NPS Form 10-900 OMB No. 1024-0018

United States Department of the Interior
National Park Service

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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.

RECEIVED 2280
APR 22 2016
Nat. Register of Historic Places
National Park Service

1. Name of Property

Historic name: Shields' Mill Covered Bridge
Other names/site number: Shieldstown Covered Bridge
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: Shields Road –County Road 200 N, 1 mile north of U.S. 50, spanning the East Fork of White River
City or town: Brownstown State: IN County: Jackson
Not For Publication: [ ] Vicinity: [X]

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** X **statewide** X **local**

Applicable National Register Criteria:

X **A** ___**B** X **C** ___**D**

4.21.2016

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**

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:) _____

for Edson H. Beall 6.7.16

Signature of the Keeper Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

Private:	☐
Public – Local	x
Public – State	☐
Public – Federal	☐

Category of Property

(Check only **one** box.)

Building(s)	☐
District	☐
Site	☐
Structure	x
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

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: pedestrian-related
RECREATION & CULTURE: outdoor recreation

7. Description

Architectural Classification
(Enter categories from instructions.)
_OTHER: _multiple kingpost Burr Arch Truss_____

Materials: (enter categories from instructions.)

foundation:	STONE: limestone
walls:	WOOD: weatherboard
roof:	METAL: steel
other:	OTHER: wrought iron

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

Shields' Mill Covered Bridge, built 1876, is a two-span wooden bridge resting on cut limestone pier and abutments. J.J. Daniels utilized a variant of Burr Arch Truss system, reinforced with kingposts and minimal amount of metal fittings, to create the bridge. Despite 140 years of exposure to the elements, and several repair campaigns, Shields' Mill Covered Bridge retains a clear majority of its wooden truss members, design, and workmanship. The bridge was named for the family-owned mill in the immediately adjacent village of Shields.

Narrative Description

This nineteenth century two span covered bridge is a three hundred forty five feet six inches (345'6") multiple kingpost double Burr Arch through truss (photo # 2). Eight (8) wooden symmetrical arches rise from cut stone abutments and single pier six (6) feet above the high water mark across the East Fork of White River in Jackson County, Indiana 0.9 mile north of the junction of 200 N and U. S. 50 in SE1/4, NE 1/4, Section 31, R5E, T6N.

The historic gabled roofline length is three hundred forty five feet and six inches (345'6") and has the rounded portal end form (photo #1) consistent with all J. J. Daniels' bridge designs. The overhang is fourteen feet ten inches (14'l0") on the south end of the bridge and is fourteen feet (14') on the north end of the bridge. The portal arch and portal entrances on the north and south span are not original. The portal entrance wall sits on the cut capstone atop the right angle abutment back wall. The height of the bridge is fourteen feet three and one quarter inches (l4'3¼") in clear not including the two inch (2") oak vehicular runner that is present across the bridge. The roadway width of this bridge is fourteen feet (14') between arch bolts at mid-span. Post to post the width of the bridge is sixteen feet eleven and one-half inches (16' 11½") with a fifteen (l5') clear roadway according to Janssen & Spaans Engineering, Columbus, Indiana-preliminary rehabilitation design. The deck length of this bridge is three hundred thirty-one feet five inches plus/or minus two inches (331' 5"±2"). The decking floor is laid diagonally and is not original. The overall roof length is three hundred fifty three feet (353') with each span measuring one hundred seventy six feet and six inches (l76'6"). Some metal roofing has loosened on the western side (downstream) of the roof. Wind removed the upstream portal entrance siding in March 2013.

The 1876 commissioners' names were block lettered on the right portal side of the Shields' Mill Bridge. J. J. Daniels-Contractor/ Builder, William H. Hamilton-Auditor, and John J. Horstman-treasurer were block lettered on the left portal side of the south side of the Shields' Mill Bridge[1] centered below the roof apex. On the south portal of the Shields' Mill Bridge was the date 1876. Below the date was the 5-ton weight limit. Immediately, above the portal entrance in block letters were the words "CROSS THIS BRIDGE AT A WALK."[2] Both portal ends carried the above information according to Bryan E. Ketcham in l948. Around l925, the highway superintendent added a 5-Ton load limit next to the bridge date. Eventually, a metal sign indicating "load limit of five tons" (5 T) was placed on the right portal side at vehicle height. The portal ends were always painted with three (3) coats of white paint. The painted one inch thick by twelve inch wide board siding is red, consistent with any of Daniels' bridge contracts, which specified iron

[1] Hohenberger Photograph Collection, Trustees of Indiana University. Box 8, Item :11 Date 8/7/1946.
[2] Reed, Robert, Images of America Indiana's Covered Bridges, South Carolina: Charleston, Arcadia Publishing, 2004. p. 50.

red oxide. Battens one by three inch wide covers the board joints the length of the bridge except the west side. Battens were not replaced in l988. The portal face and bridge siding is vertically placed on the bridge frame.

The wooden bridge superstructure contains eight symmetrical poplar arches resting on metal plates placed on skewback stone at the abutment stem and at the common pier below the lower chords and make a perfect concentric arch appropriate to the span length (photos #9 and #10). The arch timbers are double bolted with washers at each kingpost as the arches pass across the kingposts as well as when the arch timbers butt against each other. Each arch timber passes across two truss panels. The arches do not attach to the upper chord; however, the arch timbers are bolted through the lower chord. Four original arch timbers[3] were replaced with corresponding metal components in l938. According to former county auditor, Richard M. Isaacs (deceased), an arch timber was replaced in the late nineteen sixties (1960's) (Undocumented). As with the earlier 1876 West Union Covered Bridge[4] structure, the Shields' Mill Bridge guardrails were placed behind the inner arch timbers. The downstream arch timber at the pier seat on the north span of this bridge is in an advanced state of deterioration. A beetle infestation has drawn the pileated woodpecker or flicker to seek the beetle larva in the north span of the timber arches, damaging these timbers. Canadian geese as well as raccoons have utilized the lower chords depositing their body wastes upon the lower chord that contributes to further wood decay at the lower kingpost joints, counterbraces, as well as the lower chords.

The Shields' bridge is a sixteen (16) panel multiple kingpost through truss anchored at the abutments and single pier with a nine foot (9') one and one-quarter inch (1¼") wrought iron rod threaded at the top and the bottom to receive washer and square nut. A one foot by one foot by three inch (1' x1' x 3") wooden oak block sits atop the double parallel lower chord members through which the wrought iron anchor rod passes through. The iron rod is attached to this block with washer and nut. Each iron rod passes through an eyebolt anchored three feet (3') in the abutment stem below each truss and at the pier not less than seven feet below the bridge seat. (Photo #14) The north span anchor rods are missing at the center pier. The lower oak chords are connected over the pier. The arch timber encompasses the lower chord as well as the kingposts and braces. Each arch timber is bolted through the double lower chords as they pass on the outside of the lower chords and connect to each other at the chord. The double lower chord timbers connect with two iron bolts, which pass through: each abutting timber, each side of the wooden oak double fish claw joint, and the single metal strip that completes the connection between the lower oak chord members. (Photo #15) The metal strip (plate) is alternately placed at the joints between the inside and outside chord members the length of the bridge. Generally, the lower chord timbers are forty feet (40').

