



TOLEDO, OHIO - MICH.

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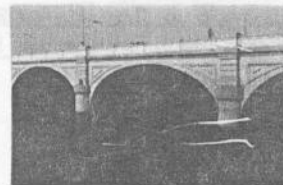
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Close Up of Portal -
Northern Approach



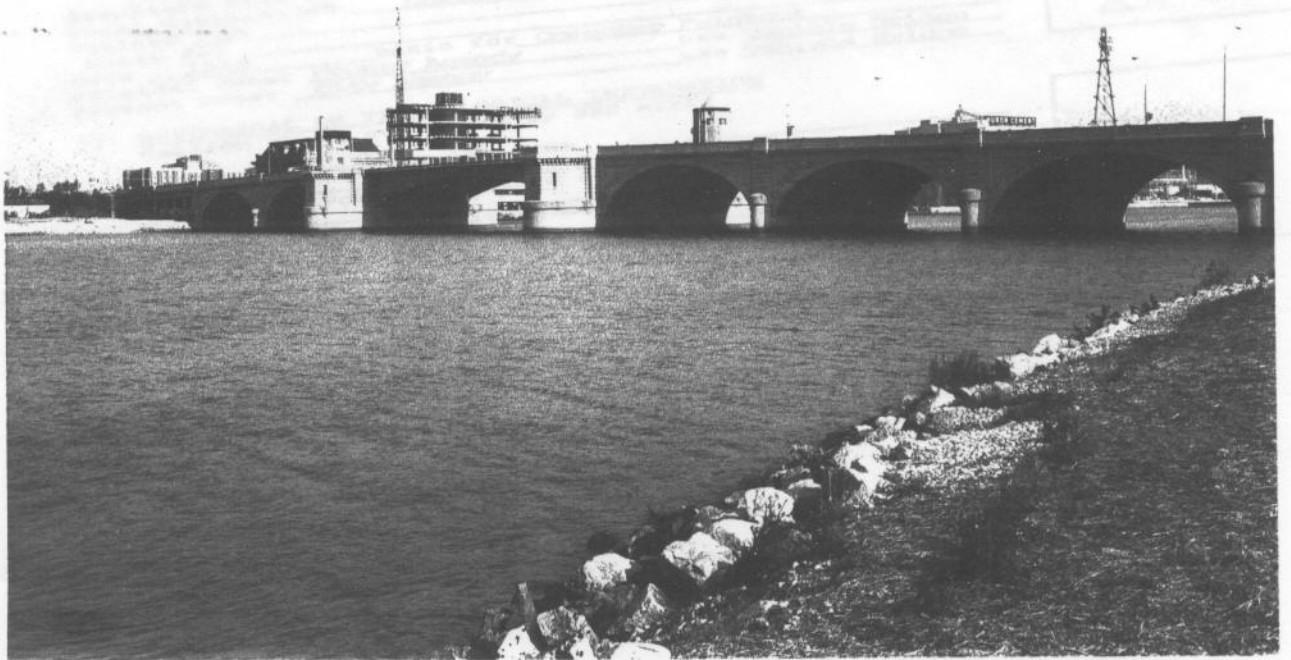
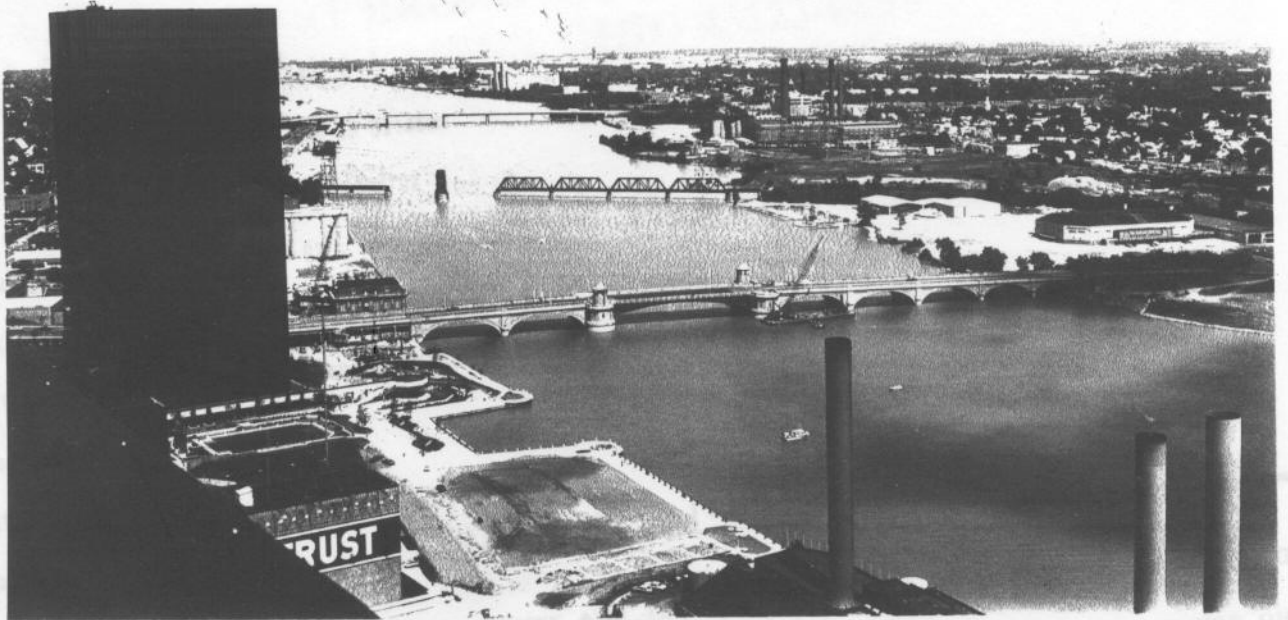
Side Perspective -
View from West



