



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

November 9, 2015

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: S326-5-3.98
Federal Project: STP-0005 (109)D
FR# 15-449-MR
Rude Bridge
Marshall County

Attached, in accordance with the Memorandum of Agreement (MOA) Stipulations I and II is the State Level Historic Documentation for Rude Bridge, in hard copy and CD-ROM versions. Also enclosed, in accordance with MOA Stipulations III & IV, is the brochure for Rude Bridge for SHPO review. Upon concurrence, 200 color brochures will be distributed to Marshall County Board of Education (50 brochures), Marshall County Historical Society (50), Moundsville-Marshall County Public Library (50), and Benwood-McMechen Public Library (50). As well, each recipient will receive a CD-ROM of the brochure for the organization's own reproduction use.

MOA Stipulation V – delivery of bridge plaques - has been completed. The plaques were delivered to Gary Rider, President of Marshall County Historical Society in Moundsville, WV on October 19, 2015. The receipt and email confirming this delivery are attached.

A copy of the signed MOA (highlighting the stipulations addressed) is also included with this submittal. Thank you for your assistance in the progress of this project. Should you have any questions, please do not hesitate to contact Tracy Bakic of our Environmental Section at (304) 558-9676.

Very truly yours,

Ben L. Hark
Environmental Section Head
Engineering Division

BH:h

Attachments

bcc: DDE(TDB)

**MEMORANDUM OF AGREEMENT
BY AND AMONG
THE WEST VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND THE
WEST VIRGINIA DIVISION OF HIGHWAYS
REGARDING IMPLEMENTATION OF THE
RUDE BRIDGE REPLACEMENT PROJECT
STATE PROJECT # S226-5-3.98
FEDERAL PROJECT #STP-0005 (109)D
MARSHALL COUNTY, WEST VIRGINIA
JULY 2015**

WHEREAS, the Federal Highway Administration (FHWA), in cooperation with the West Virginia Division of Highways (WVDOH), proposes to replace the Rude Bridge which spans over Big Wheeling Creek on County Route 5 (Big Wheeling Creek Road) in Marshall County, hereinafter referred to as the "Project." The improvements involve the construction of a new concrete bridge and the removal of the existing bridge; and

WHEREAS, the FHWA has determined that the Project will have an adverse effect upon Rude 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 effect archaeological properties; and

WHEREAS, the WVDOH has contacted the Preservation Alliance of West Virginia and the Marshall County Historical Society regarding the Project. Neither group chose to respond in relation to reuse of the existing Rude Bridge in place or by moving it to a new location; and

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:

Rude Bridge

- I. Rude Bridge will be documented in its present historic setting. The documentation package will include 5"x7" black and white or color digital prints in accordance with the NRHP and National Historic Landmarks Survey Photo Policy of May 2013.

- II. A brief history of Rude Bridge will be included in the aforementioned documentation package, along with fully completed West Virginia Historic Property Inventory (HPI) forms and copies of any available plan sheets and/or drawings of the bridges from WVDOH bridge files. The history will address the bridge's background in relation to its location and surroundings and, as well, will address the associated topics of: the bridge's relation to rural road development in Marshall County; the development/evolution of the bridge's Whipple Trapezoidal Through Truss design, including the design's introduction to West Virginia and Marshall County; and the history of the bridge's builder - Wrought Iron Bridge Company.
- III. WVDOH staff will provide Marshall County Schools Board of Education, Marshall County Historical Society, Moundsville-Marshall County Public Library, and Benwood-McMechen Public Library a copy of the Rude Bridge documentation for references and educational purposes.
- IV. 200 color brochures about Rude Bridge will be developed by the WVDOH. The brochures will be distributed to the following recipients: Marshall County Schools Board of Education (50 brochure copies); Marshall County Historical Society (50 brochure copies), Moundsville-Marshall County Public Library (50 brochure copies) and Benwood-McMechen Public Library (50 brochure copies). As well, each recipient will receive a CD format digital copy of the brochure for future reproduction once the original hard copies provided by WVDOH have been depleted. The WVSHPO will be given the opportunity to review all educational materials developed for this stipulation.
- V. Rude Bridge's two bridge plaques will be given to Marshall County Historical Society per that organization's request. *COMPLETED OCTOBER 19, 2015*
- VI. Rude Bridge will be documented on a future website listing historic bridges.

VII. Duration

This Memorandum of Agreement (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 Advisory Council on Historic Preservation (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 XI below. FHWA shall notify the signatories as to the course of action it will pursue.

VIII. 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).

IX. 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.

X. 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.

XI. 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.

XII. Termination

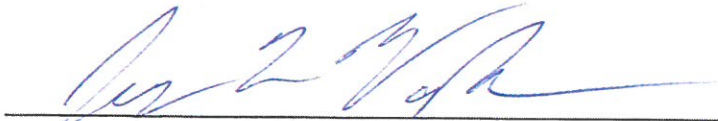
If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation XI, above. If within thirty (30) days (or another time period agreed to by all signatories) an amendment 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 WVDOT and the ACHP, and implementation of its terms evidence that the FHWA has afforded the ACHP an opportunity to comment on the Rude 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

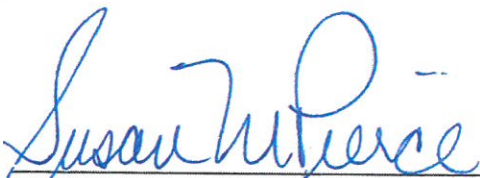
APPROVED:



Federal Highway Administration

10/9/15

Date



West Virginia Deputy State Historic Preservation Officer

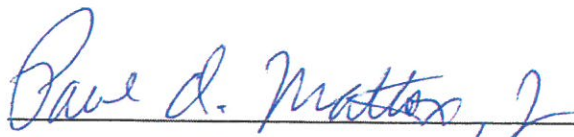
8/10/15

Date

Advisory Council on Historic Preservation

Date

CONCUR:



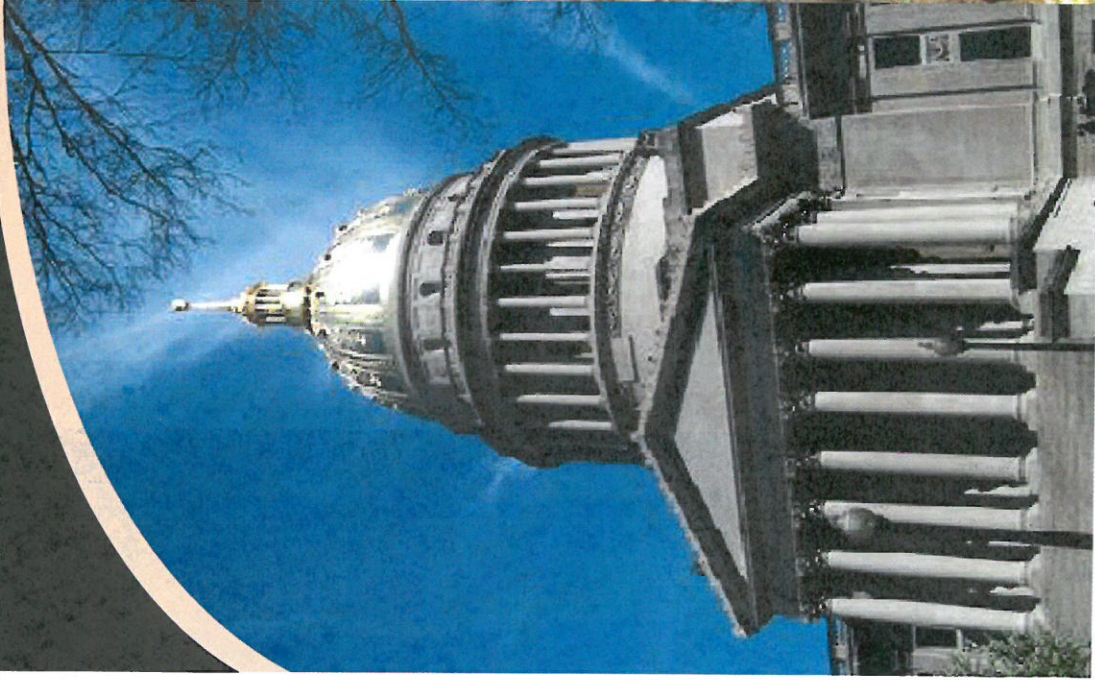
West Virginia Division of Highways

8/11/15

Date

whatHistoricalServicesUnitdoes

- Research and Write Historic Reports
- Determine National Register Eligibility
- Determine Historic Boundaries
- Determine Effects to Historic Properties
- Mitigate Adverse Effects to Historic Properties
- Complete Historic Documentations for Specific Historic Properties
- Historic Turnpike Research and Analysis
- Coordinate with Federal, State, and Local Resource Agencies
- Conduct Public Workshops for Specific Bridge and Highway Projects



contactus

Division of Highways
Engineering Division
Environmental Section
1334 Smith Street
Charleston, WV 25301
Sondra Mullins
Historical Services Unit Leader
304.558.9487
sondra.l.mullins@wv.gov



bridge
marshall county
rude

Rude Bridge was built in 1896 by the Wrought Iron Bridge Company of Canton, Ohio – a prolific late 19th-century builder of iron and steel bridges in the US. This bridge's main steel span exhibits the Whipple Trapezoidal Truss design which was highly favored for highway and railroad spans of that period. The prominent identifying feature of this truss type is that the diagonal tension members extend over two panel widths. Rude Bridge has wrought iron pin connections as well as riveted and bolted joinery at the supporting components. The second span at the east end of the bridge is a short deck girder structure. The bridge's substructure includes steel caisson bents, a common pier type by the 1890s.

Documented road building in Marshall County area did not begin until the 19th century. A route along the banks of Big Wheeling Creek was in place by the mid- to late-1800s. The earliest metal truss bridges in the county were built in 1882. Along with Rude Bridge, three other metal truss bridges are known to have spanned today's County Route 5 over Big Wheeling Creek – Shepard Bridge (1882), County Line Bridge (ca. 1895; demolished ca. 1960), and Langmyer Bridge (1897; dem. ca. 1980). Shepard Bridge still exists but is closed to traffic due to a 2003 road realignment. Rude Bridge is the last steel truss bridge in use along Rt. 5. As of 2015 very few metal through truss bridges remain in Marshall County with no more than four of them being of the Whipple Trapezoidal Truss design.

Rude Bridge History

During the 1800s the two large farms surrounding this bridge were owned by the Downings east of the creek and the Davis' to the west. Resident farmer Silas Rodefer Davis was a county commissioner and reportedly influenced installation of the 1896 bridge. Around 1920 the Rude family purchased the Davis farm and it was sometime during the ensuing years that Rude Bridge became thus labeled.

Rude Bridge has been determined eligible for listing in the National Register of Historic Places for its association with 19th-century rural road development in Marshall County as well as for its engineering significance as an example of Whipple Trapezoidal Through Truss, an increasingly uncommon bridge type in West Virginia, and its association with Wrought Iron Bridge Company, a contractor distinguishable on a national level.



Location: County Route 5, north of County Route 16, spanning Big Wheeling Creek
Type: Whipple Trapezoidal Through Truss with Deck Girder Span at east end
Length: 170 feet (truss); 39 feet (deck girder)
Year constructed: 1896
Contractor: Wrought Iron Bridge Co. of Canton, Ohio



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION

Division of Highways

Office of the District Engineer/Manager

District Six

Earl Ray Tomblin
Governor

1 DOT Drive · Moundsville, West Virginia 26041-2353 · (304) 843-4008

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

**Receipt of Plaques
For
Rude Bridge (S326-5-3.98)**

^{DELIVERED}
I have ~~received~~ the plaques for Rude Bridge. Stewart L. Hull 10/19/95
(signature/date)

^{RECEIVED}
I have ~~delivered~~ the plaques for Rude Bridge. Bary L. Rader
(signature/date)

From: grider7091@aol.com
To: [Bakic, Tracy D](#)
Subject: Re: Rude Bridge and Jefferson Ext Bridge Plaques
Date: Monday, October 19, 2015 1:07:33 PM

Tracy

I was at the Marshall County Historical Society Museum when the plaques from the Jefferson Ave. Ext. bridge and Rude bridge were delivered and signed for them. Thank you very much for all your work to get these plaques for the Historical Society. They will be in permanent display in the Museum for all to see.

Gary Rider
Marshall County Historical Society President.

