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THE MICHIGAN AVENUE BRIDGE—IMPROVEMENT OF  
MICHIGAN AVENUE AND PINE STREET, CHICAGO, ILLINOIS.  
*The Wrigley Building in the background.*



# THE ARCHITECTURAL RECORD

VOLUME LII



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## *The* CHICAGO RIVER BRIDGES



By EDWARD H BENNETT  
*Consulting Architect to the Plan Commission*

THE Chicago Plan Commission began its work in 1909. Its first enterprises were Twelfth Street, now Roosevelt Road, and Michigan Avenue, and in the case of each of these works the river crossing was involved. This led at once to a study of the bridges and, subsequently, to the supervision architecturally by the Plan Commission of all bridges proposed for execution.

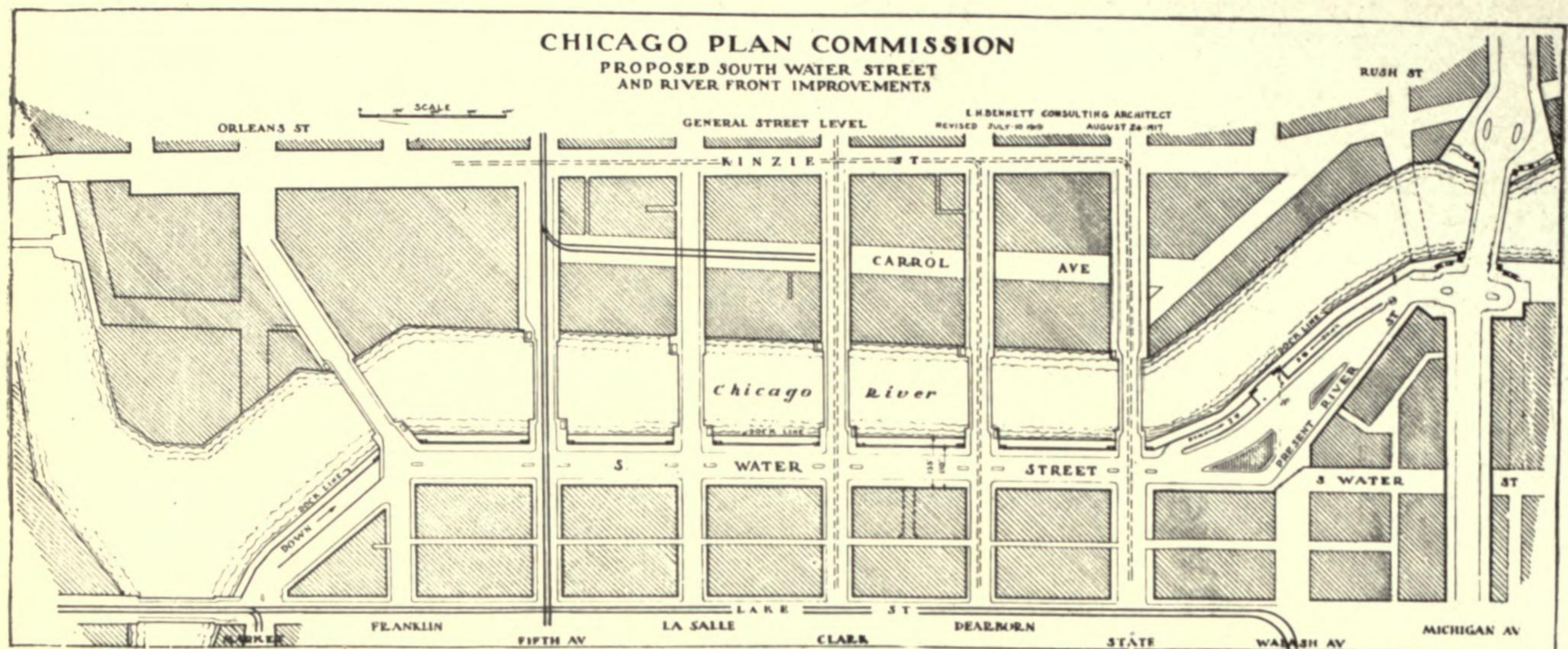
Collaboration was necessary with the Department of Bridges. At first this was rather difficult to obtain due to one cause or another, but after a year or more of painstaking work, an adjustment of the ideas of the Department Engineers and the Commission's architect and staff was brought about. Complete confidence reigned in the common purpose of the two groups for good and a very fine basis of collaboration was established.

