

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 National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any 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.

1. Name of Property

Historic name: Meridian Line Road Iron Truss Bridge

Other names/site number: Carroll County Bridge No. 87

Name of related multiple property listing:

N/A

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

2. Location

Street & number: Meridian Line Road over Deer Creek

City or town: Camden State: IN County: Carroll

Not For Publication: ☐

Vicinity: ☒

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this x 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 x meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___ national ___ statewide x local

Applicable National Register Criteria:

A ___ B x C ___ D

Signature of certifying official/Title:

Date

Indiana DNR-Division of Historic Preservation and Archaeology

State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of commenting official:

Date

Title :

State or Federal agency/bureau
or Tribal Government

Meridian Line Road Iron Truss Bridge
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4. National Park Service Certification

I hereby certify that this property is:

- ☐ entered in the National Register
☐ determined eligible for the National Register
☐ determined not eligible for the National Register
☐ removed from the National Register
☐ other (explain:) _____

Signature of the Keeper

Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

- Private: ☐
Public – Local ☒
Public – State ☐
Public – Federal ☐

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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	
<u>0</u>	<u>0</u>	buildings
<u>0</u>	<u>0</u>	sites
<u>1</u>	<u>0</u>	structures
<u>0</u>	<u>0</u>	objects
<u>1</u>	<u>0</u>	Total

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

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7. Description

Architectural Classification

(Enter categories from instructions.)

Iron Warren Pony Truss

Materials: (enter categories from instructions.)

foundation: CONCRETE

walls: STEEL

roof: N/A

other:

Narrative Description

(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with a **summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

Summary Paragraph

The Meridian Line Road Iron Truss Bridge was first erected in 1932 on State Road 22 west of Greentown, Howard County, Indiana by the Indiana State Highway Commission. The 116' long Warren Pony Truss was disassembled and erected by Carroll County Commissioners in 1970 to carry Meridian Line Road over Deer Creek southeast of Camden.

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Narrative Description

The Meridian Line Road Iron Truss Bridge is an example of a Warren Pony Truss bridge originally placed into service by the Indiana State Highway Commission in 1932. The bridge was relocated from State Road 22 west of Greentown to Carroll County when the Indiana Highway Department replaced the structure. The bridge was reopened for traffic in 1970.

The bridge is located approximately one-half mile south of State Road 218/Main Street in Camden on Meridian Line Road. The span rises over Deer Creek, which features wooded banks, approximately fifteen feet below. The truss is set on concrete abutments with wing walls that date to the 1970 installation (photo 04). Stone riprap is along the bank under the bridge and modern safety guardrails and reflective signs extend from either approach to the bridge.

The 116' long bridge is twenty-four feet wide with a concrete deck covered with asphalt (photo 01). This was an expansion from its original deck width of sixteen feet when it was located on State Road 22. The truss is approximately ten feet tall with its main members forming a trapezoidal frame (canted at the ends of the bridge) with smaller structural members composing triangular-shaped webbing within the trapezoid (photos 04, 07). These are the alternating compression and tension diagonal members. Vertical steel members with outer braces are between each of the triangular compositions to stiffen the overall truss. These function together to create a typical Warren Truss design. The members are fastened together with steel plates and rivets (photo 09). A lattice railing is on each side of the deck and is fastened to the truss (photos 05-06). The steel is stamped with ILLINOIS S USA on certain main truss members (photo 08). The structure underwent a restoration campaign and was repainted green in 2007.

The understructure of the bridge deck is composed of main east/west girders that carry north/south steel I-beams that in turn carry a corrugated steel deck. See photo in continuation page 19. The steel deck carries a concrete deck, which is part of the concrete curbing seen on either side of the paved road surface over the concrete deck and bridge. Steel stiffening members are between the girders. All these materials are from the 1969-1970 relocation and installation on Meridian Road given the widening of the bridge deck that was required. Those changes to the bridge are now 55 years old. In the 2007 rehabilitation, the steel members of the bridge were blasted to remove rust, members retightened as necessary, and the bridge was painted green. It does not appear that any new steel members were introduced. It also appears that a skim coat of concrete parge was put over the abutments. See other historic photos in the continuation pages.

INDOT's Mead & Hunt Survey of Bridges deemed this bridge had already been determined eligible for the National Register of Historic Places at its current location. That determination had been made with the SHPO about 1998. See continuation page 19.