-----Original Message-----

From: Bakic, Tracy D <Tracy.D.Bakic@wv.gov>
To: grider7091 <grider7091@aol.com>
Sent: Mon, Oct 19, 2015 11:10 am
Subject: Rude Bridge and Jefferson Ext Bridge Plaques

Gary,

I just was emailed the Plaque receipts for Rude and Jefferson Ext. bridges from Patrick Gurrera/Steven Hall that were delivered to MCHS this morning. As a formality, I just wanted to ask for a quick reply to this email, to be certain they were received.

Thanks so much to MCHS for its interest in the plaques!

Sincerely,

Tracy Bakic

Tracy D. Bakic
Structural Historian
WV Division of Highways
Engineering Division-Environmental Section
1900 Kanawha Blvd East, Bldg 5, Rm 450
Charleston, WV 25305
Email: Tracy.D.Bakic@wv.gov
Office: 304-558-9676
Fax: 304-558-7296

State Level Historic Documentation Report

State Project: S326-5-3.98
Federal Project: STP-0005 (109)D

RUDE BRIDGE **Marshall County**



Prepared by:

Tracy D. Bakic, Structural Historian

Department of Transportation
Division of Highways
Engineering Division
Environmental Section

November 9, 2015

STATE LEVEL HISTORIC DOCUMENTATION
RUDE BRIDGE

Location: County Route 5 (Big Wheeling Creek Road), over Big Wheeling Creek
Sherrard vicinity
Marshall County
West Virginia

USGS Moundsville Quadrangle

Date of Construction: 1896

Builder: Wrought Iron Bridge Company of Canton, Ohio

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 Rude Bridge is historically significant for its association with 19th-century rural road development in Marshall County and for its engineering significance as an example of the Whipple Trapezoidal Through Truss, an increasingly uncommon bridge type in West Virginia, and for its association with the Wrought Iron Bridge Company, a bridge builder distinguishable on a national level.

Project Information: The project has been undertaken due to the deteriorating condition of the bridge and the necessity for a structure that can accommodate two lanes of traffic. Any future deterioration of the bridge will result in its closure. Therefore, this bridge warrants replacement. This documentation was undertaken in November 2015 in accordance with a Memorandum of Agreement among the West Virginia Department of Transportation and West Virginia State Historic Preservation Office. These measures are required due to the replacement of this National Register eligible structure.

Tracy D. Bakic, Structural Historian
West Virginia Division of Highways
Charleston, WV 25305
November 9, 2015

Rude Bridge spans Big Wheeling Creek and is located in northern Marshall County, West Virginia on County Route (CO) 5, approximately 2.25 miles north of the CO 5 intersection with CO 16. CO 5 is also known as Big Wheeling Creek Road. Big Wheeling Creek is a tributary of the Ohio River. The 2014 average daily traffic (ADT) count for Rude Bridge 300 vehicles per day.



Rude Bridge was built in 1896 by the Wrought Iron Bridge Company of Canton, Ohio. This single lane structure has an overall length of 215 feet, four inches (out to out of backwalls) and consists of a two spans – the main through truss span and a shorter deck girder span at the east end. This bridge has a 12-foot, six-inch (min.) road width (between wood curbs). The horizontal clearance (railing to railing) is 13 feet, eighth inches for the main span and 13 feet, two-and-one-half inches for the deck girder span. The vertical clearance for the truss span is generally 19 feet, three inches.

Main Truss Span. The main bridge span is a wrought iron pin-connected through truss of a bridge design type known as the Whipple Trapezoidal Truss or Double-Intersection Pratt Truss. This span is 170 feet long, measured from center to center of the truss end bearing pins. The width measurement from centerline of the north (upstream) truss to centerline of the south (downstream) truss is 15 feet, three inches. The steel superstructure consists of a pair of trapezoidal-shaped trusses – each composed of top and bottom chords, end posts, hip verticals, vertical posts and diagonal tension members – that are connected by floor beams and lower lateral bracing below and by A-frame portal struts, sway struts and upper lateral bracing above. Each diagonal tension member is composed of eyebars which extend the length of two truss panels; this is the prominent design feature of a Whipple Trapezoidal Truss. Steel railings – composed of upper and lower parallel runs of steel L-shape rails with steel lattice-work between – are attached to the inward-facing side of each truss.

Deck Girder Span. The deck girder span is 39-feet-long and consists of two steel beam girders connected via steel floorbeams. The floorbeams are topped by smaller profile steel beam stringers. The original floorbeams and stringers were removed and replaced in 1975 and the extant L-shape diaphragms (between the stringers) were added in the same year. There is a standard steel guardrail on each side of the span.

Decking. Both spans of the extant bridge have non-original steel five-inch (depth) open grid decking with timber curbing. This replaced timber decking in 1988.

Substructure. The bridge's substructure includes two steel caisson bents that support both ends of the main truss span and the west end of the deck girder span. This type of caisson bent was a common substructure design at least from the 1890s-1910s. Both bents include a pair of crossed diagonal tension members (round-profile eyebar with turnbuckles) attached between the caissons. The west bent has a concrete backwall with wingwalls constructed up against it. The east end of the deck girder span is supported on a full height reinforced concrete abutment that includes a breastwall, backwall and wingwalls.



Plaques. Bridge builder's plaques were originally attached to the portal bracing at each end of the bridge. Each reads "1896 / WROUGHT IRON BRIDGE COMPANY / BUILDERS / CANTON, OHIO." WVDOH District 6 removed both plaques sometime between July 2012 and July 2013. As part of mitigation for the future replacement of this bridge, WVDOH gave the plaques to the Marshall County Historical Society Museum in October 2015.

A January 2015 bridge inspection reported that the overall structure of Rude Bridge is in poor condition. The most significant deficiencies included: poor condition of wrought iron fracture critical pin connected eyebars with some members affected by foundation settlement, overloading and/or impact damage; fracture critical loop bar supplemented hangers display stress sensitive butt welds and unequal load distribution; fracture critical wrought iron diagonal eyebars exhibiting major corrosion, unequal tension, welded repairs, were from cross members, and impact damage; and vertical posts displaying major packed rust at the lower chord pin plates and at the mid-panel batten plates (where diagonal tension member cross).

Historic Context

Marshall County was known to be a rich agricultural area, particularly north of Fish Creek. By the late 19th century through at least the early 20th century the principal farm products in the county were corn, oats, wheat, barley, potatoes, grass/hay, cattle, sheep, hogs and poultry. Areas of the county with rolling hills could also be noted for orchards. Although farming is no longer the

major business in the county, it is still is an important part of the area's economy. Industries generally focused along the Ohio River in or near Moundsville, McMechen and Benwood included iron- and steel-making, coal mining, and glass-making.

Rude Bridge spans Big Wheeling Creek over the historic boundary between Marshall County's Union and Sand Hill districts. Typically, Union District is to the west and Sand Hill District is to the east of the waterway. However, due to the severe curvilinear nature of this creek there are some locations where Union District land is to the east and Sand Hill District land to the west; such is the case with the Rude Bridge location which is within a prominent loop in the creek. The Union District land to the east of the bridge was owned for many years by the Downing family (by 1871-ca. 1920) and the Sand Hill District property to the west side of the bridge was owned for many years by the Davis family (ca. 1827-ca. 1920). Both parties, and the successor owners of these properties, use the majority of the land for agricultural purposes.

The earliest Davis to live west of Rude Bridge appears to have been Albert Davis. Davis has been described as a farmer, carpenter, blacksmith, boot maker, justice of the peace and was a trustee of both a local school and Methodist church. Albert also may have been associated with improvements to Big Wheeling Creek Road. Albert's son, Silas R. Davis, and grandson, Harry Albert Davis, proceeded to live on the property with their respective families. Around 1920 Edward J. and Mabel S. Rude became the new owners of the Davis property and today their daughter, Betty Jane Schafer, and grandson Roy Schafer, Jr. continue to live on the property. The Rude family is the present namesake for Rude Bridge.

Early Roads in Marshall County

Documented road-building in the Marshall County area apparently did not begin until the 19th century. Between 1800 and 1810 a road paralleling the Ohio River was developed, being surveyed by A. McMahon, from the Flats of Grave Creek (Moundsville) north to Wheeling. Soon after, the road was extended south to Fish Creek under the direction of pioneer surveyor Morgan Jones. This road is depicted on maps dating to 1806-1807 (Carey 1806; Madison 1807). In 1811 the Ohio County court ordered the building of the *Waynesburg Pike* to extend from Parr's Point (Moundsville) to the Pennsylvania state line near Rocklick, WV, and thence the road extended to Waynesburg, PA. Today, the path of this route is generally followed by US 250 and a small portion of WV 891 to Rocklick.

The *National Road*, historically designated as the *Cumberland Road*, was completed in 1821 from Cumberland, MD to Wheeling, WV. The road did not extend within the Marshall County area, but was just to the north in Ohio County following Little Wheeling Creek, generally the route

of today's US 40. The two rival toll roads built to provide access from the east to the Ohio River – Northwestern Turnpike (today's US 50) and Staunton-Parkersburg Turnpike – were not completed until about 20 and 30 years later and are over 30+ miles south of Marshall County.

By the 1830s-1850s there were three major turnpikes (toll routes) that extended through Marshall County. The *Fairmont & Wheeling Turnpike and Moundville Branch* traversed from the Northwestern Turnpike near Grafton to Wheeling and Moundsville. The majority of the earlier-mentioned Waynesburg Pike became part of this turnpike. Today, the route in Marshall County is followed by US 250 and WV 88. The *Marshall & Ohio Turnpike* extended from Fish Creek (at the Ohio River) to Moundsville and then Wheeling. Today the route is generally followed by CO 2. *Fish Creek Turnpike* extended from the Marshall & Ohio Turnpike, thence along Fish Creek and North/Pennsylvania Fork Fish Creek to join with the Fairmont & Wheeling Turnpike near Belton. The entire alignment was within Marshall County and generally follows today's CO 74 and CO 250/11.

A local or country road (or roads) associated with Big Wheeling Creek likely existed before the 1850s-1860s. However, the earliest formal documentation located regarding intended road improvements along the waters of Wheeling Creek to the Pennsylvania state line was in 1853 (VA 1853:51,123,141). The Wheeling Creek Turnpike Company was incorporated in 1858 with Albert Davis listed amongst the Marshall County directors for the company; at this time, Albert Davis was the owner of the property west of Rude Bridge. The road was to extend from a point on the National Road, “up the valley of Wheeling creek, to the forks thereof; then with the branch of each fork of said creek to the Pennsylvania line” (VA 1858:141).

Once the State of West Virginia was created in 1863, it appears that the Wheeling Creek Turnpike Company was reorganized as the Wheeling Creek & Pennsylvania Turnpike Company. The new company was incorporated on October 30, 1863 with Albert Davis again listed as a director. This company planned for a 20- to 30-foot-wide graded toll road “from a point near Mrs. Lydia Cruger's, on the National Road, in Ohio County, and then along the ravine or valley of Wheeling Creek, to a point on the line between the State of Pennsylvania and this state, so as to connect with a road which may be made in the state of Pennsylvania” (WV 1866 [Constitution]:89-90). An early map that clearly depicts a road following the banks of Big Wheeling Creek is in 1871 (Beers 1871).

With no other information available, it can only be speculated that today's Big Wheeling Creek Road (CO 5), on which Rude Bridge is associated, may have resulted from planning the above turnpike, particularly due to the interest of Albert Davis and others owning land along Big

Wheeling Creek such as Sherrard Clemens, Alexander Caldwell, Joseph Sheppard and William McCreary. However, it is presently unknown if this road was ever used as a toll road.

As early as 1909, residents living along the northernmost approximate four miles of Big Wheeling Creek Road raised \$1500 to repair the road, including grading and macadamizing. By 1933 the approximately 7.5-mile-long Big Wheeling Creek Road (CO 5) was depicted as paved from the Ohio County line to the Rude Bridge area with the remaining approximately three miles to the south shown as having gravel- or shale-surfaced and unimproved sections. By the mid-1940s and to the present all but the southernmost 1.5 miles of CO 5 has been asphalt-paved.

Metal Road Bridges in the County. It was not until the year 1882 that an iron bridge was erected in Marshall County. Three iron/steel truss bridges were reportedly erected that year by the order of the county court - one over Big Grave Creek, the Graysville Bridge over Fish Creek, and the Shepard Bridge over Big Wheeling Creek. (WVDOH records give the Graysville Bridge an 1886 construction date, but the correctness of the date is uncertain with information available.) Other steel truss bridges were soon to be built through the county including Adaline Bridge over Fish Creek (1892), County Line Bridge (ca. 1895, demolished ca. 1960), Rude Bridge (1896), Langmyer Bridge over Big Wheeling Creek (1897, dem. ca. 1980) and Shepherd Bridge over Fish Creek (1897, dem. ca. 2010).