The Chicago River runs west from  
*four hundred fifty-nine*

Lake Michigan about one-half mile and then forks abruptly north and south. The main channel east and west, about 250 feet wide, and the south branch, about 200 feet, separate the loop business section from the surrounding territory and have cramped its growth. Bridges must open for water borne traffic, and the delay in opening and shutting the bridges must be reduced to the minimum by rapid operation and freedom from obstructions in the river. The center piers of old bridges have long ago been ordered out by the Government.

The first studies for a bridge at Michigan Avenue were made as a single deck bridge, many years ago. Later, plans of Michigan Avenue on a two level basis brought about the design of the present structure. The chief feature of the Michigan Avenue improvement is this two level plan, separating its heavy flow





PLAN OF PROPOSED SOUTH WATER STREET AND RIVER FRONT IMPROVEMENTS IN CHICAGO, ILLINOIS.

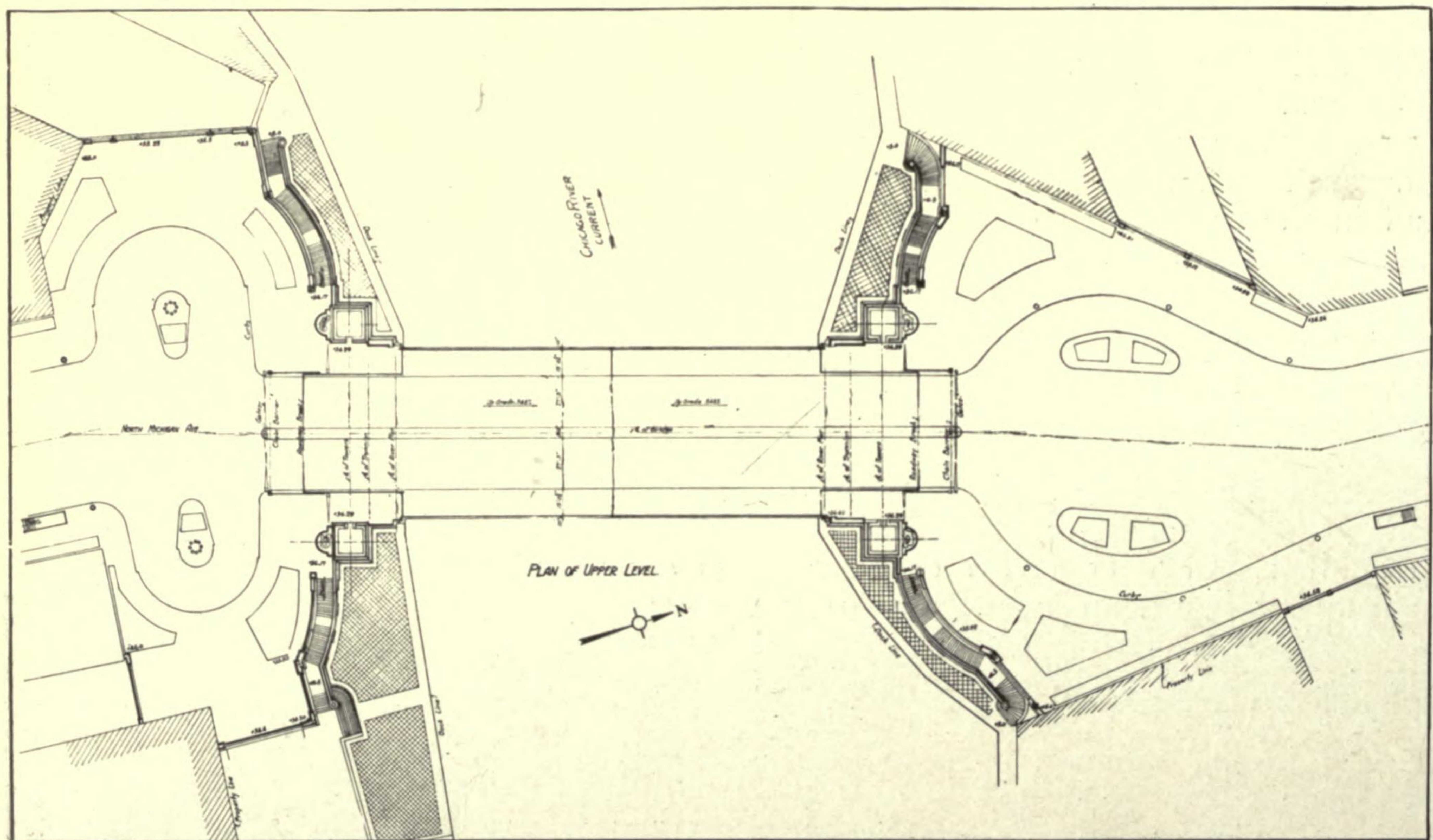
of light traffic from the cross currents of trucking and other light east and west traffic.

