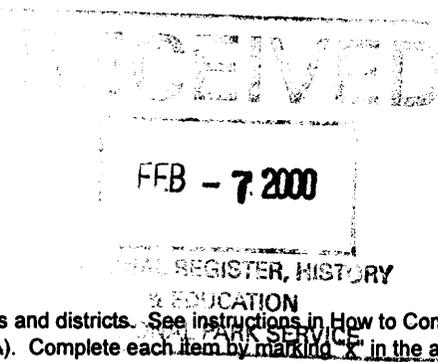


**United States Department of the Interior
National Park Service**

**National Register of Historic Places
Registration Form**



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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 Aqueduct Bridge
other names/site number Coffey Bridge; Clay County Bridge #182 021-568-40088

2. Location

street & number Towpath Rd. (CR 55W) over Birch Creek N/A not for publication
city or town Clay City vicinity
state Indiana code IN county Clay code 021 zip code 47841

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 36CFR 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.)

[Signature]
Signature of certifying official/Title

1/25/00
Date

Indiana Department of Natural Resources
State or 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 or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the property is:

- entered in the National Register. See continuation sheet.
- determined eligible for the National Register See continuation sheet.
- determined not eligible for the National Register
- removed from the National Register
- other, (explain:)

Signature of the Keeper

Date of Action

Edson A. Beall

3/15/00

5. Classification

Ownership of Property
(Check as many boxes as apply)

Category of Property
(Check only one box)

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

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

- building
- district
- site
- structure
- object

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

N/A

0

6. Function or Use

Historic Functions
(Enter categories from instructions)

Current Functions
(Enter categories from instructions)

TRANSPORTATION: Road-Related (vehicular)

VACANT

Not in use

7. Description

Architectural Classification
(Enter categories from instructions)

Materials
(Enter categories from instructions)

OTHER: Pratt through truss

foundation

walls

roof

other

METAL
CONCRETE

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.

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.

Areas of Significance

(Enter categories from instructions)

TRANSPORTATION

Period of Significance

1880-1920

Significant Dates

1880

1917

1920

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

Architect/Builder

Cleveland Bridge and Iron Company

Vincennes Bridge Company

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:

Aqueduct Bridge _____
Name of Property

Clay _____ IN _____
County and State

10. Geographical Data

Acreege of Property Less than 1 acre

UTM References

(Place additional UTM references on a continuation sheet.)

1

1	6	4	8	4	5	4	0	4	3	5	2	8	2	0
Zone		Easting						Northing						

3

Zone		Easting						Northing						

2

Zone		Easting						Northing						

4

Zone		Easting						Northing						

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 John Warner
organization _____ date 6-1-99
street & number 5018 Broadway Street telephone (317) 283-5450
city or town Indianapolis state IN zip code 46205

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 Board of Commissioners, Clay County
street & number 609 East National Ave. telephone 812-448-9001
city or town Brazil state IN zip code 47834

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 Continuation Sheet - Aqueduct Bridge #182

Sections 7, 8, 9, and 10

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Section 7 Description

Now abandoned, Aqueduct Bridge AKA Clay County Bridge #182, consists of two spans, seated on concrete abutments and center pier, and once carried Towpath Road over Birch Creek. One span is a 60', wrought iron, Pratt, pin-connected pony truss with five panels built in 1880 (photo 1); the second span is a 102', steel, Pratt pin-connected through truss with six panels built in 1920 (photo2). The roadway of the through span is 16' wide, the roadway of the pony is slightly narrower.

Photo 3 is a view of the center pier erected in 1917, which acted as the west abutment for the pony truss when it was a single span bridge. The verticals of this span are fabricated rather than rolled I-beams (photos 1 and 3) and are formed by riveting a plate web between two T-shaped bars to gain the advantages of I-beam construction. Die-forged eyebars act as the diagonals in panels 2 and 4; the diagonals and counters of the center panel are a pair of adjustable, cylindrical rods.

The configuration and relationship of the truss vertical, pin plate, connecting pin, lower chord, and floor I-beam is clearly demonstrated in photo 4. A pair of U-shaped bolts holds the floor I-beam in place, against the lower end of the vertical. The eyebar and nut connection on the web of the floor I-beam is part of the floor diagonal bracing system.

