

CLEAR CREEK BRIDGE
(Shoal Creek Bridge)
Spanning Clear Creek at County Road 312
Ritchey Vicinity
Newton County
Missouri

HAER No. MO-69

HAER
MO
73-RITC.V,
1-

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
Rocky Mountain Regional Office
National Park Service
U.S. Department of the Interior
P.O. Box 25287
Denver , Colorado 80225

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Present Location: Spanning Clear Creek on County Road Number 312, approximately 3 miles east of Ritchey in Newton County, Missouri. This is a north-south road in Section 29, Township 26 North, Range 29 West.

UTM: Point A: 15/4088421/399291
Point B: 15/4088384/399291
Latitude: 36 degrees, 56 minutes, 17 seconds
Longitude: 94 degrees, 7 minutes, 46 seconds
Quad: Newtonia

Original Location: Spanning Shoal Creek, south of Joplin, then known as Reding's Mill Bridge

UTM: Point A: 15/4097961/365365
Point B: 15/4097935/365332
Latitude: 37 degrees, 1 minutes, 12 seconds
Longitude: 94 degrees, 30 minutes, 47 seconds

Date of Construction: 1886 (constructed Reding's Mill over Shoal Creek)
1932 (moved to its present location)

Present Owner: Newton County
Newton County Courthouse
Neosho, Missouri 64850-1860

Present Use: Vehicular bridge, to be replaced by a new vehicular bridge. Projected date of removal: 1992

Significance: The Clear Creek Bridge is a typical example of a through Pratt Truss manufactured and constructed by the Wrought Iron Bridge Company. This type of bridge was used throughout the country from the middle 1880s to the early part of this century.

Compiled by: Robert S. Chambers, P.E.
Cook, Flatt & Strobel, Engineers, P.A.
6111 S.W. 29th Street
Topeka, Kansas 66614

I. HISTORY

A. Construction Chronology

Shoal Creek provides a natural barrier in the northern portion of Newton County. After the Civil War, while Newton County was rebuilding, the need arose to provide a route to market for the increasing crop production. A bridge was needed to connect Reding's Mill and the surrounding farmlands to the markets of Joplin to the north.¹

According to county records and the New County Commission, in 1886 Newton County hired the Wrought Iron Bridge Company of Canton, Ohio, to construct a bridge at Reding's Mill over Shoal Creek.² In 1932, this bridge was replaced to better accommodate the greater and heavier amount of traffic.³ The bridge was matchmarked, dismantled and moved to its present location over Clear Creek.⁴ All work was completed and the bridge opened for traffic in 1932.⁵

B. Location

The Clear Creek Bridge is located on County Road Number 312 over Clear Creek, approximately 3 miles east of Ritchey in Newton County, Missouri. This is a north-south road in Section 29, Township 26 North, Range 29 West.

II. THE BRIDGE

A. Description

The Clear Creek Bridge is a single span, eight panel, pin-connected Pratt high through truss. Total length of the bridge is 120 feet. Vertical clearance over the deck is 13.3 feet. The clear roadway is 15.5 feet with an out to out dimension of 15.9 feet.

The bridge has diagonal members in tension, with five inside vertical members acting in compression. The two vertical members nearest the ends of the structure are hangers and act in tension. The tension members consist of eyebars. Round iron rods were used for diagonal bracing both, top and bottom. Diagonal members consist of double eyebars and round iron rods tied to pins, top and bottom. The end posts and top chord are comprised of two channels with a solid cover plate and laced underside bracing. The vertical compression members are made up of two channels tied together with lacing riveted in place. The upper bracing is fabricated of angles with riveted gusset plate connections. The bracing connects to the vertical compression members and the end posts. The lower chords are eyebars pin-connected to the vertical members. The floor beams are attached to the vertical members by a "U"-bolt.

The bridge has decorative ornamentation located at each portal in the upper bracing. There are no plaques present on the bridge.

The bridge deck is made of rough sawn lumber of various dimensions. The decking is laid transverse to the centerline of the bridge. Two lines of various sizes of lumber have been laid longitudinally to provide a curb. The deck lays on steel stringers, comprised of I beams. The stringers are supported by I beams, commonly known as transverse floor beams.

