

GREENE COUNTY

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

Inv. No.	MHTD	Bridge Name	Description
*GREN01	H 123A	Sac River Bridge	3-100' concrete open spandrel arch 1926 A.P. Poirot
*GREN02	H 636	Pomme de Terre R. Bridge	3-100' concrete open spandrel arch 1928 M.E. Gillioz
GREN03	K 818	Little Sac River Bridge	1-110' steel plate deck girder 1939 Otto W. Knutson
GREN04	X 710	James River Bridge	4-100' steel stringer 1947 F.D. Coate Construction Company
GREN05	U4075021	Olive Street Bridge	1- 20' concrete filled spandrel arch 1924
GREN06	U4075029	Zoo Park Bridge	1- 20' concrete filled spandrel arch 1913 Canton Bridge Company
*GREN07	U4075046	Benton Avenue Viaduct	26-53' concrete deck girder 1927 M.E. Gillioz, Monett MO
*GREN08	U4075047	Grant Avenue Viaduct	30-56' concrete deck girder 1927 List & Weatherly Const. Co.
GREN09	017011.9	Sycamore Bridge	4- 35' concrete deck girder 1916 Matthews and Sturdevant
GREN10	018006.4	Bridge	2- 17' concrete slab 1914 Canton Bridge Company
GREN11	020024.5	Pomme de Terre R. Bridge	1- 60' pinned Pratt half-hip pony truss 1906 Canton Bridge Company
GREN12	021004.0	Bridge	2- 14' concrete slab 1916 J.S. McMillan
*GREN13	033004.3	Baker/Hawkins Bridge	(replaced)
GREN14	035011.1	John's Mill Bridge	(replaced)
*GREN15	043004.8	Killingsworth Bridge	(replaced)
*GREN16	044012.3	Johnson Ford Bridge	(replaced)
*GREN17	052008.8	Cave Springs Bridge	(replaced)
GREN18	052009.4	Cave Springs Bridge	1- 36' concrete through girder 1915 Canton Bridge Company
*GREN19	054012.7	Hackney Mill Bridge	1-100' pinned Pratt through truss 1896 Wrought Iron Bridge Company
GREN20	065015.5	Sac River Bridge	1- 32' concrete through girder 1915 Canton Bridge Company
GREN21	065015.9	Yeakley Bridge	1- 24' concrete slab 1913 Canton Bridge Company
GREN22	068001.3	Ash Grove Overpass	1- 36' steel plate deck girder 1915 Canton Bridge Company
*GREN23	084000.7	Spring Branch Bridge	(replaced)
GREN24	088009.9	Bigbee Ford Bridge	(replaced)
GREN25	115020.5	Wilson Creek Bridge	1- 60' pinned Pratt pony truss c1905 Canton Bridge Company (prob.)

GREENE COUNTY

INCLUDED (cont.):

GREN26	119019.2	Roundtree Ford Bridge	1- 48'	pinned Pratt half-hip pony truss
			1901	American Bridge Company
*GREN27	128003.9	Sac River Bridge	1- 45'	concrete filled spandrel arch
			1918	Pioneer Construction Company
GREN28	144022.5	Pearson Creek Bridge	1- 45'	pinned Pratt half-hip pony truss
			c1905	
GREN29	148024.4	James River Bridge	1-150'	riveted Parker through truss
			1926	M.E. Gillioz (poss.)
GREN30	151009.8	Dry Sac River Bridge		(replaced)
*GREN31	156013.3	Wilson Creek Bridge		(replaced)
GREN32	407522.0	River Road Bridge	1-160'	riveted Parker through truss
			1923	M.E. Gillioz

EXCLUDED:

Warren pony truss
174012.8 128003.3

Steel stringer

J 930R1	K 162	K 646	K 818	S 347	S 348	T 493
171010.6	141022.0	144004.4	148024.6	148023.0		

Steel girder

215004.8 0250149.1 156004.7

Concrete slab

H 493R	Y 682	U4075038	U4075041	U4075042	004008.1	099003.0
117005.1	117005.0	094010.1	052000.3	033004.6	074001.0	137001.4
137001.1	149002.7	167003.7	181005.4	068020.1	034024.7	048025.4
221027.8	231000.1	225010.1	044004.2	207004.8	223007.1	062030.6
134027.8	219016.7	132023.6	175022.7	169022.5	186009.6	186009.8
116003.8	116003.5	116003.1	045013.2	045015.5	144005.6	160006.4
043022.4	190022.8	407501.1	407502.0	407503.5	407503.9	407520.1
407522.8	407523.0					

Concrete girder

G 521	H 462	H 945R	K 281	K 901	K 949	U4075004
X 143	X 144	U4075044	U4075049	004008.3	076007.0	129009.3
167001.5	076018.0	102016.4	102017.9	087018.2	141015.1	141015.5
206024.8	407522.1	407522.9				

Concrete box culvert

H 461	H 468	H 494R	H 737	J 227	J 692R	K 420
K 747	L 281R1	L 338	L 369	L 370	S 346	S 362
S 363	S 417	T 273	T 371	T 492	T 494	T 992
W 10	X 560	X 581	Y 757	U4075017	U4075018	U4075019

GREENE COUNTY

EXCLUDED (cont.):

Concrete box culvert

U4075022	U4075031	004007.6	022009.6	002010.9	076006.8	060015.0
149002.9	177000.4	177000.3	173002.5	066021.2	094021.9	159007.4
102019.7	102020.7	189011.1	197011.2	213012.4	138027.4	150025.4
144022.1	227019.5	170025.6	170025.4	170024.9	182016.2	097012.1
097012.4	101013.5	124010.4	160008.7	150024.0	407504.5	407520.2
407520.5	407520.6	407520.8	407521.3	407521.4	407521.5	407521.6
407521.7	407522.2	407522.7	407523.1	407523.2		

SUMMARY:

	Primary	Secondary	Urban	Other	Total
Included	5	17	5	0	27
Excluded	41	109	15	0	165
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	46	126	20	0	192 structures

Sac River Bridge

GREN01

GENERAL DATA

structure no.:	H 123A	city/town:	1.0 mile northwest of Ash Grove
county:	Greene	feature inters.:	Sac River
		cadastral grid:	S18, T30N, R24W
		highway route:	U.S. Highway 160
		highway distr.:	8
		current owner:	Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: concrete, open spandrel arch; five concrete deck girder approach spans
substructure: concrete abutments, wingwalls and piers

span number:	3	condition:	good
span length:	100.0'	alterations:	none
total length:	310.0'	floor/decking :	concrete deck
roadway width:	20.0'	other features:	MSHD standard-design concrete guardrails; fluted pylons at piers and abutments; bridge plate: Missouri Highway Dept. Bridge 123 1926; Erected A.D. 1926 Contractor A.P. Poirot Belleville, Ill.

HISTORICAL DATA

erection date: 1926
erection cost: \$31,445.41
designer: Missouri State Highway Department
fabricator : none
contractor: A.P. Poirot

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number H 123A; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City, MO; field inspection by Clayton Fraser, 23 January 1990.

sign. rating: 50
evaluation: NRHP possibly eligible (well-preserved, multiple-span example of MSHD open spandrel concrete arch construction)

Inventoried by: Clayton B. Fraser 8 April 1993

Pomme de Terre River Bridge

GREN02

GENERAL DATA

structure no.:	H 636	city/town:	2.4 miles north of Fairgrove
county:	Greene	feature inters.:	Pomme de Terre River
		cadastral grid:	S17, T31N, R20W
		highway route:	U.S. Highway 65
		highway distr.:	8
		current owner:	Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure:	concrete open spandrel arch; 5 concrete deck girder approach spans		
substructure:	concrete abutments and wingwalls; concrete spill-through piers		
span number:	1;1;1	condition:	fair
span length:	122';100';77'	alterations:	bridge closed, 1979
total length:	522.0'	floor/decking :	asphalt on concrete deck
roadway width:	20.0'	other features:	MSHD standard-design concrete guardrails with square balusters); fluted pylons at main piers

HISTORICAL DATA

erection date:	1928-29
erection cost:	\$50,376.46
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 636; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; Sixth Biennial Report of the State Highway Commission of Missouri , 1927-28, page 172; field inspection by Clayton Fraser, 23 January 1990.
sign. rating:	50
evaluation:	NRHP possibly eligible (well-preserved, multiple-span example of MSHD open spandrel concrete arch construction)

Inventoried by: Clayton B. Fraser 8 April 1993

Little Sac River Bridge

GRENO3

GENERAL DATA

structure no.: K 818	city/town: 6.8 miles north of Willard
county: Greene	feature inters.: Little Sac River
	cadastral grid: S24, T31N, R23W
	highway route: State Supplementary Route BB
	highway distr.: 8
	current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel plate deck girder; 4 steel stringer approach spans
substructure: concrete abutments and wingwalls; concrete hammerhead, spill-through piers

span number: 1	condition: good
span length: 110.0'	alterations: none
total length: 299.0'	floor/decking : concrete deck
roadway width: 24.0'	other features: steel guardrails

