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## Grand Trunk Pacific Railway.

The following memorandum has been prepared by Jas. White, Geographer of the Department of the Interior: "During the summer of 1903 preliminary surveys were made of the line between North Bay and Winnipeg, and location surveys were made of a large portion of the line between Winnipeg and White Earth lake, about 300 miles. The extraordinarily wet weather not only interfered with the work and movements of the survey parties, but made the carriage of supplies extremely difficult and expensive. Enough work has been done, however, to show that it is possible to get a line from Winnipeg to the point at which the North Bay branch diverges from the main line, with gradients not to exceed 0.4% and curves of not more than 4°. Mr. Stephens (Assistant Chief Engineer of the G.T.R.) is confident that on the final location he can reduce most of the 0.4% to 0.3%, and he can shorten the line. All curves are compensated and the line is in every way a more favorable one than the C.P.R. through the corresponding sections. In general terms, it follows the valley of the English river to Lac Seul; thence to the Ogoki branch of the Albany river; thence in almost an air line to Opazatika lake. From this point it will probably follow a little to the south of and parallel to a base line run by Messrs. Niven & Speight, in about latitude 49° 30', for the Ontario Government. From the Interprovincial Boundary line it will probably run south-eastward to the headwaters of the St. Maurice, thence down the valley of the last named river; thence across country to Quebec. "The first 100 miles from Winnipeg can be built for \$25,000 a mile; that between the 100th and 350th miles, will cost \$35,000 a mile, and between the 350th and 530th miles, \$30,000 a mile. From the 530th mile eastward to Quebec cannot be estimated with any degree of accuracy till further surveys are made, but Mr. Stephens considers \$30,000 a mile ample. He also stated that all these estimates were liberal and that the road should easily be constructed at these figures. The \$30,000 estimate for the line through the 'clay belt' may seem high, but it is largely due to the heavy cost of getting in supplies. For the reverse reason the cost of the Quebec-Moncton section—other costs being equal—should be correspondingly reduced.

"It should be mentioned that in Ontario and Quebec the line has been located well to the north, that as much as possible of the timbered area shall be above the track. At the same time it has been kept above the edge of the upper plateau or 'fall line' where the streams plunge down in falls and rapids to the lower plateau.

"Prairie Section—Cost, gradients and curvature. Edmonton to Winnipeg, 850 miles by preliminary surveys, but will be reduced by 25 or 30 miles. Maximum gradient in western portion, 0.4%, and maximum curve, 3°; in

eastern portion maximum grade against east-bound traffic, 0.3% and 0.4% against west-bound. The maximum gradient in the eastern portion has been reduced on the assumption that the branch lines will feed in freight to the main line, and it is highly desirable that the locomotives should be able to haul the maximum loading. There is nothing to be gained by reducing the gradient below 0.3%, as it does not require the expenditure of more power to haul a train up such a gradient than it would to start it on the level. The maximum curve, as stated above, is 3°, but there are very few as sharp as this, and the alignment is very favorable.

"Winnipeg-Missinaibi Section—The G.T. Pacific has numbered its sections from North

ent against east-bound traffic, 0.35%; of which there are only three short stretches between the 39th and 100th mile—and 0.38% against west-bound traffic. From the 100th mile to the end of this section—at its 130th mile—the preliminary location shows a maximum of 0.4%, which can be reduced on the final location.

"Sec. 6, From White Earth Lake to Otter River—80 miles. The western portion, 0 to 35th mile, has not been returned, but as it follows the Ogoki River through a generally sandy country, there will not be any difficulty in getting a maximum gradient of 0.4%.

"Sec. 5, From Otter River to 9 miles west of Kenogami or English River—89 miles. Preliminary surveys show that a 0.4% line can be got.

"Sec. 4, From 9 miles west of Kenogami to Missinaibi River—132 miles. This is an air line, which shows that nearly all the maximum gradient will be against west-bound traffic. This extraordinary tangent shows an extremely level country.

"Sec. 3, From Missinaibi River to Kakozisk or Ground Hog River—102 miles. Easy gradients with a maximum of 0.4% and an excellent line. From the eastern end of the last section the surveyed line turns south-eastward via the Mattagami, Wanapitai and Sturgeon Rivers to North Bay. No attempt has been made to keep the maximum gradient on this portion not to exceed 0.4%, as it is only a branch. A very good line has been secured."

The Nelson and Fort Sheppard Ry. Co. has appealed against the valuation of \$1 an acre placed on its land grant of 500,000 acres, on the ground that the land was practically worthless for agricultural or ranching purposes, and that the standing timber, where it has not been burned over, could not be got out at a profit. The provincial tax for which purpose the valuation was made is 5% on the value.

The amount of fees paid by the Newfoundland Government for legal assistance in connection with the railway arbitration of 1902 was \$19,060. The return recently presented to the Legislature by the Finance Minister showed that the following amounts were paid: Hon. E. P. Morris, \$6,000; M. W. Furlong, \$5,000; J. A. Cleft, \$2,015; C. H. Emerson, \$2,015; C. O'N. Conroy, \$2,015; Horwood & Conroy, \$2,015.

At the annual meeting of the Railway Transportation Association, recently held at Cincinnati, Ohio, applications for membership were received from the Canadian Northern Ry. and the Toronto, Hamilton and Buffalo Ry. A report was received from the committee appointed to consider the question of the amalgamation of the International Association of Car Accountants and Car Service Officers and the Railway Transportation Association, but action thereon was deferred.



W. WAINWRIGHT,

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Bay westward, and, to avoid confusion, this arbitrary numbering has been used below, though the arrangement is not a convenient one.

"Sec. 9, Winnipeg to the Winnipeg River crossing, 110 miles. The first 70 miles is practically an air line, and from the 70th mile to the eastern end of the division is an excellent location. Maximum gradient 0.35%, except  $\frac{3}{4}$  mile at 0.40; maximum curve 4' and a very few, nearly all 1° and 2°.

"Sec. 8, Winnipeg River to Lac Seul, 90 miles. Maximum gradient 0.4%, most of it against west-bound traffic, maximum curve 4°.

"Sec. 7, Lac Seul to White Earth Lake, 130 miles. In first 100 miles maximum gradi-