The bridge first designed in 1910 was proposed by the author as it is now built with the steel truss including the arched chord. This was submitted to well known bridge engineers and approved, and it was then worked out by the engineers of the Bridge Department and our staff in collaboration.

The architecture of the approaches,

abutments, lighting standards and houses then established has been from time to time revised and improved until the recent date of execution.

During this time a great number of bridges were designed and built. The type now known as the "hand-rail height" was evolved and progressively the bridge designs were improved. The steel work came in for its share of attention and, as a result of the collaboration mentioned, improvements in the arch



MICHIGAN AVENUE AND PINE STREET IMPROVEMENT, CHICAGO, ILLINOIS.

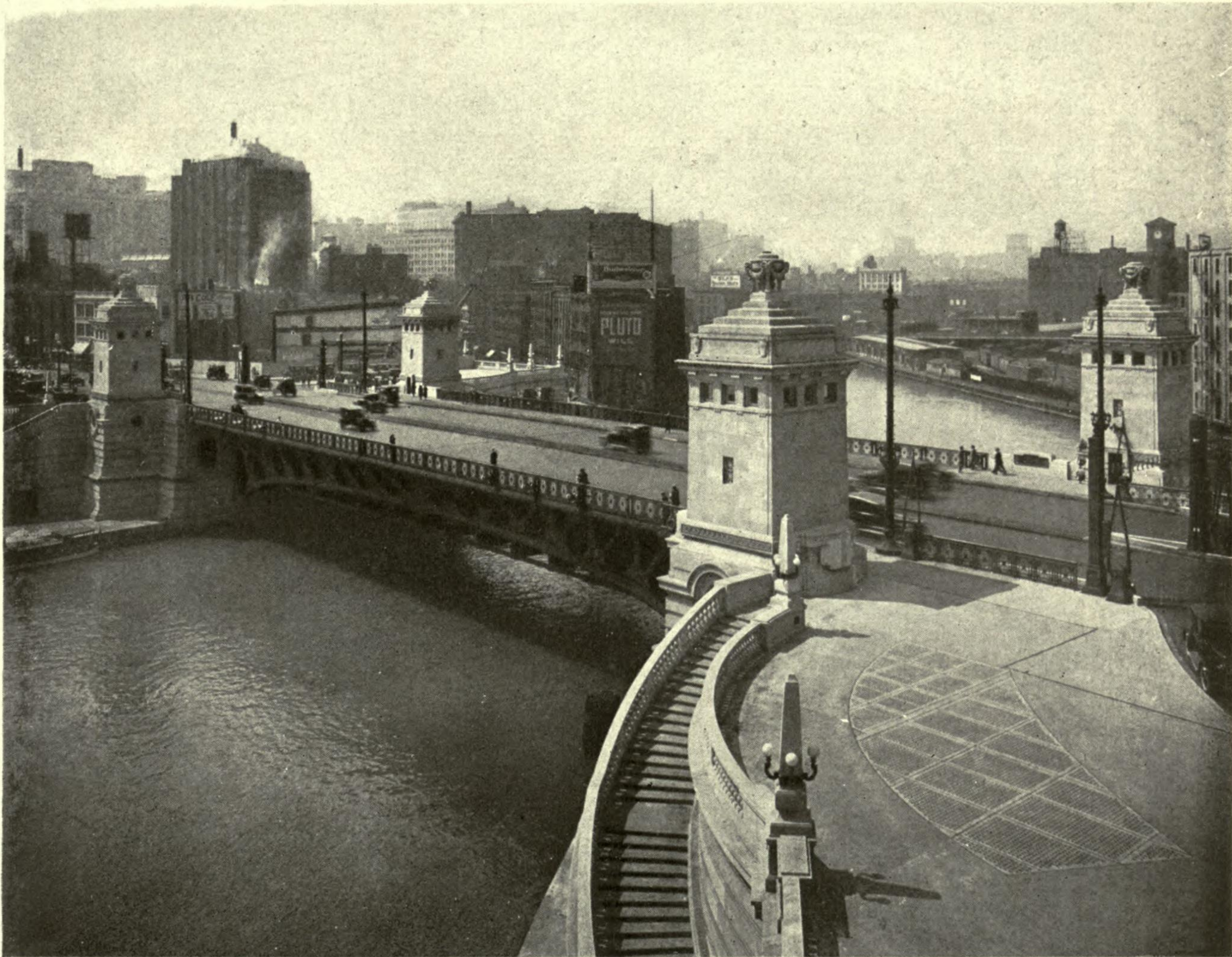


