

JOHNSON COUNTY

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

| Inv. No. | MHTD | Bridge Name | Description |
|----------|----------|-------------------------|--|
| JOHN01 | 081001.2 | McMahan Bridge | (replaced) |
| JOHN02 | 089002.2 | North Fork Bridge | (replaced) |
| JOHN03 | 095000.3 | Honey Creek Bridge | (replaced) |
| JOHN04 | 106001.7 | Bridge | 1- 32' c1915 riveted Pratt bedstead |
| JOHN05 | 110001.0 | Brown Bridge | (replaced) |
| JOHN06 | 153000.6 | Blackjack Creek Bridge | (replaced) |
| *JOHN07 | 153001.5 | Blackwater River Bridge | 1-200' 1929 pinned Parker through truss Standard Bridge Company |
| JOHN08 | 167001.3 | Burns Bridge | 1- 90' 1913 pinned Pratt through truss Western Bridge Company |
| JOHN09 | 186001.2 | Brush Creek Bridge | (replaced) |
| JOHN10 | 214001.1 | Blackwater River Bridge | (replaced) |
| *JOHN11 | 216003.4 | Waupler Bridge | 1- 78' c1890 pinned Pratt through truss |
| *JOHN12 | 220001.7 | Granger Ford Bridge | 1-136' c1895 pinned Pratt through truss 1929 |
| JOHN13 | 250000.3 | Todd Bridge | 1- 24' 1914 moved by Standard Bridge Co. steel stringer Western Bridge Company |
| JOHN14 | 254000.1 | Blackwater River Bridge | (replaced) |
| *JOHN15 | 264000.6 | Murray Ford Bridge | 1- 80' 1891 pinned Pratt through truss John Bridgewater |
| JOHN16 | 272003.7 | Kassing Bridge | 1- 75' 1912 riveted Pratt pony truss A.E. Shorthill Company 1930 moved by county work force |
| JOHN17 | 274000.4 | McFarland Bridge | (replaced) |
| JOHN18 | 314000.8 | Lost Creek Bridge | (replaced) |
| JOHN19 | 361000.6 | Spence Bridge | (replaced) |
| *JOHN20 | 378001.9 | Post Oak Creek Bridge | (replaced) |
| JOHN21 | 388000.8 | Bundley Bridge | (replaced) |
| JOHN22 | 392000.3 | Giersig Bridge | (replaced) |
| JOHN23 | 448000.4 | Clear Creek Bridge | (replaced) |
| JOHN24 | 527001.5 | Hildebrand Bridge | (replaced) |
| JOHN25 | 547000.7 | Hogan Fork Bridge | (replaced) |
| JOHN26 | 550001.9 | Hogan Fork Bridge | (replaced) |
| JOHN27 | 592003.5 | Panther Creek Bridge | 1- 50' 1912 riveted Pratt pony truss A.E. Shorthill Company |
| *JOHN28 | 594001.0 | Quick City Bridge | 1-200' 1929 pinned Pratt through truss Standard Bridge Company |
| JOHN29 | 610000.4 | Big Creek Bridge | 1-160' c1930 riveted Parker through truss |

JOHNSON COUNTY

EXCLUDED:

Pratt pony truss
236003.8

Warren pony truss
M13000.5 M13000.8 161000.5 175000.5 274001.2 374002.5 442000.7
610000.9

Steel stringer

| | | | | | | |
|----------|----------|----------|----------|----------|----------|-----------------|
| G 952R1 | G 954R | G 955R | K 384 | L 142 | S 778 | S 779 |
| T 111 | T 818 | T 819 | T 852 | X 855 | 005001.1 | 016000.8 |
| 045000.3 | 058000.4 | 061000.1 | 068001.7 | 071000.2 | 075000.2 | 078001.1 |
| 079002.0 | 084001.6 | 086002.6 | 092R00.7 | 094000.4 | 105000.7 | 106000.7 |
| 114R00.5 | 115001.8 | 116001.0 | 122000.6 | 126000.2 | 128000.9 | 130002.5 |
| 137000.6 | 141001.0 | 147000.4 | 148000.1 | 167000.7 | 179001.1 | 182000.2 |
| 188000.1 | 210000.4 | 218002.0 | 219001.3 | 220001.0 | 226002.1 | 2 2 8 5 0 0 . 1 |
| 231000.6 | 236000.8 | 241000.2 | 245000.8 | 261001.0 | 266001.2 | 278003.5 |
| 279001.7 | 286000.2 | 292000.3 | 298001.1 | 305002.0 | 305002.3 | 310000.3 |
| 315000.1 | 320000.2 | 320000.4 | 333001.4 | 339002.5 | 340001.8 | 357001.3 |
| 366003.3 | 369002.4 | 375001.4 | 387001.2 | 390001.1 | 390002.7 | 396000.6 |
| 397000.2 | 398000.3 | 416000.2 | 425003.4 | 431000.7 | 433002.9 | 438000.8 |
| 440000.2 | 464001.0 | 493002.4 | 503001.2 | 511R01.1 | 511001.8 | 535000.7 |
| 536000.2 | 547002.1 | 556002.2 | 579001.2 | 579002.5 | 580001.8 | 586001.3 |
| 588003.0 | 598001.3 | 601001.7 | 602000.3 | 620R00.7 | | |

Concrete girder

G 95 G 966 K 429 042000.3

Concrete slab

G 953R L 83R 564000.7

Concrete box culvert

F 573R G 397R G 399R G 528R K 383 L 274392 R 837
S 2R T 374 T 853 X 370 042000.6

SUMMARY:

| | Primary | Secondary | Urban | Other | Total |
|----------|---------|-----------|-------|-------|----------------|
| Included | 0 | 11 | 0 | 0 | 11 |
| Excluded | 30 | 99 | 0 | 0 | 129 |
| | 30 | 110 | 0 | 0 | 140 structures |

Bridge

JOHN04

GENERAL DATA

| | | | |
|----------------|----------|------------------|------------------------------------|
| structure no.: | 106001.7 | city/town: | 8.1 miles northwest of Warrensburg |
| county: | Johnson | feature inters.: | branch of Walnut Creek |
| | | cadastral grid: | S9, T47N, R26W |
| | | highway route: | County Road 106 |
| | | highway distr.: | 4 |
| | | current owner: | Johnson County |

