

State Level Historic Documentation Report

State Project No. S342-250-1.72
Federal Project No. ACST-0250(239)D

Cheat Bridge Randolph County



Prepared by:

Randy Epperly, Historian

Department of Transportation
Division of Highways
Engineering Division
Environmental Section

May 30, 2017

STATE LEVEL HISTORIC DOCUMENTATION CHEAT BRIDGE

Location: U.S. Route 250, Spanning Shavers Fork
Randolph County
West Virginia

USGS Durbin Quadrangle

Date of Construction: 1934

Builder: Monty Brothers Company. Steel was fabricated by Pittsburgh-Des Moines Steel 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: Cheat Bridge is eligible for the National Register under Criterion A for its association with the development of US Route 250, a major east-west transportation route. It is also eligible under Criterion C for its engineering significance and association with Monty Brothers Company, an important bridge builder in WV. Cheat Bridge is also associated with Pittsburgh-Des Moines Steel Company, a nationally known bridge fabricator. Cheat Bridge is listed on the 1990 Final List of Historic Bridges in WV.

Project Information: The project has been undertaken due to the poor condition and serious deficiencies of the structure. The project will provide a new bridge crossing Shavers Fork. The existing bridge is rated as poor and considered to be structurally deficient. A considerable number of superstructure members are considered "Fracture Critical." The existing bridge warrants replacement. The documentation was undertaken in April 2017 in accordance with a Memorandum of Agreement among the Federal Highway Administration, West Virginia Department of Transportation, and West Virginia State Historic Preservation Office. The bridge is scheduled to be replaced in 2019.

No original plans are available.

Randy Epperly, Historian
West Virginia Division of Highways
Charleston, WV 25305
May 30, 2017

Cheat Bridge carries US Route 250 over Shavers Fork in Randolph County. The bridge consists of a 110-foot simple span rivet connected pony truss (Camelback Warren) supported on concrete abutments. The trusses are rivet connected and the stringer's connections now consist of welds as opposed to the original rivet connections. A bridge plaque is located on the downstream end post of abutment 1 listing the fabricator and builder. The bridge was erected in 1934 by Monty Brothers Company of St. Albans, WV. The steel superstructure was fabricated by Pittsburgh-Des Moines Steel Company of Pittsburgh, Pa.

Cheat Bridge is listed on the 1990 Final List of Historic Bridges in WV. It is eligible for the National Register of Historic Places under Criterion A for its association with the development of US Route 250 in WV. It is also eligible under Criterion C for its engineering significance (good example of a pony truss), association with an important bridge builder in WV (Monty Brothers Company), and association with a nationally known bridge fabricator (Pittsburgh-Des Moines Steel Company).

Cheat bridge was renovated by state forces in 1983 in which several repairs and replacements were made. The bridge is currently rated as poor and is considered to be structurally deficient. A considerable number of superstructure members are deemed "Fracture Critical" and failure of these members can result in collapse of the bridge. The bridge seat is cracked and deteriorated at the downstream end. The downstream end of the backwall at Abutment 2 shows scaling and spalling. There is section loss at the upstream diagonals on the inside flange, the lower downstream chord, inside of the gusset plate downstream at the end of the lower chord, and at the ends of the floorbeams. The underside of the deck form pans shows heavy rust and the lower chord batten and splice plates show section loss, as do the upstream channel member and wearing surface (WVDOH 1991, 2014).

The steel superstructure was fabricated by Pittsburgh-Des Moines Steel Company of Pittsburgh, Pennsylvania and Des Moines, Iowa. It was erected in 1934 by Monty Brothers Company of St. Albans, West Virginia. Little information has been found regarding Monty Brothers Construction. They are recognized as an important bridge builder in WV. Several bridges in WV were built by the company including White Oak Bridge in Boone County and LCPL Larry S. Heater Memorial Bridge in Lewis County. Pittsburgh-Des Moines Steel Company was established in 1916 and after multiple name changes was known as Pitt-Des Moines, Inc in 1985 (FTC.gov). Little information other than name changes can be found. The company has been heavily involved in the construction of steel bridges and water tanks since the early to mid-1900s. The company is a nationally known bridge fabricator (Bakic, 2016).

