

# The Railway and Marine World

May, 1912.

## The Grand Trunk Railway Grade Separation Work at Toronto.

The grade separation work on the G.T.R. near the western outskirts of Toronto on the Toronto-Hamilton section of the main line is rapidly nearing completion, work for the spring having been resumed recently. At the rate in which the work is being pushed to completion it will be finished in July or August. This portion of the work includes only the section from Strachan Ave. westward, the viaduct through the city forming another part of the comprehensive scheme of level crossing elimination along the Toronto waterfront.

The section here referred to may be divided into two subdivisions, the first of these extends from Strachan Ave. to

with the city under the Board of Railway Commissioners orders. In order to fully carry out the plan of level crossing elimination, it was found necessary to extend the separation work as far as Mimico, a total length of about six miles. The maximum gradients on the old line was 0.7%, while that of the work under construction is 0.4%.

At Dufferin St. the new rail level will be about 22 ft. lower than the old; at Dunn, Jamieson and Dowling Aves., it will be 25 ft. lower; in all these cases the highway is to be carried across at practically street level. At Sunnyside, the rail level is to be raised 4½ ft., with the highway carried on an overhead

additional right of way and finally build four tracks throughout nearly the whole of the length of this section. The width of the right of way was increased on the southerly side.

As the prime requisite was that train service should in no way be interfered with, special provisions had to be made with this end in view. Close alongside of the northern fence of the right of way, two temporary tracks were laid, as indicated to the extreme right in fig. 3, and on to these the traffic was diverted. This left all the new right of way strip, together with a good portion of the old right of way, clear for the excavating operations. The plan adopted was first

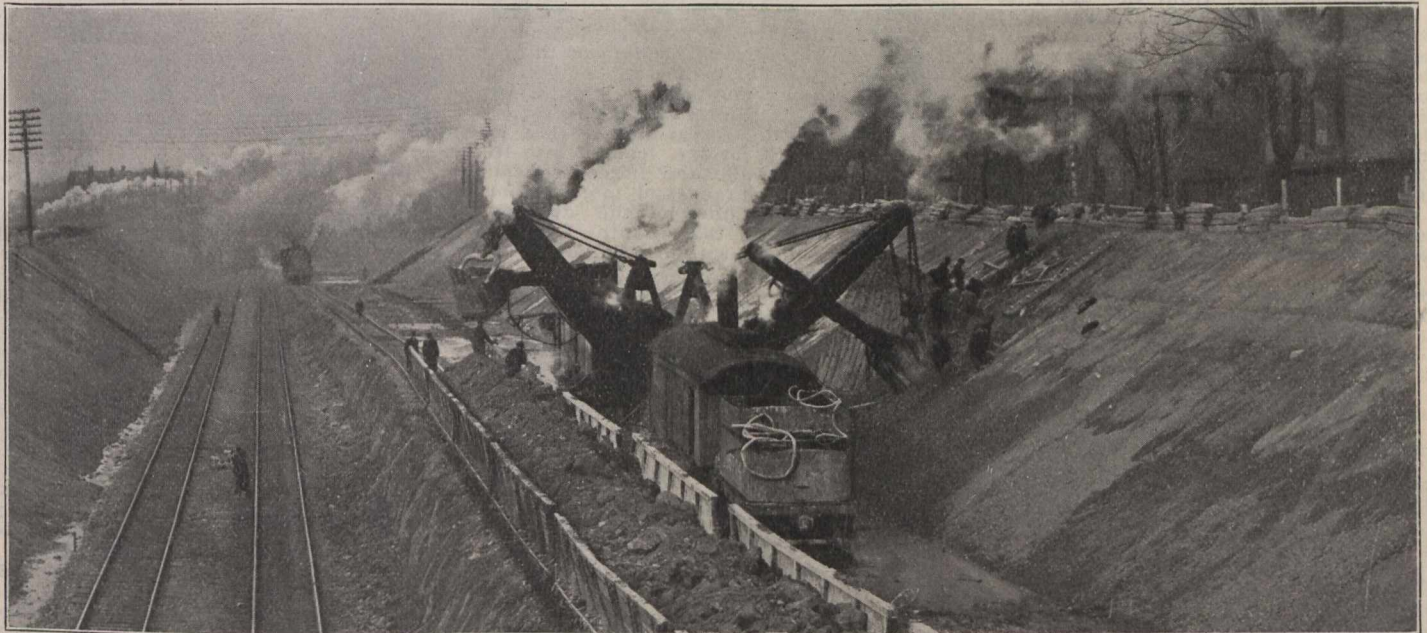


Fig. 1. Looking West from Dowling Avenue Bridge, Dec. 1, 1911.

Sunnyside, consisting of one long cutting, at places as much as 27 ft. deep, and the second extends from Sunnyside to Mimico, the western terminus of the grade separation as at present contemplated. This second section is almost entirely elevated on an embankment, the highest point being about 16 ft. above the former level.

The construction work was simplified to a considerable degree by the fact that the new grade is to have four new tracks instead of the two through tracks of the former level. The wider right of way made possible the construction of the roadbed half at a time, the other half being used temporarily for the construction machinery.

The Railway and Marine World for Aug., 1911, contained profiles of the grades as they formerly existed, and as they are to be eventually with a short description covering the scope of the work. This profile, fig. 2, together with a brief recapitulation, is here given for the benefit of those not aware of the scope of the work which is being carried out by the G.T.R. in conjunction

bridge with long approaches, a few hundred feet east of the present crossing. From Sunnyside to Ellis Ave., the track will be 14 ft. higher, with subways at Indian Rd., Howard Ave., Ellis Ave., Windermere Ave., Jane St., Queen St., near the Humber River; Salisbury Ave. and Church St., Mimico. The tracks across the Humber will be carried on a 4-track deck girder bridge of two spans, the centre resting on a pier sunk in the centre of the river.

The section of the work extending from Strachan Ave. on the east to Sunnyside, as the profile in fig. 2 indicates, extends through a heavy cutting all the way. In the former construction the right of way through the major portion of the distance, carried only two tracks, the section near the easterly end along the frontage of the National Exhibition grounds, where there are several sidings, being the only part with more than the two. It was found that to maintain traffic and carry on the construction work the same amount of right of way would be required for two as for four tracks; it was therefore decided to obtain the

to dig a cut of sufficient width to depress two of the ultimate four tracks, and after the completion of these two tracks, to divert on to them the traffic from the temporary tracks on the edge of the embankment, and then proceed with the excavation through the ground on which the temporary tracks stood, for the depression of the two northerly tracks.

In view of the fact that the maximum cutting ran as high as 27 ft. and the capacity of the shovels was only 10 ft. deep at a setting, it was necessary to work the cuttings in three levels. Commencing at both ends of the cutting on the southerly edge, the shovels ate their way into the cutting, working towards each other. A temporary track on the north embankment of the steam shovel cutting was advanced simultaneously with that of the steam shovel for the accommodation of work trains. In this manner excavation on the three levels was pushed successively to completion. Up to July 1, 1911, there were two shovels at work, and from that time on until the close of the season, early in