STRUCTURAL DATA

| | | | |
|-----------------|---|-----------------|-------------|
| superstructure: | steel, 2-panel, rigid-connected Pratt bedstead | | |
| substructure: | steel pile bent abutments with timber wingwalls | | |
| span number: | 1 | condition: | fair |
| span length: | 32.0' | alterations: | unknown |
| total length: | 32.0' | floor/decking : | timber deck |
| roadway width: | 12.0' | other features: | unknown |

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 Number 106001.7.

| | |
|---------------|--|
| sign. rating: | 20 |
| evaluation: | NRHP non-eligible (poorly documented example of standard truss type) |

inventoried by: Clayton B. Fraser 14 August 1993

Blackwater River Bridge

JOHN07

GENERAL DATA

| | | | |
|----------------|----------|------------------|------------------------------------|
| structure no.: | 153001.5 | city/town: | 6.0 miles northeast of Warrensburg |
| county: | Johnson | feature inters.: | Blackwater River |
| | | cadastral grid: | S34/35, T47N, R25W |
| | | highway route: | County Road 153 |
| | | highway distr.: | 4 |
| | | current owner: | Johnson County |

STRUCTURAL DATA

| | | | |
|-----------------|---|-----------------|--|
| superstructure: | steel, 10-panel, pin-connected Parker through truss; 2-span steel stringer approach at east end | | |
| substructure: | steel pile bent piers and concrete abutments and wingwalls | | |
| span number: | 1 | condition: | fair |
| span length: | 200.0' | alterations: | none |
| total length: | 237.0' | floor/decking : | steel plate deck |
| roadway width: | 13.6' | other features: | upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched eyebars; vertical: 2 channels with lacing; diagonal: 2 punched eyebars; lateral bracing: round rods with threaded ends; counter: round rod with turnbuckle; strut: 2 angles; floor beam: I-beams, U-bolted to verticals; guardrail: steel channels |

HISTORICAL DATA

| | |
|----------------|--|
| erection date: | 1929 |
| erection cost: | unknown |
| designer: | Standard Bridge Company, Omaha NE |
| fabricator : | Standard Bridge Company, Omaha NE; Bethlehem Steel Company, Bethlehem PA |
| contractor : | Standard Bridge Company, Omaha NE |
| references: | Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 153001.5; Johnson County Bridge Record (1899-1930) page 52; Johnson County Bridge Record (1899-1930) page 52; Ewing Cockrell, <i>History of Johnson County, Missouri</i> (Topeka, Kansas: Historical Publishing Company, 1918); "County Bridge Loss May Be High As \$75,000," <i>Warrensburg Star-Journal</i> , 23 November 1928; <i>The History of Johnson County, Missouri</i> (Kansas City: Kansas City Historical Company, 1881); Johnson County Court Record, 1880-1930, located at the Johnson County Clerk's Office, Johnson County Courthouse, Warrensburg, Missouri; <i>Standard Atlas of Johnson County, Missouri</i> (Chicago: George A. Ogles and Company, 1898); "Worst Rain Storm Ever Known Here," <i>The Holden Progress</i> , 22 November 1928; field inspection by Mark Hufstetler, 9 February 1991. |

Blackwater River Bridge

sign. rating: 49

evaluation: NRHP possibly eligible (well-preserved, long-span example of uncommon structural type)

Inventoried by: Clayton B. Fraser 14 August 1993

Burns Bridge

JOHN08

GENERAL DATA

| | |
|--------------------------------|--|
| structure no.: 167001.3 | city/town: 9.8 miles northwest of Knob Noster |
| county: Johnson | feature inters.: Blackwater River |
| | cadastral grid: S32, T48N, R24W |
| | highway route: County Road 167 |
| | highway distr.: 4 |
| | current owner: Johnson County |

STRUCTURAL DATA

| | |
|--|---|
| superstructure: steel, pin-connected Pratt through truss | |
| substructure: steel pile bent piers and abutments; timber wingwalls | |
| span number: 1 | condition: fair |
| span length: 90.0' | alterations: substructure replaced |
| total length: 158.0' | floor/decking : timber deck |
| roadway width: 11.8' | other features: unknown |

HISTORICAL DATA

| | |
|---|--|
| erection date: 1913 | |
| erection cost: \$2632.00 | |
| designer: Western Bridge Company, Harrisonville MO | |
| fabricator : unknown | |
| contractor: Western Bridge Company, Harrisonville MO | |
| references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 167001.3; Johnson County Bridge Record (1899-1930) page 42 - located at the Johnson County Courthouse, Warrensburg MO. | |
| sign. rating: 34 | |
| evaluation: NRHP non-eligible (typical example of common structural type, substantially altered) | |

inventoried by: Clayton B. Fraser 14 August 1993

Waupler Bridge

JOHN11

GENERAL DATA

| | |
|--------------------------------|--|
| structure no.: 216003.4 | city/town: 8.7 miles northeast of Warrensburg |
| county: Johnson | feature inters.: Clear Fork of Blackwater River |
| | cadastral grid: S31, T47N, R24W |
| | highway route: County Road 216 |
| | highway distr.: 4 |
| | current owner: Johnson County |

STRUCTURAL DATA

| | |
|--|--|
| superstructure: steel, 6-panel, pin-connected Pratt through truss | |
| substructure: concrete/stone abutments and wingwalls | |
| span number: 1 | condition: poor |
| span length: 78.0' | alterations: decking removed; bridge closed |
| total length: 78.0' | floor/decking: deck removed |
| roadway width: 14.0' | other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, U-bolted to lower chord pins |

HISTORICAL DATA

| |
|--|
| erection date: c1890 |
| erection cost: \$1200.00 (estimate) |
| designer: unknown |
| fabricator: unknown |
| contractor: unknown |

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 216003.4; Johnson County Bridge Record (1899-1930), page 16 - located at Johnson County Courthouse, Warrensburg MO; field inspection by Mark Hufstetler, 9 February 1991.