Shepard Bridge, built 1882

County Line Bridge, Langmyer Bridge, Rude Bridge and Shepard Bridge were all associated with Big Wheeling Creek Road (CO 5). Presently only two of these truss bridges still exist. Shepard Bridge was abandoned for a new road alignment and bridge in 2003, but the 1882 bridge was left in place. Rude Bridge is the only extant example of a steel truss bridge still in use on the historic Big Wheeling Creek Road alignment.

Whipple Trapezoidal Truss

Squire Whipple was an engineer from New York. He built his first iron truss bridge – a bowstring arch truss - in 1840 over the Erie Canal. It was the second all-metal truss bridge built in the US. Whipple received a patent for this design in 1841 and it became the first metal truss to be

used widely and was the first based on scientific principles. Reportedly, there are no Whipple Bowstring Arch bridges in West Virginia.

About a year later, engineer Thomas Pratt designed the first Pratt Truss. In 1844 Thomas and his father, Caleb, were granted the patent for the design, which used wood vertical compression members and wrought iron diagonals in tension. Initially not popular due to the expense of the metal, things turned around when all-iron bridges became a favored type for the nation's railroads. Squire Whipple's take on the Pratt Truss, was a design he called a "Trapezoidal Truss" which is often today also labeled as a "Double-Intersection Pratt Truss." He built his first trapezoidal truss in 1846 and patented the design in 1847. Whipple determined that by "extending the diagonal members over two panel lengths, the depth of the panel was increased without altering the optimal angle of 45 degrees; thus, the span length could be increased" (PB & EIH 3-25).

The first Whipple Trapezoidal Truss bridge was erected in 1853 near Troy, NY for the Albany & Northern Railroad. The early bridges of this design had cast iron top chords and end post and wrought iron lower chords; connects were with cast iron trunnions. In 1861 Engineer Jacob H. Linville built a Whipple Trapezoidal Truss bridge over the Schuylkill River using wrought iron eyebars and posts for the first time. In 1863 Engineer John W. Murphy erected his version of the Whipple bridge over the Lehigh River in Mauch Chunk (now Jim Thorpe, PA) using all wrought iron members, including the replacement of trunnions with wrought iron pin connections. It has been considered the first truss bridge in which pin connections were used throughout.

The Whipple Trapezoidal Truss was not fully favored until the 1860s after Murphy's pin connection improvement made for easier factory manufacture of components and simpler assembly on site. As well, the wrought iron pins insulated bending stresses. From that point the Whipple became a well-used bridge type for railroad and vehicular bridges of the late 19th century. Although extremely popular from about 1865 to 1885, the use of this bridge type lessened afterward with preference going toward the Camelback or Parker trusses which were less complex to erect.

Whipple Trapezoidal Trusses in West Virginia. Amongst the Pratt through trusses that still exist in the state, very few are known to be of the Whipple Trapezoidal design and are located in only four counties. The oldest extant example appears to be the Old Capon Lake Truss Bridge in Hampshire County. It was originally built in 1874 over the South Branch Potomac River near Romney and moved to Capon Lake in 1937. The Glenville Truss, built 1885 in Gilmer County and the PRR Elk River Bridge in Kanawha County are also of the Whipple design. Marshall County has four known Whipple Trapezoidal spans – Graysville (1886) and Adaline (1892; to be dem. ca. 2016) bridges, both over Fish Creek, and Shepard (1882) and Rude (1896) bridges, both over Big Wheeling Creek; all of these bridges were built by the Wrought Iron Bridge Company of Canton, Ohio.



Rude Bridge

Wrought Iron Bridge Company

“David Hammond formed the Wrought Iron Bridge Company in 1866 in Canton, Ohio. This firm was one of the most productive bridge companies in the United States in the nineteenth century and energized the bridge building industry with its diverse patents. As one bridge historian had noted, ‘it would be difficult to overestimate the importance of this firm to the history of metal bridge engineering in [Ohio] and [the] nation’ (Simmons 1978) . . . The company erected nearly all forms of truss, arch, swing and plate bridges and iron piers . . . The firm grew steadily through the 1870s, ‘perhaps becoming the most prolific 19th century iron bridge fabricator in the country’ (Ashback-Sladik and Fraser 1991:1)” (Carver 2008:218). Hammond later (ca. 1891-92) helped form a rival bridge works, the Canton Bridge Company.

“By 1881 the [Wrought Iron Bridge] company had built bridges in 25 states and Canada for a total of approximately 3,300 bridges” (Carver 2008:219). By 1883 the number reportedly had risen to 4,600 spans in 26 states, Canada and Mexico. By 1885, the company claimed to have erected bridges in 30 states, Canada and Mexico. In 1901-1902, the American Bridge Division of U.S. Steel purchased 28 companies, including the Wrought Iron Bridge Company, and merged these companies to form the US Steel subsidiary known as American Bridge Company. Due the Great Depression, US Steel closed the Canton plant in the fall of 1930 and sold the property.

Eligibility

Rude Bridge was determined eligible for listing in the National Register of Historic Places for its association with 19th-century rural road development in Marshall County and for its engineering significance as an example of the Whipple Trapezoidal Through Truss, an increasingly uncommon bridge type in West Virginia, and for its association with the Wrought Iron Bridge Company, a bridge builder distinguishable on a national level.

Rude Bridge will eventually be removed as a result of the planned construction of a new bridge in the same location.

BIBLIOGRAPHY

- Ashback-Sladek, Ron D. and Clayton B. Fraser/Fraserdesign, Loveland, CO. Historic American Engineering Record Documentation: Davis Bridge [built by Wrought Iron Bridge Company of Canton, OH] in Howard County, Iowa. HAER No. IA-35, December 1991.
- Beers, F. W. *Map of the Panhandle Embracing Counties of Hancock, Brooke, Ohio and Marshall, West Virginia*. F. W. Beers & Co., 1871. [Depicts Townships].
- Bridgehunter.com. PRR Elk River Bridge (Abandoned.)
<http://bridgehunter.com/wv/kanawha/bh44004/> (November 2015).
- Carey, Mathew. *Virginia* [map], 1806. Online map, Norman B. Leventhal Map Center, Boston Public Library, <http://maps.bpl.org/id/12449> (November 2015).
- Carver, Martha/Tennessee Department of Transportation. *Tennessee's Survey Report for Historic Highway Bridges: Pre-1946 Masonry Arch, Timber Truss, Metal Truss, Concrete Arch, Metal Arch and Suspension Bridges*. Nashville, TN: Ambrose Printing Company, 2008.
- Jourdan, K. M./SHPO-NRO. *West Virginia Historic Property Inventory Form: Wrought Iron Bridge Co. (Canton, Ohio) Bridge on County Road 5 over Big Wheeling Creek* (Rude Bridge; MR-0011), 1993.
- KCI Technologies and Mead & Hunt, Inc. *West Virginia Statewide Historic Bridge Survey: Final Survey Report*, April 2015.
- . *West Virginia Historic Bridge Inventory Form (HBI) – Rude Bridge over Big Wheeling Creek* (Bridge No. 26-005/00-003.98, BARS No. 26A020, SHPO Survey No. MR-0102), 2011.
- Madison, Rev. James. *Map of Virginia*. Richmond, VA: Frederick Bossler, 1807.
- Parsons Brinckerhoff and Engineering and Industrial Heritage (PB & EIH). *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. October 2005.
- Simmons, David. "Bridge Preservation in Ohio." *Ohio Cities and Villages*. August 1978:13-18.
- Virginia (State of). *Acts of the General Assembly of Virginia, Passed in 1857-8 in the Eighty-Second Year of the Commonwealth*. Richmond, VA: William F. Ritchie, Public Printer, 1858.
- . *Journal of the House of Delegates of the State of West Virginia for Session 1853-4*. Richmond, VA: William P. Ritchie, Public Printer, 1853-4.
- WV Division of Highways (WVDOT). Bridge files, including Inspection Reports for Adaline, Meighen, Kausooth Graysville bridges, Shepard, Rude and other bridges, 2015.
- . *Bridge Inspection Report, Rude Bridge spanning Big Wheeling Creek Bridge, County Route 5, Marshall County, Bridge No. 26-5-3.98(7526), BARS 26A020*, May 19, 1995.
- . *Bridge Inspection Report. Rude Bridge over Big Wheeling Creek, County Route 5, Marshall County, Bridge No. 026-5-3.98(7526), BARS 26A020*, January 8, 2015.

WVDOH. *Bridge Replacement Study, Rude Bridge, State Project No. S226-5-3.98, Marshall County*, January 2014.

- . *Constitution of West Virginia*. Wheeling, 1863. As bound within *Ordinances and Acts of the Restored Government of Virginia Prior to the Formation of the State of West Virginia; with the Constitution and Laws of The State of West Virginia, To March 2d, 1866*. Wheeling, WV: John Frew, Public Printer, 1866.
- . Historic Resources Management Report, Rude Bridge Replacement Project, State Proj. S326-5-3.98 & Federal Project STP-0005 (109)D, Completed by Tracy Bakic, WVDOH Engineering, Charleston, West Virginia, March 2015.
- . *West Virginia Historic Property Inventory Form Continuation Sheet – Rude Bridge*. Completed by Tracy Bakic, WVDOH Engineering Division, Charleston, West Virginia, March 24, 2015. Appended to 2011 HBI Form completed by KCI Technologies and Mead & Hunt, Inc.

STATE LEVEL HISTORIC DOCUMENTATION
INDEX TO PHOTOGRAPHS

Rude Bridge

County Route 5 (Big Wheeling Creek Road), over Big Wheeling Creek

Sherrard Vicinity, Marshall County, West Virginia

Photographer(s): Tracy D. Bakic

December 3, 2013 & February 10, 2015

RUDE BRIDGE -1	South (Downstream) Side Elevation. View Northeast (2-10-2015)
RUDE BRIDGE -2	North (Upstream Side) Elevation. View Southeast (12-2-2013).
RUDE BRIDGE -3	East Approach. View West/Northwest (12-2-2013).
RUDE BRIDGE -4	East Approach. View Northwest (12-2-2013).
RUDE BRIDGE -5	West End. View SE. Note Portal Strut/Bracing b/w End Posts (12-2-2013).
RUDE BRIDGE -6	Interior of Bridge, Highlighting Sway Struts & Top Lateral Bracing (12-2-13).
RUDE BRIDGE -7	East End, View Northwest (12-2-2013).
RUDE BRIDGE -8	East End, View West (12-2-2013).
RUDE BRIDGE -9	South Truss. Detail View of Typ. Truss Members, incl. End Post, Lower Chord Eyebars, and Hip and Main Tension Verticals. View East (12-2-2013).
RUDE BRIDGE -10	Typ. Railing and Curb Detail. View East of North Side Truss (12-2-2013).
RUDE BRIDGE -11	Typical End Post Detail. View Northwest of North Side Truss (12-2-2013).
RUDE BRIDGE -12	Typ. Main Vertical Tension Member. View SE of So. Side Truss (12-2-2013).
RUDE BRIDGE -13	Detail View Highlighting the Hip Vertical Tension Member at the South Side Truss, West End. View Southeast (12-2-2013).
RUDE BRIDGE -14	Typical Detail of a Main Vertical Tension Post with Retainer Clips for attachment of Diagonal Tension members (2-10-2015).
RUDE BRIDGE -15	Caisson Bent at East End of Bridge. View Southeast (2-10-2015).
RUDE BRIDGE -16	Caisson Bent & Abutment at West End of Bridge. View NW (2-10-2015)
RUDE BRIDGE -17	Underside of the Truss Span Deck. View Northwest (12-2-2013).
RUDE BRIDGE -18	Understructure of Deck Girder Portion at East End. View SE (2-10-2015).
RUDE BRIDGE -19	Underside of Truss Bridge Deck and with East Caisson Bent in foreground. View Northwest (12-2-2013).
RUDE BRIDGE -20	East End Caisson Bent. View North/Northeast (2-10-2015).

