

SWANN BRIDGE
(Joy Bridge)
National Covered Bridges Recording Project
Spanning Locust Fork of Black Warrior River, Swann Bridge Road
Cleveland vicinity
Blount County
Alabama

HAER No. AL-201

PHOTOGRAPHS

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WRITTEN HISTORICAL AND DESCRIPTIVE DATA

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

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(Joy Bridge)

HAER No. AL-201

LOCATION: Spanning Locust Fork of Black Warrior River at Swann Bridge Road,
Cleveland vicinity, Blount County, Alabama
UTM: 16.536795.3761969, Cleveland, Alabama Quadrangle

STRUCTURAL
TYPE: Wood covered bridge, Town lattice truss

DATE OF
CONSTRUCTION: 1933

DESIGNER/
BUILDER: Zelma C. Tidwell, Locust Fork, Alabama

PRESENT OWNER: Blount County, Alabama

PREVIOUS USE: Vehicular bridge

PRESENT USE: Vehicular bridge

SIGNIFICANCE: Swann Bridge is one of three surviving covered bridges in Blount County,
Alabama, one of the last strongholds of covered bridge building in the
United States.

HISTORIAN: Researched and written by Lola Bennett, March 2003

PROJECT
INFORMATION: The National Covered Bridges Recording Project is part of the Historic
American Engineering Record (HAER), a long-range program to
document historically significant engineering and industrial works in the
United States. HAER is administered by the Historic American Buildings
Survey/Historic American Engineering Record, a division of the National
Park Service, U.S. Department of the Interior. The Federal Highway
Administration funded the project.

Chronology

- 1818 Blount County established
- 1820 Ithiel Town patents Town lattice truss
- 1830c Alabama's first covered bridge constructed over Black Warrior River at Tuscaloosa
- 1902 Zelma Tidwell born at Locust Fork, Alabama
- 1905 U.S. Department of Agriculture Map of Blount County shows road and bridge at this location
- 1930 Easley Bridge constructed
- 1933 Zelma Tidwell becomes foreman of Blount County bridge crew
- 1933 Tyre Green Bridge construction
- 1933 Swann Bridge constructed
- 1934 Horton Mill Bridge constructed
- 1935 Nectar Bridge constructed
- 1936 Blount County stops building covered bridges when Zelma Tidwell leaves the county bridge crew
- 1967 Blount County Commissioners vote to repair Horton Mill Bridge, Swann Bridge and Nectar Bridge and preserve them as tourist attractions
- 1967 Alabama Historical Commission established
- 1971 Horton Mill Bridge listed on the National Register of Historic Places
- 1972 Blount County has four covered bridges
- 1980 Swann Bridge listed on the National Register of Historic Places as part of a theme study
- 1987 Zelma Tidwell dies at Locust Fork, Alabama
- 1993 Blount County has three covered bridges after Nectar Bridge burns
- 2003 Swann Bridge recorded by the Historic American Engineering Record

Description

The Swann Bridge is a three-span wood Town lattice truss covered bridge on concrete piers and abutments. The total length of the bridge is 320', with span lengths of approximately 98', 98' and 112'. The bridge is 13'-9" overall, with a roadway width of approximately 10'-6".

The trusses are framed in the manner patented by Ithiel Town in 1820. Each truss is 3-½ diamonds high, measuring 11'-6" high from the top of the upper chord to the bottom of the lower chord. The upper and lower chords are four parallel 2"x10" planks (2"x10") bolted together at the lattice intersections. The lattice webs are composed of 2"x10" planks, bolted with two ¾" threaded steel bolts at each intersection. There are vertical 6"x10" timber posts at the ends of the trusses and over the piers and 7"x9" chin braces next to each of the vertical posts. The posts and chin braces rest on bed timbers and support the inner section of the upper chord. Single 1½" diameter metal rods with threaded ends connect the floor beams to the upper chord and are fastened with a nut above the upper chord and below the deck beams.