| |
|---|
| sign. rating: 32 |
| evaluation: NRHP non-eligible (early example of mainstay structural type, poorly documented) |

inventoried by: Clayton B. Fraser 14 August 1993

Granger Ford Bridge

JOHN12

GENERAL DATA

| | |
|--------------------------------|--|
| structure no.: 220001.7 | city/town: 3.0 miles northeast of Warrensburg |
| county: Johnson | feature inters.: Blackwater River |
| | cadastral grid: S7, T46N, R25W |
| | highway route: County Road 220 |
| | highway distr.: 4 |
| | current owner: Johnson County |

STRUCTURAL DATA

| | |
|---|--|
| superstructure: steel, 9-panel, pin-connected Pratt through truss; two steel stringer approaches | |
| substructure: steel pile bent piers and abutments with timber back- and wingwalls | |
| span number: 1 | condition: fair |
| span length: 136.0' | alterations: truss moved; approach spans added and sub-structure partially replaced |
| total length: 201.0' | floor/decking : timber deck over steel stringers |
| roadway width: 12.5' | 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; diagonal: 2 punched rectangular eyebars; counter: round rod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: variable-depth plate girder, U-bolted to lower chord pins; guardrail: steel angle |

HISTORICAL DATA

| |
|---|
| erection date: c1895; moved 1929 |
| erection cost: \$1563.00 (re-erection) |
| designer: unknown |
| fabricator : unknown |
| contractor: Standard Bridge Company, Omaha NE (re-erection) |
| references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 220001.7; Johnson County Bridge Record (1899-1930) page 52, located at the Johnson County Courthouse, Warrensburg MO; field inspection by Mark Hufstetler, 10 February 1991. |
| sign. rating: 29 |
| evaluation: NRHP non-eligible (typically configured example of mainstay structural type, moved to this site) |

Inventoried by: Clayton B. Fraser 14 August 1993

Murray Ford Bridge

JOHN15

GENERAL DATA

| | |
|--------------------------------|---|
| structure no.: 264000.6 | city/town: 6.5 miles northeast of Holden |
| county: Johnson | feature inters.: Little Blackwater Creek |
| | cadastral grid: S16/17, T46N, R27W |
| | highway route: County Road 264 |
| | highway distr.: 4 |
| | current owner: Johnson County |

STRUCTURAL DATA

superstructure: wrought iron, 5-panel, pin-connected Pratt through truss
substructure: concrete/stone abutments and wingwalls

| | |
|-----------------------------|--|
| span number: 1 | condition: fair |
| span length: 80.0' | alterations: partial replacement of substructure |
| total length: 80.0' | floor/decking : timber deck over steel stringers |
| roadway width: 14.0' | other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: round rod with turnbuckle; lateral bracing: round rod with threaded ends; strut: 4 angles with lacing; floor beam: variable-depth plate girder, U-bolted to verticals; guardrail: steel channel |

HISTORICAL DATA

erection date: 1890-91
erection cost: unknown
designer: unknown
fabricator : Carnegie Iron Works, Pittsburgh PA
contractor : John Bridgewater

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 264000.6; Johnson County Court Record, Book P, page 400 (23 September 1890), page 592 (29 June 1891) - located at Johnson County Courthouse, Warrensburg, Missouri; field inspection by Mark Hufstetler, 9 February 1991.

sign. rating: 44
evaluation: NRHP possibly eligible (well-preserved, relatively early example of main-stay structural type)

inventoried by: Clayton B. Fraser 14 August 1993

Kassing Bridge

JOHN16

GENERAL DATA

| | | | |
|----------------|----------|------------------|--------------------------------|
| structure no.: | 272003.7 | city/town: | 5.3 miles northeast of Holden |
| county: | Johnson | feature inters.: | South Fork of Blackwater River |
| | | cadastral grid: | S19, T46N, R27W |
| | | highway route: | County Road 272 |
| | | highway distr.: | 4 |
| | | current owner: | Johnson County |

STRUCTURAL DATA

| | | | |
|-----------------|---|-----------------|----------------------------------|
| superstructure: | steel, 6-panel, rigid-connected Pratt pony truss | | |
| substructure: | steel pile bent piers and abutments with timber wingwalls | | |
| span number: | 1 | condition: | fair |
| span length: | 75.0' | alterations: | none |
| total length: | 143.0' | floor/decking : | timber deck over steel stringers |
| roadway width: | 11.6' | other features: | unknown |

HISTORICAL DATA

| | |
|----------------|--|
| erection date: | 1912 |
| erection cost: | unknown |
| designer: | A.E. Shorthill Company, Marshalltown IA |
| fabricator : | A.E. Shorthill Company, Marshalltown IA |
| contractor : | A.E. Shorthill Company, Marshalltown IA; county work force (1930) |
| references: | Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 272003.7; Johnson County Bridge Record (1899-1930) page 53 - located at the Johnson County Courthouse, Warrensburg MO. |
| sign. rating: | 32 |
| evaluation: | NRHP non-eligible (typically configured example of common structural type, moved to this location) |

inventoried by: Clayton B. Fraser 14 August 1993

Panther Creek Bridge

JOHN27

GENERAL DATA

| | |
|--------------------------------|--|
| structure no.: 592003.5 | city/town: 5.2 miles southeast of La Tour |
| county: Johnson | feature inters.: Panther Creek |
| | cadastral grid: S29, T44N, R28W |
| | highway route: County Road 592 |
| | highway distr.: 4 |
| | current owner: Johnson County |

STRUCTURAL DATA

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

| | |
|-----------------------------|--------------------------------|
| span number: 1 | condition: fair |
| span length: 50.0' | alterations: none |
| total length: 50.0' | floor/decking: unknown |
| roadway width: 12.0' | other features: unknown |

HISTORICAL DATA

erection date: 1912
erection cost: unknown
designer: A.E. Shorthill Company, Marshalltown IA
fabricator: A.E. Shorthill Company, Marshalltown IA
contractor: A.E. Shorthill Company, Marshalltown IA

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 592003.5; Johnson County Supervisors' Minute Book P: page 394 (18 August 1890), located at the Johnson County Courthouse, Warrensburg MO.

sign. rating: 33
evaluation: NRHP non-eligible (undistinguished example of mainstay structural type)

inventoried by: Clayton B. Fraser 14 August 1993

Quick City Bridge

JOHN28

GENERAL DATA

| | | | |
|----------------|----------|------------------|--------------------------------|
| structure no.: | 594001.0 | city/town: | 5.4 miles southeast of La Tour |
| county: | Johnson | feature inters.: | Big Creek |
| | | cadastral grid: | S29, T44N, R28W |
| | | highway route: | County Road 594 |
| | | highway distr.: | 4 |
| | | current owner: | Johnson County |

