WEST VIRGINIA STATE-LEVEL RECORDATION

GLENVILLE TRUSS BRIDGE (NBI No. 11A076; Bridge No. 11-033/00-016.59)

Location:	Spanning the Little Kanawha River on US Routes 33 and 119 in the City of Glenville, Gilmer County, West Virginia	
	The Glenville Truss Bridge is located at latitude: 38.560082, longitude: -80.502030. The coordinates represent the center of the bridge at mid-span. The coordinates were obtained on October 31, 2023, using Google Earth. The coordinate's datum is World Geodetic System 1984 (WGS84). The bridge's location has no restriction on its release to the public.	
Present Owner:	West Virginia Department of Transportation, Division of Highways 1900 Kanawha Boulevard, East, Building 5, Room 820, Charleston, WV 25301	
Present Use:	Vehicular/Pedestrian Bridge	
Significance:	The Glenville Truss Bridge was determined eligible for listing in the National Register of Historic Places (NRHP) under Criterion C for its engineering significance as a well-preserved example of a two-span, riveted Parker through-truss bridge over 300 feet in total length and for its association with the Atlantic Bridge Company (contractor) and the Virginia Bridge and Iron Company (fabricator). The structure is also significant as a bridge design of the West Virginia State Road Commission.	
Historians:	ans: Chris Halderman and Jesse Belfast, Architectural Historians Michael Baker International, Inc., 100 Airside Drive, Moon Township, PA 15108 July 2024	
Project Information:	A Memorandum of Agreement among the West Virginia Division of Highways, West Virginia State Historic Preservation Officer, and the Federal Highway Administration (executed April 2023) stipulated that the Glenville Truss Bridge be documented prior to demolition. Architectural historians from Michael Baker International, Inc. prepared the written and photographic documentation.	

PART I. HISTORICAL INFORMATION

A. Physical History:

1.	Date(s) of construction:	1929
2.	Engineer:	West Virginia State Road Commission
3.	Builder:	Fabricated by Virginia Bridge and Iron Company; Erected by Atlantic Bridge Company
4.	Original plans and construction:	Original substructure and superstructure drawings dated May 1929 and preliminary (1925) plan and profile drawings are in the collection of the West Virginia Department of Transportation, Division of Highways in Charleston. Originally designated State Project No. 3334 and Bridge #1006.
5.	Alterations and additions:	No substantial additions or alterations are known to have taken place except for the replacement of the road deck. Typical maintenance and repairs have also been conducted over time, including portal bracing, lateral bracing, and truss strengthening. ¹

B. Historical Context:

Early Development of Glenville:

The city of Glenville, located on the north shore of the Little Kanawha River, is the seat of Gilmer County. The site was attractive to early European-American settlers in the late eighteenth and early nineteenth centuries because the river was shallow there and could be crossed with a horse or wagon. Such places were referred to as "riffle water." Because of these conditions, the earliest name for the site was "The Ford," which later was renamed Hartford.² As settlement continued and more land was cleared, water run-off became faster resulting in a raise river level. A dam was later built.³

In 1845, Hartford was designated the seat of the newly formed Gilmer County, and Samuel Lewis Hays laid out the town on a grid pattern with commercial and civic buildings constructed on the north side of the river and private houses on the south side.⁴ To facilitate transportation across the now-dammed river, a

¹Terry Chapman, "New Bridge WV HPI Form," *West Virginia Historic Property Inventory Form*, (Charleston: West Virginia Department of Culture and History, 1984).

² Gilmer County Historical Society, *History of Gilmer County, West Virginia 1845-1989*, (Glenville, West Virginia: Walsworth Publishing Company 1994), 5.

³ Terry Chapman,. "New Bridge WV HPI Form," *West Virginia Historic Property Inventory Form*, (Charleston: West Virginia Department of Culture and History, 1984).

⁴ Gilmer County Historical Society, *History of Gilmer County, West Virginia 1845-1989*, (Glenville, West Virginia: Walsworth Publishing Company, 1994),3.

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ferry was installed at Ferry Street. The town was incorporated in 1856 and renamed Glenville because of its location in a glen or valley.⁵

Glenville's early economy relied on commerce via river traffic, especially downriver to Parkersburg and upriver to Gilmer Station. Several mills were constructed in the area that relied on waterpower and later on steam power. Natural gas and oil industries emerged after oil was struck in 1875 at nearby Letter Gap.⁶

Construction of the First Glenville Truss Bridge:

During the county court's first session in 1845, it elected surveyor Michael Stump to assess the county's transportation needs and Stump's report laid the resources. groundwork for future roads and bridges constructed throughout the county. In 1884, the county voted 1167 to 365 to build six bridges to connect parts of the county separated by rivers and streams.⁷ On December 1, 1884, Gilmer County Court signed a contract with the firm Stewart, Shirreffs and Company of Richmond, Virginia, to design six wrought iron highway bridges at a cost of \$13,132.



Figure 1. Undated photo of the 1885 Glenville Bridge. (Gilmer County Historical Society.)

In 1885, the Wrought Iron Bridge Company of Canton, Ohio, built these six highway bridges at Glenville, Fink Creek, Cove Creek, Sand Fork, Leading Creek, and Cedar Creek. The Glenville Bridge on Court Street is the only one of these six bridges still in existence.⁸ The first Glenville Bridge (Figure 1) was a prefabricated bridge that arrived by rail in Weston, West Virginia and was then brought 27 miles to Glenville by horse and wagon. The county was responsible for erecting the stone abutments on each bank of the river. The bridge's main span is a double-intersection Pratt truss (also known as a Whipple truss), which incorporates inclined end posts and diagonals that extend across two panels.⁹ As the first metal

⁵ Idem, 5.

⁶ Idem, 7.

⁷ Terry Chapman, "The Whipple Truss Bridge WV HPI Form," West Virginia Historic Property Inventory Form, (Charleston: West Virginia Department of Culture and History, 1984.

⁸ Kim A. Valente, "Glenville Truss Bridge," National Register of Historic Places Registration Form, (Washington, D.C.: United States Department of the Interior, National Park Service, 1998).

⁹ Terry Chapman, "The Whipple Truss Bridge WV HPI Form," West Virginia Historic Property Inventory Form, (Charleston: West Virginia Department of Culture and History, 1984).

bridge in Glenville to accommodate horse-drawn vehicles and livestock, as well as pedestrian traffic, the Glenville Bridge made a major contribution to the development of the community.¹⁰

Glenville in the Twentieth Century and Construction of the Second Glenville Truss Bridge:

In the early twentieth century, the timber industry flourished in Glenville as the Little Kanawha River was used to float logs down the river to mills. However, the construction of roads in the area and the eventual rise of the automobile led to the demise of riverboating by the late 1930s. Through the 1940s, Glenville experienced a steady population increase and a rise in development that included businesses, commercial buildings, and growth of residential areas outside of the downtown area. The city enjoyed importance as a center for commerce and county business. With rising vehicular traffic, a new crossing over the river was needed.¹¹

By 1920, it was clear that one of West Virginia's biggest issues was the inadequacy of its road network. The 1914 State Road Bureau noted that West Virginia had the worst roads in the nation. The rugged terrain and muddy roads slowed the advance of the automotive age in the state. To tackle this problem, the West Virginia Good Roads Federation, under the slogan "Help Pull West Virginia Out of the Mud," campaigned for an amendment to the state constitution that would make the improvement of the state road network a priority. Voters approved the amendment in 1920 and another in 1928, and road building became a major activity for the state. One of the resulting projects was a new state route connecting Normanville, Glenville, and Lynn.¹²

