

THE
NATIONAL TRANSCONTINENTAL
RAILWAY

CANADIAN RAILWAY AND
MARINE WORLD

C. H. RIFF

JULY 1905 — MARCH 1909

Transcontinental Railway Surveys.

The first report of the Transcontinental Railway Commission was presented to Parliament May 22. It confirms the favorable reports which have appeared from time to time as to the easy gradients obtainable and the character and resources of the country, not only between Moncton and Quebec, but westerly towards Winnipeg. It has not yet been ascertained whether a line north or south of Lake Abitibi would be more advantageous. The commissioners dissent from the idea that the Intercolonial Ry. could be used for the eastern section of the line. Were this done, they say, the country would be deprived of a more profitable line for freight, and much valuable country would be unopened. Chairman F. B. Wade summarizes the work already accomplished. He states that the commission has decided, subject to the approval of Parliament, to take over a portion of the survey work on the eastern division, performed by the G.T. Pacific Ry., for which \$289,863 will be paid. Although the G.T. Pacific management is strongly of opinion that it has secured the best possible line through the country east of Winnipeg, the commissioners decided it would not be advisable to take this for granted, and further explorations are accordingly being made. "We have reason," Mr. Wade says, "to hope for very substantial improvement upon the line obtained by the G.T. Pacific Ry., but it is too early yet to attempt to go into details."

So far as could be learned the chief instrument men and other men on parties taken from the G.T.P. were mostly, if not all, Canadians. The preliminary surveys in districts A from Moncton to the boundary between New Brunswick and Quebec, and B from the boundary line between New Brunswick and Quebec to Clear Lake, have been completed, and the parties withdrawn from the field. The commission is now possessed of sufficient information to enable a decision to be arrived at as to whether the line via Fredericton and the St. John River valley or one across the centre of New Brunswick shall be adopted. As to whether the line should run north or south of Lake Abitibi in Ontario it will be some time before the commissioners will have sufficient data to make up their minds on the point. It is proposed to commence location surveys in districts A and B as soon as local conditions permit, and it is expected that surveys for this stretch, from Moncton to Clear Lake, in Quebec, as well as for F from Winnipeg to Lake Nipigon, will be completed, so that tenders may be invited in early autumn. As far as the commissioners are aware all their employees are British subjects, and with very few exceptions Canadian-born. They are confident that there will be a full home supply of both skilled and common labor for all their purposes. They have laid

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Speaking of Lake Abitibi region and the

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extending west, the Chairman says is now known to be most inviting. The line between Clear Lake, in Quebec, and Moncton, are most valuable, and should be taken up by railway communication. Arrangements to secure uniform specifications for the eastern and western divisions of the line have been approved. It has been ascertained that there are almost insuperable physical difficulties in the way of constructing a direct line between Moncton and Levis, but the route, as the surveys show, runs all the way through valuable country, part of which is settled and the remainder most desirable for settlement. The opening up of this stretch will be of great advantage to the country. The probable length of this line, if the cross-country route in New Brunswick is adopted, will be shorter than the I.C.R., but how much shorter the comparison cannot say until location surveys are completed. Using the same gradients as the I.C.R., a saving of at least 90 miles would be effected, and nearly as much by the river route. The same motive power that would haul 660 tons on the Intercolonial would by the new line haul 1,260 tons going east and 990 tons going west.

Looking the workings of the two railways, and supposing that 10 daily freight trains are run each way, in 313 working days on the I.C.R. there will be 4,131,660 pay tons of freight carried, costing \$3,160,711. On the Transcontinental the same business would be done for \$1,782,518; in other words, the commissioners claim that the saving by means of the Transcontinental, with its lower gradients and curves, would be \$1,349,192, which, capitalized at 4% per year, would be equivalent to over \$30,000,000. Taking the Transcontinental 10 fully loaded trains per day of its own, the saving capitalized would represent \$54,000,000, and if the gradients are increased to the I.C.R. standard of 1%, the distance will be reduced on the Transcontinental to 403 miles from Moncton to Levis. These calculations are all made on the line through the centre of New Brunswick. With the distance reduced to 403 miles there will be a saving of \$448,927 a year, as against the I.C.R., which, capitalized, would represent \$13,723,438.

It has been suggested that the I.C.R. should be utilized for the eastern section of the line, but the commissioners consider, from information obtainable, if it were attempted to lower the gradients of the I.C.R. to the standards secured for the Transcontinental, the distance from Levis to Moncton would be increased by considerably over 100 miles, and a large section of valuable country left unopened. There are two points on the stretch from Levis to Moncton

the latter. Bridges and curvatures on the back line are comparatively few and small in number. From Grand Falls to Quebec they are small in size and number.

District Engineer Doucet found that a first-class line could be had from the Quebec boundary near Edmundston to Quebec bridge, and from the latter westerly via Batiscan, La Tuque and St. Maurice Rivers to Waymantachane, a distance of 432 miles. In no case will the gradients on eastbound traffic exceed 4% and on westbound 6%, with very few cases of the latter. The maximum curvatures of 6° will only be called into requisition in a few places. The average cost of this stretch from Edmundston to Waymantachane will not exceed \$30,000 a mile.

The distance from Moncton to St. Chrysostome is 493½ miles by the I.C.R. The distance between the same points by the Transcontinental is 504 miles. Final location surveys will, however, shorten this latter distance by 18 miles, making the distance from Moncton to St. Chrysostome 486 miles. The estimated shortening from preliminary surveys, using 1% gradients both ways, is 100 miles, which would make the distance 403 miles. The I.C.R. with 1% gradients can haul 22 cars, equal to 660 tons net pay load, whereas the Transcontinental could carry 42 cars eastbound, giving 1,260 tons net pay load, and westbound 33 cars, giving 990 tons net pay load.

Assistant Chief Engineer Butler gives the cost per ton on the respective lines as follows: I.C.R., Moncton to St. Chrysostome, 73c.; Transcontinental Ry., Moncton to St. Chrysostome, 59 7-10c., using a 1% gradient, or 43c. using the minimum gradients obtainable.

Speaking of the region between Clear Lake, Quebec, and the Ontario boundary, Chief Engineer Lumsden says that the country is dotted with numerous lakes, the lands being timbered with spruce, cypress, birch, poplar, small tamarac and cedar. It will be some time before it can be decided whether the line north or south of Lake Abitibi will prove more advantageous. The reports so far indicate that the north line will be found more advantageous as to cost of construction, the nature of country traversed and its suitability for settlement. The country between Winnipeg and Lake Nepigon contains enough timber to supply the whole of this section, and, in addition, the branch to Lake Superior. It consists principally of rocky knolls intersected with numerous lakes.

—Ottawa Correspondence Toronto Globe.

Grand Trunk Pacific Ry.

The Ontario Legislature at its recent session declaring that the cor-

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"We cannot estimate accurately," says Mr. Wade, "the cost of the proposed line from Moncton to Chaudiere (Levis), but think it will not exceed \$33,000 a mile, and we hope to very considerably reduce this estimate. We have expended up to the end of March \$10,000, and we have liabilities of \$175,761. For the ensuing year we estimate that we will require sums of \$1,328,500 to carry on our work. We hope to be in a position to call for tenders early this autumn. In this case we deem it desirable that \$3,000,000 should be voted on account of possible payments to contractors."

Chief Engineer Lumsden reports that gradients of 4% eastbound and of 6% westbound with maximum curvatures of 4° are obtainable except in a few places, where 6° curves may be needed. In no case will the curvature be in excess of 6°. The river route is surveyed to measure 333 miles, whereas what is known as the back route is 346 miles, a distance of 17 miles in favor of

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—Ottawa Correspondence Toronto Globe.

Grand Trunk Pacific Ry.

The Ontario Legislature at its recent session passed an act declaring that the corporation of Fort William had power to enter into an agreement with the G.T. Pacific Ry., respecting the location of the Lake Superior terminals of the company on Mission Island there, and to provide for the raising of \$300,000 by debentures, to provide for the payment of the bonus agreed upon. The act also declares that the 1,600 acres of the present Indian reserve on Mission Island, acquired for the terminals, and any other contiguous land acquired for the same purposes, shall form part of the town of Port William. The land mentioned will form the headquarters of the company on Lake Superior of the line to be constructed to connect with the Eastern Division from Moncton, N.B., to Winnipeg, to be constructed by the Transcontinental Railway Commissioners. According to a sketch map published by the Fort William Board of Trade, the terminals will extend from opposite the Canadian Northern Ry. coal docks on the Kaministiquia River to the lake front at the mouth of the Mission River. The area in the bend of the Mission River will be re-

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Discontinental Railway Report.

In this issue we gave a brief advance notice of the interim report of the Transcontinental Ry. Commissioners, more extended notice to which will be of interest. The report was signed by F. B. Wade, Chairman, in May, shortly after the report had been completed, and whose place on the Commission has not yet been filled, C. A. [Name] having been appointed acting Chairman at such time as the new member is appointed.

The report deals with the work of the Commissioners from the date of their appointment in Sept., 1904, to Feb. 28, 1905. Permanent offices for the Commission have been obtained in the Corby Building, Ottawa, at a rental of \$8,500.

The Commissioners meet every Monday when a quorum of two is present in town; the chief engineer attends all board meetings and takes part in the deliberations.

The first matter considered was as to what work should be undertaken during the then approaching autumn and winter. It was decided that as the G.T.P. Ry. Co. had had in hand surveys from Winnipeg east to the north of North Bay, and might prove desirable to purchase over these surveys, it would first direct attention to placing the field parties along the line from Moncton to Lake Abitibi. With the route across the province of New Brunswick, as there was a great diversity of opinion as to whether a line through the centre of the province was feasible at all, it was decided to run survey lines from Moncton to the Falls by alternative routes, the Chipman, Fredericton and the St. John River to Grand Falls and the other via or near Chipman across country to Grand Falls. As there was also a diversity of opinion as to whether the line further north should be located by the St. Lawrence River and north of Lake Huron by the Mathwin River and north of Lake Abitibi, it was decided to run both of these lines. It was decided to ascertain if a location could be found from Lake Clear down the River to St. Michael and on to Joliette. Survey parties for the several districts on the points named, having been organized and placed in the field, the work proceeded throughout the fall and winter. Subsequently additional parties were sent into the field between Lake Abitibi and St. Mary.

"The engineering work," the report states, "has been carried on under the supervision of the Chief Engineer, H. D. Lumsden, and the services and advice we have had to ourselves of in many other matters than

those strictly pertaining to engineering work, and which we have always found most valuable."

Early consideration was given to the desirability of purchasing the surveys, plans, etc., made by the G.T.P. Ry. Co., on the main line east of Winnipeg. It was deemed desirable that these should be secured as it would at once give the Commission a mass of valuable information, and negotiations were opened with the G.T.P. Ry. Co., Nov. 26, 1904. The terms upon which the Commissioners proposed to take over the

cost of the said surveys to be computed to Nov. 30, and all parties and materials in the field and elsewhere to be taken over by us on Dec. 1, 1904. (6) The accounting to commence forthwith and to be pushed through as rapidly as possible. (7) If necessary, a portion of the payment to be deferred until after a further appropriation by parliament to the Commission, such deferred payment to bear interest at the rate of 4%." The offer was finally accepted Jan. 13, 1905, and special auditors were appointed to go over the books and accounts of expenditure made in connection with the surveys. The audit was made under the supervision of the Commissioners' Assistant Engineer, M. J. Butler, who reported during its progress, "that he considered that 4.5 of section 3 of the surveys was not within the zone of the explorations which would have been made by the Commission upon the main line, and it was agreed as a result that the Commission would take over the caches, equipment and outfits in connection with said section 3 and pay for 4.5 of the surveys made upon it, which would cover the portion which was reasonably within the zone of our explorations. The Commissioners agreed that if their chief engineer, after additional explorations, was of the opinion that any greater portion of section 3 was within the zone which would have been explored by the Commission, the difference would be added to the amount that we would pay. The amount arrived at as the cost of these surveys, including the supplies on hand, and 4.5 of section 3, is \$289,863.67, including interest up to Nov. 30, 1904. The total cost to the company of the surveys upon the main line east of Winnipeg, including the whole of section 3, was \$348,308.24, including interest from the date of payment to Nov. 30, 1904." The reason the Commission agreed to take over the caches and supplies on the remaining 4.5ths of section 3, was because it was desirable to have the supplies in that part of the country, where they could be easily dropped down the streams, north, to the line projected by the Commission. It was also agreed to pay for the cost of the parties working in the field upon that portion of the main line taken over by the Commission from and after Dec. 1, 1904, up to the date at which they were taken over. The cost of these parties has not been accurately ascertained as yet.

Previous to the purchase of these surveys the Commissioners had sent our parties to survey a route between Winnipeg and Lake Abitibi, the headquarters of the district engineers in charge being Winnipeg afterwards changed to Rat Portage, Ont., Nipigon and North Bay, Ont. The Commissioners pro-

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(Continued on page 311.)



AKAHER BAKER.
European Manager Canadian Pacific Railway.

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Continental Railway Report.

(continued from page 337.)

up the route as far as possible in Lake Abitibi, and not to deflect North Bay, as was the object of the R. Co. The Commission had, in making the report, only two parties sent out by the G.T.P.R.

The Commission has a well-organized transport staff, with headquarters at Ottawa, and in a position to deliver all needed supplies, all along the route, and is in a position to move its supplies into the interior with comparative ease and economy, although the cost of transportation through New Brunswick and the eastern end of the province of Quebec, especially as far as the western boundary of the district has been accomplished mostly by teams, and very little trouble has been experienced in these districts, except that arising from the unusually heavy snowfall of the winter. A great deal of difficulty was experienced in getting supplies up to the northern shores of the Ottawa and Gatineau rivers. It was late before the supplies were obtained, after having secured the necessary canoe boats and men. The men were overworked in some cases, before they had reached the distributing caches aimed at. The winter transportation up the Gatineau has been conducted by teams as far as the Park, a large cache there, from which point has been distributed to the different parties by packers and dog teams. Dog teams have also been employed to advantage up through North Temiskaming to the north of Lake Abitibi. In order to get supplies up the north and west of Lake Abitibi, a road had to be cut out. Although the winter was one of unusual severity, there were no disasters of any moment, with the exception of the death of W. Leamy, transportation up the Temiskaming route. He was on ahead of his party, looking for the way for moving his supplies on, and was supposed that he broke through the ice and was drowned. The distance from the end of the railway track at Maniwaki to where the supplies are taken by teams to the head of the Gatineau, is about 115 miles. The distance to the south line is about 20 miles, and from the south line to the north line is about 10 miles. As there is no road or trail from the forks northward, the difficulty

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As to the work accomplished it is reported that the exploratory surveys in districts A and B had been completed, and the parties withdrawn. The Commission is now possessed of sufficient information to enable a decision to be arrived at as to whether the line via Fredericton and St. John River Valley or the one across the centre of New Brunswick should be adopted. It will be some little time before sufficient information is obtained to enable a decision to be arrived at as to whether the line north or south of Lake Abitibi will be preferable, although about all the information desirable for that purpose in the eastern portion of district B has been secured. It was proposed to commence location surveys in districts A and B as soon as the local conditions would permit, probably the first week in May. It was expected that location surveys in districts A, B and F would be completed so that tenders might be called for in the early autumn.

It was deemed advisable before tenders were invited that there should be prepared general specifications covering all works, forms and conditions under which tenders will be asked for, forms of contract that will be insisted upon. After some correspondence with the G.T.P.R., it was decided that there should be uniform specifications on the eastern and western divisions of the line. These specifications were prepared and have been approved by the company. They have been submitted to the Minister of Railways, who has also approved of them, although his sanction is not necessary. A copy of the specifications is appended to the report.

The Commissioners have, as far as possible, familiarized themselves with the country. They have visited Quebec, Edmundston, Grand Falls, Woodstock, Fredericton, Boiestown, St. John, Norton, Chipman, Minto, Moncton and Halifax, and also spent several days in Winnipeg, studying with the Chief Engineer the conditions there, and at the same time, visited Selkirk and Port Arthur. It will be necessary in the near future to decide upon the questions involved in connection with the terminals at Quebec and Winnipeg. The report continues:—

“The Commission feels that it should make special reference to the work which has been accomplished in connection with the surveys from Moncton to Chaudiere. It has been estimated and indicated for many years that a

parties were placed in the field on Sept. 27, 1901, and continued at work through the whole winter (the most rigorous and with the heaviest snowfall in that part of the country within the memory of living man), and as a result we are in a position to state that we have secured a line from Moncton to Chaudiere with a maximum grade of 0.4 opposed to eastbound freight and 0.6 opposed to westbound freight, and with a maximum curvature of 6° and these only used in a few places. This line runs all the way through a valuable country, part of which is settled and the remainder is most desirable for settlement, and the opening of which will be of great advantage to the country. The probable length of this line, when finally concluded, if the cross country route in New Brunswick is adopted, will be shorter than the L.C.R. between the same points, but how much we cannot say until our location surveys have been completed. If, however, the grades in existence upon the L.C.R. were employed, a saving of at least 90 miles over the L.C.R. by the cross country route would be effected, and nearly as much by the river route. The value of the road on the lines we have secured, and with the grades and curvatures we have obtained may best be understood by a comparison with the L.C.R., with its grades and curves, and in this connection we refer to the calculations contained in the report of the Assistant Chief Engineer, M. J. Butler, from which I will draw a few conclusions. The same motive power that will haul 600 tons on the L.C.R. will by the line secured haul 1,200 tons going east and 990 tons going west. If we take the workings of the two roads with 10 daily L.C.R. freight trains each way, we find that in 313 working days upon the L.C.R. there would be 1,131,000 pay tons of freight carried, and to haul this number of trains there would be 3,089,310 train miles per year. The cost of this, as per the report of the L.C.R. for 1903, would equal \$3,016,711. The Transcontinental Ry. would only have to run (via the centre route) 1,825,415 train miles per year to move the same quantity of freight, and which, at the same cost per train mile as the Intercolonial, would amount to \$1,782,518.72. It will thus be seen that the annual operating cost of the L.C.R. for the said quantity of freight is \$3,016,711.21, while that of the Transcontinental will only be \$1,782,518.72, a saving in favor of the Transcontinental of \$1,237,192.47, which capitalized at 4% per annum equals \$30,854,812.25; that is, we claim that the Trans-

...by ice in some cases, before they had reached the distributing caches aimed at. The winter transportation up the Gatineau has been conducted by teams as far as the lake, a large cache there, from which supplies have been distributed to the different camps by packers and dog teams. Dog sleds have also been employed to advantage throughout North Temiskaming to the north of Lake Abitibi. In order to get supplies to the north and west of Lake Abitibi a great deal of road had to be cut out. Although the winter was one of unusual severity, there were no disasters of any moment, with the exception of the death of W. Leamy, transport officer up the Temiskaming route, who went on ahead of his party, looking for a way for moving his supplies on, and was supposed that he broke through the ice and was drowned. The distance from the point where the railway track at Maniwaki to the point where the supplies are taken by teams to the north of the Gatineau, is about 115 miles. The distance to the south line is about 20 miles, and from the south line to the north line is about 10 miles. As there is no road or trail between the forks northward, the difficulty of transporting supplies by dog teams and sleds can be appreciated. One of the great obstacles encountered in the transportation of supplies into the interior is the action of the lakes. After the lakes freeze the weight of the first heavy fall of snow on the ice; consequently the water overflows and saturates the snow, which is then broken up. This slush will usually weigh more than the weight of a man, and is sometimes several feet in depth. Each successive fall of snow has the same result, and the lakes sometimes rendered almost impassable. The purchase of supplies, etc., were made by the purchasing department, under the charge of Mr. Ogilvie.

As the Commissioners were aware, the employees are British subjects and, with few exceptions, Canadian born. "We are confident," the report continues, "that we will have a full home supply of both skilled and common labor for the purposes of the work. During the rather hasty march of our forces, we took on a few enlisted instrument men and laborers, who proved to be undesirable. This was to be expected. These have been about all weeded out, and we are confident that we have in our employ to day, as fine a body of engineers, instrument men and men as can be found upon any similar work. We have laid down the rule

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The Commissioners have, as far as possible, familiarized themselves with the country. They have visited Quebec, Edmundston, Grand Falls, Woodstock, Fredericton, Boiestown, St. John, Norton, Chipman, Minto, Moncton and Halifax, and also spent several days in Winnipeg, studying with the Chief Engineer the conditions there, and at the same time, visited Selkirk and Port Arthur. It will be necessary in the near future to decide upon the questions involved in connection with the terminals at Quebec and Winnipeg. The report continues:

"The Commission feels that it should make special reference to the work which has been accomplished in connection with the surveys from Moncton to Chaudiere. It has been asserted and believed for many years that a line could not be secured across the centre of New Brunswick, with grades equal to the Intercolonial Ry., or any grades which at the time of the building of the I.C.R. would have been considered reasonable; also that it was impossible to secure such a line around the corner of the State of Maine, except by such an enormous expenditure as would make it prohibitive. It was also asserted that it would be necessary to use 1% or heavier grades the remainder of the way to Chaudiere. On the other hand, it was claimed that these difficulties did not exist; that the surveys which had apparently established them had not followed the right direction, or had not exhausted the possibilities of the territory traversed. In taking up this part of the work, the Commissioners decided to have an exhaustive and minute examination made of this country, and to acquire and present such information as would definitely settle and determine these conflicting contentions. We deemed it best to ascertain beyond doubt which was right and which was wrong in order that the public mind would be set at rest. To this end we directed our engineers to make the most exhaustive and careful explorations and surveys, so that having before them all that had been written or said they would be able to make complete and decisive reports. The first of the surveying

tained in the report of the Assistant Chief Engineer, M. J. Butler, from which I will draw a few conclusions. The same motive power that will haul 660 tons on the I.C.R. will by the line secured haul 1,200 tons going east and 990 tons going west. If we take the workings of the two roads with 10 daily I.C.R. freight trains each way, we find that in 313 working days upon the I.C.R. there would be 4,131,000 pay tons of freight carried, and to haul this number of trains there would be 3,089,310 train miles per year. The cost of this, as per the report of the I.C.R. for 1903, would equal \$3,010,711. The Transcontinental Ry. would only have to run (via the centre route) 1,825,415 train miles per year to move the same quantity of freight, and which, at the same cost per train mile as the Intercolonial, would amount to \$1,782,518.72. It will thus be seen that the annual operating cost of the I.C.R. for the said quantity of freight is \$3,010,711.21, while that of the Transcontinental will only be \$1,782,518.72, a saving in favor of the Transcontinental of \$1,237,192.47, which capitalized at 4% per annum equals \$30,851,812.25; that is, we claim that the Transcontinental, with its lower grades and curves, the road being equally well constructed with the I.C.R., will be over \$30,000,000 more valuable. With increased business the difference would be much greater. If, however, we give the Transcontinental 10 fully loaded trains per day (of its own) instead of confining it to what would be equal in tons to 10 fully loaded trains upon the I.C.R., the difference would be much greater still and the net annual saving would amount to \$2,157,544.52, which capitalized at 4% per annum would give \$53,938,613 as the increased value of the Transcontinental low grade line over the I.C.R. If the grades are increased to the I.C.R. standard the distance would be reduced on the Transcontinental to 403.7 miles. Taking the same 10 trains per day comparison, there would be an annual saving in favor of the latter road of \$548,937.52, which being capitalized at 4% per annum, equals \$13,723,438, which represents the increased value of the Transcontinental Ry. over the I.C.R. for the handling of that amount of traffic. As the traffic increases, the difference increases. These calculations have all been made upon the centre line through New Brunswick. They can easily be applied to the other route. There are sundry other comparisons in the report of Mr. Butler which should be re-

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in order to estimate the additional line we are constructing. It is suggested that the I.C.R. could be constructed in the eastern section of this line, and the Commission is, in its judgment, of the opinion that it is not desirable to lower the grades of the line to the standard that we have secured for the Transcontinental, the distance from Montreal to Moncton would be increased considerably over 100 miles, and this would mean a great deal of valuable country would not be put up. There are two points on the line between Chaudiere and Moncton where it would be desirable to put in 'pusher' grades. If this is decided upon, a distance of 25 miles can be put in these grades. As the heavy traffic east beyond Quebec will only be in five months of the year, there is no objection to putting in these grades. On the other hand is placed against a 'pusher' service at two points about five months of the year, and we estimate accurately the cost of the proposed line from Moncton to Chaudiere, and we think we are safe in stating that it will not exceed an average of \$33,000 a mile, and we hope to very considerably reduce this estimate."

The expenditure to the end of March was \$1,200,000, leaving \$59,547,977 on hand of the session of 1904. There were some date liabilities of \$175,761,000, estimated that a further vote of \$200,000 could enable the Commissioners to carry on operations to the end of the fiscal year, and for 1905-06, it was estimated that \$1,000,000 would meet all expenditures, and the event of tenders being asked for the line, the Commissioners estimated that \$1,000,000 to meet payments to contractors. The supplementary estimates provided for \$1,000,000 for construction work, \$1,000,000 for terminals and right of way,

constructed to adhere to grades not exceeding 0.4% adverse to eastbound and 0.5% adverse to westbound traffic, though in regard to the last mentioned this has been changed to 0.6% in one or two exceptional cases. The maximum curvature was limited to 4°. The work done by the different parties is summarized by the Chief Engineer as follows:

DISTRICT A.—On Sept. 27, A. C. Dunn, who had been appointed acting district engineer for that district, organized and started out six survey parties, and during the following month six more parties, two of these, however, were disbanded before the end of Dec. Commencing at Moncton and extending through to Quebec boundary, a large area of country has been explored, and preliminary surveys have been made to Chipman on the Salmon River, and thence by what is known as the back route up the valley of the Gasper River, and passing south of Boiestown to the head waters of the Texas and Miramichi rivers, thence to near Plaster Rock, then to Grand Falls and Edmundston, and connecting with the surveys made in district B, at a point about 20 miles beyond the province line. Another route was surveyed branching off the foregoing near Chipman, striking the valley of the St. John River and crossing it at Fredricton, thence following the west side of the river to Woodstock, and Andover, and crossing the river at the last mentioned point, thence to Grand Falls, where it joined the back route survey. On both these routes many pieces of alternative lines were run or explored. The total distance by the back line from Moncton to the Quebec boundary is, say, 299 miles, which distance will probably be shortened on location. By the river route the distance is 311 miles, but will probably be lengthened on location. Total mileage covered in this district was, of bare natural explorations, 2,900 miles; preliminary lines, 1,320. Grades of 0.4% adverse to eastbound and 0.6% adverse to westbound traffic, with maximum curvature of 4° were obtained, except the curvature which may require the use of several 6° curves.

the mile. Total distance country line to Champlain market via line 1, 114 miles. Branching off line 2, avoiding viaduct to Louise basin 6.40 miles. Maximum grade 0.4. Total distance country line to Louise basin via line 2, 12.75 miles. Maximum grade westbound 0.6%. Total length of location and preliminary survey lines run in this section, 85 miles.

DISTRICT C.—The country through which the line in this district will pass is entirely uninhabited save by several Hudson's Bay or fur traders' posts and a few Indians, and unsurveyed with the exception of a few explorations, geological and others, along the principal rivers, and these generally at right angles to the direction of the proposed line. No reliable information is obtainable as to the country between the streams. As far as reports heretofore received by us would indicate, this country is dotted with numerous lakes, the land being more or less timbered with spruce, cypress, birch, poplar and small tamarac and cedar. Eight parties were organized and sent out in this district in Oct., four going out by way of Maniwaki, Que., and four others by way of Nipawin, Que. (Owing to the lateness of the season, these parties took considerable time in reaching their destination, caused by the low state of the water in the rivers, the early forming of ice and difficulty in transporting considerable quantities of provisions beyond the regular transportation routes. They have now been at work for some time, but in many cases have had to abandon miles of line owing to their meeting with numerous lakes and stretches of country where it was impracticable to obtain the grades required. From the latest reports they are now making fair progress, but it will be some time before it can be decided whether the north or south line will prove the most advantageous. Cues with provisions for all the necessary parties for the next 10 months have been provided at the next 10 months have been provided at the north end of Grand Lake, Victoria. As soon as the ice moves out of the rivers and lakes supplies will be distributed east, west and north from these centres for the use of the

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and a line run across the entire district from about 110 miles easterly from the north end of Nepigon Lake this line would go so much to the south, especially crossing the Missanabi River, near Albany, at which point it turned southward, and headed for North Bay. At the last point near Albany rapids the line would be about 18 or 20 miles south of the line passing to the north of Lake Albany now proposed. I am now in contact with parties who have been working for the C.P.R. during the winter in that district to be put on to explore this direct route, and to connect with parties which have been sent out in District D, for a similar purpose. The surveys so far made in this district go to show that the country is broken in places, with one or two extensive river crossings, especially the Pequtchewan river, but as the proposed line is some distance north of the line as run, and I have been informed that a much better crossing can be found to the north of said line, it is probable that this crossing can be much reduced in cost. The route in this district passes through what may be found to be fair agricultural land to a considerable extent, with large areas of timber, but where not burnt over the timber is generally small spruce, cedar and aspen, the latter generally dead, with occasional blocks of heavier timber, suitable for pulp, etc.