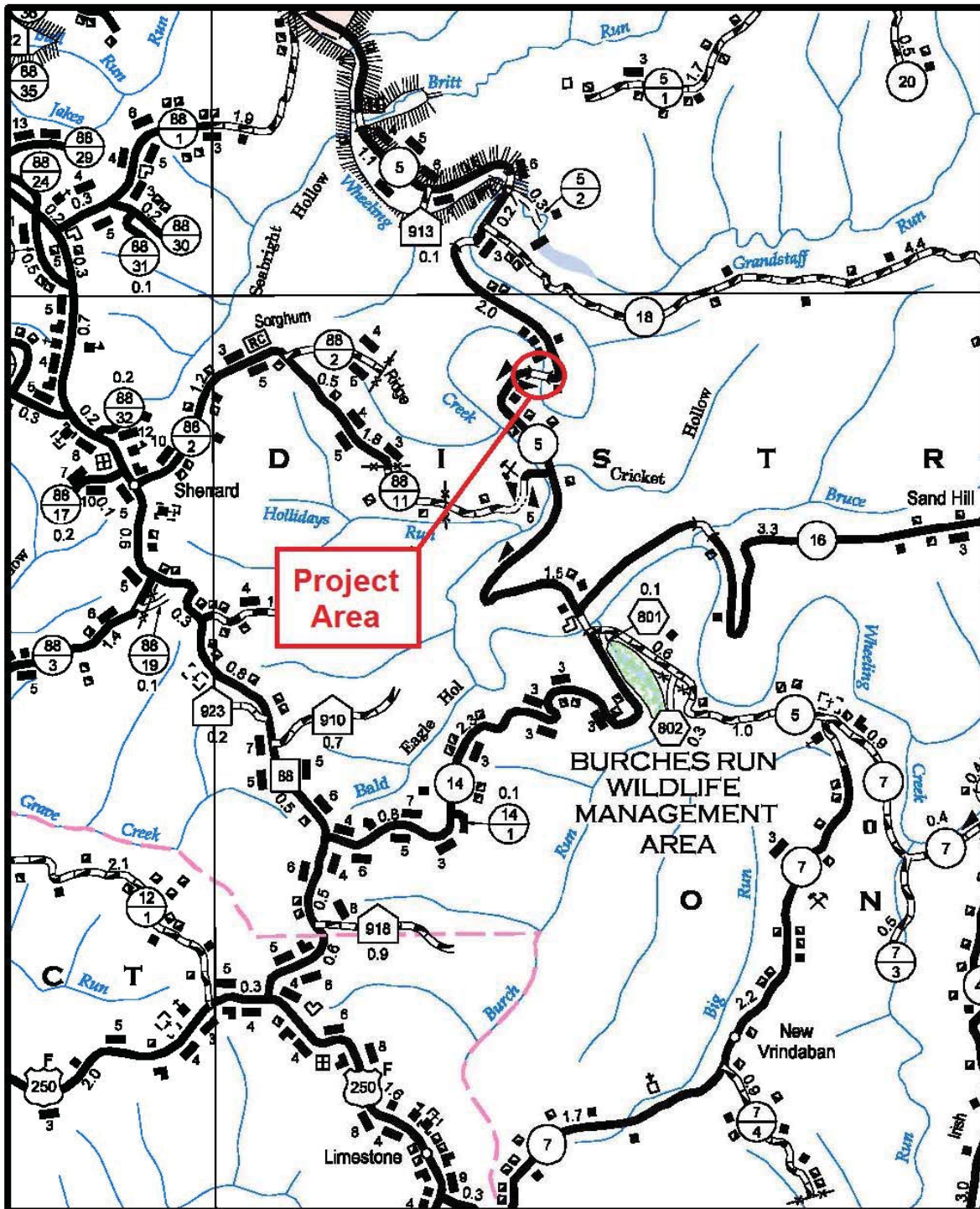
No original bridge plans exist for this bridge.

LOCATION MAP

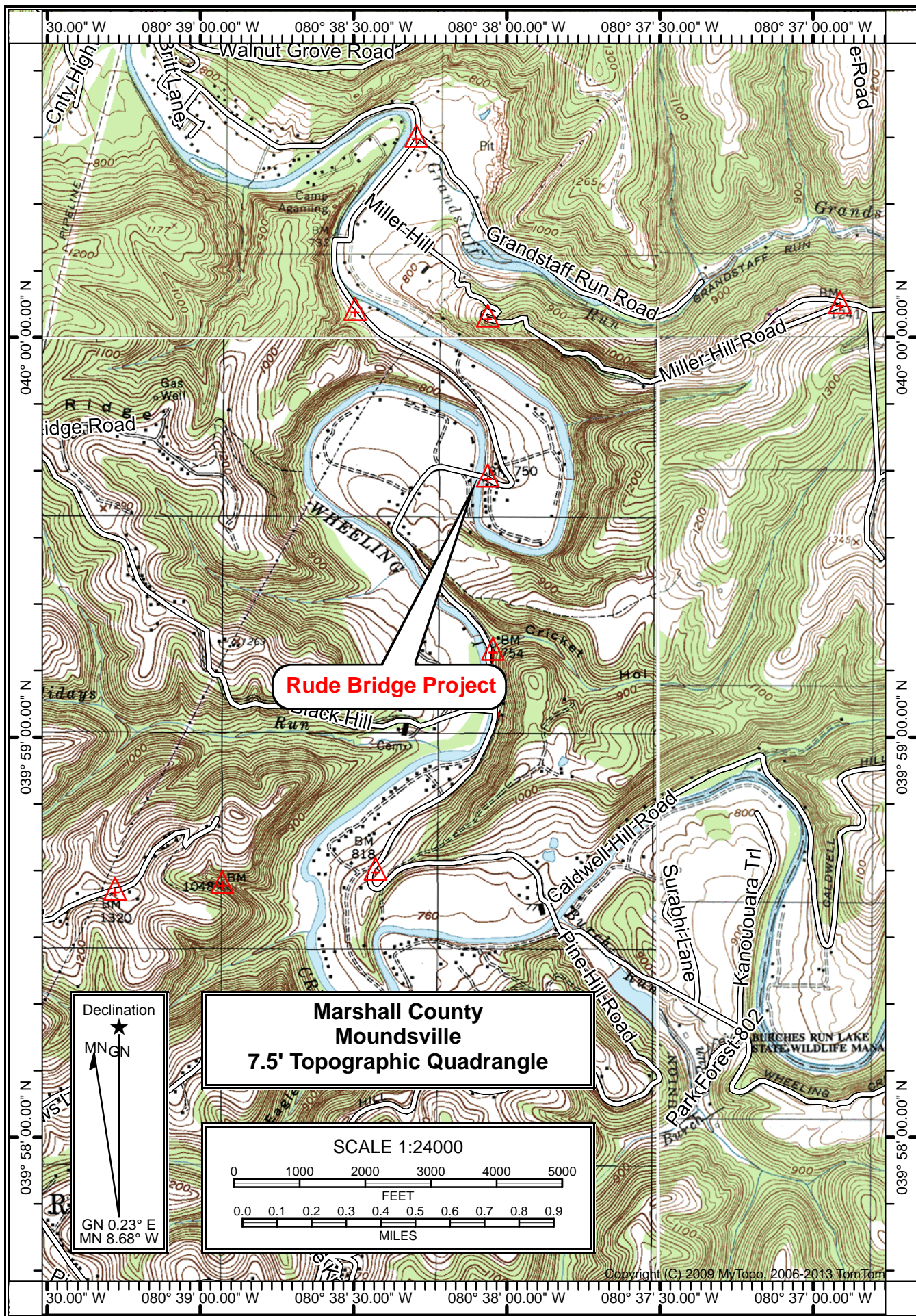
RUDE BRIDGE PROJECT

STATE PROJECT NO. S226-5-3.98 00

MARSHALL COUNTY



WEST VIRGINIA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS



PROJECT AREA
RUDE BRIDGE PROJECT (State Project S226-5-3.98 00)
County Route 5 over Big Wheeling Creek
Marshall County





1. South (Downstream) Side Elevation. View Northeast



2. North (Upstream Side) Elevation. View Southeast



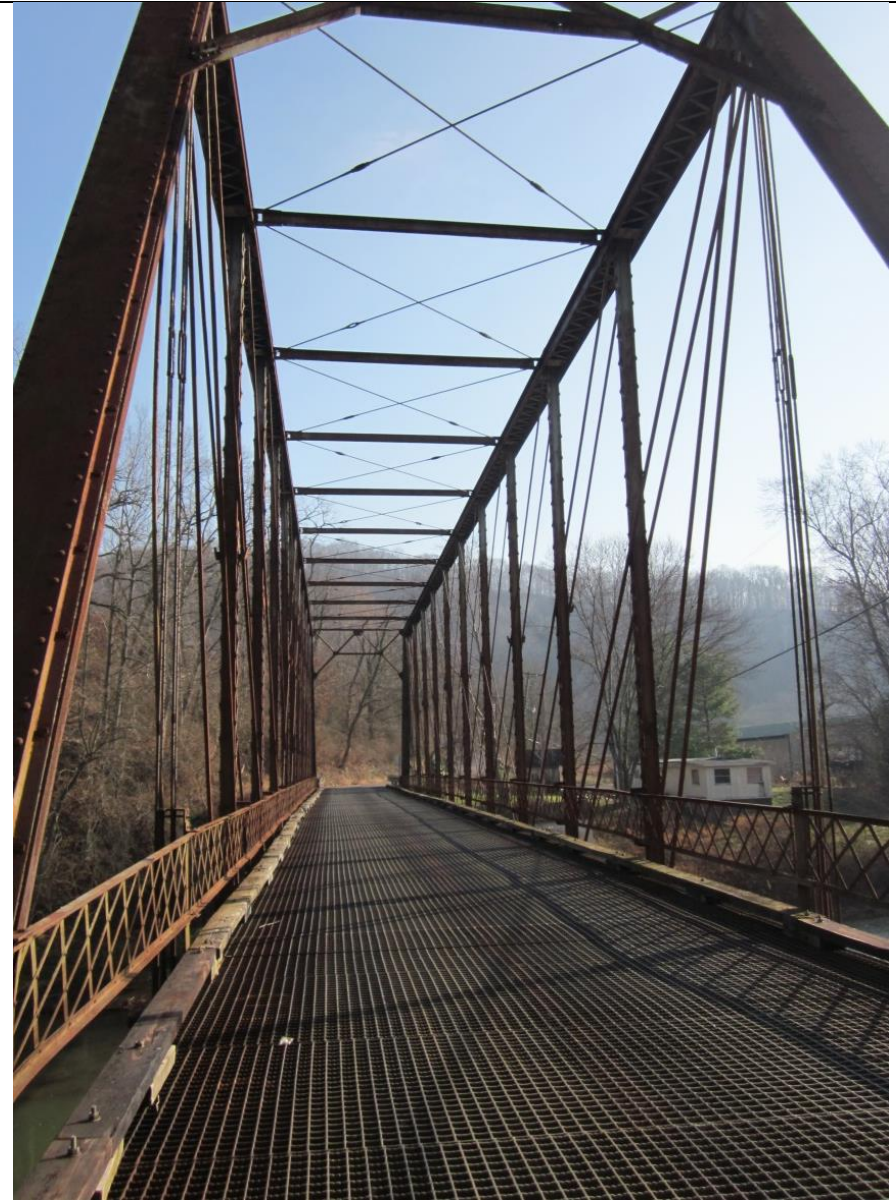
3. East Approach. View West/Northwest



4. East Approach. View Northwest



5. West End. View Southeast. Note Portal Strut/Bracing between End Posts



6. Interior of Bridge, Highlighting Sway Struts and Top Lateral Bracing



7. East End, View Northwest



8. East End, View West



9. South Truss. Detail View of Typical Truss Members, incl. End Post, Lower Chord Eyebars, and Hip and Main Tension Verticals. View East



10. Typical Railing and Curb Detail. View East of North Side Truss



11. Typical End Post Detail. View Northwest of North Side Truss



12. Typical Main Vertical Tension Member. View Southeast of South Side Truss



13. Detail View Highlighting the Hip Vertical Tension Member at the South Side Truss, West End. View Southeast



14. Typical Detail of a Main Vertical Tension Post with Retainer Clips for attachment of Diagonal Tension members.



15. Caisson Bent at East End of Bridge. View Southeast



16. Caisson Bent & Abutment at West End of Bridge. View Northwest



17. Underside of the Truss Span Deck. View Northwest



18. Understructure of Deck Girder Portion at East End. View Southeast



19. Underside of Truss Bridge Deck and with East Caisson Bent in foreground. View Northwest.



20. East End Caisson Bent. View North/Northeast

West Virginia Historic Bridge Inventory Form

Bridge No. 26-005/00-003.98 BARS No. 26A020 Federal Bridge No. 00000000026A020 Bridge Design No. 7526.0

IDENTIFICATION INFORMATION

SHPO Survey No. MR-0102 Owner State Highway Agency
Local Name RUDE BRIDGE Status Extant - in service
Other Local Name