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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.)

- ☐ 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 old or achieving significance within the past 50 years

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Areas of Significance

(Enter categories from instructions.)

ENGINEERING

Period of Significance

1932

Significant Dates

1969-1970

Significant Person (last name, first name)

(Complete only if Criterion B is marked above.)

Cultural Affiliation

Architect/Builder (last name, first name)

Indiana Department of Transportation

Hornbeck-Sickler

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Period of Significance (justification)

The period of significance is relegated to 1932, the year the bridge was fabricated and put into service by the Indiana Highway Commission. Because the bridge was relocated and erected in Carroll County between 1969-1970, the dates, while they fall outside the period of significance, are noted as important in the history of the structure.

Criteria Considerations (explanation, if necessary)

The bridge is an example of a long-span Warren Pony Truss fabricated of steel and put into service by the Indiana State Highway Commission in 1932, but was relocated to Carroll County in 1969, therefore criteria consideration B applies. The structure retains all of its important features identifying it as a Warren Pony Truss and is an example of a long single span of the truss type, at 116 feet.

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

The Meridian Line Road Iron Truss Bridge is eligible for listing on the National Register of Historic Places under criterion C/engineering. The bridge is a long, single-span example of a Warren Pony Truss fabricated in steel by the Indiana State Highway Commission in 1932. It retains all of its important features that qualify it as an example of the truss type with little modification except for the 1970 concrete abutments on which it sits.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

ENGINEERING

The Meridian Line Road Iron Truss Bridge is an example of a Warren Pony Truss with vertical stiffening members to carry the bridge deck and top chord which permit the absence of overhead members between the sides. This gives the structure the categorical inclusion of a pony truss since the sides are lower than other examples of the Warren Truss which require overhead members (photo 02). The structure features triangular, or A-shaped compositions of webbing that form alternating, diagonal compression and tension. The vertical members between the triangular compositions stiffen the overall frame and are braced on the outer wall of the truss.

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The bridge was fabricated in 1932 for a span of 116 feet and width of sixteen feet, though it was modified upon its relocation to a width of twenty-four feet. The trusses are approximately ten feet tall and carry a simple lattice railing fastened to the main structure (photo 06). The various members are riveted together, typically through steel plates where diagonal members are present (photo 08).

The Warren Truss was an invention of James Warren and Willoughby Monzani who patented the design in 1848. While the truss continues to bear Warren's name, it has evolved from the original patent but retains the common diagonal compression/tension members that form triangular-shaped webbing, and the common trapezoidal-shaped frame which features canted ends which again are part of the overall composition of diagonal compression/tension. These, along with vertical members, are present in the Meridian Line Road Bridge.

The Warren patent provided for four modifications to the truss that could allow its use for both aqueduct and roof design. It was engineered to carry two decks rather than just one for which it is more commonly used. The four modifications from the patent are as follow:

- 1) The bridge is built with cast iron side bands, rods, or plates, inclined towards each other, and combined so as to form a series of Vandykes [V shapes]. They are bolted at top to horizontal compression rods, and at bottom to horizontal tension rods, and carry a roadway at top or at bottom, or at both.
- 2) Or the bridge may be built of cast iron side angular frames (placed with the apices [point] downwards), which have their bases bolted together, end to end, and their apices bolted to horizontal rods.
- 3) Or, instead of the preceding modes of longitudinal construction, hollow cast-iron transverse frames may be employed, which are inclined, and bolted together at top, and are similarly attached at bottom to horizontal rods, bars, or plates.
- 4) Or wrought iron tie rods may be bolted at top to compression rods, and at bottom held together by the side of wooden girders, and the structure strengthened by means of stay rods. The angles of the plates are regulated by longitudinal screw rods and nuts.

In the patent, Warren claimed the truss was unique in its design due to, and capable of, the following:

- 1) The mode of constructing bridges, aqueducts, or roofing with iron rods, bars, or plates, inclined towards each other, and connected together at top by compression band, and at bottom by tension band, so as to carry a roadway at top or bottom, or at both.
- 2) The mode of constructing bridges with cast iron angular frames bolted together at their bases, and having their apices bolted to horizontal compression rods.

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3) The mode of constructing bridges with transverse hollow cast iron frames inclined towards each other, and bolted together at top and at bottom to horizontal plates.