District E.—The surveys in this district up to Jan. last were conducted by the G.T.P.R. engineers, who in Nov. commenced running a line which showed heavy work in places. From the information furnished by them it was my opinion that there was no warrantable continuance of location north of such time as I was sure the line they had run was the best the country afforded. Accordingly in January last I sent out one party and five exploratory survey parties under A. R. Hodgins, district engineer, to explore and examine other sections of the country than those shown to have been explored by the G.T.P.R. parties.

At the request of the Chief Engineer, Mr. J. G. B. Assistant Chief Engineer, who had been over considerable portions of the country, and made a report on the comparative distances by the Intercolonial Ry., the Transcontinental preliminary line, and the difference would be made in this district supposing grades of 1% were used in each direction; and comparing the operating values of the several lines on the basis of ten freight trains per day each way; and what the difference in the capital

ton to St. Chrysostome, by such 1% both ways grade, 403.7 miles. For the purpose of the calculation, I have taken the I.C.R. locomotive no. 310, a simple consolidation, recently built by the Canadian Locomotive Company, and which, I understand, is now in use on the line, the principal dimensions of which are as follows: Diameter of cylinder, 21 ins.; length of stroke, 28 ins.; height of driving wheels, 56 ins.; weight of driving wheels, 150,000 lbs.; weight of engine in working order, 165,000 lbs.; weight of tender, 120,000 lbs.; total weight of engine and tender, 285,000 lbs.; or 142.5 tons. The weight of the van or carboose is 14.5 tons. I assume that 30-ton capacity cars, which weigh when loaded, 46.15 tons, will constitute the train. The several cars which the above locomotive can haul at a speed of 15 miles per hour on the several grades below are as follows: I.C.R. 1% grades, 22 cars, equal to 660 tons net pay load. Transcontinental Ry. eastbound 4-10ths of 1% grade, 42 cars, giving 1,260 tons net pay load. Transcontinental Ry. westbound, 6-10ths of 1% grade, 33 cars, giving 990 tons net pay load. The I.C.R., 10 daily freight trains each way, will haul in a year of 313 working days (length of line 493.5 miles), net pay tons 660x2, trains 2x10x313 days=4,131,600 pay tons; and to haul this number of trains will make 403.5x2 miles, 2x10 trains, 313 days, 3,089,310 train miles per year. The cost per train mile on the I.C.R. Ry. for 1903, as given in the report of the Department of Railways is 97.65c., which cost will be used for all comparisons. Hence 3,089,310 train miles x 97.65c. = \$3,016,711.21, which gives the annual cost of operating the ten daily trains on the I.C.R. The Transcontinental Ry. low grade line will handle the same tonnage, with 7 trains eastbound and 5 westbound, although they will not be quite loaded to the full limit, the ratio of eastbound to westbound traffic is taken at about 6 to 4. (Length of line 486 miles). Hence we get 486 miles x 12 trains x 313 days = 1,825,415 train miles per year, which moneyed out at the same price per train mile of 97.65c. equals \$1,782,518.72, which gives the annual cost of operating the twelve trains on the Transcontinental Ry. The annual operating cost of the I.C.R. being \$3,016,711.21. The annual operating cost of the Transcontinental Ry. being \$1,782,518.72. Leaves a net annual savings in favor of the Transcontinental Ry. of \$1,234,192.49, which sum capitalized at 4% per annum equals \$30,854,812.25. And this amount is the increased value of the Transcontinental low grade line over and above the existing I.C.R., on the basis of 10 daily

St. Chrysostome, 403.7 miles; ten daily trains each way per day for 313 working days; 403.7 miles x 10 x 2 trains x 313 days = 2,527,162 train miles per year. Tonnage hauled, same as on I.C.R., viz., 4,131,600 pay tons; 2,527,162 train miles at 97.65, \$2,467,773.69. As the I.C.R. cost for the same service is \$3,016,711.21, the net annual savings by the proposed 1% Transcontinental would be \$548,937.52, which sum, capitalized at 4% = \$31,723,438; and this amount is the increased value of the suggested 1% Transcontinental line over the I.C.R., on the basis of ten daily trains over each road each way. The comparison between the two proposed grades on the Transcontinental Railway works out as follows:—On the basis of ten daily trains each way per day, on the 1% grade line—1% per grade line train mileage cost \$2,467,773.69, Transcontinental low grade line train mileage cost, doing same business, \$1,782,518.72; net annual savings in operation \$685,254.97, which capitalized at 4% per annum = \$17,131,374.75. And this amount is the increased value of the low grade line over the 1% line. In all the above calculations no account has been taken of reduced operating cost for passenger trains. It is obvious that substantial savings will result from the use of lighter engines to haul the same passenger train. Less fuel, oil, etc., will be required, less wear and tear to track and bridges through lighter engines, better time and more uniform rates of speed may be maintained. In conclusion, the cost per ton on the several lines, based upon the above figures, are as follows: I.C.R., Moncton to St. Chrysostome per ton, 73 cents; Transcontinental Ry., 1% grade, Moncton to St. Chrysostome, per ton, 59 7-10 cents; Transcontinental Ry., 0.4% and 0.6% grade, Moncton to St. Chrysostome, per ton, 43 cents."

Robert Larmour, Principal of Larmour's School of Telegraphy, Stratford, Ont., and formerly Superintendent of the G.T.R. Southern Division, writes:—"I read THE RAILWAY AND SHIPPING WORLD with much interest, as it keeps me in touch with many old friends with whom I was connected when in active railway life."

The question of the provision of standard rules for train operation which was taken up by the Board of Railway Commissioners and discussed with representatives of the railway companies, was referred to a committee consisting of representatives of the C.P.R. and the G.T.R. That committee has now practically completed its report, which will be submitted at a meeting of the representatives

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National Transcontinental Railway.

The Transcontinental Railway Commissioners left Ottawa, Sept. 29, on a trip to the Maritime Provinces. From Quebec they travelled to Riviere du Loup, thence via the Temiscouata Ry. to Edmundston, N.B., and on by the C.P.R. to Grand Falls. From this point they went to Plaster Rock, via the Tobique Valley Ry., and then along a portion of the projected route of the Eastern Division to Fredericton. St. John was the next point visited. Messrs. Young and Reid went to Chipman, where the Central and the St. John Valley routes meet, and Messrs. Parent and McIsaac joined them later on. A visit was also paid to Halifax and Sydney, and later on a trip was made to Prince Edward Island, where they went over the railway, leaving Charlottetown for Ottawa, Oct. 9.

The offices of G. C. Dunn, Division Engineer, will be moved Nov. 1, from Fredericton to St. John, N.B.

Work has been commenced on an extension

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classifications and tariffs, in order that various commercial centres and all other points may be treated equitably and that the requirements of the recent Railway Act may be carried out. The freight officials of the transportation companies have their own duties, which usually are heavy enough to require their entire time, and the only relief to them and at the same time service to the public, in ascertaining and presenting to the Association in a thorough manner the needs of the public as far as transportation can deal with them.

Mr. Wade has also been Manager of the car service department, which is now to be abolished, its work being transferred to the Car Service Bureau, reference to which is made on page 359.

Transcontinental Railway Surveys.

A number of press reports are current in regard to the route and as to the time when construction will be started. One report has it that the route from Winnipeg has been laid out, and is to be approved by the Government at the end of July. According to the act, as set forth in the commissioners' report, no plan can be made for the Government's approval until the route is approved by the Department of Railways, mentioned in the report, and by a majority of the commissioners. The reference of the plans to the Department of Railways, mentioned in the report, is apparently an unnecessary formality. From the date of the surveys at the end of Feb., it is difficult to imagine that the surveys for the route between Moncton and Winnipeg were such a condition as to say that all the preliminary surveys had been completed, reports made thereon, and a route decided upon. The reason why it is unlikely that the commissioners have adopted any particular route, is that no successor has been appointed to the chairman, the late F. B. Wade, K.C., while any two of the commissioners in attendance are competent to transact business, they would hesitate before deciding on such an important matter, while there was a vacancy on the commission.

Another report declares that the whole western section will be abandoned as it has been found that the cost of construction in some parts will be so high that its construction is altogether out of the question. Other reports state that contracts will be asked for within a few weeks, and that construction will begin in the fall. It is more than doubtful, however, if anything in the way of asking for contracts will be done until the fall, or early

winter, and it is not at all likely that any construction will be undertaken this year.

The commission is having built at Nepigon, Ont., a residence and office building for the District Engineer and his staff. The probable cost of the building will be between \$2,000 and \$3,000.

Grand Trunk Pacific Railway.

E. W. Morse, Vice-President and General Manager, spent some time at the end of June and early in July at Fort William, Ont., and Winnipeg, in connection with the business of the company. He stated, on his return to Montreal, July 4, that work would be commenced on the Lake Superior branch at Fort William, about a month thereafter.

The route of this branch as filed with the Department of Railways by the G.T.P.R. Co., provides for a line about 220 miles long. The surveyed route runs westerly from the terminals at Fort William to Kakabeka Station on the C.P.R., thence parallel with the C.P.R. for 41.3 miles to Linko (formerly Linkoping) station. From this point the route is north westerly, passing immediately south of Mattawa Lake, and north of Minnetakie Lake to the terminus on the east boundary of Lac Seul Indian Reserve, north of Lost Lake, where connection will be made with the main line of the Transcontinental Ry.

A Winnipeg press despatch of July 4 stated that construction on the western division would be commenced in about a month. The route, it stated, had been definitely located westward to the intersection with the Regina and Prince Albert branch of the C.P.R. (Qu'Appelle, Long Lake and Saskatchewan Ry.), and provisionally to Edmonton. It was further stated that construction would be started in the vicinity of Portage La Prairie, Man., and that the first contracts let would cover 400 miles of grading.

gradient eastbound is 0.4%, and westbound 0.6%, and the maximum curvature is 5° compensated. There is a large amount of rock-work on the contract, in one place there being a cutting of 128,000 cubic yards; while across the height of land there is a good bit of shallow muskeg. There are a few bridges on the route, including four large steel ones. The company will build its own stations and put in a water service. There will be a division point about 100 or 110 miles north of Fort William. The work is to be completed in time to have the line in operation in the fall of 1907. O. W. Swenson, who was recently in charge of construction for the firm on the C.P.R. Toronto-Sudbury line at Wahnapijag, Ont., will have charge of construction of the G.T.P. branch, with his headquarters at Fort William.

The construction for the company is under the charge of G. A. Knowlton, Division Engineer at Fort William, Ont. The first section is 100 miles in length, and is subdivided under the charge of A. G. Allan, as Assistant Engineer, for the first 50 miles, with headquarters at Fort William, and G. Macrone, Assistant Engineer in charge of the second 50 miles, with headquarters at Savanne, Ont. The assistant engineers have a number of resident engineers under them, each of whom has charge of from six to ten miles of construction. On the first 50 miles the resident engineers, with addresses, are: S. Street, R. A. Frederick, Fort William; A. E. Morris, Kakabeka; H. B. Dibley, Kaministiquia; S. F. Hazelwood, Finmark; J. M. Fotheringham, Buda; and on the second 50 miles, W. R. Smith, C. D. Fairchild, J. S. Leitch, J. A. Vickery and E. R. Brobeck, their nearest post office being Savanne. This second 50 miles runs through unsurveyed territory and a more exact location of the resident engineers cannot be given. The contractors have been completing their store-houses and other arrangements, but have not yet let any sub-contracts.

The question of the Winnipeg terminals has been under consideration by the National Transcontinental Railway Commissioners, the Canadian Northern Ry. and the G.T. Pacific Ry. interests, and the Winnipeg City Council. The Board of Railway Commissioners has also some matters before it in connection with the closing of certain streets on the lands acquired by the Canadian Northern Ry. for its terminals. The proposition is that there should be a joint terminal for the G.T.P. Ry. and the Canadian Northern Ry. This latter company has secured a large area of land for its terminals, and a good deal of the difficulty in arranging for joint terminals is as to the ownership of the land.

The contractors for the line from Portage la Prairie to Touchwood Hills, Man., 275 miles, McDonald, McMillan Co., have let sub-contracts as follows:—36 miles to G. H. Strevel, Portage la Prairie; 10 miles to N. Keith, Portage la Prairie; two miles to W. McQuat, Wellwood; four miles, Roe Bros., Wellwood; five miles, J. A. Munson, Brookdale; 11 miles, J. A. Tierney, Varcose; two

18 miles, J. A. Tierney, Varcose. Chief Engineer, J. McLaren, Assistant Engineer, and W. J. Weller, Bridge Superintendent, for the contractors, and the following represent the railway company. Section 1, from Portage la Prairie, westerly for 86 miles, Assistant Engineer A. M. Jones, who has under him as resident engineers: R. Ripley, Bagot, Man.; H. L. Johnston, Austin, Man.; M. A. Burbank, Carberry, Man.; J. Durie, Sewell, Man.; C. M. Bull, Forest, Man.; R. F. Hickman, Carnegie, Man. Section 2, H. B. Roe, Assistant Engineer, who has as resident engineers: C. E. McLennan, Oak River, Man.; A. E. Stanton, Minnota, Man.; J. Hislop, Birtle, Man.

The plans for the line from Touchwood Hills, Man., to Edmonton, Alta., have been supplied to the Dominion Government, and C. Schrieber, formerly Deputy Minister of Railways, has been commissioned by the Minister of Railways to report upon the location. The company expects to be able to put under contract about 100 or 500 miles of line west of Touchwood Hills, by the end of Nov.

In reference to the terminus of the line on the Pacific coast, reports are current that Vancouver will be chosen instead of Port Simpson or Kaien Island. A press report is also current that a prize of \$250 is to be offered by the company for the best name for the terminus, the competition to be among the school children of the Dominion.

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Grand Trunk Pacific Railway.

A contract has been let to Foley Bros., Larson & Co., of Winnipeg, Man., and St. Paul, Minn., for the construction of the Lake Superior branch from Fort William to Lake Superior Jet., Ont., about 210 miles, and including a branch into Port Arthur. Lake Superior Junction is the point where a connection will be made with the Eastern Division, which the National Transcontinental Railway Commissioners will construct easterly from Winnipeg. The contract covers the grading, culverts, bridges (except those of steel) and everything ready for the ties and tracklaying. The company will let the contracts for the steel bridges direct, and will do its own tracklaying. The maximum gradient eastbound is 0.4%, and westbound 0.6%, and the maximum curvature is 5' compensated. There is a large amount of rock-work on the contract, in one place there being a cutting of 128,000 cubic yards; while across the height of land there is a good bit of shallow muskeg. There are a few bridges on the route, including four large steel ones. The company will build its own stations and put in a water service. There will be a division point about 100 or 110 miles north of Fort William. The work is to be completed in time to have the line in operation in the fall of 1907. O. W. Swenson, who was recently in charge of construction for the firm on the C.P.R. Toronto-Sudbury line at Wabnapitae, Ont.; will have charge of construction of the G.T.P. branch, with his headquarters at Fort William.

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miles each to W. Carson, G. S. Poole and H. Olsen, Varcoe; five miles, A. J. Selwood, Minnola; 25 miles to J. Bradley, Minnola; two miles to A. D. McCormick, Minnola; seven miles to H. Guilbault, Minnola. The general contractors have camps at four points covering seven miles of the heavy work on the Sand Hills, and anticipate putting on some more steam shovel outfits during the fall. A sub-contract has been let to the Doughbors for 17 miles of the heavy work, on which it was expected to put on at once about 150 teams and 1,500 men. These contracts cover about 110 miles of the work, which it is expected to have completed ready for tracklaying early in next season. Contracts for an additional mileage are expected to be let at an early date. C. W. McMillan is Manager of Construction; A. T. Fraser, Chief Engineer; J. McLaren, Assistant Engineer; and W. J. Weller, Bridge Superintendent, for the contractors, and the following represent the railway company: Section 1, from Portage la Prairie, westerly for 86 miles, Assistant Engineer A. M. Jones, who has under him as resident engineers: B. Ripley, Bagot, Man.; H. L. Johnston, Austin, Man.; M. A. Burbank, Carberry, Man.; J. Durie, Sewell, Man.; C. M. Bull, Forest, Man.; R. F. Hickman, Carnegie, Man. Section 2, H. B. Roe, Assistant Engineer, who has as resident engineers: C. E. McLennan, Oak River, Man.; A. E. Stanton, Minnola, Man.; J. Hislop, Birtle, Man.

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Grand Trunk Pacific Railway.

Survey parties are in the field over the whole country between Moncton, N.B., and Winnipeg, Man., described as the Eastern Division of the Transcontinental Ry. The projected route is divided into six districts, the headquarters and division engineers in charge being:—Fredericton, G. C. Dunn; Quebec, A. E. Doucet; Ottawa, A. N. Molesworth; New Liskeard, Ont., appointment not made; Nipigon, Ont., C. E. Perry (acting); Winnipeg, Man., Major Hodgins. It is not likely that any tenders will be asked for until the fall so that work may be gone on with during the winter. Construction, according to Sec. 10, Chap. 24, 1901, must be commenced simultaneously at Moncton, N.B.; Quebec; at the point of junction of the Eastern Division with the branch southerly to a point at, or near, either North Bay or Nipissing, Ont., and at Winnipeg, and shall be carried on westerly from Moncton, eastward and westward from Quebec, and from the point of junction with the North Bay branch, and eastward from Winnipeg, in order that the whole line between Moncton and Winnipeg shall be completed as nearly as practicable at the same time. The specifications for construction are being prepared, a considerable portion of the work being completed. H. A. Wood, Assistant Chief Engineer G.T.P. Ry., is acting with the commissioner's engineers in arranging the specifications, etc., in conformity with the provisions of section seven of the agreement between the Government and the G.T.P. Ry., confirmed by Chap. 71 of the Statutes of 1903. This section sets forth that in order to protect the interests of the lessees of the Eastern Division, it is agreed that the specifications be submitted to, and approved of by, the G.T.P. Ry. before the commencement of work, and that the work shall be done according to the specifications, and shall be subject to the supervision and inspection of the chief engineer appointed by the Government and the chief engineer of the company. In the case of differences between these engineers an arbitrator is to be chosen by them, or appointed by the Chief Justice of the Supreme Court, if the engineers cannot agree on one.

In connection with the surveys upon the eastern section of the Grand Trunk Pacific Ry. between Moncton, N.B., and Winnipeg, Man., which is to be constructed by the Transcontinental Railway Commissioners, the annual report of the Department of Public Works contains the following paragraph:—

"The despatching of so many engineering

Moncton state that a route has been found round the shoulder of the State of Maine giving a grade of 4-10 of 1% going east, and 6-10 of 1% going west.

A return made to the House of Commons shows that there are 30 persons on the staff of the Transcontinental Railway Commission, exclusive of the Commissioners:—Their salaries are: H. D. Lumsden, \$500 a month; M. J. Butler, \$375; A. W. H. Sampson, \$125; C. J. Jones, \$80; Fred Dillon, \$80; A. L. Ogilvie, \$150; R. L. Landry, \$70; Alice Seed, \$25; R. M. J. McGill, \$175; Jos. Clement, \$100; R. H. Lang, \$60; H. A. Collins, \$85; John Meghohn, \$75; R. Rojan, \$70; D. Lefebvre, \$20; P. B. Ryan, \$208.33; R. F. Omacke, \$150; J. H. Roy, \$100; O. P. Schreiber, \$60; F. McCourt, \$70; P. Wright, \$30; F. W. White, \$100; G. O'Reilly, \$15 a week; A. T. Gow, \$150 a month; W. R. Saults, \$75; R. Lagimodiere, \$60; A. Beaudry, \$70; C. Heldmann, \$80; R. Larocque, \$70; J. O'Malley, \$50. No allowances are made except for actual travelling expenses. The engineers in charge of parties are appointed by the Board upon the recommendation of the Chief Engineer. The engineering parties were made up in the first place by the Board on the recommendation of the chief and district engineers, and changes in same are made upon the recommendation of the chief of parties and the district engineers and approved of by the chief engineer. The engineers in charge of parties report to the district engineers, who report to the Chief Engineer, and he reports to the Board. Interim reports are received from time to time from the parties in the field and district engineers.

The plans submitted to the Department of Railways by the G.T. Pacific Ry. provide for large terminals at both Port Arthur and Fort William, Ont., and on the Pacific coast. These plans, it has been explained, were deposited to secure available sites from which the final sites would be selected. The Minister of Railways, replying to a question in the House of Commons recently, stated that certain plans had been deposited, but they were not available. The surveys are being prosecuted from Winnipeg to the coast by a large number of parties, and a report from A. S. Going, who has been in the mountains since August, 1904, states that nine passes are available for a line in northern B.C. These are Yellowhead, Peace River, Pine River, Smoky and North Smoky, Porcupine, two in the Red Deer district, and the Wapiti pass. F. M. Morse, Vice-President and General Manager, and other officials are expected to return to Montreal, April 1, from a trip to Victoria and intermediate points. At Port Arthur he stated that construction would

nomical plan. Should a start be made on the Pacific coast the cost would be much greater and the company could not change its policy without assistance from the Provincial Government either in land or cash. The financial arrangements for the construction of the line from Winnipeg to the Rocky Mountains had been completed, and it was important that the company should arrange for the balance of the line while the money market was in its present condition. No portion of the road would be suspended while others were being constructed; every section must bring its returns as soon as ready for traffic. The line would have connection with Vancouver Island and the southern portion of the province.

TRANSPORTATION APPOINTMENTS.

Canadian Northern Ry.—H. J. Cowie has been appointed European Freight Agent with offices at Liverpool, Eng.

Canadian Pacific Ry.—W. M. Kirkpatrick, heretofore Assistant General Freight Agent at Vancouver, B.C., is acting Export Agent at Montreal, on account of the illness of A. E. Cook.

W. T. Robson has been appointed Advertising Agent, vice C. A. Bramble, resigned. Office, Montreal.

F. O'Hara, heretofore bridge and building foreman at Sherbrooke, Que., has been appointed Bridge and Building Master at Ottawa, succeeding E. Best.

W. Melroy, heretofore C.P.R. ticket and passenger agent and Dominion Ex. agent at Galt, Ont., has been appointed C.P.R. town ticket agent at Peterboro, Ont., succeeding T. E. Boddy, resigned.

J. W. Leonard, Manager of Construction Toronto and Sudbury branch, and President Guelph and Goderich Ry., is about to remove his office from the Union Station to 418 King St. West, Toronto.

F. S. Darling, Division Engineer of Construction, is about to be removed from Montreal to Toronto, where his office will be at 418 King St. West.

W. Malcolm has been appointed C.P.R. ticket and passenger agent and Dominion Ex. agent at Galt, Ont., succeeding W. Melroy, his former chief, transferred to Peterboro, Ont.

D. G. McKay, heretofore station master, has been appointed General Yard Master at Winnipeg, succeeding F. G. Arnold, transferred.

W. R. Hogarth has been appointed station master at Winnipeg, succeeding D. G. McKay, promoted.

W. R. Hogarth, heretofore Assistant General

The main in this district passes through what may be found to be fair agricultural land to a considerable extent, with large masses of timbers, but where not burnt over the masses are generally small spruce, cedar and maple, the latter generally dead, with occasional blocks of heavier timber, suitable for lumber, etc.

DISTRICT B.—The surveys in this district up to Jan last were conducted by the G.T.P.R. engineers, who in Nov. commenced locating a line which showed heavy work in places. From the information furnished by them it was my opinion that there was not sufficient exploration through the country to warrant the continuance of location until such time as I was sure the line they had run was the best the country afforded. Accordingly in January last I sent out one preliminary and five exploratory survey parties under A. E. Hodgins, district engineer, to explore and examine other sections of the country than those shown to have been explored by the G.T.P.R. parties."

At the request of the Chief Engineer, M. J. Butler, Assistant Chief Engineer, who had previously been over considerable portions of Districts A and B, made a report on the comparative distances by the Intercolonial Ry., by way of St. Jean Chrysostome to Moncton and 60 miles Transcontinental preliminary line, and that difference would be made in this district supposing grades of 1% were used in both directions; and comparing the operating values of the several lines on the basis of 10 freight trains per day each way; and showing what the difference in the capital account would be. Mr. Butler's report follows: "The distance from Moncton to St. Chrysostome, by way of the I.C.R., is 493.5 miles. The distance from Moncton to St. Chrysostome via the preliminary survey line to be run for the Transcontinental Ry., is 486 miles. The estimated shortening of the preliminary line that will be secured by the location is 18 miles, making the distance from Moncton to St. Chrysostome by way of the Transcontinental line, 486 miles. Having at this estimated shortening, I conferred with the district engineers of districts A and B, and it is from their estimates of the above distances are fixed. My personal knowledge of the field work and based upon a recent examination of the route through New Brunswick and a portion of Quebec, would lead me to expect a greater shortening of these lines in the location. Hence, I have taken the distance at 486 miles for all comparisons as the length of the Transcontinental Ry. from Moncton to St. Chrysostome. The estimated shortening from the preliminary survey line, using 1% grades both ways, is 18 miles, making the distance from Moncton

to St. Chrysostome, by way of the I.C.R., 493.5 miles, net pay tons 660x2, trains 2x10x313 days=4,131,600 pay tons; and to haul this number of trains will make 493.5x2 miles, 2x10 trains, 313 days, 3,089,310 train miles per year. The cost per train mile on the I.C.R. Ry. for 1903, as given in the report of the Department of Railways is 97.65c, which cost will be used for all comparisons. Hence 3,089,310 train miles x 97.65c = \$3,016,711.21, which gives the annual cost of operating the ten daily trains on the I.C.R. The Transcontinental Ry. low grade line will handle the same tonnage, with 7 trains eastbound and 5 westbound, although they will not be quite loaded to the full limit, the ratio of eastbound to westbound traffic is taken at about 6 to 4. (Length of line 486 miles). Hence we get 486 miles x 12 trains x 313 days = 1,825,415 train miles per year, which moneyed out at the same price per train mile of 97.65c, equals \$1,782,518.72, which gives the annual cost of operating the twelve trains on the Transcontinental Ry. The annual operating cost of the I.C.R. being \$3,016,711.21. The annual operating cost of the Transcontinental Ry. being \$1,782,518.72. Leaves a net annual savings in favor of the Transcontinental Ry. of \$1,234,192.49, which sum capitalized at 4% per annum equals \$30,854,812.25. And this amount is the increased value of the Transcontinental low grade line over and above the existing I.C.R., on the basis of 10 daily trains each way over the I.C.R. With increased business the difference will be much greater. For instance, on the basis of 10 fully loaded trains each way per day on the Transcontinental, we get 486 length line x 10 x 2 trains x 313 days = 3,042,360 train miles, which will cost per year at 97.65c, \$2,970,861.51, and will transport 7,042,500 net pay tons. To do this business on the I.C.R. will require 34 daily trains, and we get 493.5 miles x 34 trains x 313 days = 5,251,857 train miles, which will cost per year at 97.65c, \$5,128,109.06. The annual net savings in favor of the Transcontinental Ry. on this basis being \$2,157,544.52, which sum capitalized at 4% per annum, gives \$53,938,613, and this amount is the increased value of the Transcontinental low grade line over and above the existing I.C.R., on the basis of ten daily trains each way on the Transcontinental Ry. The next comparison required is, between the proposed 1% grade on the Transcontinental Ry., and other lines, the train loads to be the same as the I.C.R. as the grades are the same, the cost being affected by the shorter mileage. Length of line from Moncton to

above calculations no account has been taken of reduced operating cost for passenger trains. It is obvious that substantial savings will result from the use of lighter engines to haul the same passenger train. Less fuel, oil, etc., will be required, less wear and tear to track and bridges through lighter engines, better time and more uniform rates of speed may be maintained. In conclusion, the cost per ton on the several lines, based upon the above figures, are as follows:—I.C.R., Moncton to St. Chrysostome per ton, 73 cents; Transcontinental Ry., 1% grade, Moncton to St. Chrysostome, per ton, 59 7-10 cents; Transcontinental Ry., 0.4% and 0.6% grade, Moncton to St. Chrysostome, per ton, 43 cents."

