

# North Whites Addition Arch Bridge (LG-0757) Logan County, West Virginia State Project #S323-119/26-0.33 Federal Project #STP-1192(050)D



# State Level of Historic Documentation Bridge Number: 23-119/26-000.33 Federal Bridge Number: 0000000023A150

GAI Project Number: C121823.03

February 2018



Prepared by: GAI Consultants, Inc. The BB&T Building 300 Summers Street, Suite 1100 Charleston, West Virginia 25301 Prepared for: West Virginia Department of Transportation Division of Highways 1334 Smith Street Charleston, West Virginia 25301 State Level of Historic Documentation

North Whites Addition Arch Bridge (LG-0757) Logan County, West Virginia

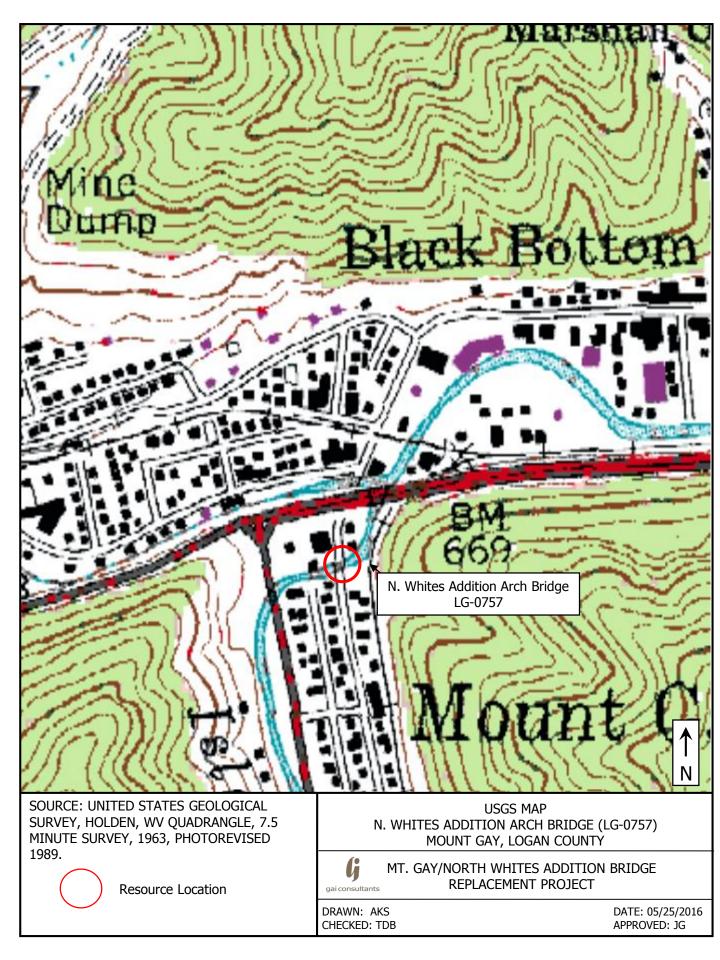
State Project #S323-119/26-0.33 Federal Project #STP-1192(050)D Bridge Number: 23–119/26–000.33 Federal Bridge Number: 0000000023A150

