

# The Canadian Engineer

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## Reinforced Concrete Railway Trestle at Toronto

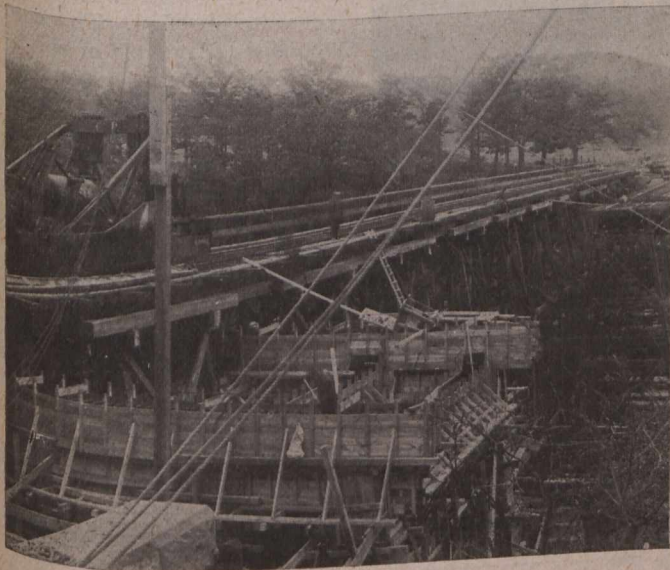
New Three-Track Structure Spans the Rosedale Ravine on the North Toronto Subdivision of the Canadian Pacific Railway—Premoulded Concrete T-Slabs Rest on Concrete Bents Supported on Concrete Spread Footings

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**A**BOUT one mile east of the Canadian Pacific Railway Company's station at North Toronto, a single track formerly crossed the Rosedale Ravine near Summerhill Avenue on a steel trestle. As traffic increased on this line, the trackage facilities became insufficient and it was decided to span the ravine at this point with a new, three-track trestle. In designing the structure for three tracks, provision was being made not only for present needs but also for a probable still greater increase of business over these lines in the comparatively near future.

In view of its location, it was necessary to give due consideration to the aesthetic features of the design of the new structure. The ravine to be spanned is a continuation southwards of Reservoir Park, and is largely used in the summer months by a great number of citizens as a resting place and recreation grounds. The utilitarian was therefore not the only consideration in choosing a suitable design and the present reinforced concrete structure seems more in harmony with its surroundings than the former steel structure.

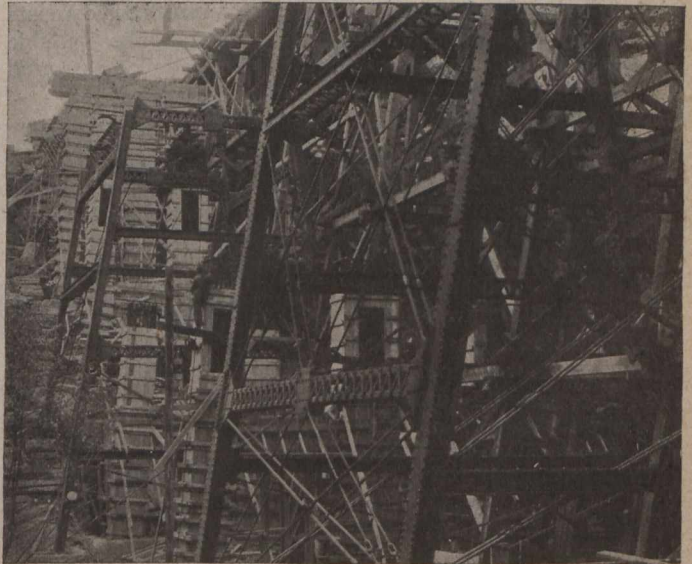
A general plan and elevation of the trestle is shown in Fig. No. 1. The clear height from top of concrete founda-



Temporary Timber Trestle

tion to base of rail is 82 ft. 7 ins. The length from face to face of ballast walls is 368 ft., and the width out to out of concrete coping blocks is 41 ft. The general design is of concrete coping blocks supporting concrete bents on concrete spread footings supporting concrete bents on which rest the premoulded concrete T-slabs.

The details of the foundation are shown in Fig. No. 4. The nature of the soil remains practically unchanged across the whole ravine bottom, and the creek is too small to require to be taken into consideration. The bearing value of the soil was determined by comprehensive tests,



First Concrete Bents and Part of Old Steel Trestle

by means of tables and weights, at each end of each pier. The necessary spread of the footing was then calculated accordingly. Near the top of the footing, seven-eighths inch round reinforcing bars, placed longitudinally, distribute the stresses transmitted from the bent posts and give additional security against unequal settlement. One and one-eighth inch round anchor bars, eight feet long, bond the superstructure to the foundation. There are one hundred and twelve anchor bars in each pier.

The reinforcing bars are medium open-hearth steel. The concrete is mixed in the proportions of one part of Portland cement to two parts of washed sand to four parts of broken stone.

The bents of the superstructure are spaced alternately 34 ft. and 36 ft. Each bent consists of four posts braced by struts, as shown in detail in Fig. No. 3. The bents themselves are braced longitudinally in pairs. The reinforcing in the batter posts consists of twenty-four round bars varying in size from seven-eighths to one and one-