4) The mode of constructing bridges with wrought iron rods inclined towards each other, and attached at top and bottom, as described.

One of the earliest uses of the Warren Truss, at least in similar design to the patent, was constructed by Joseph Cubitt in 1852 for a span of 240 feet known as the Newark (Nottinghamshire, England) Dyke Railroad Bridge for the Great Northern Railroad. The truss featured A-frame members of compression/tension Cubitt called equilateral triangles, 18'-6" in length, connected at the top and bottom by additional steel chords.¹

The Warren Truss, particularly its lower pony truss version, became very popular for bridge construction in the United States. While many Warren Trusses were used for long spans, the pony truss version became commonly used for shorter spans on county roads and city streets, as well as a common application by railroads for simple spans. However, the Meridian Line Road Bridge is the only example of a Warren Pony Truss in Carroll County. Most of the county's extant iron bridges fall into other categories such as the Parker and Pratt Through-Truss, Whipple Truss (1890), and an example of a Lattice Pony Truss (c. 1910). The examples of Pratt Trusses date to 1898, 1901, and 1913. The examples of Parker Through Trusses are contemporaries of the Meridian Line Road Bridge, constructed in 1931 and 1947, the latter of which is also a state highway bridge located over Wildcat Creek on State Road 75.

Developmental History/Additional historic context information

The Indiana State Highway Commission was responsible for initially putting the Meridian Line Road Bridge into service. The structure was erected over Wildcat Creek in 1932 west of Greentown on State Road 22. State Road 22, also part of State Road 35, was one of the original routes designated as part of Indiana's highway network in 1919. The route connected Kokomo, in Howard County, to Marion, in Grant County, and points further east on a route solely designated Highway 35 in 1919. By 1932, the route was substantially improved between Kokomo, through Greentown, to Hartford City and carried the highway designation of Route 22. The same route was being further improved in 1932 from Kokomo west to Burlington (Carroll County). This was likely the route the Meridian Line Road structure took on its way from near Greentown to Flora (Carroll County) when it was removed by the state highway in 1969.

The Carroll County Board of Commissioners purchased and relocated the State Road 22 bridge for use across Deer Creek on Meridian Line Road south of Camden in April 1969. Helvie Movers of Flora were contracted for moving the structure which came across State Road 18 through Flora and turned north on Division Street.² Bids for constructing abutments and erection of the structure were not solicited until late in 1969. The commissioners awarded the contract to

¹ Griggs, Frank, Jr. The Warren Truss: <https://www.structuremag.org/?p=8715>

² "Here Come da' Bridge" *Hoosier Democrat* (Flora) 17 April 1969. Page 1

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Horbeck-Slicker of Monticello who presented a bid of \$52,480 in December 1969 with work to begin in January 1970, weather permitting.³ The bridge was reassembled, with some modifications, during the first six months of 1970 and officially opened for traffic on June 29, 1970.⁴ It included new concrete abutments and a widened concrete deck. The bridge underwent restoration in 2007.

The Carroll County Commissioners maintained access to Camden's east side and State Road 218 from the south at this important crossing of Deer Creek with installation of the Meridian Line Road Bridge. Camden and Flora, to the south, were connected by an improved county road for most of the first half of the 20th century. It was not until 1950 that the same route would receive more substantial improvements and be adopted into the state highway system under the route designation of Highway 75. Meridian Line Road, for the most part, parallels Highway 75 to the east but connects to Highway 218 east of the Logansport, Crawfordsville, & Southwestern Railroad.

Camden was platted in 1836 on sixteen acres once reserved for school purposes in Jackson Township, but remained small until the railroad was routed along the east edge of town in 1872. With this, the small village began to grow more substantially. By the early 1910s, Main Street extended directly east and crossed the railroad and Paint Creek before splitting at a T intersection. The road that extended south from the T was Meridian Line Road which extends south today to East 100 North before a jog allows one to continue south into Flora on County Road North 25 East. This becomes Division Street in Flora. This alternate route, Highway 75 being the primary route between Flora and Camden, was no doubt convenient for residents of both communities through much of the 20th century.

³ "Bridge Bid Accepted" *Hoosier Democrat* (Flora) 25 Dec 1969. Page 1

⁴ "Bridge Opened Monday" *Hoosier Democrat* (Flora) 2 July 1970. Page 1

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9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form.)

Atlas & Plat Book of Carroll County. Kenyon Company, Des Moines: 1919.

