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FRANKLIN COUNTY

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

Inv. No.	MHTD	Bridge Name	Description
*FRAN01	H 996R1	Meramec River Bridge	**5-105' concrete open spandrel arch** 1930 M.E. Gillioz, Monett MO
FRAN02	J 872	Pacific Overpass	1- 70' **concrete open spandrel arch** 1932 Gaines Brothers
FRAN03	J 959	Big Boeuf Creek Bridge	1-**100' riveted polyg. Warren pony truss** 1934 James R. Hancock
*FRAN04	F-6	Big Berger Creek Bridge	1-115' **pinned Pratt through truss** **1912** Stupp Brothers Bridge and Iron
FRAN05	F-31	Bucklick Creek Bridge	1- 45' pinned Pratt pony truss **1910** Stupp Brothers Bridge and Iron
*FRAN06	F-32	Steiner's Ford Bridge	1-**180' pinned Parker through truss** **1908** Missouri Bridge and Iron Co.
*FRAN07	F-33	Horstkamp Ford Bridge	1-150' **riveted Parker through truss** **1915** Vincennes Bridge Company
*FRAN08	F-46	Noelker's Ford Bridge	(replaced)
*FRAN09	F-51	Labadie Bottoms Bridge	1- 60' pinned Pratt bedstead **1900** Stupp Brothers Bridge and Iron
FRAN10	F-52	Labadie Creek Bridge	1- 30' **concrete filled spandrel arch** c1930
*FRAN11	F-56	Labadie Creek Bridge	1- 96' **pinned Pratt through truss** **1901** Stupp Brothers Bridge and Iron
FRAN12	F-57	Fiddle Creek Bridge	1- 50' **riveted Pratt/Warren pony truss** 1920 R.L. Miller
*FRAN13	F-59	Tavern Creek Bridge	1- 33' **concrete arched deck girder** c1925
*FRAN14	F-72	Withington Ford Bridge	**2-200' pinned Pennsylv. through truss** **1917** Miller and Borcherding
FRAN15	F-89	Brown Branch Bridge	1- 36' riveted lattice bedstead **c1905** Stupp Brothers B&I (probable)
*FRAN16	F-136	Cedar Fork Bridge	1- 50' **riveted Pratt/Warren pony truss** 1920 R.L. Miller
*FRAN17	F-190	Short's Ford Bridge	1-**194' pinned Pratt through truss** **1888** King Iron Bridge Company
*FRAN18	F-191	L. Meramec River Bridge	1-110' **pinned Pratt through truss** **1911** Stupp Brothers Bridge and Iron
*FRAN19	F-207	McGuire Ford Bridge	1-100' **riveted Pratt through truss** **1915** Vincennes Bridge Company
*FRAN20	F-224	South Fork Bridge	1- 40' pinned Pratt half-hip pony **1899** Stupp Brothers Bridge and Iron
*FRAN21	F-284	Bridge	1- 80' **riveted Pratt/Warren pony truss** 1920 R.L. Miller
FRAN22	F-405	Spring Creek Bridge	1- 34' riveted lattice bedstead **1908** Stupp Brothers Bridge and Iron

FRANKLIN COUNTY

INCLUDED (cont.):

*FRAN23	F-420	Hartmann's Ford Bridge	1-**250'**	**pinned Pennsylv. through truss**
			1916	Miller and Borcherding
*FRAN24	F-424	Noser Mill Bridge	1-**190'**	**pinned Parker through truss**
			1902	Midland Bridge Company
*FRAN25	F-425	Noser Mill Bridge	**4**- 19'	steel stringer
			1902	Midland Bridge Company
*FRAN26	U4300003	Washington St. Bridge	1- 30'	stone masonry arch
			c**1890**	
*FRAN27	U4300004	Church Street Bridge	1- 25'	concrete deck girder
			1915	Missouri Construction Company

EXCLUDED:

Pratt pony truss
F-140 F-286

Pratt bedstead
F-116

Warren pony truss
F-40

Steel stringer

F-2	F-11	F-19	F-23	F-95	F-101R	F-106
F-113	F-125	F-135	F-142	F-148	F-153	F-170F-178
F-189R	F-268	F-279	F-285	F-406	H 353R	H 389R1J 960S
244	S 265	T 301	W 409	X 92	Y 721	Y 722
Z 547						

Steel girder
F-314 K 154R U430000.2

Concrete girder

F-5	F-10	F-14	F-25	F-45	F-85	F-107
F-119	F-120	F-124	F-184	F-218	F-219	F-236
F-272	F-281	F-415	F-422	H 994R	H 995R	K 141
K 479R	U446500.2	W 102	W 103	W 104	X 489	316200.1
430000.1						

Concrete slab
F-141 F-159 F-304

Concrete box culvert

F-50	F-426	H 205R	H 226R	H 992	H 997	L 120
L 163R1	T 199	X 286	X 488	X 913	X 926	X 982
X 983						

Timber stringer
F-423

FRANKLIN COUNTY

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	3	21	2	0	26
Excluded	32	51	3	0	86
	35	72	5	0	112 structures

Meramec River Bridge

FRAN01

GENERAL DATA

structure no.: H 996R1
county: Franklin
city/town: 3.0 miles east of Parkway
feature inters.: Meramec River
cadastral grid: S4, T41N, R1E
highway route: Missouri State Highway 30
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: concrete, two-rib, open spandrel arch, with seven concrete deck girder approach spans
substructure: concrete abutments, wingwalls and piers

span number: 5
span length: 105.0'
total length: 825.0'
roadway width: 20.0'
condition: excellent
alterations: none
floor/decking : asphalt over concrete deck
other features: concrete guardrails (standard Missouri State Highway Department design); architectural detailing, including: fluted, hammerhead concrete piers; curved haunches on deck girder approach spans; bullnosed cutwaters on channel piers

HISTORICAL DATA

erection date: 1929-30
erection cost: $91,197.45
designer: Missouri State Highway Department
fabricator : none
contractor: M.E. Gillioz, Monett MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number H 996R1; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 57
evaluation: NRHP potentially eligible (well-preserved, multiple-span example of mainstay structural type, one of best in state)

inventoried by: Clayton B. Fraser 15 January 1994

Pacific Overpass

FRAN02

GENERAL DATA

structure no.: J 872
county: Franklin
city/town: Pacific
feature inters.: Missouri Pacific Railroad
cadastral grid: S9, T43N, R2E
highway route: State Secondary Route AT
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: concrete, three-rib open spandrel arch, skewed, with two deck girder approach spans
substructure: concrete abutments, wingwalls and piers

span number: 1
span length: 70.0'
total length: 163.0'
roadway width: 32.0'
condition: good
alterations: none
floor/decking : concrete deck
other features: concrete guardrails (Missouri State Highway Department standard design)

HISTORICAL DATA

erection date: 1932
erection cost: $14,564.46
designer: Missouri State Highway Department
fabricator : none
contractor: Gaines Brothers

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J 872; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 40
evaluation: NRHP non-eligible (The Pacific Overpass is a typically built, single-span, concrete open spandrel arch, of average span length and ordinary detailing.)

inventoried by: Clayton B. Fraser 15 January 1994

Big Boeuf Creek Bridge

FRAN03

GENERAL DATA

structure no.: J 959
county: Franklin
city/town: 3.1 miles east of New Haven
feature inters.: Boeuf Creek
cadastral grid: S5, T44N, R2W
highway route: Missouri State Highway 100
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 6-panel, rigid-connected Warren pony truss with polygonal upper chords
substructure: concrete abutments and wingwalls; solid concrete hammerhead spill-through piers

span number: 1
span length: 100.0'
total length: 314.0'
roadway width: 22.0'
condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: steel guardrails

HISTORICAL DATA

erection date: 1934
erection cost: $36,328.87
designer: Missouri State Highway Department
fabricator : unknown
contractor: James R. Hancock

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J 959; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO.

sign. rating: 46
evaluation: NRHP non-eligible (typically configured, long-span example of MSHD 1930s truss design)

inventoried by: Clayton B. Fraser 15 January 1994

Big Berger Creek Bridge

FRAN04

GENERAL DATA

structure no.: F-6
county: Franklin

city/town: 5.6 miles south of Berger
feature inters.: Big Berger Creek
cadastral grid: S3, T44N, R4W
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 7-panel, pin-connected Pratt through truss
substructure: concrete abutments

span number: 1
span length: 115.0'
total length: 116.0'
roadway width: 15.7'

condition: good
alterations: none
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: 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 verticals; guardrail: 2 angles; portal builder's plate: **1912 / Built by Stupp Bros. Bridge & Iron Co. / St. Louis Mo.**

HISTORICAL DATA

erection date: 1912
erection cost: unknown
designer: A.R. Moore, Franklin County Engineer
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO; Illinois Steel Company, Chicago IL
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-6; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 43
evaluation: NRHP non-eligible (well-preserved, typically configured example of a standard truss type)

inventoried by: Clayton B. Fraser 15 January 1994

Bucklick Creek Bridge

FRAN05

GENERAL DATA

structure no.: F-31
county: Franklin

city/town: 3.9 miles south of New Haven
feature inters.: Bucklick Creek
cadastral grid: S24, T44N, R3W
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

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

span number: 1
span length: 45.0'
total length: 46.0'
roadway width: 15.6'

condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: steel angle guardrails

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 F-31; contract between Stupp Brothers Bridge and Iron Company and Franklin County (5 August 1910), located at Franklin County Clerk's Office, Union MO.

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

inventoried by: Clayton B. Fraser 15 January 1994

Steiner's Ford Bridge

FRAN06

GENERAL DATA

structure no.: F-32
county: Franklin

city/town: 3.9 miles southeast of New Haven
feature inters.: Boeuf Creek
cadastral grid: S9, T44N, R2W
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 10-panel, pin-connected Parker through truss
substructure: stone masonry abutments with stepped wingwalls

span number: 1
span length: 180.0'
total length: 185.0'
roadway width: 15.1'

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; lateral bracing: round rod with threaded ends; strut: 2 angles, braced; floor beam: I-beam, field bolted to vertical; guardrail: steel lattice

HISTORICAL DATA

erection date: 1907-08
erection cost: $4239.00: superstructure; $3158.00: substructure
designer: Charles L. Moore, Franklin County Engineer
fabricator : Jones and Laughlin Steel Company, Pittsburgh PA
contractor: Missouri Bridge and Iron Company, St. Louis MO: superstructure; Rosmann and Goeller, substructure

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-32; Franklin County Court Record, Book T: page 300 (8 August 1903), page 311 (13 August 1903), page 342 (2 November 1903), page 375 (24 December 1903), page 398 (3 February 1904), page 523 (2 August 1904); Book V: page 63 (5 March 1907), page 115 (17 May 1907), page 175 (4 June 1907), page 268 (6 November 1907), page 298 (2 December 1907) - located at Franklin County Clerk's Office, Union MO; superstructure contract between Missouri Bridge and Iron Company and Franklin County (3 September 1907); substructure contract between Rosmann and Goeller and Franklin County (6 August 1907); original construction drawings by C.L. Moore - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

Steiner's Ford Bridge

sign. rating: 57
evaluation: NRHP potentially eligible (excellent example of uncommon Pratt truss subtype)

inventoried by: Clayton B. Fraser 15 January 1994

Horstkamp Ford Bridge

FRAN07

GENERAL DATA

structure no.: F-33
county: Franklin
city/town: 3.8 miles southeast of New Haven
feature inters.: Boeuf Creek
cadastral grid: S7, T44N, R2W
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 8-panel, rigid-connected Parker through truss, with steel stringer approach spans
substructure: concrete abutments and piers

span number: 1
span length: 150.0'
total length: 190.0'
roadway width: 15.8'
condition: good
alterations: none
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 angles with batten plates; vertical: 2 channels with lacing; diagonal: 2 angles with batten plates; lateral bracing: round rod with threaded ends; strut 2 angles, braced; floor beam: I-beam, field bolted to vertical; guard-rail: 2 angles

HISTORICAL DATA

erection date: 1915
erection cost: $3532.00
designer: Vincennes Bridge Company, Vincennes IN
fabricator : Inland Steel Company, East Chicago IN;
Illinois Steel Company, Chicago IL
contractor: Vincennes Bridge Company, Vincennes IN

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-33; citizens' petition and subscription (8 September 1859); original construction drawings by J.M. Moore (1915); contract with Vincennes Bridge Company (3 July 1915) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 51
evaluation: NRHP potentially eligible (well-preserved, relatively early example of mainstay structural type)

inventoried by: Clayton B. Fraser 15 January 1994

Noelker's Ford Bridge

FRAN08

GENERAL DATA

structure no.: F-46
county: Franklin
city/town: 5.5 miles west of Washington
feature inters.: St. Johns Creek
cadastral grid: S26, T44N, R2W
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 7-panel, pin-connected Pratt through truss
substructure: stone masonry abutments

span number: 1
span length: 116.0'
total length: 118.0'
roadway width: 14.7'
condition: good
alterations: none
floor/decking : asphalt on 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: 2 angles; floor beam: I-beam, field bolted to vertical; guardrail: steel lattice; builder's plate: **1908 / Stupp Bro's Bridge & Iron Co. / St. Louis Mo.**

HISTORICAL DATA

erection date: 1907-08
erection cost: $1700.00: superstructure; $2282.00: substructure
designer: Charles L. Moore, Franklin County Engineer
fabricator : Cambria Steel Company, Pittsburgh PA
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO: superstructure; Rosmann and Goeller: substructure

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-46; citizens' petition and subscription (5 August 1908); construction progress report from Charles Moore to Franklin County Court (9 December 1908); original construction drawings and specifications by Charles Moore (1908); substructure contract between Rosmann and Goeller and Franklin County (8 September 1908); superstructure contract between Stupp Brothers Bridge and Iron Company and Franklin County (8 September 1908) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

Noelker's Ford Bridge

sign. rating: 47
evaluation: NRHP non-eligible (typically configured example of common structural type, undistinguished in its age and design)

inventoried by: Clayton B. Fraser 17 January 1994

Labadie Bottoms Bridge

FRAN09

GENERAL DATA

structure no.: F-51
county: Franklin

city/town: 2.2 miles northwest of Labadie
feature inters.: Missouri River tributary
cadastral grid: S27, T44N, R1E
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt truss-leg bedstead, with steel stringer approach spans
substructure: timber pile bent pier under south end of truss; truss legs under north end of truss; concrete abutments

span number: 1
span length: 60.0'
total length: 86.0'
roadway width: 15.7'

condition: fair
alterations: truss moved to this location; original timber deck replaced with concrete
floor/decking : concrete deck over steel stringers
other features: upper chord and upright end post: 2 channels with cover and batten plates; lower chord: 2 angles with batten plates, or 2 looped rectangular eyebars; vertical: 4 angles with lacing; diagonal: 2 looped rectangular eyebars; counter: square eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles; builder's plate: **Stupp Bros. / Bridge & Iron Co. / Builders / St. Louis Mo.**

HISTORICAL DATA

erection date: 1900
erection cost: $1140.00
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO; Lackawanna and Cambria Steel Companies, Pittsburgh PA
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-51; (standard) construction drawing by Stupp Brothers Bridge and Iron Company (1900); contract between Stupp Brothers and Franklin County (6 August 1900) - both located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

Labadie Bottoms Bridge

sign. rating: 38
evaluation: NRHP non-eligible (undistinguished, altered structure, moved to this location.)

inventoried by: Clayton B. Fraser 17 January 1994

Labadie Creek Bridge

FRAN10

GENERAL DATA

structure no.: F-52
county: Franklin

city/town: 1.0 mile southeast of Labadie
feature inters.: Labadie Creek
cadastral grid: S31, T44N, R2E
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

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

span number: 1
span length: 31.0'
total length: 36.0'
roadway width: 25.5'

condition: good
alterations: none
floor/decking : concrete deck over earth fill
other features: steel pipe 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 Number F-52.

sign. rating: 27
evaluation: NRHP non-eligible (technologically undistinguished example of a concrete bridge type, dating from the 1930s)

inventoried by: Clayton B. Fraser 17 January 1994

Labadie Creek Bridge

FRAN11

GENERAL DATA

structure no.: F-56
county: Franklin

city/town: 1.8 miles north of Labadie
feature inters.: Labadie Creek
cadastral grid: S18, T44N, R2E
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 6-panel, pin-connected Pratt through truss, with steel stringer approach spans
substructure: concrete abutments and spill-through piers

span number: 1
span length: 96.0'
total length: 136.0'
roadway width: 15.2'

condition: good
alterations: truss moved to this location
floor/decking : asphalt on 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 square eyebars at the hip); 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, field bolted to vertical; guardrail: steel pipe; builder's plate: **1901 / Built by Stupp Bros. Bridge & Iron Co. / St. Louis, Mo.**

HISTORICAL DATA

erection date: 1901
erection cost: unknown
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO; Jones and Laughlin, Cambria Steel Companies, Pittsburgh PA
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-57; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 37
evaluation: NRHP non-eligible (early, well-preserved example of a mainstay structural type, moved to this location)

inventoried by: Clayton B. Fraser 17 January 1994

Fiddle Creek Bridge

FRAN12

GENERAL DATA

structure no.: F-57
county: Franklin

city/town: 3.7 miles northwest of Labadie
feature inters.: Fiddle Creek
cadastral grid: S16, T44N, R2E
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Pratt/Warren pony truss, with 1 steel stringer approach span
substructure: concrete-filled steel cylinder piers

span number: 1
span length: 50.0'
total length: 75.0'
roadway width: 11.6'

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

HISTORICAL DATA

erection date: 1920
erection cost: unknown
designer: R.L. Miller, St. Louis MO
fabricator : R.L. Miller, St. Louis MO
contractor: county crew

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-57; Franklin County Court Record, Book AA: page 408 (21 July 1919), page 529 (4 February 1920) - located at Franklin County Courthouse, Union MO.

sign. rating: 50
evaluation: NRHP possible (example of an uncommon structural type, lacking in documentation)

inventoried by: Clayton B. Fraser 17 January 1994

Tavern Creek Bridge

FRAN13

GENERAL DATA

structure no.: F-59
county: Franklin

city/town: 6.1 miles northeast of Labadie
feature inters.: Tavern Creek
cadastral grid: S2, T44N, R2E
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: concrete deck girder
substructure: concrete abutments and wingwalls

span number: 1
span length: 33.0'
total length: 34.0'
roadway width: 17.7'

condition: fair
alterations: none
floor/decking : concrete deck
other features: concrete guardrails with recessed panels; concrete gravity arch dam built integrally with bridge

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 F-59; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 50
evaluation: NRHP potentially eligible (rare concrete bridge-dam combination structure, apparently built from MSHD standard design)

inventoried by: Clayton B. Fraser 17 January 1994

Withington Ford Bridge

FRAN14

GENERAL DATA

structure no.: F-72
county: Franklin

city/town: 3.2 miles southeast of Gray Summit
feature inters.: Meramec River
cadastral grid: S15/22, T43N, R2E
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 10-panel, pin-connected Pennsylvania through truss, with steel stringer approach span
substructure: concrete abutments and pier

span number: 2
span length: 200.0'
total length: 422.0'
roadway width: 15.0'

condition: good
alterations: none
floor/decking : asphalt on timber, 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, braced; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles; builder's plate: **Built by / Miller & Borcherding / St. Louis Mo.**

HISTORICAL DATA

erection date: 1916-17
erection cost: $13,832.00 (contract amount)
designer: J.M. Moore, Franklin County Engineer
fabricator : Illinois Steel Company, Chicago IL
contractor: Miller and Borcherding, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-72; Franklin County Court Record, Book Q: page 48 (6 September 1892), page 109 (8 December 1892); Book T: page 346 (4 May 1903); Book Z: page 575 (10 December 1915), page 618 (16 February 1916), page 626 (22 February 1916); Book AA: page 70 (5 October 1916), page 82 (21 November 1916), page 95 (4 January 1917); citizens' petitions and subscriptions (4 May 1903, 1 August 1914, 10 February 1915; 12 February 1916); construction drawings by J.M. Moore (November 1915); bid summary (16 February 1916); superstructure contract with Miller and Borcherding (18 February 1916); contract for approach work with F.X. Manning (25 February 1916) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

Withington Ford Bridge

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

inventoried by: Clayton B. Fraser 18 January 1994

Brown Branch Bridge

FRAN15

GENERAL DATA

structure no.: F-89
county: Franklin

city/town: 5.9 miles west of Labadie
feature inters.: Brown Branch
cadastral grid: S5, R1E, T43N
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 2-panel rigid-connected lattice bedstead truss
substructure: stone masonry abutments

span number: 1
span length: 36.0'
total length: 36.0'
roadway width: 14.9'

condition: fair
alterations: original timber deck replaced with concrete
floor/decking : concrete deck over steel stringers
other features: unknown

HISTORICAL DATA

erection date: c1905
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 F-89.

sign. rating: 32
evaluation: NRHP non-eligible (undistinguished, small-scale structure, lacking in technological significance)

inventoried by: Clayton B. Fraser 18 January 1994

Cedar Fork Bridge

FRAN16

GENERAL DATA

structure no.: F-136
county: Franklin
city/town: 6.8 miles northeast of Gerald
feature inters.: Cedar Fork
cadastral grid: S8, T43N, R3W
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 3-panel, rigid-connected Pratt/Warren pony truss
substructure: concrete abutments

span number: 1
span length: 50.0'
total length: 52.0'
roadway width: 11.4'
condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: upper chord and inclined end post: I-beam; lower chord: 2 angles with batten plates; vertical: 2 angles with batten plates; diagonal: 2 angles with batten plates; end post stiffener: 2 angles with batten plates; lateral bracing: round rod with threaded ends; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles

HISTORICAL DATA

erection date: 1919-20
erection cost: unknown
designer: J.L. Ekey, Franklin County Highway Engineer
fabricator : R.L. Miller, St. Louis MO
contractor: R.L. Miller, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-136; original drawing by J.L. Ekey, Franklin County Highway Engineer (7 October 1919); citizens' petition (5 August 1918); Right-of-Way conveyance (10 April 1920) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

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

inventoried by: Clayton B. Fraser 18 January 1994

Short's Ford Bridge

FRAN17

GENERAL DATA

structure no.: F-190
county: Franklin
city/town: 5.8 miles east of St. Clair
feature inters.: Meramec River
cadastral grid: S26, T42N, R1E
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: wrought iron, 10-panel, pin-connected Pratt through truss
substructure: stone masonry abutments and wingwalls

span number: 1
span length: 194.0'
total length: 198.0'
roadway width: 14.8'
condition: good
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 looped round eyebars at the hip); diagonal: 2 punched rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round eyerod with turnbuckle; strut: 4 angles with lacing; floor beam: I-beam, U-bolted to vertical; guardrail: 3 angles; builder's plate: **1888 / King Iron Bridge Co. / Cleveland, O.**

HISTORICAL DATA

erection date: 1888
erection cost: $3759.00 (superstructure only)
designer: King Iron Bridge Company, Cleveland OH
fabricator : Phoenix Iron Company, Philadelphia PA
contractor: George E. King Bridge Company, Des Moines IA

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-190; Franklin County Record, Book O: page 215 (8 May 1884); Book P: page 37 (14 February 1888), page 39 (15 February 1888), page 50 (13 March 1888), page 58 (3 April 1888), page 59 (4 April 1888), page 63 (23 April 1888), page 78 (5 July 1888), page 84 (6 August 1888), page 126 (24 November 1888), page 194 (6 May 1889), page 209 (9 July 1889), page 234 (20 September 1889), page 249 (4 November 1889), page 330 (7 May 1890); citizens' petitions (5 September 1887, 11 November 1887, 2 August 1887); county engineer's reports (30 August 1888, 15 February 1888, 24 November 1888) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

Short's Ford Bridge

sign. rating: 60
evaluation: NRHP determined eligible (excellent early example of mainstay structural type, located on an important crossing)

inventoried by: Clayton B. Fraser 18 January 1994

Little Meramec River Bridge

FRAN18

GENERAL DATA

structure no.: F-191
county: Franklin

city/town: 6.6 miles east of St. Clair
feature inters.: Little Meramec River
cadastral grid: S36, T42N, R1E
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

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

span number: 1
span length: 110.0'
total length: 112.0'
roadway width: 10.9'

condition: fair
alterations: none
floor/decking : asphalt on 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 with knee braces; floor beam: I-beam, field bolted to vertical; guardrail: steel lattice; builder's plate: **1911 / Built by Stupp Bro's Bridge & Iron Co. / St. Louis Mo.**

HISTORICAL DATA

erection date: 1911
erection cost: $634.00 (substructure cost)
designer: Allen R. Moore, Franklin County Highway Engineer
fabricator : Lackawanna Steel Company, Pittsburgh PA
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO: superstructure; Oscar Fisher: substructure

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-191; citizens' petition (8 November 1907); Right-of-Way conveyance (8 February 1912); substructure contract with Oscar Fisher (8 August 1911); shop drawings by Stupp Brothers Bridge and Iron Company (7 November 1911); superstructure contract with Stupp Brothers (8 August 1911); original specifications by Allen R. Moore (1911) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 43
evaluation: NRHP non-eligible (well-preserved and well-documented example of a mainstay structural type, lacking historical or technological distinction)

inventoried by: Clayton B. Fraser 18 January 1994

McGuire Ford Bridge

FRAN19

GENERAL DATA

structure no.: F-207
county: Franklin
city/town: 2.5 miles south of Catawissa
feature inters.: Calvey Creek
cadastral grid: S10, T42N, R2E
highway route: county road
highway distr.: 6
current owner: Franklin 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: 15.0'
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 angles with batten plates; vertical: 2 channels with lacing; diagonal: 2 angles with batten plates; lateral bracing: round rod with threaded ends; strut: 2 angles; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles; builder's plate: **1915 Built by Vincennes Bridge Co. Vincennes Ind.**

HISTORICAL DATA

erection date: 1915
erection cost: $1535.00: superstructure; $1048.00: substructure and approaches
designer: J.M Moore, Franklin County Engineer
fabricator : Illinois Steel Company, Chicago IL
contractor: Vincennes Bridge Company, Vincennes IN: superstructure; Walter Moore: substructure and approaches

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-207; superstructure contract with Vincennes Bridge Company (3 July 1915); original construction drawings and specifications by J.M. Moore (14 June 1915); substructure contract with Walter Moore (3 July 1915) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 41
evaluation: NRHP non-eligible (relatively early example of typically configured riveted Pratt through truss construction)

inventoried by: Clayton B. Fraser 18 January 1994

South Fork Bridge

FRAN20

GENERAL DATA

structure no.: F-224
county: Franklin

city/town: 2.5 miles southwest of Lonedell
feature inters.: South Fork
cadastral grid: S19, T41N, R2E
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

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

span number: 1
span length: 40.0'
total length: 42.0'
roadway width: 14.3'

condition: fair
alterations: truss moved, 1913-14
floor/decking : asphalt on 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: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field bolted to vertical; guardrail: 2 steel pipes; builder's plate: [broken] **...Iron Co. Builders St. Louis Mo.**

HISTORICAL DATA

erection date: 1899
erection cost: $315.00 (superstructure)
designer: Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO; Carnegie Rolling Mills, Pittsburgh PA (probable)
contractor: Stupp Brothers Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-224; Franklin County Court Record, Book S: page 50 (6 February 1899), page 85 (3 April 1899), page 90 (7 April 1899), page 104 (4 May 1899); original construction drawing by Stupp Brothers (1898 standard); citizens' petition (23 January 1912); subscription (6 March 1912); contract with Oscar Fisher to build new abutments and move bridge (1913) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 42
evaluation: NRHP non-eligible (a well-documented, but technologically undistinguished example of a standard truss type, moved to this location)

inventoried by: Clayton B. Fraser 18 January 1994

Little Bourbeuse Bridge

FRAN21

GENERAL DATA

structure no.: F-284
county: Franklin

city/town: 10.2 miles south of Gerald
feature inters.: Bourbeuse River tributary
cadastral grid: S35, T41N, R4W
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 4-panel, rigid-connected Pratt/Warren pony truss
substructure: concrete abutments

span number: 1
span length: 80.0'
total length: 80.0'
roadway width: 11.6'

condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: upper chord: I-beam; lower chord: 2 angles with batten plates; vertical: 2 angles with batten plates; diagonal: 2 angles with batten plates; lateral bracing: round rod with threaded ends; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles; end post stiffener: 2 angles with batten plates

HISTORICAL DATA

erection date: 1920
erection cost: unknown
designer: R.L. Miller, St. Louis MO
fabricator : R.L. Miller, St. Louis MO
contractor: county work force

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-284; Franklin County Court Record, Book AA: page 421 (7 August 1919); citizens' petition (7 August 1919) - located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 52
evaluation: NRHP possibly eligible (well-preserved, well-documented example of uncommon structural type)

inventoried by: Clayton B. Fraser 18 January 1994

Spring Creek Bridge

FRAN22

GENERAL DATA

structure no.: F-405
county: Franklin

city/town: 0.5 mile west of Oak Grove Village
feature inters.: Spring Creek
cadastral grid: S4, T40N, R2W
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 2-panel, rigid-connected lattice bedstead truss
substructure: concrete abutments and wingwalls

span number: 1
span length: 34.0'
total length: 36.0'
roadway width: 16.1'

condition: fair
alterations: pier added at mid-span; original timber deck replaced with concrete
floor/decking : concrete deck over steel stringers
other features: unknown

HISTORICAL DATA

erection date: 1908
erection cost: $499.00
designer: Charles L. Moore, Franklin County 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 F-405; citizens' petition (8 May 1907); contract with Stupp Brothers Bridge and Iron Company (8 September 1908); original construction drawings by C.M. Moore (1908); bill from Stupp Brothers (4 December 1908) - all located at Franklin County Courthouse, Union MO.

sign. rating: 35
evaluation: NRHP non-eligible (well-documented, but is undistinguished and exhibits below-average physical integrity)

inventoried by: Clayton B. Fraser 18 January 1994

Hartmann's Ford Bridge

FRAN23

GENERAL DATA

structure no.: F-420
county: Franklin
city/town: Union
feature inters.: Bourbeuse River
cadastral grid: S34, T43N, R1W
highway route: North Bend Road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 12-panel, pin-connected Pennsylvania through truss, with steel stringer approach span
substructure: concrete abutments and pier

span number: 1
span length: 250.0'
total length: 271.0'
roadway width: 14.9'
condition: good
alterations: none
floor/decking : asphalt on 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, braced; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles; builder's plate: **Built by Miller & Borcherding / St. Louis / Mo.**

HISTORICAL DATA

erection date: 1916
erection cost: $8960.00
designer: J.M. Moore, Franklin County Engineer
fabricator : Illinois Steel Company, Chicago IL
contractor: Miller and Borcherding, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-420; Franklin County Court Record, Book Z: page 533 (3 November 1915), page 618 (16 February 1916), page 626 (22 February 1916); Book AA: page 82 (21 November 1916); construction drawings by J.M. Moore (November 1915); bid summary (16 February 1916); contract with Miller and Borcherding (25 February 1916); miscellaneous notes (5 October 1916, 15 March 1917, 7 December 1915) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 62
evaluation: NRHP possibly eligible (excellent long-span example of uncommon truss type)

inventoried by: Clayton B. Fraser 18 January 1994

Noser Mill Bridges

FRAN24; FRAN25

GENERAL DATA

structure no.: F-424; F-425
county: Franklin
city/town: Noser Mill
feature inters.: Bourbeuse River
cadastral grid: S7, T42N, R2W
highway route: county road
highway distr.: 6
current owner: Franklin County

STRUCTURAL DATA

superstructure: steel, 10-panel, pin-connected Parker through truss, with 4 steel stringer approach spans (**Structure No. F-425**) at the east end
substructure: stone masonry abutments

span number: 1; 4
span length: 190.0; 19.0'
total length: 190.0; 72.0'
roadway width: 15.0; 15.0'
condition: good
alterations: none
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: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; lateral bracing: round rod with threaded ends; strut: 2 angles, braced; floor beam: I-beam, field bolted to vertical; guardrail: steel pipe; decorative finials and portal cresting.

HISTORICAL DATA

erection date: 1880: substructure; 1902: superstructure
erection cost: $3345.00 (superstructure)
designer: A.R. Moore, Franklin County Engineer
fabricator : Carnegie Steel Company, Pittsburgh PA
contractor: substructure: H.W. Sebastian;
superstructure: Midland Bridge Company, Kansas City

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Numbers F-424 and F-425; Franklin County Court Record, Book N: page 427 (5 May 1880), page 449 (22 September 1880), page 452 (15 October 1880); Book O: page 263 (1 December 1894); Book P: page 296 (6 February 1890), page 512 (5 August 1891), page 542 (3 November 1891), page 637 (27 April 1892); Book Q: page 15 (7 June 1892), page 100 (5 September 1892); Book S: page 541 (30 July 1901), page 542 (5 August 1901), page 548 (8 August 1901), page 557 (21 September 1901), page 568 (24 September 1901), page 578 (4 November 1901), page 589 (9 November 1901); Book T: page 8 (12 April 1902); Book AA: page 231 (12 August 1914) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

Noser Mill Bridges

sign. rating: 54
evaluation: NRHP possibly eligible (excellent, long-span example of uncommon truss type, built on abutments of earlier covered bridge)

inventoried by: Clayton B. Fraser 18 January 1994

Washington Street Bridge

FRAN26

GENERAL DATA

structure no.: U4300003
county: Franklin
city/town: Union
feature inters.: Flat Creek
cadastral grid: S27, T43W, R1W
highway route: Washington Street
highway distr.: 6
current owner: City of Union

STRUCTURAL DATA

superstructure: stone masonry filled spandrel arch
substructure: stone/concrete abutments and wingwalls

span number: 1
span length: 30.0'
total length: 63.0'
roadway width: 40.0'
condition: good
alterations: arch barrel extended with concrete arch on east side; north wingwall extended with stone; steel stringer sidewalk added on west side; new concrete guardrails added on east side
floor/decking : asphalt over earth fill
other features: rusticated keystone; stone guardrails with tooled stone copings, on west side

HISTORICAL DATA

erection date: c1890
erection cost: unknown
designer: unknown
fabricator : none
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number U4300003; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 44
evaluation: NRHP non-eligible (early example of stone arch construction, inadequately documented and extensively altered)

inventoried by: Clayton B. Fraser 18 January 1994

Church Street Bridge

FRAN27

GENERAL DATA

structure no.: U4300004
county: Franklin
city/town: Union
feature inters.: Flat Creek
cadastral grid: R26/27, T43N, R1W
highway route: Church Street
highway distr.: 6
current owner: City of Union

STRUCTURAL DATA

superstructure: concrete deck girder
substructure: concrete abutments and wingwalls

span number: 1
span length: 25.0'
total length: 30.0'
roadway width: 30.6'
condition: good
alterations: sidewalk added on west side
floor/decking : asphalt over concrete deck
other features: concrete guardrails with recessed panels; builder's plate: **1915 / Missouri Construction & Ballast Co. / Contractors**

HISTORICAL DATA

erection date: 1915
erection cost: unknown
designer: unknown
fabricator : none
contractor: Missouri Construction and Ballast Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number U4300004; field inspection by Clayton Fraser, 23 October 1989.

sign. rating: 42
evaluation: NRHP non-eligible (technologically undistinguished example of concrete bridge construction)

inventoried by: Clayton B. Fraser 18 January 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Meramec River Bridge
MHTD: H 996R1

FRAN01

DATE(S) OF CONSTRUCTION
1929-30

LOCATION
Missouri State Highway 30 over Meramec River; S4, T41N, R1E
3.0 miles east of Parkway; Franklin County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP possibly eligible (score: 57)

CONDITION
excellent

OWNER
Missouri Highway and Transportation Department

span number:	5	superstructure:	concrete, two-rib, open spandrel arch, with seven concrete deck girder approach spans
span length:	105.0'	substructure:	concrete abutments, wingwalls and piers
total length:	825.0'	floor/decking:	asphalt over concrete deck
roadway wdt.:	20.0'	other features:	concrete guardrails (standard Missouri State Highway Department design); architectural detailing, including: fluted, hammerhead concrete piers; curved haunches on deck girder approach spans; bullnosed cutwaters on channel piers

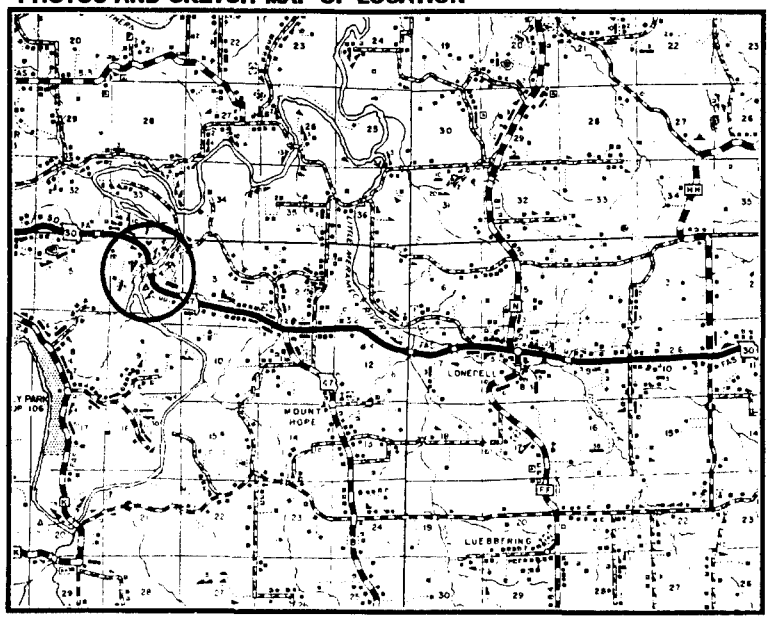
Extending east from St. Clair, State Highway 30 is a principal route leading from St. Louis to southern Franklin County. In the late 1920s the Missouri State Highway Commission began efforts to improve the roadway, including the construction of this major bridge over the Meramec River. Opting for concrete construction rather than steel, the highway commission built this graceful five-span open spandrel arch, with shorter concrete deck girder spans over the river's floodplain. Drawings were prepared by the Missouri State Highway Department in early 1929. As delineated by MSHD, the structure was comprised of five 105-foot arches and seven 40-foot deck girder approach spans, all supported by a concrete substructure on driven piles. The bridge featured typical MSHD detailing, with standard concrete guardrails and fluted pylons at the piers. MSHD advertised the project for bids that fall. On November 7, 1929, a contract for the bridge's construction was awarded to M.E. Gillioz. Based in Monett, Missouri, Gillioz was one of Missouri's most prolific builders during the 1920s and 1930s, and was especially active in the southern half of the state. Gillioz completed the crossing the following year. Today unchanged from its original construction, the Meramec River Bridge displays an exceptionally high degree of historical integrity as it continues to carry traffic in southeastern Franklin County.

In the 1920s and 1930s the Missouri State Highway Department developed plans for numerous concrete bridges that were erected on the state's highways. For concrete bridges with span lengths under 80 feet, filled spandrel arches were most often executed, while for longer-span bridges, the highway department usually opted for open spandrel designs. Single-span examples of the latter configuration were fairly common, but multiple-span open spandrel arches were built far less often, largely because of their relatively high erection costs. Approximately twenty multiple-span, open spandrel arches have been identified as standing today by the statewide bridge inventory. The Meramec River Bridge in Franklin County is significant among these as a well-preserved, five-span example. Only five of Missouri's open spandrel arches have individual span lengths greater than those on the Meramec River Bridge, and only three such bridges are comprised of more than five spans. The Meramec River Bridge is thus distinguished as one of the most noteworthy examples remaining in the state of this mainstay structural type.

NAME(S) OF STRUCTURE

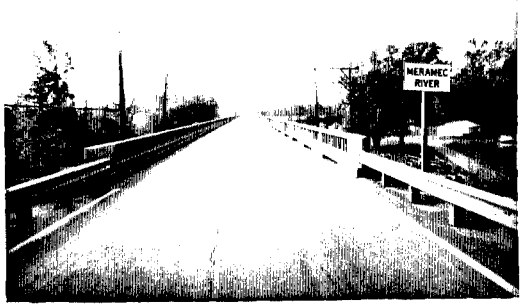
Meramec River Bridge

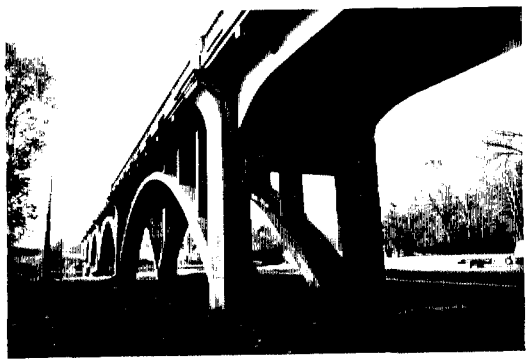
PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT
GENERAL HIGHWAY MAP





SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number H 996R1; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; field inspection by Clayton Fraser, 23 October 1989.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign	18 January 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Steiner's Ford Bridge
MHTD: F-32

FRAN06

DATE(S) OF CONSTRUCTION
1907-08

LOCATION
county road over Boeuf Creek; S9, T44N, R2W
3.9 miles southeast of New Haven; Franklin County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 57)

CONDITION
good

OWNER
Franklin County

span number:	1	superstructure:	steel, 10-panel, pin-connected Parker through truss
span length:	180.0'	substructure:	stone masonry abutments with stepped wingwalls
total length:	185.0'	floor/decking:	timber deck over steel stringers
roadway wdt.:	15.1'	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, braced; floor beam: I-beam, field bolted to vertical; guardrail: steel lattice

Located four miles southeast of New Haven, Steiner's Ford on Boeuf Creek formed a pivotal crossing on the Washington-New Haven Road in northwest Franklin County. The county court first received a citizens' petition for a permanent bridge at this location in August 1903. Several petitions and subscriptions later, the court finally acted to construct the bridge in May 1907. At this time the judges ordered county engineer Charles L. Moore to survey and prepare specifications for the structure and advertise for competitive bids. In August 1907 the court contracted with local masons Henry Rosmann and George Goeller to build the bridge's stone abutments for $3158.00. A month later the county awarded the contract to fabricate and erect a long-span Parker through truss to the Missouri Bridge and Iron Company of St. Louis for $4239.00. Rosmann and Goeller completed the substructure that December, while MoB&I assembled the pin-connected truss early the following year in 1908. The Steiner's Ford Bridge carried regional traffic alongside the Missouri River's south bank until the subsequent construction of State Highway 100 superseded the original road. The bridge now carries relatively light vehicular traffic in essentially unaltered condition.

