width: 12.9'

condition: fair
alterations: deck and stringers replaced
floor/decking : concrete deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 4 angles with lacing; diagonal: 2 punched rectangular eyebars; counter: 1 looped round eyebar with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angle

HISTORICAL DATA

erection date: 1905
erection cost: $1249.00 (contract amount)
designer: Illinois Bridge and Iron Company, Sullivan IL
fabricator : Illinois Bridge and Iron Company, Sullivan IL; Illinois Steel Company, Chicago IL
contractor: Illinois Bridge and Iron Company, Sullivan IL

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 444001.6; Callaway County Court Record, Book 31: page 202 (6 July 1905), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser and Sheila Bricher-Wade, 6 November 1990.

sign. rating: 38
evaluation: NRHP non-eligible (typically configured example of mainstay structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Covington Bridge

CALL39

GENERAL DATA

structure no.: 444002.5
county: Callaway

city/town: 6.5 miles north of Williamsburg
feature inters.: branch of Loutre River
cadastral grid: S22/23, T49N, R7W
highway route: County Road 444
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number: 1
span length: 23.0'
total length: 24.0'
roadway width: 13.0'

condition: fair
alterations: unknown
floor/decking : unknown
other features: unknown

HISTORICAL DATA

erection date: 1912-13
erection cost: $409.96
designer: Missouri Bridge and Iron Company, St. Louis MO
fabricator : Missouri Bridge and Iron Company, St. Louis MO
contractor: county work force

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 444002.5; Callaway County Bridge Record, see entry for Covington Bridge; Callaway County Court Record, Book 32: page 91 (8 February 1913), located at Callaway County Courthouse, Fulton MO.

sign. rating: 34
evaluation: NRHP non-eligible (typical, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Bridge

CALL41

GENERAL DATA

structure no.:	465000.9	city/town:	7.7 miles southeast of Auxvasse
county:	Callaway	feature inters.:	branch of Whetstone Creek
		cadastral grid:	S11, T48N, R8W
		highway route:	County Road 465
		highway distr.:	5
		current owner:	Callaway County

STRUCTURAL DATA

superstructure: steel stringer
substructure: unknown

span number:	1	condition:	fair
span length:	30.0'	alterations:	unknown
total length:	32.0'	floor/decking :	unknown
roadway width:	13.0'	other features:	unknown

HISTORICAL DATA

erection date: 1910
erection cost: $566.00
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 465000.9; Callaway County Court Record, Book 31: page 570, located at Callaway County Courthouse, Fulton MO.

sign. rating: 34
evaluation: NRHP non-eligible (typical, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 29 January 1992

Middle River Bridge

CALL43

GENERAL DATA

structure no.: 521000.6
county: Callaway
city/town: 5.5 miles southwest of Fulton
feature inters.: Middle River
cadastral grid: S2, T46N, R10W
highway route: County Road 521 (Old U.S. 54)
highway distr.: 5
current owner: Callaway County

STRUCTURAL DATA

superstructure: steel, 5-panel, rigid-connected Pratt pony truss
substructure: concrete abutments, wingwalls and pier

span number: 2
span length: 50.0'
total length: 100.0'
roadway width: 22.0'
condition: good
alterations: trusses widened
floor/decking : concrete deck over steel stringers
other features: steel pipe guardrails

HISTORICAL DATA

erection date: 1922
erection cost: $6,712.01
designer: Missouri State Highway Department
fabricator : unknown
contractor: Riley and Bailey Construction Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 521000.6; Missouri Highway and Transportation Department Primary System Bridge Record, located at Bridge Division, MHTD, Jefferson City MO; **Report of the State Highway Board of Missouri**, 1919-20, page 130.

sign. rating: 36
evaluation: NRHP non-eligible (relatively early example of MSHD truss design, substantially altered)

inventoried by: Clayton B. Fraser 29 January 1992

Little Auxvasse Creek Bridge

CALL44

GENERAL DATA

structure no.:	521004.7	city/town:	9.1 miles southwest of Fulton
county:	Callaway	feature inters.:	Little Auxvasse Creek
		cadastral grid:	S21, T46N, R10W
		highway route:	County Road 521 (old U.S. 54)
		highway distr.:	5
		current owner:	Callaway County

STRUCTURAL DATA

superstructure: steel, 5-panel, rigid-connected Pratt through truss
substructure: concrete abutments and wingwalls

span number:	1	condition:	good
span length:	100.0'	alterations:	none
total length:	103.0'	floor/decking :	concrete deck over steel stringers
roadway width:	20.0'	other features:	steel pipe guardrails

HISTORICAL DATA

erection date: 1922
erection cost: $15,406.32
designer: Missouri State Highway Department
fabricator : unknown
contractor: Pope Construction Company, Jefferson City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 521004.7; Missouri Highway and Transportation Department Primary System Bridge Record, located at Bridge Division, MHTD, Jefferson City MO; **Third Biennial Report of the Missouri State Highway Commission,** 1921-22, page 137.

sign. rating: 43
evaluation: NRHP possibly eligible (relatively early, well-preserved example of MSHD truss design)

inventoried by: Clayton B. Fraser 29 January 1992

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Auxvasse Creek Bridge
MHTD: F 485R

CALL01

DATE(S) OF CONSTRUCTION
1921

LOCATION
U.S. Highway 54 over Auxvasse Creek; S2, T48N, R9W
3.3 miles south of Auxvasse; Callaway County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP possibly eligible (score: 55)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	2	superstructure:	steel, 6-panel, rigid-connected Warren deck truss, with steel stringer approach spans
span length:	80.0'	substructure:	concrete abutments, wingwalls and piers
total length:	283.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	28.0'	other features:	steel guardrails

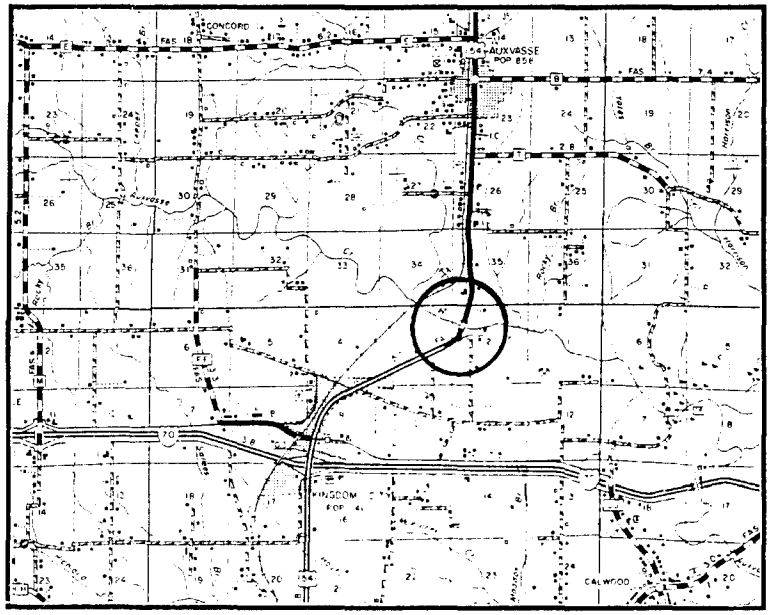
In 1920 the Missouri State Highway Department began planning for Federal Aid Project No. 136 in Callaway County, which entailed graveling a mile of road on Auxvasse Hill, south of the town of Auxvasse, and replacing an existing bridge over Auxvasse Creek. Located in the northern part of the county, the proposed highway bridge would carry the north-south State Route 15 (later redesignated U.S. 54). Late that year MSHD engineers designed this steel deck truss for the Auxvasse Creek crossing. The bridge featured two rigid-connected Warren trusses, supported by concrete abutments and a center pier. On June 18, 1921, the highway commission awarded a construction contract for the roadwork to John L. Moss of Clayton, Missouri. To build the bridge the commission hired the Riley and Bailey Construction Company of St. Louis. The contractors began work on the substructural excavation a month later, completing the bridge early the next year. Total cost: $12,410.82. (The earlier truss **[CALL32]** was moved to a county-road crossing north of Calwood by Riley and Bailey.) The 1921 Auxvasse Creek Bridge carried highway traffic for over thirty years without significant alteration. In 1954 the highway department hired the Arthur Engineering Company to build new 31-foot and 51-foot steel stringer approaches at either end of the existing trusses. This modification is the only one of note on the bridge.

"During [1921-22] this Bureau has been largely engaged in preparing special designs for the bridges needed on the various road projects initiated during this time," the MSHD Bureau of Bridges reported in 1922. Most of the structures designed by MSHD in its formative years were simple I-beam or concrete slab bridges, interspersed with steel pony and through trusses. The Auxvasse Creek Bridge differed from virtually all of these other spans in that it employed a deck truss configuration. Steel deck trusses have never been common in Missouri (less than ten have been identified by the inventory). Thus, as an example of an uncommon structural type, designed on an experimental basis by MSHD, the Auxvasse Creek Bridge is technologically significant. Its subsequent alteration has diminished its integrity somewhat, however.

NAME(S) OF STRUCTURE

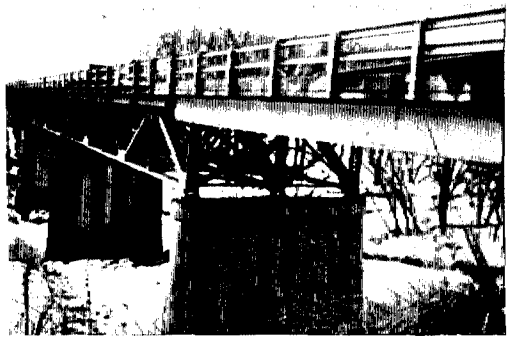
Auxvasse Creek Bridge

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 F 485R; Missouri Highway and Transportation Department, Primary Bridge Files, located at Bridge Division, MHTD, Jefferson City MO; **Report of the State Highway Board of Missouri**: 1919-20, page 130; **Third Biennial Report of the Missouri State Highway Commission**: 1921-22, page 146.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	29 January 1992

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Cedar Creek Bridge
MHTD: 201001.3

CALL18

DATE(S) OF CONSTRUCTION
1909-10

LOCATION
County Road 201 over Cedar Creek; S12, T45N, R12W
6.8 miles northwest of Holts Summit; Callaway County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 43)

CONDITION
fair

OWNER
Callaway County

span number:	1	superstructure:	steel, 7-panel, pin-connected Pratt through truss
span length:	112.0'	substructure:	concrete-filled steel cylinder piers; concrete abutments and wingwalls
total length:	162.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	12.8'	other features:	upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 looped rectangular eyebars; counter: 1 round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles; portal builder's plate: **1909 / Stupp Bros's Bridge & Iron Co / St. Louis MO**

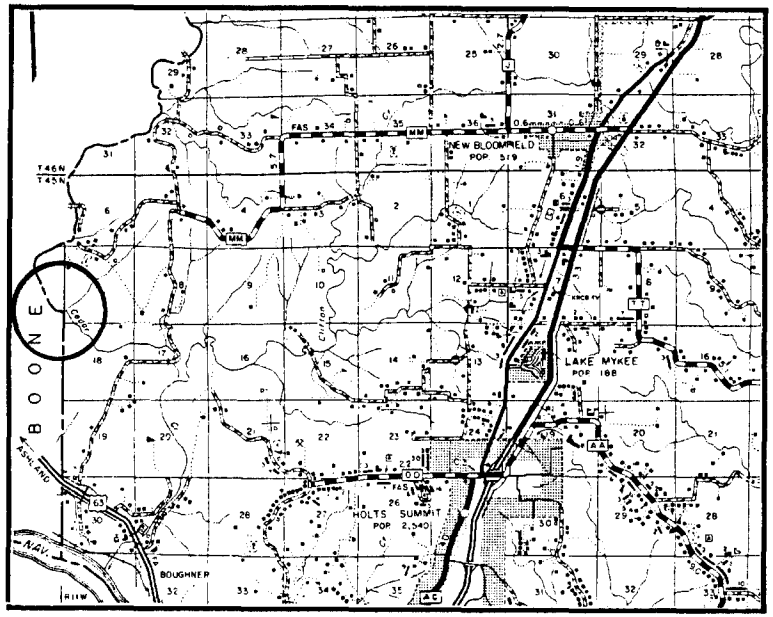
This medium-span through truss carries a gravel-surfaced road over Cedar Creek northwest of Holts Summit, in southwest Callaway County. The bridge traces its history to 1909. Early that year the Callaway County Court directed H.C.D. Halley, the Callaway County Highway Engineer, to investigate the site for a proposed bridge at this crossing. Halley did so, let the bridge's construction out to competitive bids, and on June 9th of that year, reported to the county court that he had "let the contract to build a 112 foot steel bridge with one 26 foot and one 23 foot approach" to the Stupp Brothers Bridge and Iron Company for $2460.00. The St. Louis contractors began work on steel cylinder piers soon thereafter, completing the pin-connected truss by the end of the year. The Cedar Creek Bridge has functioned in place since, with only maintenance-related repairs to its deck and floor system.

The Cedar Creek Bridge is a representative example of the pinned Pratt through truss - a mainstay structural type. Built by the thousands on Missouri's county roads in the late 19th and early 20th centuries, this ubiquitous truss type is still well-represented throughout the state. With an erection date of 1909 and a span length of 112 feet, the Cedar Creek Bridge fits well within the mainstream of this construction trend.

NAME(S) OF STRUCTURE

Cedar Creek 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 201001.3; Callaway County Court Record, Book 31: page 471 (9 June 1909), page 504 (1 February 1910), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser, 6 November 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	29 January 1992

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Murphy Bridge (Hillers Creek Bridge) CALL20
MHTD: 237002.2

DATE(S) OF CONSTRUCTION
1911

LOCATION
County Road 237 over Hillers Creek; S15, T45N, R10W
5.4 miles northeast of Holts Summit; Callaway County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 46)

CONDITION
fair

OWNER
Callaway County

span number: 1
span length: 75.0'
total length: 112.0'
roadway wdt.: 12.8'

superstructure: steel, 5-panel, pin-connected Pratt pony truss, with steel stringer approach spans
substructure: concrete abutments; concrete-filled steel cylinder piers; steel pile bent piers at approach spans
floor/decking: timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 looped rectangular eyebars; vertical: 4 angles with lacing; diagonal: 2 looped rectangular eyebars; counter: 1 square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles; endpost-mounted builder's plate: **Built by the Stupp Bro's Bridge & Iron Co St. Louis MO 1910**

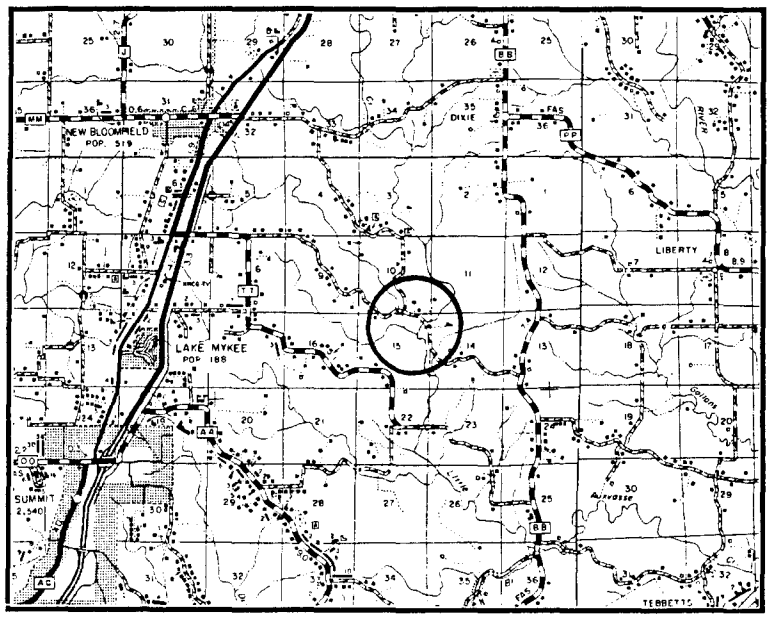
Late in 1910 the Callaway County Court ordered W.P. Divers, the county highway engineer, to view the site for a proposed bridge over Hillers Branch northeast of Holts Summit. Intended to carry the Murphy Road, the bridge would form an important crossing in the southern part of the county. In January 1911 Divers reported back that he had surveyed, located and prepared plans and specifications for a bridge at this crossing. The structure, according the Divers, would be "a 75 foot span Low pin connected truss steel bridge 20 feet high on tubes with 14 feet roadway and wooden floor, all of which will cost about $1860.00." The county at this time contracted with the Stupp Brothers Bridge and Iron Company of St. Louis to fabricate and erect the truss for $1687.00. When a Stupp Brothers crew completed the five-panel truss that September, they inexplicably affixed a 1910 builder's plate on one of the endposts. Since its completion, the Murphy Bridge has carried vehicular traffic in essentially unaltered condition.

For spans of less than 100 feet, the pinned Pratt pony truss was the bridge of choice for regional bridge companies in the early 20th century. Stupp Brothers Bridge and Iron Works, Missouri's most prolific bridge fabricator, was one of many competing firms that marketed Pratt trusses extensively to the counties at this time. With its standard design and detailing, the Murphy Bridge exemplifies this bridge construction trend.

NAME(S) OF STRUCTURE

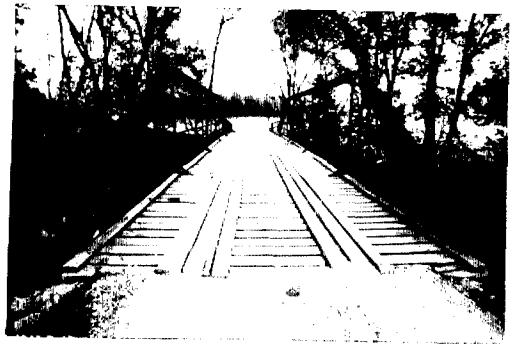
Murphy Bridge (Hillers Creek Bridge)

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 237002.2; Callaway County Court Record, Book 31: page 564 (4 January 1911), page 608 (5 September 1911); Book 32: page 15 (9 February 1912) - located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser, 6 November 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	29 January 1992

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Bryan Bridge
MHTD: 316002.2

CALL26

DATE(S) OF CONSTRUCTION
1912

LOCATION
County Road 316 over Auxvasse Creek; S32, T46N, R8W
1.2 miles northwest of Steedman; Callaway County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 65)

CONDITION
fair

OWNER
Callaway County

span number:	1	superstructure:	steel, 10-panel, pin-connected Pennsylvania through truss, with steel-stringer approach spans
span length:	180.0'	substructure:	concrete abutments and wingwalls; concrete-filled steel cylinder piers
total length:	232.0'	floor/decking:	asphalt over corrugated steel deck, with steel stringers
roadway wdt.:	16.0'	other features:	upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: 2 square eyebars with turnbuckles; lateral bracing: round rod with threaded ends; strut: 2 angles, braced; portal strut; A-frame; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles; portal builder's plate: **1912 / BUILT BY MISSOURI BRIDGE & IRON CO.**

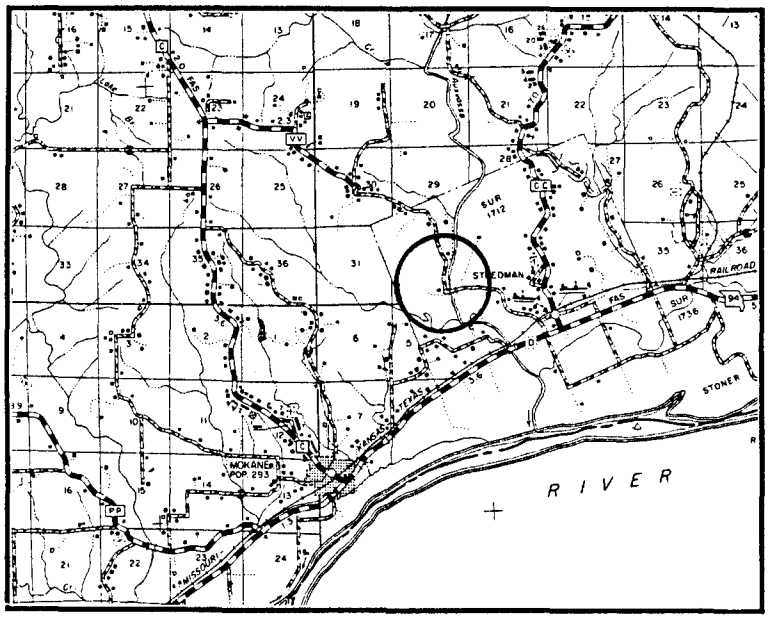
Located northwest of Steedman in southeast Callaway County, this long-span through truss carries a gravel-surfaced road over Auxvasse Creek, near the creek's mouth. The bridge features a pin-connected Pennsylvania truss, supported by concrete-filled steel cylinder piers and approached by steel stringer spans on both sides. Known locally as the Bryan Bridge, this structure dates to 1912. In the summer of that year the Callaway County Court directed county highway engineer W.P. Divers to locate and make estimates for a permanent bridge at this crossing. In October Divers reported back to the court that he had surveyed the site and that the bridge would necessarily be a 180-foot span, supported approximately 30 feet above the creek on steel tubes. Divers estimated the cost of the timber-decked structure at about $6190.00. The county then let a contract to fabricate and build the Bryan Bridge to the Missouri Bridge and Iron Works of St. Louis for $5875.00. Using steel rolled by the Cambria mills in Pittsburgh, MO B&I erected the steel cylinder piers and assembled the truss by the following October. The Bryan Bridge has carried vehicular traffic since its completion, with the replacement of its timber deck with asphalt as the only major alteration.

As a major, long-standing crossing on the road that paralleled the Missouri River (now State Highway 94), the Bryan Bridge played a historical role that is regional in scope. The bridge is also technologically significant as an example of an unusual steel truss design. Pennsylvania through trusses - long-span, curved chorded Pratt variants - have never been common on Missouri's county roads. And because of their inherently long spans and archaic pinned connections, those that were built have fallen prey to attrition through subsequent removal. Fewer than ten such trusses remain in use today, ranging in date from 1907 to 1917 and in span length from 180 feet (the Bryan Bridge) to 294 feet. The Bryan Bridge is a well-preserved, handsomely proportioned example of this uncommon Pratt variant.

NAME(S) OF STRUCTURE

Bryan Bridge (Auxvasse Creek 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 316002.2; Callaway County Court Record, Book 32: page 65 (10 October 1912), page 135 (7 October 1913), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser, 6 November 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	29 January 1992

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Logan Creek Bridge
MHTD: 327000.2

CALL27

DATE(S) OF CONSTRUCTION
1911

LOCATION
County Road 327 over Logan Creek; S31, T46N, R7W
6.7 miles northeast of Mokane; Callaway County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 54)

CONDITION
fair

OWNER
Callaway County

span number:	1	superstructure:	steel, 3-panel, rigid-connected Warren/Pratt pony truss, with steel stringer approach spans
span length:	50.0'	substructure:	concrete abutments and wingwalls; concrete-filled steel cylinder piers; steel pile bent piers under approach spans
total length:	134.0'		
roadway wdt.:	12.0'	floor/decking:	timber deck over steel stringers
		other features:	upper chord and inclined end post: wide flange; lower chord: 2 angles with batten plates; vertical: 1 channel; diagonal: 1 channel; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles

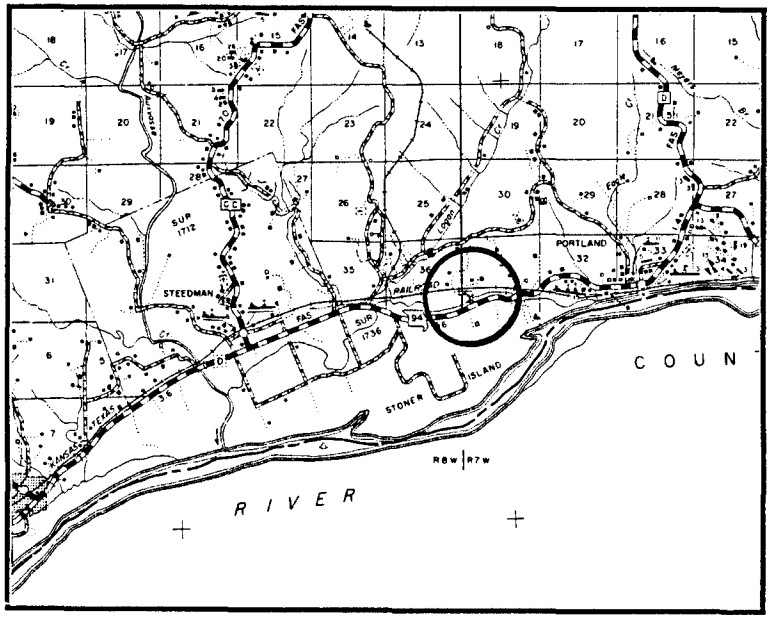
This medium-span pony truss carries an unpaved county road over Logan Creek, west of Portland in southeastern Callaway County. The structure consists of a single rigid-connected pony truss, supported by steel cylinder piers and approached by steel stringers on both sides. Callaway County Structure Inventory and Appraisal Records indicate that the bridge was erected here in 1911. This date has not been corroborated in county records from the period, however. Construction details on the bridge itself support the 1911 date and further suggest that the truss was fabricated by the Stupp Brothers Bridge and Iron Company of St. Louis. With its main span, approach spans and substructure unaltered, the Logan Creek Bridge has retained a high degree of structural integrity.

The rigid-connected truss configuration used for the Logan Creek Bridge features an unusual combination of Warren and Pratt elements. The diagonals and verticals function like a Warren web, using simple triangulation for structural strength, but the end posts are sloped shallowly like a Pratt. Very few trusses using this hybrid design were erected in Missouri - virtually all attributable to either Stupp Brothers or Miller and Borcherding, a Stupp offshoot. Fewer yet remain in place today. The Logan Creek Bridge is distinguished as the earliest example in the state of this truss type. It is today a well-preserved example of an uncommon early rigid-connected truss, fabricated and built by Missouri's most prolific bridge builder.

NAME(S) OF STRUCTURE

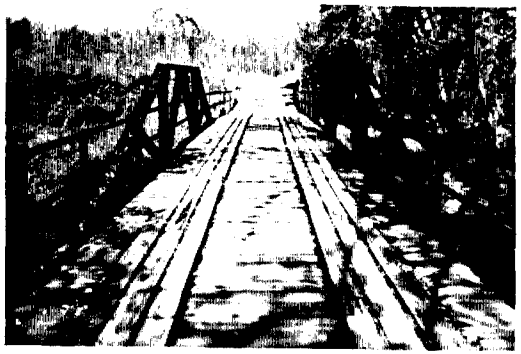
Logan Creek Bridge

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 327000.2; Callaway County Court Record, Book 31, page 520 (8 June 1910), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser, 6 November 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	29 January 1992

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Berry's Ford Bridge
MHTD: 340002.1

CALL28

DATE(S) OF CONSTRUCTION
1860/84

LOCATION
County Road 340 over Auxvasse Creek; S17, T46N, R8W
8.5 miles southeast of Fulton; Callaway County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 56)

CONDITION
fair

OWNER
Callaway County

span number: 1
span length: 153.0'
total length: 249.0'
roadway wdt.: 13.5'

superstructure: wrought iron, 8-panel, pin-connected Pratt through truss, with steel stringer approach spans
substructure: stone abutments and piers; steel pile bent piers under approach spans
floor/decking: timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing (2 round eyebars at the hip); diagonal: 2 punched rectangular eyebars; counter: 1 round eyebar with turnbuckle; lateral bracing: round eyebar with turnbuckle; strut: 4 angles with double lacing; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles

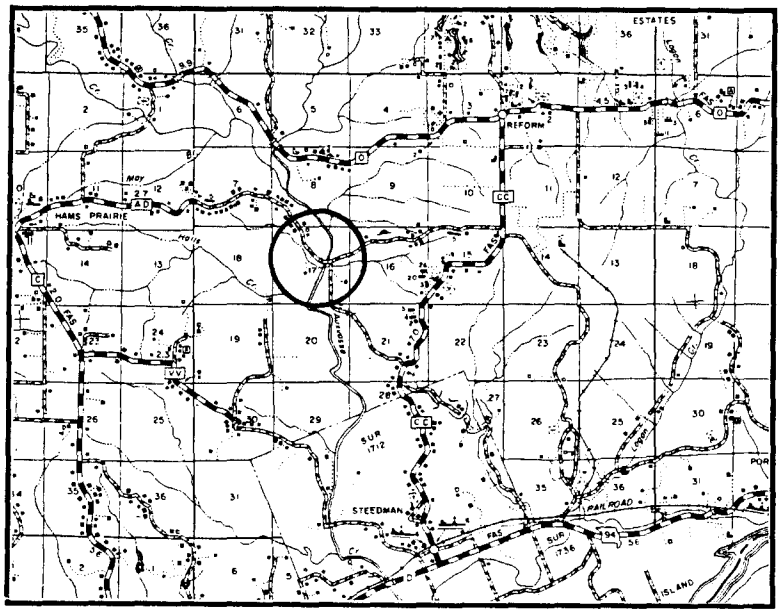
In June 1859 the Callaway County Court directed Nathaniel Hart to "select sites and report plans" for several bridges in the county. Among these was a crossing of Auxvasse Creek known as Berry's Ford, located on the road between Fulton and Portland in the southern part of the county. In August Hart presented plans for the proposed Berry's Ford structure: a long-span covered timber bridge held high above the river on massive stone abutments. The county hired contractor Richard L. Hord to build the piers and truss in December 1859; Hord completed the structure as the Civil War was beginning in 1861. The Berry's Ford Bridge carried wagon traffic for twenty years with occasional repairs, but by the early 1880s the county had begun to consider its replacement. In May 1882 Thomas H. Holley, the Callaway County Bridge Commissioner, inspected the old bridge and its abutments. Two moths later the county court ordered an iron bridge built here, a "single span without any middle piers, old abutments now standing to be used and extended three feet." Holley solicited design and cost proposals from bridge companies in the region, and in August 1883 the county awarded a contract to fabricate and erect the new wrought iron truss to the Missouri Valley Bridge and Iron Works for $2600.00. The Leavenworth, Kansas, firm completed the truss and its approaches by January 1885. At some subsequent point - perhaps in 1897, when a new river channel was cut at this point - one of the abutments was apparently re-configured as a pier, a new abutment built, and steel stringer approach spans were built on one side of the truss. Other than this modification and maintenance-related replacement of its deck components, the Berry's Ford Bridge remains in unaltered condition, as it continues to carry vehicular traffic.

Like virtually all of Missouri's counties, Callaway County followed a definite progression in its bridge construction in the 19th century, responding to evolving transportation needs and to technological development in the bridge building industry. The first simple spans, built as the county was undergoing its initial settlement, were rudimentary timber structures: cheap and easy to build but lacking in

NAME(S) OF STRUCTURE

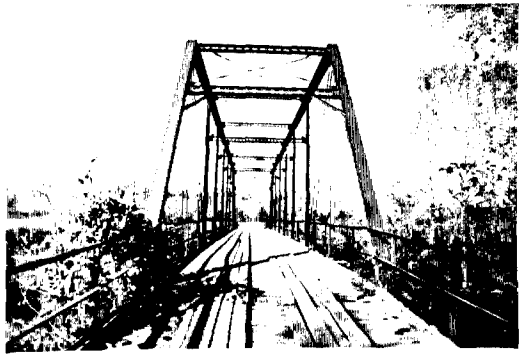
Berry's Ford Bridge (Harris Ford Bridge; Auxvasse Creek Bridge)

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 340002.1; Callaway County Court Record, Book O: page 163 (23 June 1859), page 218 (19 August 1859), page 321 (25 November 1859), page 339 (21 December 1859), page 536 (22 May 1860), page 752 (19 December 1860), page 768 (23 January 1861); Book W: page 127 (5 May 1882), page 316 (3 July 1883), page 329 (9 August 1883), page 512 (10 October 1884), page 549 (5 January 1885); Book 27: page 448 (7 June 1897); Book 31: page 526 (5 May 1909), page 570 (9 June 1909); Callaway County Court Record 32: page 85 (4 February 1913), page 91 (8 February 1913), located at Callaway County Courthouse, Fulton MO; field inspection by Clayton Fraser, 6 November 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	29 January 1992

durability and limited in span length. With greater revenues from increased settlement, the county could undertake more ambitious timber trusses in the 1850s and 1860s. Iron was used for tension members in the combination spans erected during the 1870s and early 1880s. These in turn were superseded in the 1880s by all-iron spans, made readily available by mass-production techniques. Although the county court barely noticed the transition from iron to steel in the 1890s - and, indeed, continued to refer to new bridges as iron that were undoubtedly made of steel - this evolution marked a watershed that would continue into the 20th century for bridge fabricators and the rolling mills that supplied them. Of the dozens of substantial iron bridges built in the 19th century by Callaway County, only one, the Berry's Ford Bridge, has survived demolition and flooding. The Berry's Ford Bridge is significant as the only remaining example in the county of early wrought iron truss construction: a well-preserved early structure that connects the period between the early covered bridges and the iron spans to follow.

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Loutre River Bridge
MHTD: 443002.3

CALL37

DATE(S) OF CONSTRUCTION
1896

LOCATION
County Road 443 over Loutre River; S14, T49N, R7W
7.3 miles north of Williamsburg; Callaway County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 48)

CONDITION
fair

OWNER
Callaway County

span number:	1	superstructure:	steel, 5-panel, pin-connected Pratt pony truss, with rigid-connected lattice truss approach span
span length:	80.0'		
total length:	125.0'	substructure:	concrete-filled steel cylinder piers; concrete abutments and wingwalls
roadway wdt.:	10.3'	floor/decking:	timber deck over steel stringers
		other features:	upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 looped rectangular eyebars; vertical: 4 angles with lacing; diagonal: 2 looped rectangular eyebars; counter: 1 round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, U-bolted to lower chord pin; endpost-mounted builder's plate: **BUILT BY J.S. McCLEARY & SON**

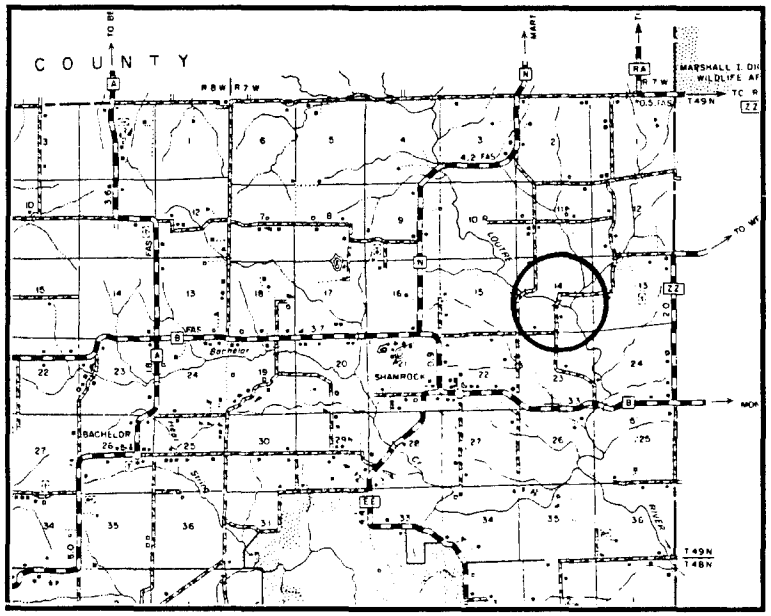
In February 1895 the Callaway County Court received a citizens' petition for a permanent bridge at this crossing northeast of the small settlement of Shamrock. The judges approved construction of a 68-foot truss here, but did not act further to build it. A year later, when the court received another petition for the bridge from W.W. Covington and others, it directed the county bridge commissioner to contract with J.S. McCleary and Son to provide and erect an 80-foot pinned pony truss. The Montgomery City-based contractor began work on the substructure soon thereafter, completing the bridge by early May 1896 for a cost of $1035.00. The Loutre River Bridge functioned in place unaltered until a lattice truss was added on one approach in 1911. Other than minor maintenance-related repairs and relatively recent collision damage to one of its verticals, the structure remains in unaltered condition, as it continues to carry vehicular traffic.

The pinned Pratt pony truss was used extensively throughout Missouri for short- to medium-span crossings in the late 19th and early 20th centuries. Virtually all of the state's bridge contractors - both large and small - marketed Pratt trusses as economical structures for short- to medium-span crossings. Built by a small-time contractor active in the late 1890s, the Loutre River Bridge typifies this trend. With standard design and detailing and common span length, it is technologically representative.

NAME(S) OF STRUCTURE

Loutre River 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 443002.3; Callaway County Bridge Record: page 444; Callaway County Court Record, Book Z: page 521 (4 February 1895); Book 27: page 153 (6 February 1896), page 210 (4 May 1896), page 224 (7 May 1896); Callaway County Court Record 31: page 585 (8 March 1911); field inspection by Clayton Fraser and Sheila Bricher-Wade, 6 November 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	29 January 1992

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Little Auxvasse Creek Bridge CALL44
MHTD: 521004.7

DATE(S) OF CONSTRUCTION
1922

LOCATION
County Road 521 (old U.S. 54) over Little Auxvasse Creek; S21, T46N, R10W
9.1 miles southwest of Fulton; Callaway County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / roadway bridge

RATING NRHP possibly eligible (score: 43)

CONDITION
good

OWNER
Callaway County

span number:	1	superstructure:	steel, 5-panel, rigid-connected Pratt through truss
span length:	100.0'	substructure:	concrete abutments and wingwalls
total length:	103.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	20.0'	other features:	steel pipe guardrails

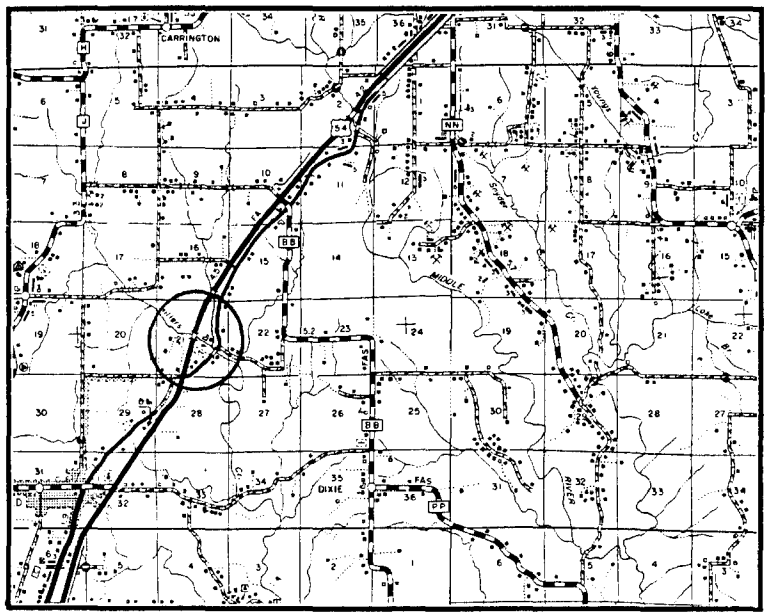
Located some nine miles southwest of Fulton, this short-span steel truss carries a gravel-surfaced county road over Little Auxvasse Creek. The structure is comprised of a single rigid-connected Pratt through truss, with a concrete deck and substructure. The bridge dates to 1922. In March of that year the Missouri State Highway Department contracted with the Pope Construction Company of Jefferson city to supply and erect the structure for $15,406.32. Since its completion, the Little Auxvasse Creek Bridge has carried vehicular traffic, with only maintenance-related repairs. Originally on U.S. Highway 54, it–and this stretch of road–has more recently been transferred to county-road status following a re-routing of the highway.

One of the provisions of the Hawes Road Law establishing the Missouri State Highway Department was that the newly formed agency develop plans and specifications for bridges and culverts. "The Highway Department has maintained a drafting room which has been called upon for many kinds of service," the department reported in 1918, "but the especial function of which has been the preparation of bridge and culvert designs." By 1920, the department had developed several standards for short- and medium-span bridges, including 13 designs for steel superstructures with spans ranging up to 100 feet. The department designed numerous other spans in the early 1920s, but, due to attrition, most of these have since been demolished. Although modest in its design and dimensions, the Little Auxvasse Creek Bridge in Callaway County is historically distinguished as one of the oldest remaining trusses designed by the state highway department. It is thus an important resource for interpreting MSHD's formative years and the early development of Missouri's state highway network.

NAME(S) OF STRUCTURE

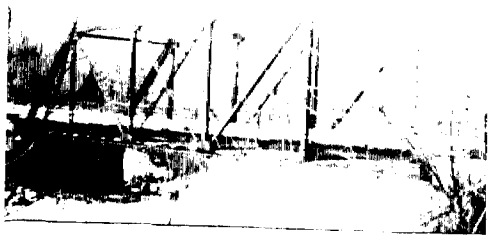
Little Auxvasse Creek Bridge

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 521004.7; Missouri Highway and Transportation Department Primary System Bridge Record, located at Bridge Division, MHTD, Jefferson City MO; **Third Biennial Report of the Missouri State Highway Commission,** 1921-22, page 137.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	6 April 1993

CAMDEN COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	MHTD	Bridge Name	Description	
*CAMD01	J 296R	Niangua River Bridge	**3-343'**	**riveted cantilever through truss**
			1931	Wisconsin Bridge and Iron Co.
*CAMD02	J 832	Grand Glaize Bridge		(removed)
*CAMD03	K 510A	Niangua River Bridge	**5-401'**	**riveted cantilever deck truss**
			1936	W.A. Ross Construction Co.
*CAMD04	K 961R	Hurricane Deck Bridge	**5-463'**	**riveted cantilever deck truss**
			1935	W.A. Ross Construction Co.
*CAMD05	S 391	Little Niangua R. Bridge	**3-225'**	**steel cable suspension bridge**
			1933	Clinton Bridge Works
CAMD06	178000.7	Bridge	1- 24'	**stone masonry arch**
			c1930	

EXCLUDED:

Steel stringer
S 392 S 503 XS499 XS500 XS501 237001.1 366001.4

Concrete girder
G 807 T 345 W 251 X 490

Concrete slab
167000.9 195000.1

Concrete box culvert
G 806R

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	4	1	0	0	5
Excluded	10	4	0	0	14
	14	5	0	0	19 structures

Niangua River Bridge

CAMD01

GENERAL DATA

structure no.: J 296R
county: Camden

city/town: 2.7 miles southwest of Camdenton
feature inters.: Niangua River
cadastral grid: S34, T38N, R17W
highway route: U.S. Highway 54
highway distr.: 5
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 14-panel, rigid-connected Warren cantilever through truss, with flanking 6-panel, rigid-connected Pratt through truss approach spans
substructure: concrete abutments, wingwalls and piers

span number: 3
span length: 343.0'
total length: 1229.0'
roadway width: 20.0'

condition: good
alterations: none
floor/decking : asphalt-covered concrete over steel stringers
other features: inclined end post: 2 channels with cover plate and double lacing; upper chord: 2 channels with double lacing; lower chord: 2 channels with batten plates; vertical: wide flange or 4 angles with continuous plate; diagonal: 2 channels with double lacing; lateral bracing: 2 angles with lacing; strut: 4 angles with lacing; floor beam: I-beam; guardrail: steel pipe; Missouri Highway Department bridge plate

HISTORICAL DATA

erection date: 1930-31
erection cost: $180,157.49
designer: Missouri State Highway Department
fabricator : Wisconsin Bridge and Iron Company, Milwaukee WI; Illinois Steel Company, Chicago IL
contractor: Wisconsin Bridge and Iron Company, Milwaukee WI

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J 296R; **Seventh Biennial Report of the State Highway Commission of Missouri**, for the period ending 1 December 1930, page 259; **Ninth Biennial Report of the State Highway Commission of Missouri**, for the period ending 1 December 1934, page 426; Missouri Highway and Transportation Department Primary System Bridge Record, Book 1, located at Bridge Division, MHTD, Jefferson City MO; field inspection by Clayton Fraser, 5 May 1990.

sign. rating: 54
evaluation: NRHP determined eligible (well-preserved example of long-span truss construction)

inventoried by: Clayton B. Fraser 15 March 1993

Niangua River Bridge

CAMD03

GENERAL DATA

structure no.: K 510A
county: Camden

city/town: 6.3 miles northwest of Camdenton
feature inters.: Lake of the Ozarks
cadastral grid: S33, T39N, R17W
highway route: Missouri State Highway 5
highway distr.: 5
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, rigid-connected, Warren cantilever deck truss
substructure: concrete abutments, wingwalls and piers

span number: 2; 3
span length: 315'; 401'
total length: 1958.0'
roadway width: 20.0'

condition: good
alterations: none
floor/decking : asphalt-covered concrete deck over steel stringers
other features: upper and lower chord: 2 built-up channels with lacing; vertical: 4 angles with batten plates; diagonal: 2 built-up channels with lacing; 4 angles with batten plates; lateral bracing: 2 angles with batten plates; strut: 4 angles with lacing; floor beam: I-beam with cantilevered sidewalks; guardrail: steel rail

HISTORICAL DATA

erection date: 1935-36
erection cost: $530,899.14
designer: Missouri State Highway Department
fabricator : Illinois Steel Company, Chicago IL
contractor: W.A. Ross Construction Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 510A; Missouri Highway and Transportation Department Primary System Bridge Record, Book 1, located at Bridge Division, MHTD, Jefferson City MO; **Tenth Biennial Report of the State Highway Commission of Missouri**, for the period ending 1 December 1936, page 262; field inspection by Clayton Fraser, 5 May 1990.

sign. rating: 70
evaluation: NRHP eligible (outstanding long-span example of uncommon structural type)

inventoried by: Clayton B. Fraser 15 March 1993

Hurricane Deck Bridge

CAMD04

GENERAL DATA

structure no.: K 961R
county: Camden
city/town: 1.0 mile southwest of Hurricane Deck
feature inters.: Osage River / Lake of the Ozarks
cadastral grid: S16, T39N, R17W
highway route: Missouri State Highway 5
highway distr.: 5
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, rigid-connected, Warren cantilever deck truss
substructure: concrete abutments, wingwalls and piers

span number: 3; 2
span length: 463'; 377'
total length: 2281.0'
roadway width: 28.0'
condition: good
alterations: approach span and bridge deck replaced, 1985
floor/decking: asphalt covered concrete deck over steel stringers
other features: upper and lower chord: 2 built-up channels with lacing; vertical: 4 angles with batten plates; diagonal: 2 built-up channels with lacing; 4 angles with batten plates; lateral bracing: 2 angles with batten plates; strut: 4 angles with lacing; floor beam: I-beam with cantilevered sidewalks; guardrail: steel rail

HISTORICAL DATA

erection date: 1934-35
erection cost: $655,000.00
designer: Missouri State Highway Department
fabricator : Illinois Steel Company, Chicago IL
contractor: W.A. Ross Construction Company;
Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 961R; Primary System Bridge Record, Camden County, located at Bridge Division, missouri Highway and Transportation Department, Jefferson City, Missouri; field inspection by Clayton Fraser, 5 May 1990.

sign. rating: 76
evaluation: NRHP eligible (outstanding long-span example of uncommon structural type)

inventoried by: Clayton B. Fraser 15 March 1993

Little Niangua River Bridge

CAMD05

GENERAL DATA

structure no.: S 391
county: Camden
city/town: 7.7 miles northeast of Macks Creek
feature inters.: Little Niangua River
cadastral grid: S4, T38N, R19W
highway route: State Secondary Route J
highway distr.: 5
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel cable suspension bridge with pinned and rigid steel towers
substructure: concrete abutments, wingwalls and spill-through pedestal piers

span number: 3
span length: 225.0'
total length: 524.0'
roadway width: 20.0'
condition: good
alterations: none
floor/decking : asphalt-covered timber over steel stringers
other features: tower: 2 channels with lacing; vertical: 2 wide flanges with batten plates; diagonal: 2 angles with batten plates; lateral bracing: 2 angles; floor beam: I-beam field riveted to vertical; guardrail: 2 angles; main cable: 4 separate galvanized wound cables; 1 cable suspender; I-beam through girder; cables connected with pinned eyebars which lead into deadmen at abutments

HISTORICAL DATA

erection date: 1932-33
erection cost: $36,914.00
designer: Howard Mullins, Engineer, Missouri Highway and Transportation Department
fabricator : Skully Steel Company;
American Steel and Wire Company, Trenton NJ
contractor: Clinton Bridge Works, Clinton IA

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number S 391; **Eighth Biennial Report of the State Highway Commission of Missouri**, for the period ending 1 December 1932, page 240; "Self-Anchored Suspension Bridge Built in Missouri," **Engineering News-Record**, vol. 111, no. 13, (28 September 1933), pages 367-370; field inspection by Clayton Fraser, 5 May 1990.

sign. rating: 77
evaluation: NRHP eligible (nationally significant exercise in structural engineering)

inventoried by: Clayton B. Fraser 15 March 1993

Bridge

CAMD06

GENERAL DATA

structure no.: 178000.7
county: Camden

city/town: 3.0 miles south of Osage Beach
feature inters.: intermittent stream
cadastral grid: S18, T39N, R15W
highway route: County Road 178
highway distr.: 5
current owner: Camden County

STRUCTURAL DATA

superstructure: stone arch
substructure: stone abutments

span number: 1
span length: 24.0'
total length: 34.0'
roadway width: 20.0'

condition: fair
alterations: unknown
floor/decking : earth fill over stone
other features: unknown

HISTORICAL DATA

erection date: c1930
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 178000.7; field inspection by Clayton Fraser, 5 May 1990.

sign. rating: 29
evaluation: NRHP non-eligible (inadequately documented example of small-scale stone bridge construction)

inventoried by: Clayton B. Fraser 15 March 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Niangua River Bridge
MHTD: J 296R

CAMD01

DATE(S) OF CONSTRUCTION
1930-31

LOCATION
U.S. Highway 54 over Niangua River; S34, T38N, R17W
2.7 miles southwest of Camdenton; Camden County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP determined eligible (score: 54)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	3	superstructure:	steel, 14-panel, rigid-connected Warren cantilever through truss, with flanking 6-panel, rigid-connected Pratt through truss approach spans
span length:	343.0'		
total length:	1229.0'	substructure:	concrete abutments, wingwalls and piers
roadway wdt.:	20.0'	floor/decking:	asphalt-covered concrete over steel stringers
		other features:	inclined end post: 2 channels with cover plate and double lacing; upper chord: 2 channels with double lacing; lower chord: 2 channels with batten plates; vertical: wide flange or 4 angles with continuous plate; diagonal: 2 channels with double lacing; lateral bracing: 2 angles with lacing; strut: 4 angles with lacing; floor beam: I-beam; guardrail: steel pipe; Missouri Highway Department bridge plate

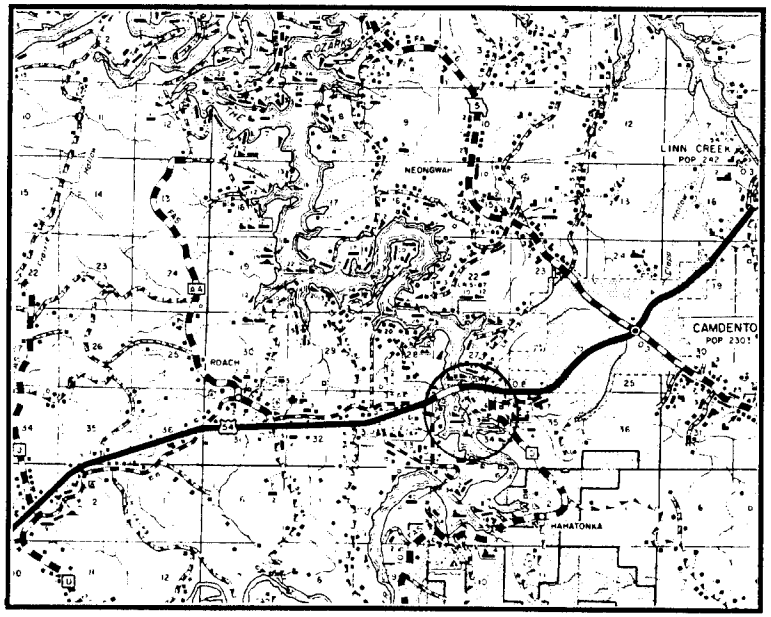
Spanning the Niangua River, this long-span steel truss carries U.S. Highway 54 in south-central Camden County. The bridge is comprised of a central 196-foot Warren truss span suspended from 196-foot cantilever arms over dumbbell concrete piers; the center span is flanked on both sides by anchor spans and simply supported Pratt truss approaches. With an overall length of 1,229 feet, the Niangua River Bridge was designed in the fall of 1930 by engineers for the Missouri State Highway Department. "The superstructure will be of steel cantilever truss design and the substructure of reinforced concrete carried to solid rock," MSHD stated in 1930. A contract to fabricate and erect the bridge was let to the Wisconsin Bridge and Iron Company of Milwaukee, Wisconsin, on October 11, 1930. Using steel components rolled in Chicago by the Illinois Steel Company, WB&I finished construction the following year. Total cost: $180,157.49. Other than the installation of navigation lights in 1939, the Niangua River Bridge has functioned in place in unaltered condition since its completion in 1931.