Cheat Bridge was constructed in 1934 when US Route 250 was expanding into Virginia. US Route 250 was created in 1928 and traveled from Grafton, WV to Norwalk, Ohio. In 1934 it expanded to Richmond, VA and roughly followed the route of the Staunton Parkersburg Turnpike. US Route 250 was a spur of US Route 50 and became a major east-west transportation route.

Pony Truss bridges are typically represented by the sides of a truss extending, but not connecting, above the roadbed (Cridlebaugh, 1999-2008). Pony Truss bridges normally contained riveted connections. Camelback truss designs consist of a polygonal upper chord with five slopes. This type of design can provide a savings of material because the center span has the greatest depth of truss (NCDOT, 2013).

BIBLIOGRAPHY

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FTC.gov. Pitt-Des Moines, Inc. Briefing on Complaint Counsel's Motion for Clarification. Docket No.9300.<https://www.ftc.gov/sites/default/files/documents/cases/2005/04/050407pittdmoinnesbriefonccmoclar.pdf> Retrieved 10 November 2016.

North Carolina Department of Transportation. Types of Bridges. "Historic Bridges of North Carolina. June 2013. <https://www.ncdot.gov/projects/ncbridges/historic/types/?p=17> Retrieved 17 April 2017.

West Virginia Division of Highways, Bridge Files, Maintenance Division, Building 5, Capitol Complex, Charleston, WV 25305. 1991, 2014.

STATE LEVEL HISTORIC DOCUMENTATION
INDEX TO PHOTOGRAPHS

Cheat Bridge
U.S. Route 250
Shavers Fork
Randolph County, West Virginia

Photographer: Randy Epperly

October 2016

CHEAT BRIDGE-1	View of Cheat Bridge looking north.
CHEAT BRIDGE-2	View of Cheat Bridge looking north.
CHEAT BRIDGE-3	View of Cheat Bridge looking south.
CHEAT BRIDGE-4	View of Cheat Bridge looking south.
CHEAT BRIDGE-5	View of upstream truss member.
CHEAT BRIDGE-6	View of downstream truss member looking north.
CHEAT BRIDGE-7	View of connection on upstream truss.
CHEAT BRIDGE-8	View of guardrail on upstream truss.
CHEAT BRIDGE-9	View of bridge plate on downstream truss at southern end of bridge.
CHEAT BRIDGE-10	View of bridge plate on upstream truss at northern end of bridge.
CHEAT BRIDGE-11	View of bridge deck.



