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United States Department of the Interior
National Park Service

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 Indiana State Highway Bridge 46-11-1316
other names/site number Bowling Bridge 021-105-30027

2. Location

street & number State Road 46 over Eel River N/A not for publication
city or town Bowling Green vicinity
state Indiana code IN county Clay code 021 zip code 47833

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] 1/25/00
Signature of certifying official/Title Date
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

Name of Property

County and State

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

Table with columns: Contributing, Noncontributing, buildings, sites, structures, objects, Total. Values: 0, 0, 0, 0, 1, 0, 0, 0, 1, 0.

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)

TRANSPORTATION: Road-Related (vehicular)

7. Description

Architectural Classification (Enter categories from instructions)

Materials (Enter categories from instructions)

OTHER: Parker 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.)

- Property is associated with events that have made a significant contribution to the broad patterns of our history.
Property is associated with the lives of persons significant in our past.
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.
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:

- owned by a religious institution or used for religious purposes.
removed from its original location.
a birthplace or grave.
a cemetery.
a reconstructed building, object, or structure.
a commemorative property.
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

1935-1949

Significant Dates

1939

Significant Person

(Complete if Criterion B is marked above)

N/A

Cultural Affiliation

Architect/Builder

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:

10. Geographical DataAcreage of Property Less than 1 acre**UTM References**

(Place additional UTM references on a continuation sheet.)

1	1 6	4 9 8 2 4 0	4 3 5 9 2 1 0
	Zone	Easting	Northing

2			

3			
	Zone	Easting	Northing

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 Byname/title John Warnerorganization _____ date 6-1-99street & number 5018 Broadway Street telephone (317) 283-5450city 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 State of Indiana Dept. of Transportation- Operations Division #W478street & number 402 W. Washington St. telephone 317-232-3150city or town Indianapolis state IN zip code 46204

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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Continuation Sheet – State Bridge # 46-11-1316

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Section 7 Description

State bridge 46-11-1316 is oriented generally east to west and carries State Road 46 over the Eel River at Bowling Green, Indiana. Positioned on standard concrete abutments and a concrete pier, the two 198' spans are riveted, Parker through trusses with a 24' roadway. The vertical curve of 398' is atypical for the standard plan. Each truss has 11- 18' panels bounded by verticals fabricated from a pair of laced 10" channels, except for the second from the end. The upper chord is fabricated from a pair of 15" channels and each member of the chord, except for the central panel's, is differently sloped (not parallel) from the horizontal plane of the lower chord (photo 1). Between the trusses at the upper chord location, substantial latticed strut bracing provides protection against stress induced by sway from either high winds or vehicle passage. Diagonal sets are composed of two pairs of 4"X3.5" angles (L-shaped steel members) reinforced and fastened together with battens in the outermost panels; in the second and third, a pair of 7" X 4" angles; and in the fourth a pair of 3.5" X 3" angles. A pair of 4.5" X 3" angles forms the counter sets in the three most central panels (photos 1 and 2).

The 33" floor I-beams are riveted to the verticals above a lower chord fabricated from two pair of 6"X 4" angles joined by riveted battens and reinforced along the sides with riveted plates (photo2). Heavy I-stringers, eight in all, combined with the floor beams carry the concrete deck. Crossed angles provide lower sway bracing members (photo 2).

Each span of the bridge has a fixed and expansion end; the fixed ends for both spans are anchored on the central pier. The expansion ends rest on the bridge seats on elliptical bearing points attached to the endpost with pins (photo 3). The approaches to the both ends of the bridge have concrete foundations and flared, paneled, and coped concrete rails (photo 4).

Section 8 Significance

State bridge 46-11-1316 is significant under Criterion A for its association with events in the settlement and economic development of Clay County, Indiana. The bridge is an example of an important, revised, third-generation, Indiana State Highway Commission bridge that replaced many of the late 19th century wooden structures inherited from county commissioners in the late 1910s. The bridge retains significant integrity and is structurally noteworthy for the vertical curve of the trusses; the handrails have been replaced. In addition, the bridge, erected on the site of the first major bridge to span the Eel River, is the work of a major Indiana bridge-building firm, the Vincennes Bridge Company. The positioning of the bridge, 500' upstream from the historic crossing site to Bowling Green, reminds us of the importance to commerce of all-weather roads and bridges in the development of the county.

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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 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.

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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.

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 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 real limits to economic success existed in the region. 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. The two-span Burr arch bridge was bypassed in 1934/35 by the new bridge #46-11-1316A. The old wooden bridge was later demolished in the early 1950s. 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

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bridge across Jordan Creek north of Bowling Green. The firm built 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).