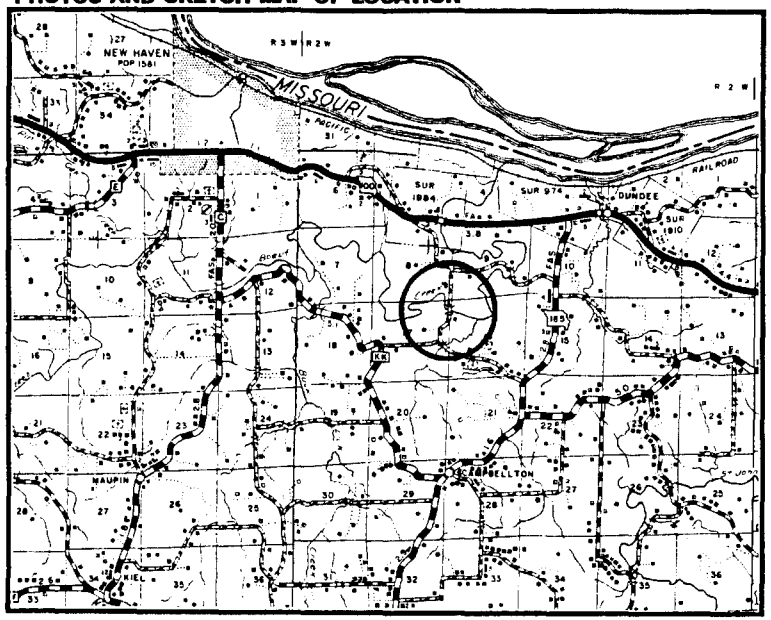
Serving as a regionally important Boeuf Creek crossing for more than eighty years, the Steiner's Ford Bridge is noteworthy for its longstanding role in the development of regional transportation. The structure is technologically significant as a well-preserved example of a Pratt truss subtype - the Parker truss. 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. With a construction date of 1908 and a span length of 180 feet, the Steiner's Ford Bridge in Franklin County falls within the mainstream of Parker truss construction in Missouri. It is distinguished among the thirty-some Parkers remaining in the state by its retention of physical integrity and high degree of documentation.

NAME(S) OF STRUCTURE

Steiner'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 F-32; Franklin County Court Record, Book T: page 300 (8 August 1903), page 311 (13 August 1903), page 342 (2 November 1903), page 375 (24 December 1903), page 523 (2 August 1904); Book V: page 63 (5 March 1907), page 115 (17 May 1907), page 175 (4 June 1907), page 268 (6 November 1907), page 298 (2 December 1907); superstructure contract between Missouri Bridge and Iron Company and Franklin County (3 September 1907); substructure contract between Rosmann and Goeller and Franklin County (6 August 1907); construction drawings by C.L. Moore - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign	18 January 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Horstkamp Ford Bridge
MHTD: F-33

FRAN07

DATE(S) OF CONSTRUCTION
1915

LOCATION
county road over Boeuf Creek; S7, T44N, R2W
3.8 miles southeast of New Haven; Franklin County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 51)

CONDITION
good

OWNER
Franklin County

span number:	1	superstructure:	steel, 8-panel, rigid-connected Parker through truss, with steel stringer approach spans
span length:	150.0'	substructure:	concrete abutments and piers
total length:	190.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	15.8'	other features:	upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 angles with batten plates; vertical: 2 channels with lacing; diagonal: 2 angles with batten plates; lateral bracing: round rod with threaded ends; strut 2 angles, braced; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles

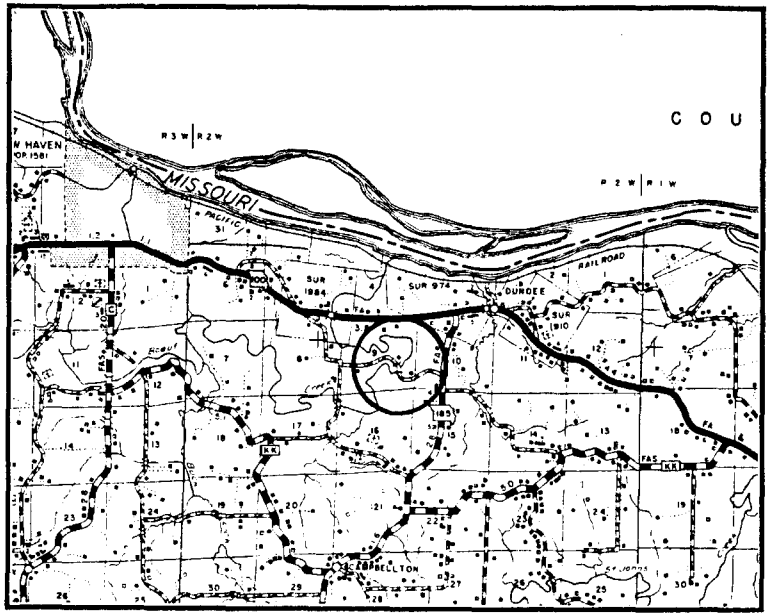
Early in 1915 the post office established a new route north of Campbellton in northwest Franklin County. Branching southward from the Washington-New Haven Road, the route crossed Boeuf Creek at Horstkamp Ford, about a mile from the Steiner's Ford Bridge (**FRAN06**), built in 1907-08. To bridge the creek at this point, county engineer J.M. Moore delineated a timber-decked, 160-foot pinned Parker through truss that was nearly identical to the Steiner's Ford structure. The bridge was let for competitive bids in June 1915 along with another truss over Calvey Creek, but at some point in the bidding process its design was changed to a rigid-connected Parker through truss with a concrete deck and tubular steel piers. Why the design was changed is unclear; perhaps the new configuration had been proposed as an alternate choice by the Vincennes Bridge Company of Indiana, the successful bidder for both spans. (The McGuire Ford Bridge (**FRAN19**), a 100-foot Pratt through truss, featured similarly detailed riveted connections.) Using steel components rolled by the Inland and Illinois Steel Companies of Indiana and Illinois respectively, Vincennes completed both structures by early January 1916. Total cost for the Horstkamp Ford Bridge was $3532.00. Secondary in traffic volume to the Steiner's Ford Bridge, this structure has carried intermittent county-road traffic to the present in essentially unaltered condition.

Dozens of riveted Parker through trusses were erected throughout Missouri, beginning in the 1910s. Marketed by many of the in-state and regional bridge companies, this versatile structural type was used by counties for medium- and long-span applications. With standard dimensions and detailing, the Horstkamp Ford Bridge typifies this statewide bridge building trend. It is distinguished somewhat by its early construction date and is exceeded in age by only one other riveted Parker truss.

NAME(S) OF STRUCTURE

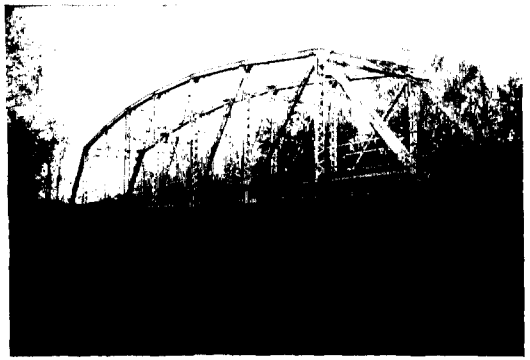
Horstkamp Ford Bridge

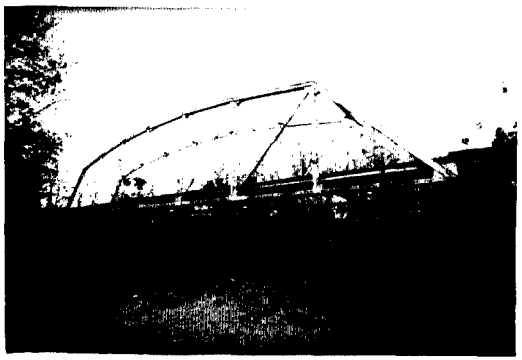
PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT GENERAL HIGHWAY MAP





SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-33; citizens' petition and subscription (8 September 1859); original construction drawings by J.M. Moore (1915); contract with Vincennes Bridge Company (3 July 1915) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign	18 January 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Fiddle Creek Bridge
MHTD: F-57

FRAN12

DATE(S) OF CONSTRUCTION
1920

LOCATION
county road over Fiddle Creek; S16, T44N, R2E
3.7 miles northwest of Labadie; Franklin County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 50)

CONDITION
good

OWNER
Franklin County

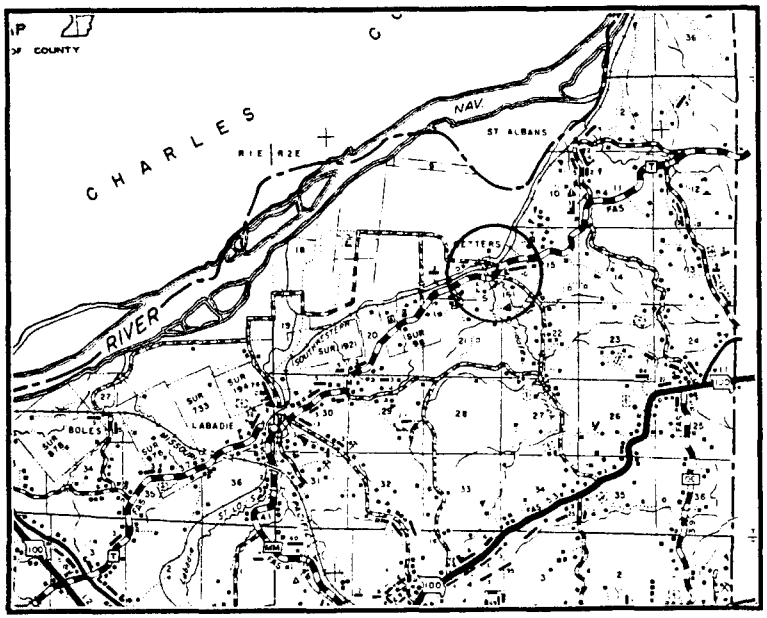
span number:	1	superstructure:	steel, 3-panel, rigid-connected Pratt/Warren pony truss, with 1 steel stringer approach span
span length:	50.0'		
total length:	75.0'	substructure:	concrete-filled steel cylinder piers
roadway wdt.:	11.6'	floor/decking:	concrete deck over steel stringers
		other features:	upper chord and inclined end post: I-beam; lower chord: 2 angles with batten plates; vertical: 2 angles with batten plates; diagonal: 2 angles with batten plates; end post stiffener: 2 angles with batten plates; lateral bracing: round rod with threaded ends; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles

Located northwest of Labadie, this medium-span steel truss spans Fiddle Creek. The truss was fabricated by St. Louis bridge builder R.L. Miller and erected by a county work Crew. Since its completion in 1920, the Fiddle Creek Bridge has functioned in place with only maintenance-related repairs.

The rigid-connected truss configuration that R.L. Miller used for the Fiddle 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. A number of these bridges were built in southeastern and east-central Missouri between circa 1915 and 1930, with the greatest concentration found in Butler County. And virtually all of these bridges are attributable to Miller and/or Louis Borcherding. (Miller and Borcherding were in the bridge building business together, until they separated in 1917.) The Fiddle Creek Bridge is distinguished as a well-preserved, well-documented example of this proprietary truss type.

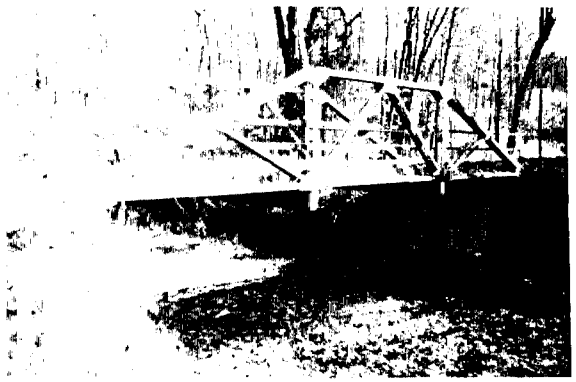
NAME(S) OF STRUCTURE
Fiddle Creek Bridge

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-57; Franklin County Court Record, Book AA: page 408 (21 July 1919), page 529 (4 February 1920) - located at Franklin County Courthouse, Union MO.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	18 January 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Tavern Creek Bridge
MHTD: F-59

FRAN13

DATE(S) OF CONSTRUCTION
c1925

LOCATION
county road over Tavern Creek; S2, T44N, R2E
6.1 miles northeast of Labadie; Franklin County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 50)

CONDITION
fair

OWNER
Franklin County

span number:	1	superstructure:	concrete deck girder
span length:	33.0'	substructure:	concrete abutments and wingwalls
total length:	34.0'	floor/decking:	concrete deck
roadway wdt.:	17.7'	other features:	concrete guardrails with recessed panels; concrete gravity arch dam built integrally with bridge

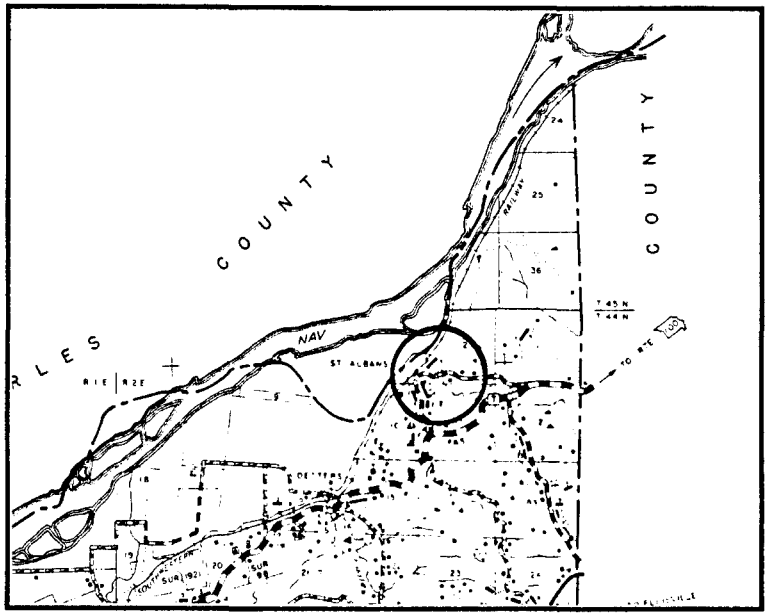
Located some six miles northeast of Labadie, in Franklin County's northeast corner, the Tavern Creek Bridge is a visually striking concrete deck girder structure. Built in conjunction with a small concrete dam with a curved gravity design, the bridge is a remarkably well-preserved example of a concrete deck girder design. Although Franklin County has retained virtually all of its records pertaining to bridge construction, no record of the Tavern Creek Bridge was revealed. Additionally, an extensive review of bridge construction records at the Missouri State Highway and Transportation Department also yielded no reference to this intriguing crossing. Despite its lack of documentation, the Tavern Creek Bridge is technologically noteworthy for its exceptional state of preservation and for its unique association with the small dam. Based on the structure's appearance and concrete deck girder design, it was probably built in the mid-1920s, from a modified Missouri State Highway Department standard design.

Although its construction history is largely undocumented, the Tavern Creek Bridge possesses significance as a remarkably well-preserved example of a concrete deck girder design. Representative of the Missouri State Highway Department's proclivity for concrete construction in the 1920s, the structure is distinguished because it was built integrally with a small concrete, gravity arch dam.

NAME(S) OF STRUCTURE

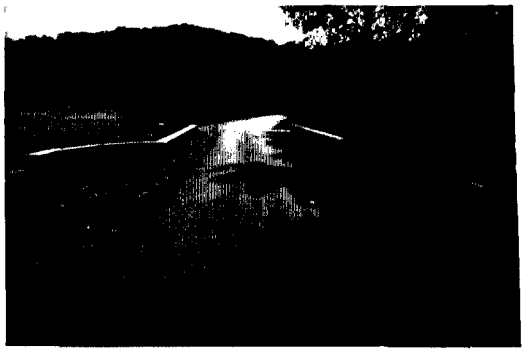
Tavern Creek Bridge

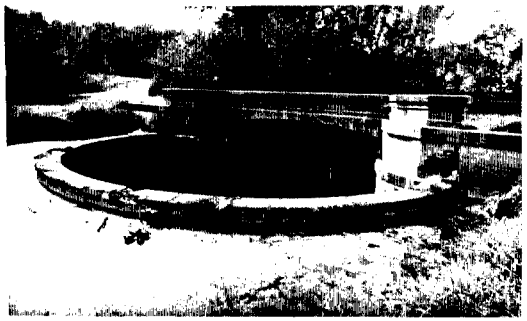
PHOTOS AND SKETCH MAP OF LOCATION



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-59; field inspection by Clayton Fraser, 23 October 1989.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign	18 January 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Withington Ford Bridge
MHTD: F-72

FRAN14

DATE(S) OF CONSTRUCTION
1916-17

LOCATION
county road over Meramec River; S15/22, T43N, R2E
3.2 miles southeast of Gray Summit; Franklin County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 63)

CONDITION
good

OWNER
Franklin County

span number: 2
span length: 200.0'
total length: 422.0'
roadway wdt.: 15.0'

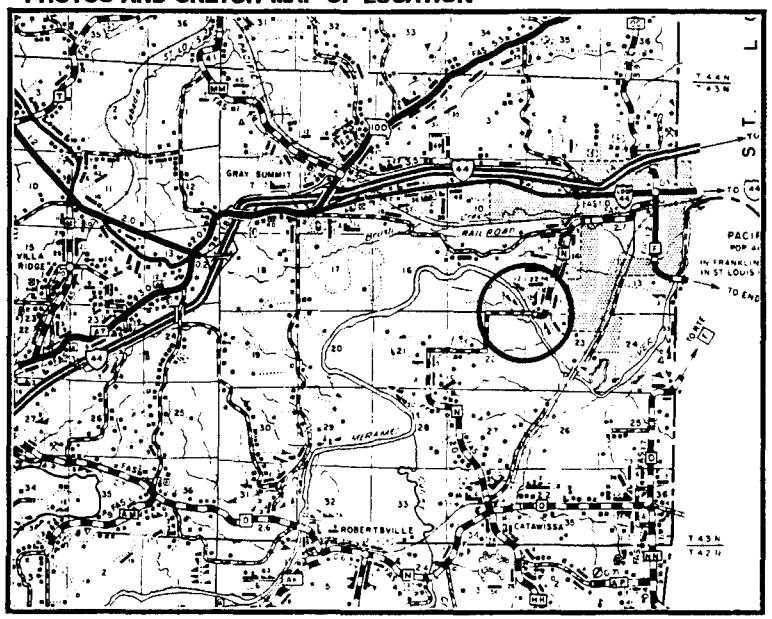
superstructure: steel, 10-panel, pin-connected Pennsylvania through truss, with steel stringer approach span
substructure:concrete abutments and pier
floor/decking: asphalt on timber, over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower 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, braced; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles; builder's plate: **Built by / Miller & Borcherding / St. Louis Mo.**

With its wide channel and high bordering cliffs, the Meramec River proved to be a formidable obstacle to overland travelers in central Franklin County. Local citizens began subscribing for a bridge over the river on the Catawissa-Pacific Road as early as 1892. The Withington Ford crossing, as it was known locally, became the object of repeated petitions to - and rejections by - the county court over the next 23 years. The judges finally directed county engineer J.M. Moore to design a bridge for the crossing in December 1915. Moore delineated a pair of 200-foot Pennsylvania through trusses, with typical pin-connected detailing, supported by concrete abutments and center pier. After receiving competitive proposals from nine bridge companies later in the month for the Withington Ford and Hartmann's Ford (**FRAN23**) bridges, the county selected the East St. Louis Bridge Company to erect the two trusses. For an unknown reason, the bridge company asked to be released from its bid, however, and in February 1916 the St. Louis firm of Miller and Borcherding agreed to construct both bridges for the same price. Construction proceeded slowly throughout the next two years. Using steel components milled by the Illinois Steel Company of Chicago, Miller and Borcherding completed the Withington Ford Bridge in December 1917 for the contract cost of $13,832.00. It has carried traffic since, with only minor maintenance-related repairs.

Serving as a major crossing of the Meramec River for more than seventy years, the Withington Ford Bridge is historically significant for its longstanding role in the development of regional transportation. The structure's channel spans are technologically significant as well-preserved examples of a Pratt truss subtype–the Pennsylvania through truss. With their polygonal top chord and subdivided panels, the trusses exemplify this relatively uncommon truss type which was used primarily at long-span crossings after the turn of the century. As a rare multiple-span example of this configuration, the Withington Ford Bridge is one of the state's more noteworthy roadway trusses dating from the 1910s.

NAME(S) OF STRUCTURE
Withington 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 F-72; Franklin County Court Record, Book Q: page 48 (6 September 1892); Book T: page 346 (4 May 1903); Book Z: page 575 (10 December 1915); Book AA: page 70 (5 October 1916), page 82 (21 November 1916), page 95 (4 January 1917); citizens' petitions and subscriptions (4 May 1903, 1 August 1914, 10 February 1915; 12 February 1916); construction drawings by J.M. Moore (November 1915); bid summary (16 February 1916); superstructure contract with Miller and Borcherding (18 February 1916); contract for approach work with F.X. Manning (25 February 1916) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign	18 January 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Cedar Fork Bridge
MHTD: F-136

FRAN16

DATE(S) OF CONSTRUCTION
1919-20

LOCATION
county road over Cedar Fork; S8, T43N, R3W
6.8 miles northeast of Gerald; Franklin County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP potentially eligible (score: 50)

CONDITION
good

OWNER
Franklin County

span number:	1	superstructure:	steel, 3-panel, rigid-connected Pratt/Warren pony truss
span length:	50.0'	substructure:	concrete abutments
total length:	52.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	11.4'	other features:	upper chord and inclined end post: I-beam; lower chord: 2 angles with batten plates; vertical: 2 angles with batten plates; diagonal: 2 angles with batten plates; end post stiffener: 2 angles with batten plates; lateral bracing: round rod with threaded ends; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles

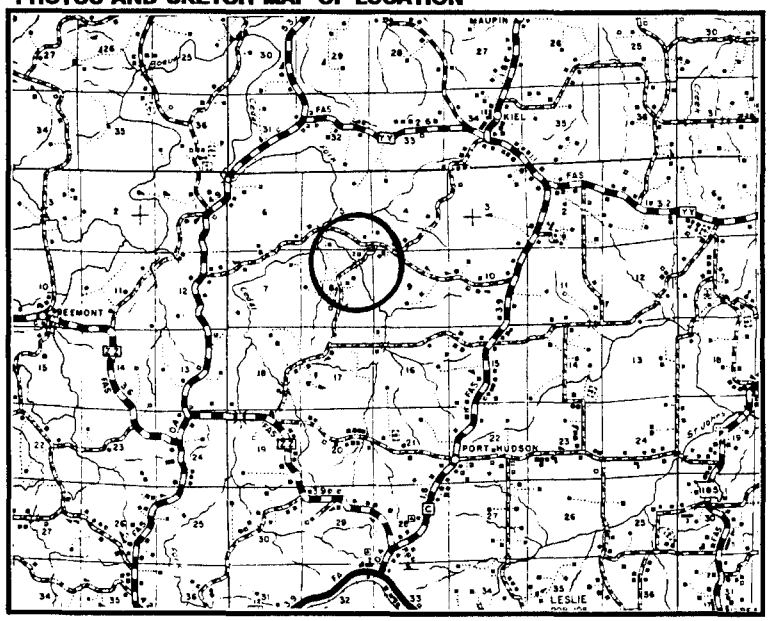
In August 1918 citizens petitioned the Franklin County Court for the re-alignment of a county road and construction of a new bridge in the northeast part of the county. Located some seven miles northeast of the small town of Gerald, the bridge would carry the proposed road over Cedar Fork, a minor branch of Boeuf Creek. Over a year later, in October 1919, county highway engineer J.L. Ekey drafted plans and specifications for a short-span steel truss in response to the petition. Undoubtedly using standard plans prepared by St. Louis bridge builder, R.L. Miller, Ekey delineated a rigid-connected pony truss of a hybrid design peculiar to Missouri, which combined the web pattern of a Warren with the end post angle of a Pratt. The county purchased the small truss from R.L. Miller and erected it on concrete abutments using force account labor. The Cedar Fork Bridge has carried relatively light traffic since, in essentially unaltered condition.

The rigid-connected truss configuration that R.L. Miller used for the Cedar Fork 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. A number of these bridges were built in southeastern and east-central Missouri between circa 1915 and 1930, with the greatest concentration found in Butler County. And virtually all of these bridges are attributable to Miller and/or Louis Borcherding. (Miller and Borcherding were in the bridge building business together, until they separated in 1917.) The Cedar Fork Bridge is distinguished as a well-preserved, well-documented example of this proprietary truss type.

NAME(S) OF STRUCTURE

Cedar Fork 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-136; original drawing by J.L. Ekey, Franklin County Highway Engineer (7 October 1919); citizens' petition (5 August 1918); Right-of-Way conveyance (10 April 1920) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign	18 January 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Short's Ford Bridge
MHTD: F-190

FRAN17

DATE(S) OF CONSTRUCTION
1888

LOCATION
county road over Meramec River; S26, T42N, R1E
5.8 miles east of St. Clair; Franklin County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP determined eligible (score: 60)

CONDITION
good

OWNER
Franklin County

span number: 1
span length: 194.0'
total length: 198.0'
roadway wdt.: 14.8'

superstructure: wrought iron, 10-panel, pin-connected Pratt through truss
substructure: stone masonry abutments and wingwalls
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 looped round eyebars at the hip); diagonal: 2 punched rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round eyerod with turnbuckle; strut: 4 angles with lacing; floor beam: I-beam, U-bolted to vertical; guardrail: 3 angles; builder's plate: **1888 / King Iron Bridge Co. / Cleveland, O.**

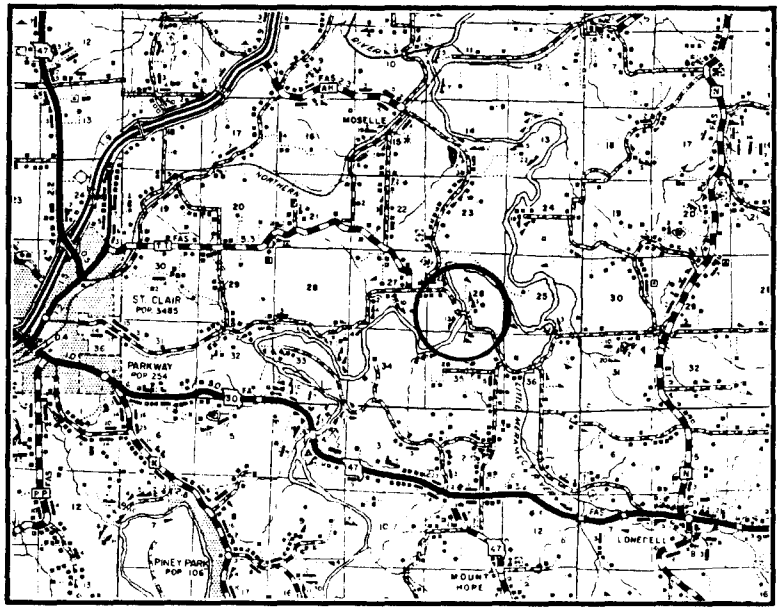
After receiving a petition and substantial local subscription in September 1887, the Franklin County Court acted to construct an iron bridge over the Meramec River, just upstream from its confluence with the Little Meramec. Known as Short's Ford, the crossing site would link the towns of St. Clair and Union (the county seat) with the southeast part of the county. The county hired local masons to build the stone abutments in February 1888. In addition, the contract for the long-span iron truss was awarded to the George E. King Bridge Company of Des Moines, Iowa. An agent for the huge King Bridge Works of Cleveland, George King used a pin-connected Pratt through truss engineered and fabricated (using sections rolled by the Phoenix Iron Company of Philadelphia) by the Ohio firm. The stonework was complete by early August, and the truss assembled by mid-November. Poorly constructed, the west abutment began to collapse almost immediately after the bridge was opened to traffic, an occurrence which evidently cost the county's road and bridge commissioner his job. Both abutments required numerous repairs to maintain the bridge over the next three decades. Although it no longer carries mainline traffic, the Short's Ford Bridge still functions as originally designed, with only minor deck modifications.

Like virtually all of Missouri's counties, Franklin County followed a definite progression in its bridge construction in the 19th century, 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 1880s 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. As the oldest documented wagon bridge in Franklin County and the last remaining example in the county of wrought iron truss construction, the Short's Ford Bridge is historically noteworthy as an intact remnant of early transportation.

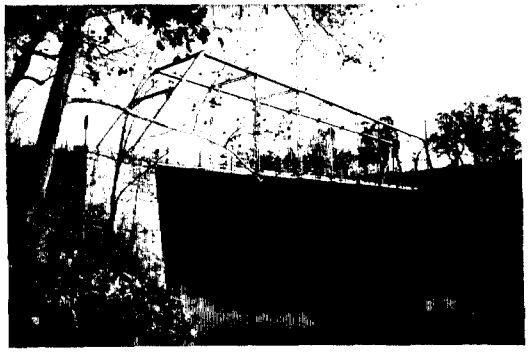
NAME(S) OF STRUCTURE
Short's Ford Bridge

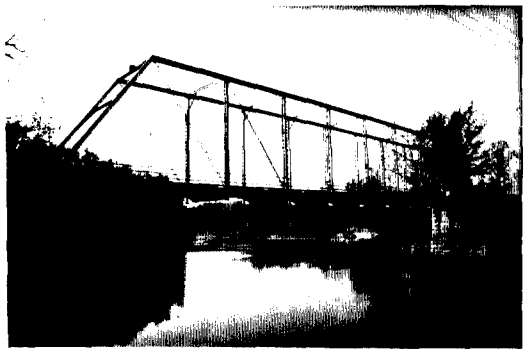
PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT
GENERAL HIGHWAY MAP





SOURCES
Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F-190; Franklin County Record, Book O: page 215 (8 May 1884); Book P: page 37 (14 February 1888), page 39 (15 February 1888), page 50 (13 March 1888), page 58 (3 April 1888), page 59 (4 April 1888), page 63 (23 April 1888), page 78 (5 July 1888), page 84 (6 August 1888), page 126 (24 November 1888), page 209 (9 July 1889), page 234 (20 September 1889), page 249 (4 November 1889), page 330 (7 May 1890); citizens' petitions (5 September 1887, 11 November 1887, 2 August 1887); county engineer's reports (30 August 1888, 15 February 1888, 24 November 1888) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign	18 January 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Little Bourbeuse Bridge
MHTD: F-284

FRAN21

DATE(S) OF CONSTRUCTION
1920

LOCATION
county road over Bourbeuse River tributary; S35, T41N, R4W
10.2 miles south of Gerald; Franklin County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 52)

CONDITION
good

OWNER
Franklin County

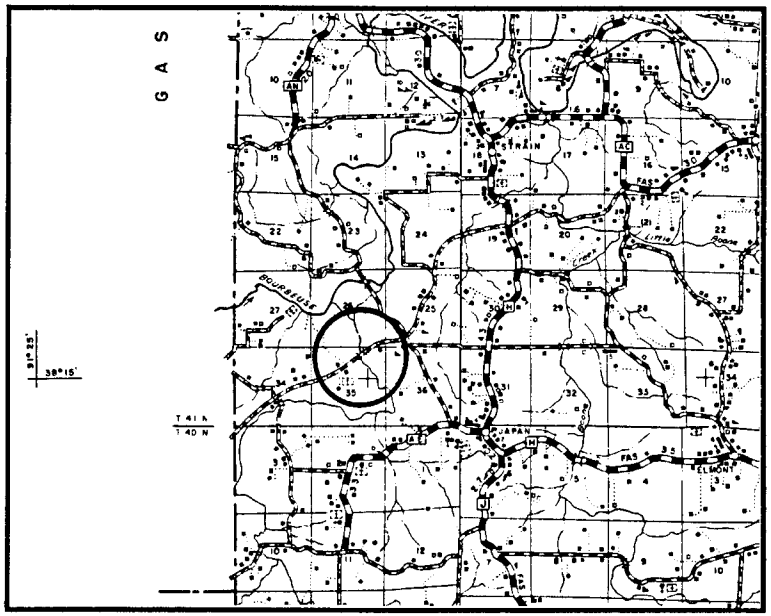
span number:	1	superstructure:	steel, 4-panel, rigid-connected Pratt/Warren pony truss
span length:	80.0'	substructure:	concrete abutments
total length:	80.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	11.6'	other features:	upper chord: I-beam; lower chord: 2 angles with batten plates; vertical: 2 angles with batten plates; diagonal: 2 angles with batten plates; lateral bracing: round rod with threaded ends; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles; end post stiffener: 2 angles with batten plates

In August 1919 the Franklin County Court received a citizens' petition for a small bridge in the southwest corner of the county. Located near the Boone Store, between the crossroads settlements of Strain and Japan, the span would carry a county road over a small tributary of the Bourbeuse River. The judges instructed county highway engineer Jesse E. Ekey to purchase a 50-foot steel span with a concrete deck and abutments. Ekey ordered this rigid-connected structure from St. Louis bridge contractor R.L. Miller that year, and erected it on concrete abutments using local force account labor. The Little Bourbeuse Bridge, a Pratt/Warren pony truss, has carried county-road traffic since, in relatively unaltered condition.

The rigid-connected truss configuration that R.L. Miller used for the Little Bourbeuse 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 shallowly sloped like a Pratt. A number of these bridges were built in southeastern and east-central Missouri between circa 1915 and 1930, with the greatest concentration found in Butler County. Virtually all of these bridges are attributable to Miller and/or Louis Borcherding. (Miller and Borcherding were in the bridge building business together, until they separated in 1917.) The Little Bourbeuse Bridge is among the longest and best preserved of this proprietary truss type.

NAME(S) OF STRUCTURE
Little Bourbeuse 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-284; Franklin County Court Record, Book AA: page 421 (7 August 1919); citizens' petition (7 August 1919) - located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

INVENTORIED BY
Clayton B. Fraser

AFFILIATION
Fraserdesign

DATE
18 January 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Hartmann's Ford Bridge FRAN23
MHTD: F-420

DATE(S) OF CONSTRUCTION
1916

LOCATION
North Bend Road over Bourbeuse River; S34, T43N, R1W
Union; Franklin County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 61)

CONDITION
good

OWNER
Franklin County

span number: 1
span length: 250.0'
total length: 271.0'
roadway wdt.: 14.9'

superstructure: steel, 12-panel, pin-connected Pennsylvania through truss, with steel stringer approach span
substructure:concrete abutments and pier
floor/decking: asphalt on 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, braced; floor beam: I-beam, field bolted to vertical; guardrail: 2 angles; builder's plate: **Built by Miller & Borcherding / St. Louis / Mo.**

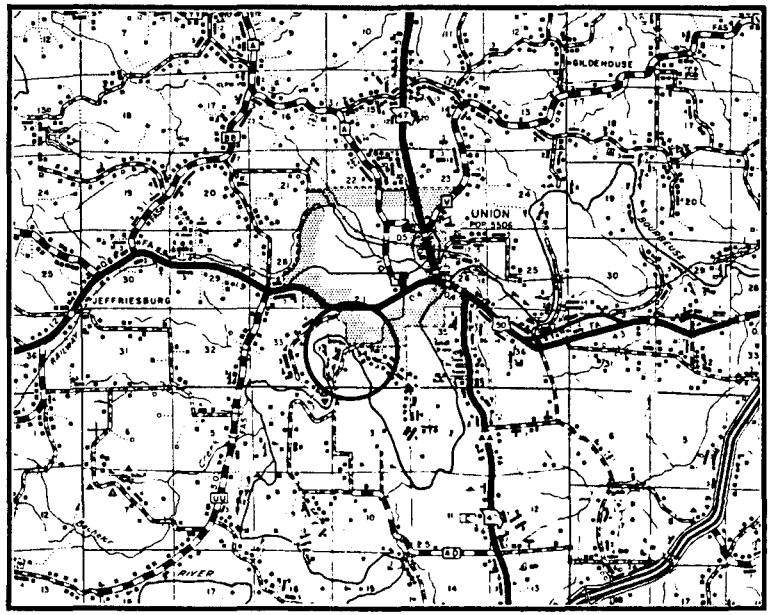
In response to a citizens' petition, in November 1915 the Franklin County Court ordered county engineer J.M. Moore to design a steel bridge for the Hartmann's Ford crossing of the Bourbeuse River. Alternately called Lovers Leap because of the sheer limestone bluffs on the river's north bank, the bridge would link the county seat of Union with settlements to the south. For the crossing, Moore engineered a long-span, pin-connected Pennsylvania through truss, similar to the bridge he designed simultaneously for Withington Ford (**FRAN14**) on the Meramec River. The county let both structures out for bid in December. When proposals were received from nine bridge contractors, Moore recommended letting the contract to the East St. Louis Bridge Company, but the firm asked to be released from its bid. The county instead awarded the construction contract for both bridges in February to Miller and Borcherding of St. Louis for the same price as the East St. Louis Bridge Company's bid. The contractor began excavation for the concrete substructure soon after, and work on the two bridges continued throughout the rest of the year. Using components milled by the Illinois Steel Company, Miller and Borcherding completed the Hartmann's Ford Bridge in December 1916 for the contract price of $8960.00. It has functioned in place since, with no alterations of note.

Serving as a locally important crossing of the Bourbeuse River for more than seventy years, the Hartmann's Ford Bridge is technologically significant as a well-preserved example of a Pratt truss subtype - the Pennsylvania through truss. With its polygonal top chord and subdivided panels, the truss exemplifies this relatively uncommon truss type, which was used primarily at long-span crossings after the turn of the century. With its 250-foot span, the Hartmann's Ford Bridge is one of the state's more noteworthy roadway trusses dating from the 1910s.

NAME(S) OF STRUCTURE

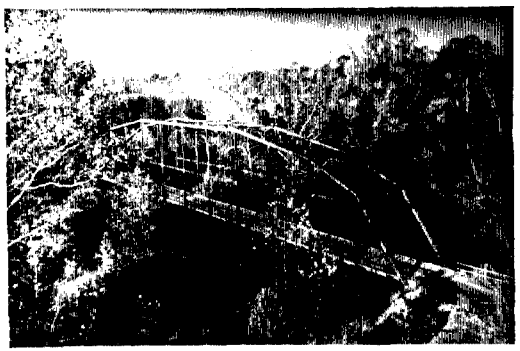
Hartmann's Ford Bridge

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 F-420; Franklin County Court Record, Book Z: page 533 (3 November 1915), page 618 (16 February 1916), page 626 (22 February 1916); Book AA: page 82 (21 November 1916); construction drawings by J.M. Moore (November 1915); bid summary (16 February 1916); contract with Miller and Borcherding (25 February 1916); miscellaneous notes (5 October 1916, 15 March 1917, 7 December 1915) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign	18 January 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Noser Mill Bridges FRAN24
MHTD: F-424; F-425 FRAN25

DATE(S) OF CONSTRUCTION
1880: substructure; 1902: superstructure

LOCATION
county road over Bourbeuse River; S7, T42N, R2W
Noser Mill; Franklin County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 54)

CONDITION
good

OWNER
Franklin County

span number:	1; 4	superstructure:	steel, 10-panel, pin-connected Parker through truss, with 4 steel stringer approach spans (**Structure No. F-425**) at the east end
span length:	190.0; 19.0'	substructure:	stone masonry abutments
total length:	190.0; 72.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	15.0; 15.0'	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; lateral bracing: round rod with threaded ends; strut: 2 angles, braced; floor beam: I-beam, field bolted to vertical; guardrail: steel pipe; decorative finials and portal cresting.

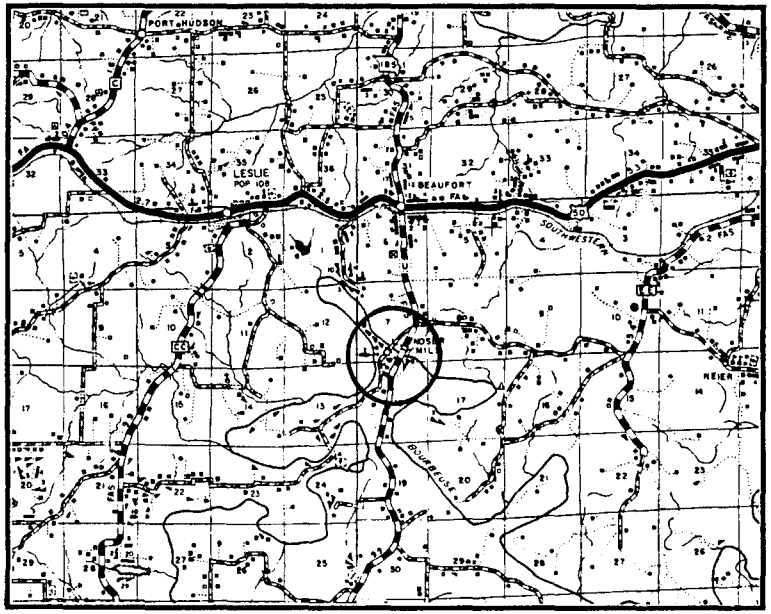
In 1880 Franklin County hired St. Louis bridge contractor H.W. Sebastian to build a 190-foot timber/iron covered Howe truss over the Bourbeuse River at Noser's Mill. With its cut limestone abutments and gabled frame covering, the bridge closely resembled the 1867 Red Bridge built in Union. The Noser Mill Bridge carried traffic for over twenty years before the truss was wrecked late in July of 1901. A.R. Moore, the county engineer immediately acted to replace the span. Within a week, he had designed a similarly sized pinned Parker truss and solicited competitive bids from several bridge companies. The timber and iron pieces from the Howe truss were sold to a local lumberyard as scrap materials. The contract to fabricate and erect the new span was then awarded to the Midland Bridge Company of Kansas City on September 21 for $3345.00. With the same roadway width as the preceding covered bridge, the steel truss was built on the existing stone abutments, which required only minor alteration to raise the bridge level slightly. Local contractor L.H. Scheer completed the abutment work early in November, and Midland erected the truss soon thereafter. As part of the new, higher approach, a four-span steel stringer structure was built at that time over a slough on the bridge's north end. The Noser Mill Bridge, with its approach, has carried traffic since, although a later bridge on State Highway 185 has diverted much of the traffic from it.

