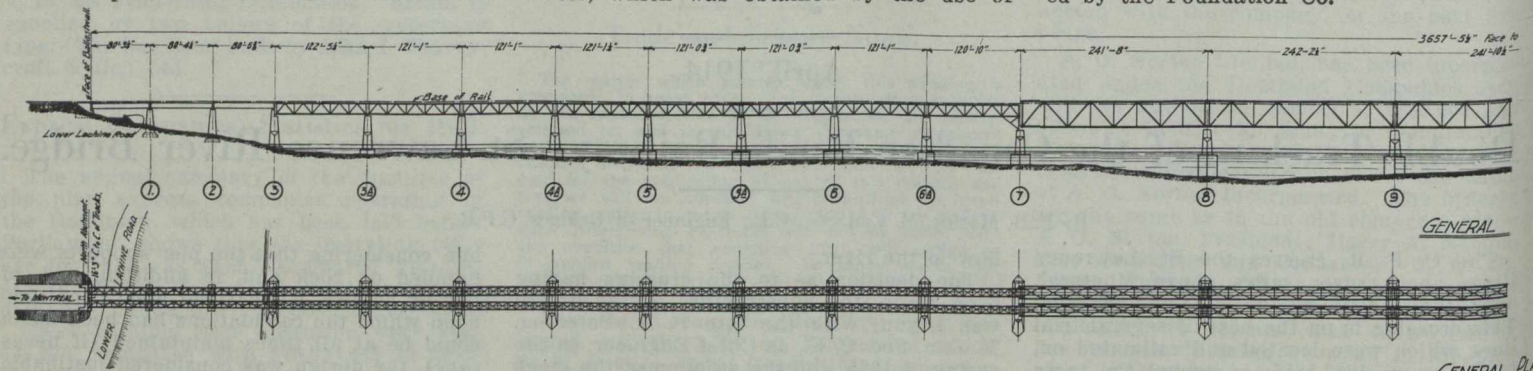


grounded on the Lachine side of the river in shallow water, and, after breaking up, floated under the Lachine end of the bridge in small pieces in a manner which did not

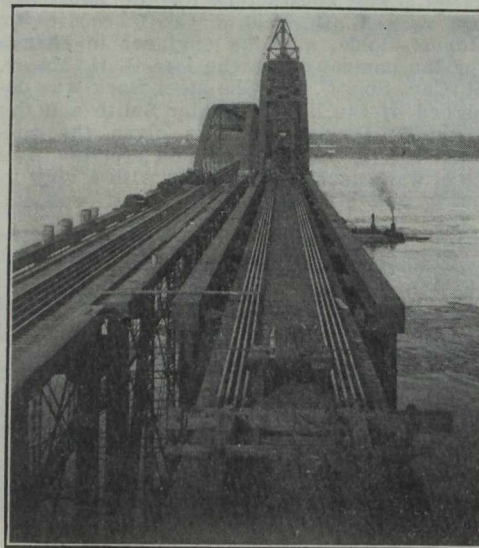
of course, would result in serious cracks in the bonding above the water line. The work at piers 8 to 14 was carried out in still water, which was obtained by the use of

which it was built up by the C. P. R.'s forces. The pneumatic plant used on piers 9 to 13 was of the type designed and operated by the Foundation Co.