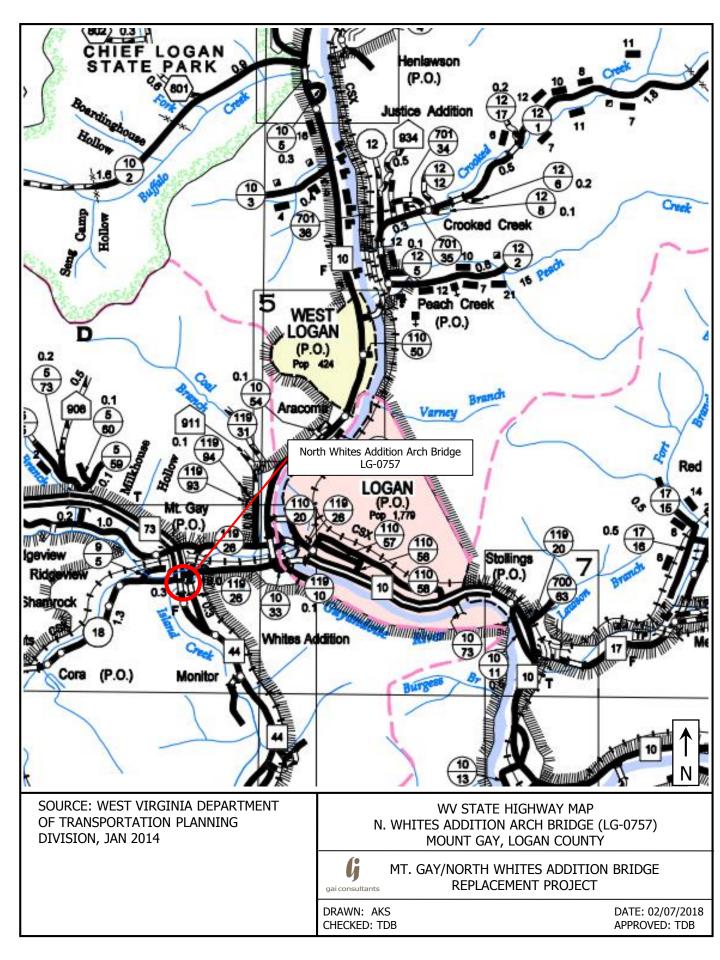
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Prepared by: Amanda K. Stander, Architectural Historian GAI Consultants, Inc. The BB&T Building 300 Summers Street, Suite 1100 Charleston, West Virginia 25301







SOURCE: GOOGLE EARTH, 2016.



**Resource Location** 

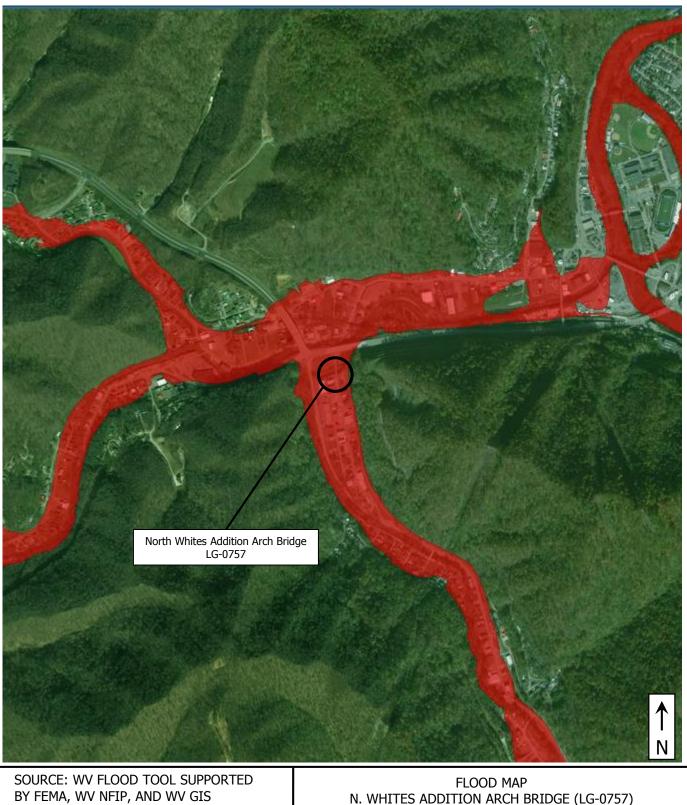
MODERN AERIAL N. WHITES ADDITION ARCH BRIDGE (LG-0757) MOUNT GAY, LOGAN COUNTY

MT. GAY/NORTH WHITES ADDITION BRIDGE REPLACEMENT PROJECT gai consultants

DRAWN: AKS CHECKED: TDB

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DATE: 05/25/2016 APPROVED: JG