In the late 1910s, the Indiana State Highway Commission (ISHC) began to assume responsibility for the construction and maintenance of certain roads and bridges previously administered by county governments. One major program was the replacement of the timber truss bridges for which the state assumed responsibility vice the counties. The state survey of the Bowling Green bridge site was conducted in the spring of 1931. In field notes drafted by the survey chief-of-party, local residents provided historical accounts of past high water levels and other pertinent flood plain information. Local resident Charles Woods remarked that "the present bridge was built in the 1871 and the west abutment was placed on a mat of logs." Another longtime resident, Hayes Miles, commented that high water in 1875, "reached up to the hub board on the Jordan Creek Bridge," which was about one-half mile upstream. These comments were collected to assist in determining average high water levels, approximately 571.1' at the bridge site, and the new bridge deck elevation (elevation 573.08'). Also identified during these testimonies were any special engineering considerations needed to mitigate the effect of flood conditions.

In 1934, the Vincennes Bridge Company of Vincennes, Indiana won the contract to build this two span structure for the sum of \$63,058.13, which was about \$7,000 below the state engineer's estimate. The new bridge was completed in the spring of 1935.

Still active, the bridge and its site are symbols of a number of significant events in the history of Clay County. First, the building of the covered bridge acknowledged the need for overcoming natural barriers to settlement, agricultural growth, and economic development and the role of county commissioners (local authority) in accomplishing this action. Secondly, the present bridge symbolizes its importance in the establishment of all-weather infrastructure and the evolution of the bridge builder's technology. Thirdly, it remains as an example of the ever-decreasing number of steel truss bridges that once dotted the landscape and if not protected in the future, will disappear as have many of the 19th century truss bridges.

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Section 9 Bibliography

Blanchard, Charles, ed. *Counties of Clay and Owen, Indiana, Historical and Biographical Atlas*. (Chicago, Ill.: F. A. Battey & Company, 1884).

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).

Indiana Department of Transportation. *Field Survey Notebooks*. Bridge 42-11-3101, Contract # 1586 -A-B and Bridge 46-11-1316, Contract #684.