LOCATIONAL AND SETTING INFORMATION

District 06 County Marshall Latitude 39594200 Longitude 080380600
Location 2.25 MI NORTH CR 16 UTM-Northing
Facility Carried By Structure COUNTY ROUTE 5 UTM-Easting
UTM Zone
Features Intersected BIG WHEELING CREEK Surrounding Land Use Agricultural
Type of Development Rural - (undeveloped area outside communities)

STRUCTURAL INFORMATION

Main Span Type Steel Truss - Through/Pin Connected Structure Length (ft) 215
Main Span Type Code 331 Length of Maximum Span (ft) 170
Number of Spans in Main Unit 001 Average Daily Traffic 000350 Year 2002
Number of Approach Spans 0001 Sufficiency Rating 0115 Skew 05
(Note: Data current as of April 2006 database)

BRIDGE DESCRIPTIVE INFORMATION

Year Built 1896 Arrangement Through
Year Reconstructed Connection Type Pin/bolt
Truss Bridge Type Whipple Truss Details Double Trapezoidal
Alteration(s) Date of Alterations (Year)
Replacement of main members 1975
Added main members 1988

Architectural Treatment(s) Bridge Plate Text
(1) plaque. "1896, WROUGHT IRON BRIDGE CO., BUILDERS, CANTON, OHIO"

BRIDGE HISTORY

Engineer or Designer Builder or Fabricator Wrought Iron Bridge Company
Bridge Plan Location Repair plans are available in the District.
Additional Details: Open metal grate deck with timber curbs, metal lattice railing, and guardrail. Pin connections with bolts on steel girder approach spans. Concrete abutments and wingwalls with a steel column pier. According to inspection files, main members were replaced in 1975 and added in 1988. The alterations appear to be in-kind. This bridge is an example of a Double Whipple Trapezoidal through truss which is an uncommon type in West Virginia and was designed or constructed by a national engineer or firm.

Bridge No.	26-005/00-003.98	BARS No.	26A020	Federal Bridge No.	0000000026A020	Bridge Design No.	7526.0
NATIONAL REGISTER EVALUATION INFORMATION							

National Register Determination
Reason Not Evaluated

National Register Determination Date

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.
 Although this bridge has undergone alterations, it still 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 FORM

CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015

Setting: The existing Rude Bridge carries County Route (CO) 5 over Big Wheeling Creek in northern Marshall County. CO 5 is also known as Big Wheeling Creek Road. The crossing is approximately 2.25 miles north of the CO 5 intersection with CO 16. Big Wheeling Creek (also simply called Wheeling Creek) flows northwesterly into the Ohio River at Wheeling approximately 13 miles northwest of Rude Bridge. CO 5 is functionally classified as a Rural Major Collector and is used by mail carriers and school buses. The 2013 average daily traffic (ADT) count for Rude Bridge is 500 vehicles per day. The surrounding landscape is a hilly rural setting that includes farm structures and private recreational camp residences and other associated structures.

Description of Bridge: Rude Bridge was built in 1896 by the Wrought Iron Bridge Company of Canton, Ohio. The single lane structure has an overall length of 215 feet, four inches (out to out of backwalls) and consists of a two spans – the main through truss span and a shorter deck girder span at the east end. This bridge has a 12-foot, six-inch (min.) road width (between wood curbs). The horizontal clearance (railing to railing) is 13 feet, eighth inches for the main span and 13 feet, two-and-one-half inches for the deck girder span. The vertical clearance for the truss span is generally 19 feet, three inches. Due to the narrow width, hazard warning paddles alert traffic to the narrow conditions and the weight limit on the bridge is currently posted at 12 tons.

Main Truss Span. The main bridge span is a wrought iron pin-connected through truss of a bridge design type known as the Whipple Trapezoidal Truss or Double-Intersection Pratt Truss. This span is 170 feet long, measured from center to center of the truss end bearing pins. The width measurement from centerline of the north (upstream) truss to centerline of the south (downstream) truss is 15 feet, three inches. The steel superstructure consists of a pair of trapezoidal-shaped trusses – each composed of top and bottom chords, end posts, hip verticals, vertical posts and diagonal tension members – that are connected by floor beams and lower lateral bracing below and by portal struts, sway struts and upper lateral bracing above.

The truss span's superstructure components include:

Lower Chords. The original lower chord of each truss is composed of paired sets of wrought iron eyebars. The pairings at the first two bays from each truss end consist of square-profile eyebars. The remaining mid-span lower chord pairings consist of rectangular-profile eyebars.

Upper Chords and End Posts. Each upper chord and slanted end post is composed of two steel channel beams with steel plate riveted onto the upper/outer side and lattice bracing bolted at the undersides. Steel angles are bolted to the bottom of the upper chords and end posts and are welded at hip joints (via gusset plates) and at bearing plates; the steel angles were added in 1975..

Hip Verticals. Each hip vertical – the first tension member in from each truss end – is composed of an original round-profile eyebar. All four hip verticals were later (in 1975) supplemented by steel loop bar hangers (with turnbuckles).

Main Vertical Posts. The main vertical posts are each composed of two steel channels and lattice bracing on two sides (riveted to the channel flanges); midway up each post are steel batten plates with retainer clips used to secure the diagonal tension members. The area between each vertical (and hip) post creates a "panel."

Diagonal Tension Members. The diagonal tension members of each truss are mainly composed of paired square/rectangular-profile eyebars. All of the eyebars extend the length the two truss panels, which is the prominent design feature of a Whipple Trapezoidal Truss (Double-Intersection Pratt Truss). The central four panels of each truss include "criss-crossed" diagonals; unlike the majority of the diagonal tension member on the two trusses, four of the diagonal tensions members in this central area of each truss are composed of paired round-profile eyebars (with turnbuckles). All diagonal tension members are secured to the main vertical posts via retainer clips.

Portal and Sway Struts. The portal struts and associated bracing are composed of steel L-shapes and are attached between the end posts at each end of the truss span. The sway struts are each composed of a channel with steel plate riveted to the top and bottom flanges; they are attached between the upper chords and match the spacing of the main vertical posts.

Top Lateral Bracing - Top lateral bracing are the crossed round-profile eyebars (with turnbuckles) between each upper panel (area between each portal/sway strut).

Floorbeams. There are 13 equally-spaced steel floorbeams. Each is a 15-inch-deep I-beam that measures 15-feet, nine inches across and is affixed between the two trusses. Two of the floorbeams are associated with the bents at the span ends. The original floorbeams were removed and replaced in 1975.

WEST VIRGINIA HISTORIC PROPERTY FORM

CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015

Description of Bridge (cont'd):

Bottom Lateral Bracing – Bottom lateral bracing is crossed eyebars between each lower panel (area between each floorbeam).

Stringers– There are seven steel stringers per each of the span's 12 lower panels that are aligned east-west from floorbeam top to floorbeam top. Each is a 12-inch-deep wide-flange steel beam. The original steel stringers were removed and replaced in 1975.

Railings. Railings are attached to the inward-facing side of each truss are composed of an upper and lower parallel run of steel L-shape rails with steel lattice-work between. The railing measures 21 inches from upper rail to lower rail, and the height of the railing from the bridge deck surface to upper rail is two feet, eight inches.

Plaques. No plaques presently exist on the structure; however, WVDOH District 6 removed the two plaques sometime between July 2012 and July 2013 and they are presently held at that district's office. The plaques were originally attached to the portal bracing at each end of the bridge.

Deck Girder Span. The deck girder span at the east end of the bridge is 39-feet-long and has a superstructure that consists of two 24-inch-deep wide-flange steel beam girders connected via steel floorbeams below. The floorbeams are 16-inch-deep I-beams, each 16 feet, six inches across. The floorbeam at the caisson bent (shared with the main truss span) has tapered ends that are supported on the caissons. The two mid-span floorbeams are attached to the girders via steel connectors, each composed of a steel plate welded to the girder and a length of steel angle bolted to each side of the plate and floorbeam web below. The floorbeams are topped by smaller profile steel beam stringers (12-inch-deep wide-flange beams). There are seven stringers per each of the span's three lower panels. The original floorbeams and stringers were removed and replaced in 1975 and the extant angle diaphragms (between the stringers) were added in the same year. There is a standard steel guardrail on each side of the span.

Decking. Both spans of the extant bridge have non-original steel five-inch (depth) open grid decking with timber curbing. This replaced timber decking in 1988. The modern curbing (with scuppers) is composed of a double-thickness of three-inch by eight-inch timber board bolted to the timber decking beneath. There are no sidewalks or approach railings at either end of the bridge.

Substructure. The bridge's substructure includes two steel caisson bents that support both ends of the main truss span and the west end of the deck girder span. Both bents include a pair of crossed diagonal tension members (round-profile eybar with turnbuckles) attached between the caissons. The west bent has a concrete backwall with wingwalls constructed up against it. The east end of the deck girder span is supported on a full height reinforced concrete abutment that includes a breastwall, backwall and wingwalls.

The maintenance history of the bridge includes the following work completed by WVDOH District bridge repair crews (WVDOH 1995, 2015):

- 1975 At the truss span, the stringers were removed and replaced and angle diaphragms were added. Angles were attached to the end posts and top chord members. Loop bar hangers were added at the hip verticals at both ends of each truss. The floor beams were reinforced by welding 1/4" plates at the top and bottom flanges. At the deck girder span, the original girders, floor beams and stringers were all removed and replaced and angle diaphragms were installed. A new timber deck was added.
- 1988 The timber deck was replaced with steel grid decking and timber curbing was installed. The floor system and lower chord was sandblasted and painted with one coat of primer. Two additional stringers were added to the deck girder span.
- 1989 At the west end of the truss span, repairs were made to the floor beam at the bent.
- 2009 Steel angles were added to strengthen the bearings at the east end of the truss. A crack was welded at the top of the south (downstream side) cap at the eastern bent. Steel plates were welded to the web and bottom flange of the floor beam at the eastern bent.
- 2012 At the truss span, the stringer bearing at the west bent was repaired along with stringer replacement and floor beam repair, and the north (upstream side) end post was repaired at the west bent. At the deck girder span, the south (downstream side) girder was repaired, floorbeam repairs were made, and stringers were replaced.

WEST VIRGINIA HISTORIC PROPERTY FORM

CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015

Description of Bridge (cont'd):

The bridge currently has a sufficiency rating of 14.4 and is considered in poor condition and structurally deficient. In WVDOH's January 2015 bridge inspection report the most serious deficiencies observed are: the wrought iron fracture critical pin connected eyebars are in poor condition with up to 40% eyebar loss with some members affected by foundation settlement, overloading and/or impact damage; fracture critical loop bar supplemented hangers display stress sensitive butt welds and unequal load distribution; fracture critical wrought iron diagonal eyebars exhibit major corrosion, unequal tension, welded repairs, were from cross members, and impact damage, with lower chord eyes having up to 61% loss; and vertical posts display major packed rust at the lower chord pin plates, with up to 62% loss to pin plates, and batten plates at mid-panel have up to 100% lost with diagonal retainer support components missing at random locations.

Statement of Significance:

Marshall County was established by an act of Virginia General Assembly on March 12, 1835, formed from part of Ohio County. However, the present county area had its earliest documented white settlers by the 1760s-70s (Forbes 2013). After the State of West Virginia was created in 1863, Marshall County was subdivided into nine townships. Then in 1872 a new state constitution was ratified and the nine townships were reestablished as magisterial districts. Thus, Big Wheeling Creek became the boundary line between Union and Sand Hill districts, and Rude Bridge spans between them. The historic use of both districts in this area has been agricultural (MCHS 1984:28; Newton et al. 1879:406,425; Snell 2012; WV 1866 [*Acts of Legislature*]:27-28; WV 1905:24; WV Dept. of Free Schools 1866:62; White 1873).

To the east side of Rude Bridge is a large landholding that, by 1871, was owned by J. Downing, likely James Downing (Beers 1871). James was a farmer and his wife, Maria Grandstaff Downing, kept house. They had 12 children. By 1920 Henry Gus Hummel owned this property and operated it as a farm. Henry and his wife, Elizabeth, had at least five children. Eventually, one of their sons - George Oscar Hummel - took over the property. George married Ruth Hipsley in 1927 and they had their only child - a son, George Robert Hummel in 1934. George Oscar was a farmer and dairy man. His son, who went by Robert, inherited the farm and later transferred it to a friend, John Gray (Ancestry.com; Schafer 2015; WVGenWeb.org). Today the majority of this property (126.23 acres) is owned by John Alvin Gray (Marshall County Assessor).