During the 1929-1930 biennium, the Missouri State Highway Department produced designs for 529 bridges, ranging from 10 feet to 3,154 feet in length. Most were short-span concrete or steel structures, the longer of which were comprised of Warren pony trusses or Pratt through trusses, simply supported by concrete piers. With its cantilevered through truss spanning 343 feet, the Niangua River Bridge was among the state's longer spans erected during the period. It is distinguished as one of the longer steel spans in Missouri and one of only a dozen such cantilevered trusses in the state.

NAME(S) OF STRUCTURE

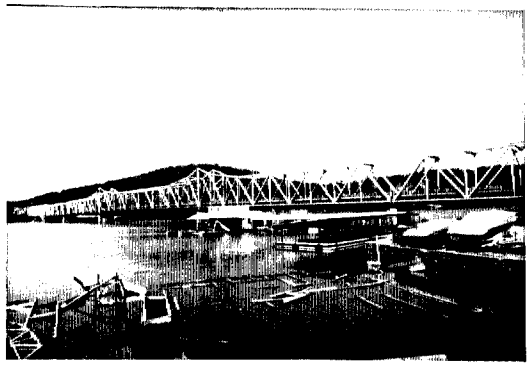
Niangua River Bridge

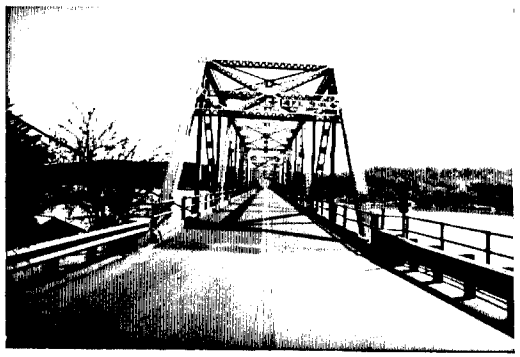
PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT GENERAL HIGHWAY MAP





SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J 296R; **Seventh Biennial Report of the State Highway Commission of Missouri**, for the period ending 1 December 1930, page 259; **Ninth Biennial Report of the State Highway Commission of Missouri**, for the period ending 1 December 1934, page 426; Missouri Highway and Transportation Department Primary System Bridge Record, Book 1, located at Bridge Division, MHTD, Jefferson City MO; field inspection by Clayton Fraser, 5 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	15 March 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Niangua River Bridge CAMD03
MHTD: K 510A

DATE(S) OF CONSTRUCTION
1935-36

LOCATION
Missouri State Highway 5 over Lake of the Ozarks; S33, T39N, R17W
6.3 miles northwest of Camdenton; Camden County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP eligible (score: 70)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	2; 3	superstructure:	steel, rigid-connected, Warren cantilever deck truss
span length:	315'; 401'	substructure:	concrete abutments, wingwalls and piers
total length:	1958.0'	floor/decking:	asphalt-covered concrete deck over steel stringers
roadway wdt.:	20.0'	other features:	upper and lower chord: 2 built-up channels with lacing; vertical: 4 angles with batten plates; diagonal: 2 built-up channels with lacing; 4 angles with batten plates; lateral bracing: 2 angles with batten plates; strut: 4 angles with lacing; floor beam: I-beam with cantilevered sidewalks; guardrail: steel rail

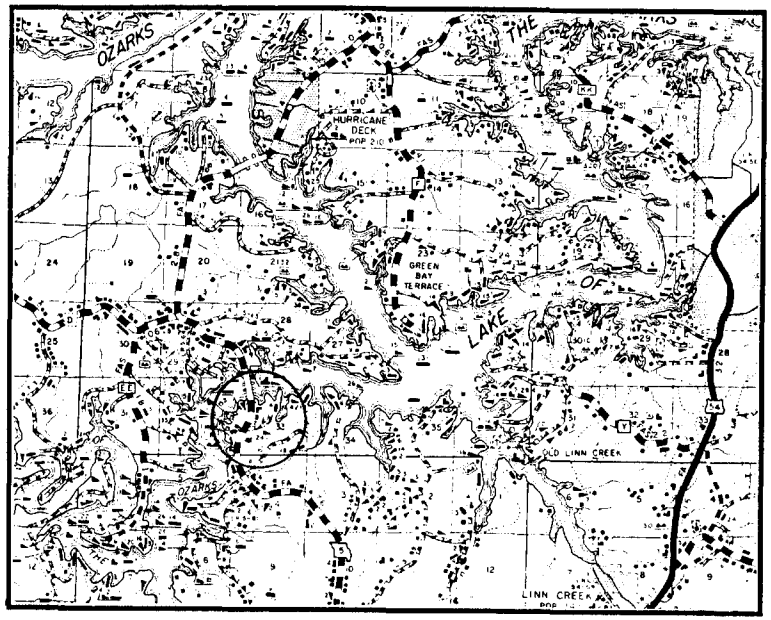
Situated some six miles northwest of Camdenton, this dramatic long-span structure carries State Highway 5 over the Niangua Arm of Lake of the Ozarks. Featuring an exceedingly rare cantilever deck truss, the superstructure is supported by concrete piers and abutments. The design for this five-span bridge was completed in the summer of 1935 by engineers for the Missouri State Highway Department. "This bridge is 1,958 feet in length," MSHD reported in 1936. "The superstructure consists of 2-57' I-beams, 2-315' and 3-401' deck cantilever truss spans. All foundations are of concrete piers and carried to rock." A contract for the bridge's fabrication and erection was let that September to the W.A. Ross Construction Company. Using steel components rolled by the Illinois Steel Company of Chicago, the contractors erected the bridge in 1936 for $530,899.14. Virtually unchanged since its completion, the Niangua River Bridge continues to carry traffic in central Camden County.

During the late 19th and early 20th centuries, numerous through and pony trusses were built on roads and highways throughout Missouri. Deck trusses–in which the roadway is carried by the truss's upper chords–were built far less often. Never very common, this truss type has suffered attrition throughout the state, until only six deck trusses are now listed in Missouri's Structure Inventory and Appraisal list. Significantly, all are located on the state highway system, and were built in the 1930s. Three of these bridges span the Lake of the Ozarks in Camden County. Of the remaining deck trusses, only the Camden County bridges employ cantilevered construction; the balance are all simply supported. Listed as one of the most important bridges built in the 1935-36 biennium, the Niangua River Bridge thus stands out as the second longest of Missouri's remaining deck trusses and one of only three such cantilevered spans in the state.

NAME(S) OF STRUCTURE

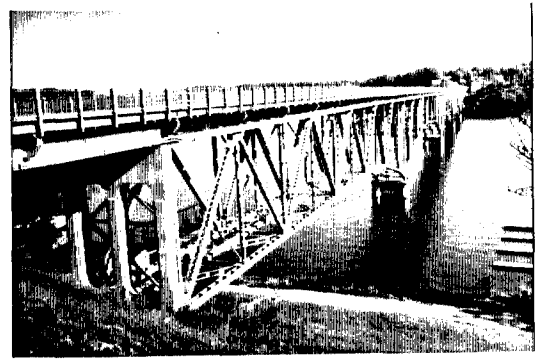
Niangua River Bridge

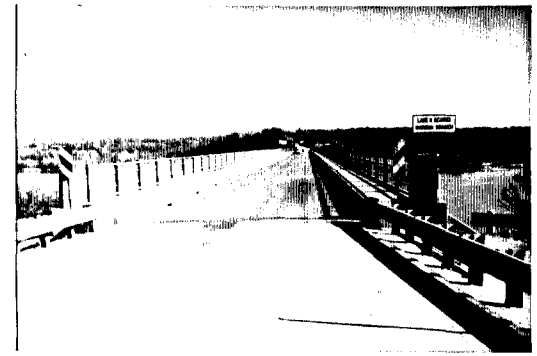
PHOTOS AND SKETCH MAP OF LOCATION



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 510A; Missouri Highway and Transportation Department Primary System Bridge Record, Book 1, located at Bridge Division, MHTD, Jefferson City MO; **Tenth Biennial Report of the State Highway Commission of Missouri**, for the period ending 1 December 1936, page 262; field inspection by Clayton Fraser, 5 May 1990.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	15 March 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Hurricane Deck Bridge
MHTD: K 961R

CAMD04

DATE(S) OF CONSTRUCTION
1934-35

LOCATION
Missouri State Highway 5 over Osage River / Lake of the Ozarks; S16, T39N, R17W
1.0 mile southwest of Hurricane Deck; Camden County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP eligible (score: 76)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	3; 2	superstructure:	steel, rigid-connected, Warren cantilever deck truss
span length:	463.0'; 377.0'	substructure:	concrete abutments, wingwalls and piers
total length:	2281.0'	floor/decking:	asphalt covered concrete deck over steel stringers
roadway wdt.:	28.0'	other features:	upper and lower chord: 2 built-up channels with lacing; vertical: 4 angles with batten plates; diagonal: 2 built-up channels with lacing; 4 angles with batten plates; lateral bracing: 2 angles with batten plates; strut: 4 angles with lacing; floor beam: I-beam with cantilevered sidewalks; guardrail: steel rail

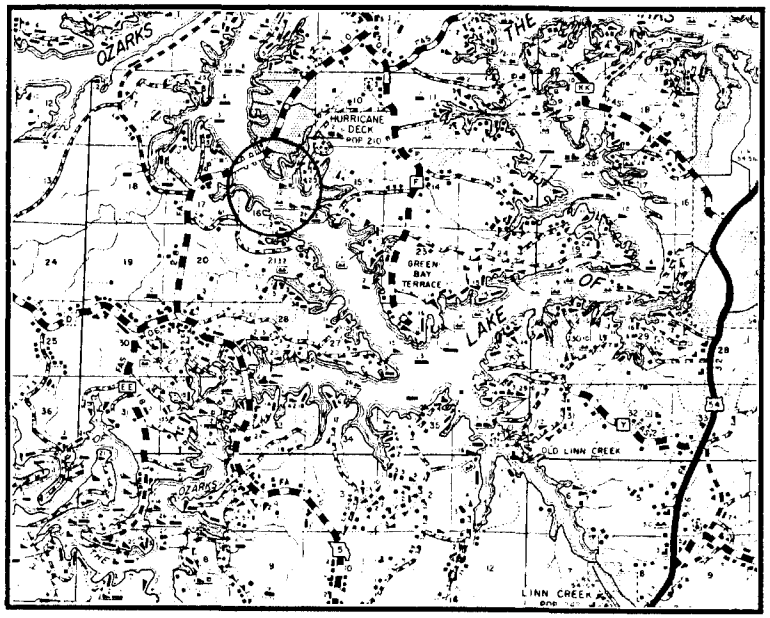
Known locally as the Hurricane Deck Bridge, owing to its proximity to the town of Hurricane Deck, this dramatic long-span cantilever deck truss dates to 1934. The bridge carries State Highway 5 over the Osage Arm of Lake of the Ozarks. Featuring an exceedingly rare cantilever deck truss, the superstructure is supported by concrete piers and abutments. The design for this five-span bridge was completed in the fall of 1934 by engineers for the Missouri State Highway Department. A contract for the bridge's fabrication and erection was let that October to the W.A. Ross Construction Company and the Stupp Brothers Bridge and Iron Company of St. Louis. Made up of steel components rolled by the Illinois Steel Company of Chicago, the bridge was erected in 1935 for $541,117.00. Virtually unchanged since its completion, the Hurricane Deck Bridge continues to carry traffic in Camden County with only maintenance-related repairs.

During the late 19th and early 20th centuries, numerous through and pony trusses were built on roads and highways throughout Missouri. Deck trusses–in which the roadway is carried by the truss's upper chords–were built far less often. Never very common, this truss type has suffered attrition throughout the state, until only six deck trusses are now listed in Missouri's Structure Inventory and Appraisal list. Significantly, all are located on the state highway system, and were built in the 1930s. Three of these bridges span Lake of the Ozarks in Camden County. Of the remaining deck trusses, only the Camden County bridges employ cantilevered construction; the balance are all simply supported. The Hurricane Deck Bridge thus stands out as the longest of Missouri's remaining deck trusses. Recognized by the American Institute of Steel Construction as one of the most beautiful medium-span bridges built in America in 1935, it is an important transportation-related resource.

NAME(S) OF STRUCTURE

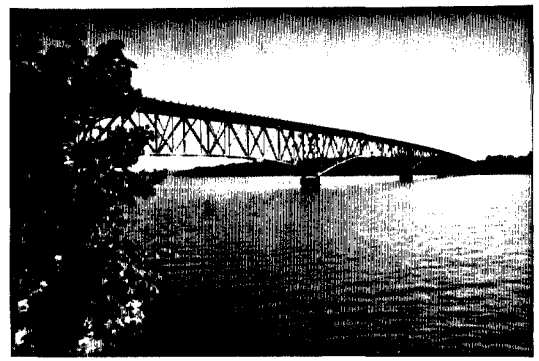
Hurricane Deck Bridge

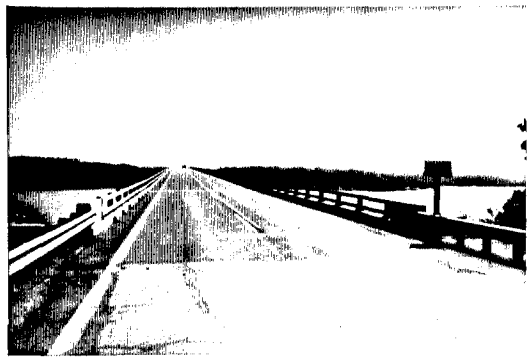
PHOTOS AND SKETCH MAP OF LOCATION



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 961R; Primary System Bridge Record, Camden County, located at Bridge Division, missouri Highway and Transportation Department, Jefferson City, Missouri; field inspection by Clayton Fraser, 5 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	15 March 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Little Niangua River Bridge CAMD05
MHTD: S 391

DATE(S) OF CONSTRUCTION
1932-33

LOCATION
State Secondary Route J over Little Niangua River; S4, T38N, R19W
7.7 miles northeast of Macks Creek; Camden County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP eligible (score: 77)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	3	superstructure:	steel cable suspension bridge with pinned and rigid steel towers
span length:	225.0'	substructure:	concrete abutments, wingwalls and spill-through pedestal piers
total length:	524.0'	floor/decking:	asphalt-covered timber over steel stringers
roadway wdt.:	20.0'	other features:	tower: 2 channels with lacing; vertical: 2 wide flanges with batten plates; diagonal: 2 angles with batten plates; lateral bracing: 2 angles; floor beam: I-beam field riveted to vertical; guardrail: 2 angles; main cable: 4 separate galvanized wound cables; 1 cable suspender; I-beam through girder; cables connected with pinned eyebars which lead into deadmen at abutments

Spanning the Little Niangua River in scenic west-central Camden County, the Little Niangua River Bridge is situated some eight miles northeast of the town of Macks Creek. The bridge forms an interesting study in the evolution of bridge design. During its design stage in 1932, with construction funds limited, engineers for the Missouri State Highway Department considered various truss and beam configurations. "The I-beam layout was entirely unsuited from an esthetic viewpoint," MSHD design engineer Howard Mullins wrote in 1933. "The truss layout was little better. The unstiffened suspension layout was considered inadequate for a bridge of such light weight and slender proportions. The self-anchored type proved the most economical and was adopted." The bridge consisted of a central 225-foot suspended span, anchored by shorter 112½-foot flanking spans and supported by steel towers on spill-though concrete pedestals. Spun and prestressed in the Trenton, New Jersey, plant of the American Steel and Wire Company, the four parallel wire cables were attached to steel eyebars at the bridge deck level and anchored to the lightweight concrete supports, without benefit of massive deadmen. Lateral stiffness was provided by 33-inch-deep rolled deck girders. Mullins stated: "Unique features of the design include the application of pre-stressed strands to the self-anchored type: an unusual arrangement of the strands in the cable; the use of rolled beam sections for the stiffening girders; the use of a built-up or laminated cable clamp; and the method of handling he expansion movement."

After soliciting competitive proposals, the state highway commission awarded a contract to build the bridge to the Clinton Bridge Works of Clinton, Iowa. A Clinton crew set up shop on the west bank of the river and began building a falsework trestle over which the bridge would be erected. Work on the substructure began in August and was completed the following March. "For the superstructure a guy derrick with a 70-ft. boom was set up on the lower tier of falsework and began setting steel at the east abutment," Mullins stated. "Moving toward the west end, this derrick set all upper-tier falsework and all steel complete, including the towers, in one pass. All

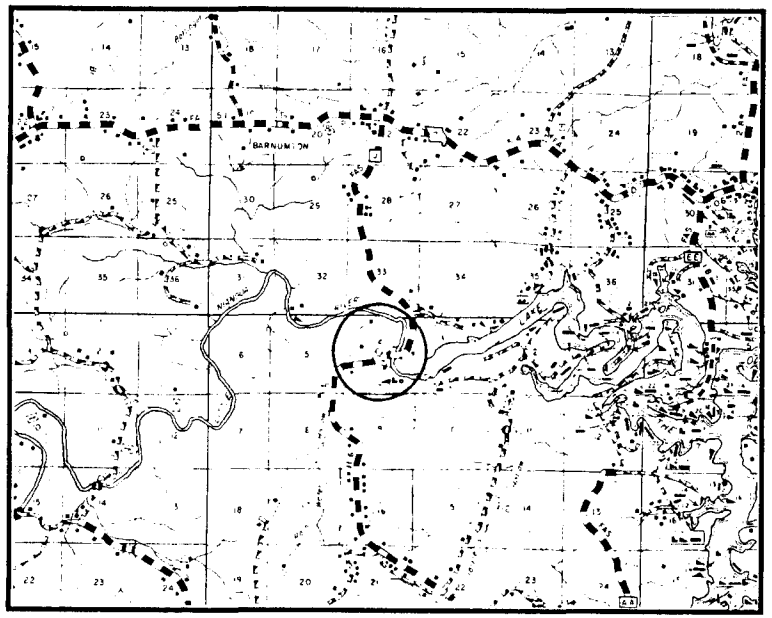
superstructure material was delivered too position by a cableway operating along the north side of the bridge. After all riveting was completed, the strands were hoisted into position and adjusted. After placing of the cable clamps and flooring, the hangers were connected by pulling the cable down by a ratchet device connected between a sling over the cable clamp and one underneath the stiffening girder." The superstructure was completed soon after the substructural work in March 1933. Aggregate cost of the bridge was an exceedingly low $36,914.00. This crossing effectively fulfilled the state highway department's goal of building an aesthetically pleasing bridge that would blend in with the surrounding area at a reasonable cost to the state. The Little Niangua River Bridge continues to carry traffic in Camden County in basically unaltered condition.

Standing in stark contrast with the ethereal suspension spans by central Missouri bridge builder A.J. Dice, the Little Niangua River Bridge marks a noteworthy foray into suspension bridge design by the state highway department. At the time of its completion, this structure was the fourth self-anchored suspension bridge built in America, preceded by only three urban structures in Pittsburgh. It was the first stiffened suspension bridge built in Missouri since the Grand Avenue Bridge in St. Louis, a cable-braced structure built in 1890. A seldom-used prototype of an esoteric bridge design, the Little Niangua River Bridge represents a daring exploration of structural design by the state highway department, an agency not usually associated with experimentation. It thus ranks among Missouri's most important early highway spans.

NAME(S) OF STRUCTURE

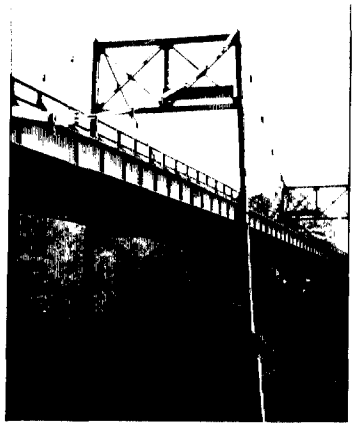
Little Niangua River Bridge

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 S 391; **Eighth Biennial Report of the State Highway Commission of Missouri**, for the period ending 1 December 1932, page 240; "Self-Anchored Suspension Bridge Built in Missouri," **Engineering News-Record**, vol. 111, no. 13, (28 September 1933), pages 367-370; field inspection by Clayton Fraser, 5 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	15 March 1993

COLE COUNTY

Included: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	MHTD	Bridge Name	Description	
*COLE01	001000.2	Moniteau Creek Bridge	1-140'	**pinned Pratt through truss**
			1916	Kansas City Bridge Company
*COLE02	031000.7	Bridge		(replaced)
*COLE03	031000.8	Koehler's Ford Bridge	1-140'	**pinned Pratt through truss**
			1911	Canton Bridge Co., Canton OH
*COLE04	039000.1	Rock House Ford Bridge		(replaced)
*COLE05	047002.8	Robinson's Ferry Bridge	1-170'	**pinned Parker through truss**
			1916	Kansas City Bridge Company
*COLE06	069001.6	Wears Creek Bridge	1- 36'	**concrete filled spandrel arch**
			c1925	
COLE07	078003.4	Herbrandt Creek Bridge		(replaced)
COLE08	092002.4	Rising Creek Bridge		(replaced)
*COLE09	165001.9	McCannis Ford Bridge		(replaced)
COLE10	218000.1	Cole Junction Bridge	3- 40'	concrete deck girder
			1917	Pope Construction Company
COLE11	229001.0	Moreau River Bridge	1-140'	**riveted Pratt through truss**
			1934	Drexel Construction Company

EXCLUDED:

Steel stringer
G 302R S 410 S 823 X 35 173001.2 218000.4

Concrete slab
024001.5 039000.7 090000.7 151000.2 176000.8 193000.7

Concrete girder
K 760 Y 310 071002.3 096000.6 113001.0 194000.9 218002.2
228001.9

Concrete box culvert
H 629 J 715 J 717 J 718 K 759R P 93 S 254
S 255 U2180R23 X 483 071001.4 218003.4

Steel pipe culvert
218001.9

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	0	6	0	0	6
Excluded	15	17	1	0	33
	15	23	1	0	39 structures

Moniteau Creek Bridge

COLE01

GENERAL DATA

structure no.: 001000.2
county: Cole
city/town: 7.2 miles north of Centertown
feature inters.: Moniteau Creek
cadastral grid: S24, T46N, R14W
highway route: County Road 1
highway distr.: 5
current owner: Cole County

STRUCTURAL DATA

superstructure: steel, 7-panel, pin-connected Pratt through truss, with steel stringer approach spans
substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers; laced steel pile bents at east approach

span number: 1
span length: 140.0'
total length: 221.0'
roadway width: 14.7'
condition: fair
alterations: none
floor/decking : asphalt-covered timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field-bolted to vertical; guardrail: 2 channels; portal builder's plate: **1916 / Built by Kansas City Bridge Co. / Kansas City MO. / I.D. Bond Pres. Judge / John Lepage Assoc. Judge / J.R. Taylor Assoc. Judge / Clem Dirokx Clerk / O.L. Moore Dep. Clerk / E.F.C. Harding Engineer**; endpost-mounted bridge plate: "**Bridge No. 27 Class B**

HISTORICAL DATA

erection date: 1915-16
erection cost: $5779.00
designer: Kansas City Bridge Company, Kansas City MO (probable)
fabricator : Kansas City Bridge Company, Kansas City MO;
Inland Steel Company, East Chicago IN
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 001000.2; Cole County Court Record, Book Q: page 459 (11 June 1915), page 555 (7 April 1916)- located at the Cole County Courthouse, Jefferson City MO; field inspection by Clayton Fraser, 9 November 1990.

Moniteau Creek Bridge

sign. rating: 46
evaluation: NRHP non-eligible (typically configured, relatively late example of mainstay structural type)

inventoried by: Clayton B. Fraser 15 January 1992

Koehler's Ford Bridge

COLE03

GENERAL DATA

structure no.: 031000.8
county: Cole

city/town: 2.2 miles southwest of St. Martens
feature inters.: North Moreau Creek
cadastral grid: S8/9, T44N, R13W
highway route: County Road 31
highway distr.: 5
current owner: Cole County

STRUCTURAL DATA

superstructure: steel, 8-panel, pin-connected Pratt through truss; 9-span steel stringer approach, south end; 2-span steel stringer approach, north end
substructure: concrete abutments; concrete-filled steel cylinder piers under truss; laced, steel pile bent piers under approach spans

span number: 1
span length: 140.0'
total length: 469.0'
roadway width: 14.7'

condition: fair
alterations: none
floor/decking : asphalt-covered corrugated steel deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing (2 looped square eyebars at the hip); diagonal: 2 looped rectangular eyebars; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field-bolted to vertical; guardrail: steel lattice; portal builder's plate: **The Canton Bridge Co. / Builders / Canton Ohio**

HISTORICAL DATA

erection date: 1910-11
erection cost: $6775.00 (contract amount)
designer: Canton Bridge Company, Canton OH (probable)
fabricator : Canton Bridge Company, Canton OH;
Cambria Steel Company, Pittsburgh PA
contractor: Canton Bridge Company, Canton OH

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 031000.8; Cole County Court Record, Book P: page 479 (7 October 1910), page 481 (7 November 1910), Cole County Court Record, Book Q: page 12 (10 November 1911), page 25 (4 January 1912), page 84 (12 March 1912) - located at the Cole County Courthouse, Jefferson City MO; **History of Cole, Moniteau, Morgan, Benton, Miller, Maries and Osage Counties, Missouri** (Chicago: Goodspeed Publishing Company, 1889); field inspection by Clayton Fraser, 9 November 1990.

Koehler's Ford Bridge

sign. rating: 54
evaluation: NRHP possibly eligible (well-preserved, well-documented example of mainstay structural type)

inventoried by: Clayton B. Fraser 15 January 1992

Robinson's Ferry Bridge

COLE05

GENERAL DATA

structure no.: 047002.8
county: Cole

city/town: 5.6 miles south of St. Martens
feature inters.: North Moreau Creek
cadastral grid: S36, T44N, R13W
highway route: County Road 47
highway distr.: 5
current owner: Cole County

STRUCTURAL DATA

superstructure: steel, 8-panel, pin-connected Parker through truss, with steel stringer approach span
substructure: concrete abutments at the north end; concrete footers on stone ledge at the south end; concrete pier

span number: 1
span length: 170.0'
total length: 205.0'
roadway width: 14.5'

condition: fair
alterations: none
floor/decking : asphalt-covered corrugated steel deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: 1 round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to verticals; guardrail: 2 channels; endpost-mounted bridge plate: **Class B**

HISTORICAL DATA

erection date: 1915-16
erection cost: unknown
designer: Kansas City Bridge and Iron Company, Kansas City MO (probable)
fabricator : Kansas City Bridge and Iron Company, Kansas City MO;
Carnegie Steel Company, Pittsburgh PA;
Cambria Steel Company, Pittsburgh PA
contractor: Kansas City Bridge and Iron Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 047002.8; Cole County Court Record Book N: page 623 (February 3 1904); Book Q: page 431 (4 March 1915) - located at the Cole County Courthouse, Jefferson City, MO; field inspection by Clayton Fraser, 9 November 1990.

sign. rating: 53
evaluation: NRHP possibly eligible (well-preserved example of uncommon Pratt truss subtype)

inventoried by: Clayton B. Fraser 15 January 1992

Wears Creek Bridge

COLE06

GENERAL DATA

structure no.: 069001.6
county: Cole
city/town: 3.0 miles west of Jefferson City
feature inters.: Wears Creek
cadastral grid: S14, T44N, R12W
highway route: County Road 69
highway distr.: 5
current owner: Cole County

STRUCTURAL DATA

superstructure: concrete filled spandrel arch
substructure: concrete abutments and wingwalls

span number: 1
span length: 36.0'
total length: 56.0'
roadway width: 15.5'
condition: fair
alterations: steel I-beams bolted to arch sidewalls
floor/decking: concrete deck over earth fill
other features: cantilevered roadway; solid concrete guard-rails with recessed panels

HISTORICAL DATA

erection date: c1925
erection cost: unknown
designer: unknown
fabricator: none
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 069001.6; field inspection by Clayton Fraser, 9 November 1990.

sign. rating: 20
evaluation: NRHP non-eligible (poorly preserved, poorly documented example of early concrete arch construction)

inventoried by: Clayton B. Fraser 15 January 1992

Cole Junction Bridge

COLE10

GENERAL DATA

structure no.:	218000.1	**city/town:**	Jefferson City
county:	Cole	**feature inters.:**	Grays Creek
		cadastral grid:	S27, T45N, R12W
		highway route:	County Road 218
		highway distr.:	5
		current owner:	Cole County

STRUCTURAL DATA

superstructure: concrete deck girder
substructure: concrete abutments, wingwalls and piers

span number:	3	**condition:**	fair
span length:	40.0'	**alterations:**	none
total length:	126.0'	**floor/decking :**	concrete deck
roadway width:	16.2'	**other features:**	concrete guardrails with turned balusters; bridge plate: **BR #6 1917**

HISTORICAL DATA

erection date: 1917
erection cost: unknown
designer: unknown
fabricator : none
contractor: Pope Construction Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 218000.1; Cole County Court Record, Book R: pages 46-47 (7 May 1917) - located at Cole County Courthouse, Jefferson City MO.

sign. rating: 50
evaluation: NRHP possibly eligible (well-preserved, relatively early example of mainstay structural type)

inventoried by: Clayton B. Fraser 15 January 1992

Moreau River Bridge

COLE11

GENERAL DATA

structure no.:	229001.0	**city/town:**	4.1 miles south of St. Martens
county:	Cole	**feature inters.:**	Moreau River
		cadastral grid:	S26, T44N, R13W
		highway route:	County Road 229
		highway distr.:	5
		current owner:	Cole County

STRUCTURAL DATA

superstructure: steel, 7-panel, rigid-connected Pratt through truss, with steel stringer approach spans

substructure: concrete abutments, wingwalls and piers

span number:	1	**condition:**	good
span length:	140.0'	**alterations:**	unknown
total length:	198.0'	**floor/decking :**	concrete deck over steel stringers
roadway width:	23.9'	**other features:**	steel guardrails

HISTORICAL DATA

erection date: 1934

erection cost: $17,347.70

designer: Missouri State Highway Department

fabricator : unknown

contractor: Drexel Construction Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 229001.0; Primary System Bridge Files - located at MHTD, Jefferson City MO.

sign. rating: 39

evaluation: NRHP non-eligible (typical example of MSHD truss design of the 1930s)

inventoried by: Clayton B. Fraser 15 January 1992

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Moniteau Creek Bridge
MHTD: 001000.2

COLE01

DATE(S) OF CONSTRUCTION
1915-16

LOCATION
County Road 1 over Moniteau Creek; S24, T46N, R14W
7.2 miles north of Centertown; Cole County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 46)

CONDITION
fair

OWNER
Cole County

span number: 1
span length: 140.0'
total length: 221.0'
roadway wdt.: 14.7'

superstructure: steel, 7-panel, pin-connected Pratt through truss, with steel stringer approach spans
substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers; laced steel pile bents at east approach
floor/decking: asphalt-covered timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field-bolted to vertical; guardrail: 2 channels; portal builder's plate: **1916 / Built by Kansas City Bridge Co. / Kansas City MO. / I.D. Bond Pres. Judge / John Lepage Assoc. Judge / J.R. Taylor Assoc. Judge / Clem Dirokx Clerk / O.L. Moore Dep. Clerk / E.F.C. Harding Engineer**; endpost-mounted bridge plate: "**Bridge No. 27 Class B**

The Moniteau Creek Bridge carries a county road over Moniteau Creek in the uppermost northern region of Cole County. Located some seven miles north of Centertown, this medium-span structure is comprised of a pinned Pratt truss over the stream's channel, with a steel stringer approach span on the west and two steel stringer approach spans on the east. The Moniteau Creek Bridge dates to 1915. Late that spring E.F.C. Harding, the Cole County Engineer, surveyed the site for a permanent span here. The county advertised for competitive bids and on June 11, a contract to fabricate and erect the truss was awarded to the Kansas City Bridge Company for $5779.00. The firm used components rolled by Inland Steel to fabricate the truss and assembled it over steel cylinder piers later that year. Since its completion, the Moniteau Creek Bridge has carried vehicular traffic, with only maintenance-related repairs.

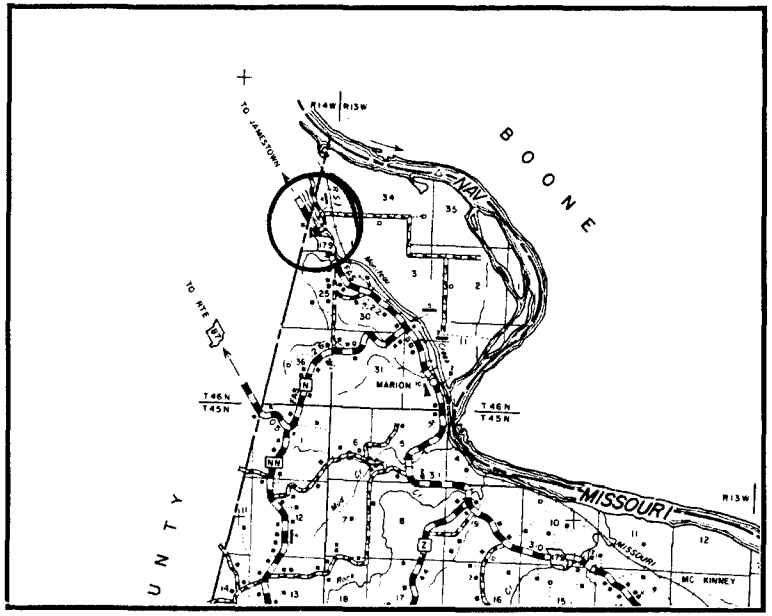
Like virtually all of Missouri's counties, Cole County followed a definite progression in its bridge construction in the 19th and early 20th centuries, in response to evolving transportation needs and technological development in the bridge industry. The first simple spans, built as the county was undergoing its initial settlement, were rudimentary timber structures. These were cheap and easy to build but lacking in durability and limited in span length. With greater revenues from increased settlement, the county could undertake more ambitious timber/iron combination trusses in the 1860s and 1870s. These, in turn, were superseded in the late 1870s by all-iron spans, made readily available by mass production. Although the county court barely noticed the transition from iron to steel in the

1890s, this evolution marked a watershed that would continue into the 20th century for bridge fabricators and the rolling mills that supplied them. Throughout these later years, the pinned Pratt truss (and its various subtypes) was the bridge of choice for medium- and long-span crossings. In this, it was like most of Missouri's counties. From the 1870s through the 1910s, thousands of pinned Pratt trusses were erected on Missouri's roadways. Although several hundred of these structures remain in use today, relatively few predate the turn of the century. And fewer yet of the 19th century survivors remain structurally intact. With an erection date of 1915-16 and a span length of 140 feet, the Moniteau Creek Bridge falls well within the mainstream of this statewide trend.

NAME(S) OF STRUCTURE

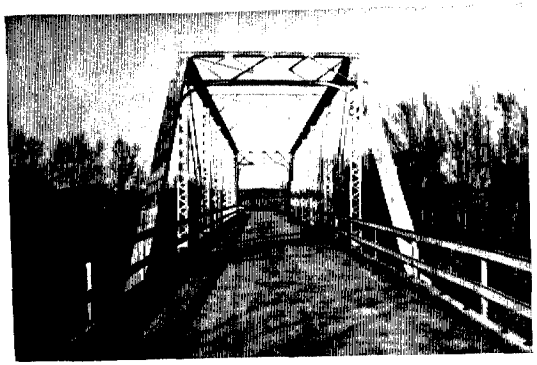
Moniteau Creek Bridge

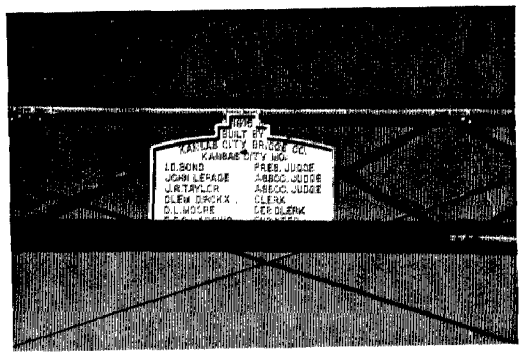
PHOTOS AND SKETCH MAP OF LOCATION

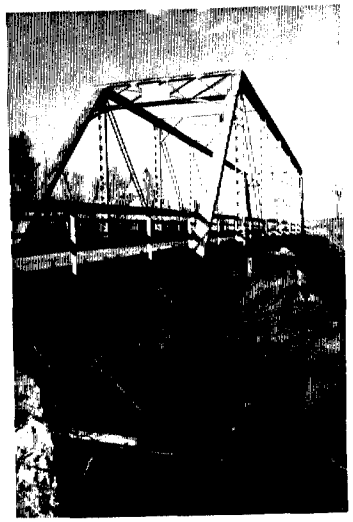


LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT GENERAL HIGHWAY MAP







SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 001000.2; Cole County Court Record, Book Q: page 459 (11 June 1915), page 555 (7 April 1916)- located at the Cole County Courthouse, Jefferson City MO; field inspection by Clayton Fraser, 9 November 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	15 January 1992

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Koehler's Ford Bridge
MHTD: 031000.8

COLE03

DATE(S) OF CONSTRUCTION
1910-11

LOCATION
County Road 31 over North Moreau Creek; S8/9, T44N, R13W
2.2 miles southwest of St. Martens; Cole County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 54)

CONDITION
fair

OWNER
Cole County

span number: 1
span length: 140.0'
total length: 469.0'
roadway wdt.: 14.7'

superstructure: steel, 8-panel, pin-connected Pratt through truss; 9-span steel stringer approach, south end; 2-span steel stringer approach, north end

substructure: concrete abutments; concrete-filled steel cylinder piers under truss; laced, steel pile bent piers under approach spans

floor/decking: asphalt-covered corrugated steel deck over steel stringers

other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing (2 looped square eyebars at the hip); diagonal: 2 looped rectangular eyebars; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field-bolted to vertical; guardrail: steel lattice; portal builder's plate: **The Canton Bridge Co. / Builders / Canton Ohio**

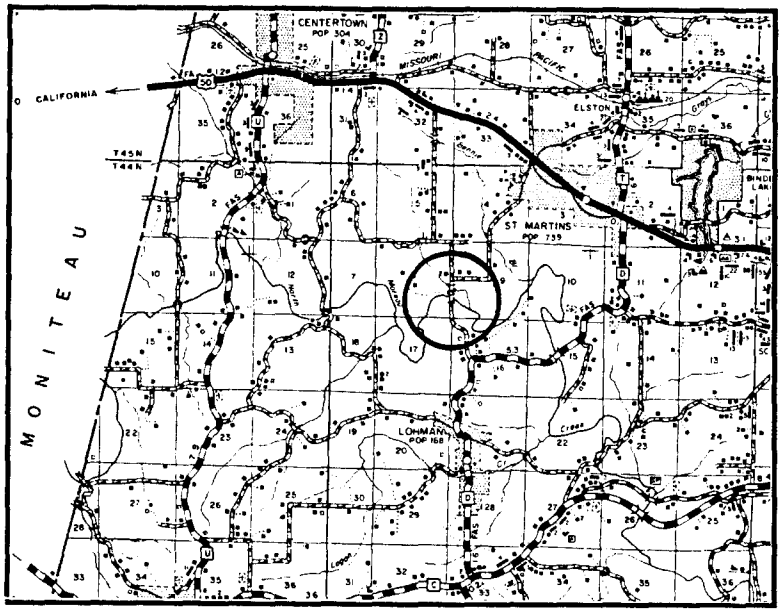
In October 1910 the Cole County Court instructed county surveyor E.F.C. Harding to visit a stream crossing of a county road in northwestern Cole County. Known locally as Koehler's Ford, this crossing of North Moreau Creek was located southwest of St. Martens. The surveyor prepared cost estimates for a "steel highway bridge across North Moreau Creek at or near Koehler's Ford" that would "conform to state highway engineers Class B bridge" specifications. Later that month the county solicited competitive bids for the bridge's fabrication and erection, awarding the contract to the Canton Bridge Company of Canton, Ohio, for $6775.00. As built (and probably designed) by Canton, the multiple-span structure consisted of a pin-connected Pratt truss over the river's channel, with an extensive steel stringer trestle over the flood plain to the south. Concrete-filled cylinder piers supported the truss; steel pile bents with laced lateral bracing were located under the approach spans. Canton used steel components rolled in the Cambria mills of Pittsburgh to fabricate the truss, substructure and approaches. Completed early in 1911, the Koehler's Ford Bridge has functioned in place since, in essentially unaltered condition.

