

State Level Historic Documentation Report

State Project No. S307-11-7.66

Nicut Run Ribbed Arch Calhoun County



Prepared by:

Randy Epperly, Historian

Department of Transportation
Division of Highways
Engineering Division
Environmental Section

June 4, 2019

STATE LEVEL HISTORIC DOCUMENTATION
NICUT RUN RIBBED ARCH

- Location: County Route 11, spanning Left Fork West Fork of Little Kanawha River
Calhoun County
West Virginia

USGS Chloe Quadrangle
- Date of Construction: 1926
- Builder: Luten Bridge Company
- Present Owner: West Virginia Department of Transportation
Division of Highways
1900 Kanawha Boulevard, Building 5, Room A-110
Charleston, WV 25305
- Present Use: Vehicular Bridge
- Significance: Nicut Run Ribbed Arch is eligible for the National Register under Criterion C as an example of a spandrel-braced arch bridge, an uncommon bridge type. It is also associated with nationally recognized bridge designer Daniel Luten.
- Project Information: The project has been undertaken due to its poor condition and deficiencies of the structure. The project will provide a new bridge crossing the Left Fork West Fork Little Kanawha River. The existing bridge is rated as poor and is in a deteriorating condition. The existing bridge warrants replacement. The documentation was undertaken in January 2019 in accordance with a Memorandum of Agreement among the Federal Highway Administration, West Virginia Department of Transportation, West Virginia State Historic Preservation Office. The bridge is scheduled to be replaced in 2019.

Randy Epperly, Historian
West Virginia Division of Highways
Charleston, WV 25305
June 4, 2019

Nicut Run Ribbed Arch is located in Calhoun County and carries County Route 11 over Left Fork West Fork of Little Kanawha River. The bridge consists of a simple span reinforced concrete arch supported by concrete footings. It is a one lane bridge that is 58 feet long and 18 feet wide. It was built in 1926 by the Luten Bridge Company and the Average Daily Traffic in 2016 was 437 Vehicles Per Day.

Nicut Run Ribbed Arch is eligible for the National Register of Historic Places under Criterion C as an example of a spandrel braced arch, an uncommon bridge type. The bridge is also significant for its association with Daniel Luten, a nationally recognized bridge designer.

The existing bridge is seriously deteriorated. The structure's condition is rate as poor. There are numerous cracks and spalls exposing rebar in the arch wing, parapets, and walls. A plate has been added to the roadway where a hole in the deck has developed. There are also issues with erosion, scour, and settlement along the abutments (WVDOH, 2017).

The small community of Nicut has existed since the mid-1800s. The area was used for agriculture with small family farms. The community included a post office (now closed), Beech Grove School (now closed), and Beech Valley Baptist Church (still open).

Concrete deck arch bridges were typically constructed in West Virginia between 1900 and 1951. The arch is elliptical with the bottom of the arch receiving most of the load. Concrete arches are located throughout West Virginia and were very popular between 1910 and the 1930s. They are similar to masonry arches but were cheaper to build. These bridges "act in compression and require steel reinforcement. The arch rib and spandrel columns are reinforced with longitudinal steel held by lateral ties" (KCI, 2015). Nicut Run Ribbed Arch consists of two closed spandrel elliptical arch ribs supporting the deck slab. It is an example of a spandrel braced arch, which is an uncommon bridge type. Closed spandrel arches are typically filled with earth or rubble encased by concrete (PGH Bridges, 2008).

Daniel B. Luten received numerous patents for concrete arch bridge designs in the early 1900s. Luten often gave other bridge builders permission to construct bridges using his design for a fee. The National Bridge Company was founded in 1902 by Daniel Luten and renamed Luten Bridge Company in 1920. Branch offices were established along the eastern United States and the company was known for its numerous concrete arch bridge designs (Ficker, 2003 and KCI, 2015).

BIBLIOGRAPHY

Ficker, Maryellen. Bridge Builders. January 2003. West Virginia Division of Highways.

KCI Technologies and Mead & Hunt Inc. West Virginia Statewide Historic Bridge Survey: Final Survey Report. April 2015.

PGH Bridges. Bridges & Tunnels of Allegheny County & Pittsburgh, PA. 2008.
www.pghbridges.com Retrieved 2 January 2019.

