Bridge Street Bridge (Bridge #1360)
Spanning the Connecticut River on Connecticut
State Route 140. Connecting the towns of
Windsor Locks and East Windsor
Hartford County
Connecticut

HAER No. CT-34

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
Mid-Atlantic Regional Office
National Park Service
U. S. Department of the Interior
Philadelphia, Pennsylvania 19106

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HISTORIC AMERICAN ENGINEERING RECORD

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(Bridge #1360)

HAER No. CT-34

Location: Spanning the Connecticut River on Connecticut State Route 140. Connecting the towns of Windsor Locks and East Windsor in Hartford County, Connecticut

UTM: 18.696700.4644400
Quad: Windsor Locks

Date of Construction: 1921. Rehabilitated in 1932, 1938, 1940, and 1960

Builder/Designer: Berlin Construction Company

Present Owner: State of Connecticut
Department of Transportation
Wethersfield, Connecticut

Present Use: Vehicular bridge, with a pedestrian sidewalk on the south side

Significance: The Bridge Strcet Bridge is a riveted Pratt through truss design consisting of seven spans of approximately 152 feet cach. Each span has six 25-foot by 4-inch panels.

Project Information: This document was undertaken in November 1987 in accordance with the Memorandum of Agreement by the Connecticut Department of Transportation as a mitigative measure prior to replacement of the bridge superstructure.

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Transportation Planner
Bureau of Planning
Connecticut Department of Transportation
Wethersfield, Connecticut

January 1988

A. Physical History

Bridge Street Bridge carries Bridge Street (Route 140) over the Connecticut River, from the town of Windsor Locks to the town of East Windsor in Connecticut. The bridge was constructed in 1921 by the Berlin Construction Company, replacing a 1886 suspension bridge immediately south of it. The present misalignment of the bridge with the roadway on both ends results from the present bridge being constructed immediately adjacent to the older structure, necessitating two "S" turns for roadway alignment. There are seven spans of approximately 152 feet, each span having six 25-foot by 4-inch panels, making the total length of the bridge 1,064 feet between abutments. It is a riveted Pratt through truss design with a 28-foot vertical separation between top and bottom chords and a 23-foot curb to curb width. The present roadway is a reinforced concrete slab, without overlay, but the roadway has been completely replaced at least twice. There is a 6 foot 8 inch sidewalk cantilevered off the south truss, which was originally floored with a 2-inch planking.

The abutments, wingwalls and piers are reinforced concrete supported on bedrock, in the case of the western three piers and abutment, and on timber pilings carried to bedrock for the eastern three piers and abutment. The hridge was designed to carry a 15-ton load.

Eleven years after construction, the road was raised several inches by inserting new steel grillages under the bearing points of each span, mostly toward the center of the bridge. Although plans showing this modification are available, the reason for it is not known.

In 1938, the wooden planking of the sidewalk was replaced by a concrete-filled steel grid, at a cost of $8,314.26.

In 1940, the entire roadway was replaced with a six to seven-inch reinforced concrete roadway, covered with two-inch asphalt wearing surface. As early as the 1950s, there was talk about the need for a new bridge. However, an accident in 1959 damaged vertical members of one truss, which were repaired.

The 1940 reinforced concrete roadway with asphaltic overlay was replaced in 1960 with a new slay without overlay. By 1977, enough deterioration had occurred to warrant reduction of the load limit to 10 tons, as the bridge is currently posted.

In 1984, uplifting of the stringers underneath the steel grid caused serious buckling of the sidewalk slabs, necessitating construction of a temporary wooden sidewalk the full length of the bridge. That sidewalk is used by hundreds of fishermen during the spring shad season.

B. Historical Context

1. History of the Crossing

Ever since the first settlers came to Windsor, crossing the Connecticut River was an obstacle. The first large body of settlers left Massachusetts on October 15, 1635, driving their horses and cattle with them. They reached Windsor one month later, only to find that the river had partially frozen over. Faced with cold, heavy snowfall, insufficient shelter, and the inability to get most of their livestock across the river, most of the settlers returned to Dorchester. However, many more came the following year and, in 1638, a highway was laid out from Hartford to Windsor. By 1641, there was agitation for a ferry across the Connecticut River, but no official action was taken until 1648, when "John Bissell undertakes to keep and carefully to attend the ferry over the Great River at Windsor for the full term of seven years" *(Trumbull 1886:517)*. That ferry was eventually taken over by the town of Windsor and operated until this century.

