

CUTLER BRIDGE
(Donahoe Bridge)
Winterset City Park
Winterset
Madison County
Iowa

HAER IA-92
IA-92

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001

HISTORIC AMERICAN ENGINEERING RECORD

CUTLER BRIDGE
(Donahoe Bridge)

HAER No. IA-92

LOCATION: Spanning a ravine in Winterset City Park, Winterset, Madison County,
Iowa
UTM: 15.415913.4576009, Winterset, Iowa, Quadrangle

STRUCTURAL
TYPE: Town lattice through truss covered bridge

DATE OF
CONSTRUCTION: 1871; moved 1970; rehabilitated 1997

DESIGNER/
BUILDER: Eli Cox

OWNER: Madison County, Iowa

PREVIOUS USE: Vehicular bridge

PRESENT USE: Historic landmark and tourist attraction

SIGNIFICANCE: Cutler Bridge is one of nineteen covered bridges built in Madison County,
Iowa, in the late nineteenth century and the second-oldest of the five that
survive. Originally located over the North River near Bevington, the
bridge was moved to its present site in Winterset City Park in 1970.

HISTORIAN: Researched and written by Lola Bennett, Summer 2002

PROJECT
INFORMATION: The National Covered Bridges Recording Project is part of the Historic
American Engineering Record (HAER), a long-range program to
document historically significant engineering and industrial works in the
United States. HAER is administered by the Historic American Buildings
Survey/Historic American Engineering Record, a division of the National
Park Service, U.S. Department of the Interior. The Federal Highway
Administration funded the project.

RELATED

DOCUMENTATION: HAER No. IA-64, Holliwell Bridge; HAER No. IA-93, Hogback
Bridge; HAER No. IA-94, Imes Bridge; HAER No. IA-95, Roseman Bridge

Chronology

- 1805 America's first covered bridge built at Philadelphia.
- 1820 Ithiel Town patents the Town Lattice truss.
- 1844 G.B. Clark erects Iowa's first covered bridge at Fort Des Moines.
- 1846 Iowa becomes twenty-ninth state admitted to the Union.
- 1849 Madison County created.
- 1868 Eli Cox erects Madison County's first covered bridge near his farm.
- 1870 Madison County adopts Town Lattice plan for bridges.
- 1871 Cutler Bridge erected over North River near Bevington.
- 1872 Madison County erects the county's first iron bridge over Middle River at Compton's Mill.
- 1884 Madison County stops building covered bridges.
- 1933 Madison County Historical Society begins campaign to save covered bridges.
- 1950 Madison County Board of Supervisors votes in favor of preserving covered bridges.
- 1970 Madison County Covered Bridge Festival organized.
- 1970 Cutler Bridge moved to Winterset City Park.
- 1997 Cutler Bridge rehabilitated at a cost of \$35,538.
- 2002 Cutler Bridge recorded by the Historic American Engineering Record.

Introduction

Between 1868 and 1884, Madison County erected nineteen wooden covered bridges. Over time, all but five of these structures were lost to floods, fires, progress or willful destruction. In 1933, the Madison County Historical Society began campaigning to preserve the county's ten surviving covered bridges, but they faced strong opposition from progress-minded citizens and local farmers, who desired modern open spans. Controversy continued for nearly two decades, and during that time, several more covered bridges were lost.

In 1950, the Madison County Board of Supervisors finally agreed to maintain the county's seven surviving covered bridges as tourist attractions. One by one, the bridges were moved or bypassed over the next three decades, but the county upheld its commitment to preserve them. In 1970, the county held the first annual Madison County Covered Bridge Festival, a time-honored event that now draws thousands of visitors each year. Tourism increased dramatically in the 1990s following the publication and subsequent movie adaptation of Robert James Waller's novel, *The Bridges of Madison County*.

Unfortunately, the covered bridges are still threatened by vandalism and arson. McBride Bridge was burned in 1983, Cedar Bridge was burned in 2002, and there were subsequent arson attempts on Hogback and Roseman bridges. In cooperation with the Coalition for Advanced Wood Structures (USDA Forest Service Forest Products Laboratory and Iowa State University Bridge Engineering Center), Madison County is currently testing a remote-monitoring system to identify and mitigate potentially destructive activities at covered bridges. The ultimate goal is to develop tools for long-term preservation of historic timber bridges across the country.¹

Description

Cutler Bridge is a 79' Town lattice truss covered bridge. The trusses are fastened together with treenails. The bridge has a gable roof and vertical plank siding.

History

In 1871, Eli Cox constructed Cutler Bridge across the North River near Bevington, Iowa. The bridge carried traffic for almost a century. In 1970, the 40-ton bridge was moved 18 miles to its present location in Winterset City Park. The bridge was rehabilitated in 1997 for \$35,538.

Builder

¹ Coalition for Advanced Wood Structures, "Remote Monitoring of Historic Covered Timber Bridges in Madison County for the Prevention of Arson and Vandalism," *Research in Progress*, 2003.