Among Franklin County's important early river crossing's, Noser Mill has been the site of two documented bridges since 1880. Replacing an earlier covered bridge, the current structure at Noser Mill is an example of a pin-connected Parker through truss - a mainstay design for long span crossings in the years following the turn of the century. An extremely well-documented and well-preserved truss, the Noser Mill Bridge is historically noteworthy as an intact remnant of early transportation.

NAME(S) OF STRUCTURE

Noser Mill Bridges

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 Numbers F-424 and F-425; Franklin County Court Record, Book N: page 427 (5 May 1880), page 449 (22 September 1880), page 452 (15 October 1880); Book O: page 263 (1 December 1894); Book P: page 296 (6 February 1890), page 637 (27 April 1892); Book Q: page 15 (7 June 1892), page 100 (5 September 1892); Book S: page 541 (30 July 1901), page 542 (5 August 1901), page 548 (8 August 1901), page 557 (21 September 1901), page 568 (24 September 1901), page 589 (9 November 1901); Book T: page 8 (12 April 1902); Book AA: page 231 (12 August 1914) - all located at Franklin County Courthouse, Union MO; field inspection by Clayton Fraser, 23 October 1989.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign	18 January 1994

JEFFERSON COUNTY

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

Inv. No.	MHTD	Bridge Name	Description
*JEFF01	J-24	Morse Mill Bridge	1-**180'** **pinned Pratt through truss** **1887** H.W. Sebastian & Co., St. Louis
*JEFF02	J-48	Kingston Slough Bridge	1- 80' pinned Pratt pony truss **1917** Miller & Borcherding, St. Louis
*JEFF03	J-51	Vineland Bridge	1-**190'** **pinned Parker through truss** **1906** Joliet Bridge and Iron Co.
*JEFF04	J-55	Blackwell Bridge	**3**-140' **pinned Pratt through truss** 1931 L.W. Fitzpatrick, Rolla MO / Stupp Brothers Bridge & Iron
*JEFF05	J-102	Sandy Creek Bridge	1- 75' **timber Howe truss [covered]** **1886** Henry Steffin
*JEFF06	J-114	Klondike Road Bridge	(replaced)
*JEFF07	J-158	Windsor Harbor Bridge	1-124' **pinned Pratt through truss** **1875** Keystone Bridge Co., Pittsburgh
JEFF08	K 294R	Joachim Creek Bridge	1-120' **riveted Pratt through truss** 1934 M.E. Gillioz
JEFF09	104500.2	Mississippi Ave. Overpass	5- 21' concrete slab **1917** St. Louis and Santa Fe Railroad
JEFF10	192500.1	Herculaneum Bridge	1-100' **riveted Pratt through truss** 1924 Vincennes Bridge Company

EXCLUDED:

Pratt pony truss

P 17	114000.6

Warren pony truss

J 610	J-140R

Steel stringer

G 499R1	J-1	J-9	J-13	J-19	J-20	J-22
J-35	J-42	J-46	J-52	J-58	J-59	J-61
J-62	J-66	J-85	J-88	J-97	J-101	J-116
J-118	J-119	J-125	J-127	J-177	J-178	J-181
K 135	K 598	K 614	T 261	T 531	U1140001	U1140003
U3875003	U3875003	U3875004	U3875012	U3875004	U3875005	U3875005
U3875013	U3875014	U3875015	U3875016	U3875017	U3875018	104500.3
114000.2	114000.3	114000.5	114001.1			

Concrete girder

G 439R1	G 846R	G 916	J-161	J-163	J-166

JEFFERSON COUNTY

EXCLUDED (cont.):

Concrete slab

J-33	J-50	J-54	J-57	J-63	J-95	J-104
J-135	J-165	J-171	K 750	U1435001	U3875001	U3875007
U3875009						

Concrete box culvert

G 511R	G 512R	G 641R	J-40	J-53	J-68	J-162
J-167	J-168	J-172	K 597	K 613	K 749	K 751
L 12	L 13	L 68	L 69	L 87	L 262	L 386
T 41	T 223	T 333	U3875001	U3875006	U3875008	

Timber stringer
104500.1

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	1	8	0	0	9
Excluded	28	59	25	0	112
	29	67	25	0	121 structures

Morse Mill Bridge

JEFF01

GENERAL DATA

structure no.: J-24
county: Jefferson
city/town: Morse Mill
feature inters.: Big River
cadastral grid: S23, T41N, R3E
highway route: county road
highway distr.: 6
current owner: Jefferson County

STRUCTURAL DATA

superstructure: wrought iron, 10-panel, pin-connected Pratt through truss
substructure: stone masonry abutments

span number: 1
span length: 182.0'
total length: 185.0'
roadway width: 15.0'
condition: fair
alterations: closed to vehicular traffic
floor/decking : asphalt-covered timber deck with steel stringers
other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 or 4 punched rectangular eyebars; vertical: 2 channels with lacing (2 looped square eyebars at the hip); diagonal: 2 punched rectangular eyebars; counter: 1 looped square eyebar with turnbuckle; lateral bracing: round eyebar with turnbuckle; strut: 4 angles with lacing; floor beam: I-beam, U-bolted to lower chord pins; guardrail: 2 angles

HISTORICAL DATA

erection date: 1886-87
erection cost: $7915.00
designer: St. Louis Bridge and Iron Company, St. Louis MO
fabricator : St. Louis Bridge and Iron Company, St. Louis MO; Carnegie Iron Works, Pittsburgh PA
contractor: St. Louis Bridge and Iron Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J-24; Jefferson County Court Record, Book 4: page 378 (2 February 1886), page 438 (7 July 1886), page 446 (4 August 1886), page 574 (6 April 1887), page 589 (4 May 1887); Jefferson County Court Record, Book 5: page 51 (9 November 1887), page 74 (10 December 1887); Jefferson County Record, Book 8: page 164 (6 July 1900), page 335 (27 September 1901), page 350 (6 November 1901); Jefferson County Court Record, Book 9: page 142 (7 May 1904); Jefferson County Record, Book 11: page 150 (6 July 1909), page 185 (5 August 1910), page 194 (7 September 1910); Jefferson County Record, Book 13: page 358 (7 August 1922) - located at the Jefferson County Courthouse, Hillsboro MO; field inspection by Clayton Fraser, 5 September 1991.

Morse Mill Bridge

sign. rating: 58
evaluation: NRHP possibly eligible (significant, long-span example of mainstay structural type)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 15 January 1993

Kingston Slough Bridge

JEFF02

GENERAL DATA

structure no.: J-48
county: Jefferson

city/town: 7.6 miles southwest of DeSoto
feature inters.: Slough of the Big River
cadastral grid: S22, T39N, R3E
highway route: county road
highway distr.: 6
current owner: Jefferson County

STRUCTURAL DATA

superstructure: steel, 5-panel, pin-connected Pratt pony truss, with three steel stringer approach spans on north side
substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers; steel pile bents at approach

span number: 1
span length: 80.0'
total length: 195.0'
roadway width: 14.9'

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: 4 angles with batten plates; diagonal: 2 punched rectangular eyebars; counter: 2 round eyerods with turnbuckles; lateral bracing: round rod with threaded ends; floor beam: I-beam, field bolted to vertical; guardrail: steel angle

HISTORICAL DATA

erection date: 1917
erection cost: $1050.00
designer: unknown
fabricator : Lackawanna Steel Company, Pittsburgh PA
contractor: Miller & Borcherding, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J-48; Jefferson County Court Record, Book 12: page 411 (20 July 1916), page 443 (23 September 1916), page 518 (19 March 1917), page 520 (19 March 1917) - located at the Jefferson County Courthouse, Hillsboro MO; field inspection by Clayton Fraser, 5 September 1991.

sign. rating: 46
evaluation: NRHP non-eligible (typically configured example of common structural type)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 15 January 1993

Vineland Bridge

JEFF03

GENERAL DATA

structure no.: J-51
county: Jefferson
city/town: 5.7 miles southwest of DeSoto
feature inters.: Big River
cadastral grid: S30, T39N, R4E
highway route: Vineland Road
highway distr.: 6
current owner: Jefferson County

STRUCTURAL DATA

superstructure: steel, 10-panel, pin-connected Parker through truss, with three steel stringer approach spans on south side and one steel stringer approach span on north side

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

span number: 1
span length: 190.0'
total length: 289.0'
roadway width: 15.0'
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; counter: 1 round eyerod with slotted turnbuckle; 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

HISTORICAL DATA

erection date: 1905-06
erection cost: $4375.00
designer: Joliet Bridge and Iron Company, Joliet MO
fabricator : Joliet Bridge and Iron Company, Joliet MO
contractor: Joliet Bridge and Iron Company, Joliet MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J-51; Jefferson County Court Record, Book 9: page 632 (14 November 1906), page 407 (3 October 1905), page 444 (4 December 1905), page 304 (6 March 1905), page 338 (1 May 1905), page 347 (4 May 1905), page 381 (10 August 1905), page 399 (6 September 1905); Jefferson County Court Record, Book 11: page 368 (5 June 1911), page 410 (12 August 1911), page 416 (6 September 1911) - located at the Jefferson County Courthouse, Hillsboro MO; field inspection by Clayton Fraser, 5 September 1991.

Vineland Bridge

sign. rating: 55
evaluation: NRHP determined eligible (noteworthy long-span example of uncommon structural type)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 15 January 1993

Blackwell Bridge

JEFF04

GENERAL DATA

structure no.: J-55
county: Jefferson / St. Francois
city/town: 7.1 miles southwest DeSoto
feature inters.: Big River
cadastral grid: S5, T38N, R4E
highway route: county road
highway distr.: 6
current owner: Jefferson County

STRUCTURAL DATA

superstructure: steel, 8-panel, rigid-connected Pratt through truss; steel, 8-panel, pin-connected Pratt through truss; steel, 6-panel, pin-connected Pratt through truss; steel stringer approach spans at each end
substructure: concrete abutments and wingwalls with steel cylinder and concrete piers

span number: 3
span length: 140.0'
total length: 415.0'
roadway width: 12.9'
condition: fair
alterations: none
floor/decking : asphalt-covered timber deck over steel stringers
other features: **pin-connected truss:** 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 square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 angles, braced; floor beam: I-beam: field bolted to vertical; guardrail: 2 angles; A-frame portal strut

HISTORICAL DATA

erection date: 1930-31
erection cost: $5478.00 (Fitzpatrick); $3590.00 (Stupp Brothers);$1065.00 (Roll Blackwell)
designer: Missouri State Highway Department; Stupp Brothers Bridge and Iron Company, St. Louis MO
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: L.W. Fitzpatrick, Rolla MO;
Roll Blackwell, Blackwell MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J-55; Jefferson County Court Record, Book 12: page 112 (3 February 1914), page 370 (17 April 1914), page 456 (9 November 1916); Jefferson County Court Record, Book 13: page 100 (13 January 1919), page 500 (2 September 1924), page 558 (8 September 1925); Jefferson County Court Record, Book 14: page 174 (4 September 1929), page 221 (4 April 1930), page 236 (2 June 1930);

page 263 (22 September 1930), page 37 (3 October 1930), page 270 (6 October 1930) - located at the Jefferson County Courthouse, Hillsboro MO; contracted dated 9 December 1929 and 25 January 1930, at the St. Francois County Courthouse, Farmington MO; field inspection by Clayton Fraser, 5 September 1991.

sign. rating: 48

evaluation: NRHP possibly eligible (unusually configured structure combining pinned and riveted spans)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 15 January 1993

Sandy Creek Bridge

JEFF05

GENERAL DATA

structure no.: J-102
county: Jefferson
city/town: 5.6 miles north of Hillsboro
feature inters.: Sandy Creek
cadastral grid: S3, T41N, R4E
highway route: Old Lemay Ferry Road
highway distr.: 6
current owner: Missouri State Park Board

STRUCTURAL DATA

superstructure: timber, covered Howe through truss
substructure: concrete abutments and piers

span number: 1
span length: 75.0'
total length: 75.0'
roadway width: 18.0'
condition: good
alterations: rebuilt using half of the original timber, 1886; restored, 1984
floor/decking : timber deck over timber stringers
other features: timber vertical panels with battens; galvanized, corrugated metal roof

HISTORICAL DATA

erection date: 1886
erection cost: $889.00 (contract amount)
designer: unknown
fabricator : none
contractor: Henry Steffin

references: Jefferson County Court Record, Book 4: page 429 (20 May 1886), page 431 (16 June 1886), page 437 (7 July 1886), page 445 (4 August 1886), page 483 (4 November 1886), page 493 (22 November 1886); Jefferson County Court Record, Book 5: page 73 (9 December 1887); Jefferson County Court Record, Book 10: page 163 (7 August 1907), page 367 (16 July 1908), page 544 (April 1909), page 581 (7 June 1909; Jefferson County Court Record, Book 11: page 358 (3 May 1911) - located at the Jefferson County Courthouse, Hillsboro MO; **Historic Sites of Jefferson County, Missouri**, by Walter L. Eschbach and Malcolm C. Drummond, published by Harland Bartholomew and Associates, 1968, Hillsboro MO, pages 123, 1933; **Jefferson County News Democrat**, "Span Stands," by Nan Lee, 20 January 1988, n.p.; nomination to the National Register of Historic Places for the Sandy Creek Covered Bridge, prepared by Charla A. Piggott, Research Historian at the Missouri State Historical Survey and Planning Office, 4 March 1970, Hillsboro MO; field inspection by Clayton Fraser, 5 September 1991.

sign. rating: 71
evaluation: NRHP individually listed, 1970 (rare example of timber truss construction)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 15 January 1993

Windsor Harbor Bridge

JEFF07

GENERAL DATA

structure no.: J-158
county: Jefferson
city/town: Kimmswick
feature inters.: Rock Creek
cadastral grid: S17, T42N, R6E
highway route: county road
highway distr.: 6
current owner: Kimmswick Historical Society

STRUCTURAL DATA

superstructure: wrought and cast iron, 9-panel, pin-connected Pratt through truss, with steel stringer approach span at each end
substructure: concrete abutments with steel pile bent piers (old steel cylinder piers below bridge)

span number: 1
span length: 124.0'
total length: 194.0'
roadway width: 16.3'

condition: good
alterations: trusses moved, 1930; restricted to pedestrian and bicycle traffic, 1970
floor/decking : asphalt-covered timber deck over steel stringers
other features: end post: cast iron Keystone columns; upper chord: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars (2 square eyebars with turnbuckles at outer panels); vertical: cast iron Keystone columns (2 square eyebars at hip); diagonal: 2 punched rectangular eyebars; counter: 1 round eyerod with turnbuckle; lateral bracing: square bar with slotted turnbuckle; strut: 4 angles with lacing; floor beam: 2 I-beams (not original); guardrail: 2 angles; cast iron hip blocks and bearing shoes; cast iron portal kneebraces

HISTORICAL DATA

erection date: 1875
erection cost: approximately $13,000.00
designer: Keystone Bridge Company, Pittsburgh PA
fabricator : Keystone Bridge Company, Pittsburgh PA
contractor: Keystone Bridge Company, Pittsburgh PA

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J-158; Jefferson County Court Record, Book 9: page 54 (8 December 1903), page 92 (5 February 1904), page 115 (5 April 1904); Jefferson County Court Record, Book 14: page 158 (6 May 1929), page 222 (8 April 1930) - located at the Jefferson County Courthouse, Hillsboro MO; Memorandum of Agreement, dated 8 June 1987; **Globe-Democrat** "Well-traveled Bridge is Saved Again," by

Carol Rehg, n.p.; letter to County Commission of Jefferson County from the Kimmswick Historical Society, dated 1 June 1987; **The News Democrat**, "Kimmswick's Old Bridge Will Still Have a Place in the Sun," by Sam Shapiro, 9 June 1987, n.p.; Nomination to the National Register of Historic Places for the Windsor Harbor Road, prepared by the Landmarks Association of St. Louis, Inc., Elizabeth Eldridge, Richard Bliss, and Carolyn Toft, Editors, 22 June 1983, St. Louis MO; field inspection by Clayton Fraser, 5 September 1991.

sign. rating: 77

evaluation: NRHP individually listed (only remaining example in Missouri of earliest cast iron bridge construction)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 15 January 1993

Joachim Creek Bridge

JEFF08

GENERAL DATA

structure no.: K 294R
county: Jefferson
city/town: north edge of Herculaneum
feature inters.: Joachim Creek
cadastral grid: S30, T41N, R6E
highway route: U.S. Highway 67
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

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

span number: 1
span length: 120.0'
total length: 280.0'
roadway width: 42.0'
condition: fair
alterations: deck repaired, 1985
floor/decking : concrete deck over steel stringers
other features: steel guardrails

HISTORICAL DATA

erection date: 1933-34
erection cost: $70,564.85
designer: unknown
fabricator : unknown
contractor: M.E. Gillioz

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 294R; Primary System Bridge Record, located at Missouri Highway and Transportation Department, Jefferson City MO.

sign. rating: 45
evaluation: NRHP non-eligible (typically configured example of MSHD truss bridge design)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 15 January 1993

Mississippi Avenue Overpass

JEFF09

GENERAL DATA

structure no.: 104500.2
county: Jefferson
city/town: Crystal City
feature inters.: Burlington Northern Railroad
cadastral grid: S4, T40N, R6E
highway route: Mississippi Avenue
highway distr.: 6
current owner: City of Crystal City

STRUCTURAL DATA

superstructure: concrete slab
substructure: unknown

span number: 5
span length: 21.0'
total length: 122.0'
roadway width: 24.0'
condition: fair
alterations: unknown
floor/decking : unknown
other features: unknown

HISTORICAL DATA

erection date: 1917
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: St. Louis and Santa Fe Railroad

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 1045002.

sign. rating: 31
evaluation: NRHP non-eligible (undistinguished, small-scale example of common structural type)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 15 January 1993

Herculaneum Bridge

JEFF10

GENERAL DATA

structure no.: 192500.1
county: Jefferson
city/town: Herculaneum
feature inters.: Joachim Creek
cadastral grid: S20, T41N, R6E
highway route: Joachim Avenue
highway distr.: 6
current owner: Town of Herculaneum

STRUCTURAL DATA

superstructure: steel, 5-panel, rigid-connected Pratt through truss, with concrete deck girder approach spans
substructure: concrete abutments, wingwalls and piers

span number: 1
span length: 100.0'
total length: 253.0'
roadway width: 20.2'
condition: good
alterations: rehabilitated, 1989
floor/decking : concrete deck over steel stringers
other features: sidewalk cantilevered on one side; guardrail: steel angle

HISTORICAL DATA

erection date: 1924
erection cost: $28,024.40
designer: Missouri State Highway Department
fabricator : Vincennes Bridge Company, Vincennes IN
contractor: Vincennes Bridge Company, Vincennes IN

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 1925001; Primary System Bridge Record, located at Missouri Highway and Transportation Department, Jefferson City MO; Jefferson County Court Record, Book 13: page 596 (7 June 1926) - located at the Jefferson County Courthouse, Hillsboro MO; Steve Puckett, "County Commission Aids Herculaneum's Joachim Bridge Repair Project," **Festus Daily News-Democrat**, 14 August 1985.

sign. rating: 35
evaluation: NRHP non-eligible (typically configured example of MSHD truss bridge design)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 15 January 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Morse Mill Bridge
MHTD: J-24

JEFF01

DATE(S) OF CONSTRUCTION
1886-87

LOCATION
county road over Big River; S23, T41N, R3E
Morse Mill; Jefferson County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / closed

RATING NRHP possibly eligible (score: 58)

CONDITION
fair

OWNER
Jefferson County

span number:	1	superstructure:	wrought iron, 10-panel, pin-connected Pratt through truss
span length:	182.0'	substructure:	stone masonry abutments
total length:	185.0'	floor/decking:	asphalt-covered timber deck with steel stringers
roadway wdt.:	15.0'	other features:	upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 or 4 punched rectangular eyebars; vertical: 2 channels with lacing (2 looped square eyebars at the hip); diagonal: 2 punched rectangular eyebars; counter: 1 looped square eyebar with turnbuckle; lateral bracing: round eyebar with turnbuckle; strut: 4 angles with lacing; floor beam: I-beam, U-bolted to lower chord pins; guardrail: 2 angles

Local residents from Big River Township petitioned the Jefferson County Court in February of 1886 for a permanent bridge spanning Big River near Morse Mill. The judges directed road and bridge commissioner J.B. Dover to view the proposed site and estimate the cost of building the bridge. Dover subsequently reported to court officials that a truss at this location would cost approximately $7394.00 to erect. In response to Dover's report, the court then "moved emphatically that the said bridge when built is to be made of iron" and advertised for competitive construction bids. Proposals were received in August, with H.W. Sebastian, proprietor of the St. Louis Bridge and Iron Company, the low bidder at $7315.00. St. Louis B&I began work on the substructural excavation that fall and worked through the winter on the masonry abutments. In April the bridge was complete and accepted by the county. It was, according to Dover, "not exactly to the specifications... but the contractors have put in an extra panel being one more than called for which adds great strength to the bridge, making it equally good if not better than it would have been if built strictly according to the specs." Since its completion, the Morse Hill Bridge has functioned in place with only maintenance-related repairs. The bridge no longer carries vehicular traffic, however, and is restricted to only pedestrian and bicycle traffic in its wooded setting.

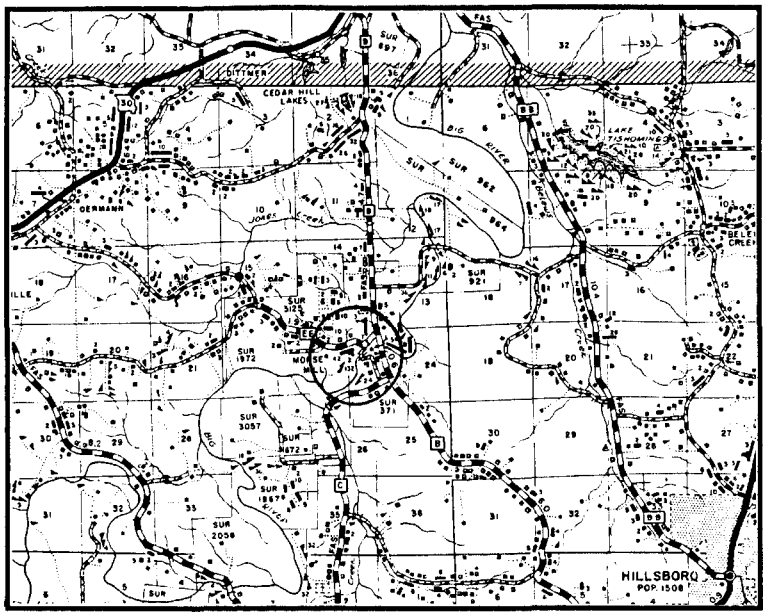
In the early 1880s the pin-connected Pratt through truss superseded the bowstring arch-truss as the iron bridge of choice for medium- and long-span wagon bridges. Patented in 1844 by Thomas and Caleb Pratt, the Pratt design is distinguished by vertical members acting in compression and diagonals that act in tension. "The Pratt truss is the type most commonly used in America for spans under two hundred and fifty (250) 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 bridge fabricators manufactured Pratt trusses and marketed them extensively to Missouri's counties in the late 19th and early 20th centuries. Hundreds of Pratts remain in place today. The Morse Mill Bridge is distinguished among these for its long span, its relatively early fabrication and its excellent state of preservation. It is thus a significant example in Missouri of a mainstay structural type: the pin-connected Pratt pony truss.

NAME(S) OF STRUCTURE

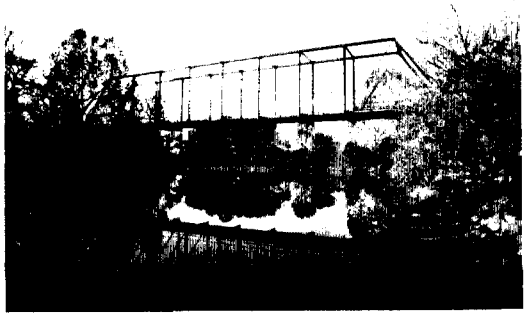
Morse Mill Bridge

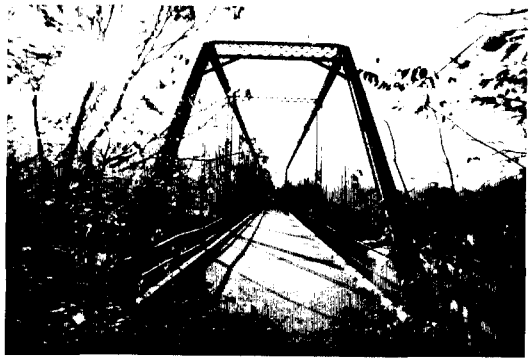
PHOTOS AND SKETCH MAP OF LOCATION



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-24; Jefferson County Court Record, Book 4: page 378 (2 February 1886), page 438 (7 July 1886), page 446 (4 August 1886), page 574 (6 April 1887), page 589 (4 May 1887); Jefferson County Court Record, Book 5: page 51 (9 November 1887), page 74 (10 December 1887); Jefferson County Record, Book 8: page 164 (6 July 1900), page 335 (27 September 1901), page 350 (6 November 1901); Jefferson County Court Record, Book 9: page 142 (7 May 1904); Jefferson County Record, Book 11: page 150 (6 July 1909), page 185 (5 August 1910), page 194 (7 September 1910); Jefferson County Record, Book 13: page 358 (7 August 1922) - located at the Jefferson County Courthouse, Hillsboro MO; field inspection by Clayton Fraser, 5 September 1991.

INVENTORIED BY

Clayton B. Fraser

AFFILIATION

Fraserdesign, Loveland CO

DATE

15 January 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Kingston Slough Bridge
MHTD: J-48

JEFF02

DATE(S) OF CONSTRUCTION
1917

LOCATION
county road over Slough of the Big River; S22, T39N, R3E
7.6 miles southwest of DeSoto; Jefferson County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 46)

CONDITION
fair

OWNER
Jefferson County

span number: 1
span length: 80.0'
total length: 195.0'
roadway wdt.: 14.9

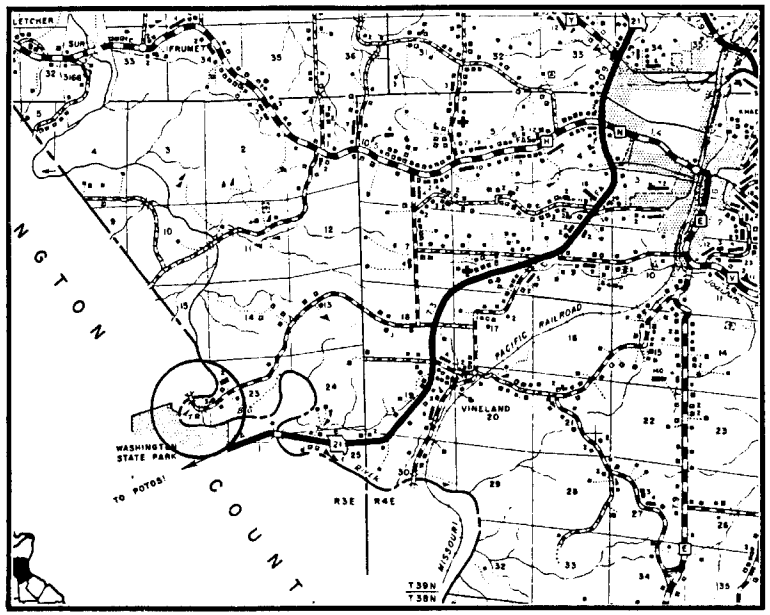
superstructure: steel, 5-panel, pin-connected Pratt pony truss, with three steel stringer approach spans on north side
substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers; steel pile bents at approach
floor/decking: timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched rectangular eyebars; vertical: 4 angles with batten plates; diagonal: 2 punched rectangular eyebars; counter: 2 round eyerods with turnbuckles; lateral bracing: round rod with threaded ends; floor beam: I-beam, field bolted to vertical; guardrail: steel angle

This steel structure was built in 1917 as an approach span over a slough of the Big River for the Kingston Ford Bridge **[WASH02]**, located less than a mile downstream. The structure was constructed by Miller & Borcherding of St. Louis, who was paid $1050.00 for assembling and erecting the pin-connected Pratt pony truss. The bridge contractor utilized steel components rolled in Pittsburgh by the Lackawanna Steel Company. Supported by a concrete and steel substructure, the truss is approached by three steel stringers on the north end. This 195-foot structure was built concurrently with the Kingston Ford Bridge, which is made up of one of the salvaged spans from the Lemay Ferry Bridge. The impressive pre-20th century through truss spans the Big River in western Jefferson County on the county line separating Jefferson and Washington Counties. Both the approach span (Kingston Slough Bridge) and the main truss (Kingston Ford Bridge) continue to carry vehicular traffic with no major alterations of note. The Kingston Slough Bridge, since its construction in 1917, exhibits an excellent degree of both structural and historical integrity

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. Miller & Borcherding, one of Missouri's most prolific bridge fabricators, was one of many competing firms that marketed Pratt trusses extensively to the counties at this time. With its standard design and detailing, the Kingston Slough Bridge exemplifies this bridge construction trend.

NAME(S) OF STRUCTURE
Kingston Slough 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-48; Jefferson County Court Record, Book 12: page 411 (20 July 1916), page 443 (23 September 1916), page 518 (19 March 1917), page 520 (19 March 1917) - located at the Jefferson County Courthouse, Hillsboro MO; field inspection by Clayton Fraser, 5 September 1991.

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

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Vineland Bridge
MHTD: J-51

JEFF03

DATE(S) OF CONSTRUCTION
1905-06

LOCATION
Vineland Road over Big River; S30, T39N, R4E
5.7 miles southwest of DeSoto; Jefferson County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP determined eligible (score: 55)

CONDITION
fair

OWNER
Jefferson County

span number: 1
span length: 190.0'
total length: 289.0'
roadway wdt.: 15.0'

superstructure: steel, 10-panel, pin-connected Parker through truss, with three steel stringer approach spans on south side and one steel stringer approach span on north side
substructure: concrete abutments and wingwalls with concrete-filled steel cylinder piers
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; counter: 1 round eyerod with slotted turnbuckle; 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

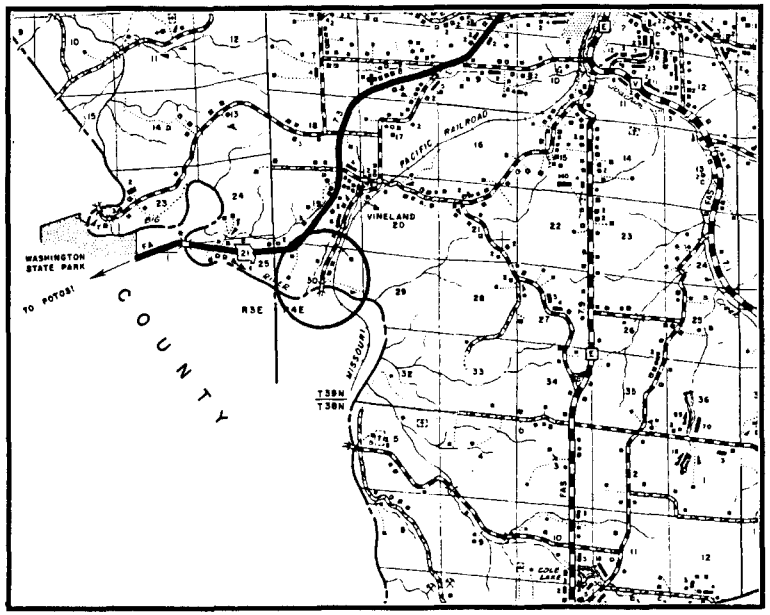
Citizens from Valle Township petitioned the Jefferson County Court in March 1905, asking for a permanent bridge over Big Creek near the small community of Vineland. The Court responded by directing special road and bridge commissioner J.B. Dover to view the site and prepare an estimate for construction of the proposed structure. Dover surveyed the surrounding rights-of-way for the new crossing, recommended a 190-foot span and estimated its cost at $4500.00. Located on the line between Jefferson and St. Francois Counties, the bridge was to be financed by both counties. The court advertised for competitive construction bids and awarded the contract to fabricate and erect the bridge to the Joliet Bridge and Iron Company for $4375.00. Work progressed on the pin-connected Parker through truss through 1905. When Joliet B&I had not completed the structure by December, however, the county extended the contract to the following March. Completed by new the contractual deadline, the Vineland Bridge has since functioned in place, without serious alteration.

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 Vineland Bridge, with its 190-foot span and 1906 construction date, falls within the mainstream of this trend. It is noteworthy for its excellent state of preservation. The Vineland Bridge 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.

NAME(S) OF STRUCTURE
Vineland 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-51; Jefferson County Court Record, Book 9: page 632 (14 November 1906), page 407 (3 October 1905), page 444 (4 December 1905), page 304 (6 March 1905), page 338 (1 May 1905), page 347 (4 May 1905), page 381 (10 August 1905), page 399 (6 September 1905); Jefferson County Court Record, Book 11: page 368 (5 June 1911), page 410 (12 August 1911), page 416 (6 September 1911) - located at the Jefferson County Courthouse, Hillsboro MO; field inspection by Clayton Fraser, 5 September 1991.

INVENTORIED BY
Clayton B. Fraser

AFFILIATION
Fraserdesign, Loveland CO

DATE
15 January 1993

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Blackwell Bridge JEFF04
MHTD: J-55

DATE(S) OF CONSTRUCTION
1930-31

LOCATION
county road over Big River; S5, T38N, R4E
7.1 miles southwest DeSoto; Jefferson / St. Francois County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 48)

CONDITION
fair

OWNER
Jefferson County

span number: 3
span length: 140.0'
total length: 415.0'
roadway wdt.: 12.9'

superstructure: steel, 8-panel, rigid-connected Pratt through truss; steel, 8-panel, pin-connected Pratt through truss; steel, 6-panel, pin-connected Pratt through truss; steel stringer approach spans at each end
substructure: concrete abutments and wingwalls with steel cylinder and concrete piers
floor/decking: asphalt-covered timber deck over steel stringers
other features: **pin-connected truss**: 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 square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; strut: 2 angles, braced; floor beam: I-beam: field bolted to vertical; guardrail: 2 angles; A-frame portal strut

As early as 1914 citizens of Valle Township in Jefferson County and Blackwell Township in St. Francois County began petitioning for a large-scale steel bridge over the Big River at the Blackwell Station on the St. Louis, Iron Mountain and Southern Railroad. They provided county court officials with testimony and petitions, all attesting to the urgent need of a permanent bridge at this location. The highway engineers for both counties met at the site in the spring of 1914 to investigate "the practicability and necessity for such bridge and probable cost of same." Although the counties agreed in principle about the necessity for the bridge, they delayed further consideration on it for two years, until another petition was received in April 1916. "The court finds from the petition and from testimony that a bridge at said location is a public necessity and that the location is practicable," the Jefferson County Court stated, and agreed to fund the bridge in part if St. Francois County paid its share. St. Francois County agreed to fund the bridge later that year, but again the two counties postponed action for thee more years. In 1919 a low water trestle was built at Blackwell. Predictably short-lived, it had washed out soon after it was built.

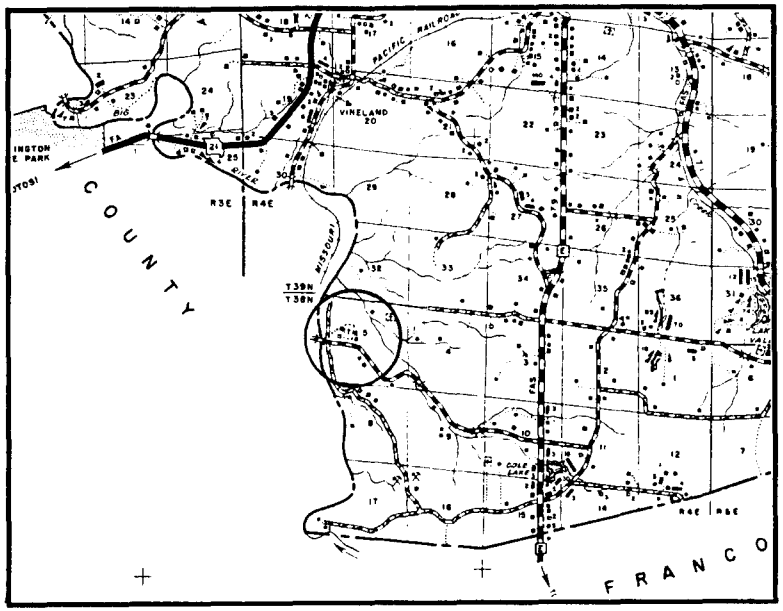
Jefferson and St. Francois counties negotiated for the bridge over the next five years, while the residents of the area could only wait in frustration. Finally, in September 1929 the two county courts executed a joint-funding agreement for the Blackwell Bridge. Even in this they could not agree, however. Instead of each contributing funds to design and build a single bridge–which was the norm for inter-county highway spans–each county designed and contracted separately for its half of the structure. "It is agreed that Jefferson County will construct 186 lineal feet and St. Francois County 246 lineal feet of said bridge, which shall be 14 feet in the clear, together with the earth fills or approaches at their respective ends of said bridge." The center pier was funded jointly under a separate contract signed

in December. The result was an oddly mismatched bridge: Jefferson County's section a single MSHD-standard, rigid-connected Pratt truss with a steel stringer approach span, St. Francois County's section two pinned Pratt trusses with a steel stringer approach. In 1930 St. Francois County hired L.W. Fitzpatrick of Rolla to build the substructure and erect the pin-connected trusses, which had been salvaged from another bridge. Jefferson County contracted with the Stupp Brothers Bridge and Iron Company of St. Louis to fabricate a 140-foot riveted truss and with Roll Blackwell to erect it. Construction of the Blackwell Bridge proceeded more smoothly than the negotiations had, and the structure was completed in 1931. Since that time it has functioned in place, with no serious alterations.

With many of Missouri's counties divided by watercourses, inter-county bridges were relatively common. Few have had such a contentious past as did the Blackwell Bridge. Local residents waited more than 15 years while Jefferson and St. Francois counties quibbled over the bridge's construction. And when they finally did build the bridge, the two counties barely managed to cooperate on the center pier. The result is one of the state's more unusual highway spans, which combines pinned and riveted truss technologies in a single structure that spans decades in its fabrication and erection.

NAME(S) OF STRUCTURE
Blackwell 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-55; Jefferson County Court Record, Book 12: page 112 (3 February 1914), page 370 (17 April 1914), page 456 (9 November 1916); Jefferson County Court Record, Book 13: page 100 (13 January 1919), page 500 (2 September 1924), page 558 (8 September 1925); Jefferson County Court Record, Book 14: page 174 (4 September 1929), page 221 (4 April 1930), page 236 (2 June 1930); page 263 (22 September 1930), page 37 (3 October 1930), page 270 (6 October 1930) - located at the Jefferson County Courthouse, Hillsboro MO; contracted dated 9 December 1929 and 25 January 1930, at the St. Francois County Courthouse, Farmington MO; field inspection by Clayton Fraser, 5 September 1991.

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

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Sandy Creek Bridge
MHTD:
J-102

JEFF05

DATE(S) OF CONSTRUCTION
1886

LOCATION
Old Lemay Ferry Road over Sandy Creek; S3, T41N, R4E
5.6 miles north of Hillsboro; Jefferson County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / pedestrian traffic only

RATING NRHP individually listed, 1970 (score: 71)

CONDITION
good

OWNER
Missouri State Park Board

span number:	1	superstructure:	timber, covered Howe through truss
span length:	75.0'	substructure:	concrete abutments and piers
total length:	75.0'	floor/decking:	timber deck over timber stringers
roadway wdt.:	18.0'	other features:	timber vertical panels with battens; galvanized, corrugated metal roof

During the 19th century the covered timber bridge was a mainstay means of spanning streams and rivers on roadways throughout rural Missouri. During this era, the ready availability and concomitant low cost of timber contributed to the popularity of wooden bridges. Moreover, because wooden structural members could not long withstand the forces of nature, such bridges were often covered to provide protection, and thus increase their longevity. After the industrial revolution, timber bridges, covered or otherwise, were eclipsed first by all-metal trusses. Early covered bridges were usually kingpost or queenpost trusses (for shorter crossings), Burr arch-trusses (patented by Theodore Burr of Pennsylvania in 1804), or Town lattice trusses (patented by Ithiel Town in 1820). In 1840 William Howe of Massachusetts patented a new truss design which featured diagonal wooden members acting in compression, combined with iron verticals acting in tension. Located on the Lemay Ferry Road, the Sandy Creek Covered Bridge is an example of this latter design.

The Sandy Creek Covered Bridge, located some six miles north of Hillsboro, was built in 1872 as a part of a Jefferson County road-building program after the Civil War. The Lemay Ferry Road, on which the bridge is located, was constructed to connect Hillsboro with St. Louis County. By spring of 1872 the road was complete except for this crossing over Sandy Creek. John Hathaway Morse, President of the House Springs, Big River Valley Macadamized and Gravel Road Company, proposed to construct a wooden bridge and described the structure to the county court as, "...a first class Howe Truss Seventy Six feet long Sixteen feet high not less than Twelve feet in the clear. The Cords and Braces to be of white pine Lumber of the best quality and the Timbers and Iron Work to be of sufficient strength and capacity to sustain a pressure of Seventy Tons in weight. The Bridge to be covered in with the best of white pine shingles on the Roof and the sides to be covered with good white lumber and all the joists Batoned and the entire Bridge exposed to wet to be painted with not less than three coats of paint..." Subsequently awarded the contract, Morse completed the bridge in 1872 at a total cost of $2000.00.