As one of America's most prolific bridge fabricators, the Canton Bridge Company maintained an extensive catalogue of truss types, ranging from the exotic to the commonplace. Canton, like most of the region's bridge builders of the time, relied heavily on pin-connected Pratt truss variants for its standard truss types. Patented in 1844 by Thomas and Caleb Pratt, the Pratt design was characterized by upper chords and vertical members acting in compression and lower chords and diagonals that acted in tension. Its parallel chords and equal panel lengths resulted in standardized sizes for the verticals, diagonals and chord members, making fabrication and assembly relatively

NAME(S) OF STRUCTURE

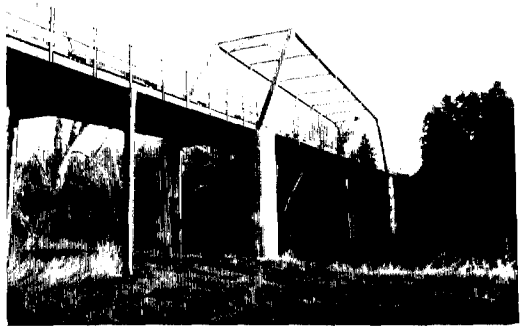
Koehler's Ford Bridge

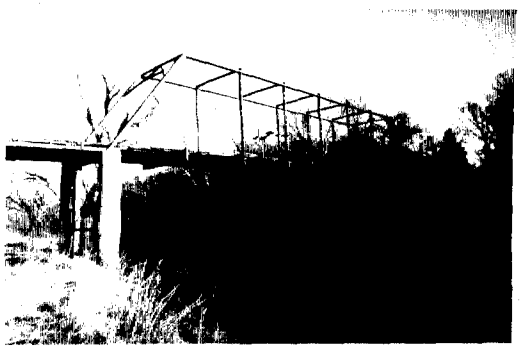
PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT GENERAL HIGHWAY MAP





SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 031000.8; Cole County Court Record, Book P: page 479 (7 October 1910), page 481 (7 November 1910), Cole County Court Record, Book Q: page 12 (10 November 1911), page 25 (4 January 1912), page 84 (12 March 1912) - located at the Cole County Courthouse, Jefferson City MO; **History of Cole, Moniteau, Morgan, Benton, Miller, Maries and Osage Counties, Missouri** (Chicago: Goodspeed Publishing Company, 1889); field inspection by Clayton Fraser, 9 November 1990.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	15 January 1992

easy. In the highly competitive bridge manufacturing industry, in which efficiency equated with profit, Pratt trusses received almost universal use. "The Pratt truss is the type most commonly used in America for spans under two hundred and fifty feet in length," noted bridge engineer J.A.L. Waddell wrote in 1916. "Its advantages are simplicity, economy of metal, and suitability for connecting to the floor and lateral systems." Virtually all of the major regional fabricators manufactured Pratt trusses and marketed them extensively to Missouri's counties in the late 19th and early 20th centuries. The Koehler's Ford Bridge is distinguished among these for its excellent state of preservation: with its truss, substructure and extensive approach spans in place, it is an important transportation-related resource.

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Robinson's Ferry Bridge
MHTD: 047002.8

COLE05

DATE(S) OF CONSTRUCTION
1915-16

LOCATION
County Road 47 over North Moreau Creek; S36, T44N, R13W
5.6 miles south of St. Martens; Cole County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 53)

CONDITION
fair

OWNER
Cole County

span number: 1
span length: 170.0'
total length: 205.0'
roadway wdt.: 14.5'

superstructure: steel, 8-panel, pin-connected Parker through truss, with steel stringer approach span
substructure: concrete abutments at the north end; concrete footers on stone ledge at the south end; concrete pier
floor/decking: asphalt-covered corrugated steel deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: 1 round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to verticals; guardrail: 2 channels; endpost-mounted bridge plate: **Class B**

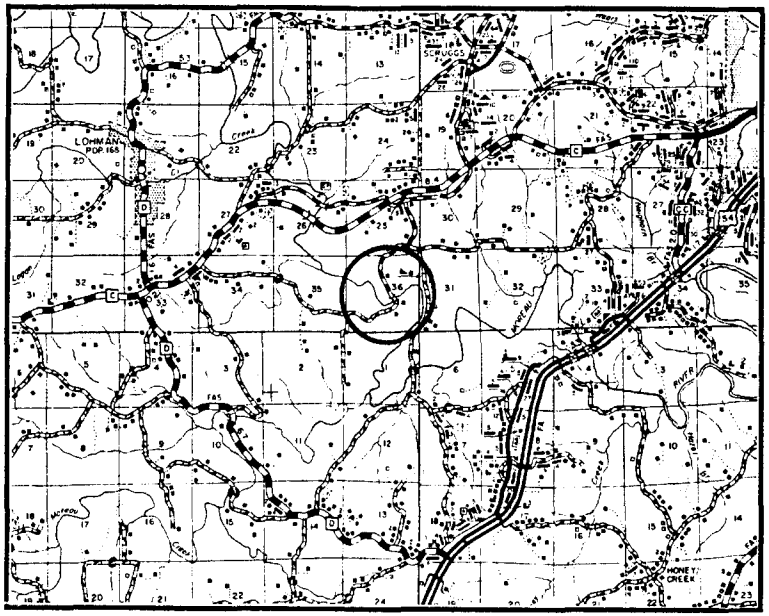
Located south of St. Martens in central Cole County, this medium-span truss carries a gravel-surfaced road over North Moreau Creek. The bridge features a pin-connected Parker through truss, supported by a concrete substructure and approached by a single steel stringer span on the north. Built in 1916, the structure has its origins early in the 20th century. Early in 1904 a group of citizens from Moreau Township petitioned the Cole County Court for a permanent bridge over North Moreau Creek to replace the ferryboat operation at Robinson's Ferry. The petitioners offered a $2000.00 subscription to help defray the cost of the bridge's construction, but the county delayed action on the bridge for eleven years. In 1915 the judges finally advertised for competitive bids to build the bridge. When proposals were received, the court accepted the bid of the Kansas City Bridge and Iron Company to fabricate and erect the truss for $7600.00. Completed in 1916, the Robinson's Ferry Bridge has since carried vehicular traffic, with the strengthening of a strut as the only modification of note.

With their relatively long spans, light structural members and archaic detailing, pin-connected Parker through trusses have proved particularly vulnerable in Missouri's bridge replacement program. As a result, of the hundreds that once carried vehicular traffic through the state, only some 35 have been identified as extant by the historic bridge inventory. These range in span length from 110 feet to 200 feet and from erection date from 1900 to 1932. Typical of Missouri's trusses, they vary widely in their retention of physical integrity as well. The Robinson's Ferry Bridge, with its 170-foot span and 1915-16 construction date, falls within the milieu of this trend. It is noteworthy for its excellent state of preservation.

NAME(S) OF STRUCTURE

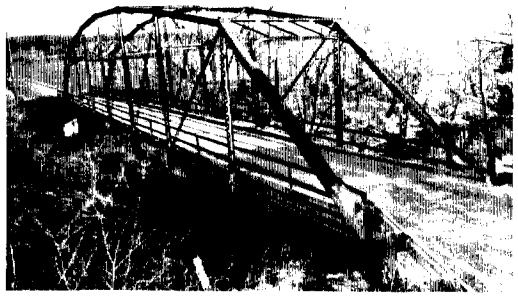
Robinson's Ferry Bridge

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 047002.8; Cole County Court Record Book N: page 623 (February 3 1904); Book Q: page 431 (4 March 1915) - located at the Cole County Courthouse, Jefferson City, MO; field inspection by Clayton Fraser, 9 November 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	15 January 1992

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Cole Junction Bridge
MHTD: 218000.1

COLE10

DATE(S) OF CONSTRUCTION
1917

LOCATION
County Road 218 over Grays Creek; S27, T45N, R12W
Jefferson City; Cole County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 50)

CONDITION
fair

OWNER
Cole County

span number:	3	superstructure:	concrete deck girder
span length:	40.0'	substructure:	concrete abutments, wingwalls and piers
total length:	126.0'	floor/decking:	concrete deck
roadway wdt.:	16.2'	other features:	concrete guardrails with turned balusters; bridge plate: **BR #6 1917**

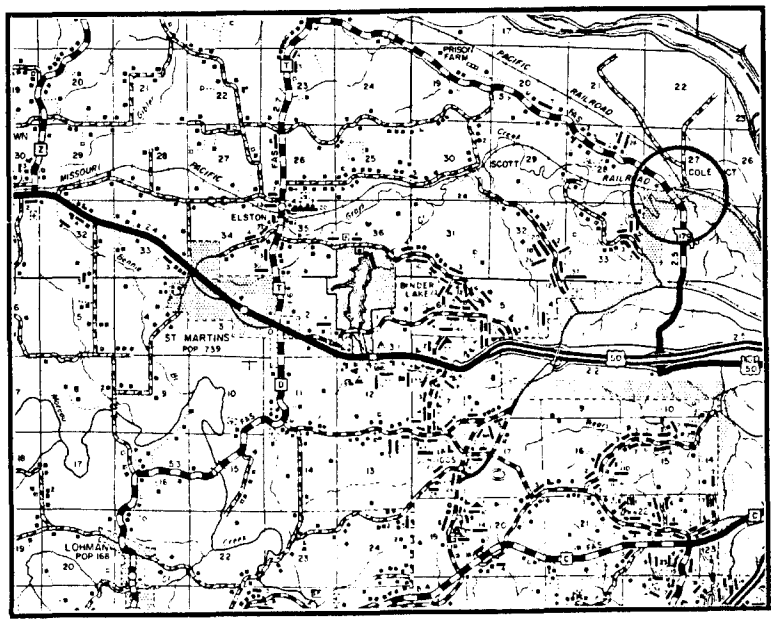
Located at Cole Junction, near the northern outskirts of Jefferson City, this bridge spans Grays Creek. The structure consists of three concrete deck girder spans, supported by concrete piers and abutments. Molded concrete balusters in the guardrails form the bridge's most noteworthy architectural expression. The Cole Junction Bridge dates to 1917. In April of that year the Cole County Court contracted with Joseph Pope, owner of the Pope Construction Company, to build a "Class A concrete bridge" at this point, a concrete span over Grays Creek at Buckner Ford and another smaller structure over Herbrandt Branch on the Thomas - Jefferson City road. (Both of the latter structures have recently been demolished.) The cost of the Cole Junction Bridge was $6160.00. Completed later that year, it has functioned in place without substantial alteration.

Unlike many Midwestern states, Missouri did not employ reinforced concrete extensively for construction of vehicular bridge superstructures in the 1910s. The various counties and, to a lesser extent, the state highway department continued to prefer steel for bridge superstructures well after concrete had received widespread acceptance elsewhere. This, combined with subsequent attrition, has resulted in a relatively small number of concrete bridges that exist today from this formative period. The Cole Junction Bridge is distinguished among these as one of the earliest concrete deck girders found in the state. Modestly scaled and simply detailed, it is noteworthy as an early, well-preserved example of concrete bridge construction in Missouri.

NAME(S) OF STRUCTURE

Cole Junction 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 218000.1; Cole County Court Record, Book R: pages 46-47 (7 May 1917) - located at Cole County Courthouse, Jefferson City MO.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	15 January 1992

COOPER COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	MHTD	Bridge Name	Description	
*COOP01	G 366	Lamine River Bridge	**1-180'**	**riveted Parker through truss**
			1924	Haller and Davis
COOP02	J 72	Lamine River Bridge	1-120'	**concrete open spandrel arch**
			1930	Yancey Construction Company
*COOP03	K 236	Lamine River Bridge	**1-200'**	**riveted Parker through truss**
			1933	Carruthers and Crouch
*COOP04	W 304	Turley Bridge	1-170'	**pinned Parker through truss**
			1906	Kansas City Bridge Company
COOP05	002000.7	Bridge		(replaced)
COOP06	003001.7	Bridge		(replaced)
*COOP07	025000.0	Dicks Bridge	**2-160'**	**pinned Parker through truss**
			1908	Kansas City Bridge Company
*COOP08	026000.4	Bridge	1- 60'	pinned Pratt pony truss
			c1910	
COOP09	067001.8	Bridge	1- 22'	steel stringer
			1912	Kansas City Bridge Company
COOP10	070000.0	Petite Saline Ck. Bridge	1-**100'**	pinned Pratt pony truss
			c1910	
COOP11	140000.0	Billingsville Bridge	1-**100'**	pinned Pratt pony truss
			1913	Kansas City Bridge Company
*COOP12	156000.6	Roberts Ford Bridge		(replaced)
*COOP13	173002.9	Cordry Bridge		(replaced)
*COOP14	202000.0	Bryant Bottom Bridge	1-**210'**	**pinned Parker through truss**
			1908	Missouri Bridge and Iron Co.
*COOP15	211000.0	Shakleton Ford Bridge	1-160'	**pinned Parker through truss**
			1913	Kansas City Bridge Company
*COOP16	223000.4	Klenklen Bridge	1-**210'**	**steel cable suspension bridge**
			1930	J.A. Dice
*COOP17	231001.3	Streit Ford Bridge	1-140'	**pinned Pratt through truss**
			1913	Kansas City Bridge Company
*COOP18	238002.0	Otterville Ford Bridge	1-160'	**pinned Parker through truss**
			1908	Missouri Bridge and Iron Co.
*COOP19	258001.3	Otter Creek Bridge	1- 72'	riveted Pratt pony truss
			1920	Kansas City Bridge Company
*COOP20	314000.5	Cotton Bridge		(replaced)
*COOP21	333001.3	Moniteau Creek Bridge	1- 50'	**pinned kingpost pony truss**
			1899	A.M. Blodgett, Kansas City
			1902	A.M. Blodgett, Kansas City
COOP22	030003.7	Thomas Branch Bridge	1- 36'	concrete deck girder
			1920	Pope Construction Company

COOPER COUNTY

EXCLUDED:

Pratt pony truss
G 365 196001.2 298002.3 314000.5 340001.0

Warren pony truss
236002.0 270000.9 148000.6

Steel girder
013001.9 123000.4 284000.5 327002.3 329000.4

Steel stringer
G 365R G 581R S 123 S 621 X 21R 023001.0 047001.0
113000.6 114001.3 117000.2 123001.1 137000.4 143002.0 162000.6
164001.1 180000.3 189000.2 219000.7 228000.9 232000.3 237001.1
246000.3 284000.3 300000.3 331000.4

Concrete girder
J 431 X 827 045500.1 344003.0

Concrete slab
G 581 G 702R G 731R J 129 107001.5 148001.1 252000.9
254001.2 279001.3 282001.1

Concrete box culvert
H 497 T 939 X 544 X 860 343000.7

Timber stringer
020000.9 192000.8 193000.6

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	4	13	0	0	17
Excluded	16	44	0	0	60
	20	57	0	0	77 structures

Lamine River Bridge

COOP01

GENERAL DATA

structure no.:	G 366	**city/town:**	4.2 miles northwest of Pilot Grove
county:	Cooper	**feature inters.:**	Lamine River
		cadastral grid:	S12, T48N, R19W
		highway route:	State Secondary Route M
		highway distr.:	5
		current owner:	Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 9-panel, rigid-connected Parker through truss, with rigid-connected Warren pony truss approach spans at each end

substructure: concrete abutments, wingwalls and piers

span number:	1; 2	**condition:**	good
span length:	180'; 80'	**alterations:**	none
total length:	347.0'	**floor/decking :**	concrete deck over steel stringers
roadway width:	20.0'	**other features:**	steel guardrails

HISTORICAL DATA

erection date: 1924

erection cost: $46,638.37

designer: Missouri State Highway Department

fabricator : unknown

contractor: Haller and Davis

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number G 366; Primary System Bridge Record, Cooper County, located at the Bridge Division, Missouri Highway and Transportation Department, Jefferson City, Missouri; **Fourth Biennial Report of the Missouri State Highway Commission**, for the period ending 1 December 1924, page 145; field inspection by Clayton Fraser, 1 May 1990.

sign. rating: 46

evaluation: NRHP non-eligible (typically configured, long-span highway truss of the 1920s)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 11 December 1993

Lamine River Bridge

COOP02

GENERAL DATA

structure no.:	J 72	**city/town:**	1.2 miles east of Otterville
county:	Cooper	**feature inters.:**	Lamine River
		cadastral grid:	S2, T45N, R19W
		highway route:	State Secondary Route A
		highway distr.:	5
		current owner:	Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: concrete, two-rib open spandrel arch, with four concrete deck girder approach spans

substructure: concrete abutments, wingwalls and piers

span number:	1	**condition:**	good
span length:	120.0'	**alterations:**	none
total length:	318.0'	**floor/decking :**	concrete deck
roadway width:	20.0'	**other features:**	MSHD standard concrete guardrails

HISTORICAL DATA

erection date: 1930

erection cost: $31,847.70

designer: Missouri State Highway Department

fabricator : none

contractor: Yancey Construction Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J 72; Primary System Bridge Record, Cooper County, located at the Bridge Division, Missouri Highway and Transportation Department, Jefferson City, Missouri; field inspection by Clayton Fraser, 1 May 1990.

sign. rating: 47

evaluation: NRHP non-eligible (typically configured, long-span arch configuration)

inventoried by: Michelle Crow-Dolby 11 December 1993

Lamine River Bridge

COOP03

GENERAL DATA

structure no.:	K 236	**city/town:**	7.4 miles southwest of Boonville
county:	Cooper	**feature inters.:**	Lamine River
		cadastral grid:	S10, T48N, R18W
		highway route:	Missouri State Highway 41
		highway distr.:	5
		current owner:	Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 9-panel, rigid-connected Parker through truss; rigid-connected Warren pony truss approach span at each end; three steel stringer approach spans

substructure: concrete abutments, wingwalls and piers

span number:	1; 2	**condition:**	good
span length:	200'; 80'	**alterations:**	none
total length:	524.0'	**floor/decking :**	concrete deck over steel stringers
roadway width:	22.0'	**other features:**	steel guardrails

HISTORICAL DATA

erection date: 1933

erection cost: $40,246.02

designer: Missouri State Highway Department

fabricator : unknown

contractor: Carruthers and Crouch

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 236; field inspection by Clayton Fraser, 1 May 1990; Primary System Bridge Record, Cooper County, located at the Bridge Division, Missouri Highway and Transportation Department, Jefferson City, Missouri.

sign. rating: 50

evaluation: NRHP possibly eligible (well-preserved, long-span highway truss of the 1920s)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 11 December 1993

Turley Bridge

COOP04

GENERAL DATA

structure no.: W 304
county: Cooper
city/town: 6.5 miles northeast of Prairie Home
feature inters.: Petite Saline Creek
cadastral grid: S22, T48N, R15W
highway route: State Secondary Route V
highway distr.: 5
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 9-panel, pin-connected Parker through truss
substructure: concrete abutments; non-original masonry abutments and pier from previous bridge

span number: 1
span length: 170.0'
total length: 171.0'
roadway width: 13.0'
condition: fair
alterations: truss moved, 1938
floor/decking : asphalt over timber deck with steel stringers
other features: upper chord: two channels with cover plate and lacing; lower chord: two punched rectangular eyebars; vertical: two channels with lacing; hip vertical: two angles with batten plates; diagonal: two punched rectangular eyebars; counter: looped square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: two angles with continuous plate; lateral bracing on struts: round looped rods; portal strut: two angles with lacing and curved knee braces; floor beam: I-beam, field-bolted to verticals; guardrail: four angles with lattice and continuous ends

HISTORICAL DATA

erection date: 1906-07; moved 1938
erection cost: $8200.00 (original two-span bridge)
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO; Carnegie Steel Company, Pittsburgh PA
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number W 304; Cooper County Court, Record X: pages 90-91 (9 May 1906), page 98 (6 June 1906), page 102 (9 July 1906), page 162 (4 December 1906); original bridge drawing, 4 June 1906, located at the Cooper County Courthouse, Boonville MO; County Engineer's report, 4 February 1907, located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

Turley Bridge

sign. rating: 47
evaluation: NRHP possibly eligible (well-documented example of uncommon structural type, moved to this location)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 11 December 1993

Dicks Bridge

COOP07

GENERAL DATA

structure no.:	025000.0	**city/town:**	3.5 miles southeast of Blackwater
county:	Cooper	**feature inters.:**	Lamine River
		cadastral grid:	S12, T49N, R19W
		highway route:	County Road 25
		highway distr.:	5
		current owner:	Cooper County

STRUCTURAL DATA

superstructure: steel, 8-panel, pin-connected Parker through trusses; one 50-foot, 3-panel, pin-connected Pratt pony truss approach span at west end and three steel stringer approach spans at east end

substructure: concrete abutments and wingwalls with concrete-filled steel cylinder piers

span number:	2	**condition:**	fair
span length:	160.0'	**alterations:**	none
total length:	390.0'	**floor/decking :**	timber deck over steel stringers
roadway width:	14.0'	**other features:**	upper chord and inclined end post: two channels with cover plate and lacing; lower chord: two punched rectangular eyebars; vertical: two channels with lacing; diagonal: two looped rectangular eyebars; counter: square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: two angles, braced; portal strut: two angles, latticed; floor beam: I-beam, field-bolted to verticals; endpost stiffener: two angles with batten plates; guardrail: lattice; builder's plate text on pony truss: **built by / A.M. Blodgett, C. E. / Kansas City, MO**; county portal plate: **1908** on through truss endpost

HISTORICAL DATA

erection date: 1908

erection cost: $9600.00

designer: Kansas City Bridge Company, Kansas City MO

fabricator : Cambria Steel Company, Pittsburgh PA

contractor: Kansas City Bridge Company, Kansas City MO;
A.M. Blodgett, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 025000.0; Cooper County Court Record, Book X: page 256 (8 May 1907), page 264 (3 June 1907), pages 281-282 (5 August 1907), page 304 (3 September 1907), page 334 (6 November 1907), page 356 (8 January 1908), page 365 (3 February 1908), page 447 (4 May 1908) - located at the Cooper

County Courthouse, Boonville MO; report of county road and bridge commissioner E. T. Hale to the county court regarding reconstruction of the Dicks Bridge, 3 June 1907 - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

sign. rating: 53

evaluation: NRHP possibly eligible (well-preserved, well-documented example of uncommon Pratt truss variant)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 11 December 1993

Bridge

COOP08

GENERAL DATA

structure no.: 026000.4
county: Cooper

city/town: 7.6 miles southwest of Boonville
feature inters.: unnamed tributary to the Lamine River
cadastral grid: S10, T49N, R18W
highway route: County Road 26
highway distr.: 5
current owner: Cooper County

STRUCTURAL DATA

superstructure: steel, 4-panel, pin-connected Pratt pony truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 60.0'
total length: 62.0'
roadway width: 13.8'

condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: two channels with cover and batten plates; lower chord: two punched rectangular eyebars; vertical: four angles with lacing; diagonal: two punched rectangular eyebars; counter: round eyebar with turnbuckle; lateral bracing: round bar; floor beam: I-beam, field-bolted to verticals; guardrail: two channels

HISTORICAL DATA

erection date: c1910
erection cost: unknown
designer: unknown
fabricator : Lackawanna Steel Company, Pittsburgh PA
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 026000.4; field inspection by Clayton Fraser, 1 May 1990.

sign. rating: 30
evaluation: NRHP non-eligible (typical example of common structural type)

inventoried by: Michelle Crow-Dolby 11 December 1993

Bridge

COOP09

GENERAL DATA

structure no.: 067001.8
county: Cooper

city/town: 3.9 miles southwest of Wooldridge
feature inters.: branch of Wolf Creek
cadastral grid: S30, T48N, R15W
highway route: County Road 67
highway distr.: 5
current owner: Cooper County

STRUCTURAL DATA

superstructure: steel stringer
substructure: concrete abutments and wingwalls

span number: 1
span length: 22.0'
total length: 24.0'
roadway width: 14.1'

condition: fair
alterations: unknown
floor/decking : timber deck
other features: no guardrails

HISTORICAL DATA

erection date: 1912
erection cost: unknown
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 067001.8; Cooper County Court Record, Book Z: page 200 (1 July 1912), page 208 (23 July 1912) - located at the Cooper County Courthouse, Boonville MO.

sign. rating: 34
evaluation: NRHP non-eligible (typical small-scale example of common structural type)

inventoried by: Michelle Crow-Dolby 12 December 1993

Petite Saline Creek Bridge

COOP10

GENERAL DATA

structure no.: 070000.0
county: Cooper

city/town: 6.1 miles southeast of Boonville
feature inters.: Petite Saline Creek
cadastral grid: S15, T48N, R16W
highway route: County Road 70
highway distr.: 5
current owner: Cooper County

STRUCTURAL DATA

superstructure: steel, 6-panel, pin-connected Pratt pony truss
substructure: concrete-filled steel cylinder piers

span number: 1
span length: 100.0'
total length: 134.0'
roadway width: 12.7'

condition: fair
alterations: unknown
floor/decking : timber deck
other features: steel angle guardrails

HISTORICAL DATA

erection date: c1910
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 070000.0.

sign. rating: 25
evaluation: NRHP non-eligible (typical example of mainstay structural type, poorly documented)

inventoried by: Michelle Crow-Dolby 12 December 1993

Billingsville Bridge

COOP11

GENERAL DATA

structure no.:	140000.0	**city/town:**	5.2 miles south of Boonville
county:	Cooper	**feature inters.:**	Petite Saline Creek
		cadastral grid:	S26/27, T48N, R17W
		highway route:	County Road 140
		highway distr.:	5
		current owner:	Cooper County

STRUCTURAL DATA

superstructure: steel, 6-panel, pin-connected Pratt pony truss, with steel stringer approach spans

substructure: concrete abutments, wingwalls and piers

span number:	1	**condition:**	fair
span length:	100.0'	**alterations:**	unknown
total length:	164.0'	**floor/decking :**	timber deck
roadway width:	12.8'	**other features:**	steel angle guardrails

HISTORICAL DATA

erection date: 1913

erection cost: unknown

designer: Kansas City Bridge Company, Kansas City MO

fabricator : Kansas City Bridge Company, Kansas City MO

contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 140000.0; Cooper County Court Record, Book Z: page 450 (7 May 1913), page 475 (5 June 1913) - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

sign. rating: 44

evaluation: NRHP non-eligible (typically configured, long-span example of common structural type)

inventoried by: Michelle Crow-Dolby 12 December 1993

Bryant Bottom Bridge

COOP14

GENERAL DATA

structure no.:	202000.0	**city/town:**	4.4 miles southeast of Blackwater
county:	Cooper	**feature inters.:**	Lamine River
		cadastral grid:	S15, T48N, R19W
		highway route:	County Road 202
		highway distr.:	5
		current owner:	Cooper County

STRUCTURAL DATA

superstructure: steel, 12-panel, pin-connected Parker through truss
substructure: limestone masonry abutments and extensive wingwalls

span number:	1	**condition:**	fair
span length:	210.0'	**alterations:**	none
total length:	212.0'	**floor/decking :**	timber deck over steel stringers
roadway width:	14.0'	**other features:**	upper chord and inclined end post: two channels with cover plate and lacing; lower chord: two punched rectangular eyebars; vertical: two channels with lacing; diagonal: two looped rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; strut: four angles with lacing, braced; portal strut: angle A-frame; stringer: steel; floor beam: I-beam, field-bolted to verticals; guardrail: steel pipe; portal builder's plate: **1908 / BUILT BY MISSOURI BRIDGE & IRON CO. / ST. LOUIS MO. / A.M. HALL PRESIDING JUDGE / JOSH. MINTER B.O. JEWETT ASSOCIATE JUDGES / JESSE T. HAYES COUNTY CLERK / E.T. HALE ROAD AND BRIDGE COMM'R**

HISTORICAL DATA

erection date: 1908
erection cost: $3300.00 (contract amount); $4400.00 (actual payment)
designer: Missouri Bridge and Iron Company, St. Louis MO
fabricator : Missouri Bridge and Iron Company, St. Louis MO;
Jones and Laughlin Steel Company, Pittsburgh PA;
Lackawanna Steel Company, Pittsburgh PA
contractor: Missouri Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 202000.0; Cooper County Court Record, Book X: page 173 (4 February 1907), page 256 (8 May 1907), page 263 (3 June 1907), page 273 (1 July 1907), page 280 (5 August 1907), page 461 (6 May 1908), page 473 (6 July 1908), page 500 (8 August 1908), pages 586-587 (9 December 1908), page 608 (1 February 1909); county engineer's report, no date - both located at the Cooper County Courthouse, Boonville MO; report of road and bridge commissioner E.T. Hale regarding construction of the Bryant Bottom Bridge, June 1907 - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

sign. rating: 60

evaluation: NRHP possibly eligible (outstanding early county-built truss bridge)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 12 December 1993

Shakleton Ford Bridge

COOP15

GENERAL DATA

structure no.:	211000.0	**city/town:**	6.7 miles west of Pilot Grove
county:	Cooper	**feature inters.:**	Lamine River
		cadastral grid:	S32, T48N, R19W
		highway route:	County Road 211
		highway distr.:	5
		current owner:	Cooper County

STRUCTURAL DATA

superstructure: steel, 9-panel, pin-connected Parker through truss; steel stringer approach span at one end

substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers

span number:	1	**condition:**	fair
span length:	160.0'	**alterations:**	none
total length:	232.0'	**floor/decking :**	timber deck over steel stringers
roadway width:	14.0'	**other features:**	upper chord and inclined end post: two channels with cover plate and lacing; lower chord: two punched rectangular eyebars; vertical: two channels with lacing; hip vertical: two angles with batten plates; diagonal: two looped rectangular eyebars; lateral bracing: round rod with threaded end; strut: two angles; portal strut: angle lattice with curved knee braces; floor beam: I-beam, field-bolted; guardrail: two channels; portal builder's plate: **1913 / BUILT BY KANSAS CITY BRIDGE CO. / KANSAS CITY, MO. / A.M. HALL PRES. JUDGE / ANDREW DAVIN ASSOC. JUDGE / B.L. MOORE ASSOC. JUDGE / J. THAYS COUNTY CLERK / W.E. HARRIS COUNTY ENG'R**

HISTORICAL DATA

erection date:	1913
erection cost:	$11,400.00
designer:	Kansas City Bridge Company, Kansas City MO
fabricator :	Kansas City Bridge Company, Kansas City MO; Lackawanna Steel Company, Pittsburgh PA
contractor:	Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 211000.0; Cooper County Court Record, Book Z: page 424 (7 April 1913), page 457 (8 May 1913) - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

sign. rating: 48

evaluation: NRHP possibly eligible (well-preserved example of uncommon truss type)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 12 December 1993

Klenklen Bridge

COOP16

GENERAL DATA

structure no.: 223000.4
county: Cooper

city/town: 4.3 miles northwest of Pleasant Green
feature inters.: Lamine River
cadastral grid: S20, T47N, R19W
highway route: County Road 223
highway distr.: 5
current owner: Cooper County

STRUCTURAL DATA

superstructure: steel cable suspension bridge
substructure: concrete abutments and wingwalls

span number: 1
span length: 210.0'
total length: 368.0'
roadway width: 10.5'

condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: tower vertical: two channels and I-beam with lacing; portal strut: I-beam with channel knee braces; cast iron cradle; cables and suspenders: galvanized steel, parallel strand, anchored in concrete deadmen; floor beam: I-beam; guardrail: three channels on main span, gas pipe on approach span

HISTORICAL DATA

erection date: 1930
erection cost: $6200.00
designer: J.A. Dice, Warsaw MO
fabricator : Illinois Steel Company, Chicago IL (towers);
Jones and Laughlin Steel Company, Pittsburgh PA (floor beams)
contractor: J. A. Dice, Warsaw MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 223000.4; Cooper County Court Record, Book F: page 272 (6 May 1929), page 345 (7 August 1929), page 349 (26 August 1929), page 366 (24 September 1929), page 475 (5 March 1930) - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

sign. rating: 58
evaluation: NRHP determined eligible (technologically significant example of an esoteric bridge type, built using vernacular tradition)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 13 December 1993

Streit Ford Bridge

COOP17

GENERAL DATA

structure no.: 231001.3
county: Cooper

city/town: 4.4 miles southwest of New Lebanon
feature inters.: Lamine River
cadastral grid: S16, T46N, R19W
highway route: County Road 231
highway distr.: 5
current owner: Cooper County

STRUCTURAL DATA

superstructure: steel, 8-panel, pin-connected Pratt through truss; 4-span steel stringer approach on north end, 1-span steel stringer approach on south end
substructure: concrete abutments and piers with stone retaining walls

span number: 1
span length: 140.0'
total length: 228.0'
roadway width: 12.7'

condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord: two channels with cover plate and lacing; lower chord: two looped rectangular eyebars; vertical: two channels with lacing; hip vertical: two angles with batten plates; diagonal: two looped rectangular eyebars; lateral bracing: round rod with threaded ends; strut: two angles; floor beam: I-beam, field-bolted to verticals; guardrail: two channels; portal builder's plate: **1913 / BUILT BY KANSAS CITY BRIDGE CO. / KANSAS CITY MO. / A.M. HALL PRES. JUDGE / ANDREW W. DAVIN ASSOC. JUDGE / B.E. MOORE ASSOC. JUDGE / J.T. HAYS COUNTY CLERK / W.E. HARRIS COUNTY ENG'R.**

HISTORICAL DATA

erection date: 1913
erection cost: $9400.00
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO; Lackawanna Steel Company, Pittsburgh PA
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 231001.3; Cooper County Court Record, Book Z: page 424 (7 April 1913), page 457 (8 May 1913) - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton B. Fraser, 1 May 1990.

Streit Ford Bridge

sign. rating: 46

evaluation: NRHP possibly eligible (well-preserved, well-documented example of mainstay structural type, built relatively late)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 13 December 1993

Otterville Ford Bridge

COOP18

GENERAL DATA

structure no.: 238002.0
county: Cooper

city/town: 3.3 miles southwest of New Lebanon
feature inters.: Lamine River
cadastral grid: S26, T46N, R19W
highway route: County Road 238
highway distr.: 5
current owner: Cooper County

STRUCTURAL DATA

superstructure: steel, 9-panel, pin-connected Parker through truss; 3-panel, pin-connected Pratt half-hip pony truss approach span on west end, four steel stringer approach spans on east end

substructure: concrete abutments and wingwalls, concrete-filled steel cylinder piers under channel span; steel pile bents under stringer approach spans

span number: 1
span length: 160.0'
total length: 285.0'
roadway width: 14.0'

condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: two channels with cover plate and lacing; lower chord: two looped rectangular eyebars; vertical: two channels with lacing; diagonal: two looped rectangular eyebars; counter: square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: four angles with lacing, braced; floor beam: I-beam, field-bolted to verticals; guardrail: steel pipe

HISTORICAL DATA

erection date: 1908
erection cost: $4945.50; $850.00 [80-foot approach span]
designer: Missouri Bridge and Iron Company, St. Louis MO
fabricator : Missouri Bridge and Iron Company, St. Louis MO; Lackawanna Steel Company, Pittsburgh PA
contractor: Missouri Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 238002.0; Cooper County Court Record, Book V: page 592 (9 August 1905); Book X: page 256 (8 May 1907), page 263 (3 June 1907), page 273 (1 July 1907), page 280 (5 August 1907), page 461 (6 May 1908), page 473 (6 July 1908), pages 500-501 (8 August 1908); County Engineer's Report, undated - both located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

Otterville Ford Bridge

sign. rating: 50
evaluation: NRHP possibly eligible (well-preserved, well-documented example of uncommon structural type)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 13 December 1993

Otter Creek Bridge

COOP19

GENERAL DATA

structure no.: 258001.3
county: Cooper

city/town: 5.0 miles southeast of New Lebanon
feature inters.: Otter Creek
cadastral grid: S4, T45N, R18W
highway route: County Road 258
highway distr.: 5
current owner: Cooper County

STRUCTURAL DATA

superstructure: steel, 4-panel, rigid-connected Pratt pony truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 70.0'
total length: 72.0'
roadway width: 16.8'

condition: fair
alterations: none
floor/decking : concrete deck over steel stringers
other features: upper chord and inclined end post: two channels with cover plate and lacing; lower chord: two angles with batten plates; vertical: two angles with batten plates; diagonal: two angles with batten plates; lateral bracing: one angle; floor beam: I-beam, field-bolted to verticals; guardrail: two channels

HISTORICAL DATA

erection date: 1920
erection cost: $6910.00
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 258001.3; original bridge contract, 5 January 1920 - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

sign. rating: 40
evaluation: NRHP non-eligible (typical example of common structural type)

inventoried by: Michelle Crow-Dolby 13 December 1993

Moniteau Creek Bridge

COOP21

GENERAL DATA

structure no.:	333001.3	city/town:	5.6 miles southwest of Prairie Home
county:	Cooper	feature inters.:	Moniteau Creek tributary
		cadastral grid:	S24, T46N, R16W
		highway route:	County Road 333
		highway distr.:	5
		current owner:	Cooper County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt pony truss; 2-panel, pin/rigid-connected Kingpost pony truss approach span

substructure: concrete abutments and wingwalls; spill-through concrete pier

span number:	1; 1	condition:	fair
span length:	50.0'; 25.0'	alterations:	substructure replaced; kingpost truss added
total length:	76.0'	floor/decking :	timber deck over steel stringers
roadway width:	11.7'	other features:	upper chord and inclined end post: two channels with cover and batten plates; lower chord: two punched rectangular eyebars; vertical: four angles with lacing (Pratt), four angles with batten plates (Kingpost); diagonal: one square eyebar; lateral bracing: round rod with threaded ends; floor beam: I-beam, U-bolted to lower chord pins (round bolt); guardrail: lattice; builder's plate: **A. M. BLODGETT / 1899 / KANSAS CITY MO**

HISTORICAL DATA

erection date: 1899; 1902

erection cost: $1349.00 (superstructure); $441.30 (substructure)

designer: unknown

fabricator : unknown

contractor: A. M. Blodgett, Kansas City MO (superstructure); C.N. Hutchinson (stone abutments)

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 333001.3; Cooper County Court Record, Book V: page 26 (7 August 1899), page 95 (5 December 1899), page 97 (5 December 1899), page 466 (7 August 1901), page 484 (3 September 1901), page 495 (7 October 1901), page 525 (2 December 1901), page 627 (2 June 1902); Record W: page 6 (8 July 1902); original contract, 7 October 1901 - both located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

Moniteau Creek Bridge

sign. rating: 59
evaluation: NRHP possibly eligible (now-rare example of what once was a mainstay structural type)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 16 December 1993

Thomas Branch Bridge

COOP22

GENERAL DATA

structure no.: 030003.7
county: Cooper

city/town: 3.0 miles west of Boonville
feature inters.: Thomas Branch
cadastral grid: S4, T48N, R17W
highway route: County Road 30
highway distr.: 5
current owner: Cooper County

STRUCTURAL DATA

superstructure: concrete deck girder
substructure: concrete abutments and wingwalls

span number: 1
span length: 36.0'
total length: 38.0'
roadway width: 19.2'

condition: good
alterations: none
floor/decking : concrete deck
other features: MSHD-standard concrete guardrails with square balusters and paneled bulkheads

HISTORICAL DATA

erection date: 1920
erection cost: $7407.20
designer: Missouri State Highway Department
fabricator : none
contractor: Pope Construction Company, Jefferson City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number G 366; Primary System Bridge Record, Cooper County, located at the Bridge Division, Missouri Highway and Transportation Department, Jefferson City, Missouri; Missouri State Highway Board, **Second Biennial Report**: 1919-20, pp. 130, 134.

sign. rating: 46
evaluation: NRHP possibly eligible (one of earliest remaining MSHD-designed bridges)

inventoried by: Michelle Crow-Dolby 16 December 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Lamine River Bridge
MHTD: K 236

COOP03

DATE(S) OF CONSTRUCTION
1933

LOCATION
Missouri State Highway 41 over Lamine River; S10, T48N, R18W
7.4 miles southwest of Boonville; Cooper County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP possibly eligible (score: 50)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	1; 2	superstructure:	steel, 9-panel, rigid-connected Parker through truss; rigid-connected Warren pony truss approach span at each end; three steel stringer approach spans
span length:	200'; 80'		
total length:	524.0'	substructure:	concrete abutments, wingwalls and piers
roadway wdt.:	22.0'	floor/decking:	concrete deck over steel stringers
		other features:	steel guardrails

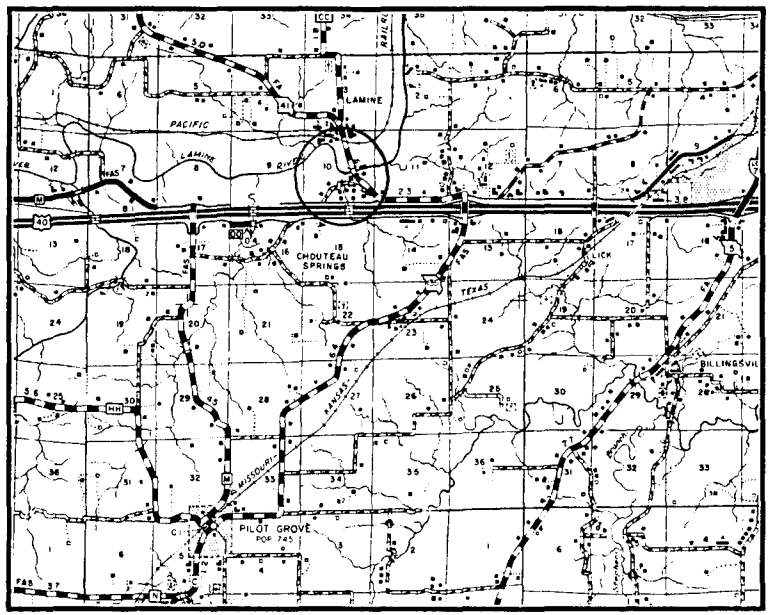
This large-scale highway truss spans the Lamine River some seven miles southwest of Boonville, the Cooper County seat. The bridge is comprised of a 200-foot Parker through truss over the river's main channel, flanked on both sides by 80-foot Warren pony trusses. In 1933 engineers for the Missouri State highway Department designed the Lamine River Bridge as a replacement for an earlier county-built truss. A contract for its fabrication and erection was let that May to Carruthers and Crouch for $40,246.02. Completed later that year, the Lamine River Bridge has carried vehicular traffic, with only maintenance-related repairs.

In the early 1930s the state highway department began using rigid-connected Parker trusses for its long-span crossings. With its polygonal upper chords, the Parker was somewhat more materially conservant that straight-chorded Pratt trusses, making its use more economical for spans in excess of 160 feet. Most of MSHD's Parkers ranged between 150 and 180 feet in span length. With its 200-foot length, the central span on the Lamine River Bridge in Cooper County ranked among the state's longest Parker trusses. Seven other 200-foot Parkers and two other bridges with longer spans have been identified by the statewide inventory. The Lamine River Bridge is thus a well-preserved, relatively long-span example of a mainstay structural type in Missouri.

NAME(S) OF STRUCTURE

Lamine River 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 236; field inspection by Clayton Fraser, 1 May 1990; Primary System Bridge Record, Cooper County, located at the Bridge Division, Missouri Highway and Transportation Department, Jefferson City, Missouri.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Michelle Crow-Dolby	Fraserdesign, Loveland CO	16 December 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Turley Bridge
MHTD: W 304

COOP04

DATE(S) OF CONSTRUCTION
1906-07; moved 1938

LOCATION
State Secondary Route V over Petite Saline Creek; S22, T48N, R15W
6.5 miles northeast of Prairie Home; Cooper County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / highway bridge

RATING NRHP possibly eligible (score: 47)

CONDITION
fair

OWNER
Missouri Highway and Transportation Department

span number:	1	superstructure:	steel, 9-panel, pin-connected Parker through truss
span length:	170.0'	substructure:	concrete abutments; non-original masonry abutments and pier from previous bridge
total length:	171.0'	floor/decking:	asphalt over timber deck with steel stringers
roadway wdt.:	13.0'	other features:	upper chord: two channels with cover plate and lacing; lower chord: two punched rectangular eyebars; vertical: two channels with lacing; hip vertical: two angles with batten plates; diagonal: two punched rectangular eyebars; counter: looped square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: two angles with continuous plate; lateral bracing on struts: round looped rods; portal strut: two angles with lacing and curved knee braces; floor beam: I-beam, field-bolted to verticals; guardrail: four angles with lattice and continuous ends

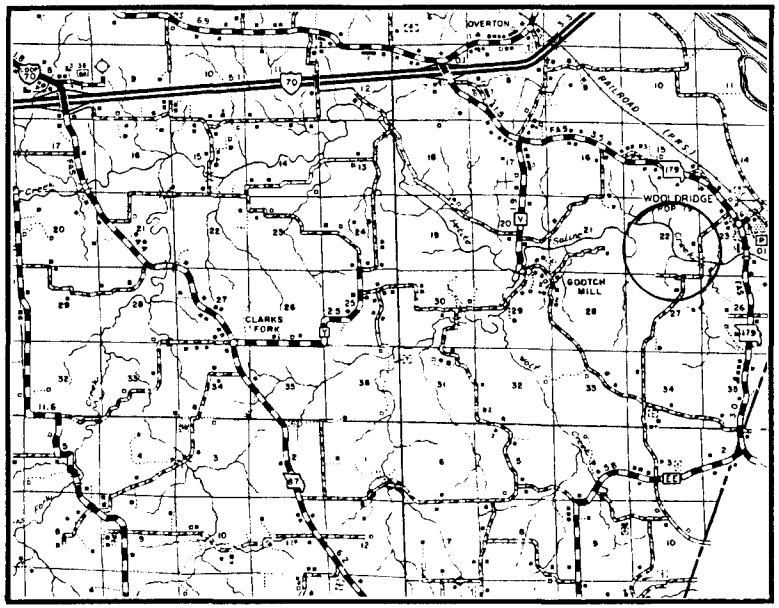
This long-span pinned Parker truss carries State Secondary Route V over the Petite Saline Creek some seven miles northeast of Prairie Home. Supported by a masonry pier and abutments, remnants of an earlier bridge at this location, the bridge was originally built as part of a two-span structure over the Lamine River. It was later moved to its present site in 1938. The truss on the Turley Bridge dates to 1906. In May of that year, the Cooper County Court declared "an urgent necessity for re-building the Turley Bridge across the Lamine River." When the job was let for bids in early June, several competitive proposals were received but were rejected by the court as too high. Negotiations to lower the bid estimates ensued. The resulting low bidder at $8200.00, the Kansas City Bridge Company, was awarded the contract to fabricate and erect the long-span trusses. Using steel components rolled in Pittsburgh by Carnegie, KCBCo fabricated the two 170-foot spans and erected them on stone abutments and piers. Reported finished in March 1907, the bridge carried traffic at the rural crossing for almost thirty years before it was replaced by the state highway department with a heavier bridge [**COOP03**]. One of the spans of the 1907 bridge was moved in 1938 to a Boone County crossing near Columbia [**BOON06**]. The other was moved the same year to this location in Cooper County over Petite Saline Creek. It has functioned in place since the move, in unaltered condition.

Between the early 1880s, when trusses superseded bowstrings, and the 1920s, when field riveting attained widespread use, the pin-connected truss was the structure of choice for medium- and long-span wagon bridges in Missouri. Virtually all of the major Midwestern bridge companies fabricated pinned trusses and marketed them extensively to counties throughout the state in the late 19th and early 20th centuries. This corresponded with a period of intense bridge construction, as the counties were busily upgrading their road and

NAME(S) OF STRUCTURE

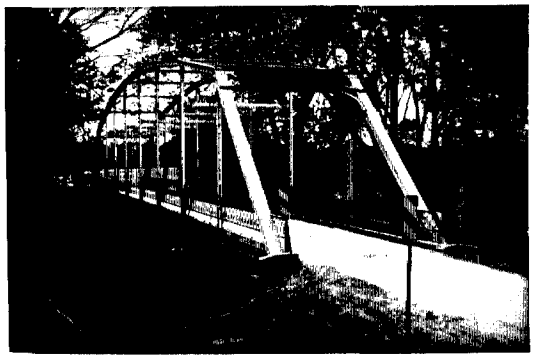
Turley Bridge

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 W 304; Cooper County Court, Record X: pages 90-91 (9 May 1906), page 98 (6 June 1906), page 102 (9 July 1906), page 162 (4 December 1906); original bridge drawing, 4 June 1906, located at the Cooper County Courthouse, Boonville MO; County Engineer's report, 4 February 1907, located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Michelle Crow-Dolby	Fraserdesign, Loveland CO	16 December 1993

highway systems. As a result, thousands of pinned trusses were built in Missouri during this formative period, and many remain in place today.

