

**Cairo Bridge
Ritchie County
State Project #: S343-31-9.82
Federal Project #: STP-0031(037)D
FR #: 16-533-OH-2**



State Level Historic Documentation

July 2018

Prepared for:

***West Virginia Department of Transportation
Division of Highways
Engineering Division
Environmental Section***

Prepared by:

***Skelly and Loy, Inc.
Engineers-Consultants
Pittsburgh/Harrisburg, PA
Morgantown, WV***



SOURCE: USGS QUAD. SHEET -
CAIRO, WV 1977

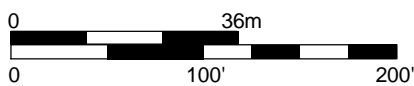


LEGEND

 CAIRO BRIDGE



SOURCE: BING 2018 (BASE IMAGERY)



CAIRO BRIDGE SITE PLAN



STATE LEVEL HISTORIC DOCUMENTATION
CAIRO BRIDGE

Location: West Virginia Route 31/Main Street
Cairo (northwest of downtown)
Ritchie County, West Virginia

USGS Cairo Quadrangle

Date of Construction: 1925

Builder: Vincennes Bridge Company, Vincennes, Indiana

Present Owner: West Virginia Department of Transportation
Division of Highways
1900 Kanawha Boulevard, Building 5, Room A-110
Charleston, WV 25305

Present Use: Carries a roadway and sidewalk over the North Fork Hughes River

Significance: The Parker Through Truss bridge is significant as a contributing resource to the National Register of Historic Places (NRHP) eligible Cairo Historic District.

Project Information: The Cairo Bridge is being replaced with a new crossing over the North Fork Hughes River that meets current design standards. The crossing will continue to carry Main Street over the river near its current location, assuring safe and efficient transportation access, including connectivity for residents and businesses along WV Route 31/Main Street; assuring adequate emergency response times for ambulance, police, and fire services; and to support economic development. The documentation was undertaken in June 2018 in accordance with a Memorandum of Agreement among the West Virginia Department of Transportation, the West Virginia State Historic Preservation Office, and the Federal Highway

Administration. This is one of the measures (stipulations) required prior to the removal and replacement of this contributing structure.

Gerald M. Kuncio, Senior Historian

Skelly and Loy, Inc.

Morgantown, WV 26508

July 10, 2018

The Cairo Bridge is a single-span, 184-foot-long Parker Through Truss bridge constructed in 1925 (Photographs 1 and 2). It carries West Virginia (WV) Route 31/Main Street over the North Fork Hughes River at the northwest edge of the unincorporated community of Cairo, Ritchie County, West Virginia. The structure is a contributing resource to the Cairo Historic District, which is eligible for listing in the National Register of Historic Places (NRHP). The community and historic district are located in a river valley surrounded by steep, hilly terrain and scattered farms. Historically, Cairo was serviced by a number of railroad lines, most notably the Baltimore & Ohio Railroad's Parkersburg Branch, but much of that line has been turned into a hiking and biking trail, the North Bend Rail Trail. The Cairo Historic District is predominantly located to the southeast of the bridge and contains approximately 70 contributing resources (Photographs 3 and 4).

The Cairo Bridge is a conventionally designed steel Parker Through Truss bridge. The upper chords and inclined endposts consist of built-up box sections composed of rolled channels, cover plates on the top, and laced bars on the bottom. The portal struts are heavily-built Warren Trusses composed of paired angles and riveted gusset plates. The interior struts are more lightly built Warren Trusses (Photographs 5 and 6). The vertical members are toe-out channels with lacing and the diagonals are paired angles (Photograph 7). When built, the diagonals were joined together by a series of bolted stay plates. A large number of the stay plates are now welded to the diagonal members (Photograph 8). In the middle panels of the truss are counter-diagonals that are also paired angles. The diagonals and counter-diagonals are bolted together at their midpoints (Photograph 9). The lower chords consist of two sets of paired angles joined by both bolted and welded stay plates. The floorbeams are rolled H-sections, and the rolled stringers frame into them (Photographs 10 and 11). The floorbeams and stringers support a steel pan, concrete filled deck surfaced with asphalt (see Photographs 6 and 11). The bridge has one sidewalk, which is cantilevered off the northeast side of the structure on built-up, angled brackets (see Photographs 1, 2, and 11). The sidewalk is concrete, surfaced with asphalt, and framed by a steel, three-high railing composed of angles and flat metal lattice bars (Photograph 12). The bridge is supported on U-shaped concrete abutments and wingwalls with concrete bridge seats (Photographs 13 and 14).