“Bridge Bid Accepted” *Hoosier Democrat* (Flora) 25 Dec 1969. Page 1

“Bridge Opened Monday” *Hoosier Democrat* (Flora) 2 July 1970. Page 1

Carroll County, Indiana Historic Sites and Structure Inventory. Indiana Landmarks, 2011.

Griggs, Frank, Jr. The Warren Truss: <https://www.structuremag.org/?p=8715>. Accessed April 21, 2023

“Here Come da’ Bridge” *Hoosier Democrat* (Flora) 17 April 1969. Page 1

Indiana State Highway Maps: 1919, 1926, 1932, 1940, 1945, 1950.

Maxwell, Bonnie. Original research on Carroll County bridges.

Warren Truss Patent: *Construction of Bridges and Aqueducts* issued on August 15, 1848 with Patent #12,242.

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 # _____
- ☐ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- ☐ State Historic Preservation Office
- ☐ Other State agency
- ☐ Federal agency
- ☐ Local government

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☐ University

☐ Other

Name of repository: _____

Historic Resources Survey Number (if assigned): 015-207-40031

10. Geographical Data

Acreeage of Property Less than one acre

Use the UTM system

UTM References

Datum (indicated on USGS map):

☐ NAD 1927 or ☒ NAD 1983

1. Zone: 16	Easting: 540173	Northing: 4494584
2. Zone:	Easting:	Northing:
3. Zone:	Easting:	Northing:
4. Zone:	Easting :	Northing:

Verbal Boundary Description (Describe the boundaries of the property.)

The east and west boundaries are lines parallel to and 10 feet east and west of the sides of the bridge and extend along the right-of-way for Meridian Road which is approximately 40 feet wide. Similarly, the north and south boundaries are lines parallel to and 10 feet north and south of the edge of the approaches. Nothing in this boundary description should be construed as intent to include adjacent private property.

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Boundary Justification (Explain why the boundaries were selected.)

The boundary described includes the outer extents of the iron bridge, its approaches, all parts of the bridge, and the portion of the Meridian Road alignment that features approaches to the bridge.

11. Form Prepared By

name/title: Kurt West Garner
organization: Heartland Heritage, Inc.
street & number: 12954 6th Road
city or town: Plymouth state: IN zip code: 46563
e-mail: kwgarner@kwgarner.com
telephone: 574-780-1423
date: May 1, 2023

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A USGS map or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)
-

Photographs

Submit clear and descriptive photographs. The size of each image must be 3000x2000 at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

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Photo Log

Name of Property: Meridian Line Road Iron Truss Bridge

City or Vicinity: Camden

County: Carroll State: Indiana

Photographer: Kurt West Garner

Date Photographed: August 11, 2020

Description of Photograph(s) and number, include description of view indicating direction of camera: Looking northwest from south end of bridge

1 of 9.

Description of Photograph(s) and number, include description of view indicating direction of camera: Looking north from south end of bridge

2 of 9.

Description of Photograph(s) and number, include description of view indicating direction of camera: Looking northeast from south end of bridge

3 of 9.

Description of Photograph(s) and number, include description of view indicating direction of camera: Looking northeast/down along west edge of bridge to north abutment

4 of 9.

Description of Photograph(s) and number, include description of view indicating direction of camera: Looking southwest from north end of bridge

5 of 9.

Description of Photograph(s) and number, include description of view indicating direction of camera: Looking southeast from north end of bridge

6 of 9.

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Description of Photograph(s) and number, include description of view indicating direction of camera: Looking down along west edge of bridge from northwest corner

7 of 9.

Description of Photograph(s) and number, include description of view indicating direction of camera: Looking at fabrication welding/stamp detail

8 of 9.

Description of Photograph(s) and number, include description of view indicating direction of camera: Looking at plate and rivet detail

9 of 9.

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.460 et seq.).

