HISTORIC AMERICAN ENGINEERING RECORD
SHOAL CREEK BRIDGE
(BRIDGE NO. 359000.8) HAER No. MO-98

I. INTRODUCTION

Location:	Located on Cart Road 359 over Shoal Creek in Kingston Township in Caldwell County, Missouri. In Section 7 and 18, Township 56 North, Range 28 West. It is approximately 2.9 miles northwest of Kingston or 4.2 miles west and 4.5 miles south of junction of State Highway 13 and U.S. Highway 36.
Quadrangle:	Hamilton West
Latitude:	39 degrees, 40 minutes, 16 seconds
Longitude:	94 degrees, 4 minutes, 42 seconds
UTM:	Point A: 15/4391523/407508 Point B: 15/4391523/407570
Date of Construction:	1894
Present Owner:	Caldwell County Kingston, Missouri
Present Use:	Vehicular bridge to be replaced by a new vehicular bridge. Projected date of removal: Spring 1997.
Significance:	The Shoal Creek Bridge is a typical example of a pin-connected Pratt through Truss erected by John Dildine and Company. This type of bridge was used throughout the country from the middle 1800s to the early part of the twentieth century.
Compiled by:	Robert S. Chambers, P.E., Cook, Flatt & Strobel, Engineers, P.A., Topeka, Kansas.

II. HISTORY

A. COUNTY RECORDS

The Shoal Creek Bridge was constructed in 1894. The Caldwell County Courthouse, along with all county records, was destroyed by fire in 1897. In addition, no newspapers in the county have retained early records of their publications.

A request was made of the Missouri State Historical Society in Columbia for any records in their possession for Caldwell County newspapers published between 1890 and 1896. Microfilm was obtained containing some publications from several County newspapers and a book on the history of Caldwell County, however, no reference to the Shoal Creek Bridge was disclosed.[1]

B. CONSTRUCTION CHRONOLOGY

Shoal Creek and its tributaries provide a natural barrier in the Northwest portion of Caldwell County. Near the turn of the century, the need arose to provide a route to market for increasing crop production in the area. A bridge was needed to connect the northwest portion of Caldwell and surrounding farmlands to the markets and railroads in the middle of Caldwell County.

The chronology of development and construction along with the records of the designer, fabricator and builder of the Shoal Creek Bridge were lost in the Caldwell County Courthouse fire of 1897.

However, according to plaques located on the portals the structure was erected by John Dildine and Company of Cameron, Missouri.

Like most of the region's bridge builders of the time, the Dildine Bridge Company, as it was also known, relied heavily on pin-connected Pratt truss variants for its standard truss types. 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 manufacturing industry, in which efficiency equated with profit, Pratt trusses received almost universal use. Virtually all of the major regional fabricators manufactured Pratt trusses and marketed them extensively to Missouri's counties in the late nineteenth and early twentieth centuries. As a result, thousands were built during this period of extensive bridge construction. Hundreds remain in use today, of which the Shoal Creek Bridge in Caldwell County is a relatively early, well-preserved example.[2]

C. LOCATION

The Shoal Creek Bridge is located on CART Road 359 along the common section line of Sections 7 and 18, Township 56 North, Range 28 West in Kingston Township, Caldwell County, Missouri. It is

approximately 2.9 miles northwest of Kingston. From the intersection of U.S. Highway 36 and Missouri Highway 13, it is 4.2 miles west and 4.5 miles south.

III. THE BRIDGE

A. DESCRIPTION

The Shoal Creek Bridge consists of a 124 foot, seven panel, pinconnected Pratt high through truss. Total length of the bridge is 204′. Vertical clearance over the deck is 13.5′. The clear roadway width is 12.3′.[3] The cost for construction of the Shoal Creek Bridge is unknown due to loss of records.

The bridge has diagonal members in tension, with four 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 at both top and bottom. Diagonal members consist of double eyebars, or round iron rods, tied to pins at both 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 to the end posts. The lower chords are eyebars pin connected to the vertical

members. The floorbeams are u-bolted to the lower chord pins. The bridge has plaques located in the upper bracing at each portal.

The bridge deck is made of rough sawn lumber of various dimensions. The decking is laid transverse to the centerline of the bridge. The deck rests on steel stringers comprised of I-beams. The stringers are supported by I-beams commonly known as transverse floorbeams.

The handrails consist of channels on each side of the roadway bolted to the vertical members. There are two lines of channels on each side of the roadway. One of these channel forms the top of the rail and the second is spaced half way between the top rail and the bridge deck. The Pratt truss design utilized for the Shoal Creek Bridge is of a type commonly used for bridges built throughout the country during the 1880s to 1900s.