HISTORICAL DATA

erection date: 1939
erection cost: \$29,290.50
designer: Missouri State Highway Department
fabricator : unknown
contractor: Otto W. Knutson

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number K 818.

sign. rating: 43
evaluation: NRHP non-eligible (long-span, relatively late example of MSHD beam bridge construction)

inventoried by: Clayton B. Fraser 8 April 1993

James River Bridge

GRENO4

GENERAL DATA

structure no.:	X 710	city/town:	5.2 miles south of Strafford
county:	Greene	feature inters.:	James River
		cadastral grid:	S21, T29N, R20W
		highway route:	State Highway 125
		highway distr.:	8
		current owner:	Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure:	continuous steel stringer	condition:	good
substructure:	concrete abutments, wingwalls and piers	alterations:	none
span number:	2; 2	floor/decking :	concrete deck
span length:	100.0'; 80.0'	other features:	steel guardrails
total length:	364.0'		
roadway width:	20.0'		

HISTORICAL DATA

erection date:	1947
erection cost:	\$61,259.60
designer:	Missouri State Highway Department
fabricator :	unknown
contractor:	F.D. Choate Construction Company
references:	Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number X 710; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO.
sign. rating:	43
evaluation:	NRHP non-eligible (noteworthy for its multiple long spans, but otherwise an undistinguished, late example of an exceedingly common structural type)

inventoried by: Clayton B. Fraser 8 April 1993

Olive Street Bridge

GRENO5

GENERAL DATA

structure no.:	U4075021	city/town:	Springfield
county:	Greene	feature inters.:	Jordan Creek
		cadastral grid:	S19, T29N, R21W
		highway route:	Olive Street
		highway distr.:	8
		current owner:	City of Springfield

STRUCTURAL DATA

superstructure:	concrete filled spandrel arch		
substructure:	concrete abutments		
span number:	1	condition:	fair
span length:	20.0'	alterations:	unknown
total length:	22.0'	floor/decking :	concrete
roadway width:	34.0'	other features:	concrete guardrails (standard Missouri State Highway Department design)

HISTORICAL DATA

erection date:	1924
erection cost:	unknown
designer:	unknown
fabricator :	none
contractor:	unknown
references:	Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number U4075021.
sign. rating:	25
evaluation:	NRHP non-eligible (technologically undistinguished, short-span concrete bridge)

inventoried by: Clayton B. Fraser 8 April 1993

Zoo Park Bridge

GRENO6

GENERAL DATA

structure no.: U4075029	city/town: Springfield
county: Greene	feature inters.: Pea Ridge Creek
	cadastral grid: S7, T29N, R21W
	highway route: Norton Street
	highway distr.: 8
	current owner: Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: concrete filled spandrel arch	
substructure: concrete abutments and wingwalls	
span number: 1	condition: fair
span length: 20.0'	alterations: roadway widened and guardrails replaced
total length: 22.0'	floor/decking : concrete deck over earth fill
roadway width: 26.7'	other features: concrete guardrails (standard Missouri State Highway Department design)

HISTORICAL DATA

erection date: 1913	
erection cost: \$324.00	
designer: Greene County Road and Bridge Commissioner	
fabricator : none	
contractor : Canton Bridge Company, Canton OH	
references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number U4075029; Greene County Court Record, Book 40: pages 115-120 (8 August 1913), page 367 (23 December 1923) - located at Greene County Archives, Springfield MO.	
sign. rating: 35	
evaluation: NRHP non-eligible (substantially altered, small-scale example of early concrete bridge type)	

inventoried by: Clayton B. Fraser 8 April 1993

Benton Avenue Viaduct

GREN07

GENERAL DATA

structure no.:	U4075046	city/town:	Springfield
county:	Greene	feature inters.:	Jordan Creek; SL&SF Railroad
		cadastral grid:	S19, T29N, R21W
		highway route:	Benton Avenue
		highway distr.:	8
		current owner:	Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure:	concrete deck girder		
substructure:	concrete abutments, wingwalls and piers		
span number:	26	condition:	fair
span length:	53.0'	alterations:	roadway widened and guardrails replaced
total length:	980.0'	floor/decking :	concrete deck
roadway width:	50.0'	other features:	concrete guardrails (standard Missouri State Highway Department design); bridge plate: Built 1927 M.E. Gillioz, Contractor / St. Louis - San Francisco Ry. F.G. Jonah, Chief Engineer Ralph Miller, Bridge Engineer / Missouri Pacific Railroad F.A. Hadley, Chief Engineer E.E. Bates, Bridge Engineer

HISTORICAL DATA

erection date:	1927
erection cost:	unknown
designer:	Ralph Miller, St. Louis & San Francisco Railroad; E.E. Bates, Missouri Pacific Railroad
fabricator :	none
contractor :	M.E. Gillioz, Monett MO
references:	Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number U4075046; field inspection by Clayton Fraser, 23 January 1990.
sign. rating:	42
evaluation:	NRHP non-eligible (notable for its multiple spans, but otherwise a typically configured example of a common concrete structural type, substantially altered)

inventoried by: Clayton B. Fraser 8 April 1993

Grant Avenue Viaduct

GREN08

GENERAL DATA

structure no.:	U4075047	city/town:	Springfield
county:	Greene	feature inters.:	Jordan Creek; MoPac Railroad
		cadastral grid:	S24/19, T28N, R21/22W
		highway route:	Grant Avenue
		highway distr.:	8
		current owner:	Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure:	concrete deck girder		
substructure:	concrete abutments, wingwalls and piers		
span number:	30	condition:	fair
span length:	56.0'	alterations:	roadway widened and guardrails replaced, 1979
total length:	1209.0'	floor/decking :	concrete deck
roadway width:	50.0'	other features:	concrete guardrails (standard Missouri State Highway Department design); bridge plate: Built 1927 W.E. / Freeman, Mayor (list of commissioners) / Russell & Axon, Engineers List & Weatherly Construction Company / Reconstructed in 1979

HISTORICAL DATA

erection date:	1927
erection cost:	unknown
designer:	Russell and Axon, Engineers
fabricator :	none
contractor:	List and Weatherly Construction Company
references:	Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number U4075047; field inspection by Clayton Fraser, 23 January 1990.
sign. rating:	42
evaluation:	NRHP non-eligible (notable for its multiple spans, but otherwise a typically configured example of a common concrete structural type, substantially altered)

inventoried by: Clayton B. Fraser 8 April 1993

Sycamore Bridge

GRENO9

GENERAL DATA

structure no.:	017011.9	city/town:	4.2 miles south of Ash Grove
county:	Greene	feature inters.:	Sac River
		cadastral grid:	S6, T29N, R24W
		highway route:	county road
		highway distr.:	8
		current owner:	Greene County

STRUCTURAL DATA

superstructure:	concrete deck girder		
substructure:	concrete abutments, wingwalls and piers		
span number:	4	condition:	fair
span length:	35.0'	alterations:	none
total length:	140.0'	floor/decking :	concrete
roadway width:	15.1'	other features:	concrete guardrails with incised panels

HISTORICAL DATA

erection date:	1916-17
erection cost:	\$7950.00 (two-bridge contract)
designer:	Greene County Road and Bridge Commissioner
fabricator :	none
contractor:	Matthews and Sturdevant
references:	Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 2758.
sign. rating:	55
evaluation:	NRHP possibly eligible (well-preserved, relatively early example of pre-MSHD concrete bridge construction)

inventoried by: Clayton B. Fraser 8 April 1993

Bridge

GREN10

GENERAL DATA

structure no.: 018006.4	city/town: 2.0 miles east of Walnut Grove
county: Greene	feature inters.: branch of Asher Creek
	cadastral grid: S19, T31N, R23W
	highway route: county road
	highway distr.: 8
	current owner: Greene County

STRUCTURAL DATA

superstructure: concrete slab	
substructure: concrete abutments, wingwalls and piers	
span number: 2	condition: fair
span length: 17.0'	alterations: none
total length: 35.0'	floor/decking : concrete deck
roadway width: 15.7'	other features: concrete guardrails with recessed rectangular panels

HISTORICAL DATA

erection date: 1914	
erection cost: unknown	
designer: Greene County Road and Bridge Commissioner	
fabricator : none	
contractor: Canton Bridge Company, Canton OH	
references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 439; Greene County Court Record, Book 41 pages 115-16 (14 July 1914) - located at Greene County Courthouse, Springfield MO.	
sign. rating: 46	
evaluation: NRHP possibly eligible (early, small-scale example of concrete bridge construction)	

inventoried by: Clayton B. Fraser 8 April 1993

Little Pomme de Terre River Bridge

GREN11

GENERAL DATA

structure no.:	020024.5	city/town:	2.0 miles northwest of Fairgrove
county:	Greene	feature inters.:	Little Pomme de Terre River
		cadastral grid:	S24, T31N, R21W
		highway route:	county road
		highway distr.:	8
		current owner:	Greene County