An iron rod passes through the interior iron shoe, upper chord, and each kingpost tenon. It is two and one-half inches by six inches by nine inches (2½ x 6"x 9"). The wooden tenon fits into the upper chord mortise four inches by twelve inches by six inches(4" x 12" x6") deep at the proper distance. Two wooden dowel pins one and one-half inches (1½") in diameter, the width of the top chord plus the kingpost tenon width are on either side of the iron rod and hold the tenon in the upper chord. An interior iron shoe receives the upper and lower wooden lateral "x"-bracing. Each iron shoe should weigh fifteen (l5) pounds (photo #8 shows the iron shoes).

[3] Commissioners' Record, Book 24, February 2, 1925, p. 476.
[4] HAER documentation IN-105. West Union Covered Bridge-Parke County, Indiana.

The top chord timbers are butted end to end the length of the span, ending with a truss panel and a half present in each span on each side of the pier. The top chord timbers do not connect at the pier. Each acts independently.

The original bridge decking was replaced in 1892. A similar single span Burr Arch Bridge at Hanging Rock (Rockport), designed by Daniels, illustrates a floor laid perpendicular and loose over nine (9) longitudinal stringers atop the floor beams, which cross lower chords. Janssen & Spaans' preliminary design for rehabilitation illustrates seven (7) longitudinal stringers for the Shields' Mill Bridge. The two-inch loose oak flooring was laid loose transversely and held in place at each entrance span end with butt plank, which is the typical contract design for all deck floors from existing Daniels' bridge contracts reviewed. Janssen & Spaans are retaining the diagonal deck floor plan as well as the secondary deck. County Highway road supervisors/or road superintendents of a later period have lived within the county's means and their experience; this diagonal floor decking was placed in l939.[5] (Photo #10)

The floor system is composed of a different number of floor stringers, which continue over a lower single lateral panel sitting atop the floor beams or floor joists depending on the lateral panel examined. Additional stringer members are added to different lower lateral panels depending upon which lower panel is examined; these are probably not spiked to the floor beam. (Photo #15)

All original floor beams are bolted to the lower chords. (Photo #15) An emergency request was granted for repairing the Shields' Mill Bridge[6] on February 2, 1925 at the Jackson County Commissioners' meeting. Wooden oak floor beams were either added or replaced. The additional timbers are not bolted to the lower chord as specified in a Daniels contract, nor are they of corresponding length to the bolted floor beams per original county lumber invoices. The new floor beams were placed between the bolted floor beams.

The Jackson County Park and Recreation board replaced the poplar siding on the west side of the Shields' Mill Bridge in 1988 with one inch by twelve inches by sixteen foot (1" x 12" x 16') with yellow poplar. The board did not properly cover the lower arch timbers on the west side of the Shields' Mill Bridge in 1988 nor add the batten element to the bridge, which has allowed for water damage to the interior wall boards as originally constructed.

The east side of the bridge retains siding from an earlier period but may not be original as the siding contains knots. (Photo # 13) Vertical siding is 18" down from the top of the top chord the length of the bridge. Siding is batten and board nailed on four (4) separate strips running the entire length of the bridge. The siding covers the lower chord and continues below the chord to cover any exposed arch timbers at the abutments and the pier. A single door exists over the pier in each sidewall giving access to the pier.

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[5] Bidders' Record December 24, 1938 for 2" x 18' 12,000' ordered for Shields' Mill Bridge. Auditor's Record.
[6] Commissioners' Record Book 25, February 2,1925, p. 476.
[7] Hohenberger Photograph Collection, Trustees of Indiana University. Box 8, Item :11 Date 8/7/1946.
[8] Ketcham, Byran E., Covered Bridges on the Byways of Indiana. Ohio: Lockland. Privately published. p. 12. Url"http//purl.dlib.indianaedu/iudl/lily/hohenberger/Hoh006.009.0011/
[9] Pépe, Sidney B. photograph collection. 1953. Courtesy of Willennar Genealogy Center. Indiana: Auburn.

A shingle roof originally covered this bridge, reroofed in 1902 with shingles. Photos by Hohenberger[7] and Ketcham [8] indicate the standing rib metal roof replaced the wooden shingle roof sometime after l948, but prior to 1953.[9] Sheathing for the shingle roof remains. (Photo #8) As with the shingled Medora Covered Bridge, periodical "window boxes" access the roof in the sheathing between rafters are present. Jackson County Park and Recreation Board painted the metal standing roof and siding in 1989. Recently, some roof metal has loosened on the downstream side.

The 1876 Commissioners specified the structure be six feet (6') above high water mark. The substructure rises approximately twenty-eight (28') feet above low water lever. No documentation has been located regarding the substructure of the bridge. Presumably, the cut limestone material originated from the Dixon quarry north of Fort Ritner, in Lawrence County, Indiana, as with Daniels' other Jackson County covered bridge substructure material.[10] In 1887, the Board of Commissioners authorized C. C. Isaacs and George Roeger to work on the center pier and abutments of the bridge. The cemented cutwater form at the base of the center pier on the upstream side of the bridge may have been added at this time or later to eliminate the undercutting of the original cutwater base at the pier. (Photo #2, lower right)

The cement forms created above the abutment stem on the south end of the bridge as well as the north end abutment is a more recent addition. These latter cement forms at the abutments are being removed during the current rehabilitation and replaced with appropriate wooden material at the abutments.

The lower oak wood chord has decayed where it has contacted with soil at the abutments. Bed timbers are faulty at the pier and both abutments.

The north span has four broken oak floor joists. This floor failure was prior to the concrete bridge construction according to former Park and Recreation board member and local farmer Lynn Stuckwisch. Since 1942, except for high water, this transportation structure was never closed to the public according to local resident Irene McKain, deceased. The concrete bridge which bypasses Shields' Mill Covered Bridge stands just south of the covered wooden bridge. Dedication of the White River concrete bridge at Shieldstown was October 26, 1980.[11]

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[10] Cox, E. T. State Geologist. Sixth Annual Report of the Geological Survey of Indiana, Jackson County, Indiana. Indianapolis: Indiana Sentinel Co. Printers, 1875. p. 71.
Larry McKeigg. Interview in 2005 a descendant of Albert Luedtke-Today, the McKeigg property is in Lawrence County, Indiana due to boundary relocation.