The 1885 Glenville Whipple Truss Bridge was not adequate for an improved highway, as it was overburdened by traffic, was not designed for heavy vehicles, and was only one lane in width. As a result of the 1920 amendment and the 1929 creation of a state bridge commission, a new Parker through-truss, two-lane bridge over the Little Kanawha River was built as part of the new US Route 33/State Route 5 highway through Glenville. The bridge was fabricated by the Virginia Bridge and Iron Company and erected by the Atlantic Bridge Company; the former was a nationally recognized bridge fabricator. The two firms often worked together on projects throughout the country. The new Glenville Truss Bridge had two ten-foot lanes and a five-foot sidewalk and measured 327 feet in length. Subsequently, US Route 119 was extended along US Route 33 from Morgantown into Kentucky. These developments meant the new bridge would see a considerable amount of traffic.¹³ The 1885 bridge continued to remain open for local use in Glenville, but it gradually fell out of use during the latter half of the twentieth century.

Through-Truss Bridges in West Virginia:

Metal truss bridges were an evolution of prior wood truss designs. These bridges were built in West Virginia starting the late nineteenth century to accommodate the expanding railroads throughout the state.

¹⁰ Kim A. Valente, "Glenville Truss Bridge," National Register of Historic Places Registration Form, (Washington, D.C.: United States Department of the Interior, National Park Service, 1998).

¹¹ Ibid.

¹² Jerry B. Thomas, "Good Roads Movement," E-WV: The West Virginia Encyclopedia, February 10, 2012.

¹³ Bridgestunnels.com, "Glenville Truss Bridge," 2023.

Metal trusses were first constructed of wrought iron, and sometimes a combination of cast and wrought iron members, but these materials were supplanted by steel as production became more economical.¹⁴

Thomas and Caleb Pratt received a patent on their truss bridge design in 1844. The Pratts' design reversed the direction of the diagonals, which was not possible with earlier wooden truss bridges but worked well for new metal truss bridges. The main advantage of the Pratt truss over many earlier designs was "the relative ease of calculating the distribution of stress throughout the structure."¹⁵ The Pratt design became quite popular during the last quarter of the nineteenth century. According to historian Emory Kemp, the Pratt truss design was constructed in large numbers across West Virginia owing to the expansion of early roadways throughout the state and the expansion of the state's railroad networks.

The Parker truss is a modification of the Pratt truss. In a Parker truss, the top chord is polygonal, which creates a lighter bridge that does not lose any strength. Due to the top chord design, the ends of the bridge have less dead weight giving more strength to the center portion of the structure.¹⁶ According to *A Context for Historic Bridge Types*, the Parker truss claimed three improvements over earlier designs: minor changes in bridge lengths could be accommodated by changing the slope of the inclined end post or extending it to the top chord to a point behind the first vertical web member; the design of the top and bottom connections of the web posts to the chords was new; and the casting at the bottom of the end post simplified the connection joining the top and bottom chords.¹⁷

Many Parker truss bridges were built throughout the United States and superseded Pratt truss bridges for long spans after 1900 because less steel was needed to construct them. Parker trusses were adopted as standard designs by highway departments nationwide and were used for shorter pony trusses (30-60 feet) and through trusses (100-300 feet).¹⁸ As the Parker truss bridge was a ubiquitous design of the early twentieth century, they were common in West Virginia. By the mid-1930s, however, steel truss bridge construction began to decline as technology improved that allowed for the construction of cheaper steel-girder bridges.

 ¹⁴ KCI Technologies, Inc., and Mead & Hunt, Inc., West Virginia Statewide Historic Bridge Survey: Final Survey Report, State Project # S699-HIS/BR-1.0000, Federal Project #BR-2004(029)E (Charleston: West Virginia Department of Transportation, Division of Highways, April 2015), 57-58.

¹⁵ Parsons Brinckerhoff, and Engineering and Industrial Heritage, *A Context for Common Historic Bridge Types: NCHRP Project 25-25, Task 15* (National Cooperative Highway Research Program, Transportation Research Council, and National Research Council, October 2005), 3.25.

¹⁶ KCI Technologies, Inc., and Mead & Hunt, Inc., West Virginia Statewide Historic Bridge Survey: Final

Survey Report, State Project # S699-HIS/BR-1.0000, Federal Project #BR-2004(029)E (Charleston: West Virginia Department of Transportation, Division of Highways, April 2015), 59.

¹⁷ Parsons Brinckerhoff, and Engineering and Industrial Heritage, A Context for Common Historic Bridge Types:

NCHRP Project 25-25, Task 15 (National Cooperative Highway Research Program, Transportation Research Council, and National Research Council, October 2005), 3.34.

¹⁸ Ibid.

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According to the 2015 West Virginia Statewide Historic Bridge Survey, there were 125 metal through-truss bridges (including both wrought iron and steel) built before 1965 remaining in West Virginia.¹⁹ Between 1918 and 1940, steel truss bridges were one of the most consistent bridge types built in the state, and twenty steel-truss bridges were built from 1928 to 1929. Since steel through-truss bridges were common throughout the state, these bridges remain in 46 counties. However, most of these bridges range in length from 150 to 200 feet, whereas the Glenville Truss Bridge is over 300 feet in length making it one of the longer steel truss bridges extant in the state.²⁰

¹⁹ KCI Technologies, Inc., and Mead & Hunt, Inc., West Virginia Statewide Historic Bridge Survey: Final

Survey Report, State Project # S699-HIS/BR-1.0000, Federal Project #BR-2004(029)E (Charleston: West Virginia Department of Transportation, Division of Highways, April 2015), 29.

²⁰ Idem, 63-64.

PART II. STRUCTURAL/DESIGN INFORMATION

A. General Statement:

1. Character

The Glenville Truss Bridge carrying South Lewis Street (US Routes 33 and 119) over Little Kanawha River is a two-span, seven-panel, steel Parker through-truss structure with a total length of 327.5 feet. Parker through-truss bridges were common in the first half of the twentieth century. They developed as an economical variant (with a polygonal top chord) of the earlier Pratt truss for spans typically ranging from 40 to 250 feet. The superstructure is supported by a concrete pier and concrete abutments. Its built-up, steel members are composed of riveted plates, channels, and angles, and connections are made with gusset plates and rivets, except at bearings. Character-defining features of the Glenville Truss Bridge include each truss's polygonal upper chord with seven slopes, lower chord, inclined end posts, diagonals, verticals which shorten in length outward from the central panel, cross-bracing on built-up members, portal bracing, and riveted connections with gusset plates. The concrete abutments and pier and the sidewalk's angled brackets and original riveted lattice railing are also character-defining features.

2. Condition of Fabric:

The Glenville Truss Bridge is in poor condition. The bridge has significant damage to vertical members and moderate impact damage to diagonal members. The entire structure exhibits rust, spalling, and collision damage, resulting in weight restrictions and the requirement that trucks and buses must cross the bridge one at a time.²¹

B. Description

Constructed in 1929, the Glenville Truss Bridge carries US Routes 119 and 33 over the Little Kanawha River in the city of Glenville, Gilmer County, West Virginia (see Appendix A: Project Mapping for a location map). The bridge runs in a northeast and southwest direction and is located about 330 feet downstream of its 1885 predecessor bridge (now abandoned), which crossed at Court Street in downtown Glenville.

