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Toronto Hamilton and Buffalo Ry. Grade Separation in Hamilton.

The question of raising or depressing the T.H.&B.R. main line through Hamilton, Ont., or of moving the tracks to another location altogether, has been agitated for several years. In 1914, Westinghouse, Church, Kerr & Co., who were employed by the company to investigate the matter, prepared a scheme for track elevation, and in 1915, W. F. Tye, M.Can.Soc.C.E., of Montreal, on behalf of the applicants for grade separation, presented an alternative plan of depression. The question was before the Board of Railway Commissioners on several occasions and was referred to its Chief Engineer, G. A. Mountain, who made two reports, copies of which we have been favored with.

In the first report dated Jan. 15, 1915, Mr. Mountain said: In accordance with the Board's instructions, at a meeting held in Hamilton, on Dec. 14, 1914, in connection with the application of Sealey and others for track depression of the T.H.& B.R., from the tunnel across James, John and other streets in Hamilton, to Victoria St., a conference of engineers was held in my office, presided over by the Engineer, on Jan. 13 and 14, 1915. The representatives were W. F. Tye, M.Can. Soc.C.E, for the applicants, A. F. McCallum, City Engineer, for the city and R. L. Latham, Chief Engineer for the T.H.&B. R. Associated with the latter were L. W. Tucker, and G. W. Burpee, of Westinghouse, Church, Kerr & Co. There was also present J. W. Pfau, C.E., Engineer of Construction, New York Central Rd., A. L. Sarvey, Assistant Valuation Engineer, Michigan Central Rd., J. W. Orrock Principal Assistant Engineer, C.P.R., A. S. Going, Engineer of Construction, G.T. Ry., E. G. Hewson, Division Engineer, G.T.R., Toronto, the latter road being interested in the connection of the branch line from Ferguson Ave. Subsequently, the railway company filed a plan for track elevation instead of track depression, along the same section. We went thoroughly into the merits of both track elevation and track depression and the cost of the same, and Mr. Tye, representing Sealey and others, decided he would want more time to revise some estimates and check over some of the estimates submitted by the T.H.&B.R. on the cost of track depression. I suggested a modification of both plans and that the parties get out estimates on that suggestion, which they thought was well worth considering. It was also decided to make a test pit at the mouth of the tunnel.

Mr. Mountain's second report dated Jan. 18, 1916, is as follows: The parties met again in Hamilton, in April, 1915 and went thoroughly into the examination of the test pit that had been opened by the T.H&B.R. authorities at a point designated and satisfactory to all parties. We found material in this test pit that might be considered of a quick sand nature and also that water rose in the pit to pretty near the surface of the ground. We then continued to work out the actual cost of the work and on this all parties have agreed.

The cost of the track elevation is $673,000. The cost of the track depression is $965,000. R. L. Latham, Chief Engineer of the T.H.&B.R., agreed to this cost with a proviso that no unforseen conditions arose. I understand from that that he means from this such conditions as we felt were indicated by this test pit in excavating for lowering the tunnel 12 ft. at its portal. The engineers associated with Mr. Lathem, and Mr. Tye, acting for the city, felt that business could be continued through this tunnel during the time that it was being lowered for a length of 800 ft. from nothing to 12 ft. at the portal. My opinion is that this would be a very difficult thing to do and I have very much doubt whether it would be possible to continue traffic through while it was being lowered. In addition to the construction there is the cost of the right of way. I have spent a lot of time on this and have not been able to arrive at a very satisfactory result. It is very difficult to estimate the value of land when it it to be purchased for this purpose. However, there is no doubt that the land required for the track depression exceeds the land required for the track elevation, and I roughly estimate the land damage on the track elevation at $331,000 and on the track depression at $537,000. It was stated that owing to the fact that the track depression would carry the railway away from its present station facilities, they would be available for sale, but to give the company the equivalent of the land it already has on its present facilities, would add an increased cost to the land expenses, which would be about even to the sale of the present station property. In addition to that there would be consequential damages, which are only estimated, and which I have put in for the track elevation at $151,000 and for track depression at $148,000. Adding these I make the approximate cost of track depression $1,650,000 and the track elevation at $1,161,000. While there has been a good deal of discussion as to the amount of the land damages, and I have made several trips and gone thoroughly over the ground several times, I feel that I am unable to arrive at any other conclusion as to the land damages but that it is only approximate and may vary $100,000 one way or the other. The items on the cost of construction are, I think, as close as it is possible to get and the land damages are what might be termed an approximation.

As to the merits of the case. The track depression suggested by the city lends itself to the opening of Hunter St. its entire distance, except that the crossings by overhead bridges would slope well out on Hunter St. at several places, for instance at Charles, McNab, James, John and Catherine. Hunter St. would then be like an up and down grade at these points, but nevertheless open for traffic. At present Hunter St. stops at Park St. and then the tracks run on the level from Park St. to practically Catherine St., but vehicular traffic has been allowed to use it, driving alongside the tracks. This is a pretty dangerous procedure and should not have been allowed, but apparently it has been going on for years. Most of the traffic is in connection with railway work along Hunter St. between John and James Sts., to express company's warehouses which are situated in that section.

The track elevation scheme would practically cut out the use of Hunter St. from Park to Catherine; that is it would prevent any use of that portion of the street for vehicular traffic and, in addition, would leave Charles and McNabb Sts. at grade level, protected by gates as they are at present, or else closed to vehicular traffic and opened by pedestrain subway, which is all that could be got at these points. These streets are not important and would not, unless the whole question of grade separation came up, be over considered as points warranting subways, as practically all the business is done first on James St. and second on John and other streets to the east, which would all be taken care of by track elevation or depression as far as Ferguson Ave.

In connection with the operation of trains, I attach a plan which is explanatory of the conditions as they are on the level, as they would be elevated, and as they would be depressed. The present station facilities lie between James and John Sts. and whether it be track elevation or depression, that location would not be changed. The operation of trains is easier at their present location, at ground level than either of the other means, elevation or depression. Elevating the tracks would continue a 1% grade rising from the mouth of the tunnel to James St., about 1,000 ft. Depressing the track from the tunnel to James St. for 1,300 ft., would give a falling grade of 9/10%. This depressed grade would then continue level for 1,800 ft. approximately 16 ft. below the present level of the ground, and would then rise 1,750 ft. by a 1% grade to the surface at Victoria Ave. This, to my mind, would make a tremendous difference in the operation of the railway. Heavy trains coming through, both freight and passenger, particularly if they had to stop at the station, which all passenger trains would have to do, would have great difficulty in making these grades in either direction and would be a most serious drawback to the operation of the railway. It would make it one of the worst places conceivable for the location of a station and would hamper the operation of the road through Hamilton to a very great extent.

The city's second idea was that the T.H.&B.R. be moved to the location of the G.T.R. present tracks, and that, to my mind, would be the proper solution of this question but it has been found impossible to do it. The T.H.&B.R. has spent a great deal of money in building its tunnel and on other works in connection with its present location, which could not be picked up and moved easily.

The noise from trains running in track depression in this locality would be less than on track elevation, but the smoke