

CANADIAN
PACIFIC
ONTARIO &
QUEBEC

NORTH
TORONTO
C. H. RIFF

North Toronto Station. Canadian Pacific Railway.

A short preliminary description of the station which the C.P.R. is building in the north end of Toronto for joint use with the Canadian Northern R., appeared in *Canadian Railway and Marine World* for July. For some time work has been progressing on track elevation across the north end of the city, the new station forming a part of the whole general scheme which involves the raising of the tracks for about 3 miles with the elimination of all grade crossings. This line has been used by the C.P.R. principally as a freight cut off between Leaside Jct. and West Toronto from which point the main line runs down to the union station in the lower part of the city. Origin-

work has been started, the excavations and foundations being nearly completed. This station has been designed on a larger scale than would be required for C.P.R. traffic alone, as the Canadian Northern in planning a permanent entrance into Toronto decided on the northerly entrance, arrangements being made with the C.P.R. to build the station, the C.N.R. to use it jointly as tenants. It is the Canadian Northern's intention to use this station for most, if not all, of its Toronto passenger service but the C.P.R. will retain its connection with the present union station near the water front only using the North Toronto station for certain trains.

by two lower sections containing the station facilities. On the Yonge St. side there will be a 140 ft. clock tower, the 30 ft. spire of which will be of terra cotta. The station building will be 114 x 78 ft., the broader side facing south, with the tracks on the north side passing it at an angle of about 15 degrees. The central or high section of the station will be the main waiting room, 70 x 51 ft., with a centrally located entrance from the driveway on the south side. Flanking this waiting room on the west will be the ticket offices and telegraph offices. Flanking the east side of the waiting room will be the women's room, smoking room, lavatory facilities, and telephone booths. Adjoining the waiting room in the north-east corner will be the news stand and staff lavatory. Directly opposite the main



Fig. 1.—New North Toronto Station for Joint Use of Canadian Pacific and Canadian Northern Railways.

ally the Leaside-West Toronto line was the only entrance into Toronto of the Ontario and Quebec Ry., which was absorbed by the C.P.R. in its early days, and subsequently a connection was built from Leaside Jct. to connect with the union station, and all passenger trains from the east were run over it. For several years a connecting stub line service was operated both ways between Leaside Jct. and West Toronto, and about three years ago the C.P.R. decided to make use of the line from North Toronto to Leaside Jct. for passenger traffic, starting therefrom one of its Toronto-Montreal night trains, and running one of the Montreal-Toronto night trains into it. This proved such a success that a further development of the northern entrance was decided on. The remodeling of the existing station made necessary further accommodation, the result of which is the new station on which

A perspective of the new station is shown in fig. 1, a ground floor plan in fig. 2; and the track arrangement in the station vicinity, with its relation to the city transportation conveniences, in fig. 3. The station is being built on the east side of Yonge St., at the present end of the Toronto Ry.'s Yonge St. line, which passes down through the centre of the city. With this convenient and through street car line, the new station will be very easily reached from the business centre of the city. The rapid growth of the city northward makes the North Toronto location particularly available for that section of the city, the new location being more centrally located with regard to the centre of population than the present downtown union station.

The new station will be a single storey brick and stone structure, the central section of which will have a high roof, flanked

entrance will be the entrance to the midway under the tracks. The vestibule under the tower will lead into the concourse along the north side of the west end of the waiting room, connecting at its east end with the midway. The south and west sides of the station will have a sidewalk, so that passengers may either alight at the main entrance centrally on the south side, or at the tower vestibule, the expectation being that the latter entrance will be used by the majority of passengers who have already secured their tickets, and only require to pass directly to the trains, relieving the main waiting room of much of the congestion that might otherwise occur. Along the west side of the station there will be a 15 ft. driveway, so that vehicles may drive up to either station entrance, and pass through under the tracks through this driveway and out on Yonge St. to the north of the station.

