

**HISTORIC AMERICAN ENGINEERING RECORD**

**CEDAR CREEK BRIDGE**

**HAER No. AR-31**

**LOCATION:** Adjacent to State Highway 154, spanning Cedar Creek, Petit Jean State Park, Conway County, Arkansas.

UTM: 15/506710/3888130

Quad: Atkins, Arkansas

**DATE OF CONSTRUCTION:** 1934

**BUILDER:** Civilian Conservation Corps (CCC).

**OWNER:** Petit Jean State Park, Morrilton, Arkansas.

**USE:** Vehicular and Pedestrian Bridge.

**SIGNIFICANCE:** The Cedar Creek Bridge is one of eight remaining masonry arch bridges in Arkansas, and is unique as the only one incorporating finished, rather than rusticated, stone. The bridge was constructed as part of a Civilian Conservation Corps project which blazed the trails and erected the structures in Arkansas' first state park.

**HISTORIAN:** Lola Bennett

**DESCRIPTION:** Corinne Smith

Arkansas Historic Bridge Recording Project, 1988.

Petit Mountain stretches approximately ten miles along the southern bank of the Arkansas and Petit Jean Rivers in west-central Arkansas, just southwest of Morrilton. The state park on the mountain encompasses nearly 3,500 acres of woods, streams, ravines, and geological formations. Cedar Falls Creek, a stream about nine miles in length, has its source in the springs at the summit of the mountain. The creek flows down the mountain, into a gorge, and out into the valley below.

The Cedar Creek Bridge was built in 1934 as part of a Civilian Conservation Corps (CCC) project that built the original structures which formed the nucleus of Petit Jean State Park. The CCC, a federal work program, made possible the creation of many such state parks throughout the nation during the depression years. Petit Jean State Park was the first of five state parks in Arkansas built by the CCC.

The Cedar Creek Bridge was built using traditional methods of masonry arch bridge construction. It is one of eight remaining masonry arch bridges in the state, and is unique as the only one which incorporated finished, rather than rusticated, stone. It is an excellent example of a coursed ashlar deck arch bridge.

#### PETIT JEAN MOUNTAIN (1)

The first permanent settlers on Petit Jean Mountain were John Walker and his family, in 1840. In 1841 Roderick Webber established a tanyard on the mountain with the aid of his slaves who knew the art of tanning leather and making shoes. Their reputation brought customers from as far away as Little Rock to buy shoes. The tanyard ceased operation about 1860, by which time the mountain community was growing rapidly. At one point, the community boasted two schools, a sawmill, a resort hotel, two post offices, and stores. The main industries were cotton farming and

timbering. By 1900, more than one hundred families had made their homes on Petit Jean. The community declined during the years from 1910 to 1922: cotton farming played out the soil and the forests had been cut; the young people began to leave, seeking opportunity elsewhere.

### THE BEGINNING OF ARKANSAS STATE PARKS

In 1921, Dr. T.W. Hardison and a few other influential Arkansans launched a campaign to designate an area on Petit Jean as a National Park. After careful study, the National Park Service determined that the area was too small, and, although interesting and picturesque, not of national significance. They suggested that the sponsors of the Petit Jean project try to have the area set aside as a state park instead.(2)

In March 1923, the Arkansas legislature passed Act 276, which authorized the commissioner of state lands "to accept lands donated to the state for parks and state reservations" and designated a section of land already donated as Petit Jean State Park.(3)

In March 1927, the State Parks Commission was created by Act 172:

to select and acquire such areas of the State of Arkansas which, by reason of their natural features, scenic beauty and historical interest, have educational, recreational, health, camping and out-door life advantages; to protect and preserve in its original habitat and native beauty the flora, fauna and wild life therein and preserve the same for all future generations, thereby promoting health and pleasure through recreational places, resorts and scenic playgrounds for the people of the State and to attract visitors, homeseekers and tourists to the State and to provide places of recreation and pleasure for them, and to increase the wealth and revenue of our State by means of such parks.(4)

The Act also charged the State Parks Commission with the responsibility of overseeing the lands entrusted to its care.

