

The Canadian Engineer

A weekly paper for Canadian civil engineers and contractors

14458

Mount Pleasant Road Bridge, Toronto

Reinforced Concrete Structure Consisting Essentially of a Pair of Cantilevered Beams of Arched Form, with Free Joint at Center—Piers and Abutments on Skew, Parallel to Railway Track

By J. S. BURGOYNE

Designing Engineer, Department of Railways and Bridges, City of Toronto



THE extension of Mount Pleasant Road from the Toronto city limits southerly across Mount Pleasant Cemetery to Home Avenue will relieve the growing congestion of traffic on Yonge Street and later take care of the future communication requirements of North Toronto. This new artery runs parallel to and about half a mile east of Yonge Street. This civic improvement necessitated the construction of a bridge over the ravine and the Grand Trunk Railway (old Belt Line) at a location just south of Merton Street.

The south approach to the bridge is an earth ramp through the cemetery on a 3 per cent. grade, while the north approach consists of a timber trestle between the concrete structure and Merton Street and earth fills to the north, east and west.

In order that the grade of the north approach should strike Merton Street with as little difference in elevation as possible consistent with the maximum allowable of 5 per cent., it was thought advisable to use an easy vertical curve over the centre span from the ends of which straight

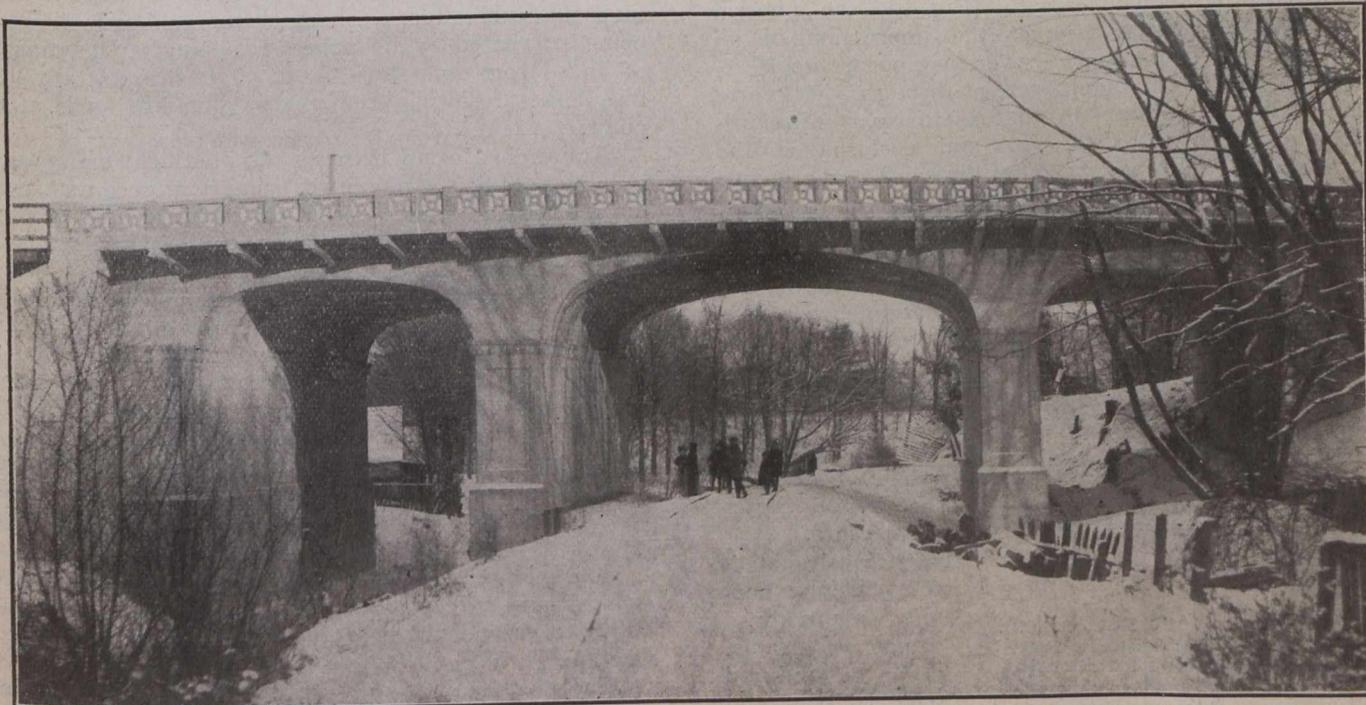


Fig. No. 1.—General View of Bridge, Looking East from Belt Line Tracks

Alternative plans for this structure in steel and in reinforced concrete were prepared and tenders received for the two types of construction. The contract was finally awarded for the construction of a reinforced concrete bridge.

The bridge proper, as will be seen from Fig. 4, consists of a central span providing a clear track allowance of 22 feet in width and a standard vertical clearance of 22 feet 6 inches for the old Belt Line railway. The southerly span provides 24 feet clear for a future roadway in the cemetery, and a similar span to the north crosses the small creek parallel to the track.

grades were provided, 5 per cent. for the north approach and 3 per cent. for the south. When this improvement as a whole is completed the north approach grade will run out about 500 feet north of Merton Street, which will be raised about 6½ feet at the intersection with 4.8 per cent. grades east and 3.8 per cent. grade west.

Owing to the fact that the railway track is at an angle of 73° with the centre line of the street, it was deemed advisable on the score of economy to place the piers and abutments on the skew, approximately parallel to the railway right-of-way. The central span was thus reduced to a minimum.

10693