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The new station will be a single story brick and stone structure, the central section of which will have a high roof, backed

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The midway will be a passage 30 ft. wide passing from the rear of the station to the far side of the tracks, under the latter. The elevation of the tracks makes a difference in grade between the track platforms and the station level of 15 1/4 ft., giving a headway in the midway of about 14 ft. Passing over the midway will be 6 through tracks, the two westerly for eastbound passenger

provided with umbrella roofs, and provision has been made for their future extension to 1,190 ft. These platforms will be reached from the midway by two 6 ft. stairways on the east side. The plans provide for future stairways opposite the present proposed stairways, and another to a platform contemplated for the south side of the tracks. The baggage room, 137 x 62 ft., will oc-

stairway will ascend to the track level, where the station master's office will be located in the lower above the vestibule. Passenger communication with the baggage room will be through the vestibule. The building will be of brick construction, faced with Tyndale stone, while the section under the tracks will be of steel and concrete construction. Around the sidewalk

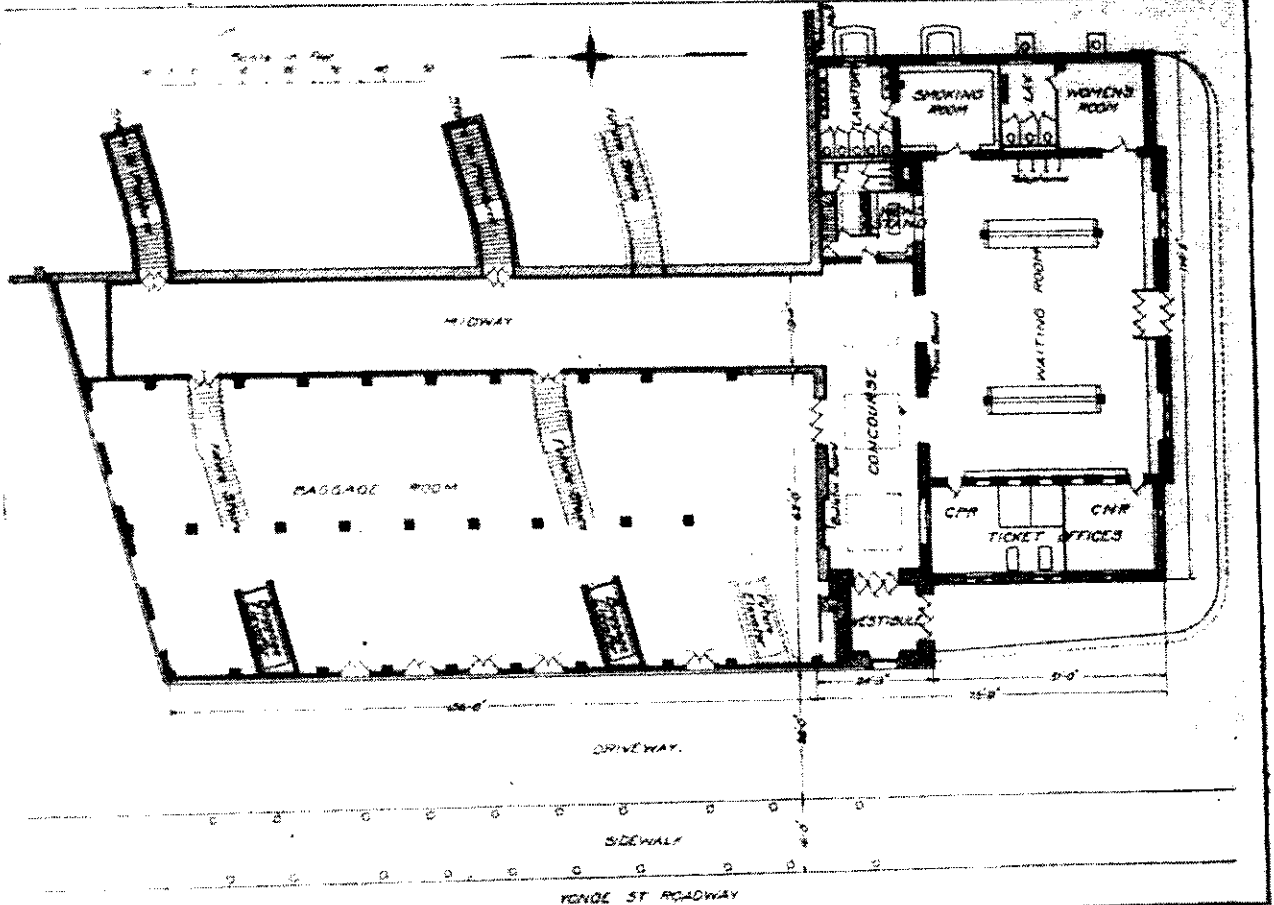


Fig. 2.—Ground Floor Plan of New North Toronto Station.