Most of these featured straight-chorded Pratt configurations. After the turn of the century, however, bridge manufacturers found a greater economy in polygonal-chorded Pratt variants (particularly the Parker truss) for long-span applications. Their relatively long spans, light structural members and archaic detailing have rendered pin-connected Parker trusses particularly vulnerable to subsequent replacement. As a result, of the hundreds that once carried vehicular traffic throughout the state, fewer than three dozen remain in place today. These range in span length from 110 feet to 200 feet and in erection date from 1900 to 1932. The Turley Bridge, with its 170-foot span and 1907 construction date, falls within the mainstream of this trend. It is not unique among Missouri's early roadway spans. Rather, the significance of this structure accrues from its representation of early wagon/auto bridge construction. It is among the longest and best-preserved trusses in Missouri: a noteworthy example of a now-uncommon structural type.

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Dicks Bridge
MHTD: 025000.0

COOP07

DATE(S) OF CONSTRUCTION
1908

LOCATION
County Road 25 over Lamine River; S12, T49N, R19W
3.5 miles southeast of Blackwater; Cooper County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 53)

CONDITION
fair

OWNER
Cooper County

span number: 2
span length: 160.0'
total length: 390.0'
roadway wdt.: 14.0'

superstructure: steel, 8-panel, pin-connected Parker through trusses; one 50-foot, 3-panel, pin-connected Pratt pony truss approach span at west end and three steel stringer approach spans at east end

substructure: concrete abutments and wingwalls with concrete-filled steel cylinder piers

floor/decking: timber deck over steel stringers

other features: upper chord and inclined end post: two channels with cover plate and lacing; lower chord: two punched rectangular eyebars; vertical: two channels with lacing; diagonal: two looped rectangular eyebars; counter: square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: two angles, braced; portal strut: two angles, latticed; floor beam: I-beam, field-bolted to verticals; endpost stiffener: two angles with batten plates; guardrail: lattice; builder's plate text on pony truss: **built by / A.M. Blodgett, C. E. / Kansas City, MO**; county portal plate: **1908** on through truss endpost

In May 1907, the Cooper County Court conditionally announced that it would rebuild the Dicks Bridge if the local citizenry would pay for one-half its estimated cost. Located over the Lamine River some three miles southeast of Blackwater, the existing structure here had deteriorated beyond the point of repair. County road and bridge commissioner, E.T. Hale, presented the following month his estimate of $6000.00 to construct the Dicks Bridge. He noted that the previous bridge's masonry abutments and steel cylinder piers were largely salvageable, but would need to be elevated approximately four feet. Competitive bids for the reconstruction project were received on August 5, 1907. The Kansas City Bridge Company of Missouri, a prominent contractor in Cooper County, was awarded the contract for this and other structures, totaling $49,600.00. To the discouragement of the county court, local citizens eventually only met a fraction of this amount. The contract for improving the existing abutments was awarded in November to Charles Hutchinson for $5.75 per cubic yard. Hutchinson also handled the re-erection of several piers which had collapsed or were missing. Completed in early May the next year, the Dicks Bridge, a pin-connected Parker through truss, continues to retain a strong degree of visual integrity.

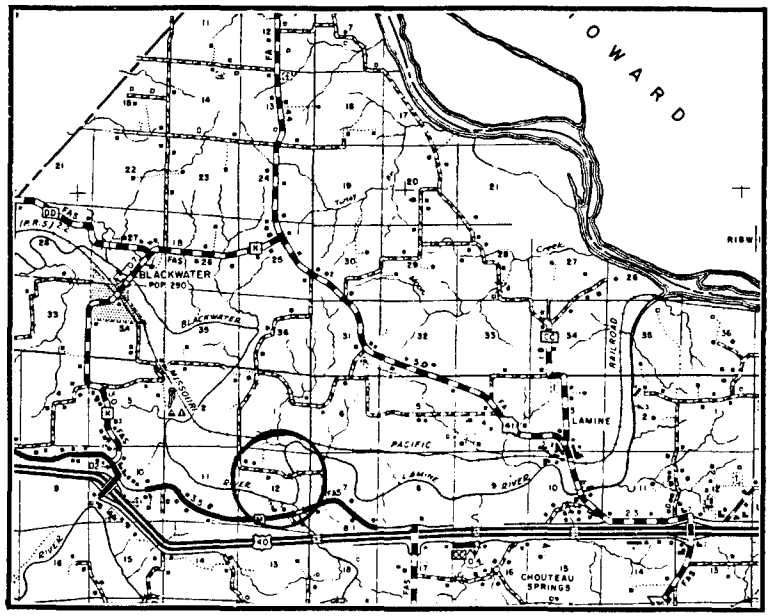
As one of Missouri's most prolific bridge fabricators, the Kansas City Bridge Company maintained an extensive catalogue of truss types, ranging from the exotic to the commonplace. KCBCo, like most of the region's bridge builders of the time, relied heavily on pin-connected Pratt truss variants for its standard truss types. After the turn of the century, however, KCBCo began fabricating polygonal-chorded Pratt variants (particularly Parkers) for long-span applications. Their relatively long spans, light structural members and archaic detailing have

rendered pin-connected Parker trusses particularly vulnerable to subsequent replacement. As a result, of the hundreds that once carried vehicular traffic throughout the state, fewer than three dozen remain in place today. These range in span length from 110 feet to 200 feet and in erection date from 1900 to 1932. The Dicks Bridge, with its 160-foot span and 1908 construction date, falls within the mainstream of this trend. It is noteworthy for its excellent state of preservation and its two-span configuration.

NAME(S) OF STRUCTURE

Dicks 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 025000.0; Cooper County Court Record, Book X: page 256 (8 May 1907), page 264 (3 June 1907), pages 281-282 (5 August 1907), page 304 (3 September 1907), page 334 (6 November 1907), page 356 (8 January 1908), page 365 (3 February 1908), page 447 (4 May 1908) - located at the Cooper County Courthouse, Boonville MO; report of county road and bridge commissioner E. T. Hale to the county court regarding reconstruction of the Dicks Bridge, 3 June 1907 - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	16 December 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Bryant Bottom Bridge
MHTD: 202000.0

COOP14

DATE(S) OF CONSTRUCTION
1908

LOCATION
County Road 202 over Lamine River; S15, T48N, R19W
4.4 miles southeast of Blackwater; Cooper County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 60)

CONDITION
fair

OWNER
Cooper County

span number:	1	superstructure:	steel, 12-panel, pin-connected Parker through truss
span length:	210.0'	substructure:	limestone masonry abutments and extensive wingwalls
total length:	212.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	14.0'	other features:	upper chord and inclined end post: two channels with cover plate and lacing; lower chord: two punched rectangular eyebars; vertical: two channels with lacing; diagonal: two looped rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; strut: four angles with lacing, braced; portal strut: angle A-frame; stringer: steel; floor beam: I-beam, field-bolted to verticals; guardrail: steel pipe; portal builder's plate: **1908 / BUILT BY MISSOURI BRIDGE & IRON CO. / ST. LOUIS MO. / A.M. HALL PRESIDING JUDGE / JOSH. MINTER B.O. JEWETT ASSOCIATE JUDGES / JESSE T. HAYES COUNTY CLERK / E.T. HALE ROAD AND BRIDGE COMM'R**

The first recorded discussion in the Cooper County court records concerning the Bryant Bottom Bridge is a February 1907 court decision to delay the bridge's construction owing to a lack of money. Three months later, in an effort to procure extra funding, the court announced the county would build the bridge contingent upon receipt of a subscription, totaling one-third of the structure's cost, from local citizens. In June E.T. Hale, county road and bridge commissioner, presented his $4000.00 estimate to build a permanent bridge over the Lamine River some four miles southeast of Blackwater. Hale reiterated the urgent need for a bridge at this location by explaining to the court how a ferry was trying to accommodate traffic at this crossing. The county solicited competitive bids for the bridge's fabrication and construction in August 1907, concurrent with a $600.00 pledge from the citizenry. These bids, however, were never used because the county court delayed the project for nine months for unspecified reasons. Finally, in early May 1908, county engineer R.S. Roe was ordered to re-advertise for bids. The ensuing contract was awarded in late summer to the Missouri Bridge and Iron Company of St. Louis for $3300.00. This amount swelled to $4400.00 after the length of the main span needed to be increased by 35 feet. Using steel rolled by Jones and Laughlin and Lackawanna Steel Companies, MoB&I competed the structure by February 1909. The Bryant Bottom Bridge continues to carry traffic at this rural crossing.

It is unclear who engineered the truss for the Bryant Bottom Bridge or whether MoB&I was responsible for its design. County engineer Hale probably delineated the general outline of the bridge and left the specific truss design to the bridge company. As built, the channel span consisted of a pin-connected Parker through truss, subdivided into twelve equal-length panels. Developed in the 19th century by

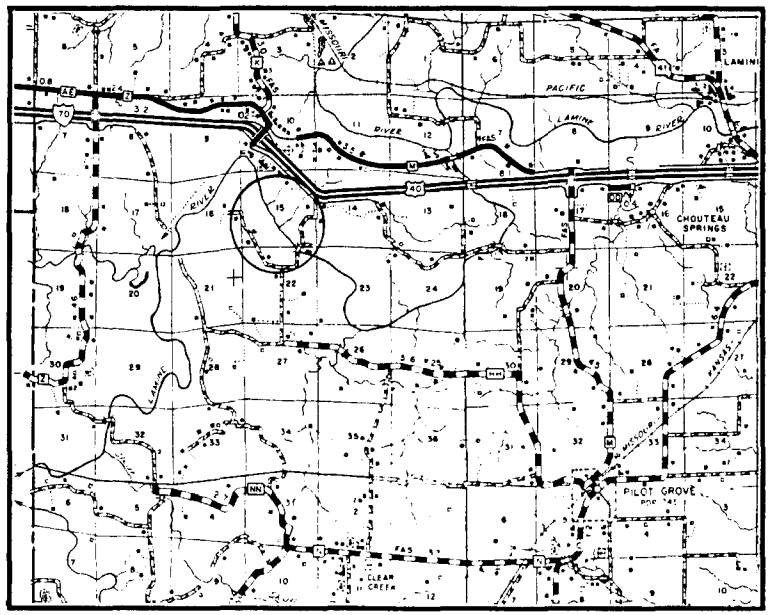
C.H. Parker, the Parker truss was characterized by upper chords and vertical members that acted in compression and lower chords and diagonals acting in tension. In this it resembled the venerable Pratt and was, in fact, universally regarded by civil engineers as a Pratt subtype. J.A.L. Waddell in his influential **Bridge Engineering** gave the Parker only passing mention in his discussion of truss types, stating: "[The Pratt's] chords are not necessarily parallel, but may be inclined. This latter form is frequently known as the Parker truss."

The inclined upper chords afforded a degree of efficiency in long span trusses, where bending moment stresses at mid-span greatly exceed the sheer stresses at the ends. The Parker's drawback was that, unlike the straight-chorded Pratt truss, the polygonal chords necessitated different-length verticals and diagonals at each panel, increasing its fabrication costs somewhat. Because trusses were generally priced on the basis of their superstructural steel weight, the lighter overall weight of a polygonal-chord truss more than offset the slight increase in fabricating costs in spans greater than 160 feet. In the highly competitive bridge industry, this economy equated directly with profit. The Parker truss on the Rock House Ford Bridge extended 210 feet between the bearing pins, distinguishing it among Missouri's longest county-built trusses. It is thus technologically significant as a well-preserved, long-span example of this Pratt truss sub-type–an outstanding example of a now-uncommon structural type.

NAME(S) OF STRUCTURE

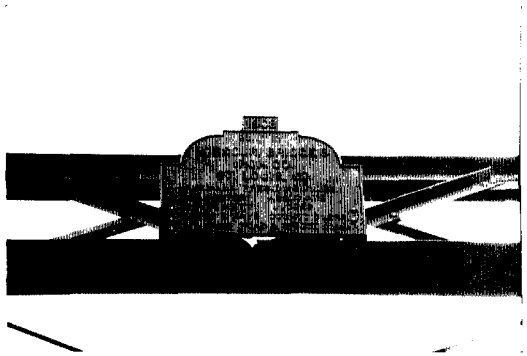
Bryant Bottom Bridge

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 202000.0; Cooper County Court Record, Book X: page 173 (4 February 1907), page 256 (8 May 1907), page 263 (3 June 1907), page 273 (1 July 1907), page 280 (5 August 1907), page 461 (6 May 1908), page 473 (6 July 1908), page 500 (8 August 1908), pages 586-587 (9 December 1908), page 608 (1 February 1909); county engineer's report, no date - both located at the Cooper County Courthouse, Boonville MO; report of road and bridge commissioner E.T. Hale regarding construction of the Bryant Bottom Bridge, June 1907 - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Michelle Crow-Dolby	Fraserdesign, Loveland CO	16 December 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Shakleton Ford Bridge
MHTD: 211000.0

COOP15

DATE(S) OF CONSTRUCTION
1913

LOCATION
County Road 211 over Lamine River; S32, T48N, R19W
6.7 miles west of Pilot Grove; Cooper County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 48)

CONDITION
fair

OWNER
Cooper County

span number: 1
span length: 160.0'
total length: 232.0'
roadway wdt.: 14.0'

superstructure: steel, 9-panel, pin-connected Parker through truss; steel stringer approach span at one end
substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers
floor/decking: timber deck over steel stringers
other features: upper chord and inclined end post: two channels with cover plate and lacing; lower chord: two punched rectangular eyebars; vertical: two channels with lacing; hip vertical: two angles with batten plates; diagonal: two looped rectangular eyebars; lateral bracing: round rod with threaded end; strut: two angles; portal strut: angle lattice with curved knee braces; floor beam: I-beam, field-bolted; guardrail: two channels; portal builder's plate: **1913 / BUILT BY KANSAS CITY BRIDGE CO. / KANSAS CITY, MO. / A.M. HALL PRES. JUDGE / ANDREW DAVIN ASSOC. JUDGE / B.L. MOORE ASSOC. JUDGE / J. THAYS COUNTY CLERK / W.E. HARRIS COUNTY ENG'R**

Situated about seven miles west of Pilot Grove in west-central Cooper County, the Shakleton Ford Bridge carries County Road 211 over the Lamine River. The medium-span Parker through truss dates to 1913. Approached on one end by a steel stinger span and supported by steel cylinder piers, the timber-decked bridge features pinned connections throughout. After advertising for competitive bids for a bridge at this location, the Cooper County Court, on April 7, 1913, rejected all proposals submitted by various contractors owing to excessive cost. One month later, in an effort to secure the contract, the Missouri-based Kansas City Bridge Company offered the county court the required construction bond valued at $5700.00, approximately half the estimated cost of the bridge. The county court accepted the bond and promptly awarded KCBCo the construction contract. The bridge was completed the same year for the aggregate cost of $11,400.00. Retaining a high degree of structural integrity since its construction, the Shakleton Ford Bridge continues to carry intermittent traffic at this rural crossing.

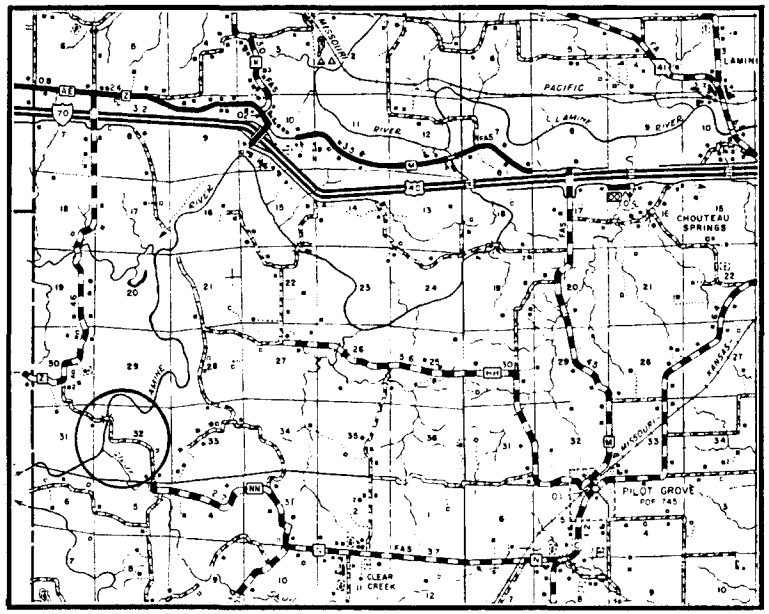
The Shakleton Ford Bridge is technologically significant as a well-preserved example of a relatively uncommon structural type. Pin-connected Pratt trusses were built by the thousands throughout Missouri in the late 19th and early 20th centuries. Pinned Parker trusses,

a polygonal-chorded Pratt variant, were typically used for crossings requiring long spans, where a savings in material could be effected by angling the upper chords. Pinned Parker trusses such as the Shakleton Ford Bridge were built far less often than Pratts; fewer than three dozen remain in place today on Missouri's road system. Among these, the Shakleton Ford Bridge is distinguished by its excellent degree of structural integrity.

NAME(S) OF STRUCTURE

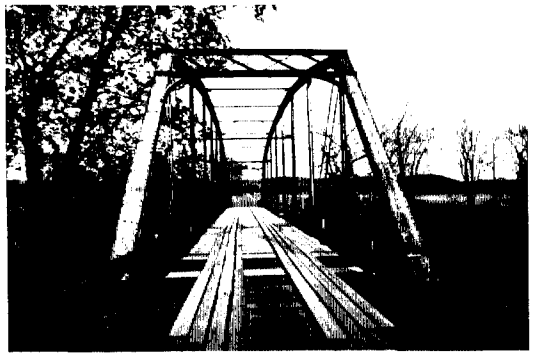
Shakleton Ford Bridge

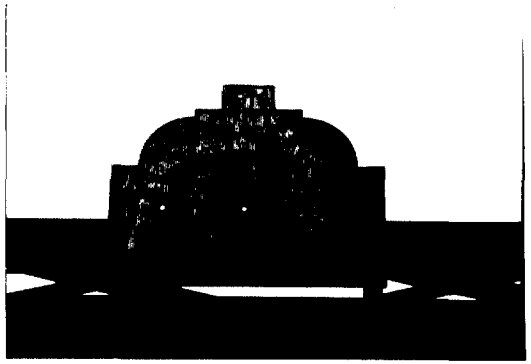
PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT GENERAL HIGHWAY MAP





SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 211000.0; Cooper County Court Record, Book Z: page 424 (7 April 1913), page 457 (8 May 1913) - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Michelle Crow-Dolby	Fraserdesign, Loveland CO	16 December 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Klenklen Bridge
MHTD: 223000.4

COOP16

DATE(S) OF CONSTRUCTION
1930

LOCATION
County Road 223 over Lamine River; S20, T47N, R19W
4.3 miles northwest of Pleasant Green; Cooper County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP determined eligible (score: 58)

CONDITION
fair

OWNER
Cooper County

span number:	1	superstructure:	steel cable suspension bridge
span length:	210.0'	substructure:	concrete abutments and wingwalls
total length:	368.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	10.5'	other features:	tower vertical: two channels and I-beam with lacing; portal strut: I-beam with channel knee braces; cast iron cradle; cables and suspenders: galvanized steel, parallel strand, anchored in concrete deadmen; floor beam: I-beam; guardrail: three channels on main span, gas pipe on approach span

Among the twenty-one Cooper County structures included in Missouri's statewide historic bridge inventory is this steel cable suspension bridge located northwest of Pleasant Green. The bridge is situated in Section 20 of Township 47 North, Range 19 West, and has served to carry a secondary county road across the Lamine River on the county's western edge. The bridge consists of a single steel cable suspension span, supported by riveted steel towers and anchored on each end by massive, tapered concrete deadmen. Like virtually all of the suspension bridges designed and built by Warsaw, Missouri, contractor J.A. Dice, the two main cables consist of parallel-strand galvanized wires. To each main cable are attached the wire suspender cables by means of simple wrapping and tying. The steel I-beam floor beams are similarly attached to the suspenders' other ends. Steel stringers, which carry the timber plank deck, bear directly on these floor beams.

Known locally as the Klenklen Bridge, the structure traces its origins to the 1920s. After years of petitioning for a new bridge across the Lamine River at this location, a committee of citizens, headed by A.J. Deuschler, appeared before the Cooper County Court in May 1929 to request the structure once again. The citizens reported that they had held the petition, as well as a subscription worth nearly $1400.00, for several years, hoping that the county would eventually build a suspension bridge here. In response, the judges agreed to appropriate $4000.00 "when and if said citizens build a suspension bridge under specifications, agreement and contract as specified and approved by the county." In late summer of 1929 the county highway engineer advertised for competitive bids for the erection of a 180-foot suspension bridge. After rejecting a $14,500.00 proposal from the Kansas City Bridge Company, the county awarded a $6200.00 contract to J.A. Dice to design and build a 200-foot suspension bridge. Dice used steel components rolled by the Illinois Steel Company for the towers and by the Jones and Laughlin Steel Company for the floor beams and stringers. In addition, Dice apparently acted as foreman of the project while local citizens provided free labor. A separate contract was let for fill work to George Deuschler, J.T. Kemper, and Joe Klenklen. Completed in early March 1930, the Klenklen Bridge has since carried intermittent rural traffic at this rural crossing.

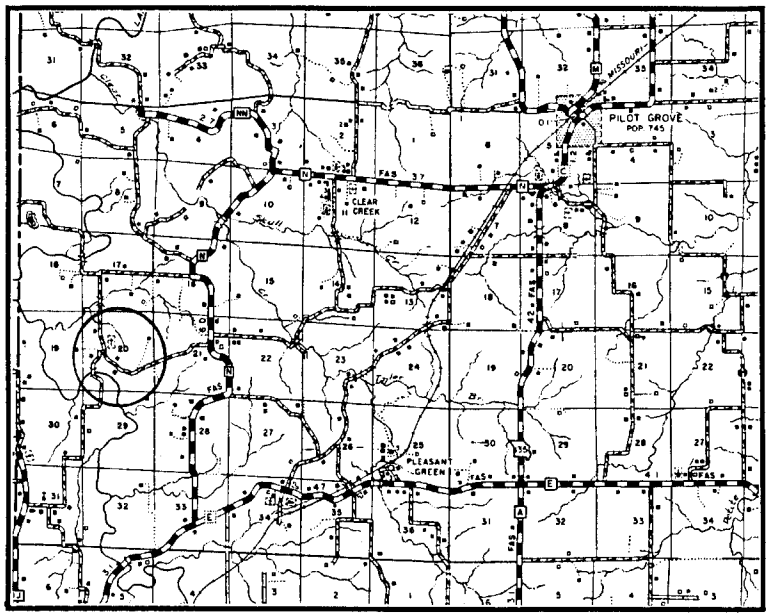
A committee of citizens, headed by A.J. Deuschler, appeared before the Cooper County Court on 6 May 1929 with a petition for a new bridge across the Lamine River to be located 4.3 miles northwest of Pleasant Green. The citizens reported that they had held the petition as well as a subscription worth nearly $1400.00 for several years, hoping that the county would eventually build the structure. The group informed the court that they wanted the county to make the necessary appropriations to construct a suspension bridge at this location. In response, the court agreed to appropriate $4000.00 "when and if said citizens build a suspension bridge under specifications, agreement and contract as specified and approved by the county." In late summer of the same year the county highway engineer advertised for competitive bids for the erection of a 180-foot suspension bridge. After rejecting a $14,500.00 bid from the Kansas City Bridge Company, the county awarded a $6200.00 contract to J.A. Dice of Warsaw, Missouri for a 200-foot suspension bridge. Dice, designer and contractor, used steel components rolled in Chicago by the Illinois Steel Company and by the Pittsburgh-based Jones and Laughlin Steel Company. In addition, Dice apparently acted as foreman of the project while local citizens provided free labor. A separate contract was let for fill work to George Deuschler, J.T. Kemper, and Joe Klenklen. Completed in early March 1930, the Klenklen Bridge has since carried intermittent rural traffic in north-central Cooper County.

Missouri bridge builder J.A. Dice built a number of suspension bridges between 1897 and 1940 in central Missouri, ten of which remain in place today. As a group, these spans comprise the state's most important examples of vernacular bridge construction, designed and built without benefit of detailed structural analysis or computation. Dice built his lightweight suspension bridges empirically using easily obtainable materials, and, as a result they cost substantially less than comparable steel truss spans. They were breathtakingly light, however, and have fared poorly in subsequent years. The Klenklen Bridge is distinguished as one of the best-preserved among Dice's remaining bridges: a technologically significant example of an esoteric bridge type.

NAME(S) OF STRUCTURE

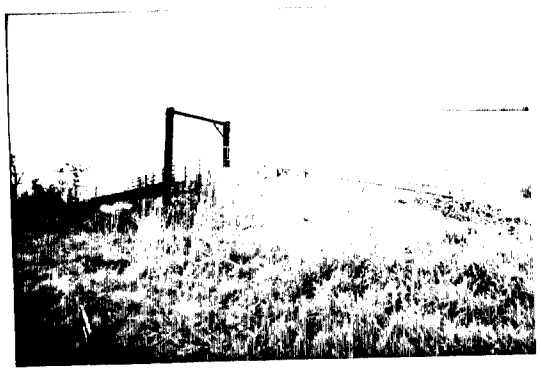
Klenklen Bridge

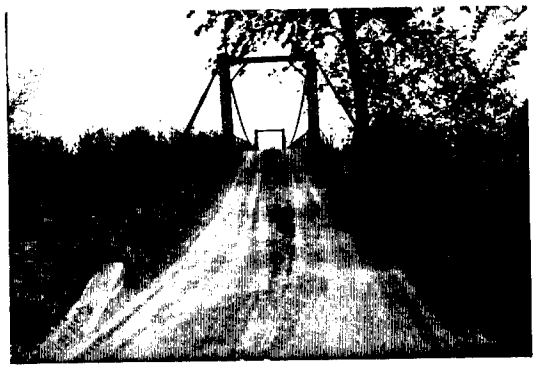
PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT GENERAL HIGHWAY MAP





SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 223000.4; Cooper County Court Record, Book F: page 272 (6 May 1929), page 345 (7 August 1929), page 349 (26 August 1929), page 366 (24 September 1929), page 475 (5 March 1930) - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Michelle Crow-Dolby	Fraserdesign, Loveland CO	16 December 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Streit Ford Bridge
MHTD: 231001.3

COOP17

DATE(S) OF CONSTRUCTION
1913

LOCATION
County Road 231 over Lamine River; S16, T46N, R19W
4.4 miles southwest of New Lebanon; Cooper County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 46)

CONDITION
fair

OWNER
Cooper County

span number: 1
span length: 140.0'
total length: 228.0'
roadway wdt.: 12.7'

superstructure: steel, 8-panel, pin-connected Pratt through truss; 4-span steel stringer approach on north end, 1-span steel stringer approach on south end
substructure: concrete abutments and piers with stone retaining walls
floor/decking: timber deck over steel stringers
other features: upper chord: two channels with cover plate and lacing; lower chord: two looped rectangular eyebars; vertical: two channels with lacing; hip vertical: two angles with batten plates; diagonal: two looped rectangular eyebars; lateral bracing: round rod with threaded ends; strut: two angles; floor beam: I-beam, field-bolted to verticals; guardrail: two channels; portal builder's plate: **1913 / BUILT BY KANSAS CITY BRIDGE CO. / KANSAS CITY MO. / A.M. HALL PRES. JUDGE / ANDREW W. DAVIN ASSOC. JUDGE / B.E. MOORE ASSOC. JUDGE / J.T. HAYS COUNTY CLERK / W.E. HARRIS COUNTY ENG'R.**

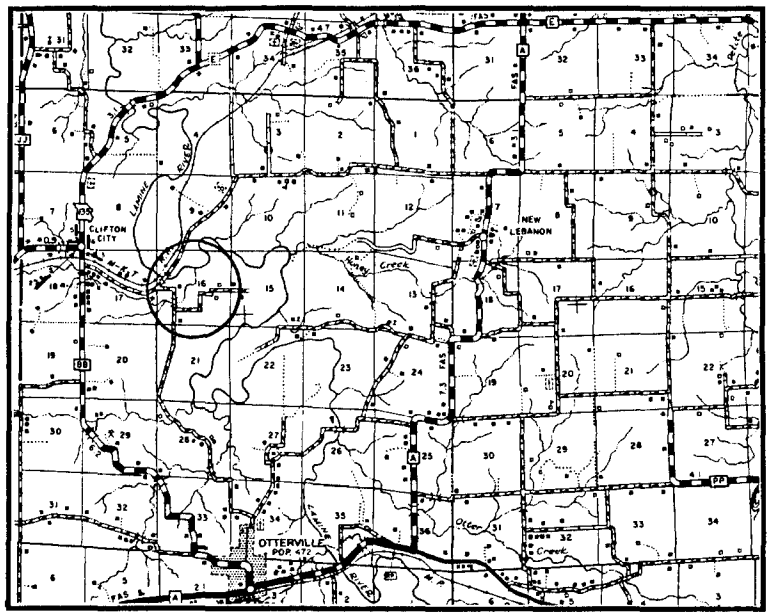
The Cooper County Court received several bids on April 7, 1913, for construction of the Streit Ford Bridge over Lamine River, some four miles southwest of New Lebanon. All bids were subsequently rejected by the court as too high. However, one month later a construction bond submitted by the Kansas City Bridge Company was approved. A $9400.00 contract was let to KCBCo to erect a 230-foot long structure at this crossing. Using steel rolled by Lackawanna Steel Company of Pittsburgh, the structure was completed the same year. The pin-connected Pratt through truss is approached on the north by a four-span and on the south by a single-span steel stringer. The timber-decked Streit Ford Bridge, since its construction, has continued to carry intermittent rural traffic.

In Missouri the pinned Pratt through truss was the bridge of choice for short- and medium-span applications in the late 19th and early 20th centuries. Most of the structures erected during this period were based on standard plans developed by either the state highway department (after 1917) or by the individual bridge companies, such as the prolific Kansas City-based Kansas City Bridge Company. As a result, thousands of Pratts were built across the state, all very much alike in detailing, and today the Pratt truss constitutes the most populous group of through trusses. The Streit Ford Bridge is a typically configured pin-connected Pratt through truss.

NAME(S) OF STRUCTURE

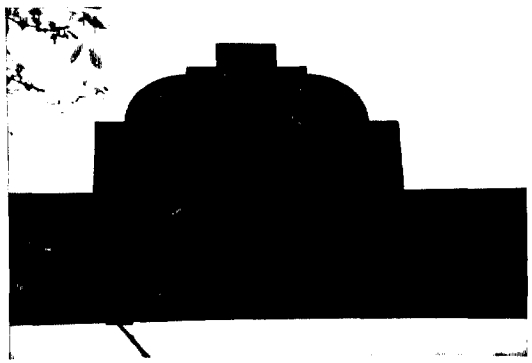
Streit Ford Bridge

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 231001.3; Cooper County Court Record, Book Z: page 424 (7 April 1913), page 457 (8 May 1913) - located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton B. Fraser, 1 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Michelle Crow-Dolby	Fraserdesign, Loveland CO	16 December 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Otterville Ford Bridge
MHTD: 238002.0

COOP18

DATE(S) OF CONSTRUCTION
1908

LOCATION
County Road 238 over Lamine River; S26, T46N, R19W
3.3 miles southwest of New Lebanon; Cooper County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 50)

CONDITION
fair

OWNER
Cooper County

span number: 1
span length: 160.0'
total length: 285.0'
roadway wdt.: 14.0'

superstructure: steel, 9-panel, pin-connected Parker through truss; 3-panel, pin-connected Pratt half-hip pony truss approach span on west end, four steel stringer approach spans on east end

substructure: concrete abutments and wingwalls, concrete-filled steel cylinder piers under channel span; steel pile bents under stringer approach spans

floor/decking: timber deck over steel stringers

other features: upper chord and inclined end post: two channels with cover plate and lacing; lower chord: two looped rectangular eyebars; vertical: two channels with lacing; diagonal: two looped rectangular eyebars; counter: square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: four angles with lacing, braced; floor beam: I-beam, field-bolted to verticals; guardrail: steel pipe

Desirous of a permanent bridge across the Lamine River southwest of New Lebanon, local citizens presented a petition to the Cooper County Court in late summer of 1905. Curiously, the court substantially delayed its decision for reasons not specified by the court recorder. Nearly two years later in early May of 1907, the court announced it would rebuild the Otterville Ford Bridge contingent on a subscription from area residents consisting of one-third the bridge's cost. One month later in his report to the court, E.T. Hale, county road and bridge commissioner, recommended that the new bridge be built one-hundred yards upstream of the existing crossing. In its new location the span could be shortened and the structure would cross the river at a right angle to the current. The estimated cost of the bridge was $4500.00. On August 5, 1907, the county court ordered Hale to advertise for competitive bids for the bridge contract. The county highway engineer, R.S. Roe, was instructed after a second period of inaction to prepare a new construction estimate nine months later. The project was re-advertised and in August 1908 the St. Louis-based Missouri Bridge and Iron Company was awarded the contract for $4945.00. Local subscriptions, at the time only totaling only $400.00, failed to meet one-third of the bridge's cost with the balance presumably being absorbed by the court. The contract amount was later amended by the addition of $850.00 owing to the unforseen expense of a 80-foot approach span. The Otterville Ford Bridge–a Parker through truss–was completed before the end of the year. Today it continues to carry intermittent rural traffic in relatively unaltered condition.

Between the early 1880s, when trusses superseded bowstrings, and the 1920s, when field riveting attained widespread use, the pin-connected truss was the structure of choice for medium- and long-span wagon bridges in Missouri. Virtually all of the major Midwestern bridge companies fabricated pinned trusses and marketed them extensively to counties throughout the state in the late 19th and early

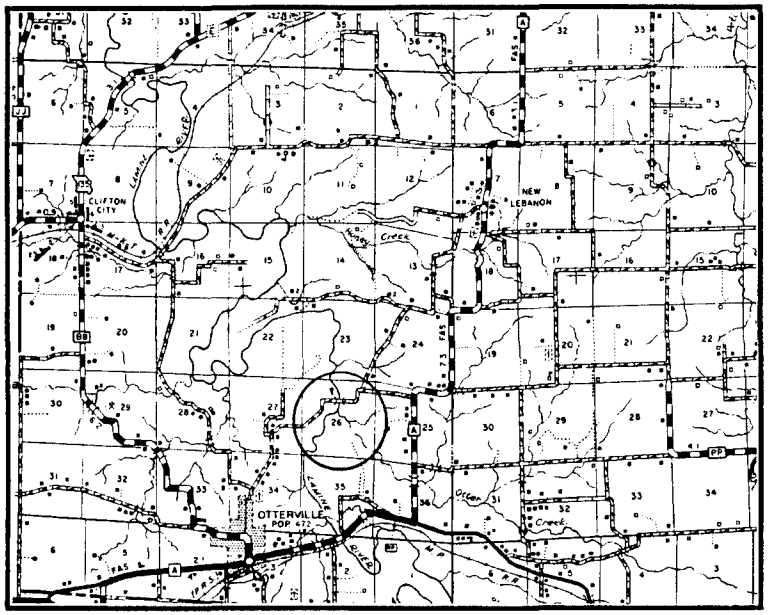
20th centuries. This corresponded with a period of intense bridge construction, as the counties were busily upgrading their road and highway systems. As a result, thousands of pinned trusses were built in Missouri during this formative period, and many remain in place today.

Most of these featured straight-chorded Pratt configurations. After the turn of the century, however, bridge manufacturers found a greater economy in polygonal-chorded Pratt variants (particularly the Parker truss) for long-span applications. Their relatively long spans, light structural members and archaic detailing have rendered pin-connected Parker trusses particularly vulnerable to subsequent replacement. As a result, of the hundreds that once carried vehicular traffic throughout the state, fewer than three dozen remain in place today. These range in span length from 110 feet to 200 feet and in erection date from 1900 to 1932. The Otterville Ford Bridge, with its 160-foot span and 1908 construction date, falls within the mainstream of this trend. It is distinguished by its excellent degree of structural integrity (including its lengthy approach spans) and by its high level of documentation.

NAME(S) OF STRUCTURE

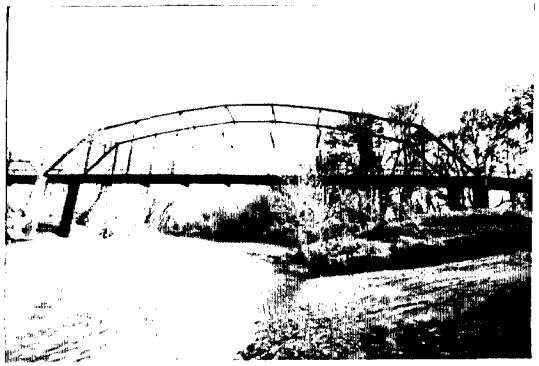
Otterville Ford Bridge

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 238002.0; Cooper County Court Record, Book V: page 592 (9 August 1905); Book X: page 256 (8 May 1907), page 263 (3 June 1907), page 273 (1 July 1907), page 280 (5 August 1907), page 461 (6 May 1908), page 473 (6 July 1908), pages 500-501 (8 August 1908); County Engineer's Report, undated - both located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Michelle Crow-Dolby	Fraserdesign, Loveland CO	16 December 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Moniteau Creek Bridge COOP21
MHTD: 333001.3

DATE(S) OF CONSTRUCTION
1899; 1902

LOCATION
County Road 333 over Moniteau Creek tributary; S24, T46N, R16W
5.6 miles southwest of Prairie Home; Cooper County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 59)

CONDITION
fair

OWNER
Cooper County

span number:	1; 1	superstructure:	steel, 3-panel, pin-connected Pratt pony truss; 2-panel, pin/rigid-connected Kingpost pony truss approach span
span length:	50.0'; 25.0'		
total length:	76.0'	substructure:	concrete abutments and wingwalls; spill-through concrete pier
roadway wdt.:	11.7'	floor/decking:	timber deck over steel stringers
		other features:	upper chord and inclined end post: two channels with cover and batten plates; lower chord: two punched rectangular eyebars; vertical: four angles with lacing (Pratt), four angles with batten plates (Kingpost); diagonal: one square eyebar; lateral bracing: round rod with threaded ends; floor beam: I-beam, U-bolted to lower chord pins (round bolt); guardrail: lattice; builder's plate: **A. M. BLODGETT / 1899 / KANSAS CITY MO**

In the summer of 1901 the Cooper County Court directed W.C. Allison, the county road and bridge commissioner, to view the site for a proposed bridge over Moniteau Creek southwest of Prairie Home. Intended to carry a county road, the bridge would form an important crossing in the southern part of the county. Soon thereafter, Allison recommended that $2000.00 of county funds be set aside for the bridge, and the court decided to let the substructure and superstructure contracts out separately. The court at this time contracted with A.M. Blodgett of Kansas City to erect the truss for $1349.00. The commissioners at that time hired C.N. Hutchinson to build the bridge's stone abutments. The abutments were completed in December 1901, the pin-connected Pratt pony truss the following July. At some later time the bridge was apparently altered. The abutments were replaced with concrete, a center concrete pier added, and a kingpost pony truss affixed to one end of the Pratt span. (This latter truss, built in 1899 by Blodgett, may have originally spanned the Thomas Branch on the Boonville / Sedalia Road in the western part of the county.) Since this latter alteration, the Moniteau Creek Bridge has carried vehicular traffic in essentially unaltered condition.

Like most of Missouri's bridge builders of the time, A.M. Blodgett relied heavily on pin-connected Pratt truss variants as its standard truss types. The short-span bridge that Blodgett fabricated for Cooper County in 1899 was a kingpost pony truss, the most fundamental of the truss configurations. The kingpost's origins are ancient and obscure. Its symmetrical triangular form lent itself naturally to timber roof framing, where the truss was first used in the Middle Ages. In 1570 Italian architect Andrea Palladio described a simple kingpost truss bridge in his general treatise on architecture, **I quattro libri della architettura**; he attributed its source to well-established antecedents. Using Palladio's work (translated into English in 1742) and their own empirical designs, early American carpenters constructed kingpost bridges at minor crossings throughout the East. The technology spread westward to Missouri with the pioneers in the late 18th

and early 19th centuries. As a result, uncounted timber kingposts were built on the region's early roads. The truss form remained the same as its construction evolved from the vernacular to the industrial in the 19th century, with the principle changes involving the materials used: timber, timber/iron, iron, steel.

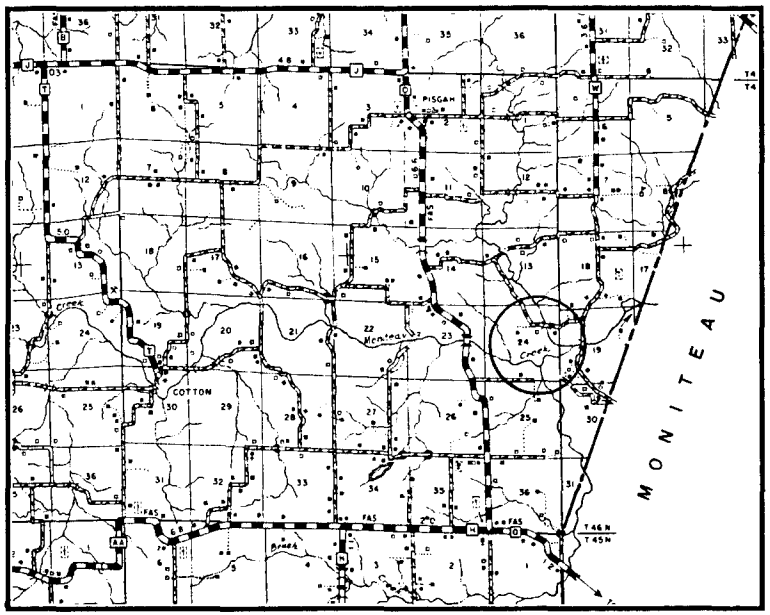
The kingpost's simplicity and straightforward determination of stresses in the individual members made it an ideal subject to illustrate bridge design. Squire Whipple delineated a kingpost truss in his 1847 essay on bridge building, the first such work to rationalize bridge design using scientific principles. Similarly, Merriman and Jacoby, in their **Text-Book on Roofs and Bridges** [1906], and J.A.L. Waddell, in his **Bridge Engineering** [1916]–two of the most influential bridge engineering texts of their time–employed the kingpost to illustrate the principals of static design. "The secret of economical and efficient truss arrangement lies in the panel system," stated Merriman and Jacoby, "which may be regarded as having been developed from the king-post truss."

These texts used the kingpost because the stresses within it are easily rationalized. The bridge companies that marketed kingposts used them because they were materially conservant, economically manufactured and quickly erected. The Moniteau Creek Bridge is a model of simplicity. It is distinguished today as one of the few remaining examples in Missouri of this mainstay structural type.

NAME(S) OF STRUCTURE

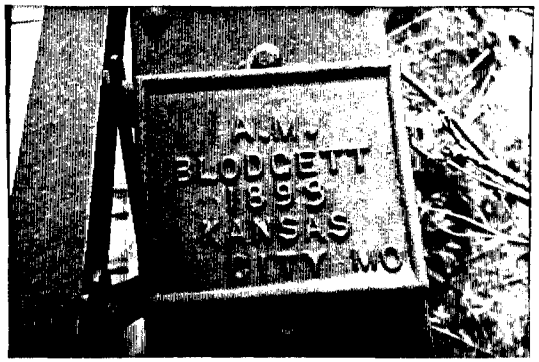
Moniteau Creek Bridge

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 333001.3; Cooper County Court Record, Book V: page 26 (7 August 1899), page 95 (5 December 1899), page 97 (5 December 1899), page 466 (7 August 1901), page 484 (3 September 1901), page 495 (7 October 1901), page 525 (2 December 1901), page 627 (2 June 1902); Record W: page 6 (8 July 1902); original contract, 7 October 1901 - both located at the Cooper County Courthouse, Boonville MO; field inspection by Clayton Fraser, 1 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Michelle Crow-Dolby	Fraserdesign, Loveland CO	16 December 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Thomas Branch Bridge
MHTD: 030003.7

COOP22

DATE(S) OF CONSTRUCTION
1920

LOCATION
County Road 30 over Thomas Branch; S4, T48N, R17W
3.0 miles west of Boonville; Cooper County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / roadway bridge

RATING NRHP possibly eligible (score: 46)

CONDITION
good

OWNER
Cooper County

span number:	1	superstructure:	concrete deck girder
span length:	36.0'	substructure:	concrete abutments and wingwalls
total length:	38.0'	floor/decking:	concrete deck
roadway wdt.:	19.2'	other features:	MSHD-standard concrete guardrails with square balusters and paneled bulkheads

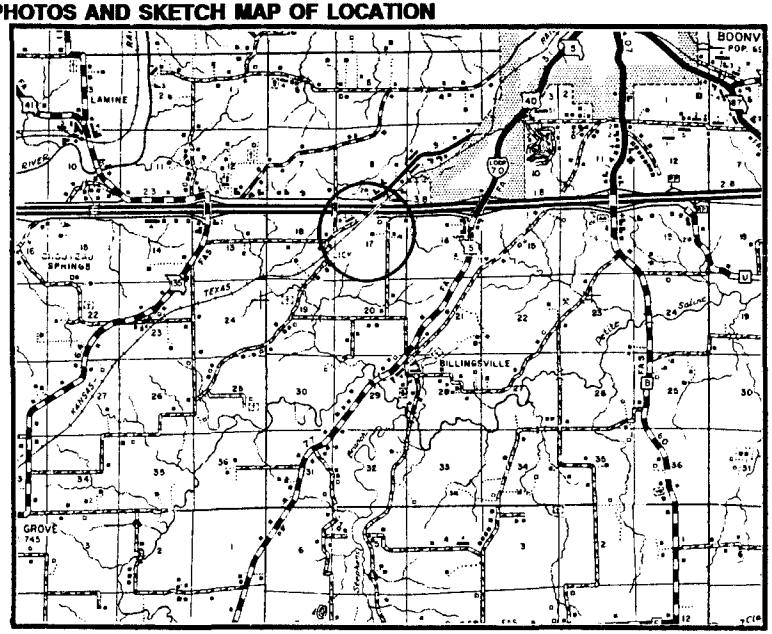
This modest concrete girder bridge carries a county road over Thomas Branch west of Boonville. Although now a county-owned structure, the Thomas Branch Bridge was designed and built by the Missouri State Highway Department in 1920 as a part of construction on State Highway 2 (later U.S. 40) along the Missouri River. That May the state contracted with the Pope Construction Company to build this small-scale span. The Jefferson City contractor apparently completed the bridge that year for a total cost of $7407.20. The Thomas Branch Bridge remains in unaltered condition.

One of the provisions of the Hawes Road Law establishing the Missouri State Highway Department was that the newly formed agency develop plans and specifications for bridges and culverts. "The Highway Department has maintained a drafting room which has been called upon for many kinds of service," the department reported in 1918, "but the especial function of which has been the preparation of bridge and culvert designs." By 1920, the department had developed several standards for short- and medium-span bridges, including 13 designs for steel superstructures with spans ranging up to 100 feet. In addition, the department delineated some 185 special bridge designs during the 1919-20 biennium. One of these was the Thomas Branch Bridge in Cooper County, designated Structure No. F-108. Although modest in its design and dimensions, this bridge is historically distinguished as one of the oldest remaining highway bridges designed by the state highway department. It is thus an important resource for interpreting MSHD's formative years and the early development of Missouri's state highway network.