Handrails. The handrail consists of pipes on each side of the roadway bolted to the vertical members. There are two lines of longitudinal pipes on each side of the roadway. One of these pipes form the top of the rail and the second is spaced halfway between the top rail and the bridge deck.

Abutments. The existing abutments are built of concrete with fair to moderate amounts of cracking and spalling.⁶

Summary

The Pratt truss design utilized for the Clear Creek Bridge is a type commonly used for bridges built throughout the country during the 1880s to 1900s.

B. Ownership & Future

The Clear Creek Bridge has been owned and maintained by Newton County since its construction.

The county bridge inventory number is 312000.2. The bridge has moderate rust on its members and heavy deterioration of the wood deck. The bridge has been slated for replacement due to a low load capacity of 5 tons, poor condition and a narrow roadway of only 15.5 feet.

On July 17, 1991, an advertisement regarding availability of the Clear Creek Bridge was forwarded to the Newton County Commission to be placed in The Missouri Transportation Bulletin, the Preservation News, a local newspaper, and Rails to Trails Conservancy. If no new owner is found, upon completion of all documentation and approval by the National Park Service, the structure will be removed to make way for the new bridge.⁷

III. BIOGRAPHICAL MATERIAL

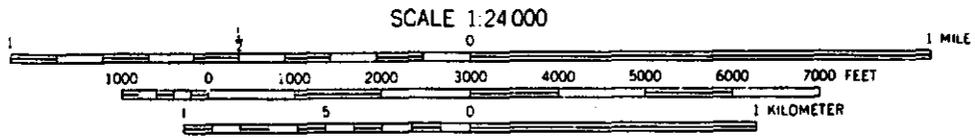
A. Wrought Iron Bridge Company

The Wrought Iron Bridge Company, which fabricated this bridge, was organized in 1864 and incorporated in 1871 by D. Hammond, W. R. Reeves, J. W. Miller, M. Adler and J. B. Robinson.⁸ The firm was based in Canton, Ohio, with offices in New York City, Chicago and Kansas City. Its primary business was manufacturing and construction of bridges, turn-tables and roofs until 1900 when it was absorbed by the American Bridge Company.⁹ The Wrought Iron Bridge Company engaged in the manufacturing and construction of numerous wrought iron

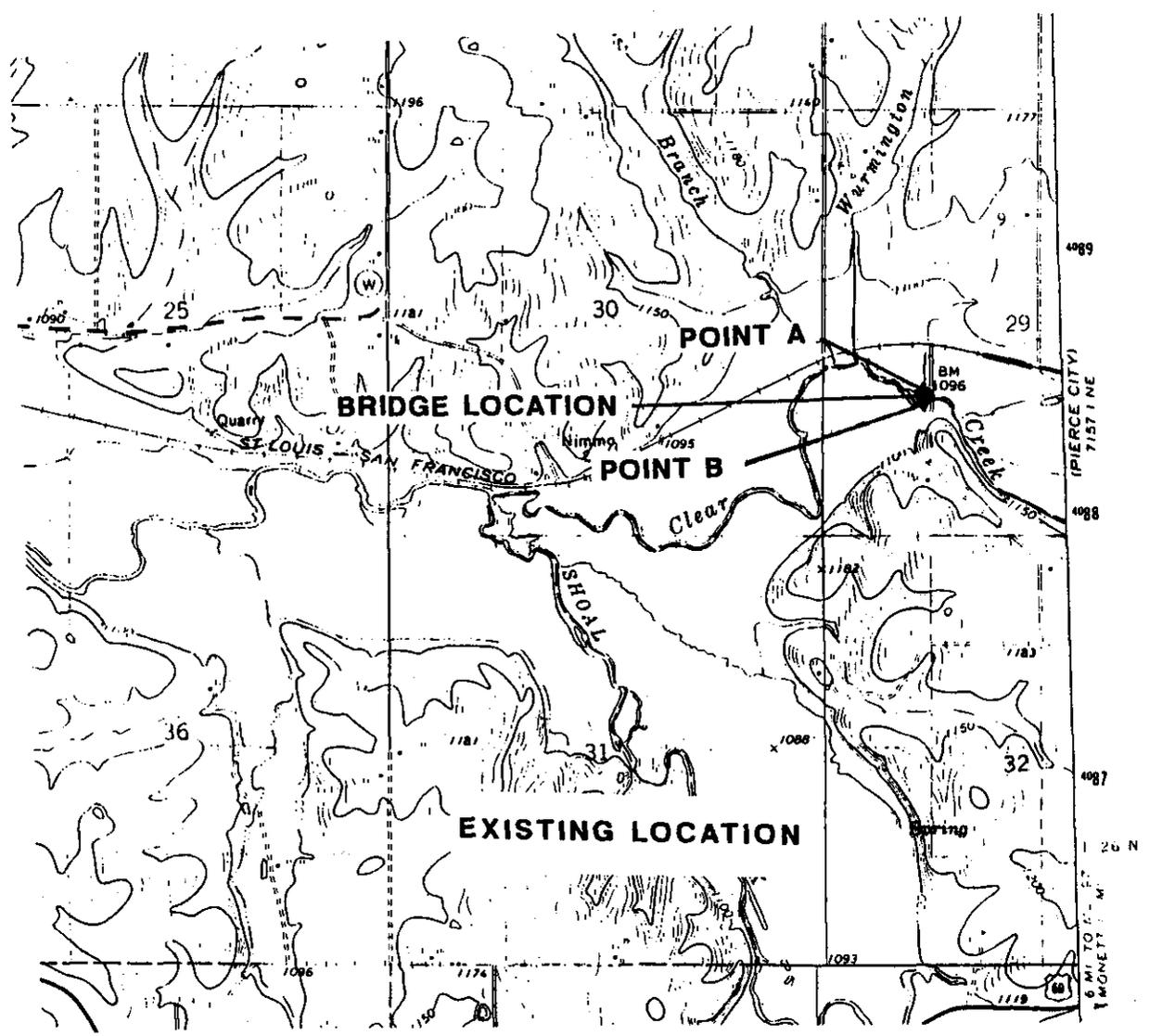
bridges in Missouri, two of which were in Newton County. No plans were found on the construction of the Shoal Creek Bridge.