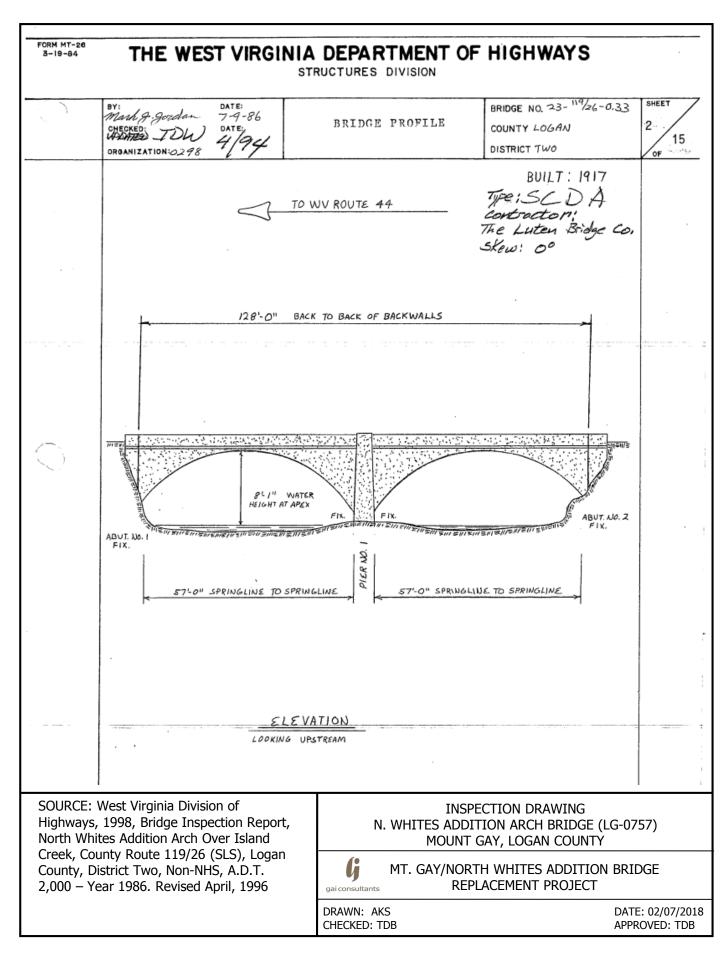
TECHNICAL CENTER, SEPT 2016

N. WHITES ADDITION ARCH BRIDGE (LG-0757) MOUNT GAY, LOGAN COUNTY

G gai consultants

MT. GAY/NORTH WHITES ADDITION BRIDGE **REPLACEMENT PROJECT** 

DRAWN: AKS CHECKED: TDB DATE: 02/07/2018 APPROVED: TDB



WEST VIRGINIA HISTORIC BRIDGE RECORDATION North Whites Addition Arch Bridge (LG-0757) Bridge Number: 23 – 119/26 – 000.33 Federal Bridge Number: 0000000023A150				
Location:	North Whites Addition Arch Bridge carrying Riverview Avenue (CR 119/26), spanning Island Creek, Cherry Tree (Mount Gay/Shamrock), Logan County, West Virginia.			
USGS Quadrangle:	Holden, West Virginia [7.5-Minute Series, 1963 (Photorevised 1989)]			
UTM Coordinates:	17/411235.59 m E/41899124.72 m N			
Date of Construction:	1917			
Engineer:	Daniel B. Luten			
Builder:	Luten Bridge Company, York, Pennsylvania			
Present Owner:	West Virginia Department of Transportation Division of Highways 1334 Smith Street Charleston, WV 25301			
Present Use:	Vehicular Bridge. Scheduled for removal and replacement.			
<u>Significance</u> :	The North Whites Addition Arch Bridge is historically and technologically significant as an example of the work of nationally-recognized bridge engineer, Daniel B. Luten. Constructed by the Luten Bridge Company, the bridge was constructed in 1917 and spans Island Creek. The 128-foot-long bridge contains a 17-foot, 8-inch-wide concrete deck with concrete parapets decorated with incised rectangles. The bridge is supported by concrete abutments with two 57-foot spans. The bridge possesses Luten's distinctive rounded arch ring details and nonsymmetrical design in what became known as the Luten Arch, a patented design significant for its innovative use of reinforcements used to alleviate tension and load, creating a significantly lighter bridge.			
<u>Project Information</u> :	This documentation was conducted on behalf of the West Virginia Division of Highways (WVDOH) owning to the poor condition of the bridge structure. Future deterioration of the bridge would likely lead to bridge closure; therefore, the existing structure warrants replacement. The recordation was conducted in May 2016 in accordance with a Memorandum of Agreement between the West Virginia Department of Transportation and the West Virginia State Historic Preservation Office. These measures are required prior to the replacement of this National Register-eligible structure. The project was completed as part of the Mt. Gay Bridge/North Whites Addition Bridge Replacement Project.			
	Amanda K. Stander, AICP, Architectural Historian GAI Consultants, Inc. The BB&T Building 300 Summers Street, Suite 1100 Charleston, West Virginia, 25301			