The gusset plates at the upper chord panel points have both riveted and bolted connections (Photograph 15). This suggests that the vertical members were shop riveted to the gusset plates and shipped to the bridge site, where the diagonals were bolted to the gusset plates. The lower chord connections were mostly likely similarly constructed. However, all are now bolted (see Photograph 10), which appears to be a repair, dating to either a 1976 or 1989

rehabilitation. Other changes include steel plates welded to the bottom portion of some vertical members (Photograph 16) and the strengthening of all floorbeams through the addition of smaller, supplemental floorbeams (see Photograph 11) to increase load-carrying capacity.

The Cairo Bridge was built in 1925 by the Vincennes Bridge Company of Vincennes, Indiana, one of the Hoosier State's most successful bridge building firms, with a practice that extended primarily into the South, Midwest, and West. The Vincennes Bridge Company was founded in 1899 by brothers John and Frank Oliphant, along with Jacob L. Riddle. John had worked between 1896 and 1898 for Indiana's New Castle Bridge Company, while Frank had been an educator. Initially capitalized with stock totaling \$20,000, in 1902 the company increased the investment to \$50,000, combining that with profits to underwrite a four-fold expansion of its physical plant. By 1911, the Vincennes Bridge Company had a weekly payroll in the thousands of dollars and the firm had manufactured more than 2,000 miles of spans. Annual production soon reached 1,200 spans, with annual sales of around \$1,000,000. Most of the company's engineers came from Indiana's Purdue University. The Vincennes Bridge Company designed primarily simplified, standard design truss bridges in a variety of long and short forms. They emphasized function and economy over elegance and novelty (Cooper 1987:28), a description that fits the Cairo Bridge.

The Vincennes Bridge Company continued to supply full-service bridge building even after World War I, when most bridge companies had subcontracted construction work to contractors. The company retained crews prepared to build concrete substructures and erect its spans. It aggressively pursued contracts offered by state highway departments following the expansion of federal highway funds to such entities in 1916 and 1921, including a number of bridges in West Virginia. However, plans for this bridge could not be located at the West Virginia Division of Highways. The marketing effort by the Vincennes Bridge Company was so successful that in early 1927 it increased its capital stock from \$50,000 to \$750,000 (Cooper 1987:28-29). In 1932, the company reincorporated as the Vincennes Steel Corporation, expanding into other products and markets and making greater use of assembly line production methods. Its growth continued through World War II and into the post-war years. In 1956, the company was taken over by Industrial Enterprises, Inc., ending Oliphant family control of the business (O'Reilly and Smith 1988:5). Into the 1980s, Vincennes Steel Corporation was still specializing in girder and truss bridges (Maxwell 1985:4).

The Cairo Bridge is an example of a Parker Through Truss bridge. The truss design is credited to Charles H. Parker, a mechanical engineer with the National Bridge and Iron Works of Boston, who applied for a patent for a similar design in 1870. All trusses use triangular shapes

to create beams that are longer and stronger than rolled beams. In the case of a Parker Truss, the webs of the beams consist of right triangles, the same triangular shape used by the Pratt Truss, of which the Parker Truss is a variation. A Pratt Truss has straight upper chords while the upper chords of a Parker Truss are polygonal. The truss design recognizes that depth of truss required at mid-span is greater than that required at the end of the span. Because of the polygonal upper chords, the design progressively shortens the vertical and diagonal members from the center to the ends of the truss, resulting in a greater economy of material and a lighter truss than a Pratt Truss of equal length. However, because the Parker Truss requires different length vertical and diagonal members at each panel, fabrication and erection costs are increased. The lighter weight of the polygonal upper chords tended to offset the increased labor costs for spans over a certain length (Cridlebaugh 2008; Condit 1960:153; Parsons Brinckerhoff and Engineering and Industrial Heritage 2005:3-34).