AUGUST 1905

Moncton and Winnipeg shall be completed as nearly as practicable at the same time. The specifications for construction are being prepared, a considerable portion of the work being completed. H. A. Wood, Assistant Chief Engineer G.T.P. Ry., is acting with the commissioner's engineers in arranging the specifications, etc., in conformity with the provisions of section seven of the agreement between the Government and the G.T.P. Ry., confirmed by Chap. 71 of the Statutes of 1903. This section sets forth that in order to protect the interests of the lessees of the Eastern Division, it is agreed that the specifications be submitted to, and approved of by, the G.T.P. Ry. before the commencement of work, and that the work shall be done according to the specifications, and shall be subject to the supervision and inspection of the chief engineer appointed by the Government and the chief engineer of the company. In the case of differences between these engineers an arbitrator is to be chosen by them, or appointed by the Chief Justice of the Supreme Court, if the engineers cannot agree on one.

In connection with the surveys upon the eastern section of the Grand Trunk Pacific Ry. between Moncton, N.B., and Winnipeg, Man., which is to be constructed by the Transcontinental Railway Commissioners, the annual report of the Department of Public Works contains the following paragraph:—"The despatching of so many engineering parties at the same time as the surveying work of the Transcontinental Ry. was being commenced has given employment to a large number of Canadian engineers. It has been found on the formation of parties that the engineering profession in Canada was fully equal to the demand made upon it for the professional equipment which is required for the explorations and studies necessitated by the extensive surveys for those two great works. All the engineering staff has been supplied by Canadian intelligence and professional training, and there is no doubt that the profession in Canada is fully able to render a good account of itself in the performance of the arduous duties connected with the examinations now under way."

Answering questions in the House of Commons the Minister of Railways stated recently that no accurate information was available as to the progress of surveys. The Commission was directed to present an annual report, and, although interim reports had probably been sent in, no final reports had been presented to the department. The survey parties on the whole of the route from Moncton to Winnipeg are in the field. Reports of the engineers between Quebec and

up in the west pass by the recommendation of the chief and district engineers, and changes in same are made upon the recommendation of the chief of parties and the district engineers and approved of by the chief engineer. The engineers in charge of parties report to the district engineers, who report to the Chief Engineer, and he reports to the Board. Interim reports are received from time to time from the parties in the field and district engineers.

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The visit of the Vice-President to the west was largely for the purpose of carrying on negotiations with the B.C. Government with the view of obtaining a subsidy in aid of the construction of the 480 miles of line to be constructed in that province. Reports state that the Provincial Government was asked to set aside approximately 7,000,000 acres of land as a subsidy, and that the proposition is not viewed with much favor by the Cabinet. Speaking at Victoria, Mar. 10, before leaving for the east, Mr. Morse stated that it had been decided to construct the line from east to west as being the more eco-

August 1905

National Transcontinental Railway.

The Commissioners had the tenders submitted by various contractors for the two portions of the Eastern Division examined by their engineers, and made a report thereon to the Government, April 3. The matter was discussed on several occasions, and a decision was reached April 12, when it was announced that tenders had been accepted as follows:

DISTRICT B.—From the north end of the Quebec Bridge and Ry. Co.'s bridge, Quebec, to near La Tuque, Que., about 150 miles; Hogan and Macdonnell, Montreal.

DISTRICT F.—From Winnipeg, Man., to Peninsula Crossing, Ont., near the junction point of the Fort William branch of the G.T. Pacific Ry., about 245 miles; J. D. MacArthur, Winnipeg, Man.

BRIDGE AT CAP ROUGE.—A steel viaduct of about 3,000 ft. long near Cap Rouge, Que., in District B, to be constructed in accordance with the general specifications of the Commissioners, and of the Department of Railways, Dominion Bridge Co., Montreal, at an approximate cost of \$320,000.

The length of time taken in awarding the contracts was due, apparently, to a difference of opinion between the Commissioners as to which tenders should be accepted. The majority of the Commissioners were of opinion that the contracts should go to the lowest tenderers, but the Chairman thought that these were too low, as they were considerably below the estimated cost as figured out by the Chief Engineer and his staff, and recommended the acceptance for the two divisions of the tenders of the G.T. Pacific Ry. Co. This view was over-ruled by the Government and the lowest tenders accepted. The amount at which the different tenders work out are:

DISTRICT B	
Hogan and Macdonnell (accepted)	\$ 3,226,000
O'Brien and Mulharky	3,359,000
G.T. Pacific Ry. Co.	6,459,000
M. P. and J. T. Davis	6,667,000
M. Connolly, Desjardins & Wilson	7,081,000
McArthur Construction Co.	7,940,000

DISTRICT F—	
J. D. MacArthur	\$13,010,000
Pacific Construction Co.	13,028,000
G.T. Pacific Ry. Co.	13,991,000
McArthur Construction Co.	17,548,000

STEEL VIADUCT—	
Dominion Bridge Co. (No. 2) accepted	\$ 318,000
Dominion Bridge Co. (No. 1)	329,000
Locomotive and Machine Co. of Montreal	331,000
Canadian Bridge Co.	343,000
G.T. Pacific Ry. Co.	347,000
Phoenix Bridge Co.	348,000

The contracts cover the grading and all other work, except the steel rails and ties, which are to be supplied by the Commissioners, and for the completion of the work by Oct. 1, 1907. Tenders for about 50,000 tons of 80-lb. steel rails, and 2,500 tons of angle irons, etc., will shortly be asked for by the Commissioners for these sections of the line, for delivery this season. As the contractors have to purchase their materials and supplies as far as possible in Canada, it is expected that the order for the steel rails, etc., will be placed in Canada if the mills can supply them at the time they will be required.

In connection with the Winnipeg-Peninsula Crossing section of the work, it has been announced in Winnipeg that work will be started at four points—five miles east of Winnipeg, the second at Molson, the third north of Kenora on the Winnipeg River, and the fourth north of Dinorwic—immediately, and at other points which can be reached from the C.P.R. line, as speedily as they can be arranged for. Work at the Quebec end will also be started at once.

A return presented to the House of Commons, April 6, contained a report from H. D. Lumsden, Chief Engineer of the Commission, in reference to the two routes suggested for the line through New Brunswick.

Mr. Lumsden recommends the adoption of what is known as the back route, which is about 28 miles shorter, and will cost about \$1,500,000 less to construct than what is known as the river route. The back route opens up a country well adapted for settlement and at present without transportation facilities, while there are lines of railway tapping and traversing the valley of the St. John River, through which the river route has been surveyed.

GRAND TRUNK PACIFIC RAILWAY.

In a report to the Minister of Railways, C. Schrieber, Consulting Engineer, to the Department, reviews the progress made in survey work and construction on the line west of Winnipeg, Man. The route between Winnipeg and Portage la Prairie, 58 miles, had been approved and location surveys were in progress. Of the line under contract between Portage la Prairie and the Touchwood Hills, 275 miles, the contractors had graded 55 miles, and put in a number of culverts. The line from Touchwood Hills to Edmonton, Alta., 490 miles, was under contract, but the Government had withheld approval of the plans for the last 45 miles. The reason for this was that it showed a line crossing the Saskatchewan River at Clover Hill bar, 12 miles east of Edmonton, while the Government desired, if possible, to have a line through Stratheona, crossing the Saskatchewan at that point, and so into Edmonton. Further surveys were being made to ascertain if a sufficiently favorable line could be obtained to allow of this change to be made. Preliminary surveys had been made from Edmonton to the end of the prairie section, but no route map had been submitted for approval pending a decision as to what pass through the Rocky Mountains would be adopted. Exploration had been made of several passes, but sufficient data had not been obtained to enable a decision to be reached.

So far as the portions of the lines under contract are concerned, the McDonald-McMillan Co. have got a number of gangs of men at work between Portage la Prairie and the Touchwood Hills. The Canadian White Co. have got their outfit on their contract between the Touchwood Hills to west of Saskatoon, Sask., and active work was expected to be started by the end of April. On the section from Saskatoon to Edmonton, contractors Foley Bros., Larson & Co., 29 cars of grading outfit were on the way to Saskatoon April 25, from which point it is proposed to start grading westward. Superintendent of Construction Feters stated that there would be 1,000 teams at work by the end of April, and by the end of May it was hoped to have 3,000 teams and 5,000 men on the line. As soon as the work from Saskatoon to Battle River was got in hand, the section between Battle River and Edmonton would be started, operations being gone on with from the Edmonton end. The Saskatoon-Battleford River section, about 200 miles, comprises some heavy work, particularly in the Eagle Hills country, almost due south of Battleford. There will be one large steel bridge across the Saskatchewan River at Saskatoon, and a wooden bridge across the Battle River, the other bridge work being light.

F. W. Morse, Vice-President and General Manager G. T. P. Ry., said in an interview at Montreal, April 17, that a satisfactory route had been surveyed from Edmonton to the foothills of the Rocky Mountains, about 200 miles, and that contracts would be let for its construction at an early date. Referring to the work in the mountains, he said that 12 survey parties were at work in the passes, and that until their reports had been received and considered, it would be impossible to say anything as to the further location of the line.

MAY 1906

Canadian Railway Contractors in the U.S.

The Cornwall Freeholder points out that a surprising proportion of the great railway contractors of the continent are Glengarry or Stormont men. J. D. McArthur, who has recently secured the contract for building the western section of the Grand Trunk Pacific Ry., aggregating over \$13,000,000, is a Lancaster man. By June 1, he will have 10,000 men on his pay-roll. A. R. Macdonald, who, with his partner, Mr. Hogan, is to build four or five million dollars' worth of the Government section, hails from Williams-town. D. D. McBean, who has just finished the Harlem tunnel at New York, an enormous work, is a Lancaster boy. James A. McIntosh and Donald McIntosh, of Milwaukee, Wis., were recently awarded a contract for building 1,500 miles of road for the Chicago, Milwaukee and St. Paul Ry., the price of which was nearly \$50,000,000. This is said to be the largest contract ever given to one firm for railway building on the continent of America, or in the world for the matter of that. Their native place is St. Andrew's, Cornwall. Besides these there are the Grant brothers of California, W. A. Grant of Illinois, and the McDougalls of Milwaukee, all representatives of that Celto-Canadian element that has made so distinct a mark in the Glengarry-Stormont settlements of Ontario. There must be something in the mental equipment, as well as in the big, vigorous frame of the people of that section which fits them for this sort of work.—Toronto Globe.

National Transcontinental Railway.

The Commissioners of the Transcontinental Ry. will receive tenders to June 7, for 65,000 tons of 80-lb. steel rails, open hearth or Bessemer, at the option of the Commissioners, together with the necessary splice bars, bolts and nuts, spikes, nut locks and 1,545,000 ties. Tenders are to be accompanied by a marked cheque for 10% of the amount of the tender, and the rails, etc., are to be delivered in such quantities and at such places as the Commissioners may direct. The rails, etc., are for use on the line from near Quebec to La Tuque, Que., and from Winnipeg, Man., to Peninsula Crossing, Ont.

A report from Ottawa states that it is expected that the Commissioners will be in a position to ask for tenders for the construction of the Quebec-Moncton section of the National Transcontinental Ry. early in July.

GRAND TRUNK PACIFIC RY.

Track-laying was commenced at Portage la Prairie, Man., May 2, and a number of sidings have been put in in order to facilitate the movement of construction trains and to store steel rails and other supplies which are being delivered. Tracklaying on the main line is expected to be commenced at an early date.

A general meeting of the shareholders of

JUNE 1906

Ottawa despatch states that it is likely the contract will be divided between the Algoma Steel Co., Sault Ste. Marie, Ont., and the Dominion Iron and Steel Co., Sydney, N.S.

The contractors for the 150 miles of line between the Quebec Bridge northern approach and La Tuque, have let a sub-contract to M. P. Davis to construct 50 miles of the line from the Quebec Bridge towards La Tuque, and will themselves do the work on the other 100 miles. Mr. Davis started work on June 6 at the bridge. The general contractors, Hogan & Macdonald, who have associated M. J. O'Brien with them, are also at work, having started at Reid's, on the Great Northern Ry., and are working in both directions. They also propose starting work at La Tuque. Considerable progress is reported upon construction on the 245 miles from Winnipeg easterly. Guy Campbell, Ottawa, has been given a sub-contract for five miles of rock work, and sub-contracts are also reported let to A. Herbert, 20 miles prairie work; W. Wardsop, 15 miles; P. W. Smith, two miles of solid rock cutting.

GRAND TRUNK PACIFIC RAILWAY

A meeting of shareholders was held in Montreal, June 14, to ratify an issue of \$15,000,000 of debenture stock, under the agreement with the Government. The act authorizing the issue of \$25,000,000 has been passed by the Dominion Parliament, and the resolution is a formal one necessary to ratify the by law providing for the issue.

The contractors for the line from Winnipeg to Portage la Prairie, Man., are the McDonald-McMillan Co., who are well advanced with the grading on the Portage la Prairie-Touchwood Hills portion. A start has been made upon the line near Winnipeg, and a sub-contract has been let to McIntosh Bros., Petrel, Man., who also have started construction. Track-laying is being gone on with from Portage la Prairie westerly. The rails, 80-lb. to the yard, are being delivered at Portage la Prairie by the Canadian Northern Ry., and it is expected to get in 50,000 tons by Sept. 1. The Canadian White Co., Montreal, which has the contract to grade from the Touchwood Hills to Saskatoon, had its plant delivered at the beginning of June, and has several gangs of men actively engaged, while Foley Bros., Larson & Co. are rushing work from Saskatoon to Edmonton. The Dominion Government engineers, who have been going over the route at the Edmonton end, state that the proposed gradient into that city by way of Strathcona is as favorable as that by the Clover Bar way, and that a better gradient into Strathcona can be obtained by the south of Cooking Lake than by Clover Bar. The Government will decide upon the route to be adopted at an early date. The location plans and profiles for practically the whole of the route to within about 50 miles of Edmonton have been approved by the Railway Commissioners, as well as by the Government. West of Edmonton surveys are still in progress, and at Prince Rupert, on the Pacific coast, the preliminary work of laying out the new townsite, etc., is in progress.

An order for 150,000 tons of steel rails for the G.T. Pacific Ry. is reported to have been placed with the Dominion Iron and Steel Co., Sydney, N.S.

GRAND TRUNK PACIFIC RY. BRANCHES.

The G.T.P. Ry. interests have a bill before the Dominion Parliament seeking the incorporation of a company with the title of the Grand Trunk Pacific Branch Lines Co. for the purpose of constructing branch lines. The various lines proposed raised considerable discussion when the bill was before the House of Commons Railway Committee, and the schedule of lines finally approved of follows:

(1) From near Edmundston, N.B., to Riviere du Loup, Que., 81 miles; (2) A line into Montreal, via Joliette, Que., about 250

National Transcontinental Railway.

In the House of Commons, June 12, the Minister of Railways made some explanations in regard to the vote for \$110,000,000 which was asked for the construction of the line from Moncton, N.B., to Winnipeg, Man. The Commissioners for construction were in a position to ask the Government to approve of the route from Moncton to Miramichi, or from Moncton to Nashua, whenever the back route or the river route should be decided upon. An order-in-council would then be passed approving of the whole route and the line from Moncton to Quebec would be put under contract. It was expected to have this section completed as soon as the Quebec-Winnipeg section. The preliminary and location surveys had been made between Quebec and Winnipeg, the cost being about \$1,000,000, and the complete revision of these surveys would cost an additional \$600,000. A portion of the surveys which the C.T. Pacific Ry. made east of Winnipeg, which cost the company about \$1,000,000, had been taken over by the Government for \$350,000. The gradient between Moncton and Winnipeg would be 4-10 of 1% eastbound, and a maximum of 6-10 of 1% westbound, with a maximum curvature of 4°. The total distance would be about 1,800 miles, of which 395 miles are at present under contract.

Tenders are under consideration for the supply of 65,000 tons of steel rails, with the necessary fastenings for the same, and an

June 1906

The National Transcontinental Railway.

Hugh D. Lumsden, Chief Engineer, writes as follows: As the value of a railway as means of transportation depends largely upon its location, neither time nor money is being spared in securing for the Transcontinental line the best route available. The Great Lakes will for all time remain the favored freight route from the West to tide-water, but when the lakes are frozen, if the crops increase as they have increased for the past decade, there will always be millions of bushels of wheat awaiting shipment in the West. In order to haul wheat at a profit two thousand miles from the wheat-fields to the Atlantic, it is absolutely necessary that the road be as free as may be from heavy grades and excessive curves. While the entire line is not yet definitely located, enough field-work has been done to demonstrate beyond a doubt that the Transcontinental will be, as far as grades go, one of the best laid lines across the continent. From the great wheat-fields of the West to tide-water on the Atlantic the grades going east will, in all probability, not exceed 0.4 of a foot per 100 ft. This will mean that a modern locomotive will handle 42 cars between Winnipeg and Moncton.

The first surveys on the government section under the commissioners were commenced in October, 1904. The first contracts from near Winnipeg to a point 245 miles east thereof, and from the north end of the Quebec Bridge for 150 miles westerly, a total distance of 395 miles, have been awarded. Inasmuch as the prime purpose of the road is to relieve any possible congestion of grain at Winnipeg, the government is doing everything in its power to facilitate the construction of that part of the line from Winnipeg to Superior Junction, where it will be met by a branch line now being built by the Grand Trunk Pacific Ry. Co. north-westerly from Fort William to connect with the main Transcontinental line. By this means it is expected that the new road may be built in time to participate in the transportation of the crop of 1907. As one evidence of the rapidity with which the output of the Western fields is growing, it is stated that in 1901 the G.T.R. received at its Lake Huron ports 9,862,000 bush. of wheat. Last year the receipts reached 29,764,000 bush. If there were any doubts—assuredly there were many—as to the ability of Canada to support another ocean to ocean railway, these doubts must be disappearing, from the fact that the annual arrivals of immigrants has increased fivefold within the past eight years, and that the wheat crop has doubled since the day Sir Wilfrid Laurier made his famous speech on the need of another transcontinental railway. The whole line is being built as rapidly as may be consistent with good building, but with the best we can do it is evident that the traffic will be ready for the road by the time the railway is prepared to take care of the traffic.

From an engineering standpoint the obtaining of a suitable location through the entire country from the St. Maurice River to within 70 miles of Winnipeg has been tedious and expensive, owing to the fact that little was known of the country through which it passed, there being only one or two points where any surveys had heretofore been run, and though explorations had been made up a number of rivers crossed by the Transcontinental Ry., little or nothing was known of the country lying between these streams, which generally run at right angles to the course of the railway. These surveys have proved that there exists nearly 500 miles of country adjoining the proposed route in the Provinces of Quebec and Ontario where the soil is excellent (generally a clay loam), and where a large number of settlers can find suitable homes. The timber con-

sists of spruce, birch, poplar, jack-pine, tamarack, and small cedar.

The heaviest and most expensive portions on the route of the Transcontinental Ry. will probably be on the upper St. Maurice River in the Province of Quebec, and through the portion of country between the north end of Lake Nepigon and the crossing of the C.P.R., say 70 miles east of Winnipeg, where the amount of solid rock that will have to be moved will be large. The bridges will be numerous, but with the exception of one or two steel viaducts in New Brunswick and three or four in Quebec, they will not be very large. The St. Lawrence River will be crossed about six miles above the city of Quebec by a bridge 3,270 ft. long, including a centre cantilever span 1,800 ft. long over the main channel, and leaving a clear headway of 150 ft. above the water. This bridge has been in the course of construction by the Quebec Bridge and Ry. Co. for the past four years. Within the past three years the Ontario Government has been constructing a railway from North Bay northerly, and it is now nearly completed to the watershed between the St. Lawrence and Hudson Bay waters, a distance of, say, 160 miles. It is probable that this railway in the near future will be extended to a junction with the Transcontinental Ry. near where the latter crosses the Abitibi River, a farther distance of, say, 80 miles. Other branch lines to tap the Transcontinental have been projected, and some of them may eventually be constructed and form valuable feeders to the main line. The entire work is being pushed as rapidly as circumstances will permit, and should be completed well within the time specified.

At the last session of the Dominion Parliament \$10,000,000 was voted on account of surveys and construction of the National Transcontinental Ry.

The Commissioners have awarded contracts for the supply of rails and fastenings for the two sections of the line now under construction to the following: Dominion Iron and Steel Co., Sydney, N.S.—23,000 tons of rails at \$34 per ton, delivered at Quebec; 10,000 tons of rails at \$34.50 per ton, delivered at Port Arthur, Ont.; Algoma Steel Co., Sault Ste. Marie, Ont., 32,000 tons at \$34 per ton delivered at Port Arthur, Ont.; Toronto Bolt and Forging Co., Swansea, Ont., 202,800 lbs. bolts at \$3.44 per 100 lbs.; 728,900 lbs. spikes at \$2.55 per 100 lbs., delivered at Fort William or Port Arthur, Ont.

Tenders for the supply of 535,000 ties for the current year's requirements are under consideration, and tenders have been asked for, to be submitted by Sept. 4, for 1,010,000 ties for 1907 requirements.

GRAND TRUNK PACIFIC RY.

The G.T. Pacific Ry. was required by the act of 1903 to deposit \$5,000,000 in cash as security for the performance of its contract in connection with the construction of the National Transcontinental Ry. By an act passed at last session the Dominion Parliament has authorized the Government to release the cash in whole or in part, and to accept in lieu thereof approved securities.

An act was also passed last session of the Dominion Parliament authorizing the company, with the approval of the shareholders, to issue perpetual or terminable debenture stock to the extent of \$25,000,000 or its equivalent in sterling. The debenture stock may be guaranteed by the G.T.R., which shall rank as a prior charge on all G.T.R. securities, except its 4% preference stock; the proceeds of the issue are to be devoted to the provision of equipment referred to in sec. 2, chap. 24, 1904. Authority is also given to guarantee the bonds of the G.T. Pacific Branch Lines Co., and

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National Transcontinental Railway Construction.

The viaduct at Cap Rouge, Que., on district B of the eastern section, will have a total length of 3,335 ft., and will consist of 33 towers, each 49 ft. in length; 29 spans of 60 ft. each, one span of 125 ft. and one span of 150 ft. The viaduct will be a single track one, the girders being spaced 9 ft. centre to centre, and the base of rail will be 165 ft. above high water in Cap Rouge River. The weight of the steel superstructure when erected will be about 4,200 tons. The Dominion Bridge Co., Montreal, has the contract.

The Commissioners have had under consideration tenders for the construction and erection of steel superstructures and floor system, with ties and guard rails complete, for bridges at River Aux Pommes (Sept. 1); River Jacques Cartier (Nov. 1); crossing C.P.R. (Dec. 1); River Portneuf (Dec. 1); River St. Anne (Jan. 1, 1907); River Noir (Feb. 1, 1907); River Charest (Mar. 1, 1907), and River Batiscan (April 1, 1907). The dates in brackets are the dates upon which the superstructures are required to be ready for shipment.

A report from Ottawa Aug. 29, stated that the tenders of the Dominion Bridge Co., Montreal, and of the Locomotive and Machine Co., of Montreal, were the lowest, and that the contracts would probably be divided. These bridges are for the section of the line between Quebec and La Tuque, Que., now under contract.

GRAND TRUNK PACIFIC RY.

C. Schriber, C.M.G., Consulting Engineer to the Department of Railways, returned to Ottawa, Aug. 23, having made a lengthened trip of inspection over the route of the G.T. Pacific Ry. In an interview he said:

"I am satisfied that in the G.T. Pacific Ry when it is completed, the people of Canada will have the cheapest transcontinental line in existence. From the Rocky Mountains to the Atlantic seaboard it will show a maximum grade of 4-10ths of 1%, eastbound, and 5-10ths of 1% westbound. The company itself expects to obtain an equally level location across British Columbia to its Pacific terminus. I am satisfied that it will get through with a maximum gradient not exceeding 1%, and anyone who knows the first thing about railway building and the existing routes through the Rockies can readily appreciate what that means, especially in the haulage of heavy traffic. The G.T.P. Ry. has 16 survey parties now in the field in British Columbia and the company will be in a position to let some contracts this season on this section, probably at the Port Simpson end, as it is the most accessible. I drove 700 miles across the prairies from Portage la Prairie to Edmonton following the located route of the new line. From 100 to 120 miles of this will be laid with rails this fall, and by the end of next year the G.T.P. ought to have its track through to Edmonton. Their greatest difficulty lies in the scarcity of labor. In one stable I saw 20 horses idle because it was impossible to secure drivers to handle them. It is simply wonderful the way settlement is already flowing in along the route that the new line is to follow. Shacks of all sorts are being put up and land brought under cultivation. The company has truly secured an excellent line across to Edmonton; it is practically a straight line all the way from Winnipeg."

There are reported to be over 12,000 men at work on different sections of the line, and that satisfactory progress is being made with the work under contract. On the Lake Superior branch from Fort William to Lake Superior Junction, Ont., construction trains are being operated for short distances, and over 100,000 ties have already been delivered. The equipment for two tracklaying machines has been received at Fort William. Between Winnipeg and Edmonton the con-

tractors are pushing work ahead with the greatest possible speed, but they are somewhat hampered by the scarcity of labor.

An agreement was reached at a meeting of the Edmonton City Council, Aug. 18, by which, in return for a bonus of \$100,000, the G.T.P. undertakes to establish within three miles of the public offices, its yards, workshops and other terminal facilities, and to erect a station south of the Canadian Northern station, if a union station could not be arranged for. The city also agrees to purchase certain right of way required, which it is estimated will cost another \$60,000.

Plans have been filed for 77 miles of line west of Edmonton, Alta., and tenders will shortly be asked for grading on this distance. F. M. Morse, Vice-President, proposes to go over the projected route through the mountains as far as the coast during the fall, and upon his report, on his return, the final selection will depend. A survey is being made by H. S. Sprague and A. L. Kepper through the Caribou country, to determine whether there is a satisfactory route through it, instead of the present projected one around it. If such a route can be located it will materially shorten the distance between Winnipeg and the Pacific coast. Survey parties are also working east and west from Lorne Creek, on the Skeena River, and from Morrice town in the Bulkley Valley.

The Dominion Parliament at its last session passed an Act authorizing an extension of time for the construction of the Pacific Northern and Ontario Ry., and authorizing the construction of a railway from the junction of the Skeena and Copper rivers to the junction of the Bulkley and Telkwa rivers. It is likely that the first construction in connection with the G. T. Pacific Ry. on the Pacific coast will take place under this charter (Aug., pg. 473).

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The other portion of the line under contract is from Winnipeg, Man., easterly to Lake Superior Junction, where it connects with the line under construction for the Grand Trunk Pacific Ry., known as the Lake Superior branch.

GRAND TRUNK PACIFIC RY.

C. M. Hays, President, and F. M. Morse, Vice-President, G.T. Pacific Ry., left Montreal, at the end of Aug. on a trip of inspection. After looking over the work in progress on the Lake Superior branch in the vicinity of Fort William they went to Winnipeg, reaching there Sept. 2, where it was stated by the Vice-President that there was no foundation for the report that the company was arranging to secure a right of way over the Canadian Northern Ry. between Winnipeg and Portage la Prairie. On reaching Portage la Prairie, the President and Vice-President drove over the right of way to Edmonton, Alta., which was reached Sept. 20. The progress of the work at different points was examined, and the suggestions for branch lines at several places were looked into. Speaking of the trip it was stated that 50% of the grading between Portage la Prairie and Saskatoon was completed, and 30% was done between Saskatoon and Edmonton. There is considerable scarcity of labor, but notwithstanding, it is expected that all the heavy work will be completed this fall, leaving practically nothing to do next year except to lay the steel and do the ballasting. From Edmonton they proceeded over the surveyed routes into the Rocky Mountains with a view of coming to some decision as to the route to be adopted. It is expected they will proceed to Vancouver, B.C., and thence to Prince Rupert, the Pacific Coast terminal, by steamer. H. Phillips, Secretary, and B. B. Kelliher, Chief Engineer, were also of the party, which is expected to return to Montreal about Oct. 20.