NAME(S) OF STRUCTURE

Thomas Branch 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 G 366; Primary System Bridge Record, Cooper County, located at the Bridge Division, Missouri Highway and Transportation Department, Jefferson City, Missouri; Missouri State Highway Board, **Second Biennial Report**: 1919-20, pp. 130, 134.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	16 December 1993

GASCONADE COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	MHTD	Bridge Name	Description	
*GASC01	K 974	Gasconade Bridge	**3-276'**	**riveted cantilever through truss**
			1931	C.P. O'Reilly Constr. Company
GASC02	010000.1	Frene Creek Bridge		(replaced)
GASC03	036002.0	Bridge	1- 40'	**riveted Pratt/Warren pony truss**
			c1915	Miller and Borcherding (prob.)
GASC04	056000.6	Richland Creek Bridge	1- 42'	pin Pratt half-hip pony truss
			1903	Stupp Brothers B&I Company
GASC05	134002.0	Bridge	1- 30'	**concrete filled spandrel arch**
			c1920	county work force (prob.)
*GASC06	181000.3	Miller's Ford Bridge	1-120'	**pinned Pratt through truss**
			1925	St. Louis Construction Co.

EXCLUDED:

Warren pony truss
J 543R K 160R

Steel stringer

L 321	S 826	X 417	007003.1	007004.2	009000.2	009000.8
010002.9	019001.0	040001.0	061002.8	177002.5	193000.1	199003.2

Concrete girder

G 850	G 851	H 983	J 9R	J 538R	K 636R	N 744
W 176	039001.8	125001.2	166001.8	182000.8	187002.1	442000.2

Concrete slab

Y 420	011003.0	019002.5	028000.2	036002.1	041003.0	073000.2074002.3
093003.4	109000.8	110000.3	112001.2	113000.7	131001.1	135002.5142000.1
142000.8	150002.2	153001.5	153004.9	204001.6	206002.1	207001.3

Concrete box culvert

J 537	J 684	R 832	S 263	S 420	T 590	T 591
X 416	X 418	X 698	033002.3	052001.7	153002.0	

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	1	4	0	0	5
Excluded	24	42	0	0	66
	25	46	0	0	71 structures

Gasconade Bridge

GASC01

GENERAL DATA

structure no.: K 974
county: Gasconade
city/town: eastern edge of Gasconade
feature inters.: Gasconade River
cadastral grid: S11, T45R, R6W
highway route: Missouri State Highway 100
highway distr.: 5
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 14-panel, rigid-connected Warren cantilever through truss, with steel stringer approach spans
substructure: concrete abutments and spill through piers

span number: 3
span length: 276.0'
total length: 766.0'
roadway width: 18.0'
condition: excellent
alterations: none
floor/decking: asphalt over concrete deck with steel stringers
other features: upper chord / inclined endpost: 2 channels with cover plate and lacing; lower chord: 2 channels with lacing; vertical: wide flange; diagonal: 2 channels with lacing; lateral bracing: 4 angles with lacing; strut: 4 angles with lacing; floor beam: I-beam, field-bolted to vertical; guardrail: steel pipe

HISTORICAL DATA

erection date: 1930-31
erection cost: approximately $175,000
designer: Sverdrup and Parcel, St. Louis MO
fabricator: Jones and Laughlin Steel Company, Pittsburgh PA
contractor: C.P. O'Reilly Construction Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 974; Hermann **Advertiser-Courier**, 7,21,28 November 1930, 5,12,26 December 1930, 30 January 1931, 13,20 February 1931, 8 May 1931, 13,27 November 1931; field inspection by Clayton Fraser, 27 October 1989.

sign. rating: 65
evaluation: NRHP determined eligible (well-preserved example of uncommon highway structural type)

inventoried by: Clayton B. Fraser 6 February 1993

Bridge

GASC03

GENERAL DATA

structure no.:	036002.0	city/town:	3.5 miles northeast of Drake
county:	Gasconade	feature inters.:	tributary of Barren Fork
		cadastral grid:	S6, T43N, R4W
		highway route:	county road
		highway distr.:	5
		current owner:	Gasconade County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Pratt/Warren pony truss
substructure: concrete abutments and wingwalls

span number:	1	condition:	fair
span length:	40.0'	alterations:	none
total length:	42.0'	floor/decking :	concrete deck over steel stringers
roadway width:	14.2'	other features:	steel angle guardrail

HISTORICAL DATA

erection date: c1915
erection cost: unknown
designer: Miller and Borcherding, St. Louis MO (probable.)
fabricator : unknown
contractor: Miller and Borcherding, St. Louis MO (probable)

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 036002.0.

sign. rating: 33
evaluation: NRHP non-eligible (undistinguished example of uncommon truss configuration)

inventoried by: Clayton B. Fraser 6 February 1993

Richland Creek Bridge

GASC04

GENERAL DATA

structure no.: 056000.6
county: Gasconade

city/town: 6.3 miles southwest of Gasconade
feature inters.: Richland Creek
cadastral grid: S6, T44N, R6W
highway route: county road
highway distr.: 5
current owner: Gasconade County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt half-hip pony truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 42.0'
total length: 43.0'
roadway width: 10.9'

condition: fair
alterations: none
floor/decking : concrete deck over steel stringers
other features: steel angle guardrails

HISTORICAL DATA

erection date: 1903
erection cost: $567.00 (contract amount)
designer: J.C. Danuser, Gasconade County Highway Engineer
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 056000.6; Gasconade County Court Record, Book G, page 448 (30 May 1903), page 450 (2 July 1903), page 452 (3 August 1903), page 483 (25 November 1903), located at Gasconade County Courthouse, Hermann MO.

sign. rating: 43
evaluation: NRHP non-eligible (typical example of common structural type)

inventoried by: Clayton B. Fraser 6 February 1993

Bridge

GASC05

GENERAL DATA

structure no.: 134002.0
county: Gasconade

city/town: 2.4 miles southeast of Owensville
feature inters.: tributary of Red Oak Creek
cadastral grid: S3, T41N, R5W
highway route: county road
highway distr.: 5
current owner: Gasconade County

STRUCTURAL DATA

superstructure: concrete filled spandrel arch
substructure: concrete abutments and wingwalls

span number: 1
span length: 30.0'
total length: 31.0'
roadway width: 17.4'

condition: fair
alterations: none
floor/decking : concrete over earth fill
other features: guardrail: concrete with recessed panels

HISTORICAL DATA

erection date: c1920
erection cost: unknown
designer: unknown
fabricator : none
contractor: county work force (probable)

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 134002.0.

sign. rating: 23
evaluation: NRHP non-eligible (undistinguished small-scale example of concrete structural type)

inventoried by: Clayton B. Fraser 6 February 1993

Miller's Ford Bridge

GASC06

GENERAL DATA

structure no.: 181000.3
county: Gasconade
city/town: 2.2 miles southeast of Bem
feature inters.: Bourbeuse River
cadastral grid: S2, T40N, R5W
highway route: county road
highway distr.: 5
current owner: Gasconade County

STRUCTURAL DATA

superstructure: steel, 6-panel, pinned Pratt through truss with two riveted Warren pony truss approach spans
substructure: concrete abutments, wingwalls and piers

span number: 1
span length: 120.0'
total length: 242.0'
roadway width: 14.9'
condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: steel angle guardrails

HISTORICAL DATA

erection date: 1925
erection cost: $14,990.00 (contract amount)
designer: J.C. Danuser, Gasconade County Highway Engineer
fabricator : unknown
contractor: St. Louis Construction Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 181000.3; Gasconade County Court Record, Book K, page 456 (11 April 1924), pages 615-16 (8 September 1925), page 623 (6 October 1925), located at Gasconade County Courthouse, Hermann MO; field inspection by Clayton Fraser, 27 October 1989.

sign. rating: 31
evaluation: NRHP non-eligible (typically configured, relatively late example of common truss configuration)

inventoried by: Clayton B. Fraser 6 February 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Gasconade Bridge GASC01
MHTD: K 974

DATE(S) OF CONSTRUCTION
1930-31

LOCATION
Missouri State Highway 100 over Gasconade River; S11, T45R, R6W
eastern edge of Gasconade; Gasconade County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP determined eligible (score: 65)

CONDITION
excellent

OWNER
Missouri Highway and Transportation Department

span number: 3
span length: 276.0'
total length: 766.0'
roadway wdt.: 18.0'

superstructure: steel, 14-panel, rigid-connected Warren cantilever through truss, with steel stringer approach spans
substructure: concrete abutments and spill through piers
floor/decking: asphalt over concrete deck with steel stringers
other features: upper chord / inclined endpost: 2 channels with cover plate and lacing; lower chord: 2 channels with lacing; vertical: wide flange; diagonal: 2 channels with lacing; lateral bracing: 4 angles with lacing; strut: 4 angles with lacing; floor beam: I-beam, field-bolted to vertical; guardrail: steel pipe

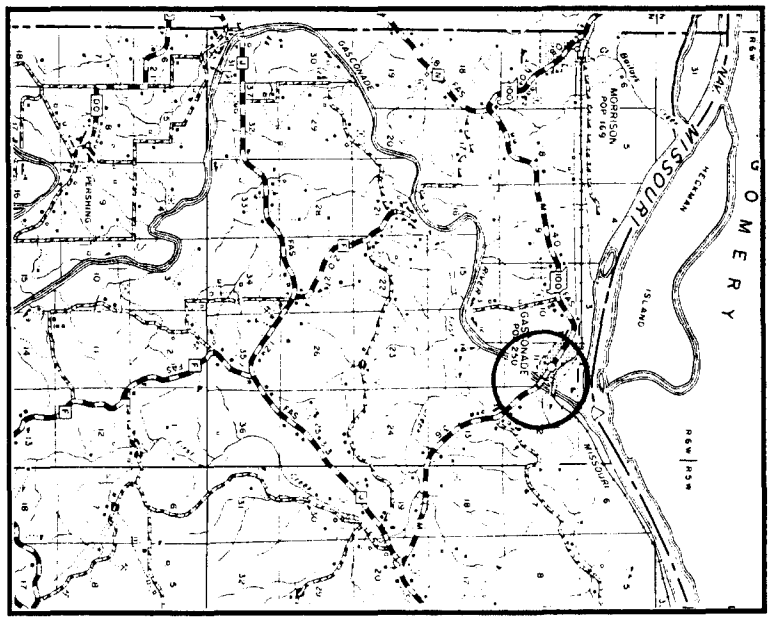
No sooner was the toll-supported Hermann Bridge over the Missouri River dedicated in September 1930, when Gasconade and Osage County officials began boosting for another toll structure to replace the existing toll ferry over the Gasconade River on the outskirts of the small town of Gasconade. Led by Civil Engineer L.J. Sverdrup of St. Louis, who had supervised construction of the Hermann Bridge, a consortium of local businessmen incorporated the Gasconade Bridge Company in December, secured a charter for the structure and began selling stock to investors. In February the company contracted with the C.P. O'Reilly Construction Company of St. Louis to build the immense structure. Work progressed on the substructure throughout the rest of the year and into 1931. Early in November 1931 the steelwork and deck were completed, and the bridge was opened to traffic. The Gasconade Bridge was formally dedicated on November 22, 1931, to the musical accompaniment of the Hermann Military Band. It functioned as a toll bridge for several years before being acquired by the State of Missouri. Now a free bridge, the Gasconade Bridge carries moderate traffic on State Highway 100. It remains unaltered.

"With the formal dedication of the Gasconade bridge to the state highway system," the Hermann **Advertiser-Courier** stated in November 1931, "every ferry delay, danger and handicap to travel between river towns south of the Missouri River between St. Louis and Jefferson City has now been permanently done away with." Opened to traffic that month, the Gasconade Bridge facilitated highway traffic in central Missouri. It is thus historically significant for its role in the development of overland transportation in the region and for its representation of the toll bridge business - a growth industry in the early years of the Depression, spawned by the inability of the state highway departments to construct major river crossings. The Gasconade Bridge is technologically significant as a well-preserved, medium-scale example of cantilevered truss construction in Missouri. It is one of only a handful of such major trusses found in the state away from the Mississippi and Missouri rivers.

NAME(S) OF STRUCTURE

Gasconade 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 974; Hermann **Advertiser-Courier**, 7,21,28 November 1930, 5,12,26 December 1930, 30 January 1931, 13,20 February 1931, 8 May 1931, 13,27 November 1931; field inspection by Clayton Fraser, 27 October 1989.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	6 February 1990

MARIES COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	MHTD	Bridge Name	Description
*MARI01	029003.0	Kaiser Bridge	1-200' **steel cable suspension bridge** 1930 J.A. Dice, overseer, with local force account labor
*MARI02	none	Maries River Bridge	1-150' **steel cable suspension bridge** 1928 J.A. Dice, overseer, with local force account labor

EXCLUDED:

Steel stringer
H 981R S 783 T 28

Concrete girder
H 980R W 38 W 93 W 94 W 268 W 275 W 490
Z 222 029004.0 030002.0 069000.6 073003.3 088002.7 088003.8
110003.9 117000.1 147002.1 150001.4 166002.4 169001.1

Concrete slab
113000.7 150000.8 171002.7

Concrete box culvert
H 523 S 515 T 344 T 873 T 874 W 520 X 594
X 882 Y 664

Timber stringer
050000.1

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	0	1	0	1	2
Excluded	20	16	0	0	36
	20	17	0	1	38 structures

Kaiser Bridge

MARI01

GENERAL DATA

structure no.:	029003.0	city/town:	2.1 miles northwest of Vienna
county:	Maries	feature inters.:	Maries River
		cadastral grid:	S24, T40N, R10W
		highway route:	county road
		highway distr.:	5
		current owner:	Maries County

STRUCTURAL DATA

superstructure: steel cable suspension bridge with timber towers
substructure: concrete abutments, tower pedestals and tapered concrete deadmen

span number:	1	condition:	fair
span length:	200.0'	alterations:	steel cable suspenders, wood floor beams added
total length:	312.0'	floor/decking :	timber deck over 3x6 timber stringers
roadway width:	12.3'	other features:	timber towers with wood plank sheathing; 4-inch diameter main cables with 300 parallel fence-wire strands and single-strand wrapping; irregularly spaced, 7-strand fence-wire suspenders, looped simply around main cables and floor beams; 4x10 timber floor beams, notched for suspender wires; wrapped wire lateral bracing beneath floor beams

HISTORICAL DATA

erection date: 1930
erection cost: $2005.37
designer: J.A. Dice
fabricator : none
contractor: Henry L. Steinman, with J.A. Dice, overseer

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 029003.0; Minute Book of Special Road District Number 1, located at Maries County Courthouse, Vienna, Missouri; undated 1930 article in **Maries County Home Advisor; Rolla Daily News:** "Historic Maries County Bridge May Not Hold Modern Vehicles" (29 April 1987), "Bridge Fate in Hands of the State" (11 November 1987); **Maries County Gazette:** "Swinging Bridge Safe to Cross" (9 November 1988); Robert Hayden, "Historical Resources Mitigation: Bridges over the Osage," report for U.S. Army Corps of Engineers, September 1980, pages 5-21, 35-36; field inspection by Clayton Fraser, 26 October 1989. (See HAER Inventory Form for additional information.)

sign. rating: 54
evaluation: determined NRHP eligible

inventoried by: Clayton B. Fraser 29 October 1989

Maries River Bridge

MARI02

GENERAL DATA

structure no.: none
county: Maries

city/town: 5.8 miles north of Vienna
feature inters.: Maries River
cadastral grid: S35, T41N, R10W
highway route: vacated county road
highway distr.: 5
current owner: private

STRUCTURAL DATA

superstructure: steel cable suspension bridge with timber towers
substructure: concrete abutments, tower pedestals and tapered concrete deadmen

span number: 1
span length: 150.0'
total length: 254.0'
roadway width: 11.5'

condition: towers and cables: fair; floor: deteriorated
alterations: none
floor/decking : timber decking over 3x6 timber stringers
other features: timber towers with corrugated steel sheathing; 4-inch diameter main cables with 300 parallel fence-wire strands and single-strand wrapping; irregularly spaced, 7-strand fence-wire suspenders, looped simply around main cables and floor beams; 10x10 timber floor beams, notched for suspender wires; wrapped wire lateral bracing beneath floor beams

HISTORICAL DATA

erection date: 1928
erection cost: $1668.68
designer: J.A. Dice
fabricator : none
contractor: force account labor, with J.A. Dice, overseer

references: Minute Book of Special Road District Number 1, located at Maries County Courthouse, Vienna, Missouri; Robert Hayden, "Historical Resources Mitigation: Bridges over the Osage," report for U.S. Army Corps of Engineers, September 1980, pages 5-21, 35-36; field inspection by Clayton Fraser, 27 October 1989. (See HAER Inventory Form for additional information.)

sign. rating: 54
evaluation: potentially NRHP eligible

inventoried by: Clayton B. Fraser 29 October 1989

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Kaiser Bridge (Swinging Bridge)
MHTD: 029003.0

MARI01

DATE(S) OF CONSTRUCTION
1930

LOCATION
county road over Maries River; S24, T40N, R10W
2.1 miles northwest of Vienna; Maries County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING determined NRHP eligible (score: 54)

CONDITION
fair

OWNER
Maries County

span number:	1	superstructure:	steel cable suspension bridge with timber towers
span length:	200.0'	substructure:	concrete abutments, tower pedestals and tapered concrete deadmen
total length:	312.0'	floor/decking:	timber deck over 3x6 timber stringers
roadway wdt.:	12.3'	other features:	timber towers with wood plank sheathing; 4-inch diameter main cables with 300 parallel fence-wire strands and single-strand wrapping; irregularly spaced, 7-strand fence-wire suspenders, looped simply around main cables and floor beams; 4x10 timber floor beams, notched for suspender wires; wrapped wire lateral bracing beneath floor beams

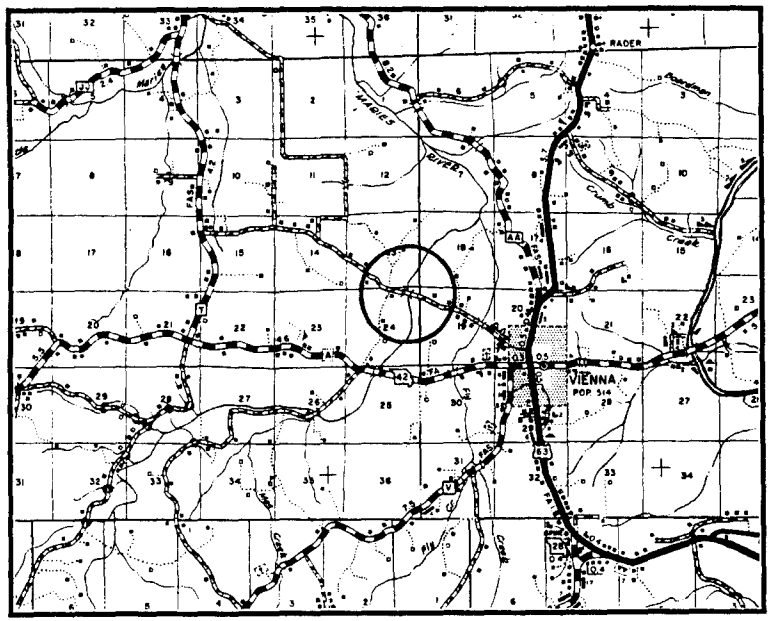
In response to road maintenance shortcomings by Maries County, a group of citizens around Vienna formed their own Special Road District Number 1 in February 1925. Three years later the district constructed a 150-foot steel suspension bridge over the Maries River. In September 1930 the district let contracts for a second span over the river, at the Kaiser crossing northwest of Vienna. "This bridge has been talked about for years," the Vienna newspaper reported. "It is a fine improvement and it links up the Vienna - St. Thomas Road with [State Highway] Number 63." Fifty feet longer than the earlier structure, this lightweight bridge featured fence-wire cables and suspenders, two squat timber towers and massive concrete deadmen buried at the four corners. Hardware dealer Fred Schmidt supplied the 250 sacks of cement and 13,000 pounds of wire, and local builder Henry Steinman erected the bridge under the supervision of J.A. Dice. Work began on October 20th; in November the bridge was completed. Total cost: $2005.37, divided equally between the district and local subscription. The Kaiser Bridge carried traffic with minimal maintenance until its closure in 1987. Following an extensive rehabilitation in 1988, the bridge was re-opened and carried light county-road traffic in fair condition until its recent re-closure.

Special Road District Number 1 lasted from 1925 until its dissolution in 1936. Although the district built several culverts, the Kaiser Bridge and Maries River Bridge (**MARI02**) were the only major spans constructed by the group during this period. The county court at this time was building concrete structures based on state highway department standards. In contrast, these lightweight suspension bridges, designed empirically and built by local labor using easily obtainable materials, represent an unusual application of vernacular tradition to bridge construction. Missouri bridge builder J.A. Dice was responsible for the design and construction oversight of both structures. Although Dice had built a number of similar suspension spans between 1897 and about 1940, only ten such structures remain in place today, in varying degrees of repair. The Kaiser Bridge is among the better preserved of Dice's remaining bridges: a technologically significant example of an esoteric and uncommon bridge type.

NAME(S) OF STRUCTURE

Kaiser 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 No. 029003.0; Minute Book of Special Road District Number 1, located at Maries County Courthouse, Vienna, Missouri; undated 1930 article in **Maries County Home Advisor**; **Rolla Daily News**: "Historic Maries County Bridge May Not Hold Modern Vehicles" (29 April 1987), "Bridge Fate in Hands of the State" (11 November 1987); **Maries County Gazette**: "Swinging Bridge Safe to Cross" (9 November 1988); Robert Hayden, "Historical Resources Mitigation: Bridges over the Osage," report for U.S. Army Corps of Engineers, September 1980, pages 5-21, 35-36; field inspection by Clayton Fraser, 26 October 1989.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	29 October 1989

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Maries River Bridge
MHTD: none

MARI02

DATE(S) OF CONSTRUCTION
1928

LOCATION
vacated county road over Maries River; S35, T41N, R10W
5.8 miles north of Vienna; Maries County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / abandoned

RATING potentially NRHP eligible (score: 54)

CONDITION
towers and cables: fair; floor: deteriorated

OWNER
private

span number:	1	superstructure:	steel cable suspension bridge with timber towers
span length:	150.0'	substructure:	concrete abutments, tower pedestals and tapered concrete deadmen
total length:	254.0'	floor/decking:	timber decking over 3x6 timber stringers
roadway wdt.:	11.5'	other features:	timber towers with corrugated steel sheathing; 4-inch diameter main cables with 300 parallel fence-wire strands and single-strand wrapping; irregularly spaced, 7-strand fence-wire suspenders, looped simply around main cables and floor beams; 10x10 timber floor beams, notched for suspender wires; wrapped wire lateral bracing beneath floor beams

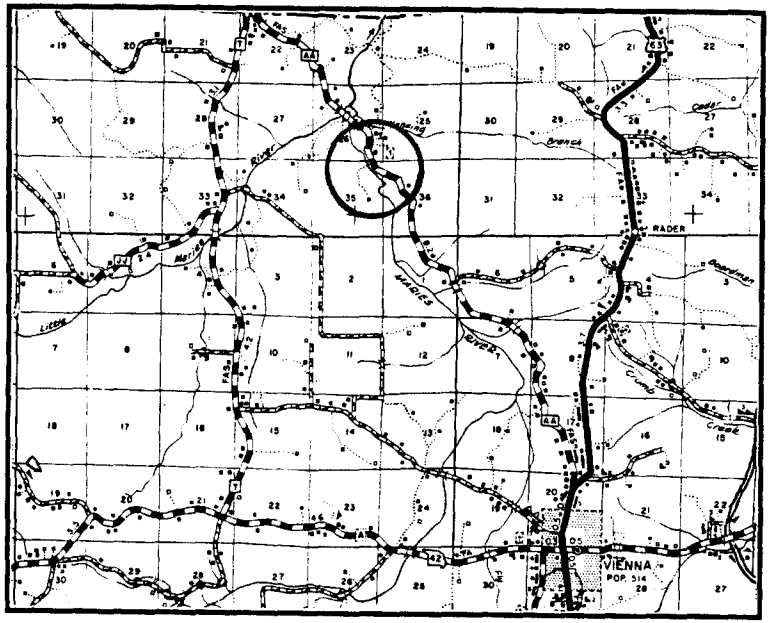
In February 1925 citizens around Vienna, the Maries County seat, formed the Special Road District Number 1 to maintain roads and stream crossings in their region. Three years later, in the summer of 1928, the district undertook its first major bridge: a 150-foot span over the Maries River six miles north of the town. The bridge was a single-span suspension structure, with a cambered deck and fence-wire main cables and suspenders. Two squat timber towers supported the cables, with massive concrete deadmen buried at the four corners. The Interlocking Fence Company supplied the 9,000 pounds of wire, the Argyle Lumber Company supplied 200 sacks of cement for the deadmen, abutments and tower pedestals, and the bridge was constructed that summer by local laborers under the supervision of bridge builder, J.A. Dice. Total construction cost: $1668.68, including approach grading. Despite its extremely lightweight construction, the Maries River Bridge carried traffic for several years before its eventual abandonment to the adjacent landowner. Now privately held, the structure stands abandoned, with its deck, stringers and floor beams in deteriorating condition.

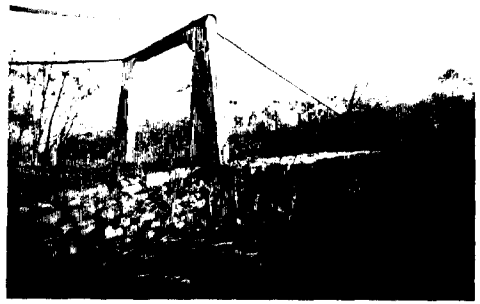
Special Road District Number 1 lasted from 1925 until its dissolution in 1936. Although the district built several culverts, the Maries River Bridge and the Kaiser Bridge (**MARI01**) were the only major spans constructed by the group during this period. The county court at this time was building concrete structures based on state highway department standards. In contrast, these lightweight suspension bridges, designed empirically and built by local labor using easily obtainable materials, represent an unusual application of vernacular tradition to bridge construction. Missouri bridge builder J.A. Dice was responsible for the design and construction oversight of both structures. Although Dice had built a number of similar suspension spans between 1897 and about 1940, only ten such structures remain in place today, in varying degrees of repair. The Maries River Bridge is among the better preserved of Dice's remaining bridges: a technologically significant example of an esoteric and uncommon bridge type.

NAME(S) OF STRUCTURE

Maries River Bridge

PHOTOS AND SKETCH MAP OF LOCATION





LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT GENERAL HIGHWAY MAP

SOURCES

Minute Book of Special Road District Number 1, located at Maries County Courthouse, Vienna, Missouri; Robert Hayden, "Historical Resources Mitigation: Bridges over the Osage," report for U.S. Army Corps of Engineers, September 1980, pages 5-21, 35-36; field inspection by Clayton Fraser, 27 October 1989.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	29 October 1989

MILLER COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	MHTD	Bridge Name	Description	
MILL01	H 119	Saline Creek Bridge	1-120'	**riveted Pratt through truss**
			1925	Fogleman and Davidson
*MILL02	J 719	Osage River Bridge	**2-200'**	**riveted cantilever through truss**
			1932	Industrial Construction Co.
MILL03	011000.2	Calhoun Bridge	1- 80'	riveted Pratt pony truss
			1914	Kansas City Bridge Company
*MILL04	096001.5	Hoecker Bridge	1-120'	**pinned Pratt through truss**
			1909	Missouri Bridge and Iron Co.
*MILL05	146000.4	Singer Bridge	1-120'	**pinned Pratt through truss**
			1913	Missouri Bridge and Iron Co.
*MILL06	156001.2	Kemna Bridge	1-167'	**steel cable suspension bridge**
			1924	J.A. Dice
*MILL07	181001.2	Boeckman Bridge	1-160'	**steel cable suspension bridge**
			1926	J.A. Dice
*MILL08	199000.7	Brumley Bridge	1-**216'**	**steel cable suspension bridge**
			c1925	J.A. Dice
*MILL09	222001.8	Buetcher Bridge	1-140'	**steel cable suspension bridge**
			c1925	J.A. Dice
*MILL10	264000.2	Mill Creek Bridge	1- 96'	**steel cable suspension bridge**
			c1925	J.A. Dice
*MILL11	274001.7	Glaize Bridge	1-**414'**	**steel cable suspension bridge**
			1922	J.A. Dice

EXCLUDED:

Warren pony truss
T 52

Steel stringer

K 819	S 535	S 536	S609	T 27	T 53	T 962
X 536R	009000.5	012000.5	032000.2	106000.1	107000.1	203000.5
212002.2	217002.5	330001.9	339000.4			

Concrete girder

G 962A	G 964	G 965	K 42	023000.5	089004.1	210000.1
287000.6	287001.2	338000.3				

Concrete slab

002000.5	022000.7	024000.1	046001.2	049000.9	051001.9	066000.4
087000.9	097000.5	106005.0	108002.1	112003.0	134000.5	135001.1
152000.4	182001.2	182001.3	235000.6	270002.6	330001.3	

MILLER COUNTY

EXCLUDED (cont.):

Concrete box culvert

G 252R1	G 253R	K 41	K 43	T 26	T 94	T 448
W 344	W 464	W 465	W 538	074000.6	132000.2	158002.7
158003.7	199000.5	203000.1	206000.2	299002.6	319000.9	337000.9

Timber stringer

Y 199	059001.1

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	2	9	0	0	11
Excluded	25	47	0	0	72
	27	56	0	0	83 structures

Saline Creek Bridge

MILL01

GENERAL DATA

structure no.: H 119
county: Miller

city/town: 3.8 miles northeast of Tuscumbia
feature inters.: Saline Creek
cadastral grid: S25, T41N, R14W
highway route: State Highway 17
highway distr.: 5
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 6-panel, rigid-connected Pratt through truss, with rigid-connected Warren pony truss approach span
substructure: concrete abutments, wingwalls and pier

span number: 1
span length: 120.0'
total length: 288.0'
roadway width: 20.0'

condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: steel pipe guardrails

HISTORICAL DATA

erection date: 1925
erection cost: $29,776.75
designer: Missouri State Highway Department
fabricator : unknown
contractor: Fogleman and Davidson

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. H 119; Primary System Bridge Files, located at Missouri Highway and Transportation Department, Jefferson City MO.

sign. rating: 41
evaluation: NRHP non-eligible (typically configured example of MSHD truss design)

inventoried by: Michelle Crow-Dolby and Clayton Fraser 1 March 1993

Osage River Bridge

MILL02

GENERAL DATA

structure no.: J 719
county: Miller
city/town: Tuscumbia
feature inters.: Osage River
cadastral grid: S11, T40N, R14W
highway route: Missouri State Highway 17
highway distr.: 5
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, rigid-connected cantilever through truss with 5-panel, rigid-connected Warren deck truss approach span at each end; 6 span steel stringer approach at north end
substructure: concrete abutments, wingwalls and bullnosed piers; spill-through piers under stringer approach spans

span number: 2
span length: 200.0'
total length: 1084.0'
roadway width: 20.0'
condition: excellent
alterations: none
floor/decking : asphalt-covered concrete deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and double lacing; lower chord: 2 channels with double lacing; vertical: wide flange; diagonal: 2 channels with double lacing; 2 channels with batten plates; lateral bracing: 1 angle; strut: 4 angles with lacing; floor beam: I-beam; guardrail: 2 channels

HISTORICAL DATA

erection date: 1932-33
erection cost: $109,112.80
designer: Missouri State Highway Department
fabricator : Inland Steel Company, East Chicago IL
contractor: Industrial Construction Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. J 719; Primary System Bridge Files, located at Missouri Highway and Transportation Department, Jefferson City MO; field inspection by Clayton Fraser, 4 May 1990.

sign. rating: 53
evaluation: NRHP possibly eligible (well-preserved, short-span cantilevered highway truss, one of a relatively small number)

inventoried by: Michelle Crow-Dolby and Clayton Fraser 1 March 1993

Calhoun Bridge

MILL03

GENERAL DATA

structure no.: 011000.2
county: Miller

city/town: 1.1 miles north of Orlean
feature inters.: South Moreau Creek
cadastral grid: S1/2, T42N, R15W
highway route: County Road 11
highway distr.: 5
current owner: Miller County

STRUCTURAL DATA

superstructure: steel, 5-panel, rigid-connected Pratt pony truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 80.0'
total length: 80.0'
roadway width: 11.7'

condition: fair
alterations: none
floor/decking : concrete deck over steel stringers
other features: steel guardrails

HISTORICAL DATA

erection date: 1914
erection cost: $3600.00
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 011000.2; Miller County Court Record, Book R: page 55 (5 March 1914); original contract between Miller and Moniteau Counties with Kansas City Bridge Company (2 March 1914); original drawing - all located at Miller County Courthouse, Tuscumbia MO.

sign. rating: 46
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Michelle Crow-Dolby and Clayton Fraser 1 March 1993

Hoecker Bridge

MILL04

GENERAL DATA

structure no.:	096001.5	**city/town:**	4.5 miles northwest of St. Elizabeth
county:	Miller	**feature inters.:**	Tavern Creek
		cadastral grid:	S7, T41N, R12W
		highway route:	County Road 96
		highway distr.:	5
		current owner:	Miller County

STRUCTURAL DATA

superstructure: steel, 7-panel, pin-connected Pratt through truss, with 4-span steel stringer on south end (replacement) and 2-span steel stringer on north end (original)

substructure: stone rubble on north end; concrete abutments and wingwalls with steel cylinder piers on south end

span number:	1	**condition:**	fair
span length:	120.0'	**alterations:**	none
total length:	212.0'	**floor/decking :**	timber deck over timber stringers
roadway width:	11.0'	**other features:**	upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 looped rectangular eyebars; counter: 1 square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 channels with lacing; floor beam: I-beam; guardrail: gas pipe

HISTORICAL DATA

erection date: 1908-09

erection cost: $2494.00 (contract amount)

designer: Missouri Bridge and Iron Company, St. Louis MO

fabricator : Inland Steel Company, East Chicago IN;
Cambria Steel Company, Pittsburgh PA

contractor: Missouri Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 096001.5; Miller County Court Record, Book P: page 54 (7 May 1908), page 137 (7 September 1908), page 161 (4 November 1908), page 287 (7 May 1909), page 411 (6 November 1909); original bridge contract between Miller County and Missouri Bridge and Iron Company (15 March 1909); letter from Curtis Hill, State Highway Engineer (15 September 1908); original bridge drawing (no date) -all located at Miller County Courthouse, Tuscumbia MO; field inspection by Clayton Fraser, 4 May 1990.

Hoecker Bridge

sign. rating: 46
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Michelle Crow-Dolby and Clayton Fraser 1 March 1993

Singer Bridge

MILL05

GENERAL DATA

structure no.: 146000.4
county: Miller

city/town: 1.8 miles northeast of St. Elizabeth
feature inters.: Tavern Creek
cadastral grid: S27, T41N, R12W
highway route: County Road 146
highway distr.: 5
current owner: Miller County

STRUCTURAL DATA

superstructure: steel, 7-panel, pin-connected Pratt through truss, with steel stringers at each end
substructure: concrete abutments and wingwalls with concrete-filled steel cylinder piers

span number: 1
span length: 120.0'
total length: 170.0'
roadway width: 10.8'

condition: good
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: 1 round eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field bolted to vertical; guardrail: timber

HISTORICAL DATA

erection date: 1913
erection cost: $2235.00
designer: Missouri Bridge and Iron Company, St. Louis MO
fabricator : Inland Steel Company, East Chicago IN
contractor: Missouri Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 146000.4; Miller County Court Record, Book Q: page 365 (10 August 1912), page 369 (3 September 1912), page 377 (21 September 1912), page 419 (21 January 1913), page 477 (12 April 1913); original Notice of Letting by D.W. Baker, County Surveyor; original bridge contract between Miller County and Missouri Bridge and Iron Company (3 September 1912); original bridge drawing

by D.W. Baker; letter from Robert P. Garrett, Vice President of Missouri Bridge and Iron Company to Miller County (23 January 1913) - all located at Miller County Courthouse, Tuscumbia MO; field inspection by Clayton Fraser, 4 May 1990.

sign. rating: 44

evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Michelle Crow-Dolby and Clayton Fraser 1 March 1993

Kemna Bridge

MILL06

GENERAL DATA

structure no.: 156001.2
county: Miller

city/town: 1.4 miles southeast of St. Elizabeth
feature inters.: Tavern Creek
cadastral grid: S3, T40N, R12W
highway route: County Road 156
highway distr.: 5
current owner: Miller County

STRUCTURAL DATA

superstructure: steel cable suspension bridge with steel towers
substructure: concrete pier pedestals and deadmen

span number: 1
span length: 167.0'
total length: 167.0'
roadway width: 11.1'

condition: fair
alterations: bridge rehabilitated and timber towers replaced, 1978
floor/decking : corrugated steel over steel stringers
other features: towers: wide-flange steel; parallel-strand, straight wire cables in concrete deadmen; guardrail: none

HISTORICAL DATA

erection date: 1924
erection cost: unknown
designer: J.A. Dice, Warsaw MO
fabricator : unknown
contractor: J.A. Dice, Warsaw MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 156001.2; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; field inspection by Clayton Fraser, 4 May 1990.

sign. rating: 46
evaluation: NRHP non-eligible (poorly preserved example of uncommon vernacular bridge type)

inventoried by: Michelle Crow-Dolby and Clayton Fraser 1 March 1993

Boeckman Bridge

MILL07

GENERAL DATA

structure no.: 181001.2
county: Miller

city/town: 2.6 miles southeast of St. Elizabeth
feature inters.: Tavern Creek
cadastral grid: S10, T40N, R12W
highway route: County Road 181
highway distr.: 5
current owner: Miller County

STRUCTURAL DATA

superstructure: steel cable suspension bridge
substructure: concrete abutments and concrete piers

span number: 1
span length: 160.0'
total length: 185.0'
roadway width: 12.4'

condition: good
alterations: rehab work done in 1988; timber towers replaced with steel
floor/decking : timber over timber stringers
other features: towers: steel; single strand, straight cables in concrete deadmen; guardrail: wire mesh

HISTORICAL DATA

erection date: 1926
erection cost: unknown
designer: J.A. Dice, Warsaw MO
fabricator : unknown
contractor: J.A. Dice, Warsaw MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 181001.2; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; **The Miller County Autogram-Sentinel**, "Revamping Underway on Boeckman Bridge," n.p. 30 June 1988; **Missouri Transportation Bulletin**, "Miller County Rehabilitates Suspension Bridge," Vol.5, page 1, September 1988; field inspection by Clayton Fraser, 4 May 1990.

sign. rating: 46
evaluation: NRHP individually listed and more recently de-listed (poorly preserved example of uncommon vernacular bridge type)

inventoried by: Michelle Crow-Dolby and Clayton Fraser 1 March 1993

Brumley Bridge

MILL08

GENERAL DATA

structure no.: 199000.7
county: Miller

city/town: 6.4 miles northwest of Iberia
feature inters.: Tavern Creek
cadastral grid: S25, T40N, R13W
highway route: County Road 199
highway distr.: 5
current owner: Miller County

STRUCTURAL DATA

superstructure: steel cable suspension bridge
substructure: concrete tower pedestals and deadmen

span number: 1
span length: 216.0'
total length: 216.0'
roadway width: 10.8'

condition: good
alterations: bridge renovated, 1988
floor/decking : timber deck over timber stringers
other features: towers: timber tower sheathed in corrugated steel, reinforced by I-beams at one end; concrete tower at other end: single strand, straight cables in concrete deadmen; guardrail: none

HISTORICAL DATA

erection date: c1925
erection cost: unknown
designer: J.A. Dice, Warsaw MO
fabricator : unknown
contractor: J.A. Dice, Warsaw MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 199000.7; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; "Revamping Underway on Boeckman Bridge," **Miller County Autogram-Sentinel**, 30 June 1988; field inspection by Clayton Fraser, 4 May 1990.

sign. rating: 52
evaluation: NRHP possibly eligible (technologically significant example of an esoteric bridge type, built using vernacular tradition)

inventoried by: Michelle Crow-Dolby and Clayton Fraser 1 March 1993

Buetcher Bridge

MILL09

GENERAL DATA

structure no.: 222001.8
county: Miller

city/town: 3.5 miles north of Iberia
feature inters.: Tavern Creek
cadastral grid: S1, T39N, R13W
highway route: County Road 222
highway distr.: 5
current owner: Miller County

STRUCTURAL DATA

superstructure: steel cable suspension bridge
substructure: fieldstone side walls on east approach; concrete tower pedestals and deadmen

span number: 1
span length: 140.0'
total length: 141.0'
roadway width: 12.0'

condition: good
alterations: renovated, 1986
floor/decking : timber deck over timber stringers
other features: tower: timber sheathed in corrugated steel, supported by I-beams; single strand, straight cables in concrete deadmen; guardrail: none

HISTORICAL DATA

erection date: c1925
erection cost: unknown
designer: J.A. Dice, Warsaw MO
fabricator : unknown
contractor: J.A. Dice, Warsaw MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 222001.8; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; field inspection by Clayton Fraser, 4 May 1990.

sign. rating: 52
evaluation: NRHP possibly eligible (technologically significant example of an esoteric bridge type, built using vernacular tradition)

inventoried by: Michelle Crow-Dolby and Clayton Fraser 1 March 1993

Mill Creek Bridge

MILL10

GENERAL DATA

structure no.: 264000.2
county: Miller

city/town: 2.2 miles southwest of Brumley
feature inters.: Mill Creek
cadastral grid: S36, T39N, R15W
highway route: County Road 264
highway distr.: 5
current owner: Miller County

STRUCTURAL DATA

superstructure: steel cable suspension bridge
substructure: concrete deadmen and spill-through tower pedestals

span number: 1
span length: 96.0'
total length: 135.0'
roadway width: 11.1'

condition: fair
alterations: towers and pedestals replaced; cables reinforced
floor/decking : corrugated steel deck over steel stringers
other features: towers: steel I-beams; single strand, straight cables in concrete deadmen; guardrail: none

HISTORICAL DATA

erection date: c1925
erection cost: unknown
designer: J.A. Dice, Warsaw MO
fabricator : unknown
contractor: J.A. Dice, Warsaw MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 264000.2; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; field inspection by Clayton Fraser, 4 May 1990.

sign. rating: 44
evaluation: NRHP non-eligible (poorly preserved example of uncommon vernacular bridge type)

inventoried by: Michelle Crow-Dolby and Clayton Fraser 1 March 1993

Glaize Bridge

MILL11

GENERAL DATA

structure no.: 274001.7
county: Miller

city/town: 2.8 miles southwest of Brumley
feature inters.: Grand Auglaize Creek
cadastral grid: S36, T39N, R15W
highway route: County Road 274
highway distr.: 5
current owner: Miller County

STRUCTURAL DATA

superstructure: steel cable suspension bridge with steel cable towers
substructure: concrete tower pedestals abutments, wingwalls and piers

span number: 1
span length: 414.0'
total length: 500.0'
roadway width: 12.0'

condition: good
alterations: renovated
floor/decking : timber deck over timber stringers
other features: towers: 2 channels with lacing; single strand, straight cables in concrete deadmen; guardrail: 3 angles

HISTORICAL DATA

erection date: 1922
erection cost: unknown
designer: J.A. Dice, Warsaw MO
fabricator : Pan American Bridge Company, New Castle IN
contractor: J.A. Dice, Warsaw MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 274001.7; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; Miller County Court Record, Book T: page 327 (6 November 1922) - located at Miller County Courthouse, Tuscumbia MO; field inspection by Clayton Fraser, 4 May 1990.

sign. rating: 66
evaluation: NRHP possibly eligible (outstanding, technologically significant example of an esoteric bridge type, built using vernacular tradition)

inventoried by: Michelle Crow-Dolby and Clayton Fraser 1 March 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Osage River Bridge
MHTD: J 719

MILL02

DATE(S) OF CONSTRUCTION
1932-33

LOCATION
Missouri State Highway 17 over Osage River; S11, T40N, R14W
Tuscumbia; Miller County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP possibly eligible (score: 53)

CONDITION
excellent

OWNER
Missouri Highway and Transportation Department

span number: 2
span length: 200.0'
total length: 1084.0'
roadway wdt.: 20.0'

superstructure: steel, rigid-connected cantilever through truss with 5-panel, rigid-connected Warren deck truss approach span at each end; 6 span steel stringer approach at north end

substructure: concrete abutments, wingwalls and bullnosed piers; spill-through piers under stringer approach spans

floor/decking: asphalt-covered concrete deck over steel stringers

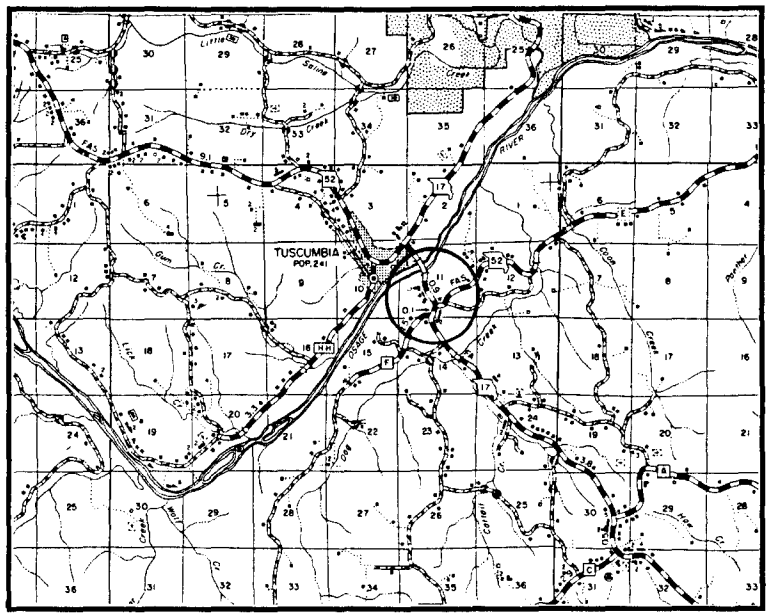
other features: upper chord and inclined end post: 2 channels with cover plate and double lacing; lower chord: 2 channels with double lacing; vertical: wide flange; diagonal: 2 channels with double lacing; 2 channels with batten plates; lateral bracing: 1 angle; strut: 4 angles with lacing; floor beam: I-beam; guardrail: 2 channels

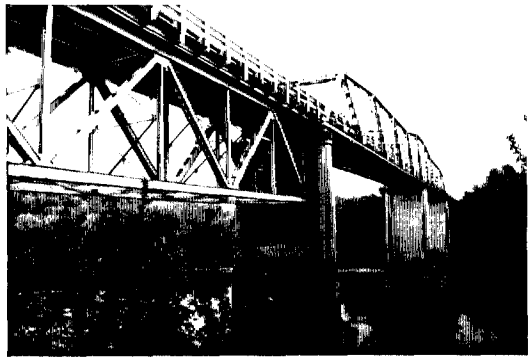
Carrying Missouri State Highway 17 over the Osage River, this two-span steel truss is located in the county seat of Tuscumbia. Configured as a five-panel riveted cantilevered through truss with six steel stringer approach spans on the north, the structure rests on concrete abutments and bullnosed and spill-through piers. The bridge's history dates to 1932, when the Missouri State Highway Department let a construction contract to the Industrial Construction Company for the sum of $109,112.80. Designed by the state highway commission and utilizing steel components rolled in Illinois by the Inland Steel Company, the structure was erected without incident and continues to carry traffic in essentially unaltered condition. Opened to traffic in 1933, the Osage River Bridge facilitated highway traffic in central Missouri. It is thus historically significant for its role in the development of overland transportation in the region. The Osage River Bridge is technologically significant as a well-preserved, small-scale example of cantilevered truss construction in Missouri. It is one of only a handful of such major trusses found in the state away from the Mississippi and Missouri rivers.