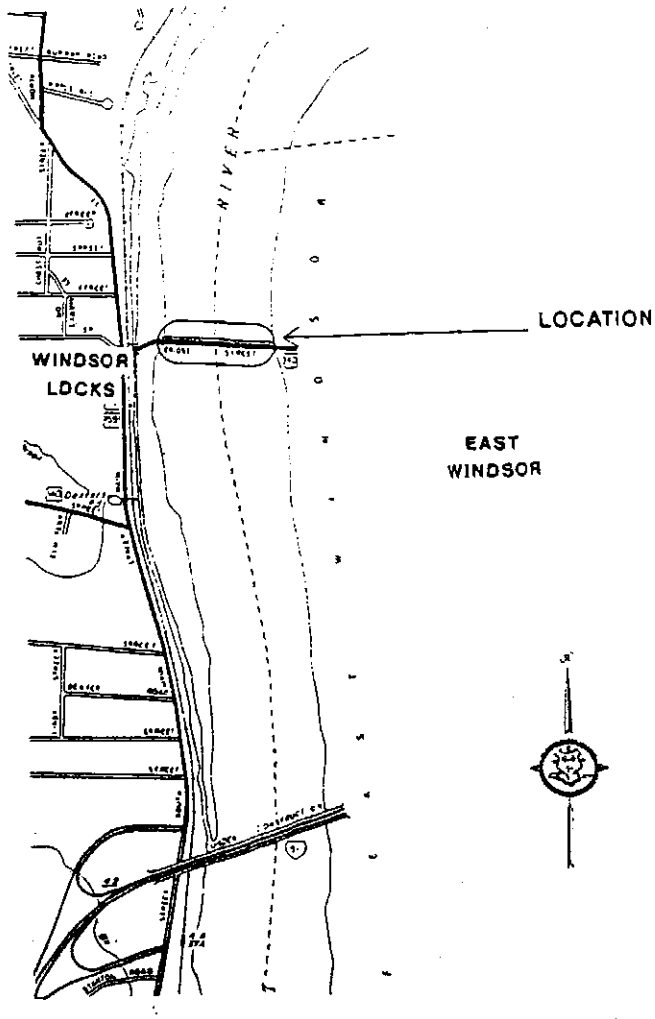
Although farmers lived in the northern parts of Windsor as early as 1663, the area was not named Windsor Locks until after the Enfield Canal was built in 1829 and a post office established. Fifty years after that, however, a charter had been granted for a ferry across the Connecticut River in that area, and ferry boats were either rowed or poled across the river. This was far from the Bissell ferry in Windsor. Around 1855, a pier was constructed in the middle of the river, upstream from the ferry. From this pier, a cable was run to the ferryboat, which could then swing back and forth across the river without being swept downstream. In 1886, the Windsor Locks and Warehouse Point Bridge and Ferry Company built a three-span suspension bridge across the river, right next to the present structure. Originally built as a toll bridge, the State purchased the bridge in 1907 and made it a free bridge in 1908. The purchase price was $93,500 for the bridge and another $10,000 to repair it. Fourteen years later, the State erected the present structure, immediately north of the suspension bridge.

2. Berlin Construction Company (builder)

The Berlin Construction Company is the historical successor to the Berlin Iron Bridge Company, which was established in 1868 as the American Corrugated Iron Company, to make corrugated roofing panels. In the early 1870s, the company became involved in the manufacture of iron support trusses for the installation of its roofing products. In 1878, the Corrugated Metal Company, as the company was then known, acquired the manufacturing rights to William Douglas's lenticular bridge patents and began to fabricate wrought iron bridge trusses. The lenticular trusses differ from other curved top bridge designs by having bottom chords which are mirror images of the top ones, although much lighter in construction. Business was good and, in 1883, they changed the name of the company to the Berlin Iron Bridge Company.

Because the lenticular design used less material than either the more common Pratt or Warren trusses, it became a fairly popular design, especially in New York and New England. Hundreds of these structures, ranging in size from under thirty feet to the 288-foot Raymondville, New York, span, were built during the next twenty years. By the turn of the century, the Berlin Iron Bridge Company was the largest structural steel fabricator in New England. The popularity of lenticular bridges began to decline, however, as engineering firms standardized on the more common Pratt and Warren configurations.

Finally, in 1900, the American Bridge Company purchased the Berlin Company and moved it from its Connecticut location. When this happened, three former Berlin Iron Bridge Company executives formed the Berlin Construction Company to produce structural steel for different industrial projects, and many steel truss bridges were manufactured by this concern. Welding and high strength bolts have replaced the older riveted joints, but the company, now called the Berlin Steel Construction Company, still manufactures structural steel fabrication.



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