Reports from Winnipeg state that it has been decided to erect shops for the G.T. Pacific Ry. about five miles east of the city; that a site has been selected; that Guibault & Co. will be given the contract, and that work will be started immediately.

At Portage la Prairie, the company has paid duty on an importation of 54,500 tons of steel rails from the United States for the line westerly from that point. Tracklaying is being gone on with on the line from Portage la Prairie to the Touchwood Hills, the grading contract for which is being carried out by McDonald, McMillen & Co. On the next section of 140 miles to near Saskatoon, for which the Canadian White Co. has the contract, it is expected to have the grading completed by the end of the year. The route from Saskatoon to Edmonton, 210 miles, is well covered with men by the contractors, Foley Bros. & Larson.

Survey parties are in the field going over routes for branch lines from Yorkton. One of these branches is intended to connect with Regina; and another to Hudson Bay. The company has secured about 800 acres of land near Saskatoon, which is described on the register as the G.T.P. townsite. When F. M. Morse, Vice-President, was at Saskatoon, Sept. 17, he stated that it was proposed to locate a spur line into the town. The company has also survey parties in the field locating a line into Calgary, Alta. The Edmonton, Alta., City Council has ratified a by-law granting the company a bonus of \$100,000 and a right of way into the city, on condition that it establishes divisional terminals there.

Reports from the Pacific coast state that large contracts for ties and other timber have been placed and that the saw mills at Port Simpson and Essington, B.C., have large railway orders on hand. J. H. Bacon, the company's harbor engineer, has returned to

National Transcontinental Railway

The survey parties which have been working between Quebec and Moncton, N.B., have practically completed their work, and their reports were expected to be in the hands of the Commissioners Sept. 30. It is stated that the Commissioners expect to be in a position to ask for tenders for the grading of this portion of the line during Oct.

Construction work upon the section from Quebec to La Tuque, about 150 miles, is reported to be progressing satisfactorily. For the first 70 miles from Quebec the line passes through a more or less settled country, but beyond that the route is through the forest. In addition to the Cap Rouge viaduct there will be a number of steel bridges on this section. For the superstructure of these the Commissioners have just let contracts. The Dominion Bridge Co., Montreal, will supply the steel for the bridges at Batiscan, Jacques Cartier, Riviere Charest and the crossing of the C.P.R. in Portneuf county, and the Locomotive and Machine Co. of Montreal will supply that for the bridges at Riviere Noir, Riviere aux Pommes, Ste. Annes and Portneuf.

The Commissioners are preparing to invite tenders for the grading and other work upon about 200 miles running east and west from Lake Abitibi. It is expected to get tenders let sufficiently early to permit of much of the material to be brought in during the winter from the end of steel on the Temiskaming and Northern Ontario Ry. This line is at present under construction to a point about 40 miles south of Lake Abitibi; but it is said that the Ontario Government intends to push forward its construction to the lake as early as possible.

National Transcontinental Railway

A conference between the Commissioners for the National Transcontinental Ry., representatives of the other railway lines having interests in Quebec, the marine interests, and others, for the purpose of discussing the question of railway terminals, etc., at Quebec, was held in that city, Oct. 12. The matter was fully discussed and a committee was appointed, consisting of one representative from each of the railway interests, steamship companies, presidents of Harbor Commission and the Board of Trade, E. C. Fry, Lloyd's agent, Mayor of Quebec, Quebec Bridge and Railway Co. The Chairman of the N.T. Ry. Commission submitted the following general suggestions for the committee to work upon:

That the south shore roads—the G.T.R., I.C.R., Quebec Central and Delaware & Hudson, and also the G.T. Pacific and Canadian Northern, should come into the city from the bridge by way of the coves; docks and freight yards being built between Diamond Harbor and Sillery, and a union passenger station for these roads at Champlain market, adjacent to the proposed new ocean steamship docks, with an elevator to the upper town.

That the C.P.R., Quebec Railway, Light & Power Co. and Quebec & Lake St. John roads, if they prefer to do so, retain each their present stations, they being well situated for their business, all being in the centre of the city and nearer to their clients than they would be at Champlain market.

That a track connection be built between St. Andrew St., the Louise docks and the Champlain market, either along Dalhousie St., or preferably on the river front, open to all railways upon the same terms.

That a track connection be made between the Louise Docks, Limoulin and the St. Lawrence bridge along the St. Charles valley, open to all railways upon the same terms.

That all railways to or from Quebec be put upon the same footing as regards the use of the bridge across the St. Lawrence and its approaches.

That all these railways shall each have a representative in the Terminal Company which is to carry out these works.

The committee selected subsequently met under the chairmanship of R. Audette, Vice-President Quebec Bridge and Ry. Co., and appointed A. E. Doucet, E. A. Hoare, and St. G. Boswell, to make plans carrying out the suggestions to lay before the committee for discussion, and the further consideration of the N.T. Ry. Commissioners.

The Commissioners have completed an inspection of the work in progress upon the section of the line between Quebec and La Tuque, going over a considerable mileage between Quebec and Reed, and some miles west of the latter point. Steel rails for this section

of the line are being delivered at Quebec by the Dominion Steel Co., Sydney, N.S. It is expected to have about 40,000 tons of rails delivered by the end of the year, and distributed along the route.

The question of the location of the terminals in Winnipeg, for the National Transcontinental Ry., and the G.T. Pacific Ry., is under consideration by the Commissioners, who arrived in Winnipeg, Oct. 18, for the purpose of discussing it with the other railway and local interests involved.

GRAND TRUNK PACIFIC RY.

The Ontario Railway and Municipal Board visited Fort William, Ont., Oct. 6, for the purpose of looking into the question of the location of the Lake Superior Branch, G.T. Pacific Ry., from that town to the main line of the National Transcontinental Ry. from Moncton, N.B. to Winnipeg. The route of the line between Fort William and Port Arthur, and the location of the terminals in these towns were inspected, and evidence was given showing that the valley of the Kaministiquia was the only available route westerly and northerly, and that it was therefore not possible to avoid paralleling the C.P.R. for about 70 miles. The Board reserved decision upon the various questions involved. The investigation was rendered necessary by reason of the fact that the Ontario Legislature voted a grant of 2,000 acres of land a mile to aid the construction of this branch.

Collingwood Schreiber, consulting engineer to the Department of Railways, arrived in Winnipeg, Oct. 9, for the purpose of making an inspection of the construction west of Portage la Prairie, Man. He said at Winnipeg: "The construction work this summer has been hampered a little by a lack of labor, the all-round demand for men on farms and railways being greatly in excess of the supply. The various companies which have the western sections under construction, have all made very favorable progress in the face of this adverse circumstance, however, and there has been practically no shortage of material, if a lack of ties during a few weeks in the summer is excepted."

Tracklaying was reported to be going on west of Portage la Prairie at the rate of two miles a day. Over 50% of the grading between Portage la Prairie and Saskatoon, and over 30% between Saskatoon and Edmonton was reported to have been completed Oct. 30. The labor situation has been somewhat relieved by the return of the harvest hands from field work, and the arrival of men from Scotland, specially engaged for work on the line.

The contract for the bridge over the North Saskatchewan River at Edmonton, Alta., has been let to the May Sharpe Construction Co., Winnipeg, Man. The bridge will be of steel on concrete piers, and is estimated to cost about \$250,000.

The taxpayers of Edmonton, Alta., have passed a by-law granting \$75,000 for the purchase of the right of way for the G.T.P. Ry. in the city.

C. M. Hays, President; F. Morse, Vice-President, and H. Phillips, Secretary, G.T. Pacific Ry., returned to Montreal, Oct. 11, from their trip over the route of the line from Portage la Prairie westerly, and a run from Vancouver to the Pacific Coast terminus at Prince Rupert. At this point the company is clearing 1,000 acres as a town site, and is erecting an hotel at a cost of about \$40,000. It is intended to start work at once upon the erection of wharves, aggregating about 2,000 ft. in length. It was the company's intention, said Mr. Hays, at Vancouver, B.C., to construct a line to it some time or other, but it was impossible to say when.

National Transcontinental Railway.

Survey work upon the section easterly from Quebec to Moncton is being completed, all the parties with one exception having reported. The location of the line between Quebec and Grand Falls, and between Chipman and Moncton, has been completed, and the first location surveys between Grand Forks and Moncton have been made. The question of the route between these two points has not been finally decided. The arrangement of the terminals at Quebec is being considered, and the commissioners have been inspecting various blocks of land required for the terminals, as well as for the railway connections.

In connection with the terminals in Winnipeg, it is reported that the arrangement made with the Canadian Northern Ry. includes the construction of the terminals by that company, and the payment by the commissioners and the G.T. Pacific Ry., of an annual rental of \$65,000 a year therefor.

The route of the line west of Winnipeg has been the subject of considerable discussion at Ottawa, and as provisionally approved the line will run through the southerly end of Tuxedo park, Winnipeg, across the C.P.R. Gretna branch, along Grant and Woodward Ave., paralleling the latter to Pembina Road, where a junction will be made with the Canadian Northern Ry. track. The Government has approved of the plans for 25 miles of the route easterly from Portage la Prairie. The question of terminals at Edmonton was also discussed. The Minister of Railways desires that union terminals be arranged for. The Canadian Northern Ry., as the pioneer line in the city, desires that its terminals be made use of. An arrangement as to terminals has been made between the G.T. Pacific Ry. and the Edmonton City Council, and the Minister of Railways says unless the three companies can agree upon joint plans, the department will approve of this agreement. The company has decided to use the Yellowhead Pass for its line from Edmonton to Prince Rupert, B.C. The reports of the engineers show that a line with a gradient of 21 ft. to the mile can be obtained.

Thos. Dunn, who returned to Vancouver, B.C. from Prince Rupert, Nov. 1, in an interview said: "Engineer Pillsbury, of the G.T.P. Ry., has 70 men at work laying out the townsite, and already the first street, which is 100 ft. wide, and starts at the wharf, is being planked. The clearing of 300 acres of the townsite will be commenced right away. Lumber for the construction of the houses which the railway company will build at Prince Rupert had commenced to arrive. J. Moore, locating engineer of the G.T.P., is surveying the route the line will take on Kaien Island. There are five survey parties on the island also. Dominion Hydrographic Engineer Dodge is making surveys of the harbor and contiguous waters. Prince Rupert itself has a water frontage about 12 miles long (Nov., pg. 649.)

DECEMBER 1906

National Transcontinental Railway.

The report of the National Transcontinental Railway Commission for the year ended June 30, was presented in the House of Commons Dec. 10. The total expenditure for the year was \$1,831,263, of which \$362,191 was paid to the C.T. Pacific Ry. for surveys from Winnipeg eastward. There were 18 casualties in the survey parties during the year, chiefly from drowning. When District Engineer Almon and Transman White, of section C, in the eastern district of Quebec, were drowned, the rest of the party refused to remain in the field. They were sent to their homes and a new party organized. The report of the surveys in District E, which extends from Abitibi to Peninsula Crossing, the point of junction with the Lake Superior branch C. T. Pacific Ry., to which point the Eastern Division (National Transcontinental Ry.) is under construction from Winnipeg, shows that 14 bridges of considerable magnitude will be required. Five of these will be 500 ft. long, and one 700 ft.

The report of the Chief Engineer, H. D. Lumsden, which is incorporated, reaffirms the statements previously made that the gradient from Winnipeg easterly to the Atlantic seaboard will not exceed 0.3%, and westward the gradient will not exceed 0.6%. The curvature for the most part will be kept down to a minimum of 1,433 ft., except in a few cases where the radius is 955 ft.

The question of the route of the line into Moncton has not been finally settled, but a St. John despatch, Dec. 19, says, unofficial information indicates that the reports of the engineers favor what is known as the central route, reaching Chipman practically in a straight line, instead of along the valley of the St. John River. The central route is said to be somewhat shorter than the river route, offers better gradients and presents fewer obstacles to construction. Replying to questions in the House of Commons on the subject the Premier said the preliminary location surveys for the Quebec-Moncton section of the line had been made, and a portion of the revised survey, but the reports had not come to hand. With regard to the re-survey of the proposed routes from Grand Falls to Moncton, N.B., the Commissioners had not made any recommendation as to routes. The engineers of District A reported in favor of the back line, and preliminary surveys were completed between Moncton and Grand Falls, as the shortest and cheapest, but before finally deciding this matter it was considered advisable to have the first location made over both routes. This had been done and plans and estimates are expected to be furnished shortly.

The Chairman of the Commission stated in Quebec, Nov. 20, that the Commissioners expected by the end of Dec. to be in a position to ask for tenders for the construction of about 450 miles of line. Of this mileage, 50 miles would be from Levis, Que., southerly 100 miles from Moncton, N.B., 40 miles northwesterly from La Tuque, Que., and 150 miles from Abitibi.

The Minister of Railways spent Christmas in New Brunswick and a Moncton dispatch of Dec. 26, which was probably inspired, said:

JANUARY 1907

"Advertisements will be issued this week, calling tenders for constructing portions of the eastern section of the Transcontinental Ry. between Moncton and Levis. Besides asking tenders for the sections between Levis and the New Brunswick frontier, tenders for constructing the following sections of the National Transcontinental Ry. will be solicited: From Moncton towards Chipman, 50 miles, will be the first section. The road will enter Moncton from north of Steeves Mountain and run almost parallel with the I.C.R. from east Berry's Mills. Tenders will also be called for the section in New Brunswick for a distance 62 miles from Quebec frontier towards Grand Falls. The route will be down to Baker's Brook and thence along the St. John River valley to Edmundston and following the valley to about 2½ miles from Grand Falls. Between the two sections named there will be in New Brunswick three additional sections, each 50 miles, tenders for constructing which will be called early in the spring, or as soon as the question of route has been finally determined."

The position of construction upon the line easterly from the Quebec bridge, shows that on the seven miles to Cap Rouge, a considerable amount of rock cutting will have to be done during the winter. The granite piers of the viaduct at Cap Rouge have been completed, except the two eastern ones, one of which is caisson work. The section from Cap Rouge to Belair, 13 miles, where a connection is made with the C.P.R., is expected to be completed by June. On the 14 miles between Belair and Jacques Cartier River, the grading is nearly completed, and it is expected that tracklaying will be commenced in the spring. The section from Jacques Cartier River for 33 miles is also well advanced, and the masonry work for the bridge across St. Anne's River is finished. The work on the other 127 miles to La Tuque is well advanced, and the abutments of nearly all the bridges are completed.

GRAND TRUNK PACIFIC RY.

The Vice-President and General Manager stated in an interview at Winnipeg, Dec. 18, that he was well satisfied with the work that had been done on the road during the past year. About 80% of the work the company set out to do during the year had been completed, and preparations had been made for larger works during the coming season. It was anticipated that not only would the arrears of 1906 be made up in 1907, but the whole of the work laid out for the year would be completed. The company was taking every precaution to provide against any scarcity of labor during the summer, such as there was during 1906.

Plans have been submitted for the approval of the Government for the line from Edmonton, Alta., through the Yellowhead Pass to Prince Rupert on the Pacific coast. The plans show the line over the summit of the Rocky Mountains will have a gradient of 0.4% and that no heavier gradient will be required to the ocean. The profile accompanying the location plans shows that there will be some heavy cuts and deep fills to ensure a line with so low a gradient. Engineers who are familiar with the Yellowhead Pass state that it is wide enough to provide routes for several lines.

Reports from Prince Rupert state that during the year five acres of land have been cleared and stumped; the whole district has been surveyed, and a hydrographic survey made of the harbor. The harbor is 16 miles wide, with a good entrance, straight and deep for a width of over 2,000 yds., the water in the harbor averaging 25 fathoms in depth.

National Transcontinental Railway.

Tenders are being received to Feb. 14, by the Commissioners, for the construction of the following sections of the projected line:

DISTRICT A.—From at or near Moncton, N.B., westerly for about 50 miles. From at or near Grand Falls, N.B., westerly to the boundary between New Brunswick and Quebec, about 62 miles.

DISTRICT B.—From at or near Quebec Bridge easterly for about 150 miles. From about 150 miles west of Quebec Bridge, westerly to Weymontachene, Que., about 45 miles.

DISTRICTS C AND D.—From about 8 miles west of the Abitibi River crossing easterly for about 150 miles.

The plans for these sections of the line were approved by the Government at the end of 1906.

Referring to the two sections under contract, the Minister of Railways, replying to a question in the House of Commons, Jan. 21, said between Quebec and La Tuque, the common earth excavation was estimated at 6,803,682 cubic yards, and the solid rock at 1,189,150 cubic yards. At the end of the year there had been removed 664,955 cubic yards of earth and 322,367 cubic yards of rock. On the line between Winnipeg and Lake Superior junction, there was estimated to be 11,233,247 cubic yards of earth excavation and 3,696,336 cubic yards of rock cutting. At the end of 1906 there had been removed 282,000 cubic yards of earth and 179,920 yards of rock.

The Commissioners have practically purchased a site in the east part of Winnipeg as a site for shops and yards. The site will have a length of about two miles and a width of about a mile, and the price is said to be about \$200,000.

We have been advised that no track was laid on the main line up to the end of 1906, with the exception of a few hundred feet at St. Boniface, Man.

GRAND TRUNK PACIFIC RY.

On the first section put under contract from Portage la Prairie, Man., westerly, 35 miles of steel had been laid to the vicinity of Pine Creek, to Dec. 31, 1906, and the company's officers state that it is expected to have track laid into Saskatoon, Sask., by the end of 1907. Five miles of tracks have been laid in the yards at Portage la Prairie, where large quantities of material are being assembled for construction during the current year. An agreement was reached, Jan. 13, with the Portage la Prairie council for the sale of a portion of Pacific Ave. to the Company, the closing of several streets, and the opening up of a new street the length of Pacific Ave., south of the G.T.P. right of way. The May Sharp Construction Co. is pushing the excavation for the bridge at Clover Bar, Sask., so as to be ready to start the concrete work early in the spring. The survey work through British Columbia, according to a statement credited to Division Engineer Van Arsdol, is progressing satisfactorily. The actual locating of the line has not been made for any great part of the way, but lines have been run over the whole of the route intended.

The G.T.P. Ry. has purchased altogether about 1,200 acres of land in the east part of Winnipeg, including the Arctic ice farm, upon which it will locate its shops and yards. It is reported that the plans for the shops are completed, and that tenders for their erection are to be asked for at an early date. Another report states that the property in question has been acquired by the G.T.P. Ry. in conjunction with the Commissioners of the Transcontinental Ry., and that it will be used for shop and yard purposes by the Eastern and Western Divisions of the line.

With respect to the construction of branch lines we were advised, Jan. 1, that while the company's charters provide for branch lines from either Orillia or North Bay, Ont., to a junction with the National Transcontinental Ry., it had not made any arrangement for the construction of these lines, and it was not probable anything would be done in that direction in the immediate future, as it was concentrating all forces and all labor procurable on the branch line from Fort William, Ont., and on the main line from Portage la Prairie to Edmonton, Alta.

Surveys for the branch into Regina, Sask., have been completed. The route passes through Fort Qu'Appelle. (Jan., pg. 29.)

National Transcontinental Railway.

The Dominion Parliament has under consideration an act the object of which is to make the statute respecting payment of wages upon public works applicable to the Transcontinental Railway Commissioners' contracts.

In a recent discussion in the House of Commons when papers relating to the projected construction of a central station at Quebec were asked for, the Premier pointed out that the Transcontinental Railway Commissioners had no power to build terminals at Quebec this work rested with the Quebec Bridge and Railway Co., which had been authorized in 1903 to enter Quebec by the bank of the St. Lawrence. The Government had not surrendered its control; it could refuse to guarantee the Q.B. and Ry. Co.'s bonds if its plans were not satisfactory.

Tenders have been opened for the construction of five additional sections as follows:

DISTRICT A.—From Moncton westerly 50 miles: G.T. Pacific Construction Co.; Eastern Construction Co. of Amherst, N.S.; M. T. Schurman & Co., Prince Edward Island; Eastern Construction Co., Ottawa.

From Grand Falls, N.B., westerly to the New Brunswick-Quebec boundary: G.T. Pacific Construction Co.; Toronto Construction Co.; Eastern Construction Co. of Amherst; Eastern Construction Co., Ottawa; Lyons & White, Ottawa.

DISTRICT B.—From Quebec Bridge easterly for about 150 miles: G.T. Pacific Construction Co.; Russell-Chambers, Limited, Toronto; M. P. & J. T. Davis, Ottawa; O'Brien & Mullarkey, Montreal.

From 150 miles west of Quebec Bridge to Weymontachene, Que., about 45 miles: G. T. Pacific Construction Co.; Russell-Chambers, Limited, Toronto; MacDonnell & O'Brien, Renfrew, Ont.

DISTRICT C AND D.—From about eight miles west of Abitibi River, crossing easterly for 150 miles: G.T. Pacific Construction Co.; E. F. Fauquier, Ottawa.

The contracts were awarded Feb. 25 as follows: district A, from Moncton westerly, 50 miles; district B, from about 150 miles west of Quebec Bridge to Weymontachene, Que., and districts C and D from about eight miles west of Abitibi River easterly for 150 miles, to the Grand Trunk Pacific Construction Co.; district A, from Grand Falls, N.B., westerly to the New Brunswick-Quebec boundary to Lyons & White, Ottawa; district B, from 150 miles west of Quebec Bridge to Weymontachene, Que., to M. P. & J. T. Davis, Ottawa. It is said that the cost of the whole 457 miles, according to the accepted tenders, will be about \$13,000,000.

There are now under construction on the Government portion of the Transcontinental Ry. 395 miles, which added to the 457 miles awarded Feb. 25, makes 852. This is nearly the half of the line between Moncton and Winnipeg. In connection with the section between Chipman and Grand Falls, N.B., the route has not yet been definitely decided upon by the Commission, but there is no doubt the report of the resident engineer, which is in favor of the centre route, will be accepted by the Commission and the Government. The statute calls for the most central route through the province easterly. The St. John Valley route would not be a central line. But, apart from the statute, the Transcontinental engineers have been able to discover a shorter and a cheaper route through the centre of the province than was to be found by the St. John River Valley.

GRAND TRUNK PACIFIC RY.

C. Schreiber, C.M.G., General Consulting Engineer to the Government, and Chief Engineer Western Division National Transcontinental Ry., has reported as to the progress

made to Sept. 1, 1906, with the surveys, location and construction of the Western Division of the National Transcontinental Ry. (G.T. Pacific Ry.). The preliminary surveys have sufficiently advanced to enable the company to submit route maps of the line from Winnipeg, touching Saskatoon and Edmonton, and passing through the Yellow Head Pass to the Pacific slope at the junction of the Salmon River with the Fraser River, a distance of about 1,247 miles. Of this the Government has approved from Winnipeg to a short distance east of Edmonton, about 776 miles in all. Edmonton being favorably situated for the establishment of the principal workshops, sorting and distributing yards, cattle yards, warehouses and grain elevators, a large area of land has been purchased for the purpose, and will give ample room for quick despatch of business at that important point. Plans and profiles of location have been submitted and approved by the Government from Portage la Prairie, Man., to nine miles east of Edmonton, about 720 miles, upon which construction is in progress. Mr. Schreiber had recently made an inspection of this section of the line, and found the location has been carefully selected with a view to obtaining a first-class alignment and favorable gradients, the curvature is light and the maximum gradients against the traffic going west are 0.50%. In securing so good an alignment and gradients, heavy work has been encountered in the form of high embankments, deep cuttings and large structures at certain points, such as at Pine Mutt, Minnawashita, Birdtail and Cut Arm Creeks; the little Saskatchewan River, the Touchwood, Eagle and Beaver hills, the Qu'Appelle valley and at Battle River.

He was disappointed with the progress made with construction; it had not advanced, and was not advancing as rapidly as could be desired. This was due to the impossibility of securing the requisite number of men for a vigorous prosecution of the work. In fact, so short of men were the contractors that in several instances many teams of horses were standing idle in the stables, owing to the inability to secure teamsters to drive them. It is, however, only fair to state that the works executed are of a substantial character. The embankments and cuttings are neatly finished off, and the latter are well drained by side surface ditching. Following is a statement of the approximate quantities on the work on the section between Portage la Prairie and Edmonton, and the amount of work executed thereon up to Sept. 1, 1906:

Character of Work	Total	Quantity Done.
Clearing, acres	1,120	1,409
Grubbing, acres	260	97
Earth excavation, cubic yards	17,700,000	5,091,000
Rock, cubic yards	797,000	314,700
Culverts, lineal feet	62,000	17,900
Large trestle bridges, lineal feet	16,000	4,300
Smaller pile bridges, lineal feet	11,000	2,080
Steel bridges over large rivers, lineal feet	5,700	Nil.
Telegraph and telephone lines, miles	750	20,000 telegraph poles delivered
Fencing, miles	1,500	Nil.
Track complete, including ballasting	816	50,000 tons rails delivered; 160,000 ties delivered; 2 miles track laid.
Station and other buildings, number	265	Nil.
Cattle-guards and sign boards, number	1,500	Nil.
Rip rap, cubic yards	20,000	200

The material for the balance of the culverts, trestles and pile bridges, as well as the materials for the fencing, telegraph and telephone lines, can be taken out during the winter and delivered upon the ground with much greater facility than in summer, and if nothing unforeseen occurred, it might

be anticipated that the track would reach Edmonton by the latter end of the autumn of 1907.

The Ontario Legislature has under consideration a bill respecting the land grant for the construction of the Lake Superior branch. By the present act the Government is to survey the land into townships, and by the amendments the company will take the land in blocks with areas about the size of three townships, and the Government will have to undertake the work of outlining. This will cost about \$24,000, whereas the cost of surveys by townships would have amounted to three times that much.

The McDonald, McMillan Co. expects in a short time to be able to make a start upon construction of the line from Portage la Prairie to Winnipeg. The erection of the concrete piers for the bridge across the Saskatchewan River is being proceeded with by Gunn & Son, contractors. There are four piers and two heavy abutments.

It is expected that a conference between the C.P.R., the Canadian Northern Ry., the Great Northern Ry. U.S., and the G.T.P.R., officials will be held in Calgary, Alta., in March, with a view of an arrangement being reached respecting the terminal arrangements for all lines in the city.

Referring to the various mileages mentioned in connection with the Pacific section of the line, Senator Scott stated recently that the first figures were merely estimates, as no surveys had been made. It had now been found from surveys that the line would have to go through the Yellow Head Pass, and that the mileage would be about 766. The plans for the line in B.C. have been filed at Victoria, and approved by the Commissioner of Works. Entering the Province by the Yellow Head Pass the line will pass to the north of Cowdung and Moose lakes, following the northerly banks of the south fork of the Fraser river, until it is joined by the north fork. The latter will be crossed near its mouth and the main river followed to a point in the vicinity of Fort George. This fort, which is at the junction of the Fraser and Lower Nechaco, will be left to the south, and the valley of the latter, on the north bank, followed almost due west to Fraser lake. Skirting to the north of Fraser lake, the line, at the westerly extremity, will change in course, going northwesterly along the north-east banks of Endako river and Burns and Decker lakes to the headwaters of the South Bulkley river. Contrary to general expectation, the map of the proposed route shows that the railway will not be built on the west side of Bulkley river, but on the east. This will take it through the Hudson's Bay ranch and Moricetown, and it will cross the Skeena near Hazelton, thence turning abruptly to the southwest, following the north bank of the Skeena entirely to its mouth. From that point it will cross to Kaien Island and the terminus at Prince Rupert.

Following are the officers and directors of the Quebec Cartage and Transfer Co., elected at the organization meeting, Jan. 22: Pres., Hon. E. B. Carneau; Vice-President, Hon. R. Turner; Managing Director, J. Houe, Jr.; Secretary-Treasurer, N. Belleau; other directors, Hon. A. Turgeon, R. Forget, Montreal; and J. H. Walsh, Sherbrooke, Que. With the exception of the two last named, all the officers and directors reside in Quebec.

The Winnipeg Jobbers and Shippers Association, which established a transportation department recently, has the following officers: President, J. H. Ashdown; Vice-President, E. D. Martin; Executive Committee, W. Georgeon, A. L. Johnston, D. E. Sprague, G. F. Galt, D. E. Williams, H. M. Belcher, E. F. Hutchings, A. Macdonald; Sec. Treas., A. B. Kent; Manager Transportation Department, G. E. Carpenter.

National Transcontinental Railway.