IV. ENDNOTES

1. Environmental Research Center of Missouri, Inc., Cultural Resource Investigation Report, March 1991, p. 16.
2. Record of the County Clerk, Newton County, Mo., Book F, p. 592, 1886.
3. Comments from Newton County Commission, Courthouse - Room No. 1, Neosho, Mo. 64850, October 21, 1991.
4. Environmental Research Center of Missouri, Inc., Cultural Resource Investigations Report, March 1991, pp. 18-19.
5. Comments from Basil Fergenson, long-time local resident, who lives adjacent to present location of the Clear Creek Bridge, October 21, 1991.
6. Newton County Bridge Inspection Records, 1986.
7. Letter from Cook, Flatt and Strobel, Engineers, P.A., 616 Main Street, Joplin, Mo. 64801, July 17, 1991.
8. Charter Number F00000068, Office of the Secretary of State, 830 Truman State Office Building, Jefferson City, Mo.
9. Directory of American Bridge-Building Companies 1840-1900, Victor C. Darnell, Washington, DC, p. 48, 1984.



CONTOUR INTERVAL 10 FEET
 DATUM IS MEAN SEA LEVEL

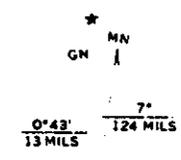


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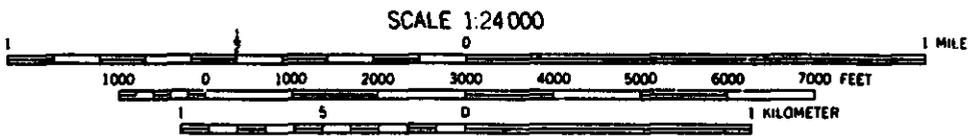
Topography by photogrammetric methods from aerial
 photographs taken 1970. Field checked 1972

Polyconic projection. 1927 North American datum
 10,000-foot grid based on Missouri coordinate system, west zone
 1000-meter Universal Transverse Mercator grid ticks,
 zone 15, shown in blue