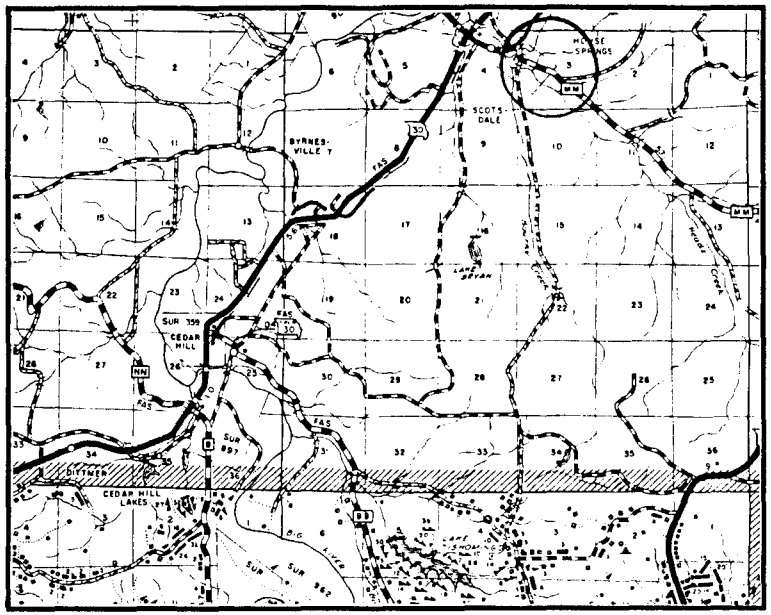
The Sandy Creek Bridge serviced the important farm-to-market road in Jefferson County until it was damaged by flooding in 1886. Acting quickly to re-open the crossing, J.B. Dover, road and bridge commissioner, estimated it would cost $810.00 to replace the span and

advertised the project to contractors. All initial bids were deemed too high by the court, and, after a deferred court action, "for the purpose of giving time to investigate and ascertain the cost of an iron bridge at said place," county officials readvertised for bids. Low-bidder Henry Steffin was awarded the contract to reconstruct the bridge, using half the original lumber, for $899.00. Since being rebuilt by Steffin, the Sandy Creek Bridge has functioned in place. After the 1940s the truss went through a period of neglect, but maintenance-related repairs and minor restorations in 1940-41 and 1952 by the county and Jefferson County Chamber of Commerce helped to maintain the bridge's structural integrity. The original timber substructure was severely damaged in a 1981 flood and was replaced with concrete piers and wingwalls.

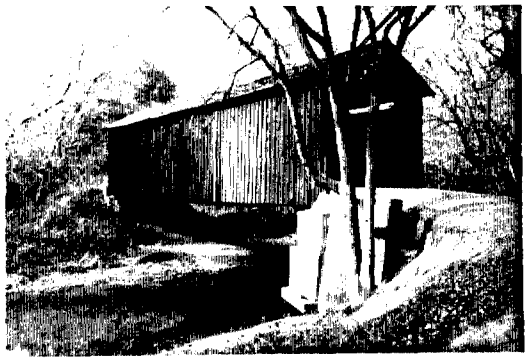
The bridge was extensively restored in 1984 by the Department of Natural Resources. The bridge–now restricted to pedestrian and bicycle traffic–and surrounding fourteen acres were obtained by the state and have since been managed as a historic site. In 1967 the State of Missouri took over stewardship of its remaining covered bridges. Administered as State Historic Sites by the Department of Natural Resources, four such bridges still exist, and have each been listed in the National Register of Historic Places. In addition to the Sandy Creek Covered Bridge, Missouri's three other covered bridges include the Burfordville Bridge, located adjacent to the historic Bollinger Mill, the Locust Creek Covered Bridge in Linn County, and the Union Covered Bridge near Paris in Monroe County. The Sandy Creek Bridge was listed in the National Register of Historic Places in 1970.

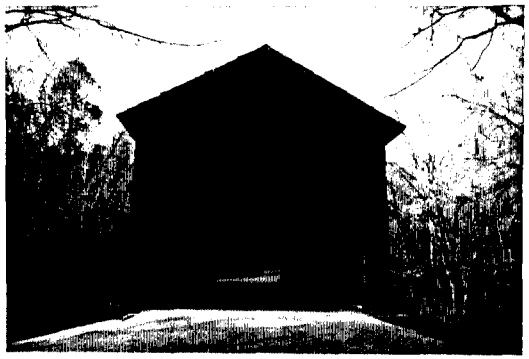
NAME(S) OF STRUCTURE
Sandy Creek Bridge

PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP
TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT
GENERAL HIGHWAY MAP





SOURCES
Jefferson County Court Record, Book 4: page 429 (20 May 1886), page 431 (16 June 1886), page 437 (7 July 1886), page 445 (4 August 1886), page 483 (4 November 1886), page 493 (22 November 1886); Jefferson County Court Record, Book 5: page 73 (9 December 1887); Jefferson County Court Record, Book 10: page 163 (7 August 1907), page 367 (16 July 1908), page 544 (April 1909), page 581 (7 June 1909; Jefferson County Court Record, Book 11: page 358 (3 May 1911) - located at the Jefferson County Courthouse, Hillsboro MO; **Historic Sites of Jefferson County, Missouri**, by Walter L. Eschbach and Malcolm C. Drummond, published by Harland Bartholomew and Associates, 1968, Hillsboro MO, pages 123, 1933; **Jefferson County News Democrat**, "Span Stands," by Nan Lee, 20 January 1988, n.p.; nomination to the National Register of Historic Places for the Sandy Creek Covered Bridge, prepared by Charla A. Piggott, Research Historian at the Missouri State Historical Survey and Planning Office, 4 March 1970, Hillsboro MO; field inspection by Clayton Fraser, 5 September 1991.

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

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Windsor Harbor Bridge
MHTD: J-158

JEFF07

DATE(S) OF CONSTRUCTION
1875

LOCATION
county road over Rock Creek; S17, T42N, R6E
Kimmswick; Jefferson County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / pedestrian bridge

RATING NRHP individually listed (score: 77)

CONDITION
good

OWNER
Kimmswick Historical Society

span number: 1
span length: 124.0'
total length: 194.0'
roadway wdt.: 16.3'

superstructure: wrought and cast iron, 9-panel, pin-connected Pratt through truss, with steel stringer approach span at each end
substructure: concrete abutments with steel pile bent piers (old steel cylinder piers below bridge)
floor/decking: asphalt-covered timber deck over steel stringers
other features: end post: cast iron Keystone columns; upper chord: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars (2 square eyebars with turnbuckles at outer panels); vertical: cast iron Keystone columns (2 square eyebars at hip); diagonal: 2 punched rectangular eyebars; counter: 1 round eyerod with turnbuckle; lateral bracing: square bar with slotted turnbuckle; strut: 4 angles with lacing; floor beam: 2 I-beams (not original); guardrail: 2 angles; cast iron hip blocks and bearing shoes; cast iron portal kneebraces

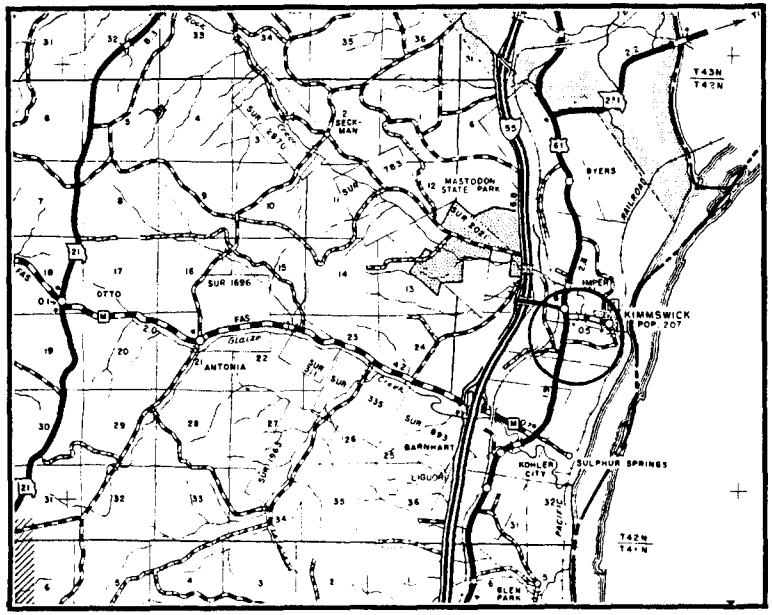
The Windsor Harbor Bridge, which currently spans Rock Creek in Kimmswick, was originally built in 1875 to "carry farm-to-market traffic across the river Des Peres from Alabama Avenue in St. Louis to Lemay Ferry Road" in what is now the town of Mehlville. The truss's history, therefore, dates to 1875, when city and county officials let a construction contract to the Keystone Bridge Company of Pittsburgh to erect a structure at this location, for the aggregate sum of $13,000.00. The 124-foot pin-connected Pratt through truss was completed the same year and carried wagon traffic with no alterations until 1903 when the Jefferson County Road and Bridge Commissioner, P.M. Reilly, contracted with W.J. Knopp for $290.00 to replace the structure's flooring.

After nearly fifty-three years of service, the court ordered the county engineer in 1928 to delineate a steel bridge to supplant the Lemay Ferry Bridge. The new concrete and steel viaduct was completed in 1930, whereupon the 1875 truss was moved to its present location spanning Rock Creek in Kimmswick, a small community some twenty miles south of St. Louis. The relocation was arranged through the bridge's donation by the city of St. Louis to Jefferson County, if the county would assume moving and re-erection costs. Local contractor H.C. Grunewald, paid $1420.00 by the county for moving the truss, successfully relocated the wrought iron span to its new site across Rock Creek in Kimmswick. Once reliant on river trade, Kimmswick's population began to dwindle over the years as superhighways became the norm, although the resulting light traffic loads helped to preserve the overall structural integrity of the bridge. The late 1970s ushered in new transformations for the town, however, and through an improved water supply and several local restoration projects, the town began to prosper once again. So successful were the residential restoration ventures, the local Kimmswick Historical Society sought

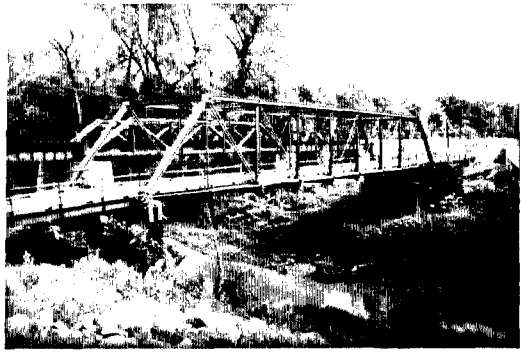
to obtain ownership of the Windsor Harbor Bridge from the Missouri Highway and Transportation Commission when its replacement became evident in the late 1980s. The **Globe-Democrat** reported the eventual outcome in the summer of 1987, "An agreement was reached...making it possible for Kimmswick's Historical Society to accept ownership, control and maintenance of the old bridge. Under terms of the agreement, the future use of the historic bridge will be restricted to bicycle and pedestrian traffic." Under the historical society's stewardship and listed on the National Register of Historic Places since 1983, the Windsor Harbor Bridge functions in place today carrying only recreational traffic. The pre-1880s historical truss, an excellent example of adaptive re-use, has maintained a high degree of both structural and historical integrity. The oldest bridge in Jefferson County and the oldest Pratt through truss in the state of Missouri, The Windsor Harbor Bridge is an remarkably important example of wrought iron bridge construction.

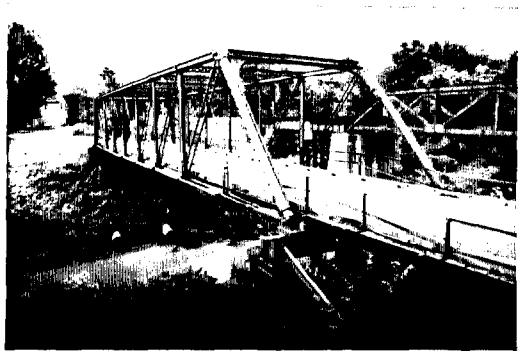
NAME(S) OF STRUCTURE
Windsor Harbor Bridge

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-158; Jefferson County Court Record, Book 9: page 54 (8 December 1903), page 92 (5 February 1904), page 115 (5 April 1904); Jefferson County Court Record, Book 14: page 158 (6 May 1929), page 222 (8 April 1930) - located at the Jefferson County Courthouse, Hillsboro MO; Memorandum of Agreement, dated 8 June 1987; **Globe-Democrat** "Well-traveled Bridge is Saved Again," by Carol Rehg, n.p.; letter to County Commission of Jefferson County from the Kimmswick Historical Society, dated 1 June 1987; **The News Democrat**, "Kimmswick's Old Bridge Will Still Have a Place in the Sun," by Sam Shapiro, 9 June 1987, n.p.; Nomination to the National Register of Historic Places for the Windsor Harbor Road, prepared by the Landmarks Association of St. Louis, Inc., Elizabeth Eldridge, Richard Bliss, and Carolyn Toft, Editors, 22 June 1983, St. Louis MO; field inspection by Clayton Fraser, 5 September 1991.

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

ST. CHARLES COUNTY

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

Inv. No.	MHTD	Bridge Name	Description
*STCH01	J 1000	Daniel Boone Bridge	**4-512'** **riveted cantilever through truss**
			1937 Kansas City Bridge Company
*STCH02	K 984R1	Clark Bridge	(replaced)
STCH03	SCC 172	Bergfeld Bridge	1- 66' pinned Pratt half-hip pony truss
			1910 Stupp Brothers B&I Company
*STCH04	SCC 174	Frey Ford Bridge	1-100' **pinned Pratt through truss**
			1908 Missouri Bridge and Iron Co.
*STCH05	SCC 176	Peruque Creek Bridge	1- 90' pinned Pratt pony truss
			c**1915**
*STCH06	SCC 178	Peruque Creek Bridge	1- 80' **pinned Pratt through truss**
			c**1915**
*STCH07	SCC 230	Schluersburg Bridge	1-100' **riveted Pratt through truss**
			1913 Miller and Borcherding
*STCH08	SCC 262	Camp Creek Bridge	1- 60' pinned Pratt pony truss
			c**1910**
STCH09	SCC 269	Camp Creek Bridge	1- 80' **riveted Camelback pony truss**
			c1925
*STCH10	SCC 274R	Bridge	1- 42' pinned Pratt pony truss
			c**1890**
*STCH11	SCC 388	Karrenbrock Mill Bridge	1-116' **pinned Pratt through truss**
			1909 Decatur Bridge Company

EXCLUDED:

Pratt pony truss
SCC 152 SCC 286 SCC 330 SCC 372 SCC 508

Warren pony truss
SCC 164 SCC 241 SCC 291 U387500.3 092

Lattice bedstead
SCC 232R

Steel stringer
G 337 H 141R L 15 L 16 SCC 47 SCC 102 SCC 161
SCC 162 SCC 185 SCC 186 SCC 190 SCC 217 SCC 218 SCC 221
SCC 229 SCC 273 SCC 309 SCC 337R SCC 391 SCC 507 SCC1509
T 224 T 250 T 390 T 401 Y 829 Z 318 Z 718
383000.2 U387500.2 3830 U387500.4 092 U387500.4 3830
U387500.8 3885

ST. CHARLES COUNTY

EXCLUDED (cont.):

Concrete girder

L 57	SCC 11	SCC 279	SCC 353	SCC 354	Y 830	

Concrete slab

H 755R	SCC 216	U387500.6 092				

Concrete box culvert

J 992R	K 175	K 176	K 348R	K 872	L 56	L 58
L 59	L 205R1	T 281	T 282	T 283	T 402	X 41R
X 827	Y 828	U387500.3 3885		U387500.5 3885		

Timber stringer

SCC 509	SCC1001

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	1	9	0	0	10
Excluded	30	34	8	0	72
	31	43	8	0	82 structures

Daniel Boone Bridge

STCH01

GENERAL DATA

structure no.: J1000
county: St. Charles / St. Louis
city/town: St. Charles
feature inters.: Missouri River
cadastral grid: S2/3 T45N R3E
highway route: U.S. Highway 40
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, rigid-connected, cantilever through truss, with deck truss apporach spans
substructure: concrete abutments, wingwalls and spill-through piers with Art Moderne detailing

span number: 4
span length: 512.0'
total length: 2614.0'
roadway width: 32.0'
condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover plate and built-up, double channel lacing; lower chord: 2 built-up channels with lacing; vertical: 2 laced channels; diagonal: 2 laced channels; lateral bracing: 2 angles; strut: angles with lacing; floor beam: built-up plate girder; guardrail: steel

HISTORICAL DATA

erection date: 1936-37
erection cost: $1,213,48.00 (contract amount)
designer: Missouri State Highway Department
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. J1000; **Tenth Biennial Report of the State Highway Commission of Missouri**, 1935-36, p. 262; **St. Charles Daily Cosmos-Monitor:** "State Asking for Bids on Bridges and Grading Hiway 40 Cutoff" (11 January 1935), "Kansas City Bridge Co. Low Bidder Highway at Weldon Spring" (27 November 1935), "Highway Bridge at Weldon Spring," (6 January 1937), "Daniel Boone Bridge Dedication Was a Success," (28 June 1937), "New Floor for Bridge and New East Approach Among the Improvements" (1 April 1937), "Opening of the Weldon Spring Bridge Postponed" (3 June 1937), "'Daniel Boone Bridge' Dedication June 26" (17 June 1937), "New $1,350,000 Bridge at Weldon Spring Will be Dedicated Saturday" (25 June 1937), "New Bridge Over River is Opened" (1 July 1937); field inspection by Clayton Fraser, June 1994.

Daniel Boone Bridge

sign. rating: 61
evaluation: NRHP possibly eligible (excellent example of large-scale bridge construction)

inventoried by: John J. Roberts 14 July 1994

Bergfeld Bridge

STCH03

GENERAL DATA

structure no.: SCC 172
county: St. Charles
city/town: 0.8 mile south of Dardenne Prairie
feature inters.: Dardenne Creek
cadastral grid: S18 T46N R3E
highway route: county road
highway distr.: 6
current owner: St. Charles County

STRUCTURAL DATA

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

span number: 1
span length: 66.0'
total length: 147.0'
roadway width: 14.0'
condition: fair
alterations: unknown
floor/decking : timber deck
other features: Armco guardrails

HISTORICAL DATA

erection date: 1910
erection cost: $2500.00
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 No. SCC 172; St. Charles County Court Record, Book 20, page 105 (24 February 1911) - located at St. Charles County Courthouse, St. Charles, MO.

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

inventoried by: Clayton B. Fraser 14 July 1994

Frey Ford Bridge

STCH04

GENERAL DATA

structure no.: SCC 174
county: St. Charles
city/town: 1.0 mile south of Wentzville
feature inters.: Peruque Creek
cadastral grid: Survey 149 T47N R1E
highway route: Hepperman Road
highway distr.: 6
current owner: St. Charles County

STRUCTURAL DATA

superstructure: steel 6-panel pin-connected Pratt through truss, with steel stringer approach spans
substructure: concrete abutments and wingwalls; concrete-filled steel cylinder piers

span number: 1
span length: 100.0'
total length: 130.0'
roadway width: 13.7'
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: looped square eyebar with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 channels

HISTORICAL DATA

erection date: 1908
erection cost: $2344.65
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 No. SCC 174; St. Charles County Court Record, Book 18, page 146 (15 August 1908), pages 331-32 (12 February 1909) - located at St. Charles County Courthouse, St. Charles, MO; field inspection by Clayton Fraser, 10 November 1990.

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

inventoried by: Clayton B. Fraser 14 July 1994

Peruque Creek Bridge

STCH05

GENERAL DATA

structure no.: SCC 176
county: St. Charles
city/town: 1.1 miles southwest of Wentzville
feature inters.: Peruque Creek
cadastral grid: S33 T47N R1E
highway route: county road
highway distr.: 6
current owner: St. Charles County

STRUCTURAL DATA

superstructure: steel, 5-panel pin-connected Pratt pony truss
substructure: unknown

span number: 1
span length: 90.0'
total length: 92.0'
roadway width: 13.5'
condition: fair
alterations: unknown
floor/decking: timber deck
other features: steel angle guardrails

HISTORICAL DATA

erection date: c1915
erection cost: unknown
designer: unknown
fabricator: Illinois Steel Company, Chicago IL
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. SCC 176; field inspection by Clayton Fraser, 10 November 1990.

sign. rating: 20
evaluation: NRHP non-eligible (typically configured, inadequately documented example of common structural type)

inventoried by: Clayton B. Fraser 1 August 1994

Peruque Creek Bridge

STCH06

GENERAL DATA

structure no.: SCC 178
county: St. Charles
city/town: 1.9 miles southwest of Wentzville
feature inters.: Peruque Creek
cadastral grid: S28/29 T47N R1E
highway route: county road
highway distr.: 6
current owner: St. Charles County

STRUCTURAL DATA

superstructure: steel 5-panel pin-connected Pratt through truss, with steel stringer approach spans
substructure: concrete abutments and wingwalls

span number: 1
span length: 80.0'
total length: 108.0'
roadway width: 13.5'
condition: fair
alterations: unknown
floor/decking : timber deck
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 (2 looped round eyerods at hips); diagonal: 2 looped square eyebars; counter: looped round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guard-rail: 2 channels

HISTORICAL DATA

erection date: c1915
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. SCC 178; field inspection by Clayton Fraser, 10 November 1990.

sign. rating: 27
evaluation: NRHP non-eligible (typically configured, inadequately documented example of common structural type)

inventoried by: Clayton B. Fraser 1 August 1994

Schluersburg Bridge

STCH07

GENERAL DATA

structure no.: SCC 230
county: St. Charles

city/town: 1.2 miles northeast of Schluersburg
feature inters.: Femme Osage Creek
cadastral grid: S19 T45N R2E
highway route: county road
highway distr.: 6
current owner: St. Charles County

STRUCTURAL DATA

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

span number: 1
span length: 100'
total length: 101.0'
roadway width: 12.8'

condition: fair
alterations: none
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 angles with batten plates; vertical: 2 channels with lacing; diagonal: 2 angles with batten plates; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: 2 channels

HISTORICAL DATA

erection date: 1913
erection cost: $2799.00 (contract amount)
designer: Miller and Borcherding, St. Louis MO
fabricator : unknown
contractor: Miller and Borcherding, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. SCC 230; St. Charles County Court Record, Book 21, page 374 (14 August 1913); Book 22, pages 47-48 (2 March 1914); field inspection by Clayton Fraser, 10 November 1990.

sign. rating: 46
evaluation: NRHP determined non-eligible (early example of mainstay structural type)

inventoried by: Clayton B. Fraser 14 July 1994

Camp Creek Bridge

STCH08

GENERAL DATA

structure no.: SCC 262
county: St. Charles
city/town: 4.5 miles north of Wentzville
feature inters.: 3.0 miles northwest of Flint Hill
cadastral grid: S32 T48N R1E
highway route: county road
highway distr.: 6
current owner: St. Charles 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: 60.0'
total length: 89.0'
roadway width: 13.7'
condition: fair
alterations: unknown
floor/decking: concrete deck over steel stringers
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 No. SCC 262; field inspection by Clayton Fraser, 10 November 1990.

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

inventoried by: Clayton B. Fraser 1 August 1994

Camp Creek Bridge

STCH09

GENERAL DATA

structure no.: SCC 269
county: St. Charles
city/town: 3.5 miles north of Foristell
feature inters.: Camp Creek
cadastral grid: S6 T48N R1E
highway route: county road
highway distr.: 6
current owner: St. Charles County

STRUCTURAL DATA

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

span number: 1
span length: 80.0'
total length: 82.0'
roadway width: 14.6'
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. SCC 262.

sign. rating: 36
evaluation: NRHP non-eligible (uncommon structural type, poorly documented)

inventoried by: Clayton B. Fraser 1 August 1994

Bridge

STCH10

GENERAL DATA

structure no.: SCC 274
county: St. Charles

city/town: 2.4 miles northeast of Foristell
feature inters.: tributary of McCoy Creek
cadastral grid: S8 T47N R1E
highway route: county road
highway distr.: 6
current owner: St. Charles County

STRUCTURAL DATA

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

span number: 1
span length: 42.0'
total length: 42.0'
roadway width: 13.0'

condition: fair
alterations: truss moved to this location
floor/decking : timber deck
other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars; vertical: 2 Ts with lacing; diagonal: 2 punched rectangular eyebars; counter: looped round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: riveted plate girder, U-bolted to lower chord pins; guardrail: 1 channel

HISTORICAL DATA

erection date: c1890
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. SCC 274; field inspection by Clayton Fraser, 10 November 1990.

sign. rating: 25
evaluation: NRHP non-eligible (inadequately documented example of mainstay structural type, moved to this location)

inventoried by: Clayton B. Fraser 1 August 1994

Karrenbrock Mill Bridge

STCH11

GENERAL DATA

structure no.: SCC 388
county: St. Charles

city/town: 1.0 mile northeast of Cappelin
feature inters.: Callaway Forks Creek
cadastral grid: S33 T46N R1E
highway route: county road
highway distr.: 6
current owner: St. Charles County

STRUCTURAL DATA

superstructure: steel, 8-panel, pin-connected Pratt through truss
substructure: concrete-filled steel cylinders; concrete abutments and wingwalls

span number: 1
span length: 116.0'
total length: 117.0'
roadway width: 12.8'

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 nd lacing; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; lateral bracing: round rod with threaded ends; floor beam: I-beam, U-bolted to lower chord pins; guardrail: 2 angles

HISTORICAL DATA

erection date: 1909
erection cost: $2654.39
designer: Decatur Bridge Company, Decatur IL
fabricator : Cambria Steel Company, Pittsburgh PA
contractor: Decatur Bridge Company, Decatur IL

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure No. SCC 230; St. Charles County Court Record, Book 18, page 413 (14 April 1909); Book 22, pages 47-48 (2 March 1914); field inspection by Clayton Fraser, 10 November 1990.

sign. rating: 41
evaluation: NRHP non-eligible (typical example of common structural type)

inventoried by: Clayton B. Fraser 1 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Daniel Boone Bridge
MHTD: J1000

STCH01

DATE(S) OF CONSTRUCTION
1936-37

LOCATION
U.S. Highway 40 over Missouri River; S2/3 T45N R3E
St. Charles; St. Charles / St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP possibly eligible (score: 61)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	4	superstructure:	steel, rigid-connected, cantilever through truss, with deck truss approach spans
span length:	512.0'	substructure:	concrete abutments, wingwalls and spill-through piers with Art Moderne detailing
total length:	2614.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	32.0'	other features:	upper chord and inclined end post: 2 channels with cover plate and built-up, double channel lacing; lower chord: 2 built-up channels with lacing; vertical: 2 laced channels; diagonal: 2 laced channels; lateral bracing: 2 angles; strut: angles with lacing; floor beam: built-up plate girder; guardrail: steel

During the 1930s, the resources of the Missouri Highway Department were stretched thin by many important projects, including road improvement and widening, bridge repair and maintenance and grade separation construction. MSHD engineers were further taxed by a statewide movement for constructing "farm-to-market" roads, linking rural areas to major cities. In St. Charles County, for example, the many small towns situated east of St. Charles-St. Louis were connected to these cities by county roads that merged with Federal Highway 40, carrying traffic between St. Louis and Kansas City. Revenue for this construction came from three sources: basic revenues (automobile-related fees), incidental revenues (various state funds), and advanced revenues (bond proceeds and federal aid–including PWA funds). Armed with these resources, MSHD proceeded with its extensive plans.

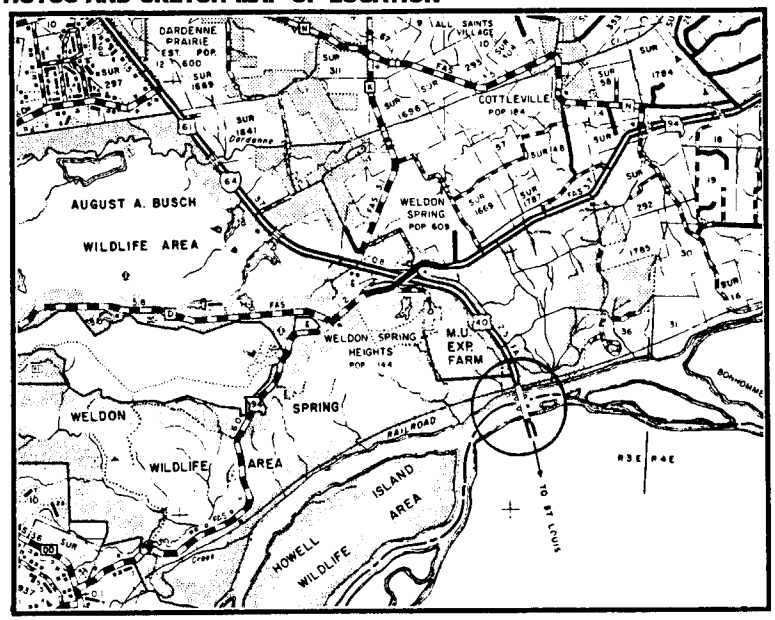
In St. Charles, located at the confluence of the Mississippi and Missouri rivers, the bureau's task was even greater. Responding to increased traffic volume that demanded the construction of new highways, MSHD began work in the early 1930s on roads offering ready access to St. Louis. A project to connect Highway 40 with Highway 77 in St. Louis soon began. The largest obstacle to completing the road (Highway 40TR) was bridging the unpredictable Missouri River. In January 1935 MSHD solicited bids for grading the highway and building the several small bridges along the route. State engineers planned the highway to cross the river at Weldon Spring, estimating the required bridge to cost over $1,000,000. Bidding for the Missouri River structure opened on November 25; in two days the Kansas City Bridge Company was awarded the contract with its bid of $1,221,670. The selected design stipulated a multiple-span steel truss

that incorporated cantilevering, which was gaining widespread acceptance along the Mississippi and Missouri rivers in the 1930s. Four deck trusses approached the main bridge. KCBCo quickly began work, completing the substructure and superstructural steelwork by January 1937. Delaying pouring the concrete deck until spring, KCBCo estimated a June opening for the massive structure. The bridge was officially opened to traffic on June 26, 1935, amidst dancing, carnival concessions and speeches by Governor Lloyd C. Stark and other state officials. Mrs. Stark performed the ribbon cutting ceremony.

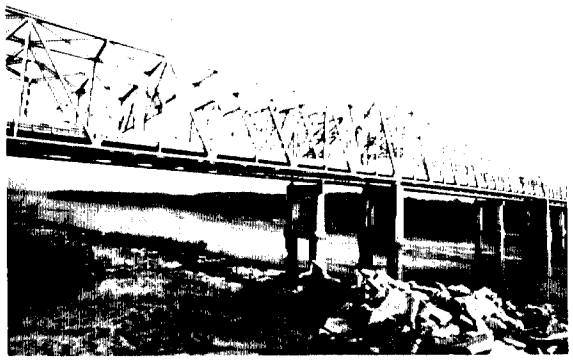
Known locally as the Weldon Spring Bridge as it was under construction, the bridge was officially christened the Daniel Boone Bridge shortly before its opening. According to Colonel F.M. Curlee, the Spanish government had convinced the legendary Daniel Boone to relocate to the Missouri area and oversee its colonization. After years in the territory, Boone "died in the vicinity of the structure." Appropriately, two-year-old Daniel Boone, descendant of the American hero, was present at the bridge's dedication. The Daniel Boone Bridge played an integral role in the development and expansion of the St. Louis-St. Charles area by facilitating traffic to metropolitan St. Louis. The state's seventeenth Missouri River bridge, the Daniel Boone Bridge stands as a symbol of mid-western urban expansion in the 1930s.

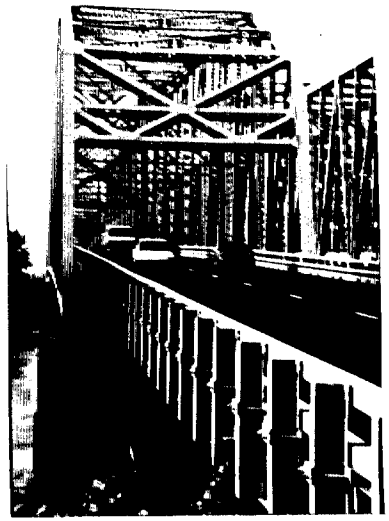
NAME(S) OF STRUCTURE
Daniel Boone Bridge

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. J1000; Tenth Biennial Report of the State Highway Commission of Missouri for the Period Ending December First 1936, p. 262; St. Charles Daily Cosmos-Monitor: "State Asking for Bids on Bridges and Grading Hiway 40 Cutoff" (11 January 1935), "Kansas City Bridge Co. Low Bidder Highway at Weldon Spring" (27 November 1935), "Highway Bridge at Weldon Spring," (6 January 1937), "Daniel Boone Bridge Dedication Was a Success," (28 June 1937), "New Floor for Bridge and New East Approach Among the Improvements" (1 April 1937), "Opening of the Weldon Spring Bridge Postponed" (3 June 1937), "'Daniel Boone Bridge' Dedication June 26" (17 June 1937), "New $1,350,000 Bridge at Weldon Spring Will be Dedicated Saturday" (25 June 1937), "New Bridge Over River is Opened" (1 July 1937); field inspection by Clayton Fraser, June 1994.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	10 November 1990

ST. LOUIS CITY

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

Inv. No.	MHTD	Bridge Name	Description
STLC01	K 468	U.S. Hwy. 40 Underpass	1- 56' **concrete rigid frame** 1935 Powers Thompson Constr. Co.
STLC02	230.01	Arsenal Street Overpass	3- 31' concrete deck girder **1914** John B. Turner
*STLC03	230.02	Carondolet Park Bridge	1- **95' concrete filled spandrel arch** **1913** John V. Boland
STLC04	230.03	Chouteau Avenue Viaduct	30-38' concrete deck girder **1917**
STLC05	230.04	Columbia Avenue Overpass	3- 32' concrete deck girder **1914** John B. Turner
STLC06	240.01	Broadway Viaduct	15-25' concrete deck girder **1917**
*STLC07	260.03	Kingshighway Viaduct	9- 42' concrete deck girder **1927** Bailey and McMahon
*STLC08	260.07	Eads Bridge	**3-533' steel/iron deck arch** **1874** Keystone Bridge Company
*STLC09	400.01	Bellerive Park Bridge	1- 94' **concrete filled spandrel arch** **1918** Herkoltz and Herchert
*STLC10	400.08	Chouteau Avenue Viaduct	**3-103' steel plate rigid frame** 1937 Chase Construction Company
*STLC11	600.03	Franklin Bridge	1- 46' **concrete Melan arch** **1898**
*STLC12	600.04	Lafayette Bridge	1- 72' **steel three-hinge deck arch** c1888 Stupp Brothers B&I Company
*STLC13	600.07	McKinley Bridge	1- 46' **concrete filled spandrel arch** **1902** Louisiana Purchase Exposition
*STLC14	600.08	Old Stable Bridge	1- 44' **concrete filled spandrel arch** 1922
*STLC15	none	MacArthur Bridge	**3-668' pinned Pennsylv. through truss** **1917** American Bridge Company
*STLC16	none	McKinley Bridge	**3-518' pinned Pennsylv. through truss** **1910** Missouri Valley B&I Company

EXCLUDED:

Steel stringer
250.07 250.10

Steel girder
100.06 230.05 230.07 260.04

Concrete girder
100.01 100.03 100.08 100.11 100.13 100.14 250.01
250.02 250.06 400.09 400.10 900.01

ST. LOUIS CITY

EXCLUDED (cont.):

Concrete slab

250.50	250.80	250.90	K 951R

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	1	7	6	2	16
Excluded	1	7	14	0	22
	2	14	20	2	38 structures

U.S. Highway 40 Underpass

STLC01

GENERAL DATA

structure no.: K 468
county: St. Louis
city/town: St. Louis
feature inters.: Sarah Street
cadastral grid: T45N R7E
highway route: U.S. Highway 40
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

superstructure: concrete rigid frame
substructure: concrete abutments and wingwalls

span number: 1
span length: 56.0'
total length: 61.0'
roadway width: 36.0'
condition: good
alterations: none
floor/decking : concrete deck
other features: MSHD-standard slotted concrete guardrails

HISTORICAL DATA

erection date: 1935
erection cost: $15,051.40
designer: Missouri State Highway Department
fabricator : none
contractor: Powers Thompson Construction Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 468; Missouri Highway and Transportation Department Primary System Bridge Record, located at Bridge Division, MHTD, Jefferson City, Missouri.

sign. rating: 58
evaluation: NRHP possibly eligible (well-preserved example of uncommon structural type)

inventoried by: Clayton B. Fraser 4 August 1994

Arsenal Street Overpass

STLC02

GENERAL DATA

structure no.: 230.01
county: St. Louis
city/town: St. Louis
feature inters.: Missouri Pacific Railroad
cadastral grid: T45N R7E
highway route: Arsenal Street
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

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

span number: 3
span length: 31.0'
total length: 90.0'
roadway width: 36.0'
condition: fair
alterations: none
floor/decking : concrete deck
other features: slotted concrete guardrails

HISTORICAL DATA

erection date: 1913-14
erection cost: $24,258.18 (two-bridge contract)
designer: Office of Bridge Engineer, St. Louis Street Department
fabricator : none
contractor: John B. Turner, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 230.01; **Annual Report of the President, Board of Public Improvements,** 1912-13, report by Office of Bridge Engineer, Street Department, 8 April 1913, pages 418-19; **Annual Report of the President, Board of Public Improvements,** 1913-14, report by Office of Bridge Engineer, Street Department, 21 May 1914, page 63; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970.

sign. rating: 48
evaluation: NRHP possibly eligible (relatively early, well-preserved example of urban concrete bridge construction)

inventoried by: Clayton B. Fraser 4 August 1994

Carondolet Park Bridge

STLC03

GENERAL DATA

structure no.: 230.02
county: St. Louis
city/town: St. Louis
feature inters.: Missouri Pacific Railroad
cadastral grid: T45N R7E
highway route: Grand Avenue
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

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

span number: 1
span length: 95.0'
total length: 95.0'
roadway width: 40.0'
condition: good
alterations: none
floor/decking : asphalt over earth fill
other features: ornamental concrete guardrails with corbeled parapets; Gothic pylons at arch corners

HISTORICAL DATA

erection date: 1912-13
erection cost: $27,343.30 (excluding grading and light standards)
designer: Office of Bridge Engineer, St. Louis Street Department
fabricator : none
contractor: John V. Boland, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 230.02; **Annual Report of the President, Board of Public Improvements**, 1912-13, report by Office of Bridge Engineer, Street Department, 8 April 1913, pages 418-19; **Annual Report of the President, Board of Public Improvements**, 1913-14, Office of Bridge Engineer, Street Department, 21 May 1914, page 63; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970; field inspection by Richard Collier, 3 April 1992.

sign. rating: 54
evaluation: NRHP possibly eligible (well-preserved, relatively early example of urban concrete bridge construction)

inventoried by: Clayton B. Fraser 4 August 1994

Chouteau Avenue Viaduct

STLC04

GENERAL DATA

structure no.: 230.03
county: St. Louis
city/town: St. Louis
feature inters.: Missouri Pacific and Burlington Northern Railroad
cadastral grid: T45E R7E
highway route: Chouteau Avenue
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

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

span number: 30
span length: 38.0'
total length: 1134.0'
roadway width: 56.0'
condition: unknown
alterations: roadway and sidewalks widened and guardrails replaced
floor/decking : concrete deck
other features: concrete guardrails

HISTORICAL DATA

erection date: 1915-17
erection cost: $332,155.11
designer: Office of Bridge Engineer, St. Louis Street Department
fabricator : none
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 230.03; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970; field inspection by Richard Collier, 3 April 1992.

sign. rating: 41
evaluation: NRHP non-eligible (relatively early, large-scale example of urban viaduct construction, substantially altered)

inventoried by: Clayton Fraser and Lisa Schoch 4 August 1994

Columbia Avenue Overpass

STLC05

GENERAL DATA

structure no.: 230.04
county: St. Louis
city/town: St. Louis
feature inters.: Missouri Pacific Railroad
cadastral grid: T45N R7E
highway route: Columbia Avenue
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

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

span number: 3
span length: 32.0'
total length: 88.0'
roadway width: 36.0'
condition: good
alterations: none
floor/decking : concrete deck
other features: slotted concrete guardrails

HISTORICAL DATA

erection date: 1913-14
erection cost: $20,326.06 (two-bridge contract)
designer: Office of Bridge Engineer, St. Louis Street Department
fabricator : none
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 230.04; **Annual Report of the President, Board of Public Improvements**, 1912-13, report by Office of Bridge Engineer, Street Department, 8 April 1913, pages 418-19; **Annual Report of the President, Board of Public Improvements**, 1913-14, report by Office of Bridge Engineer, Street Department, 21 May 1914, page 63; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970.

sign. rating: 48
evaluation: NRHP possibly eligible (relatively early, well-preserved example of urban concrete bridge construction)

inventoried by: Clayton B. Fraser 4 August 1994

Broadway Viaduct

STLC06

GENERAL DATA

structure no.: 240.01
county: St. Louis
city/town: St. Louis
feature inters.: Manufacturers Railroad
cadastral grid: T45N R7E
highway route: Broadway Avenue
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

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

span number: 15
span length: 25.0'
total length: 372.0'
roadway width: 59.3'
condition: fair
alterations: roadway widened and guardrails replaced
floor/decking : concrete deck
other features: concrete guardrails

HISTORICAL DATA

erection date: 1917
erection cost: unknown
designer: Division of Bridges and Buildings, St. Louis Board of Public Service
fabricator : none
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 240.01; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970.

sign. rating: 41
evaluation: NRHP non-eligible (relatively early urban concrete viaduct, substantially altered by widening)

inventoried by: Clayton Fraser and Lisa Schoch 4 August 1994

Kingshighway Viaduct

STLC07

GENERAL DATA

structure no.: 260.03
county: St. Louis
city/town: St. Louis
feature inters.: St. Louis Terminal Railway
cadastral grid: T45N R7E
highway route: Kingshighway
highway distr.: 6
current owner: City of St.Louis

STRUCTURAL DATA

superstructure: concrete deck girder
substructure: concrete abutments, wingwalls and spill-through piers

span number: 9
span length: 42.0'
total length: 378.0'
roadway width: 50.0'
condition: fair
alterations: extensive concrete deterioration and guardrail repairs
floor/decking : concrete deck
other features: slightly arched girder profile; brick guardrails; bridge plate: Dedicated by North St. Louis Business Mens Association 1927

HISTORICAL DATA

erection date: 1926-27
erection cost: $200,426.28
designer: Division of Bridges and Buildings, St. Louis Board of Public Service
fabricator : none
contractor: J.J. Bailey and Joseph F. McMahon, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 260.03; Report for Year 1918, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis, page 5; Report for Year 1918-19, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis, page 4; Report for Year 1923-24, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis, page 4; Report for Year 1924-25, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis, 14 April 1925, page 4; Report for Year 1925-26, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis, 13 April 1926, pages 2-3; Report for Year 1927-28, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis, 10 April 1928, pages 5-6; Mont Schuyler, "Kingshighway Viaduct, St. Louis, MO," Engineering News 67, 27 June 1912, pages 1226-1233; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970; field inspection by Richard Collier, 3 April 1992.

