



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

**1900 Kanawha Boulevard East • Building Five • Room 110
Charleston, West Virginia 25305-0430 • (304) 558-3505**

**Earl Ray Tomblin
Governor**

**Paul A. Mattox, Jr., P. E.
Secretary of Transportation/
Commissioner of Highways**

October 22, 2013

**Ms. Susan Pierce, Deputy State
Historic Preservation Officer
Division of Culture and History
1900 Kanawha Boulevard, East
Charleston, West Virginia 25305**

Dear Ms. Pierce:

**State Project: S305-1/7-1.68
Daugherty Bridge Replacement
Brooke County**

Attached, in accordance with the Memorandum of Agreement (MOA) Stipulations I and II is the State Level Historic Documentation for the Daugherty Bridge. Also attached is a CD-ROM of the documentation. Thank you for your assistance in the progress of this project.

Should you have any questions, please do not hesitate to contact Randy Epperly III of our Environmental Section at (304) 558-9385.

Very truly yours

A handwritten signature in blue ink that reads "Ben L. Hark".

**Ben L. Hark
Section Head
Environmental Section
Engineering Division**

**H:k
Attachments
bcc: DDE (RE)**

STATE LEVEL HISTORIC DOCUMENTATION

DAUGHERTY BRIDGE

Location: County Route 1/7 at its intersection with County Route 1
Spanning Harmon Creek
Brooke County
West Virginia

USGS Steubenville East Quadrangle

Date of Construction: 1912

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: The Daugherty bridge is significant under Criterion A of National Register of Historic Places for its local significance as a transportation link and Criterion C as representing a patented feature of Daniel B. Luten, a master bridge builder.

Project Information: The project has been undertaken due to the poor condition of the bridge. Any future deterioration of the bridge would result in its closure. The existing bridge warrants replacement. The documentation was undertaken in October 2013 in accordance with a Memorandum of Agreement among the West Virginia Department of Transportation and the West Virginia State Historic Preservation Office. These measures are required prior to replacement of this National Register listed structure.

Randy Epperly III, Structural Historian
West Virginia Division of Highways
Charleston, WV 25305

October 21, 2013

Daugherty Bridge is located in Brooke County on County Route 1/7 at its intersection with County Route 1. The bridge spans Harmon Creek in the community of Colliers. The structure consists of two reinforced concrete arch spans supported by two stub abutments and one pier. The overall length is 65 feet 6 inches and the horizontal clearance is 14 feet. No original bridge plans were found (WVDOH Bridge Files).

Daugherty Bridge was built in 1912, by Luten Bridge Company York, Pennsylvania. The bridge provided an important link to the movement of goods and materials in Brooke County. It conveys its local association with the growth of the state's road system as a result of the 1909 legislature that delineated the county's responsibilities for road maintenance and set standards regarding the width and grade of state roads built by county engineers prior to the Good Roads Amendment (Carver, 2008). Therefore Daugherty Bridge is eligible under Criterion A of the National Register of Historic Places.

The bridge is also eligible under Criterion C for its significance as a concrete arch bridge constructed by a company associated with a master builder. The bridge possesses distinctive rounded arch ring detail and nonsymmetrical design that was a patented feature of Daniel B. Luten. Although there has been inconsistent repair to the original bridge material, the Daugherty Bridge does retain sufficient integrity as a Luten designed concrete arch bridge.

Luten bridges were built throughout the United States including many in West Virginia and established branch offices throughout the east and south. Daniel B. Luten received his first patent for a concrete arch bridge in 1900 and by 1925 Luten was responsible for over 1,400 bridges and 50 patents. According to the 2013 West Virginia Historic Bridge Survey Draft Final Report, there were 215 remaining concrete arch bridges associated with Luten Bridge Company in West Virginia (KCI, 2013).

In West Virginia 453 concrete deck arches built prior to 1965 are still standing. The 1910s and 1920s were when the most concrete deck arches were built and most were between 20 and 100 feet long. Concrete arches were built as an alternative to masonry arches, because they were cheaper but maintained the same function and appearance. Deck arches such as Daugherty Bridge that are shorter span lengths are closed spandrel arches. The spandrel is filled, closed with a wall, and the fill material takes the traffic loads. The arch is called a ring or barrel in this type of arches. Daugherty Bridge has a distinctive rounded arch ring detail (KCI, 2013).

BIBLIOGRAPHY

Carver, Martha. Tennessee's Survey Report for Historic Highway Bridges. Tennessee Department of Transportation, 2008.