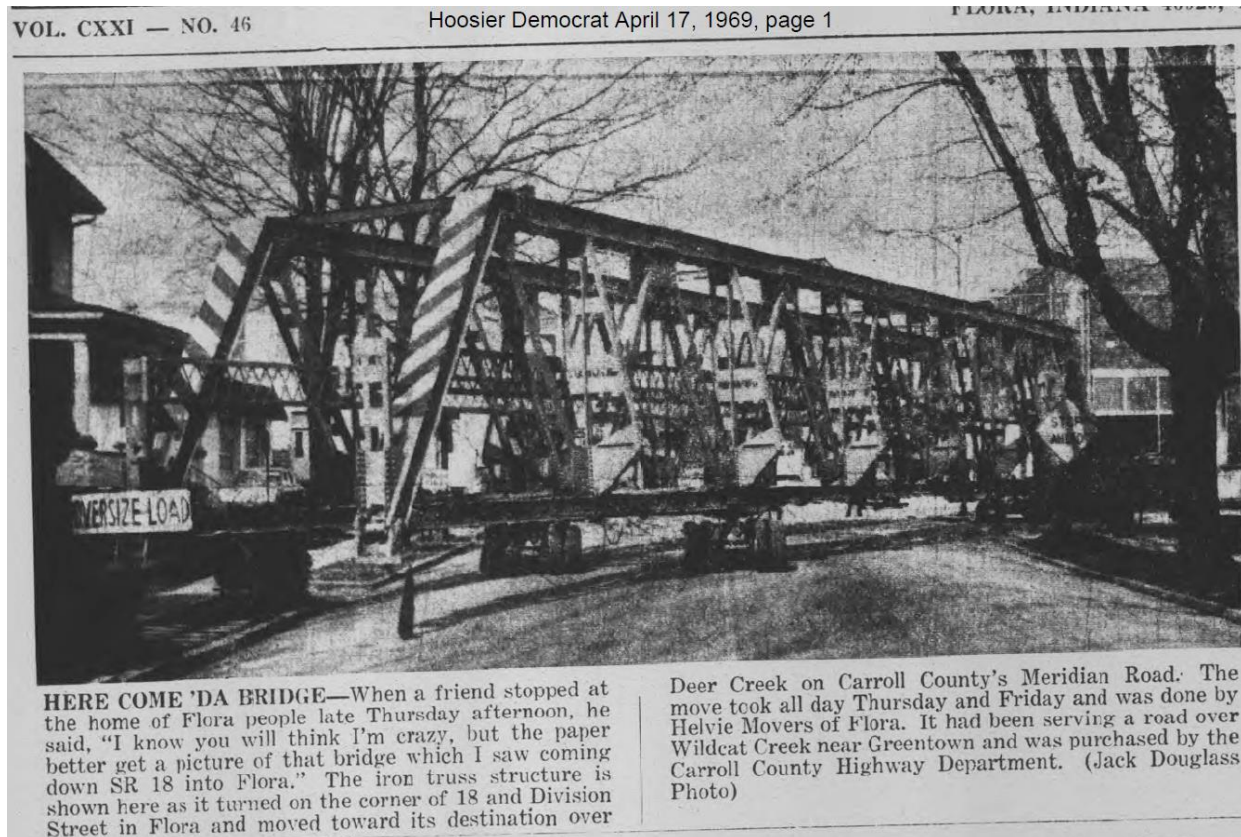
Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.

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Meridian Line Road Iron Truss Bridge, Carroll County, IN



Bridge trusses being moved intact in 1969 through Flora (Carroll County, IN).

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Bridge in its new location near Camden (Carroll County, IN) in 1970.

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Meridian Line Road Iron Truss Bridge, Carroll County, IN



Underside of bridge, looking north. March 6, 2025

Section 1. Listing of Historic Bridges

Carroll	Bridge No. 00087	NBI No. 0800064	Previously determined eligible
Feature Carried: MERIDIAN ROAD		Feature Crossed: DEER CREEK	
Latitude (degrees/minutes) 40 / 36.0		Longitude (degrees/minutes) 086 / 31.4	

This bridge has been previously listed or determined eligible for listing in the National Register or is a contributing resource within a historic district listed in the National Register. Therefore, this bridge was not reevaluated as part of this inventory project.