Kingshighway Bridge

sign. rating: 50
evaluation: NRHP possibly eligible (typically configured, technologically undistinguished example of urban concrete viaduct construction)

inventoried by: Clayton Fraser and Lisa Schoch 4 August 1994

Eads Bridge

STLC08

GENERAL DATA

structure no.: 260.07
county: St. Louis
city/town: St. Louis
feature inters.: Mississippi River
cadastral grid: T45N R7E
highway route: Washington Street, St. Louis / Broadway, East St. Louis
highway distr.: 6
current owner: City of St.Louis

STRUCTURAL DATA

superstructure: wrought iron/steel deck arch with stone arch approach spans
substructure: stone masonry abutments and piers with angled cutwaters

span number: 3
span length: 533'
total length: 4026.0'
roadway width: 40.0'
condition: fair
alterations: railroad tracks removed, 1977; numerous repairs
floor/decking : timber and concrete
other features: steel guardrails

HISTORICAL DATA

erection date: 1867-74
erection cost: $10,000,000.00
designer: James Buchanon Eads, St. Louis MO
fabricator : Butcher Steel Works (steel);
Carnegie Kloman Company (iron)
contractor: Keystone Bridge Company, Pittsburgh PA

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 260.07. Stephen Lissandrello, National Register of Historic Places Inventory Nomination Form, the Eads Bridge, U.S. Department of the Interior, National Park Service, 1985; Paul Watkins, "The Eads," **Missouri Life**, July-August 1974, 39; David Plowden, **Bridges: The Spans of North America** (New York: W.W. Norton & Company, 1974), pages 127-129; Donald C. Jackson, **Great American Bridges and Dams** (Washington: The Preservation Press, 1988), pages 220-221; Howard S. Miller, **The Eads Bridge** (Columbia: University of Missouri Press, 1979), pages 76-82; field inspection by Richard Collier, 23 February 1992.

sign. rating: 97
evaluation: NRHP eligible (nationally significant example of early bridge construction located at important interstate crossing; one of America's most important spans)

inventoried by: Lisa Schoch 4 August 1994

Bellerive Park Bridge

STLC09

GENERAL DATA

structure no.: 400.01
county: St. Louis
city/town: St. Louis
feature inters.: Broadway
cadastral grid: T45N R6E
highway route: Bellerive Boulevard
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

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

span number: 1
span length: 94.0'
total length: 94.0'
roadway width: 40.0'
condition: good
alterations: none
floor/decking : asphalt over concrete deck
other features: decorative concrete guardrails, concrete sidewalks, modern lampposts

HISTORICAL DATA

erection date: 1917-18
erection cost: $53,851.23
designer: Division of Bridges and Buildings, St. Louis Board of Public Service
fabricator : none
contractor: Herkoltz and Herchert Construction Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 400.01; **Report for Year 1918, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis**, page 5; **Report for Year 1918-19, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis**, page 4; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970; field inspection by Richard Collier, 3 April 1992.

sign. rating: 51
evaluation: NRHP possibly eligible (well-preserved, handsomely designed example of urban concrete bridge construction)

inventoried by: Clayton B. Fraser 4 August 1994

Chouteau Avenue Viaduct

STLC10

GENERAL DATA

structure no.: 400.08
county: St. Louis
city/town: St. Louis
feature inters.: Vandeventer Avenue
cadastral grid: T45N R7E
highway route: Chouteau Avenue
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

superstructure: steel plate rigid frame
substructure: concrete abutments, wingwalls and pier pedestals

span number: 3
span length: 103'
total length: 742.0'
roadway width: 42.0'
condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: slightly arched plate girders, with angle web stiffeners and built-up flanges; built-up steel piers; MSHD-standard slotted concrete guard-rails

HISTORICAL DATA

erection date: 1936-37
erection cost: $295,521.83
designer: Missouri State Highway Department
fabricator : none
contractor: Chase Construction Company;
Webb Boone Paving Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 400.08; Missouri Highway and Transportation Department Primary System Bridge Record, located at Bridge Division, MHTD, Jefferson City, Missouri; field inspection by Richard Collier, 3 April 1992.

sign. rating: 64
evaluation: NRHP possibly eligible (well-preserved example of uncommon structural type)

inventoried by: Clayton B. Fraser 4 August 1994

Franklin Bridge

STLC11

GENERAL DATA

structure no.: 600.03
county: St. Louis
city/town: St. Louis
feature inters.: River Des Peres Lagoon
cadastral grid: T45N R7E
highway route: Wells Drive
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

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

span number: 1
span length: 46.0'
total length: 46.0'
roadway width: 29.5'
condition: deteriorating
alterations: repairs in 1907-08, 1931
floor/decking : concrete over earth fill
other features: ornamental concrete forming on arch spandrels; (non-original) stone masonry guard-rails

HISTORICAL DATA

erection date: 1898
erection cost: unknown
designer: unknown
fabricator : unknown
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 600.03. Caroline Loughlin and Catherine Anderson, **Forest Park**, (Columbia: University of Missouri Press, 1986), pages 3, 5, 7, 18, 35, 51; "Forest Park Bridges, September 1992: Road Bridges in Existence," typewritten list prepared by St. Louis Department of Streets; David Plowden, **Bridges: The Spans of North America** (New York: Viking Press, 1974), page 298.

sign. rating: 70
evaluation: NRHP eligible (earliest example in state of concrete wagon bridge construction)

inventoried by: Clayton B. Fraser 4 August 1994

Lafayette Bridge

STLC12

GENERAL DATA

structure no.: 600.04
county: St. Louis
city/town: St. Louis
feature inters.: River des Peres Lagoon
cadastral grid: T45N R7E
highway route: Jefferson Drive
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

superstructure: welded steel deck arch
substructure: stone and concrete abutments

span number: 1
span length: 72.0'
total length: 72.0'
roadway width: 36.0'
condition: fair
alterations: 1935 reconstructed and repaired, 1988 rehabilitated
floor/decking : asphalt over concrete deck
other features: steel guardrails with architecturally ornamental features

HISTORICAL DATA

erection date: c1888; 1934-35; 1982-88
erection cost: unknown
designer: City of St. Louis Bridges and Buildings Section
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 600.04. Caroline Loughlin and Catherine Anderson, **Forest Park** (Columbia: University of Missouri Press, 1986), pages 3, 7-8, 35, 51; "Forest Park Bridges, September 1992: Road Bridges in Existence," typewritten list prepared by St. Louis Department of Streets; "Report for Fiscal Year Beginning April 10, 1934, and Ending April 9, 1935," Bridges and Building Section, Department of the President, Board of Public Service, City of St. Louis, April 1935; field inspection by Richard Collier, 23 February 1992.

sign. rating: 32
evaluation: NRHP non-eligible (1980s replacement of a 19th century bridge)

inventoried by: Clayton Fraser and Lisa Schoch 4 August 1994

McKinley Bridge

STLC13

GENERAL DATA

structure no.: 600.07
county: St. Louis
city/town: St. Louis
feature inters.: River des Peres Lagoon
cadastral grid: T45N R7E
highway route: McKinley Drive
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

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

span number: 1
span length: 46.0'
total length: 46.0'
roadway width: 40.0'
condition: good
alterations: none
floor/decking : asphalt over earth fill
other features: faux stone ashlar finish on spandrels; ornamental wrought iron guardrails with concrete posts

HISTORICAL DATA

erection date: 1902
erection cost: $12,600.00
designer: Division of Bridges and Buildings, St. Louis Board of Public Service
fabricator : none
contractor: Louisiana Purchase Exposition

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 600.07; Phillip Pregill and Nancy Volkman, **Landscapes in History** (New York: Van Nostrand Reinhold, 1993), page 445; "Forest Park Bridges, September 1992: Road Bridges in Existence," typewritten list prepared by St. Louis Department of Streets; "Reinforced Concrete Bridge over River Des Peres, Forest Park, St. Louis, Mo.," **Engineering News**, 11 June 1903, pages 530-31; field inspection by Richard Collier, 3 April 1992.

sign. rating: 56
evaluation: NRHP possibly eligible (well-preserved, early example of concrete arch bridge construction and a nationally important example of early concrete reinforcing technology)

inventoried by: Clayton B. Fraser 4 August 1994

Old Stable Bridge

STLC14

GENERAL DATA

structure no.: 600.08
county: St. Louis
city/town: St. Louis
feature inters.: River des Peres Lagoon
cadastral grid: T45N R7E
highway route: Theater Drive
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

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

span number: 1
span length: 44.0'
total length: 44.0'
roadway width: 40.0'
condition: fair
alterations: sidewalks, railings repaired, 1986
floor/decking : asphalt over earth fill
other features: ornamental Italianate concrete guardrails; corbeled arch rings with ornamental concrete keystones; corbeled concrete stringcourse with moulded concrete brackets at road level

HISTORICAL DATA

erection date: 1922
erection cost: unknown
designer: Division of Bridges and Buildings, St. Louis Board of Public Service
fabricator : none
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 600.08; "Forest Park Bridges, September 1992: Road Bridges in Existence," typewritten list prepared by St. Louis Department of Streets.

sign. rating: 46
evaluation: NRHP possibly eligible (well-preserved example of urban bridge design associated with significant urban park)

inventoried by: Clayton Fraser and Lisa Schoch 4 August 1994

MacArthur Bridge

STLC15

GENERAL DATA

structure no.:	none	city/town:	St. Louis
county:	St. Louis	feature inters.:	Mississippi River
		cadastral grid:	T45N R7E
		highway route:	Chouteau Avenue
		highway distr.:	6
		current owner:	City of St. Louis

STRUCTURAL DATA

superstructure: steel, 18-panel, pin-connected Pennsylvania through truss with double decks

substructure: coursed stone masonry piers with angled cutwaters

span number:	3	condition:	fair
span length:	668'	alterations:	widened/safety curbs installed, 1946; painted, 1948; closed, 1981
total length:	13,300.0'		
roadway width:	30.0'	floor/decking :	steel grid deck over steel stringers
		other features:	steel lattice guardrails

HISTORICAL DATA

erection date: 1909-17

erection cost: unknown

designer: Boller and Hodge, New York NY

fabricator : American Bridge Company, NY

contractor: American Bridge Company, New York NY (superstructure and flooring);
Missouri Valley Bridge and Iron Company, Leavenworth KS (river piers and substructure of western approach);
Fruin-Colnon Company, St. Louis MO;
City of St. Louis (superstructure, eastern approach)

references: "Proposed New Bridges over the Mississippi River at St. Louis, Mo," **Engineering News**, 21 March 1907; William E. Rolfe and Lucius H. Cannon, "Municipal Bridge of St. Louis: A Record of Municipal Effort," St. Louis Public Library pamphlet, August 1922; "Chronological History of the Municipal Bridge," St. Louis Public Library, April 1930; "Erecting Three 670-Ft. Steel Bridge Spans," **Engineering and Contracting** 36, 13 December 1911, pages 622-30; S.W. Bowen, "The St. Louis Municipal Bridge," **Engineering News** 67, 8 February 1912, pages 231-40; "Erecting the Last Span of the Municipal Bridge, St. Louis," **Engineering Record** 65, 13 April 1912, pages 399-400; "St. Louis Municipal Bridge East Approach a Steel Viaduct Nearly 3 Miles Long," **Engineering Record** 72, 20 November 1915, pages 634-35; "Completing the Municipal Bridge," **Engineering News** 76, 14 December 1916, pages 1129-1131; "Free Bridge to be Named MacArthur," **St. Louis Globe-Democrat**, 28 March 1942; "Unused Approach on MacArthur Bridge Sold," **St. Louis Globe-Democrat**, 12 August 1942; "Committee Favors Post-War Projects," **St. Louis Globe-Democrat**, 12 September 1945; "Hundreds Back Bridge Fight, Morse Says," **St. Louis Star-Times**, 26 October 1946; "2 Candidates Assail 'Gouge' on Bridge Toll," **St. Louis Star-Times**, 28 October 1946; "Suit to End Bridge Tolls Being Planned," **St. Louis Star-Times**, 14 May 1946; "City Seeks Steel Bridge Barriers; 2 More Killed," **St.**

Louis Globe-Democrat, 3 November 1944; "City Motion in Bridge Toll Case Overruled," **St. Louis Post-Dispatch**, 22 November 1946; "Bridge Fight May Go to Highest Court," **St. Louis Star-Times**, 13 November 1948; "Mayor Defends M'Arthur Bridge Toll Collections," **St. Louis Post-Dispatch**, 15 May 1946; "$1,000,000 a Year Tolls Saved City by Bridge Ruling," **St. Louis Globe Democrat**, 3 December 1944; "Artery to the East: Rail and Traffic Flows Over MacArthur Bridge," **St. Louis Post-Dispatch**, 4 February 1951; Floyd C. Shoemaker, ed., **Missouri Day by Day** vol. II, State Historical Society of Missouri, 1943, pages 59-60; "Death on MacArthur Bridge," **St. Louis Post-Dispatch**, 26 December 1950; "'Free Bridge' Symbolic Victory for the People," **St. Louis Business Journal**, 4-10 February 1991.

sign. rating: 71

evaluation: NRHP eligible (outstanding example of large-scale bridge construction at an important great river crossing)

Inventoried by: Lisa Schoch 4 August 1994

McKinley Bridge

STLC16

GENERAL DATA

structure no.: none
county: St. Louis
city/town: St. Louis, MO / Venice, IL
feature inters.: Mississippi River
cadastral grid: T45N R7E
highway route: vacated street
highway distr.: 6
current owner: City of St. Louis

STRUCTURAL DATA

superstructure: steel, 18-panel, pin-connected Pennsylvania through trusses; 10-panel Warren deck truss approach spans
substructure: stone masonry abutments, wingwalls and piers with bullnosed cutwaters

span number: 3; 5
span length: 517.5'
total length: 2515.2'
roadway width: 14.0'
condition: fair
alterations: steel floor added, 1951
floor/decking : asphalt-covered steel deck over steel stringers
other features: steel guardrails

HISTORICAL DATA

erection date: 1907-10
erection cost: $3,500,000.00
designer: Ralph Modjeski, Harrisville PA
fabricator : Missouri Valley Bridge and Iron Company, Leavenworth KS; Pennsylvania Steel Company, Pittsburgh PA
contractor: Missouri Valley Bridge and Iron Company, Leavenworth KS

references: St. Louis Globe-Democrat, 7 February 1907; St. Louis Republican, 13 November 1910; Ralph Modjeski, The McKinley Bridge (Chicago: H.C. Sherman and Company, 1919); St. Louis Globe-Democrat, 29 February 1964; "McKinley Bridge," Municipal Reference Library Monthly Bulletin 93, May 1924; "I.T.S. Bridge to be Rebuilt this Summer, St. Louis Star, 21 February 1924; "$863,000 Extension for McKinley Bridge: I.C.C. Authorizes Construction," St. Louis Globe-Democrat, 1 June 1926; "McKinley Bridge to Get $1,000,000 Steel Floor," St. Louis Globe-Democrat, 11 April 1951; St. Louis Post-Dispatch, 24 September 1954; St. Louis Globe-Democrat, 21 February 1959; St. Louis Post-Dispatch, 14 September 1969; St. Louis Globe-Democrat, 5 March 1957; St. Louis Globe-Democrat, 11 January 1967; St. Louis Globe-Democrat, 31 December 1959; St. Louis Globe-Democrat, 10 November 1960; Landmarks Tour-North St. Louis, Number 22, n.d.

sign. rating: 72
evaluation: NRHP eligible (outstanding example of large-scale bridge construction)

inventoried by: Lisa Schoch 4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
U.S. Highway 40 Underpass
MHTD: K 468

STLC01

DATE(S) OF CONSTRUCTION
1935

LOCATION
U.S. Highway 40 over Sarah Street; T45N R7E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
highway underpass / highway underpass

RATING NRHP possibly eligible (score: 58)

CONDITION
good

OWNER
City of St. Louis

span number:	1	superstructure:	concrete rigid frame
span length:	56.0'	substructure:	concrete abutments and wingwalls
total length:	61.0'	floor/decking:	concrete deck
roadway wdt.:	36.0'	other features:	MSHD-standard slotted concrete guardrails

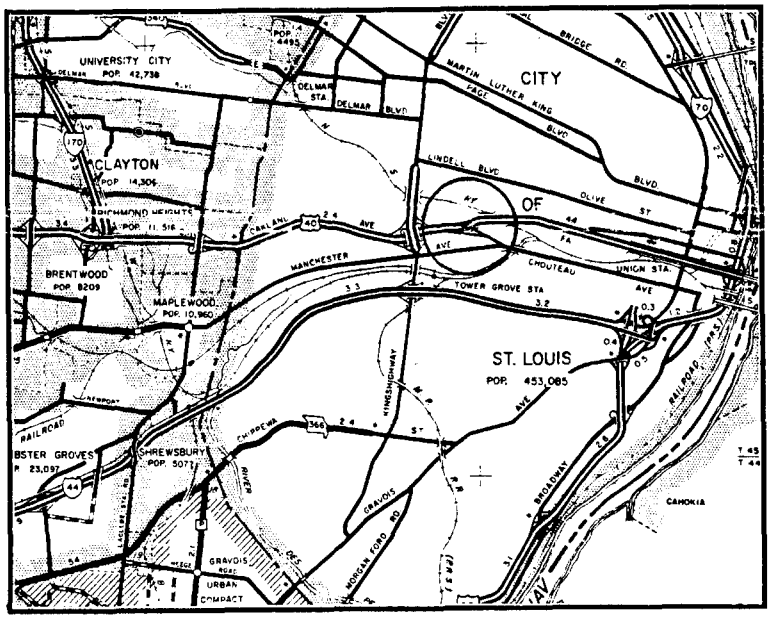
As part of the effort to create jobs during the Depression, Congress in 1934 passed an act allowing federal monies to be used for road and bridge construction within municipalities. Taking advantage of the new legislation, the Missouri State Highway Commission undertook a number of urban road and bridge projects in subsequent years. Between 1934 and 1936, 558 new structures were designed by MSHD. This concrete bridge that carries Sarah Street over U.S. Highway 40 in St. Louis was one of these. The structure consists of a single-span concrete rigid frame, which features a slightly arched slab supported by concrete abutments, with slotted concrete guardrails. The U.S. 40 Underpass was designed by the Missouri State Highway Department as part of work on U.S. Highway 40 in St. Louis. On June 7, 1935, MSHD awarded a contract to build the bridge to the Powers Thompson Construction Company. Presumably, Thompson finished the bridge later that year. Total cost: $15,051.40. Since its completion, the underpass has carried vehicular traffic in essentially unaltered condition.

The U.S. Highway 40 Underpass is important as one of the grade separation projects in Missouri funded through the New Deal's Hayden-Cartwright Act. Federal relief programs of the 1930s broke with past practice by allowing federal funds to be used for urban, as well as rural highways. Grade separation was a major focus of the highway department during this period, requiring commitment of much staff time. The U.S. 40 Underpass is technologically distinguished as one of the few examples in the state of this esoteric structural type. Developed by Westchester County, New York, in the early 1920s, the concrete rigid frame bridge became especially popular for federal relief projects during the 1930s. Both picturesque and practical, the flat or elliptically arched designs appealed to proponents of urban beautification. The Missouri State Highway Department used the concrete rigid frame sparingly in urban overpass situations, never adopting this structural type as a state standard. Only three concrete rigid frame bridges have been identified by the statewide bridge inventory, all of which are in Kansas City. Although built relatively late in the milieu of rigid frame construction, the U.S. Highway 40 Underpass is distinguished by its well-preserved condition. It is technologically significant as a relatively rare example of what was essentially an experimental structural type for the state highway department.

NAME(S) OF STRUCTURE

U.S. Highway 40 Underpass

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 468; Missouri Highway and Transportation Department Primary System Bridge Record, located at Bridge Division, MHTD, Jefferson City, Missouri.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Lisa Schoch	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Arsenal Street Overpass STLC02
MHTD: 230.01

DATE(S) OF CONSTRUCTION
1913-14

LOCATION
Arsenal Street over Missouri Pacific Railroad; T45N R7E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
city street overpass / city street overpass

RATING NRHP possibly eligible (score: 48)

CONDITION
fair

OWNER
City of St. Louis

span number:	3	superstructure:	concrete deck girder
span length:	31.0'	substructure:	concrete abutments, wingwalls and piers
total length:	90.0'	floor/decking:	concrete deck
roadway wdt.:	36.0'	other features:	slotted concrete guardrails

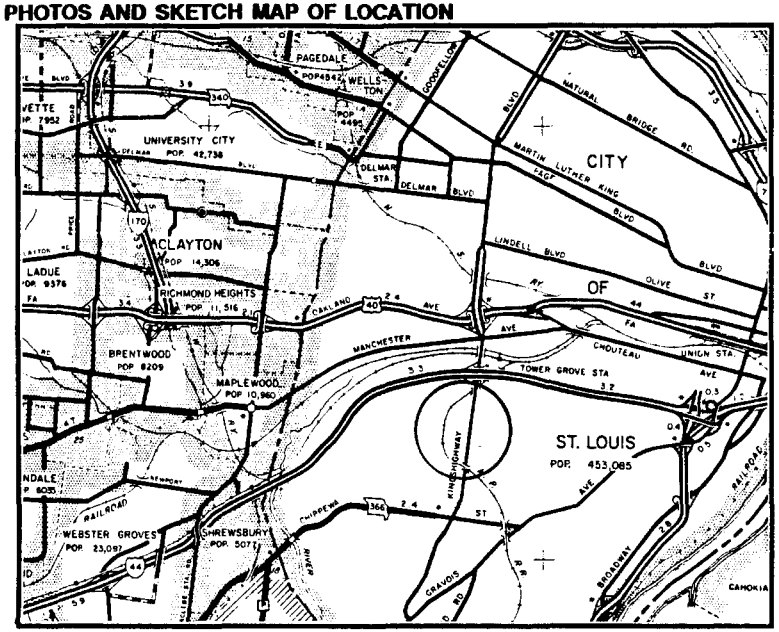
In 1886 the St. Louis, Oak Hill and Carondolet Railway Company constructed an overpass over its tracks at Arsenal Street north of Tower Grove Park in St. Louis. The railroad maintained the bridge until 1899, when it abandoned the structure to the city's care. Situated on a skew to Arsenal Street the bridge was "not only unsightly because of its narrowness and lack of alignment with the street," reported the city bridge engineer in April 1913, but it was "too narrow for traffic and ought to be rebuilt at once." In 1911 the city board of aldermen had passed an ordinance requiring railroads to pay a share of construction costs for such overpasses, legislation that was aimed specifically toward the Missouri Pacific Railroad for the overpasses at Arsenal Street and Columbia Avenue [**STLC05**]. The Bridge Engineer's Office of the St. Louis Street Department designed almost identical concrete structures for both crossings–each a three-span concrete deck girder bridge with concrete guardrails, piers and abutments. After the railroad paid $13,000 for the two overpasses, the city let a contract to St. Louis builder John B. Turner to construct both on June 2, 1913. Within two weeks the city had moved the old Arsenal Street structure to one side. The contractor was slow in starting work, however, not beginning the substructural excavation until late July. Once finally underway, the construction proceeded steadily; on February 16, 1914, the Arsenal Street Overpass was opened to traffic. It has functioned in place since, with only maintenance-related repairs.

Missouri was slow to embrace concrete as a bridge superstructural material after the turn of the century. It was not until the state highway department began promulgating standard concrete slab and girder designs in the 1920s that the counties began building all-concrete bridges with any regularity. The exceptions to this were the heavily urbanized areas–primarily Kansas City and St. Louis–where heavy traffic necessitated the use of concrete relatively early. Built by the city and jointly funded by a major railroad, the Arsenal Street Overpass is distinguished among Missouri's concrete bridges as one of the earliest dateable concrete girder spans still in use.

NAME(S) OF STRUCTURE

Arsenal Street Overpass

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 230.01; **Annual Report of the President, Board of Public Improvements,** 1912-13, report by Office of Bridge Engineer, Street Department, 8 April 1913, pages 418-19; **Annual Report of the President, Board of Public Improvements,** 1913-14, report by Office of Bridge Engineer, Street Department, 21 May 1914, page 63; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Carondolet Park Bridge
MHTD: 230.02

STLC03

DATE(S) OF CONSTRUCTION
1912-13

LOCATION
Grand Avenue over Missouri Pacific Railroad; T45N R7E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
city street overpass / city street overpass

RATING NRHP possibly eligible (score: 54)

CONDITION
good

OWNER
City of St. Louis

span number:	1	superstructure:	concrete filled spandrel arch
span length:	95.0'	substructure:	concrete abutments and wingwalls
total length:	95.0'	floor/decking:	asphalt over earth fill
roadway wdt.:	40.0'	other features:	ornamental concrete guardrails with corbeled parapets; Gothic pylons at arch corners

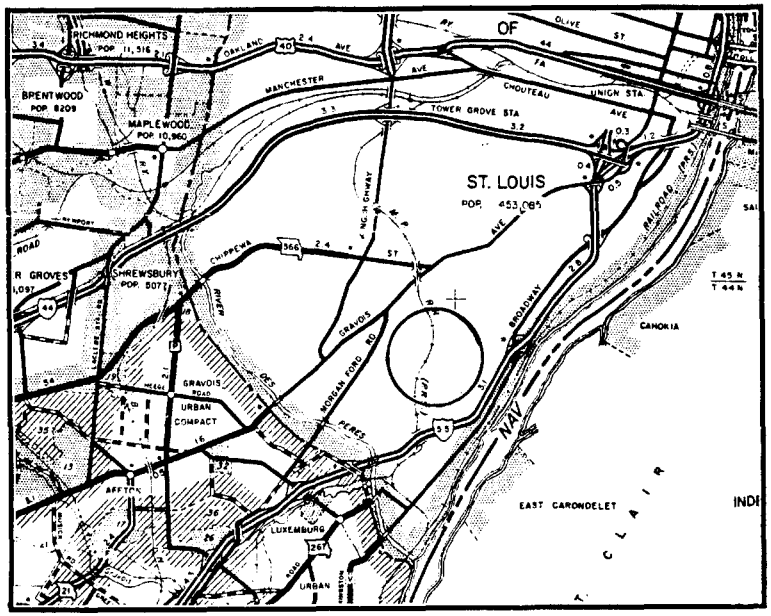
Located at the southeast corner of Carondolet Park, this long-span concrete arch bridge carries Grand Boulevard over the tracks of the Missouri Pacific Railroad. The structure is comprised of a single 95-foot, filled spandrel arch with an elliptical profile. Called by the city the Carondolet Park Bridge (although, strictly speaking, the structure is an overpass), this well-proportioned span features decorative guardrails and Gothic pylons at the bridge's four corners. The Carondolet Park Bridge was designed in 1912 by the Office of Bridge Engineer in the St. Louis Street Department. The city appropriated $28,000 to build the arch and arranged for a right-of-way from the Missouri Pacific Railroad. In September 1912 a contract to construct the bridge was executed with St. Louis builder John V. Boland, who began work that month. By the following April the street commissioner reported that the foundations had almost been completed. By mid-June the bridge superstructure was complete, with the exception of the grading and installation of light standards. "In order that the bridge might be used, about seven thousand yards of earth was excavated from the adjoining park and placed in the approaches," the city bridge engineer reported. "Most of the labor for this work was done by Work House prisoners, while the teams were paid for out of our fund for repairs and maintenance. A temporary roadway was built over the bridge by another Division of the Street Department. The bridge was opened to traffic about December 10th." Total cost: $27,343.30. Since its opening the Carondolet Park Bridge has carried traffic into the park, in essentially unaltered condition.

Carondolet Park in St. Louis is one of Missouri's most noteworthy urban parks, rivaled in town by Tower Grove Park and Forest Park and some of the greens in the Kansas City park system. As an integral part of Carondolet Park, this overpass structure is closely associated with both the city's urban landscaping and transportation. It is distinguished as a well-preserved example of urban bridge construction–one of Missouri's more handsome concrete spans.

NAME(S) OF STRUCTURE

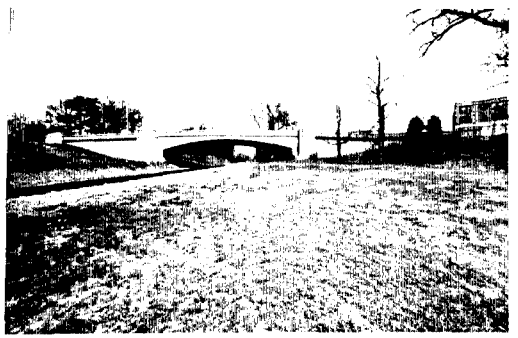
Carondolet Park Bridge

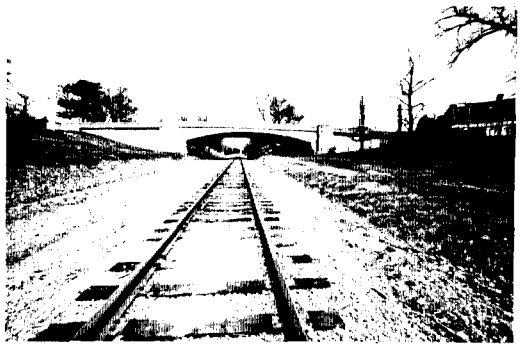
PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT
GENERAL HIGHWAY MAP





SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 230.02; **Annual Report of the President, Board of Public Improvements**, 1912-13, report by Office of Bridge Engineer, Street Department, 8 April 1913, pages 418-19; **Annual Report of the President, Board of Public Improvements**, 1913-14, Office of Bridge Engineer, Street Department, 21 May 1914, page 63; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970; field inspection by Richard Collier, 3 April 1992.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser and Lisa Schoch	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Columbia Avenue Overpass STLC05
MHTD: 230.04

DATE(S) OF CONSTRUCTION
1913-14

xcLOCATION
Columbia Avenue over Missouri Pacific Railroad; T45N R7E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
city street overpass / city street overpass

RATING NRHP possibly eligible (score: 48)

CONDITION
good

OWNER
City of St. Louis

span number:	3	superstructure:	concrete deck girder
span length:	32.0'	substructure:	concrete abutments, wingwalls and piers
total length:	88.0'	floor/decking:	concrete deck
roadway wdt.:	36.0'	other features:	slotted concrete guardrails

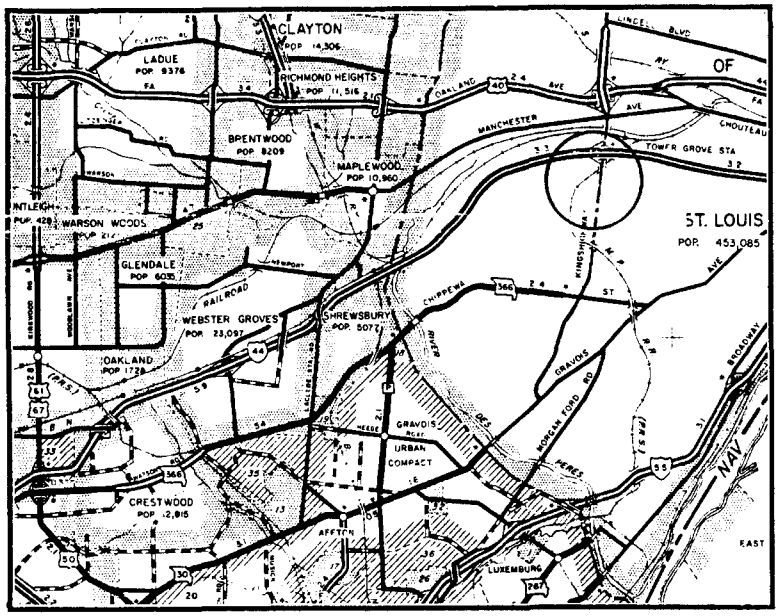
In 1911 the City of St. Louis passed an ordinance requiring railroads to pay a share of the costs to build grade separations for city streets. Aimed primarily toward the Missouri Pacific Railroad and the Columbia Avenue and Arsenal Street overpasses, the law stated: "Whenever the City shall declare by ordinance the necessity of bridging over or tunneling under any street on the line of this railroad, the company owning said railroad shall be obliged to pay one-half of the cost of such structure and the whole cost of grading necessary." Thinking that the railroad would respond immediately to the city's request for a replacement structure at the Columbia Avenue Overpass, the city set aside $15,000 toward its construction, and the Bridge Engineer's Office of the Street Department prepared construction drawings for a concrete structure here. As delineated by the city's engineers, the proposed Columbia Avenue Overpass would consist of three concrete deck girders, supported by concrete piers and abutments. But litigation on another grade separation at Tower Grove Road delayed construction of the Columbia Avenue span for two years. After the railroad paid $13,000 for the two overpasses, the city in June 1913 let a contract to St. Louis builder John B. Turner to construct both the Columbia Avenue and Arsenal Street bridges. The contractor was slow in starting work, however, not beginning the substructural excavation until late July. Once finally underway, the construction proceeded steadily; on January 16, 1914, the Columbia Avenue Overpass was opened to traffic. It has functioned in place since, with only maintenance-related repairs.

Missouri was slow to embrace concrete as a bridge superstructural material after the turn of the century. It was not until the state highway department began promulgating standard concrete slab and girder designs in the 1920s that the counties began building all-concrete bridges with any regularity. The exceptions to this were the heavily urbanized areas–primarily Kansas City and St. Louis–where heavy traffic necessitated the use of concrete relatively early. Built by the city and jointly funded by a major railroad, the Columbia Avenue Overpass is distinguished among Missouri's concrete bridges as one of the earliest dateable concrete girder spans still in use.

NAME(S) OF STRUCTURE

Columbia Avenue Overpass

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 230.04; **Annual Report of the President, Board of Public Improvements**, 1912-13, report by Office of Bridge Engineer, Street Department, 8 April 1913, pages 418-19; **Annual Report of the President, Board of Public Improvements**, 1913-14, report by Office of Bridge Engineer, Street Department, 21 May 1914, page 63; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970.

INVENTORIED BY	AFFILIATION	DATE
Clayton [illegible] Fraser and Lisa Schoch	Fraserdesign [illegible]veland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Kingshighway Viaduct
MHTD: 260.03

STLC07

DATE(S) OF CONSTRUCTION
1926-27

LOCATION
Kingshighway over St. Louis Terminal Railway; T45N R7E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
city street viaduct / city street viaduct

RATING NRHP possibly eligible (score: 50)

CONDITION
fair

OWNER
City of St.Louis

span number:	9	superstructure:	concrete deck girder
span length:	42.0'	substructure:	concrete abutments, wingwalls and spill-through piers
total length:	378.0'	floor/decking:	concrete deck
roadway wdt.:	50.0'	other features:	slightly arched girder profile; brick guardrails; bridge plate: **Dedicated by North St. Louis Business Mens Association 1927**

The Kingshighway Viaduct in St. Louis had a tentative beginning. A city commission was originally appointed in 1902 to make suggestions for extending the city's highway system. The viaduct did not then advance to the design stage, although a temporary bridge was built for the Louisiana Purchase Exposition in 1904. A second attempt at a permanent structure was made in 1907 but was again abandoned. Finally, with design plans completed and approved, the viaduct moved toward construction in 1910. However, the onset of World War I further postponed the project until it could be recaptured in 1923. In November 1923 the St. Louis Division of Bridges and Buildings made a proposal to the St. Louis Terminal Railway to construct a viaduct carrying Kingshighway over the St. Louis Terminal rail tracks in Penrose Park.

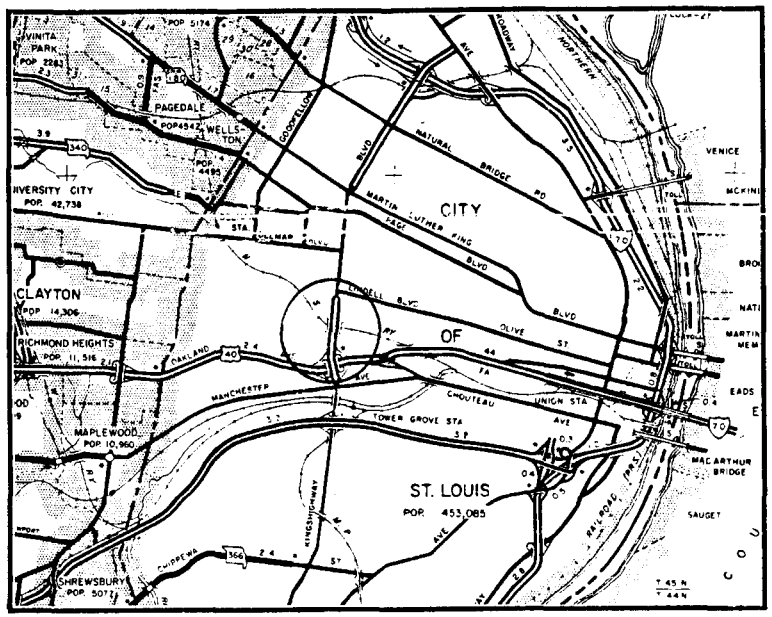
By 1924 an agreement was still pending. In early 1925 the city solicited bids to construct its newest viaduct. By April the first contracts had been awarded, for grading approaches, and other construction except paving and sidewalks and lamps to J.J. Bailey and Joseph F. McMahon of St. Louis. But a dispute arose between city developers and the St. Louis Terminal Railway company over funding for the structure. In October 1925 the disagreement was resolved, and the following February the city passed an ordinance approving $210,000.00 for the construction of the viaduct; the Terminal Railway paid the city an additional $125,000 to help defray the cost of construction. By 1927 the Kingshighway Viaduct was nearly complete, the concrete work being done. Placing of the handrails was yet to be done. At that time, the City expected the structure to be done ahead of schedule, but wet weather prevented its timely completion.

After a three-month delay, work quickly resumed. With its approach grading, the new structure reached a length of about 1700 feet. The viaduct itself extended 378 feet, consisting of nine 42-foot spans. Between August and October 1927 the finishing touches were

made on the structure: pouring sidewalks, asphalt paving and installing lights. The viaduct was finally opened to traffic on November 15th amidst a ceremony by the North St. Louis Business Men's Association. Made of reinforced concrete, the structure features gray brick handrails trimmed with Bedford limestone. Consuming nearly a decade to complete, the Kingshighway Viaduct demonstrates the foresight of St. Louis city planners. Recognizing their city's imminent expansion, they instituted construction projects such as the Kingshighway Viaduct to facilitate an increasing population and a rapidly developing metropolis.

NAME(S) OF STRUCTURE
Kingshighway Viaduct

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 260.03; **Report for Year 1918, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis,** page 5; **Report for Year 1918-19, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis,** page 4; **Report for Year 1923-24, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis,** page 4; **Report for Year 1924-25, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis,** 14 April 1925, page 4; **Report for Year 1925-26, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis,** 13 April 1926, pages 2-3; **Report for Year 1927-28, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis,** 10 April 1928, pages 5-6; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970; field inspection by Richard Collier, 3 April 1992.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser and Lisa Schoch	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Eads Bridge STLC08
MHTD: 260.07

DATE(S) OF CONSTRUCTION
1867-74

LOCATION
Washington Street, St. Louis / Broadway, East St. Louis over Mississippi River; T45N R7E, St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
roadway and railway bridge / light rail bridge

RATING NRHP eligible (score: 97)

CONDITION
fair

OWNER
City of St.Louis

span number:	3	superstructure:	wrought iron/steel deck arch with stone arch approach spans
span length:	533'	substructure:	stone masonry abutments and piers with angled cutwaters
total length:	4026.0'	floor/decking:	timber and concrete
roadway wdt.:	40.0'	other features:	steel guardrails

In an effort to make their city the "gateway to the Far West," St. Louisans throughout the late 1840s and into the 1860s sought ways in which to develop their river commerce. Having watched cities such as Rock Island, Illinois, where the first Mississippi River railroad bridge was constructed in 1856, and Chicago, which had become a major railroad center by 1860, St. Louis by the late 1860s realized that a major bridge over the Mississippi River would help to make it a more competitive city. Such a bridge would link five eastern and western railroads that converged on St. Louis at that time. With the local media boosting the bridge idea, numerous bridge builders–including John A. Roebling and Lucius Boomer–submitted plans for the proposed structure.

Boomer became the leading choice for the job when he pressured the Illinois legislature to grant his Illinois and St. Louis Bridge Company a 25-year right to build bridges from the Illinois shore of the Mississippi River. In this way, if Chicago investors built the bridge they would absorb all tolls from St. Louis, possibly assuming control of St. Louis' commercial fate. At the same time, Boomer's proposal could easily allow for the blockage of any bridge building on the Missouri shore for 25 years. It was not entirely clear if it was Boomer's intention to build or prevent the building of a bridge. Although his plan eventually passed, his credibility diminished when he attempted to discredit the plans submitted by James Buchanon Eads, who distributed his own drawings for the project when he became convinced that Boomer's design was flawed. When public opinion plummeted, Boomer and his associates met with Eads to arbitrate a merger in 1868. Eads' design was adopted at that time.