The bridge is composed of two simple-span steel through trusses. Each span measures 159'-11.75'' in length. The overall length of the bridge is 327'-1.5'', with a length of 321'-11.5'' from face to face of the abutment walls. The deck width is 20.9' according to a 1992 inspection report, but the original plans indicate a curb-to-curb width of $20'-0'.^{22}$ A concrete sidewalk is present on the on the upstream (southeast) side and has a riveted steel lattice railing. The sidewalk measures 5'-3'' wide. The bridge deck is composed of a 5'' thick steel grid partially filled with concrete and a 1'' thick asphalt wearing surface. The travel lanes

²¹ WVDOH, Glenville Truss Bridge Project Public Informational Workshop, March 2023.

²² WVDOH, Bridge Inspection Report. August 13, 1992. WVDOH, "Superstructure, Steel Thru Truss, Glenville Bridge," May 1929.

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are 10' wide and the vertical clearance is 14'-11". The roadway has no shoulders. The substructure is composed of concrete stub abutments located at either end of the bridge with concrete wingwalls and a single concrete pier located between the two truss spans.

The Glenville Truss Bridge retains a moderately high level of integrity. Very few changes or alterations have been made to the bridge. Changes that have taken place were primarily for maintenance purposes. These include renewal of paint, replacement of the road deck, replacement portal bracing, and various strengthening procedures completed on the deck and trusses. The structure retains integrity of location, design, setting, materials, workmanship, feeling, and association.

C. Site Information

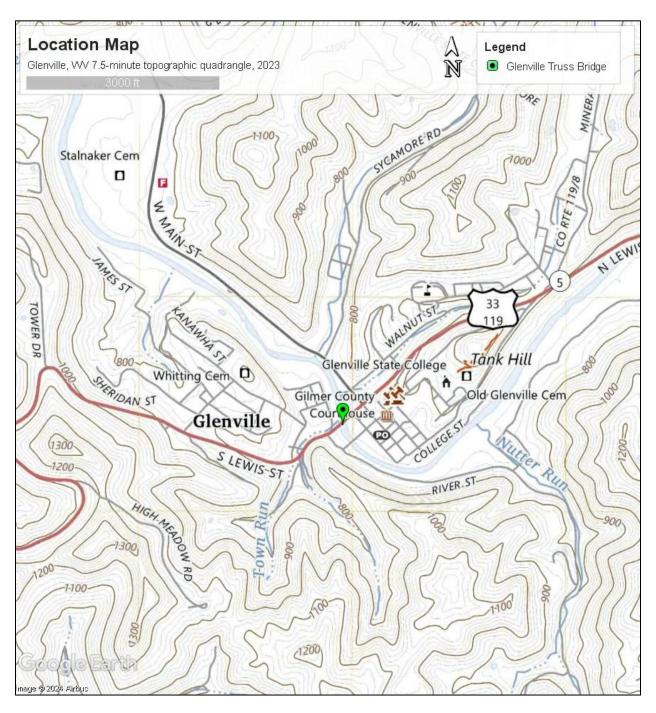
The Glenville Truss Bridge runs in a northeast to southwest direction and carries US Routes 33 and 119 over the Little Kanawha River in Glenville, West Virginia. Within Glenville, the segment of the highway is known as S. Lewis Street. The Little Kanawha River is a 169-mile-long tributary of the Ohio River. The river is located on the southwest and southeast side of the downtown area of Glenville. The bridge's setting is primarily residential to the west and commercial to the east. The National Register of Historic Places (NRHP) eligible Brooklyn Historic District lies directly west of the bridge, and the Glenville Truss Bridge is a contributing element of the district.

PART III. SOURCES OF INFORMATION

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 - ______. "Substructure, Steel Thru Truss, Glenville Bridge." State Project #3334; Bridge #1006, two sheets. Charleston: State Road Commission of West Virginia, May 1929.
 - _____. "Superstructure, Steel Thru Truss, Glenville Bridge." State Project #3334; Bridge #1006,. one sheet. Charleston: State Road Commission of West Virginia, May 1929.

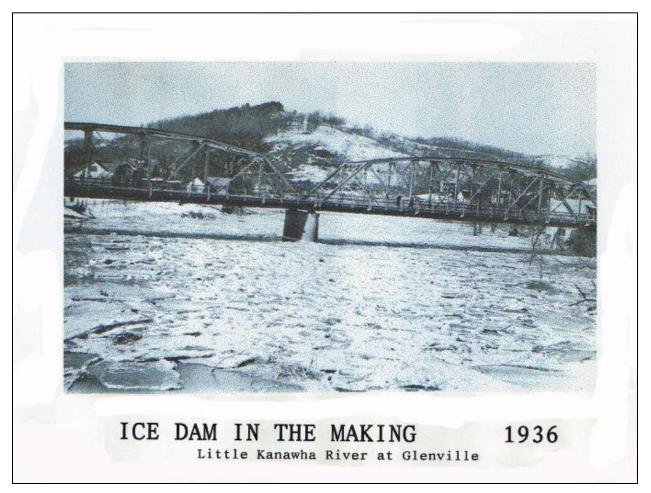
West Virginia State Historic Preservation Office. WV SHPO Map Viewer. Accessed October 24, 2023.

APPENDIX A: PROJECT MAPPING



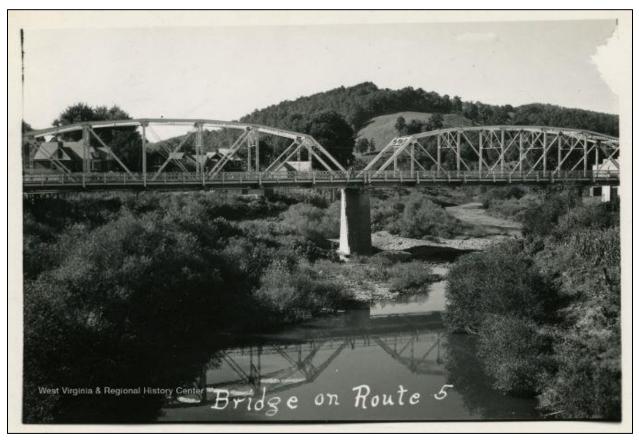
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APPENDIX B: HISTORICAL PHOTOGRAPHS



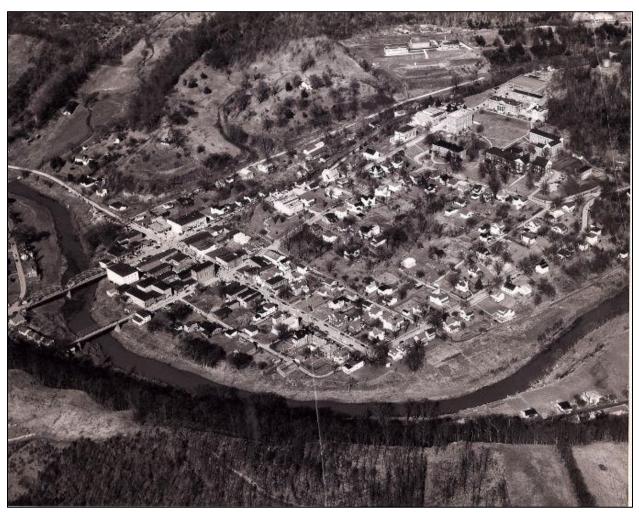
View of the southeast side of the Glenville Truss Bridge engulfed in ice. Photo courtesy of the Gilmer County Historical Society.