STRUCTURAL DATA

superstructure: steel, 10-panel, pin-connected Pratt through truss
substructure: steel pile abutments with concrete back- and wingwalls

| | | | |
|----------------|--------|-----------------|---|
| span number: | 1 | condition: | fair |
| span length: | 200.0' | alterations: | none |
| total length: | 200.0' | floor/decking : | timber deck over steel stringers |
| roadway width: | 13.6' | 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; diagonal: 2 punched rectangular eyebars; lateral bracing: round rod with threaded ends; counter: round rod with turnbuckle; strut: 2 angles; floor beam: I-beam, U-bolted to verticals; guardrail: steel channels |

HISTORICAL DATA

erection date: 1929
erection cost: \$10,001.00
designer: Standard Bridge Company, Omaha NE
fabricator : Bethlehem Steel Company, Bethlehem PA
contractor: Standard Bridge Company, Omaha NE

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 594001.0; Johnson County Bridge Record (1899-1930) page 52; Ewing Cockrell, *History of Johnson County, Missouri* (Topeka, Kansas: Historical Publishing Company, 1918); "County Bridge Loss May Be High As \$75,000," *Warrensburg Star-Journal*, 23 November 1928; *The History of Johnson County, Missouri* (Kansas City: Kansas City Historical Company, 1881); Johnson County Court Record, 1880-1930, located at the Johnson County Clerk's Office, Johnson County Courthouse, Warrensburg, Missouri; "Worst Rain Storm Ever Known Here," *The Holden Progress*, 22 November 1928; field inspection by Mark Hufstetler, 9 February 1991.

sign. rating: 50
evaluation: NRHP determined eligible (longest-span example in Missouri of this mainstay structural type)

inventoried by: Clayton B. Fraser 14 August 1993

Big Creek Bridge

JOHN29

GENERAL DATA

| | | | |
|----------------|----------|------------------|-------------------------------|
| structure no.: | 610000.4 | city/town: | 8.7 miles southwest of Holden |
| county: | Johnson | feature inters.: | Big Creek |
| | | cadastral grid: | S12, T44N, R29W |
| | | highway route: | County Road 610 |
| | | highway distr.: | 4 |
| | | current owner: | Johnson County |

STRUCTURAL DATA

| | | | |
|-----------------|---|-----------------|----------------------------------|
| superstructure: | steel, 10-panel, rigid-connected Parker through truss | | |
| substructure: | steel pile bent piers and timber wingwalls | | |
| span number: | 1 | condition: | fair |
| span length: | 160.0' | alterations: | none |
| total length: | 160.0' | floor/decking : | timber deck over steel stringers |
| roadway width: | 14.5' | other features: | unknown |

HISTORICAL DATA

| | |
|----------------|---|
| erection date: | c1930 |
| erection cost: | unknown |
| designer: | unknown |
| fabricator : | unknown |
| contractor: | unknown |
| references: | Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 610000.4. |
| sign. rating: | 30 |
| evaluation: | NRHP non-eligible (poorly documented example of Pratt truss subtype) |

inventoried by: Clayton B. Fraser 14 August 1993

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Blackwater River Bridge
MHTD: 153001.5

JOHN07

DATE(S) OF CONSTRUCTION

1929

LOCATION

County Road 153 over Blackwater River; S34/35, T47N, R25W
6.0 miles northeast of Warrensburg; Johnson County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 49)

CONDITION

fair

OWNER

Johnson County

span number: 1
span length: 200.0'
total length: 237.0'
roadway wdt.: 13.6'

superstructure: steel, 10-panel, pin-connected Parker through truss; 2-span steel stringer approach at east end
substructure: steel pile bent piers and concrete abutments and wingwalls
floor/decking: steel plate deck
other features: upper chord and inclined end post: 2 channels with cover plate and lacing; lower chord: 2 punched eyebars; vertical: 2 channels with lacing; diagonal: 2 punched eyebars; lateral bracing: round rods with threaded ends; counter: round rod with turnbuckle; strut: 2 angles; floor beam: I-beams, U-bolted to verticals; guardrail: steel channels

The floods that struck Johnson County late in 1928 were some of the worst in memory. Up to ten inches of rain fell over the region between November 15th and 17th, sending water roaring down Big Creek and its tributaries. "Starting late Thursday night, rain fell continuously in torrential quantity until 8 o'clock Saturday morning when it began to slacken," a local newspaper reported, "and during the rest of the morning only a light mist fell. As a result practically all streams in this vicinity are out of their banks, lowlands are flooded and roads and highways have been made impassable." No human lives were lost, but damage to livestock, crops and property was extensive. Flood stage at Quick City was six feet higher than the previous high water mark, heavily damaging several houses in the small town. And farmers such as Byron Riffle and C.L. Farnsworth, who had cattle in low-lying pastures, lost much of their herds when cows floated away in the roiling water. One of Farnsworth's animals was later found dead in a tree.

For the Johnson County Court, the damage was particularly acute, as some fifteen county-owned bridges were wrecked by the floodwaters, aggregating between \$60,000 and \$75,000 of loss. "Small bridges and culverts by the score over the county will have to be rebuilt," another newspaper reported. "The county engineer says that several bridges repaired the last year by bridge crews were lost in the onslaught of the waters and trees carried along in the flood." In the aftermath of the flood, Johnson County re-built or moved several steel and iron trusses, including this long-span pinned Parker through truss northeast of Warrensburg. In 1929 the Johnson County Court contracted with the Standard Bridge Company to supply and erect five long-span steel trusses. Standard's bid was substantially lower than those of the other six firms that had bid, primarily because the Omaha-based firm was proposing to use pin-connected trusses. Although the 200-foot span of the Blackwater River Bridge was far longer than the crossing required, its extreme length served to insure that the structure would never be washed away again.

Standard used steel rolled by Bethlehem to fabricate the truss. For the truss's design, the firm used an established configuration—the Parker through 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.