When the stock market collapsed in 1929, and the nation fell into an economic depression, acquisition of land for park areas was simply not possible due to lack of funds. Ironically, however, the economic effect of the depression was one of the catalysts which brought about the development of many of the nation's parks and recreational areas. Act 39 of 1881 had allowed that lands where taxes were delinquent would, after a reasonable time, revert to the State. Since many people were unable to pay their property taxes during the depression, the land holdings of the State increased, and lands for State Parks became available. The other force that helped shape the course of the Arkansas State Parks program during its formation was the Civilian Conservation Corps, a federally funded work program which operated during the depression years. Much of their work in Arkansas formed the core of park facilities in Petit Jean, Mt. Nebo, Crowley's Ridge, Devil's Den and Lake Catherine State Parks and the Buffalo National River.

By 1935 the State was informed that most of the planned development of the parks was completed and the CCC would disband by 1938. Therefore, the State should put together a working staff to take over the supervision of the parks. The State Parks Commission appointed Sam Davies, the supervising engineer at Petit Jean, as the first Director of State Parks.(5)

#### THE CIVILIAN CONSERVATION CORPS (6)

On April 5, 1933, President Franklin D. Roosevelt established the Emergency Conservation Work Program, also known as the Civilian Conservation Corps, by Executive Order 6101. The country at this time was facing two national crises--the economic depression, and the loss of precious natural and historic resources through exploitation and apathy. In asking Congress for appropriations to establish work programs, Roosevelt saw a way to bring both problems together, each one helping

to solve the other. The goal of the CCC was primarily to provide work for unemployed youths, war veterans, and Indians, the allotments from their salaries providing income for their families. The program was run in cooperation with the Department of Agriculture and Interior, the Department of War and the Department of Labor. The work consisted of conservation projects on public lands: forestry; erosion and flood control; road, structural and landscape improvements; and development of recreational areas. Participants were given \$30 a month, in addition to clothing, food, housing and medical care. Each man was assigned to a camp with approximately 200 other men. At the peak of the program in 1936, there were 650,000 enrollees on duty, located in 2700 camps throughout the nation. The program lasted until 1942, when the United States entered World War II.

#### CONSTRUCTION OF CEDAR CREEK BRIDGE

The CCC camp at Petit Jean was comprised of World War I veterans, rather than young men as in most CCC camps. There were 200 men in the camp, and, according to Ladd Davies, the son of the supervising engineer, "because the men were older, there was someone who knew how to do everything."(7)

The CCC began work in the park by clearing roads and trails, and the construction of the bridge across Cedar Creek. An old iron bridge originally spanned Cedar Creek, near where the present dam is located, approximately a quarter of a mile upstream from the masonry bridge. Ladd Davies recalls it being there when the park was started in 1933. There were several reasons why masonry was the chosen material for the new bridge. First, suitable stone was readily available on the mountain, and thus the expense of materials and transporting them could be kept to a minimum.

Second, a masonry bridge could be more easily maintained than an iron bridge. Third, it would not be necessary to call in skilled laborers to work on the job, although there happened to be a mason in the camp at Petit Jean. Fourth, a stone bridge would blend well with the surrounding landscape, and would be in keeping with the idea of a "natural" park.

A crew of fifteen or twenty men began construction on the bridge in the summer of 1933, and completed it in 1934.(8) Because the master plan for the park was not drawn up until 1935, there are no documented drawings of the bridge, but Ladd Davies recalls that he was the draftsman, and that he calculated the depth of the keystone (22 inches) using an railroad engineer's handbook.(9)

The first task in the construction of the bridge was clearing the lake bed and collecting stones. Nearly all the work was done by hand, as the crew had only three dumptrucks, a flatbed truck and a tractor.(10) After the area was cleared, a wooden arch form (also known as centering) was constructed using heavy timbers (see historic field photos in HAER file). The rocks, cut by the stone mason, were laid over this form. Once the keystone was dropped into place, the centering was removed. The stones were lifted into place using a makeshift crane, which consisted of "a block and tackle, two trees, and a little iron work made by a blacksmith."(11) The final steps in construction were backfilling the bridge with dirt and paving the road.