With no formal education but a natural gift for engineering, Eads acquired practical experience gained from working as a purser on a Mississippi steamboat, from which he developed an intimate understanding of that river's disposition. Initially not involved in the boosterism over bridge planning, Eads was not a likely choice to design the new bridge. His background was in removing boat wreckage from the river; he had no formal training in engineering. As soon as he became the chosen builder, Eads assembled a prestigious group of assistants to aid in preparing the final plans for the bridge.

Built between 1867 and 1874, the Eads Bridge–originally the St. Louis Bridge–spans the Mississippi River, connecting St. Louis, Missouri,

with East St. Louis in Illinois. A ribbed steel arch bridge, the Eads features two decks, "granite faced limestone piers", and including its approaches, has an overall length of 6,442 feet. Originally designed and constructed for railway use, the Eads was known for its innovative building techniques and features. Although it was not entirely steel, it was one of the first bridges to employ that material extensively in its structure. The only American company that could handle the enormous task of producing the steel for the bridge was the Keystone Bridge Company, whose vice-president was Andrew Carnegie; its president was the well-known engineer Jacob J. Linville. When Eads engineers approached Linville to sign him as a consulting engineer early in the bridge's construction, Linville refused, stating "'The bridge, if built upon these plans will not stand up; it will not carry its own weight.'" Nevertheless, by 1870, Carnegie convinced Linville to change his mind; at that time the contract for the superstructure was awarded to Keystone Bridge Company who subcontracted steel fabrication to Butcher Steel Works, and iron to Carnegie's Carnegie-Kloman Company. Work on the superstructure began in April 1873.

The Eads Bridge was also the first to use the pneumatic caisson method to affix the bridge's piers on the bedrock, which ranged from 172 to 197 feet below the water's surface. In its design, the Eads was the earliest to utilize the cantilever construction method, hollow tubular chord members, and alloy steel as a building material. It consists of a three-arch superstructure constructed with the cantilever method. Two of the arches are 502-feet long, while the third is 520-feet. From the very start the construction of the Eads was plagued with difficulties. The pneumatic caisson method caused an illness known as the "bends" in many of the workers; by the time the bridge's piers were in place in 1871, fifteen men had died and many were crippled. Other problems, such as Eads' health and his demanding personality, conflicts with steamboat operators, and difficulties with rupturing arch ribs, characterized the construction years.

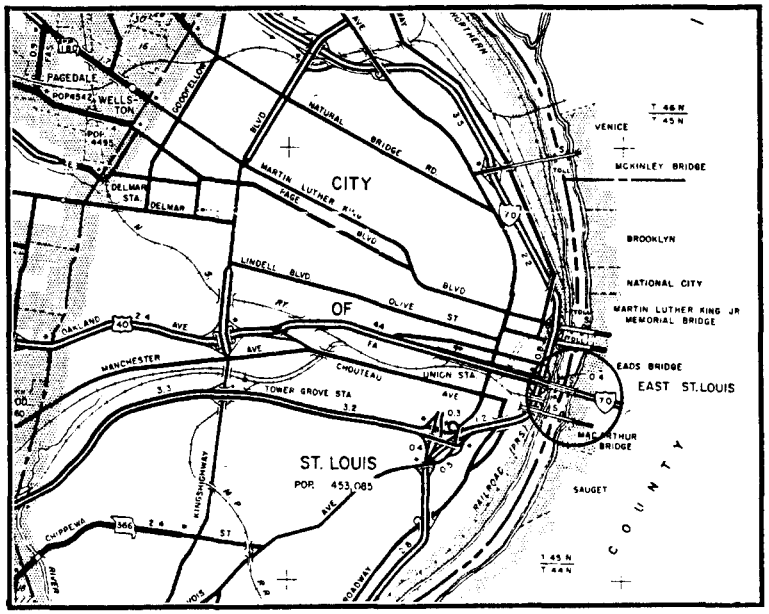
Officially opened on July 4, 1874, as the Illinois and St. Louis Bridge, the structure soon faced serious financial problems. No agreement was made with the railroad connected to the bridge–the St. Louis, Vandalia, and Terre Haute Railroad–to allow traffic across the bridge. In addition, other railroads quickly boycotted the new bridge, an act that eventually led to the demise of the bridge's owner, the St. Louis and Illinois Bridge Company. For the next fifteen years, the Eads' lease was shuttled between various companies. The Terminal Railroad Association eventually obtained the lease and has operated the bridge since 1889. The rail tracks to the bridge were removed in 1974, but the highway section is still in use. Currently the bridge is under repair, so its roadway is closed to all but light rail traffic.

Bridges over the Mississippi River comprise some of America's longest examples of vehicular steel truss construction. With over 400 miles fronting on the great river, Missouri possesses several notable Mississippi River bridges. Seven of these, including the Eads Bridge, are included in the statewide historic bridge inventory, and are all individually eligible for inclusion in the National Register. As the first span over the lower Mississippi River and a formative exercise in bridge engineering and construction, the Eads Bridge is nationally significant, clearly one of America's most important 19th century spans.

NAME(S) OF STRUCTURE

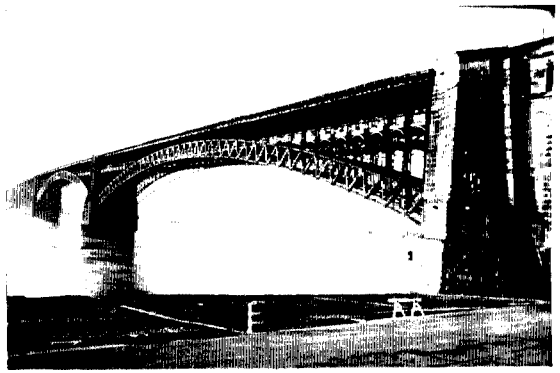
Eads Bridge

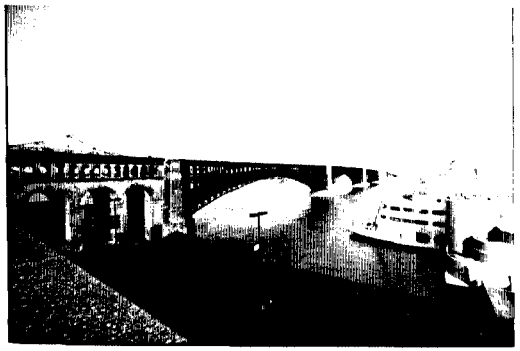
PHOTOS AND SKETCH MAP OF LOCATION

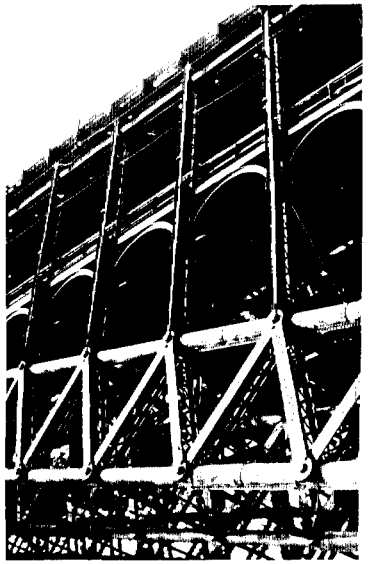


LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT
GENERAL HIGHWAY MAP







SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 260.07. Stephen Lissandrello, National Register of Historic Places Inventory Nomination Form, the Eads Bridge, U.S. Department of the Interior, National Park Service, 1985; Paul Watkins, "The Eads," **Missouri Life**, July-August 1974, 39; David Plowden, **Bridges: The Spans of North America** (New York: W.W. Norton & Company, 1974), pages 127-129; Donald C. Jackson, **Great American Bridges and Dams** (Washington: The Preservation Press, 1988), pages 220-221; Howard S. Miller, **The Eads Bridge** (Columbia: University of Missouri Press, 1979), pages 76-82; field inspection by Richard Collier, 23 February 1992.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser and Lisa Schoch	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Bellerive Park Bridge
MHTD: 400.01

STLC09

DATE(S) OF CONSTRUCTION
1917-18

LOCATION
Bellerive Boulevard over Broadway; T45N R6E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
city street overpass / city street overpass

RATING NRHP possibly eligible (score: 51)

CONDITION
good

OWNER
City of St. Louis

span number:	1	superstructure:	concrete filled spandrel arch
span length:	94.0'	substructure:	concrete abutments and wingwalls
total length:	94.0'	floor/decking:	asphalt over concrete deck
roadway wdt.:	40.0'	other features:	decorative concrete guardrails, concrete sidewalks, modern lampposts

This handsomely proportioned concrete bridge is situated at Bellerive Park near the Mississippi River in St. Louis. Known historically as the Bellerive Park Bridge, it is in fact an overpass, carrying Bellerive Boulevard over Broadway. The structure is comprised of a single long-span filled spandrel arch supported by concrete abutments. Architectural expression is provided by the decorative concrete guardrails and massive pylons at the abutments, both of which feature Italianate lines and trim. Planning for the Bellerive Bridge began in July 1917, when the city board of aldermen appropriated $55,000.00 toward its construction. The newly organized Division of Bridges and Buildings designed the structure that year, but the overpass's construction appeared stalled by World War I. "So much time was consumed in following the regular procedure before bids could be taken... that it was August 28th before bids were finally opened," E.R. Kinsey, president of the board of public service complained. When bids were received, even the low bid submitted by the Herkoltz and Herchert Construction Company of St. Louis was some $10,000 over budget. The city awarded a contract for all but the paving and light fixtures.

Herkoltz and Herchert were forced to wait until paving on Bellerive was completed in November 1917 before they could start construction on the overpass. By then government restrictions on shipments of gravel limited the amount of work that could be undertaken by the end of the year. The workers nevertheless pushed construction as much as possible. "By securing early deliveries of practically all material required for building this bridge the contractor was able to continue its construction after most other work had been forced to stop through inability to get materials shipped." The bridge was completed on October 15, 1918. Completed but not ready for traffic. To bring the project in under budget, the city had cut grading from the contract. The Bellerive Bridge thus stood essentially complete because of a lack of funds to grade and pave its roadway. It languished throughout 1919 and 1920. In 1921 Kinsey wrote, "No money was set aside for completing the bridge at Bellerive Park and the investment made in that structure is still to no purpose." He does not mention the paving in subsequent reports, so it is assumed that it was quietly paved and opened sometime in the early 1920s. Since that time, the Bellerive Park Bridge has functioned in place, in essentially unaltered condition.

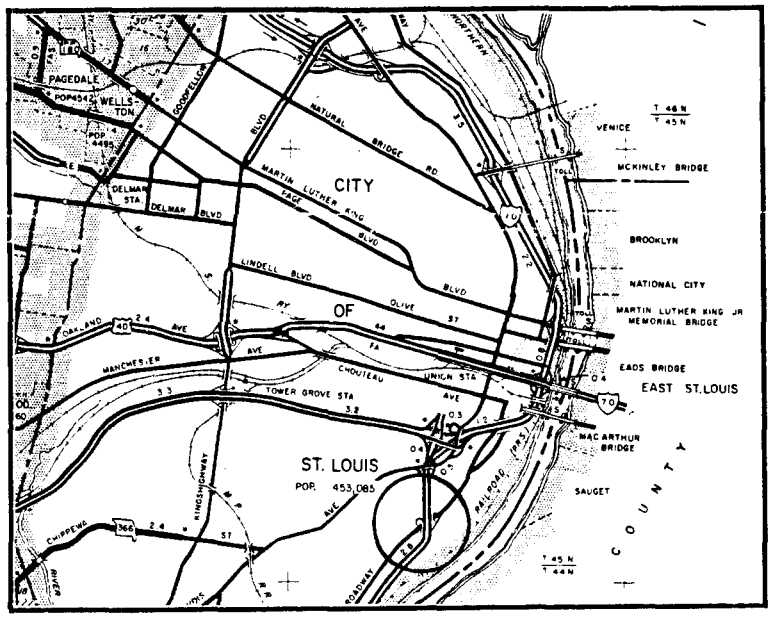
"The workmanship on this structure has been of the highest class throughout and the work as completed is very satisfactory in every respect," Kinsey stated. As one of the first bridges designed by the re-organized Division of Bridges and Buildings, the Bellerive Park

Bridge provided a prototype for future bridge design and detailing. It is today a noteworthy example of urban concrete bridge construction. Handsomely proportioned and detailed, the Bellerive Park Bridge is distinguished as one of St. Louis's–and Missouri's–most architecturally successful spans.

NAME(S) OF STRUCTURE

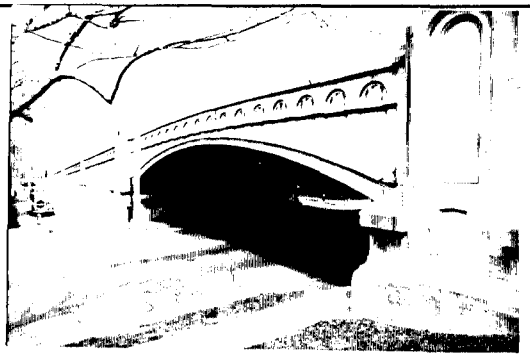
Bellerive Park Bridge

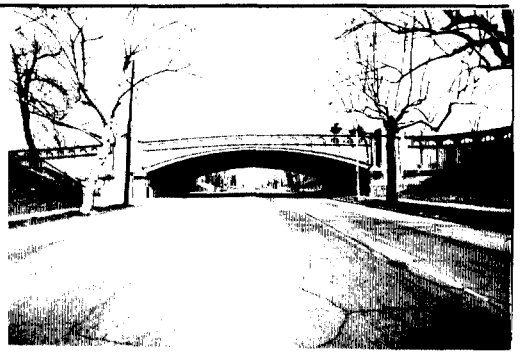
PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT GENERAL HIGHWAY MAP





SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 400.01; **Report for Year 1918, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis**, page 5; **Report for Year 1918-19, Board of Public Service, President's Department, Division of Bridges and Buildings, City of St. Louis**, page 4; St. Louis Board of Public Services, "Bridges Owned and Maintained by the City of St. Louis," May 1970; field inspection by Richard Collier, 3 April 1992.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser and Lisa Schoch	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Chouteau Avenue Viaduct
MHTD: 400.08

STLC10

DATE(S) OF CONSTRUCTION
1936-37

LOCATION
Chouteau Avenue over Vandeventer Avenue; T45N R7E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
highway viaduct / city street viaduct

RATING NRHP possibly eligible (score: 64)

CONDITION
good

OWNER
City of St. Louis

span number:	3	superstructure:	steel plate rigid frame
span length:	103'	substructure:	concrete abutments, wingwalls and pier pedestals
total length:	742.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	42.0'	other features:	slightly arched plate girders, with angle web stiffeners and built-up flanges; built-up steel piers; MSHD-standard slotted concrete guardrails

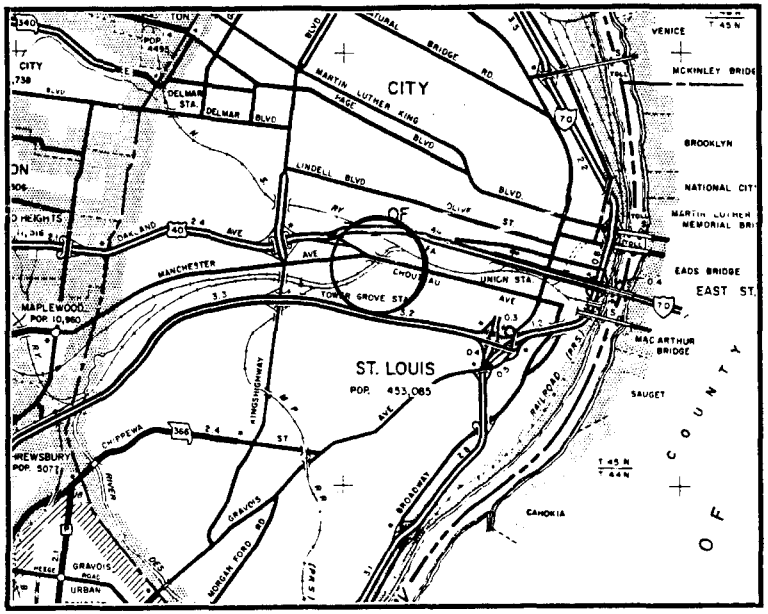
As part of the effort to create jobs during the Depression, Congress in 1934 passed an act allowing federal monies to be used for road and bridge construction within municipalities. Taking advantage of the new legislation, the Missouri State Highway Commission undertook a number of urban road and bridge projects in subsequent years. Between 1934 and 1936, 558 new structures were designed by MSHD. This steel bridge that carries Chouteau Avenue over Vandeventer Avenue and Missouri Pacific Railroad in St. Louis was one of these. As delineated by MSHD, the Chouteau Avenue Viaduct features three 103-foot spans, with the steel deck girders rigidly fixed to steel pedestals to form a rigid-frame superstructure. On December 1, 1936, MSHD awarded contracts to build and pave the bridge to the Chase Construction Company and the Webb Boone Paving Company. Presumably, the bridge was completed in 1937. Total cost: $295,521.83. Since its completion, the Chouteau Avenue Viaduct has carried vehicular traffic in essentially unaltered condition.

As an important crossing of Chouteau Avenue, this viaduct has formed an integral part of the city's street system. The viaduct is also important as one of the railroad separation projects funded through the New Deal's Hayden-Cartwright Act. Federal relief programs of the 1930s broke with past practice by allowing federal funds to be used for urban, as well as rural highways. Grade separation was a major focus of the highway department during this period, requiring commitment of much staff time. The Chouteau Avenue Viaduct is technologically distinguished as one of the few examples in the statewide bridge inventory of steel rigid-frame construction. Steel rigid-frame bridges had been developed in the late 19th century and marketed extensively to the counties by bridge fabricators as the bedstead truss. Due primarily to their structural shortcomings, bedsteads largely fell from favor soon after the turn of the century in virtually all of the country except Missouri. Eventually even Missouri counties stopped buying bedsteads. The rigid-frame design remained dormant in the state until the highway department revived it in the early 1930s with a limited number of urban viaducts and overpasses. But MSHD's use of rigid frames proved shortlived, limited primarily to Kansas City and St. Louis, the department never adopted it as a structural standard. The only remaining examples in Missouri of this rather esoteric structural type are three Jackson County structures built in 1934 and this structure in St. Louis. They are thus technologically significant as relatively rare examples of what was essentially an experimental structural type for the state highway department.

NAME(S) OF STRUCTURE

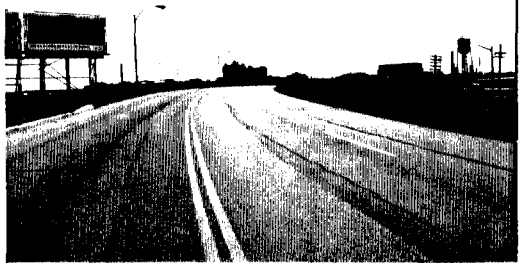
Chouteau Avenue Viaduct

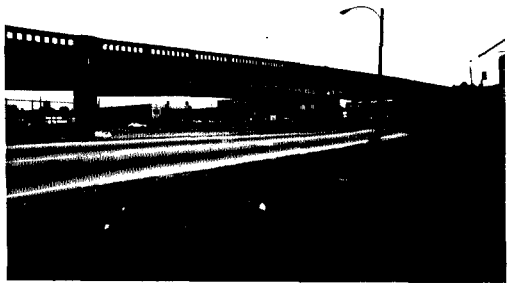
PHOTOS AND SKETCH MAP OF LOCATION

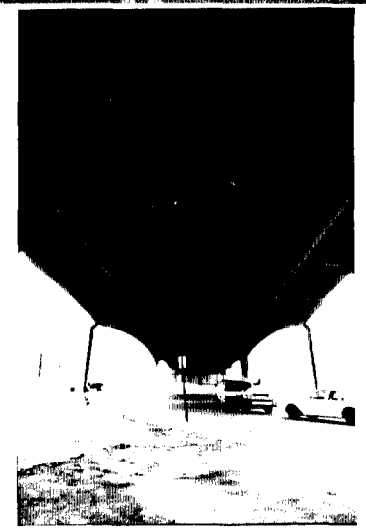


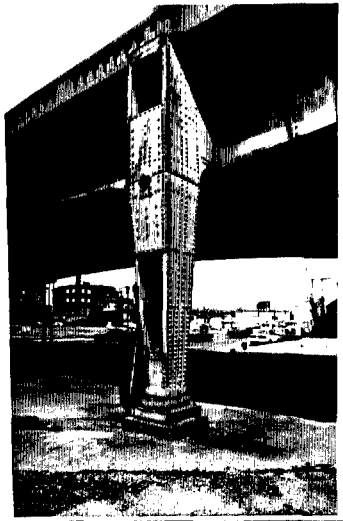
LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT
GENERAL HIGHWAY MAP









SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 400.08; Missouri Highway and Transportation Department Primary System Bridge Record, located at Bridge Division, MHTD, Jefferson City, Missouri; field inspection by Richard Collier, 3 April 1992.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Lisa Schoch	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Franklin Bridge
MHTD: 600.03

STLC11

DATE(S) OF CONSTRUCTION
1898

LOCATION
Wells Drive over River Des Peres Lagoon; T45N R7E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
city park bridge / city park bridge

RATING NRHP eligible (score: 70)

CONDITION
deteriorating

OWNER
City of St. Louis

span number:	1	superstructure:	concrete filled spandrel Melan arch
span length:	46.0'	substructure:	concrete abutments and wingwalls
total length:	46.0'	floor/decking:	concrete over earth fill
roadway wdt.:	29.5'	other features:	ornamental concrete forming on arch spandrels; (non-original) stone masonry guardrails

As early as 1864 the Missouri State Legislature approved an election to determine whether St. Louis should acquire a large urban park. At the same time, a board of park commissioners was created and asked to select an area that would not exceed 350 acres for the site. Anxious to compete with other large cities that had already acquired parks, many St. Louisans voted on the park proposal in April 1864. Nevertheless, the Civil War interrupted immediate plans for the park. In 1870, however, real estate businessman Hiram W. Leffingwell rekindled the park idea. Late that year, he summoned the media and local politicians to hear his park proposal, which entailed the creation of a 2,754-acre park a mile west of the city. Officially founded in March 1872, the park consisted of 1,370 acres that were obtained for under $800,000. Known as Forest Park, it was officially dedicated in 1876.

Development of the area's facilities began soon after its creation. Buildings, roads, bridges, and even artificial lakes were part of the early plans for the park. There were two features of Forest Park that caused difficulties for park commissioners. The River des Peres, described as "a wild and uncontrollable prairie stream," was prone to flooding until it was channeled in underground conduit in 1920. Also, Clayton Road traversed the southeast section of the park, constituting the only link between the city of St. Louis with the farming communities of St. Louis County. Park commissioners were not at all pleased with farm traffic through the park but were compelled to endure it until Clayton Road could permanently be relocated. Forest Park was the site of the 1904 World's Fair, an event that significantly altered the park's facilities and grounds; walkways were built, flower beds planted, bridges enlarged and built, and numerous buildings constructed.

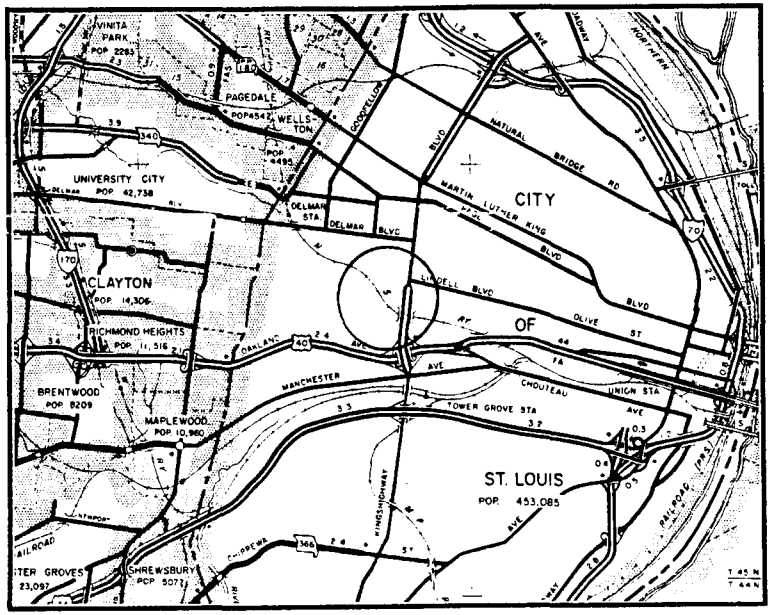
The Franklin Bridge on Wells Drive was one of the small-scale structures that spanned an arm of the River des Peres in Forest Park. In 1885 the city built an iron structure with stone buttresses to replace an earlier timber span here. Named in 1892 for "heroes of United States history" (presumably Benjamin Franklin), this structure was fabricated and erected by the Stupp Brothers, an old-line St. Louis bridge builder. In April 1897 the iron bridge was destroyed by flooding on the River des Peres. A year later the city appropriated funds to reconstruct the bridge; presumably it was built that year. The 1898 structure was comprised of a single concrete arch span, with concrete substructure and decorative moulding formed into the spandrel walls. Although its designer is not presently known, the arch's profile and its bolted I-beam reinforcing suggest that it was built from Josef Melan's patented design. The Franklin Bridge carried park

traffic for years before its original guardrails were replaced with stone masonry, which featured a crenelated parapet. More recently, one of the guardrails has suffered collision damage, and the concrete spandrels of the arch have spalled considerably. Today the Franklin Bridge, in deteriorating condition, is closed to traffic is considered for replacement.

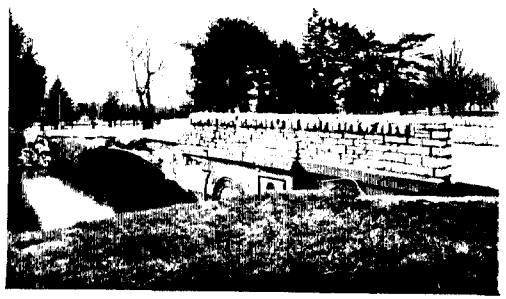
The Melan arch traces its roots to Austria in the early 1890s, where Josef Melan was developing a new system of concrete reinforcement. Melan's design employed parallel steel beams embedded in the concrete to provide the tensile strength that concrete inherently lacked. He used an elliptical arch profile for his bridge, with the steel placed at the arch's intrados. Melan's system was introduced to the United States by another Austrian, Fritz von Emperger, who obtained a patent for it in 1893. "Melan's system, introduced in America in 1893, was used extensively in highway bridges and in some pedestrian spans," stated David Plowden in **Bridges: The Spans of North America.** "It can be said to have heralded a new and unimaginative era of bridge design. In spite of the economy and structural advantages of a system like [San Francisco engineer Ernest] Ransome's, engineers grasped at Melan's system in which they saw a safe compromise. It was another step in the emancipation of concrete from the traditions of stone masonry, but it did not free it entirely." The Franklin Bridge in Forest Park is apparently one of these early Melan designs. Now in deteriorating and altered condition, it is nevertheless an important example in Missouri–the earliest concrete wagon bridge in the state–of concrete arch bridge design.

NAME(S) OF STRUCTURE
Franklin 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 600.03. Caroline Loughlin and Catherine Anderson, **Forest Park**, (Columbia: University of Missouri Press, 1986), pages 3, 5, 7, 18, 35, 51; "Forest Park Bridges, September 1992: Road Bridges in Existence," typewritten list prepared by St. Louis Department of Streets; David Plowden, **Bridges: The Spans of North America** (New York: Viking Press, 1974), page 298.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser and Lisa Schoch	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Lafayette Bridge
MHTD: 600.04

STLC12

DATE(S) OF CONSTRUCTION
c1888; 1934-35; 1982-88

LOCATION
Jefferson Drive over River des Peres Lagoon; T45N R7E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
city park bridge / city park bridge

RATING NRHP non-eligible (score: 32)

CONDITION
fair

OWNER
City of St. Louis

span number:	1	superstructure:	welded steel deck arch
span length:	72.0'	substructure:	stone and concrete abutments
total length:	72.0'	floor/decking:	asphalt over concrete deck
roadway wdt.:	36.0'	other features:	steel guardrails with architecturally ornamental features

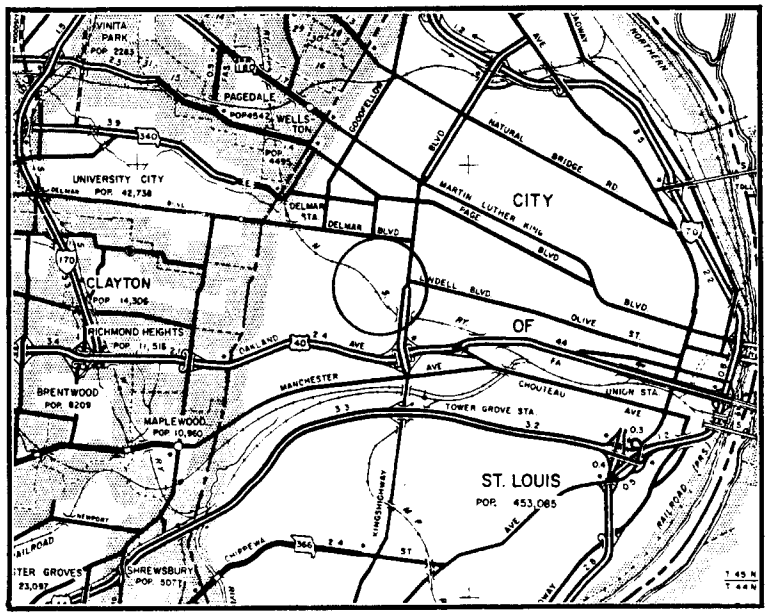
The Lafayette Bridge carries Jefferson Drive south of Union Boulevard, crossing the River des Peres Lagoon in St. Louis' Forest Park. It was originally built around 1888 as a replacement for one of the park's older wooden bridges. Like other replacement bridges built at that time, the Lafayette was named for an important American historical figure–in this case the bridge was most likely the namesake of the American Revolution's General Lafayette. The structure as originally built was comprised of a three-hinge, wrought iron deck arch, with four wrought iron plate girder ribs, supported on pinned bearing shoes by stone masonry abutments. Indicative of its 19th century origins, the Gladstone Boulevard Overpass featured ornamental wrought iron guardrails with cast iron newels. The Lafayette Bridge was designed by the city bridge engineer and fabricated and erected by the Stupp Brothers Bridge and Iron Company of St. Louis. In 1935 the bridge superstructure was reconstructed by Superior Structural Steel Company under contract with the City of St. Louis. And between 1982 and 1988, the bridge underwent more rehabilitation, including, apparently, another replacement of the steel arches with welded arch ribs. The original ornamental guardrails were retained, but the rest of the Lafayette Bridge is essentially a new structure.

Very few wrought iron arches were ever built in Missouri, and today only one–the Gladstone Boulevard Overpass in Kansas City [JACK17]–remains in place in well-preserved condition. The Lafayette Bridge, unfortunately, has been replaced almost entirely, with only a few remnants of its original components intact, in a misguided attempt at historic preservation. It can no longer be considered a 19th century bridge, and its interpretive value is therefore reduced substantially.

NAME(S) OF STRUCTURE

Lafayette 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 600.04. Caroline Loughlin and Catherine Anderson, **Forest Park** (Columbia: University of Missouri Press, 1986), pages 3, 7-8, 35, 51; "Forest Park Bridges, September 1992: Road Bridges in Existence," typewritten list prepared by St. Louis Department of Streets; "Report for Fiscal Year Beginning April 10, 1934, and Ending April 9, 1935," Bridges and Building Section, Department of the President, Board of Public Service, City of St. Louis, April 1935; field inspection by Richard Collier, 23 February 1992.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser and Lisa Schoch	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
McKinley Bridge
MHTD: 600.07

STLC13

DATE(S) OF CONSTRUCTION
1902

LOCATION
McKinley Drive over River des Peres Lagoon; T45N R7E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
city park bridge / city park bridge

RATING NRHP possibly eligible (score: 56)

CONDITION
good

OWNER
City of St. Louis

span number:	1	superstructure:	concrete filled spandrel arch
span length:	46.0'	substructure:	concrete abutments and wingwalls
total length:	46.0'	floor/decking:	asphalt over earth fill
roadway wdt.:	40.0'	other features:	faux stone ashlar finish on spandrels; ornamental wrought iron guardrails with concrete posts

As early as 1864 the Missouri State Legislature approved an election to determine whether St. Louis should acquire a large urban park. At the same time, a board of park commissioners was created and asked to select an area that would not exceed 350 acres for the site. Anxious to compete with other large cities that had already acquired parks, many St. Louisans voted on the park proposal in April 1864. Nevertheless, the Civil War interrupted immediate plans for the park. In 1870, however, real estate businessman Hiram W. Leffingwell rekindled the park idea. Late that year, he summoned the media and local politicians to hear his park proposal, which entailed the creation of a 2,754-acre park a mile west of the city. Officially founded in March 1872, the park consisted of 1,370 acres that were obtained for under $800,000. Known as Forest Park, it was officially dedicated in 1876.

At the turn of the century the city gave permission to use the western half of Forest Park for the Louisiana Purchase Exposition. Known as the "Wilderness", this area was characterized by briar thickets that crowded around meanders of the River des Peres. The thickets were cleared and the river straightened and channelized. This channelization necessitated construction of a bridge east of the exposition site. As designed by Richard R. Phillips, the Chief Engineer of the city's Department of Bridges and Buildings, the bridge consisted of a single concrete arch, with an elliptical filled spandrel configuration. Architectural expression was provided by the ornamental wrought iron guardrails with terra cotta posts and by the faux stone ashlar surface treatment of the concrete spandrel walls. The Louisiana Purchase Exposition built the concrete arch for $12,6000 under Phillips' direction, first excavating the abutments to bedrock, building arch ring forms and pouring the concrete. They completed the bridge in October 1902. It carried traffic for the Exposition and has functioned since in essentially unaltered condition.

As the only remaining vehicular bridge in forest Park from the Louisiana Purchase Exposition, the McKinley Bridge is historically important. Although modestly sized, the structure is more important for what lies beneath the concrete, however, for the McKinley Bridge marks one of the first documented uses of square reinforcing bars in America. Manufactured by the St. Louis Expanded Metal Fireproofing Company, the reinforcing featured square bars with uniformly spaced ribs. The company explained the advantage of its system:

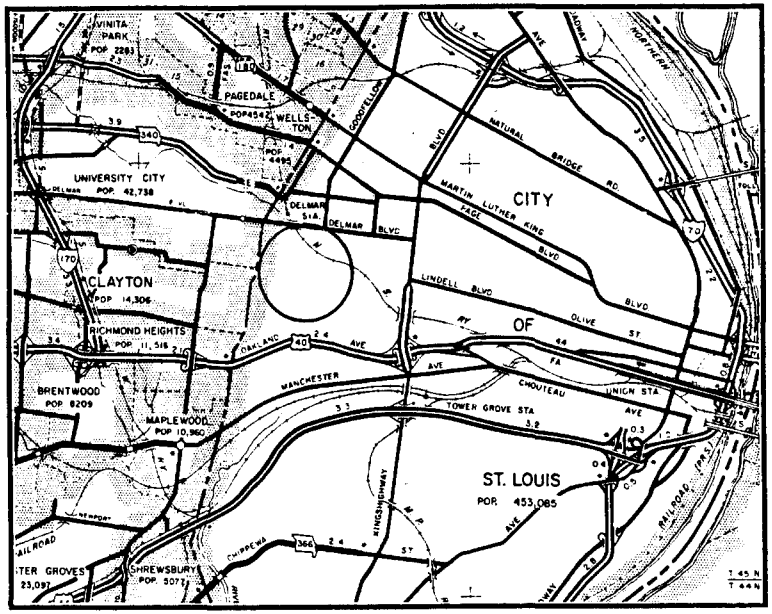
> By numerous practical examples as well as by laboratory tests, it has been determined that it is very easy to break the adhesion between the concrete and the surface of the embedded metal, and it is therefore not safe to use plain bars, or any form of bar depending upon this adhesion for its efficiency. The bar should be provided with some form of ribbing device, the sides of which ribs should be nearly at right angles to the axis of the bar, varying therefrom by an angle not exceeding the angle of friction between the materials used. Our corrugated bar is designed on this principle, and the practical results and tests that have been made by others, as well as by ourselves, have proved the correctness of the theory. Theory and practice do not always agree, but they do in this case. This bar is rolled hot, like any other shape, from special material, and has double the amount of work put on it that is given ordinary structural steel. This results in a very high elastic limit, which is desirable in steel-concrete construction, the load producing this stress in the steel being the ultimate load of the combination in all cases.

Placing the bars before the development of stirrups proved problematic, as workers tried–with various degrees of success–to use temporary wooden blocks. "This blocking served its purpose in a somewhat unsatisfactory manner, since it had to be removed as the concreting proceeded," Phillips stated. More successful methods of placing reinforcing and more economical bar shapes would later be developed, but the McKinley Bridge represents a formative effort of concrete construction. As one of Missouri's oldest intact concrete arch vehicular bridges, as a nationally noteworthy example of emerging concrete reinforcing technology, and as one of the few intact remnants from the St. Louis World's Fair, the McKinley Bridge is both technologically and historically significant.

NAME(S) OF STRUCTURE

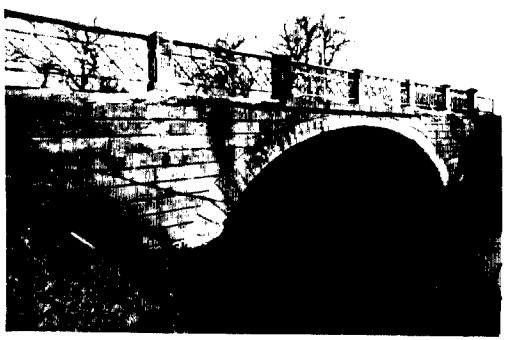
McKinley Bridge

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 600.07; Phillip Pregill and Nancy Volkman, **Landscapes in History** (New York: Van Nostrand Reinhold, 1993), page 445; "Forest Park Bridges, September 1992: Road Bridges in Existence," typewritten list prepared by St. Louis Department of Streets; "Reinforced Concrete Bridge over River Des Peres, Forest Park, St. Louis, Mo.," **Engineering News**, 11 June 1903, pages 530-31; field inspection by Richard Collier, 3 April 1992.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Old Stable Bridge
MHTD: 600.08

STLC14

DATE(S) OF CONSTRUCTION
1922

LOCATION
Theater Drive over River des Peres Lagoon; T45N R7E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
city park bridge / city park bridge

RATING NRHP possibly eligible (score: 46)

CONDITION
fair

OWNER
City of St. Louis

span number:	1	superstructure:	concrete filled spandrel arch
span length:	44.0'	substructure:	concrete abutments and wingwalls
total length:	44.0'	floor/decking:	asphalt over earth fill
roadway wdt.:	40.0'	other features:	ornamental Italianate concrete guardrails; corbeled arch rings with ornamental concrete keystones; corbeled concrete stringcourse with moulded concrete brackets at road level

As early as 1864 the Missouri State Legislature approved an election to determine whether St. Louis should acquire a large urban park. At the same time, a board of park commissioners was created and asked to select an area that would not exceed 350 acres for the site. Anxious to compete with other large cities that had already acquired parks, many St. Louisans voted on the park proposal in April 1864. Nevertheless, the Civil War interrupted immediate plans for the park. In 1870, however, real estate businessman Hiram W. Leffingwell rekindled the park idea. Late that year, he summoned the media and local politicians to hear his park proposal, which entailed the creation of a 2,754-acre park a mile west of the city. Officially founded in March 1872, the park consisted of 1,370 acres that were obtained for under $800,000. Known as Forest Park, it was officially dedicated in 1876.

Development of the area's facilities began soon after its creation. Buildings, roads, bridges, and even artificial lakes were part of the early plans for the park. There were two features of Forest Park that caused difficulties for park commissioners. The River des Peres, described as "a wild and uncontrollable prairie stream," was prone to flooding until it was channeled in underground conduit in 1920. Also, Clayton Road traversed the southeast section of the park, constituting the only link between the city of St. Louis with the farming communities of St. Louis County. Park commissioners were not at all pleased with farm traffic through the park but were compelled to endure it until Clayton Road could permanently be relocated. Forest Park was the site of the 1904 World's Fair, an event that significantly altered the park's facilities and grounds; walkways were built, flower beds planted, bridges enlarged and built, and numerous buildings constructed.

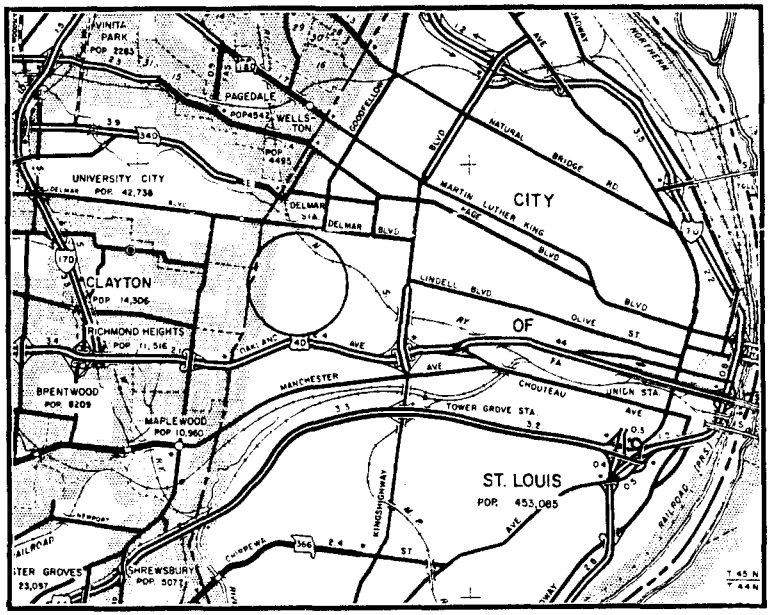
The Old Stable Bridge was one of the small-scale structures that spanned an arm of the River des Peres in Forest Park. Located on Theater Drive just east of Deer Lake Drive, the existing structure was built in 1922 to replace an earlier timber span here. It is comprised of a single filled spandrel concrete arch with an elliptical profile. In its Italianate architectural treatment, the bridge indicates its design by the Office of Bridge Engineer in the St. Louis Street Department. Since its completion, the Old Stable Bridge has carried park traffic, with only maintenance-related repairs.