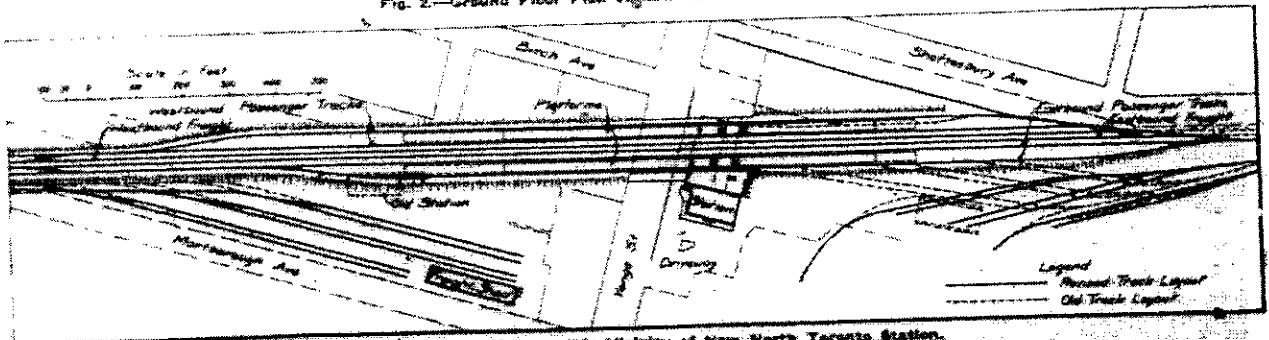


Fig. 1.—Track Arrangement in Vicinity of New North Toronto Station.

service and the two westerly for west-bound passenger service, at 11 ft. centre, with an 800 ft. platform 20 ft. wide between each pair. The central pair of tracks, at 11 ft. centre from each other and from the adjoining passenger ones, will be for through freight; the westerly one for east-bound, and the westerly for west-bound freight. The passenger platforms will be

copy all the section beneath the tracks between the midway and Yonge St. driveway. From the latter the baggage is to be raised through 14 stairways, and will be rolled on trucks to the platform level by two 15 x 6 1/2 ft. elevators. Provision is made for a future elevator to the contemplated southern platform. From the south-west corner of the baggage room a spiral

recreation there will be a metal canopy. The whole will be of a Rago steel construction. Darling and Pearson, Toronto, prepared the plans, under J. M. R. Fairbairn, Assistant Chief Engineer, and D. H. Mays, Engineer of Building Construction, C.P.R. The construction and the foundation have been done by T. Lyall and Sons, at a percentage basis.

Canadian Railway and Marine World

September, 1915.

North Toronto Grade Separation, Canadian Pacific Railway.

By B. Ripley, M. Can. Soc. C. E., Engineer, North Toronto Grade Separation, Canadian Pacific Railway.

The North Toronto viaduct construction on which was started in a small way during the autumn of 1912, is nearing completion. The general scheme, which is shown in fig. 1, comprises the elevating of four lines of track between Summerhill Ave. on the east and Dufferin St. on the west, with additional passenger facilities at Yonge St. [The new station was described in Canadian Railway and Marine World for August.—Editor.] During Sept. 1912 a trestle was erected between Poplar Plains Road and Summerhill Ave. and the filling in to make up the embankment was commenced from the trestle. This permitted the work on the subway at Avenue Road to be proceeded with. Fig. 1 shows this subway as completed. During its construction the street traffic was diverted on the property acquired for the purpose just east of the street, which facilitated the handling of the work very considerably and the traffic was not resumed on Avenue

The work at the Howland Ave. subway was started Aug. 12, 1913, the traffic having been diverted over the tracks at Albany Ave. by means of a temporary wooden bridge erected at that point for the purpose.