KCI Technologies, Inc. and Mead & Hunt, Inc. West Virginia Statewide Historic Bridge Survey: Revised Draft Final Report. West Virginia Division of Highways. February 2013.

West Virginia Division of Highways, Bridge Files, Maintenance Division, Building 5, Capitol Complex, Charleston, WV 25305.

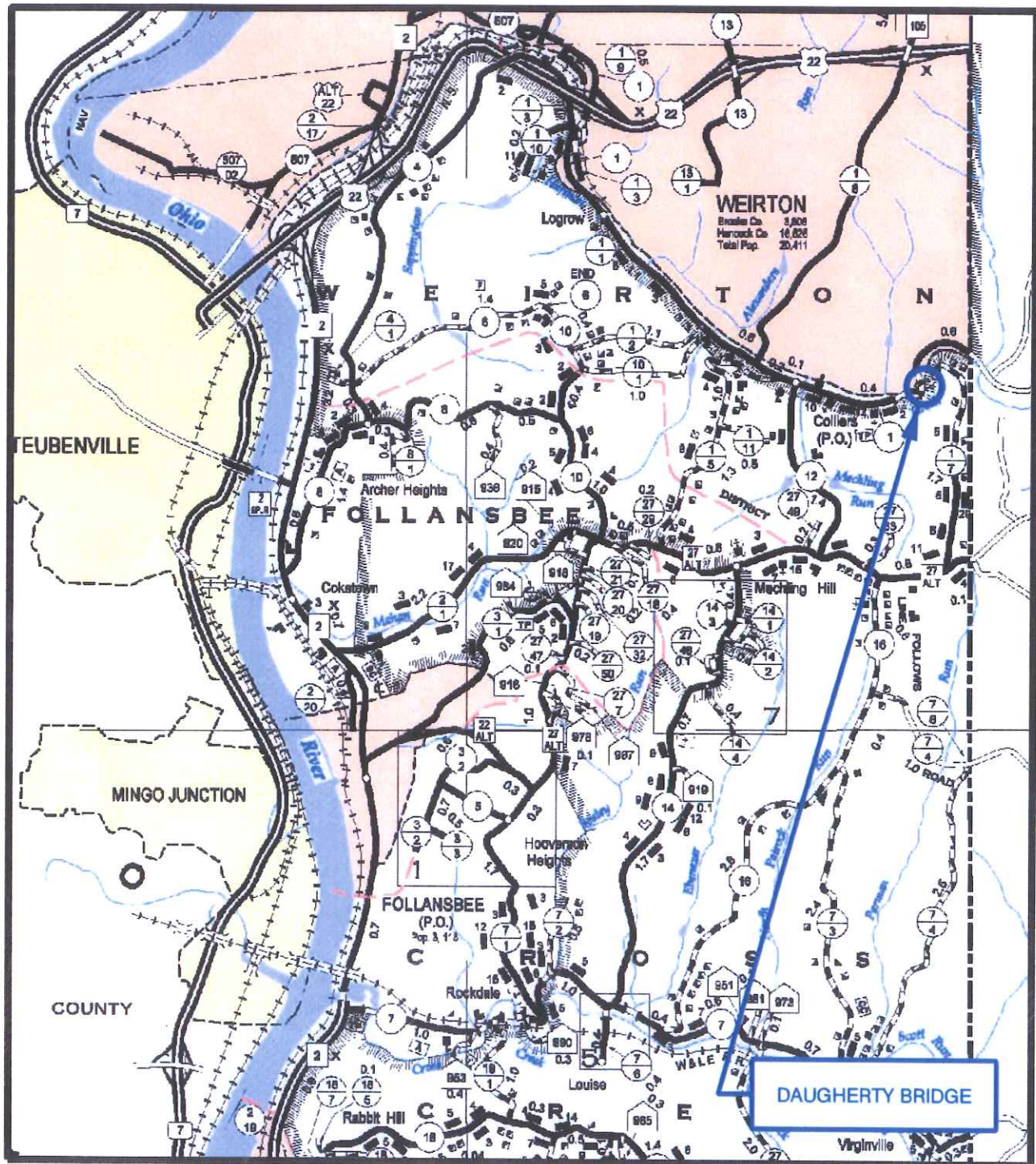
STATE LEVEL HISTORIC DOCUMENTATION
INDEX TO PHOTOGRAPHS

Daugherty Bridge
County Route 1/7
Harmon Creek
Brooke County, West Virginia

Photographer: Ginger Williford

May 23, 2011

DAUGHERTY BRIDGE-1	Bridge profile looking upstream.
DAUGHERTY BRIDGE-2	Upstream side of bridge looking SE at modern residence.
DAUGHERTY BRIDGE-3	Looking east toward bridge.
DAUGHERTY BRIDGE-4	Looking at SW intersection of CR 1/7 and CR 1.
DAUGHERTY BRIDGE-5	View of pier, abutment, and wingwall.
DAUGHERTY BRIDGE-6	Looking upstream at Daugherty Bridge.