View of Typical Arch
Span

*Selected
Bridge
map info
1965*

January 2004
Time
11:47 AM
Sep-28-00 08:13 AM
STATISTICAL
ENVIRONMENTAL SERVICE



AMERICAN SOCIETY OF CIVIL ENGINEERS

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Paper No. 1362

THE CHERRY STREET BRIDGE, TOLEDO, OHIO*

BY CLEMENT E. CHASE, JUN. AM. SOC. C. E.

WITH DISCUSSION BY MESSRS. EDWARD GODFREY, JAMES RITCHIE,
AND CLEMENT E. CHASE.

SYNOPSIS.

This paper describes the general design and the most interesting and instructive features of the construction of a massive reinforced concrete arch bridge across the Maumee River at Toledo, Ohio.

After a short résumé of the history of the former bridge at this site and of the new bridge project, the loadings and general features of the design are stated. The construction work is followed in some detail from its beginning in 1910 to the opening for use of the first half of the structure during the winter of 1912-13. The construction of the second half of the bridge, being to all intents a duplication of the work on the first half, is merely outlined up to January 1st, 1914, at which time the structure was practically complete.

The description of construction deals with the following features: The building of the bridge in parallel halves, carrying traffic on the old structure at the same time, until the first half was completed; the use of deep, single-wall coffer-dams and attempts to dig wells to rock from the bottom of the pumped-out dams by the Chicago method; change of plans by reason of the proven hazard of this first plan, and the utilization of steel cylinders sunk inside the unwatered dams; the

* Presented at the meeting of December 1st, 1915.

filling of these cylinders with concrete and the sealing of the coffer-dams by concrete deposited under water; the construction plant and methods of depositing concrete under water, with a statement of the general principles; the collapse of a steel coffer-dam, through failure of the bracing, and its repair and re-use; the use of movable steel centers to support the arch concrete, and the expedients resorted to for increasing the width (of the arch barrel) poured at one time; the forms, plant, and methods of work in building the arches, spandrel walls, and viaduct; the procedure followed in water-proofing and back-filling; and the erection of the bascule span. Special attention is paid to the esthetic appearance of the bridge. The paper closes with a summary of unit prices, quantities, and amounts expended for the different parts of the work.