The Cairo Bridge was determined not eligible for NRHP listing in 2013 as part of the West Virginia Statewide Historic Bridge Survey. The bridge, however, is a contributing resource to the NRHP eligible Cairo Historic District.

BIBLIOGRAPHY

- Bing
2018 Aerial photograph of the Cairo Bridge, Cairo, West Virginia. Bing Corporation, Bellevue, Washington.
- Condit, C.W.
1960 *American Building Art: The Nineteenth Century*. Oxford University Press, New York.
- Cooper, J.L.
1987 *Iron Monuments to Distant Prosperity: Indiana's Metal Bridges, 1870-1930*. Depauw University, Greencastle, Indiana.
- Cridlebaugh, B.
2008 Bridge Basics. *Bridges & Tunnels of Allegheny County & Pittsburgh, PA*. Website at <http://pghbridges.com/basics.htm>. Accessed June 13, 2018.
- KCI Technologies, Inc., and Mead & Hunt, Inc.
2015 *West Virginia Statewide Historic Bridge Survey: Final Survey Report*. Prepared by KCI Technologies, Inc., Mechanicsburg, Pennsylvania and Mead & Hunt, Inc., Middleton, WI. Prepared for the West Department of Transportation, Division of Highways, Charleston, West Virginia.
- Maxwell, J.
1985 *J.E. Millhollin Memorial Bridge (Jacksonville Ferry Bridge), HAER No. GA-35*. Historic American Engineering Record, Washington, D.C. Website at <http://cdn.loc.gov/master/pnp/habshaer/ga/ga0400/ga0487/data/ga0487data.pdf>. Accessed June 13, 2018.
- O'Reilly, S, and C. Smith
1988 *Cache River Bridge, HAER No. AR-25*. Historic American Engineering Record, Washington, D.C. Website at <http://cdn.loc.gov/master/pnp/habshaer/ar/ar0000/ar0083/data/ar0083data.pdf>. Accessed June 12, 2018.
- Parsons Brinckerhoff and Engineering and Industrial Heritage
2005 *A Context for Common Historic Bridge Types. NCHRP Project 25-25, Task 15*. Prepared for the National Cooperative Highway Research Program, Transportation Research Council, National Research Council, Washington, D.C.
- United States Geological Survey
1977 Cairo, WV quadrangle, 7.5 minute series. United States Geological Survey, Washington, D.C.

STATE LEVEL HISTORIC DOCUMENTATION
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West Virginia Route 31/Main Street
Cairo (northwest of downtown)
Ritchie County, West Virginia

June 2018

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WV_Ritchie County_Cairo Bridge_0003	View of the bridge from the Cairo Historic District, facing northwest.
WV_Ritchie County_Cairo Bridge_0004	View of the Cairo Historic District from the bridge, facing southeast.
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WV_Ritchie County_Cairo Bridge_0002. Elevation view, facing west.



WV_Ritchie County_Cairo Bridge_0003. View of the bridge from the Cairo Historic District, facing northwest.