The work at Bathurst St. subway was started Aug. 23, 1913. In carrying out the work at this point, it was necessary to remove a portion of the tracks of both the Toronto Ry. and Toronto Suburban Ry. After a portion of the excavation had been taken out, a large pocket of gravel containing water was struck, the water making the work a great deal more difficult. This difficulty was also experienced in alterations to water mains, sewers and the laying of the underground electric wires. The foundations were taken slightly deeper in this case than in any other, in order to eliminate the possibility of disturbance by the installation of other underground utilities, at a later date. The street traffic was handled by means of

work to be done at this point, and the city offered no objections at that time, but many difficulties have arisen to delay the work. During the autumn of 1913 the city applied to the Board to have the south approach made level instead of having the 5% approach which had previously been agreed on. The Board ordered in effect that the city could have this on condition that it pay the extra expense incurred by the C. P. R., giving it a certain period in which to decide as to what it wanted. The level approach idea fell through; the C. P. R. had plans prepared for the carrying out of the work, but it was so late in the autumn of 1913 that the work was held over until the following spring. Meanwhile the city applied to the Board for an order compelling the C. P. R. to build the subway at this point, with an increase in the headroom of 4 ft., making an 18 ft. subway, with a 3 1/2% approach. The Board ordered that the city



Fig. 2.—West Abutment Wall of Yonge Street Subway.



Fig. 1.—Avenue Road Subway as Completed.

Road itself until the whole work, including the paving and sidewalks, was completed. During this period, the Toronto Ry. operated a stub line service from the C. P. R. tracks to the end of the Avenue Road line at St. Clair Ave. [This subway was described in detail in Canadian Railway and Marine World for Sept., 1913.—Editor.]

Other work was not started until early in the summer of 1913, owing to an appeal by the City to the Governor in Council, to change the railway profile west of Avenue Road. Work on Davenport Road subway was however, started on July 7, 1913. Conditions at this point were somewhat complex, because of the subway which was built, and which is known as the Davenport Road subway, readily takes both Davenport and Poplar Plains Roads. The general plan, fig. 1, shows the layout at the intersection of these two streets. The alterations necessary to the underground public utilities occasioned thereby involved a large amount of work, the greater portion of which had to be undertaken before the subway could be constructed. The finished subway, viewed from the north, is shown in fig. 1.

The work at Spadina Road was commenced July 12, 1913, the traffic having previously been diverted by a temporary wooden bridge over the tracks at Hares St., at which point also the traffic from Davenport and Poplar Plains Roads was largely handled.

the opening up of a new street between Albany Ave. and Bathurst St., and the erection of a temporary wooden bridge over the C. P. R. tracks at Albany Ave.

The work at the Christie St. subway was started Sept. 16, 1913. The traffic was handled by means of a plank roadway and a temporary wooden bridge over the C. P. R. tracks on the west side of the street. The work at this point is almost completed, the bulk of the paving of roadway and sidewalks being finished.

Work was begun at Shaw St. Oct. 6, 1913, prior to which a temporary street had been opened up between Shaw St. and Ossington Ave. over the Toronto Power Co.'s property. This made it possible to divert the traffic from Shaw St. to Ossington Ave. during construction.

The work at Ossington Ave. was commenced June 15, 1914. A 4 ft. circular sewer, laid bare by the excavation, was lowered to comply with the depression of the roadway. Work was started at Dovercourt Road subway May 5, 1914. Alterations to the sewer were also made necessary by the depression of the street.

At the Yonge St. subway, although the running of trains on the level was abandoned on May 26, 1914, and all the railway traffic run on a trestle overhead, as shown in fig. 1, the work at this point has not progressed very far. The Board of Railway Commissioners for Canada approved, in 1912, of the

could have this conditional on the additional cost over and above that of a 14 ft. headroom subway being borne by the city. Before anything further was done the city decided to widen the street at this point from 66 to 86 ft., the widening to be done on the west side. The C. P. R. prepared its plans accordingly, and before the work was again got under way, the city decided to make another change, and to have the street widened on the east instead of the west side. The Board of course issued orders accordingly. This made it necessary to take a strip off the front of the C. P. R. property, which it had purchased for a station site. Some difficulties arose over the settlement to be made between the city and the C. P. R. in this connection, and before the work was again got under way the bylaw in reference to the widening of Yonge St. was rescinded, and of course it was impossible to do any work. A new bylaw, however, had been passed expropriating sufficient property to widen the street on the east side throughout the length of the subway, and the work is now being proceeded with.

