

West Main Street Bridge
Spanning the Wepawaug River on West Main Street
Milford
New Haven County
Connecticut

HAER No. CT-45

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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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Location: Spanning the Wepawaug River on West Main Street
Milford, New Haven County, Connecticut

UTM: 18.662710.4965500
Quad: Milford, Connecticut 1:24000

Date of Construction: 1928

Designer: Vincent B. Clarke

Present Owner: City of Milford
City Hall
River Street
Milford, Connecticut 06460

Present Use: Vehicular and pedestrian traffic

Significance: West Main Street Bridge is significant as part of a locally-sponsored effort undertaken between 1917 and 1929 to create an attractively landscaped setting for the public buildings in the town center. Illustrating a typical form of its day, the small steel-beam concrete-clad highway bridge, it also gains significance because of its designer, Vincent B. Clarke, a regionally prominent civil engineer.

Project Information: This document was undertaken in August 1989 in accordance with the Memorandum of Agreement among the Advisory Council on Historic Preservation, the Connecticut State Historic Preservation Officer, and the Corps of Engineers, New England Division, as a mitigatory measure prior to the replacement of the bridge in 1990. The report was prepared by Matthew Roth of Historic Resource Consultants, Inc., of Hartford, Connecticut.

The Setting

West Naub Street Bridge, erected in 1928, stands near the northern end of the Milford town center, immediately west of the intersection of West Main and West River streets. Just downstream (south) from the bridge, the Wepawaug River is impounded by a low dam (historically a mill dam), creating a pond that is the central feature of a small park. At the south end of the park is Milford Town Hall, a 1917 Colonial Revival building that initiated the development of the immediate surroundings as an attractively landscaped area. West Main Street Bridge was a later part of this local effort to create an appealing public park to complement the civic-institutional character of the town center. Ten years after the bridge was erected, it was described in this way:

"This reinforced concrete structure [sic], replacing an unsightly iron bridge, greatly enhanced the beauty of the civic center."¹

The other major feature of the park is the three-span, stone-faced, concrete-arch bridge that carries River Street over the Wepawaug, about 500 feet southeast of West Main Street Bridge.

This crossing has had an important, though changing, role in the life of Milford virtually from the start of Anglo-European occupation. In 1639, several dozen families from New Haven settled along the Wepawaug River. A year later, they established a local government and named their new community Milford. One of the first actions of the new town was to authorize construction of a bridge at this location. It was known locally as Meetinghouse Bridge, a name that recalls the importance of providing access for early east-bank residents journeying to the church on the west bank. The present Greek Revival-style First Church of Christ, on West Main Street just west of the bridge, stands approximately at the location of that early meetinghouse. In 1961, the local chapter of the Daughters of the American Revolution sponsored the bronze plaque affixed to the west end of the present bridge, memorializing the first span at this location. It is not known precisely how many structures have crossed the Wepawaug at this site. The "iron bridge" mentioned in the quotation above must have been built after 1870, which such structures became generally available for highway use.

Today, this small structure carries local traffic around the northwest edge of Milford's town center.

The Bridge

West Main Street Bridge, designed by consulting engineer Vincent B. Clarke, is a small, single-span, steel, plate-girder bridge. All the steel members are encased in concrete, a common technique in the years between 1900 and 1930, intended to provide corrosion protection rather than structural support. The abutments, which, like the superstructure, date from 1928, are ashlar masonry of granite blocks, with concrete footings and caps. The bridge is 48 feet 11 inches long and 26 feet wide between the centers of the parapets. The bottom of the bridge is about three feet above the river (For detailed dimensions of all components not given in this text, see the copy of the original construction drawings in the photographs accompanying this report). East of the bridge, West Main Street slopes gradually upward to the level of the bridge on an earthen ramp (some 90 feet long) with rubble-masonry retaining walls. West of the bridge, a rubble-masonry retaining wall runs south from the abutment, along the edge of the pond.

The primary structural support is provided by two plate-girder beams (about 4-1/2 feet deep) embedded in the concrete parapets which run on either side of the roadway. These beams are built up of steel plates and angles, riveted together. Large right-angle gusset plates connect the girders to the cross beams supporting the floor system and the sidewalk brackets. Additional support of the floor beams comes from a shelf angle running the length of each beam, about 2-1/2 feet above the bottom flange. Because of the concrete casing, none of these riveted connections are visible.