STRUCTURAL DATA

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

span number:	1	condition:	fair
span length:	60.0'	alterations:	none
total length:	62.0'	floor/decking :	timber deck over steel stringers
roadway width:	13.0'	other features:	upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 looped square eyebars; vertical: 4 angles with double lacing; diagonal: looped square eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: steel lattice; cast iron bearing shoes; builder's plate (remnant): ...IDGE...ANTON OH

HISTORICAL DATA

erection date: 1906
erection cost: \$7064.25 (3-bridge contract)
designer: Canton Bridge Company, Canton OH
fabricator : Canton Bridge Company, Canton OH;
Carnegie Steel Company, Pittsburgh PA
contractor: Canton Bridge Company, Canton OH
references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 1417; Greene County Court Record, Book 29: page 20 (2 November 1904); Greene County Court Record, Book 30: page 291 (14 November 1905), page 616 (22 May 1906) - located at Greene County Courthouse, Springfield MO; field inspection by Clayton Fraser, 23 January 1990.
sign. rating: 46
evaluation: NRHP non-eligible (typically configured example of mainstay structural type)

inventoried by: Clayton B. Fraser 8 April 1993

Bridge

GREN12

GENERAL DATA

structure no.:	021004.0	city/town:	3.8 miles north of Ash Grove
county:	Greene	feature inters.:	branch of Clear Creek
		cadastral grid:	S32, T31N, R24W
		highway route:	Farm Road 21
		highway distr.:	8
		current owner:	Greene County

STRUCTURAL DATA

superstructure:	concrete slab	condition:	fair
substructure:	concrete abutments and pier	alterations:	unknown
span number:	2	floor/decking :	concrete deck
span length:	14.0'	other features:	bridge plate: Judges W.A. McGuire / W.R. Gorsuch / John Cowell / built by W.W. Simmons Aug 1916
total length:	28.0'		
roadway width:	20.3'		

HISTORICAL DATA

erection date:	1916
erection cost:	unknown
designer:	Greene County Road and Bridge Commissioner
fabricator :	none
contractor:	W.W. Simmons
references:	Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 552.
sign. rating:	39
evaluation:	NRHP non-eligible (small-scale, relatively early example of concrete bridge construction)

Inventoried by: Clayton B. Fraser 8 April 1993

Cave Springs Bridge

GREN18

GENERAL DATA

structure no.:	052009.4	city/town:	3.6 miles northwest of Willard
county:	Greene	feature inters.:	branch of Asher Creek
		cadastral grid:	S10, T30N, R23W
		highway route:	county road
		highway distr.:	8
		current owner:	Greene County

STRUCTURAL DATA

superstructure:	concrete through girder		
substructure:	concrete abutments and wingwalls		
span number:	1	condition:	fair
span length:	36.0'	alterations:	none
total length:	36.0'	floor/decking :	concrete deck
roadway width:	15.6'	other features:	concrete guardrails with recessed rectangular panels

HISTORICAL DATA

erection date:	1915
erection cost:	\$1300.00
designer:	Greene County Road and Bridge Commissioner
fabricator :	none
contractor:	Canton Bridge Company, Canton OH
references:	Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 216; Greene County Court Record, Book 42, page 28 (12 April 1915) - located at Greene County Court-house, Springfield MO.
sign. rating:	56
evaluation:	NRHP possibly eligible (well-preserved, early example of concrete bridge construction)

inventoried by: Clayton B. Fraser 8 April 1993

Hackney Mill Bridge

GREN19

GENERAL DATA

structure no.:	054012.7	city/town:	3.3 miles northeast of Willard
county:	Greene	feature inters.:	Little Sac River
		cadastral grid:	S7, T30N, R22W
		highway route:	Farm Road 54
		highway distr.:	8
		current owner:	Greene County

STRUCTURAL DATA

superstructure: wrought iron or steel, 6-panel, pin-connected Pratt through truss; steel, 5-panel, pin-connected Pratt pony truss approach span, and 1 steel stringer approach span on the south end

substructure: stone masonry abutments; concrete-filled iron cylinder piers

span number:	1	condition:	fair
span length:	100.0'	alterations:	none
total length:	142.0'	floor/decking :	timber deck over steel stringers
roadway width:	12.5'	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 (1 looped square eyerod at the hip); diagonal: 2 looped rectangular eyebars; counter: square eyebar with turnbuckle; upper lateral bracing: round eyerod with turnbuckle; lower lateral bracing: round rod with threaded ends; strut: I-beam; floor beam: I-beam, U-bolted to vertical; guardrail: 2 channels; portal builder's plate: 1895 / Wrought Iron Bridge Co / Builders / Canton, Ohio

HISTORICAL DATA

erection date: 1895-96

erection cost: \$3350.00

designer: Wrought Iron Bridge Company, Canton OH

fabricator : Wrought Iron Bridge Company, Canton OH;
Carnegie Rolling Mills, Pittsburgh PA

contractor: Wrought Iron Bridge Company, Canton OH

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 333; Greene County Court Record, Book S: pages 415-416 (25 November 1895), page 579 (4 February 1896), page 580 (4 February 1896), page 584 (5 February 1896); Greene County Court Record, Book T: page 96 (15 May 1896) - located at Greene County Courthouse, Springfield MO; "Hackney Bridge Proposal Draws Fire," **Springfield Leader & Press**, 20 August 1985; oral interview with Russell Mahan, conducted by Clayton Fraser, 23 January 1990; field inspection by Clayton Fraser, 23 January 1990.

Hackney Mill Bridge

sign. rating: 52

evaluation: NRHP determined non-eligible (early, well-documented example of this mainstay structural type, which has retained a high degree of structural integrity)

inventoried by: Clayton B. Fraser 8 April 1993

Sac River Bridge

GREN20

GENERAL DATA

structure no.:	065015.5	city/town:	3.2 miles south of Bois d'Arc
county:	Greene	feature inters.:	Sac River
		cadastral grid:	S24, T29N, R23W
		highway route:	county road
		highway distr.:	8
		current owner:	Greene County

STRUCTURAL DATA

superstructure:	concrete through girder		
substructure:	concrete abutments and wingwalls		
span number:	1	condition:	fair
span length:	32.0'	alterations:	unknown
total length:	33.0'	floor/decking :	concrete deck
roadway width:	15.0'	other features:	concrete guardrails with recessed rectangular panels

HISTORICAL DATA

erection date:	1915
erection cost:	\$1300.00 (three-bridge contract)
designer:	Greene County Road and Bridge Commissioner
fabricator :	none
contractor:	Canton Bridge Company, Canton OH
references:	Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 2852; Greene County Court Record, Book 42, page 28 (12 April 1915) - located at Greene County Court-house, Springfield MO.
sign. rating:	56
evaluation:	NRHP possibly eligible (well-preserved, early example of concrete bridge construction)

Inventoried by: Clayton B. Fraser 8 April 1993

Yeakley Bridge

GREN21

GENERAL DATA

structure no.:	065015.9	city/town:	5.8 miles northwest of Republic
county:	Greene	feature inters.:	Pond Creek
		cadastral grid:	S25, T29N, R23W
		highway route:	county road
		highway distr.:	8
		current owner:	Greene County

STRUCTURAL DATA

superstructure:	concrete slab	condition:	fair
substructure:	unknown	alterations:	none
span number:	1	floor/decking :	unknown
span length:	24.0'	other features:	unknown
total length:	25.0'		
roadway width:	14.5'		

HISTORICAL DATA

erection date: 1913
erection cost: \$287.00 (contract cost)
designer: Greene County Road and Bridge Commissioner
fabricator : none
contractor: Canton Bridge Company, Canton OH

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 2853; Greene County Court Record, Book 40, pages 222-23 (16 October 1913) - located at Greene County Courthouse, Springfield MO.

sign. rating: 32
evaluation: NRHP non-eligible (technologically undistinguished example of early concrete bridge type)

inventoried by: Clayton B. Fraser 8 April 1993

Ash Grove Overpass

GREN22

GENERAL DATA

structure no.:	068001.3	city/town:	1.2 miles northwest of Ash Grove
county:	Greene	feature inters.:	Saint Louis and San Francisco Railroad
		cadastral grid:	S20, T30N, R24W
		highway route:	county road
		highway distr.:	8
		current owner:	Greene County

STRUCTURAL DATA

superstructure:	steel plate deck girder	condition:	fair
substructure:	concrete abutments	alterations:	unknown
span number:	1	floor/decking :	concrete deck
span length:	36.0'	other features:	steel pipe guardrails
total length :	36.0'		
roadway width:	20.0'		

HISTORICAL DATA

erection date:	1915
erection cost:	\$979.50
designer:	Canton Bridge Company, Canton OH
fabricator :	none
contractor:	Canton Bridge Company, Canton OH
references:	Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 798; Greene County Court Record, Book 42 page 191 (21 June 1915) - located at Greene County Court-house, Springfield MO.
sign. rating:	45
evaluation:	NRHP non-eligible (undistinguished small-scale structure, lacking in technological significance)