Charleston, West Virginia 25301



# **Summary Description of Bridge and Setting**

The North Whites Addition Arch Bridge carries Riverview Avenue (CR 119/26) over Island Creek and is situated on the western outskirts of the City of Logan, Logan County, West Virginia. The bridge spans the fork in a north-south direction and provides vehicular access to the community of Black Bottom to the north, and Mount Gay and Cherry Tree to the south.

The North Whites Addition Bridge is located north of the once bustling community of Mount Gay, a small mining town located approximately 0.95-mile southwest of the City of Logan. Mount Gay thrived in the early-twentieth century during the height of the coal era in Logan County and West Virginia. The majority of the extant structures in Mount Gay and Cherry Tree are late-nineteenth and early-twentieth century frame residential and masonry commercial buildings concentrated in an area south of the Mt. Gay Deck Arch Bridge, on the east and west sides of Riverview Avenue. According to historic-era photographs, the area surrounding the North Whites Addition Bridge was once a bustling area of commercial buildings known as Monitor Junction. Few historic-era commercial buildings are extant in the immediate vicinity of the bridge, having been demolished for the construction of the Mt. Gay Overpass.

The Mt. Gay Overpass (LG-0749/Bridge No. 23-073/00-002.31) was constructed in 1956 and spans Riverview Avenue and a portion of the North Whites Addition Bridge, which has significantly diminished its integrity of setting. A trestle (LG-0086) carries the former Chesapeake and Ohio (current CSX) Railroad (C&O) over Riverview Avenue, approximately 500 feet northeast of the bridge. Non-historic commercial infill comprises the majority of the area, which has also diminished the integrity of the bridge's setting. The North Whites Addition Bridge was determined to be eligible for listing in the National Register of Historic Places (NRHP) under Criterion C in 2013; this determination was concurred by the West Virginia Division of Culture and History. It should be noted that no other information was uncovered to suggest the North Whites Addition Bridge meets any other NRHP eligibility criteria.

The surrounding area consists of the unincorporated community of Cherry Tree, a former coal mining hamlet associated with numerous coal mining operations that existed in the vicinity during the coal mining industry's boom years in the late-nineteenth through mid-twentieth century. The area to the south is characterized by many frame dwellings, typically one-story, built in the vernacular styles common to the coal heritage region, as well as a handful of masonry commercial and industrial buildings. Primarily vacant land occupies the area to the north which is bisected by the C&O Railroad and trestle.

The landscape consists of steeply-wooded mountainsides extending to Mt. Gay summit creating a narrow valley floor adjacent to Island Creek. It is on this landscape that the community has been built similar to so many others in the coal heritage region of southern West Virginia. Because of the isolation of communities to the south, the North Whites Addition Bridge represents an important link to the more populous areas to the north which includes the county seat of Logan. Thus the bridge is very closely tied to the history of this small village and those located immediately to the south. Though many of Cherry Tree's structures survive from its origins in the early-twentieth century, the character of the community has been modified significantly due to numerous modern and intrusive highway projects. These include the creation of SR 44, which bypasses the small hamlet of Cherry Tree to the west resulting in the loss of numerous residences. Moreover, in 1954 US 119 was reconfigured creating the Mt. Gay overpass, which passes almost directly over the North Whites Addition Arch Bridge.