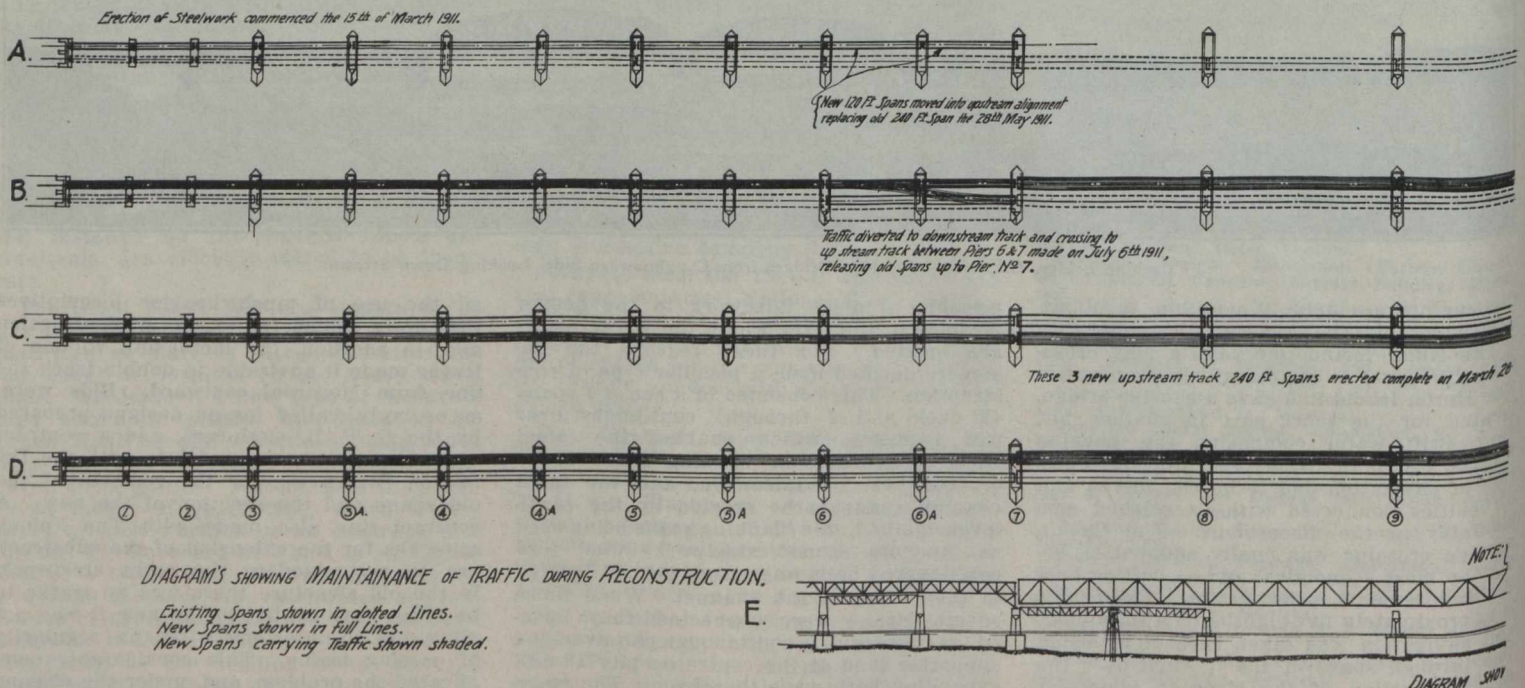
Plan 1.—Lachine Bridge, C.P.R. General Elevation and Plan. (See opposite page.)

seem to justify the existence of four 240 ft. spans between piers 3 and 7. It was, therefore, decided to bisect these spans by the building of new intermediate piers 3a, 4a, 5a and 6a), and using eight 120 foot spans instead of four 240 ft. This resulted in considerable economy in cost. Between piers 7 and 11, it was not considered advisable to make a change. With these exceptions, the structure was renewed in span lengths similar to those which originally existed, but, instead of the continuous spans between piers 11 and 15, it was decided to use simple spans of ordinary deck and through types, as shown on the plates. The new second track was placed on the downstream side of the existing bridge. The added masonry was bonded into the old above water line, while below the water line open caissons were sunk generally to the same hard bottom to which the original masonry was carried, except in the case of piers 9 to 13, where pneumatic caissons were found necessary. Caisson 13 was square ended where it butted against the old masonry, and pointed at the down-



Skidways on Down Stream Span 13-14.

SUPERSTRUCTURE.—The 80 ft. deck plate girders at the Lachine end of the bridge are the C. P. R. standard design, and are single track spans placed alongside each other. The 120 ft. spans are deck Warren truss spans with rivetted connections, their ties resting upon the top chords. These spans are also simple single track spans laid abreast of each other. The 240 ft. spans are also Warren trusses with rivetted connections, and have the usual floor system of stringers and floor beams (2 stringers per track) rivetted against the vertical posts immediately under the top chord. The upper laterals are also rivetted immediately below the top chord, and connected with the top flanges of the stringers, where they intersect with same. The 270 ft. flanking spans are Warren trusses, and, while longer in the panel lengths than the 240 ft. spans, are the same in general description. Typical details are shown on plan 4, from which it will be seen that all the web members, except the diagonals near the centre of the span, have solid web plates down the centre of the same, and,



Plan 2.—Lachine Bridge, C.P.R. Diagrams Showing Maintenance of Traffic During Reconstruction, and Method of Erection. (See opposite page.)

stream end. It was carried about 7 ft. lower than the bottom of the old pier, because it was found that the shale immediately under the same was of such a description as to make it advisable to go deeper in order to make sure that there would be absolutely no settlement, which,

wing dams composed of rock-filled cribs sunk immediately upstream at an angle of about 45 degrees so as to deflect the current. Masonry was started in June 1910 and was finished in Nov. 1911, except the upstream end of pier 13, which was left till the removal of the old steelwork, after

where necessary, double lattice on the flanges. For the deck spans the Warren type of truss was found to be more economical than any other. The general dimensions and typical details of the 408 foot spans are shown on plan 3. These spans are of the subpanelled Pratt truss