Inventoried by: Clayton B. Fraser 8 April 1993

Wilson Creek Bridge

GREN25

GENERAL DATA

structure no.: 115020.5	city/town: 1.5 miles northwest of Battlefield
county: Greene	feature inters.: Wilson Creek
	cadastral grid: S18, T28N, R22W
	highway route: county road
	highway distr.: 8
	current owner: Greene County

STRUCTURAL DATA

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

span number: 1	condition: fair
span length: 60.0'	alterations: none
total length: 61.0'	floor/decking : asphalt on concrete, over steel stringers
roadway width: 13.0'	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 double lacing; diagonal: 2 looped rectangular eyebars; lateral bracing: round rod with threaded ends; floor beam: I-beam, field-bolted to vertical; guardrail: steel lattice with curved ends

HISTORICAL DATA

erection date: c1905
erection cost: unknown
designer: Canton Bridge Company, Canton OH
fabricator : Canton Bridge Company, Canton OH;
Jones and Laughlin Steel Company, Pittsburgh PA;
Cambria Steel Company, Pittsburgh PA
contractor: Canton Bridge Company, Canton OH
references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 2594; field inspection by Clayton Fraser, 23 January 1990.
sign. rating: 39
evaluation: NRHP non-eligible (slightly longer than average, largely undocumented example of a mainstay structural type)

Inventoried by: Clayton B. Fraser 8 April 1993

Roundtree Ford Bridge

GREN26

GENERAL DATA

structure no.: 119019.2	city/town: 2.3 miles north of Battlefield
county: Greene	feature inters.: Wilson Creek
	cadastral grid: S7, T28N, R22W
	highway route: county road
	highway distr.: 8
	current owner: Greene County

STRUCTURAL DATA

superstructure: steel, 3-panel, pin-connected Pratt half-hip pony truss	
substructure: concrete abutments and wingwalls	
span number: 1	condition: fair
span length: 48.0'	alterations: none
total length: 48.0'	floor/decking : timber deck over steel stringers
roadway width: 13.2'	other features: steel lattice guardrails

HISTORICAL DATA

erection date: 1901	
erection cost: unknown	
designer: American Bridge Company, New York NY	
fabricator : American Bridge Company, New York NY	
contractor: American Bridge Company, New York NY	
references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 2422; Greene County Court Record, Book Z: pages 277-78 (5 February 1902), pages 32-33 (20 October 1902) - located at the Greene County Courthouse, Springfield MO.	
sign. rating: 41	
evaluation: NRHP non-eligible (partially documented, typically configured example of pinned pony truss construction)	

inventoried by: Clayton B. Fraser 8 April 1993

Sac River Bridge

GREN27

GENERAL DATA

structure no.: 128003.9	city/town: 7.1 miles southeast of Ash Grove
county: Greene	feature inters.: Sac River
	cadastral grid: S15, T29N, R24W
	highway route: county road
	highway distr.: 8
	current owner: Greene County

STRUCTURAL DATA

superstructure: concrete filled spandrel arch	
substructure: concrete abutments and wingwalls	
span number: 1	condition: fair
span length: 45.0'	alterations: none
total length: 47.0'	floor/decking : concrete deck over earth fill
roadway width: 16.2'	other features: concrete guardrails with recessed rectangular panels

HISTORICAL DATA

erection date: 1918
erection cost: unknown
designer: Fred Johnson, Greene County Highway Engineer
fabricator : none
contractor: Pioneer Construction Company, Kansas City MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 2809; Greene County Court Record, Book 45: pages 591-593 (28 May 1918), page 613 (10 June 1918); Greene County Court Record, Book 46: page 61 (31 July 1918), page 180 (17 October 1918) - located at the Greene County Courthouse, Springfield MO.

sign. rating: 49
evaluation: NRHP possibly eligible (well-preserved, well-documented early example of pre-MSHD concrete bridge construction)

inventoried by: Clayton B. Fraser 8 April 1993

Pearson Creek Bridge

GREN28

GENERAL DATA

structure no.:	144022.5	city/town:	5.3 miles east of Springfield
county:	Greene	feature inters.:	Pearson Creek
		cadastral grid:	S26, T29N, R21W
		highway route:	county road
		highway distr.:	8
		current owner:	Greene County

STRUCTURAL DATA

superstructure:	steel, 3-panel, pin-connected Pratt half-hip pony truss		
substructure:	concrete abutments and wingwalls		
span number:	1	condition:	fair
span length:	45.0'	alterations:	unknown
total length:	46.0'	floor/decking :	timber deck over steel stringers
roadway width:	12.8'	other features:	steel angle guardrails

HISTORICAL DATA

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

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 1979.

sign. rating:	26
evaluation:	NRHP non-eligible (typically configured, inadequately documented example of a common structural type)

Inventoried by: Clayton B. Fraser 8 April 1993

James River Bridge

GREN29

GENERAL DATA

structure no.:	148024.4	city/town:	7.7 miles east of Springfield
county:	Greene	feature inters.:	James River
		cadastral grid:	S31, T29N, R20W
		highway route:	county road
		highway distr.:	8
		current owner:	Greene County

STRUCTURAL DATA

superstructure:	steel, 9-panel, rigid-connected Parker through truss, with steel stringer approach spans		
substructure:	concrete abutments, wingwalls and piers		
span number:	1	condition:	fair
span length:	150.0'	alterations:	unknown
total length:	348.0'	floor/decking :	concrete deck over steel stringers
roadway width:	20.0'	other features:	steel guardrails

HISTORICAL DATA

erection date:	1926
erection cost:	unknown
designer:	Missouri State Highway Department (probable)
fabricator :	unknown
contractor:	M.E. Gillioz, Monett MO (possible)
references:	Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 3044; Fifth Binennial Report of the State Highway Commission of Missouri , 1925-26, pages 178-79.
sign. rating:	44
evaluation:	NRHP non-eligible (typically configured example of riveted Parker through truss design, partially documented)

inventoried by: Clayton B. Fraser 8 April 1993

River Road Bridge

GREN32

GENERAL DATA

structure no.:	407522.0	city/town:	Springfield
county:	Greene	feature inters.:	James River
		cadastral grid:	S16, T28N, R21W
		highway route:	River Road
		highway distr.:	8
		current owner:	Missouri Highway and Transportation Department

STRUCTURAL DATA

superstructure: steel, 8-panel, rigid-connected Parker through truss; two Warren pony truss approach spans

substructure: concrete abutments, wingwalls and piers

span number:	1; 2	condition:	good
span length:	160.0'; 60.0'	alterations:	unknown
total length:	287.0'	floor/decking :	concrete deck over steel stringers
roadway width:	19.8'	other features:	steel angle guardrails

HISTORICAL DATA

erection date: 1922-23

erection cost: \$27,015.40

designer: Missouri State Highway Department

fabricator : unknown

contractor: M.E. Gillioz, Monett MO

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 407522.0; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; Missouri State Highway Board, **Third Biennial Report**: 1921-1922, page 127-28, 138; Missouri State Highway Board, **Fourth Biennial Report**: 1923-1924, page 149.

sign. rating: 57

evaluation: NRHP possibly eligible (one of earliest remaining examples in state of MSHD standard long-span structural type)

Inventoried by: Clayton B. Fraser 8 April 1993

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Sac River Bridge
MHTD: H 123A

GREN01

DATE(S) OF CONSTRUCTION

1926

LOCATION

U.S. Highway 160 over Sac River; S18, T30N, R24W
1.0 mile northwest of Ash Grove; Greene County, Missouri

USE (ORIGINAL / CURRENT)

highway bridge / highway bridge

RATING NRHP possibly eligible (score: 50)

CONDITION

good

OWNER

Missouri Highway and Transportation Department

span number: 3

span length: 100.0'

total length: 310.0'

roadway wdt.: 20.0'

superstructure: concrete, open spandrel arch; five concrete deck girder approach spans

substructure: concrete abutments, wingwalls and piers

floor/decking: concrete deck

other features: MSHD standard-design concrete guardrails; fluted pylons at piers and abutments; bridge plate: **Missouri Highway Dept. Bridge 123 1926; Erected A.D. 1926 Contractor A.P. Poirot Belleville, Ill.**