To the west of Rude Bridge is another large landholding that was associated with John Rodefer by the early quarter of the 1800s. The property then went to Albert Davis, who married John's daughter in 1827. Albert operated the land as a farm. One of Albert's sons - Silas Rodefer Davis - continued the farm use of the property, as did Silas' son, Harry Albert Davis until ca. 1920. Until at least 1909, the landholding was 357+ acres (. Around 1920 Edward J. Rude and his wife, Mabel S., came to the property and operated it as a dairy and poultry farm. They had one child in 1923 - a daughter named Betty Jane. Betty Jane married Roy Alvin Schafer in 1943 and by the late 1950s the couple was living on the family property. Today, Betty Jane and one of her sons - Roy Schafer, Jr. - live on the property which is now 213.4 acres, renting out the farmland for grazing/pasture land (Ancestry.com; Hogg 1909; MCHS 1984:132-33; Schafer 2015).

Both the Gray and Schafer properties include recreational camp-type rental lots along the banks of Big Wheeling Creek.

Big Wheeling Creek Road (CO 5)

A local or country road (or roads) associated with Big Wheeling Creek likely existed before the 1850s-1860s. However, the earliest formal documentation located regarding intended road improvements along the waters of Wheeling Creek to the Pennsylvania state line was in 1853 (VA 1853:51,123,141). The Wheeling Creek Turnpike Company was incorporated in 1858 with Albert Davis - who owned the property directly west of Rude Bridge - listed amongst the Marshall County directors for the company. The road was to extend from a point on the National Road (to the north is Ohio County), "up the valley of Wheeling creek, to the forks thereof; then with the branch of each fork of said creek to the Pennsylvania line" (VA 1858:141).

Once the State of West Virginia was created, it appears that the Wheeling Creek Turnpike Company was reorganized as the Wheeling Creek & Pennsylvania Turnpike Company. The new company was incorporated on October 30, 1863 with Albert Davis again listed as a director. This company planned for a 20- to 30-foot-wide graded toll road "from a point near Mrs. Lydia Cruger's, on the National Road, in Ohio County, and then along the ravine or valley of Wheeling Creek, to a point on the line between the State of Pennsylvania and this state, so as to connect with a road which may be made in the state of Pennsylvania" (WV 1866 [*Constitution*]:89-90). An early clear map depiction of a road following the banks of Big Wheeling Creek is in 1871 (Beers 1871).

WEST VIRGINIA HISTORIC PROPERTY FORM

CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015

Statement of Significance (cont'd):

With no other information available, it can only be speculated that today's Big Wheeling Creek Road (CO 5) through the Project Area may have resulted from planning the above turnpike, particularly due to the interest of Albert Davis and others along Big Wheeling Creek such as Sherrard Clemens, Alexander Caldwell, Joseph Sheppard and William McCreary (WV 1866 [Const.]:90). However, it is presently unknown if this road was ever used as a toll road. Previous research conducted of turnpikes by WVDOH or other turnpike information available does not include information related to a Wheeling Creek & Pennsylvania Turnpike Company or the present CO 5 alignment being part of any known turnpike road.

Bridge and Road Improvements. It was not until the year 1882 that an iron bridge was erected in Marshall County. Three iron/steel truss bridges were reportedly erected that year by the order of the county court - one over Big Grave Creek, the Graysville Bridge over Fish Creek, and the Shepard (or Shepherd) Bridge over Big Wheeling Creek near Burch Run (Powell 1998:89). (WVDOH records give the Graysville Bridge an 1886 construction date, but the correctness of the date is uncertain with information available.) The Shepard and Graysville bridges, both built by the Wrought Iron Bridge Company of Canton, Ohio, are of similar construction detailing and still exist today, although both closed to traffic. Other steel truss bridges were soon to be built through the county including Adaline Bridge over Fish Creek (1892; to be demolished ca. 2015-16), County Line Bridge (ca. 1895, dem. ca. 1960), Rude Bridge over Big Wheeling Creek (1896), Langmyer Bridge over Big Wheeling Creek (1897, dem. ca. 1980) and Shepherd Bridge over Fish Creek (1897, dem. 2010; *Engineering News* 1895:188; *Paving and Municipal Engineering* 1895:49). It can only be speculated that the iron/steel truss structures replaced earlier wood bridges.

By 1925 many miles of Marshall County roads had reportedly been macadamized or paved with brick (Powell 1998:90). As early as 1909, residents living along the northernmost approximate four miles of Big Wheeling Creek Road raised \$1500 to repair the road, including grading and macadamizing (*Municipal Journal and Engineer* 1909:865). "Wheeling Creek Road" and "Big Wheeling Creek Road" are earliest referenced in Marshall County in WV State Road Commission (SRC) annual reports dating to the late 1920s. The two names are considered related to the same road since, of the main Wheeling Creek waterway and its three major branches, Big Wheeling Creek is the only portion in Marshall County. The earliest district-county work mentioned for the road is the paving of two miles with waterbound macadam by June 1927 (WV SRC 1927:87). By 1933 the approximately 7.5-mile-long Big Wheeling Creek Road (CO 5) was depicted as paved from the Ohio County line and through the Rude Bridge area with the remaining approximately three miles to the south shown as having gravel- or shale-surfaced and unimproved sections (WV SRC 1928:85, 1931:110, 1932:123, 1933:119 & 1933 map).

By the late 1930s improvements to Big Wheeling Creek Road, or Secondary Route 5 as SRC called it then, appear to have been handled by state forces. State Project No. 5405 was authorized in 1938 to grade, drain and apply road mix to 6.08 miles of the roadway from the Ohio County line to Shepard (Shepherd) Bridge. This work, which included the Rude Bridge area, was completed by the early half of 1940 under contract with Tri-State Asphalt Corp (WV SRC 1937 map & 1941:311). The paved portions of the road received bituminous sealing by Winter 1945 and was completed by state forces (WV SRC 1943:69, 1945:159). The southernmost 1.5 miles between CO 5's intersection with CO 16 and CO 7 has never been more than gravel/stone-surfaced to the present (WVDOT 2014).

Over time, three of the four steel truss bridges known to have been installed along Big Wheeling Creek Road prior to 1900s automotive highway development were replaced by newer structures. The Marshall-Ohio County Line Bridge's truss superstructure was removed to be replaced in 1960 with the extant steel girder and floorbeam span; however caisson bents from the truss bridge were reused for the new structure (Bridgemappper.com). The Langmyer Truss Bridge was removed, having been replaced in 1980 with the existing two-span steel stringer structure. Finally, the Shepard Truss Bridge was replaced in 2003 with a prestressed concrete box beam span installed west of the original CO 5 alignment. However, the Shepard truss bridge was retained in its original location and closed to traffic; the associated road alignment is now overgrown and unnoticeable. Rude Bridge is the only steel truss bridge that remains in use along CO 5 today.

Rude Bridge – As mentioned above, Rude Bridge was built in 1896 by the Wrought Iron Bridge Company. No information has been found about maintenance of this bridge through 1941. Sometime between June 1942 and February 1943, state forces performed unspecified maintenance on the bridge (WV SRC 1942:52 & 1943:69). There was an authorization in August 1949 for the repair and re-flooring of the Big Wheeling Creek bridges. This work was completed by August 1951 and it can only be speculated that Rude Bridge received the repairs (WV SRC 1952:313). It is known that in July 1969 bids were being requested to repaint this bridge (*Charleston Daily Mail* 1969).

WEST VIRGINIA HISTORIC PROPERTY FORM

CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015

Statement of Significance (cont'd):

The 1943 annual SRC report is the earliest documentation found in the present research that identifies this structure by the name "Rude Bridge." (WV SRC 1942:52 & 1943:69). This name was likely attributed to the bridge since ca. 1920 when the Rude Family's residence began on the property west of the bridge and/or was assigned the name by WV SRC sometime thereafter. Identifying a local bridge by using an adjacent property owner's name is common throughout state. However, this bridge was constructed about 24 years prior to the coming of the Rudes to the area.

Rude bridge was actually built during the tenure of the Davis family. In the *History of Marshall County* (MCHS 1984) it is noted on page 132 that Silas R. Davis "served as a Marshall County commissioner, and was responsible for the bridge near his property still called the Davis Bridge"; it is speculated that this is the same structure as the Rude Bridge. It also appears that Silas' father, Albert, had interests in improvements to Big Wheeling Creek Road as early as the 1850s. It is not historically uncommon that farmer's became active/involved in local government, such as a county commissioner, or organizations/corporations to improve and maintain infrastructure that would benefit the agricultural business in their area. Silas was just one of a group of commissioners in his term(s) to approve any local bridge construction.

Wrought Iron Bridge Company of Canton, Ohio

"David Hammond formed the Wrought Iron Bridge Company in 1866 in Canton, Ohio. This firm was one of the most productive bridge companies in the United States (US) in the nineteenth century and energized the bridge building industry with its diverse patents. As one bridge historian had noted, 'it would be difficult to overestimate the importance of this firm to the history of metal bridge engineering in [Ohio] and [the] nation' (Simmons 1978) . . . The company erected nearly all forms of truss, arch, swing and plate bridges and iron piers . . . The firm grew steadily through the 1870s, 'perhaps becoming the most prolific 19th century iron bridge fabricator in the country' (Ashback-Sladik and Fraser 1991:1)" (Carver 2008:218). Hammond later (ca. 1891-92) helped form a rival bridge works, the Canton Bridge Company (Carver 2008:219).

"By 1881 the [Wrought Iron Bridge] company had built bridges in 25 states and Canada for a total of approximately 3,300 bridges." By 1883 the number reportedly had risen to 4,600 spans in 26 states, Canada and Mexico. By 1885, the company claimed to have erected bridges in 30 states, Canada and Mexico (Carver 2008:219). In 1901-1902, the American Bridge Division of U.S. Steel purchased 28 companies, including the Wrought Iron Bridge Company, and merged these companies to form the US Steel subsidiary known as American Bridge Company. Due the Great Depression, US Steel closed the Canton plant in the fall of 1930 and sold the property (Carver 2008:219).

Whipple Trapezoidal Truss (aka, Double-Intersection Pratt Truss, Whipple-Murphy Truss, Linville Truss).

Squire Whipple was an engineer from New York. He built his first iron truss bridge – a bowstring arch truss - in 1840 over the Erie Canal. It was the second all-metal truss bridge built in the US. Whipple received a patent for this design in 1841 and it became the first metal truss to be used widely and was the first based on scientific principles (Carver 2008:267; PB & EIH 2005: 2-7, 3-22; Solomon 2008:34-35). Reportedly, there are no Whipple Bowstring Arch bridges in West Virginia (KCI et al. 2013:61).

About a year later, engineer Thomas Pratt designed the first Pratt Truss. In 1844 Thomas and his father, Caleb, were granted the patent for the design, which used wood vertical compression members and wrought iron diagonals in tension. Initially not popular due to the expense of the metal, things turned around when all-iron bridges became a favored type for the nation's railroads (PB & EIH 2008:3-25). Squire Whipple's take on the Pratt Truss, was a design he called a "Trapezoidal Truss" which is often today also labeled as a "Double-Intersection Pratt Truss." He built his first trapezoidal truss in 1846 and patented the design in 1847 (Carver 2008:298; PB & EIH 2008:2-7, 3-28; Solomon 2008:36). Whipple determined that by "extending the diagonal members over two panel lengths, the depth of the panel was increased without altering the optimal angle of 45 degrees; thus, the span length could be increased" (PB & EIH 3-25).

The first Whipple Trapezoidal Truss bridge was erected in 1853 near Troy, NY for the Albany & Northern Railroad. The early bridges of this design had cast iron top chords and end post and wrought iron lower chords; connects were with cast iron trunnions. In 1861 Engineer Jacob H. Linville built a Whipple Trapezoidal Truss bridge over the Schuylkill River using wrought iron eyebars and posts for the first time. In 1863 Engineer John W. Murphy erected a his version of the Whipple bridge over the Lehigh River in Mauch Chunk (now Jim Thorpe, PA) using all wrought iron members, including the replacement of the trunnions with wrought iron pin connections. It has been considered the first truss bridge in which pin connections were used throughout (*Engineering News* 1889; PB & EIH 2008:3-28, -29).

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015

Statement of Significance (cont'd):

The Whipple Trapezoidal Truss was not fully favored until the 1860s after Murphy's pin connection improvement made for easier factory manufacture of components and simpler assembly on site. As well, the wrought iron pin insulated bending stresses (Solomon 2008:40). From that point the Whipple became a well-used bridge type for railroad and vehicular bridges of the late 19th century (PB & EIH 2008:3-28). Although extremely popular from about 1865 to 1885, the use of this bridge type lessened afterward with preference going toward the Camelback or Parker trusses which were less complex to erect (Carver 2008:298).

