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REINFORCED CONCRETE

PART I. METHODS OF CALCULATION

BY
A. W. BUEL
♦♦

PART II. REPRESENTATIVE STRUCTURES

PART III. METHODS OF CONSTRUCTION

BY
C. S. HILL

NEW YORK
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1904

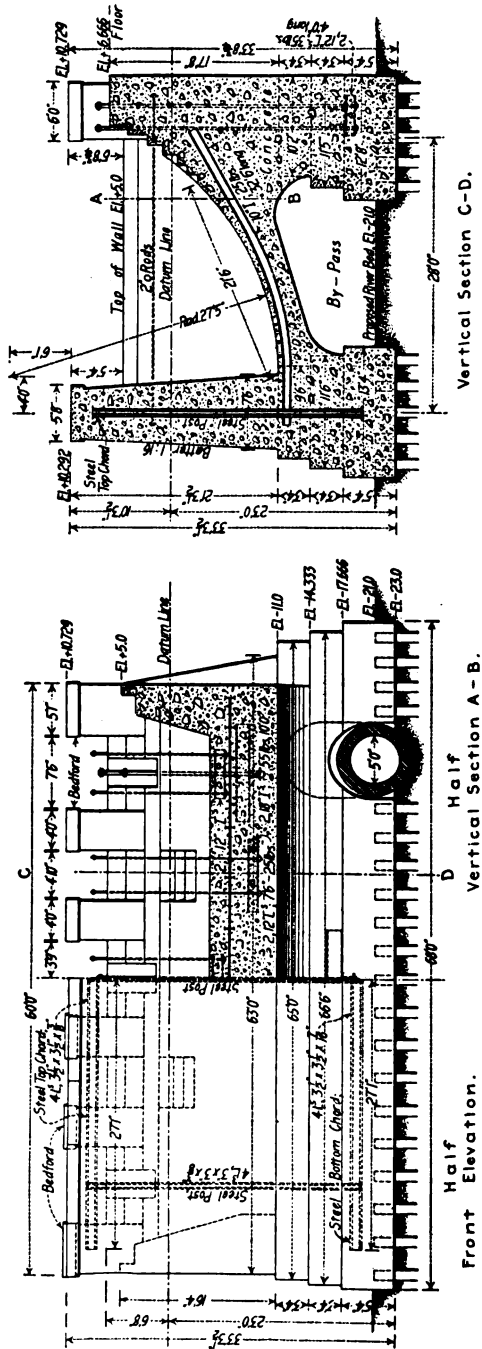


FIG. 219.—Reinforced Concrete Pier, Clybourn Place Bridge, Chicago.

BRIDGE PIERS.

Clybourn Place Bridge, Chicago, Ill.—In constructing the series of new bascule bridges across the Chicago River at Chicago, Ill., it was planned to make extensive use of reinforced concrete in the pier and abutment construction. One of the most important of these bridges was that at Clybourn Place, and the pier and abutment construction of this structure is shown by Fig. 219. It will be observed that the pier and abutment on each side were a single structure, and that a by-pass was carried under each to provide additional waterway. These facts and the fact that the short arm of the bascule requires a suitable tail-pit for its movement account for the peculiar form of structure adopted.

The reinforcement proper is confined to the pier and the bottom sheet of the tail-pit. The pier reinforcement consists of a rectangular framework consisting of two chords and three vertical posts set vertical and lengthwise of the pier. To reinforce the bottom sheet of the tail-pit 13 I beams 10 ins. deep bent to curve are set parallel and 4 ft. apart except the outermost pair on each side, between which the space is 3 ft. The outermost I beam on each side is 15 ins. from the face-wall. These parallel I beams are connected by tie-rods 1 in. in diameter spaced 4 ft. apart. Fig. 220 shows the details of the rein-

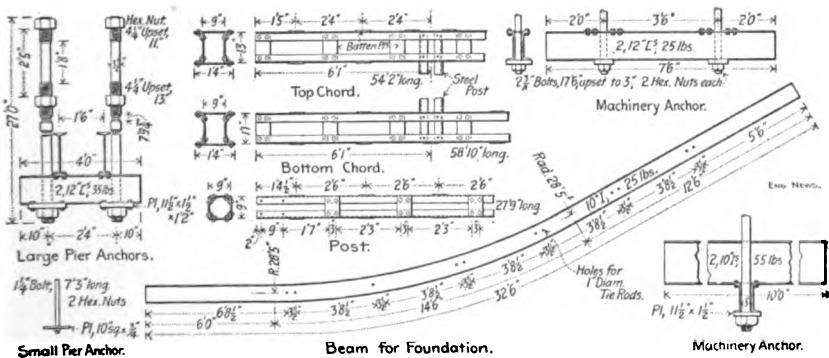


FIG. 220.—Details of Reinforcement for Clybourn Place Bridge.

forcement and of the various anchors built into the abutment and pier. The concrete used was composed of 1 part Portland cement, 3 parts sand, and 5 parts of 1 1/2-in. broken stone.

Perth Amboy, N. J.—Fig. 221 shows the details of the concrete-steel bent construction adopted for a railway trestle built at Perth