Weaver, Bob. Upper Nicut Valley. 2012. <http://www.hurherald.com/obits.php?id=48988>
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West Virginia Division of Highways. Nicut Run Ribbed Arch Inspection Report. 2017.

STATE LEVEL HISTORIC DOCUMENTATION
INDEX TO PHOTOGRAPHS

Nicut Run Ribbed Arch
County Route 11
Left Fork West Fork Little Kanawha River
Calhoun County, West Virginia

Photographer: Randy Epperly

July 2018

NICUT RUN RIBBED ARCH-1	View of Nicut Run Ribbed Arch looking south.
NICUT RUN RIBBED ARCH-2	View of Nicut Run Ribbed Arch looking north.
NICUT RUN RIBBED ARCH-3	View of arch and broken parapet wall.
NICUT RUN RIBBED ARCH-4	View of County Court Bridge Plate located on upstream parapet wall.
NICUT RUN RIBBED ARCH-5	View of bridge builder plate located on outside of downstream parapet wall.
NICUT RUN RIBBED ARCH-6	View of Nicut Run Ribbed Arch looking north.



Photo #1



Photo #2



Photo #3



Photo #4



Photo #5



Photo #6

**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 NICUT RUN RIBBED ARCH BRIDGE
REPLACEMENT PROJECT
STATE PROJECT #S307-11-7.66
CALHOUN COUNTY, WEST VIRGINIA
OCTOBER 2018**

WHEREAS, the Federal Highway Administration (FHWA), in cooperation with the West Virginia Division of Highways (WVDOH), proposes to replace the Nicut Run Ribbed Arch Bridge, hereinafter referred to as the Project. The project will replace the existing bridge with a new bridge on a new upstream alignment; and

WHEREAS, the FHWA has determined that the Project will have an adverse effect upon the Nicut Run Ribbed Arch Bridge, a property 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 and Calhoun County Historical Society and received no response; and

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:

Nicut Run Ribbed Arch Bridge Replacement Project

- I. The Nicut Run Ribbed Arch Bridge will be documented in its present historic setting. The documentation package will include 5"x7" 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. The documentation package will include hard copies in the form of PDFs for reports and documents, and TIFF files for photographs. The WVSHPO will be given the opportunity to review the documents before submission of final versions.
- 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 WVDOH bridge files
- III. West Virginia Division of Highways staff will provide the Calhoun County Public Library a copy of the Nicut Run Ribbed Arch Bridge State Level Historic Documentation for references and educational purposes.
- IV. 50 color brochures of the Nicut Run Ribbed Arch Bridge will be developed by the WVDOH and distributed to the Calhoun County Public Library. 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 library to print brochures when the original total has been exhausted.
- V. The Nicut Run Ribbed Arch Bridge will be documented on the West Virginia historic bridge website.

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 effects to or 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 X, 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 Nicut Run Ribbed Arch Bridge Replacement Project and its effects on historic properties, and that the FHWA has taken into account the effects of the undertaking on the historic properties.