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 Old Stable Bridge is distinguished among these as one of the most architecturally accomplished of Missouri's early concrete bridges. An integral part of St. Louis' Forest Park, it is a noteworthy transportation-related resource.

NAME(S) OF STRUCTURE

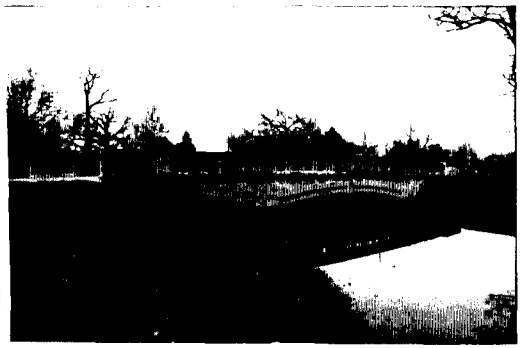
Old Stable Bridge

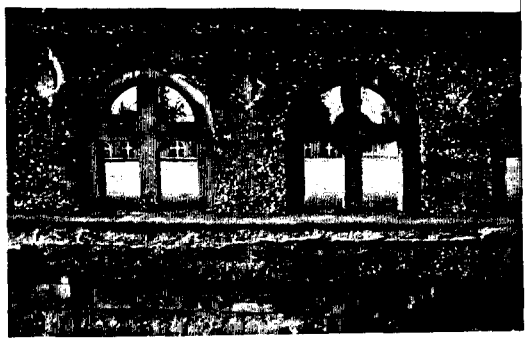
PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT GENERAL HIGHWAY MAP





SOURCES

Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 600.08; "Forest Park Bridges, September 1992: Road Bridges in Existence," typewritten list prepared by St. Louis Department of Streets.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Lisa Schoch	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
MacArthur Bridge
MHTD: none

STLC15

DATE(S) OF CONSTRUCTION
1909-17

LOCATION
Chouteau Avenue over Mississippi River; T45N R7E
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
highway, railroad bridge / closed

RATING NRHP eligible (score: 71)

CONDITION
fair

OWNER
City of St. Louis

span number:	3	superstructure:	steel, 18-panel, pin-connected Pennsylvania through truss with double decks
span length:	668'	substructure:	coursed stone masonry piers with angled cutwaters
total length:	13,300.0'	floor/decking:	steel grid deck over steel stringers
roadway wdt.:	30.0'	other features:	steel lattice guardrails

In the period following the Civil War, westward expansion rapidly accelerated. With expansion came demands for projects for facilitating easier travel, such as new roads and bridges. Agitation for a bridge over the impassible Mississippi arose in the 1860s, resulting in the eventual construction of the Eads Bridge. The Eads, however, was constructed as a toll structure, sparking repeated conflicts between residents and the owner of the bridge, the Terminal Railroad Association. Around the turn of the century a movement emerged to erect a bridge over the Mississippi that would be owned and operated by the city of St. Louis, free from toll charges, and funded by city bond issues.

The first official proposal for the St. Louis free bridge came on April 6, 1905. The Missouri Legislature, responding to popular agitation, passed an act authorizing large cities (populations of 100,000 or more) to build and operate bridges on rivers forming borders with other states. Later that month St. Louis Mayor Rolla Wells–despite his personal opposition to the bridge–appointed a Municipal Bridge Commission to investigate potential terminal points for the proposed structure. Popular support for a free bridge reached "fever heat" between 1905 and 1909. In 1907 a committee sought to locate the most feasible location for the bridge, enlisting the services of three important engineering firms: Gayler and Rohwer of St. Louis; Ralph Modjeski of Chicago; and Waddell and Harrington of Kansas City. The consensus, with respect to cost, convenience and termini conditions, was that the bridge would be best located at Chouteau Avenue.

Connecting St. Louis, Missouri, with East St. Louis, Illinois, the Municipal Bridge was slated to be built about a mile below the Eads Bridge. Design plans for the bridge were completed in late 1908 and submitted to the War Department for approval. The first set of plans, prepared by Brenneke and Fay, were rejected for inadequate clearance above the river. The second set was submitted and approved in November. The final design, submitted by Boller and Hodge in substitution of the second set, was approved and retained as the construction design. In accordance with the bridge's final composition, the third set delineated a main span of three double-decked Pennsylvania trusses, each 668 feet and towering 65 feet over the river on massive stone masonry piers.

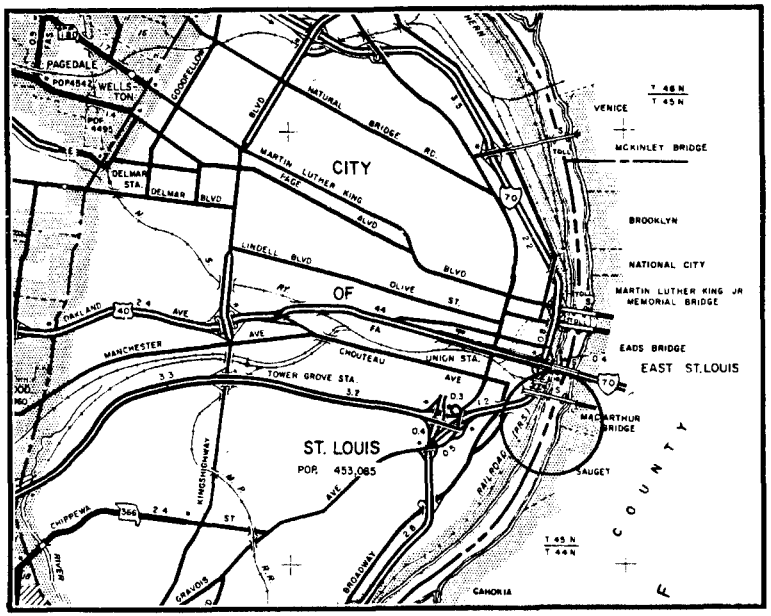
The contract to found and build the stone river piers was let to the Missouri Valley Bridge and Iron Company on July 28, 1909, for $459,835.63. The contractor began work on excavating and sinking the caissons in December, completing the task in June 1911. The American Bridge Company won the contract to build the superstructure of the channel spans on November 16, 1909. ABC's bid of $1,394,043.00 was lower than the nearest competitor. After fabricating the steel in its New York plant, work over the river began in May 1911. Although river ice delayed completion, the superstructure finally stood on August 21, 1912. Between August 1911 and September 1912 the contracts for the western approaches were let. ABC assumed responsibility for the superstructure (total bid, $477,574.00), and Missouri Valley and Fruin-Colnon Construction shared the work of building the foundations and retaining walls. The western approach was completed in April 1913. On the eastern side, the City of St. Louis accomplished much of the work itself with steel provided by ABC at a cost of $1,099,453.00. Four small local contractors were awarded contracts for the substructure of the approach spans. Delays on account of unusually high water prevented completion of the eastern approach span until January 3, 1917. Paving (with creosoted wood blocks on concrete) and installation of the lighting system was finished in two weeks, in time for the opening on January 20.

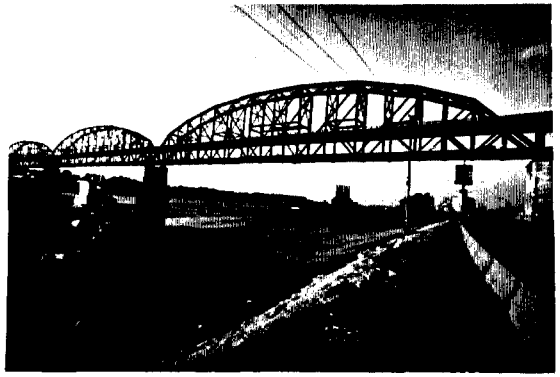
St. Louis' third bridge over the Mississippi, the Municipal Bridge (also known as the City Bridge) finally opened in 1917. St. Louisans' hope for a toll-free bridge, however, were not realized in this grand structure. Exorbitant construction costs forced the city to collect tolls on its own bridge for several years. By 1933 the city had lost about $17 million on the bridge and public support had diminished. In March 1942 the city's Board of Aldermen adopted an ordinance to officially re-name the structure after a figure they hoped would appeal to their constituents, then-Commander of the United Nations in Australia, Douglas MacArthur. In May the name became official. After World War II the city, in encouragement of post-war projects, voted to widen the bridge and build safety curbs in reaction to mounting traffic deaths. In 1981 the MacArthur Bridge was closed to traffic. Its role in the development of St. Louis and eastern Missouri, however, are immeasurable.

NAME(S) OF STRUCTURE

MacArthur Bridge

PHOTOS AND SKETCH MAP OF LOCATION





LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT
GENERAL HIGHWAY MAP

SOURCES

"Proposed New Bridges over the Mississippi River at St. Louis, Mo," **Engineering News**, 21 March 1907; William E. Rolfe and Lucius H. Cannon, "Municipal Bridge of St. Louis: A Record of Municipal Effort," St. Louis Public Library pamphlet, August 1922; "Chronological History of the Municipal Bridge," St. Louis Public Library, April 1930; "Erecting Three 670-Ft. Steel Bridge Spans," **Engineering and Contracting** 36, 13 December 1911, pages 622-30; S.W. Bowen, "The St. Louis Municipal Bridge," **Engineering News** 67, 8 February 1912, pages 231-40; "Erecting the Last Span of the Municipal Bridge, St. Louis," **Engineering Record** 65, 13 April 1912, pages 399-400; "St. Louis Municipal Bridge East Approach a Steel Viaduct Nearly 3 Miles Long," **Engineering Record** 72, 20 November 1915, pages 634-35; "Completing the Municipal Bridge," **Engineering News** 76, 14 December 1916, pages 1129-1131; "Free Bridge to be Named MacArthur," **St. Louis Globe-Democrat**, 28 March 1942; "Bridge Fight May Go to Highest Court," **St. Louis Star-Times**, 13 November 1948; "Mayor Defends M'Arthur Bridge Toll Collections," **St. Louis Post-Dispatch**, 15 May 1946;

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Lisa Schoch	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
McKinley Bridge
MHTD: none

STLC16

DATE(S) OF CONSTRUCTION
1907-10

LOCATION
vacated street over Mississippi River; T45N R7E
St. Louis, MO / Venice, IL; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
railroad, roadway bridge / roadway bridge

RATING NRHP eligible (score: 72)

CONDITION
fair

OWNER
City of St. Louis

span number:	3; 5 approach spans	superstructure:	steel, 18-panel, pin-connected Pennsylvania through trusses; 10-panel Warren deck truss
span length:	517.5'	substructure:	stone masonry abutments, wingwalls and piers with bullnosed cutwaters
total length:	2515.2'	floor/decking:	asphalt-covered steel deck over steel stringers
roadway wdt.:	14.0'	other features:	steel guardrails

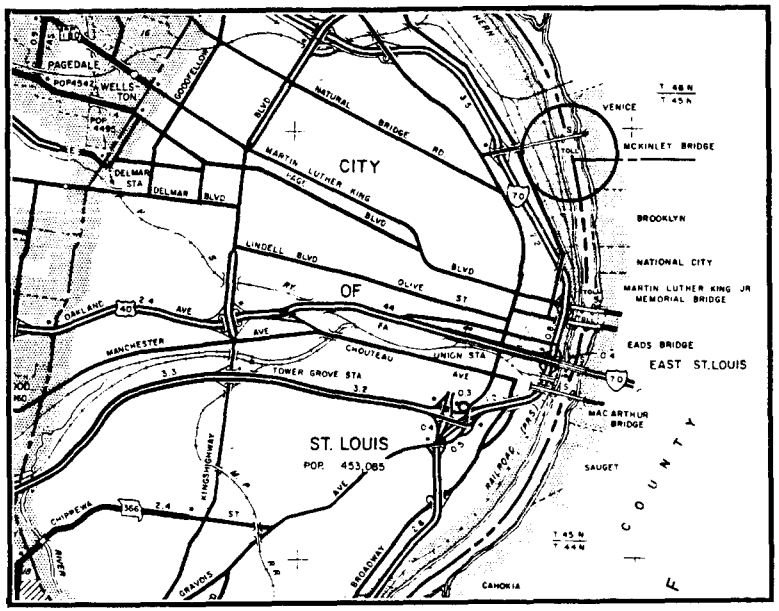
The origin of the McKinley Bridge dates to January 3, 1906. The Illinois Traction System (ITS), interested in joining their lines east and west of the Mississippi River, contacted the acclaimed bridge engineer Ralph Modjeski (1861-1940) to supervise the design and construction of a combination bridge at St. Louis. ITS chose their engineer chief engineer well; Modjeski had established himself as one of the nation's preeminent bridge engineers as an associate of George Morison from 1885 to 1893. Leaving Morison to pursue his own career, Modjeski established Modjeski and Nickerson. He left the firm after a year, leaving him to serve as consulting engineer on several important projects. Modjeski designed the Thebes Bridge on the Mississippi (in collaboration with Alfred Noble), rebuilt the Bismarck Bridge in 1905, and constructed railroad bridges throughout the nation. In 1923 he entered a partnership with Masters, a firm which designed a great number of significant bridges. His involvement with the San Francisco / Oakland Bay Bridge–then the longest highway bridge in the world at 8.25 miles–was one of his last projects. Ralph Modjeski died in 1940 at the end of a decorated and influential career.

His part in the McKinley Bridge typified the character of his life's work. On February 15, 1907, Congress passed an act granting ITS the authority to construct their bridge. Modjeski immediately began work on a design for the bridge. On May 11th he sent plans and profiles to the Secretary of War for his approval. July 5th brought the Secretary's approval. Modjeski's design incorporated three large Pennsylvania trusses flanked by several smaller deck trusses. A single deck accommodated railroad tracks and a narrow roadway. Bids were solicited for the substructure and the contract awarded to the Missouri Valley Bridge and Iron Company on the following August 24th. MVB&I began work on December 8th, and until the bridge was complete, "work proceeded at a good rate of speed." In 1908 ITS awarded the remaining contracts; Pennsylvania Steel Company was commissioned to provide the superstructural steel (November 2), MVB&I won the bid to build the superstructure (December 31), and several local firms contributed to the bridge's foundations, paving and other details. In 1910 the McKinley Bridge was completed for an overall cost of about $3.5 million.

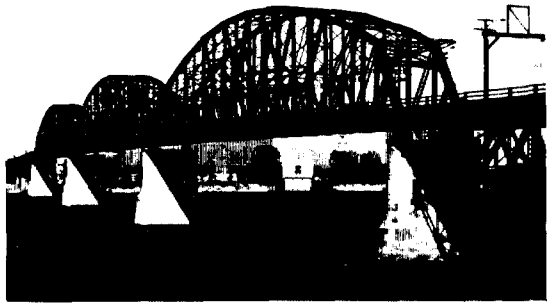
Bridges over the Mississippi River comprise some of America's longest examples of vehicular steel truss construction. With over 400 miles fronting on the great river, Missouri possesses several notable Mississippi River bridges. Seven of these, including the McKinley Bridge, are included in the statewide historic bridge inventory, and are all individually eligible for inclusion in the National Register. Although typically configured, the McKinley Bridge ranks among Missouri's most monumental examples of steel truss construction. The crossing is also historically significant for its pivotal role as an interstate crossing over a major river.

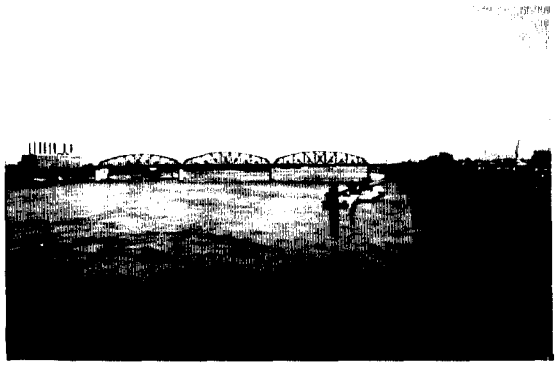
NAME(S) OF STRUCTURE
McKinley Bridge

PHOTOS AND SKETCH MAP OF LOCATION



LOCATION MAP
TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT
GENERAL HIGHWAY MAP





SOURCES
St. Louis Globe-Democrat, 7 February 1907; St. Louis Republican, 13 November 1910; Ralph Modjeski, The McKinley Bridge (Chicago: H.C. Sherman and Company, 1919); St. Louis Globe-Democrat, 29 February 1964; "McKinley Bridge," Municipal Reference Library Monthly Bulletin 93, May 1924; "I.T.S. Bridge to be Rebuilt this Summer, St. Louis Star, 21 February 1924; "$863,000 Extension for McKinley Bridge: I.C.C. Authorizes Construction," St. Louis Globe-Democrat, 1 June 1926; "McKinley Bridge to Get $1,000,000 Steel Floor," St. Louis Globe-Democrat, 11 April 1951; St. Louis Post-Dispatch, 24 September 1954; St. Louis Globe-Democrat, 21 February 1959; St. Louis Post-Dispatch, 14 September 1969; St. Louis Globe-Democrat, 5 March 1957; St. Louis Globe-Democrat, 11 January 1967; St. Louis Globe-Democrat, 31 December 1959; St. Louis Globe-Democrat, 10 November 1960; Landmarks Tour-North St. Louis, Number 22, n.d.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser and Lisa Schoch	Fraserdesign, Loveland CO	4 August 1994

ST. LOUIS COUNTY

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

Inv. No.	MHTD	Bridge Name	Description
STLO01	F 180R1	Mattese Creek Bridge	1- 50' **concrete filled spandrel arch** 1922 Unit Construction Company
STLO02	G 681R	Deer Creek Bridge	1- 70' **concrete filled spandrel arch** 1923 E.C. Johnson
STLO03	H 990R	Two Mile Creek Bridge	1- 60' **concrete filled spandrel arch** 1930 W.C. McNeelly Company
STLO04	J 217	Wabash Railroad Overpass	**18**-66' steel plate deck girder viaduct 1935 Skrainka Construction Co.
STLO05	J 421	Meramec River Bridge	3-130' **riveted Warren deck truss** 1932 Frazier-Davis Constr. Co.
*STLO06	K 205	Meramec River Bridge	2-210' **rivet Parker through truss, skewed** 1934 Samuel Kraus Company
*STLO07	K 239R2	St. Charles Bridge	**5-420' pinned Pennsylv. through truss** **1904** Midland Bridge Company
*STLO08	K 458	Meramec River Bridge	**2-220' riveted Parker through truss** 1936 F.T. O'Dell
*STLO09	K 637R	Meramec River Bridge	**3-264' cantilevered tied arch** 1940 Massman Construction Co.
STLO10	K 795R	Highway 40 Overpass	3-**123'** steel plate deck girder 1941 Blackwell Corporation
STLO11	K 854	Highway 40 Underpass	2- 61' **concrete rigid frame** 1941 Atkinson-Windle Company
STLO12	K 861	Highway 40 Underpass	2- 62' **concrete rigid frame** 1944 Isreal Brothers
STLO13	L 53R1	Highway 231 Overpass	2- 66' **concrete rigid frame** 1947 J.E. Latta Construction Co.
STLO14	U3875130	Hall's Ferry Road Bridge	1- 80' **riveted polyg. Warren pony truss** 1947 J.S. Alberici
STLO15	U3875452	Gravois Road Bridge	**2-200' riveted Parker through truss** 1925 Vincennes Bridge Company
STLO16	052500.3	Black Creek Culvert	1- 28' **concrete arch culvert** c1930
STLO17	096044.8	Quinette Road Bridge	1- 70' riveted Pratt half-hip pony truss **1913** Miller and Borcherding
*STLC18	none	Chain of Rocks Bridge	**10-700' riveted cantilever through truss** 1929 Union Bridge and Constr. Co.

EXCLUDED:

Warren pony truss
096013.2

ST. LOUIS COUNTY

EXCLUDED (cont.):

Steel stringer

J 149R1	J 217	J 255R	J 824	J 891R	K 342	K 463
K 464	K 638R	U3875003	U3875101B	033000.1	052000.1	096010.2
096010.3	096013.8	096016.6	096033.6	096035.1	096043.7	096052.4
096310.9	135500.1	135500.2	231500.1	3275R0.1	419000.2	432000.9
432001.2	432001.3					

Steel girder

H 924	K 795R	U3875002

Concrete girder

H 923R	J 827R	J 848R	K 506R	K 849	U3875001	U3875107
U3875110	U3875131	U3875153	U3875455	W 332	Z 774	Z 778
Z 779R	Z 785	Z 786	Z 787	096026.9	096031.9	096032.9
096033.1	096034.9	096038.9	096039.2	096039.8	096040.0	096040.2
096050.9	096311.0	142000.1	228000.1	231500.2	231500.3	231500.5

Concrete slab

F 132R1	J 416	U3875001	U3875146	U3875453	U3875456	Z 557R
Z 773	Z 780R	096025.9	096032.1	096039.3	096042.0	096310.4
329500.1						

Concrete box culvert

A 3933	F 181R1	F 182R2	F 183R1	F 184R1	F1115R1	J 254R
J 513R	J 522R	J 539R	J 825	J 890	K 632	L 269R
U3875281	U3875312C	U3875316C	Y 241	096013.9	096020.8	096027.1
096027.3	096031.7	096041.0	096044.4	096046.4	146500.2	4520R0.1

Timber stringer

U3875461

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	14	2	2	1	19
Excluded	24	61	39	0	124
	28	63	41	1	133 structures

Mattese Creek Bridge

STLO01

GENERAL DATA

structure no.: F 180R1
county: St. Louis
city/town: Lemay
feature inters.: Mattese Creek
cadastral grid:
highway route: U.S. Highway 61
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

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

span number: 1
span length: 50.0'
total length: 52.0'
roadway width: 42.0'
condition: good
alterations: roadway widened and guardrails replaced, 1933
floor/decking : concrete deck over earth fill
other features: MSHD-standard concrete guardrails

HISTORICAL DATA

erection date: 1921-22
erection cost: $7,688.60
designer: Missouri State Highway Department
fabricator : none
contractor: Unit Construction Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number F 180R1; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; **Third Biennial Report of the State Highway Commission of Missouri**: 1921-22, page 143.

sign. rating: 39
evaluation: NRHP non-eligible (one of earliest remaining examples of MSHD concrete bridge design, substantially altered)

inventoried by: Clayton B. Fraser 2 August 1994

Deer Creek Bridge

STLO02

GENERAL DATA

structure no.: G 681R
county: St. Louis

city/town: St. Louis
feature inters.: Deer Creek
cadastral grid:
highway route: State Highway 100
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

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

span number: 1
span length: 70.0'
total length: 131.0'
roadway width: 56.0'

condition: good
alterations: roadway widened and guardrails replaced, 1930
floor/decking : concrete deck over earth fill
other features: MSHD-standard concrete guardrails

HISTORICAL DATA

erection date: 1923
erection cost: $18,134.00
designer: Missouri State Highway Department
fabricator : none
contractor: E.C. Johnson, Carrollton MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number G 681R; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO.

sign. rating: 37
evaluation: NRHP non-eligible (relatively early example of MSHD concrete bridge design, substantially altered)

inventoried by: Clayton B. Fraser 2 August 1994

Two Mile Creek Bridge

STLO03

GENERAL DATA

structure no.: H 990R
county: St. Louis
city/town: St. Louis
feature inters.: Two Mile Creek
cadastral grid:
highway route: U.S. Highway 61
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

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

span number: 1
span length: 60.0'
total length: 122.0'
roadway width: 74.0'
condition: good
alterations: roadway widened and one guardrail replaced, 1977
floor/decking : concrete deck over earth fill
other features: stone veneer guardrails, one side; concrete/steel pipe guardrails, one side

HISTORICAL DATA

erection date: 1930
erection cost: $19,348.24
designer: Missouri State Highway Department
fabricator : none
contractor: W.C McNeely Construction Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number H 990R; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO.

sign. rating: 37
evaluation: NRHP non-eligible (typical example of MSHD concrete arch bridge design, substantially altered)

Inventoried by: Clayton B. Fraser 2 August 1994

Wabash Railroad Overpass

STLO04

GENERAL DATA

structure no.: J 217
county: St. Louis
city/town: St. Louis
feature inters.: Wabash Railroad
cadastral grid:
highway route: State Highway 61TR
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: 3 steel plate deck girders with 15 steel stringer approach spans
substructure: concrete abutments, wingwalls and hammerhead spill-through piers

span number: 1; 2; 15
span length: 66'; 59'; 47'
total length: 1350.0'
roadway width: 42.0'
condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: concrete guardrails with Italianate cutouts

HISTORICAL DATA

erection date: 1935
erection cost: $199,804.94
designer: Missouri State Highway Department
fabricator : unknown
contractor: Skrainka Construction Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J 217; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; **Tenth Biennial Report of the State Highway Commission of Missouri**, 1935-36, page 263.

sign. rating: 44
evaluation: NRHP non-eligible (technologically undistinguished example of MSHD beam bridge design)

inventoried by: Clayton B. Fraser 2 August 1994

Meramec River Bridge

STLO05

GENERAL DATA

structure no.: J 421
county: St. Louis
city/town: 1.8 miles east of Eureka
feature inters.: Meramec River
cadastral grid:
highway route: Interstate 44
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 12-panel, rigid-connected Warren deck truss, with steel stringer approach spans
substructure: concrete abutments, wingwalls and piers with bullnosed cutwaters

span number: 3
span length: 130.0'
total length: 1009.0'
roadway width: 30.0'
condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: steel angle guardrails

HISTORICAL DATA

erection date: 1931-32
erection cost: $133,592.99
designer: Missouri State Highway Department
fabricator : unknown
contractor: Frazier-Davis Construction Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number J 421; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO.

sign. rating: 63
evaluation: NRHP possibly eligible (well-preserved example of uncommon structural type, located at regionally important river crossing)

inventoried by: Clayton B. Fraser 2 August 1994

Meramec River Bridge

STLO06

GENERAL DATA

structure no.: K 205
county: St. Louis
city/town: 2.7 miles north of Arnold
feature inters.: Meramec River
cadastral grid:
highway route: U.S. Highway 61
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 9-panel, rigid-connected Parker through truss, with steel stringer approach spans
substructure: concrete abutments, wingwalls and piers

span number: 2
span length: 210.0'
total length: 845.0'
roadway width: 42.0'
condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: steel guardrails

HISTORICAL DATA

erection date: 1933-34
erection cost: $250,283.48
designer: Missouri State Highway Department
fabricator : unknown
contractor: Samuel Kraus Company, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 205; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; **Ninth Biennial Report of the State Highway Commission of Missouri**, 1933-34, pages 182, 187; field inspection by Clayton Fraser, 10 June 1994.

sign. rating: 75
evaluation: NRHP eligible (only example of this uncommon structural type found in the inventory)

inventoried by: Clayton B. Fraser 2 August 1994

St. Charles Bridge

STLO07

GENERAL DATA

structure no.: K 239R2
county: St. Louis / St. Charles
city/town: St. Charles
feature inters.: Missouri River
cadastral grid: T47N R5E
highway route: abandoned State Highway 115
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel pin-connected Pennsylvania through truss
substructure: concrete-filled steel cylinder piers

span number: 5
span length: 420.0'
total length: 2873.0'
roadway width: 19.0'
condition: fair
alterations: deck replaced with concrete and approaches rebuilt, 1939
floor/decking : concrete deck
other features: steel pipe guardrails

HISTORICAL DATA

erection date: 1900-04
erection cost: unknown
designer: J.A.L. Waddell, Kansas City MO
fabricator : unknown
contractor: Midland Bridge Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 239R2; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; U.S. Engineer Office, **Bridges, Missouri River: Data, History & Laws**, 1933, page 13; field inspection by Clayton Fraser, 10 June 1994.

sign. rating: 64
evaluation: NRHP determined eligible (excellent early highway bridge over the Mississippi River)

inventoried by: John J. Roberts 2 August 1994

Meramec River Bridge

STLO08

GENERAL DATA

structure no.: K 458
county: St. Louis / Jefferson
city/town: 1.2 miles southeast of Arnold
feature inters.: Meramec River
cadastral grid:
highway route: State Highway 231
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 9-panel, rigid-connected Parker through truss, with steel stringer approach spans
substructure: concrete abutments, wingwalls and piers

span number: 2
span length: 220'
total length: 1179.0'
roadway width: 22.0'
condition: good
alterations: none
floor/decking : concrete deck over steel stringers
other features: steel guardrails

HISTORICAL DATA

erection date: 1935-36
erection cost: $226,997.33
designer: Missouri State Highway Department
fabricator : unknown
contractor: F.T. O'Dell

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 458; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; **Tenth Biennial Report of the State Highway Commission of Missouri**, 1935-36, page 262; field inspection by Clayton Fraser, 10 June 1994.

sign. rating: 51
evaluation: NRHP possibly eligible (well-preserved, long-span example of MSHD standard truss design)

Inventoried by: Clayton B. Fraser 2 August 1994

Meramec River Bridge

STLO09

GENERAL DATA

structure no.: K 637R
county: St. Louis / Jefferson
city/town: 3.2 miles northwest of Arnold
feature inters.: Meramec River
cadastral grid:
highway route: State Highway 21
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 11-panel, rigid-connected, cantilevered tied arch
substructure: concrete abutments, wingwalls and piers

span number: 1; 2
span length: 264.0'; 192.0'
total length: 648.0'
roadway width: 46.0'
condition: good
alterations: deck replaced, 1985
floor/decking : concrete deck over steel stringers
other features: upper chord, inclined end post and arch ribs: 2 built-up channels with cover plate and lacing; lower chord, vertical and diagonal: H-section beam; lateral bracing: 2 angles; strut: 4 angles with lacing; floor beam: I-beam; guardrail: ornamental steel

HISTORICAL DATA

erection date: 1940
erection cost: $323,154.04
designer: Missouri State Highway Department
fabricator : Stupp Brothers Bridge and Iron Company, St. Louis MO
contractor: Massman Construction Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 637R; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; **Twelfth Biennial Report of the State Highway Commission of Missouri**, 1939-40, pages 189-190; Howard H. Mullins, "Continuous Tied Arch Built in Missouri," **Engineering News-Record** 126 (5 June 1941), pages 84-87; field inspection by Clayton Fraser, 10 June 1994.

sign. rating: 76
evaluation: NRHP eligible (first of its structural type built in the United States)

inventoried by: Clayton B. Fraser 2 August 1994

Highway 40 Overpass

STLO10

GENERAL DATA

structure no.: K 795R
county: St. Louis
city/town: St. Louis
feature inters.: Clayton Road
cadastral grid:
highway route: U.S. Highway 40
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel plate deck girder, with steel stringer approach spans
substructure: concrete abutments, wingwalls and piers

span number: 3
span length: 123.0'
total length: 586.0'
roadway width: 41.8'
condition: good
alterations: substructure repair and deck replacement, 1984
floor/decking : concrete deck over steel stringers
other features: curved alignment; MSHD-standard concrete guardrails with slotted cutouts

HISTORICAL DATA

erection date: 1940-41
erection cost: $300,373.08
designer: Missouri State Highway Department
fabricator : unknown
contractor: Blackwell Corporation

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 795R; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO.

sign. rating: 38
evaluation: NRHP non-eligible (undistinguished, relatively late example of MSHD beam bridge design)

inventoried by: Clayton B. Fraser 2 August 1994

Highway 40 Underpass

STLO11

GENERAL DATA

structure no.: K 854
county: St. Louis
city/town: St. Louis
feature inters.: U.S. Highway 40
cadastral grid:
highway route: McKnight Road
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: concrete rigid frame
substructure: concrete abutments, wingwalls and piers

span number: 2
span length: 61.0'
total length: 123.0'
roadway width: 44.0'
condition: good
alterations: none
floor/decking : concrete deck
other features: arched haunches at girders; Art Moderne detailing at piers; steel guardrails

HISTORICAL DATA

erection date: 1940-41
erection cost: $55,180.90
designer: Missouri State Highway Department
fabricator : none
contractor: Atkinson-Windle Company

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 854; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; Elmer Napier, "Rigid-Frame Bridges," **Roads and Bridges**, April 1940, page 13.

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

Inventoried by: Clayton B. Fraser 2 August 1994

U.S. Highway 40 Underpass

STLO12

GENERAL DATA

structure no.: K 861
county: St. Louis
city/town: St. Louis
feature inters.: U.S. Highway 40
cadastral grid:
highway route: McCutcheon Road
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: concrete rigid frame
substructure: concrete abutments, wingwalls and pier

span number: 2
span length: 62.0'
total length: 124.0'
roadway width: 44.0'
condition: good
alterations: none
floor/decking : concrete deck
other features: arched girders; MSHD-standard concrete guardrails

HISTORICAL DATA

erection date: 1944
erection cost: $74,136.00
designer: Missouri State Highway Department
fabricator : unknown
contractor: Israel Brothers

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 861; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; Elmer Napier, "Rigid-Frame Bridges," **Roads and Bridges**, April 1940, page 13.

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

inventoried by: Clayton B. Fraser 2 August 1994

Highway 231 Overpass

STLO13

GENERAL DATA

structure no.: L 53R1
county: St. Louis
city/town: 1.0 mile east of Mehlville
feature inters.: Interstate Highway 255
cadastral grid:
highway route: State Highway 231
highway distr.: 6
current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: concrete rigid frame
substructure: concrete abutments, wingwalls and pier

span number: 2
span length: 66.0'
total length: 220.0'
roadway width: 52.0'
condition: good
alterations: none
floor/decking : concrete deck
other features: arched girders; solid concrete guardrails; abstract emblem on spandrel

HISTORICAL DATA

erection date: 1947
erection cost: $158,980.13
designer: Missouri State Highway Department
fabricator : none
contractor: J.E. Latta Construction Company; Grantwood Contracting Company; Henry L. Perkinson

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number L 53R1 Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; Elmer Napier, "Rigid-Frame Bridges," **Roads and Bridges**, April 1940, page 13.

sign. rating: 55
evaluation: NRHP possibly eligible (well-preserved example of uncommon structural type)

inventoried by: Clayton B. Fraser 2 August 1994

Hall's Ferry Road Bridge

STLO14

GENERAL DATA

structure no.: U3875130
county: St. Louis
city/town: St. Louis
feature inters.: Cold Water Creek
cadastral grid:
highway route: Old Hall's Ferry Road
highway distr.: 6
current owner: St. Louis County

STRUCTURAL DATA

superstructure: steel, 8-panel, rigid-connected Warren pony truss with polygonal upper chord
substructure: concrete abutments and wingwalls

span number: 1
span length: 80.0'
total length: 83.0'
roadway width: 28.0'
condition: good
alterations: deck replaced, 1969; guardrails replaced
floor/decking: concrete deck over steel stringers
other features: steel Armco guardrails

HISTORICAL DATA

erection date: 1947
erection cost: unknown
designer: C.F. Berthold, St. Louis County Engineer's Office
fabricator: unknown
contractor: J.S. Alberici

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number U3875130, "Replacement Bridge #203 over Cold Water Creek," original construction drawings by St. Louis County Engineer, February 1947 - located at St. Louis County Engineer's Office.

sign. rating: 46
evaluation: NRHP non-eligible (relatively late example of uncommon structural type)

Inventoried by: Clayton B. Fraser 2 August 1994

Gravois Road Bridge

STLO15

GENERAL DATA

structure no.: U3875452
county: St. Louis
city/town: St. Louis
feature inters.: Meramec River
cadastral grid:
highway route: Gravois Road
highway distr.: 6
current owner: St. Louis County

STRUCTURAL DATA

superstructure: steel, 10-panel, rigid-connected Parker through truss, with 6-panel rigid-connected Pratt through truss approach spans
substructure: concrete abutments, wingwalls and hammerhead spill-through piers

span number: 2; 2
span length: 200.0'; 120.0'
total length: 649.0'
roadway width: 20.0'
condition: good
alterations: none
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 channels with lacing; vertical: 2 channels with lacing (4 angles with lacing at the hip); diagonal: 2 angles with batten plates; lateral bracing: 1 angle; strut: 4 angles with bracing; floor beam: I-beam; guardrail: steel angles

HISTORICAL DATA

erection date: 1924-25
erection cost: $92,962.00
designer: Missouri State Highway Department
fabricator : Vincennes Bridge Company, Vincennes IN
contractor: Vincennes Bridge Company, Vincennes IN

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number U3875452; Primary System Bridge Record, located at the Missouri Highway and Transportation Departm ment, Jefferson City MO; field inspection by Clayton Fraser, 10 June 1994.

sign. rating: 47
evaluation: NRHP non-eligible (typically configured example of MSHD standard long-span truss design)

inventoried by: Clayton B. Fraser 2 August 1994

Black Creek Culvert

STLO16

GENERAL DATA

structure no.: 052500.3
county: St. Louis
city/town: Brentwood
feature inters.: Black Creek
cadastral grid:
highway route: Central Avenue
highway distr.: 6
current owner: City of Brentwood

STRUCTURAL DATA

superstructure: concrete arch culvert
substructure: concrete abutments and wingwalls

span number: 1
span length: 28.0'
total length: 30.0'
roadway width: 29.0'
condition: fair
alterations: closed to vehicular traffic
floor/decking : concrete deck over earth fill
other features: timber 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 Number 052500.3.

sign. rating: 29
evaluation: NRHP non-eligible (undistinguished, small-scale culvert, inadequately documented)

inventoried by: Clayton B. Fraser 2 August 1994

Quinette Road Bridge

STLO17

GENERAL DATA

structure no.: 096044.8
county: St. Louis
city/town: St. Louis
feature inters.: Grand Glaize Creek
cadastral grid:
highway route: Quinette Road
highway distr.: 6
current owner: St. Louis County

STRUCTURAL DATA

superstructure: steel, 4-panel, rigid-connected Pratt half-hip pony truss
substructure: stone masonry abutments

span number: 1
span length: 70.0'
total length: 74.0'
roadway width: 15.0'
condition: fair
alterations: unknown
floor/decking: concrete deck over steel stringers
other features: steel angle guardrails

HISTORICAL DATA

erection date: 1913
erection cost: unknown
designer: Miller and Borcherding, St. Louis MO
fabricator: Stupp Brothers Bridge and Iron Company, St. Louis MO (probable)
contractor: Miller and Borcherding, St. Louis MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 096044.8; Original construction drawings by Miller and Borcherding, 18 April 1913 - located at St. Louis County Engineer's Office.

sign. rating: 42
evaluation: NRHP non-eligible (undistinguished pony truss)

inventoried by: Clayton B. Fraser 2 August 1994

Chain of Rocks Bridge

STLO18

GENERAL DATA

structure no.: none
county: St. Louis MO
Madison IL
city/town: St. Louis
feature inter: Mississippi River
cadastral grid:
highway route: abandoned U.S. Highway 66
highway distr.: 6
current owner: City of Madison, Illinois

STRUCTURAL DATA

superstructure: steel, 20- and 12-panel, rigid-connected cantilevered through truss, with rigid-connected Warren through truss approach spans
substructure: concrete abutments, wingwalls and piers

span number: 2; 8
span length: 700.0';350.0'
total length: 5350.0'
roadway width: 40.0'
condition: fair
alterations: closed to traffic, 1970
floor/decking : concrete deck over steel stringers
other features: upper chord and inclined end post: 2 built-up channels with cover plate and double lacing; lower chord: 2 built-up channels with lacing; vertical: 2 channels with lacing, built-up I-beam; diagonal: 2 channels with lacing; lateral bracing: 4 angles with lacing; strut: 4 angles with bracing; floor beam: I-beam; guardrail: steel angles

HISTORICAL DATA

erection date: 1927-29
erection cost: $2.5 million
designer: Baxter L. Brown, Consulting Engineer, St. Louis MO
fabricator : American Bridge Company, New York NY
contractor: Union Bridge and Construction Company, New York NY

references: "Seven New Mississippi River Highway Bridges," **Engineering News-Record**, 31 July 1930, pages 181-84; Susan Croce Kelly and Quinta Scott, **Route 66** (Norman, Oklahoma: University of Oklahoma Press, 1988), page 76; Mary Charlotte Aubry Costello, **Mississippi River Bridge by Bridge** (By the Author, 1995), pages 66-67; Michael Wallis, **Route 66: The Mother Road** (New York: St. Martins Press, 1990), page 53; **St. Louis Globe-Democrat**, 5 November 1927, 2 December 1927, 2 March 1928, 17 August 1928, 25 June 1929, 21 July 1929, 18 March 1932, 17 May 1941, 25 August 1957; Peter Hernon, "Bridge's History a Troubled One," **St. Louis Post-Dispatch**, 15 April 1991; David G. Wrone, "Old Bridge a Secluded Teenage Hangout," **Bellefontaine-Jennings Journal**, 14 April 1991; field inspection by Clayton Fraser, 10 June 1994.

sign. rating: 77
evaluation: NRHP eligible (outstanding large-scale truss on nationally significant highway crossing)

inventoried by: Clayton B. Fraser 2 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Meramec River Bridge
MHTD: J 421

STLO05

DATE(S) OF CONSTRUCTION
1931-32

LOCATION
Interstate 44 over Meramec River;
1.8 miles east of Eureka; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP possibly eligible (score: 63)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	3	superstructure:	steel, 12-panel, rigid-connected Warren deck truss, with steel stringer approach spans
span length:	130.0'	substructure:	concrete abutments, wingwalls and piers with bullnosed cutwaters
total length:	1009.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	30.0'	other features:	steel angle guardrails

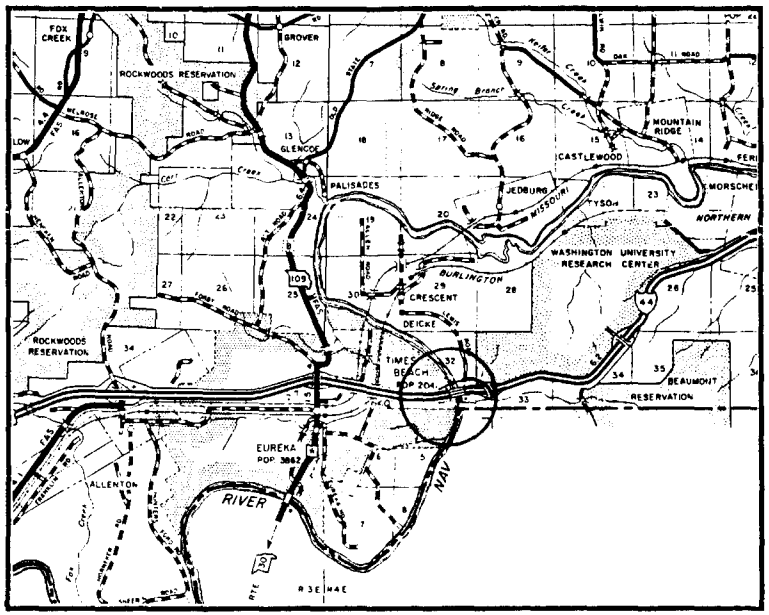
Situated some two miles east of Eureka, this dramatic structure carries Interstate Highway 44 over the Meramec River. Featuring a rare riveted deck truss, the superstructure is supported high above the river by concrete piers and abutments. The design for this three-span bridge was completed in the spring of 1931 by engineers for the Missouri State Highway Department as part of the improvements being made on U.S. Highway 66. A contract for the bridge's fabrication and erection was let that July to the Frazier-Davis Construction Company. Using steel components rolled by the Illinois Steel Company of Chicago, the contractors erected the bridge in 1931-32 for $133,592.99. Virtually unchanged since its completion, the Meramec River Bridge continues to carry traffic in western St. Louis County.