The final surveys and location of the Eastern Division from Quebec to Winnipeg, it is stated, show a line of 1,349½ miles. The route through New Brunswick, it is reported, has been decided upon, but no official announcement had been made to Mar. 20. Press reports state that of the three routes surveyed, the engineers recommend the adoption of the back route between Chipman and Grand Falls. The adoption of the route, it is stated, will require the use of a pusher for westbound traffic for a distance of about 17 miles. The route will be 47 miles shorter than the route surveyed by the St. John River valley, and 18 miles shorter than the third route surveyed. The last mentioned route was laid out so as to provide the standard gradients, and its cost was consequently the heaviest of the three.

The Commissioners have authorized the construction of three buildings for the use of the engineering staff between Moncton and Chipman, N.B. The buildings will be of frame and will be located at Hemlock Ridge, near Canaan, a point 15 miles north of Havlock, and eight miles east of Chipman, respectively. H. Ryan, of the Commissioners' engineering staff, is superintending their erection.

Tenders have been received for the construction and erection of six steel bridges in District F., at the following points between Winnipeg and Lake Superior Junction: Wabigoon River, Winnipeg River, C.P.R. crossing, Whitemouth River, Brokenhead River, east branch, Brokenhead River, west branch. The class of load which the bridges are to carry is that designated as heavy in the general specifications for steel bridges of the Department of Railways.

GRAND TRUNK PACIFIC RY

Glyn, Mills, Currie & Co., London, Eng., have offered £1,000,000 of G.T.P. Ry debenture stock at par, the proceeds of which is to be devoted to the purchase of rolling stock for the equipment of the line. The stock, which is part of an authorized issue of £3,000,000, is redeemable at 105, Mar. 1,

APRIL 1907

National Transcontinental Railway.

The central route for the Eastern Division of the line through New Brunswick has been finally approved, and the necessary order-in-council has been passed. Instructions have been given to the engineers to complete the location from Chipman to Grand Falls, N.B. This work will take several weeks to complete, and it is expected that tenders for the construction of this section will be asked for at an early date. The line is under contract from Moncton westerly for 50 miles, the G.T. Pacific Ry. Co. having the contract. Tenders were received to June 25 by the commissioners for the construction of an eight mile section from the terminal point of the 50 mile section west of Moncton to Chipman. When the Chipman-Grand Falls section has been let, the whole of the line from Quebec to Moncton will be under contract as well as a considerable mileage between Quebec and Winnipeg. The gap for which the location has not been completed, and for which tenders have not been asked, include

JULY 1907

Aug., 1907]

THE RAILWAY AND MARINE WORLD

National Transcontinental Railway.

The Commissioners have awarded a contract for 44,000 tons of steel rails to the Dominion Iron and Steel Co., and for 21,371 tons to the Algoma Steel Co., delivery to commence in Nov., and be completed in 1908. The Commissioners have let a contract to the Dominion Bridge Co. for five steel bridges for the line in Eastern Quebec. The Commissioners have under consideration four tenders for the construction of the line from Chipman eastwards to Moncton, N.B. The contractors tendering are M. J. O'Brien and Q. J. Fowler, Ottawa; Grand Trunk Pacific Ry. Co., Montreal; Willard Kitchen Co., Fredericton, N.B.; J. W. McManus Co., Menamcook, N.B.

Press reports state that M. P. and J. Davis have sublet the greater part of the 150-mile section between Quebec Bridge and the New Brunswick boundary, the sub-contractors being: Pocock and Lemay, Cameron and Perregé, Johnston and Sabiston, Beaugard and Dufour, McDougall Bros., Murdoch Bros., R. Ryan and A. McGougan. The latter will construct bridges over the Etchemin and Abenakis rivers. The G. T. Pacific Ry. Co. has sublet the clearing of the right of way on the Abitibi section to Rogers and O'Brien, of Montreal. With respect to the 275-mile section from Winnipeg easterly to Lake Superior Junction, H. D. Lumsden, Chief Engineer, stated recently that the contractors had 4,000 men at work, and very poor progress was being made. He thought that a great deal of work could be done during next winter, but he would not care to say that this section of the line would be completed by the spring.

Owing to forest fires in Ontario east of the Manitoba boundary, J. D. McArthur, contractor on the Winnipeg-Superior Junction section, has suffered considerable damage. The loss at the Vermillion Bay storehouse is estimated at nearly \$30,000. Camps at other points have been damaged to some extent.

August 1907

steel, straight type, fitted patent spark arrester.

National Transcontinental Railway.

H. D. Lumsden, Chief Engineer, arrived in Winnipeg Aug. 13 from Ottawa, for the purpose of making an inspection of the construction operations eastward, carried on during the summer. It is reported that satisfactory progress has been made during the year with the grading and track-laying on the portion under contract from Winnipeg, easterly to the junction with the Lake Superior branch from Fort William, which is being constructed by the G.T. Pacific Ry.

The Commissioners of the Transcontinental Ry. will receive tenders to Sept. 5, for the construction and erection of the steel superstructures and floor systems, with ties and guard rails complete, required for bridges at the following points in District B., west of Quebec: Grand Bras d'Arme, mileage 38.9; Lacheyrotiere River, mileage 39.93; Nigerette, mileage 46; Tawachiche River, mileage 83; Roberge Creek, mileage 85; River des Eaux Mortes, mileage 95; viaduct of River du Milieu, mileage 97; crossings of Brochet River at mileages 99, 101.5, 102, 108.5, and 109; Creek a Beauce, mileage 115; overhead crossing, Quebec & Lake St. John Ry., mileage 118.25; Little Bostonnais, mileage 119.5; Big Bostonnais, mileage 124; Croche River, mileage 127; River au Lait, mileage 128.9; St. Maurice River, mileage 129.

GRAND TRUNK PACIFIC RY.

F. W. Morse, Vice-President and General Manager, returned to Montreal Aug. 8, after having been absent since July 4 inspecting the work in progress on the line. He said in an interview that the connection between Fort William and Winnipeg would not be made in time to carry the present season's crop. The company's branch from Fort William to Peninsula Lake, or Lake Superior Junction, would be completed, but the main line of the National Transcontinental Ry. into Winnipeg, which the Government is constructing, would not be completed. Satisfactory progress was being made on the line west of Winnipeg. A good deal of the grading and tracklaying between Winnipeg and Portage la Prairie had been completed, while about 60 miles of track had been laid and ballasted beyond Portage la Prairie. By the time the cold weather set in it was expected to have about 235 miles west of Portage la Prairie completed. Further west the bridge construction was being proceeded with as rapidly as possible, and the other work was well forward. The steel bridge over the Battle River would be ready for the rails this autumn. The one over the south Saskatchewan, just south of Saskatoon, was just as

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September
1907

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National Transcontinental Railway.

A despatch sent out from Ottawa states that in 1903, when the project for the construction of this railway was introduced, the cost of the eastern section, extending from Moncton to Winnipeg, 1,800 miles, was estimated at \$100,000,000. It is now estimated that the cost will be at least 25% in excess of this amount owing to the increased cost of labor, materials and supplies of all kinds. It is stated that this increased cost of construction, and the inaccessibility of the section of the country through which the line will pass between Abitibi and the junction with the Lake Superior Branch, is responsible for the delay in putting this portion of the line under contract. Another despatch from Ottawa states that on the 660 miles of the Eastern Division of the line under contract there are over 18,000 men at work, and that the monthly pay roll is over \$1,000,000.

Justice McLeod of the New Brunswick High Court has decided that the N.T. Ry. is a Government railway, and that the provisions of the Railway Act requiring a deposit to be put up before taking possession of land did not apply, and that all the Commission had to do was to file with the Registrar of Deeds a plan of the lands required for railway purposes. This decision was given upon an application of the Commission for an order putting it in possession of lands required for the railway in Madawaska county.

An immediate start is to be made upon the grading of the 50 mile section from Moncton westerly to Chipman, N.B., the contract for which was let to the G.T. Pacific Ry. The company has sublet the work to J. H. Corbett, of Franklyn, Pa., who will have his headquarters at Chipman.

We are advised that the contract which the J. W. McManus Co. is carrying out on the National Transcontinental Ry. is for an eight mile section from a point about 14 miles east of Chipman, N.B., westerly, mileage 50 to 58. The contract is direct with the Commissioners of the Transcontinental Ry., and not a sub-contract under the G.T. Pacific Ry., as previously reported.

The G.T. Pacific Ry., which secured the contract for the section of 150 miles easterly from the Abitibi River, has sublet the work to the J. H. Reynolds Construction Co. This company proposes to get in supplies, form camps, and perfect arrangements for starting grading work in the spring.

J. W. Fitzgerald, Ontario Land Surveyor, who has returned to Peterborough, Ont., after a summer spent in making surveys in the Matagami district, is reported as saying that the principal feature of the construction of the line in northwestern Ontario will be a tangent of 70 miles, on which there is no obstruction whatever except rivers.

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National Transcontinental Railway.

A despatch sent out from Ottawa states that in 1903, when the project for the construction of this railway was introduced, the cost of the eastern section, extending from Moncton to Winnipeg, 1,800 miles, was estimated at \$100,000,000. It is now estimated that the cost will be at least 25% in excess of this amount owing to the increased cost of labor, materials and supplies of all kinds. It is stated that this increased cost of construction, and the inaccessibility of the section of the country through which the line will pass between Abitibi and the junction with the Lake Superior Branch, is responsible for the delay in putting this portion of the line under contract. Another despatch from Ottawa states that on the 660 miles of the Eastern Division of the line under contract there are over 18,000 men at work, and that the monthly pay roll is over \$1,000,000.

Justice McLeod of the New Brunswick High Court has decided that the N.T. Ry. is a Government railway, and that the provisions of the Railway Act requiring a deposit to be put up before taking possession of land did not apply, and that all the Commission had to do was to file with the Registrar of Deeds a plan of the lands required for railway purposes. This decision was given upon an application of the Commission for an order putting it in possession of lands required for the railway in Madawaska county.

An immediate start is to be made upon the grading of the 50 mile section from Moncton westerly to Chipman, N.B., the contract for which was let to the G.T. Pacific Ry. The company has sublet the work to J. H. Corbett, of Franklyn, Pa., who will have his headquarters at Chipman.

We are advised that the contract which the J. W. McManus Co. is carrying out on the National Transcontinental Ry. is for an eight mile section from a point about 1½ miles east of Chipman, N.B., westerly, mileage 50 to 58. The contract is direct with the Commissioners of the Transcontinental Ry., and not a sub-contract under the G.T. Pacific Ry., as previously reported.

The G.T. Pacific Ry., which secured the contract for the section of 150 miles easterly from the Abitibi River, has sublet the work to the J. H. Reynolds Construction Co. This company proposes to get in supplies, form camps, and perfect arrangements for starting grading work in the spring.

J. W. Fitzgerald, Ontario Land Surveyor, who has returned to Peterborough, Ont., after a summer spent in making surveys in the Matagami district, is reported as saying that the principal feature of the construction of the line in northwestern Ontario will be a tangent of 70 miles, on which there is no obstruction whatever except rivers.

GRAND TRUNK PACIFIC RY.

C. M. Hays, President G. T. Pacific Ry.; F. W. Morse, Vice-President and General Manager, accompanied by A. Smithers, of London, Eng., Vice-President G.T.R., Senator Cox, and others interested in the con-

struction of the line, spent a month in inspecting the work in progress. They visited Prince Rupert, the Pacific Coast terminal point, and on returning to Vancouver, Sept. 30, Mr. Hays said the company would construct a line from Port George to Vancouver, but for the present attention would be confined to the construction of the main line. The growth of Prince Rupert since his visit a year ago had surprised him. On returning to Montreal, Oct. 14, he said he expected that his next visit to Edmonton would be made over the G.T. Pacific Ry. from Fort William. While the company had the right to construct branch lines the company's first care would be to complete the main line through to the coast. As regards steamships the company would operate two fleets of steamers, one on the Atlantic and one on the Pacific. It was too early to discuss details, but he might say that the company would work in connection with allied lines of steamships, especially the Allan Line, but if necessary, it would construct its own fleet.

It was reported Oct. 8, that about 40 miles of track had been laid on the Lake Superior Branch from Fort William, Ont., and that construction trains were running daily. A drawbridge is to be constructed across the Kaministiquia River at Fort William, the contracts for which have been let to Wylie & Balfour for the substructure, and to the Canadian Bridge Co. for the steel work. The bridge will accommodate not only the railway tracks, but an electric railway, vehicles and foot passengers.

An inspection of the line from Portage la Prairie, mileage 54, to Ren, mileage 176, was made by H. A. K. Drury, Inspecting Engineer for the Board of Railway Commissioners, Winnipeg, and an order was issued Oct. 3, authorizing the operation of freight trains over this mileage. The stations are as follows: Portage la Prairie, mileage 54; Arona, mileage 59; Barr, mileage 63; Caye, mileage 70; Deer, mileage 76; Ekira, mileage 84; Firdale, mileage 91; Gregg, mileage 99; Harte, mileage 106; Ingelow, mileage 112; Justice, mileage 121; Knox, mileage 129; Levine, mileage 136; Rivers, mileage 142; Myra, mileage 151; Norman, mileage 158; Oakner, 158; Pope, mileage 164; Quix, mileage 170; Ren, mileage 176. The line crosses at grade the C.P.R. near Red Deer and Justice, and the Canadian Northern Ry. near Gregg.

Steel has been laid to the Assiniboine River, 150 miles west of Portage la Prairie, and is being pushed forward as rapidly as possible. A second gang has started working eastward from Saskatoon, Sask. The grading is almost completed between Portage la Prairie and Saskatoon, some few small gaps being reported remaining Sept. 30. It is expected that this portion of the line will be completed and in operation by the end of the year.

Westerly from Saskatoon, Sask., to Edmonton, Alta., the contractors are pushing the work as rapidly as possible. C. Schrieber, Consulting Engineer of the Department of Railways, left Ottawa Sept. 28, for the purpose of inspecting the work done and in progress as far as Edmonton.

The Canadian White Co. has started work on a contract for a fill of 200,000 cubic yards, at the western end of the bridge over the Saskatchewan River at the Clover Bar crossing. The piers and abutments for this bridge are being put up by the May-Sharp Construction Co. The work done by the firm during the summer includes the erection of a concrete pier 95 ft. above low water mark, with a double row of piers on one side of the river and the anchor pier.

The question of letting a contract for 200 miles from Edmonton, westerly towards the Yellowhead Pass, is under consideration, and it is expected tenders will be called for shortly.

In connection with the construction of the line from Kitamaat easterly, J. W. Stewart, of the firm of Foley Bros, Larson & Co., the contractors, says that active work is in progress on the 10 mile section from Kitamaat summit to Kitselas canyon, where the Copper River joins the Skeena River. The rock work there is the heaviest on the entire 180 miles between Kitamaat Arm and Hazelton. The right-of-way from Kitamaat to the Kitselas Canyon, 45 miles, is being cleared, and a wagon road is being constructed. When this section has been completed it will be possible to go ahead rapidly with the construction of the upper section of the line to Hazelton. Progress will be slow at first owing to the limited transportation afforded by the river. Reports from Kitamaat state that there is every probability that a port will be established there for handling G.T. Pacific Ry. business before the development of Prince Rupert is proceeded with.

A map showing the complete transcontinental system is issued as a supplement to this number of THE RAILWAY AND MARINE WORLD.

under contract is well advanced. Tenders for the greater part of the remaining 1,000 miles between Winnipeg and Moncton will, it is said, be called for in the spring. The portion of the line in Northern Ontario adjacent to the Temiskaming and Northern Ontario Ry. will probably be the last to be constructed, as tenders are not expected to be called for until the T. and N.O.R. is extended to the proposed point of junction.

GRAND TRUNK PACIFIC RAILWAY.

F. W. Morse, Vice-President and General Manager, recently completed a trip of inspection over the whole main line, and the Lake Superior branch. Fifty miles of track had been laid on this branch, and grading is reported to be progressing favorably. The Macdonald, McMillan Co. have completed their contract for grading from Portage la Prairie to the Touchwood Hills, 272 miles, and the Canadian White Co. is finishing up its contract for grading into Saskatoon, Sask. The grading between Saskatoon and Edmonton is also well forward, and it was expected that by Nov. 30, 600 miles of the 770 between Portage la Prairie and Edmonton would have been graded. It is expected that track will be laid into Saskatoon by the end of the year, but this depends entirely upon favorable weather. On Nov. 12, the steel-laying gang working westerly was reported to be on Sec. 5, about 20 miles south of Yorkton. Steel is also being laid easterly from Saskatoon, from which point 100 miles of grade has been fully completed. On Nov. 12, the track-laying gang was working some miles east of French.

The substructure for the big bridge across the Saskatchewan River at Saskatoon has been completed, and the contractors have removed their plant to the Battle River, where another large bridge is to be constructed. The substructure consists of nine piers and two abutments in which there are 7,000 cubic yards of concrete. The false work is being erected and a large quantity of the steel for the superstructure has been delivered. The contractor for the steel work is the Canadian Bridge Co., Walkerville, Ont., and J. Gunn & Sons were the contractors for the substructure.

The route finally adopted for the line west of Edmonton, Alta., runs parallel with the Canadian Northern Ry., to near Stoney Plain. It skirts the shores of Wabamun Lake, 40 miles west, then to the Pembina River, crossing it several miles west of the mouth of the Lobstick River, and runs along the bank of that river until near Lobstick Lake. South of the lake the line runs along the valley following pretty nearly the old Yellowhead Pass trail, but crossing Upper Lobstick River, Carrot River, a branch of the McLeod, the Wolf, and crossing the McLeod a few miles below the Jasper trail crossing at White Mud creek, west along the south bank of the McLeod, beyond the big eddy, to within a mile of Leavings, the name given to the dividing land that separates the McLeod watershed from the Athabasca, the line traverses valley land. On this divide of the two rivers the G.T.P. strikes a heavy grade and winds over a hill, 3,470 ft. high. The line strikes the Athabasca River about three miles up from the mouth of Train Creek, and then runs through a beautiful valley to the Roche Miette, the first mountain the old Jasper trail crosses. Here there is an excellent grade to climb to the pass, the line winding up the river valley. At a meeting of the Commissioners at Ottawa, Nov. 12, it was reported that 10 parties were in the field locating the route from the Yellowhead Pass to the coast. These parties will remain in the field during winter. C. Van Arsdel, engineer in charge of the Western Division, returned to Vancouver, B.C., Nov. 2, after having gone over the route of the line from Prince

Rupert easterly to Barkerville, B.C. He said alternative routes had been surveyed in various sections, and it would take some time to decide as to the final route to be followed. (Nov. pg. 839).

National Transcontinental Railway.

The report of the Transcontinental Ry. Commission for the nine months ended Mar. 31, is referred to in the report of the Department of Railways and Canals. From the summary given it appears that the total amount expended during the nine months was \$5,537,867.50, which with the \$2,609,627.13 previously expended, makes total payments of \$8,147,494.63. It is stated that the various surveys carried on have produced satisfactory results, and that the basal intention that the railway throughout should be so located as to afford grades of exceptional ease in operation not exceeding 0.40% against eastbound and 0.60% against westbound traffic, and curves of the greatest possible radius has been closely regarded, though the endeavor to meet this requirement has, of course, entailed much additional survey work. Connected lines of survey have now been obtained for the entire distance between Moncton and Winnipeg. Contracts for construction have been awarded for 852 miles.

The report of C. Schrieber, Consulting Engineer to the Department, is published in full, and is summarized as follows by the Deputy Minister: "On the Western Division of the railway to be built by the C.T. Pacific Ry., Mr. Schrieber's report shows the position up to Mar. 31. Surveys have been completed and the plans and profiles of location have been approved by orders-in-council from about 32 miles west from Winnipeg to Edmonton. From Edmonton to 27 miles west of Yellowhead Pass location plans and profiles have been approved; but may be revised as improvements develop. The balance of the line to Prince Rupert, the proposed terminus on the Pacific Coast, has been located, and plans and profiles submitted; but an improved revision was expected. The Chief Engineer states that a very good location has been made, only one grade exceeding 4-10 of 1%; the exception being a 1% grade for about 20 miles. The work, for mountainous work, will not be heavy, except for about 170 miles east from Prince Rupert, where it will be almost entirely very heavy rock excavation. The construction under contract and progress is from Portage la Prairie, 275 miles westward, on which about 75% of the grading was done, and about 60% of the culverts, bridges, etc., a further distance of 141 miles to a short distance west of the crossing of the South Saskatchewan River, on which 48% of the grading and about 38% of the entire work was done. For a further distance of about 316 miles to Edmonton about 25% of the grading was done. The bridges over the Assiniboine, the South and North Saskatchewan, and the Battle rivers, are under contract. The severity of the last winter greatly interfered with construction, with regard to tracklaying, though steel rails of 80 lbs. to the yard have been delivered for the whole distance from Winnipeg to Edmonton, 800 miles. The shortage of ties has delayed tracklaying, only 36 miles of track being laid to Mar. 31. About 36 miles of telegraph line have been erected." The Commissioners visited Moncton, N.B., Nov. 8, for the purpose of considering the question of the terminals necessary there. They returned to Ottawa on the following day, and will confer with the Minister of Railways upon the subject.

The Commissioners have filed with the Registrar of Deeds for the County of L'Islet, route plans for the railway from mileage 89 to 130, from the north abutment of the Quebec Bridge, easterly through the County of L'Islet. Reports received at Ottawa state that about 50 miles of track have been laid on the Quebec section, and that grading on the sections

Transcontinental Ry. Commission.—S. R. Poulin, heretofore District Engineer at North Bay, has been appointed District Engineer at Kenora, Ont., succeeding Major Hodgins, resigned.

C. O. Foss, heretofore Assistant District Engineer at St. John, N.B., has been appointed Assistant District Engineer at Kenora, succeeding A. F. Heaman, resigned.

Wisconsin Central Ry.—H. S. Head has been appointed District Passenger Agent, with headquarters at 290 Broadway, New York City. His territory includes all the territory lying east of Buffalo in the United States, and the Canadian territory lying east of Toronto.

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at Five-mile Bend, above the Grand canyon, goes through a pass at the head of Tonaquah creek, and down that creek to its mouth on the Fraser, ten miles below the canyon. This part of the line is to avoid following the Fraser through the Grand canyon, where two tunnels would be necessary. The new survey crosses to the south bank of the Fraser; goes up Goat River a short distance, crosses to Bear River; thence via Otter and Eagle lakes to Willow River, and down Willow river to its mouth. It will probably cross to the north bank of the Fraser at the mouth of Little Salmon River, where there will be a single span bridge on solid rock. It is expected that steps will be taken at an early date to let contracts for the 700 miles between Edmonton and Prince Rupert, B.C.

We are advised that a contract has been let to Foley Brothers, Larson & Co. for the grading along a certain portion of the company's projected line in British Columbia, but that details of the same have not been settled. Local press despatches state that this contract covers the grading of the line between Kitamaat and the headquarters of the Copper River, and that the route will follow the location staked out for the Pacific, Omineca and Northern Ry., the charter for which was acquired by the G.T. Pacific Ry. A start was made Aug. 17, when the first sod was cut. There will be a good deal of rock cutting, and this will be gone on with throughout the winter. A wagon road will be cut the entire length of the Kitamaat branch, and supplies will be got in during the winter.

The question of the entrance of the company's line into Vancouver is being discussed and press reports state that the charter of the Vancouver, Westminster and Yukon Ry. had been purchased, but J. Hendry, President, is quoted as stating that the line has not been sold. He further stated that the line would be constructed from Vancouver northward with the direct object of tapping the G.T. Pacific Ry., and giving that railway a connection with Vancouver.

A press report states that on the return of Chief Railway Commissioner Killam to Ottawa from the West early in Oct., the Board will take up the complaints of alleged discrimination in freight rates in favor of Winnipeg as against other western points. Among the other questions to be dealt with by the Board are the Bell Telephone Co.'s rates, the express companies' rates, standard operating rules for railways, the re-classification and authorization of new schedules of maximum freight rates, the adoption of new forms for bills of lading, the drafting of new regulations affecting the safety of passenger trains in the matter of heating, lighting, etc., and the settlement of the Toronto union station problem.

Canadian Northern System Terminals has been incorporated under the Dominion Companies Act, with a capital of \$2,000,000 and offices at Toronto, to lay out, construct, purchase, lease or otherwise acquire, maintain, operate and manage terminals, transportation, warehouse and storage facilities, yards, stock yards, etc., and tracks and equipment for the movement, care storage, or handling any merchandise or traffic; passenger facilities and accommodation, hotels, parks, amusement resorts, etc.; grain elevators and cleaning plants, steamships and vessels, piers, docks, dry docks, wharves, slips, etc.; smelters and furnaces, mines, power-houses and structures, and for a number of other objects necessary in connection with either of these businesses. The provisional directors are: G. Ruel, A. J. Mitchell, J. B. Robertson, R. P. Ormsby, F. C. Annesley, L. W. Mitchell, Toronto; all of whom are in the employ of Mackenzie, Mann & Co. (Ltd.)

National Transcontinental Railway.

The Governor-General in the speech from the throne at the opening of the current session of the Dominion Parliament referred to the construction of this line. He said a gratifying result of the expansion of trade was that the revenue of the last fiscal period of nine months, ended Mar. 30, 1907, was more than sufficient to meet expenses on Consolidated Fund, National Transcontinental Ry. capital and special outlays, all expenses of the Dominion of every kind, and leave a balance of over \$3,000,000 to be applied in reduction of the public debt. The difficulty of obtaining labor and materials at a time of great business activity has somewhat retarded the construction of the N.T.R., but notwithstanding that great progress has been made on the Eastern Division and on the Prairie Section of the Western Division under construction by the G.T. Pacific Ry. Co. A section of the latter of about 250 miles has been available for handling the freight traffic of the present season. Contracts for the portion of the Prairie Section west of Edmonton are about to be let, and immediate steps will be taken for the commencement of work at both the eastern and western ends of the Mountain Division. Thus, in a very short time, the whole work from Moncton to the Pacific Ocean will be under vigorous construction.

The report of the Commissioners of the N.T.R. for the year ended June 30, 1906, dated Ottawa, Oct. 9, 1906, has been laid before the House of Commons. A report for the nine months ended Mar. 30, 1907, was laid on the table of the House of Commons Nov. 29. The total expenditure amounts to \$5,537,867, of which the Purchasing Department expended \$224,880 for supplies. The greater portion of the expenditure was on account of surveys and payments to contractors on progress estimates. The expenses at the headquarters in Ottawa totalled \$166,191. The total expenditure from Sept., 1904, to March 31, 1907, was \$8,147,494. Of the \$224,880 expended on supplies all was spent in Canada, except \$1,833 for goods from Great Britain, and \$444 for purchases from the U.S.

H. D. Lumsden, Chief Engineer, states that the first location from Moncton, N.B., to St. Boniface, Man., is practically completed, and that 852 miles are under construction. The total distance from Moncton to St. Jean Chrysostome will be 453 miles, a saving of only 34 miles as compared with the Intercolonial Ry. The entire distance to Winnipeg is 1,817, as against 1,890 originally estimated. During the year contracts for supplying 80-lb. steel rails were awarded to the Dominion Iron & Steel Co. and the Algoma Steel Co. at \$34 a ton.

Spliced bars were ordered from the Nova Scotia Steel Co. for \$47.04, from the Hamilton Steel & Iron Co. at \$43.68; bolts and nuts from the Toronto Bolt and Forge Co. at \$3.60 per 100 lbs., at \$3.41 from the Gananoque Forge Co., and at \$3.57 from the Montreal Rolling Mills Co.; spikes from the Peck Rolling Mills Co. at \$2.50 per 100 lbs., and from the Montreal Rolling Mills, the Toronto Bolt and Forge Co., and the Hamilton Steel Co. at \$2.55 per 100 lbs. The contracts were awarded to J. G. Hearn, of Quebec, at prices varying from 44 to 50 cents each, and to R. Bates, of Kenora, at 35 and 40 cents. In connection with the supply of ties for the section immediately east of Winnipeg, Mr. Lumsden complained that several tenderers were not able to fulfil their contracts by reason of the refusal of the Ontario Government to grant permits to cut. The price to be paid for bridge superstructures varies from \$4.04 to \$4.18 per pound to the Locomotive and Machine Co. of Montreal, and \$4.95 to \$4.23 to the Dominion Bridge Co., Montreal. For the inspection of material and workmanship of bridges, an inspection company was paid at the rate of 45 cents a ton, and for fastenings at 20 cents a ton. The inspection of rails costs 5 cents a ton.

