LITTLE BUFFALO RIVER BRIDGE
Arkansas Bridges 2005
Spanning Little Buffalo River at AR 327
Parthenon vicinity
Newton County
Arkansas

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD
National Park Service
U.S. Department of the Interior
1849 C Street NW
Washington, DC 20240-0001
HISTORIC AMERICAN ENGINEERING RECORD

LITTLE BUFFALO RIVER BRIDGE

HAER No. AR-80

Location: Spanning Little Buffalo River at AR 327 (formerly Buffalo Road), Parthenon vicinity, Newton County, Arkansas

UTM: 15.479510.3980524, Parthenon, Arkansas, Quad.

AHTD #: M2889

Structural Type: Reinforced concrete T-beam

Construction Date: 1939

Builder: Works Projects Administration (WPA)

Owner: State of Arkansas

Use: Vehicular bridge

Significance: Little Buffalo River Bridge is the longest reinforced concrete T-beam bridge in Arkansas and an excellent example of a Works Projects Administration-built highway bridge.

Project Information: The Arkansas Historic Bridges Recording Project is part of the Historic American Engineering Record (HAER), a long-range program that documents historically significant engineering sites and structures in the United States. HAER is administered by the Heritage Documentation Programs Division of the National Park Service, United States Department of the Interior, Richard O'Connor, Manager. The Arkansas State Highway and Transportation Department sponsored this project.

Lola Bennett, HAER Historian, 2007
Chronology

1803 Louisiana Purchase doubles size of the United States
1818 Buffalo Fork appears on "Map of the Territorial Limits of the Quapaw Cession"
1819 Arkansas Territory created from part of Louisiana Purchase
1830s John Belah settles near this site on Buffalo River
1836 Arkansas becomes 25th state to join the Union
1838 Newton County formed
1844 Morse & Breese's map of Arkansas shows road and crossing near this site
1855 "Mt. Parthenon" appears on J.H. Colton's map of Arkansas
1851 Mt. Parthenon post office established
1889 America's first reinforced concrete bridge built at San Francisco
1895 Mt. Parthenon changes its name to Parthenon
1910s Introduction of reinforced concrete T-beam construction in the United States
1912 Parthenon population 100\(^1\)
1929 U.S. stock market crash marks beginning of the Great Depression
1932 President Franklin D. Roosevelt proposes unemployment relief programs
1935 Congress passes Emergency Relief Appropriation Act; WPA created
1939 WPA constructs Little Buffalo River Bridge
1941 Newton County population 10,881
1943 WPA program ends
1995 Little Buffalo River Bridge listed in National Register of Historic Places

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Description
Little Buffalo River Bridge is a 7-span reinforced concrete T-beam bridge on stone-faced piers and abutments. The bridge is 15'-0" high, 22'-0" wide and 210'-0" long, with clear spans of 30'-0" each. The concrete slab is 7" thick, with three integral 14"x28" beams, spaced at 7'-6". No plans showing the steel reinforcing have been found. The deck is paved with asphalt. There is a reinforced concrete railing on each side of the deck. The reinforcing of the 12"x12" posts is integral with the superstructure. The ashlar masonry abutments and piers have concrete footings and caps. They are 20'-0" wide, 14'-0" high, and taper in thickness from 1'-6" at the top to 6'-0" at the bottom.

History
In the 1830s, John Belah settled near this site on the Buffalo River. A road was established along the river from Jasper to Clarksville sometime prior to 1844, when it appeared on Morse & Breese's map of Arkansas. By 1851, the small industrial hamlet was officially known as "Mt. Parthenon." No information has been found concerning a prior bridge at this location.

In 1938, Newton County sponsored WPA Project #665-63-1-169 to "improve, construct and reconstruct county-owned roads." Buffalo Road, which originally followed the west bank of Buffalo River, was realigned to cross the river at this point. The Little Buffalo River Bridge was completed in 1939 by local WPA work crews.

Builder
The Works Projects Administration (WPA) was a federal agency established under President Franklin D. Roosevelt to combat unemployment during the Great Depression. Originally called the Works Progress Administration, it employed 8,500,000 people in public works projects between 1935 and 1943. In addition to projects that employed artists, actors and writers, WPA workers built schools, courthouses, parks, roads and bridges, many of which are still in use today.

Design
T-beam bridges—named for their cross-sectional shape—were commonly built from about 1910 to 1950. They were developed as a way to build long-span beam bridges using the least amount of concrete possible. The "beams" serve primarily to contain the tension steel and locate it a given distance below the deck. Generally, the neutral axis is located just below the deck so that the whole cross-sectional area of the deck is placed into compression, balancing the tension forces developed in the reinforcing steel. Spans are cast in place, with longitudinal steel reinforcing arranged along the bottom of the beam, where tension forces occur. Eliminating sections of un-reinforced concrete below the neutral axis minimizes the dead weight of the span. Although cheaper to build than an arch or truss, the T-beam is limited to spans of 25' to 50' and typically constructed where piers are easily established.² The Little Buffalo River Bridge is the longest of five reinforced concrete T-beam bridges identified in the Arkansas Highway and Transportation Department historic bridges database.

Sources

Arkansas Highway and Transportation Department. Bridge Records: Bridge No. M2889.