[11] "Brownstown Banner" October 27, 1980.

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.)

- [x] 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.
- [x] 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

Areas of Significance
(Enter categories from instructions.)
ENGINEERING
TRANSPORTATION

Period of Significance
1876-1966

Significant Dates
1876

Significant Person (last name, first name)
(Complete only if Criterion B is marked above.)

Cultural Affiliation

Architect/Builder (last name, first name)
Daniels, Joseph John
Brown, Daniel Helper
Stanford, James

Period of Significance (justification)

The bridge was completed in 1876 and served continuously as a transportation crossing until it was closed to traffic in 1970. Since the bridge continued to serve as significant connector to the county seat for both local and through traffic until 1970, the authors chose the fifty year mark to end the period of significance.

Criteria Considerations (explanation, if necessary)

None.

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.)

One of Indiana's longest wooden spans, Shields' Mill Covered Bridge is an intact example of early nineteenth century wooden truss technology. The Hamilton Township Bridge Company hired master bridge maker J.J. Daniels to plan and build the two-span bridge in 1876 with the permission of the Jackson County Board of Commissioners. Shields' Mill Covered Bridge has statewide significance under Criterion C because it is a rare variant of the Burr Arch Truss, and is the work of a master builder whose efforts included engineering landmarks across Indiana. The bridge played a locally significant role in transportation under Criterion A. In addition to aiding those passing through Jackson County, the bridge served the nineteenth-century German agricultural community which had settled in the area. The bridge has served as a link to a popular fishing, hunting, and recreational area on the north side of White River, known first as Hamilton Grove; in the early twentieth century as Seymour Elk Club land, and currently as Camp Sustus, a private recreational camp operated by the fourth generation of the Haas' family.

Bypassed in 1980, a wider concrete deck bridge serves today's heavier and wider agricultural equipment. This county transportation route; today, is a heavy semi thoroughfare to Rose Acre Farm's soybean processing plant north of the White River in Hamilton Township.

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

The Shields' Mill Bridge permanently established a significant transportation route across the East Fork of White River. The route diagonally cuts through Jackson County, Indiana; linking Hamilton Township and Brownstown Township to provide a connection to Brownstown, the county seat. This route, originally known as the Mock's Ferry Road (or Mauck's Ferry Road) was one of the three routes through Jackson County established by the Indiana General Assembly session in 1823. Furthermore, it may have been a seventeenth century Indian trace, but this is undocumented. The bridge, built in 1876, provided Hamilton Township's agricultural community access to the water-powered Shields' Mill, adjacent to the bridge, and to rail access at the village of Shields

After l850, Indiana law allowed local communities to establish bridge companies when federal, state or local tax revenue failed to provide financial support for local internal improvements. In particular, thirteen (13) Jackson County German farming families south of White River needed a secure crossing to their low-lying bottom agricultural land. A bridge would allow them to gather their grain for easier transport to the town of Shields, where trains could provide access to distance markets via the Ohio and Mississippi Railroad. The German-American stockholders of the Hamilton Township Bridge Company[12] invested between five hundred ($500) and seven hundred ($700) each. Garrett F. Roeger, a pioneer settler, former commissioner, and stockholder of the Hamilton Township Bridge Company was instrumental in establishing the Shields' Mill Bridge. It was the second-such company that had hoped to span the White River, and consisted of essentially the same subscribers.

The Jackson County Commissioners refused an earlier attempt to bridge White River at this location. William H. Shields was a stockholder in both bridge companies as well as Henry W. Wacker, Sr. the first mercantile resident of Shields and part owner of the Shields' Mill when the covered bridge was constructed. The bridge company reorganized in March of 1876 under the new name of the Hamilton Township Bridge Company.[13] This company advertised for bids until June 30,1876, letting the contract on July 8, 1876. The Board of Jackson County Commissioners accepted the Shields' Mill Bridge November 21, 1876, authorizing Joseph J. Daniels of Rockville, Indiana money to print the bridge bonds. The organized bridge company did not receive tolls from the bridge, instead, stockholders bought bridge insurance for the bridge for five (5) years after construction. The county did not purchase bridge insurance until the late nineteenth century.

Interests in land, industry and profit brought road and rail transportation together, and created a need for a wooden bridge at Shields, Indiana. The transportation route was established earlier than the Indiana territorial days according to Brandt & Fuller's l886 Jackson County History, serving the French fur traders of the eighteenth century. The Indiana General Assembly, in l821-l822, established twenty-two (22) state roads. The Mock's Ferry Road route established a crossing in T6N R5E RE Sec. 31 as evidenced by the 40-foot timbers that remain in the river bottom downstream from the covered bridge site and the Deed Record of James H. Hamilton to William H. Robertson. According to Tipton's memoirs, he assisted laying out the Mock's Ferry Road. Indiana historical records[14]substantiate this claim. Hamilton and Robertson petitioned Jackson County Commissioners in February 1823 to establish a ferry crossing[15] downstream

[12] Jackson County Commissioners Record. Book 11, l876. p.23
[13] Unused Bond Certificate of the Hamilton Township Bridge Company for Bridge at Shields, Auditor's Records l876.

[14] Heiss, Willard, Ed. Indiana Source Book Vol. 11. Indiana: Indianapolis. Indiana Historical Society.
[15] Commissioners Record Book 1, February 1823, p. 273.

from this bridge site, which they operated for several years. Partitioned November 1829, Andrew Hamilton inherited a portion of James H. Hamilton's land, which he sold to William H. Shields and Lycurgus S. Shields.[16] Meedy W. Shields, an early stockholder in the Ohio and Mississippi Railroad, supervised a railroad construction contract from his newly created town of Seymour, established in l854, west to reach the present-day location of Shields, Indiana in 1856.[17] By l860,[18] Meedy W. Shields owned several acres of land in Sec. 31, R5E, T6N all south of White River near the mill operated by his son, which opened for business at about that time.