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Undated photograph showing the southeast side of the Glenville Truss Bridge. Photo courtesy of the West Virginia & Regional History Center, West Virginia University (WVhistoryonview.org).

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Aerial photograph (1960) depicting the Glenville Truss Bridge at left. The 1885 bridge is visible below the subject bridge (Photo courtesy of the Robert F Kidd Library and Archives at Glenville State University).

APPENDIX C: PHOTOGRAPHS

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Name of Property:	Glenville Truss Bridge (NBI No. 11A076)
City or Vicinity:	Glenville City
County:	Gilmer County
State:	West Virginia
Name of Photographer:	Thomas Lucy
Date of Photographs:	October 25, 2023
Location of Original Digital Files:	Michael Baker International, Inc.
	100 Airside Drive, Moon Township, PA 15108

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Site plan and photo key depicted on Google Earth aerial mapping dated March 2021.

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Photo 1. BRIDGE IN CONTEXT SHOWING SOUTHWEST APPROACH OF BRIDGE, FACING NORTHEAST (WV_Gilmer County_Glenville Truss Bridge_0001).



Photo 2. SOUTHWEST APPROACH TO BRIDGE FROM CENTER OF US 33/US 119, FACING NORTHEAST (WV_Gilmer County_Glenville Truss Bridge_0002).



Photo 3. VIEW OF ROADWAY AND THROUGH TRUSS FROM SOUTHWEST END OF BRIDGE, FACING NORTHEAST (WV_Gilmer County_Glenville Truss Bridge_0003).

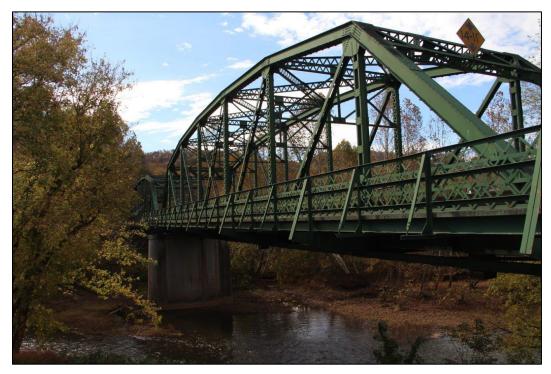


Photo 4. OBLIQUE VIEW OF SOUTHEAST ELEVATION OF BRIDGE, FACING WEST (WV_Gilmer County_Glenville Truss Bridge_0004).

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Photo 5. VIEW OF SOUTHEAST ELEVATION OF PIER AND BRIDGE FROM LITTLE KANAWHA RIVER, FACING NORTH (WV_Gilmer County_Glenville Truss Bridge_0005).



Photo 6. OBLIQUE VIEW OF NORTHEAST APPROACH OF BRIDGE FROM POWELL STREET, FACING WEST (WV_Gilmer County_Glenville Truss Bridge_0006).

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Photo 7. OBLIQUE VIEW OF NORTHWEST ELEVATION OF BRIDGE, FACING EAST (WV_Gilmer County_Glenville Truss Bridge_0007).

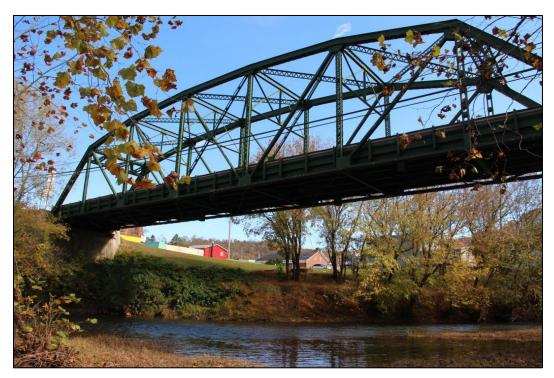


Photo 8. VIEW OF NORTHWEST ELEVATION OF SPAN 2 (NORTHEAST) FROM LITTLE KANAWHA RIVER, FACING EAST (WV_Gilmer County_Glenville Truss Bridge_0008).

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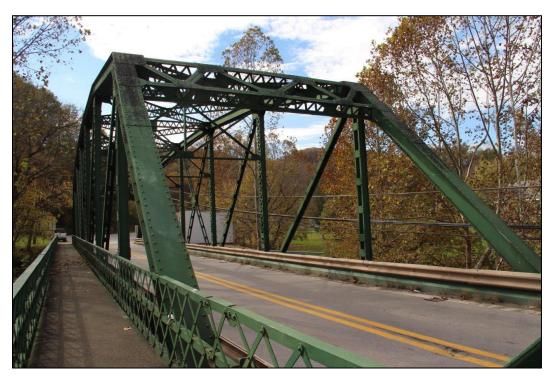


Photo 9. DETAIL OF SIDEWALK, NORTHEAST END POSTS, AND ROAD DECK OF SPAN 1 (SOUTHWEST), FACING SOUTHWEST (WV_Gilmer County_Glenville Truss Bridge_0009).



Photo 10. INTERIOR VIEW FROM MIDDLE OF SPAN 1 (SOUTHWEST) SHOWING ROAD DECK AND TRUSS DETAILS, FACING NORTHEAST (WV_Gilmer County_Glenville Truss Bridge_0010).

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Photo 11. INTERIOR VIEW FROM THE END OF SPAN 2 SHOWING VERTICALS, DIAGONALS. CROSS BRACING, AND SOUTHWEST PORTAL OF SPAN 2 (NORTHEAST), FACING SOUTHWEST (WV_Gilmer County_Glenville Truss Bridge_0011).



Photo 12. DETAIL OF LATTICE BRACING ON UNDERSIDE OF END POST OF NORTHEAST PORTAL OF SPAN 1 (SOUTHWEST), FACING NORTHEAST (WV_Gilmer County_Glenville Truss Bridge_0012).

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Photo 13. DETAIL OF NORTHEAST PORTAL OF SPAN 2 (NORTHEAST), FACING NORTHEAST (WV_Gilmer County_Glenville Truss Bridge_0013).



Photo 14. DETAIL OF UPPER CHORD, LATERAL BRACING, SWAY BRACING, AND VERTICAL POST OF NORTHWEST ELEVATION OF SPAN 2 (NORTHEAST), FACING NORTHWEST (WV_Gilmer County_Glenville Truss Bridge_0014).

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Photo 15. DETAIL OF INCLINED END POST, HIP VERTICAL, AND PORTAL BRACING OF NORTHEAST PORTAL OF SPAN 2 (NORTHEAST), FACING NORTH (WV_Gilmer County_Glenville Truss Bridge_0015).



Photo 16. VIEW OF SOUTHEAST ELEVATION OF BRIDGE SHOWING SIDEWALK, RAILING AND BRACKET, FACING NORTHEAST (WV_Gilmer County_Glenville Truss Bridge_0016).

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Photo 17. DETAIL VIEW OF SIDEWALK BRACKET, FASCIA BEAM, AND SOUTHWEST ABUTMENT, FACING NORTH (WV_Gilmer County_Glenville Truss Bridge_0017).



Photo 18. DETAIL OF SIDEWALK END POST AND LATTICE AT SOUTHWEST END OF BRIDGE, FACING EAST (WV_Gilmer County_Glenville Truss Bridge_0018).