Eli Cox (1835-1885) emigrated from Ohio to Madison County, Iowa in 1856.² He built houses, barns, schools, churches and commercial buildings in and around Winterset, but he is probably best remembered for his bridges.³ Cox began building bridges in 1864, but his early bridges were not covered. In 1868, he built Madison County's first covered bridge near his farm and subsequently built at least five other covered bridges in the county.⁴

Design

Ithiel Town (1784-1844) was an architect from New Haven, Connecticut. He is remembered today for his role in developing the Greek Revival style of architecture, along with his partner, Alexander Jackson Davis. Town designed a number of churches, state capitols and other public buildings that still stand today. He also designed one of the most widely used wooden bridge trusses, for which he received patents in 1820 and 1835.

The Town truss was a lattice of sawn planks that eliminated the need for an arch or large hewn timbers. Rather than having notched joints, the lattice intersections were fastened with large wooden pegs, or treenails (trunnels). The truss functioned as a series of overlapping triangles, so that the load in any one triangle affected distribution of stress in all other triangles. The web members could handle both tension and compression and spread loads over a wide area.

Ithiel Town built only a few bridges himself, but used this same type of truss in the roofs of several important buildings he designed, and he received royalties of a dollar per foot of truss from bridge builders who used his patent. Town lattice truss bridges were built in large numbers in New England, New York and the South throughout the nineteenth century. Seeking Ithiel Town's own objective of "simple, permanent and economical" bridge design, in 1870, the Madison County Board of Supervisors issued a directive that all spans over 40' should be lattice truss covered bridges.⁵ The local newspaper summarized their decision as follows:

There has been much complaint about the erection of county bridges, as to their stability and make. The plan by the Board does away with the stone abutments, thus saving such expense and enabling the county to build a number more bridges. It is claimed that timber can be readily replaced, and that ice will affect it less than stone. They also require that bridges shall be covered. The expense of the roof is more than made up by the permanency of the bridge. Instead of the old style framing for the support of the bent, they have adopted the lattice work frame, like that used to support the ceiling of our court room.⁶

² A.T. Andreas, *Illustrated Historical Atlas of the State of Iowa* (Chicago: Andreas Atlas Corp., 1875).

³ Herman August Mueller, *The History of Madison County Iowa and its People* (Chicago: S.J. Clarke Publishing Co., 1915), p.173.

⁴ According to W.H. Lewis, "Story of an Early Pioneer: Eli Cox, A Pioneer Builder in Madison County," *Winterset Madisionian* (Winterset, Iowa), 9 September 1926, Cox built at least seventeen covered bridges in Madison County and surrounding areas. This number could not be confirmed.

⁵ Ithiel Town, *A Description of Ithiel Town's Improvement in the Construction of Wood and Iron Bridges*. New Haven: S. Converse, 1821.

⁶ *Winterset Madisionian* (Winterset, Iowa), 12 January 1870: 1.

Appendix A, Madison County Covered Bridges

	Cox	1868	Eli Cox		Replaced 1913
	Callison	1868	Eli Cox		
	Kellogg	1869			
	Brown (Walker/Fletcher)	1871	J.P. Clark	Town lattice truss; pitch roof	
WG #15-61-06	Imes (Wilkins Mill)	1871	J.P. Clark	Town lattice truss; pitch roof	Moved 1887, 1977
	Wiggins (McBride)	1871	J.P. Clark	Town lattice truss; flat roof	Burned 1983
WG #15-61-02	Cutler (Donahoe)	1871	Eli Cox	Town lattice truss; pitch roof	Moved 1970
	Rose (Dunmire)	1871		Town lattice truss; pitch roof	Replaced c1910
	Afton (Reed's Crossing)	1872	Eli Cox	Town lattice truss	Destroyed by ice 1895
	Rhyno's Ford	1872	S.W. Winkley	Town lattice truss	
	Klingensmith (Bennett)	c1875	J.P. Clark H.P. Jones	Town lattice truss; flat roof	Replaced 1934
	Coopers Ford	1877	Eli Cox	Town lattice truss	Destroyed by flood 1898
	Cottonwood Ford	1878	Eli Cox	Town lattice truss	
	Badger (Welch)	1878	J.P. Clark	Town lattice truss; pitch roof	Replaced late 1920s
	Backbone	1878	H.P. Jones G.K. Foster	Town lattice truss; flat roof	Burned 1914
WG #15-61-05	Holliwell	1880	H.P. Jones G.K. Foster	Town lattice truss; flat roof	Bypassed 1986 Rehabilitated 1997
WG #15-61-07	Roseman (Oak Grove)	1883	H.P. Jones G.K. Foster	Town lattice truss; flat roof	Bypassed 1981
	Cedar (Casper)	1883	H.P. Jones G.K. Foster	Town lattice truss; flat roof	Moved 1921; Bypassed 1964; Burned 2002
WG #15-61-04	Hogback	1884	H.P. Jones G.K. Foster	Town lattice truss; flat roof	Bypassed 1993

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