With the assistance of Meedy S. Shields, William H. Shields had established Shields' Mill, a water mill on White River.[19] His sons, William H. Shields and Lycurgus S. Shields, established the village of Shields on April, l866 after the death of their father. They named the village in his honor, and platted out twenty-seven (27) lots. Most significantly, Shields was a rail stop, a great benefit to the mill owners and nearby farmers. The Shields rail station halted in 1882 after a second mill burnt[20] but the Shields' railroad station resumed when the Baltimore & Ohio Southwestern[21]absorbed the Ohio and Mississippi Railroad after October, l893.[22]

One historic bridge arch timber carries the advertisement of O. H. Emerson, a Brownstown pharmacist who established his pharmacy in the Aetna House in 1899. He was a son-in-law to Commissioner J. H. Burrell, one of the three named commissioners who authorized the building of the Shields' Mill Bridge in 1876; the other Commissioners were A. L. May and Garrett F. Schepman. Business advertising was an accepted practice on the "enclosed" bridges owned by the county. (Photo #10)

Repairs to the bridge in the 1920s, and installation of new wood decking in 1939, attest to the continued usefulness of the route and this crossing of the White River well into the auto era. The bridge was closed to vehicular traffic in 1970, and was bypassed in 1980. A wider concrete deck bridge serves today's heavier and wider agricultural equipment. This county transportation route; today, is a heavy semi thoroughfare to Rose Acre Farm's soybean processing plant north of the White River in Hamilton Township.

The Burr Arch Truss and J.J. Daniels

The monumental bridging of Eastern rivers by Theodore Burr prior to 1822 provided later contractors with workable models suited to the often harsh environment of North America. He patented two bridge designs, one in 1806 and one in 18l7, both lost in the U. S. patent office fire. The Waterford, New York patented Burr Arch bridge design was the universally adopted Burr Arch system used by most American bridge carpenters for trusses with an arch component. By 1838, the patented Burr Arch plan was universally recognized and the accepted plan by Indiana mechanics for covered bridges exceeding ninety (90'-150') as reported by Jesse L. Williams,[23] Indiana's first civil engineer. Mr. Williams was placed in charge of all state internal improvements including canal, rail and wagon roads. The early nineteenth century bridges were all wooden structures held together with wooden tunnels and a limited amount of metal fasteners.

Local builders such as contractor J.J. Daniels modified and sought an improved multiple kingpost Burr Arch bridge to meet the changing demands of the nineteenth century. The Shields' Mill Bridge is

[16] Jackson County Recorder's Office. Deed Record of Andrew & Lydia Hamilton to William H. Shields and Lycurgus S. Shields, Book S, p.162 dated April l864.
[17] Excerpt from James Ireland papers dated l856. MS Courtesy of Indiana Historical Society.
[18] Stairs, W. H. Stairs Map of Jackson County, Indiana @1860 Reprinted by the Bicentennial Project of the Jackson County Historical Society. P. 4.
[19] "Seymour Times" December 9, 1860 "Everybody to it, sic..,regarding mills sic…, except the one founded by the late Capt. Shields, at the town that bears his name, for the accommodation of the people below here, which mill was completed by his sons and is now one of the institutions of the county. Editor James R. Monroe relocated his newspaper to Seymour from Rockford, Indiana in l857 at the invitation of Meedy W. Shields, Col. 1, p.3.
[20] "Brownstown Banner", "In Ashes", January 1, 1878, Col. 2, p. 2.
[21] "Seymour Daily Times", Baltimore & Ohio Timetable Ad 1897.
[22] "American Railroad Journal" notice October 31, l893. O & M ceased to exist. p. 352.
[23] Indiana General Assembly 1828, Report of Jesse L. Williams Regarding the New Albany-Greencastle Road to that body, p. 274 ©Google Books.

significant as it embodies engineering characteristics of a modernization process to meet those changes. The introduction of the iron half shoes which receives both the wooden "x" top bracing and the wooden bottom "x" bracing to the patented Burr Arch form created an "improved" Burr Arch. This engineering element allowed wooden bridge contractors to compete with iron bridge technology in the late nineteenth century. Further historical data is necessary to identify the improved multiple kingpost Burr Arch design. However, it appears from a later bridge design (Hanging Rock Covered Bridge, 1889) that J. J. Daniels' introduction of the wrought iron half shoes was the improved element. These shoes are not present in Daniels' earlier Burr Arch bridge designs but were utilized in the Howe Truss systems which Daniels contracted. The West Union Covered Bridge in Parke County (1876) is similar to Shields' Mill as both contain these half shoe iron braces.

This was the last engineered covered bridge built in Jackson County across the East Fork of White River by Joseph J. Daniels, one of sixty (60) long-span covered bridges[24] built by one of Indiana's prolific nineteenth century's bridge contractors. It is one of eleven and one half[25] (11½) documented covered bridges built across Jackson County's waterways as researched and documented to date. In co-operation with Jackson County citizens, Jackson County's Commissioners authorized several local bridge companies to assist in building Jackson County's nineteenth century long span covered wooden transportation structures. Indiana law allowed local communities to establish bridge companies to establish safer transportation routes for agricultural products, livestock, and man when federal, state, and local county tax revenue failed to provide financial support for local internal improvements.

Joseph J. Daniels built three multi-span covered bridges across the East Fork of White River for Jackson County: the 1869 Ewing Bridge supervised by brother, Stephen H. Daniels, Jr. that was a Howe Truss financed by the Brownstown Bridge Company, the 1875 Medora Bridge, today the longest multiple kingpost Burr arch in the United States built in cooperation with the Medora Bridge Company, and finally, the Shields' Mill Bridge financed by the Hamilton Township Bridge Company in 1876. Each of the Daniels's Jackson County's covered bridges lasted over one hundred (100) years and served both the state and county well into the twentieth century.

Jackson County retains two distinct Burr Arch multiple kingpost historic covered bridges engineered by J. J. Daniels. The Medora Bridge exhibits the more labor-intensive wooden elements consistent with early 19th century wooden carpentry while the Shields' Mill Bridge introduces more ironwork to decrease construction costs to achieve a sound covered bridge structure of the late nineteenth century. (Photo #7) Identifiable components consistent with a multiple span Burr Arch identified as a Daniels design include:

1. Lower chords continuous over piers adopted from the "Long Truss"
2. Bridge anchored with iron rods to mortared eyebolts in abutments
3. Rounded portal entrance
4. Double notched fishplate joint
5. Iron plate receiving arch end at abutment
6. Arches springing from abutments below lower chord
7. Truss encased in double arch rings usually double when truss length is greater than 100 feet
8. Level floor

Unique to this bridge is the addition of a panel and a half for length at the pier in both spans. Daniels usually made this addition at the abutments. The arches are double bolted at each kingpost the entire length of the bridge. Finally, the iron lateral shoes which receives the overhead lateral "x" bracing and lower lateral "x" bracing qualifies the Shields' Mill Bridge for National Register nomination under Criterion C. (Photos 8,14, & l5). This was one of two Burr Arch plans which Daniels offered his clients.

[24] "Rockville Tribune." August 8, l9l6. Obituary of Joseph J. Daniels. Col. 8. P1 & p. 5. Microfilm. Courtesy of Indiana State Archives.

[25] "Brownstown Banner" November 18, l936. "Interesting Data of Sand Creek Bridge on Jackson and Bartholomew County Line." Col. 5, p.1.