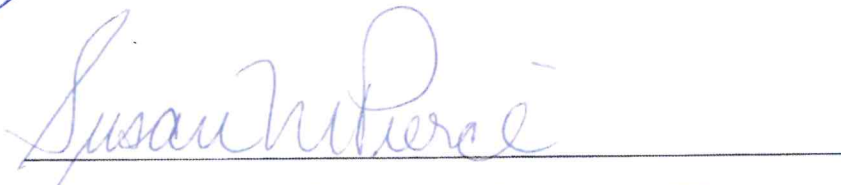
Signatories Page



Federal Highway Administration

11/16/18

Date



West Virginia Deputy State Historic Preservation Officer

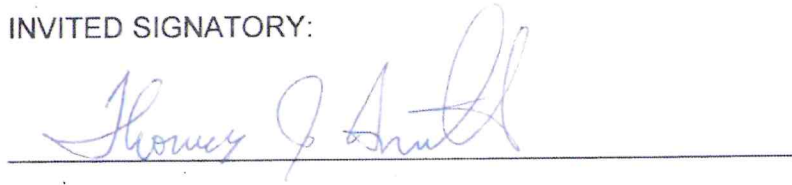
10/26/18

Date

Advisory Council on Historic Preservation

Date

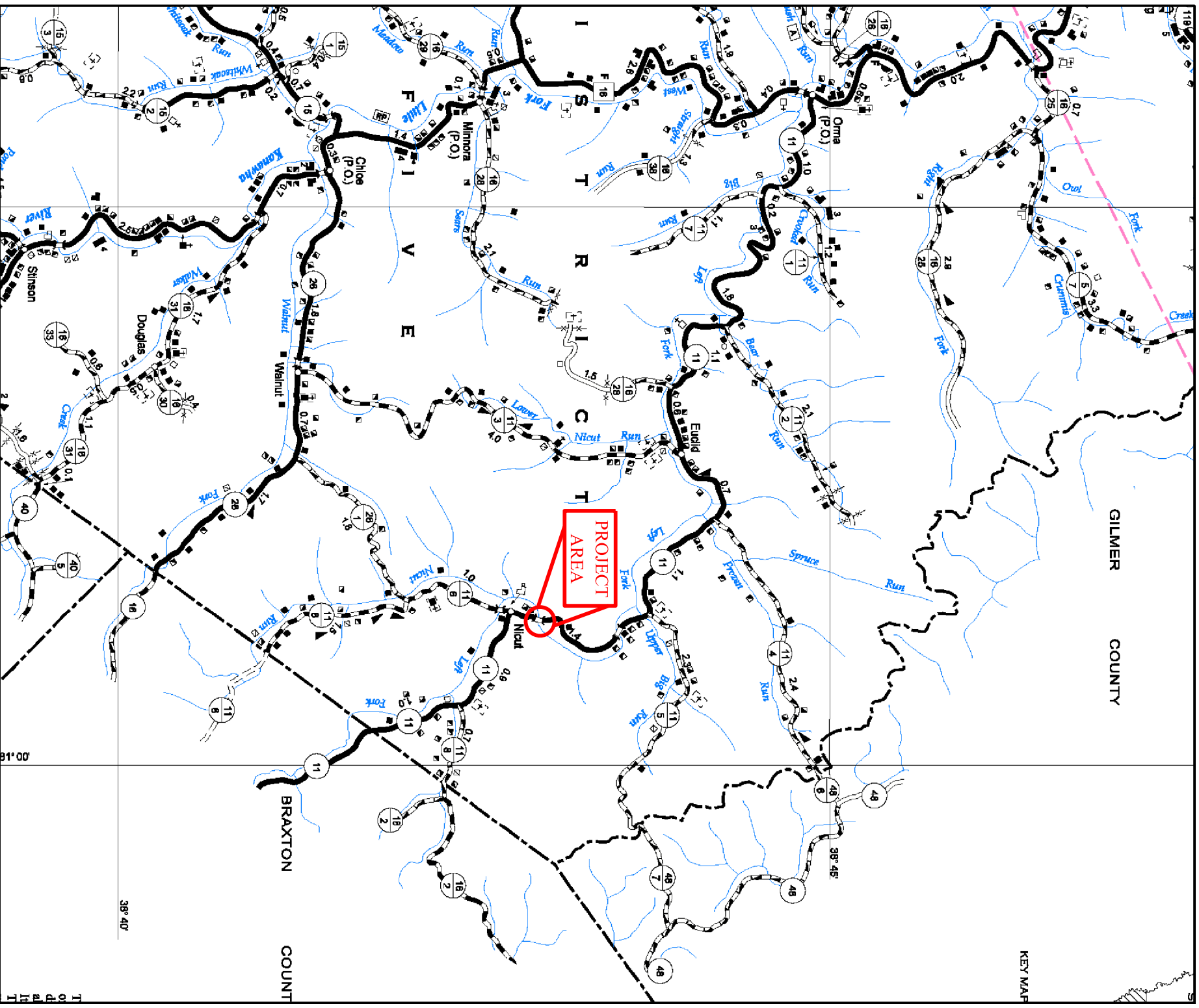
INVITED SIGNATORY:



West Virginia Division of Highways

11-7-18

Date



KEY MAP

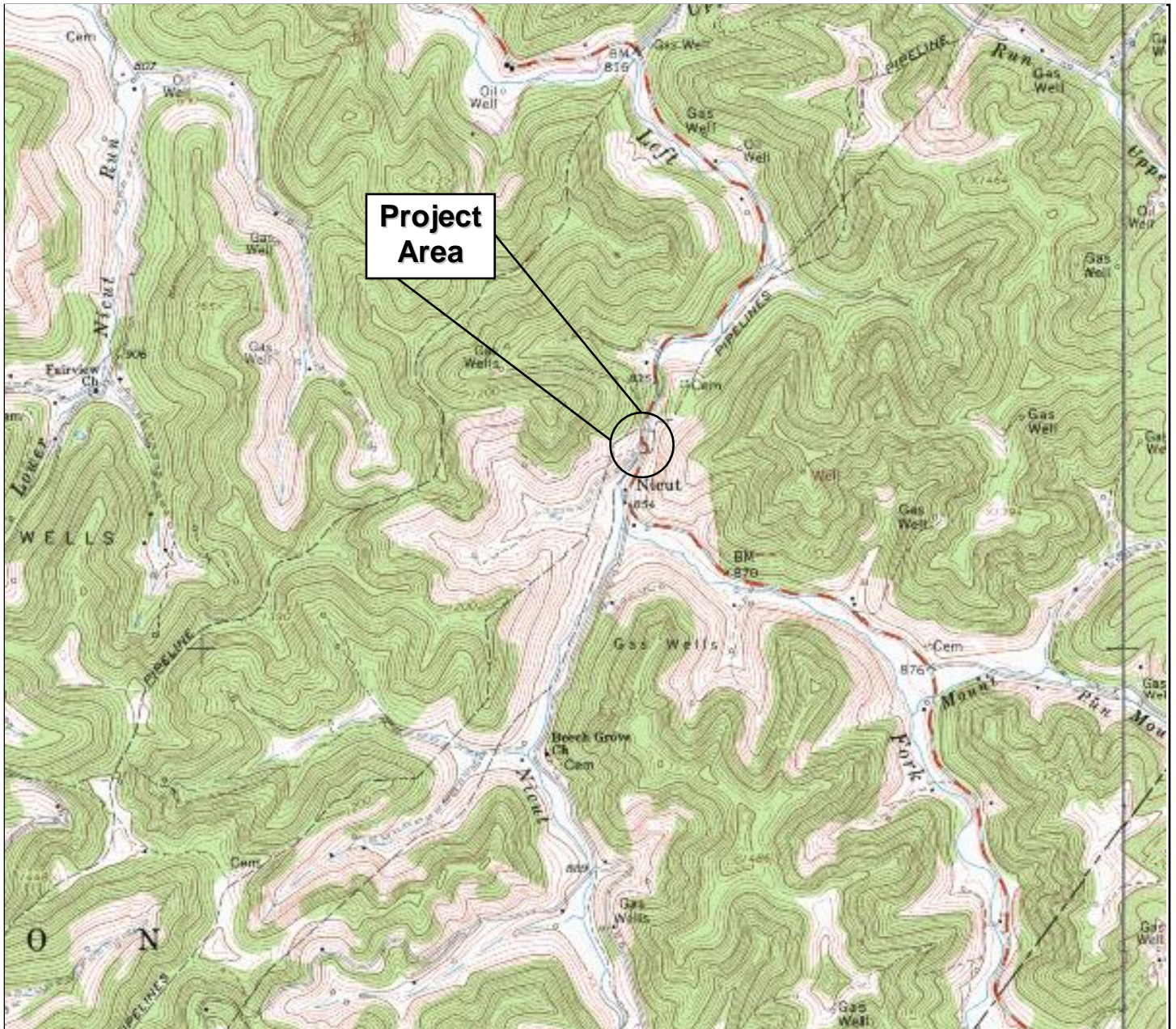
GILMER COUNTY

BRAXTON COUNTY

BRIDGE REPLACEMENT STUDY
 NICUT RUN ARCH #07-11-7.69
 PROJECT NO. S307-11-7.66
 CALHOUN COUNTY
 38° 42'57"N, 81° 01'17"W

WEST VIRGINIA
 DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS
 DISTRICT THREE BRIDGE DEPARTMENT

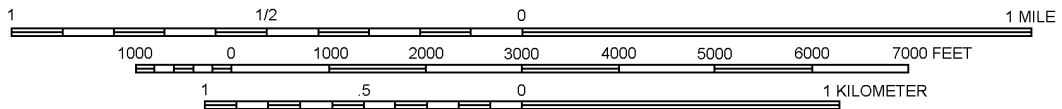
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Project Area