After the through span was added in 1920, one end of each span rested on the center pier. Photo 5 shows the one endpost of the pony truss on the right and one endpost of the through truss on the left. The purpose of the set of large nuts on the pony truss was to adjust the tension of the bridge's lower chord; the end threads of the chord are visible. There is no evidence of roller bearing nests under any endposts of either span. They may have been eliminated when the spans were moved/erected in 1917 and 1920. The endposts at each abutment appear to be fixed in place by the concrete step, but the endposts on the pier were not fixed. The expansion ends of both spans likely rested on the pier.

The through span, photo 6, has a pair of laced channels for verticals between panels 1-2 and 5-6 and latticed pairs of channels for the other verticals. Pairs of die-forged eyebars form the diagonals in panels 2 and 4; adjustable cylindrical rods form the diagonal and counter sets in the center panel.

Photo 7 is a view of the west abutment for the through span and the lower chord connection with the endpost.

Some aspects of the evolution of fastening floor I-beams to vertical members are apparent in photos 8 and 9. These floor beams are bolted directly to the pin plates at the lower end of the vertical rather than the U-bolt method used in the pony truss (photo 4). The small I-beams at right angles to floor I-beams (photo 8) are the remnants of the stringers that once supported the deck of the bridge.

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Section 8 Significance

Clay County Bridge # 182, AKA Aqueduct/Coffey Bridge is significant under Criterion A for its association with events that defined the settlement and economic development of Clay County, Indiana. Without the early construction of bridges such as Aqueduct Bridge, farmers and coal producers in Perry and Sugar Ridge Townships would have lacked essential access to the communities and markets that required their products. Aqueduct Bridge is one of only four county metal truss bridges extant and the oldest of the four. Its verticals are rare examples of the bridge builder's transition from the use of built-up members to the sole use of mill-rolled members.

Clay County, Indiana, named for the noted statesman Henry Clay, was originally a part of a land cession from the Delaware, Potawatomie, and Miami Indians in 1809. This elevated portion of the Wabash Valley was heavily forested with burr oak, ash, beech, elm, black walnut, and gum trees when the General William H. Harrison marched through the area in 1812 on his way to Fort Harrison on the Wabash from Vincennes, Indiana, on the lower Wabash River. With Harrison's command was a private soldier by the name of Samuel Rizley, who liked the land around Bowling Green so much he later returned to become one of the county's earliest white settlers.

The topography of the Eel River Basin proved to be one major factor in developing the transportation and industrial history of the county. At the time of settlement, the county contained as many as thirty streams, large and small, and the Eel River that traverses the county from Cass Township in the northeast, meanders through Washington, Sugar Ridge, Harrison, Perry, and Lewis Townships and exits the county in the southeast corner. With a very small change of elevation throughout its length, the river tended to flood at regular intervals and created an obstacle to travel even at its lowest depth in the dry months of the year. The Eel River, along with its major tributary, Birch Creek that drains much of the center of the county, often confounded personal travel and transportation of goods by early settlers. Birch Creek gained early historic significance in the county as a feeder stream to the Wabash and Erie Canal. On a positive note, streams like Jordan Creek, situated in some places in rugged terrain, provided enough fall to power mills, both saw and flouring. Another topographical factor in county development was the presence of a number of sloughs and marshy areas that once drained and controlled made accessible fertile land suitable for farming.

After 1816 and Indiana's statehood was a fact, the General Assembly and other private citizens sought ways to make Indiana a place attractive to settlers and entrepreneurs searching for opportunities. Indiana, like the other states carved from the Northwest Territory, lacked even a rudimentary infrastructure that would spur the influx of settlement. More importantly, an infrastructure to serve as the means to import goods these new citizens would need to live and export excess production that would result from the burgeoning economy. Debate on a solution continued until in 1827, the US Congress offered Indiana a substantial land grant to build a canal, the Wabash and Erie

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Canal, that when completed would connect Lake Erie with the Ohio River via the Wabash River. The canal would impact the history of Indiana and Clay County.

In 1832, construction on the canal began at Fort Wayne, Indiana, and progressed fitfully through the next two decades and reached Evansville, Indiana, in the early 1850s. Part of the canal system was the Cross-cut Canal that was to connect the Wabash and Erie with the never-constructed Central Canal in the vicinity of Worthington in Greene County. The Cross-cut Canal traversed the south west quadrant of Clay County and accounts for the names of well-known county historic assets/ events such as Feeder Dam Bridge, Aqueduct or Towpath Bridge, Towpath Road, and the Reservoir War of 1855. The Wabash and Erie Canal only operated over its full length of 459 miles for approximately a decade, but its short existence belies its importance in the growth of the Wabash River Valley and the State of Indiana.