lines and the overhead truss lines were made.

An early good example was the Jackson Street Bridge. The Engineers of the Sanitary District collaborated with the author to the end that a clear deck type of bridge was built, having an unbroken arch below and suitably designed houses and lamp fixtures.

actual necessary structural depth of the truss, govern to a great extent the main lines of the structures.

Occasionally, as in the case of Jackson Street and in the two level Michigan Avenue Bridge, a clear deck is obtained. On the other hand, the curved overhead truss is sometimes and more generally necessary. Whenever possible this over-



MICHIGAN AVENUE DOUBLE DECK BRIDGE AND APPROACHES.

Looking from the Northeast to the Loop District.

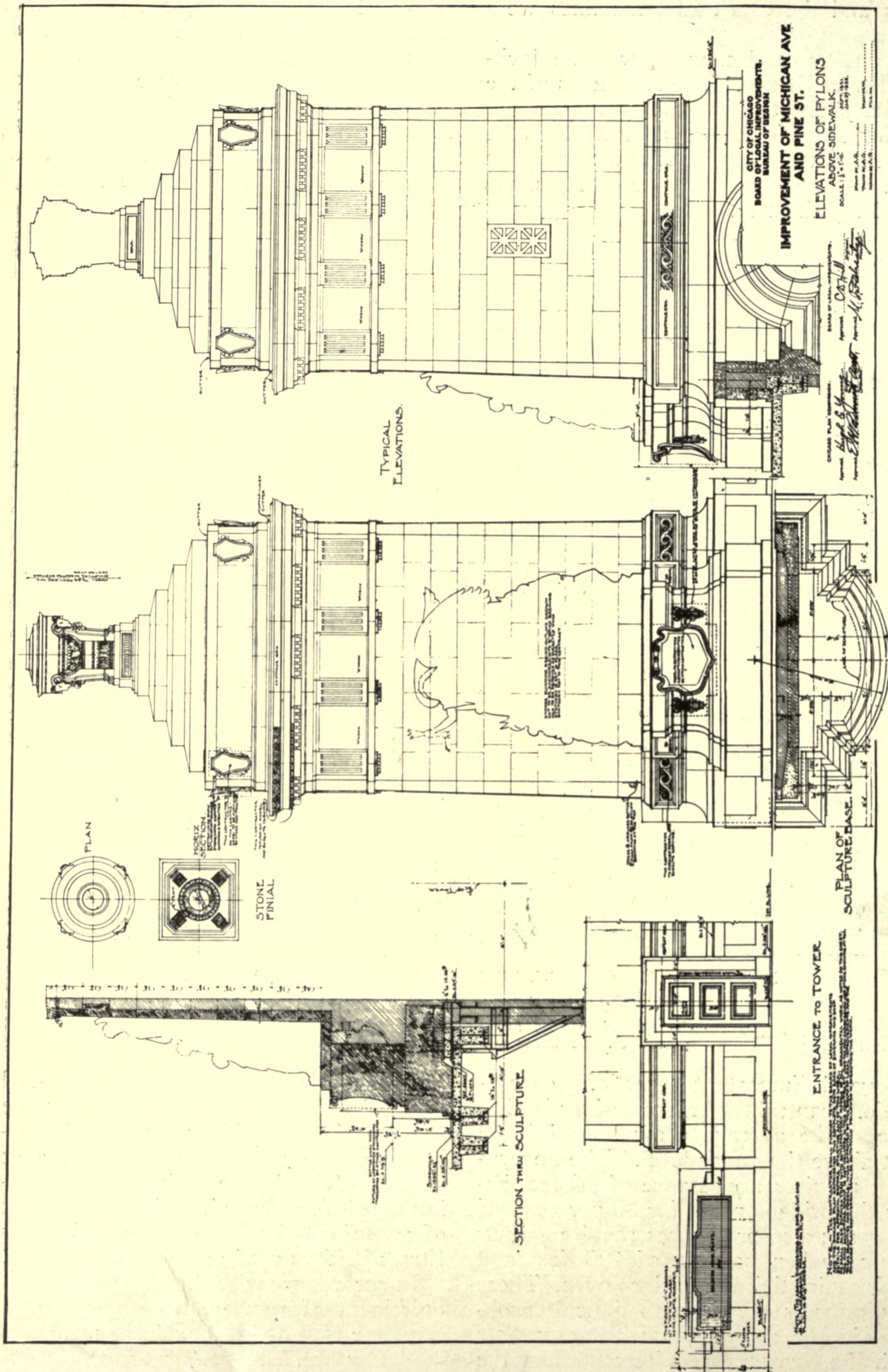
Sculptural groups are provided for and are to be placed on the bases shown attached to the pylons.