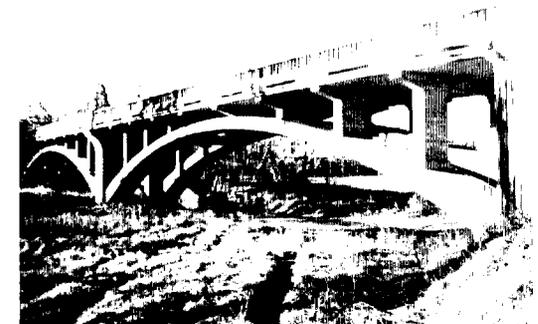
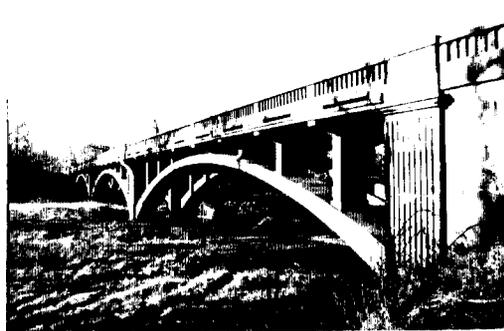
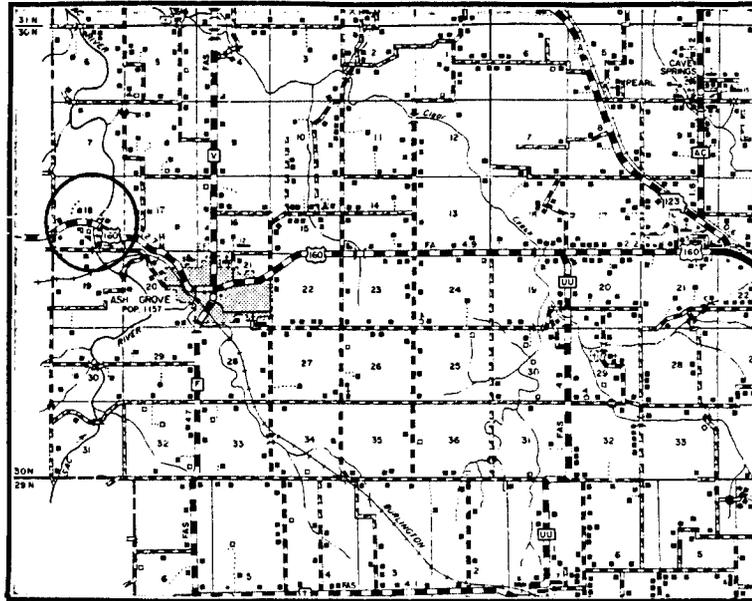
This multiple-span concrete bridge spans the Sac River a mile northwest of Ash Grove. A part of U.S. Highway 160, the bridge consists of a three open spandrel concrete arches, with a series of concrete deck girder approach spans. The architectural detailing is typical for such concrete structures of the period designed by the state highway department, with concrete baluster guardrails and fluted concrete pylons at the arch corners. The Sac River Bridge was designed late in 1925 by the Bridge Department of the state highway commission. Its construction was contracted in February 1926 to A.P. Poirot. Costing \$31,445.41, the structure was completed later that year. In unaltered condition, it continues to carry traffic at this rural Greene County crossing.

The Missouri State Highway Department adopted the open spandrel concrete arch as a standard design for medium- and long-span crossings in the mid-1920s. During the 1920s and 1930s, the department built dozens of such arches throughout the state, concentrating them for some reason in the Ozarks region in southwestern Missouri. The Sac River Bridge in Greene County is distinguished among the remaining open spandrel arches in the state for its noteworthy degree of physical integrity and for its three spans. It is a noteworthy highway-related resource.

NAME(S) OF STRUCTURE

Sac 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 123A; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City, MO; field inspection by Clayton Fraser, 23 January 1990.

INVENTORIED BY

Clayton B. Fraser

AFFILIATION

Fraserdesign, Loveland CO

DATE

23 January 1990

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Pomme de Terre River Bridge
MHTD: H 636

GREN02

DATE(S) OF CONSTRUCTION

1928-29

LOCATION

U.S. Highway 65 over Pomme de Terre River; S17, T31N, R20W
2.4 miles north of Fairgrove; Greene County, Missouri

USE (ORIGINAL / CURRENT)

highway bridge / highway bridge

RATING NRHP possibly eligible (score: 50)

CONDITION

fair

OWNER

Missouri Highway and Transportation Department

span number: 1;1;1	superstructure: concrete open spandrel arch; 5 concrete deck girder approach spans
span length: 122'; 100'; 77'	substructure: concrete abutments and wingwalls; concrete spill-through piers
total length: 522.0'	floor/decking: asphalt on concrete deck
roadway wdt.: 20.0'	other features: MSHD standard-design concrete guardrails with square balusters); fluted pylons at main piers

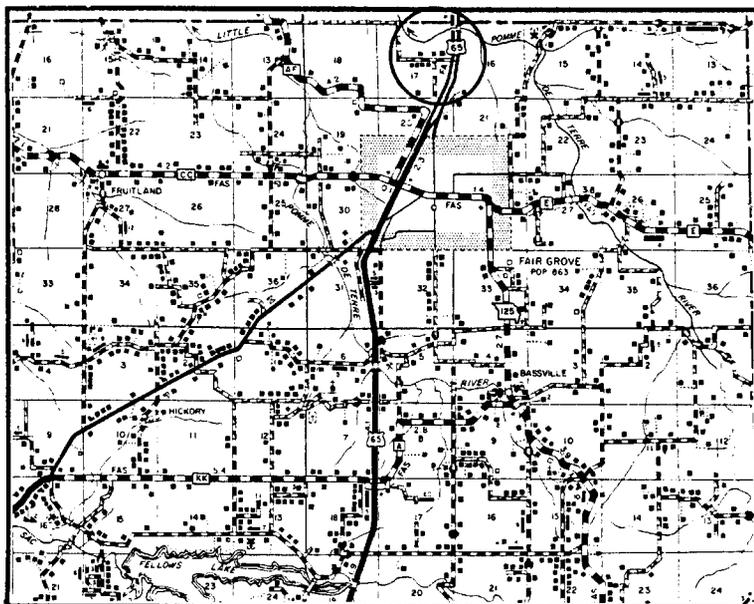
In the early-1920s, the Missouri State Highway Commission prepared long-span concrete arch designs for a number of the state's longest river crossings. Comprised of three open spandrel arches, flanked by five concrete deck girder approaches, this bridge in Greene County was erected where Highway 65 intersected the Pomme de Terre River, some 2½ miles north of Fairgrove. Drawings were prepared in early 1928, and that summer the project was ready to bid. On August 10, 1928, a contract for the bridge's construction was awarded to M.E. Gillioz. Based in Monett, Missouri, Gillioz was one of southern Missouri's most prolific builders during the 1920s and 1930s. He completed the multiple-span bridge later that year for a total cost of over \$50,000. Unchanged from its original construction, the Pomme de Terre River Bridge displays a high degree of historical integrity.

The state highway department in the 1920s and 1930s developed plans for a number of 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 typically 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. Approximately 20 multiple-span, open spandrel arches have been identified by the statewide bridge inventory. The Pomme de Terre River Bridge is significant among these as a well-preserved example, with a notable 122-foot maximum span length.

NAME(S) OF STRUCTURE

Pomme de Terre 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 636; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; field inspection by Clayton Fraser, 23 January 1990.

INVENTORIED BY
Clayton Fraser

AFFILIATION
Fraserdesign, Loveland CO

DATE
23 January 1990

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Sycamore Bridge
MHTD: 017011.9

GREN09

DATE(S) OF CONSTRUCTION

1916-17

LOCATION

county road over Sac River; S6, T29N, R24W
4.2 miles south of Ash Grove; Greene County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 55)

CONDITION

fair

OWNER

Greene County

span number: 4	superstructure: concrete deck girder
span length: 35.0'	substructure: concrete abutments, wingwalls and piers
total length: 140.0'	floor/decking: concrete
roadway wdt.: 15.1'	other features: concrete guardrails with incised panels

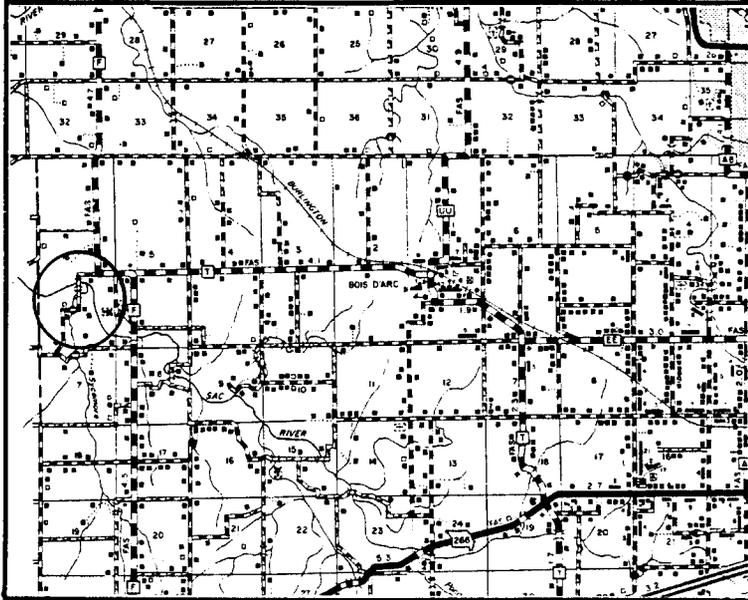
Located about four miles south of Ash Grove in Boone Township, this small-scale concrete bridge carries a county road over a branch of the Dry Sac River. The bridge is comprised of three concrete deck girder spans, supported by concrete piers and abutments. Greene County began planning for construction of a bridge at this point in the summer of 1916. That October, after soliciting competitive proposals, the county court awarded a contract to build this and another, almost identical concrete bridge over the Dry Sac River [GREN12] to the partnership of A.H. Matthews and W.E. Sturdevant. The contractors began work on both bridges soon thereafter, completing them both sometime after the new year. The Sycamore Bridge, as this structure is known locally, has functioned in place since, in essentially unaltered condition.