The lower chords rest on 9"x9" bed timbers on the abutments and piers. Transverse deck beams (6"x10" timbers spaced about 12' apart) are suspended below the lower chord by means of hanger rods fastened with nuts. There are four lines of stringers, each composed of three or four 2"x10" planks laid on edge, on top of the deck beams. The deck consists of three layers of planks laid diagonally, transversely and longitudinally on top of the stringers. There are running boards (four lines of 1 ½"x8" planks) laid longitudinally on top of the deck. Lower lateral bracing is 1" diameter rods with turnbuckles crossing between the floor beams. The rods appear to have loop-welded ends that wrap around the hanger rods in the space between the lower chord and each floor beam. Both ends of the bridge have been braced with 7"x8" timber bents under the first deck beam.

Upper lateral bracing is 2"x6" timbers in a lattice web resting on top of the upper chords, spaced about every 3'. Rafters (2"x4", spaced ever 2 ½') are seated on the upper chord and angle upward to support the gable roof. The corrugated metal roof is nailed to 2"x4" purlins spaced approximately every 2 ½' on the rafters. The portals are square and angle out over the approaches about 10'. There is a board and batten tympanum over each portal. The tympanum over the south portal has a wooden sign bearing the inscription: "Swann Bridge. Built in 1933." Galvanized corrugated metal siding, which is fastened to three longitudinal 1½" x 4" nailers along the outside of the trusses, covers the bridge. The siding extends from the bottom of the lower chord to 4' below the upper chord. Along the center span, the siding has been cut back to provide window openings. Short concrete wingwalls extend behind the abutments along the roadway.

Alabama Covered Bridges

The first known covered bridge in Alabama was a Town lattice truss built c.1830 over the Black Warrior River at Tuscaloosa. During the nineteenth century an estimated 200 covered bridges were built in the state. Presumably, many covered bridges did not survive the Civil War, and

many others were lost to floods, vandalism, neglect and replacement. By the mid-twentieth century, only about fifty covered bridges remained, and by 1970 there were only seventeen. The National Society for the Preservation of Covered Bridges' *World Guide to Covered Bridges* database currently lists twelve extant covered bridges in Alabama. These have reported construction dates ranging from c.1850 to 1933. Eight of the twelve are of Town lattice construction.

There are records of at least twelve covered bridges that once existed in Blount County. Only three have survived to the present: Swann Bridge (1933), Horton Mill Bridge (1934) (see HAER No. AL-203) and Easley Bridge (1930).¹ Along with the Pacific Northwest, Blount County appears to have been one of the last strongholds of covered bridge building in the United States.

History of Bridge and Site

The area near the present-day community of Cleveland (originally known as Village Springs) was settled in the mid-nineteenth century.² A 1905 U.S. Department of Agriculture Soil Survey Map of Blount County shows a road along the alignment of the present Swann Bridge Road crossing Warrior River at, or near, this location. According to Bonnie Swann Montey, this crossing was a ford until 1933, when her grandmother, Lula Swann, widow of Thomas Swann, gave the county the right of way to build the road and bridge.³

On September 11, 1933, the Blount County Commissioners ordered "that a highwater bridge be built across the Warrior River in Joy Precinct...said bridge to be a covered lattice bridge, with abutment at each end and two piers under bridge." This bridge was to be built "by the county's bridge crew, under the leadership of Zelma Tidwell," bridge foreman for Blount County from 1933 to 1935. The county paid Tidwell \$2.75 per day, carpenters \$1.75 and common laborers \$1.25. E.L. Dover supplied hardware for the bridge, and Chuck Richards supplied lumber at \$14 per thousand board feet. The total cost of the bridge was \$3,682.54.⁴

The Swann Bridge was constructed in the fall of 1933. According to Blount County historian Warren Weaver's 1979 interview with Zema Tidwell, each bridge he built averaged fourteen to twenty workmen who lived on-site and built the bridges without the aid of machinery. Timbers were hoisted into place with ropes, and piers were built by stacking rocks and pouring hand-mixed concrete over them. All of the bridges used the Town lattice design, because, according to Mr. Tidwell, "it was the strongest bridge construction." The Swann Bridge was dedicated on November 7, 1933, when the village of Cleveland held a community dinner.⁵ According to Bonnie Swann Montey, whose family has lived adjacent to the bridge for three generations, the

¹ Arson destroyed another covered bridge, Nectar Bridge (1932) in 1993.