#### REPAIRS ON THE CEDAR CREEK BRIDGE

Ladd Davies recalled that, in the spring of 1985, he received an anxious telephone call from the park, "Mr. Davies, come quick! The bridge is collapsing!" Apparently a recent flash flood had caused the fill inside the bridge to leach out through a crack that had developed in the wall. Consequently, when enough fill had escaped, a hole was created under the asphalt pavement, and

the pavement collapsed. Under Mr. Davies' direction, the hole was filled with concrete, and crack in the bridge wall repointed, and road repaved.(12) This, apparently, is the only time the bridge has been repaired.

### THE DAVIES FAMILY (13)

Mr. Sam Davies, the supervising engineer for the bridge, was born in Fayetteville, Arkansas in 1885. He graduated from the University of Arkansas at Fayetteville in 1907, with a degree in Civil Engineering. In 1917, he moved to Morrilton to work as a resident engineer for Harrington, Howard and Ash, a bridge engineering firm from Kansas City, Missouri. The firm was supervising the construction of a bridge over the Arkansas River. In 1932, the Attorney General of Arkansas asked Mr. Davies to be the supervising engineer at Petit Jean State Park. Consequently, in 1937, Governor Bailey asked him to be the first Director of Arkansas State Parks, a position which he held until 1943.

Sam Davies' son, Ladd Davies, was 19 years old in 1933, and was pursuing a degree in engineering at the University of Arkansas at Fayetteville. Ladd had completed two years of the program when he decided to work with his father on the CCC project at Petit Jean. He returned to the University in 1935 to finish his degree, and went on to obtain a Master's degree in Sanitary Engineering from Harvard University. He served with the army from 1945 to 1947, during which time he was working in Latin America. From 1947 to 1949, he worked in Peru, helping to set up a public health system. After returning to the United States, he and his father set up a private water and sewage contracting business, Davies and Davies Municipal Contractors. When his father retired in 1962, they dissolved the business, and Ladd went to work for the Arkansas Department of

Pollution Control and Ecology. After four years he was appointed as Director of department, and he remained there until his retirement in 1976. He presently lives on Petit Jean Mountain, fondly recalling the days that he spent working with the CCC at Petit Jean State Park.

Ladd's son, Richard Davies, has carried on the tradition set by his grandfather. He graduated from the University of Arkansas at Fayetteville in 1972 with a degree in journalism. In 1973 he accepted a position as Assistant to the Director of Parks and Tourism, and in 1976 he became the Director of Arkansas State Parks, a position which he currently holds.

#### DESCRIPTION

The Cedar Creek Bridge is a semi-circular masonry deck arch with a total deck length of over 60 feet. The arch is about 20 feet long, with a rise of approximately 10 feet. The sandstone masonry units are coursed, rock-faced ashlar, ranging in size from 6"x10" to 2'x3', with an average size of 12"x15". The mortar joints are about an inch thick and are weatherstruck pointed. The voussoirs are primarily rectangular in shape, and approximately 12"x15" in size. About ten to fifteen stones on each side are rusticated, and thus protrude from the spandrel wall surface. The spandrel wall continues upward from the arch about ten feet to form a parapet wall capped with 6-inch-thick, flat coping stones. The solid spandrels are filled with sand, and the two-land road deck is covered with asphalt.