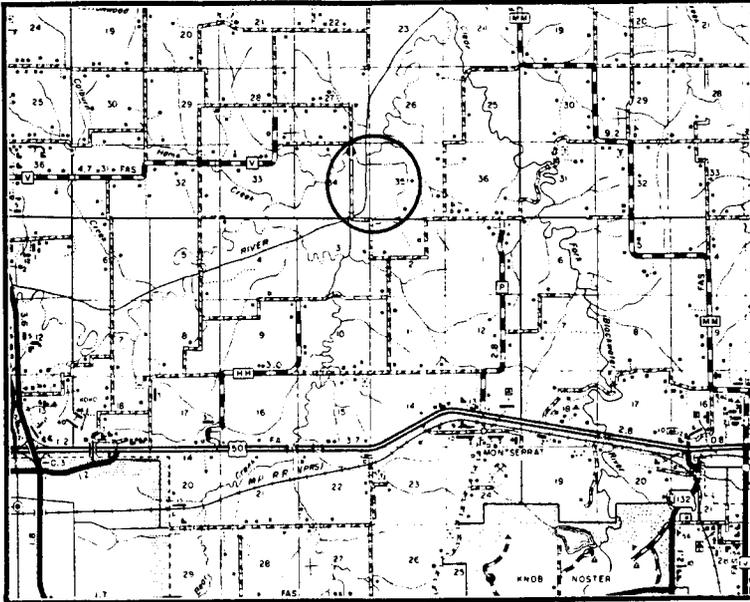
Standard probably completed the Blackwater River Bridge in 1929; since that time the bridge has functioned in place, with only maintenance-related repairs.

Built as an emergency measure in the wake of severe flooding, the Blackwater River Bridge is one of the few pin-connected Parker trusses remaining in use on Missouri's roadways. Thousands of pinned trusses were built across the state during an intense period of bridge construction in the late 19th and early 20th centuries. Most 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. Among these, the Blackwater River Bridge is noteworthy for its long span. With its pinned configuration, it is not unique among Missouri's early roadway spans. Rather, the significance of this structure accrues from its representation of early wagon/auto bridge construction. It is among the longest and best-preserved trusses in Missouri: an important example of a now-uncommon structural type.

NAME(S) OF STRUCTURE

Blackwater 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 153001.5; Johnson County Bridge Record (1899-1930) page 52; Johnson County Bridge Record (1899-1930) page 52; Ewing Cockrell, **History of Johnson County, Missouri** (Topeka, Kansas: Historical Publishing Company, 1918); "County Bridge Loss May Be High As \$75,000," **Warrensburg Star-Journal**, 23 November 1928; **The History of Johnson County, Missouri** (Kansas City: Kansas City Historical Company, 1881); Johnson County Court Record, 1880-1930, located at the Johnson County Clerk's Office, Johnson County Courthouse, Warrensburg, Missouri; **Standard Atlas of Johnson County, Missouri** (Chicago: George A. Ogles and Company, 1898); "Worst Rain Storm Ever Known Here," **The Holden Progress**, 22 November 1928; field inspection by Mark Hufstetler, 9 February 1991.

INVENTORIED BY

Clayton B. Fraser

AFFILIATION

Fraserdesign, Loveland CO

DATE

14 August 1993

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Waupler Bridge
MHTD: 216003.4

JOHN11

DATE(S) OF CONSTRUCTION

c1890

LOCATION

County Road 216 over Clear Fork of Blackwater River; S31, T47N, R24W
8.7 miles northeast of Warrensburg; Johnson County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / abandoned

RATING NRHP non-eligible (score: 32)

CONDITION

poor

OWNER

Johnson County

span number: 1
span length: 78.0'
total length: 78.0'
roadway wdt.: 14.0'

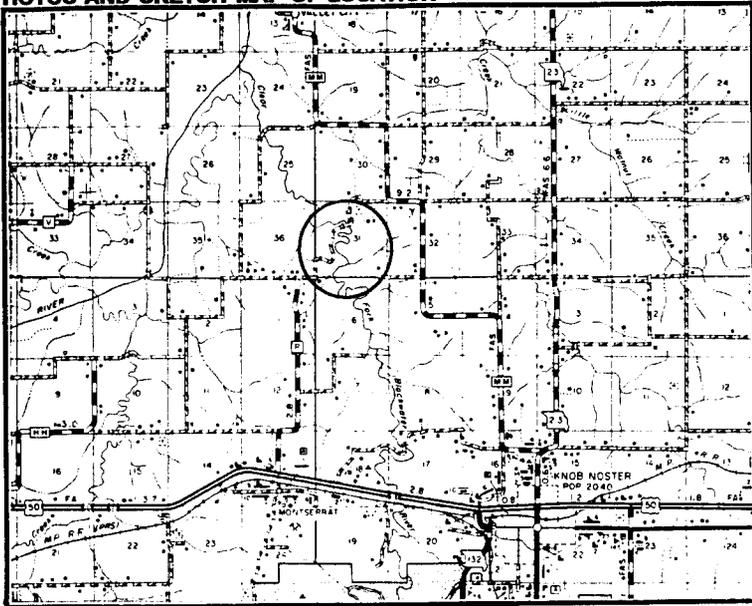
superstructure: steel, 6-panel, pin-connected Pratt through truss
substructure: concrete/stone abutments and wingwalls
floor/decking: deck removed
other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: round eyerod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: I-beam, U-bolted to lower chord pins

Known locally as the Waupler Bridge, this single-span truss carries a gravel-surfaced county road over the Clear Fork of the Blackwater River northeast of Warrensburg. The structure consists of a pin-connected Pratt through truss, supported by concrete/stone abutments. Johnson County bridge files noted in 1903 that the Waupler Bridge was a "steel bridge built some time ago." Physical attributes of the truss indicate that it was fabricated around 1890. Today the bridge is closed to traffic, with its timber deck removed.

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 Waupler Bridge is distinguished among these for its early construction date. It is thus noteworthy as an early example in Missouri of a mainstay structural type: the pin-connected Pratt through truss.

NAME(S) OF STRUCTURE
Waupler 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 216003.4; Johnson County Bridge Record (1899-1930), page 16 - located at Johnson County Courthouse, Warrensburg MO; field inspection by Mark Hufstetler, 9 February 1991.