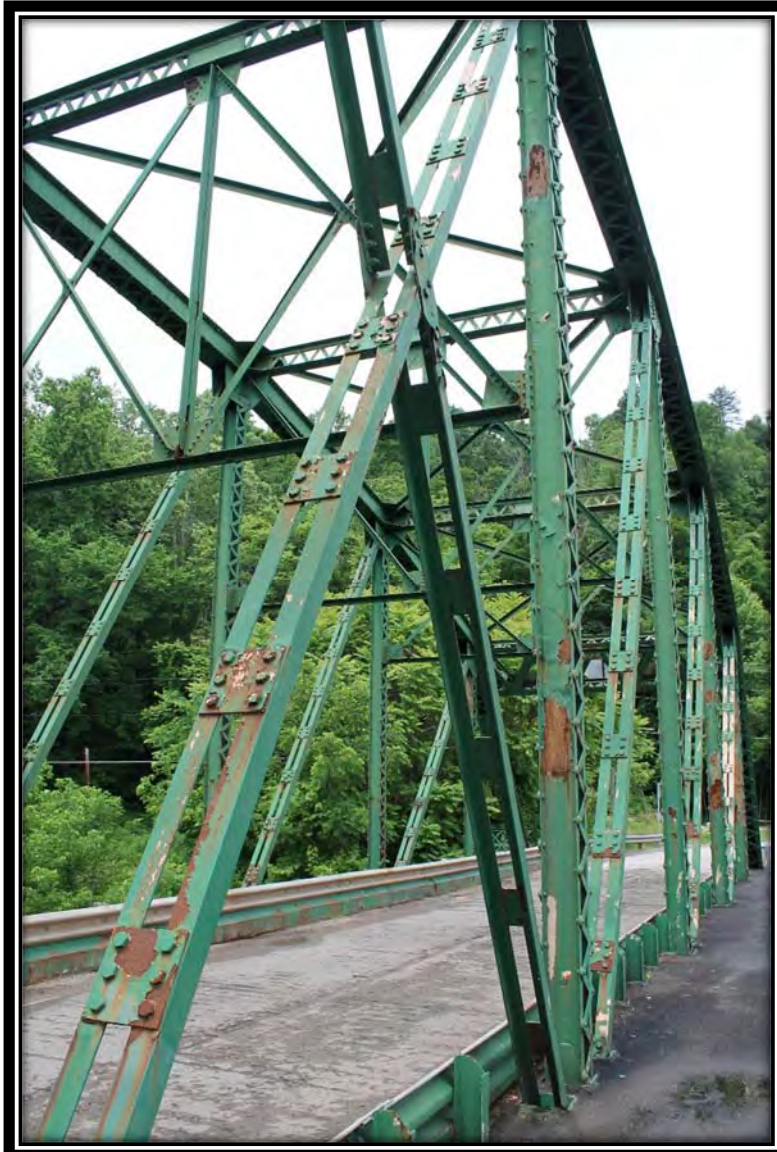
WV_Ritchie County_Cairo Bridge_0004. View of the Cairo Historic District from the bridge, facing southeast.



WV_Ritchie County_Cairo Bridge_0005. Through view, facing northeast.



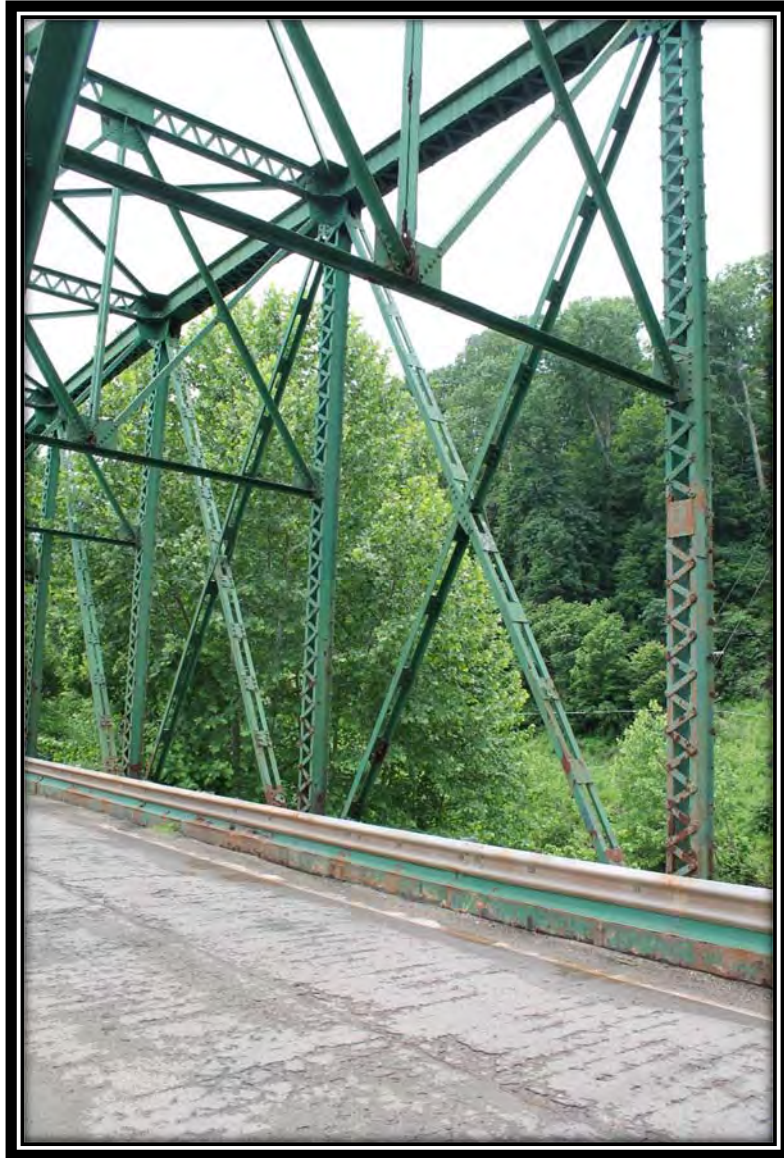
WV_Ritchie County_Cairo Bridge_0006. Through view, facing southeast.