Photo #1



Photo #2



Photo #3



Photo #4



Photo #5



Photo #6



Photo #7



Photo #8



Photo #9



Photo #10



Photo #11

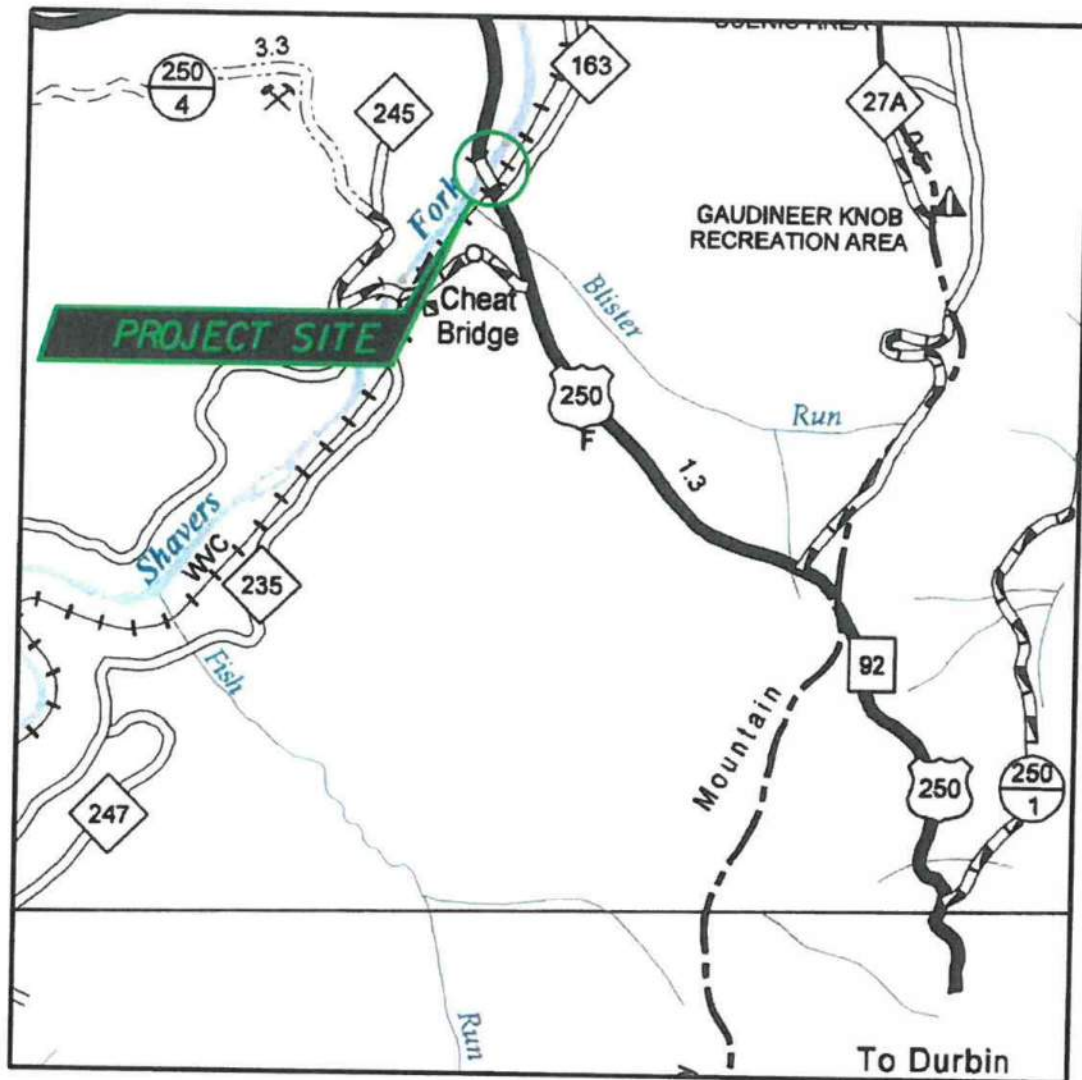
OFFICE
REVIEW

BRIDGE REPLACEMENT STUDY

CHEAT BRIDGE

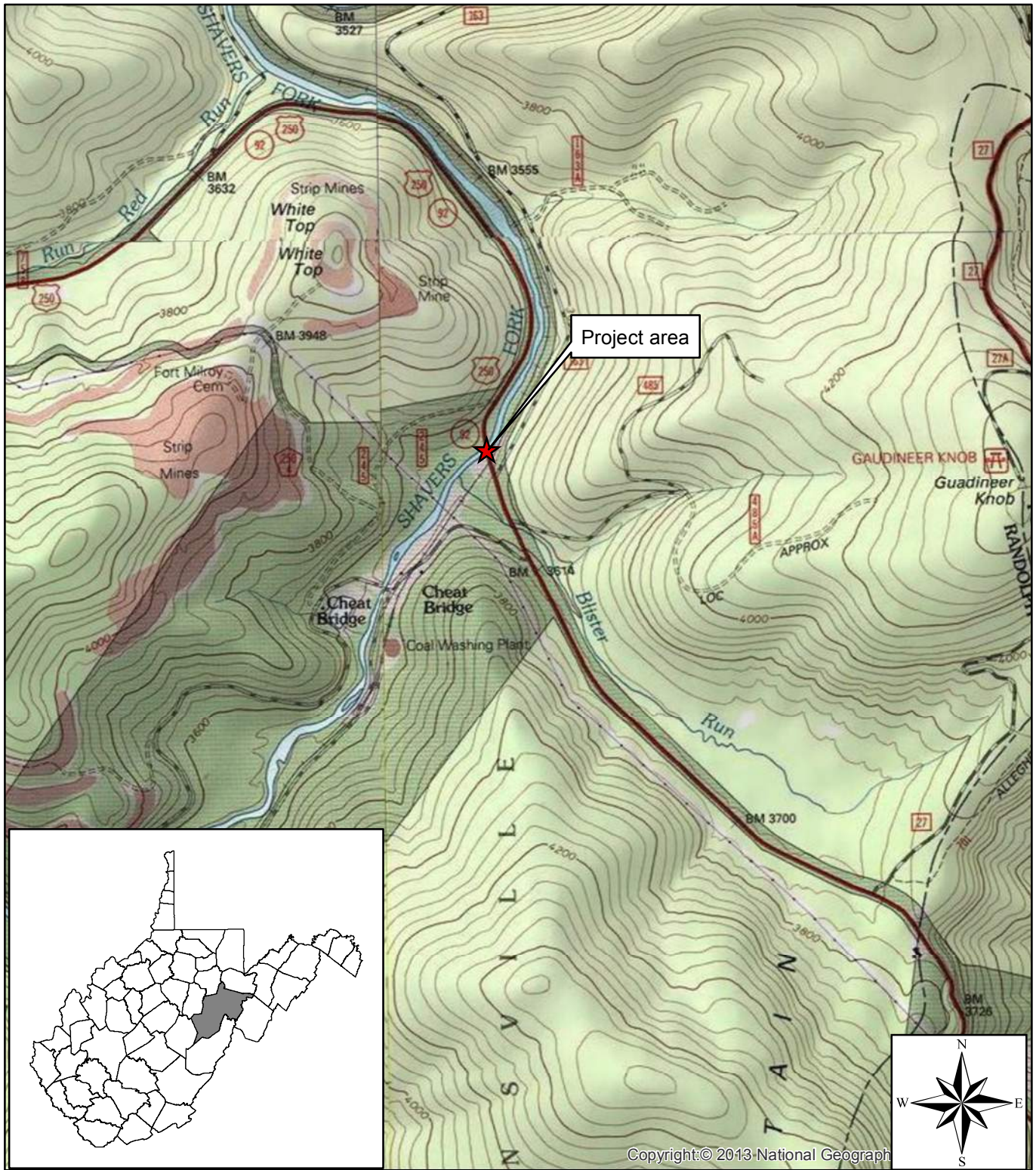
STATE PROJECT NO. S242-250-1.72

RANDOLPH COUNTY



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
ENGINEERING DIVISION
NOVEMBER 2016

Cheat Bridge Replacement
State Project No. S342-250-1.72, Federal Project No. ACST-0250(239)D



Randolph
Durbin
7.5' Topographic Quadrangle

0 500 1,000 1,500 2,000 Meters

0 0.2 0.4 0.6 0.8 Miles

Cheat Bridge



Coordinate System: WGS 1984 Web Mercator (Auxiliary Sphere)

Map Created on 10/26/2015

Architectural

- Point
- Area

National Register

- Point
- Area

User Notes:

No USGS 7.5' topographic quadrangles for West Virginia at this map extent.

Disclaimer:

The West Virginia State Historic Preservation Office Interactive Map is designed to provide professional consultants, state/federal agency employees and the public with a means to make informed decisions with regards to the cultural resource location.