Several important practical considerations control the bridge designs in Chicago. The average ground level is 15 feet above the water level. The government requires a clearance of 16 feet below the bridge arches for 80 per cent. of the span; also ordinances require a clear channel when possible of 200 feet and also require that the bridges open. These requirements give rise to difficult problems in the approaches which, together with the clearance requirements and the *four hundred sixty-one*

head truss is lowered to the "hand-rail height." This type is illustrated by the Madison Street Bridge; the curved overhead type by the Franklin, Orleans Street. The double deck bridges carrying the elevated lines have had their share of attention—the Lake Street and Wells Street Bridges are here shown.

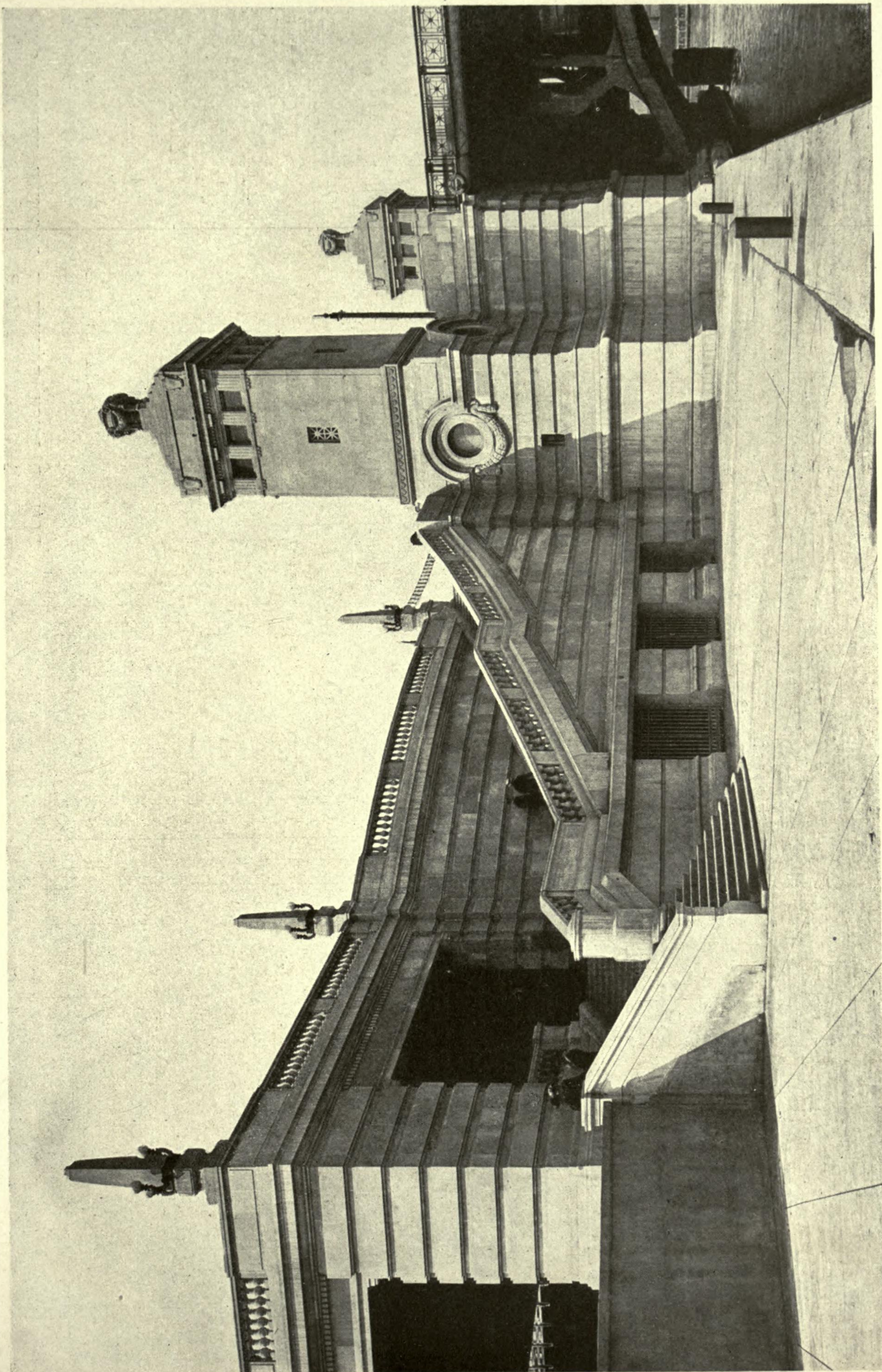
In accordance with the Government requirement of removal of center piers a complete plan of bridge development was made by the Bridge Department some





ELEVATIONS OF PYLONS—IMPROVEMENT OF MICHIGAN AVENUE AND PINE STREET, CHICAGO, ILLINOIS.





ONE OF THE ABUTMENTS FROM THE LOWER QUAY—  
MICHIGAN AVENUE BRIDGE-IMPROVEMENT OF  
MICHIGAN AVENUE AND PINE STREET, CHICAGO, ILL.