B. OWNERSHIP & FUTURE

The Shoal Creek Bridge has been owned and maintained by Caldwell County since its original construction. The county bridge inventory number is 359000.8. Field inspection shows the structure to be in poor condition. The deck is showing signs of heavy deterioration and many structural members are rusted from exposure to the elements. The bridge is posted for a 3-ton weight limit. This restriction, along with the narrow roadway, makes the structure inadequate for present needs.

The Shoal Creek Bridge has been scheduled for replacement. An advertisement regarding availability of the bridge will be placed in The Missouri Transportation Bulletin, Preservation, and a local newspaper. 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.

IV. BIOGRAPHICAL MATERIAL

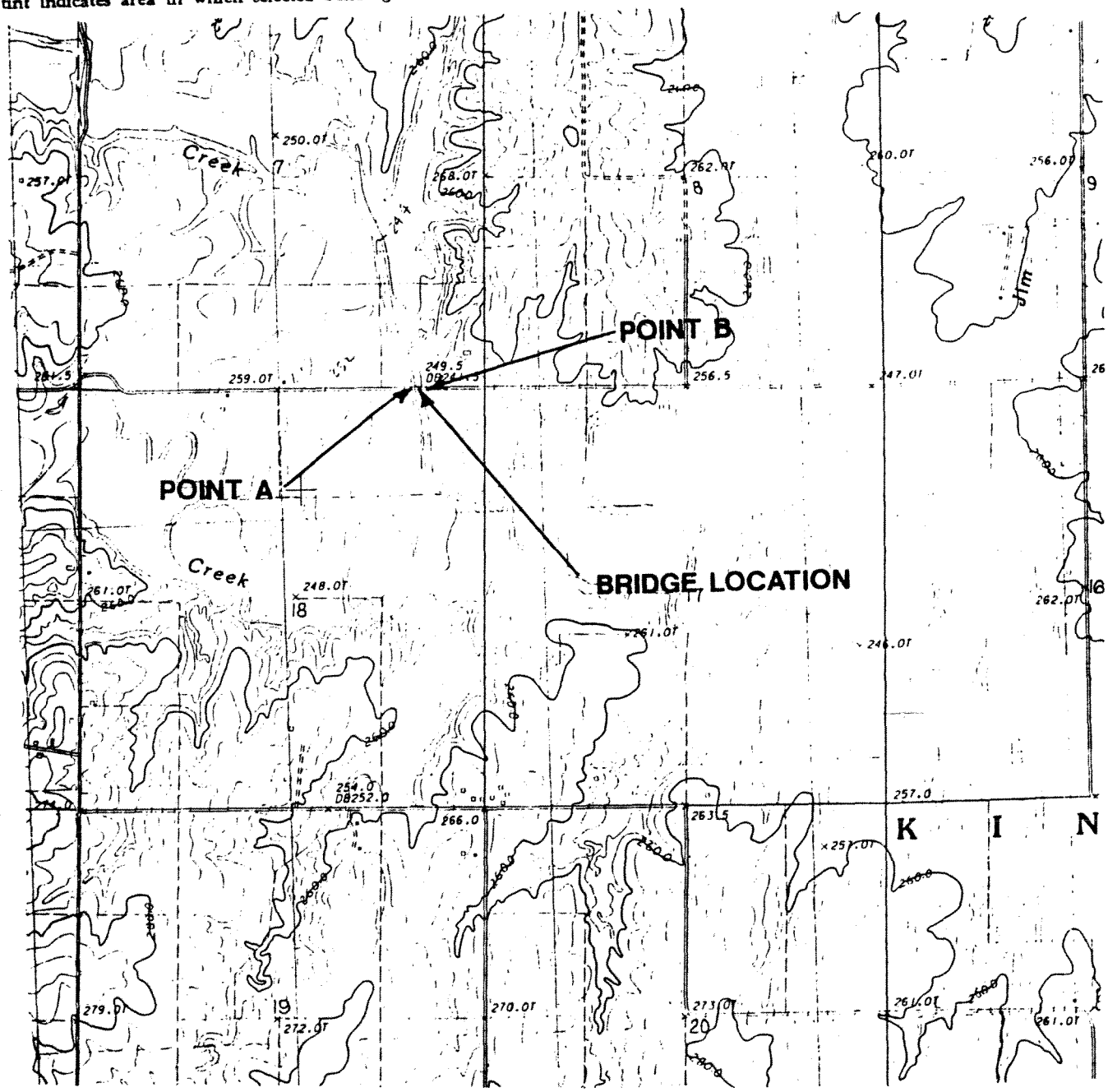
Records of the designer, fabricator and builder of the Shoal Creek Bridge were lost when the Caldwell County courthouse burned near the turn of the century. However, according to the plaques located on the bridge portals, the structure was erected by John Dildine and Company of Cameron, Missouri. As a businessman in Cameron, Missouri, John Dildine was a self-taught bridge manufacturer and farmer, working mainly with wood or constructing/erecting metal bridges manufactured by others. The Dildine Bridge Company, as it was also known, was a family firm. J.C. Dildine, John's son was a formally trained engineer, who worked for Stupp Brothers of St. Louis and as general sales manager for the Canton Ohio Bridge Company before he became the engineer for his father's bridge company. The Dildine Bridge Company was active in numerous Missouri counties. Between 1890 and 1910, it constructed approximately sixty bridges in DeKalb County. Between 1898 and 1910, approximately fourteen bridges were constructed in