VICINITY MAP

(USGS TOPO MAP: STEUBENVILLE EAST OH, WV (NO SCALE))

BRIDGE NUMBER: S305-1/7-1.68
FEDERAL PROJECT NUMBER: N/A

PROJECT NAME: DAUGHERTY BRIDGE
COUNTY: BROOKE



WEST VIRGINIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

DATE:
4/20/11

SHEET
1 OF 3



SITE LOCATION MAP

(SCALE: 1"=1 MILE)

BRIDGE NUMBER: S305-1/7-1.68
FEDERAL PROJECT NUMBER: N/A

PROJECT NAME: DAUGHERTY BRIDGE
COUNTY: BROOKE



WEST VIRGINIA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

DATE:
4/20/11

SHEET
2 OF 3

**MEMORANDUM OF AGREEMENT
BY AND AMONG
THE WEST VIRGINIA STATE HISTORIC PRESERVATION OFFICER
AND THE WEST VIRGINIA DIVISION OF HIGHWAYS
REGARDING IMPLEMENTATION OF THE DAUGHERTY BRIDGE
REPLACEMENT PROJECT
STATE PROJECT #S305-1/7-1.68
BROOKE COUNTY, WEST VIRGINIA
JUNE 2013**

WHEREAS, the West Virginia Division of Highways (WVDOH) proposes to replace Daugherty Bridge which spans Harmon Creek in Brooke County, hereinafter referred to as the Project. The improvements involve the construction of a new bridge at the existing location and the removal of the existing bridge; and

WHEREAS, the WVDOH has determined that the Project will have an adverse effect upon the Daugherty Bridge, a property eligible for the National Register of Historic Places (NRHP); and

WHEREAS, the WVDOH has consulted with the West Virginia State Historic Preservation Officer (WVSHPO) pursuant to West Virginia Code Chapter 29, Article 1 and its implementing regulations (82 CSR 2), as well as 36 CFR Part 800.5 Implementing Section 106 of the National Historic Preservation Act; (16 U.S.C., 470f); and

WHEREAS, The WVDOH has contacted the Preservation Alliance of West Virginia and the Panhandle Trail Association; and

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

NOW, THEREFORE, 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 WVDOH shall ensure that the following stipulations are carried out:

Daugherty Bridge

- I. Daugherty 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 March 2005.
- II. A brief history of the structure will be included along with fully completed West

Virginia Historic Property Inventory forms and copies of plan sheets and drawings of the bridge from WVDOH bridge files if they are available.

- III. A brochure of the Daugherty Bridge will be developed by WVDOH and distributed to the Brooke County Public Library in Follansbee. The WVSHPO will be given the opportunity to review all educational materials developed for this stipulation.
- IV. The Daugherty Bridge will be documented on a future website listing historic bridges once the West Virginia Historic Bridge Survey is complete.

V. 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 WVDOH shall execute a MOA pursuant to 82 CSR 2.5.4.d. Prior to such time, WVDOH may consult with other signatories to reconsider the terms of the MOA and amend it in accordance. WVDOH shall notify the signatories as to the course of action it will pursue.

VI. 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).

VII. Monitoring and Reporting

Each year following the execution of this MOA until it expires or is terminated, WVDOH 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 WVDOH's efforts to carry out the terms of this MOA.

VIII. 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 SHPO.

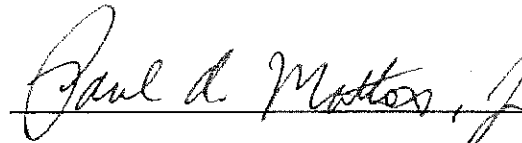
IX. Termination

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

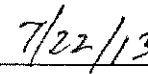
agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, WVDOH must execute a MOA pursuant to 82 CSR 2.5.4.d.

EXECUTION of the Memorandum of Agreement by the WVSHPO and the WVDOH, and implementation of its terms evidence that the WVDOH has afforded the SHPO an opportunity to comment on the Daugherty Bridge Replacement project and its effects on historic properties, and that the WVDOH has taken into account the effects of the undertaking on the historic property.



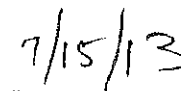
West Virginia Division of Highways



Date



West Virginia Deputy State Historic Preservation Officer



Date