WV_Ritchie County_Cairo Bridge_0007. Detail of vertical and diagonal members, facing northwest.



WV_Ritchie County_Cairo Bridge_0008. Detail of welded stay plates on a diagonal member, facing northwest.



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WV_Ritchie County_Cairo Bridge_0010. Lower chord panel point, facing north.



WV_Ritchie County_Cairo Bridge_0011. Underside of the bridge showing lower chords and supplemental floorbeams, facing northwest.



WV_Ritchie County_Cairo Bridge_0012. Detail of the bridge railing, facing southeast.



WV_Ritchie County_Cairo Bridge_0013. Northwest abutment and wingwall, facing northwest.



WV_Ritchie County_Cairo Bridge_0014. Southeast abutment and wingwall, facing southeast.



WV_Ritchie County_Cairo Bridge_0015. Upper chord panel point connection, facing south.




WV_Ritchie County_Cairo Bridge_0016. Representative view of a steel plate welded to a vertical, facing west.



Internal Rating: _____

WEST VIRGINIA HISTORIC PROPERTY INVENTORY FORM

Street Address Main Street (WV 31)	Common/Historic Name/Both <input type="radio"/> <input type="radio"/> <input checked="" type="radio"/> Cairo Bridge	Field Survey # 43-031/00-009.82	Site # (SHPO Only)
Town or Community Cairo	County Ritchie	Negative No. 1-16	NR Listed Date
Architect / Builder Vincennes Bridge Company	Date of Construction 1925	Style Parker Through Truss	
Exterior Siding/Materials Metal - Steel	Roofing Material --	Foundation Concrete - Poured	
Property Use or Function Residence <input type="radio"/> Commercial <input type="radio"/> Other <input checked="" type="radio"/> Transportation	UTM# Zone 17 486268 E 4240088 N		
Survey Organization & Date Skelly and Loy, Inc. 06/08/2018	QuadrangleName Cairo, WV		
	Part of What Survey/FR# Cairo Bridge Project STP-0031(037)D		

Sketch Map of Property
Or Attach Copy of USGS Map

Site No.

Present Owners	Owners Mailing Address
Phone #	
Describe Setting	
	_____ Acres
	_____ Archaeological Artifacts Present
Description of Building or Site (Original and Present)	
	_____ Stories _____ Front Bays
<i>(Use Continuation Sheets)</i>	
Alterations	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe
Additions	<input type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe
Describe All Outbuildings	
<i>(Use Continuation Sheets)</i>	
Statement of Significance	
<i>(Use Continuation Sheets)</i>	
Bibliographical References	
<i>(Use Continuation Sheets)</i>	
Form Prepared By:	Date:
Name/Organization: Skelly and Loy, Inc.	
Address: 3280 William Pitt Way Pittsburgh, PA 15238	
Phone #: 412-828-1412	



West Virginia Division of Culture and History
State Historic Preservation Office

This program receives federal funds from the National Park Service. Regulations of the U. S. Department of the Interior prohibit unlawful discrimination in department Federally Assisted Programs on the basis of race, color, national origin, age or handicap. Any person who believes he or she has been discriminated against in any program, activity, or facility operated by a recipient of Federal Assistance should write to: Director, Equal Opportunity Program, U.S. Department of the Interior, National Park Service, P.O. Box 37127, Washington, D.C. 20013-7127.