Clinton County by the company. J.C., and his brother, E.L. Dildine as president and general manager, moved the company to Hannibal, where it produced 300 tons of steel each month.[4] In 1914, J.C. Dildine returned to Cameron and started the Cameron Bridge Company.[5]

V. PROJECT INFORMATION

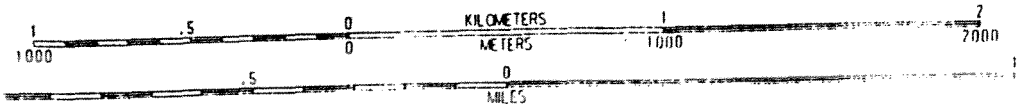
This Historic American Engineering Record (HAER) project was undertaken by the Caldwell County Commission and the Missouri Highway and Transportation Department, in conjunction with a bridge replacement project in Caldwell County. The Shoal Creek Bridge is scheduled for removal in Spring 1997. The project was conducted in accordance with the Federal Highway Administration's (FHWA) Memorandum of Agreement (MOA) with the Missouri State Historic Preservation Office and the Advisory Council on Historic Preservation. The MOA stipulates that HAER documentation be provided for the Shoal Creek Bridge. The field work and report was prepared by Cook, Flatt and Strobel of Topeka, Kansas. Archival photography was completed by Phillip Geller of St. Joseph, Missouri.

ROL BY. . . . . USGS AND NOS/NOAA
PILED FROM AERIAL PHOTOGRAPHS TAKEN 1979
CHECKED . . . . . 1981. MAP EDITED 1984
ECTION . . . . . UNIVERSAL TRANSVERSE MERCATOR
1000-METER UNIVERSAL TRANSVERSE MERCATOR . . . . . ZONE 15
10,000-FOOT STATE GRID TICKS . . . . . MISSOURI, WEST ZONE
GRID DECLINATION . . . . . 0°41' WEST
MAGNETIC NORTH DECLINATION . . . . . 5°30' EAST
L DATUM . . . . . NATIONAL GEODETIC VERTICAL DATUM OF 1929
NTAL DATUM . . . . . 1927 NORTH AMERICAN DATUM
e on the predicted North American Datum of 1983,
e projection lines as shown by dashed corner ticks
ters north and 19 meters east)
e may be private inholdings within the boundaries of any
ral and State Reservations shown on this map
tint indicates area in which selected buildings are shown



HAMILTON WEST QUADRANGLE
MISSOURI–CALDWELL CO.

SCALE 1:24 000



VI. ENDNOTES

1. Missouri State Historical Society microfilm containing copies of some publication of The Breckenridge Bulletin, Cowgill Chief, Hamilton Farmers Advocate, Hamiltonian, Hamilton News-Graphic, Caldwell County Banner, Caldwell County Sentinel, and the Kingston Times.
2. Caldwell County Inventory, Historic American Engineering Record, Fraserdesign, Loveland, Colorado, July 7, 1993.
3. Caldwell County Bridge Inspection Records, Caldwell County Courthouse, 1994.
4. W.H.S. McGlumpny, History of Clinton and Caldwell Counties, Missouri (Topeka: Historical Publishing Co., 1923), 382-82.
5. Victor C. Darnell, Directory of American Bridge-Building Companies: 1840-1900 (Washington D.C.: Society for Industrial Archeology 1984), 29.

VII. BIBLIOGRAPHY

Caldwell County Bridge Inspection Records, Structure Number 359000.8.

Darnell, Victor C.. Directory of American Bridge - Building Companies: 1840-1900. Washington D.C.: Society for Industrial Archeology, 1984.

Fraser, Clayton B.. Missouri Historic Bridge Inventory. Structure Number 359000.8. Missouri Office of Historic Preservation. Jefferson City, Missouri. July 1993.

McGlumpny, W.H.S.. History of Clinton and Caldwell Counties, Missouri. Topeka: Historical Publishing Co., 1923.