

RED BRIDGE  
(Kentucky Route 1005 Bridge)  
Spanning North Benson Creek  
Frankfort Vicinity  
Franklin County  
Kentucky

HAER NO. KY-13

HAER  
KY  
37-FRANKF.V.  
1-

PHOTOGRAPHS  
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

HISTORIC AMERICAN ENGINEERING RECORD  
NATIONAL PARK SERVICE  
Department of the Interior  
SOUTHEAST REGION  
Atlanta, Georgia 30303

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(Kentucky Route 1005 Bridge)

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Location: Spanning North Benson Creek  
Frankfort vicinity, Franklin County, Kentucky

UTM: 16.680620.4230680  
Quad: Frankfort West

Date of Construction: 1896

Present Owner: Kentucky Transportation Cabinet  
State Office Building  
Frankfort, Kentucky

Present Use: Abandoned

Significance: Good example of a standard bridge design, popular  
during the late 19th century.

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The Red Bridge (Kentucky Route 1005 Bridge) over Benson Creek in Franklin County is eligible for the National Register of Historic Places as a structure of State and local importance. It possesses integrity of location, design, setting, materials, workmanship, and embodies the distinctive characteristics of a type period and method of construction. Built in 1896, Red Bridge is a rare survivor of a standard bridge design, constructed in the late 19th century.

Presently under State ownership, Red Bridge is a 150 foot long, single truss, one lane, metal bridge. The structure was given a Structural Inventory Appraisal rating of 27 points out of a possible 100 points, and was determined structurally deficient and functionally obsolete. In 1980, Red Bridge was replaced with a new bridge structure, and plans for the removal of the historic structure are now underway.

Historic Red Bridge, part of Kentucky Route 1005 in west central Franklin County, crosses the south fork of Benson Creek. The route is a two-lane secondary road which extends north from Frankfort, the county seat of Franklin County. Frankfort, located in north central Kentucky, is bisected north to south by the Kentucky River, into which Benson Creek empties.

The Benson Creek community, of which Red Bridge is a part, is a colesive, rural area adjacent to the historic site of Conway Mills and picturesque Benson Falls. The bridge itself serves as a local point for the community, and the artistic and recreational activities which it sponsors.

Red Bridge is a 151 foot long pin-connected Pratt through truss, constructed in 1896. Built by the King Bridge Company of Cleveland, Ohio, it is an unusually good example of a standard bridge design popular during the late 19th century. The bridge is a tall, elegant, simple truss with star pattern cutouts in the portal bracing. Due to its 1896 construction date, Red Bridge is probably of steel construction material.

The Pratt through truss was patented in 1844 by Thomas and Caleb Pratt and utilized wooden compression posts and wrought iron tension members. Soon, however, all members were constructed of metal, first cast and wrought iron, then steel. This truss, capable of larger spans which would bear greater loads is the oldest and most common truss type.

On all truss spans, the end posts and top chord act in compression, with the bottom chord in tension. In a truss, unlike a rigid arch, at least one bearing point at the abutment must be able to expand or move. In the Pratt truss, the vertical between the end posts go into compression to keep the top chord from collapsing, and the diagonals act in tension to support the deck when a load first enters the bridge.

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Pratt trusses have both diagonals and counters in the web system acting in tension. Inclined members that are not parallel to the nearest end posts are called diagonals. Inclined members parallel to the nearest end posts are called counters. Diagonals support the dead load of bridge weight and the live load of the bridge. Counters always intersect with a diagonal between two panel points (or floor beams) of the bridge.

The compression members of a Pratt truss must be rigid and of sturdy construction. The main compression member on Red Bridge, the top chord, inclined end posts and intermediate posts are all composed of two channels, cover plate and lacing bars. The main tension members are as follows: bottom chord is two rectilinear, die-forged eyebars; hip verticals are two square eyebars, loop welded at top chord and die-forged at bottom chord and welded to floor beams; diagonals are two die-forged, rectilinear eyebars, with one square eyebar with a loop welded sleeve nut; counters are square eyebars with a loop welded sleeve nut. All panel points are pin-connected. The floor system consists of rolled I-beams with floor beam hangers supporting a wood deck. The substructure is composed of two rough cut stone abutments.