

United States Department of the Interior
National Park Service

AUG - 2 2001

NATIONAL REGISTER, HISTORY
& EDUCATION
NATIONAL PARK SERVICE

980

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 16A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name Lake Ditch Bridge

other names/site number omitted from Morgan County Interim Report

2. Location

street & number intersection Lake Ditch and Lake Ditch Road not for publication

city or town Monrovia vicinity

state Indiana code IN county Morgan code 109 Zip code 46157

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property meets does not meet the National Register criteria. I recommend that this property be considered significant nationally statewide locally. (See continuation sheet for additional comments.)

Jon C. Ste D-SHPO 7.23.01
Signature of certifying official/Title Date

State of Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria. (See continuation sheet for additional comments.)

Signature of certifying official/Title Date

State of Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is: for Signature of the Keeper

- entered in the National Register.
 See continuation sheet.

Entered in the
National Register

Date of Action
9/16/01

- determined eligible for the National Register
 See continuation sheet.

- determined not eligible for the National Register.

- removed from the National Register.

- other, (explain:)

Lake Ditch Bridge
Name of Property

Morgan, Indiana
County and State

5. Classification

Ownership of property
(Check as many as apply.)

- private
- public-local
- public-State
- public-Federal

Category of Property
(Check only one box.)

- building(s)
- district
- site
- structure
- object

Number of Resources within Property
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
0	0	buildings
0	0	sites
1	0	structures
0	0	objects
1	0	Total

Name of related multiple property listing
(Enter "N/A" if property is not part of a multiple property listing.)

Number of contributing resources previously listed in the National Register

0

6. Function or Use

Historic Functions

(Enter categories from instructions)

TRANSPORTATION: road-related

Current Functions

(Enter categories from instructions)

TRANSPORTATION: road-related

7. Description

Architectural Classification

(Enter categories from instructions)

OTHER: plate girder bridge

Materials

(Enter categories from instructions)

foundation CONCRETE

walls

roof

other METAL: cast iron

Narrative Description

(Describe the historic and current condition of the property on one or more continuation sheets.)

8. Statement of Significance

Applicable National register Criteria
(Mark "X" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield, information important in prehistory or history.

Areas of Significance
(Enter categories from instructions)

ENGINEERING

Period of Significance

1895-1951

Criteria Considerations
(Mark "X" in all the boxes that apply.)

Property is:

- A owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or grave.
- D a cemetery.
- E a reconstructed building, object, or structure
- F a commemorative property.
- G less than 50 years of age or achieved significance within the past 50 years.

Significant Dates

1895
1926

Significant Person

(Complete if Criterion B is marked above)

Cultural Affiliation

N/A

Architect/Builder

Chicago Bridge and Iron Co.

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographic References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____

Primary location of additional data:

- State Historic Preservation Office
 - Other State agency
 - Federal agency
 - Local government
 - University
 - Other
- Name of repository:
Indiana Historic Sites and Structures Inventory

Lake Ditch Bridge
Name of Property

Morgan IN
County and State

10. Geographical Data

Acreeage of Property less than 1 acre

UTM References

(Place additional UTM references on a continuation sheet.)

1 1 6 5 4 0 6 8 0 4 3 8 0 6 4 0
 Zone Easting Northing

3 _____ _____ _____
 Zone Easting Northing

2 _____ _____ _____

4 _____ _____ _____

See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Joanne Raetz Stuttgen
organization _____ date 01-25-2001
street & number 759 East Washington Street telephone (765) 349-1537
city or town Martinsville state IN zip code 46151

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

- Maps**
- A **USGS map** (7.5 or 15 minute series) indicating the property's location.
 - A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs
Representative **black and white** photographs of the property.

Additional items
(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name Morgan County Commissioners
street & number 180 South Main Street telephone _____
city or town Martinsville state IN zip code 46151

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 *et seq.*).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503.

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**NATIONAL REGISTER OF HISTORIC PLACES
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MATERIALS (continued)

foundation WOOD

other METAL: steel

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DESCRIPTION

The Lake Ditch Bridge is a substantially skewed steel plate girder with an approximate north-south alignment. It carries Lake Ditch Road over Lake Ditch. The span length is 58'-6" and the deck width is 24'-9", with an approach roadway width of 15'-0". The skew is approximately 55°. Under clearance is 10'-0" with a water depth of about 1'-0".

The through girders measure 61'-0" L x 67 1/2" H (including web plate and flanges) and are rounded at their outer, upper ends. Each girder consists of three web plates approximately 20'-3" long and 15/16" thick, connected with a splice plate riveted to the adjacent web plates. The web is stiffened with a filler plate and an angle on both the inside and outside riveted together through the web. The angles face towards mid-span and are spaced further apart approaching the center. Where the top flange rolls down to meet the lower one, a pair of 14" square plates are riveted together through the web on each side. The top and bottom flanges each consist of a pair of angles and a cover plate riveted to one another and through the web plate. The top flange angles are spliced just beyond the outermost set of stiffeners with a second angle nested and riveted inside the main angles.