The state highway department provided the impetus for concrete construction in the 1920s, designing and building numerous short-span concrete slabs and deck girders as primary or approach spans on bridges. Although the concrete girder was a mainstay structural type in the 1920s, 1930s and 1940s—due entirely to MSHD—few concrete girder bridges in Missouri pre-date the highway department period, because the counties were slow to embrace reinforced concrete for construction of vehicular bridge superstructures in the 1910s. The Sycamore Bridge is distinguished as one of the few concrete girders remaining from this formative period: a well-preserved, relatively early example of pre-MSHD concrete bridge construction.

NAME(S) OF STRUCTURE

Sycamore 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 017011.9.

INVENTORIED BY

Clayton B. Fraser

AFFILIATION

Fraserdesign, Loveland CO

DATE

23 January 1990

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Bridge
MHTD: 018006.4

GREN10

DATE(S) OF CONSTRUCTION

1914

LOCATION

county road over branch of Asher Creek; S19, T31N, R23W
2.0 miles east of Walnut Grove; Greene County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 46)

CONDITION

fair

OWNER

Greene County

span number: 2	superstructure: concrete slab
span length: 17.0'	substructure: concrete abutments, wingwalls and piers
total length: 35.0'	floor/decking: concrete deck
roadway wdt.: 15.7'	other features: concrete guardrails with recessed rectangular panels

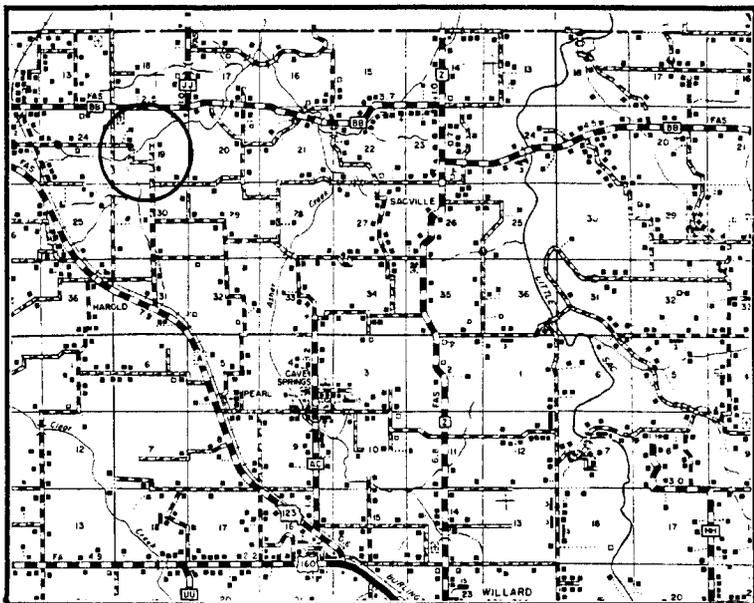
This small-scale concrete bridge carries a county road over a branch of Asher Creek northeast of Ash Grove. The structure features a concrete slab deck supported by concrete mass abutments and center pier. It is simply detailed, with recessed rectangular panels on the girder sides as the only architectural expression. The bridge is one of eleven small-scale concrete structures contracted for by the county in July 1914. The Canton Bridge Company of Ohio was hired to build the structures, which ranged in scale from single-barrel culverts to 62-foot concrete through girders. Canton completed the bridges later that year. Since that time, this bridge in Walnut Grove Township has carried rural traffic in essentially unaltered condition.

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. This small-scale bridge in green County is distinguished among these as one of the earliest dateable examples in the state of concrete bridge construction.

NAME(S) OF STRUCTURE

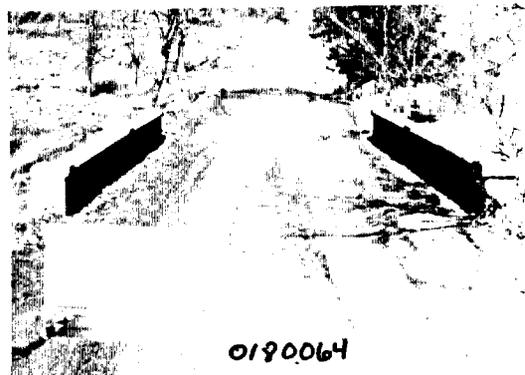
Bridge

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 018006.4; Greene County Court Record, Book 41 pages 115-16 (14 July 1914) - located at Greene County Courthouse, Springfield MO.

INVENTORIED BY

Clayton B. Fraser

AFFILIATION

Fraserdesign, Loveland CO

DATE

23 January 1990

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Cave Springs Bridge
MHTD: 052009.4

GREN18

DATE(S) OF CONSTRUCTION

1915

LOCATION

county road over branch of Asher Creek; S10, T30N, R23W
3.6 miles northwest of Willard; Greene County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 56)

CONDITION

fair

OWNER

Greene County

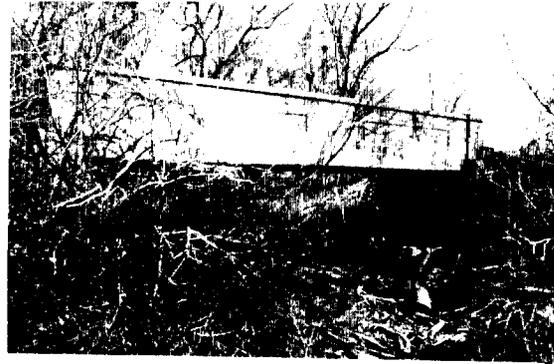
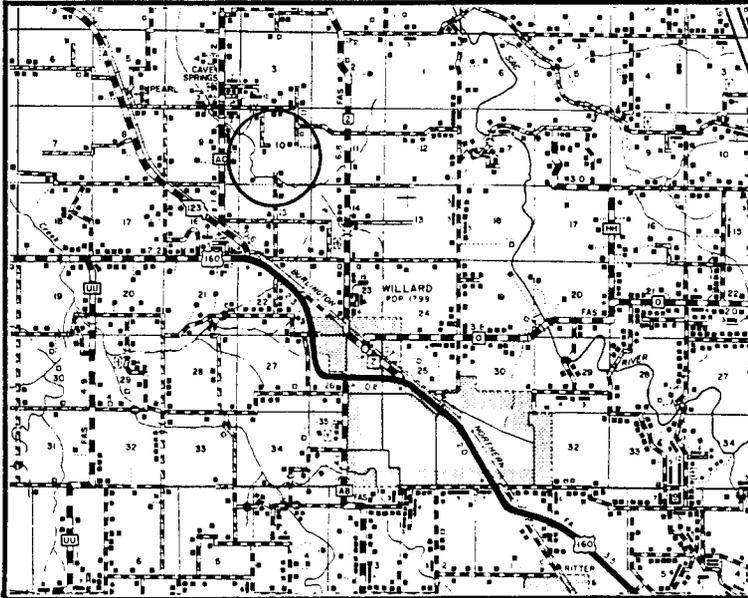
span number:	1	superstructure:	concrete through girder
span length:	36.0'	substructure:	concrete abutments and wingwalls
total length:	36.0'	floor/decking:	concrete deck
roadway wdt.:	15.6'	other features:	concrete guardrails with recessed rectangular panels

This single-span concrete bridge carries a county road over a branch of Asher Creek northwest of Willard. Known locally as the Cave Springs Bridge, the structure features a concrete deck supported between the concrete mass abutments by a pair of through girders. It is simply detailed, with recessed rectangular panels on the girder sides as the only architectural expression. The Cave Springs Bridge dates to 1915. In April of that year the Greene County Court received bids for three concrete structures: a 32-foot through girder span south of Bois d'Arc, an 8-foot concrete arch culvert west of Phoenix and this 36-foot through girder. The contract to build all three was awarded to the Canton Bridge Company of Ohio for \$1300.00. Canton completed the three small-scale bridges later that year. Since that time, the Cave Springs Bridge has functioned in place, without substantial alteration.

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

NAME(S) OF STRUCTURE
Cave Springs 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 052009.4; Greene County Court Record, Book 42, page 28 (12 April 1915) - located at Greene County Courthouse, Springfield MO.