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Photo 19. DETAIL OF LATTICE RAILING AND BOTTOM OF INCLINED END POST AT SOUTHWEST END OF SPAN 2 (NORTHEAST), FACING WEST (WV_Gilmer County_Glenville Truss Bridge_0019).



Photo 20. DETAIL OF GUARDRAIL AND SPLASHGUARD, FACING NORTHWEST (WV_Gilmer County_Glenville Truss Bridge_0020).

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Photo 21. DETAIL OF VERTICAL IN THE CENTER OF SPAN 1 (SOUTHWEST), FACING NORTHWEST (WV_Gilmer County_Glenville Truss Bridge_0021).



Photo 22. DETAIL OF DIAGONAL ON SOUTHEAST SIDE OF SPAN 1 (SOUTHWEST), FACING WEST (WV_Gilmer County_Glenville Truss Bridge_0022).

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Photo 23. VIEW OF LOWER CHORD FROM SIDEWALK, FACING DOWN (WV_Gilmer County_Glenville Truss Bridge_0023).



Photo 24. VIEW OF SOUTHWEST ELEVATION OF PIER, FACING NORTHEAST (WV_Gilmer County_Glenville Truss Bridge_0024).

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Photo 25. DETAIL OF NORTHWEST ELEVATION OF PIER AND INCLINED END POSTS OF SPANS 1 AND 2, FACING SOUTHEAST (WV_Gilmer County_Glenville Truss Bridge_0025).



Photo 26. DETAIL OF NORTHWEST AND SOUTHWEST SIDES OF PIER, FACING EAST (WV_Gilmer County_Glenville Truss Bridge_0026).

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Photo 27. UNDERSIDE OF SPAN 1 (SOUTHWEST), SHOWING LOWER CHORDS, FLOOR BEAMS, STRINGERS, AND LOWER LATERAL BRACING, FACING NORTHEAST (WV_Gilmer County_Glenville Truss Bridge_0027).



Photo 28. VIEW OF THE UNDERSIDE OF SPAN 1 (SOUTHWEST) SHOWING SIDEWALK, FLOOR BEAMS, STRINGERS, LATERAL BRACING, AND LOWER CHORD, FACING SOUTHWEST (WV_Gilmer County_Glenville Truss Bridge_0028).

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Photo 29. DETAIL OF SIDEWALK BRACKETS AND BEAMS, SOUTHEAST ELEVATION OF SPAN 2 (NORTHEAST), FACING WEST (WV_Gilmer County_Glenville Truss Bridge_0029).



Photo 30. DETAIL VIEW OF GUSSET PLATE CONNECTING FLOORBEAM, SIDEWALK BRACKET, AND LOWER CHORD ON SOUTHEAST ELEVATION OF SPAN 1 (SOUTHWEST), FACING NORTHEAST (WV_Gilmer County_Glenville Truss Bridge_0030).

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Photo 31. DETAIL OF NORTHWEST WINGWALL OF SOUTHWEST ABUTMENT, SHOWING BOTTOM OF END POST, BRIDGE SEAT, AND BEARING, FACING SOUTHEAST (WV_Gilmer County_Glenville Truss Bridge_0031).



Photo 32. DETAIL OF SOUTHEAST WINGWALL OF NORTHEAST ABUTMENT, FACING NORTHWEST (WV_Gilmer County_Glenville Truss Bridge_0032).

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Photo 33. VIEW OF NORTHEAST ABUTMENT AND BRIDGE SEAT, FACING NORTH (WV_Gilmer County_Glenville Truss Bridge_0033).



Photo 34. DETAIL OF NORTHEAST ABUTMENT, SHOWING BRIDGE SEAT AND BEARING WITH PINNED CONNECTION, FACING NORTH (WV_Gilmer County_Glenville Truss Bridge_0034).

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Photo 35. DETAIL OF JONES AND LAUGHLIN STEEL COMPANY MARKING ON SOUTHEAST ELEVATION OF SPAN 1 (SOUTHWEST) TRUSS, FACING NORTH (WV_Gilmer County_Glenville Truss Bridge_0035).



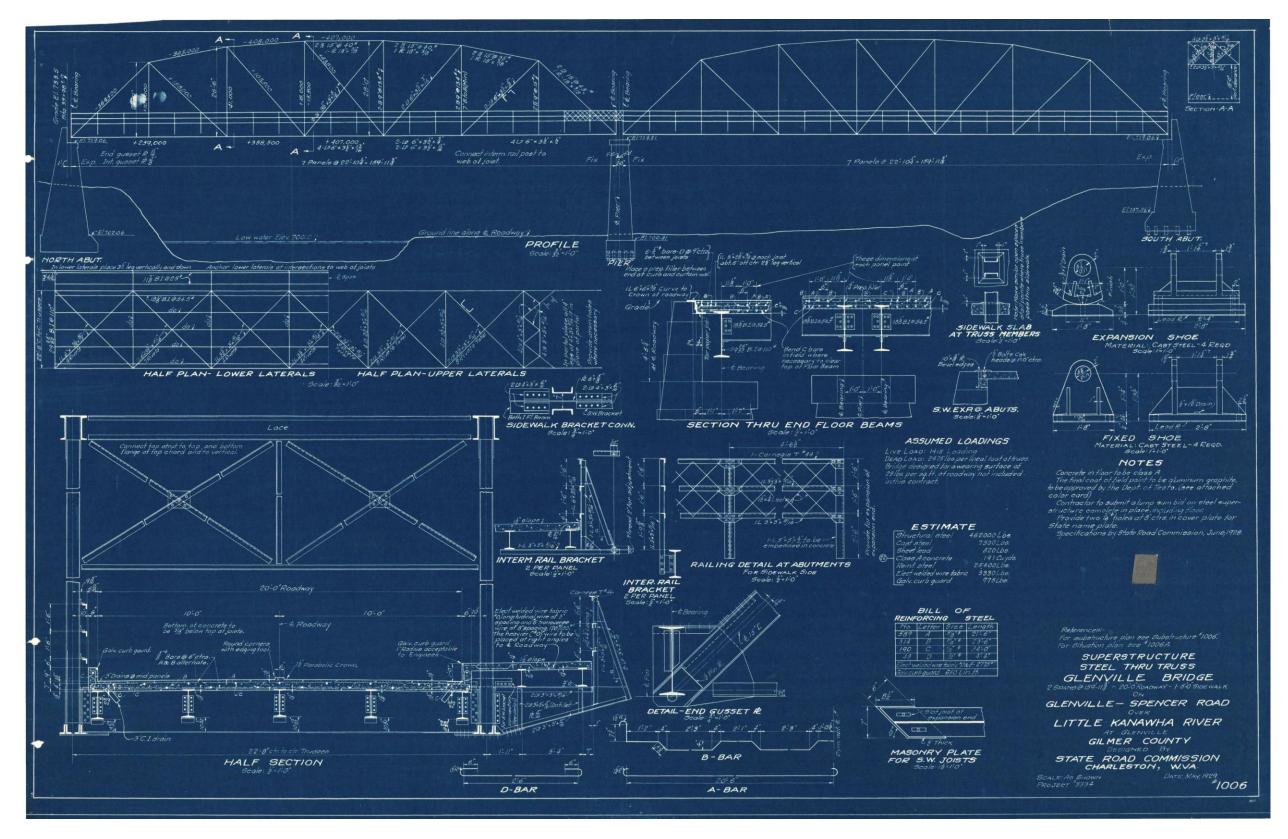
Photo 36. DETAIL OF BRIDGE PLAQUE MOUNTED ON SOUTHEAST SIDE OF SOUTHWEST END OF SPAN 1 (SOUTHWEST), FACING NORTHEAST (WV_Gilmer County_Glenville Truss Bridge_0036).