INVENTORIED BY
Clayton B. Fraser

AFFILIATION
Fraserdesign, Loveland CO

DATE
14 August 1993

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Granger Ford Bridge
MHTD: 220001.7

JOHN12

DATE(S) OF CONSTRUCTION

c1895; moved 1929

LOCATION

County Road 220 over Blackwater River; S7, T46N, R25W
3.0 miles northeast of Warrensburg; Johnson County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / roadway bridge

RATING NRHP non-eligible (score: 29)

CONDITION

fair

OWNER

Johnson County

span number: 1
span length: 136.0'
total length: 201.0'
roadway wdt.: 12.5'

superstructure: steel, 9-panel, pin-connected Pratt through truss; two steel stringer approaches
substructure: steel pile bent piers and abutments with timber back- 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; diagonal: 2 punched rectangular eyebars; counter: round rod with turnbuckle; lateral bracing: round rod with threaded ends; floor beam: variable-depth plate girder, U-bolted to lower chord pins; guardrail: steel angle

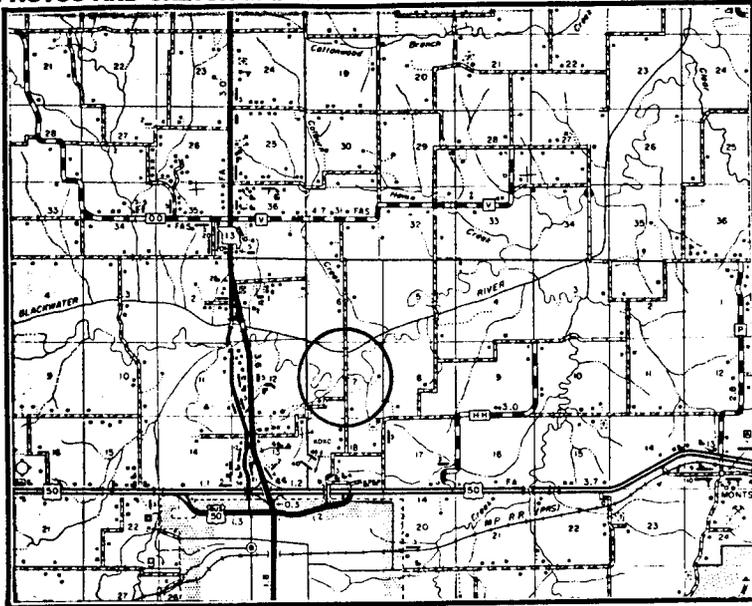
The floods that struck Johnson County late in 1928 were some of the worst in memory. Up to ten inches of rain fell over the region between November 15th and 17th, sending water roaring down Big Creek and its tributaries. "Starting late Thursday night, rain fell continuously in torrential quantity until 8 o'clock Saturday morning when it began to slacken," a local newspaper reported, "and during the rest of the morning only a light mist fell. As a result practically all streams in this vicinity are out of their banks, lowlands are flooded and roads and highways have been made impassable." No human lives were lost, but damage to livestock, crops and property was extensive. Flood stage at Quick City was six feet higher than the previous high water mark, heavily damaging several houses in the small town. And farmers such as Byron Riffle and C.L. Farnsworth, who had cattle in low-lying pastures, lost much of their herds when cows floated away in the roiling water. One of Farnsworth's animals was later found dead in a tree.

For the Johnson County Court, the damage was particularly acute, as some fifteen county-owned bridges were wrecked by the floodwaters, aggregating between \$60,000 and \$75,000 of loss. "Small bridges and culverts by the score over the county will have to be rebuilt," another newspaper reported. "The county engineer says that several bridges repaired the last year by bridge crews were lost in the onslaught of the waters and trees carried along in the flood." In the aftermath of the flood, Johnson County re-built or moved several steel and iron trusses, including this medium-span pinned Pratt through truss northeast of Warrensburg. Originally erected here around 1895, the span was dismantled and moved by the county from the "old channel of Blackwater Creek" to the Granger Ford. On July 1, 1929, the county court hired the Standard Bridge Company of Omaha to build new piers and abutments and re-erect the bridge at its new location for \$1,563.00. Since that time, the Granger Ford Bridge has functioned in place, with the partial reconstruction of its substructure and the addition of approach spans as the most noteworthy alterations to date.

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 Granger Ford Bridge is a typically configured example of this statewide bridge trend.

NAME(S) OF STRUCTURE
Granger 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 220001.7; Johnson County Bridge Record (1899-1930) page 52, located at the Johnson County Courthouse, Warrensburg MO; field inspection by Mark Hufstetler, 10 February 1991.

INVENTORIED BY

Clayton B. Fraser

AFFILIATION

Fraserdesign, Loveland CO

DATE

14 August 1993

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Murray Ford Bridge
MHTD: 264000.6

JOHN15

DATE(S) OF CONSTRUCTION

1890-91

LOCATION

County Road 264 over Little Blackwater Creek; S16/17, T46N, R27W
6.5 miles northeast of Holden; Johnson County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / roadway bridge

RATING NRHP possibly eligible (score: 44)

CONDITION

fair

OWNER

Johnson County

span number: 1
span length: 80.0'
total length: 80.0'
roadway wdt.: 14.0'