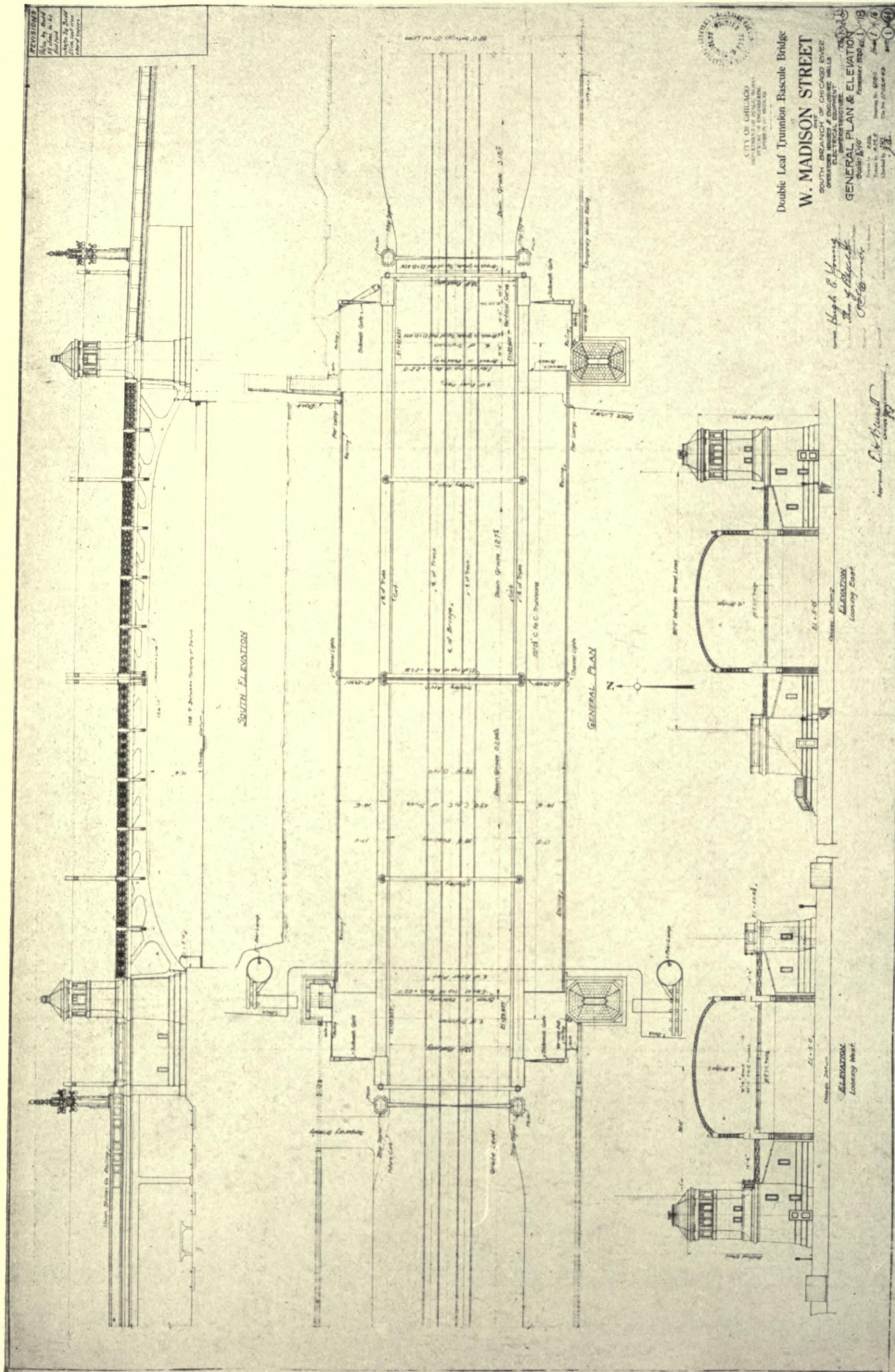






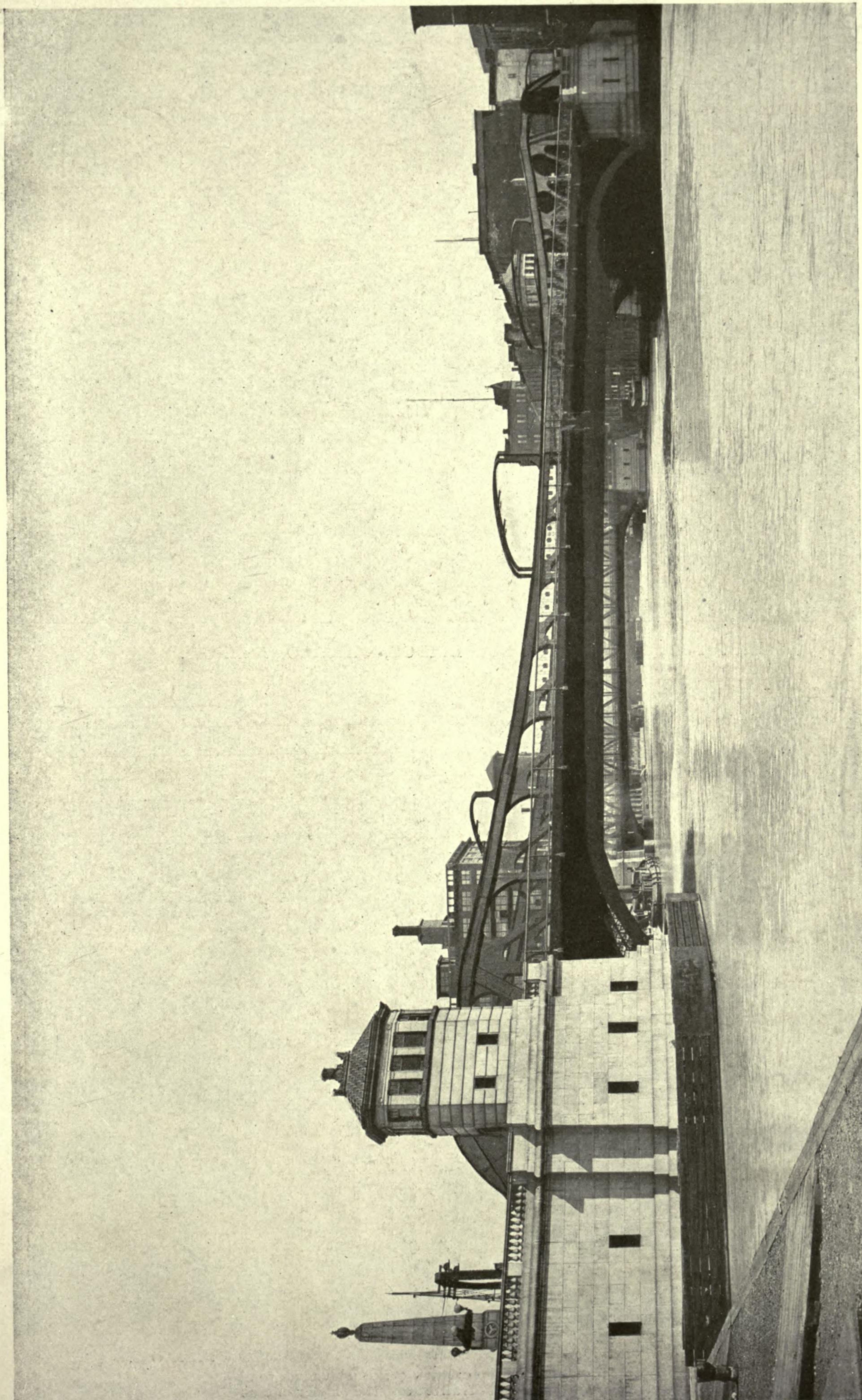
THE MICHIGAN AVENUE BRIDGE SHOWING THE TRUNNION BASCULE TYPE IN OPERATION—IMPROVEMENT OF MICHIGAN AVENUE, CHICAGO, ILLINOIS.





DOUBLE LEAF TRUNNION BASCULE BRIDGE AT  
 WEST MADISON STREET, OVER THE SOUTH BRANCH  
 OF THE CHICAGO RIVER, CHICAGO, ILLINOIS.





FRANKLIN STREET BRIDGE OVER THE CHICAGO  
RIVER - SOUTH WATER STREET AND RIVER  
FRONT IMPROVEMENTS, CHICAGO, ILLINOIS.





WELLS STREET DOUBLE DECK BRIDGE, CHICAGO, ILLINOIS.



LAKE STREET DOUBLE DECK BASCULE BRIDGE, CHICAGO, ILLINOIS.

Two examples of structures carrying the elevated road  
on the upper and general traffic on the lower level.



few years ago, establishing practically uniform grades for the bridges on the main and south branches of the river. This fitted in well with the Plan Commission project of the development of South Water Street—a two level plan, the upper level corresponding to the bridge level. The design provides for the complete architectural treatment of the waterfront, the bridge abutments and

tricts have been designed by the Plan Commission; being of a fixed type they present much less difficult problems than those in the center of the city.

With the Michigan Avenue Bridge and approaches a more sumptuous treatment of the river was begun than was contemplated in earlier days. This has been carried out in the South Water Street design, and the embellishment of the en-



JACKSON BOULEVARD BRIDGE OVER THE CHICAGO RIVER, CHICAGO, ILL.

the operators' houses in connection with them.

A policy of fixed bridges is advocated by many in Chicago in the interest of traffic and general facilities for business. Such a policy would bring about some important changes in the design of the structure of the bridges and would lend itself to a far better looking general appearance of the River.

Numerous bridges in the outlying districts

river front, it is hoped, will receive considerable impetus by the provision now made on the Michigan Avenue Bridge for sculptural groups on the four pylons. The subjects proposed are commemorative of various events in Chicago's history, ideally treated.

The Plan Commission has received in later years the support of the Planning Committee of the American Institute of Architects and the Art Commission.