The one-lane, two-span North Whites Addition Arch Bridge was built in 1917 and measures 128'-0" in length and 17'-8" wide from parapet to parapet. The bridge is constructed on a curved section of roadway and is not skewed, with the approach from Abutment No. 1 from a slightly curved section of roadway and the approach at Abutment No. 2 from a moderately curved section of roadway (WVDOH 1998). The bridge has no clearance restrictions, and sits approximately 8'-1" above the waters of



Island Creek at the apex of each arch. It contains two simple reinforced concrete spandrel-filled parabolic deck spans each measuring 57'-0" in length, springline to springline. It is supported at each end by concrete abutments and intermediately by a solid concrete pier. The foundation material of the substructure units is unknown. Each arch barrel is constructed of thick reinforced concrete and spans 17'-8" wide overall, with a 10-inch-thick wearing surface of asphalt on top of dirt fill. The roadway width is 16'-3", and there are no sidewalks, railings, or curbs on the structure. Concrete parapets with carved rectilinear decorative elements are present, however, which contribute to the overall aesthetics of the bridge. It appears discoloration on the concrete of the east parapet is from a former bronze plaque and date stone, which was likely identical to that of the twin Mt. Gay Deck Arch Bridge (LG-0758/LG-0764) located approximately 0.07-mile to the north. It reads "1917, Luten Bridge Company, York, Pa." Although there has been no record of any maintenance work performed on the structure, iron S-hooks attached to the parapet on its east side hold chains supporting a polyvinyl chloride drainage pipe. Older iron brackets attached at regular intervals on the east side of the parapet (near the road decking) may suggest earlier pipes to drain to runoff from the bridge deck.

The bridge is significantly deteriorated; the one-lane design is not sufficient to carry current traffic loads. Erosion was observed along concrete support arches, particularly along the bridge's east elevation and a moderate amount of debris (from upstream Island Creek) has collected beneath the piers. There is a significant amount of vegetative growth on the embankment surrounding the bridge.

The bridge is significant due to its association with the development of the Luten Arch, with this being a relatively early example of the application of his 1900 patent. The Luten Arch was an important advancement in the design and engineering structure of bridges, and the North Whites Addition Arch Bridge is unique in that it is one of a set of "twin" paired bridges crossing Island Creek, with an identical structure (Mt. Gay Deck Arch Bridge) (LG-0758/LG-0764) directly to the north crossing Cooperas Mine Fork. Daniel B. Luten's use of the transverse and reinforced concrete allowed his bridges to be lighter, and he obtained more than 30 patents in his lifetime. By 1919, Luten, who was born in Grand Rapids, Michigan, and based in Indianapolis, Indiana, claimed to have designed approximately 17,000 arches, with examples of the design being found in all but three states. Luten Bridge Company maintained offices in York, Pennsylvania; Clarksburg, West Virginia; Huntington, West Virginia; Atlanta, Georgia; and Palatka, Florida. His pioneering designs are significant as they are still adapted and in use today.

### Summary History of Area and North Whites Addition Arch Bridge

Logan County, West Virginia was formed in 1824 and named in honor of the famous Mingo chief. The Village of Logan was first established as Lawnsville in 1827 with the erection of the Logan County Courthouse, but was incorporated in 1852 with the name of Aracoma (Spence 1976). Its first mayor was Thomas Dunn English who wrote the famous poem "Ben Bolt" in 1843 (Logan County, WV History and Nostalgia 2016a). On June 20, 1863 West Virginia seceded from the Confederate State of Virginia and joined the Union. The Aracoma name was changed to Logan in 1907.

The first coal mine in the region was opened in 1904 by Harry S. Gay, Sr., the result of many efforts and enterprise of three generations of his family (Logan County, WV History and Nostalgia 2016b). Gay himself was trained as a mining engineer, and was the grandson of Samuel Gay. Samuel Gay came to the coal fields of southern West Virginia early on with William McQuail, where for a time they operated under the name of the Turkey Gay Coal Company in the Pocahontas District in Mercer and McDowell Counties, southeast of Logan (Logan County, WV History and Nostalgia 2016b). H.S. Gay, Sr., however, was the true pioneer in the Logan region. He was born in Mount Carmel, Pennsylvania and trained in the technical fields at Lafayette College. He later worked as a mining engineer in the anthracite fields of northeastern Pennsylvania and New Jersey. He first arrived in Logan County in 1903 in order to prepare a report on the coal fields for a coal company in Shamokin, Pennsylvania. While



there he located the Monitor-Yuma Land lease and acquired a lease of 800 acres, which later grew to become the Gay Coal and Coke Company (Logan County, WV History and Nostalgia 2016a). He shipped the first car load of coal on Thanksgiving Day in 1904 (Atkins 2013).