Fig. 4 shows a temporary trestle and span at this point. The vehicular traffic is carried underneath the steel span, but the pedestrian traffic is carried on the east side of the street underneath the trestle near the small shanty shown in that figure. Fig. 2 shows the south half of the west abutment, which has already been constructed, and it is ex-

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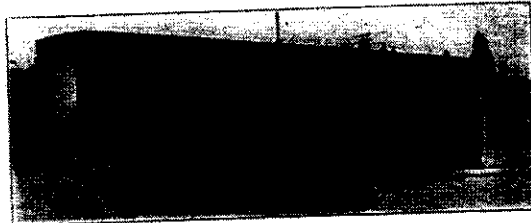


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Road street until the whole work, including the paving and sidewalks, was completed. During this period, the Toronto Ry operated a stub line service from the C. P. R. tracks to the end of the Avenue Road line at St. Clair Ave. (This subway was described in detail in Canadian Railway and Marine World for Sept., 1913—Editor.)

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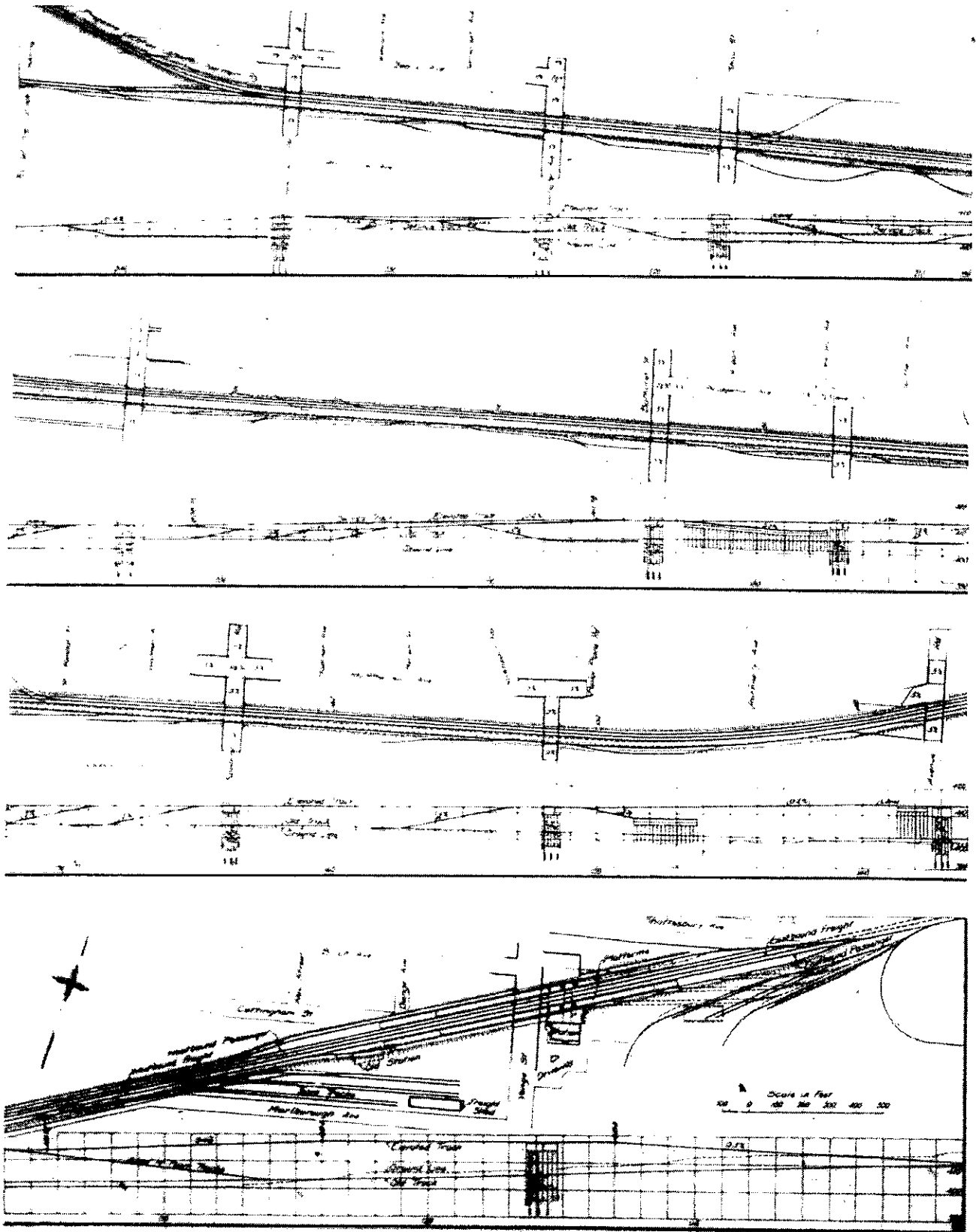


Fig. 1.—Plan and Profile of Track Elevation Across North Toronto.