The bridge is supported on timber piles that flank older and narrower concrete abutments and wing-walls.

In 1975, the floor system was reconfigured. There are seven floor beams. The three most central consist of rolled I-beams, two of which have a channel riveted to the lower flange of the beam. These central floor beams have a rolled-I strut welded from the center of one to the center of the adjacent beam for lateral bracing. Each beam is bolted to the girders through the web plate. The outer ends of the span have three floor beams more closely spaced than the central ones, one on skew bolted through the web at the end of the two girders, and two bolted on one end to the end floor-beam and through the lower girder web on the other. Twelve runs of I-beam stringers over the floor beams carry the timber deck.

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STATEMENT OF SIGNIFICANCE

Although Lake Ditch Bridge was omitted from the *Morgan County Interim Report*, the members of the Indiana Historic Bridge Committee, who advised the state Divisions of Historic Preservation and Archaeology, judged the structure as a "National Register Candidate." It is eligible for the National Register under Criteria C. It is the oldest of very few Chicago Bridge & Iron Company spans to survive in the state, and it is among the oldest known highway or railroad plate girders. The only other plate girder bridge in Morgan County spans Oliver Creek in Jackson Township; it was erected in 1930.

Lake Ditch Bridge carries Lake Ditch Road over Lake Ditch in western Monroe Township, approximately 2 miles west of Monrovia and 1/3 mile south of SR 42. The bridge stands literally in the middle of farm fields, on a gravel road that is used almost entirely by farm vehicles (although graffiti on the bridge indicates it is also visited frequently by local teenagers). To the north, across SR 42, are located three contributing historic farm properties that include an early twentieth-century I-house, a late nineteenth-century double pen, and a nice collection of vernacular farm outbuildings.

Located in the northwest section of Morgan County, Monroe Township was among the first organized in the county. Its gently rolling hills and ready access to Eel River and streams such as McCracken and Sycamore Creeks provided an impetus for settlement. However, the western portion of the township was originally untillable marshland--an area known as Lake Valley--that frustrated local farmers. To remedy the problem, Phidiller S. Woods petitioned the Morgan County Commissioners on September 1, 1874, for a "drainage ditch necessary to reclaim said wetlands." The ditch does not appear on an 1875 Morgan County map, but on a map dated the following year it is shown as a black line running from its mouth at Eel River on the Morgan-Putnam County line to its source about two miles west of Monrovia. The total length of Lake Ditch was about ten miles.

The first significant enhancement of the ditch came in 1906 following the petition of Lester C. Cook for a drainage ditch. On March 7, 1906, "many bidders and dredge men" were present for the opening of bids, but no bids were received because many felt the ditch could not be successfully dug. Among the attendees was James P. Karr of Logansport, a manufacturer of dredge machinery who hoped to sell his equipment to the winning bidder. Instead, construction commissioner Hezekiah K. Johnson awarded a \$69,000 contract to Karr and Milton J. Hannawalt for the construction of Cook Ditch. Hannawalt later assigned his interest to John D. Raugh, who

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with Karr comprised the business of American Steel Dredge Works.

Specifications for Cook Ditch found in the *Morgan Circuit Court Record* of February 5, 1906, identifies the bridge spanning Lake Ditch as bridge #3 and describes it as a 25-foot, single-span wooden structure. The extant stone abutments found at the site most likely supported this early bridge. This bridge was replaced in early 1913 by Walter E. Johnson of Monrovia, who received a contract for \$585.00 from the Morgan County commissioners.

Details of the Wallace Bridge are both sketchy and tantalizing. While no plans have survived to provide definitive answers, if the claims of the surveyor and contractors are added up, it appears that substantial activity was undertaken. For example, surveyor-engineer Henry Alton Blunk charged as much for planning the new Wallace Bridge as he did for several complete concrete structures; the superintending allowance suggested almost two weeks of on-the-job construction observation; and Johnson's work continued for six months. But what kind of structure was the Wallace Bridge?

Lake/Cook Ditch was expanded and improved again in 1926 with the excavation of an estimated 250,820 cubic yards of dirt. It was then referred to as E. R. Robards Ditch, the specifications for which appear in the *Morgan County Circuit Court Record* of June 1, 1925. The Wallace/Lake Ditch Bridge is located at Station 32 and identified as "Iron Bridge 11 x 52." Yet the source and nature of the iron bridge located over the Cook Ditch is something of a mystery. Was this the Wallace Bridge erected by Johnson in 1913? Is this the current plate girder bridge, one that in 1944 was recorded by Indiana State Highway survey engineers? Recorded measurements of the length of the bridge(s) in 1925 and 1944 do not match, and neither are close to the plate girder's length.