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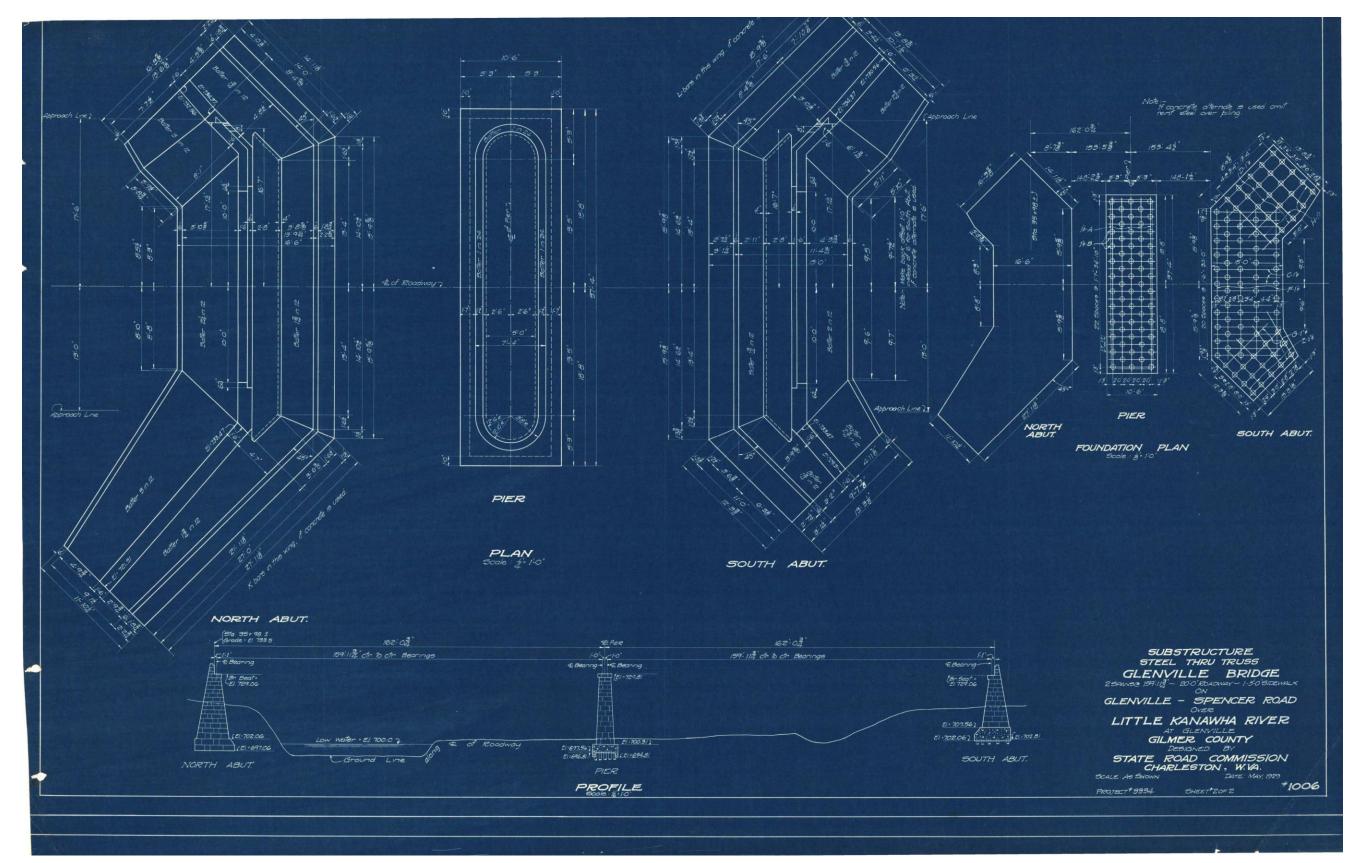


Photo 37. DETAIL OF BRIDGE PLAQUE ON NORTHEAST END OF SPAN 2 (NORTHEAST), FACING SOUTHWEST (WV_Gilmer County_Glenville Truss Bridge_0037).

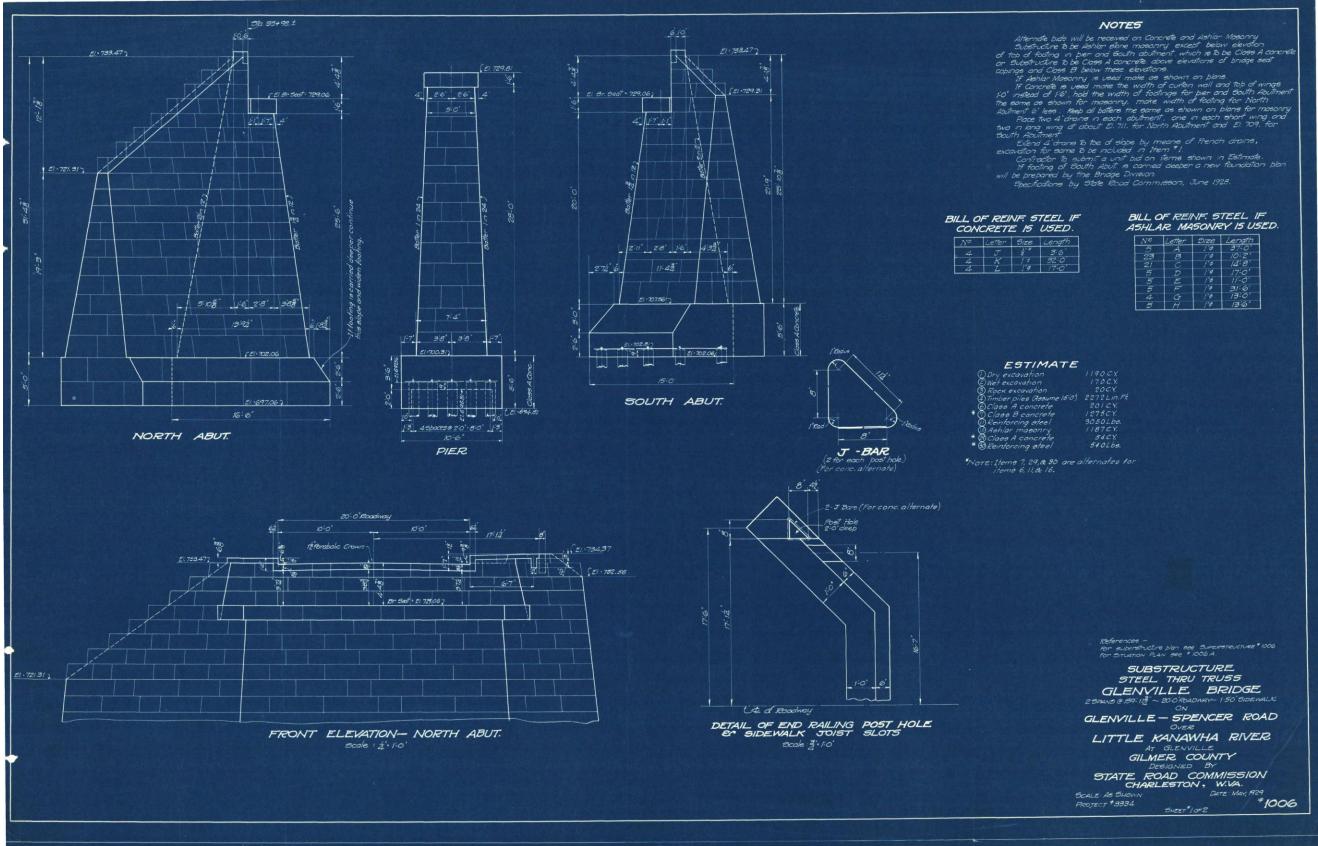
APPENDIX D: DRAWINGS (IN COLLECTION OF WVDOH)