As with much of Logan County, the history of the Mt. Gay hamlet of Cherry Tree is tied to coal. Cherry Tree was originally laid out as a town in 1905 by W. P Henritze; it was known as the Henritze Addition to the Town of Logan (Atkins 2013). Henritze anticipated the need for guality housing as part of the booming coal industry, as Henry S. Gay had just established his Gay Coal and Coke Company operations in this section of the Island Creek valley in 1904. At nearly the same time, in 1902, William H. Coolidge and Albert F. Holden bought a substantial tract of 30,000 acres on the Cooperas Fork of Island Creek with the intent of establishing a significant coal mining enterprise, later called the Island Creek Coal Company (Dobson, Stone, and Valente 1991; West Virginia Encyclopedia 2016a). They built a railroad line from Logan which later became part of the Chesapeake and Ohio Railroad (C&O), which at the time had just completed its Guyan Valley Extension (West Virginia Encyclopedia, 2016b). As a result, Mt. Gay had important rail access to Logan and hence to wider markets via the C&O network. The name of "Cherry Tree," or "Cherry Tree Bottom" was the common name given to the Henritze Addition, particularly the upper section, due to the existence of several large cherry trees at the outskirts of the settlement (Atkins 2013). When the town was first established, a man by the name of White had a farm on the south side of Island Creek, which later became known as "White's Addition." The original thoroughfare, now Riverview Avenue, was called Cherry Street, and an early local name for the lower section of the village was "Lower Ram Cat." The back alley that runs parallel to the main thoroughfare was often called "Ram Cat Alley" (Atkins 2013).

Due to its proximity to both the Island Creek and Henry S. Gay holdings, Cherry Tree experienced a building boom during the first two decades of the twentieth century. By 1930, Cherry Tree had its own primary school, church, four grocery stores, a bakery, a gas station, and several dozen residences, in addition to numerous other small business enterprises. The Logan Baking Company, which was later renamed Butter Crust Bread, began as a small enterprise founded by Italian immigrants Dante Belladonna, Patsy Ferzacci, and Miller Farley. It later grew into a significant employer for the small town (Atkins 2013). Their "butter crust bread" was well-known and was distributed throughout West Virginia. It was eventually bought by the Sunbeam Bread Company, and later became home to National Cable Repair. R.C. Cola also had a bottling plant, operated by a man named Hill Rigdon, on the east side of Riverview, directly south of the North White's Addition Bridge; this structure is no longer extant (Davidson and McCormack 2012).

The primary house of worship, Pilgrim Holiness Church, was a religious denomination associated with the holiness movement that split from the Methodist Episcopal Church in 1897. It was first organized in Cincinnati, Ohio as the International Holiness Union and Prayer League and was rechristened the Pilgrim Holiness Church in 1922. A movement to establish a branch in Cherry Tree began with spirited tent revival meetings in the first decade of the twentieth century followed by the raising of the church circa 1920 (McCormack 2012). The congregation grew to include a nearby church camp in the mountains. The organization eventually merged with the Wesleyan Methodists in 1968 to form the Wesleyan Church. Despite the town's somewhat isolated location in the flat bottom between steep mountains, it did have street lights and sidewalks prior to 1930, although the roads remained unpaved for many years. The town continued to serve as a predominantly coal mining town, and was home to several interesting individuals, including Red Berry, said to be the brother of the famous musician Chuck Berry, and many immigrant families from southern and eastern Europe (Davidson and McCormack 2012).