**MEMORANDUM OF AGREEMENT
BY AND AMONG
THE FEDERAL HIGHWAY ADMINISTRATION
THE WEST VIRGINIA STATE HISTORIC PRESERVATION OFFICE
AND THE WEST VIRGINIA DIVISION OF HIGHWAYS
REGARDING IMPLEMENTATION OF THE CHEAT BRIDGE
REPLACEMENT PROJECT
STATE PROJECT: S342-250-1.72
FEDERAL PROJECT: ACST-0250(239)D
RANDOLPH COUNTY, WEST VIRGINIA
FEBRUARY 2017**

WHEREAS, the Federal Highway Administration (FHWA), in cooperation with the West Virginia Division of Highways (WVDOH), proposes to replace the Cheat Bridge, which spans Shavers Fork in Randolph County, hereinafter referred to as the Project. The improvements involve the construction of a new bridge on the existing alignment and the removal of the existing bridge; and

WHEREAS, the FHWA has determined that the Project will have an adverse effect upon the Cheat 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 contacted the Randolph County Historical Society and the Preservation Alliance of West Virginia regarding the Project. Neither group has responded;

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:

Cheat Bridge

- I. The Cheat 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.
- 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 Elkins-Randolph County Public Library a copy of the Cheat Bridge State Level Historic Documentation for references and educational purposes.
- IV. 50 color brochures of the Cheat Bridge will be developed by the WVDOH and distributed to the Elkins-Randolph 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 Cheat 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 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 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 Cheat 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 property.

Signatories Page



Federal Highway Administration

4/12/17

Date



West Virginia Deputy State Historic Preservation Officer

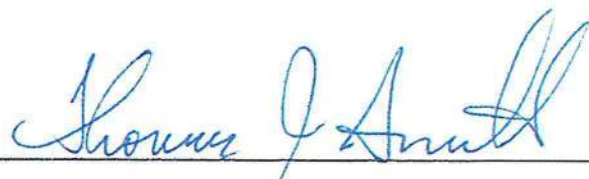
2/21/17

Date

Advisory Council on Historic Preservation

Date

CONCUR:



West Virginia Division of Highways

2-28-17

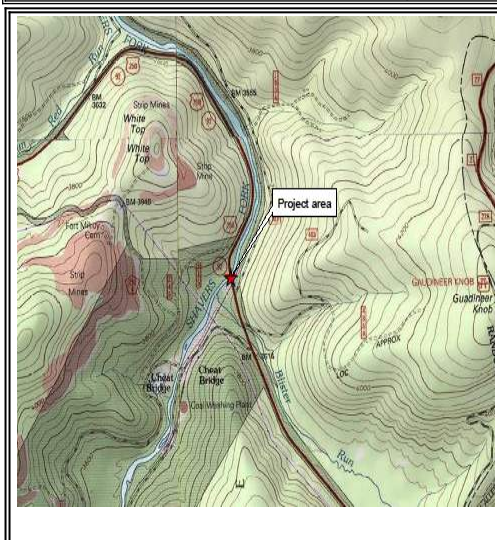
Date

Internal Rating: _____



WEST VIRGINIA HISTORIC PROPERTY INVENTORY FORM

Street Address Located on US Route 250, spanning Shavers Fork.	Common/Historic Name/Both <input checked="" type="checkbox"/> Cheat Bridge	Field Survey # HPI #1	Site # (SHPO Only) RD-0895
Town or Community Cheat Bridge	County Randolph	Negative No.	NR Listed Date
Architect/Builder Superstructure fabricated by Pittsburgh-Des Moines Steel Company. Erected by Monty Brothers Company.	Date of Construction 1934 Renovated 1983	Style (SHPO Only)	
Exterior Siding / Materials Rivet Connected Pony Truss (Camelback Warren)	Roofing Material Deck Material: Concrete filled grid deck with a seal coat wearing surface.	Foundation Abutments: Concrete	
Property Use or Function Transportation	UTM Zone17 NAD 1983 Easting 0598381E Northing 4274702N		
Survey Organization & Date WVDOH October 4, 2016	Quadrangle Name Durbin		
	Part of What Survey / FR# State County Route S342-250-1.72 Federal Project ACST-0250(239)D		



Name: Cheat Bridge
 Survey #: HPI #1
 Survey / FR#: State Project No. S342-250-1.72