His father, an agent for the Long Truss in 1836,[26] had Ohio educated, schooled, and trained three of his sons in bridge building. J. J. Daniels executed a number of the patented Long Truss structures in Ohio[27]both with his father, as well as with J. J. Daniels' own contracts beginning in 1845.[28] The patented Long Truss structural bridge engineering design taught J. J. Daniels and his brothers the most scientific engineered wooden bridge form of the day. J. J. Daniels was not only a master of the Long Truss but built the Howe Truss as well as the Burr Arch design, illustrating his expertise in wooden bridge construction. Daniels' first documented Indiana bridge was near Rising Sun, completing his father's contract for the Rising Sun & Versailles Turnpike Company, possibly a Long Truss, in 1850.[29] Relocating to Southwest Indiana in 1853, J. J. Daniels built "Indiana's longest wooden bridge structure" of the day for the Evansville & Crawfordsville Railroad. It was "enclosed" after his contract. He accepted the superintendent's job offered by this railroad and resigned in the fall of 1857.[30] At the conclusion of his employment with this railroad, he became both a mill owner and a distiller at Patoka, Indiana[31]one of Gibson County's leading citizens. Joined by William D. Daniels[32]who introduced pile driving to Southwest Indiana; the brothers resumed bridge building in 1857. William D. Daniels was the contractor of the 1861 Jackson Bridge in Parke County; Joseph served as superintendent for this structure. In February 1861, J. J. Daniels relocated to Parke County, Indiana engaging in general carpentry, bridge contracting, and railroad development. He resided in Parke County for the remainder of his life. Most of the fine engineered Indiana covered bridge structures built by J. J. Daniels served their communities through the twentieth century.

Context for the Scale of the Shields' Mill Covered Bridge

Worldwide, Canada possesses the longest multi-span covered bridge "enclosed" spans. Nationally, less than seven hundred (700) historic "enclosed" bridge structures remain. Eighty-eight (88) pre-1955 historic covered bridges are standing in Indiana. Indiana's longest multi-span covered bridge was the one thousand foot Eel River Bridge at Georgetown, Indiana. The Burr Arch design, one of this country's earliest and most successful patented bridge designs, continued as one of the most popular bridge designs in the twentieth century for road transportation. However, most communities have been reduced to rehabilitating and preserving only their single spans. The Shields' Mill Bridge is one of eight remaining double span Burr Arch covered bridges in Indiana. Only fifteen double span structures remain in Indiana. When bypassed in l979,[33] it was the third longest covered bridge in Indiana, surpassed only by the Williams Covered Bridge in Lawrence County and the Medora Covered Bridge in Jackson County. These structures still remain on Indiana's inventory of covered bridges.

This nineteenth century engineering structure provided improved safety for animals and man across White River. It is one of two bridge plans designed and executed by Joseph J. Daniels in the late nineteenth century. This bridge survived as a local transportation structure until Indiana's twentieth century school consolidation and the resulting heavier motorized transportation vehicle, as well as the wider and the heavier horseless agricultural equipment, which replaced nineteenth-century horsepower. In l988, Historic Landmarks of Indiana under Architectural Historian Ann C. Davis recorded the Shieldstown Covered Bridge with an outstanding rating, for SHPO staff, meaning that it was eligible for National Register of Historic Places.

Today, it provides the twentieth-first century pedestrian, rider, and cyclist with an nineteenth century experience and an actual example of wooden technological innovation and cut stone masonry consistent

[26] American Railroad Journal Advertising Ad by Moses Long, May 1838, p. 742. Courtesy of Indiana University. Bloomington, IN.
[27] Lane, Mary, "Greene Co. Covered Bridges extracted from the Greene County Commissioners' Meetings 1804-1902. "Working Document. May 15, l987. Courtesy of Greene Co. Public Library, Ohio.
[28] Chamberlin, Dann, "Joseph J. Daniels, and his Indiana Covered Bridges' working thesis document. January 1958. Courtesy of Emily Schilling.
[29] J. J. Daniels Manuscript Collection SC 049. Letter of Jon. Williams regarding J. J. Daniels work for the Rising Sun and Versailles Turnpike Company. Courtesy of Indiana Historical Society.
[30] "Evansville Daily Journal," J. J. Daniels Resignation from the Evansville and Crawfordsville Railroad, July 4, 1857. Col. 5, p. 3.
[31] Manufacturers Census for Gibson County, Indiana. 1860 Microfilm. Courtesy of the Indiana Historical Society.
[32] Taritt, Jason T. & Co. History of Gibson County, Indiana. Illinois: Edwardsville, l884. p.190.
[33] "Brownstown Banner" Department of Natural Resources OK's Shieldstown Bridge Plans, March 29, 1979, Col. 3-5, p.1.

with nineteenth century bridge engineering executed by knowledgeable mechanics. It is an interactive experience not usually attained by an Indiana tourist and Jackson County residents.

This nineteenth century transportation route and the late nineteenth engineering bridge structure meets criterion C. The evolution of this transportation route from the early nineteenth-century through the twenty-first century is indicative of the importance of this transportation route in Indiana's early transportation history and Jackson County's transportation infrastructure. The Shields' Mill Bridge is a patented Burr Arch bridge engineered by Indiana's most accomplished covered bridge carpenter/ contractor who utilized iron components in his "enclosed" wooden Burr Arch bridge plans: Joseph John Daniels. The covered bridge structure provides cultural, historical, and recreational experiences for all.