The reports of the district engineers are appended. G. C. Dunn, Fredericton, N.B., expresses the opinion that the selection of the Central route through New Brunswick will mean the passenger time between Quebec and Moncton about an hour and for freight train two hours less than the time which would have been required if the river route had been selected. A. E. Doucet, Quebec, reports that good progress is being made with construction work. At the close of March the contractors had 3,297 men at work.

A. N. Molesworth reports that on section C there has been good progress on surveys as far as the Gatineau River, and S. R. Poulin of district D states that his surveys have been nearly completed. On district E, which runs to the height of land, Engineer Armstrong reports good country. There will be 36 bridges on this section. A. E. Hodgins, who had supervision of the section west of Superior Jet., reports that the contractors have been embarrassed by scarcity of labor, but that the sub-letting of contract by J. D. McArthur, Ltd., has had beneficial results. There has been trouble with illicit whiskey sellers. Seventeen men have been killed and 26 injured in the work owing to recklessness in handling dynamite.

A return has been ordered by the House of Commons at the request of Mr. Schell, M.P., showing the quantities used by the N.T.R. Commission for arriving at the moneyed values of the tenders for the construction of the 50 miles, more or less, from Moncton westerly; the 62 miles, more or less, from Grand Falls westerly; from the south side of the St. Lawrence River easterly 150 miles; for the 45 miles, more or less, westerly from near La Tuque; and for the 150 miles easterly from near Abitibi; the prices placed opposite the several items by each tenderer, and the total amount so ascertained of each tender.

The final location for the first 12 miles southeasterly from the Quebec Bridge has been definitely decided upon, and a plan, together with a book of reference, has been deposited with the Registrar of Deeds for the County of Levis. The line has already been fenced and considerable trestle work and excavating done. Operations have ceased for the season.

Replying to a question in the House of Commons Dec. 4, the Minister of Railways stated that 800 miles of the G.T. Pacific Ry. were under construction west of Winnipeg, but there was no construction west of

National Transcontinental Railway.

The Governor-General in the speech from the throne at the opening of the current session of the Dominion Parliament referred to the construction of this line. He said a gratifying result of the expansion of trade was that the revenue of the last fiscal period of nine months, ended Mar. 30, 1907, was more than sufficient to meet expenses on Consolidated Fund, National Transcontinental Ry. capital and special outlays, all expenses of the Dominion of every kind, and leave a balance of over \$3,000,000 to be applied in reduction of the public debt. The difficulty of obtaining labor and materials at a time of great business activity has somewhat retarded the construction of the N.T.R., but notwithstanding that great progress has been made on the Eastern Division and on the Prairie Section of the Western Division under construction by the G.T. Pacific Ry. Co. A section of the latter of about 250 miles has been available for handling the freight traffic of the present season. Contracts for the portion of the Prairie Section west of Edmonton are about to be let, and immediate steps will be taken for the commencement of work at both the eastern and western ends of the Mountain Division. Thus, in a very short time, the whole work from Moncton to the Pacific Ocean will be under vigorous construction.

The report of the Commissioners of the N.T.R. for the year ended June 30, 1906, dated Ottawa, Oct. 9, 1906, has been laid before the House of Commons. A report for the nine months ended Mar. 30, 1907, was laid on the table of the House of Commons Nov. 29. The total expenditure amounts to \$5,537,867, of which the Purchasing Department expended \$224,880 for supplies. The greater portion of the expenditure was on account of surveys and payments to contractors on progress estimates. The expenses at the headquarters in Ottawa totalled \$166,191. The total expenditure from Sept., 1904, to March 31, 1907, was \$8,147,494. Of the \$224,880 expended on supplies all was spent in Canada, except \$1,833 for goods from Great Britain, and \$444 for purchases from the U.S.

H. D. Lumsden, Chief Engineer, states that the first location from Moncton, N.B., to St. Boniface, Man., is practically completed, and that 852 miles are under construction. The total distance from Moncton to St. Jean Chrysostome will be 453 miles, a saving of only 34 miles as compared with the Intercolonial Ry. The entire distance to Winnipeg is 1,817, as against 1,890 originally estimated. During the year contracts for supplying 80-lb. steel rails were awarded to the Dominion Iron & Steel Co. and the Algoma Steel Co. at \$34 a ton.

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of March the contractors had 3,297 men at work.

A. N. Molesworth reports that on section C there has been good progress on surveys as far as the Gatineau River, and S. R. Poulin of district D states that his surveys have been nearly completed. On district E, which runs to the height of land, Engineer Armstrong reports good country. There will be 36 bridges on this section. A. E. Hodgins, who had supervision of the section west of Superior Jct., reports that the contractors have been embarrassed by scarcity of labor, but that the sub-letting of contract by J. D. McArthur, Ltd., has had beneficial results. There has been trouble with illicit whiskey sellers. Seventeen men have been killed and 26 injured in the work owing to recklessness in handling dynamite.

A return has been ordered by the House of Commons at the request of Mr. Schell, M.P., showing the quantities used by the N.T.R. Commission for arriving at the moneyed values of the tenders for the construction of the 50 miles, more or less, from Moncton westerly; the 62 miles, more or less, from Grand Falls westerly; from the south side of the St. Lawrence River easterly 150 miles; for the 45 miles, more or less, westerly from near La Tuque; and for the 150 miles easterly from near Abitibi; the prices placed opposite the several items by each tenderer, and the total amount so ascertained of each tender.

The final location for the first 12 miles southeasterly from the Quebec Bridge has been definitely decided upon, and a plan, together with a book of reference, has been deposited with the Registrar of Deeds for the County of Levis. The line has already been fenced and considerable trestle work and excavating done. Operations have ceased for the season.

Replying to a question in the House of Commons Dec. 4, the Minister of Railways stated that 800 miles of the G.T. Pacific Ry. were under construction west of Winnipeg, but there was no construction west of

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Edmonton. East of Winnipeg there were 860 miles under construction. The estimated cost of grading, tracklaying and ballasting, including cost of ties and rails, on the portions let between Winnipeg and Edmonton, was \$18,100,000; between Edmonton and the coast \$60,700,000; and between Winnipeg and Moncton \$41,946,258; this amount includes engineering and contingencies. The mileage from Moncton to Winnipeg was 1,807.1, from Winnipeg to Edmonton, 800; and from Edmonton to the coast, 940 miles. The mileage from Edmonton to the coast has not been submitted to the Department by the C.T. Pacific Ry., so that the mileage on that section is approximate, being merely from the preliminary surveys.

GRAND TRUNK PACIFIC RY.

The annual meeting of shareholders was held in Montreal Dec. 5, having been adjourned from the third Wednesday in Sept., the official date for holding the meeting. The directors elected are: Sir C. Rivers Wilson, A. W. Smithers, Lord Welby, J. A. Clutton-Brock, Sir W. L. Young, representing the G.T.R., the three latter taking the place of Col. Firebrace, Sir H. M. Jackson, and Hon. C. Rothschild, it being the practice of the G.T.R. directors to serve in rotation on the C.T. Pacific Ry. Board. C. M. Hays, F. W. Morse, W. Wainwright, E. H. Fitzhugh, W. H. Biggar, H. A. Allan, E. B. Greenshields, Hon. G. A. Cox, E. R. Wood, J. R. Booth, are the Canadian directors. The report of the directors, which is stated to have been made for the purpose of record and not for public distribution, showed that there were 994 miles of line under contract, the construction of which is in charge of the company. This embraces the line from Winnipeg to Edmonton, and also the Lake Superior branch. On the main line of the Eastern Division there is at present 846 miles under contract, the construction of which is in charge of the National Transcontinental Ry. Commissioners, making a total mileage under contract of 1,840 miles, on all of which construction is in progress. Tracklaying is proceeding on the Prairie Section from Portage la Prairie westerly to about 280 miles, and easterly from Saskatoon, and it is expected that the rails will be laid between these two points during the winter. The grading is very nearly completed from Winnipeg as far west as Edmonton, and the season of 1908 will in all probability see this section completed. The authorized mileage of the company for its main line and branches was stated by the President to be approximately 7,000 miles.

The substructure of the bridge across the South Saskatchewan River at Saskatoon is completed and the steel superstructure is now being erected, which, it is expected, will be completed so that tracklaying can proceed from Saskatoon westerly 200 miles to Battle River with the opening of the work next spring, the grading over this portion of the line being now completed. At the latter point a large bridge across Battle River is under construction. This point is 118 miles east of Edmonton, to which place construction will also be prosecuted vigorously next season. Tenders have been asked for the construction of additional mileage from Edmonton westerly about 120 miles. Over such portions of the line as have now been constructed every facility is being extended for the accommodation of the farmers and settlers living along the line that is practicable during construction of the railway prior to its official opening.

The officers of the company were re-elected as follows: President, C. M. Hays; Vice-President and General Manager, F. W. Morse; Second Vice-President, W. Wainwright; Secretary, H. Phillips.

F. W. Morse, Vice-President and General Manager, returned to Montreal Nov. 28, after a three months' trip over the lines under construction west of Winnipeg. He said in an interview that he was thoroughly satisfied with the progress that was being made with construction at different points. The company had no reason to be disappointed with the results so far obtained.

The grading into Saskatoon, Sask., was completed Nov. 25. Tracklaying from the Portage la Prairie end is being carried on, but was suspended, Dec. 9, by the gang working easterly from Saskatoon. At the time of the suspension of work, steel had been laid for 55 miles. It was stated that the cause for the suspension of work was the shortage of material.

Tenders have been asked for the supply of 600,000 ties to be delivered at various points during the winter between Saskatoon and Edmonton. Tenders have also been asked for the grading of 120 miles westerly from Edmonton, and it is expected to call for tenders during the winter for the other 125 miles necessary to carry the line to the Yellow Head Pass.

We are advised that the progress of the work upon the location of the C.T. Pacific Ry. in British Columbia is still at a stage where it is considered advisable to keep the information as the private property of the company, consequently recent press reports purporting to give the route decided upon west of the Yellow Head Pass are in no way to be accepted as definite. One of the papers mentioning the route referred to G. O. Leask as the Assistant Chief Engineer of the company. We are advised that Mr. Leask is one of the company's locating engineers.

J. W. Stewart, of Foley Bros. and Larson, states that good progress is being made by the firm on its contract for the line between Kimsaat and Kitsias Canyon, B.C., 45 miles.

Contracts are reported to have been let for the clearing of 2,000 acres of land at Prince Rupert for the company. The contract price is said to be \$220,000.

The C.T. Pacific Branch Lines Co. will apply at the current session of the Dominion Parliament for an act extending the time for the construction of the various lines which it is authorized to lay out and operate as branch lines of the C.T. Pacific Ry., on the Eastern as well as on the Western Division. (Dec., 1907, pp. 907.)

Transcontinental Railway Contracts.

"A Contractor" writes the Toronto Globe as follows: "I have read with interest the advertisement inviting tenders by the Commissioners of the Transcontinental Railway for six sections. The accepted checks to accompany the tenders for three of the sections are to be for \$100,000 each, and for two of the sections \$75,000 each, and for the other section \$150,000. I would like to ask how many contractors or contracting firms there are in Canada that can tender on these different sections, and put up these large checks, and then give the additional security, which means another accepted check in case they are awarded any of the work, and carry it on without getting large accommodation or assistance from the banks, and any business man can tell you what help the banks are ready and willing to give during the present money stringency, and in case the bank furnishes the necessary funds it is the bank that is really the contractor.

"In the opinion of many the Railway Commissioners, while no doubt meaning well, are making two serious mistakes, viz., the work is being let in too large sections, and the checks to accompany the tenders are out of reach of the ordinary contractors, the distance in miles of the six sections now advertised to be let being as follows: 29 miles, 67 miles, 31 miles, 52 miles, 100 miles and 75 miles. It would be much better in many ways if the contracts were let in 10 or 20 mile sections, or, another way, divide the work up in money values to the amount of \$100,000 or \$200,000, still keeping it in miles, etc. Then there would be a chance for the smaller but competent railway contractor. This would also to a large extent do away with the trouble experienced last year in procuring men or help to do the work, as almost every contractor, or contracting firm, has a number of men or a following that they can place on their contracts, and with these there could and would no doubt be distributed a large number of the unemployed, who have had no experience in railway construction work, but who would soon acquire it.

"Some will say, why not let the ordinary or smaller contractor sub-contract from the party getting the large contract? Now, this is not desirable, for several reasons, one being the ever-present fear of loss, or failure, etc., on the part of the original contractor, which is avoided in case the contract is direct with the Commission.

"The C.P.R. in building their Toronto to Sudbury line, a distance of over 200 miles, did not ask for any check to accompany the tenders received, nor did they require the contractors to whom the different contracts were awarded to put up deposit or security checks, and no doubt they gained in doing this, but they no doubt assured themselves of the competency, financial and otherwise, of the contractors to whom the contracts were given before they awarded them the work.

"There are hundreds of contractors in Canada to-day who could help build the C.T. Pacific Ry., if they were given the opportunity. What is to hinder the half dozen or so firms of contractors that will tender—owing to the large and out of reason security checks that are required—getting together, and the result being that each would get a section?

"In discussing this matter with a member of Parliament he said he understood that one reason why the work was let in such large sections was that it was easier to deal with one firm than with several. This is nonsense. A division engineer has charge of, say, from 50 to 100 miles, while each 10 or 12 miles of railway construction work

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has a resident engineer, and as regards officials or office hands at Ottawa, there is no scarcity, and more can be got if required.

"The net result of the present system will likely be that two or three, or, at the most, a half a dozen wealthy men or corporations will get the whole at higher prices than would otherwise prevail if the work was let in smaller portions, as it should be. The above is not written in an antagonistic spirit to the Dominion Government or the Transcontinental Commission, but with the idea and hope of an improvement."

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National Transcontinental Railway.

Tenders will be received by the Commissioners of the Transcontinental Ry. to Mar. 10 for the construction of the following additional sections of the line:

DISTRICT A.—From about 58 miles west of Moncton, N.B., to the crossing of the Intercolonial Ry., at mileage 97.7, a distance of 39.7 miles. From the latter point to the Tobique River, at about mileage 165.7, less one mile, about 67 miles. From the Tobique River to about 2½ miles west of Grand Falls, N.B., about 31.5 miles.

DISTRICT B.—From the Quebec-New Brunswick boundary westerly for about 52.4 miles.

DISTRICT D.—From about eight miles west of the crossing of the Abitibi River, Ont., westerly for 100 miles.

DISTRICT E.—From about 19.5 miles west of the crossing of Mud River, near Lake Nepigon, Ont., easterly for 75 miles.

The three sections to be tendered for in New Brunswick, with the sections now under contract, cover the entire mileage in that Province with the exception of a short distance at Moncton, the location of which has not been finally determined. The section in District B will connect up the contract for 150 miles easterly from the southern end of the Quebec Bridge, held by the Messrs. Davis, and the section from Great Falls to the New Brunswick-Quebec boundary held by Lyons & White. The section in District D runs westerly from near the junction with the Temiskaming and Northern Ontario Ry., which will be completed to that point during the summer, and so enable construction supplies to be got in. The section in District E will touch at a point to be reached by the navigable waters of Lake Nepigon, and is being let so that supplies can be got in by water.

Replying to a question in the House of Commons, Feb. 3, the Premier said there were approximately 1,803 miles of the line between Moncton, N.B., and Winnipeg, Man., located. About four miles remained to be located. About 859 miles were under contract, and tenders had been asked for an additional 365 miles. It was estimated that the obligations already entered into on account of the construction of the line amounted to about \$38,000,000. Disbursements to Jan. 28, on account of the line, were \$21,364,364.

Track has been laid at a number of points of the line under contract between the Quebec Bridge and La Tuque, Que., totalling altogether 34 miles, and from St. Boniface, Man., easterly, at a number of points, totalling 49 miles. This track will not exceed two or three miles in any one particular place, and has been laid to facilitate construction.

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National Transcontinental Railway.

The total estimated length of the main line from Moncton, N.B., to Winnipeg, is 1,804 miles, and we are officially advised that the surveyed mileage is the same, and that with the exception of some revision at a few points the whole of the line has been located. Contracts for construction have been let covering in all about 859 miles exclusive of the mileage for which tenders are now under consideration as referred to below. The mileage under contract is distributed as follows: New Brunswick, 119 miles; Quebec, 150 miles east and 195 miles west of the St. Lawrence River, and 78 miles easterly from the Ontario boundary; Ontario, 72 miles from the Quebec boundary westerly, and 158 miles from the Manitoba boundary easterly; Manitoba, 87 miles from Winnipeg easterly. The mileage of grading done on the various contracts let in the several provinces was, at the latest reports, approximately: New Brunswick, 16 miles; Quebec, east of the St. Lawrence River, 41 miles; Quebec, west of the St. Lawrence River, 101 miles; Western Ontario and Manitoba, 171 miles. Track has been laid in Quebec west of the St. Lawrence River on 34 miles, and in Manitoba easterly from Winnipeg, on 49 miles. The maximum gradients are 0.4% eastbound, and 0.6 westbound, except at two points; and the sharpest curvature is 6°. The bridges and trestle are being constructed to stand the test of two 180-ton consolidation locomotives followed by a load of 4,750 lbs. per lineal foot. The tunnels are being constructed 16 ft. wide and 23 ft. 9 in. high on tangents. The steel being laid is 80 lbs. to the yard.

Tenders are under consideration by the Commissioners of the Transcontinental Ry. for the construction of several sections of the Eastern Division as follows:

District A.—From about 58 miles west of Moncton, N.B., to the crossing of the Intercolonial Ry. at mileage 97.7, a distance of 39.7 miles. Only one tender has been received, namely, that of the G.T. Pacific Ry. Co.

From mileage 97.7 to the Tobique River, at about mileage 165.7, less one mile, about 67 miles. The tenders received were from the G.T. Pacific Ry. Co., and Macdonald & O'Brien.

From the Tobique River to about 3.5 miles west of Grand Falls, N.B., about 31.5 miles. Tenders have been received from the G.T. Pacific Ry. Co., Craig & Thompson, Macdonald & O'Brien, M. P. & J. T. Davis, Kennedy & McDonald, the Willard Kitchen Co., Trites, McPhail, Mayor & Miller.

District B.—From the Quebec-New Brunswick boundary westerly for about 52.4 miles. Tenders have been received from the G.T. Pacific Ry., O'Brien & Fowler, M. P. & J. T. Davis.

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District E.—From about 19.5 miles west of the crossing of Mud River, near Lake Nepigon, Ont., easterly for 75 miles. Tenders have been received from the G.T. Pacific Ry. Co., J. D. McArthur, E. F. & G. E. Fauquier, Chambers Bros., McQuigge & McCaffrey.

J. D. McArthur, contractor for the section of the line from Winnipeg easterly to Lake Superior Junction, Ont., 250 miles, was in Montreal Mar. 11. He said the firm had about 7,000 men at work all winter on the contract, and the weather had been such that not a single day had been lost. About 60% of the entire work had been done. While the first estimate of the cost of the 250 miles had been \$13,000,000, so many changes had been made that the actual outlay would be well

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on to \$16,000,000. The changes made had all been for the improvement of the line.

GRAND TRUNK PACIFIC RY.

Soundings have been taken in the Red River at Winnipeg with a view of deciding on the foundation for the bridge to connect with St. Boniface. Tracklaying on the line between Portage la Prairie and Saskatoon has been resumed, and will be pushed until the gap of 65 miles left, when work had to be suspended Feb. 10, has been closed. Ballasting was expected to commence by the end of March, and the surfacing gang was announced to have been engaged to start work April 1. West of Saskatoon the grading has been completed to the Battle River, and two of Foley Bros. & Larson's camps have been at work all winter on the grading. One camp is located just across Battle River and the other just east of Clover Bar, where the line crosses the North Saskatchewan River. Under favorable conditions it is expected to have the grading from the Battle River to Edmonton completed early in the spring. At the Battle River the work of building the bridge is going on satisfactorily. However, it is not thought that Gunn & Sons, who have the contract for the cement work, will have it done till May, and that by the time the steel is on it will be late in the fall. The bridge is quite a bit larger than the one across the South Saskatchewan at Saskatoon. On the line west of Edmonton, Alta., sub-contracts of 30 miles each are reported to have been let by Foley, Welsh & Stewart to J. McAllister, M. McKenzie, and B. Baker. The remaining section of 30 miles of the contract, it is said, will be let in one or two mile sections.

The British Columbia Legislature, Mar. 7, passed the act ratifying the agreement between the company and the Provincial Government with respect to the Prince Rupert townsite. Under the agreement the Province disposes of its reversionary rights to the 14,118 acres bought from the Indians of Metlakatla by the railway company at the rate of \$2.50 an acre. One-quarter of the lots and blocks into which this land may be subdivided by the company is to be reconveyed to the Province, the chief commissioner to select one lot first, and the railway company three until the entire one-quarter is reconveyed. The Province pays one-quarter of the cost of the survey and subdivision. A free grant of a right-of-way not exceeding 100 ft. in width through from the coast to the eastern boundary of the Province is made to the company. Through the lands on Kaien Island and the Tsimpsen Reserve the right-of-way is to be but 60 ft. in width, and the plans must be approved by the Lieutenant-Governor-in-Council. The Province grants lands necessary for sidings, stations, etc., to the railway company, the area of such grants to be subject to the approval of the Lieutenant-Governor-in-Council. The railway company agrees to begin actual construction work by June 1, to purchase all material and supplies required, if the terms are similar to those upon which the said supplies may be obtained elsewhere within the Province. A fair wage clause is included in the Act. The railway is granted exemption from taxation until Dec. 31, 1921, according to the terms of the railway assessment act.

W. Wainwright, Second Vice-President G.T. Pacific Ry., stated Mar. 17, that tenders would shortly be asked for a further 200 miles of the mountain section of the line. A contract has been let to Foley, Welsh & Stewart, for the first 100 miles of the line from Prince Rupert easterly. (Mar., pg. 197.)

Traffic on the Middleton and Victoria Beach line of the Halifax and Southwestern Ry. was reopened Mar. 9, after having been

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The three sections to be tendered for in New Brunswick, with the sections now under contract, cover the entire mileage in that Province with the exception of a short distance at Moncton, the location of which has not been finally determined. The section in District B will connect up the contract for 150 miles easterly from the southern end of the Quebec Bridge, held by the Messrs. Davis, and the section from Great Falls to the New Brunswick-Quebec boundary held by Lyons & White. The section in District D runs westerly from near the junction with the Temiskaming and Northern Ontario Ry., which will be completed to that point during the summer, and so enable construction supplies to be got in. The section in District E will touch at a point to be reached by the navigable waters of Lake Nepigon, and is being let so that supplies can be got in by water.

Replying to a question in the House of Commons, Feb. 3, the Premier said there were approximately 1,803 miles of the line between Moncton, N.B., and Winnipeg, Man., located. About four miles remained to be located. About 850 miles were under contract, and tenders had been asked for an additional 365 miles. It was estimated that the obligations already entered into on account of the construction of the line amounted to about \$38,000,000. Disbursements to Jan. 28, on account of the line, were \$21,364,364.

Track has been laid at a number of points of the line under contract between the Quebec Bridge and La Tuque, Que., totalling altogether 34 miles, and from St. Boniface, Man., easterly, at a number of points, totalling 49 miles. This track will not exceed two or three miles in any one particular place, and has been laid to facilitate construction.

GRAND TRUNK PACIFIC RY.

In an interview, Feb. 12, the Minister of Public Works stated that he had been waited upon by C. M. Hays, President, and F. W. Morse, Vice-President and General Manager C.T. Pacific Ry., in connection with the provision of terminal facilities for the company on Courtenay Bay, St. John, N.B. Both these officials expressed themselves as being favorably impressed with the advantages which the bay would furnish for the purposes of the railway. He had discussed the matter with the Premier and several of his colleagues and they had expressed a willingness to make jointly with the city a conveyance of such foreshore rights as were necessary to the G.T. Pacific Ry. The subject of having borings made in order to test the character of the bottom had also been discussed, and the Government was willing to join with the city in bearing the expense of making the same.

Track has been laid on the Lake Superior

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freight, consisting almost entirely of mine stores and timber.

National Transcontinental Ry.

Contracts were awarded. Mar. 28, for six sections of the railway, aggregating 366 miles, as follows:

To the G.T. Pacific Ry. Co.—From a point 58 miles west of Moncton, N.B., westward for 39.7 miles; and from the latter point westward to the Tobique river, N.B., 67 miles.

To the Willard-Kitchen Co.—From the Tobique river to Grand Falls, N.B., 31.5 miles.

To M. P. & J. T. Davis—From the Quebec-New Brunswick boundary westward 52.4 miles.

To E. F. & G. E. Fouquier—From a point 8 miles west of the Abitibi river, Ont., westward 100 miles; and from Lake Nepigon westward 75 miles.

April 1908

National Transcontinental Ry.

Contracts were awarded, Mar. 28, for six sections of the railway, aggregating 366 miles, as follows:

To the C.T. Pacific Ry. Co.—From a point 58 miles west of Moncton, N.B., westward for 39.7 miles; and from the latter point westward to the Tobique river, N.B., 67 miles.

To the Willard-Kitchen Co.—From the Tobique river to Grand Falls, N.B., 31.5 miles.

To M. P. & J. T. Davis—From the Quebec-New Brunswick boundary westward 52.4 miles.

To E. F. & G. E. Fouquier—From a point 8 miles west of the Abitibi river, Ont., westward 100 miles; and from Lake Nepigon westward 75 miles.

APRIL 1908

National Transcontinental Railway.

The Dominion Parliament at its current session voted \$3,750,000 on account of surveys and construction; \$250 as remuneration of A. Brunet, Government director G.T. Pacific Ry. Co., and \$3,500 on account of inspection of the G.T. Pacific Ry.

In a recent speech in the House of Commons the Minister of Railways said the length of the Government section of the line from Moncton, N.B., to Winnipeg, Man., was 1,807 miles, and with the exception of about three or four miles at the entrance to the Winnipeg terminals, and a few points where revision may be made of the present location to reduce gradients, and distances on work, the location surveys had been completed. The necessary rails and fastenings covering the portions of the line under contract, excluding the 365 miles placed under contract at the end of March, had been arranged for, and a large portion delivered. The ties for the 150 miles west of the St. Lawrence River and the 245 miles easterly from Winnipeg, had been contracted for and large deliveries had been made. The ties for the other contracts previously let were included in the contract for grading. Contracts for the steel bridges required on the 150 miles westerly and 50 miles easterly of the St. Lawrence River, and for the 245 miles easterly from Winnipeg, were all entered into and considerable progress had been made for the manufacture and erection of the same. Replying to a question in the House of Commons, April 14, the Minister of Railways said contracts had been let for the whole distance from Moncton, N.B., to Weymouthachene, Que., 193 miles west of Quebec, and 656 miles west of Moncton. Between Weymouthachene and Winnipeg, 1,147 miles, there were under contract 571 miles, the gaps being: from Weymouthachene westerly for 221 miles; from Lake Superior Junction east, 148 miles; and from the section to be constructed east and west of the Temiskaming and Northern Ontario Ry. westward, 204 miles. The estimated cost of the sections under contract was \$44,389,393, and of the sections not under contract, \$19,030,173. The average estimated cost of the sections under contract was a little over \$36,000 a mile.

With respect to the contracts recently awarded, it is reported that the section between the Tobique River and Grand Falls, N.B., 31.5 miles, let to the Willard Kitchen Co., covers the heaviest work east of the Rocky Mountains. There is a good deal of rock cutting on the work, and the engineering features include the construction of a tunnel over 1,000 ft. long through rock; long bridges over the Salmon and Tobique rivers, and the disposal of a lake. A number of sub-contracts will be let.

The St. John, N.B., Board of Trade has passed a resolution bringing before the Government the importance of St. John as a port, and urging the necessity of the construction of a branch line to connect it with the Transcontinental Railway at Chipman or Woodstock. The Board is desirous of St. John having the same treatment as it is proposed to give to Montreal. A deputation from the latter city waited on the Government, Mar. 31, to urge the immediate construction of a line to give connection with the N.T. Ry., and the Premier in reply admitted that the line would not be complete without a connection with Montreal. The Government, however, had many large works in hand and was being urged to undertake others—additional railways and the Georgian Bay canal. The proposed works could not be undertaken without full consideration, but the present Parliament did not expire for 18 months, so there was plenty of time for the Government to deal with the question and to enter into contracts before the elections came on.