Criterion A

Rude Bridge was constructed in 1896 and was part of a transition to iron/steel truss bridges in Marshall County that began in 1882. Although there appear to have been plans in the 1850s and 1860s for improvements to create a turnpike road along Big Wheeling Creek, it is presently unknown if the extant Big Wheeling Creek Road (CO 5) was actually used as a toll road. Regardless, a road along the creek existed by the 1800s and at least four iron/steel truss bridges were associated with it – County Line Bridge, Langmyer Bridge, Rude Bridge and Shepard (Shepherd) Bridge. Presently only two of these truss bridges still exist. Shepard (Shepherd) Bridge was abandoned for a new road alignment and bridge; the 1882 was left in place and the associated abandoned road approaches are overgrown and unnoticeable. Rude Bridge is the only extant example of a steel truss bridge still in use on the historic Big Wheeling Creek Road alignment. Thus, Rude Bridge meets Criterion A of the National Register for Historic Places (NRHP) at a local level for its association with 19th-century rural road development in Marshall County.

Criterion B

This structure has been known as the Rude Bridge since some point after the Rude Family moved onto the property just west of the bridge around 1920. No information of notable significance relates to Edward J. Rude or his relatives associated with the property. Prior to this, the bridge was likely identified with the prior owners of this property, the Davis Family. Silas R. Davis was a county commissioner and may have had some influence, along with colleague commissioners during his term(s), over the building of this bridge and others in the county. However, involvement of farmers in local government was common and Silas Davis' speculated bridge-related contribution is not unique. Thus, this structure is not known to have been associated with the significant productive period of some notable person's life, nor to have been associated for any length of time with such a person, nor to be the best representation of such a person's historic contribution (NRHP Criterion B).

Criterion C

Rude Bridge, built 1896 by Wrought Iron Bridge Company of Canton (Ohio), was previously evaluated for the West Virginia Statewide Historic Bridge Survey and was determined eligible for the NRHP under Criterion C for its engineering significance and its association with a master builder (KCI et al. 2011 & 2013: 25, App. F p.247). Per the 2013 Survey there are approximately 120-130 metal through truss bridges (wrought iron and steel; pin-connected and riveted) remaining in WV that were built prior to 1965. They are dispersed amongst 46 counties. In the survey, eight such truss bridges are identified in Marshall County (KCI et al. 2013: Hist. Cont. pp. 29,63 & App. F pp.247, 253). However, two of the eight – the Shepherd and Denver bridges over Fish Creek have been demolished (Bridgehunter.com). Thus, Marshall County currently appears to have six remaining metal through truss bridges - Adaline, Meighen, Kausooth and Graysville bridges, all over Fish Creek, and the Shepard(or Shepherd) and Rude bridges, both over Big Wheeling Creek. Of these, four - Adaline, Graysville, Rude and Shepard bridges - are Whipple Trapezoidal through truss structures, and all happen to be constructed by the Wrought Iron Bridge Company. All four bridges have previously been found NRHP-eligible under Criterion C (KCI et al. 2013: App F p. 247; WVDOH files). Adaline Bridge is set to be removed and replaced ca. 2015-16.

The four remaining Whipple Trapezoidal through trusses in the county appear to represent at least two different phases or types of construction detailing related to Wrought Iron Bridge Company. For example, the Shepard Bridge (blt. 1882), Graysville Bridge (1886) and Adaline Bridge (1892) have similar latticed portal and sway strut details, while Rude Bridge (1896) demonstrates A-frame portal and simple channel sway struts. The only other Marshall County bridge presently known with similar portal and sway strut detailing to Rude Bridge was Langmyer Bridge over Big Wheeling Creek, which was a regular Pratt through truss built in 1897 and demolished ca. 1980 (Harding 1978). The A-frame portal was a common metal through truss detail not limited to one specific contractor/designer.

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project
Survey #: State Project: S326-5-3.98
Survey / FR#: STP-0005 (109)D
Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015

Statement of Significance (cont'd):

Rude Bridge's steel caisson bent substructure appears to have been commonly used by the 1890s on bridges. They are/were also demonstrated on the following Marshall County spans: Kausooth Bridge (blt. 1906), Meighen Bridge (blt. 1913), the reused ca. 1895 bents at present County Line Bridge, Langmyer Bridge (blt. 1897, dem. ca. 1980) and Shepherd Bridge over Fish Creek (blt. 1897, dem. 2010). The deck girder portion of the overall span is of common construction for the period built.

Although Rude Bridge has undergone alterations (mainly to decking and floor beams/stringers below), it still retains good overall integrity in conveying the engineering significance of its truss design and builder. WVDOH continues to agree with the 2013 Statewide Historic Bridge Survey finding that Rude Bridge is eligible under NRHP Criterion C. It is eligible under this criterion for its engineering significance as an example of Whipple Trapezoidal through truss, an increasingly uncommon bridge type in Marshall County and all of West Virginia, and as a representation of the work of the Wrought Iron Bridge Company, a bridge builder distinguishable on a national level.

Criterion D

This structure is not likely to have important information that will contribute to our understanding of human history or prehistory. Construction appears to have utilized commonly known techniques, tools and materials. The potential for information is minimal, so it does not meet NRHP Criterion D.

Due to conflicting periods of construction and/or lack of integrity of farm structures and residences in the vicinity, this property is not a contributor to a significant historic district or historic landscape.

Bibliographical References

Ancestry.com. Search of records, including census, marriage/death records and family trees, related to the Downing, Hummel, Davis, Rude and Schafer families in the Project Area.

Ashback-Sladek, Ron D. and Clayton B. Fraser/Fraserdesign, Loveland, CO. Historic American Engineering Record Documentation: Davis Bridge [built by Wrought Iron Bridge Company of Canton, OH] in Howard County, Iowa. HAER No. IA-35, December 1991.

Bridgehunter.com. Information about the Shepherd and Denver bridges over Fish Creek, Marshall County. Denver Bridge is referred to as "Pa Fork of Fish Creek Bridge" in this resource.

Bridgemappper.com. Information about the Marwin Drive Bridge (County Line Bridge), built 1960 (with reused piers) in Marshall-Cabell Counties and Guyandotte River Bridge (Martha Truss), built 1882 in Cabell County.

Bridgemappper.com. Martha Truss Bridge, Cabell County, West Virginia.
http://www.bridgemappper.com/bridge_detail.php?ID=429 (March 2015)

---. Marwin Drive Bridge, Marshall-Ohio County, West Virginia.
http://www.bridgemappper.com/bridge_detail.php?ID=1931 (March 2015).

Carver, Martha/Tennessee Department of Transportation. *Tennessee's Survey Report for Historic Highway Bridges: Pre-1946 Masonry Arch, Timber Truss, Metal Truss, Concrete Arch, Metal Arch and Suspension Bridges*. Nashville, TN: Ambrose Printing Company, 2008.

Charleston Daily Mail. Legal Advertisements Section, notification of State Division of Purchases accepting bid, including to repaint Rude Bridge. July 15, 1969, p 22, col. 3.

Engineering News, Volume 33, January-June, 1895. New York, NY: Engineering News Publishing Company, 1895; excerpt about Marshall-Ohio county line bridge over Big Wheeling Creek is located in the Supplemental Sections at back of volume: No. 24, June 13, 1895, page 188.

---. "American Railroad Bridges." July 6, 1889. <http://catskillarchive.com/rrextra/BRCOO0.Html> (Feb. 2015).

WEST VIRGINIA HISTORIC PROPERTY FORM

CONTINUATION SHEET

Name: Rude Bridge Replacement Project
 Survey #: State Project: S326-5-3.98
 Survey / FR#: STP-0005 (109)D
 Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015

Bibliographical References (cont'd)

- Forbes, Harold Malcom. "Marshall County." *e-WV: The West Virginia Encyclopedia*. June 3, 2013.
<http://www.wvencyclopedia.org/articles/1521> (March 2015).
- Harding, James. E. West Virginia Historic Properties Inventory Form – Langmyer Bridge (SHPO Survey No. MR-0022), October 1978.
- Hogg, J. S. *Farm Line Map of Marshall Co., West Virginia*. Uniontown, PA.: J. S. Hogg, November 1909.
- KCI Technologies and Mead & Hunt, Inc. *West Virginia Statewide Historic Bridge Survey: Revised Draft Final Report*, Feb. 2013.
- . *West Virginia Historic Bridge Inventory Form – Rude Bridge over Big Wheeling Creek* (Bridge No. 26-005/00-003.98, BARS No. 26A020, SHPO Survey No. MR-0102), 2011.
- Marshall County Historical Society (MCHS). *History of Marshall County, West Virginia*. MCHS, 1984.
- Municipal Journal and Engineer, Index, Volume XXVI, 1909*. New York, NY: Swetland Publishing Company, 1909.
 Excerpt about \$1500 for road repairs along Big Wheeling Creek located in Bulletin No. 19, May 12, 1909.
- Newton, J. H., G. G. Nichols, and A. G. Sprankle. *History of the Panhandle; Being Historical Collections of the Counties of Ohio, Brooke, Marshall and Hancock, West Virginia*. Wheeling, WV: J. A. Caldwell, 1879.
- Parsons Brinckerhoff and Engineering and Industrial Heritage (PB & EI). *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. October 2005.
- Paving and Municipal Engineering*, Volume VIII, NO. 1, January 1895. Indianapolis: Municipal Engineering Company, 1895.
- Powell, Scott. *History of Marshall County, From Forest to Field, A Story of Early Settlement and Development of Marshall County, W. Va.* Moundsville, WV: Scott Powell, 1925. Bowie, MD: Heritage Books, Inc., 1998 (reprint).
- Schafer, Betty Jane. Personal communication with Tracy Bakic, WVDOH Structural Historian, on February 10, 2015.
 Mrs. Schafer is the owner of County Parcels 22, 22.1, 23, Sandhill District Map 9.
- Simmons, David. "Bridge Preservation in Ohio." *Ohio Cities and Villages*. August 1978:13-18.
- Snell, Mark A. "Civil War." *e-WV: The West Virginia Encyclopedia*. June 21, 2012.
<http://www.wvencyclopedia.org/articles/1193> (March 2015).
- Solomon, Brian. *North American Railroad Bridges*. Frist Edition. Voyageur Press, 2008.
- Virginia (VA). *Acts of the General Assembly of Virginia, Passed in 1852-3 in the Seventy-Seventh Year of the Commonwealth*. Richmond, VA: William F. Ritchie, Public Printer, 1853.
- . *Acts of the General Assembly of Virginia, Passed in 1857-8 in the Eighty-Second Year of the Commonwealth*. Richmond, VA: William F. Ritchie, Public Printer, 1858.
- West Virginia (WV). *Constitution of West Virginia and Acts of the Legislature of West Virginia at its First Session, Commencing June 20, 1863*. Wheeling, 1863. As bound within *Ordinances and Acts of the Restored Government of Virginia Prior to the Formation of the State of West Virginia; with the Constitution and Laws of The State of West Virginia, To March 2d, 1866*. Wheeling, WV: John Frew, Public Printer, 1866.
- . *Constitution of West Virginia as Adopted in 1872: With Amendments Since Made*. Charleston, WV: Donnally Publishing Company, 1905.
- WV Department of Free Schools. *Second Annual Report of the State Superintendent of Free Schools, of the State of West Virginia*. Wheeling, WV: John Frew, Public Printer, 1866.

WEST VIRGINIA HISTORIC PROPERTY FORM

CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015

Bibliographical References (cont'd)

WV Department of Highways (WVDOH). Bridge files, including Inspection Reports for Adaline, Meighen, Kausooth Graysville bridges, Shepard, Rude and other bridges, 2015.

---. *Bridge Inspection Report, Rude Bridge spanning Big Wheeling Creek Bridge, County Route 5, Marshall County, Bridge No. 26-5-3.98(7526), BARS 26A020*, May 19, 1995.

---. *Bridge Inspection Report. Rude Bridge over Big Wheeling Creek, County Route 5, Marshall County, Bridge No. 026-5-3.98(7526), BARS 26A020*, January 8, 2015.

WV State Road Commission (WV SRC). *1941-1942 Annual Report, State Road Commission of West Virginia*. Charleston, WV: Allied Printing Trades Council, 1942.

---. *1942-1943 Annual Report, State Road Commission of West Virginia*. Charleston, WV: Allied Printing Trades Council, 1943.