HISTORICAL.

The main portion of the City of Toledo, Ohio, is separated from an important industrial and residential section, known as East Toledo, by the Maumee River, across which, from the earliest history of the community, the Cherry Street Bridge has been the main thoroughfare. Following several predecessors—of types corresponding to the progress of the art of bridge building in the United States—the iron structure, which has been recently replaced, served to carry the growing traffic across the river from 1883 until January, 1913. Several years before that time, it was realized that the bridge was inadequate for the constantly increasing loads which it had to carry, and that, with the larger number of lake carriers docking above its site, a more rapid form of movable span was needed than the existing swing span. The question of type and location for the new bridge was debated heatedly, at great length, and with such intense partisanship that the whole project was held up for a long period. The main points at issue were finally settled—the new structure should be of concrete, with a double-leaf lift-span across the channel, and should cross the river, as before, at Cherry Street.

DESIGN.

As finally located, the south half of the new and much wider structure covers the site of the old one. For a time it was planned to construct temporary piers alongside the old ones and shift the



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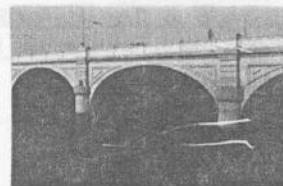
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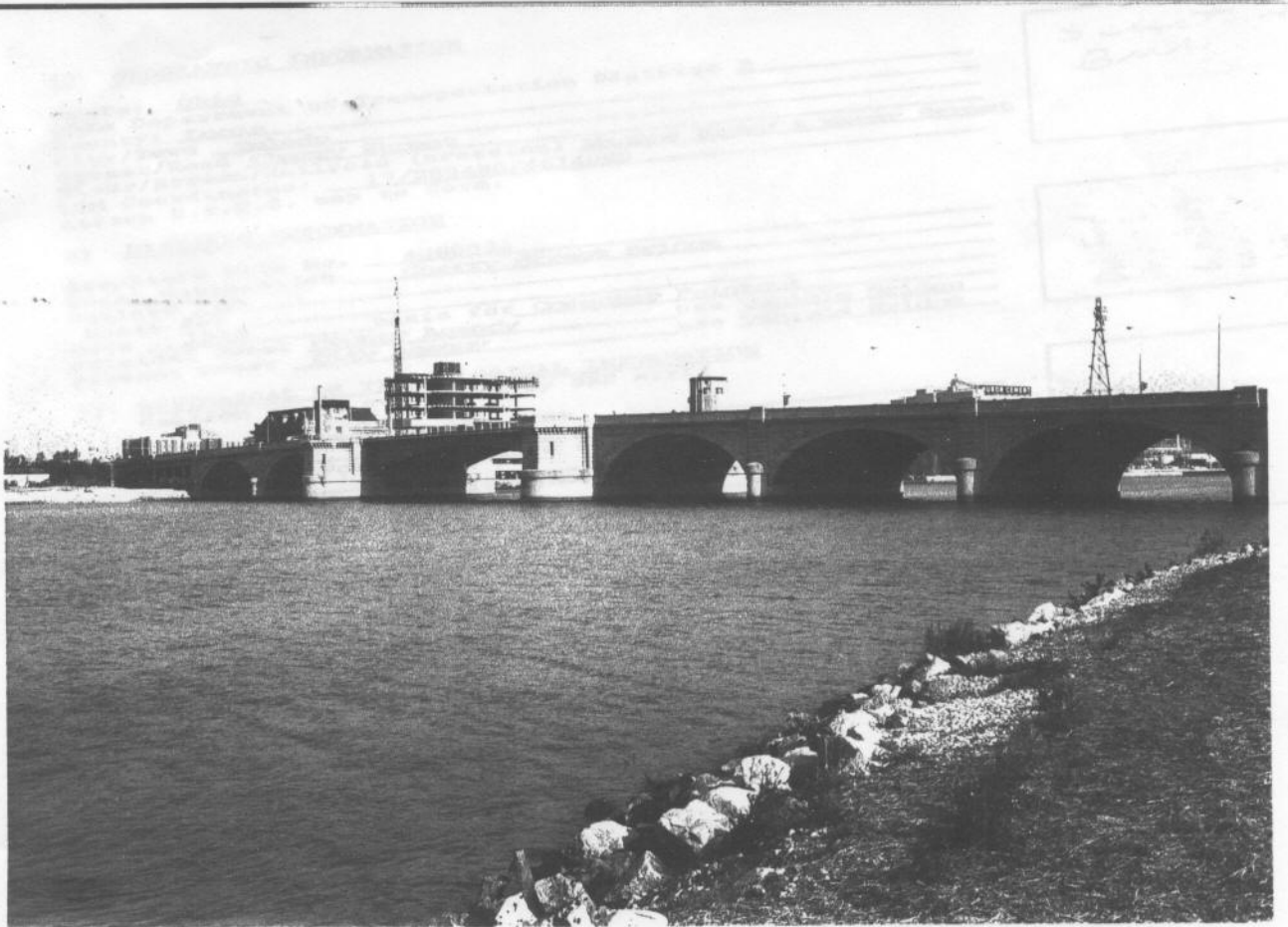
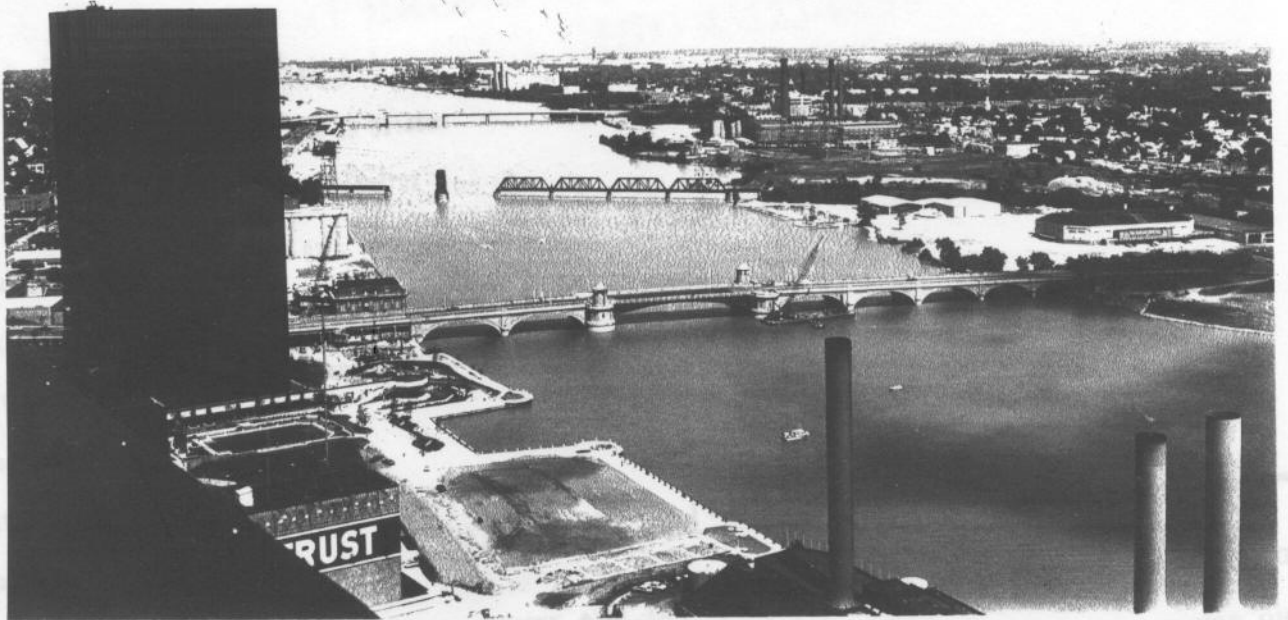
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