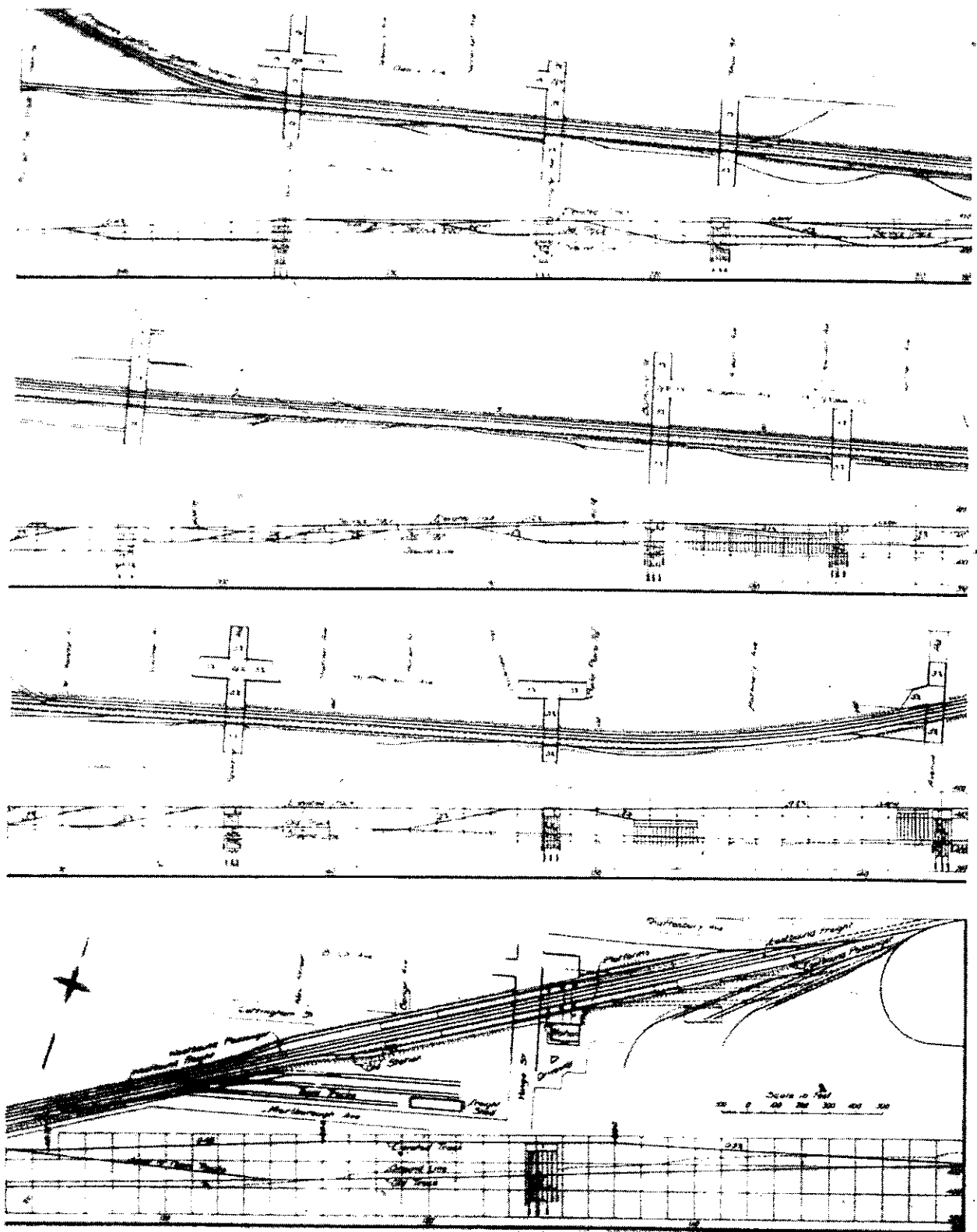


Fig. 1.—Plan and Profile of Track Elevation Across North Toronto.

pected that unless unforeseen conditions arise the work at this point, which involves heavy expenditures, will be completed, including the paving of the street, before the next freeze up. The depression of the street at this point is $\frac{3}{4}$ ft., making it necessary to make some very extensive alterations to the underground utilities, which consist of water mains, sewers, power and telephone conduits, and gas mains. To the east of the street and underneath the C. P. R. tracks will be located a driveway to the station and baggage rooms, the latter being located under the tracks. The driveway will be 23 ft. wide, and the baggage rooms will be about 146 x 60 ft. The new station has been located, as is shown in fig. 1, just east of Yonge St., and south of the tracks.