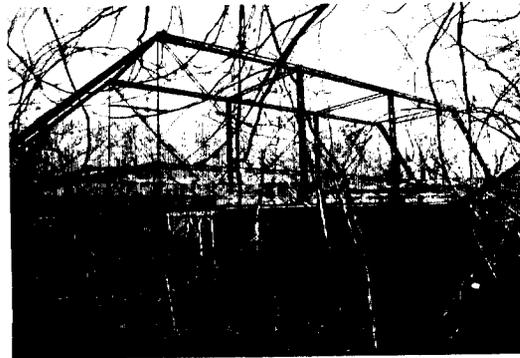
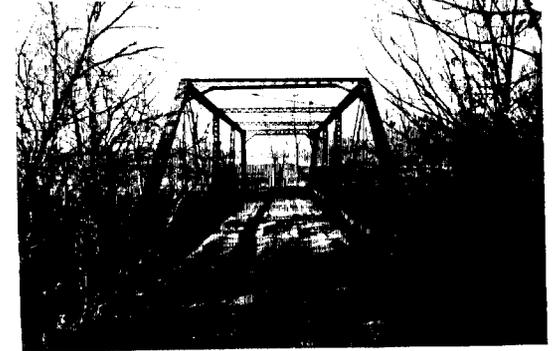
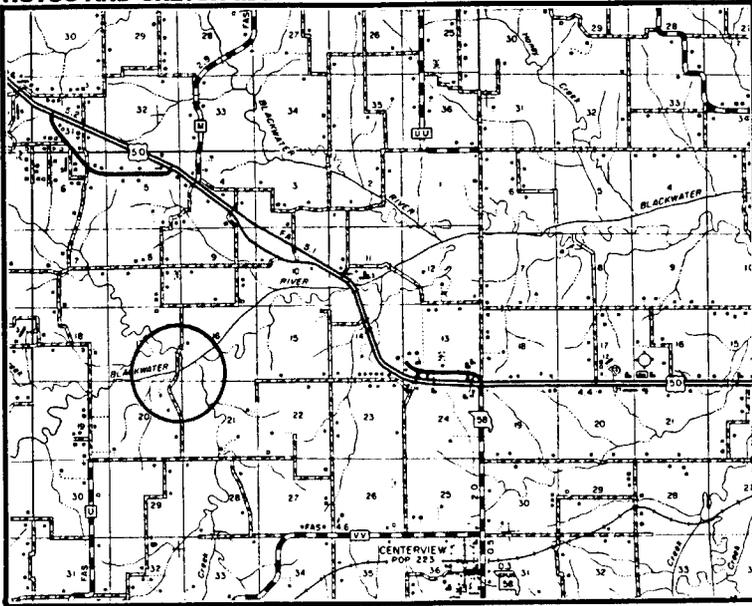
superstructure: wrought iron, 5-panel, pin-connected Pratt through truss
substructure: concrete/stone abutments and wingwalls
floor/decking: timber deck over steel stringers
other features: upper chord and inclined end post: 2 channels with cover and batten plates; lower chord: 2 punched rectangular eyebars; vertical: 2 channels with lacing; diagonal: 2 punched rectangular eyebars; counter: round rod with turnbuckle; lateral bracing: round rod with threaded ends; strut: 4 angles with lacing; floor beam: variable-depth plate girder, U-bolted to verticals; guardrail: steel channel

Located in west-central Johnson County northeast of Holden, this short-span truss carries a secondary county road over Little Blackwater Creek. The structure consists of a single pinned Pratt through truss, supported by stone abutments, that have been extended and repaired with sections of concrete. Known locally as the Murray Ford Bridge, the truss dates to 1890. In September of that year the Johnson County Court directed the county road and bridge commissioner to solicit competitive bids for an iron bridge across the Blackwater at the Murray Ford, on the Holden-Columbus Road, and another small-scale structure near Leeton. The county later contracted with John Bridgewater, a local builder responsible for constructing the majority of the timber and combination spans in Johnson County in the 1880s and early 1890s. Bridgewater completed the stone substructure by the following spring, but finished the iron superstructure only after the county threatened to cancel the contract in June 1891. The truss's fabricator is unrecorded. Since its completion, presumably later that year, the Murray Ford Bridge has carried county-road traffic. The structure has more recently been bypassed by an adjacent crossing of Blackwater Creek, although it is still open for traffic, in essentially unaltered condition.

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 Murray Ford Bridge is distinguished among these for its relatively well-preserved condition and for its early construction date. It is thus significant as an early and well-preserved example—the oldest remaining, originally placed span in Johnson County—of a mainstay structural type: the pin-connected Pratt through truss.

NAME(S) OF STRUCTURE
Murray 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 264000.6; Johnson County Court Record, Book P, page 400 (23 September 1890), page 592 (29 June 1891) - located at Johnson County Courthouse, Warrensburg, Missouri; field inspection by Mark Hufstetler, 9 February 1991.

INVENTORIED BY
Clayton B. Fraser

AFFILIATION
Fraserdesign, Loveland CO

DATE
14 August 1993

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Quick City Bridge
MHTD: 594001.0

JOHN28

DATE(S) OF CONSTRUCTION

1929

LOCATION

County Road 594 over Big Creek; S29, T44N, R28W
5.4 miles southeast of La Tour; Johnson County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / roadway bridge

RATING NRHP determined eligible (score: 50)

CONDITION

fair

OWNER

Johnson County

span number: 1
span length: 200.0'
total length: 200.0'
roadway wdt.: 13.6'

superstructure: steel, 10-panel, pin-connected Pratt through truss
substructure: steel pile abutments with concrete back- 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; diagonal: 2 punched rectangular eyebars; lateral bracing: round rod with threaded ends; counter: round rod with turnbuckle; strut: 2 angles; floor beam: I-beam, U-bolted to verticals; guardrail: steel channels

The floods that struck Johnson County late in 1928 were some of the worst in memory. Up to ten inches of rain fell over the region between November 15th and 17th, sending water roaring down Big Creek and its tributaries. "Starting late Thursday night, rain fell continuously in torrential quantity until 8 o'clock Saturday morning when it began to slacken," a local newspaper reported, "and during the rest of the morning only a light mist fell. As a result practically all streams in this vicinity are out of their banks, lowlands are flooded and roads and highways have been made impassable." No human lives were lost, but damage to livestock, crops and property was extensive. Flood stage at Quick City was six feet higher than the previous high water mark, heavily damaging several houses in the small town. And farmers such as Byron Riffle and C.L. Farnsworth, who had cattle in low-lying pastures, lost much of their herds when cows floated away in the roiling water. One of Farnsworth's animals was later found dead in a tree.

For the Johnson County Court, the damage was particularly acute, as some fifteen county-owned bridges were wrecked by the floodwaters, aggregating between \$60,000 and \$75,000 of loss. "Small bridges and culverts by the score over the county will have to be rebuilt," another newspaper reported. "The county engineer says that several bridges repaired the last year by bridge crews were lost in the onslaught of the waters and trees carried along in the flood." Six of the largest structures wrecked by the flooding spanned Big Creek. One of these was the truss north of La Tour, among the county's oldest bridges: "The truss was carried about 200 yards distant, while the flooring was found three-quarters of a mile distant." But the largest structure washed away by the floodwaters that fall was the steel span over Big Creek on the outskirts of Quick City.