Site Plan
Nicut Run Arch #07-11-7.69

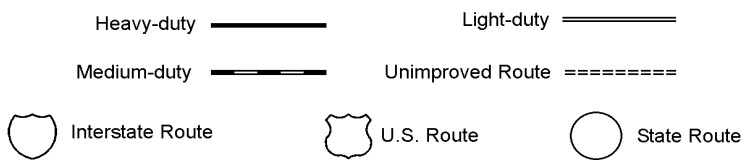
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CONTOUR INTERVAL 20 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

ROAD CLASSIFICATION



QUADRANGLE LOCATION



CR 11

Nicut Run Ribbed Arch, CH-0015



Nicut Run Ribbed Arch Bridge
Calhoun County
S307-11-7.66
WVDOH
Engineering Division
Environmental Section
Randy Epperly
July 18, 2018

West Virginia Historic Bridge Inventory Form

Bridge No. 07-011/00-007.69 BARS No. 07A030 Federal Bridge No. 00000000007A030 Bridge Design No. 6100.0

IDENTIFICATION INFORMATION

SHPO Survey No. CH-0015 **Owner** State Highway Agency
Local Name NICUT RUN RIBBED ARCH **Status** Extant - in service
Other Local Name

LOCATIONAL AND SETTING INFORMATION

District 03 **County** Calhoun **Latitude** 38430000 **Longitude** 081011800
Location 0.16 MI CR 11/16 **UTM-Northing**
Facility Carried By Structure CO RT 11 **UTM-Easting**
UTM Zone
Features Intersected NICUT RUN **Surrounding Land Use** Forested
Type of Development Rural - (undeveloped area outside communities)

STRUCTURAL INFORMATION

Main Span Type Concrete Arch - Deck **Structure Length (ft)** 57
Main Span Type Code 111 **Length of Maximum Span (ft)** 57
Number of Spans in Main Unit 001 **Average Daily Traffic** 000200 **Year** 2004
Number of Approach Spans 0000 **Sufficiency Rating** 0615 **Skew** 00
(Note: Data current as of April 2006 database)

BRIDGE DESCRIPTIVE INFORMATION

Year Built 1926 **Arrangement**
Year Reconstructed **Connection Type**
Truss Bridge Type **Truss Details**
Alteration(s) **Date of Alterations (Year)**

Architectural Treatment(s) **Bridge Plate Text**
(2) Plaques. "J.A. MOREFORD, PRES. D.O. CHENOWETH, R.A. BOARD, COUNTY COURT, B.B. FERREL, PROS. ATTY., R.C. HARDMAN, CLERK" and "1926 LUTEN BRIDGE CO. YORK, PA."

BRIDGE HISTORY

Engineer or Designer **Builder or Fabricator** Lutén Bridge Company
Bridge Plan Location Unknown
Additional Details: Closed parapet rail with incised panels. Some deterioration on parapet corner and at edge of deck slab. Two closed spandrel elliptical arch ribs support the deck slab. This bridge is an example of a spandrel-braced arch, an uncommon bridge type. The type is closely associated with the work of Daniel B. Lutén, a nationally recognized bridge designer.

NATIONAL REGISTER EVALUATION INFORMATION

National Register Determination Eligible **Reason Not Evaluated**

National Register Determination Date 2013

This bridge is not eligible for the National Register under Criterion A as it does not have a significant association with an important historic transportation system, program, event, trend, or policy identified through contextual research and survey activities.

This bridge is an example of an uncommon type or displays an unusual design element that represents the individuality or variation of features particular to this bridge type.

This bridge was designed or constructed by an engineer or firm whose work is distinguishable on the national level.

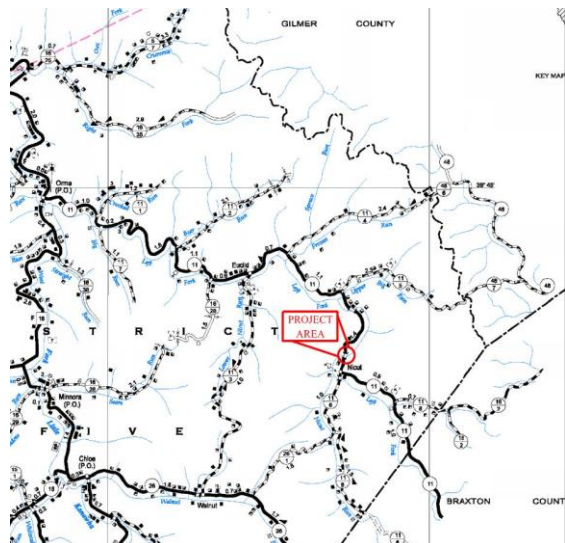
This bridge retains the historic integrity necessary to convey its engineering significance and, therefore, is eligible for the National Register under Criterion C.