In building up the embankment between the subways, the earth work, about 250,000 cu yds. of which is already placed, was basied from Leaside Jct. To the west of Avenue Road, instead of building expensive trestle work, the tracks were pumped up, or lifted in 6 in. lifts, without interfering with the traffic. At the streets where subways were to be built, timber work corresponding to the deck of a standard railway trestle was placed underneath the tracks on ties in such a way that when a 6 in. lift

own half of the viaduct, but between Yonge St. and Avenue Road, the portion which included the passenger facilities will be owned

solely by the C. P. R., but the Canadian Northern Railway will enjoy the facilities by paying a rental.

Birthdays of Transportation Men in September.

Many happy returns of the day to—
 G. W. Alexander, Local Treasurer, G.T.R., Western Lines, Detroit, Mich., born at Light Hill, Yorks., Eng., Sept. 10, 1859.
 H. Bailey, ex-Bridge and Building Master, Dominion Atlantic Ry., now of Huntsville, Ont., born there, Sept. 2, 1879.
 W. B. Bamford, Division Freight Agent, Atlantic Division, C.P.R., St. John, N.B., born at Belleville, Ont., Sept. 10, 1863.
 G. T. Bell, Passenger Traffic Manager, G.T.R. and G.T.P.R., Montreal, born there, Sept. 7, 1851.
 W. H. Bigger, E.C. Vice President and General Counsel, G.T.R. and G.T.P.R., Montreal, born at The Carrying Place, near Trenton, Ont., Sept. 19, 1852.
 E. J. Biala, Foreman Tinsmith, Grand Trunk Pacific Ry., Transcona, Man., born Sept. 26, 1878.
 E. R. Bremner, ex-Division Freight Agent, Ottawa Division, G.T.R., Ottawa, born at Toronto, Sept. 9, 1875.

ston, C.P.R., Calgary, born at Hull, Eng., Sept. 24, 1869.
 J. E. Hutchison, General Manager, Montreal Tramways Co., Montreal, born at Brockville, Ont., Sept. 15, 1863.
 C. B. King, Manager, London St. Ry., London, Ont., born at Galena, Ind., Sept. 12, 1871.
 S. King, ex-Superintendent, Canadian Car and Foundry Co., Montreal; Director, National Steel Car Co., Ltd., Hamilton, Ont., now of London, Ont., born at Thorford, Norfolk, Eng., Sept. 12, 1853.
 R. E. Larmour, Assistant General Freight Agent, C.P.R., Vancouver, born at Brantford, Ont., Sept. 26, 1858.
 H. D. Lumsden, M. Can. Soc. C. E. Engineering Department, C.P.R., Toronto, born at Belhairs, Scotland, Sept. 7, 1844.
 G. S. Lytle, Car Service Agent, Manitoba Division, C.P.R., Winnipeg, born at Demolition, Ia., Sept. 23, 1873.
 C. D. MacKintosh, Superintendent, District



Fig. 1.—Yonge Street Subway Site in Early Stages of Work.



Fig. 2.—Davenport Road Subway as Completed.

was made on the earth work, a 6 in. lift could be made with the deck of the trestle already placed underneath the tracks, by placing ordinary 6 in. sawn railway ties underneath the caps to form cribwork. As the lifting proceeded the cribwork was formed so as to permit driving piles. After the final height or elevation of the tracks had been attained, pile bents were driven, the cribwork was removed, and steam shovel excavation commenced. It was necessary, of course, to drive the piling below the foundation levels, and in some cases on account of the great density of the material encountered, it was necessary to replace the pile bents as many as two and three times, by driving fresh piles.