NAME(S) OF STRUCTURE

Osage River 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 No. J 719; Primary System Bridge Files, located at Missouri Highway and Transportation Department, Jefferson City MO; field inspection by Clayton Fraser, 4 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton Fraser	Fraserdesign, Loveland CO	4 May 1990

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Hoecker Bridge
MHTD: 096001.5

MILL04

DATE(S) OF CONSTRUCTION
1908-09

LOCATION
County Road 96 over Tavern Creek; S7, T41N, R12W
4.5 miles northwest of St. Elizabeth; Miller County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 46)

CONDITION
fair

OWNER
Miller County

span number: 1
span length: 120.0'
total length: 212.0'
roadway wdt.: 11.0'

superstructure: steel, 7-panel, pin-connected Pratt through truss, with 4-span steel stringer on south end (replacement) and 2-span steel stringer on north end (original)

substructure: stone rubble on north end; concrete abutments and wingwalls with steel cylinder piers on south end

floor/decking: timber deck over timber stringers

other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 looped rectangular eyebars; counter: 1 square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 channels with lacing; floor beam: I-beam; guardrail: gas pipe

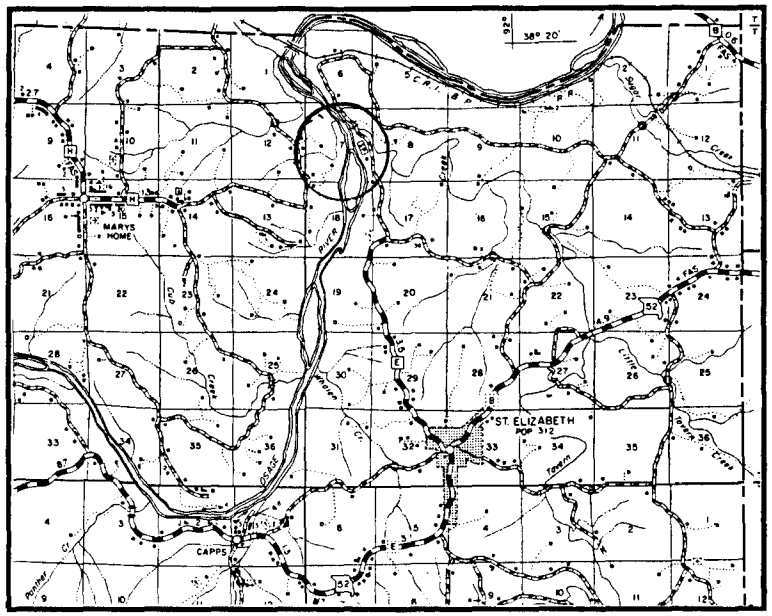
On May 7, 1908, the Miller County Court directed the county engineer to prepare specifications and estimate the cost of a bridge across Tavern Creek, just upstream from the creek's confluence with the Osage River. Known as the Hoecker Bridge, the structure was greatly desired by nearby citizens who raised $450.00 in subscriptions to help pay for its erection. In the fall of 1908, after reviewing all the bids submitted by various contractors, the county awarded the Missouri Bridge and Iron Company a $2494.00 contract to erect the structure. Using steel fabricated by the Inland and Cambria Mills of Pittsburgh, the Saint Louis-based firm erected the truss during the winter of 1908-09. On May 7, 1909, exactly a year after it was authorized by the county court, the bridge was declared completed, and a final payment of $2398.02 was issued to MoB&I. Built as a seven-panel, pin-connected Pratt through truss, the structure is still in service today. A four-span steel stringer approach on the north end has been replaced, but the two-span approach on the south end appears original.

From the 1870s through the 1910s, thousands of pin-connected Pratt through trusses were erected on Missouri's roadways. Although several hundred of these structures remain in use today, relatively few date from before the turn of the century. And fewer yet of the 19th century survivors remain structurally intact. The Hoecker Bridge stands out among Missouri's pin-connected trusses as a well-documented example that has retained a high degree of structural integrity.

NAME(S) OF STRUCTURE

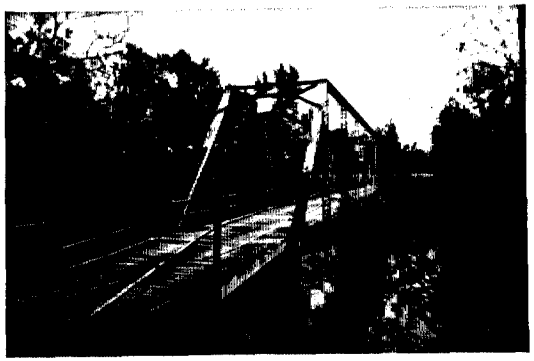
Hoecker Bridge

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 No. 096001.5; Miller County Court Record, Book P: page 54 (7 May 1908), page 137 (7 September 1908), page 161 (4 November 1908), page 287 (7 May 1909), page 411 (6 November 1909); original bridge contract between Miller County and Missouri Bridge and Iron Company (15 March 1909); letter from Curtis Hill, State Highway Engineer (15 September 1908); original bridge drawing (no date) -all located at Miller County Courthouse, Tuscumbia MO; field inspection by Clayton Fraser, 4 May 1990.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton Fraser	Fraserdesign, Loveland CO	4 May 1990

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Singer Bridge
MHTD: 146000.4

MILL05

DATE(S) OF CONSTRUCTION
1913

LOCATION
County Road 146 over Tavern Creek; S27, T41N, R12W
1.8 miles northeast of St. Elizabeth; Miller County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 44)

CONDITION
good

OWNER
Miller County

span number:	1	superstructure:	steel, 7-panel, pin-connected Pratt through truss, with steel stringers at each end
span length:	120.0'	substructure:	concrete abutments and wingwalls with concrete-filled steel cylinder piers
total length:	170.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	10.8'	other features:	upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: 1 round eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field bolted to vertical; guardrail: timber

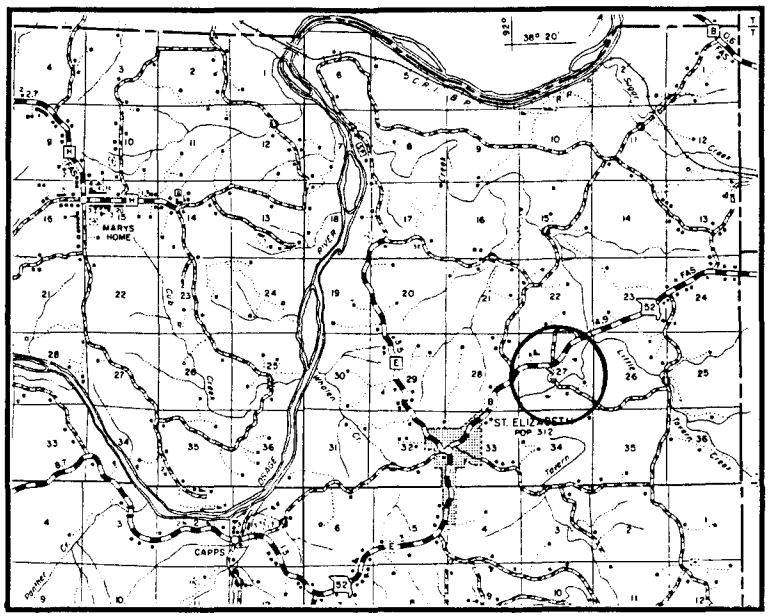
The Singer Bridge carries a secondary county road over Tavern Creek in northeastern Miller County. Configured as a seven-panel pin-connected Pratt through truss with flanking steel stringer approach spans, the structure rests on concrete abutments and concrete-filled steel cylinder piers. The bridge dates to August 1912, when the Miller County Court ordered the highway engineer to advertise for bids to build a steel bridge across Tavern Creek at Singer Ford. In September the bids were considered, and a $1962.00 contract was subsequently let to the St. Louis-based Missouri Bridge and Iron Company. The same day that the contract was awarded, nearby residents submitted subscriptions totaling $1100.00 toward the bridge's construction. By January 1913 work on the project had not yet begun, so the court ordered the county clerk to communicate with Missouri Bridge and Iron in order to ascertain why the bridge had not yet been constructed. Apparently spurred into action, MoB&I quickly erected the bridge over the next three months. In April the structure, which utilized steel components rolled by Inland Steel Company of Indiana, was declared completed. MoB&I was paid $1962.00 for the truss and an additional $273.00 for work on the approach spans. The Singer Bridge is still in service and exhibits a high degree of structural integrity.

From the 1870s through the 1910s, thousands of pin-connected Pratt through trusses were erected on Missouri's roadways. Although several hundred of these structures remain in use today, relatively few date from before the turn of the century. And fewer yet of the 19th century survivors remain structurally intact. The Singer Bridge stands out among Missouri's pin-connected trusses as a well-documented example that has retained a high degree of structural integrity.

NAME(S) OF STRUCTURE

Singer 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 No. 146000.4; Miller County Court Record, Book Q: page 365 (10 August 1912), page 369 (3 September 1912), page 377 (21 September 1912), page 419 (21 January 1913), page 477 (12 April 1913); original Notice of Letting by D.W. Baker, County Surveyor; original bridge contract between Miller County and Missouri Bridge and Iron Company (3 September 1912); original bridge drawing by D.W. Baker; letter from Robert P. Garrett, Vice President of Missouri Bridge and Iron Company to Miller County (23 January 1913) - all located at Miller County Courthouse, Tuscumbia MO; field inspection by Clayton Fraser, 4 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton Fraser	Fraserdesign, Loveland CO	4 May 1990

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Kemna Bridge
MHTD: 156001.2

MILL06

DATE(S) OF CONSTRUCTION
1924

LOCATION
County Road 156 over Tavern Creek; S3, T40N, R12W
1.4 miles southeast of St. Elizabeth; Miller County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 46)

CONDITION
fair

OWNER
Miller County

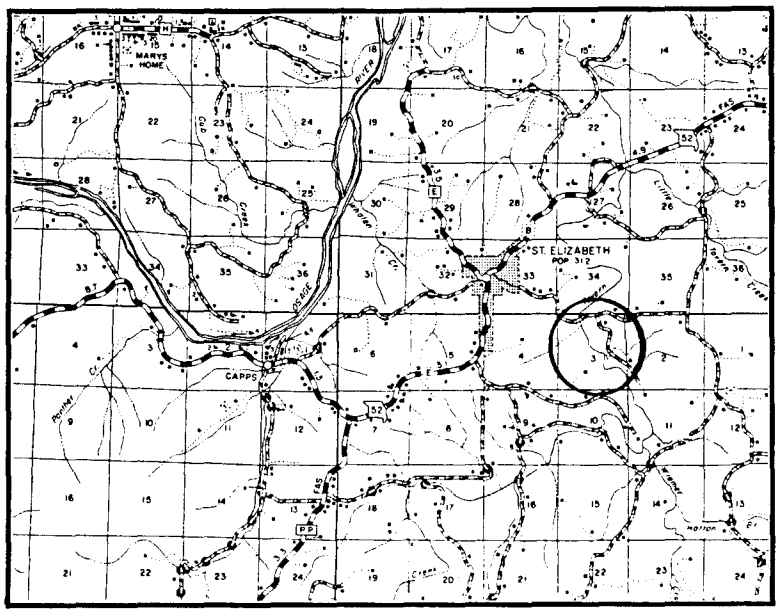
span number:	1	superstructure:	steel cable suspension bridge with steel towers
span length:	167.0'	substructure:	concrete pier pedestals and deadmen
total length:	167.0'	floor/decking:	corrugated steel over steel stringers
roadway wdt.:	11.1'	other features:	towers: wide-flange steel; parallel-strand, straight wire cables in concrete deadmen; guardrail: none

The Kemna Bridge is a steel cable suspension bridge that crosses over Tavern Creek about 1½ miles southeast of Saint Elizabeth in Miller County. The bridge was designed and built by Joseph A. Dice, a well-known regional bridge builder. A native of Warsaw, the county seat of nearby Benton County, Dice erected more than 30 bridges between 1896 and the mid-1930s. These included Dice's most notable spans, suspension bridges over the Osage River in Benton, Miller, and Saint Clair Counties. The 167-foot Kemna Bridge, supported by a concrete pier and abutments, features straight suspension wire, rather than the widely heralded twisted wire rope made famous by Washington Roebling's 1883 Brooklyn Bridge. Additionally, the structure consists of a non-rigid substructure owing to the lack of bolts to secure the floor beams to the stringer beams and the absence of bolts to secure deck flooring to the stringers. These unusual construction techniques were evidently employed by Dice in order to conserve the meager funds procured from nearby citizens and county coffers. Dice's atypical suspension bridge design also incorporated planked flooring, which was not anchored to the abutments, and a single-lane roadway. All these design elements contribute to the structural significance of Miller County's suspension bridges and to Dice's reputation as an innovative Missouri bridge builder.

County records contain little or no written documentation pertaining to Dice's suspension bridges in Miller County. Preferring to operate on a verbal and spatial basis, the prolific contractor apparently did not retain any written records either. The self-trained bridge builder never drew up any plans or specifications for the structures he erected, instead, relying solely on his memory. Dice illustrated this unorthodox practice by explaining, "with a ball of string to stretch across the river a couple of times, I could just sort of feel the correct measurements." The majority of the "swinging bridges" Dice designed were built by raising money through local subscription and were simply constructed using timber harvested from along stream and river banks. Since its erection in 1924, the Kemna Bridge has functioned in place, although a 1978 renovation and the replacement of the original timber towers diminish the bridge's structural integrity substantially. Its historical value, however, remains intact and contributes significantly to the structure's overall importance.

NAME(S) OF STRUCTURE
Kemna 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 No. 156001.2; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; field inspection by Clayton Fraser, 4 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton Fraser	Fraserdesign, Loveland CO	4 May 1990

Ten suspension bridges built by Missouri bridge builder J.A. Dice remain in central Missouri. As a group, these spans comprise the state's most important examples of vernacular bridge construction, designed and built without benefit of detailed structural analysis or computation and utilizing atypical construction techniques. The Kemna Bridge is thus distinguished as a representative example of an esoteric structural type which ranks among Missouri's most important early vehicular spans.

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Boeckman Bridge
MHTD: 181001.2

MILL07

DATE(S) OF CONSTRUCTION
1926

LOCATION
County Road 181 over Tavern Creek; S10, T40N, R12W
2.6 miles southeast of St. Elizabeth; Miller County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP de-listed (score: 46)

CONDITION
good

OWNER
Miller County

span number:	1	superstructure:	steel cable suspension bridge
span length:	160.0'	substructure:	concrete abutments and concrete piers
total length:	185.0'	floor/decking:	timber over timber stringers
roadway wdt.:	12.4'	other features:	towers: steel; single strand, straight cables in concrete deadmen; guardrail: wire mesh

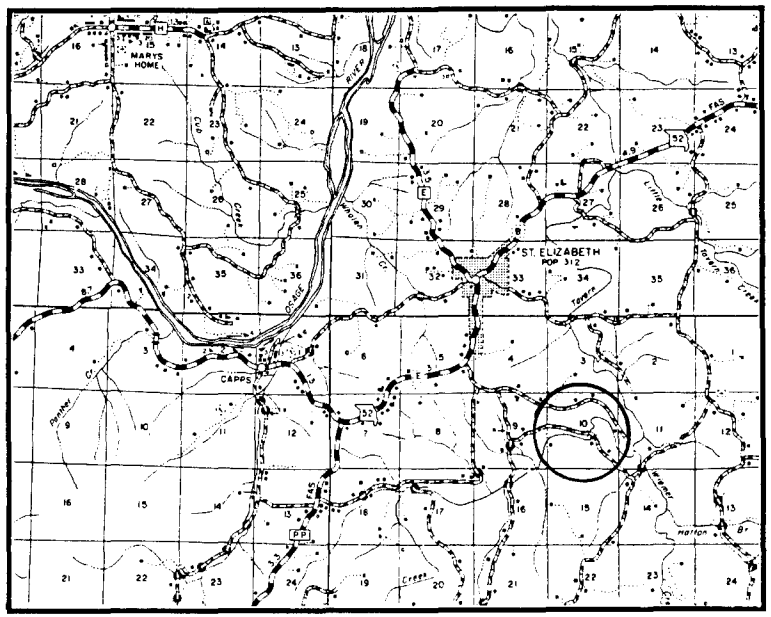
Located in rural Miller County, southeast of St. Elizabeth, this medium-span suspension bridge carries a secondary county road over Tavern Creek. The bridge consists of a steel cable suspended span supported by steel towers and tied into massive concrete deadmen at both ends. The Boeckman Bridge was built in 1926 by journeyman contractor J.A. Dice. One of ten such Dice-built suspension bridges identified by the statewide bridge inventory (six of which are in Miller County), it was individually listed on the National Register of Historic Places in 1979. "Boeckman Bridge is significant as an example of an unusual form of regional bridge construction which has survived with virtually all of its original members intact, the NRHP nomination stated. As built, the Boeckman Bridge consisted of zinc-coated steel main and suspender cables, supported by heavy timber towers with corrugated steel sheathing. In 1988 the bridge underwent major rehabilitation. The suspender cables were reinforced by new galvanized steel cables, many of the floor beams were replaced or reinforced by the addition of second side-by-side beams, the wooden stringers and deck were replaced entirely, and the original timber towers were replaced with steel posts and beams.

Replacement of floor components is considered a normal part of bridge maintenance, and virtually all of Missouri's historic timber-decked bridges have undergone numerous repairs or replacements on their decks and/or stringers. The addition of the new suspenders impacted the visual integrity of the bridge. But the original suspender cables have been left largely in place, and the new cables can be considered a reversible element. It is the replacement of the towers, however, that posed the most serious threat to the physical integrity of the Boeckman Bridge. The primary superstructural elements of a suspension bridge are its towers and main and suspender cables. Replacement of the original timber towers (and their bulky sheathing) with relatively lightweight steel components has altered both the essential structure of the bridge and its appearance. Combined with the lesser impacts, the tower replacement represents a tremendous loss of integrity for the bridge. The removal of more than half of its historic fabric begs the question of whether this bridge is a 1926 structure or a 1988 structure. As stated in the nomination, much of the Boeckman Bridge's significance is tied to its high degree of integrity, which is appropriate for a vernacular site such as this. With its integrity so seriously compromised, the bridge's significance is also diminished. As a result, the Boeckman Bridge was de-listed from the National Register in 1994.

NAME(S) OF STRUCTURE

Boeckman 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 No. 181001.2; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; **The Miller County Autogram-Sentinel**, "Revamping Underway on Boeckman Bridge," n.p. 30 June 1988; **Missouri Transportation Bulletin**, "Miller County Rehabilitates Suspension Bridge," Vol.5, page 1, September 1988; field inspection by Clayton Fraser, 4 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton Fraser	Fraserdesign, Loveland CO	4 May 1990

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Brumley Bridge
MHTD: 199000.7

MILL08

DATE(S) OF CONSTRUCTION
c1925

LOCATION
County Road 199 over Tavern Creek; S25, T40N, R13W
6.4 miles northwest of Iberia; Miller County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 52)

CONDITION
good

OWNER
Miller County

span number:	1	superstructure:	steel cable suspension bridge
span length:	216.0'	substructure:	concrete tower pedestals and deadmen
total length:	216.0'	floor/decking:	timber deck over timber stringers
roadway wdt.:	10.8'	other features:	towers: timber tower sheathed in corrugated steel, reinforced by I-beams at one end; concrete tower at other end: single strand, straight cables in concrete deadmen; guardrail: none

Known locally as the Brumley Bridge, this lightweight structure crosses over Tavern Creek some six miles northwest of Iberia in Miller County. The bridge consists of a single steel cable suspension span, supported by a timber tower sheathed in corrugated steel at one end and a concrete tower on the other end. The two main cables consist of parallel-strand galvanized wires, supported on each end by massive, tapered concrete deadmen. To each main cable are attached the wire suspender cables by means of simple wrapping and tying. The timber floor beams are similarly attached to the suspenders' other ends. Timber stringers, which carry the timber plank deck, bear directly on these floor beams. The Brumley Bridge was designed and built by Joseph A. Dice, a well-known regional bridge builder. A native of Warsaw, the county seat of nearby Benton County, Dice erected more than 30 bridges in his 40-year career. These included his most notable spans, suspension bridges over the Osage River in Benton, Miller, and Saint Clair Counties.

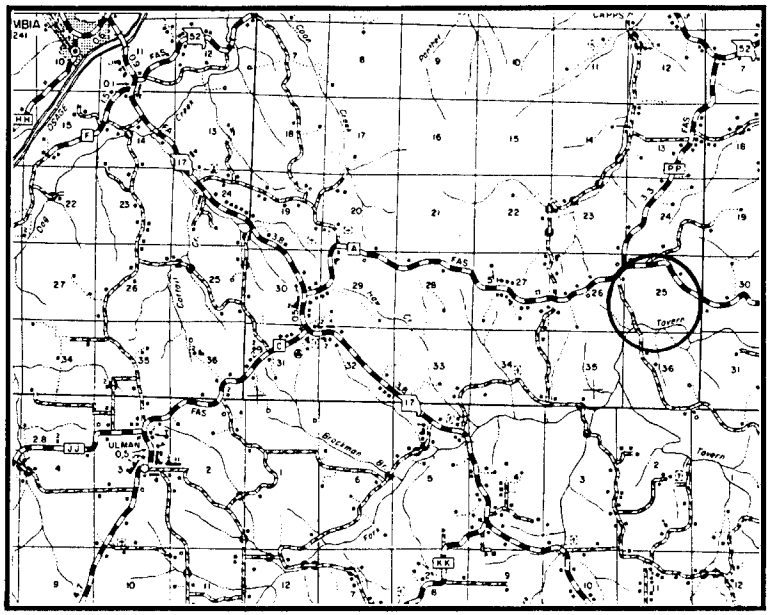
County records contain little or no written documentation pertaining to Dice's suspension bridges in Miller County, which suggests that they were built for local road districts. Preferring to operate on a verbal and spatial basis, the prolific contractor apparently did not retain any written records either. The self-trained bridge builder never drew up any plans or specifications for the structures he erected, instead, relying solely on his memory. Dice illustrated this unorthodox practice by explaining, "with a ball of string to stretch across the river a couple of times, I could just sort of feel the correct measurements." The majority of the "swinging bridges" Dice designed were built by raising money through local subscription and were simply constructed using timber harvested from along stream and river banks. Since its erection circa 1925, the Brumley Bridge has functioned in place, although a 1988 renovation impacts the bridge's structural integrity somewhat. County officials were careful to preserve the bridge's original design and appearance and merely strengthened the deck by replacing nails, which had originally secured the flooring, with screws. This augmentation increased the bridge's weight capacity from two to four tons. Its historical significance remains intact, however.

Missouri bridge builder J.A. Dice built a number of suspension bridges between 1896 and 1940 in central Missouri, ten of which remain in place today. As a group, these spans comprise the state's most important examples of vernacular bridge construction, designed and built without benefit of detailed structural analysis or computation. Dice built his lightweight suspension bridges empirically using easily obtainable materials, and, as a result they cost substantially less than comparable steel truss spans. They were breathtakingly light, however, and have fared poorly in subsequent years. The Brumley Bridge is distinguished as one of the best-preserved among Dice's remaining bridges: a technologically significant example of an esoteric bridge type.

NAME(S) OF STRUCTURE

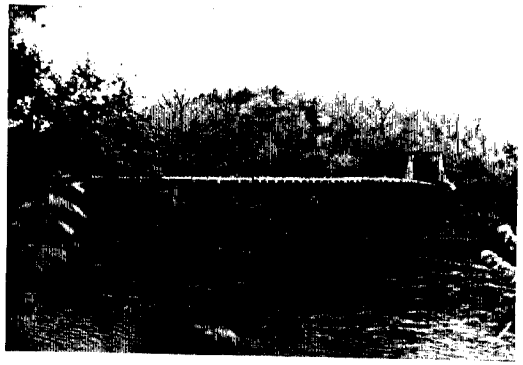
Brumley Bridge

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 No. 199000.7; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; "Revamping Underway on Boeckman Bridge," **Miller County Autogram-Sentinel**, 30 June 1988; field inspection by Clayton Fraser, 4 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton Fraser	Fraserdesign, Loveland CO	4 May 1990

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Buetcher Bridge
MHTD: 222001.8

MILL09

DATE(S) OF CONSTRUCTION
c1925

LOCATION
County Road 222 over Tavern Creek; S1, T39N, R13W
3.5 miles north of Iberia; Miller County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 52)

CONDITION
good

OWNER
Miller County

span number:	1	superstructure:	steel cable suspension bridge
span length:	140.0'	substructure:	fieldstone side walls on east approach; concrete tower pedestals and deadmen
total length:	141.0'	floor/decking:	timber deck over timber stringers
roadway wdt.:	12.0'	other features:	tower: timber sheathed in corrugated steel, supported by I-beams; single strand, straight cables in concrete deadmen; guardrail: none

The Buetcher Bridge is a steel cable suspension bridge that crosses over Tavern Creek some three miles north of Iberia in Miller County. The bridge was designed and built by Joseph A. Dice, a well-known regional bridge builder. A native of Warsaw, the county seat of nearby Benton County, Dice erected more than 30 bridges between 1896 and the mid-1930s. These included Dice's most notable spans, suspension bridges over the Osage River in Benton, Miller, and Saint Clair Counties. The 140-foot Buetcher Bridge features a single steel cable suspension span, supported by timber towers sheathed in corrugated steel. The two main cables consist of parallel-strand galvanized wires, supported on each end by massive, tapered concrete deadmen. To each main cable are attached the wire suspender cables by means of simple wrapping and tying. The timber floor beams are similarly attached to the suspenders' other ends. Timber stringers, which carry the timber plank deck, bear directly on these floor beams.

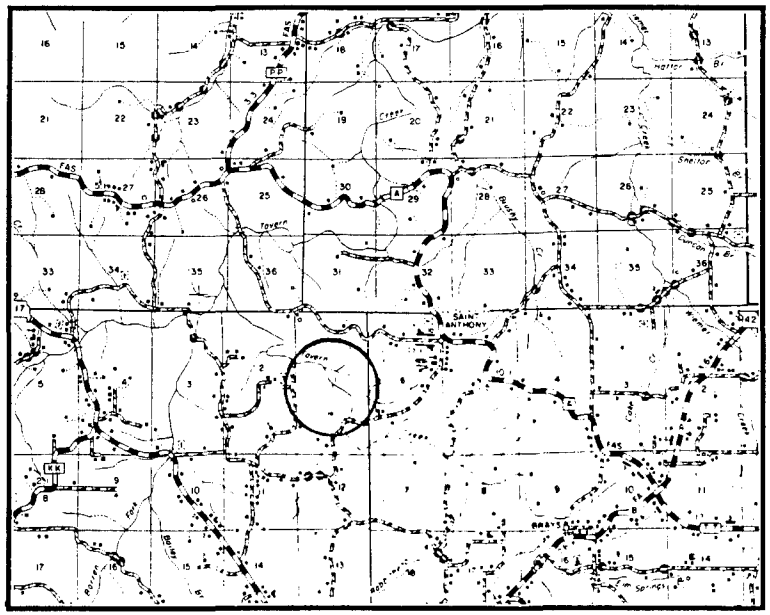
County records contain little or no written documentation pertaining to Dice's suspension bridges in Miller County, which suggests that they were built for local road districts. Preferring to operate on a verbal and spatial basis, the prolific contractor apparently did not retain any written records either. The self-trained bridge builder never drew up any plans or specifications for the structures he erected, instead, relying solely on his memory. Dice illustrated this unorthodox practice by explaining, "with a ball of string to stretch across the river a couple of times, I could just sort of feel the correct measurements." The majority of the "swinging bridges" Dice designed were built by raising money through local subscription and were simply constructed using timber harvested from along stream and river banks. Since its erection circa 1925, the Buetcher Bridge has functioned in place, although a 1986 renovation diminishes the bridge's structural integrity somewhat. Its historical value, however, remains intact and contributes significantly to the structure's overall importance.

Ten suspension bridges built by Missouri bridge builder J.A. Dice remain in central Missouri. As a group, these spans comprise the state's most important examples of vernacular bridge construction, designed and built without benefit of detailed structural analysis or computation and utilizing atypical construction techniques. The Buetcher Bridge is distinguished as among the best-preserved examples of this esoteric structural type.

NAME(S) OF STRUCTURE

Buetcher 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 No. 222001.8; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; field inspection by Clayton Fraser, 4 May 1990.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	4 May 1990

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Mill Creek Bridge
MHTD: 264000.2

MILL10

DATE(S) OF CONSTRUCTION
c1925

LOCATION
County Road 264 over Mill Creek; S36, T39N, R15W
2.2 miles southwest of Brumley; Miller County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 44)

CONDITION
fair

OWNER
Miller County

span number:	1	superstructure:	steel cable suspension bridge
span length:	96.0'	substructure:	concrete deadmen and spill-through tower pedestals
total length:	135.0'	floor/decking:	corrugated steel deck over steel stringers
roadway wdt.:	11.1'	other features:	towers: steel I-beams; single strand, straight cables in concrete deadmen; guardrail: none

The Mill Creek Bridge is a steel cable suspension bridge that crosses over Mill Creek some two miles southwest of Brumley in Miller County. The bridge was designed and built by Joseph A. Dice, a well-known regional bridge builder. A native of Warsaw, the county seat of nearby Benton County, Dice erected up to thirty-one bridges between circa 1896 and the mid-1930s. These included Dice's most notable spans, suspension bridges over the Osage River in Benton, Miller, and Saint Clair Counties. The 135-foot Mill Creek Bridge, supported by concrete abutments and spill through piers, features straight suspension wire, rather than the widely heralded twisted wire rope made famous by Washington Roebling's 1883 Brooklyn Bridge. Additionally, the structure consists of a non-rigid substructure owing to the lack of bolts to secure the floor beams to the stringer beams and the absence of bolts to secure deck flooring to the stringers. These unusual construction techniques were evidently employed by Dice in order to conserve the meager funds procured from nearby citizens and county coffers. Dice's atypical suspension bridge design also incorporated planked flooring, which was not anchored to the abutments, and a single-lane roadway. All these design elements contribute to the structural significance of Miller County's suspension bridges and to Dice's reputation as an innovative Missouri bridge builder.

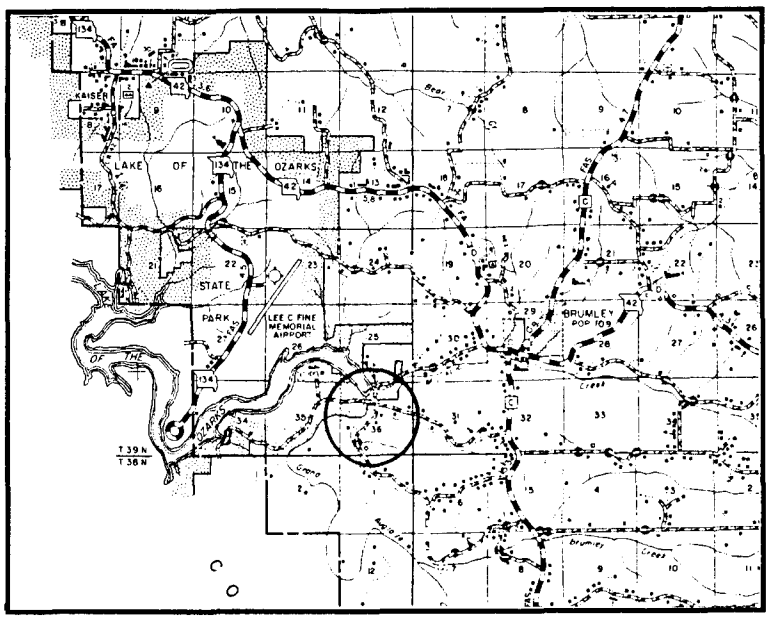
County records contain little or no written documentation pertaining to Dice's suspension bridges in Miller County, which suggests that they were built for local road districts. Preferring to operate on a verbal and spatial basis, the prolific contractor apparently did not retain any written records either. The self-trained bridge builder never drew up any plans or specifications for the structures he erected, instead, relying solely on his memory. Dice illustrated this unorthodox practice by explaining, "with a ball of string to stretch across the river a couple of times, I could just sort of feel the correct measurements." The majority of the "swinging bridges" Dice designed were built by raising money through local subscription and were simply constructed using timber harvested from along stream and river banks. Since its erection circa 1925, the Mill Creek Bridge has functioned in place, although a recent renovation–in which the original towers and concrete pedestals were replaced and the steel cables reinforced with new cables–compromises the bridge's structural integrity substantially.

Ten suspension bridges built by Missouri bridge builder J.A. Dice remain in central Missouri. As a group, these spans comprise the state's most important examples of vernacular bridge construction, designed and built without benefit of detailed structural analysis or computation and utilizing atypical construction techniques. The Mill Creek Bridge, with possesses the shortest span in the state, is as a representative example of an esoteric structural type.

NAME(S) OF STRUCTURE

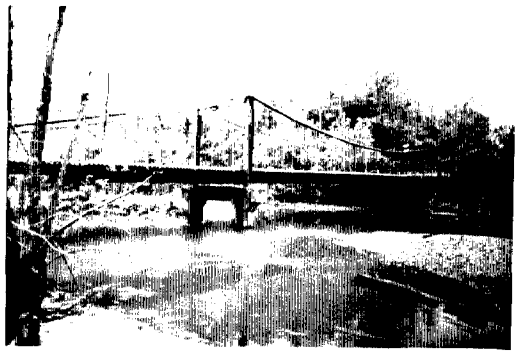
Mill Creek Bridge

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 No. 264000.2; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; field inspection by Clayton Fraser, 4 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton Fraser	Fraserdesign, Loveland CO	4 May 1990

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Glaize Bridge
MHTD: 274001.7

MILL11

DATE(S) OF CONSTRUCTION
1922

LOCATION
County Road 274 over Grand Auglaize Creek; S36, T39N, R15W
2.8 miles southwest of Brumley; Miller County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 66)

CONDITION
good

OWNER
Miller County

span number:	1	superstructure:	steel cable suspension bridge with steel cable towers
span length:	414.0'	substructure:	concrete tower pedestals abutments, wingwalls and piers
total length:	500.0'	floor/decking:	timber deck over timber stringers
roadway wdt.:	12.0'	other features:	towers: 2 channels with lacing; single strand, straight cables in concrete deadmen; guardrail: 3 angles

The Glaize Bridge is a steel cable suspension bridge that crosses over Grand Auglaize Creek some two miles southwest of Brumley in Miller County. The bridge was designed and built by Joseph A. Dice, a well-known regional bridge builder. The 414-foot Glaize Bridge features a single steel cable suspension span, supported by steel towers made up of members rolled in Pittsburgh by Bethlehem. The two main cables consist of parallel-strand galvanized wires, supported on each end by massive, tapered concrete deadmen. To each main cable are attached the wire suspender cables by means of simple wrapping and tying. The steel floor beams are similarly attached to the suspenders' other ends. Steel stringers, which carry the timber plank deck, bear directly on these floor beams.

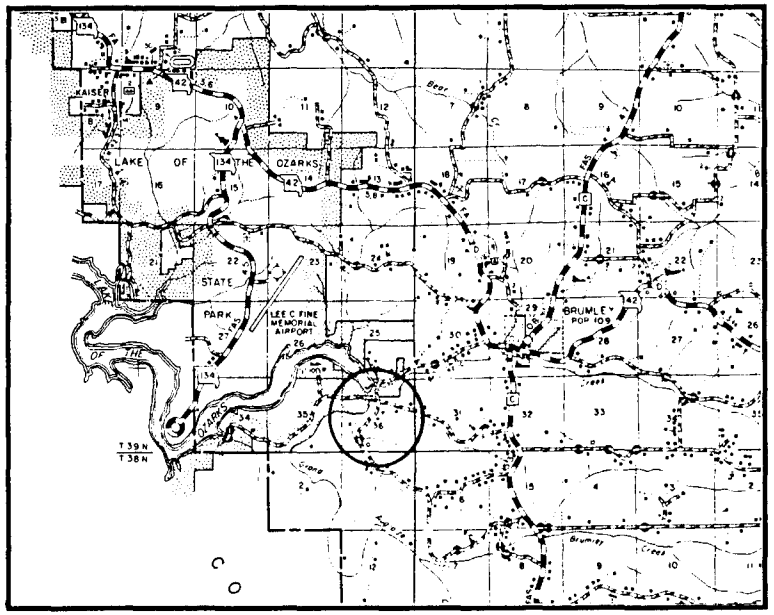
County records contain little or no written documentation pertaining to Dice's suspension bridges in Miller County, which suggests that they were built for local road districts. Preferring to operate on a verbal and spatial basis, the prolific contractor apparently did not retain any written records either. The self-trained bridge builder never drew up any plans or specifications for the structures he erected, instead, relying solely on his memory. Dice illustrated this unorthodox practice by explaining, "with a ball of string to stretch across the river a couple of times, I could just sort of feel the correct measurements." The majority of the "swinging bridges" Dice designed were built by raising money through local subscription and were simply constructed using timber harvested from along stream and river banks. Since its erection in 1922, the Glaze Creek Bridge has functioned in place, with only maintenance-related repairs.

Missouri bridge builder J.A. Dice built over 30 suspension bridges between 1896 and 1940 in central Missouri, ten of which remain in place today. As a group, these spans comprise the state's most important examples of vernacular bridge construction, designed and built without benefit of detailed structural analysis or computation. Dice built his lightweight suspension bridges empirically using easily obtainable materials, and, as a result they cost substantially less than comparable steel truss spans. They were breathtakingly light, however, and have fared poorly in subsequent years. The Glaize Bridge, which is the oldest and longest of the Dice bridges still carrying traffic, is distinguished as one of the best-preserved among his remaining spans. It is a superlative example of an esoteric structural type–among Missouri's most important early vehicular spans.

NAME(S) OF STRUCTURE

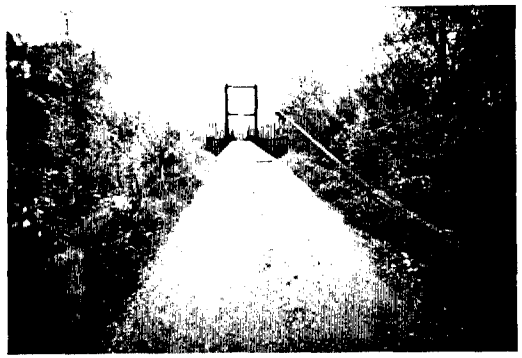
Glaize Bridge

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 No. 274001.7; Robert Hayden, **Historical Resources Mitigation: Bridges Over the Osage**, vol. 2, September 1980; Miller County Court Record, Book T: page 327 (6 November 1922) - located at Miller County Courthouse, Tuscumbia MO; field inspection by Clayton Fraser, 4 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton Fraser	Fraserdesign, Loveland CO	4 May 1990

MONITEAU COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	FHWA	Bridge Name	Description	
*MONI01	001001.1	Petite Saline Bridge	1-128'	**pinned Pratt through truss**
			1901	Kansas City Bridge Company
*MONI02	004003.1	Lupus Bridge	1-111'	**pinned Pratt through truss**
			1895	Kansas City Bridge Company
*MONI03	056001.2	Brush Creek Bridge	1- 26'	steel stringer
			1895	Kansas City Bridge Company
MONI04	092001.6	Schmidt Creek Bridge	1- 30'	steel stringer
			1911	Kansas City Bridge Company
*MONI05	098001.4	Reiden Ford Bridge	1- 70'	pinned Pratt pony truss
			1906	Interstate Bridge Company
MONI06	110001.8	Bridge	1-100'	**riveted Pratt through truss**
			c1930	
MONI07	122000.9	Smiths Fork Bridge	1- 40'	riveted Warren pony truss
			1911	Missouri Bridge and Iron Co.
MONI08	155002.1	Bridge	1- 40'	riveted Warren pony truss
			1912	Kansas City Bridge Company
MONI09	161000.7	Dry Fork Bridge	1- 65'	riveted Pratt pony truss
			1912	Kansas City Bridge Company
*MONI10	246001.0	Bridge	1- 46'	**riveted Pratt/Warren pony truss**
			c1925	
*MONI11	254000.7	N. Moreau Creek Bridge	1-108'	**pinned Pratt through truss**
			c1910	
*MONI12	258002.1	Bridge	1- 30'	pinned Pratt half-hip pony truss
			1898	**Kansas City Bridge Company**
MONI13	298000.2	Smiths Creek Bridge	2- 50'	riveted Warren pony truss
			c1925	

EXCLUDED:

Pratt pony truss
0060019 0190022 0300004 1580014 2390003 2910001

Warren pony truss
J 10 1300005 2470011

Steel stringer
S 927 0020003 0120008 0130001 0270018 0290001 0350019
0470026 0610007 0760004 0920016 0980011 0980031 1010005
1100007 1180011 1190016 1350009 1350010 1450004 1610031
1670026 1840004 1930005 2040017 2280006 2320002 2380015
2870006 2870013 2910009 2920010

MONITEAU COUNTY

EXCLUDED (cont.):

Concrete girder
K 851

Concrete slab
076000.3

Concrete box culvert
H 108 H 154 H 155 Q 156 H 817 X 384 X 631
X 632

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	0	13	0	0	13
Excluded	11	40	0	0	51
	11	53	0	0	64 structures

Petite Saline Bridge

MONI01

GENERAL DATA

structure no.: 001001.1
county: Moniteau
city/town: 4.1 miles northwest of Lupus
feature inters.: Petite Saline Creek
cadastral grid: S25, T48N, R15W
highway route: County Road 1
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel, 7-panel, pin-connected Pratt through truss, with steel stringer approach span at each end
substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers

span number: 1
span length: 128.0'
total length: 160.0'
roadway width: 12.8'
condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 looped rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; strut: 4 angles with lacing; floor beam: I-beam, U-bolted (square bolt) to vertical; guardrail: 2 channels

HISTORICAL DATA

erection date: 1900-01
erection cost: $2360.00
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 001001.1; Moniteau County Court Record, Book 5: page 61 (12 November 1881), page 63 (21 November 1881), page 110 (6 May 1882), page 139 (16 September 1882), page 226 (5 December 1891); Moniteau County Court Record, Book 8: page 289 (5 November 1900), page 325 (5 February 1901); Moniteau County Minute Book, Roads: page 145 (7 August 1900), page 149 (9 August 1900), page 154 (4 September 1900) - located at Moniteau County Courthouse, California MO; field inspection by Clayton Fraser, 8 May 1990.

sign. rating: 51
evaluation: NRHP possibly eligible (well-preserved example of mainstay structural type)

inventoried by: Clayton B. Fraser 25 March 1993

Lupus Bridge

MONI02

GENERAL DATA

structure no.: 004003.1
county: Moniteau
city/town: 0.7 mile northwest of Lupus
feature inters.: Splice Creek
cadastral grid: S4/5, T47N, R14W
highway route: County Road 4
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel, 6-panel, pin-connected Pratt through truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 111.0'
total length: 112.0'
roadway width: 11.0'
condition: fair
alterations: substructure replaced
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with lacing on both sides; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing (2 square eyerods at the hip); diagonal: 2 punched rectangular eyebars; counter: square eyerod with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 angles, with knee braces; floor beam: tapered "fishtail" plate girder, field-bolted to vertical; guardrail: steel pipe

HISTORICAL DATA

erection date: 1895
erection cost: $615.00 (superstructure cost)
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 004003.1; Moniteau County Court Record, Book 6: page 582 (4 September 1894), page 584 (2 October 1894); Moniteau County Court Record, Book 7: page 16 (5 February 1895), page 47 (8 April 1895); Moniteau County Minute Book, Roads: page 25 (2 May 1904) - located at Moniteau County Courthouse, California MO; Fraserdesign, "Lupus Bridge: Preliminary Determination of NRHP Eligibility for the Missouri Historic Bridge Inventory," 14 July 1992; field inspection by Clayton Fraser, 8 May 1990.

sign. rating: 50
evaluation: NRHP determined eligible (well-preserved, well-documented early example of a pin-connected Pratt through truss–a mainstay design for medium span crossings in the late 19th and early 20th centuries.)

inventoried by: Clayton B. Fraser 25 March 1993

Brush Creek Bridge

MONI03

GENERAL DATA

structure no.:	056001.2	**city/town:**	0.9 mile northwest of California
county:	Moniteau	**feature inters.:**	Brush Creek
		cadastral grid:	S21, T45N, R15W
		highway route:	County Road 56
		highway distr.:	5
		current owner:	Moniteau County

STRUCTURAL DATA

superstructure: steel stringer
substructure: stone masonry abutments and wingwalls

span number:	1	**condition:**	fair
span length:	26.0'	**alterations:**	none
total length:	28.0'	**floor/decking :**	timber deck
roadway width:	12.3'	**other features:**	7 lines of steel stringers comprised of I-beams with channels at outside; guardrail: 2 channels

HISTORICAL DATA

erection date: 1895
erection cost: $271.40 (superstructure cost)
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO; Illinois Steel Company, Chicago IL
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 056001.2; Moniteau County Court Record, Book 6: page 582 (4 Sept 1894), page 584 (2 October 1894), page 585 (3 October 1894); Moniteau County Court Record, Book 7: page 16 (5 February 1895), page 47 (8 April 1895) - located at the Moniteau County Courthouse, California MO; field inspection by Clayton Fraser, 8 May 1990.

sign. rating: 50
evaluation: NRHP possibly eligible (earliest datable example in state of exceedingly common structural type)

inventoried by: Clayton B. Fraser 25 March 1993

Schmidt Creek Bridge

MONI04

GENERAL DATA

structure no.: 092001.6
county: Moniteau

city/town: 4.6 miles southwest of Tipton
feature inters.: Schmidt Creek
cadastral grid: S5, T44N, R17W
highway route: County Road 92
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel stringer
substructure: concrete abutments and wingwalls

span number: 1
span length: 30.0'
total length: 30.0'
roadway width: 12.1'

condition: fair
alterations: unknown
floor/decking : concrete deck
other features: no guardrails

HISTORICAL DATA

erection date: 1911
erection cost: $430.00 (two-bridge contract)
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal, Structure No. 092001.6; Moniteau County Minute Book, Roads: page 115 (9 October 1911), located at the Moniteau County Courthouse, California MO.

sign. rating: 39
evaluation: NRHP non-eligible (undistinguished example of a common structural type)

inventoried by: Clayton B. Fraser 25 March 1993

Reiden Ford Bridge

MONI05

GENERAL DATA

structure no.: 098001.4
county: Moniteau

city/town: 2.9 miles southeast of Tipton
feature inters.: Willow Creek
cadastral grid: S26/27, T45N, R17W
highway route: County Road 98
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel, 4-panel, pin-connected Pratt pony truss
substructure: stone masonry abutments and wingwalls

span number: 1
span length: 70.0'
total length: 72.0'
roadway width: 10.8'

condition: good
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 4 angles with lacing; diagonal: 2 looped rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles; builder's plate: **1906 INTERSTATE BRIDGE CO KANSAS CITY MO**