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

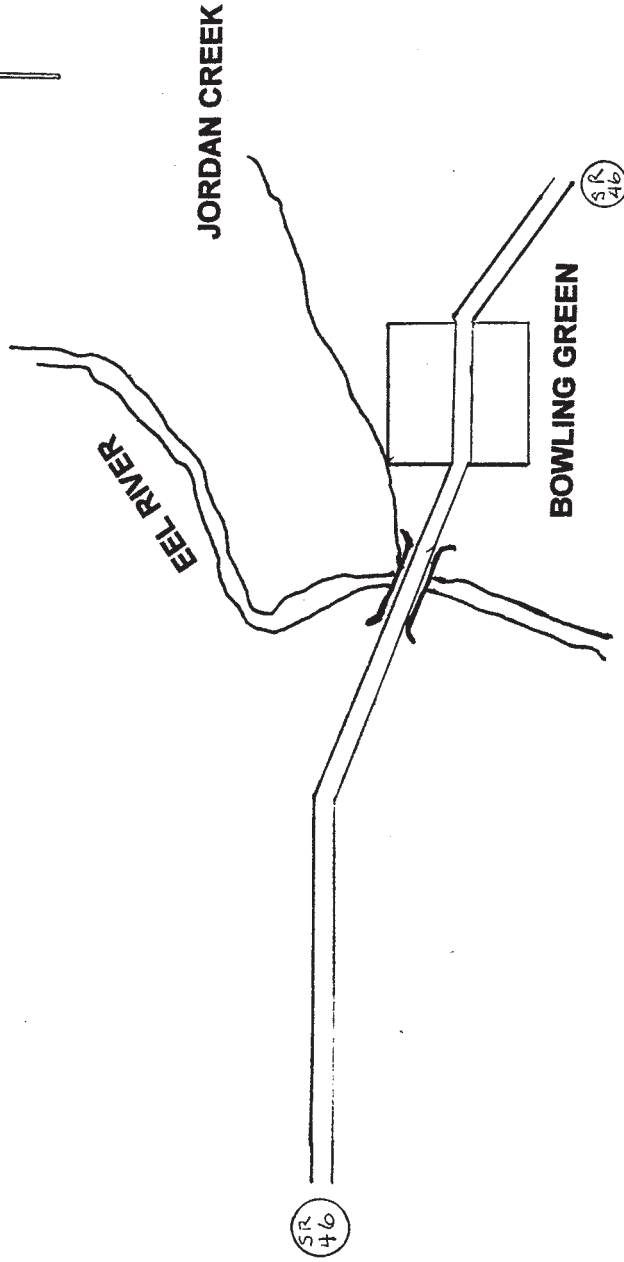
Section 10 Geographical Data

Verbal Boundary Description

From a point 60 feet east and 15 feet north of the northeast endpost of the bridge; proceed south across SR 46 to a point 60 feet east and 15 feet south of the southeast endpost of the bridge; turn west and proceed across the river to a point 105 feet west and 15 feet south of the southwest endpost of the bridge; turn north and proceed across SR 46 to a point 105 feet west and 15 feet north of the northwest endpost of the bridge; turn east and proceed across the river to close on the start point.