Water transportation was not the only element of infrastructure developing in the county in the 1850s. The first railroad survey for the Terre Haute & Richmond Railroad was made in 1849. In 1850, construction of the rails began with work commencing from both ends of the line – Indianapolis and Terre Haute – simultaneously. By 1852, daily freight and passenger trains were crossing the county. By 1872, railroad tracks from the Terre Haute & Cincinnati Railroad and the Brazil branch of the Evansville & Indianapolis Railroad also crisscrossed the county.

Starting with privately-financed/built turnpikes and continuing through the latter decades of the 19th century, Clay County made steady progress in improving its ground system of transportation. Private individuals like David Thomas, who started and operated a ferry across the Eel River west of Bowling Green for almost 50 years, provided a service to the casual traveler, the farmer going to market, and the wagons carrying coal from the small mines in the county. Parker's Ferry, named for its owner/operator William B. Parker, crossed the Eel River west of Poland, carried folks and wagons across the stream for approximately 35 years before a bridge was built north (upstream) of the ferry site. As population increased, more acres were farmed, and more products needed to get to market, the necessity for more permanent solutions to transportation problems in the county became more apparent.

The 1870s and 1880s in Clay County witnessed many changes. The extensive coal reserves in the county were identified early in the development of the county. From initial estimates, the coal area was found to encompass roughly 300 square miles in the south half of the county. Its positive economic potential for the county was obvious to many but one source defined a problem that could thwart progress because, "for want of suitable transportation ... only a small portion of it [coal reserves] ... can be made available for mining purposes." While railroads would eventually haul the majority of the coal mined in the county, mines not near a railhead or those earliest mines were dependent on wagon transportation to get their coal to the consumers. For example, the pig iron furnaces around Brazil would have ceased to function without adequate supplies of coal.

The need to transport agricultural products to market also spurred development of a more all-weather infrastructure. Clay County's farmers were hard at work to raise

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more corn and wheat to move to market as grain or as flour processed in some of the local flouring mills. The 790,000 bushels of corn produced in the county in the 1880s nearly doubled to 1,346,160 bushels in the 1890s; a significant achievement but without purpose unless the grain reached market. Wheat, another county-grown grain, increased from 165,600 bushels in the 1880s to 267,590 bushels in the 1890s; another admirable achievement. County officials harkened to the needs of the taxable public and moved forward to resolve transportation issues.

As population grew and production of agricultural items and coal increased in the post Civil War decades, county officials and citizens realized that without good roads and all-weather stream crossings in the region real limits to economic success existed. Around 1868, the county commissioners took a major step in resolving some stream crossing problems when they directed construction of a covered wooden bridge over the Eel River west of Bowling Green. Built by the firm of Rarick & Black the bridge cost \$12,000 to complete. Next, in 1871, the commissioners engaged contractors Ernst Muehler and David Notter, a firm that operated in Clay County during the 1870s and 1880s, to build a bridge across Jordan Creek north of Bowling Green. The firm was associated with the construction of many of the stonework abutments on Clay County bridges of that era. It might be worthy to note that Bowling Green was the county seat until 1877, when the seat of government was moved to the city of Brazil.

Once committed to furnishing permanent all-weather stream crossings, the county commissioners moved rapidly to contract with Muehler & McNamar for the Poland covered wooden bridge over Eel River for \$7,200 (1872), and with William Graber and Levi Fair for the Hooker's Point bridge for \$6,300 (1876). Later destroyed in 1883 by an act of nature, this bridge was replaced by an iron bridge from the Canton Iron Bridge Company, Canton, Ohio, at a cost of \$5,120. Muehler & Notter furnished the stone abutments for \$600.00. Muehler & Notter also built the first Feeder Dam Bridge over the Eel River, a wooden structure (1878) at a cost of \$8,700. The first iron bridges built over Birch Creek were built by Muehler & Notter on the Bowling Green & Brazil Road (1878), the Birch Creek Reservoir bridge near Saline City (1880), and the abutments for the aqueduct bridge (1880).

As population grew and production of agricultural items and coal increased in the post Civil War decades, county officials and citizens realized that without good roads and all-weather stream crossings real limits to economic success existed in the region. Around 1868, the county commissioners appear to have taken a major step in resolving some stream crossing problems when they directed construction of a covered wooden bridge over the Eel River west of Bowling Green. Built by the firm of Rarick & Black the bridge cost \$12,000 to complete. Next, around 1871, the commissioners engaged contractors Ernst Muehler and David Notter, a firm that operated in Clay County during the 1870s and 1880s, to build a bridge across Jordan Creek north of Bowling Green. The firm was associated with the construction of many of the stonework abutments on Clay County bridges of that era. It might be worthy to note that Bowling Green was the county seat until 1877, when the seat of government was moved to the city of Brazil.