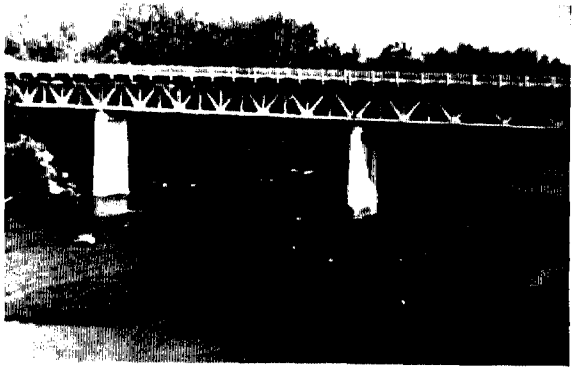
During the late 19th and early 20th centuries, numerous through and pony trusses were built on roads and highways throughout Missouri. Deck trusses–in which the roadway is carried by the truss's upper chords–were built far less often. Never very common, this truss type has suffered attrition throughout the state, until only seven 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. An important crossing of the Meramec River on Route 66, this three-span truss is both historically and technologically noteworthy–a regionally important remnant of early highway construction in the state.

NAME(S) OF STRUCTURE

Meramec 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 421; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Meramec River Bridge
MHTD: K 205

STLO06

DATE(S) OF CONSTRUCTION
1933-34

LOCATION
U.S. Highway 61 over Meramec River;
2.7 miles north of Arnold; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP eligible (score: 75)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	2	superstructure:	steel, 9-panel, rigid-connected Parker through truss, with steel stringer approach spans
span length:	210.0'	substructure:	concrete abutments, wingwalls and piers
total length:	845.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	42.0'	other features:	steel guardrails

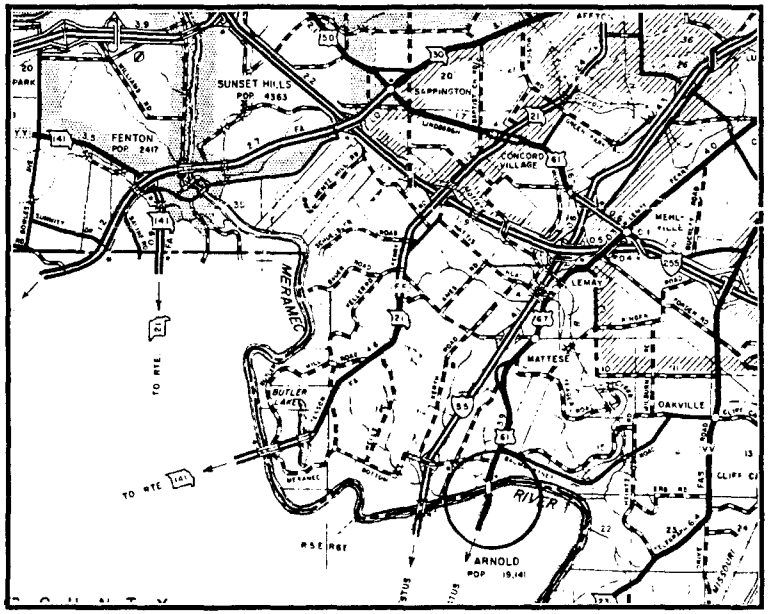
This long-span through truss carries U.S. Highway 61 over the Meramec River near Arnold, at the southern periphery of St. Louis. The Meramec River Bridge is comprised of two rigid-connected Parker through truss spans, with eight steel stringer approach spans, supported on a skew by a concrete substructure. The structure was designed in the summer of 1933 by the state highway department and built in 1933-34 by contractor Samuel Kraus of St. Louis for about $250,000. Since its completion, the bridge has functioned in place, without substantial alteration.

The Missouri State Highway Department used riveted Parker configurations for its long-span through trusses almost from the time the agency developed its first bridge standards around 1920. Structurally straightforward and versatile, these graceful spans were erected throughout the state in span lengths ranging from about 160 to 250 feet. Virtually all of these structures featured trusses with straight configurations; skewed trusses were a relative rarity. With its heavily skewed configuration and 210-foot span, the Meramec River Bridge is thus distinguished as one of the longest and the only skewed example among the state's remaining Parker trusses.

NAME(S) OF STRUCTURE

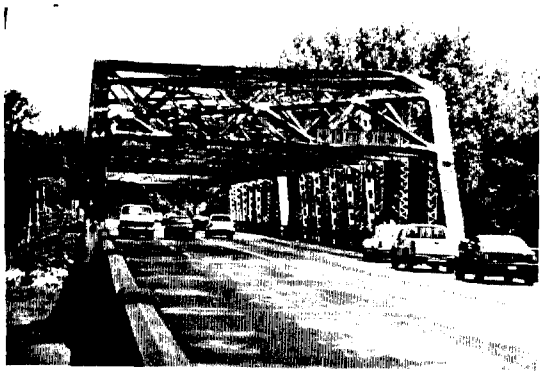
Meramec River Bridge

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 205; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; **Ninth Biennial Report of the State Highway Commission of Missouri**, 1933-34, pages 182, 187; field inspection by Clayton Fraser, 10 June 1994.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
St. Charles Bridge
MHTD: K 239R2

STLO07

DATE(S) OF CONSTRUCTION
1900-04

LOCATION
abandoned State Highway 115 over Missouri River; T47N R5E
St. Charles; St. Louis / St. Charles County, Missouri

USE (ORIGINAL / CURRENT)
roadway bridge / abandoned

RATING NRHP determined eligible (score: 64)

CONDITION
fair

OWNER
Missouri Highway and Transportation Department

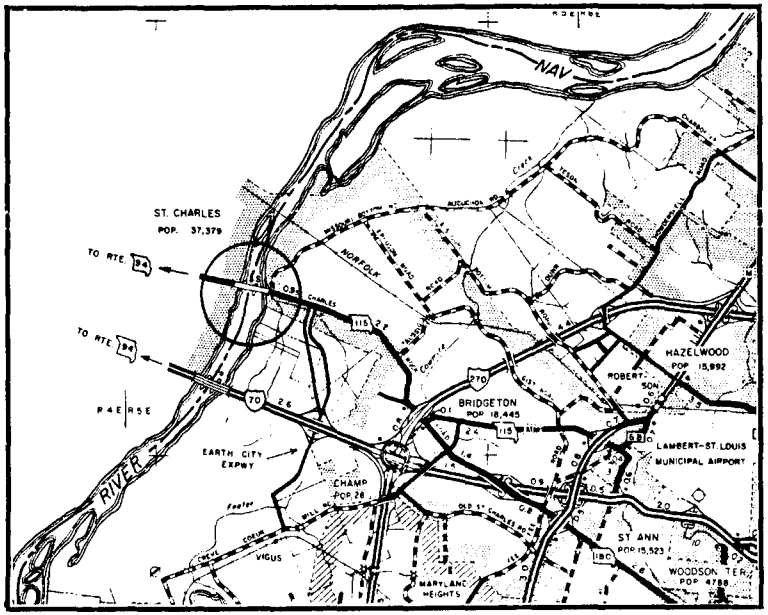
span number:	5	superstructure:	steel pin-connected Pennsylvania through truss
span length:	420.0'	substructure:	concrete-filled steel cylinder piers
total length:	2873.0'	floor/decking:	concrete deck
roadway wdt.:	19.0'	other features:	steel pipe guardrails

The St. Charles Bridge spans the Missouri River, connecting St. Charles and St. Louis. Originally built in 1902, the structure must have been a major achievement for the St. Louis-St. Charles area. In its current condition, the bridge takes the form of a large-scale Pennsylvania through truss. The Pennsylvania truss, characterized by an arched upper chord, is a rare find today in Missouri or other states. The Pennsylvania truss gained its name by its frequent employment in railroad bridges in Pennsylvania around the turn of the century. The St. Charles bridge retains the Pennsylvania's original use, carrying railroad tracks with the roadway. Although its origins are an enigma, the St. Charles Bridge has endured most of the twentieth century with only minor reparations and modifications. It has carried automobile and rail traffic between the two eastern Missouri communities since its opening nearly a century ago.

NAME(S) OF STRUCTURE

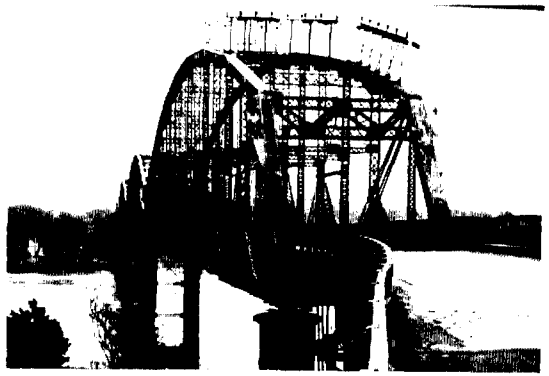
St. Charles Bridge

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 239R2; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; U.S. Engineer Office, **Bridges, Missouri River: Data, History & Laws**, 1933, page 13; field inspection by Clayton Fraser, 10 June 1994.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Meramec River Bridge STLO08
MHTD: K 458

DATE(S) OF CONSTRUCTION
1935-36

LOCATION
State Highway 231 over Meramec River;
1.2 miles southeast of Arnold; St. Louis / Jefferson County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP possibly eligible (score: 51)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	2	superstructure:	steel, 9-panel, rigid-connected Parker through truss, with steel stringer approach spans
span length:	220'	substructure:	concrete abutments, wingwalls and piers
total length:	1179.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	22.0'	other features:	steel guardrails

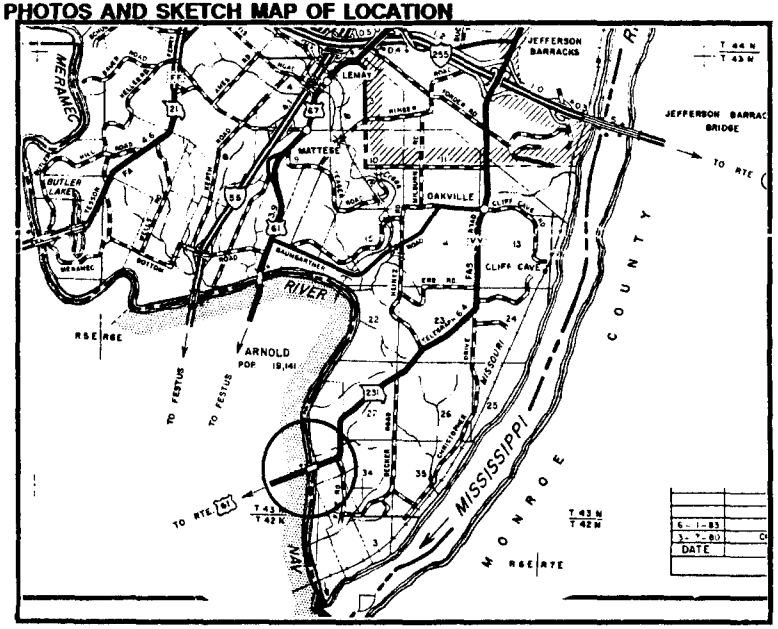
Extending south from St. Louis, State Highway 231 is a secondary route leading from St. Louis to Jefferson County. In the mid-1930s the Missouri State Highway Commission began efforts to improve the roadway, including the construction of this major bridge over the Meramec River. Opting for steel construction rather than concrete, the highway commission built this rigid-connected truss, with shorter steel stringer spans over the river's floodplain. Drawings were prepared by the Missouri State Highway Department in late 1935. As delineated by MSHD, the structure was comprised of two 220-foot Parker through trusses and 14 50-foot stringer approach spans, all supported by a concrete substructure on driven piles. MSHD advertised the project for bids that fall. On November 8, 1935, a contract for the bridge's construction was awarded to F.T. O'Dell. O'Dell completed the crossing the following year. Today unchanged from its original construction, the Meramec River Bridge displays a high degree of physical integrity as it continues to carry traffic.

The Missouri State Highway Department used riveted Parker configurations for its long-span through trusses almost from the time the agency developed its first bridge standards around 1920. Structurally straightforward and versatile, these graceful spans were erected throughout the state in span lengths ranging from about 160 to 250 feet. With a span length od 220 feet, the Meramec River Bridge is distinguished as one of the longest among the state's remaining Parker trusses.

NAME(S) OF STRUCTURE

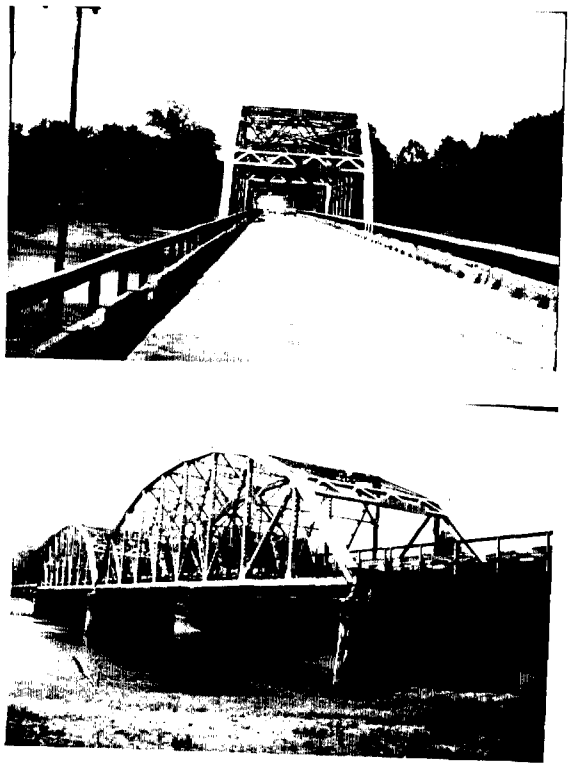
Meramec River Bridge

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 458; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; **Tenth Biennial Report of the State Highway Commission of Missouri**, 1935-36, page 262; field inspection by Clayton Fraser, 10 June 1994.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Meramec River Bridge STLO09
MHTD: K 637R

DATE(S) OF CONSTRUCTION
1940

LOCATION
State Highway 21 over Meramec River;
3.2 miles northwest of Arnold; St. Louis / Jefferson County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / highway bridge

RATING NRHP eligible (score: 76)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	1; 2	superstructure:	steel, 11-panel, rigid-connected, cantilevered tied arch
span length:	264.0'; 192.0'	substructure:	concrete abutments, wingwalls and piers
total length:	648.0'	floor/decking:	concrete deck over steel stringers
roadway wdt.:	46.0'	other features:	upper chord, inclined end post and arch ribs: 2 built-up channels with cover plate and lacing; lower chord, vertical and diagonal: H-section beam; lateral bracing: 2 angles; strut: 4 angles with lacing; floor beam: I-beam; guardrail: ornamental steel

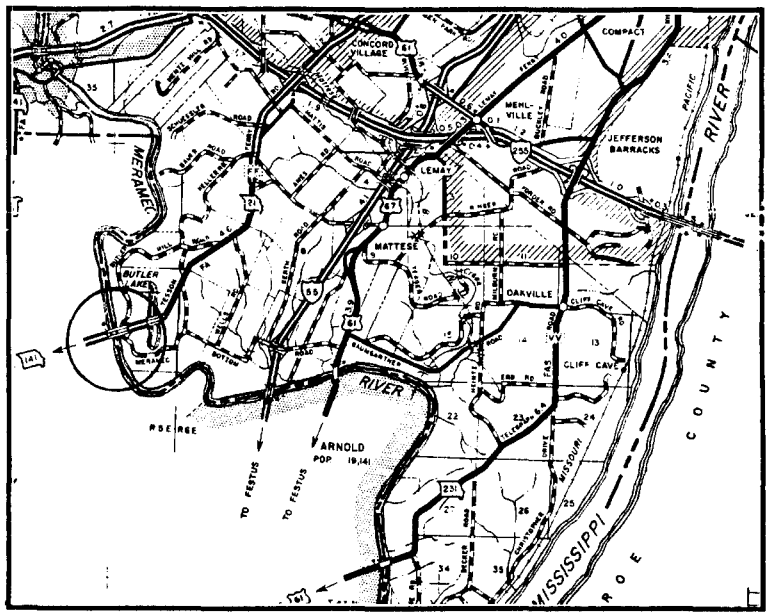
This three-span steel bridge carries State Highway 21 over the Meramec River on the line between St. Louis and Jefferson counties northwest of Arnold. The Meramec River Bridge was designed by the Missouri State Highway Commission Bureau of Bridges in 1939. "Since the Meramec River Bridge is located in a region that has been called the playground of St. Louis," bridge engineer Howard Mullins stated, "an effort was made to secure a structure of reasonable esthetic fitness." MSHD engineers considered several configurations for the bridge: a continuous plate rib tied arch, a three-span continuous truss, three single-span tied arches and a suspension bridge, among others, before developing the plan for a cantilevered tied arch. As delineated by the highway department, the structure would feature a 264-foot tied arch span, cantilevered on both sides by 192-foot anchor spans. "The continuity of the trusses and the action of the arch tie produce a structure which is threefold indeterminate," Mullins wrote. "A condition of single redundancy was also produced by the double intersection diagonals at the center of the arch truss. These double diagonals were used to permit a pleasing truss outline." The superstructure was supported by concrete spill-through piers, which were in turn founded on bedrock.

Designating the project as Federal Aid Project 806C(1), the highway department solicited competitive proposals in December 1939. A month later the state highway commission awarded a construction contract to the Massman Construction Company. The Kansas City-based contractor commissioned the superstructural fabrication to the Stupp Brothers Bridge and Iron Company of St. Louis. Massman's construction crew used traditional falseworks under the anchor spans and erected the center span by cantilevering from the sides. To connect the arch at center-span, the men removed the end bearing shoes on the anchor spans, lifting the two arch halves slightly, before the arch was riveted and the shoes replaced. Opened to traffic later in 1940, the Meramec River Bridge consumed some 1087 tons of structural steel. Since its completion, it has functioned in place, with the replacement of its original steel grid deck with concrete as the only alteration of note.

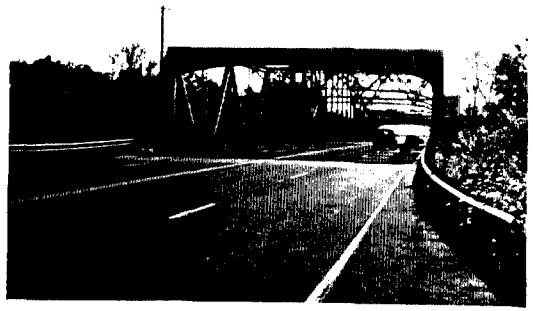
Not only was the Meramec River Bridge the first continuous tied arch built in Missouri, it was the first of its kind built in the United States. "Of the many unusual highway bridges built in recent years few were more novel than one recently constructed over the Meramec River, a short distance south of St. Louis, by the Missouri state highway department," Mullins stated. Although its 264-foot span was modest by most standards and was dwarfed by the 845-foot Julien Dubuque Bridge built over the Mississippi River three years later, the Meramec River Bridge is technologically significant as a rare incidence of structural experimentation by the state highway department and an uncharacteristic acknowledgement by the department of bridge aesthetics. It is thus noteworthy for its distinctive appearance and its atypical configuration. In essentially unaltered condition, the Meramec River Bridge is a well-preserved example of highway bridge design in the pre-war years.

NAME(S) OF STRUCTURE
Meramec 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 637R; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; **Twelfth Biennial Report of the State Highway Commission of Missouri**, 1939-40, pages 189-190; Howard H. Mullins, "Continuous Tied Arch Built in Missouri," **Engineering News-Record** 126 (5 June 1941), pages 84-87; field inspection by Clayton Fraser, 10 June 1994.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Highway 40 Underpass
MHTD: K 854

STLO11

DATE(S) OF CONSTRUCTION
1940-41

LOCATION
McKnight Road over U.S. Highway 40;
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
highway underpass / highway underpass

RATING NRHP possibly eligible (score: 50)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

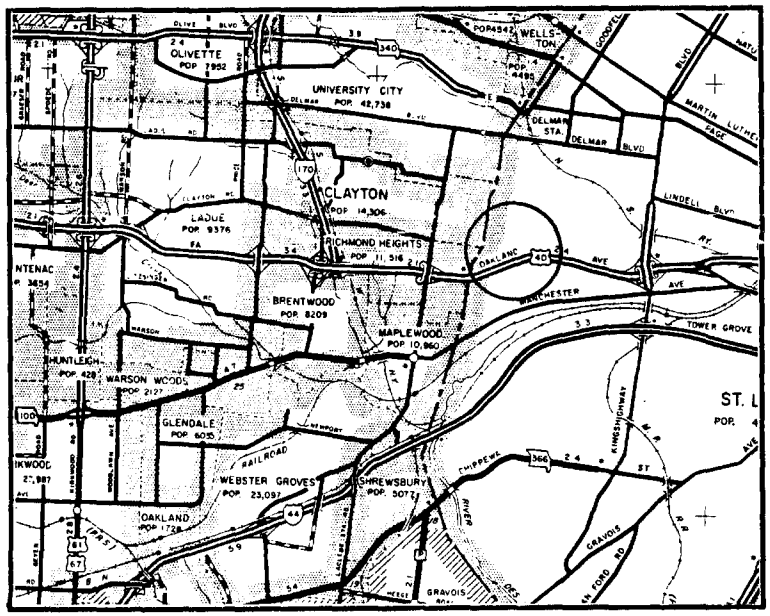
span number:	2	superstructure:	concrete rigid frame
span length:	61.0'	substructure:	concrete abutments, wingwalls and piers
total length:	123.0'	floor/decking:	concrete deck
roadway wdt.:	44.0'	other features:	arched haunches at girders; Art Moderne detailing at piers; steel guardrails

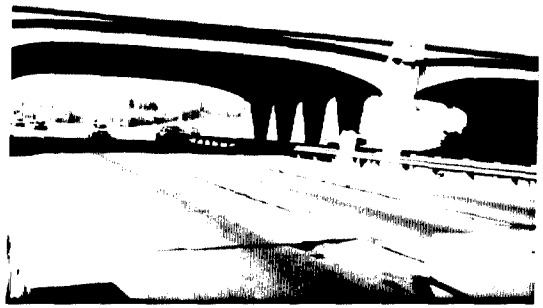
This twin-span concrete bridge carries McKnight Road over U.S. Highway 40 in St. Louis. The structure is a concrete rigid frame, which features four girder ribs with arched haunches, doweled rigidly to abutments and tapered concrete columns. The Highway 40 Underpass was designed by the Missouri State Highway Department as part of work on U.S. Highway 40 in St. Louis. On November 29, 1940, MSHD awarded a contract to build the bridge to the Atkinson-Windle Company. Presumably, Bushman finished the bridge the next year. Total cost: $55,180.90. Since its completion, the underpass has carried vehicular traffic in essentially unaltered condition.

Developed by Westchester County, New York, in the early 1920s, the concrete rigid frame bridge became especially popular for federal relief projects during the 1930s. Both picturesque and practical, the flat or elliptically arched designs appealed to proponents of urban beautification. The Missouri State Highway Department used the concrete rigid frame sparingly in urban overpass situations, never adopting this structural type as a state standard. Only seven concrete rigid frame bridges have been identified by the statewide bridge inventory, all of which are in either St. Louis or Kansas City. Although built relatively late in the milieu of rigid frame construction, the Highway 40 Underpass is distinguished by its well-preserved condition. It is technologically significant as a relatively rare example of what was essentially an experimental structural type for the state highway department.

NAME(S) OF STRUCTURE
Highway 40 Underpass

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 854; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; Elmer Napier, "Rigid-Frame Bridges," **Roads and Bridges**, April 1940, page 13.

INVENTORIED BY	AFFILIATION	DATE
Clayton B. Fraser	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
U.S. Highway 40 Underpass
MHTD: K 861

STLO12

DATE(S) OF CONSTRUCTION
1944

LOCATION
McCutcheon Road over U.S. Highway 40;
St. Louis; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
highway underpass / highway underpass

RATING NRHP possibly eligible (score: 50)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	2	superstructure:	concrete rigid frame
span length:	62.0'	substructure:	concrete abutments, wingwalls and pier
total length:	124.0'	floor/decking:	concrete deck
roadway wdt.:	44.0'	other features:	arched girders; MSHD-standard concrete guardrails

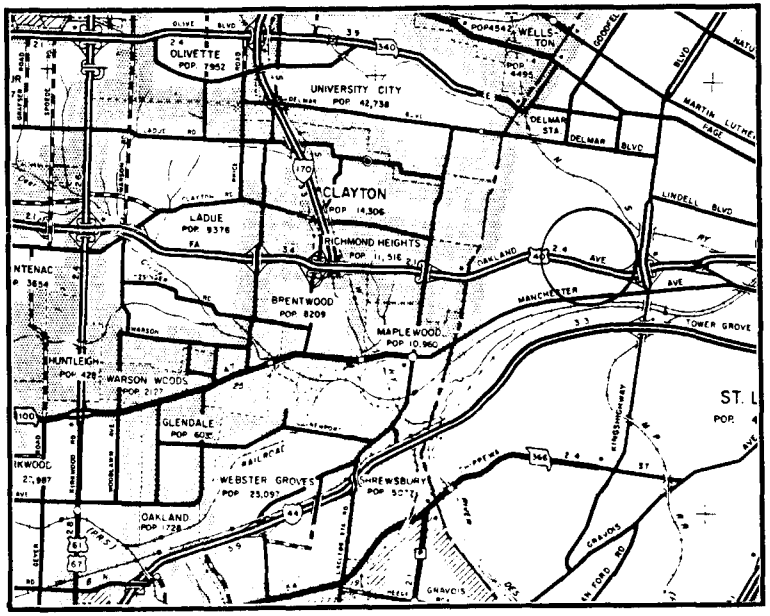
This twin-span concrete bridge carries McCutcheon Road over U.S. Highway 40 in St. Louis. The structure is a concrete rigid frame, which features four girder ribs with arched haunches, doweled rigidly to abutments and tapered concrete columns. The Highway 40 Underpass was designed by the Missouri State Highway Department as part of work on U.S. Highway 40 in St. Louis. On July 7, 1944, MSHD awarded a contract to build the bridge to the Isreal Brothers. Presumably, the contractor finished the bridge later that year. Total cost: $74,136.00. Since its completion, the underpass has carried vehicular traffic in essentially unaltered condition.

Developed by Westchester County, New York, in the early 1920s, the concrete rigid frame bridge became especially popular for federal relief projects during the 1930s. Both picturesque and practical, the flat or elliptically arched designs appealed to proponents of urban beautification. The Missouri State Highway Department used the concrete rigid frame sparingly in urban overpass situations, never adopting this structural type as a state standard. Only seven concrete rigid frame bridges have been identified by the statewide bridge inventory, all of which are in either St. Louis or Kansas City. Although built relatively late in the milieu of rigid frame construction, the Highway 40 Underpass is distinguished by its well-preserved condition. It is technologically significant as a relatively rare example of what was essentially an experimental structural type for the state highway department.

NAME(S) OF STRUCTURE

U.S. Highway 40 Underpass

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 861; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; Elmer Napier, "Rigid-Frame Bridges," **Roads and Bridges**, April 1940, page 13.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Highway 231 Overpass
MHTD: L 53R1

STLO13

DATE(S) OF CONSTRUCTION
1947

LOCATION
State Highway 231 over Interstate Highway 255;
1.0 mile east of Mehlville; St. Louis County, Missouri

USE (ORIGINAL / CURRENT)
highway overpass / highway overpass

RATING NRHP possibly eligible (score: 55)

CONDITION
good

OWNER
Missouri Highway and Transportation Department

span number:	2	superstructure:	concrete rigid frame
span length:	66.0'	substructure:	concrete abutments, wingwalls and pier
total length:	220.0'	floor/decking:	concrete deck
roadway wdt.:	52.0'	other features:	arched girders; solid concrete guardrails; abstract emblem on spandrel

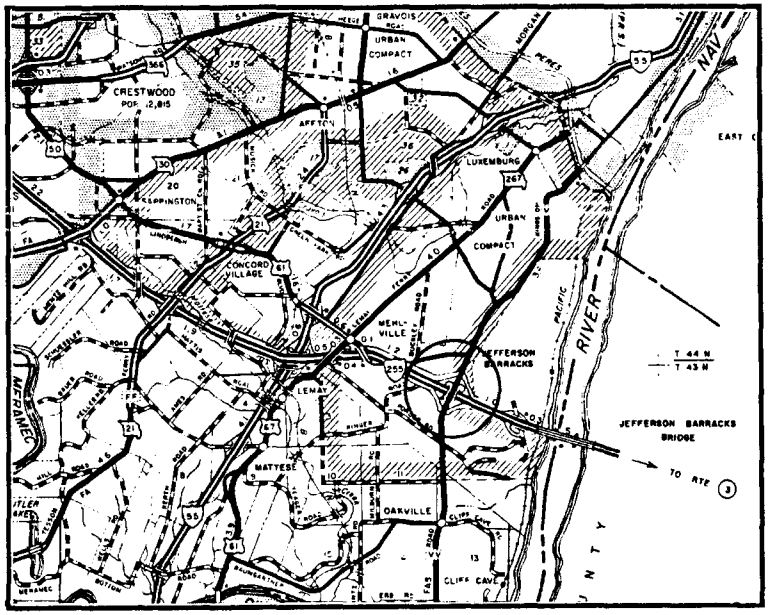
This twin-span concrete bridge carries State Highway 231 over Interstate 255 in south St. Louis County, near the small town of Mehlville. The structure is a concrete rigid frame, which features four girder ribs with arched haunches, doweled rigidly to abutments and tapered concrete columns. The Highway 231 Overpass was designed early in 1947 by the Missouri State Highway Department. On February 28, 1947, MSHD awarded contracts to build and pave the bridge to Henry L. Perkinson, the J.E. Latta Construction Company, and the Grantwood Contracting Company. Presumably, the contractor finished the bridge later that year. Total cost: $158,980.13. Since its completion, the overpass has carried vehicular traffic in essentially unaltered condition.

Developed by Westchester County, New York, in the early 1920s, the concrete rigid frame bridge became especially popular for federal relief projects during the 1930s. Both picturesque and practical, the flat or elliptically arched designs appealed to proponents of urban beautification. The Missouri State Highway Department used the concrete rigid frame sparingly in urban overpass situations, never adopting this structural type as a state standard. Only seven concrete rigid frame bridges have been identified by the statewide bridge inventory, all of which are in either St. Louis or Kansas City. Although built relatively late in the milieu of rigid frame construction, the Highway 231 Overpass is distinguished as the longest of the remaining rigid frame structures in the inventory. It is technologically significant as a relatively rare example of what was essentially an experimental structural type for the state highway department.

NAME(S) OF STRUCTURE

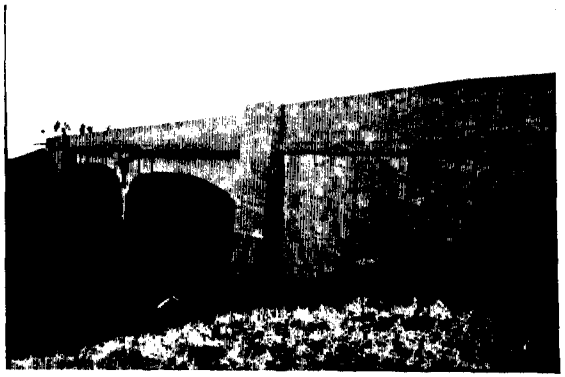
Highway 231 Overpass

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 L53R1; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; Elmer Napier, "Rigid-Frame Bridges," **Roads and Bridges**, April 1940, page 13.

INVENTORIED BY	**AFFILIATION**	**DATE**
Clayton B. Fraser	Fraserdesign, Loveland CO	4 August 1994

HAER INVENTORY
Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE
Chain of Rocks Bridge STLO18
MHTD: none

DATE(S) OF CONSTRUCTION
1927-29

LOCATION
abandoned U.S. Highway 66 over Mississippi River;
St. Louis; St. Louis MO / Madison IL County, Missouri

USE (ORIGINAL / CURRENT)
highway bridge / abandoned

RATING NRHP eligible (score: 77)

CONDITION
fair

OWNER
City of Madison, Illinois

span number:	2; 8	superstructure:	steel, 20- and 12-panel, rigid-connected cantilevered through truss, with rigid-connected Warren through truss approach spans
span length:	700.0'; 350.0'		
total length:	5350.0'	substructure:	concrete abutments, wingwalls and piers
roadway wdt.:	40.0'	floor/decking:	concrete deck over steel stringers
		other features:	upper chord and inclined end post: 2 built-up channels with cover plate and double lacing; lower chord: 2 built-up channels with lacing; vertical: 2 channels with lacing, built-up I-beam; diagonal: 2 channels with lacing; lateral bracing: 4 angles with lacing; strut: 4 angles with bracing; floor beam: I-beam; guardrail: steel angles

Route 66 between Chicago and Los Angeles was formally designated a United States Highway in November 1926 by the Secretary of Agriculture, as part of the country's newly designated interstate highway system. The largest city between the highway's two termini, St. Louis also presented the widest river crossing along its length–over the Mississippi River. As originally routed, the highway crossed into St. Louis over the McKinley Bridge [STLC16]; around 1934 it was later switched over the MacArthur Bridge [STLC15]. Both of these spans funneled traffic into St. Louis's warehouse district, however, further congesting the already-congested city streets downtown. In the late 1930s the route was again shifted, this time over the Chain of Rocks Bridge, which, at 40 feet, had a deck ten feet wider than MacArthur. Chain of Rocks brought travelers into the city from the north, past the popular Chain of Rocks amusement park, called "one of the prettiest places in the city." This latter span carried Route 66 traffic until its closure in 1970.

The Chain of Rocks Bridge had been built in the late 1920s to provide highway access between Madison, Illinois, and north St. Louis. Reportedly the sixth vehicular bridge over the Mississippi River in the area, it was sponsored by private money and paid for by tolls. In 1927 the Chain-of-Rocks and Kingshighway Bridge Company, a consortium of local capitalists led by Tom and John Scott, received a Congressional charter to build a highway bridge over the Mississippi River near the city's Chain of Rocks water pumping station. Designed by St. Louis consulting engineer Baxter L. Brown, the structure would cost $1.25 million. As delineated by Brown, the Chain of Rocks Bridge consisted of five continuous, rigid-connected trusses that formed ten spans, the longest of which extended 700 feet. These were supported on massive concrete piers some 55 feet above the high water mark and were approached on both sides by a series of simply supported trusses and, on the north side, a four-mile-long fill. The bridge was to be located immediately upstream from the intake tower for the water works. Originally planned with a straight roadway over its one-mile length, its configuration was changed under orders of the War Department after riverboatmen complained of the difficulty in steering around both the bridge and the tower. The

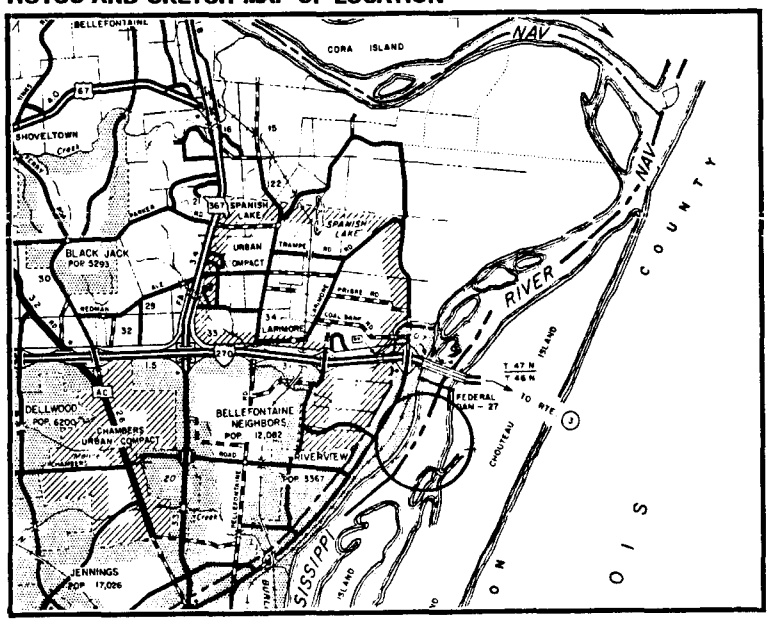
re-designed bridge incorporated a 30° bend in its roadway near mid-span. Despite the assurance that the turn would be "protected by special signs and signals, so that traffic will not be appreciably slowed down," the bent bridge formed a bottleneck that became legendary. The contract to build the concrete substructure and erect the steel superstructure was awarded to the Union Bridge and Construction Company of New York; the American Bridge Company was hired to fabricate the trusses. Actual construction began in 1927; by March 1928 the steelworkers were ready to begin erection of the superstructure on the partially complete substructure. When the piers were completed in August 1928, the engineers predicted a January 1st opening. Subsequent high waters on the Mississippi delayed this for another half-year, however. Eventually costing about $2.5 million to construct, the Chain of Rocks Bridge was opened ceremoniously to traffic on July 20, 1929. Three years later the City of Madison issued $2.3 million in bonds and purchased the structure from the bridge company. The city continued collecting tolls until August 1957, at which time the bridge was opened for free passage. In 1970 it was closed to traffic altogether. Since that time, the bridge has been a target of graffiti by gangs, the prop for the movie "Escape from New York," and in 1991 the scene of a grisly double murder. Its future is presently clouded.

As the "Main Street of America" that extended from Chicago to Los Angeles, Route 66 has proved vital in the development of American commerce and culture. "For forty-nine years that highway was a factor in millions of trips, vacations, and relocations," wrote historian Susan Croce. "It provided a living to countless men and women, ran down main streets of the hometowns of millions more, and figured in a billion personal experiences. It brought wealth and recognition to people like Bobby Troup and John Steinbeck. It brought destruction and death to others who did not respect its twists and turns and peculiarities." Forming the highway's crossing over America's largest river, the Mississippi, the Chain of Rocks Bridge has played a pivotal role in the highway's history. The bridge is technologically important as an outstanding example of large-scale highway bridge construction in the 1920s. With its graceful, long-span trusses cantilevered over tapered concrete piers and the awkward bend in the roadway, the structure is both noteworthy and distinctive. It is today a well-preserved, nationally important remnant of early highway design and construction–one of Missouri's most important bridges.

NAME(S) OF STRUCTURE

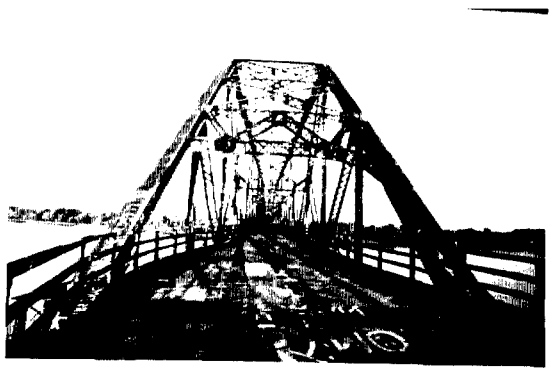
Chain of Rocks Bridge

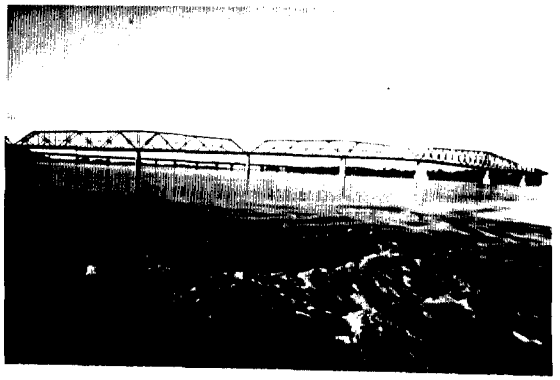
PHOTOS AND SKETCH MAP OF LOCATION

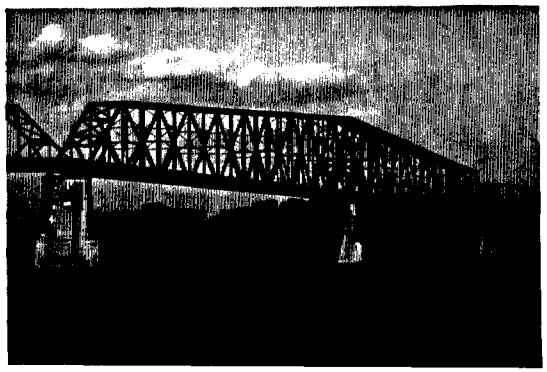


LOCATION MAP

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT GENERAL HIGHWAY MAP







SOURCES

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INVENTORIED BY	**AFFILIATION**	**DATE**
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