The Quick City Bridge was beyond salvation. The substructure was badly twisted, and the county court decided that the truss's 75-foot span was insufficient for this crossing. Instead of re-building the bridge in its original position, the judges opted to replace it entirely. The 1912 truss would be recovered from the stream and moved to another location, and a new, longer truss would be built in its place. In January the court declared an emergency and ordered Presiding Judge J.S. Graham to purchase a replacement structure from the Standard Bridge Company of Omaha, Nebraska. The court must have had a change of mind, when, the following month, it ordered county highway engineer L.E. Quick to solicit competitive bids for the Quick City Bridge and another span over the Blackwater Ditch. Late in February proposals were received from seven bridge companies. At \$10,760.00, the Standard's bid was substantially lower than those of the other six firms. The primary reason that Standard's proposal was so much lower than the others was that the Omaha-based firm was proposing to use pin-connected trusses. Although the 200-foot span of the Quick City Bridge was far longer than the crossing required, its extreme length served to insure that the structure would never be washed away again.

The truss that Standard fabricated for the Quick City crossing featured a Pratt configuration - the most common vehicular truss type in the country. Patented in 1844 by Thomas and Caleb Pratt, the Pratt design was characterized by upper chords and vertical members acting in compression and lower chords and diagonals that acted in tension. Its parallel chords and equal panel lengths resulted in standardized sizes for the verticals, diagonals and chord members, making fabrication and assembly relatively easy. In the highly competitive bridge market, in which efficiency equated with profit, Pratt trusses received almost universal use. "The Pratt truss is the type most commonly used in America for spans under two hundred and fifty feet in length," noted bridge engineer J.A.L. Waddell wrote in 1916. "Its advantages are simplicity, economy of metal, and suitability for connecting to the floor and lateral systems."

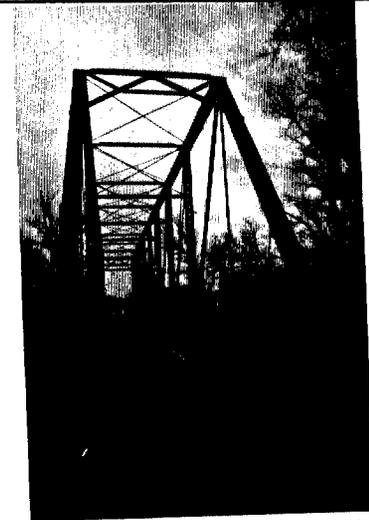
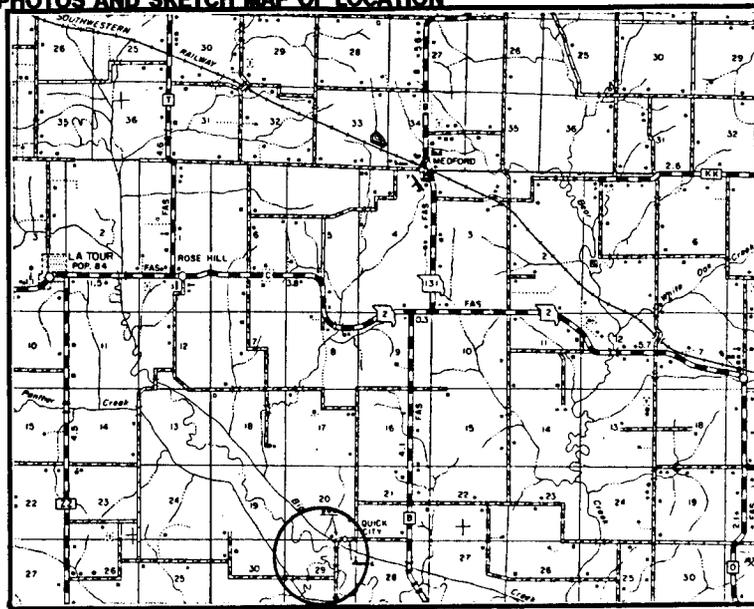
Standard Bridge began construction of these abutments in the spring of 1929. "Work of repairing and rebuilding bridges which were damaged or washed away by the floods late last fall is well under way," the *Star-Journal* reported in May. Standard shipped the truss to the site in its component parts, assembled it over timber falseworks and installed the floor system. By August the new bridge was completed and opened for traffic. A year later the original truss was salvaged from the stream, dismantled and moved to another crossing northeast of Holden. Since its erection, the Quick City Bridge has functioned in place, with only maintenance-related repairs to its deck.

Between the early 1880s, when trusses superseded bowstrings, and the 1920s, when riveted connections replaced pinned, the pin-connected Pratt truss was the metal structure of choice for medium- and long-span wagon bridges in Missouri. Virtually all of the major regional fabricators manufactured Pratt trusses and marketed them extensively to Missouri's counties in the late 19th and early 20th centuries. As a result, thousands of Pratt trusses were built across the state, and many remain in place today. Most extend less than 120 feet; several have spans greater than 150 feet. Only two 200-foot pinned Pratts are known to remain in Missouri, however: the Quick City Bridge in Johnson County and the Frenchman's Bluff Bridge in Lincoln County. Built at a time in which pin-connected trusses were considered an anachronism, the Quick City Bridge is significant as one of the longest examples in Missouri of this mainstay structural type.

NAME(S) OF STRUCTURE

Quick City 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 594001.0; Johnson County Bridge Record (1899-1930) page 52; Ewing Cockrell, *History of Johnson County, Missouri* (Topeka, Kansas: Historical Publishing Company, 1918); "County Bridge Loss May Be High As \$75,000," *Warrensburg Star-Journal*, 23 November 1928; *The History of Johnson County, Missouri* (Kansas City: Kansas City Historical Company, 1881); Johnson County Court Record, 1880-1930, located at the Johnson County Clerk's Office, Johnson County Courthouse, Warrensburg, Missouri; *Standard Atlas of Johnson County, Missouri* (Chicago: George A. Ogles and Company, 1898); "Worst Rain Storm Ever Known Here," *The Holden Progress*, 22 November 1928; field inspection by Mark Hufstetler, 9 February 1991.

INVENTORIED BY

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DATE

14 August 1993