GRAND TRUNK PACIFIC RY.

The Minister of Railways made a statement in the House of Commons recently with respect to the work done upon the main line of the G.T.P.R. The information practically covers the position of construction when work was suspended for the winter, and is as follows:

GRADING, CULVERTS AND WOODEN BRIDGES.—From mileage 0 to 13. No grading has been done, the work is very light, merely surfacing. From mileage 13 to 650. The grading is practically completed, merely a few narrow cuttings remaining to be widened, and a few embankments not yet fully brought up to grade level, to be completed. The culverts and wooden structures are about completed. From mileage 650 to 796. Considerable grading has been done in patches, aggregating about 54 miles. There, however, yet remain about 1,750,000 cubic yards of excavation to be done to complete the grading. A large proportion of the culverts are built and the pile foundations of about 75 per cent. of the bridges are driven.

STEEL BRIDGES.—Mileage 45. The Assiniboine River is to be crossed by a steel bridge 415 ft. long, 34 ft. high, one span of 255 ft. and two spans of 80 ft. each. The concrete piers are in course of construction, one having been completed and three others being worked upon, but not far advanced beyond the excavation of foundation, which is completed. At mileage 460. The South Saskatchewan River is crossed by a steel bridge 1,497 ft. long and 74 ft. high; of one span 50 ft., one of 127 ft., one of 175 ft. and five of 229 ft. The concrete piers and abutments are completed, and the steel superstructure is delivered at the site of the structure. Two spans are erected and the work of erection is being continued. At mileage 675. The Battle River is to be crossed by a steel bridge 2,770 ft. long and 180 ft. high. The work is in progress on the concrete piers, pedestals and abutments, of which there will be two piers, 100 pedestals and two abutments. Many of the foundations are excavated, but concreting may be said to have only just been commenced. Work is still in progress, the piers, etc., being housed in and kept warm during the building up of the concrete. At mileage 787. The North Saskatchewan River is to be crossed by a steel bridge 1,547 ft. long, 136 ft. high; of four spans 40 ft., 10 of 50 ft., two of 150 ft., three of 229 ft. The 28 concrete pedestals, two abutments and two of the piers are completed. The work of building the last remaining two concrete piers is in progress; they are housed in and kept warm during the progress of the work. In addition to the steel bridges mentioned, there is the bridge over the Assiniboine River at St. Lazare—at mileage 203—250 ft. long, which is being crossed by a temporary timber structure.

TRACKLAYING AND BALLASTING.—Track is laid from mileage 45 to mileage 326, and from mileage 426 to mileage 468, aggregating 310 miles; in addition to which 47 sidings are laid in. From mileage 53 to 140, the road is full ballasted and lifted. From mileage 140 to 213, it is half ballasted with a first lift.

BUILDINGS, ETC.—At mileage 43 (Portage la Prairie) a union station of brick is in course of erection, and is nearing completion. At mileage 141 (Rivers) a station is in course of erection. At mileage 385 (Nokomis) a station has been erected. At mileage 141 (Rivers divisional station) an engine-house and machine shop and boiler-house are in course of erection; the work is advanced to the extent of about 90%. At mileage 277 (Melville divisional station) an engine-house and machine shop are in course of erection; about 35% of the work is executed.

WATERTANKS, FENCING, ETC.—At mileage 141 (Rivers divisional station, a well and

watertank are being provided, about 80% of the work being done. A watertank and pump have been erected at mileage 202, and about 25% of the work has been done on a watertank at mileage 217. West of Portage la Prairie, Man., 46 miles of fencing have been put up. A telegraph line has been erected for 271 miles.

No construction has been done west of Edmonton, Alta., with the exception of a wharf at Prince Rupert. The route through the Rocky Mountains is to be by the Yellowhead Pass, which is considered to be a better pass in every way than any of the others except so far as the curvature was concerned. The grades are easier, but the curvature is greater. The total cost is considerably less, and the Government is interested in this on account of the guarantee of bonds given. The estimated cost of the line by the Yellowhead Pass route, exclusive of terminals, is \$42,115,500, being \$4,536,100 less than the cost by the Pine River Pass route; \$3,490,000 less than by the Wapiti Pass route, and \$6,251,000 less than by the Peace River Pass route. The distance from Edmonton to the Pacific Ocean by the selected route is 955 miles.

Of the Prairie section of the G.T. Pacific Ry., it is anticipated that the portion between Winnipeg and Edmonton, about 793 miles, will be completed and opened for traffic this year. F. W. Morse, Vice-President and General Manager, who returned to Montreal, April 2, stated that there remained about 40 miles of line to be completed between Portage la Prairie and Saskatoon, and some few miles between Portage la Prairie and Winnipeg. The company is working to complete these portions of the line with a view of instituting a train service between Winnipeg and Saskatoon July 1. A despatch from Portage la Prairie, April 14, stated that tracklaying had been resumed on the line towards Winnipeg, and it was expected to complete the tracklaying into Winnipeg early in May. Tracklaying is also in progress on the remaining portion of the line connecting up Saskatoon. The last span of the bridge over the South Saskatchewan River at Saskatoon has been completed, and construction trains were operated over it early in April.

West of Saskatoon, with the exception of the work at a small muskeg 25 or 30 miles out, the grading has been finished as far as the Battle River, where the steel building gang will take up work early in the summer. About 220 miles of track will have to be laid between Saskatoon and the Battle River, and it is possible that track will be laid to that point from Edmonton easterly, so as to facilitate bridge construction. The substructure for the bridge at Clover bar is reported complete, and the steel superstructure is ready for shipment from the Canadian Bridge Co.'s works, Walkerville, Ont., as soon as the spur line from the Canadian Northern Ry. to the river is completed. The substructure for the bridge is being constructed by John Gunn & Sons, and it is expected to have it ready for the steel superstructure early in June. Between Battle River and Edmonton, grading is being pushed by the contractors, Foley, Welch & Stewart. There is reported considerable heavy work to be done on this portion of the contract between Battle River and Tofield, near Strathcona, particularly on the north side of Gratton Coulee, on the first twenty-five miles north of the river. On the line between Winnipeg and Edmonton, C. M. Hays, President, recently stated that about 200 new townsites would be brought into existence during the year, either along the track, or on the 10-mile stretch on either side, which was rapidly filling up with settlers. The committee of the company's officials has completed the task of naming the townsites along the line. There are 114 and the names selected

include those of directors, officers and officials of the company. The divisional points, with their distances from Winnipeg are: Rivers, 112 miles; Melville, 277 miles; Waterous, 407 miles; Biggar, 526 miles; Wainwright, 600 miles. R. W. Jones, Divisional Engineer in Charge of Construction, has transferred his headquarters from Saskatoon to Edmonton.

The contract let to the Foley firm for the construction of 116 miles westerly from Edmonton to Wolf Creek, covers the remainder of the Prairie section of the line. It is expected that this portion will be well in hand by July, and it is hoped to have the work completed in the fall. Sub-contracts have been let for over half of the mileage, and the contractors' outfits began to go out from Edmonton early in April. The country through which the route passes is rolling prairie, and commencing at about Lake Wabamun, a gradient of 0.4% will have to be constructed in order to cross the mountains with this uniform gradient. This, the contractors state, will necessitate considerable extra work. There is also considerable muskeg west of Edmonton, but the work of constructing the line across them is not difficult, although tedious. F. W. Morse, Vice-President, stated in Montreal, April 2, that invitations had been sent out for tenders for a further stretch of 179 miles west of Wolf Creek, which would carry the line about 50 miles west of the Yellowhead Pass. This stretch would be divided into sections of 40, 60 and 79 miles, respectively, in order to facilitate construction. It is expected that contracts will be awarded early in June, so that work can be pushed ahead during the present construction season.

Reports from the Pacific coast state that the survey parties from Kitsilas Canyon and Hazelton on the Skeena River, B.C., have been transferred to the Copper River, and are now working towards the head of that stream. This has caused a revival of the reports that the Hazelton route, previously surveyed, is to be abandoned in favor of the Copper River route, which it is said will shorten the distance to the coast by from 80 to 90 miles. The route suggested is along the Copper River valley across the watershed, and thence along the Telkwa River valley.

J. W. Stewart, of Foley, Welch and Stewart, who have the contract for grading the 60-mile branch line from tidewater at Kitimaat to the junction with the main line at Kitsilas Canyon, and for the 100 miles of the main line from Prince Rupert to Kitsilas Canyon, passed through Vancouver, B.C., April 4, for Prince Rupert, to superintend the starting of operations. He said these two contracts would aggregate approximately \$10,000,000, and between 5,000 and 6,000 men would be employed for about a year and a half. A good deal of the work will be sublet. The heaviest work on the entire line is to be found in the 100-mile section easterly from Prince Rupert. Ten miles after leaving Prince Rupert the line strikes the Skeena River, following the northern bank of the river until the Kitimaat branch is reached. The grade will have to be blasted out of the solid rock for the entire distance, but there will be only one tunnel, and that only 300 ft. long. The work on the Kitimaat branch will not be so heavy as on the main line, but most of it will be of the heaviest description, as several tunnels will have to be driven through solid rock. The contractors' plant began to arrive in Vancouver, from Kenora, Ont., April 9, to be shipped north. Mr. Stewart said it would take 500 cars to ship the company's plant and equipment, including 600 horses to the contract, the cost of transportation being estimated at \$200,000.

The grading upon the branch which connects the Eastern Division at Lake Superior Junction with the head of navigation at Fort William, Ont., has been practically completed. Track has already been laid for 125

miles from Fort William, and it is expected that the remaining mileage will be laid during the summer.

Replying to a question in the House of Commons recently, the Minister of the Interior said the G.T. Pacific Ry. Co. had acquired a tract of land along the north part of the Mission Reserve at Fort William, Ont., having a total area of 1,600 acres, for terminal purposes. The price paid was: 150 acres at \$320; 250 acres at \$160; 300 acres at \$80; 700 acres at \$40; and 200 acres at \$20; the purchase price being paid in cash. The total valuation of the land and improvements was \$244,574. The land was granted to the company Jan. 27, 1906. These areas were not surrendered by the Indians, but were acquired under the provisions of sec. 46 of the Indian Act, chap. 81, Revised Statutes of Canada.

An extension of time has been granted by the House of Commons Railway Committee, at the current session of the Dominion Parliament, for the construction of the various branch lines which the G.T. Pacific Branch Lines Ry. Co. has been authorized to build. In the discussion on the bill, W. H. Biggar, K.C., General Solicitor, G.T.R., stated that contracts would probably be let during the summer for the branch lines authorized to be constructed to Calgary, Alta., and Battleford, Sask.; the branch connecting Regina and Yorkton, Sask., and the Brandon-Regina line. The preliminary surveys had been made for the branch southerly from Calgary to the International boundary, and from Regina southerly to the International boundary at North Portal. (April, pg. 261.)

National Transcontinental Railway.

The tabular statement appearing in the last report of the speech of the Minister of Railways, referred to in our last issue, gives the total length of the Eastern Division from Moncton, N.B., to the west bank of the Red River, at Winnipeg, to be 1,804.66 miles. The sections not under contract are as follows: Mileage 656.07 to 877.75, near Montmarche, to near Harricane River, 221.68 miles; mileage 1,127.75 to 1,171.85, one hundred miles west of junction with Muskaming and Northern Ontario Ry., west end of district D, 44.10 miles; mileage 1,100.35 to 1,429.76, from 191½ miles east of Mud River to west end of district E, 329.41 miles; mileage 1,429.76 to 1,557.80, from westward district E to Lake Superior Junction, 128.04 miles. The estimated cost of these sections is \$19,030,173.

A report from Montreal May 4 says as a result of an interview between the Premier of Canada, the Premier of Quebec and C. T. Hays, President G.T.P.R., on the previous day, it is expected that the portion of the Transcontinental Railway to run through the Province of Quebec would take a more southerly route than that on which construction is now in progress. Officials of the G.T.P. Ry. at Montreal refused to discuss the matter, but reports from Quebec and Ottawa state there is nothing in the report, the dispatch from Ottawa stating that no change of plans or location of the line is under consideration.

A press report May 8 said: "It is estimated that the building of the N.T.R. through New Brunswick will involve a total expenditure of close on \$15,000,000 between now and 1911 in that Province." On April 13 the Minister of Railways presented a tabular statement in the House of Commons showing the mileage under contract, with the estimated cost of each section. This shows the total mileage from Moncton to the New Brunswick-Quebec boundary to be 256.68 miles, and the estimate upon which the contracts were let amounts to less than \$7,000,000, distributed as follows:

	Miles.	\$	Estimate.
Moncton to Chipman.....	50.00	\$	989,895.90
Chipman easterly.....	8.55		289,190.62
Chipman westerly.....	39.05		967,434.95
Intercolonial crossing west.....	66.40		1,898,124.21
Mileage 164 to Grand Falls.....	31.80		1,646,253.65
Grand Falls to boundary.....	60.88		1,385,941.09
	256.68	\$	6,976,840.42

A sub-contract is reported to have been let to Powers and Brewer, Woodstock, N.B., for the bridgework on the section from mileage 164 to Grand Falls, 31.80 miles, the general contractor for which is the Wilford Kitchen Co., Grand Falls, N.B. Sub-contracts for grading have been let as follows: Jas. Kelly, four miles; Cook Kitchen, four miles; Wesley Kitchen, four miles; — Phillips, P.E.I., one mile; P. Pagano, Montreal, three miles.

Sub-contracts are reported let to W. C. Chambers, Harriston, Ont., and to — McQuigge, Kenora, Ont., for sections on the line north of Lake Nipigon.

The Dominion Government has decided to meet the request of the New Brunswick Government that the Commissioners of the Transcontinental Railway take over the expense of protecting from fire the forests of the Province along the route of the railway.

Owing to the high water in the St. Maurice River, about two miles of the line under construction near La Tuque, Que., is submerged, and it is feared that several miles of the line will be washed out.

The location of the Transcontinental Ry., says the engineer of the Ontario Department of Public Works in his annual report for 1907, has been completed across the Province, a distance of 758.47 miles, under the direction of the Commissioners of the

Transcontinental Ry. From the Manitoba boundary eastward 157.80 miles are under construction. The total approximate number of miles graded from the Manitoba-Ontario boundary to English River, in detached sections, is 84 miles. From the Quebec boundary westward 71.75 were under construction.

GRAND TRUNK PACIFIC RY.

The tabular statement appearing in the official report of the speech of the Minister of Railways, referred to in our last issue, gives the location of the several contracts on the main line of the G.T. Pacific Ry., between Winnipeg, Man., and Prince Rupert, B.C., with the names of the contractors and the dates when the contracts were entered into, and when the work should be finished. The work to be done under these contracts included grading the roadbed and building small culverts and bridges.

Date of Contract	Name of Contractor	Location of Work	Date set for Completion
June 22, 1907.....	Treat & Johnson, Winnipeg, Man.	Winnipeg to Portage la Prairie, 54 miles	Nov. 1, 1907.
Aug. 28, 1905.....	McDonald & McGillan, Winnipeg.	Portage la Prairie to Touchwood Hills, 275 miles.	Completed.
Feb. 20, 1906.....	Canadian White Co., Montreal.....	W. line Sec. 6, Tp. 27, R. 13 W. 2nd Mer., to W. line Sec. 24, Tp. 36, R. C. W. 3rd Mer., 140 miles.	Completed
Feb. 20, 1906.....	Foley Bros., Larsen & Co., Battleford.....	W. line Sec. 24, Tp. 36, R. 6 W. 3rd Mer., to a point near Edmonton, Alta., 316 miles.	Nov. 1, 1906.
Jan. 4, 1908.....	Foley, Welch & Stewart, Kenora.....	East line of Sec. 13, Tp. 33, R. 24 W. 4th Mer., to east bank of Wolf Creek, 129 miles.	Nov. 30, 1908.
Mar. 19, 1908.....	Foley, Welch & Stewart, Kenora.....	Prince Rupert to Copper River, 100 miles.	Aug. 31, 1909.

The Department, said Hon. G. P. Graham, has been advised that contracts have been awarded for the following works, but no details were given: Concrete piers, pedestals and abutments of steel bridges; steel superstructures of large bridges; station buildings, engine houses and machine shops; water services; steel rails and fastenings, frogs, diamond crossings, etc.; ties, fence posts, telegraph posts.

In making a statement as to the position of construction April 30, Collingwood Schrieber, Consulting Engineer to the Department of Railways, said with the exception of about 500 miles of the mountain section, the whole of the line being constructed by the G.T. Pacific Ry. was under contract. The whole of the prairie section, from Winnipeg to the foot of the Rocky Mountains, about 100 miles west of Edmonton, was expected to be open for traffic in the fall. Rails were laid from within 30 miles of Winnipeg to Battle River, and from Battle River west to Edmonton much of the grading was completed. The delay in the work of completing the tracklaying into Edmonton was due to the loss of time in the construction of the bridge over the Battle River.

Tenders for the supply of 600,000 ties for delivery at points west of Edmonton are reported let, and arrangements are being made to secure a sufficient supply of ties to carry the line as far as the Yellowhead Pass.

The British Columbia Government has granted registration to the G.T. Pacific Ry. townsites as Prince Rupert, despite the fact that the name had been appropriated by a land speculator. Sub-contracts are reported to have been let by Foley, Welch and Stewart for grading on the line easterly from Prince Rupert to Ross and Caulson, Kenora, Ont.; J. E. Bostrom, H. and A. McClure, and the Rurd Contracting Co. of Bellingham, Wash., and F. Antonelli.

G.T. PACIFIC BRANCH LINES.—At a session of the Board of Railway Commissioners in Ottawa, May 5, D. McNicoll, Vice-President C.P.R., objected to the G.T. Pacific Ry. plans for lines in Fort William, Ont., on the ground that they would seriously interfere with the construction by the C.P.R. of enlarged terminals. The C.P.R. favored the construction of joint terminals

for the two companies, it being understood that the Canadian Northern Ry. could join in. The C.P.R. would consider the giving of running rights over the C.P.R. through Fort William to a diamond crossing with the Canadian Northern Ry. at Port Arthur, on the wheelage basis. The Chief Commissioner told the companies to reach an agreement on this basis, otherwise the Board would make an order.

When the G.T. Pacific Ry. bill for an extension of time for the construction of the branch lines, which it is authorized to construct as the G.T. Pacific Branch Lines Co., came before the House of Commons in committee of the whole, May 8, T. H. Lennox moved the insertion of an amendment with respect to taking over of the lines by the Government. The amendment provides that if the price of the branches cannot be agreed upon it shall be deter-

mined by the Board of Railway Commissioners, either side having permission to appeal to the Supreme Court, but the Government before it can exercise its option to purchase must have a resolution of Parliament authorizing it to do so. The debate was adjourned.

The Engineer of the Ontario Department of Public Works, in his report for 1907, says the G.T. Pacific Ry. has located a branch line from North Bay to a junction with the main line of the Eastern Division of the G.T.P. Ry. (National Transcontinental Ry.), a distance of 225 miles. The construction of a line known as the Lake Superior Branch, from Fort William, Ont., to a junction with the main line of the Eastern Division, at a point known as Superior Junction, a distance of 202.8 miles, which has been finally located, has been in progress for the last two years. About 70% of the grading and bridging is completed, and 115 miles of track laid from Fort William westerly. It is expected that the entire branch will be completed during the current season. The company has located an extension of this branch through Fort William to Port Arthur and thence easterly to Bare Point.

An item has been going the rounds of the daily press to the effect that a shipment of about 2,500 tons of steel rails had been delivered at Vancouver, B.C., by the Holt Blue Funnel Line, for the G.T. Pacific Ry.; that this shipment, the place of origin of which was given as Pittsburgh, Pa., was sent to British Columbia, via New York, thence by the Atlantic route, through the Suez canal, to Kobe, Japan, and from there across the Pacific. We are officially advised that the item is entirely incorrect, and that no rails have been bought for the Pacific coast end of the line.

GRAND TRUNK PACIFIC TOWNSITES.—G. N. Riley, Land Commissioner G.T.P. Ry., in an interview at Winnipeg, May 4, said the company had then 80 townsites on the market, including five divisional points. Only one townsite had been surveyed west of Edmonton, viz., adjoining the Canadian Northern Ry. at Stoney Plains. In laying out these future towns and cities a great deal of care has been taken to have them regular. With three exceptions, all the

National Transcontinental Railway.

The Dominion Parliament has, at its current session, voted \$3,750,000 on account of surveys and construction of the National Transcontinental Railway, in addition to the amounts already reported.

Replying to questions in the House of Commons, May 27, the Minister of Railways stated that upon the Eastern Division steel rails had been purchased as follows:

District A. For delivery at Moncton, N.B., 7,791.4 tons at \$35.85 per ton, for delivery at Edmundston, N.B., 8,518.1 tons at \$37.60 per ton, from the Dominion Iron and Steel Co., Sydney, N.S.

District B. For delivery at Quebec, 24,000 tons at \$34 per ton, and 8,171.7 tons at \$35 per ton, for delivery at Levis, 19,185.7 tons at \$35 per ton, from the Dominion Iron and Steel Co., Sydney, N.S.

District D. For delivery at the junction with the Temiskaming and Northern Ontario Ry., 21,371 tons at \$40 per ton, for delivery at Port Arthur or Fort William, 32,000 tons at \$34 per ton, from the Algoma Steel Co., Sault Ste. Marie, Ont. For delivery at Port Arthur or Fort William, 10,000 tons at \$34.50 per ton, from the Dominion Iron and Steel Co., Sydney, N.S.

The total length of the Eastern Division was 1,803.56 miles, which would require 226,731.18 tons of rails. The estimated weight of rails required for trucks in yards and sidings was 11,109 tons, making a total of 267,840 tons. The estimated cost of \$63,427 per mile, as given in a recent sessional paper, included the cost of terminal yards, station houses, engine houses, turntables, water tanks, and all buildings and structures necessary or useful for the effective operation of the road, but did not include terminals at Winnipeg, shops east of Winnipeg, or terminals at Quebec or connection therewith, plans for which have not yet been made.

The Commission has appointed 19 fire wardens to look after the forests along the route of the railway in New Brunswick, and the timekeepers at the different construction camps have been appointed deputy wardens. Chief wardens are reported to have been made

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and Steel Co., Sydney, N.S.

DISTRICT D.—For delivery at the junction with the Temiskaming and Northern Ontario Ry., 21,371 tons at \$40 per ton; for delivery at Port Arthur or Fort William, 32,000 tons at \$34 per ton from the Algoma Steel Co., Sault Ste. Marie, Ont. For delivery at Port Arthur or Fort William, 10,000 tons at \$34.50 per ton, from the Dominion Iron and Steel Co., Sydney, N.S.

The total length of the Eastern Division was 1,803.55 miles, which would require 226,731.48 tons of rails. The estimated weight of rails required for tracks in yards and sidings was 41,109 tons, making a total of 267,840 tons. The estimated cost of \$63,427 per mile, as given in a recent sessional paper, included the cost of terminal yards, station houses, engine houses, turntables, water tanks, and all buildings and structures necessary or usual for the effective operation of the road, but did not include terminals at Winnipeg, shops east of Winnipeg, or terminals at Quebec or connection therewith, plans for which have not yet been made.

The Commission has appointed 19 fire wardens to look after the forests along the route of the railway in New Brunswick, and the timekeepers at the different construction camps have been appointed deputy wardens. Good progress is reported to have been made with grading in the province, and a member of the engineering staff at Moncton is quoted as saying that 10 miles of the line at that end will be completed by the end of the summer.

A plan showing the right-of-way of the line from mileage 150 to 160, from the north abutment of the Quebec Bridge easterly through the County of Kamouraska has been filed. Replying to questions in the House of Commons, the Minister of Railways recently said that the reports that part of the track near La Tuque, Que., were under water, and that as a result the route would have to be changed, were unfounded. A temporary siding at one point was under water, but no damage had been done to the road.

Another explosion of dynamite on the line north of Kenora, resulting in the loss of nine lives, is being investigated by the Chief Engineer. A previous investigation showed that the men became negligent in the handling of explosives, and instructions were issued as to the precautions to be observed.

Replying to a question in the House of Commons, the Minister of Railways recently said the medical service and attendance on

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men employed on construction were furnished by the contractors, and this service was carried on under the supervision of the Inspectors of the Department of Agriculture. The only medical officers employed by the Commissioners of the Transcontinental Ry. were: B. Piegay, district C, salary \$80 a month; Handfield, district E, salary \$75 a month; R. Johnson, district D, salary \$80 a month; W. J. Taugher, district D, salary \$75 a month.

GRAND TRUNK PACIFIC RY.—The Dominion Parliament, at its current session, has voted \$1,750 as remuneration to A. Brunet, government director, and \$24,500 for the inspection of the G.T. Pacific Ry.

The G.T. Pacific Ry., according to the reply of the Minister of Railways to questions in the House of Commons, May 27, has purchased 50,000 tons of steel rails from the Algoma Steel Co., Sault Ste. Marie, Ont., and 10,000 tons from the United States. For the Lake Superior branch from Fort William to Lake Superior Jet., the company had used 26,000 tons of steel rails lifted from the G.T.R., which were replaced by 26,000 tons of new rails purchased from the Dominion Iron and Steel Co.

The eastern limit of the Mountain section was fixed* Nov. 21, 1907, by Collingwood Schrieber, Consulting Engineer of the Department, and B. B. Kelliher, Chief Engineer of the G.T. Pacific, as the east bank of Wolfe Creek. This point is 129 miles east of the summit of the Yellowhead Pass, and 119 miles west of Edmonton. Wolfe Creek has an elevation of 665 ft. above Edmonton, while the summit of Yellowhead Pass is 840 ft. higher than Wolfe Creek.

C. Schrieber, Consulting Engineer to the Department of Railways, left Montreal, June 15, to inspect the work in progress on the line. Track is reported to have been laid westward from Portage la Prairie for 560 miles, and it was expected that track would be laid on the 51 miles between Portage la Prairie and Winnipeg by the end of June. Tracklaying is being pushed towards Battle River, and in order to push on with the work rails and other tracklaying material are being concentrated at Edmonton, so that tracklaying may also be gone on with from that point easterly.

The G.T.P.R. is establishing a base hospital at Prince Rupert, B.C., in connection with the construction from the Pacific coast. The Minister of Railways admitted in the House of Commons recently that all supplies purchased in Eastern Canada were being taken over the G.T.R. via Chicago, and shipped via Seattle, Wash. Supplies were being purchased by the contractors in the United States and shipped via Seattle, and supplies were also being purchased in Vancouver, B.C., but reports from that city state the quantity is but small compared with what are purchased in the U.S.

GRAND TRUNK PACIFIC BRANCH LINES CO.—The bill granting an extension of time for the construction of a number of branch lines has been passed at the current session of the Dominion Parliament. The amendment pro-

in the House of Commons, May 27, has purchased 50,000 tons of steel rails from the Algoma Steel Co., Sault Ste. Marie, Ont., and 20,000 tons from the United States. For the Lake Superior branch from Fort William to Lake Superior Jct., the company had used 26,000 tons of steel rails lifted from the C.T.R., which were replaced by 26,000 tons of new rails purchased from the Dominion Iron and Steel Co.

The eastern limit of the Mountain section was fixed Nov. 21, 1907, by Collingwood Schrieber, Consulting Engineer of the Department, and B. B. Kelliher, Chief Engineer of the G.T. Pacific, as the east bank of Wolfe Creek. This point is 129 miles east of the summit of the Yellowhead Pass, and 119 miles west of Edmonton. Wolfe Creek has an elevation of 665 ft. above Edmonton, while the summit of Yellowhead Pass is 840 ft. higher than Wolfe Creek.

C. Schrieber, Consulting Engineer to the Department of Railways, left Montreal, June 15, to inspect the work in progress on the line. Track is reported to have been laid westward from Portage la Prairie for 560 miles, and it was expected that track would be laid on the 61 miles between Portage la Prairie and Winnipeg by the end of June. Tracklaying is being pushed towards Battle River, and in order to push on with the work rails and other tracklaying material are being concentrated at Edmonton, so that tracklaying may also be gone on with from that point easterly.

The G.T.P.R. is establishing a base hospital at Prince Rupert, B.C., in connection with the construction from the Pacific coast. The Minister of Railways admitted in the House of Commons recently that all supplies purchased in Eastern Canada were being taken over the G.T.R. via Chicago, and shipped via Seattle, Wash. Supplies were being purchased by the contractors in the United States and shipped via Seattle, and supplies were also being purchased in Vancouver, B.C., but reports from that city state the quantity of material compared with what are purchased in the U.S.