Meridian Line Road Iron Truss Bridge classification in INDOT Mead & Hunt Survey

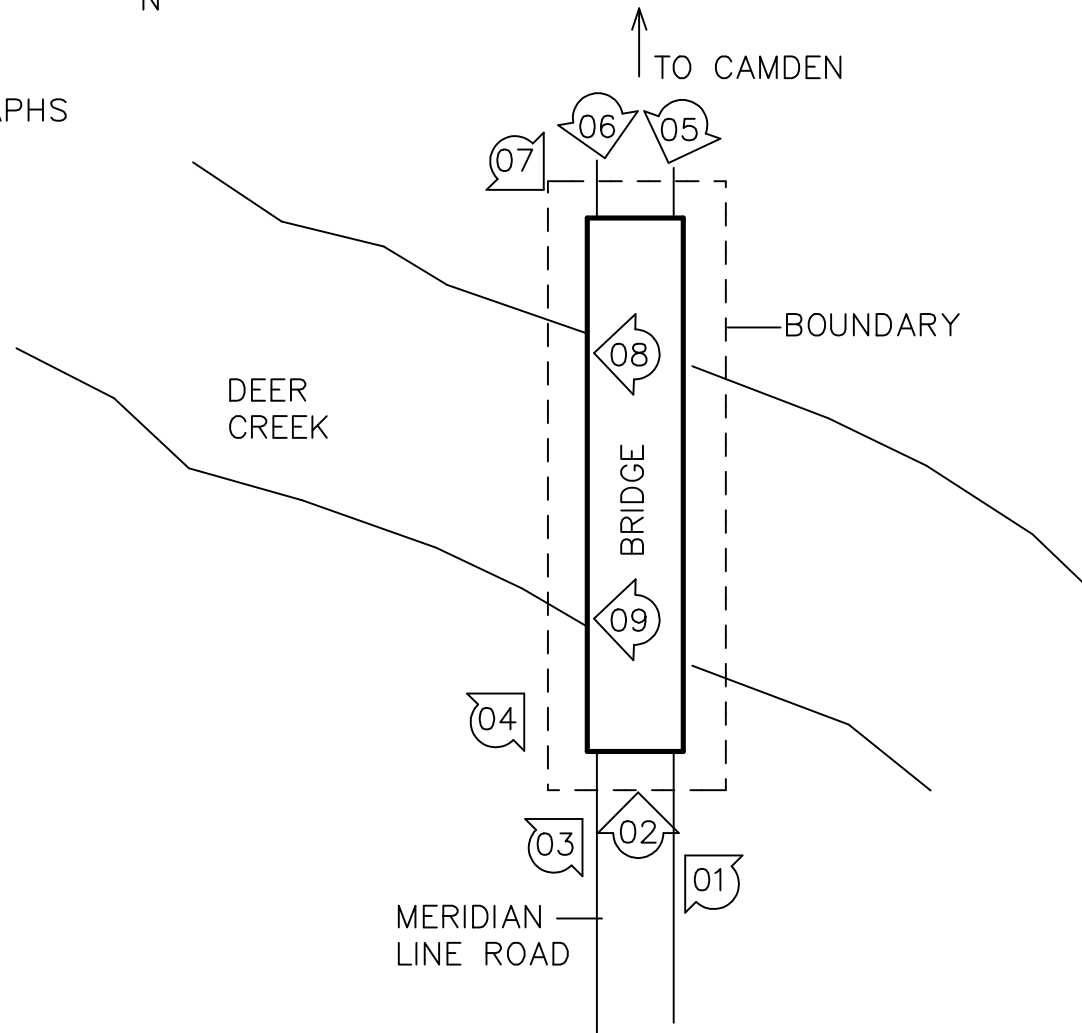
MERIDIAN LINE ROAD IRON TRUSS BRIDGE
NATIONAL REGISTER OF
HISTORIC PLACES

CARROLL COUNTY, IN

SKETCH MAP



01 = PHOTOGRAPHS





MERIDIAN LINE ROAD IRON TRUSS BRIDGE
 NATIONAL REGISTER OF HISTORIC PLACES
 CARROLL COUNTY, IN

NAD 83 UTM
 16 540173 4494584



IN_CarrollCounty_MeridianLineRoadIronTrussBridge_0001



IN_CarrollCounty_MeridianLineRoadIronTrussBridge_0002



IN_CarrollCounty_MeridianLineRoadIronTrussBridge_0003



IN_CarrollCounty_MeridianLineRoadIronTrussBridge_0004



IN_CarrollCounty_MeridianLineRoadIronTrussBridge_0005



IN_CarrollCounty_MeridianLineRoadIronTrussBridge_0006



IN_CarrollCounty_MeridianLineRoadIronTrussBridge_0007



IN_CarrollCounty_MeridianLineRoadIronTrussBridge_0008



IN_CarrollCounty_MeridianLineRoadIronTrussBridge_0009