Present Owners WVDOH	Owners Mailing Address Building 5, Capitol Complex Charleston, WV 25305	
Describe Setting <div style="text-align: right;">Unknown--<1 Acres <input type="checkbox"/> Archaeological Artifacts Present</div> <p>Cheat Bridge is located along US Route 250 in Cheat Bridge, Randolph County. The area is within the Monongahela National Forest and the Durbin and Greenbrier Valley Railroad is located 125 feet south of the bridge.</p>		
Description of Buildings or Site (Original and Present)	Stories	Front Bays
<p>The existing structure consists of a 110 foot simple span rivet connected pony truss (Camelback Warren) supported on concrete abutments. The trusses are rivet connected and the stringer's connections now consist of welds as opposed to the original rivet connections. The steel superstructure was fabricated by Pittsburgh-Des Moines Steel Company of Pittsburgh, Pennsylvania and Des Moines, Iowa. It was erected in 1934 by Monty Brothers Company of St. Albans, West Virginia. A bridge plaque is located on the downstream end post of abutment 1 listing the fabricator and builder. The bridge was renovated by state forces in 1983. The bridge is rated as poor and is considered to be structurally deficient.</p> <p>Alterations <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe</p> <p>1983 Renovations: Original stringers and connections replaced, floorbeams strengthened by welding plates, lower laterals and plates replaced, new deck and drains, new channel curbs and guardrail, end posts repaired, gabions placed at wingwalls, steel painted.</p> <p>1994: Bridge was painted.</p> <p>1996: Seal coat and overlay placed on deck.</p> <p>1997: Spot painting.</p> <p>1999: Approaches painted.</p> <p>2003: Spot painting, end floorbeams shimmed, lower laterals repaired, backwalls and abutment seats patched.</p> <p>2005: Deck patched.</p>		
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 <p>WVDOH Maintenance Division. WV Bridge Inspection Data. Charleston, WV. 1991& 2014. List of Historic Bridges. 1990. WVDOH. Bakic, Tracy D. Whiteoak Bridge State Level Historic Documentation Report. 30 March 2016.</p>		
Form Prepared By: Name/Organization: Randy Epperly Address: WV Division of Highways Capitol Complex Building 5, Rm. 463 Charleston, WV 25305 Phone #: 304-558-9385		Date: October 18, 2016

WEST VIRGINIA HISTORIC PROPERTY FORM

CONTINUATION SHEET

Name: Cheat Bridge
Survey Number: HPI #1
Project / FR#: State Project No. S342-250-1.72

Cheat Bridge was constructed in 1934 as part of US Route 250. US Route 250 was created in 1928 from Grafton, WV to Norwalk, Ohio. In 1934 the road was expanded to Richmond, VA and Cheat Bridge was built as part of this expansion. US Route 250 follows the old Staunton Parkersburg Turnpike route, although in the Cheat Bridge area it deviates slightly from the original alignment. US Route 250 became a major east west route and a spur of US Route 50. Cheat Bridge is eligible for the National Register of Historic Places under Criterion A for its association with the development of the highway system.

Cheat Bridge has no known association with a significant person or a significant part of a person's life. Therefore the bridge is not eligible under Criterion B.

Cheat Bridge is 110 foot riveted pony truss (Camelback Warren) and is listed on the 1990 Final List of Historic Bridges in West Virginia. The steel superstructure was fabricated by Pittsburgh-Des Moines Steel Company of Pittsburgh, Pennsylvania and Des Moines, Iowa and the bridge was built by Monty Brothers Company of St. Albans, WV. Little information has been found regarding Monty Brothers Construction. They are recognized as an important bridge builder in WV. Several bridges in WV were built by the company including White Oak Bridge in Boone County and LCPL Larry S. Heater Memorial Bridge in Lewis County. Pittsburgh-Des Moines Steel Company was established in 1916 and after multiple name changes was known as Pitt-Des Moines, Inc in 1985 (FTC.gov). Little information other than name changes could be found. The company has been heavily involved in the construction of steel bridges and water tanks since the early to mid-1900s. The company is a nationally known bridge fabricator (Bakic, 2016).

Although an extensive renovation was performed in 1983, Cheat Bridge is eligible for the National Register of Historic Places under Criterion C for its engineering significance and association with Monty Brothers Construction Company and Pittsburgh-Des Moines Steel Company.

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