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

NAME Cairo Bridge SITE# _____

Description of Building or Site

The Cairo Bridge is a single-span, 184-foot-long Parker Through Truss bridge constructed in 1925 (Photographs 1 and 2). It carries West Virginia (WV) Route 31/Main Street over the North Fork Hughes River at the northwest edge of the unincorporated community of Cairo, Ritchie County, West Virginia. The structure is a contributing resource to the Cairo Historic District, which is eligible for listing in the National Register of Historic Places (NRHP). The community and historic district are located in a river valley surrounded by steep, hilly terrain and scattered farms. Historically, Cairo was serviced by a number of railroad lines, most notably the Baltimore & Ohio Railroad's Parkersburg Branch, but much of that line has been turned into a hiking and biking trail, the North Bend Rail Trail. The Cairo Historic District is predominantly located to the southeast of the bridge and contains approximately 70 contributing resources (Photographs 3 and 4).

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WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

NAME Cairo Bridge SITE# _____

bridge is supported on U-shaped concrete abutments and wingwalls with concrete bridge seats (Photographs 13 and 14).

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History and Significance

The Cairo Bridge was built in 1925 by the Vincennes Bridge Company of Vincennes, Indiana, one of the Hoosier State's most successful bridge building firms, with a practice that extended primarily into the South, Midwest, and West. The Vincennes Bridge Company was founded in 1899 by brothers John and Frank Oliphant, along with Jacob L. Riddle. John had worked between 1896 and 1898 for Indiana's New Castle Bridge Company, while Frank had been an educator. Initially capitalized with stock totaling \$20,000, in 1902 the company increased the investment to \$50,000, combining that with profits to underwrite a four-fold expansion of its physical plant. By 1911, the Vincennes Bridge Company had a weekly payroll in the thousands of dollars and the firm had manufactured more than 2,000 miles of spans. Annual production soon reached 1,200 spans, with annual sales of around \$1,000,000. Most of the company's engineers came from Indiana's Purdue University. The Vincennes Bridge Company designed primarily simplified, standard design truss bridges in a variety of long and short forms. They emphasized function and economy over elegance and novelty (Cooper 1987:28), a description that fits the Cairo Bridge.

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The Cairo Bridge was determined not eligible for NRHP listing in 2013 as part of the West Virginia Statewide Historic Bridge Survey. The bridge, however, is a contributing resource to the NRHP eligible Cairo Historic District.

Bibliographical References

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United States Geological Survey

1977 Cairo, WV quadrangle, 7.5 minute series. United States Geological Survey,
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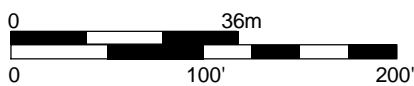


LEGEND

 CAIRO BRIDGE



SOURCE: BING 2018 (BASE IMAGERY)



CAIRO BRIDGE
SITE PLAN



WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

NAME Cairo Bridge

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WV_Ritchie County_Cairo Bridge_0001. Elevation view, facing SE.



WV_Ritchie County_Cairo Bridge_0002. Elevation view, facing W.

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WV_Ritchie County_Cairo Bridge_0003. View of the bridge from the Cairo Historic District, facing NW.



WV_Ritchie County_Cairo Bridge_0004. View of the Cairo Historic District from the bridge, facing SE.

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WV_Ritchie County_Cairo Bridge_0005. Through view, facing NE.



WV_Ritchie County_Cairo Bridge_0006. Through view, facing SE.

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WV_Ritchie County_Cairo Bridge_0007. Detail of vertical and diagonal members, facing NW.

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

NAME Cairo Bridge

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WV_Ritchie County_Cairo Bridge_0008. Detail of welded stay plates on a diagonal member, facing NW.

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NAME Cairo Bridge

SITE# _____



WV_Ritchie County_Cairo Bridge_0009. Detail of where the diagonal and counter-diagonal join, facing S.