Developmental History/Additional historic context information

Chronology

1805 Dr. Richard Peters requests the bridge company cover and enclose the Philadelphia bridge built by Timothy Palmer.
1806 Theodore Burr patents his first bridge design.
1816 State of Indiana created from Indiana Territory.
1816 Jackson County established as a county in the newly created state of Indiana
1817 Theodore Burr patents multiple kingpost Burr Arch wooden bridge with level roadway.
1817 Commissioners' Record records first bridge built in Jackson County by Charles Crabb across Huff's creek.
1823 Request from John H. Hamilton and William H. Robertson to establish ferry in Sec. 31 R 5E T 6N. Commissioners okayed their request.
1820-1832 First covered bridge built in Indiana. Documented bridges on the National Road. Floyd Co-Mooresville Road.
1838 Jesse L. Williams specifies wooden bridges to be Burr arch design for Meccanized Roads.
1839 Commissioners' Record records first frame bridge being constructed in Jackson County.
1850 J. J. Daniels builds first bridge on Rising Sun and Versailles Turnpike in Indiana completing his father's contract.
1856 O & M Railroad reaches Brownstown finished to Vincennes in 1857 opened to St. Louis in 1857.
1856-1862 Water Flour Mill erected at Shields' Mill on White River.
1860 M. W. Foster & John Foster requests Commissioners allow them to collect toll on bridge at Newry. Probably, an uncovered bridge when first built. Replaced in l884.
1864 First documented all iron railroad bridge built at Rockford, Indiana for the Jeffersonville & Indianapolis railroad in Jackson County, Indiana.
1866 Village of Shields' Mill platted - April. @1860 Jackson County map indicates village of Idaho at this location. No local, state, or federal records have been located to verify the village of Idaho.
1868 Bell Ford Post Combination Bridge constructed by Seymour Bridge Company across White River replaces Bell's Ford ferry crossing which was located downstream from the bridge.
1869 Ewing Covered Bridge constructed by Brownstown Bridge Company J. J. Daniels Contractor, Stephen H. Daniels, Jr. superintendent of the bridge across White River. Dixon Quarry provides cut stone for bridge abutments and pier which replaced the Wayman ferry crossing.
1870 Rockford iron bridge constructed by the Rockford Bridge Company contracted to D. H. & C. C. Morrison-Cleveland, OH.
1873 First Water Flour Mill burns at Shields' Mill
1874 Rebuilt Flour Mill
1875 Medora Covered Bridge constructed by Medora Bridge Company across White River replaced the downstream ferry crossing identified as Mahan's ferry.
1876 Shields' Mill Bridge constructed by the Hamilton Township Bridge Company.

1876 Daniel H. Brown brought the information about the bridge completion to newspaper. He was a master mechanic on the Shields Mill Bridge. He became a reporter for Seymour Tribune and noted that James Stanford was also a mechanic on the Shields Mill Bridge.

1877 J. J. Daniels in town.

1878 Bolts tightened around the bridge at Shields' Mill. Mill is abandoned after second mill burns.

1892 Bridge floor needs to be replaced.

1899 O. H. Emerson establishes pharmacy in Brownstown. Ad placed on the arch timber on the downstream span of the interior bridge arch.

1902 Reroofed with shingles.

1922 Painted bridge.

1925 Repairs and replacement of arch segments, joists added or replaced, stringers added or replaced.

1938 Floor lumber ordered for Shields' Mill Bridge in December probably replaced in l939.

1970 Efforts to save the Shields Mill Bridge from destruction. Commissioners transfer the Shields Mill Bridge to the Jackson County Park and Recreation Board which receives the state distribution of state funds for covered bridges.

1988-June 24 Jackson County Park and Recreation Board received funds to replace the downstream siding (West) of the Shields' Mill Bridge.

1989 August 10 Jackson County Park and Recreation Board received funds to paint the Shields' Mill Bridge.

2006 Jackson Co. Park & Recreation Board applied for federal NHCB Funds for Shields' Mill Bridge in addition to Bell Ford and Medora. Received $680,000 for Shields Mill on behalf of the County Commissioners.

Indiana Department of Transportation pulled funds received for Bell Ford and applied them to Medora and Shieldstown.

2012, 2013,2014 Preliminary Engineering underway with Janssen & Spaans.

2014 Contract let by INDOT to begin January 2015. Indiana Department of Transportation's project cost for Shieldstown rehabilitation-($1,036,287) one million, thirty six thousand two hundred eighty seven dollars.

2015 Some epoxy timber repairs have been done. Lumber rejected not No. 1 as listed in the contact. Siding was removed from the bridge in middle of June. Siding was utilized for Soccer Shed at the Jackson County Park at Brownstown. Work has been halted through 2015.

2016-January No work is being done on the project.

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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
__x_ Local government
____ University
____ Other
Name of repository: _____

Historic Resources Survey Number (if assigned): _071-075-25001_____

10. Geographical Data

Acreage of Property less than one acre

Use the UTM system

UTM References
Datum (indicated on USGS map):

[ ] NAD 1927 or [X] NAD 1983

1. Zone: 16	Easting:	586400	Northing:	4307860
2. Zone:	Easting:		Northing:	
3. Zone:	Easting:		Northing:	
4. Zone:	Easting :		Northing:	

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

The boundary includes the Shields' Mill Covered Bridge, its abutments and central pier; the footings for the abutments and central pier; the bridge's superstructure; including trusses, bracing, deck, siding, roof, and all structural members; and the right-of-way of the bridge. On the north and south portal ends of the bridge, include 15' (fifteen feet) of the approaches in a rectangle the width of the abutments.

As a parcel of land, the boundary can be described as follows:

Start at a point as described: find a point at the intersection of two lines; one that is parallel to, but 15' southeast of the front plane of the southern portal of the Shields' Mill Covered Bridge, the other line is an extension of the west wall of the bridge. From this point, proceed southwestward along a line parallel to, but 15' southeast of the front plane of the south portal of the bridge, to a point on a line parallel to, but roughly 10' southwest of the western wall of the bridge, said line touching the center pier's western point. This is the point of origin.

From the point of origin, proceed northwestward roughly 383' along a line parallel to, but 10' southwest of the western wall of the bridge, passing through a point at the extreme west point of the

center pier, to a point 15' northwest of the western edge of the north portal of the bridge. Then proceed northeast roughly 37' along a line parallel to, but 15' northwest of the front plane of the northern bridge portal, to a point on a line parallel to, but roughly 10' northeast of the eastern wall of the bridge, said line passing through a point at the extreme east point of the center pier. Proceed to the southeast 383' along a line parallel to but 10' northeast of the eastern wall of the bridge, passing through the extreme easternmost point of the center pier, to a point on a line parallel to but 15' southeast of the front plane of the southern bridge portal. Proceed southwest roughly 37' along a line 15' southeast of the front plane of the southern bridge portal, to the point of origin.

Refer also to scale map.

Boundary Justification (Explain why the boundaries were selected.)

The boundary as described includes the nominated historic resource and its supporting structures.

---

11. Form Prepared By

name/title: __Fleeta Arthur, Board Member and Primary Researcher_____
organization: __Jackson County Park & Recreation Board_____
street & number: __6494 W. S.R. 58_____
city or town:_Brownstown_____ state: __IN_____ zip code:_47220_____
e-mail_____
telephone:__812-497-2424_____
date:__January 26, 2016_____

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.

Photo Log

Name of Property: Shields' Mill Covered Bridge

City or Vicinity: Brownstown vicinity

County: Jackson County State: IN

Photographer: Paul C. Diebold

Date Photographed: June 20, 2014

Description of Photograph(s) and number, include description of view indicating direction of camera:

1 of 16.
South portal, camera looking NW. Note: memorial in foreground is not in boundary

2 of 16.
Underneath south span, camera looking NW. Modern bridge is outside boundary.

3 of 16.
North portal, camera looking SE.

4 of 16.
West flank of bridge, camera looking SE.