The history and heritage of Cherry Tree and Logan County remained intimately connected with coal for many years. Logan County witnessed one of the most famous coal mining labor incidents, the 1921 Blair Mountain Battle (West Virginia Encyclopedia, 2016b). This was one of the largest armed uprisings since the American Civil War. The murder of Sid Hatfield, who had become a hero to coal miners when



he stood up to the Baldwin Felts Mine Guards during the 1920 Matewan Massacre, incensed coal miners across the state of West Virginia and resulted in the uprising of more than 10,000 armed miners (West Virginia Encyclopedia 2016b). These groups marched to free Mingo County from what they viewed as oppressive control by coal companies. The force was met by a heavily armed contingent supported by coal companies on the Logan County line. This battle continued for several days until the U.S. Military eventually stopped the marching miners.

Logan County is also home to another infamous mining incident, the Buffalo Creek Disaster. The Buffalo Creek Flood accident that occurred on February 26, 1972 when a coal slurry impoundment dam built on a hillside in Logan County (by the Pittston Coal Company) burst four days after being declared 'satisfactory' by a federal mine inspector (Logan County, WV History and Nostalgia 2016b). The resulting flood unleashed approximately 132 million gallons of black waste water upon the residents of 16 coal mining communities in Buffalo Creek Hollow. Out of a population of 5,000 people, 125 people were killed, 1,121 were injured and over 4,000 were left homeless. A total of 507 houses were destroyed in addition to 44 mobile homes and 30 businesses (Logan County, WV History and Nostalgia 2016b). The incident completely leveled the town of Saunders, West Virginia.

Unfortunately, with the slow demise of the coal industry beginning after World War II, Cherry Tree began to see a gradual decline in its population and businesses. This was made worse by the expansion of SR 44, along with the eventual widening and reconfiguring of U.S. 119 in the 1950s. The new SR 44 resulted in the demolition of an entire row of residences in Cherry Tree as well as the elimination of the original primary school house. As a result, the small hamlet began a slow decline into obscurity. Today, it is a shadow of its former self, with many of the frame dwellings in dilapidated or deteriorated condition and many of the businesses gone.



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1998 *Bridge Inspection Report*, Mt. Gay Deck Arch Over Mud Fork, County Route 119/26 (SLS), 0.03 Mile West of County Route 5, Logan County, District Two, Non-NHS, A.D.T. 2,000 – Year 1989. Revised July 23, 1998.

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Internal Rating: \_\_\_\_\_



# WEST VIRGINIA HISTORIC PROPERTY INVENTORY FORM

Street Address	Common/Historic Name/Both	Field Survey #	Site # (SHPO Only)	
Town or Community	County	Negative No.	NR Listed Date	
Architect/Builder	Date of Construction	Style		
Exterior Siding/Materials	Roofing Material	Foundation		
Property Use or Function Residence O Commercial O Other O	UTM#			
Survey Organization & Date	Quadrangle Name			
	Part of What Survey/FR#	Photograph 1. LG-075 Facing South.	7, N. Whites Addition Arch Bridge,	

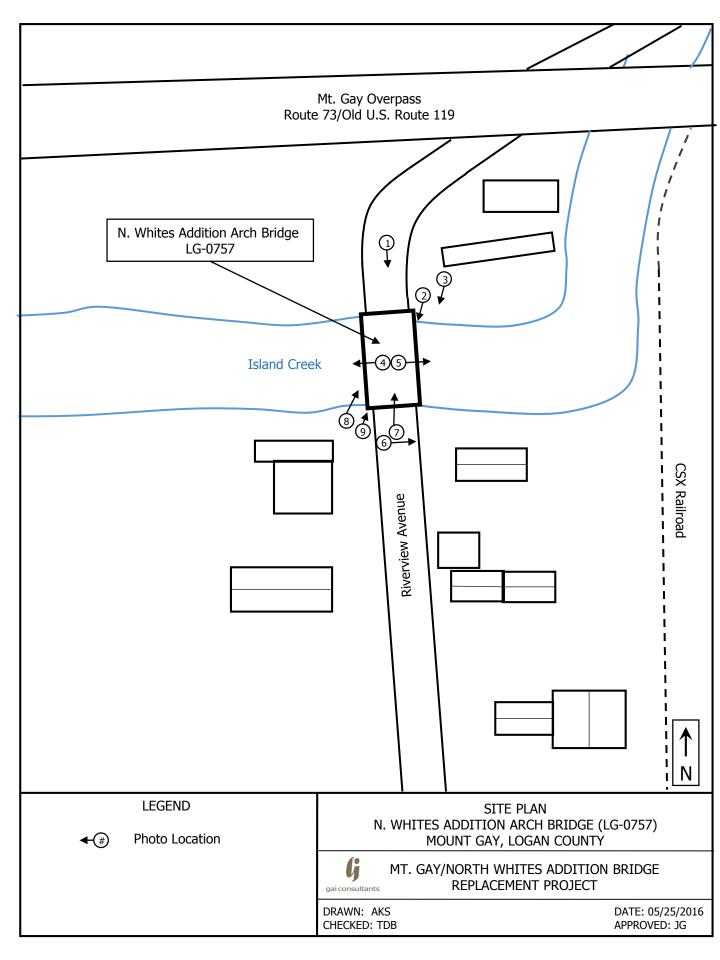
Sketch Map of Property Or Attach Copy of USGS Map