INVENTORIED BY

Clayton B. Fraser

AFFILIATION

Fraserdesign, Loveland CO

DATE

23 January 1990

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Hackney Mill Bridge
MHTD: 054012.7

GREN19

DATE(S) OF CONSTRUCTION

1895-96

LOCATION

Farm Road 54 over Little Sac River; S7, T30N, R22W
3.3 miles northeast of Willard; Greene County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / roadway bridge

RATING NRHP determined non-eligible (score: 52)

CONDITION

fair

OWNER

Greene County

span number: 1
span length: 100.0'
total length: 142.0'
roadway wdt.: 12.5'

superstructure: wrought iron or steel, 6-panel, pin-connected Pratt through truss; steel, 5-panel, pin-connected Pratt pony truss approach span, and 1 steel stringer approach span on the south end
substructure: stone masonry abutments; concrete-filled iron cylinder piers under main span
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 (1 looped square eyerod at the hip); diagonal: 2 looped rectangular eyebars; counter: square eyebar with turnbuckle; upper lateral bracing: round eyerod with turnbuckle; lower lateral bracing: round rod with threaded ends; strut: I-beam; floor beam: I-beam, U-bolted to vertical; guardrail: 2 channels; portal builder's plate: 1895 / Wrought Iron Bridge Co / Builders / Canton, Ohio

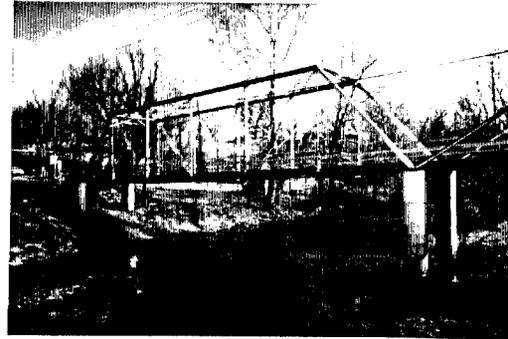
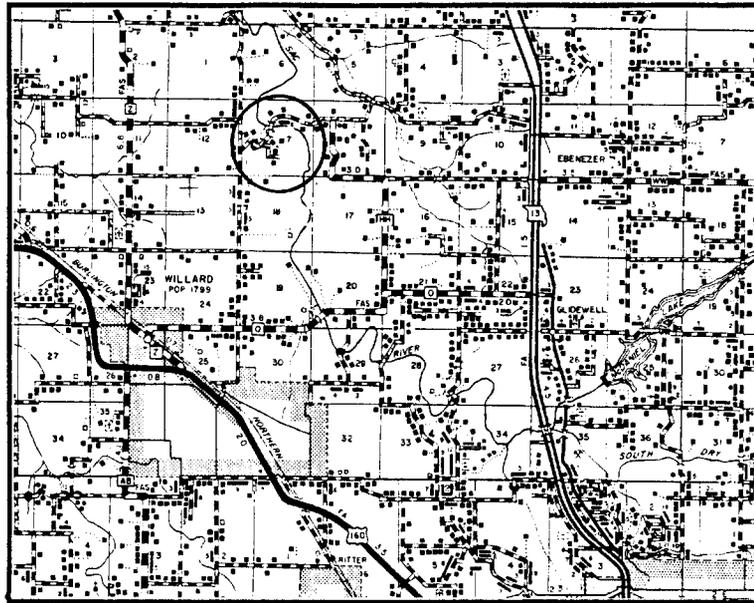
The Hackney Mill Bridge carries Greene County Farm Road 54 across the Little Sac River some three miles northeast of Willard. The pinned Pratt truss features a timber deck over steel stringers and is supported by stone abutments and concrete-filled iron cylinder piers. Greene County Court records reveal that in May of 1895 the bridge commissioner and members of the court visited Hackney Mill on the Little Sac River to view the site of a proposed bridge. The court members evidently viewed the site favorably because just over one month later, on June 12th, a contract to fabricate and erect the structure's main span was let to the Wrought Iron Bridge Company of Canton, Ohio. Construction of the bridge's approach spans was apparently handled as a separate bidding process, but on November 25, 1895, the Wrought Iron Bridge Company was awarded that contract as well. WIBCo used its patented designs to fabricate the trusses, completing the Hackney Mill Bridge by May 1896. Subsequent court records show that repair work on the bridge was carried out in June 1900 and in February 1911. The Hackney Mill Bridge continues to carry rural traffic in unaltered condition.

In the early 1880s, the pin-connected Pratt truss superseded the bowstring arch-truss as the iron bridge of choice for medium-span wagon crossings. 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 in 1916. "Its advantages are simplicity, economy of metal, and suitability for connection to the floor and lateral systems." Virtually all of the regional bridge fabricators manufactured Pratt trusses and marketed them

extensively to Missouri's counties. The Wrought Iron Bridge Company was a major player in Missouri during the late 19th century, and this structure represents that company's penchant for pinned truss construction. With an erection date of 1895, the Hackney Mill Bridge is distinguished as one of the oldest originally placed Pratt trusses in Missouri. It is thus technologically and historically significant, well-preserved, transportation-related resource.

NAME(S) OF STRUCTURE
Hackney 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 054012.7; Greene County Court Record, Book S: pages 415-416 (25 November 1895), page 579 (4 February 1896), page 580 (4 February 1896), page 584 (5 February 1896); Greene County Court Record, Book T: page 96 (15 May 1896) - located at Greene County Courthouse, Springfield MO; "Hackney Bridge Proposal Draws Fire," *Springfield Leader & Press*, 20 August 1985; oral interview with Russell Mahan, conducted by Clayton Fraser, 23 January 1990; field inspection by Clayton Fraser, 23 January 1990.

INVENTORIED BY
Clayton B. Fraser

AFFILIATION
Fraserdesign, Loveland CO

DATE
23 January 1990

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Sac River Bridge
MHTD: 065015.5

GREN20

DATE(S) OF CONSTRUCTION

1915

LOCATION

county road over Sac River; S24, T29N, R23W
3.2 miles south of Bois d'Arc; Greene County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 56)

CONDITION

fair

OWNER

Greene County

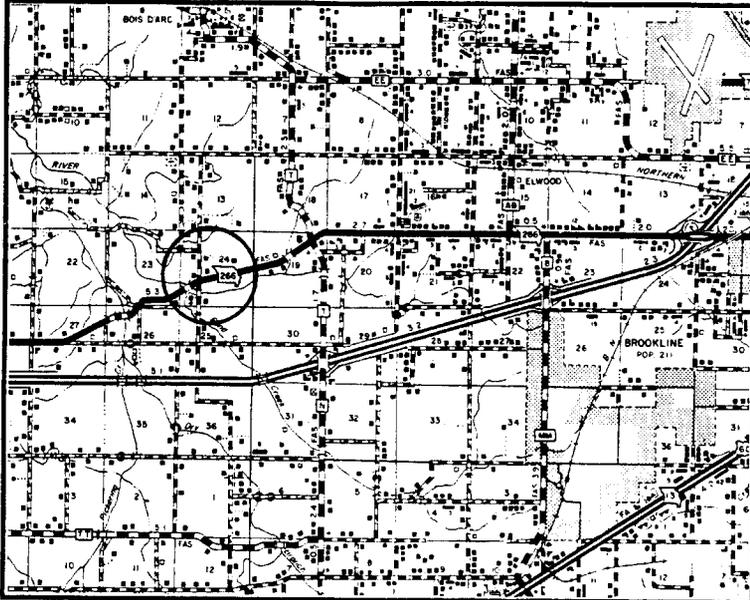
span number: 1	superstructure: concrete through girder
span length: 32.0'	substructure: concrete abutments and wingwalls
total length: 33.0'	floor/decking: concrete deck
roadway wdt.: 15.0'	other features: concrete guardrails with recessed rectangular panels

This single-span concrete bridge carries a county road over a branch of the Sac River south of Bois d'Arc. The structure features a concrete deck supported between the concrete mass abutments by a pair of through girders. It is simply detailed, with recessed rectangular panels on the girder sides as the only architectural expression. The Sac River Bridge dates to 1915. In April of that year the Greene County Court received bids for three concrete structures: a 36-foot through girder span northwest of Willard, an 8-foot concrete arch culvert west of Phoenix and this 32-foot through girder. The contract to build all three was awarded to the Canton Bridge Company of Ohio for \$1300.00. Canton completed the three small-scale bridges later that year. Since that time, the Sac River Bridge has functioned in place, without substantial alteration.

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

NAME(S) OF STRUCTURE

Sac 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 065015.5; Greene County Court Record, Book 42, page 28 (12 April 1915) - located at Greene County Courthouse, Springfield MO.