HISTORICAL DATA

erection date: 1906
erection cost: $1597.00
designer: unknown
fabricator : Carnegie Steel Company, Pittsburgh PA
contractor: Interstate Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal, Structure No. 098001.4; Moniteau County Minute Book, Roads: page 137 (9 August 1906), page 139 (4 September 1906) - located at Moniteau County Courthouse, California MO; field inspection by Clayton Fraser, 8 May 1990.

sign. rating: 44
evaluation: NRHP non-eligible (well-preserved example of common structural type, with typical dimensions and detailing)

inventoried by: Clayton B. Fraser 25 March 1993

Straight Fork Bridge

MONI06

GENERAL DATA

structure no.: 110001.8
county: Moniteau

city/town: 3.0 miles northwest of Latham
feature inters.: Straight Fork
cadastral grid: S5, T44N, R16W
highway route: County Road 110
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel, 5-panel, rigid-connected Pratt through truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 100.0'
total length: 102.0'
roadway width: 15.4'

condition: fair
alterations: unknown
floor/decking : concrete deck over steel stringers
other features: steel lattice guardrails

HISTORICAL DATA

erection date: c1930
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Structure Missouri Highway and Transportation Department, Structure Inventory and Appraisal, Structure No. 110001.8.

sign. rating: 23
evaluation: NRHP non-eligible (typically configured, undocumented example of riveted Pratt through truss design)

inventoried by: Clayton B. Fraser 25 March 1993

Smiths Fork Bridge

MONI07

GENERAL DATA

structure no.: 122000.9
county: Moniteau

city/town: 3.0 miles southeast of Fortuna
feature inters.: Smiths Fork
cadastral grid: S26, T44N, R17W
highway route: County Road 122
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Warren pony truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 40.0'
total length: 40.0'
roadway width: 11.3'

condition: fair
alterations: unknown
floor/decking : concrete deck over steel stringers
other features: steel angle guardrails

HISTORICAL DATA

erection date: 1911
erection cost: $329.00
designer: Missouri Bridge and Iron Company, St. Louis MO
fabricator : Missouri Bridge and Iron Company, St. Louis MO
contractor: Missouri Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal, Structure No. 122000.9; Moniteau County Minute Book, Roads: page 102 (4 May 1911), page 104 (5 June 1911), page 105 (3 July 1911) - located at Moniteau County Courthouse, California MO.

sign. rating: 39
evaluation: NRHP non-eligible (technologically undistinguished example of riveted Warren pony truss construction)

inventoried by: Clayton B. Fraser 25 March 1993

Bridge

MONI08

GENERAL DATA

structure no.: 155002.1
county: Moniteau

city/town: 1.7 miles northeast of Latham
feature inters.: unnamed stream
cadastral grid: S14, T44N, R16W
highway route: County Road 155
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Warren pony truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 40.0'
total length: 42.0'
roadway width: 11.7'

condition: fair
alterations: unknown
floor/decking : concrete deck over steel stringers
other features: steel angle guardrails

HISTORICAL DATA

erection date: 1912
erection cost: $648.00
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal, Structure No. 155002.1; Moniteau County Minute Book, Roads: page 146 (3 June 1912), located at Moniteau County Courthouse, California MO.

sign. rating: 39
evaluation: NRHP non-eligible (technologically undistinguished example of riveted Warren pony truss construction)

inventoried by: Clayton B. Fraser 25 March 1993

Dry Fork Bridge

MONI09

GENERAL DATA

structure no.: 161000.7
county: Moniteau

city/town: 6.0 miles southwest of California
feature inters.: Dry Fork
cadastral grid: S34, T45N, R16W
highway route: County Road 161
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Pratt pony truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 65.0'
total length: 67.0'
roadway width: 11.8'

condition: fair
alterations: unknown
floor/decking : concrete deck over steel stringers
other features: steel angle guardrails

HISTORICAL DATA

erection date: 1912
erection cost: $1500.00
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal, Structure No. 161000.7; Moniteau County Minute Book, Roads: page 153 (9 September 1912), located at the Moniteau County Courthouse, California MO.

sign. rating: 42
evaluation: NRHP non-eligible (technologically undistinguished example of a common structural type)

inventoried by: Clayton B. Fraser 25 March 1993

Bridge

MONI10

GENERAL DATA

structure no.: 246001.0
county: Moniteau

city/town: 6.5 miles southeast of California
feature inters.: unnamed stream
cadastral grid: S8/9, T44N, R14W
highway route: County Road 246
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Pratt/Warren pony truss
substructure: concrete abutments

span number: 1
span length: 46.0'
total length: 48.0'
roadway width: 11.0'

condition: poor
alterations: substructure altered
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: wide flange; lower chord: 2 channels with round-tube spacers; vertical: 2 angles with batten plates; diagonal: 1 channel; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles

HISTORICAL DATA

erection date: c1925
erection cost: unknown
designer: unknown
fabricator : Inland Steel Company, East Chicago IN
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal, Structure No. 246001.0; field inspection by Clayton Fraser, 8 May 1990.

sign. rating: 36
evaluation: NRHP non-eligible (notable for its combined Pratt and Warren design, but lacking in documentation and structural integrity)

inventoried by: Clayton B. Fraser 25 March 1993

North Moreau Creek Bridge

MONI11

GENERAL DATA

structure no.: 254000.7
county: Moniteau
city/town: 4.0 miles southeast of California
feature inters.: North Moreau Creek
cadastral grid: S10, T44N, R15W
highway route: County Road 254
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel, 6-panel, pin-connected Pratt through truss; multiple steel stringer approach spans at the north end
substructure: stone masonry abutments; concrete-filled steel cylinder pier; steel pile bent piers under approach spans

span number: 1
span length: 108.0'
total length: 244.0'
roadway width: 10.5'
condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 looped rectangular eyebars; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field-bolted to vertical; guardrail: 2 channels

HISTORICAL DATA

erection date: c1910
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal, Structure No. 254000.7; field inspection by Clayton Fraser, 8 May 1990.

sign. rating: 27
evaluation: NRHP non-eligible (notable for its extensive approach spans, but otherwise a typically configured, modestly scaled example of common structural type)

inventoried by: Clayton B. Fraser 25 March 1993

Bridge

MONI12

GENERAL DATA

structure no.: 258002.1
county: Moniteau

city/town: 3.3 miles southeast of California
feature inters.: unnamed stream
cadastral grid: S2, T44N, R15W
highway route: County Road 258
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt half-hip pony truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 30.0'
total length: 30.0'
roadway width: 12.0'

condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 4 angles with lacing; diagonal: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: none; builder's plate: **BUILT BY KANSAS CITY BRIDGE CO. KANSAS CITY MO**

HISTORICAL DATA

erection date: 1898
erection cost: $410.00
designer: Kansas City Bridge Company, Kansas City MO
fabricator : Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal, Structure No. 258002.1; Moniteau County Minute Book, Roads: page 73 (3 October 1898), located at Moniteau County Courthouse, California MO; field inspection by Clayton Fraser, 8 May 1990.

sign. rating: 47
evaluation: NRHP non-eligible (early but technologically undistinguished example of pinned Pratt pony truss construction)

inventoried by: Clayton B. Fraser 25 March 1993

Smiths Creek Bridge

MONI13

GENERAL DATA

structure no.: 298000.2
county: Moniteau

city/town: 0.8 mile northwest of Latham
feature inters.: Smiths Creek
cadastral grid: S16/21, T44N, R16W
highway route: County Road 298
highway distr.: 5
current owner: Moniteau County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Warren pony truss
substructure: concrete abutments, wingwalls and pier

span number: 2
span length: 50.0'
total length: 100.0'
roadway width: 12.8'

condition: fair
alterations: unknown
floor/decking : concrete deck over steel stringers
other features: steel angle guardrails

HISTORICAL DATA

erection date: c1925
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal, Structure No. 298000.2.

sign. rating: 25
evaluation: NRHP non-eligible (distinguished somewhat by its two spans, but still a typically configured example of a common truss design)

inventoried by: Clayton B. Fraser 25 March 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Petite Saline Bridge
MHTD: 001001.1

MONI01

DATE(S) OF CONSTRUCTION
1900-01

LOCATION
County Road 1 over Petite Saline Creek; S25, T48N, R15W
4.1 miles northwest of Lupus; Moniteau County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 51)

CONDITION
fair

OWNER
Moniteau County

span number:	1	superstructure:	steel, 7-panel, pin-connected Pratt through truss, with steel stringer approach span at each end
span length:	128.0'	substructure:	concrete abutments and wingwalls; concrete-filled steel cylinder piers
total length:	160.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	12.8'	other features:	upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 looped rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; strut: 4 angles with lacing; floor beam: I-beam, U-bolted (square bolt) to vertical; guardrail: 2 channels

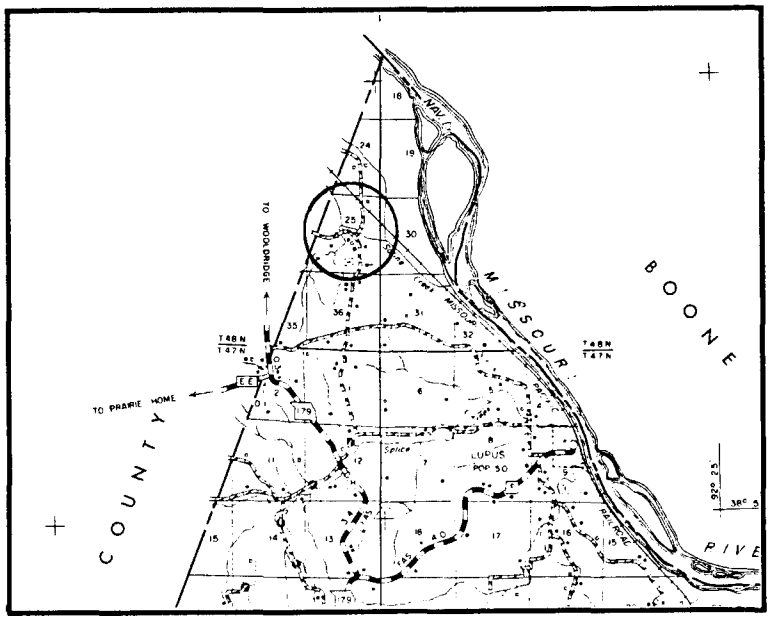
This medium-scale bridge carries an unpaved county road across Petite Saline Creek about four miles northwest of Lupus, in extreme northern Moniteau County. A seven-panel, pin-connected Pratt through truss, the structure dates to the turn of the century. Built to replace an earlier iron truss built in 1881, the Petite Saline Bridge was erected here during the winter of 1900-1901 by the Kansas City Bridge Company. County court records do not discuss its construction in great detail, but they do show that on February 5, 1901, the bridge was declared completed, and $1000.00 for balance due on the project was paid to Kansas City Bridge. Conversely, efforts to build the earlier Petite Saline Bridge were recorded in much greater detail. Built in 1881 by the Missouri Valley Bridge and Iron Company, the earlier structure was erected adjacent to A.D. Renfrow's mill. In the 1870s, prior to completion of the original crossing, Renfrow had also operated a ferry crossing at the site. Although county records do not reflect increasing repair costs, by the turn of the century the decision to build a new bridge had been made. Now more than ninety years old, the second Petite Saline Bridge continues to carry vehicular traffic with no substantial loss of integrity.

Thousands of Pratt through trusses were erected throughout Missouri in the late 19th and early 20th centuries. Marketed by virtually all of the in-state and regional bridge companies, this versatile structural type was used overwhelmingly by the counties for medium-span applications. With a slightly longer-than-average span length, and typical detailing, the Petite Saline Creek Bridge typifies this statewide bridge building trend.

NAME(S) OF STRUCTURE

Petite Saline 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 No. 001001.1; Moniteau County Court Record, Book 5: page 61 (12 November 1881), page 63 (21 November 1881), page 110 (6 May 1882), page 139 (16 September 1882), page 226 (5 December 1891); Moniteau County Court Record, Book 8: page 289 (5 November 1900), page 325 (5 February 1901); Moniteau County Minute Book, Roads: page 145 (7 August 1900), page 149 (9 August 1900), page 154 (4 September 1900) - located at Moniteau County Courthouse, California MO; field inspection by Clayton Fraser, 8 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	25 March 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Lupus Bridge
MHTD: 004003.1

MONI02

DATE(S) OF CONSTRUCTION
1895

LOCATION
County Road 4 over Splice Creek; S4/5, T47N, R14W
0.7 mile northwest of Lupus; Moniteau County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP determined eligible (score: 50)

CONDITION
fair

OWNER
Moniteau County

span number:	1	superstructure:	steel, 6-panel, pin-connected Pratt through truss
span length:	111.0'	substructure:	concrete abutments and wingwalls
total length:	112.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	11.0'	other features:	upper chord and inclined end post: 2 channels with lacing on both sides; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing (2 square eyerods at the hip); diagonal: 2 punched rectangular eyebars; counter: square eyerod with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 angles, with knee braces; floor beam: tapered "fishtail" plate girder, field-bolted to vertical; guardrail: steel pipe

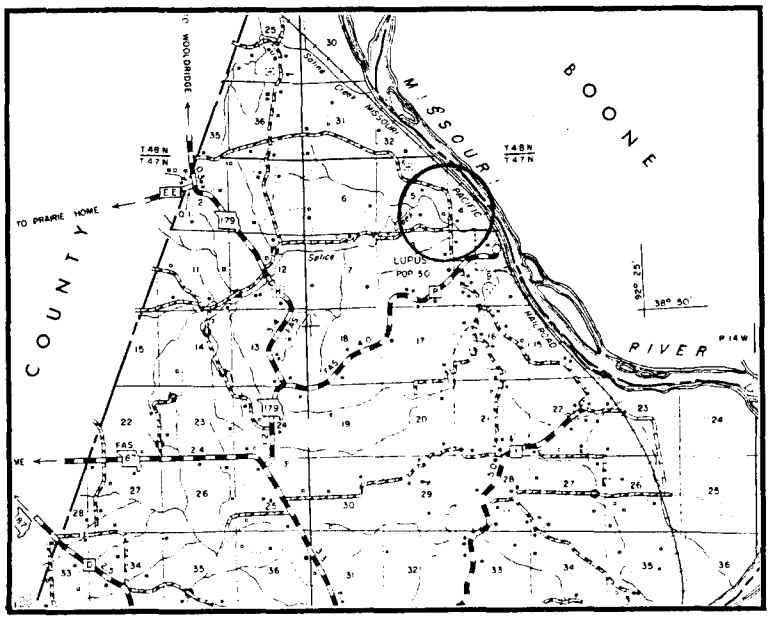
On September 4, 1894, Moniteau County advertised for bids to construct two wood bridges–one across Brush Creek on the Booneville Road, and one across Splice Creek just north of Lupus. One month later, local stonemason Emanuel Blaser contracted to build the substructures for both bridges. For the Splice Creek Bridge, though, the county later rescinded its agreement with Blaser, and instead had an iron substructure built by the Kansas City Bridge Company. On November 8th, abutments for both bridges–stone at Brush Creek and iron at Splice Creek–were in place. The county was then ready to award contracts to build the bridges' superstructures. Although timber crossings had originally been planned, at the suggestion of the Kansas City Bridge Company the county instead opted for steel superstructures. Kansas City Bridge won the contract to erect both bridges and for the Splice Creek crossing erected a six-panel pin-connected Pratt through truss. Subsequent county records reveal that Kansas City Bridge was paid for half the work on February 5, 1895, and was then paid in full on April 8, 1895. Total cost of the Lupus Bridge superstructure: $615.00. The bridge received a new deck in 1904, and at some point its original iron substructure was replaced with concrete abutments. The Lupus Bridge remains in use, however, and retains a large measure of its original historical integrity.

From the 1870s through the 1910s, thousands of pin-connected Pratt through trusses were erected on Missouri's roadways. Although several hundred of these structures remain in use today, relatively few date from before the turn of the century. And fewer yet of the 19th century survivors remain structurally intact. The Lupus Bridge stands out among Missouri's pin-connected trusses as an early, well-documented example that has retained a high degree of structural integrity. Additional significance is derived from the bridge's somewhat unusual configuration. Only a handful of through trusses with laced upper chords and end posts have been identified by the historic bridge inventory, and the Lupus Bridge is among the earliest dateable examples of these.

NAME(S) OF STRUCTURE

Lupus 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 No. 004003.1; Moniteau County Court Record, Book 6: page 582 (4 September 1894), page 584 (2 October 1894); Moniteau County Court Record, Book 7: page 16 (5 February 1895), page 47 (8 April 1895); Moniteau County Minute Book, Roads: page 25 (2 May 1904) - located at Moniteau County Courthouse, California MO; Fraserdesign, "Lupus Bridge: Preliminary Determination of NRHP Eligibility for the Missouri Historic Bridge Inventory," 14 July 1992; field inspection by Clayton Fraser, 8 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	25 March 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Brush Creek Bridge
MHTD: 056001.2

MONI03

DATE(S) OF CONSTRUCTION
1895

LOCATION
County Road 56 over Brush Creek; S21, T45N, R15W
0.9 mile northwest of California; Moniteau County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 50)

CONDITION
fair

OWNER
Moniteau County

span number:	1	superstructure:	steel stringer
span length:	26.0'	substructure:	stone masonry abutments and wingwalls
total length:	28.0'	floor/decking:	timber deck
roadway wdt.:	12.3'	other features:	7 lines of steel stringers comprised of I-beams with channels at outside; guardrail: 2 channels

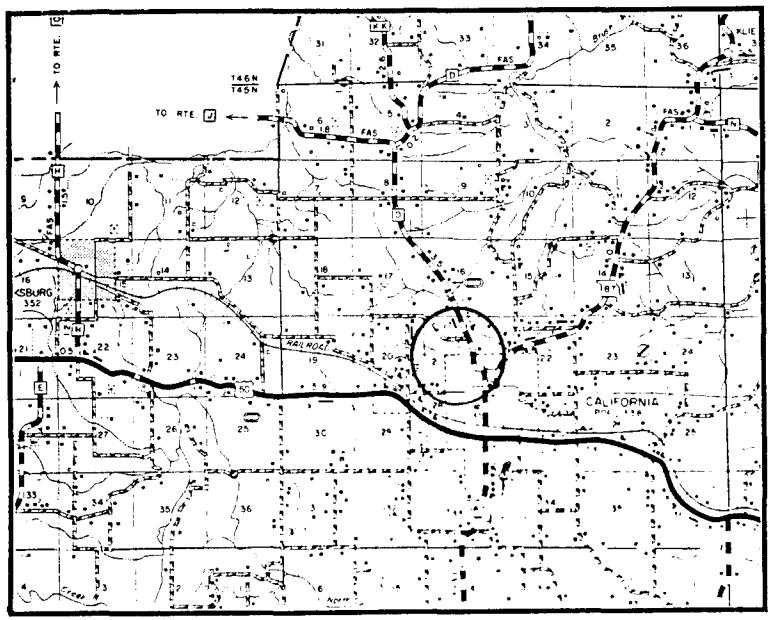
On September 4, 1894, Moniteau County advertised for bids to construct two wood bridges - one across Splice Creek just north of Lupus, and this bridge over Brush Creek on the Booneville Road. One month later, local stonemason Emanuel Blaser contracted to build the substructures for both bridges. The county later opted for an iron substructure at Splice Creek, but for this bridge Blaser built stone abutments for $86.40 priced at $2.70 per perch (a unit of measure used by stonemasons, a perch measures 16 feet by 1½ feet by 1 feet). On November 8th, abutments for both bridges–stone at Brush Creek and iron at Splice Creek–were in place. The county was then ready to award contracts to build the bridges' superstructures. Although timber crossings had originally been planned, at the suggestion of the Kansas City Bridge Company, the county instead opted for steel superstructures. Kansas City Bridge won the contract to erect both bridges, and for the Brush Creek crossing erected a modest steel stringer structure. Subsequent county records reveal that Kansas City Bridge was paid for half the work on February 5, 1895, and was then paid in full on April 8, 1895. Total cost of the Brush Creek Bridge superstructure: $271.40. Located in a rural setting just north of California, the Brush Creek Bridge continues to carry vehicular traffic with only maintenance-related repairs.

In the late 19th and early 20th centuries, steel stringer bridges were built extensively at short-span roadway crossings in Missouri. Its standardized fabrication, economy of materials and ease of erection made the steel stringer a mainstay among the various state and regional bridge building companies, as well as for county bridge building crews. Thousands of these rudimentary bridges were built throughout the state during this period, and numerous examples remain in use today. Built in 1895, the Brush Creek Bridge is historically significant as Missouri's oldest documented steel stringer structure. The well-documented bridge is further distinguished by its handsome stonework on the abutments and by its excellent state of preservation. It is difficult to say whether Moniteau County's experience with the Brush Creek Bridge changed its bridge proclivities from timber to iron; the county built so few bridges the point was almost moot. Nonetheless, this structure is significant as a bellwether for what would become the overwhelming choice in Missouri at short-span crossings.

NAME(S) OF STRUCTURE

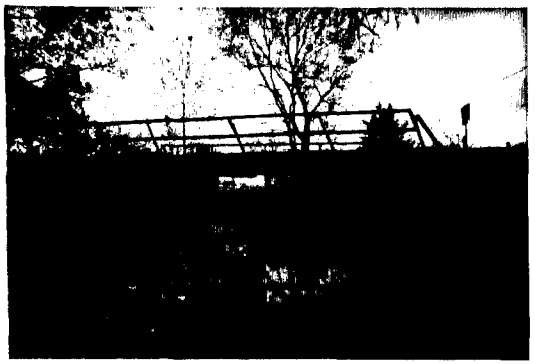
Brush Creek Bridge

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 No. 056001.2; Moniteau County Court Record, Book 6: page 582 (4 Sept 1894), page 584 (2 October 1894), page 585 (3 October 1894); Moniteau County Court Record, Book 7: page 16 (5 February 1895), page 47 (8 April 1895) - located at the Moniteau County Courthouse, California MO; field inspection by Clayton Fraser, 8 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	25 March 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Reiden Ford Bridge
MHTD: 098001.4

MONI05

DATE(S) OF CONSTRUCTION
1906

LOCATION
County Road 98 over Willow Creek; S26/27, T45N, R17W
2.9 miles southeast of Tipton; Moniteau County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 44)

CONDITION
good

OWNER
Moniteau County

span number:	1	superstructure:	steel, 4-panel, pin-connected Pratt pony truss
span length:	70.0'	substructure:	stone masonry abutments and wingwalls
total length:	72.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	10.8'	other features:	upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 4 angles with lacing; diagonal: 2 looped rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles; builder's plate: **1906 INTERSTATE BRIDGE CO KANSAS CITY MO**

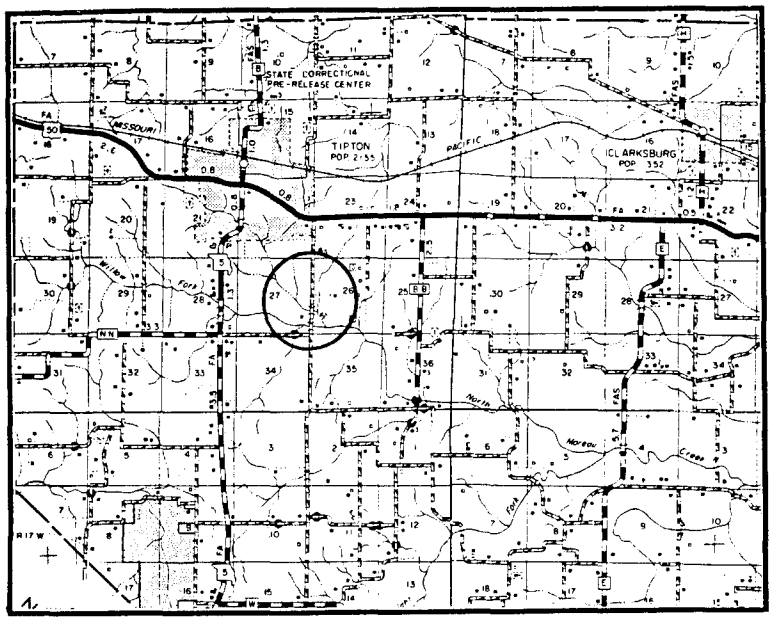
The Reiden Ford Bridge carries a gravel-surfaced county road across Willow Creek some three miles southeast of Tipton, in western Moniteau County. Configured as a single-span, pinned Pratt pony truss, the bridge rests on its original stone abutments. A plate on one of the end posts denotes that the structure was built in 1906 by the Interstate Bridge Company of Kansas City. On August 6th of that year the Moniteau County Court advertised for bids to erect this bridge, along with a small span over the Brewery Branch. One month later, the court received proposals from several firms, including the Kansas City Bridge Company, the Canton Bridge Company, A.M. Blodgett, the Midland Bridge Company, and the Interstate Bridge Company. With a low bid of $1597.00, Interstate Bridge was awarded the contract to fabricate erect the Reiden Ford span. Although no subsequent references were found in county records, the structure was evidently built as planned. The Reiden Ford Bridge still carries vehicular traffic and retains a high degree of structural integrity.

Thousands of Pratt pony trusses were erected throughout Missouri in the late 19th and early 20th centuries. Marketed by virtually all of the in-state and regional bridge companies, this versatile structural type was used overwhelmingly by the counties primarily for short-span applications. A well-documented and well-preserved example, the Reiden Ford Bridge typifies this statewide bridge building trend.

NAME(S) OF STRUCTURE

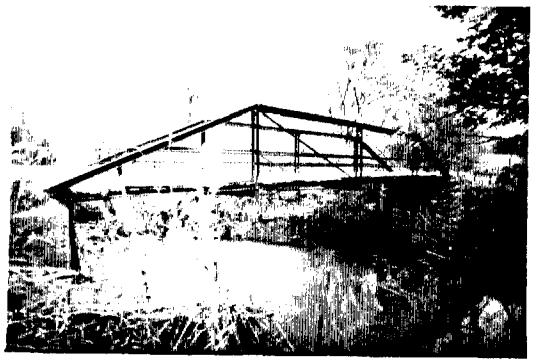
Reiden Ford Bridge

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 No. 098001.4; Moniteau County Minute Book, Roads: page 137 (9 August 1906), page 139 (4 September 1906) - located at Moniteau County Courthouse, California MO; field inspection by Clayton Fraser, 8 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	25 March 1993

MORGAN COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	MHTD	Bridge Name	Description
MORG01	K 641R	Moreau River Bridge	(replaced)
MORG02	078001.3	Culvert	**2- 11' 1930 concrete arch culvert**
MORG03	079001.0	Straight Fork Bridge	**3- 11' 1918** concrete slab

EXCLUDED:

Warren pony truss
H 46 335001.8

Steel stringer
035000.6 066001.0 080000.9 084000.6 244001.1 245000.8 257001.2
266001.6

Concrete girder
K 62 X 596 223000.4

Concrete slab
024001.5 033001.5 045001.6 054000.8 060000.2 073001.3 078001.2
085000.7 085000.8 096002.1 114002.5 115002.6 142001.4 148000.9
195001.3 202001.9 223000.2 231001.1 239000.6 242000.4 245000.8
254000.6 255001.0 291001.7 295000.1 295001.3 300000.7 318001.4
332000.4 335002.5 336000.1

Concrete box culvert
G 242R H 476 H 477R H 478 K 63 K 640 R 833
S 947 X 324 268001.4

Timber stringer
025000.1 322000.2

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	0	2	0	0	2
Excluded	12	44	0	0	56
	12	46	0	0	58 structures

Culvert

MORG02

GENERAL DATA

structure no.: 078001.3
county: Morgan

city/town: 4.0 miles north of Versailles
feature inters.: unnamed stream
cadastral grid: S12, T43N, R18W
highway route: county road
highway distr.: 5
current owner: Morgan County

STRUCTURAL DATA

superstructure: concrete arch culvert
substructure: concrete abutments, wingwalls and pier

span number: 2
span length: 11.0'
total length: 24.0'
roadway width: 18.3'

condition: fair
alterations: unknown
floor/decking : concrete deck over earth fill
other features: plainly detailed sidewalls, with no guardrails

HISTORICAL DATA

erection date: c1930
erection cost: unknown
designer: unknown
fabricator : none
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 078001.3.

sign. rating: 20
evaluation: NRHP non-eligible (undistinguished, poorly documented example of ordinary structural type)

inventoried by: Clayton B. Fraser 26 March 1991

Straight Fork Bridge

MORG03

GENERAL DATA

structure no.: 079001.0
county: Morgan

city/town: 3.5 miles north of Versailles
feature inters.: Straight Fork
cadastral grid: S13, T43N, R18W
highway route: county road
highway distr.: 5
current owner: Morgan County

STRUCTURAL DATA

superstructure: concrete slab
substructure: concrete abutments, wingwalls and pier

span number: 3
span length: 11.0'
total length: 35.0'
roadway width: 18.3'

condition: fair
alterations: unknown
floor/decking : concrete deck
other features: plainly detailed sidewalls, without guardrails

HISTORICAL DATA

erection date: 1918
erection cost: unknown
designer: unknown
fabricator : none
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 079001.0.

sign. rating: 32
evaluation: NRHP non-eligible (undistinguished, small-scale example of common concrete structural type)

inventoried by: Clayton B. Fraser 26 March 1991

OSAGE COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	MHTD	Bridge Name	Description	
*OSAG01	W 350	Koeltztown Bridge	**2-100'**	**pinned Pratt through truss**
			1915	Missouri Bridge and Iron Co.
*OSAG02	Y 198	Rich Fountain Bridge	**2- 16'**	**stone arch**
			1925	Fred Schimmle
*OSAG03	075000.3	Westphalia Bridge	1-145'	**pinned Pratt through truss**
			1893	Kansas City Bridge Company
			1903	Interstate Bridge Company
*OSAG04	078000.0	Holterman Bridge	**2-150'**	**pinned Pratt through truss**
			1915	Kansas City Bridge Company

EXCLUDED:

Warren pony truss
143001.8

Steel stringer
L 194 S 825 002001.0 017001.6 026000.0 028005.0 052001.2
058002.6 076001.8 095000.3 126001.7 131000.0 145000.2 188R01.3
189000.9

Steel girder
090000.1 141002.8 142000.6 146000.1 146000.3 160001.2 208001.2

Concrete girder
J 532 K 214 W 467 028003.1 121001.0 180000.5 181000.2

Concrete slab
J 531 109002.7 168000.8 169003.9 174001.1 177000.5 204000.4

Concrete box culvert
J 122 K 213 L 383 S 632 T 985 W 351 W 402
117004.2

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	2	2	0	0	4
Excluded	13	32	0	0	45
	15	34	0	0	49 structures

Koeltztown Bridge

OSAG01

GENERAL DATA

structure no.: W 350
county: Osage
city/town: 4.0 miles northwest of Freeburg
feature inters.: Maries River
cadastral grid: S35, T42N, R10W
highway route: Missouri State Supplementary Route P
highway distr.: 5
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 6-panel, pin-connected Pratt through truss
substructure: stone abutments with concrete-filled steel cylinder piers

span number: 2
span length: 100.0'
total length: 235.0'
roadway width: 15.0'
condition: good
alterations: wide flange welded to NW endpost; new diagonal bars added
floor/decking : asphalt over timber deck, with steel stringers
other features: upper chord / inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field-bolted to vertical; guardrail: 2 channels

HISTORICAL DATA

erection date: 1914-15
erection cost: $4200.00 (contract amount)
designer: Missouri Bridge and Iron Company, St. Louis MO
fabricator : Missouri Bridge and Iron Company, St. Louis MO;
Cambria Steel Company, Pittsburgh PA;
Jones and Laughlin Steel Company, Pittsburgh PA
contractor: Missouri Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. W 350; Osage County Court Record 17: page 32 (8 April 1914), page 67 (4 May 1914), page 86 (7 May 1914), pages 103-04 (1 June 1914), page 105 (2 June 1914), pages 128-30 (6 July 1914), page 143 (8 July 1914), page 176 (13 August 1914), page 182 (14 August 1914), page 240 (11 November 1914), page 289 (29 December 1914), page 339 (3 February 1914), located at Osage County Courthouse, Linn MO; field inspection by Clayton Fraser, 3 May 1990.

sign. rating: 44
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Clayton B. Fraser 26 February 1991

Rich Fountain Bridge

OSAG02

GENERAL DATA

structure no.: Y 198
county: Osage

city/town: 0.5 mile west of Rich Fountain
feature inters.: Town Creek
cadastral grid: S14, T42N, R9W
highway route: Missouri State Supplementary Route E
highway distr.: 5
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: stone masonry filled spandrel arch
substructure: stone abutments, wingwalls and pier

span number: 2
span length: 16.0'
total length: 35.0'
roadway width: 32.0'

condition: good
alterations: none
floor/decking: concrete deck over earth fill
other features: stone parapets; stepped stone wingwalls

HISTORICAL DATA

erection date: 1925
erection cost: $1450.00
designer: Osage County Surveyor
fabricator: none
contractor: Fred Schimmle

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. Y 198; original bridge contract between Osage County and Fred Schimmle, located at Osage County Courthouse, Linn MO; field inspection by Clayton Fraser, 3 May 1990.

sign. rating: 50
evaluation: NRHP possibly eligible (well-preserved, well-documented example of vernacular bridge construction)

inventoried by: Clayton B. Fraser 26 February 1991

Westphalia Bridge

OSAG03

GENERAL DATA

structure no.: 075000.3
county: Osage
feature inters.: Maries River
city/town: 0.5 mile northeast of Westphalia
cadastral grid: S26, T43N, R10W
highway route: county road
highway distr.: 5
current owner: Osage County

STRUCTURAL DATA

superstructure: steel or wrought iron, 7-panel, pin-connected Pratt through truss; two steel, 3-panel and one 2-panel, pin-connected Pratt half-hip pony trusses
substructure: stone masonry abutments; concrete-filled steel cylinder piers; steel pile bent piers

span number: 1; 3
span length: 145.0'
total length: 280.0'
roadway width: 13.7'
condition: fair
alterations: 1 web removed from 2-panel pony truss
floor/decking: timber deck over steel stringers
other features: through truss: upper chord / inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing (2 looped square eyebars at the hip); diagonal: 2 looped rectangular eyebars; counter: 1 looped round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; strut: 4 angles with lacing; floor beam: I-beam, U-bolted to vertical; guard-rail: steel pipe; portal builder's plate (through truss): **KANSAS CITY BRIDGE CO. / 1893 / KANSAS CITY Mo.**; endpost-mounted builder's plate (3-panel pony): **1903 Interstate Bridge Company, Kansas City MO**

HISTORICAL DATA

erection date: 1893; 1903
erection cost: $8,349.00
designer: Kansas City Bridge Company, Kansas City MO
fabricator: Kansas City Bridge Company, Kansas City MO
contractor: Kansas City Bridge Company, Kansas City MO (through truss and 2-panel pony truss);
Interstate Bridge Company, Kansas City MO (3-panel pony trusses)

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 075000.3; Osage County Court Record 8: page 465 (16 August 1892), page 471 (18 August 1892), page 493 (22 September 1892), page 508 (22 November 1892), page 515 (23 November 1892), page 629 (14 June 1893); Osage County Court Record 9: page 27 (22 November 1893); Osage County Court Record 12: page 169 (13 November 1902), page 181 (22 December 1902), page 210 (31 December 1902), located at Osage County Courthouse, Linn MO; bridge completion correspondence from Kansas City Bridge Company to Osage County, 19 September 1893, located at Osage County Courthouse, Linn MO; original design sketch and specifications for bridge, n.d., located at Osage County Courthouse, Linn MO; field inspection by Clayton Fraser, 3 May 1990.

sign. rating: 59

evaluation: NRHP possibly eligible (well-preserved example of pinned through truss, with staged construction of approaches)

inventoried by: Clayton B. Fraser 26 February 1991

Holterman Bridge

OSAG04

GENERAL DATA

structure no.:	078000.0	city/town:	3.2 miles northeast of Westphalia
county:	Osage	feature inters.:	Maries River
		cadastral grid:	S13, T43N, R10W
		highway route:	county road
		highway distr.:	5
		current owner:	Osage County

STRUCTURAL DATA

superstructure: steel, 9-panel, pin-connected Pratt through truss
substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers

span number:	2	condition:	good
span length:	150.0'	alterations:	none
total length:	232.0'	floor/decking :	timber deck over steel stringers
roadway width:	15.3'	other features:	upper chord / inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: 2 looped square eyebars with turnbuckles; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field-bolted to vertical; guardrail: 2 channels; portal builder's plate: **1915 / Kansas City Bridge Co./ Kansas City Mo. / R.O. SHOBE J.W. AGEE B. SCHAUWECKER co.court LAFE VAUGHAN co. clerk J.C. VAUGHAN co. surveyor**

HISTORICAL DATA

erection date: 1915
erection cost: $7370.11
designer: H.E. Steinman, Osage County Surveyor
fabricator : Kansas City Bridge Company, Kansas City MO;
Cambria Steel Company, Pittsburgh PA
contractor: Kansas City Bridge Company, Kansas City MO (superstructure);
James Cushion (substructure)

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 078000.0; Osage County Court Record 16: page 445 (3 June 1913), page 469 (5 August 1913), pages 472-76 (6 August 1913), pages 503-08 (2 September 1913), pages 521-23 (3 September 1913); Osage County Court Record 17: page 266 (8 December 1914), page 287 (28 December 1914), page 290 (29 December 1914), pages 309-12 (1 February 1915), pages 352-54 (15 February 1915), page 376 (15 March 1915), page 388 (16 March 1915), page 462 (4 May 1915), page 563 (1 November 1915), page 609 (6 December 1915), located at Osage County Courthouse, Linn MO; field inspection by Clayton Fraser, 3 May 1990.

Holterman Bridge

sign. rating: 55
evaluation: NRHP possibly eligible (well-preserved, well-documented, major truss bridge)

inventoried by: Clayton B. Fraser 26 February 1991

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Koeltztown Bridge (Maries River Bridge) OSAG01
MHTD: W 350

DATE(S) OF CONSTRUCTION
1914-15

LOCATION
Missouri State Supplementary Route P over Maries River; S35, T42N, R10W
4.0 miles northwest of Freeburg; Osage County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / highway bridge

RATING NRHP non-eligible (score: 44)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	2	superstructure:	steel, 6-panel, pin-connected Pratt through truss
span length:	100.0'	substructure:	stone abutments with concrete-filled steel cylinder piers
total length:	235.0'	floor/decking:	asphalt over timber deck, with steel stringers
roadway wdt.:	15.0'	other features:	upper chord / inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field-bolted to vertical; guardrail: 2 channels

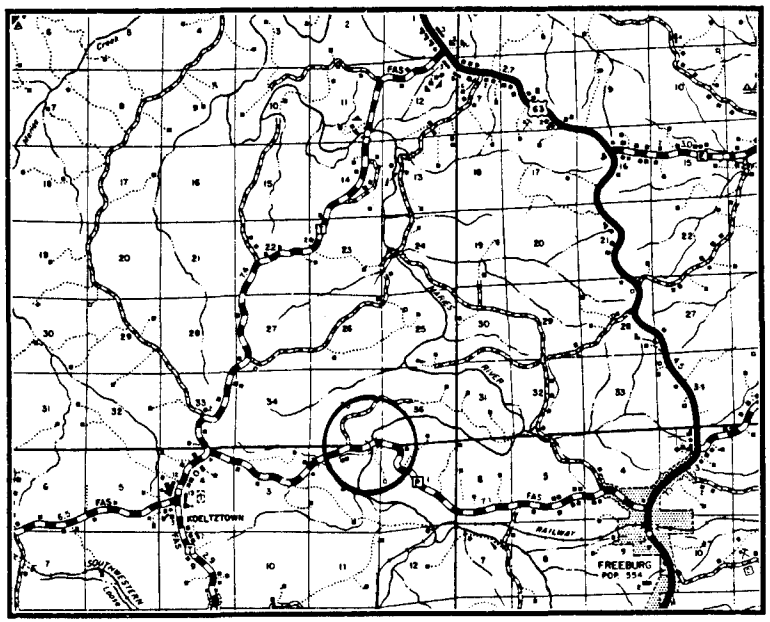
In June 1914 the Osage County Court stated that a bridge over the Maries River in the south-central part of the county would be "of great convenience to the traveling public," offering to build the structure if the citizens in the area would subscribe $2500.00 toward its construction. The citizens put up the money, the county surveyor inspected a site some three miles east of Koeltztown, and the county solicited competitive bids from bridge companies, all in June. A month later nine firms submitted bids for both pinned and riveted versions of the bridge. The contract to fabricate and erect the two through trusses and build the stone substructure was awarded that month to the Missouri Bridge and Iron Company of St. Louis for $4200.00. The company worked on the structure that fall and winter; by February the Koeltztown Bridge was complete. It has carried traffic since, initially maintained by the county and later incorporated into State Supplementary Route P. Alterations have been relatively minor: a wide flange has been welded onto one of the endposts and additional diagonal bars have been installed.

Built in 1914-15, this medium-scale bridge is a typical example of a common truss type, possessing average integrity. The two-span configuration distinguishes it somewhat, but in reality the Koeltztown Bridge lacks technological distinction. The bridge is historically noteworthy for its representation of the use-in-place program of the state highway department. The highway department converted numerous county roads into highways, as the state highway and supplementary systems formed between the 1920s and 1940s. Over the years, almost all of the original county-built trusses have since been replaced with more substantial structures, leaving less than ten pinned through trusses on the state highway system. The Koeltztown Bridge is noteworthy as one of these.

NAME(S) OF STRUCTURE

Koeltztown Bridge (Maries River 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 No. W 350; Osage County Court Record 17: page 32 (8 April 1914), page 67 (4 May 1914), page 86 (7 May 1914), pp. 103-04 (1 June 1914), page 105 (2 June 1914), pp. 128-30 (6 July 1914), page 143 (8 July 1914), page 176 (13 August 1914), page 182 (14 August 1914), page 240 (11 November 1914), page 289 (29 December 1914), page 339 (3 February 1914), located at Osage County Courthouse, Linn MO; field inspection by Clayton Fraser, 3 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	26 February 1991

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Rich Fountain Bridge OSAG02
MHTD: Y 198

DATE(S) OF CONSTRUCTION
1925

LOCATION
Missouri State Supplementary Route E over Town Creek; S14, T42N, R9W
0.5 mile west of Rich Fountain; Osage County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / highway bridge

RATING NRHP possibly eligible (score: 50)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	2	superstructure:	stone masonry filled spandrel arch
span length:	16.0'	substructure:	stone abutments, wingwalls and pier
total length:	35.0'	floor/decking:	concrete deck over earth fill
roadway wdt.:	32.0'	other features:	stone parapets; stepped stone wingwalls

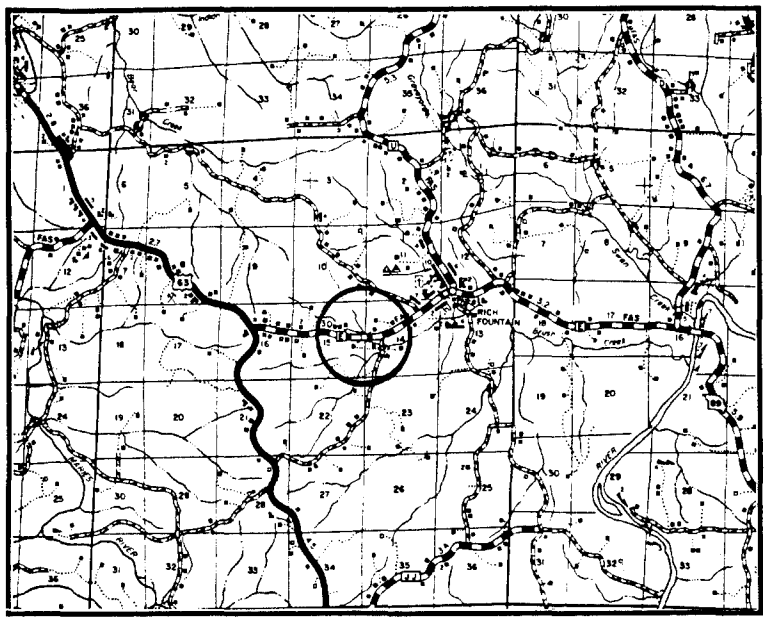
This two-barrel stone arch structure is situated on a state supplementary route over Town Creek in the small town of Rich Fountain. Although the bridge presently carries a state route, it was originally built by Osage County for a county road. In 1925 the Osage County Court contracted with local stonemason Fred Schimmle to construct the bridge. The contract specified "a culvert across the creek in the Town of Rich Fountain, consisting of a double stone arch Rock culvert, each opening to be 16 ft wide in the clear[,] 3 abutments [actually two abutments and a pier] 3 ft thick and 4 wings 10 ft long to hold approaches [sic], abutments to be dug down to solit [sic] footings and built up to 3½ ft above the level of the present creek bet [sic], where arch is to start, raising arch to 5 ft in center." The contractor furnished all the labor and stone; the county provided "the lumber and poles neeted [sic] for the scaffels [sic] for arches." The cost for the bridge: $1450.00. Built in 1925, the Rich Fountain Bridge has carried traffic since in essentially unaltered condition.

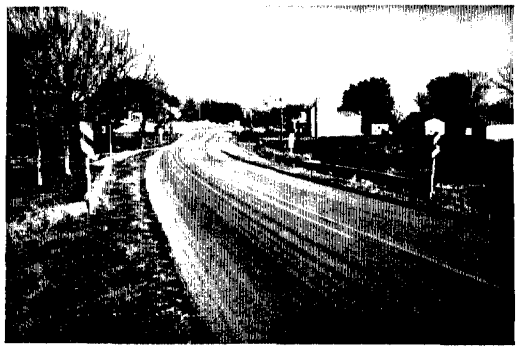
Stone is a common, indigenous building material, used often in Missouri for substructures under steel, even concrete, bridges. This use has not been limited to the 19th century, as is found in some states. Stone substructures can be found under bridges erected as late as the 1930s in Missouri. However, true stone arches, once a common early bridge type, are now relatively rare in the state, due largely to subsequent attrition. Some 16 stone arch bridges have been identified in Missouri by the statewide bridge inventory. Because these structures have tended to be small-scale and vernacular in design, built by local stonemasons, their documentation in county records has been difficult to locate. The Rich Fountain Bridge is an exception to this trend. A well-preserved, handsome structure it is one of the most distinguished of the stone arches found in the state.