Site No.

Present Owners	<b>Owners Mailing Address</b>		
Phone #			
Describe Setting			Aaraa
			Acres
			Archaeological
			Artifacts Present
Description of Building or Site (Original and Present)		_Stories	Front Bays
			-
		(Use	Continuation Sheets)
Alterations If yes, describe			
Yes No			
Additions If yes, describe			
Yes No			
Tes NU			
Describe All Outbuildings			
Statement of Significance		(Use	Continuation Sheets)
		(Use	Continuation Sheets)
Bibliographical References			
		(Use	Continuation Sheets)
Form Prepared By:	Date:	1000	
Name/Organization: Address:			
Phone #:			

West Virginia Division of Culture and History State Historic Preservation Office

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# STATE LEVEL HISTORIC DOCUMENTATION INDEX TO PHOTOGRAPHS

North Whites Addition Arch Bridge (LG-0757) Logan County, West Virginia State Project #S323-119/26-0.33 Federal Project #STP-1192(050)D Bridge Number: 23–119/26–000.33 Federal Bridge Number: 0000000023A150

Photographer: Elizabeth Williams, May 2016

Photograph 1. North Whites Addition Arch Bridge, (LG-0757), Facing South
Photograph 2. North Whites Addition Arch Bridge, (LG-0757), Detail, Facing Southwest
Photograph 3. North Whites Addition Arch Bridge, (LG-0575), Facing Southwest
Photograph 4. North Whites Addition Arch Bridge, (LG-0575), Interior of Parapet 1, Facing West
Photograph 5. North Whites Addition Arch Bridge, (LG-0575), Interior of Parapet 2, Facing East
Photograph 6. North Whites Addition Arch Bridge, (LG-0575), Modern Mile Marker
Photograph 7. North Whites Addition Arch Bridge, (LG-0575), Facing North
Photograph 8. North Whites Addition Arch Bridge, (LG-0575), Detail, Facing Northeast
Photograph 9. North Whites Addition Arch Bridge, (LG-0575), Facing Northeast

No original plans exist for this bridge.





Photograph 1. North Whites Addition Arch Bridge, (LG-0757), Facing South



Photograph 2. North Whites Addition Arch Bridge, (LG-0757), Detail, Facing Southwest





Photograph 3. North Whites Addition Arch Bridge, (LG-0757), Facing Southwest



Photograph 4. North Whites Addition Arch Bridge, (LG-0757), Interior of Parapet 1, Facing West





Photograph 5. North Whites Addition Arch Bridge, (LG-0757), Interior of Parapet 2, Facing East



Photograph 6. North Whites Addition Arch Bridge, (LG-0757), Modern Mile Marker





Photograph 7. North Whites Addition Arch Bridge, (LG-0757), Facing North



Photograph 8. North Whites Addition Arch Bridge, (LG-0757), Detail, Facing Northeast





Photograph 9. North Whites Addition Arch Bridge, (LG-0757), Facing Northeast

