Columbus Road Lift Bridge
Spanning Cuyahoga River at Columbus Road
Cleveland
Cuyahoga County
Ohio

HAER No. OH-55

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
U. S. Department of the Interior
P. O. Box 37127
Washington, D. C. 20013-7127

ADDENDUM TO
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Columbus Road Lift Bridge

HAER No. OH-55

Location: Columbus Road (between Carter Road and Merwin Street) over Cuyahoga River, Cleveland, Cuyahoga County, Ohio

UTM Coordinates: 17/441520/459300

Date of Construction: 1940

Present Owner: City of Cleveland
Lakeside Avenue
Cleveland, Ohio

Present Use: Vehicular traffic

Significance: This bridge stands at a historic river crossing in the city of Cleveland. The existing vertical lift span, designed by the prominent Cleveland engineering firm of Wilbur Watson and Associates, is representative of the designs for moveable bridges of the vertical lift type being built during the 1940s.

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Ohio Historic Bridge Recording Project
Summer 1986

The Columbus Road Lift Bridge, built in 1940, replaced a three-span bridge but utilized the stone masonry substructure founded on concrete and wooden piles from the previous bridge. This bridge has a clear span of 220 feet. The span lifts vertically and is a riveted Pratt through truss, measuring 242 feet from center to center. Each of the other three spans is 46 feet 6 inches in the center with a 42' roadway and 6' cantilevered walks on each side. The road is a concrete-filled steel grid on the approach and tower spans and an open grid steel deck on the lift span. All the sidewalks are concrete-filled steel grids. A network of steel stringers and built-up steel floor beams support the deck. The towers consist of riveted, built-up steel and rolled sections and provide for a 79 foot 8 1/4 inch lift.

The substructure consists of massive concrete piers, each supported on six concrete caissons with steel beam cores extending 130 downward from the water surface. Bridge builders rehabilitated the original stone masonry on the south abutment and used it for the present structure. They constructed a full height concrete abutment with a spread footing on the north end.

The bridge lift mechanism is a span driven steps resistor controlled system. A machinery and operator's house at the center of the lift span

houses the operating controls. Gate tender houses sit on the south pier and at sidewalk level beside the north pier. Shore protection at both ends consists of interlocking sheet piling bulkheads. An "H" pile fender with concrete beam walers is located at the northern end.[1]

The bridge allows for a four-lane roadway and sidewalks on each side. Open grid steel flooring on the lift span prevents snow, ice, and dirt build-up and serves to lessen the weight to be lifted. The lift span, resting between two towers, permits river traffic to pass beneath the bridge. It requires one and one-half minutes for the lift span to be entirely raised or lowered. Two 100 horsepower electric motors normally operate the lift. In emergency situations, a 115 horsepower gasoline engine can also be utilized. Concealed cables bring electricity to the bridge. Before lifting occurs, red lights switch on to warn highway traffic, a gong sounds, crossing gates close, red lights flash, and a cable net barrier lowers to block traffic.

The bridge has a total length of 535 feet and a length between towers of 306 feet. River width between abutments is 230 feet. The minimum clearance above water level is 18 feet when the bridge is closed and 97 feet when it is open. Tower platforms rise 150 feet above water. The

bridge cost $831,000 to construct. In all 2,936 tons of steel and 4,854 cubic yards of concrete were used.

Wilbur J. Watson (See Carter Road Lift Bridge, HAER OH-56) designed the bridge according to guidelines set by George B. Sowers, the city government's consulting engineer in charge of river improvement. Wisconsin Bridge & Iron Company of Milwaukee constructed the steel work.

Western Foundation of Chicago built the caisson foundations. Wellman Engineering Company of Cleveland built the machinery, and Dingle-Clark Company of Cleveland installed the electrical equipment and wiring. Sherwin Williams Company of Cleveland made the bridge paint. The participation of Cleveland firms in such bridge projects did much to strengthen the local economy as it recovered from the Great Depression.[2]

The bridge carries a road that has also been known as Columbus Street and Columbus Avenue and exists at a river crossing that has been important in Cleveland's history. Real estate developers first laid-out Columbus Street when they developed the "ox-bow bend" of the Cuyahoga River in 1833. Land owner James S. Clark built the first bridge at the Columbus Street river crossing in 1835. That bridge consisted of two

covered timber spans, one each next to a central draw span which was 200 feet in length, 33 feet wide and 24 feet high. It had stone abutments and masonry piers and cost $15,000.

Clark's bridge caused problems between Cleveland, east of Cuyahoga River, and Ohio City, west of the river. Rivalries already existed between the towns, but Clark increased the jealousy when he gave the bridge to Cleveland. Hard feelings existed between the towns becauseof a failed attempt in 1832 to link the towns by bridge at Euclid Avenue. Ohio City blamed Cleveland for the failure and resented Cleveland's acquisition of the Columbus Street Covered Draw Bridge.[4]

By 1836, tensions increased as new settlers avoided Cleveland in favor of Ohio City. At the same time, the towns competed in an effort for charters from the state legislature. Cleveland resented Ohio City because it received its charter first (the communities merged in 1854). Ohio City became infuriated when its own attempts to break dependence upon Cleveland through the construction of its own canal and harbor system failed, and the existence of Columbus Street Bridge boosted Cleveland's economy. Residents of Ohio City refused to use the Columbus Street crossing. Instead, they used an old floating bridge at Main Street.[5]

Violence erupted in 1837 when the Cleveland Council ordered the removal of its half of the floating bridge to force Ohio City to use Columbus Street Bridge. Ohio City failed to obtain a court injunction before the destruction occurred. Ohio City Council ruled that Columbus Street Bridge was a public nuisance, and on October 27, 1837, the city marshall and his deputies exploded a charge on the west end of the bridge and dug trenches across the roadway. A mob of Ohio City residents followed and proceeded to wreck the bridge with tools. The mayor of Cleveland ordered his city militia to stop the destruction, and a full-scale battle ensued which included the use of artillery. When the county sheriff and Cleveland marshall intervened, the fight ended. The Cleveland Council ordered the marshall to guard the bridge, and the issue was settled in court.[6]

Although a new bridge was needed at Columbus Street by the 1850s, bitterness prevented the replacement of the bridge. In 1870, the county government built an iron bridge at the site. The first double-wing span lift bridge in the world replaced the iron bridge in 1895. Finally, the present bridge was built in 1940.[7]

The Columbus Road Lift Bridge has deteriorated significantly in recent years. City engineers have discussed the possibility of replacing the

bridge. However, a consultant suggested the rehabilitation of the bridge as the most economical and practical solution. It remains to be seen what course of action the City of Cleveland will take concerning this bridge.

NOTES

1 Dalton-Dalton-Newport, "City of Cleveland Report of Findings for Columbus Lift Bridge over the Cuyahoga River" (Cleveland, 1984), p. 4.

2 Ohio, Cleveland, Division of Engineering and Construction, Columbus Road Bridge Built 1940, Bridge Files.

3 William Ganson Rose, Cleveland: The Making of a City (Cleveland: World Publishing, 1950), p. 147.

4 Ibid., pp. 117, 147.

5 Ibid., pp. 144-145, 152, 155.

6 Ibid., pp. 155-156, 160.

7 Sara Ruth Watson and John R. Wolfs, Bridges of Metropolitan Cleveland (Cleveland: Watson and Wolfs, 1981), p. 47.

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