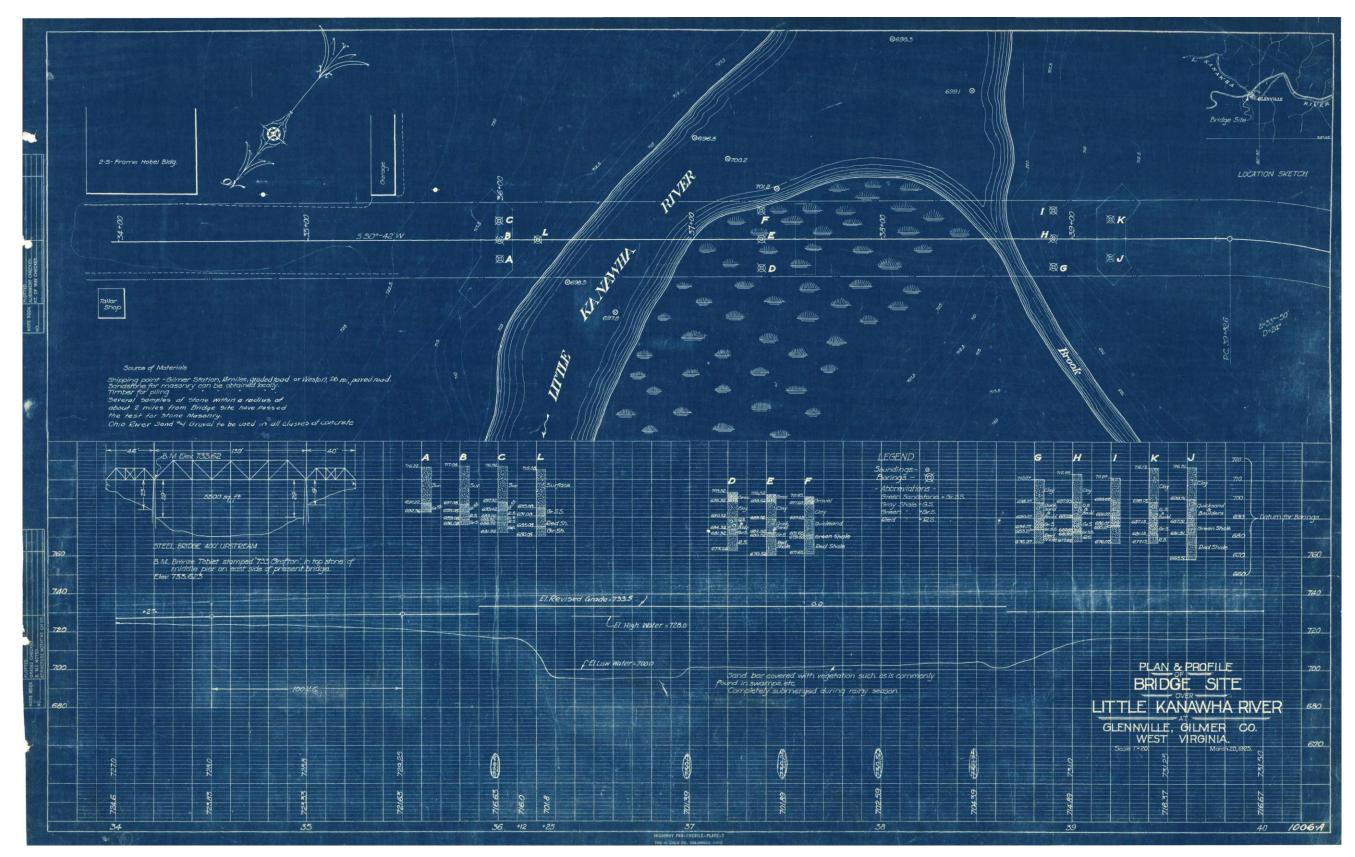
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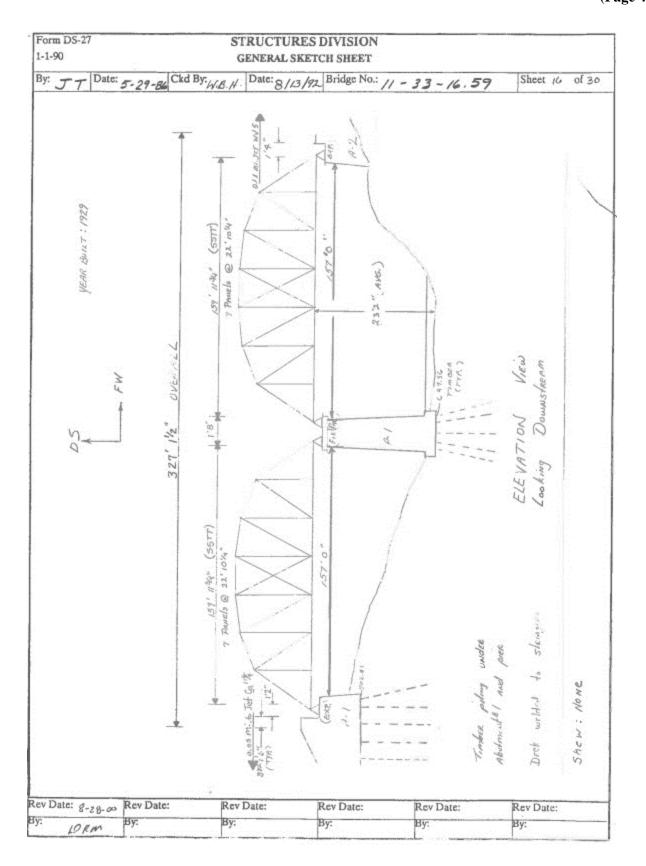


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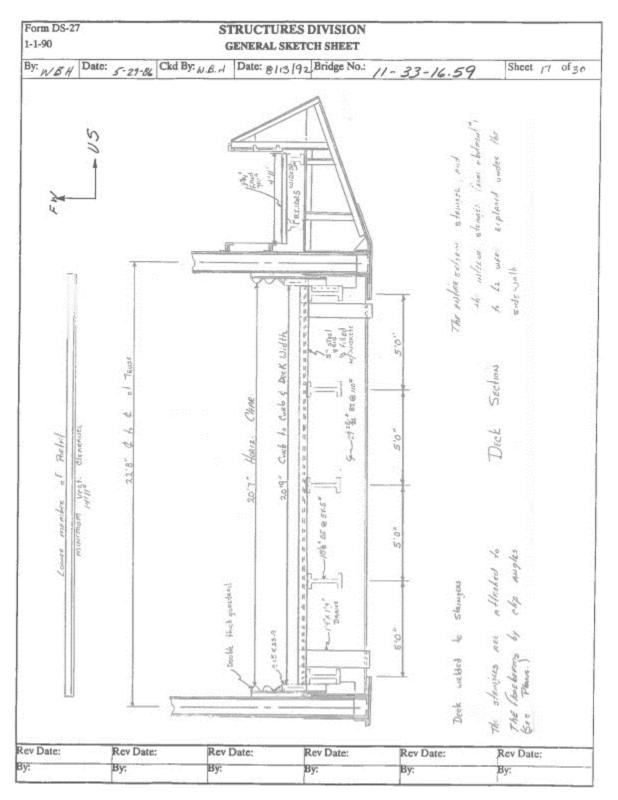
Glenville Truss Bridge (NBI No. 11A076) US Routes 33 and 119 over Little Kanawha River (Page 40)