WEST VIRGINIA HISTORIC PROPERTY INVENTORY FORM

Street Address Located along County Route 11, approximately 0.16 miles from County Route 11/16, spanning Left Fork West Fork of Little Kanawha River	Common/Historic Name/Both <input type="checkbox"/> Common <input type="checkbox"/> Historic <input checked="" type="checkbox"/> Both Nicut Run Ribbed Arch	Field Survey # HPI #1	Site # (SHPO Only) CH-0015
Town or Community Nicut	County Calhoun	Negative No.	NR Listed Date
Architect/Builder Lutten Bridge Company	Date of Construction 1926	Style (SHPO Only)	
Exterior Siding / Materials Concrete Arch	Roofing Material Deck Material: Concrete with asphalt overlay	Foundation Abutments: Concrete	
Property Use or Function Transportation	UTM Zone18 NAD 1983 Easting 498135E Northing 4285228N		
Survey Organization & Date WVDOH July 23, 2018	Quadrangle Name Chloe		
Part of What Survey / FR# State County Route S307-11-7.66			



Name: Nicut Run Ribbed Arch

Survey #: CH-0015

Survey / FR#: State County Route: S307-11-7.66

Present Owners WVDOH	Owners Mailing Address Charleston, WV
Describe Setting <div style="float: right;"> Unknown--<1 Acres <input type="checkbox"/> Archaeological Artifacts Present </div> <p>Nicut Run Ribbed Arch Bridge is located along County Route 11 in Calhoun County. It spans Left Fork West Fork of Little Kanawha River in Nicut.</p>	
Description of Buildings or Site (Original and Present) <div style="float: right;"> Stories Front Bays </div> <p>Nicut Run Ribbed Arch Bridge is a simple span reinforced concrete arch supported by concrete footings. It is a one lane bridge that is 58 feet long and 18 feet wide. It was built in 1926 by the Luten Bridge Company. It contains closed parapet rail with incised panels. Two closed spandrel elliptical arch ribs support the deck slab. The Average Daily Traffic in 2016 was 437 Vehicles Per Day.</p>	
Alterations <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe	
Additions <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes, describe	
Describe All Outbuildings N/A	
Statement of Significance: See Continuation Sheet	
Bibliographical References Mead & Hunt and KCI. West Virginia Historic Bridge Survey. 2013. WVDOH Maintenance Division. WV Bridge Inspection Data. Charleston, WV	
Form Prepared By: <div style="float: right;">Date: July 8, 2019</div> <p>Name/Organization: Randy Epperly Address: WV Division of Highways Capitol Complex Building 5, Rm. 463 Charleston, WV 25305</p> <p>Phone #: 304-558-9385</p>	

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Nicut Run Ribbed Arch
Survey Number: CH-0015
Project / FR#: State County Route: S307-11-7.66

Other than a general association with transportation in the area, there is no reason to believe this structure has an important link events or trends that have made a significant contribution to the broad patterns of our history. Nicut Run Ribbed Arch was built in 1920 and did not contribute to any significant event in the area during the 20th Century. No information regarding funding for the bridge was found. Therefore, the bridge does not meet Criterion A of the National Register.

The Nicut Run Ribbed Arch is not associated with the significance of an individual or an individual's historic contribution. The bridge is not eligible under Criterion B.

Nicut Run Ribbed Arch Bridge was inventoried by Mead & Hunt and KCI in 2013 as part of the West Virginia Historic Bridge Survey. The survey states "the bridge is a good example of an uncommon bridge type, the spandrel-braced arch." The survey recommended the bridge as eligible under Criterion C as "an example of an uncommon type or displays an unusual design element." The bridge was designed by the Luten Bridge Company and Daniel B. Luten. Luten is considered a master builder with national significance. The bridge has retained its integrity since the 2013 survey and remains eligible under Criterion C.

The bridge is not likely to possess any important information that will contribute to our understanding of early human history or prehistory. The potential for information is minimal. The Nicut Run Ribbed Arch is not eligible for the National Register of Historic Places under Criterion D.