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

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WV_Ritchie County_Cairo Bridge_0010. Lower chord panel point connection, facing N.



WV_Ritchie County_Cairo Bridge_0011. Underside of the bridge showing lower chords and supplemented floorbeams, facing NW.

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WV_Ritchie County_Cairo Bridge_0012. Detail of the bridge railing, facing SE.



WV_Ritchie County_Cairo Bridge_0013. Northwest abutment and wingwall, facing NW.

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WV_Ritchie County_Cairo Bridge_0014. Southeast abutment and wingwall, facing SE.



WV_Ritchie County_Cairo Bridge_0015. Upper chord panel point connection showing rivets and bolts, facing S.

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

NAME Cairo Bridge

SITE# _____



WV_Ritchie County_Cairo Bridge_0016. Representative view of a steel plate welded to a vertical, facing W.

**MEMORANDUM OF AGREEMENT
BY AND AMONG
THE FEDERAL HIGHWAY ADMINISTRATION,
THE WEST VIRGINIA STATE HISTORIC PRESERVATION OFFICER
AND THE WEST VIRGINIA DIVISION OF HIGHWAYS**

**REGARDING IMPLEMENTATION OF THE CAIRO BRIDGE PROJECT
STATE PROJECT #S343-31-9.82
FEDERAL PROJECT #STP-0031(037)D
RITCHIE COUNTY, WEST VIRGINIA
APRIL 2017**

WHEREAS, the Federal Highway Administration (FHWA), in cooperation with the West Virginia Division of Highways (WVDOH), proposes to replace the Cairo Bridge, which spans the North Fork Hughes River in Ritchie County, West Virginia, hereinafter referred to as the Project. The improvements involve the construction of a new bridge on its current location while detouring traffic on a temporary bridge upstream; and

WHEREAS, the FHWA has determined that the Project will have an adverse effect upon the Cairo Historic District and the Cairo Bridge, properties on or eligible for the National Register of Historic Places (NRHP); and

WHEREAS, the FHWA has consulted with the West Virginia State Historic Preservation Officer (WVSHPO) pursuant to 36 CFR Part 800 Implementing Section 106 of the National Historic Preservation Act; (16 U.S.C., 470f); and

WHEREAS, the FHWA has determined that the Project will not affect archaeological properties; and

WHEREAS, The WVDOH has contacted the Preservation Alliance of West Virginia, Ritchie County Historical Society, Ritchie County Historical Museum Association, and the Ritchie County Historic Landmarks Commission regarding the project. The Ritchie County Historic Landmark Commission responded in support of the project.

WHEREAS, in accordance with 36 CFR 800.6 (a) (1), the FHWA has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination providing the specified documentation, and the ACHP has chosen not to participate in the consultation pursuant to 36 CFR 800.6 (a) (1) (iii);

NOW, THEREFORE, the FHWA, the WVSHPO, and the WVDOH agree that the undertaking will be implemented in accordance with the following stipulations in order to take into account the effects of the undertaking on historic properties.

STIPULATIONS

The FHWA shall ensure that the following stipulations are carried out:

Cairo Bridge Project

- I. The Cairo Bridge will be documented in its present historic setting. The documentation package will include 5" x 7" black and white digital prints in accordance with the National Register of Historic Places and National Historic Landmarks Survey Photo Policy Expansion of January 2009.
- II. A brief history of the structure will be included along with fully completed West Virginia Historic Property Inventory forms and copies of any available plan sheets and drawings of the bridge from the WVDOH bridge files.
- III. The WVDOH will provide a sum of \$10,000 to the Ritchie County Historic Landmarks Commission who has requested interpretive signs, ornamental railing from the old bridge and preservation work to the Veterans Memorial in Town Square. Funding will be provided once all projects have been identified. Any work completed on historic buildings must comply with the Secretary of Interior's Standards for the Treatment of Historic Properties and must be submitted for review by the WVSHPO prior to commencement of work. Any interpretive material, such as signs and brochures, will be submitted to the WVDOH for review and approval by the WVSHPO and the WVDOH. The Ritchie County Historic Landmarks Commission will provide status reports summarizing progress and financial information in writing or via email to the WVDOH every six (6) months.
- IV. 500 color brochures of the Cairo Bridge will be developed by the WVDOH and distributed to the Town of Cairo and the Ritchie County Historic Landmarks Commission. The WVSHPO will be given the opportunity to review all educational materials developed for this stipulation. A CD containing the brochure will also be given to the Town and Landmarks Commission to print brochures when the original total has been exhausted.
- V. The Cairo Bridge will be documented on the West Virginia historic bridge website: Highways Through History (<http://www.highwaysthroughhistory.com>).