NAME(S) OF STRUCTURE

Rich Fountain 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 No. Y 198; original bridge contract between Osage County and Fred Schimmle, located at Osage County Courthouse, Linn MO; field inspection by Clayton Fraser, 3 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	26 February 1991

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Westphalia Bridge
MHTD: 075000.3

OSAG03

DATE(S) OF CONSTRUCTION
1893; 1903

LOCATION
county road over Maries River; S26, T43N, R10W
0.5 mile northeast of Westphalia; Osage County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 59)

CONDITION
fair

OWNER
Osage County

span number: 1; 3
span length: 145.0'
total length: 280.0'
roadway wdt.: 13.7'

superstructure: steel or wrought iron, 7-panel, pin-connected Pratt through truss; two steel, 3-panel and one 2-panel, pin-connected Pratt half-hip pony trusses
substructure: stone masonry abutments; concrete-filled steel cylinder piers; steel pile bent piers
floor/decking: timber deck over steel stringers
other features: through truss: upper chord / inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars; vertical: 2 channels with lacing (2 looped square eyebars at the hip); diagonal: 2 looped rectangular eyebars; counter: 1 looped round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; strut: 4 angles with lacing; floor beam: I-beam, U-bolted to vertical; guardrail: steel pipe; portal builder's plate (through truss): **KANSAS CITY BRIDGE CO. / 1893 / KANSAS CITY Mo.**; endpost-mounted builder's plate (3-panel pony): **1903 Interstate Bridge Company, Kansas City MO**

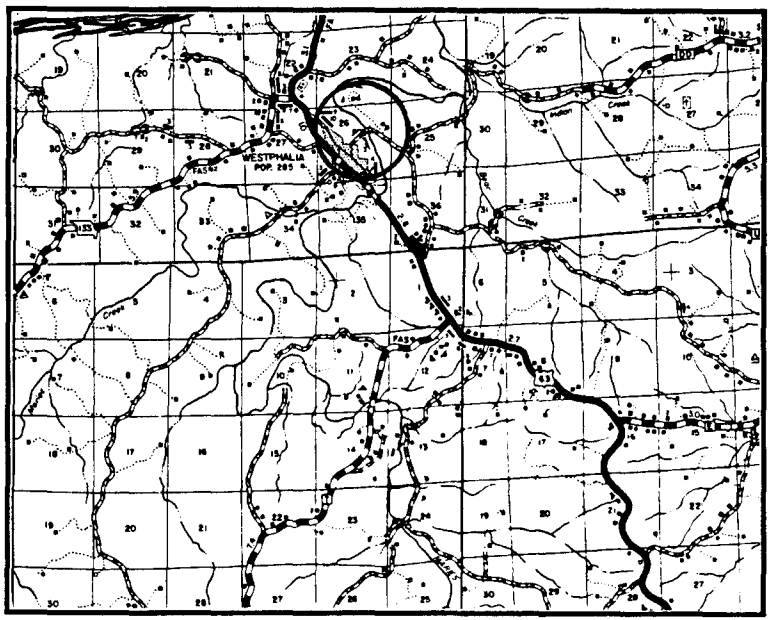
In August 1892 the Osage County Court received a petition from a dozen residents of Washington Township for a permanent bridge over the Maries River on the Linn and Westphalia Road. The court ordered the county surveyor to investigate the proposed site and prepare plans and estimates for a bridge here. In September county assessor Gerhard Plassmeyer, who was acting as special bridge commissioner for the Westphalia Bridge, presented plans and estimates for two bridge configurations. In November the county awarded a contract to fabricate and erect a bridge on Plassmeyer's Plan #2 - a 7-panel pinned through truss and a 2-panel pony truss, separated by a series of timber pile bent spans - to P.H. Everhard of the Kansas City Bridge Company. By the following September KCBCo had completed the bridge. By the turn of the century the timber spans had deteriorated, and the trusses required cleaning, painting and adjusting. The county in 1903 contracted with the Interstate Bridge Company, also of Kansas City, to undertake the repairs. Interstate installed two new steel pony trusses with steel pile bent substructures to replace the timber work inbetween the two existing trusses. Since the completion of this latter work, the bridge has continued to carry county-road traffic. Other than the removal of one of the webs from the 1893 pony truss, it remains essentially unaltered.

Pin-connected Pratt configurations were used for virtually all of Missouri's wagon trusses in the 19th century, executed first in wrought or cast iron and - after the early 1890s - in steel. Thousands of such pinned Pratt through trusses were erected throughout the state for crossing both large and small, and numerous examples remain in place today. The Westphalia Bridge is distinguished among the surviving Pratts in its somewhat long span, its early erection date and in its high degree of preservation. The bridge is also technologically noteworthy in its staged construction. The main span and one pony truss were erected in 1893 by the Kansas City Bridge Company, and the other two pony truss approach spans were erected in 1903 by the Interstate Bridge Company, also of Kansas City. A regionally important crossing of a major river, the Westphalia Bridge is a visually striking, early roadway span.

NAME(S) OF STRUCTURE

Westphalia Bridge (Isbell Bridge; Rehagen Bridge; Maries River 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 No. 075000.3; Osage County Court Record 8: page 465 (16 August 1892), page 471 (18 August 1892), page 493 (22 September 1892), page 508 (22 November 1892), page 515 (23 November 1892), page 629 (14 June 1893); Osage County Court Record 9: page 27 (22 November 1893); Osage County Court Record 12: page 169 (13 November 1902), page 181 (22 December 1902), page 210 (31 December 1902), located at Osage County Courthouse, Linn MO; bridge completion correspondence from Kansas City Bridge Company to Osage County, 19 September 1893, located at Osage County Courthouse, Linn MO; original design sketch and specifications for bridge, n.d., located at Osage County Courthouse, Linn MO; field inspection by Clayton Fraser, 3 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	26 February 1991

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Holterman Bridge
MHTD: 078000.0

OSAG04

DATE(S) OF CONSTRUCTION
1915

LOCATION
county road over Maries River; S13, T43N, R10W
3.2 miles northeast of Westphalia; Osage County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 55)

CONDITION
good

OWNER
Osage County

span number:	2	superstructure:	steel, 9-panel, pin-connected Pratt through truss
span length:	150.0'	substructure:	concrete abutments and wingwalls; concrete-filled steel cylinder piers
total length:	232.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	15.3'	other features:	upper chord / inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: 2 looped square eyebars with turnbuckles; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field-bolted to vertical; guardrail: 2 channels; portal builder's plate: **1915 / Kansas City Bridge Co./ Kansas City Mo. / R.O. SHOBE J.W. AGEE B. SCHAUWECKER co.court LAFE VAUGHAN co. clerk J.C. VAUGHAN co. surveyor**

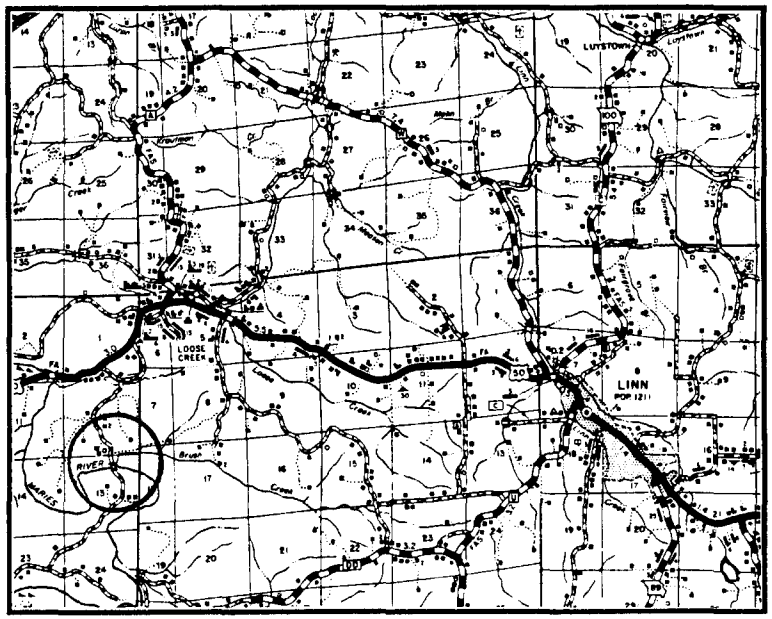
When Alex Verdot et al. petitioned the Osage County Court for a new bridge over the Maries River in December 1914, the judges sent county surveyor H.E. Steinman to visit the Holterman Ford and make estimates. The proposed structure would carry the Westphalia and Loose Creek public road, providing farm-to-market access between the two towns. Steinman drafted preliminary designs for the bridge, presenting them to the court at the end of the year. In February the citizens pledged $2500.00 toward the structure's cost, and county appropriated almost $5600.00. The judges selected Steinman's Plan #1, which consisted of two 150-foot pinned Pratt through trusses supported in mid-stream by a pair of steel cylinder piers. The court advertised in March for bids for 1) two concrete or stone abutments, 2) two 150-foot steel spans and a pair of tubular piers and 3) earth grading for the approaches. After receiving proposals from 13 contractors for the various components of the construction, the county awarded a contract to build the concrete abutments to James Cushion, the approaches to Henry Cooper and the superstructure and pier to the Kansas City Bridge Company. Cushion worked throughout the remainder of the year excavating and pouring the 204 cubic yards of concrete for the abutments. By the end of 1915 the Holterman Ford Bridge had been completed. It has carried county-road traffic since, first as a major arterial and later - after construction of U.S. Highways 63 and 50 - as a secondary road. The bridge remains in place, unaltered.

In Missouri, the pinned Pratt through truss was the bridge of choice for short- and medium-span applications in the late 19th and early 20th centuries. As a result, thousands of Pratts were built across the state, and today Pratts constitute the most populous group of through trusses. The Holterman Bridge stands out among the remaining Pratts for its long span, its double-truss configuration and for its high degree of physical integrity. A regionally important crossing of a major river, it is a distinctive roadway structure.

NAME(S) OF STRUCTURE

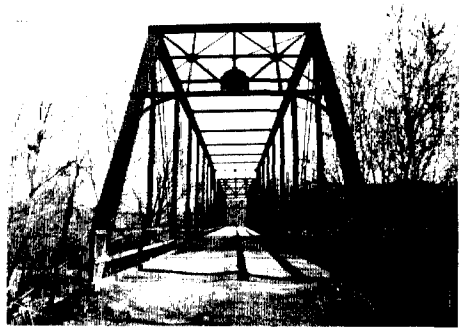
Holterman Bridge (Maries River Bridge)

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 No. 078000.0; Osage County Court Record 16: page 445 (3 June 1913), page 469 (5 August 1913), pp. 472-76 (6 August 1913), pp. 503-08 (2 September 1913), pp. 521-23 (3 September 1913); Osage County Court Record 17: page 266 (8 December 1914), page 287 (28 December 1914), page 290 (29 December 1914), pp. 309-12 (1 February 1915), pp. 352-54 (15 February 1915), page 376 (15 March 1915), page 388 (16 March 1915), page 462 (4 May 1915), page 563 (1 November 1915), page 609 (6 December 1915). located at Osage County Courthouse, Linn MO; field inspection by Clayton Fraser, 3 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	26 February 1991

PETTIS COUNTY

INCLUDED: [Significant feature(s) of bridge given in boldface]
[Field inventoried bridge indicated by asterisk]

Inv. No.	FHWA	Bridge Name	Description	
PETT01	039002.2	Sterling Bridge	1- 40'	pinned Pratt bedstead
			1903	A.M. Blodgett, Kansas City
PETT02	074000.5	McClure Bridge	**2-** 20'	steel stringer
			1906	Midland Bridge Company
PETT03	119000.2	Chamberlain Bridge	1- 70'	riveted Warren bedstead
			1907	Midland Bridge Company
*PETT04	123003.7	Trickem Bridge		(replaced)
*PETT05	130001.8	Longwood Bridge	1-100'	**pinned Pratt through truss**
			1885	King and Twiss, Des Moines IA
*PETT06	160002.4	Reave's Ford Bridge		(replaced)
*PETT07	161002.5	Muddy Creek Bridge	1- 90'	pinned Pratt pony truss
			1919	Midland Bridge Company
*PETT08	208002.4	Overstreet Bridge		(replaced)
*PETT09	237002.0	Brown's Spring Bridge	**2-** 85'	**pinned Pratt through truss**
			c1885	City Light & Traction Company
*PETT10	276000.4	Donahoe Bridge		(replaced)
PETT11	298000.2	Bridge	1- 45'	pinned Pratt bedstead
			c1905	
PETT12	331000.2	Bridge	**2-** 17'	steel stringer
			1906	Midland Bridge Company
*PETT13	348000.8	Rieke Bridge		(replaced)
*PETT14	364000.3	Bridge	1- 38'	pinned Pratt bedstead
			c1905	A.M. Blodgett, Kansas City
PETT15	371000.4	Camp Creek Bridge	1- 40'	pinned Pratt bedstead
			1903	A.M. Blodgett, Kansas City
PETT16	375000.5	Coon Creek Culvert	2- 12'	**concrete arch culvert**
			1953	Howard Construction Company
PETT17	383000.9	Elk Fork Bridge	1- 60'	pinned Pratt pony truss
			c1910	
PETT18	393500.1	Washington Ave. Viaduct	1-105'	**pinned Pratt through truss**
			1911	
PETT18	405000.8	Schmeltzer Bridge	1- 42'	riveted Warren pony truss
			1908	Midland Bridge Company
*PETT20	423001.7	Dresden Bridge	1-120'	**pinned Pratt through truss**
			1891	King Bridge Co., Des Moines IA
PETT21	451002.7	Muddy Creek Bridge	1-120'	**riveted Pratt through truss**
			1924	M.E. Gillioz, Monett MO

PETTIS COUNTY

EXCLUDED:

Pratt pony truss
411000.4 428001.9 451002.1 452001.2

Pratt bedstead
347000.8

Warren pony truss
072000.8 147001.3 326001.7 340000.8 396000.4 413000.9

Steel stringer

S 41	S 57	S 505	S 827	S 828	S 829	S 870
S 871	X 221	X 222A	X 404A	X 861	012R02.4	012000.1
015000.2	015000.4	020000.1	027003.1	047000.7	048000.4	058004.0
059000.8	059000.9	069000.8	070000.2	070000.6	077001.8	080000.4
084000.9	084001.4	103000.1	107001.5	116000.4	122000.5	143000.8
152002.5	164001.1	166000.3	182002.3	194001.6	197001.0	206001.2
210004.4	213002.0	216001.9	217001.1	246001.2	257001.1	262002.8
268000.9	279001.1	291000.1	291002.2	294000.1	294000.5	310000.0
311000.5	317001.2	328R00.0	341001.1	346001.2	349003.3	352000.5
367R04.1	375R03.3	385000.9	386000.3	388000.5	406001.8	406002.3
409000.1	419000.6	427000.5	429000.8	433001.1	442001.9	450000.2
454000.6						

Concrete girder

H 878	H 881	L 217	W 535	X 340	X 439	X 962
097000.7	451004.2					

Concrete slab
H 880 065000.0 265002.3 356003.3 451005.8

Concrete box culvert

H 767R	H 911	H 912	L 368	S 504	T 353	T 354
X 339	X 391	X 579	0640026	283001.2	287002.6	336000.2
337000.7						

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	0	16	0	0	16
Excluded	30	88	6	0	118
	30	104	6	0	134 structures

Sterling Bridge

PETT01

GENERAL DATA

structure no.: 039002.2
county: Pettis

city/town: 4.7 miles northeast of La Monte
feature inters.: branch of Beaver Dam Creek
cadastral grid: S25, T47N, R23W
highway route: county road
highway distr.: 5
current owner: Pettis County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt truss-leg bedstead
substructure: truss leg abutments with timber back- and wingwalls

span number: 1
span length: 40.0'
total length: 40.0'
roadway width: 12.7'

condition: fair
alterations: unknown
floor/decking : timber deck
other features: unknown

HISTORICAL DATA

erection date: 1903
erection cost: $800.00 (engineer's estimate)
designer: A.M. Blodgett, Kansas City MO
fabricator : unknown
contractor: A.M. Blodgett, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 039002.2; Pettis County Court Record 13: page 533 (5 August 1903), located at Pettis County Courthouse, Sedalia MO.

sign. rating: 41
evaluation: NRHP non-eligible (typically configured example of common short-span structural type)

inventoried by: Clayton B. Fraser 13 March 1991

McClure Bridge

PETT02

GENERAL DATA

structure no.:	074000.5	city/town:	6.2 miles northeast of La Monte
county:	Pettis	feature inters.:	branch of Heaths Creek
		cadastral grid:	S20/21, T47N, R22W
		highway route:	county road
		highway distr.:	5
		current owner:	Pettis County

STRUCTURAL DATA

superstructure: steel stringer
substructure: steel pile bent abutments and pier with timber back- and wingwalls

span number:	2	condition:	fair
span length:	20.0'	alterations:	unknown
total length:	34.0'	floor/decking :	timber deck
roadway width:	13.8'	other features:	unknown

HISTORICAL DATA

erection date: 1906
erection cost: $391.00
designer: Midland Bridge Company, Kansas City MO
fabricator : Midland Bridge Company, Kansas City MO
contractor: Midland Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 074000.5; Pettis County Court Record 14: page 264 (4 June 1906), located at Pettis County Courthouse, Sedalia MO.

sign. rating: 43
evaluation: NRHP non-eligible (typical, small-scale example of common structural type)

inventoried by: Clayton B. Fraser 13 March 1991

Chamberlain Bridge

PETT03

GENERAL DATA

structure no.:	119000.2	city/town:	4.5 miles northeast of Hughesville
county:	Pettis	feature inters.:	Heaths Creek
		cadastral grid:	S5, T47N, R21W
		highway route:	county road
		highway distr.:	5
		current owner:	Pettis County

STRUCTURAL DATA

superstructure: steel, 4-panel, rigid-connected Warren bedstead with steel stringer approach span

substructure: steel pile bent abutments and pier with timber back- and wingwalls

span number:	1	condition:	fair
span length:	70.0'	alterations:	unknown
total length:	86.0'	floor/decking :	timber deck
roadway width:	12.0'	other features:	alternating verticals; steel pipe guardrails

HISTORICAL DATA

erection date: 1907

erection cost: $1127.00 (contract amount)

designer: Midland Bridge Company, Kansas City MO

fabricator : Midland Bridge Company, Kansas City MO

contractor: Midland Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 119000.2; Pettis County Court Record 13: page 34 (5 July 1899), page 62 (2 September 1899); Pettis County Court Record 14: page 377 (3 June 1907), located at Pettis County Courthouse, Sedalia MO.

sign. rating: 50

evaluation: NRHP determined non-eligible (relatively early example of mainstay structural type)

inventoried by: Clayton B. Fraser 13 March 1991

Longwood Bridge

PETT05

GENERAL DATA

structure no.: 130001.8
county: Pettis
city/town: 1.0 mile northwest of Longwood
feature inters.: Heaths Creek
cadastral grid: S25, T48N, R21W
highway route: county road
highway distr.: 5
current owner: Pettis County

STRUCTURAL DATA

superstructure: wrought iron, 6-panel, pin-connected Pratt through truss
substructure: concrete-filled iron cylinder piers, with concrete and timber backwalls

span number: 1
span length: 100.0'
total length: 100.0'
roadway width: 14.8'
condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing (2 round eyebars at hip); diagonal: 2 punched rectangular eyebars; lateral bracing: round rod with turnbuckle; strut: 2 Ts with lacing; portal strut: steel lattice; floor beam: 2 channels, field-bolted to vertical; at lateral-bracing intersections: King Bridge Company knobs

HISTORICAL DATA

erection date: 1885
erection cost: $1989.75 (contract amount)
designer: King Iron Bridge and Manufacturing Company, Cleveland OH
fabricator : King Iron Bridge and Manufacturing Company, Cleveland OH; Phoenix Iron Company, Philadelphia PA
contractor: King and Twiss, Des Moines IA

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 130001.8; Pettis County Court Record 9: page 147 (9 June 1884), page 154 (7 July 1884), page 288 (9 July 1885), page 295 (4 August 1885), page 336 (2 November 1885), page 356 (8 December 1885), page 362 (5 January 1886), page 393 (2 March 1886), located at Pettis County Courthouse, Sedalia MO; field inspection by Clayton Fraser, 5 May 1990.

sign. rating: 51
evaluation: NRHP possibly eligible (well-preserved example of early iron bridge construction)

inventoried by: Clayton B. Fraser 13 March 1991

Muddy Creek Bridge

PETT07

GENERAL DATA

structure no.: 161002.5
county: Pettis

city/town: 8.3 miles southeast of Longwood
feature inters.: Muddy Creek
cadastral grid: S25, T47N, R20W
highway route: county road
highway distr.: 5
current owner: Pettis County

STRUCTURAL DATA

superstructure: steel, 5-panel, pin-connected Pratt pony truss, with steel stringer approach spans
substructure: concrete abutments, with concrete-filled steel cylinder piers and steel pile bent piers at approach spans

span number: 1
span length: 90.0'
total length: 138.0'
roadway width: 12.2'

condition: fair
alterations: none
floor/decking : timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 looped rectangular eyebars (outside panels inclined); vertical: 4 angles with lacing; diagonal: 2 looped rectangular eyebars; counter: 1 square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 angles

HISTORICAL DATA

erection date: 1919
erection cost: unknown
designer: Midland Bridge Company, Kansas City MO
fabricator : Midland Bridge Company, Kansas City MO; Lackawanna Steel Company, Pittsburgh PA
contractor: Midland Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 161002.5; field inspection by Clayton Fraser, 5 May 1990.

sign. rating: 46
evaluation: NRHP non-eligible (typical, late example of common structural type)

inventoried by: Clayton B. Fraser 13 March 1991

Brown's Spring Bridge

PETT09

GENERAL DATA

structure no.: 237002.0
county: Pettis

city/town: 3.8 miles south of Sedalia
feature inters.: Flat Creek
cadastral grid: S21, T45N, R21W
highway route: county road
highway distr.: 5
current owner: Pettis County

STRUCTURAL DATA

superstructure: wrought iron, 5-panel, pin-connected Pratt through truss
substructure: stone abutments and pier

span number: 2
span length: 85.0'
total length: 170.0'
roadway width: 13.6'

condition: good
alterations: railroad bridge converted to roadway use
floor/decking : asphalt covered timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and double lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with double lacing; (1 rectangular eyebar at the hip); diagonal: 2 punched rectangular eyebars; counter: 1 square eyerod with turnbuckle; lateral bracing: square eyerod with turnbuckle; strut: rectangular rod braced with 2 angles; floor beam: I-beam, field-bolted to vertical; guardrail: Armco

HISTORICAL DATA

erection date: c1885
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 237002.0; Pettis County Court Record 13: page 364 (4 February 1902), page 368 (17 February 1902); Pettis County Court Record 14: page 467 (20 January 1908), located at Pettis County Courthouse, Sedalia MO; **Sedalia Democrat**, 4 February 1902, 16 October 1960, 13 June 1982; "Sedalia's Streetcars," **Central Missouri News**, 6 January 1988; Mark A. McGruder, **History of Pettis County** (Topeka: Historical Publishing Company, 1919), pages 231-32; field inspection by Clayton Fraser, 5 May 1990.

sign. rating: 58
evaluation: NRHP possibly eligible (intact interurban railway bridge)

inventoried by: Clayton B. Fraser 13 March 1991

Bridge

PETT11

GENERAL DATA

structure no.: 298000.2
county: Pettis

city/town: 1.3 miles southeast of Windsor
feature inters.: branch of Tebo Creek
cadastral grid: S7, T43N, R23W (Pettis County) / S12, T43N, R24W (Henry County)
highway route: county road
highway distr.: 5
current owner: Pettis County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt truss-leg bedstead
substructure: truss leg pier with steel pile bent abutments

span number: 1
span length: 45.0'
total length: 60.0'
roadway width: 12.4'

condition: fair
alterations: unknown
floor/decking : timber deck
other features: unknown

HISTORICAL DATA

erection date: c1905
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 298000.2.

sign. rating: 26
evaluation: NRHP non-eligible (typically configured, inadequately documented example of small-scale bedstead truss configuration)

inventoried by: Clayton B. Fraser 13 March 1991

Bridge

PETT12

GENERAL DATA

structure no.: 331000.2
county: Pettis

city/town: 8.2 miles southwest of Dresden
feature inters.: unnamed stream
cadastral grid: S31, T45N, R22W / S36, T45N, R23W
highway route: county road
highway distr.: 5
current owner: Pettis County

STRUCTURAL DATA

superstructure: steel stringer
substructure: steel pile bent abutments and pier

span number: 2
span length: 17.0'
total length: 36.0'
roadway width: 12.1'

condition: fair
alterations: unknown
floor/decking : timber deck
other features: unknown

HISTORICAL DATA

erection date: 1906
erection cost: $396.00
designer: Midland Bridge Company, Kansas City MO
fabricator : Midland Bridge Company, Kansas City MO
contractor: Midland Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 331000.2; Pettis County Court Record 14: page 287 (17 September 1906), located at Pettis County Courthouse, Sedalia MO.

sign. rating: 43
evaluation: NRHP non-eligible (typical, small-scale example of exceedingly common structural type)

inventoried by: Clayton B. Fraser 13 March 1991

Bridge

PETT14

GENERAL DATA

structure no.:	364000.3	city/town:	4.8 miles southeast of Sedalia
county:	Pettis	feature inters.:	tributary of Coon Creek
		cadastral grid:	S11, T45N, R22W
		highway route:	county road
		highway distr.:	5
		current owner:	Pettis County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt truss-leg bedstead
substructure: concrete abutments and wingwalls

span number:	1	condition:	poor
span length:	38.0'	alterations:	collision damage; extensive deterioration
total length:	40.0'	floor/decking :	concrete deck over steel stringers
roadway width:	13.8'	other features:	top chord: 2 channels with cover plate and lacing; upright end post: 2 channels with lacing; bottom chord: 2 looped rectangular eyebars, 2 channels with batten plates; vertical: 4 angles with lacing; diagonal: 2 punched rectangular eyebars (2 square eyebars) counter: 1 round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 channels

HISTORICAL DATA

erection date: c1905
erection cost: unknown
designer: A.M. Blodgett, Kansas City MO (probable)
fabricator : Carnegie Steel Company, Pittsburgh PA
contractor: A.M. Blodgett, Kansas City MO (probable)

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 364000.3; field inspection by Clayton Fraser, 5 May 1990.

sign. rating: 18
evaluation: NRHP non-eligible (poorly preserved, poorly documented example of common structural type)

inventoried by: Clayton B. Fraser 13 March 1991

Camp Creek Bridge

PETT15

GENERAL DATA

structure no.:	371000.4	city/town:	5.4 miles northeast of Green Ridge
county:	Pettis	feature inters.:	Camp Creek
		cadastral grid:	S26/27, T45N, R22W
		highway route:	county road
		highway distr.:	5
		current owner:	Pettis County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt truss-leg bedstead
substructure: concrete abutments and wingwalls

span number:	1	condition:	fair
span length:	40.0'	alterations:	unknown
total length:	64.0'	floor/decking :	concrete deck over steel stringers
roadway width:	11.8'	other features:	high concrete curb

HISTORICAL DATA

erection date: 1903
erection cost: $949.00
designer: A.M. Blodgett, Kansas City MO
fabricator : unknown
contractor: A.M. Blodgett, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 371000.4; Pettis County Court Record 13: page 488 (18 February 1903), located at Pettis County Courthouse, Sedalia MO.

sign. rating: 41
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Clayton B. Fraser 13 March 1991

Coon Creek Culvert

PETT16

GENERAL DATA

structure no.:	375000.5	city/town:	6.8 miles west of Sedalia
county:	Pettis	feature inters.:	Coon Creek
		cadastral grid:	S9, T45N, R22W
		highway route:	county road
		highway distr.:	5
		current owner:	Pettis County

STRUCTURAL DATA

superstructure: concrete arch culvert
substructure: concrete abutments, wingwalls and pier

span number:	2	condition:	fair
span length:	12.0'	alterations:	unknown
total length:	35.0'	floor/decking :	concrete deck over earth fill
roadway width:	17.0'	other features:	plainly-detailed concrete guardrails

HISTORICAL DATA

erection date: 1953
erection cost: $5616.00
designer: Missouri State Highway Department
fabricator : none
contractor: Howard Construction Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 375000.5; Missouri Highway and Transportation Department, Primary Bridge Record, located at Bridge Division, MHTD, Jefferson City MO.

sign. rating: 29
evaluation: NRHP non-eligible (undistinguished, small-scale, recently constructed example of intrinsically unimportant structural type)

inventoried by: Clayton B. Fraser 13 March 1991

Elk Fork Bridge

PETT17

GENERAL DATA

structure no.:	383000.9	city/town:	3.7 miles northwest of Green Ridge
county:	Pettis	feature inters.:	Elk Fork of Muddy Creek
		cadastral grid:	S28, T45N, R23W
		highway route:	county road
		highway distr.:	5
		current owner:	Pettis County

STRUCTURAL DATA

superstructure: steel, 4-panel, pin-connected Pratt pony truss
substructure: unknown

span number:	1	condition:	fair
span length:	60.0'	alterations:	unknown
total length:	80.0'	floor/decking :	concrete deck over steel stringers
roadway width:	11.5'	other features:	steel angle guardrail

HISTORICAL DATA

erection date: c1910
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 383000.9.

sign. rating: 28
evaluation: NRHP non-eligible (typically configured, inadequately documented example of common structural type)

inventoried by: Clayton B. Fraser 13 March 1991

Washington Avenue Viaduct

PETT18

GENERAL DATA

structure no.:	393500.1	city/town:	Sedalia
county:	Pettis	feature inters.:	Missouri Pacific Railroad
		cadastral grid:	S3, T45N, R21W
		highway route:	Washington Avenue
		highway distr.:	5
		current owner:	Pettis County

STRUCTURAL DATA

superstructure: steel, 7-panel, pin-connected Pratt through truss
substructure: concrete abutments, wingwalls and piers

span number:	1	condition:	excellent
span length:	105.0'	alterations:	extensively rehabilitated, 1989
total length:	320.0'	floor/decking :	timber deck
roadway width:	18.7'	other features:	timber guardrail; cantilevered sidewalk on one side

HISTORICAL DATA

erection date: 1911
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 393500.1; Pettis County Court Record 15: page 150 (8 March 1911) - located at Pettis County Courthouse, Sedalia, Missouri; Gary A. Storm, "Rehabilitation Upgrades Historic Sedalia Bridge," **LA Perspective**, Vol. 1, No. 1 (February 1989), page 1.

sign. rating: 36
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Clayton B. Fraser 13 March 1991

Schmeltzer Bridge

PETT19

GENERAL DATA

structure no.: 405000.8
county: Pettis

city/town: 5.2 miles southwest of La Monte
feature inters.: Long Branch of Muddy Creek
cadastral grid: S5/6, T45N, R23W
highway route: county road
highway distr.: 5
current owner: Pettis County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Warren pony truss
substructure: steel pile bent abutments

span number: 1
span length: 42.0'
total length: 60.0'
roadway width: 12.0'

condition: fair
alterations: unknown
floor/decking : timber deck
other features: steel angle guardrail

HISTORICAL DATA

erection date: 1908
erection cost: $642.00
designer: Midland Bridge Company, Kansas City MO
fabricator : Midland Bridge Company, Kansas City MO
contractor: Midland Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 405000.8; Pettis County Court Record 14: page 453 (6 January 1908), located at Pettis County Courthouse, Sedalia MO.

sign. rating: 41
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Clayton B. Fraser 13 March 1991

Dresden Bridge

PETT20

GENERAL DATA

structure no.:	423001.7	**city/town:**	1.6 miles south of Dresden
county:	Pettis	**feature inters.:**	Muddy Creek
		cadastral grid:	S33, T46N, R22W
		highway route:	county road
		highway distr.:	5
		current owner:	Pettis County

STRUCTURAL DATA

superstructure: wrought iron, 7-panel, pin-connected Pratt through truss, with steel stringer approach spans

substructure: concrete abutment; concrete-filled steel cylinder piers

span number:	1	**condition:**	fair
span length:	120.0'	**alterations:**	guardrails replaced
total length:	150.0'	**floor/decking :**	timber deck over steel stringers
roadway width:	15.0'	**other features:**	upper chord / inclined end post: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars; vertical: 4 angles with lacing (2 square eyebars at the hip); diagonal: 2 punched rectangular eyebars; counter: 1 square eyebar with turnbuckle; strut: 2 angles; floor beam: riveted fishtail plate girder, field-bolted to vertical; guardrail: Armco

HISTORICAL DATA

erection date: 1890-91

erection cost: $8159.00 (three-bridge contract)

designer: King Iron Bridge and Manufacturing Company, Cleveland OH

fabricator : King Iron Bridge and Manufacturing Company, Cleveland OH

contractor: George E. King Bridge Company, Des Moines IA

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 423001.7; Pettis County Court Record 9: page 147 (9 June 1894); Pettis County Court Record 10: page 436 (15 September 1890), page 443 (7 October 1890), page 501 (3 March 1891), page 583 (8 September 1891) - located at Pettis County Courthouse, Sedalia, Missouri; field inspection by Clayton Fraser, 5 May 1990.

sign. rating: 51

evaluation: NRHP possibly eligible (well-preserved example of mainstay structural type)

inventoried by: Clayton B. Fraser 13 March 1991

Muddy Creek Bridge

PETT21

GENERAL DATA

structure no.: 451002.7
county: Pettis
city/town: 6.7 miles north of Sedalia
feature inters.: Muddy Creek
cadastral grid: S33, T47N, R21W
highway route: county road
highway distr.: 5
current owner: Pettis County

STRUCTURAL DATA

superstructure: steel, 6-panel, rigid-connected Pratt through truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 120.0'
total length: 122.0'
roadway width: 20.0'
condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: steel pipe guardrails

HISTORICAL DATA

erection date: 1924
erection cost: $18,791.62
designer: Missouri State Highway Department
fabricator : unknown
contractor: M.E. Gillioz, Monett MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. 451002.7; Missouri Highway and Transportation Department, Primary System Bridge Record, located at Bridge Division, MHTD, Jefferson City MO.

sign. rating: 41
evaluation: NRHP non-eligible (typically configured example of common structural type)

Inventoried by: Clayton B. Fraser 13 March 1991

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Longwood Bridge
MHTD: 130001.8

PETT05

DATE(S) OF CONSTRUCTION
1885

LOCATION
county road over Heaths Creek; S25, T48N, R21W
1.0 mile northwest of Longwood; Pettis County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 51)

CONDITION
fair

OWNER
Pettis County

span number:	1	superstructure:	wrought iron, 6-panel, pin-connected Pratt through truss
span length:	100.0'	substructure:	concrete-filled iron cylinder piers, with concrete and timber backwalls
total length:	100.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	14.8'	other features:	upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing (2 round eyebars at hip); diagonal: 2 punched rectangular eyebars; lateral bracing: round rod with turnbuckle; strut: 2 Ts with lacing; portal strut: steel lattice; floor beam: 2 channels, field-bolted to vertical; at lateral-bracing intersections: King Bridge Company knobs

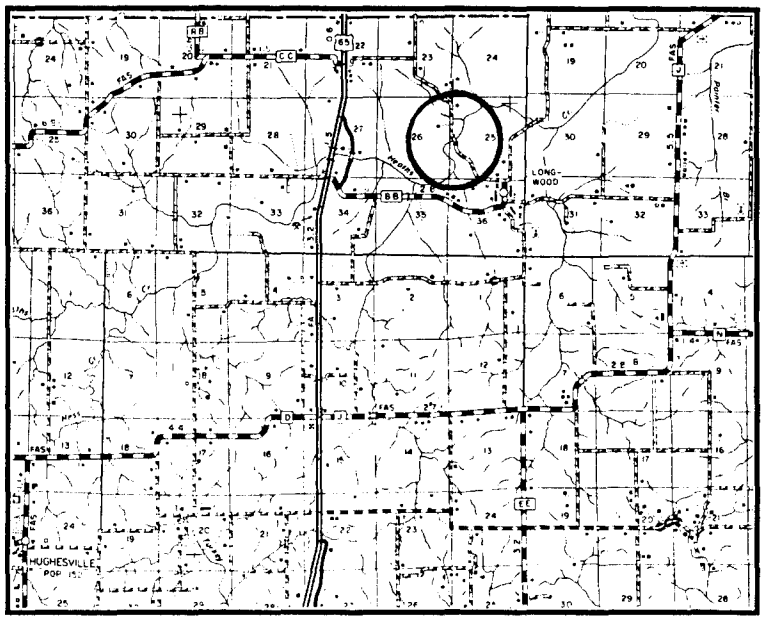
Soon after completion of the Trickem Bridge (**PETT04**) in 1885, the Pettis County Court advertised for fabrication and erection of two other iron spans - across Spring Fork near White's Station and across Heath Creek near Longwood. (The county had been considering building the latter structure since early 1884, but had postponed construction several times.) In August 1885 the county awarded the contracts for both structures to the King Iron Bridge and Manufacturing Company. King's immense plant in Cleveland fabricated the trusses from wrought iron components rolled by the Phoenix Iron Company; King and Twiss, the firm's western subsidiary from Des Moines, erected both spans later that year. Contract cost for the Longwood Bridge: $1989.75. By the end of the year the approach grading had been completed and both crossings were opened to traffic. The White's Station Bridge has since been replaced, the Longwood Bridge still carries traffic in essentially unaltered condition.

Built extensively by virtually all of the major bridge firms of the period, the Pratt through truss soon supplanted the bowstring arch-truss as the mainstay structural type for highway construction in the early 1880s. Numerous examples were erected throughout Missouri in the late 19th and early 20th centuries, executed first in wrought iron and later in steel. The Longwood Bridge is distinguished as one of the oldest remaining Pratt trusses in the state. One of the two earliest intact bridges in Pettis County, it is a well-preserved representative of early iron bridge construction in Missouri.

NAME(S) OF STRUCTURE

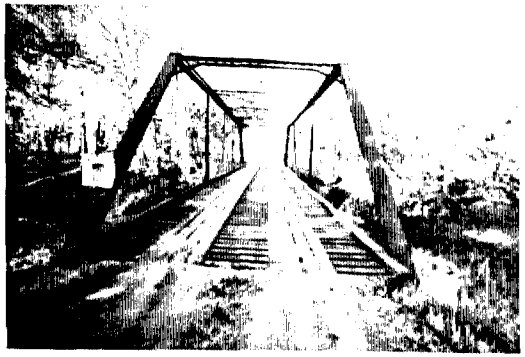
Longwood Bridge (Heaths Creek Bridge)

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 No. 130001.8; Pettis County Court Record 9: page 147 (9 June 1884), page 154 (7 July 1884), page 288 (9 July 1885), page 295 (4 August 1885), page 336 (2 November 1885), page 356 (8 December 1885), page 362 (5 January 1886), page 393 (2 March 1886), located at Pettis County Courthouse, Sedalia MO; field inspection by Clayton Fraser, 5 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	13 March 1991

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Brown's Spring Bridge
MHTD: 237002.0

PETT09

DATE(S) OF CONSTRUCTION
c1885

LOCATION
county road over Flat Creek; S21, T45N, R21W
3.8 miles south of Sedalia; Pettis County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 58)

CONDITION
good

OWNER
Pettis County

span number:	2	superstructure:	wrought iron, 5-panel, pin-connected Pratt through truss
span length:	85.0'	substructure:	stone abutments and pier
total length:	170.0'	floor/decking:	asphalt covered timber deck over steel stringers
roadway wdt.:	13.6'	other features:	upper chord and inclined end post: 2 channels with cover plate and double lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with double lacing; (1 rectangular eyebar at the hip); diagonal: 2 punched rectangular eyebars; counter: 1 square eyerod with turnbuckle; lateral bracing: square eyerod with turnbuckle; strut: rectangular rod braced with 2 angles; floor beam: I-beam, field-bolted to vertical; guardrail: Armco

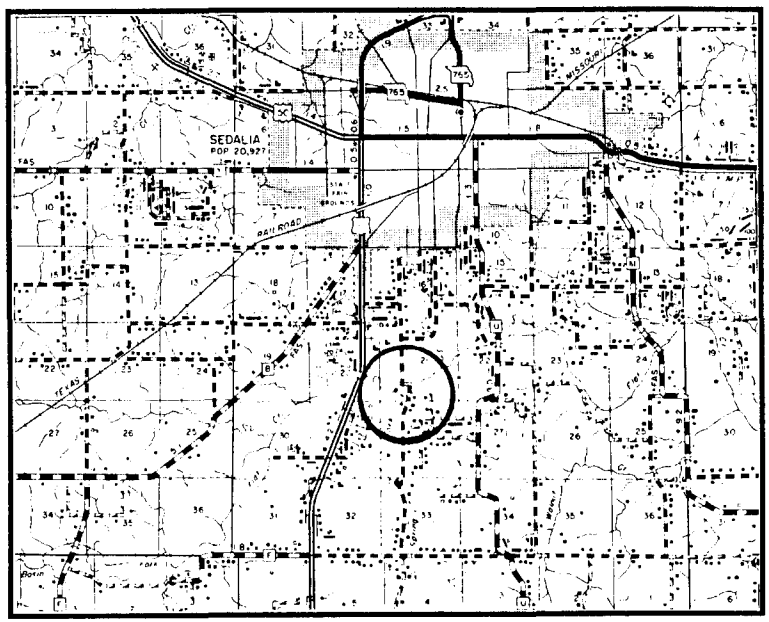
Early in the 1880s a health resort was established at Brown's Spring Park south of Sedalia to take advantage of the natural springs in the area. Later an amusement park, beer garden, menagerie, shooting gallery, bowling alley, summer theatre and hotel were constructed in the Brown's Spring / Forest Park resort area. To carry Sedalians to and from the park, the Street Railway of the City Light and Traction Company (established in 1881 from a previous trolley company) extended tracks from the city south to Forest Park, past Brown's Spring. The first trolleys to the park were horsedrawn, later electric. To carry the trolleys over Flat Creek at Brown's Park, the company built this two-span through truss, supported by stone masonry piers, sometime around 1885. By 1902 the trolleys had been discontinued, and the county had purchased the Brown's Spring Bridge from a Sedalia junk dealer for $150.00. That year the county converted it to wagon use. The Brown's Spring Bridge has carried county-road traffic since, in unaltered condition.

As an integral part of Sedalia's interurban streetcar system, the Brown's Spring Bridge forms a significant resource to interpret this aspect of the city's history. The bridge is significant as an intact early railroad structure - one of the earlier iron trusses in Missouri - converted for roadway use. Both historically and technologically significant (and aesthetically interesting with its distinctive portal struts), the Brown's Spring Bridge is an important early relic of both railway and roadway transportation.

NAME(S) OF STRUCTURE

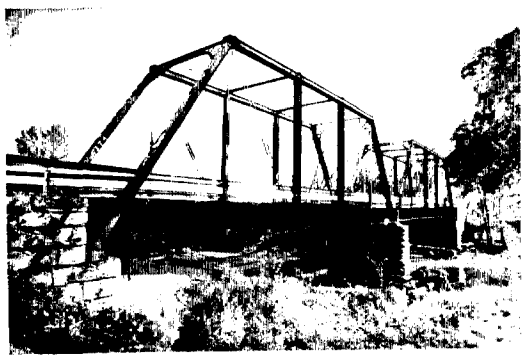
Brown's Spring Bridge (Flat Creek Bridge)

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 No. 237002.0; Pettis County Court Record 13: page 364 (4 February 1902), page 368 (17 February 1902); Pettis County Court Record 14: page 467 (20 January 1908), located at Pettis County Courthouse, Sedalia MO; **Sedalia Democrat**, 4 February 1902, 16 October 1960, 13 June 1982; "Sedalia's Streetcars," **Central Missouri News**, 6 January 1988; Mark A. McGruder, **History of Pettis County** (Topeka: Historical Publishing Company, 1919), pages 231-32; field inspection by Clayton Fraser, 5 May 1990.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	13 March 1991

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Dresden Bridge
MHTD: 423001.7

PETT20

DATE(S) OF CONSTRUCTION
1890-91

LOCATION
county road over Muddy Creek; S33, T46N, R22W
1.6 miles south of Dresden; Pettis County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 51)

CONDITION
fair

OWNER
Pettis County

span number: 1
span length: 120.0'
total length: 150.0'
roadway wdt.: 15.0'

superstructure: wrought iron, 7-panel, pin-connected Pratt through truss, with steel stringer approach spans
substructure: concrete abutment; concrete-filled steel cylinder piers
floor/decking: timber deck over steel stringers
other features: upper chord / inclined end post: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars; vertical: 4 angles with lacing (2 square eyebars at the hip); diagonal: 2 punched rectangular eyebars; counter: 1 square eyebar with turnbuckle; strut: 2 angles; floor beam: riveted fishtail plate girder, field-bolted to vertical; guardrail: Armco

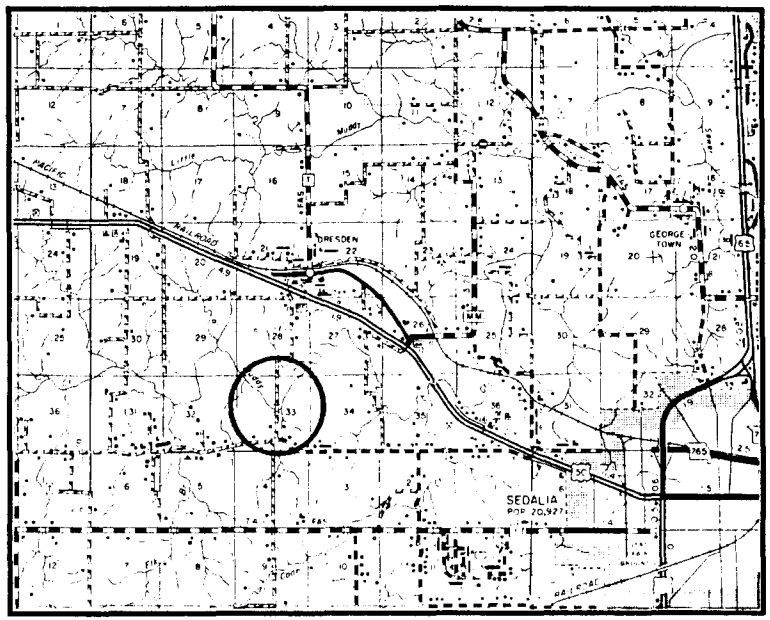
This medium-span through truss carries an unpaved county road over Muddy Creek, south of the town of Dresden in Dresden Township. Comprised of a single pinned Pratt truss, supported by steel cylinder piers and approached by steel stringer spans, its origins date to 1890. That September the Pettis County Court directed County Road and Bridge Commissioner J.C. Johnson to advertise for this and two other iron trusses over Muddy Creek. The next month the county contracted with the George E. King Bridge Company of Des Moines for the three structures for a total cost of $8159.00. Using trusses fabricated in Cleveland by the King Iron Bridge and Manufacturing Company, the firm completed the bridges by September 1891. The other two bridges have since been replaced, but the Dresden Bridge remains in place, with only the replacement of its guardrails and perhaps its approach spans as the only alterations of note.

Pinned Pratt through trusses were erected in abundance throughout Missouri during the late 19th and early 20th centuries. Their standardized fabrication, efficiency of materials and relative ease of erection made them an economical structural type for counties facing extensive bridge construction programs with limited funds. The Dresden Bridge is distinguished among the many Pratt trusses remaining in place in the state with its relatively early construction date and its state of preservation. One of the earlier examples of this mainstay structural type, it is a noteworthy early wagon structure.

NAME(S) OF STRUCTURE

Dresden Bridge (Muddy Creek 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 No. 423001.7; Pettis County Court Record 9: page 147 (9 June 1894); Pettis County Court Record 10: page 436 (15 September 1890), page 443 (7 October 1890), page 501 (3 March 1891), page 583 (8 September 1891) - located at Pettis County Courthouse, Sedalia, Missouri; field inspection by Clayton Fraser, 5 May 1990.

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