The substructure of the subway at Avenue Road was built by Jennings and Ross, Toronto and the superstructure by Canadian Bridge Co. The substructures of subways at Davenport Road, Spadina Road, Howland Ave. and Bathurst St. were built by Wells and Gray Toronto, and the superstructures by Dominion Bridge Co. The substructures of subways at Christie, Shaw, Ossington Ave. and Dovercourt Road were built by McParlane, Pratt, Hanley, Ltd., Toronto, and the superstructures erected by Dominion Bridge Co. Wells and Gray have the contract for the substructure of Yonge St. subway and the superstructure has been awarded to Dominion Bridge Co. The superstructure of Yonge St. involves 3,500,000 lbs. of steel. This is by far the largest amount of steel in any of the subways along the viaduct. It is the C. P. R.'s intention to double track its line between Summerhill Ave. and Leaside Jct., and it is understood that the Canadian Northern Ry. will run into North Toronto over the C. P. R. tracks. To the west of Avenue Road the C. N. R. will

M. H. Brown, Division Freight Agent, Ontario Division, C.P.R., Toronto, born at Victoria Square, Ont., Sept. 1, 1866.
 W. B. Bulling, ex-Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, born there, Sept. 16, 1858.
 W. E. Burke, Assistant Manager, Canada Steamship Lines, Ltd., Montreal, born at Belleville, Ont., Sept. 23, 1881.
 A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, born at Kingston, Ont., Sept. 20, 1864.
 A. S. Dawson, M. Can. Soc. C.E., Chief Engineer, Department of Natural Resources, C.P.R., Calgary, Alta., born at Picton, N.S., Sept. 6, 1871.
 W. E. Duperow, Assistant General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Stratford, Ont., Sept. 1, 1872.
 W. H. Estanc, Traffic Auditor, Intercolonial Ry., Moncton, N.B., born at Halifax, N.S., Sept. 23, 1874.
 C. B. Foster, Assistant Passenger Traffic Manager, Eastern Lines, C.P.R., Montreal, born at Kingston, N.B., Sept. 30, 1871.
 J. P. Ferguson, representing Galena Signal Oil Co., Ottawa, Ont., born at Drummondville, Que., Sept. 12, 1854.
 E. S. Gosset, Auditor of Disbursements, Canadian Northern Ry., Toronto, born there, Sept. 28, 1879.

John Gray, General Agent, G.T.R., Toronto, born at River Beaudette, Que., Sept. 23, 1863.

D. W. Hatch, Travelling Agent, Atchison, Topeka and Santa Fe Ry., Montreal, born at Bedford, Que., Sept. 1, 1841.

W. R. Howard, Chief Dispatcher and Trainmaster, District 1, Atlantic Division, C.P.R., Brownville Jct., Me., born at St. Andrews, N.B., Sept. 14, 1871.

E. Humphreys, Fuel Agent, Alberta Divi-

l. Alberta Division, C.P.R., Medicine Hat, born at Auckland, New Zealand, Sept. 24, 1882.

F. J. Mahon, Inspector of Telegraphs, Saskatchewan Division, C.P.R., Saskatoon, born at Montreal, Sept. 13, 1885.

W. A. Mather, Superintendent, District 1, Alberta Division, C.P.R., Medicine Hat, born at Oshawa, Ont., Sept., 1895.

J. F. Mundie, City Freight Agent, C.P.R., Montreal, born at Prescott, Ont., Sept. 20, 1857.

M. B. Murphy, Superintendent, District 2, Central Division, Canadian Northern Ry., Winnipeg, born at Napa, Cal., Sept. 11, 1866.

J. Paul, District Freight Agent, Canadian Northern Ry., Winnipeg, born in Ephraim Tp., Grey Co., Ont., Sept. 13, 1858.

W. J. Pickrell, Master Mechanic, Ontario Division, C.P.R., Toronto, born at London, Ont., Sept. 15, 1866.

W. D. Robb, Superintendent of Motive Power, G.T.R., Montreal, born at Longueuil, Que., Sept. 11, 1867.

E. W. Taylor, General Freight Agent, Reid Newfoundland Co., St. John's, Nfld., born at Carbonara, Italy, Sept. 1, 1878.

F. O. Wood, Commercial Agent, Canadian Northern Ry., St. Louis, Mo., born at Toronto, Sept. 15, 1890.

H. A. Young, Ontario Storage and Carriage Co., Ltd., Toronto, born at Brooklyn, N.Y., Sept. 1, 1864.

Eastern Canadian Passenger Association.
 —The monthly meeting of the association was held at Quebec August 3, instead of Montreal, as customary.

The railway mail clerks in the Winnipeg district have ordered in the Dominion Government a machine gun, with eight men to operate it.