

Boston & Maine Railroad:  
Charles River Bridges  
Charles River, north of North Station  
Cambridge-Boston  
Middlesex/Suffolk Counties  
Massachusetts

HAER No. MA-22

HAER  
MASS,  
13-BOST,  
74 -

PHOTOGRAPHS

HISTORICAL & DESCRIPTIVE DATA

Historic American Engineering Record  
National Park Service  
Department of the Interior  
Washington, D. C. 20240

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Location: Charles River, north of North Station  
Cambridge-Boston, Middlesex/Suffolk Counties,  
Massachusetts

UTM: 19.329880.4692590  
Quad: Boston South

Date of Construction: 1931

Builder/Designer: Keller & Harrington of Chicago, designer;  
Phoenix Bridge Company, Phoenixville, PA.,  
builder

Original Use: Railroad Bridges

Present Use: Two spans are still in use

Significance: Part of the extensive terminal improvement  
program by the Boston & Maine Railroad, and  
the last element to be completed, was the  
replacement and realignment of the railroad's  
crossings of the Charles River.

The Boston & Lowell was the first railroad in the U. S. to be faced with the need for a movable bridge, when in 1835 their tracks had to cross the Charles River in order to enter Boston. The railroad's solution was a movable span with a horizontal swing, hinged at the corner of one end. A system of cables supported the free end of the span. The structure was the forerunner of the jackknife bridge, invented in 1849. One by one, the three other railroads crossing the Charles River adopted this solution (and later the jackknife design), which became a characteristic feature of the railroads north of Boston. Beginning in the 1890s, most movable railroad bridges were replaced by steel bascule spans. Not until 1931, however, were the Charles River bridges replaced. To the very last, the bridges were air and steam operated. In 1931, after extensive filling and dredging, the channel of the Charles River was relocated

further away from North Station to allow the terminal tracks to converge into eight main leads crossing the river. The four new structures were double-track, single-leaf, rolling-life bascule bridges, a design made famous by the Scherzer Rolling Life Company of Chicago. All four were nearly identical in design, varying only in their length and the degree of their skew, two spans crossing the channel at a slightly greater skew than the others. Two were 87 feet in length and two, 97 feet. Each span carried a single 629-ton overhead concrete counterweight and, operated by two electric motors, was controlled from the second floor of the new signal and interlocking station, located nearby on the north side of the river. The bridges were designed by Keller & Harrington, Chicago, while the steelwork was fabricated and erected by the Phoenix Bridge Company, Phoenixville, Pennsylvania. Today, only two of the bascule spans remain.

References:

"Rare Old Bridges Replaced in B.&M. Railroad Terminal Improvements at Boston," Engineering News-Record 5 November 1931, pp. 718-722;  
"Boston & Maine Completes Large Terminal Project at Boston," Railway Age 92 (5 March 1932), pp. 390-395; Condit, Carl W., American Building Art: the Nineteenth Century (New York: Oxford University Press, 1960

Transmitted by:

Jean P. Yearby, 1984, from data compiled by Peter Stott