

## Canadian Pacific Railway Viaducts at Toronto

Premoulded Beams 35 to 37 Ft. Long—Construction Details Unprecedented

Says the C.P.R. Press Bureau

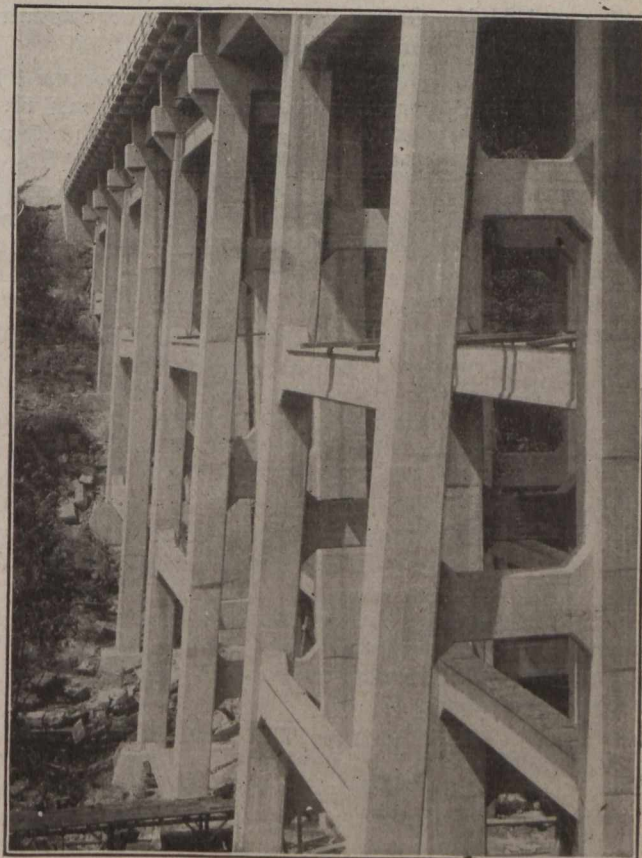
IN the April 25th, 1918, issue of *The Canadian Engineer* appeared an article by Arthur F. Wells, B.A.Sc., of Wells & Gray, Limited, engineering-contractors, Toronto, on the reinforced concrete railway trestle which his firm was then building at Toronto for the Canadian Pacific Railway Company. Another similar trestle was then under construction for the railroad by the Dominion Construction Co., Limited, Toronto. Both of these trestles have now been practically completed and the following "write-up" of them, prepared in popular style, has been sent to the daily newspapers by the C.P.R. Press Bureau:—

"The double tracking of the North Toronto subdivision of the Canadian Pacific Railway between Leaside and North Toronto is now nearing completion, and involved the replacement of bridges (known as 0.9 and 1.8) which heretofore had been trestles constructed of steel. Owing to the high price of steel and the difficulty of procuring it since the war began it was found that reinforced concrete competed successfully against steel.

"The bridges were therefore constructed of this material and are a triumph of railway construction work, No. 0.9 being 386 feet long and 90 feet high, carrying two tracks, and No. 1.8 of similar dimensions, but a three-track structure. The length of the individual spans and the details of their construction are unprecedented in the engineering world. Previous to this no reinforced concrete beam with a length of more than 25 feet has been attempted; the spans of these two C.P.R. structures are each from 35 to 37 feet long. These spans have been made possible by the employment of unit construction by which each span was designed as two T-beams which after being manufactured near the work were laid side by side on the previously built reinforced concrete towers. The towers themselves are really reinforced concrete buildings constructed in the usual manner by means of wooden forms built around a steel reinforcement which was previously assembled and securely wired together. When all was in readiness the concrete was poured by means of long spouts which led in several directions from the main mixing tower. The pouring of the concrete was maintained as continuously as possible until a whole tower was completed. This work was done during the winter at a time when the temperature was below freezing

point; it was performed inside of what was virtually a building erected to maintain a suitable temperature around the newly deposited concrete until it was out of danger by being damaged by frost.

"These two structures are provided with narrow side-walks, and hand-rails which enable trainmen to move conveniently alongside standing trains. The hand-rails add considerably to the aesthetic appearance of the structures which are extremely artistic in appearance and at the same time satisfactory from a general and utilitarian point of view besides being absolutely per-



Concrete Bents