The girders support a floor beam-and-stringer floor system. The five floor beams (members placed transverse to the axis of the roadway) are concrete-encased, rolled steel I-sections, 24 inches deep. Between floor beams, and between the end beams and the abutments, run six stringers (members placed parallel to the axis of the roadway), each consisting of a 10-inch-deep rolled steel I-section encased in concrete. The deck has a poured-concrete sub-strate with asphalt paving.

A sidewalk extends along the outside of the north girder, carried on five large brackets mounted opposite the primary floor beams. Each bracket is formed from a triangular steel plate, reinforced by steel angles riveted along its perimeter. The brackets support three reinforced-concrete stringers directly below the concrete sidewalk deck.

The concrete encasing the girders forms low parapets extending about two feet above the roadway. The outside faces of the girders' casings feature recessed rectangular panels, and square concrete piers with similar panels appear at each end. The panels appear originally to have had a textured surface, probably made by bush-hammering, but erosion makes it difficult to discern any surface contrast. The railing of the prior iron bridge was re-used as the sidewalk railing.² It has square cast-iron newels with paneled sides and cast-in medallions and vine motifs. Between the newels run iron railings with a bottom section of simple square balusters and upper panels featuring six iron bars radiating from a floral medallion. The panel-and-medallion motif was duplicated for the steel railings above the concrete parapets, and continued atop the rubble-masonry retaining wall that extends south from the bridge's west abutment.

Building the Bridge

As described above the Town of Milford built West Main Street Bridge as part of a comprehensive effort to create a park-like setting for the "civic center." The town commissioned engineer Vincent B. Clarke, who was based in nearby Ansonia, to submit plans and cost estimates. Because the estimated cost of \$10,000 represented a substantial expenditure, a special town meeting was required to authorize construction. On August 28, 1928, the voters accepted the recommendation of the Board of Finance to appropriate the funds.³ Construction was completed during the fall of 1928 and the following spring, but only after incurring cost overruns amounting to almost 30 percent. The final bill for labor and materials came to \$12,114.26. In addition, the town had to pay the engineer's fee of \$500, and \$353.25 to buy the land for the eastern approach, bringing the total cost to \$12,967.51.⁴ There is no record of which construction firm built the bridge.

Vincent B. Clarke

Clarke (1880-1975) was a Milford native. He graduated from Yale University in 1902, and then began a long career as a civil engineer. In 1909, he established his consulting practice in Ansonia and began

his service as Ansonia City Engineer, a post he held until 1962. In 1955, Clarke moved his residence from Ansonia to Milford, at the same time expanding his engineering firm by adding a Milford office. In addition to his engineering work, Clarke's business life included a long stint as a director of the Savings Bank of Ansonia, which he served as chairman during the 1960s. He was a life member of the Connecticut chapter of the American Society of Civil Engineers, and served a term as its president.⁵

Although Clarke designed hundreds of buildings, bridges, and other structures during more than 50 years as a professional engineer, perhaps his most important legacy is connected with his role as an early advocate for cleaning up the Naugatuck and Housatonic rivers. He first championed this cause in 1929, after twenty years of supervising the Ansonia sewer system convinced him of the seriousness of the problem. Clarke's remarkably prescient recommendations for regional treatment plants and complete separation of sanitary sewers from storm-water drainage were not widely accepted in Connecticut for another 30 years. In 1989, the system Clarke designed for Ansonia is still among the few in Connecticut that completely separate sewage from storm water.

Endnotes

(No other sources were consulted for this report beyond those cited below.)

1. Federal Writers' Project, History of Milford, 1639-1939 (Bridgeport, 1939), p. 141.
2. V. B. Clarke, Civil Engineer, "West Main Street Bridge, Milford, Conn.," original construction drawings; sheet 1 labels the sidewalk railing as "old railing." See accompanying photographic copies of these drawings.
3. "Minutes of All Meetings," in Town of Milford, Annual Report, 1928, pp. 35-36.
4. "Selectmen's Accounts," in Town of Milford, Annual Report, 1929, p. 43.
5. Biographical data on Clarke is from his obituary in The [Ansonia] Evening Sentinel, March 17, 1975; Ansonia City Directories, 1908-1975, and Milford City Directories, 1955-1975.

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SITE PLAN