ENDNOTES

1. "Petit Jean Mountain," exhibit, Petit Jean State Park Visitors Center, Morrilton, Arkansas.
2. Arkansas State Parks Plan (Little Rock: Arkansas Department of Parks and Tourism, October 1981).
3. "Act 276," Acts of Arkansas, 1923 (Little Rock; Democratic Printing and Lithography Co., 1923), pp.215-216.
4. "Act 172," Acts of Arkansas, 1927 (Little Rock, 1927), pp.607-611.
5. Arkansas State Parks Plan.
6. Joey McCarty, "Civilian Conservation Corps in Arkansas," thesis (University of Arkansas, 1977). Douglas Helms, compiler, Preliminary Inventory of the Records of the Civilian Conservation Corps (Washington D.C.: National Archives and Records Service, 1980).
7. Ladd Davies, Personal interview with Lola Bennett, project historian (Petit Jean, Arkansas), August 2, 1988.
8. *ibid.*
9. *ibid.*
10. *ibid.*
11. *ibid.*
12. *ibid.*
13. *ibid.*

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Arkansas State Parks Plan. Arkansas Department of Parks and Tourism, Division of State Parks, Little Rock, October 1981.

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Davies, S.G. et al, compilers. "Petit Jean State Park: An Emergency Conservation Work Project" data compiled for Little Rock Public Library and Arkansas Federation of Garden Clubs. Morrilton, Arkansas, October 1935.

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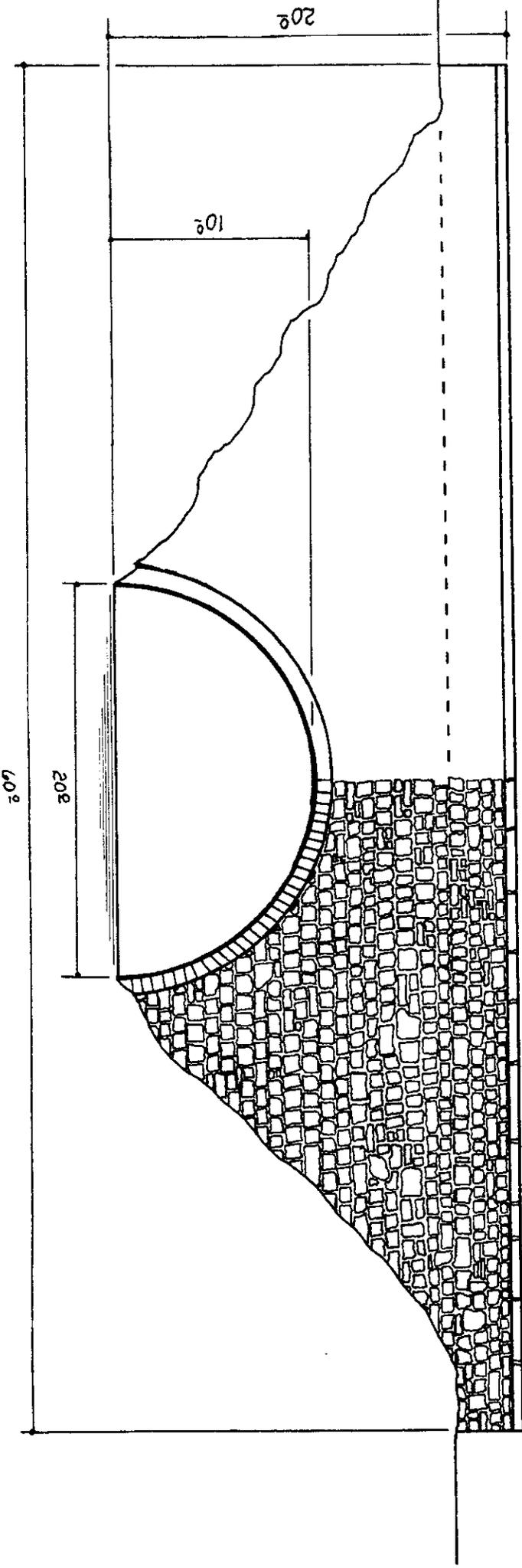
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Petit Jean State Park Master Plan, 1935. Located in the Archives of the Arkansas History Commission, Little Rock.

Photographs of Cedar Creek Bridge Under Construction. Petit Jean State Park, Morrilton, Arkansas.

"Scenes in State's Rapidly Growing Park System," in Arkansas Democrat, Arkansas Centennial Edition, 1936.

ELEVATION



DRAWING NOT TO SCALE

DIMENSIONS ARE APPROXIMATE

DRAWN BY CORINNE L. SMITH