5 of 16.
Underside of bridge, camera looking N.

6 of 16.
Inside of south portal extension, camera looking N.

7 of 16.
Base of east truss arch ring, camera looking N.

8 of 16.
West trusses and arch rings, metal shoes visible where overhead "x" braces meet top chord, camera looking W/NW.

9 of 16.

East trusses and arch rings. Taken from north end of bridge, camera looking E/SE.

10 of 16.
East truss of south span. Camera looking SE.

11 of 16.
Trusses, looking down center of bridge, camera facing NW.

12 of 16.
Truss detail. Camera facing NE.

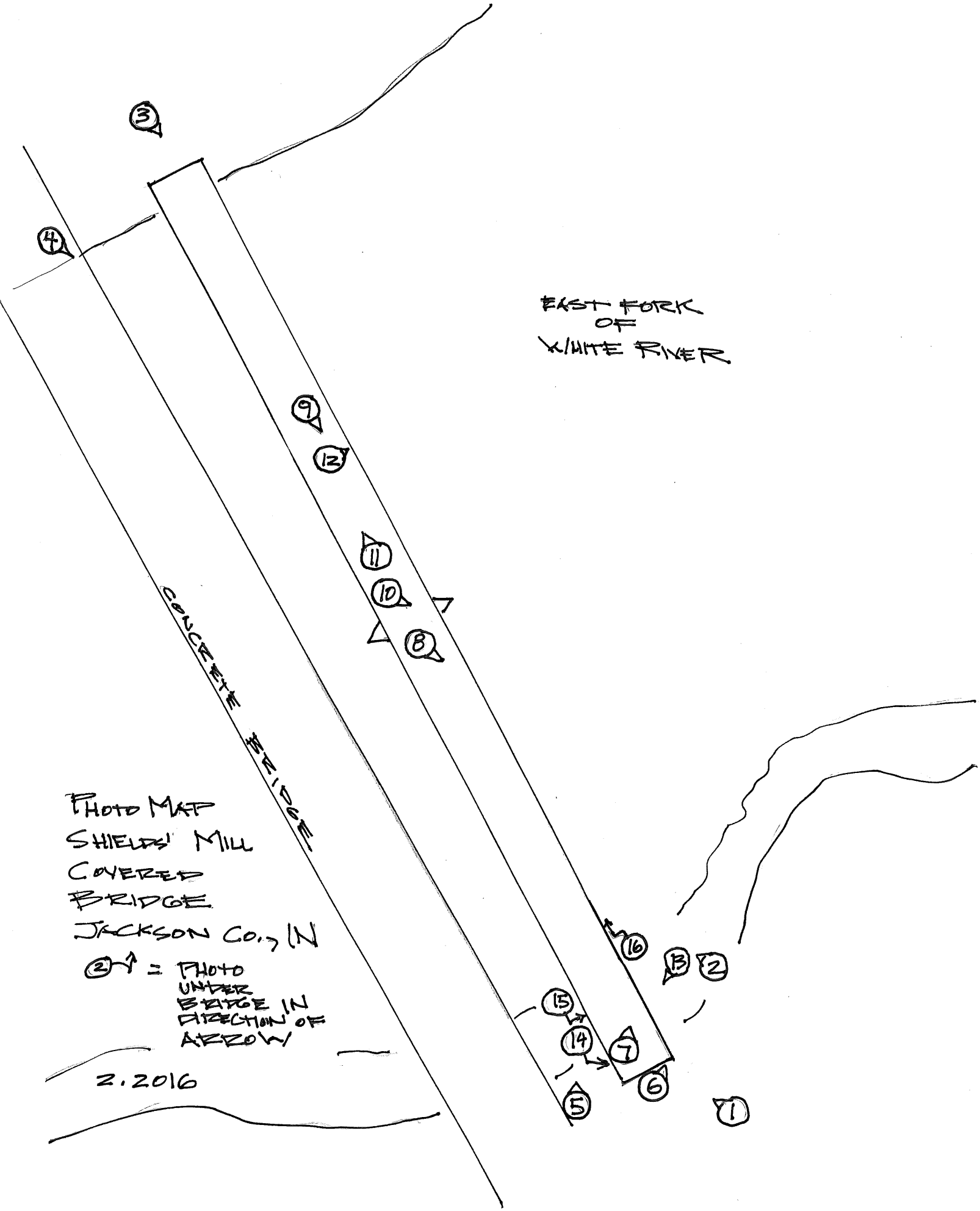
13 of 16.
South abutment. Camera facing SW.

14 of 16.
South abutment, iron anchor rod detail. Camera facing E.

15 of 16.
Joists and bracing under bridge, detail of fishplate technique on lower chord visible at lower center of picture. Camera facing E.

16 of 16.
Underside of bridge, camera looking NW toward center pier.

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.