The plate girder appears to have been placed over Lake Ditch during or after the dredging in 1926. The state highway survey engineers reported in 1944, probably on the basis of an interview with Mrs. Rebecca Kirk and other long-time residents in the neighborhood, that the girders were "moved here from a different location after [the ditch was] dredged the last time." Note the reference to *after* the dredging of 1926. In addition, interviews in late 2000 with a number of older persons living in the area of the bridge or who are related to those who had worked on it corroborate relocation, which they generally associate with ditch dredging.

While the history of the Lake Ditch Bridge is not certain, its paternity is without doubt. On viewing the structure in 1944, state highway surveyors named the fabricator and dates the

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construction. In 1988, J. L. Cooper reported the existence of nameplates inscribed "Chicago Bridge & Iron Co. - 1895." The plaques have since been stolen.

Chicago Bridge & Iron Company founder Horace E. Horton, had designed and built his first bridge, a timber arch, in Minnesota in 1867. Twenty years later Horton gained national attention with the construction of the Dubuque High Bridge, the first of eleven bridges that Horton built over the Mississippi River.

In 1889, George and William Wheelock merged their Kansas City Bridge and Iron Company with Horton's business to create the Chicago Bridge & Iron Company (CB&I). Horton purchased property bordered by two railroad lines in Washington Heights, then south of Chicago, opened the company's first fabricating plant, and began the process of building a sales network. George King, nephew to Zenas King of the King Iron Bridge and Manufacturing Company of Cleveland, integrated the George E. King Bridge Company of Des Moines, Iowa, with CB&I in 1890, giving the new and enlarged company a significant presence in the states between the Mississippi and the Rockies. By the early 1890s, CB&I had established an office in the Builder's Exchange in Indianapolis with Albert Michie as agent.

In all likelihood it was Michie who clinched a deal for the Lake Ditch plate-girder span with a rail company for a central Indiana crossing. The bridge company's historians have reported that CB&I took "contracts for a large number of railroad girder bridges" during the depression of the 1890s because they were generally larger and heavier than highway spans, and because rail clients were more concerned with the performance of the contractor than bottom-line costs, the preoccupation of many public bodies such as county boards.

The design of the Lake Ditch Bridge speaks to a carrying-capacity suitable for train weights and speed rather than for wagon traffic. The width and the floor system suited a single-track railway far better than a Morgan County roadway at the time. None of the extant plans of plate girder bridges which Morgan County engineers drew up (mostly later) for other roadway crossings proposed girders as heavy for similar span lengths. Furthermore, all specified a wider deck and roadway, and all had floor beams spaced much closer together (typically about four feet apart).

Unfortunately, the county records do not divulge information about the placement of the CB&I-built plate girder bridge. We can only surmise, based on its structure, that it was originally a railway bridge. Local lore agrees. Robert Gregory, a longtime Monroe Township resident and county councilman during the late 1960s, says the bridge has for years been referred to as the

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“The Old Railroad Bridge.” His colleague on the county council, H. Eugene Marsh, who has lived just south of the bridge for 78 years, believes the bridge was once an interurban bridge. Exactly from where and when it was relocated is unknown.

The Board of Morgan County Commissioners seeks National Register status for Lake Ditch Bridge on the basis of its significance to American bridge engineering and because it is a rare surviving type of plate girder bridge.

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Foster, Josephine. "The dredging of Lake Ditch in 1904-05." *The Reporter*, 7 November 1998.

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Hadley, Gordon. Personal interview with Joanne Raetz Stuttgen, 9 October 2000.

Lumpkin, Claude. Personal interview with Joanne Raetz Stuttgen, 11 October 2000.

Mann Ditch. Drawing. Office of Surveyor. Morgan County Courthouse Annex, Martinsville, IN.

Marsh, H. Eugene. Personal interview with Joanne Raetz Stuttgen, 10 October 2000.

Monroe Township, Morgan County, IN. Plat map. Unknown, 1915.

Monroe Township, Morgan County, IN. Plat map. Unknown, 1922.

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VERBAL PROPERTY DESCRIPTION

Intersection of Lake Ditch and Lake Ditch Road in Section 9 Twp 13N R1W. Approximately 1/3 mile south of the intersection of Lake Ditch Road and SR 42.

BOUNDARY JUSTIFICATION

This is the historic and current boundary of the property.

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Additional Documentation Page 10 Lake Ditch Bridge, Morgan County, IN

PHOTOGRAPHS

All photographs were taken by Joanne Raetz Stuttgen on April 18, 2000. Original negatives and contact prints are on file in the office of Keno Koehl, Morgan County Highway Engineer, 5400 Blue Bluff Road, Martinsville, IN 46151.

1. Camera facing northeast: view of outside of west girder
 Photo 1 of 2

2. Camera facing north: bridge and roadway
 Photo 2 of 2