² The name "Village Springs" appears on the 1864 "U.S. Coast Survey map of Northern Alabama and Northern Georgia."

³ Bonnie Swann Montey, conversation with Lola Bennett, January 29, 2003.

⁴ *Blount County Court Records*, Book 5, p. 20.

⁵ "Bridge Dedication," *The Southern Democrat* (Oneonta, Alabama), November 16, 1933, p.4.

bridge name was changed at this dinner from “Joy Bridge” to “Swann Bridge” at the suggestion of community physician Dr. Brown.⁶

Preservation of Alabama’s covered bridges began in 1967, when the Blount County Commissioners voted to repair Horton Mill Bridge, Swann Bridge and Nectar Bridge and preserve them as tourist attractions.⁷

In 1971, the Horton Mill Bridge was listed on the National Register of Historic Places. The remaining Blount County covered bridges, including Swann Bridge, were listed under a thematic nomination in 1980.

Zelma C. Tidwell

Zelma Clyde Tidwell (1902-1987) was a native of Locust Fork, Alabama. After serving in the U.S. Navy, he returned to Alabama and went to work with his uncle, Forrest Tidwell, who was foreman of the Blount County bridge construction crew. He assisted in the construction of Locust Fork Bridge (1927), Dean’s Ferry Bridge (1930), Duck Branch Bridge (1930), Inland Bridge (1930), Blount Springs Bridge (1931) Easley Bridge (1930), Slab Creek Bridge (1931), Crooked Shoals Bridge (1931), before taking over his uncle’s position in 1933. Tidwell supervised the construction of Tyre Green Bridge (1933), Swann Bridge (1933), Nectar Bridge (1934) and Horton Mill Bridge (1935).⁸ In 1936, Zelma Tidwell retired from bridge building to join the Alabama Highway Patrol, and Blount County ceased building covered bridges.

The Town Lattice Truss

Ithiel Town was born in Thompson, Connecticut in 1784 and died in New Haven in 1844. As a young man he learned carpentry and studied architecture at Asher Benjamin’s school in Boston. For most of his life, he practiced architecture, primarily as a partner in the New York City firm of Town & Davis. Town designed a number of noteworthy buildings, including Christ Church in Hartford (1825), the New York City Custom House (1837), the Yale College Library (1842), and the Virginia State Capitol at Richmond (1842). Although he is primarily recognized as an architect, Town also made a significant contribution to the field of engineering when, in 1820, he was granted a patent for a truss bridge. Town’s design consisted of two layers of overlapping planks running perpendicular to each other, with each layer arranged at an angle to the chords, forming a lattice fastened together with wooden pins or treenails at each intersection. The most significant feature of this design was that it could be quickly erected and utilized sawn planks instead of heavy hewn timbers. As Town explained, his method of bridge construction was designed to be “the most simple, permanent, and economical, both in erecting and repairing.”⁹

⁶ Bonnie Swann Montey, conversation with Lola Bennett, January 29, 2003.

⁷ *Blount County Commission Minutes*, Book 11, April 17, 1967, p.252.

⁸ Of the bridges Zelma Tidwell supervised, Swann Bridge and Horton Mill Bridge are the only two survivors.

⁹ Ithiel Town, “A Description of Ithiel Town’s Improvement in the Construction of Wood and Iron Bridges: Intended as a General System of Bridge-Building,” (New Haven: S. Converse, 1821), p.4.

Town took out a second patent in 1835, adding a second lattice web and secondary upper and lower chords. These features are found primarily in railroad bridges, where the Town lattice was widely used. Town built only a few bridges himself, but aggressively promoted his truss design through agents who sold the rights to use his patent at \$1 per foot of bridge. Thousands of Town lattice trusses were built in the United States in the nineteenth century, although there are only about 150 surviving examples in the United States today.¹⁰

¹⁰ National Society for the Preservation of Covered Bridges, *World Guide to Covered Bridges*, computer database printout, April 2002.

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