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The aqueduct bridge, identified as such because of its proximity to an aqueduct of the defunct Wabash and Erie Canal, started out as a single span pony truss erected in the summer/fall of 1880 to carry Towpath Road over Birch Creek. Little is known of the process, whether the bridge was petitioned or simply a replacement for a previously constructed bridge that brought about this bridge. Two notations in the Clay County *Commissioner's Records* offer the only insight: Muehler & Notter were paid for constructing stone abutments for the aqueduct bridge on 9 June and 27 August, 1880; and the Cleveland Bridge & Iron Company, Cleveland, Ohio, was paid \$1,461.96 for two iron bridges – one over Otter Creek in Dick Johnson Township and one over Birch Creek - in October of the same year. The timing and sequence of events plus the fabrication of the verticals of the bridge all support the age of the structure.

Aqueduct Bridge, which was later identified in records as Coffey Bridge, served as a single span bridge for approximately the next 37 years; no doubt with some repairs and painting, but virtually the same bridge. In October 1917, the county auditor advertised for proposals for repairing the bridge, but none of the bids received in November were "as provided in the plans and specifications therefore adopted by the board." The county commissioners refused all bids. However, the condition of the Coffey Bridge must have been more unsafe than previously believed because two weeks after refusing all bids, the commissioners let an "emergency provision contract" to Charles A. Rhodes of Cory, Indiana, to repair the bridge. Rhodes carried out the repair which entailed: 1) removal of the old stone west abutment; 2) construction of a new concrete pier under the west end of the 60' iron bridge in place there already; and 3) placement of the old abutment stone to form protective wingwalls for the new earthworks (approach to the west end of the bridge). Rhodes completed the work in December 1917, and received approximately \$1600.00 for the job.

In early 1917, a group of petitioners led by William Heck asked the county to undertake "widening, deepening, and straightening" Birch Creek. The next and final chapter in the evolution of Clay County Bridge #182 occurred in 1919. The county auditor advertised for proposals for a new single span, 102' through truss steel bridge to be placed on Towpath Road over Heck Ditch. The specification and plans required the contractor to build two new concrete abutments, retain the concrete center pier to support the west end of the old pony truss and the east end of the new through truss, and use the remaining stone abutment for riprap. A single bidder, Charles A. Rhodes submitted an initial bid of \$7,993.00 for the work. The board did not accept this bid and directed the county engineer to re-estimate the costs. The county engineer's estimate for the work was revised twice until the board accepted the final figure of \$10,000. The record is not clear as to the reasons for these revisions, but eventually the Vincennes Bridge Company, Vincennes, Indiana, received the contract for a sum of \$9,992.00. The bridge was completed in late 1920.

Section 9 Bibliography

Blanchard, Charles, ed. *Counties of Clay and Owen, Indiana, Historical and*

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Biographical Atlas. (Chicago, Ill.: F. A. Battey & Company, 1884).

Brazil Daily Times, 6 July 1926.

Brazil Weekly Democrat, 12 March 1917.

Bridge Papers, Clay County, Indiana. County Auditor's Files, 1897-1926.

Clay County Enterprise, 16 August 1894, 27 September 1894, and 7 February 1895.

Commissioner's Records. Clay County, Indiana, 1880-1926.

Edwards, Llewellyn N. *A Record of the History and Evolution of Early American Bridges.* (Orono, Me.: University Press, 1959).

Hool, George A. and W. S. Kinne, eds. *Steel and Timber Structures.* (New York: McGraw-Hill Book Company, 1942).

Travis, William. *History of Clay County, Indiana. Vols. 1&2.* (Chicago, Ill.: Lewis Publishing Company, 1909).

Section 10 Geographical Data

Verbal Boundary Description

From a point 30 feet east and 10 feet north of the northeast endpost of the bridge; turn south and proceed across Towpath Road to a point 30 feet east and 10 feet south of the southeast endpost of the bridge; turn west and proceed across Birch Creek to a point 30 feet west and 10 feet south of the southwest endpost of the bridge; turn north and proceed across Towpath Road to a point 30 feet west and 10 feet north of the northwest endpost of the bridge; turn east and proceed across Birch Creek to close on the start point.

Boundary Justification

The boundary as described includes the approaches, wingwalls, abutments, center pier, spans, and the immediate environs of the bridge.