EAST FORK
OF
WHITE RIVER
CONCRETE BRIDGE
PHOTO MAP
SHIELDS' MILL
COVERED
BRIDGE
JACKSON CO., IN
= PHOTO
UNDER
BRIDGE IN
DIRECTION OF
ARROW
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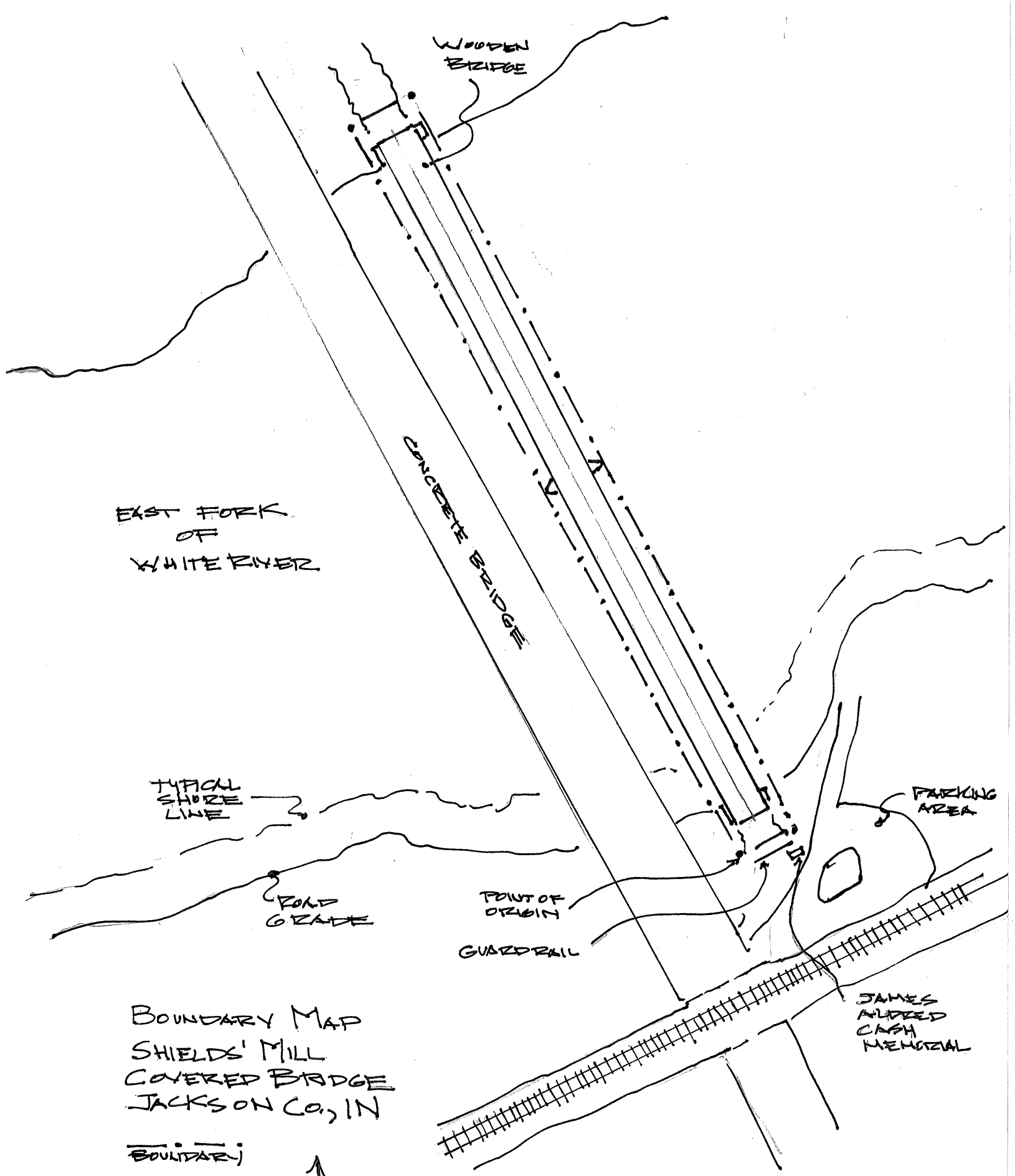
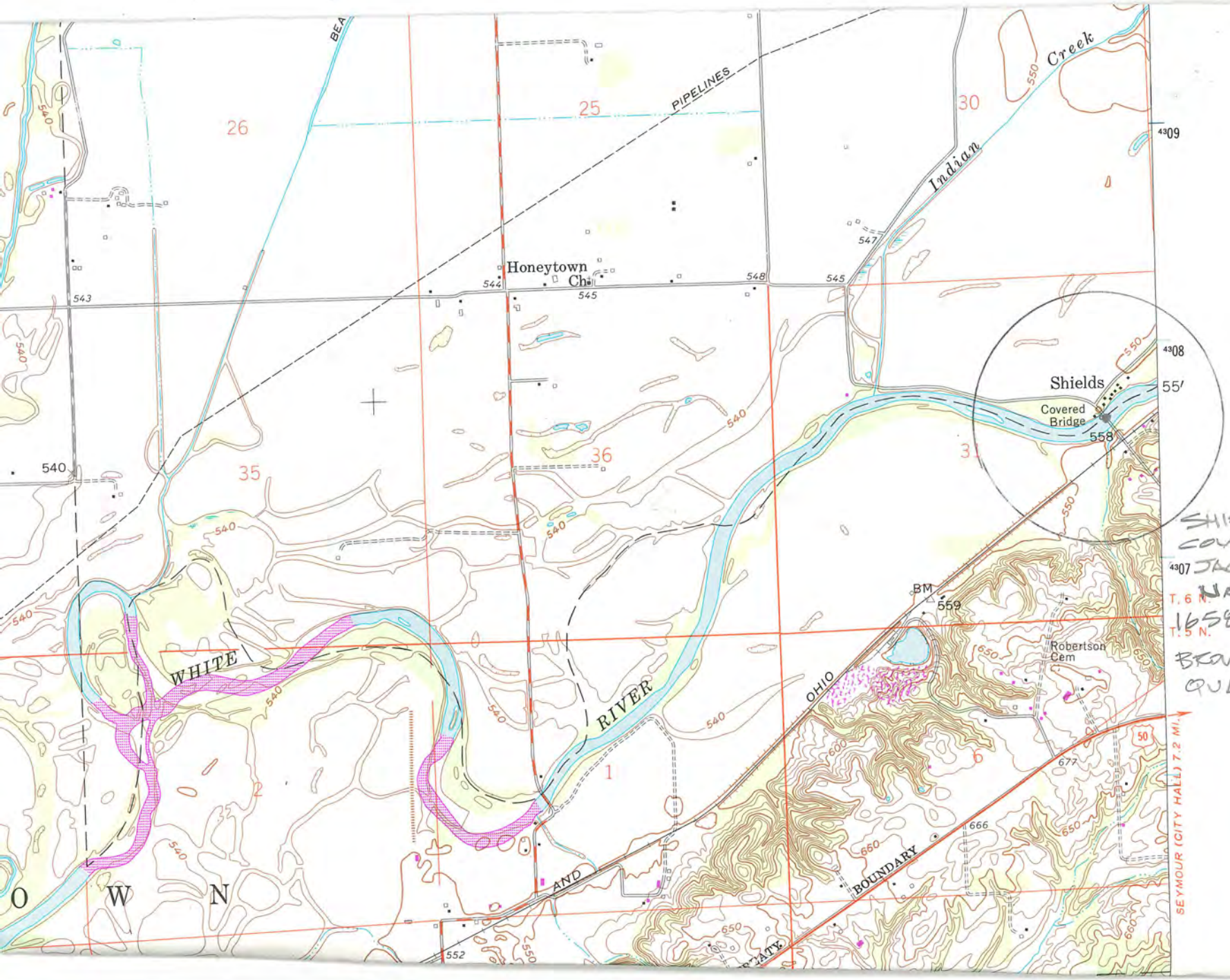


BOUNDARY MAP
SHIELDS' MILL
COVERED BRIDGE
JACKSON CO., IN

2 · 2016



SHIELDS' MILL
COVERED BRIDGE
JACKSON CO., IN
NAD 83 UTM
16586400 4307860
BROWNSTOWN
QUAD

IN MEMORY OF
JAMES
ALDREN
CASH

SHIELDSTOWN BRIDGE
Built in 1876 by J.J. Daniels
Burr Arch
Length 331ft.+12ft. overhang/ends.
Width 16ft. height 12ft.6in.
Cut stone abutments and pier.
Jackson Co. Park & Recreation Board

ZIPPY O
JOHN TOOR