VI. Duration

This MOA will expire if its stipulations are not carried out within five (5) years from the date of its execution. At such time, and prior to work continuing on the undertaking, the FHWA shall either (a) execute an MOA pursuant to 36 CFR 800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR 800.7. Prior to such time, FHWA may consult with other signatories to reconsider the terms of the MOA

and amend it in accordance with Stipulation X below. FHWA shall notify the signatories as to the course of action it will pursue.

VII. Post-Review Discoveries

If any unanticipated discoveries of historic properties or archaeological sites, including human burial sites and/or skeletal remains, are encountered during the implementation of this undertaking, work shall be suspended in the area of the discovery until the WVDOH has developed and implemented an appropriate treatment plan in consultation with the WVSHPO pursuant to 36 CFR 800.13 (b).

VIII. Monitoring and Reporting

Each year following the execution of this MOA until it expires or is terminated, FHWA shall provide all parties to this MOA a summary report detailing work carried out pursuant to its terms. Such report shall include any scheduling changes proposed, any problems encountered, and any disputes and objections received in FHWA's efforts to carry out the terms of this MOA.

IX. Dispute Resolution

Should any signatory or concurring party to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, FHWA shall consult with such party to resolve the objection. If FHWA determines that such objection cannot be resolved, FHWA will:

- A. Forward all documentation relevant to the dispute, including the FHWA's proposed resolution, to the ACHP. The ACHP shall provide FHWA with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, FHWA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP, signatories and concurring parties, and provide them with a copy of this written response. FHWA will then proceed according to its final decision.
- B. If the ACHP does not provide its advice regarding the dispute within the thirty (30) day time period, FHWA may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, FHWA shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.
- C. FHWA's responsibility to carry out all other actions subject to the terms of this MOA that are not the subject of the dispute remain unchanged.

X. Amendments

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

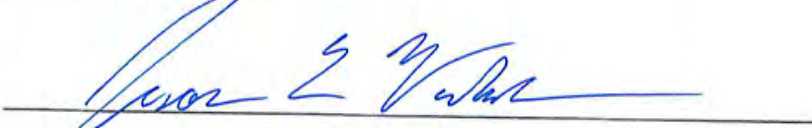
XI. Termination

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation VIII, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, FHWA must either (a) execute a MOA pursuant to 36 CFR 800.6, or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR 800.7. FHWA shall notify the signatories as to the course of action it will pursue.

EXECUTION of the Memorandum of Agreement by the FHWA, WWSHPO, the WVDOH and the Council, and implementation of its terms evidence that the FHWA has afforded the Council an opportunity to comment on the Cairo Bridge Project and its effects on historic properties, and that the FHWA has taken into account the effects of the undertaking on the historic properties.

Signatories Page



Federal Highway Administration

12/12/17

Date



West Virginia Deputy State Historic Preservation Officer


6/1/2017

Date

Advisory Council on Historic Preservation

Date

INVITED SIGNATORY:



West Virginia Division of Highways

6-15-17

Date

Consulting Parties

David M. Scott, CHAIRMAN
Ritchie County Historic Landmarks Commission

MAY 30, 2017
Date

NOTE: The Ritchie County Historic Landmarks Commission hereby agrees to this Memorandum of Agreement with the understanding that the Bank of Cairo Building is the historic building for which a portion of the \$10,000 will be appropriated. (See MOA Page 2, Stipulations, Paragraph 3.)

Consulting Parties

Gary S Haugh

Mayor, Town of Cairo

4-15-17

Date