---. *1944-1945 Annual Report, State Road Commission of West Virginia*. Charleston, WV: Jarrett Printing Company, 1945.

---. *1951-1952 Annual Report, State Road Commission of West Virginia*. Charleston, WV: Allied Printing Trades Council, 1952.

---. *Annual Report of the State Road Commission of West Virginia for the Year Ending June 30, 1925*. Charleston, WV: Tribune Printing Co., 1925.

---. *Annual Report of the State Road Commission of West Virginia for the Year Ending June 30, 1927*. Charleston, WV: Jarrett Printing Co., 1927.

---. *Annual Report of the State Road Commission of West Virginia for the Year Ending June 30, 1928*. Charleston, WV: Jarrett Printing Co., 1928.

---. *Annual Report of the State Road Commission of West Virginia for the Year Ending June 30, 1931*. Charleston, WV: Jarrett Printing Co., 1931.

---. *Annual Report of the State Road Commission of West Virginia for the Year Ending June 30, 1932*. Charleston, WV: Jarrett Printing Co., 1932.

---. *Annual Report of the State Road Commission of West Virginia for the Year Ending June 30, 1933*. Charleston, WV, 1933.

---. *Annual Report of the State Road Commission of West Virginia for the Fiscal Year Ending June 30, 1941*. Charleston, WV: Mathews Ptg. & Litho. Co., 1941.

---. *Map of Marshall County, Primary and Secondary Highways*. 1933.

---. *Transportation Map, Marshall County, West Virginia*. 1937, Revised January 1940.

WV Department of Transportation (WVDOT), Planning Division. *General Highway Map, Marshall County, West Virginia*, 2014.

White, M. Wood. *White's Topographical County & District Atlas of West Virginia. Counties of Hancock, Brooke, Ohio, Marshall*. Grafton, WV: M. Wood White, 1873. [Depicts Districts].

WVgenweb.org. Descendants of George Clinton Johnson. Submitted by Sue Royal.
<http://www.wvgenweb.org/marshall/gcjohnson.txt> (March 2015)

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



South (Downstream) Side Elevation. View Northeast (WVDOH Feb. 10, 2015)



North (Upstream Side) Elevation. View Southeast (WVDOH Dec. 3, 2013)

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



West Approach. View Northeast (WVDOH Dec. 3, 2013).



East Approach. View West/Northwest (WVDOH Dec. 3, 2013).

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



West End. View Southeast (WVDOH Dec. 3, 2013)



West End, angle view taken from south side of road. View East (WVDOH Dec. 3, 2013)

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



East End. View Northwest (WVDOH Dec. 3, 2013)



East End, angle view taken from south side of road. View Northwest (WVDOH Dec. 3, 2013)

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



East End, angle view taken from north side of road. View West (WVDOH Dec. 3, 2013)



Thru Girder Span at East End of Bridge. View East/Southeast (WVDOH Dec. 3, 2013)

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



Detail View of Typical Truss Members, incl. Endpost, Lower Chord Eyebars, and Hip & Main Tension Verticals. View East of South (Downstream Side) Truss (WVDOH Dec. 3, 2013)



Detail View Highlighting the Hip Vertical Tension Member at the South Truss, West End. This member includes the original thicker diameter central eyebar with four later-added (1975) loop bar hangers around it. View SE (WVDOH Dec. 3, 2013).

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



Typical Main Vertical Tension Member Detail. View Southeast of South (Downstream Side) Truss (WVDOH Dec. 3, 2013)



Typical Endpost Detail. View Northwest of North (Upstream Side) Truss, West Endpost (WVDOH Dec. 3, 2013).

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



Typical Detail of a main vertical Post with retainer clps that attached to the hold the diagonal tension members in place (WVDOH Feb. 2, 2015).



East end of bridge, Highlighting the typical Portal Strut/Bracing between Endposts, Sway Struts, and Top Lateral Bracing (crossed eyebars). View NE (WVDOH 2-10-2015)

WEST VIRGINIA HISTORIC PROPERTY FORM

CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



Interior of Bridge, Highlighting Sway Struts & Top Lateral Bracing (crossed eyebars) and extant steel grid decking (replaced timber decking in 1988). View SE (WVDOH Dec. 3, 2013)



South (Downstream Side) Elevation, Highlighting Floorbeams between trusses. West pier/abutment is also in view. View Northwest (WVDOH Dec. 3, 2013).

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



Underside of Truss Deck, Highlighting Floorbeams, Stringers and lateral bracing.
View NW (WVDOH Dec. 3, 2013). East end caisson bent/pier (with eyebar tension members) is in foreground.



Underside of Truss Deck , Highlighting the floorbeams, stringer and lateral bracing.
View NW (WVDOH Dec. 3, 2013).

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



Typ. Railing & Curb Detail. View East of North (Upstream Side) Truss (WVDOH Dec. 3, 2013)



West Approach to Rude Bridge in 2008, highlighting the bridge plaque still in place with the portal. View E/SE (WVDOH District 6 July 15, 2008)

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



East Approach to Rude Bridge in 2008, highlighting the bridge plaque still in place with the portal. View W/NW (WVDOH District 6 July 15, 2008)



View of one of the Rude Bridge portals before Wrought Iron Bridge Company plaques were removed (WVDOH District 6 August 28, 2009).

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

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View of Rude Bridge plaques presently held at the WVDOH District 6 main office. Each reads "1896 / WROUGHT IRON BRIDGE COMPANY / BUILDERS / CANTON, OHIO." (WVDOH District 6 December 12, 2013).



Deck Girder Span, Highlighting the understructure of Girders, Floorbeams and Stringers. East end Caisson Bent/Pier (with eyebar tension members in foreground) View SE (WVDOH Feb 10, 2015)

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

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APE B1 - Rude Bridge. Caisson Bent & Abutment at West End of Bridge.
View Northwest (WVDOH Feb. 10, 2015). Note cracks in abutment/wingwalls.



Caisson Bent at East End of Bridge. View Southeast (WVDOH Feb. 10, 2015).

WEST VIRGINIA HISTORIC PROPERTY FORM CONTINUATION SHEET

Name: Rude Bridge Replacement Project

Survey #: State Project: S326-5-3.98

Survey / FR#: STP-0005 (109)D

Form Prepared by Tracy D. Bakic (WVDOH) on March 24, 2015



East End Caisson Bent. Taken from South (Downstream) Side of Bridge.
View North/NE (WVDOH Feb. 10, 2015).




East End Abutment. View East/Southeast (WVDOH Dec. 3, 2013).



RATING: CE
 CONTEXT: _____

WEST VIRGINIA HISTORIC PROPERTY INVENTORY FORM

STREET ADDRESS BIG WHEELING CREEK ROAD COUNTY ROAD 5	COMMON/HISTORIC NAME 	NO. IN SURVEY MAR 0-8 0011	NO. OF BAYS <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <input type="checkbox"/> FRONT </div> <div style="text-align: center;"> <input type="checkbox"/> SIDE </div> </div>
TOWN OR COMMUNITY <i>Wheeling Vic.</i>	COUNTY MARSHALL	NEGATIVE NO. NRO 1-33	NOT VISIBLE FROM ROAD <input type="checkbox"/>
ARCHITECT/BUILDER WROUGHT IRON BRIDGE CO. CANTON, OHIO	DATE OF CONSTRUCTION 1896	EXTERIOR BUILDING FABRIC IRON	
<div style="text-align: right; margin-bottom: 5px;">DATE</div> NAT. REGISTER LISTED _____ STATE REGISTER LISTED _____	ROOFING MATERIAL 	STYLE (STAFF USE ONLY) PRATT THROUGH-TRUSS	
PROPERTY USE OR FUNCTION BRIDGE	TYPE OF FOUNDATION METAL & CONCRETE		
SURVEY ORGANIZATION AND DATE SHPO-NRO	QUADRANGLE NAME MAJORSVILLE- <i>moundsville</i>		
	PART OF WHAT SURVEY 		

Gm



SITE NO.

PRESENT OWNERS

OWNER ADDRESS

GENERAL CONDITION OF PROPERTY

ADDITIONS

☐

YES

☐

NO

IF YES, DESCRIBE

ALTERATIONS

☐

YES

☐

NO

IF YES, DESCRIBE

NO. AND NATURE OF OUTBUILDINGS

DESCRIPTION OF PROPERTY (ORIGINAL AND PRESENT)

Iron, pratt through-truss bridge, metal grating for deck, early guard rail, metal & concrete foundation. Single span, estimate 40 yards long, 10 yards wide. Plaque at end reads "WROUGHT IRON BRIDGE/BUILDERS/CANTON, OHIO" Weight Limit 12 tons.

HISTORICAL/CULTURAL SIGNIFICANCE

Catalog bridge from the Wrought Iron Bridge Co., Canton, Ohio.

BIBLIOGRAPHICAL REFERENCES

FORM PREPARED BY

DATE

K.M. Jourdan
SHPO-NRO

September 1993

ADDRESS Wheeling, WV

**MEMORANDUM OF AGREEMENT
BY AND AMONG
THE WEST VIRGINIA STATE HISTORIC PRESERVATION OFFICER AND THE
WEST VIRGINIA DIVISION OF HIGHWAYS
REGARDING IMPLEMENTATION OF THE
RUDE BRIDGE REPLACEMENT PROJECT
STATE PROJECT # S226-5-3.98
FEDERAL PROJECT #STP-0005 (109)D
MARSHALL COUNTY, WEST VIRGINIA
JULY 2015**

WHEREAS, the Federal Highway Administration (FHWA), in cooperation with the West Virginia Division of Highways (WVDOH), proposes to replace the Rude Bridge which spans over Big Wheeling Creek on County Route 5 (Big Wheeling Creek Road) in Marshall County, hereinafter referred to as the "Project." The improvements involve the construction of a new concrete bridge and the removal of the existing bridge; and

WHEREAS, the FHWA has determined that the Project will have an adverse effect upon Rude 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 effect archaeological properties; and

WHEREAS, the WVDOH has contacted the Preservation Alliance of West Virginia and the Marshall County Historical Society regarding the Project. Neither group chose to respond in relation to reuse of the existing Rude Bridge in place or by moving it to a new location; and

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:

Rude Bridge

- I. Rude Bridge will be documented in its present historic setting. The documentation package will include 5"x7" black and white or color digital prints in accordance with the NRHP and National Historic Landmarks Survey Photo Policy of May 2013.

- II. A brief history of Rude Bridge will be included in the aforementioned documentation package, along with fully completed West Virginia Historic Property Inventory (HPI) forms and copies of any available plan sheets and/or drawings of the bridges from WVDOH bridge files. The history will address the bridge's background in relation to its location and surroundings and, as well, will address the associated topics of: the bridge's relation to rural road development in Marshall County; the development/evolution of the bridge's Whipple Trapezoidal Through Truss design, including the design's introduction to West Virginia and Marshall County; and the history of the bridge's builder - Wrought Iron Bridge Company.
- III. WVDOH staff will provide Marshall County Schools Board of Education, Marshall County Historical Society, Moundsville-Marshall County Public Library, and Benwood-McMechen Public Library a copy of the Rude Bridge documentation for references and educational purposes.
- IV. 200 color brochures about Rude Bridge will be developed by the WVDOH. The brochures will be distributed to the following recipients: Marshall County Schools Board of Education (50 brochure copies); Marshall County Historical Society (50 brochure copies), Moundsville-Marshall County Public Library (50 brochure copies) and Benwood-McMechen Public Library (50 brochure copies). As well, each recipient will receive a CD format digital copy of the brochure for future reproduction once the original hard copies provided by WVDOH have been depleted. The WVSHPO will be given the opportunity to review all educational materials developed for this stipulation.
- V. Rude Bridge's two bridge plaques will be given to Marshall County Historical Society per that organization's request.
- VI. Rude Bridge will be documented on a future website listing historic bridges.

VII. Duration

This Memorandum of Agreement (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 Advisory Council on Historic Preservation (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 XI below. FHWA shall notify the signatories as to the course of action it will pursue.

VIII. 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).

IX. 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.

X. 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.

XI. 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.

XII. 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 XI, 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, WVSHPO, the WVDOH and the ACHP, and implementation of its terms evidence that the FHWA has afforded the ACHP an opportunity to comment on the Rude 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

APPROVED:



Federal Highway Administration

10/9/15

Date



West Virginia Deputy State Historic Preservation Officer

8/10/15

Date

Advisory Council on Historic Preservation

Date

CONCUR:



West Virginia Division of Highways

8/11/15

Date