

Bonanza Bridge

CALD32

GENERAL DATA

structure no.: 324001.9 city/town: Bonanza
county: Caldwell feature inters.: Shoal Creek
cadastral grid: S19, T56N, R27W
highway route: County Road 324
highway distr.: 1
current owner: Caldwell County

STRUCTURAL DATA

superstructure: wrought iron, 11-panel, pin-connected Whipple through truss
substructure: concrete-filled iron cylinder pier abutment with concrete backwalls (north); stone masonry abutment (south)

span number: 1 condition: fair
span length: 187.0' alterations: partial replacement of substructure
total length: 187.0' floor/decking: timber/concrete deck over iron or 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 double lacing, 2 looped square rods at hip; diagonal: 2 punched rectangular eyebars; lateral bracing: round rod with threaded ends (top and bottom); floor beam: riveted plate girder, U-bolted to lower chord pins; guardrail: 2 channels

HISTORICAL DATA

erection date: 1883
erection cost: \$6000.00 (approximate cost)
designer: unknown
fabricator: Carnegie Iron Company, Pittsburgh PA
contractor: unknown

references: Missouri Highway and Transportation Department, Structure Inventory and Appraisal: Structure Number 324001.9; *The Hamiltonian*, 21 September 1883; *History of Caldwell and Livingston Counties, Missouri* (St. Louis: National Historical Company, 1886), page 254; Fraserdesign, "Bonanza Bridge: Preliminary Determination of NRHP Eligibility for the Missouri Historic Bridge Inventory," 25 September 1991; letter and enclosures from Richard Heisler, P.E., to Michael W. Weichman, dated 28 August 1991; field inspection by Lon Johnson, 8 September 1990.

sign. rating: 66
evaluation: NRHP eligible (exceptional, long-span example of now-rare structural type)

inventoried by: Clayton Fraser and Michelle Crow-Dolby 7 July 1993

HAER INVENTORY

Missouri Historic Bridge Inventory

NAME(S) OF STRUCTURE

Bonanza Bridge
MHTD: 324001.9

CALD32

DATE(S) OF CONSTRUCTION

1883

LOCATION

County Road 324 over Shoal Creek; S19, T56N, R27W
Bonanza; Caldwell County, Missouri

USE (ORIGINAL / CURRENT)

roadway bridge / roadway bridge

RATING NRHP eligible (score: 66)

CONDITION

fair

OWNER

Caldwell County

span number: 1
span length: 187.0'
total length: 187.0'
roadway wdt.: 14.0'

superstructure: wrought iron, 11-panel, pin-connected Whipple through truss
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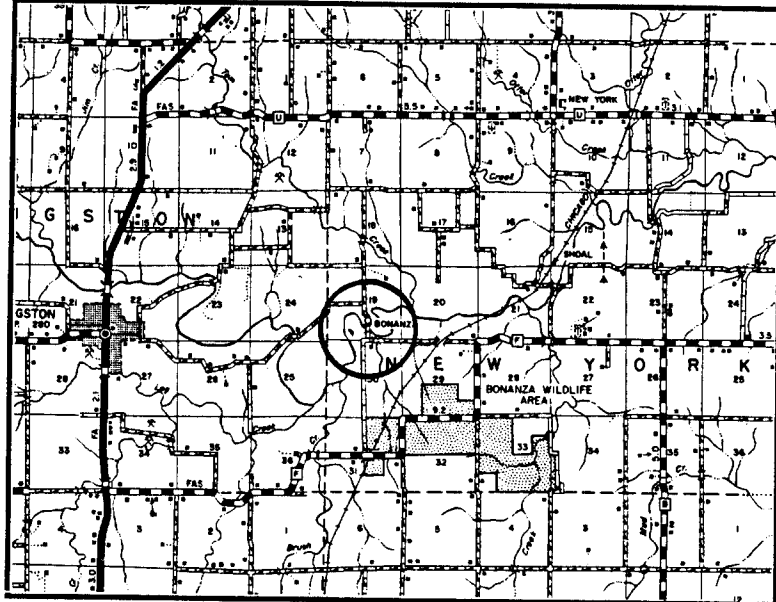
One of the more significant bridges included in Missouri's statewide historic bridge inventory is this long-span truss located just south of Bonanza, in central Caldwell County. Configured as a pin-connected Whipple (or double-intersection Pratt) through truss, the Bonanza Bridge is one of less than ten such structures known to exist in Missouri. First patented by Squire Whipple, bridge engineer and builder from New York, the Whipple truss was a popular choice for longer span crossings - generally in excess of 150 feet - between 1850 and 1890. Whipple trusses were used on most of the railroad bridges built across the Missouri River in the 1880s, due largely to engineer George S. Morison. But they were never very common for wagon trusses. The Whipple truss differed from the more common Pratt in that its diagonal members extended across, not one, but two panels. Although more costly, this variation provided greater lateral support for the diagonals, a critical consideration on deep, long-span trusses. By the turn of the century, Parker and Camelback trusses (Pratt variants with polygonal upper chords) had supplanted the Whipple as the truss of choice for longer span crossings. Accordingly, all of Missouri's extant Whipples date from before that time.

With its Whipple web configuration, rolled, wrought iron components, U-bolted, plate girder floor beams, and unslotted turnbuckles, the Bonanza Bridge typifies wagon truss construction of the early 1880s. According to an 1886 history of the county, the structure was erected here in 1883 for an approximate cost of \$6000.00. Unfortunately, county records that would have provided details of the span's construction history were evidently lost when the Caldwell County Courthouse burned shortly before the turn of the century. It is known

that the Caldwell County Court was still considering construction of the Bonanza Bridge late in September 1883. If the county history is correct, a contract to fabricate and build the long-span truss must have been awarded soon thereafter, but the contractor is not known at this time. Despite this gap in the bridge's documentation, it still remains an important transportation-related resource: an exceptional early wrought iron truss located at an important county road crossing.

NAME(S) OF STRUCTURE

Bonanza Bridge

PHOTOS AND SKETCH MAP OF LOCATION**LOCATION MAP**

TAKEN FROM MISSOURI HIGHWAY AND TRANSPORTATION DEPARTMENT
GENERAL HIGHWAY MAP

SOURCES

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Clayton Fraser and Michelle Crow-Dolby

AFFILIATION

Fraserdesign, Loveland CO

DATE

7 July 1993