Glenville Truss Bridge (NBI No. 11A076) US Routes 33 and 119 over Little Kanawha River (Page 41)

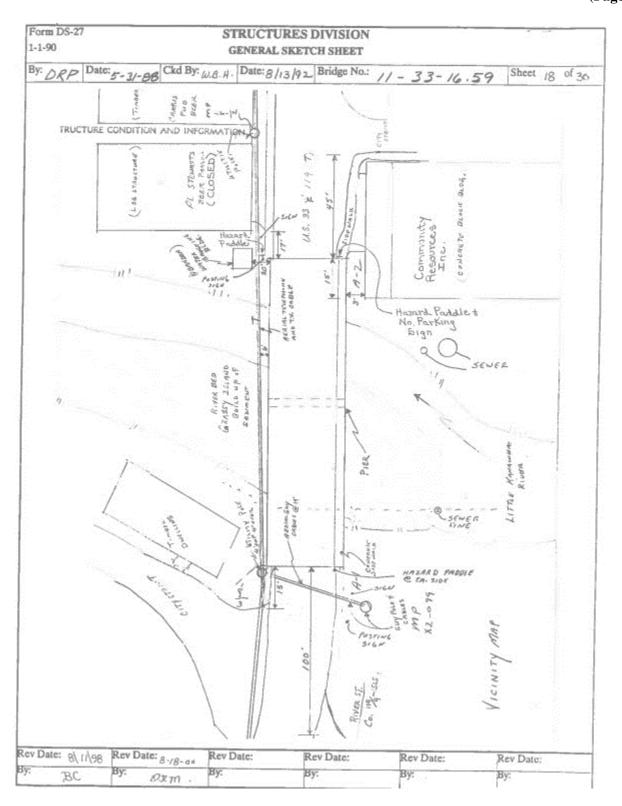


Glenville Truss Bridge (NBI No. 11A076) US Routes 33 and 119 over Little Kanawha River

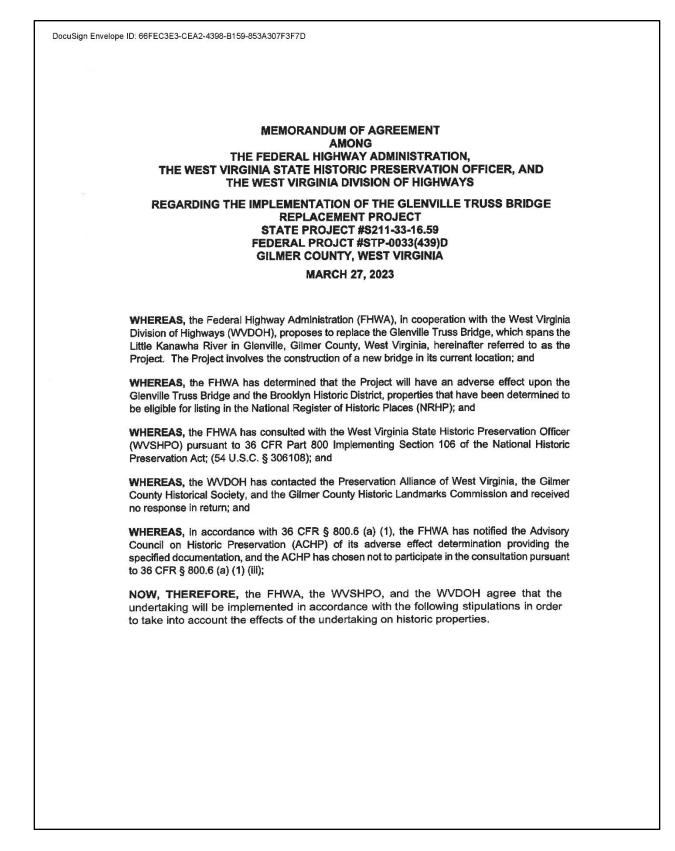
(Page 42)



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APPENDIX E: MEMORANDUM OF AGREEMENT



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STIPULATIONS

The FHWA, with the assistance of WVDOH, shall ensure that the following stipulations are carried out:

Glenville Truss Bridge

- I. The Glenville Truss Bridge will be documented in its present historic setting. The documentation package will include a brief history of the structure, current and historical 5" x 7" black and white digital prints in accordance with the National Register Photo Policy Factsheet of May 2013. The documentation package will include hard archival copies of the information outlined in this stipulation as well as digital copies in the form of PDFs for reports and documents, and TIFF files for photographs. The WVSHPO will be given the opportunity to review the documents before submission of final versions. All final documents will be distributed to the WVSHPO, WVDOH, and the Gilmer County Historical Society.
- II. The WVDOH will provide the WVSHPO an opportunity to review and comment on the design of the new bridge.
- III. 200 color brochures of the Glenville Truss Bridge will be developed by the WVDOH and distributed to the Gilmer County Historical Society. The WVSHPO will be given the opportunity to review all educational materials developed for this stipulation. A CD or thumb drive containing the brochure will also be given the Gilmer County Historical Society to print brochures when the original total has been exhausted.
- IV. The Glenville Truss Bridge will be documented on the West Virginia historic bridge website: Highways Through History (http://www.highwaysthroughhistory.com).

V. Duration

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

VI. Post-Review Discoveries

If any unanticipated discoveries of historic properties or archaeological sites, including human burial sites and/or skeletal remains, are encountered during the implementation of this undertaking, work shall be suspended in the area of the DocuSign Envelope ID: 66FEC3E3-CEA2-4398-B159-853A307F3F7D

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discovery until the WVDOH has developed and implemented an appropriate treatment plan in consultation with the WVSHPO pursuant to 36 CFR § 800.13(b).

VII. Monitoring and Reporting

Each year following the execution of this MOA until it expires or is terminated, 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.

VIII. 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 the 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.

IX. 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.

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X. 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 IX, 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 MOA by the FHWA, WVSHPO, and the WVDOH and the implementation of its terms, evidence that the FHWA has afforded the ACHP an opportunity to comment on the Project and its effects on historic properties and that the FHWA has taken into account the effects of the undertaking on historic properties.

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	Glenville Truss Bridge Memorandum of Agreement Page - 5 -	
	Signatories:	
	JASON Digitally signed by JASON WORKMAN	
	WORKMAN Date: 2023.11.01 10:57:37 -04'00'	
	Federal Highway Administration	Date
	Juan Muerce West Virginia Deputy State Historic Preservation Officer	4/19/2023 Date
	Invited Signatories:	
	West Virginia Division of Highways	4/25/2023
	West Virginia Division of Fighways	Dale