INVENTORIED BY

Clayton B. Fraser

AFFILIATION

Fraserdesign, Loveland CO

DATE

23 January 1990

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Sac River Bridge
MHTD: 128003.9

GREN27

DATE(S) OF CONSTRUCTION

1918

LOCATION

county road over Sac River; S15, T29N, R24W
7.1 miles southeast of Ash Grove; Greene County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 49)

CONDITION

fair

OWNER

Greene County

span number:	1	superstructure:	concrete filled spandrel arch, skewed
span length:	45.0'	substructure:	concrete abutments and wingwalls
total length:	47.0'	floor/decking:	concrete deck over earth fill
roadway wdt.:	16.2'	other features:	concrete guardrails with recessed rectangular panels

Among the more than thirty Greene County bridges included in Missouri's statewide historic bridge inventory is this medium-span concrete arch over the Dry Sac River. The structure carries a county road some 7 miles south of Ash Fork, in southwestern Greene County. The bridge consist of a filled spandrel concrete arch, which is supported on a skew by concrete abutments. Typical of its local design and relatively early construction, the arch is simply detailed, with plainly formed sidewalls and solid concrete parapets that feature rectangular recessed panels, corbeled coping and modest bulkheads at the ends. The Sac River Bridge has suffered minor collision damage to its parapet walls, but otherwise remains intact. The bridge traces its origins to early 1918, when Greene County Highway Engineer Fred Johnson designed several concrete arches to carry county roads. In April the Greene County Court solicited competitive proposals to build six arches: four 16-foot spans, a 48-foot arch over Wilson Creek north of Battlefield [GREN12], and this 45-foot span over the Sac River. After reviewing the bids the following month, the county awarded a construction contract to the Republic Concrete Construction Company of Republic, Missouri, for all six bridges (aggregate bid: \$9380.00). Republic must have had a change of fortune at this time, because the firm immediately assigned the county "all its rights, titles, or interest at this time and future date in said contract." The county rescinded its agreement with Republic and the next day contracted with the Pioneer Construction Company of Kansas City to build the six bridges. Pioneer began construction of the five smaller bridges first, delivering the reinforcing steel in July and completing them in October. By year's end the firm had presumably completed the 45-foot arch as well. Since this time, the Sac River Bridge has carried vehicular traffic in essentially unaltered condition.

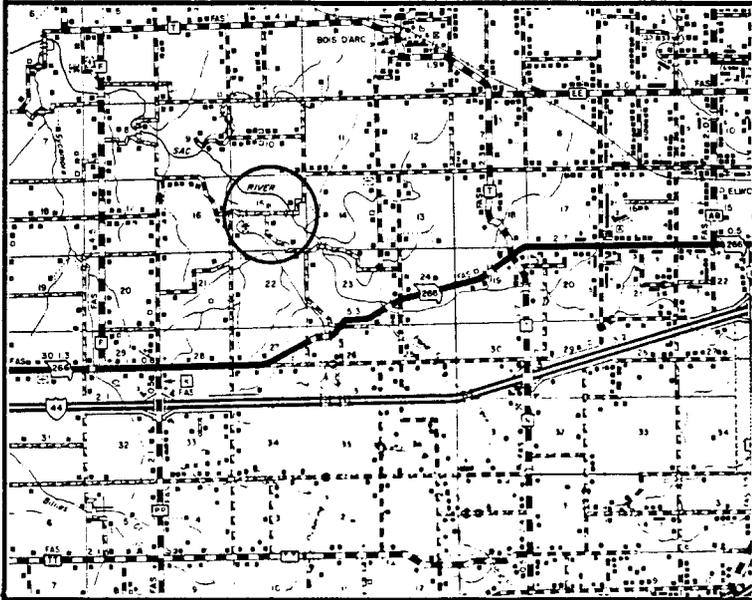
Unlike many Midwestern states, Missouri did not employ reinforced concrete extensively for construction of vehicular bridge superstructures in the 1910s. The various counties and, to a lesser extent, the state highway department continued to prefer steel for bridge superstructures well after concrete 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. Of the more than 13,000 pre-1951 bridges identified in Missouri by the statewide historic bridge inventory, only about 85 are filled spandrel concrete arches. These break down into roughly three equal groups: arches built to carry urban streets, those built by the state highway department in the 1920s

and 1930s to carry highways and those built by the counties at rural county road crossings. The Sac River Bridge falls into the third category. With its 48-foot span and 1918 construction date, it is among the longer and older of these rural county arches. The Sac River Bridge does not display any features that could be regarded as technologically superlative. Rather, the bridge derives its significance from its representation of the broad trend of concrete bridge construction in Missouri. As a well-preserved and well-documented early concrete arch—designed by a county engineer as the state highway department was just beginning to draft standardized plans—the Sac River Bridge is an important transportation-related resource.

NAME(S) OF STRUCTURE

Sac 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 128003.9; Greene County Court Record, Book 45: pages 591-593 (28 May 1918), page 613 (10 June 1918); Greene County Court Record, Book 46: page 61 (31 July 1918), page 180 (17 October 1918) - located at the Greene County Courthouse, Springfield MO.

INVENTORIED BY

Clayton B. Fraser

AFFILIATION

Fraserdesign, Loveland CO

DATE

23 January 1990

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

River Road Bridge
MHTD: 407522.0

GREN32

DATE(S) OF CONSTRUCTION

1922-23

LOCATION

River Road over James River; S16, T28N, R21W
Springfield; Greene County, Missouri

USE (ORIGINAL / CURRENT)

highway bridge / city street bridge

RATING NRHP possibly eligible (score: 57)

CONDITION

good

OWNER

Missouri Highway and Transportation Department

span number: 1; 2
span length: 160.0'; 60.0'
total length: 287.0'
roadway wdt.: 19.8'

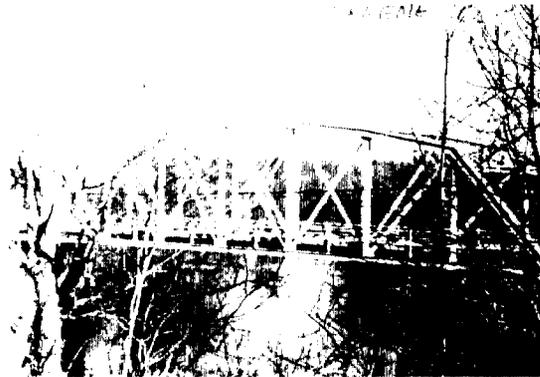
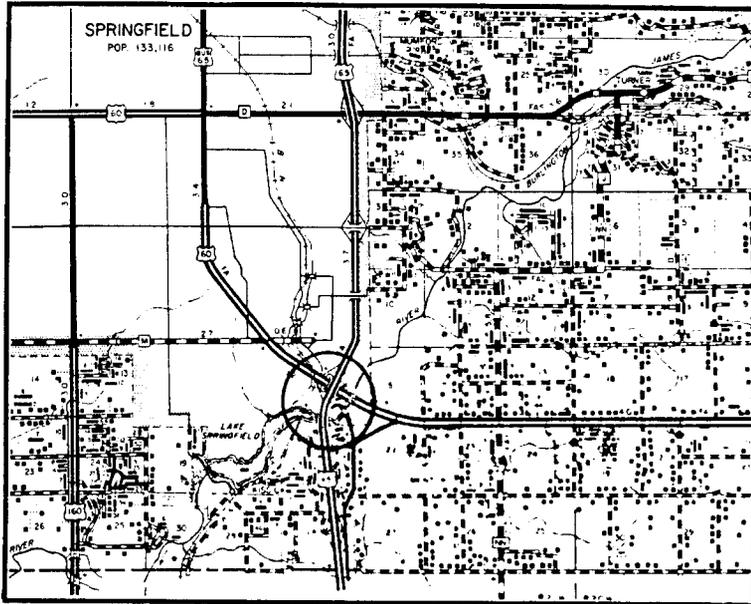
superstructure: steel, 8-panel, rigid-connected Parker through truss; two Warren pony truss approach spans
substructure: concrete abutments, wingwalls and piers
floor/decking: concrete deck over steel stringers
other features: steel angle guardrails

Spanning the James River in Springfield, the Greene County seat, this long-span structure was designed by the Missouri State Highway Department in 1922 as part of construction on Highway Project No. 162. As delineated by the agency's bridge department, the structure consisted of a Parker through trusses flanked by Warren pony truss approaches - all rigid-connected spans supported by concrete piers and abutments. In December 1922 the highway department contracted with M.E. Gillioz of Monett, Missouri, to build the bridge. The contractors worked through early 1923, completing the structure that July for a total cost of \$27,015.40. The James River Bridge carried heavy interstate traffic for years before its replacement with another, wider span and a re-routing of U.S. 60. Since that time its has carried intermittent traffic on a Springfield city street.

In the 1921-22 biennium, the highway department prepared special designs for 293 structures, for an aggregate length of some 20,000 feet and a cost in excess of \$2.3 million. The James River Bridge, one of these special designs, is noteworthy as the one of the earliest uses by MSHD of the riveted Parker through truss—a structural type that would become a mainstay for the agency on long-span crossings.

NAME(S) OF STRUCTURE

River Road 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 407522.0; Primary System Bridge Record, located at the Missouri Highway and Transportation Department, Jefferson City MO; Missouri State Highway Board, **Third Biennial Report**: 1921-1922, page 127-28, 138; Missouri State Highway Board, **Fourth Biennial Report**: 1923-1924, page 149.

INVENTORIED BY

Clayton Fraser

AFFILIATION

Fraserdesign, Loveland CO

DATE23 January 1990