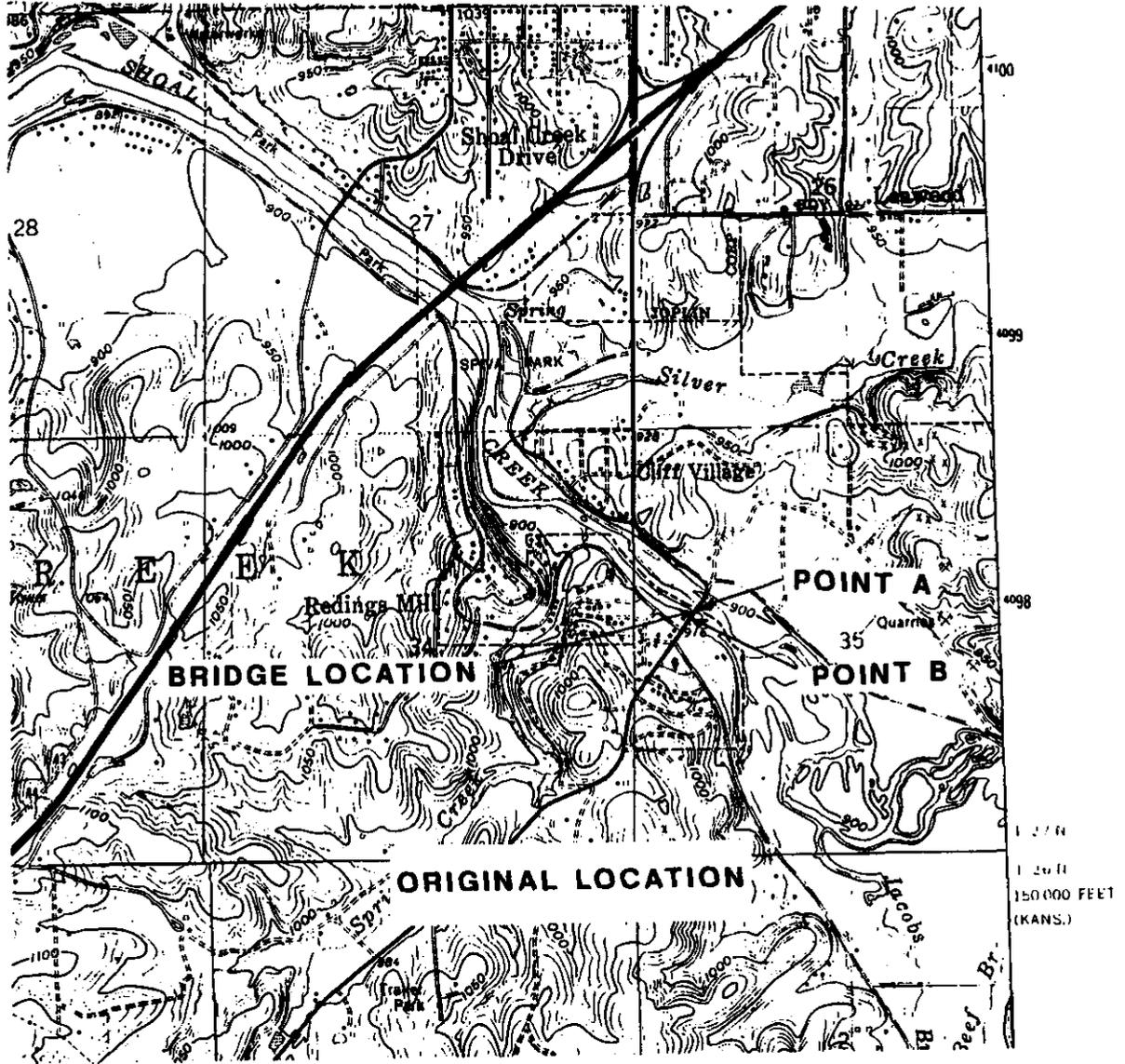
Fine red dashed lines indicate selected fence and field lines where
 generally visible on aerial photographs. This information is unchecked



UTM GRID AND 1972 MAGNETIC NORTH
 DECLINATION AT CENTER OF SHEET



CONTOUR INTERVAL 10 FEET
 DATUM IS MEAN SEA LEVEL



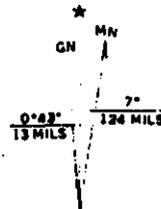
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UTM GRID AND 1972 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET



QUADRANGLE LOCATION