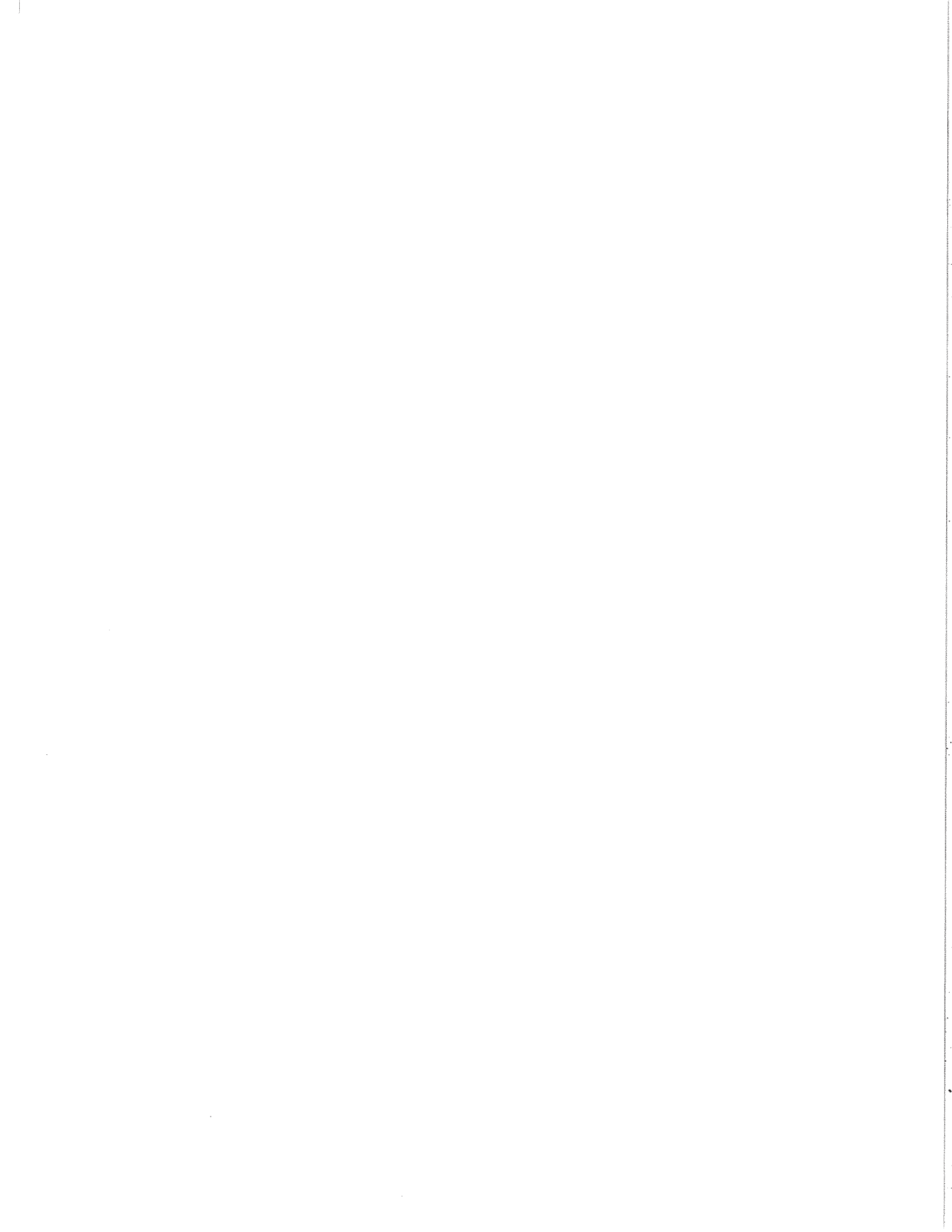
Boundary Justification

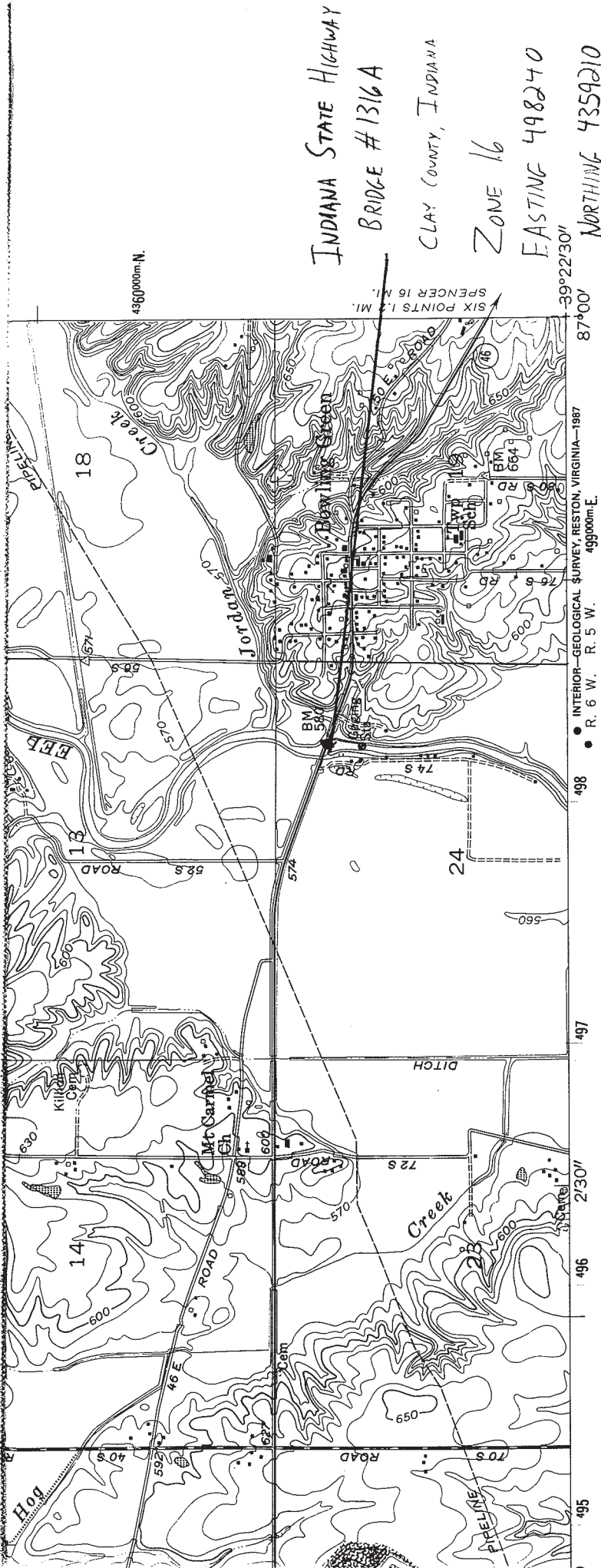
The boundary as described includes the approaches, wingwalls, abutments, piers, and spans of the bridge and its immediate environs.



**BRIDGE 46-11-1316
CLAY COUNTY, INDIANA
NE 1/4, S 24, T 11N, R 5W**

Not to Scale



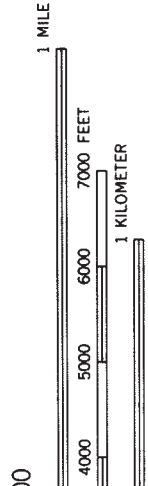


INDIANA STATE HIGHWAY
 BRIDGE #1316A
 CLAY COUNTY, INDIANA
 ZONE 16
 EASTING 498240
 NORTHING 4359210

(PATRICKSBURG)
 3662 IV SW

ROAD CLASSIFICATION

- Heavy-duty Light-duty
- Medium-duty Unimproved dirt
- State Route
- Interstate Route



10 FEET
 DATUM OF 1929

CENTER POINT, IND.
 39087-D1-TF-024

1957
 PHOTO REVISIED 1986
 DMA 3562 I NE - SERIES V851



QUADRANGLE LOCATION

Revisions shown in purple and woodland compiled in cooperation with State of Indiana agencies from aerial photographs taken 1983 and other sources. This information not field checked
 Map edited 1986

MAP ACCURACY STANDARDS
 DIGITAL SURVEY
 ESTON, VIRGINIA 22092
 SOURCES, INDIANAPOLIS, INDIANA 46204
 SYMBOLS IS AVAILABLE ON REQUEST