GRAND TRUNK PACIFIC BRANCH LINES CO.
The bill granting an extension of time for the construction of a number of branch lines has been passed at the current session of the Dominion Parliament. The amendment providing that the Government take over the branch lines of the Eastern Division, N.T. Ry., which the G.T. Pacific Ry. did not wish to retain at the end of the 50 years' lease, was withdrawn. (June, pg. 415.)

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National Transcontinental Railway.

The question of the cost to the Dominion of the Eastern and Western Divisions of the National Transcontinental Ry., under construction from Moncton, N.B., to Winnipeg, Man., by the Transcontinental Ry. Commission, and from Winnipeg to Prince Rupert by the C.T. Pacific Ry., has been made the subject of considerable discussion. On July 6, the Minister of Railways stated that he expected the railway would be fully completed by Dec. 1, 1911. The cost he now estimated at \$63,437 per mile, not including allowance for interest for the 1803.55 miles between Moncton and Winnipeg. The cost of the terminals at Winnipeg is placed at \$2,000,000, and of the terminals at Moncton at \$97,000. In regard to the joint terminals at Winnipeg, by the agreement with the Canadian Northern Ry., the value of the lands on which the station and terminals are to be located is fixed at \$2,625,000. Upon this valuation the Government and the C.T. Pacific Ry. is to pay, in equal shares, one-half of 4% a year. The amount of the valuation includes grading, levelling and filling, but does not include the buildings and the tracks. The Canadian Northern Ry. is to supply there, and the Government and the C.T. Pacific Ry. are to pay in equal shares one-half of 4½%. The assumed cost is set down at \$2,000,000, making the amount payable by the Government yearly at \$22,500, or the total for the Winnipeg terminals of \$48,710. As to the C.T. Pacific prairie section from Winnipeg to Wolf Creek, 119½ miles west of Edmonton, has been located. The estimated cost of construction has been set down at present at \$61,520,000.

On July 7, Hon. R. L. Borden made a short statement as to the cost of the railway. The estimate was based upon the figures supplied by the Government from time to time, and those obtained from private investigation. He said the 1803.55 miles from Moncton to Winnipeg at \$63,427 a mile, not including the Quebec Bridge, would amount to \$114,393,765. Allowing five years for the period of construction, there would be an average of 2½ years simple interest at 4½% a year to be met, or a total of \$10,009,454, making the cost of the Eastern Division, at completion, \$124,403,219. To this must be added seven years' interest at 3%, after completion, during which the C.T. Pacific is to pay no rent, \$26,124,676; and 3% for three years additional, during which no rent is collectible unless the earnings are sufficient, \$11,196,290, making a total of \$161,724,185. The cost of the Quebec Bridge to Mar. 1, 1907, was \$5,422,238, and the estimated cost of completion, \$9,000,000, making \$14,422,238; adding the estimated cost to the Government of the terminals at Winnipeg, Quebec and Moncton, and the shops at points east of Winnipeg, was \$5,470,000. Then there was interest which the Government had to pay on the Mountain section of the Western Division, without recourse, \$9,689,400 (which he corrected to \$11,304,300 on July 8), together cash liabilities of \$191,305,823 (or as corrected, \$192,920,723). In addition to that amount the Government had contracted to meet various obligations on the guarantee of bonds as follows: Liability on guarantee of bonds issued on Mountain section, 75% on 816 miles, estimated at \$61,520,000, or \$46,140,000; liability of bond issue on prairie section, 916 miles at \$13,000 a mile, or \$11,916,000. This made up a cash expenditure and liability of \$191,305,823; and liability on bond guarantees of \$58,048,000, or a total of \$249,353,823, and as corrected July 8, a total of \$250,968,723.

On July 12, the Minister of Railways made a statement in reply to Mr. Borden, in which he accepted a number of the figures given, but repudiated others, amounting to some \$7,000,000. He accepted the figure of

\$114,393,765 as the cost of the Eastern Division; \$10,009,454 interest during construction; \$26,124,676 seven years' interest after completion, and placed the cost of terminals at \$3,500,000. It was expected that the line would pay from the outset, consequently the interest for three years' rental which could be collected only if earned, was cut out; as also was the cost of the Quebec Bridge, which was not part of the undertaking. In regard to the Eastern Division, all the burden that would fall on the country was the \$26,124,676, the interest for the seven years after completion, during which no rental was payable by the C.T. Pacific Ry. As regards the Mountain section, he did not believe that Canada would ever be called upon to pay one cent of the guarantee.

These figures were given in the course of the discussion on the voting of \$30,000,000 for surveys and construction on the Eastern Division.

Track was laid in Moncton, N.B., to within a few hundred yards of the Intercolonial Ry. station, June 24, and will run parallel to that line into the station. A steam shovel has been put on the track, and grading for the permanent track is going on. The starting of work at this point was evidently a surprise to the citizens, as although several surveys had been made for the line in the city limits, no announcement had been made as to the route to be followed.

Tenders are being called for and will be received up to Aug. 20, for construction of the following sections:

District C.—From Weymontachene, Que., 196.38 miles west of the north abutment of the Quebec Bridge (being the boundary between Districts C and D), westerly for about 107 miles; to be completed by Dec. 31, 1910.

District C.—From 107 miles west of Weymontachene, Que., westerly to the end of the C.T. Pacific Ry. Co.'s contract, about 114.97 miles; to be completed by Dec. 31, 1910.

Districts D and E.—From the western end of Fauquier Bros.' Abitibi contract in Ontario, westerly for about 104.24 miles; to be completed by Dec. 31, 1910.

District E.—From about 60 miles west of the easterly boundary of District E, in Ontario, easterly to the end of Fauquier Bros.' contract north of Lake Nipigon, Ont., about 100 miles; to be completed by Dec. 31, 1910.

Districts E and F.—From the western end of Fauquier Bros.' contract north of Lake Nipigon, Ont., westerly to Dog Lake, Ont., about 126 miles; to be completed by Sept. 1, 1910.

District F.—From Dog Lake, Ont., to mile 2.6 west of Peninsula Crossing, by alternative routes, being about 23.76 miles by the northerly, and 24.13 miles by the southerly route; the selection of the route to be at the option of the Commissioners; to be completed by Sept. 1, 1910.

GRAND TRUNK PACIFIC RAILWAY.

The bridge which the C.T. Pacific Ry. is constructing across the Kamistikwia River at Fort William, Ont., on its Lake Superior branch, will consist of one 258 ft. through swing, and one 125 ft. through riveted truss spans, having an extreme width of 48 ft. The floor of the bridge is arranged to carry one railway track, two roadways and two side-walks. Provision is made for an electric railway track on the roadway. The substructure consists of two abutments, built on pile foundations driven to the solid rock, and two piers built of concrete from the rock line. The pier carrying the swing span is toward the northern bank of the river, leaving a navigable channel of 100 ft. with a maximum depth of 23 ft., and a minimum depth of 15 ft., for a few feet at the southern pier. On the north side of the centre pier there is a depth of over 20 ft. for about 40 ft. from the pier. The bed of the rail will be 33 ft. above water level. The bridge is being constructed in accordance

with the Dominion Government specifications for the class of bridge designed to carry heavy traffic.

Tracklaying is going on continuously on the line west from Saskatoon, Sask., and in the week ending June 29, 31 miles of steel were laid. In the yards at Saskatoon, large numbers of cars of material, and steel rails and ties for many miles of track are stored, and several carloads of steel for the bridge over the Battle River are waiting to be sent forward. This point is 630 miles west of Winnipeg, and 169 miles east of Edmonton, Alta. F. W. Morse, Vice-President, returned to Montreal July 5, after having gone over the line as far as track had been laid. It is expected that a considerable portion of the mileage to the Battle River will be opened Sept. 1, for the hauling of grain to Winnipeg.

Tracklaying on the line between Portage la Prairie and Winnipeg was completed July 13.

Beyond Battle River, nearly the whole of the grading into Edmonton has been completed, and it is hoped to have the track laid by the winter. On this section of the line is the big bridge across the Saskatchewan River at Clover Bar. The bridge has a total length of 1,500 ft., and is carried on four concrete piers in the river, two abutments, and 30 pedestals on the banks. The river piers have a total height of 124 ft., the distance from footing to lower seat being 92 ft.; from footing to upper seat, 38 ft.; and from footing course to bottom of foundation, 26 ft. The measurement at lower seat is 11 by 26 ft.; and at foundation, 41 by 87 ft. 6 in.; while the batter is half an inch to the foot. The total amount of the concrete contained in each pier is 4,171 cubic yards. The steel for the superstructure is in course of delivery.

West of Edmonton the grading on the 129 miles westerly to Wolf Creek is in a forward condition and it is expected to have it completed and ready for the rails by the fall.

In connection with the construction of the line through British Columbia, the Provincial Government has promised to give substantial assistance towards opening up a road through the Revelstoke district for taking in supplies and men for the construction of the 79 mile section through the Yellow Head Pass to Tete Jaune Cache, and 150 miles west, provided the contractors adopted the Revelstoke route and undertook to purchase supplies in the province. During his visit to the west, F. W. Morse, Vice-President, stated that an announcement would shortly be made with respect to the letting of contracts for the 100 miles from Wolf Creek to the Yellow Head Pass, and for 79 miles west of the Pass, the tenders for which had been received.

Considerable progress is reported to have been made on the line in the mountains near Prince Rupert. Foley, Welch and Stewart, the contractors, have let a number of sub-contracts, the firms engaged being: Neil Keith, J. E. Bostrom, McDonald and MacAlister, M. Shady, A. Stewart, Harstone and Stainer, McDonald and Perry, Dudley Bros., A. Ross, N. McLeod, D. Harrigan, F. Peterson, Washok & Co., J. Alba, A. Filigno, D. A. Rankin, D. Stewart, and the Prince Rupert Construction Co. These sub-contracts practically cover the mileage for which the contract has been let, with the exception of about 15 miles north of Graveyard Point, which the general contractors are doing themselves. (July, pp. 467.)

The Nova Scotia Government has approved of by-law D of the Maritime Coal, Ry. and Power Co., fixing tariff for freight and coal on its line. The Government, however, ordered the reduction of the rate on coal from 40c per gross ton to 30c per gross ton between Maccan and Jubilee, Strathmore River, Hebert and Mumble, and to 32c per ton from Maccan to Prospect and Joggins.

National Transcontinental Railway.

Rapid progress is reported to have been made with the construction of the section of the line between Moncton and Chipman, N.B. The grading is well advanced, a spur line has been laid to a ballast pit near Salisbury, and temporary lines have been laid to permit of the working of steam shovels and construction trains. The contractors' plant on the section includes five steam shovels, 15 narrow gauge locomotives, 120 five-yard cars, 20 convertible cars, 80,000 lbs. capacity; 10 flat cars, 80,000 lbs. capacity, and four concrete mixing plants. It is expected that the track will be ready for laying the permanent rails early in Sept.

A. N. Parent, Chairman of the Commission in charge of the construction of the railway, was at La Tuque, Que., Aug. 1, selecting the site for the yards and divisional buildings at that point.

J. H. Reynolds, President of the Reynolds Construction Co., which has the contract for the construction of the first 150 miles of the line east of the junction with the Temiskaming and Northern Ontario Ry., said that there were over 1,200 men engaged in clearing and grading, and that it is expected to get the track laid by the end of the year; it would require another year to do the ballasting and to clean up the line. There was not a great deal of hard work on the 150 miles, the amount of track work being small. A number of bridges had to be built, the substructures of which would be concrete. The bridge over the Abitibi River is said to be about 200 ft. long, and at a height of about 200 ft. above the river. The point of junction with the Temiskaming and Northern Ontario Ry. is about eight miles west of the crossing of the Abitibi River.

The Commissioners are asking for tenders for the supply of 44,447 gross tons of 80-lb. steel rails, for delivery at various points on the mileage under contract.

GRAND TRUNK PACIFIC RY.

On July 30 a special train left Winnipeg, carrying F. W. Morse, Vice-President and General Manager, and other officials, on a trip of inspection over the line. The train went to the end of the steel at Battle River, a point 675 miles west of Winnipeg. Mr. Morse completed arrangements for the opening of a regular train service over portions of the line, which went into operation on Aug. 1, to a point about 50 miles west of Edmonton, Sask.

The bridge over the Battle River is well advanced, and steel rails and other materials are being collected there so that track-laying may be resumed as soon as the bridge is ready. At Edmonton track has been laid to the bridge across the Saskatchewan River at Clover Bar, and as soon as the construction of the bridge is completed track-laying will be resumed on the roadbed

in the direction of Battle River. The distance from the Battle River to the Saskatchewan River at Clover Bar is 112 miles. It is expected that the line will be completed through to Edmonton early in Nov. On the section from Edmonton westerly to Wolfe River good progress is being made with the grading, and one stretch of about 60 miles is expected to be completed by Christmas.

From Prince Rupert, B.C., it is reported that the right-of-way has been cleared easterly for the first 50 miles, and that the clearing on the second 50 miles is well under way. It is announced that the townsite of Prince Rupert will be placed on the market shortly. This announcement is made concurrently with the announcement that F. W. Morse has effected a settlement of some differences with the British Columbia Government over the waterfront sites. The water frontage is in all 28,500 ft. The Government by the original agreements got 8,500 ft. of this. By the agreement now consummated this is divided into five strips of unequal length, ranging from 1,000 ft. to 3,000 ft. and located at points which, in the opinion of the Government engineers, will prove of strategic importance for the development of the northern city. The railway obtains all the land required for terminal purposes, but ceded the Government 23 acres in other parts of the townsite for the surplusage of land they receive, en bloc.

PACIFIC NORTHERN AND OMINICA RY.

The railway subsidies act passed last session of the Dominion Parliament provided for the aiding upon the usual terms and conditions, of a line of railway from Kittimat to the Telkwa River, B.C., a distance not exceeding 110 miles. (Aug., pg. 557.)

G.T. PACIFIC BRANCH LINES.

The Dominion Parliament last session voted a subsidy at the rate of \$3,200 a mile, with the usual provisions as to an increase to \$6,400 a mile, towards the construction of a railway from Montreal, northerly to a junction with the National Transcontinental Ry. (Eastern Division G.T. Pacific Ry.), not exceeding a distance of 200 miles. It transpired in the course of the discussion that the application for the subsidy stands in the name of the Premier, and that it was being asked for as a result of a very large deputation which waited on the Government from the city of Montreal. The Minister of Railways said unless it was the G.T. Branch Lines Co., he did not know what company would be in a position to construct this line; the policy of the Government was to give the bonus to the first company that will show its readiness and ability to construct the railway.

A subsidy on the same terms was also voted for the construction of the line, now nearly completed, and known as the Lake Superior Branch, extending from Fort William and Port Arthur, Ont., to a junction with the National Transcontinental Ry. (Eastern Division G.T. Pacific Ry.), a total not exceeding 220 miles.

During June, 28 men were killed and 32 injured in the course of their employment in railway work in Canada. Of the fatalities 7 were due to being run over, 10 to explosions of dynamite, 2 each to derailments, to being struck by passing objects, and to being caught between cars, 1 each to a fall, to suffocation by gasoline fumes, to being struck by train, and 2 to drowning. Of the non-fatal accidents, 8 were due to being run over, 7 to derailments, 6 to falls, 4 each to being caught between cars and to falling materials, 1 each to flying material, to an explosion of dynamite, and to machinery.

Nipigon, a distance of about 100 miles. The work is to be completed by Dec. 31, 1910. The Commissioners are also asking for tenders, to be sent in by Oct. 8, for the construction of locomotive shops at Winnipeg, and for the filling required for the preparation of the site for the shops.

The shops, for the construction of which tenders will be received Oct. 8, are to be located in Springfield municipality, 6 miles east of Winnipeg, and close to the C.P.R. Molson cut-off and a C.N.R. branch line. The site is an admirable one and is on open and level ground. The plans are so arranged as to secure the most rapid and economical handling of trains, thus obtaining the maximum efficiency from rolling stock and motive power. The specifications divide the work into sections, comprising the preparation of the site, levelling the ground to raise it to track level, foundation and concrete work, steel work, carpenter work, sheet metal, painting, glazing and plumbing. The locomotive shop will be the first structure to be undertaken, and will be divided into three departments. The tank shop for the construction of the parts of locomotives or cars, made of sheet iron or steel, will be 184 by 95 ft.; the boiler shop, 184 by 110 ft., and the machine tool and erecting shop, 615 by 174 ft. In the erecting shop there will be 26 engine pits, and these will be served by two transverse tracks, one of which will be continued through the boiler and tank shops. The total dimensions of the building will be 823 by 174 ft. The frame of the building will be of the self-supporting steel type on solid concrete foundation, the main flooring being also of concrete, while walls will be of best quality brick. The roof will be on the "saw-tooth" design, with all skylights and ventilators of copper, planned to ensure a maximum of light and ventilation. The erecting shop will be equipped with one girder crane of 120 tons capacity, and one of 10 tons capacity. A press report says that the total cost of the construction and equipment of the shops and yards will be \$5,000,000, of which the National Transcontinental Ry. Commissioners pay about \$1,500,000, the G.T. Pacific Ry.

National Transcontinental Railway.

Construction is being proceeded with rapidly on the sections of the line in New Brunswick. The Corbet-Floesch Co., which has the contract under the G.T. Pacific Ry. Co. for the line from Moncton to within six miles of Chipman, a distance of 50 miles, at the end of Aug. had 18 miles graded at the Moncton end and also a branch of six miles to a ballast pit. Track has been laid on this branch, which runs from the main line of the Intercolonial Ry. and crosses the N.T. Ry. to get to the ballast pit. The company started to lay track on the main line at Catamount, 11 miles west of Moncton, towards Canaan River, and started early in Sept. to lay track easterly from Catamount towards Moncton. It is expected that 27 miles of main line track would be laid on this 50-mile contract this fall. On the eastern end of their section the contractors have at work two standard gauge locomotives, 12 narrow gauge locomotives, five steam shovels, 20 Hart convertible cars and 10 flat cars, and at the Chipman end there are three steam shovels, one standard gauge locomotive, 10 narrow gauge locomotives, six Rodger ballast cars, and five flat cars. At the Chipman end of the line five miles of grading has been completed. Altogether there are about 700 men at work, and the contractors expect to have the whole of the grading completed during 1909.

The G.T. Pacific Ry., which secured the contract for the construction of 150 miles of the line known as the Abitibi section, is said to be taking steps to cancel the sub-

gangs, as they are closing up the work on the sections between Battle River and Edmonton, are moving west of the Pembina River. Only a short stretch of 15 miles in the Beaver Hills was reported Sept. 15 to be unfinished. This is expected to be finished by Oct. 15.

At the Prince Rupert end, the contractors state good progress is being made. Grading on the first 50 miles is reported to be well under way, and work is being opened out on the second 50 miles as fast as supplies can be got in. It is expected that a further section of 100 miles easterly from the summit of the Yellowhead Pass, will be let shortly. This would leave a further distance of about 400 miles to be let.

Collingwood Schreiber, Consulting Engineer to the Department of Railways, accompanied by B. B. Kelliher, Chief Engineer G.T.P.R., was at Prince Rupert Sept. 5, and inspected the route as far as Hazelton. Some difficulties, it appears, have arisen in the way of securing the right-of-way, and the straightening of these out was one of the reasons for Mr. Schreiber's inspection.

(Sept., pg. 637)

National Transcontinental Railway.

Construction is being proceeded with rapidly on the sections of the line in New Brunswick. The Corbet-Floesch Co., which has the contract under the G.T. Pacific Ry. Co. for the line from Moncton to within six miles of Chipman, a distance of 50 miles, at the end of Aug. had 18 miles graded at the Moncton end and also a branch of six miles to a ballast pit. Track has been laid on this branch, which runs from the main line of the Intercolonial Ry. and crosses the N.T. Ry. to get to the ballast pit. The company started to lay track on the main line at Catamount, 11 miles west of Moncton, towards Canaan River, and started early in Sept. to lay track easterly from Catamount towards Moncton. It is expected that 27 miles of main line track would be laid on this 50-mile contract this fall. On the eastern end of their section the contractors have at work two standard gauge locomotives, 12 narrow gauge locomotives, five steam shovels, 20 Hart convertible cars and 10 flat cars, and at the Chipman end there are three steam shovels, one standard gauge locomotive, 10 narrow gauge locomotives, six Rodger ballast cars, and five flat cars. At the Chipman end of the line five miles of grading has been completed. Altogether there are about 700 men at work, and the contractors expect to have the whole of the grading completed during 1909.

The G.T. Pacific Ry., which secured the contract for the construction of 150 miles of the line known as the Abitibi section, is said to be taking steps to cancel the sub-contract made with the Reynolds Construction Co. The contractors have done a good deal of preliminary work, but it is said they have failed to make adequate progress, and it is reported that the G.T. P. Ry. Co. will either secure another sub-contractor, or go ahead with the work itself.

The Commissioners have awarded contracts for the construction of line as follows:

District C, from Weymontachene, Que., 190.25 miles west of the north abutment of the Quebec bridge, westerly for about 107 miles, and from a point 107 miles west of Weymontachene, Que., westerly to the end of the G.T. Pacific Ry. Co.'s contract, about 113.7 miles; to be completed by Dec. 31, 1910; to Macdonell and O'Brien, Montreal; and

Districts E and F, from a point at the western end of Fauquier Bros.' contract north of Lake Nipigon, Ont., westerly to Dog Lake, about 126 miles, to be completed by Sept. 1, 1910; and,

District F, from Dog Lake, Ont., to a point west of what is known as Peninsula Crossing, by alternative routes, about 23.75 miles by the northerly route and 24.13 miles by the southerly route, the selection of the route to be at the option of the Commissioners; to be completed by Sept. 1, 1909; to O'Brien and McDougall, Ottawa.

The Commissioners received tenders to Sept. 28, for the remaining two sections of the Eastern Division of the line. These are: Districts D and E.—From the western end of the Abitibi contract of Fauquier Bros., westerly 104.24 miles. District E.—From about 60 miles west of the easterly boundary of District E easterly to the end of Fauquier Bros.' contract north of Lake

Nipigon, a distance of about 100 miles. The work is to be completed by Dec. 31, 1910. The Commissioners are also asking for tenders, to be sent in by Oct. 8, for the construction of locomotive shops at Winnipeg, and for the filling required for the preparation of the site for the shops.

The shops, for the construction of which tenders will be received Oct. 8, are to be located in Springfield municipality, 6 miles east of Winnipeg, and close to the C.P.R. Molson cut-off and a C.N.R. branch line. The site is an admirable one and is on open and level ground. The plans are so arranged as to secure the most rapid and economical handling of trains, thus obtaining the maximum efficiency from rolling stock and motive power. The specifications divide the work into sections, comprising the preparation of the site, levelling the ground to raise it to track level, foundation and concrete work, steel work, carpenter work, sheet metal, painting, glazing and plumbing. The locomotive shop will be the first structure to be undertaken, and will be divided into three departments. The tank shop for the construction of the parts of locomotives or cars, made of sheet iron or steel, will be 184 by 95 ft.; the boiler shop, 184 by 110 ft., and the machine tool and erecting shop, 615 by 174 ft. In the erecting shop there will be 26 engine pits, and these will be served by two transverse tracks, one of which will be continued through the boiler and tank shops. The total dimensions of the building will be 823 by 174 ft. The frame of the building will be of the self-supporting steel type on solid concrete foundation, the main flooring being also of concrete, while walls will be of best quality brick. The roof will be on the "saw-tooth" design, with all skylights and ventilators of copper, planned to ensure a maximum of light and ventilation. The erecting shop will be equipped with one girder crane of 120 tons capacity, and one of 10 tons capacity. A press report says that the total cost of the construction and equipment of the shops and yards will be \$5,000,000, of which the National Transcontinental Ry. Commissioners pay about \$1,500,000, the G.T. Pacific Ry. being responsible for the remainder.

GRAND TRUNK PACIFIC RY.

A regular train service was placed in operation Sept. 21 from Winnipeg to Wainwright, Sask., at the crossing of the Battle River, a distance of 666 miles. Several general officers of the company from Montreal and A. W. Smithers, Vice-President G.T.R., London, Eng., were present on the occasion. The party left Montreal Sept. 11 on a special train, travelling to Winnipeg, via Chicago. After travelling over the completed line, the party went over the line under construction to Edmonton, Alta., and a portion of the route westerly. They subsequently went to Prince Rupert to inspect the work in progress there. A press report states that the resignation of officials at Winnipeg is due "to the deplorable condition of the new system which has been rushed through for political reasons. In many places the track sinks as rapidly as constructed for want of ballast and proper construction." This item appears only in the newspapers of one political party, and no doubt exaggerates for political reasons the difficulties of getting a newly constructed line into operation. At Wainwright a 12-stall roundhouse is under construction, and a large force of men has been at work since Sept. 1, grading and laying out the yards.

In regard to the progress of construction west of Edmonton, it is reported that the contractors have over 3,500 men at work, the larger number being engaged between Edmonton and the Pembina River, a distance of 65 miles. It is expected that this portion of the line will be graded and ready for tracklaying by winter. The construction

National Transcontinental Railway.

The Commissioners have filed plans and books of reference for extra land required in the County of Portneuf, Que., as follows: For additional station ground at St. Casimir, situated at mileage 45 west from Quebec bridge, and for a diversion of the public road at mileage 19 west from Quebec bridge.

Reports from Abitibi, Ont., state that the bridge being constructed across the river there is 840 ft. long, and 94 ft. above the water level. The construction of the line has been pushed forward to such an extent that it is expected to have track laid from the river crossing, seven miles east of Cochrane, the junction with the Temiskaming and Northern Ontario Ry., and Frederick House, by Christmas.

On the line easterly from St. Boniface, Man., G. A. Wade, Track Inspector, reported, Oct. 8, that the track was finally ballasted to First Broken Head, about 32 miles; two lifts of ballast had been laid on the eight miles thence to Second Broken Head, and one lift between that point and Rennie, an additional 17 miles. Steel was laid from Rennie to Green Lake, 13 miles. A later report stated track had been laid to 25 miles east of Rennie and that it was expected to have a further 20 miles laid by the end of the year. It is also expected to lay track on about 50 miles from Lake Superior Junction westerly by the end of the year.

The contract for the construction of tank, boiler and erecting shops, in Springfield municipality, 6 miles east of Winnipeg, has been awarded to T. Kelly & Sons, Winnipeg. The price is stated to be about \$500,000. On this page we give a map showing the location of the shops and yards, and a ground plan of the shops, with the proposed track layout as given on page 813.

GRAND TRUNK PACIFIC RY.

It is expected that the branch line connecting Fort William with the National Transcontinental Ry., at Lake Superior Junction, Ont., will be completed by Nov. 30. G. Knowlton, Divisional Engineer, stated, Oct. 7, that there were 30 miles of steel to be laid, but as several bridges have to be completed the work of tracklaying is being delayed. The other work on the line is well forward and everything is being pushed with the object of getting the branch finished by the date mentioned. The bridge over the river at Fort William, except for the finishing touches and the approaches, was reported to be completed Oct. 15. The steel work was erected by the Canadian Bridge Co., Walkerville, Ont.

The official returns for the inspection of grain at Winnipeg, issued Oct. 3, credited the G.T.P.R. with having brought 13 carloads of wheat into the city. Previous shipments of grain coming from points on the G.T.P.R. had been brought into Winnipeg over the Canadian Northern Ry. from Portage la Prairie. The service given on the line is three trains a week between Winnipeg and Waterous, Sask., 408 miles, and two trains a week between Waterous and Wainwright, 258 miles. On this stretch of line there are 97 stations. During his recent inspection of the line the President, C. M. Hays, said it was expected that the line would be completely ballasted east of Saskatoon early in Oct. A proposition had been made by the Canadian Northern Ry. for the construction of joint terminals there, but nothing in the way of an agreement had been reached. The construction of the bridge across the Battle River is expected to be completed early in Nov. The bridge has a total length of 2,772 ft., and the centre spans are 160 ft. above the concrete piers. The superstructure is carried on 53 piers. As soon as the bridge is completed, track will be laid across it and tracklaying will be resumed on the roadbed west of the Battle River and pushed forward towards Edmonton. The bridge over the Saskatchewan River at Clover Bar is also expected to be completed early in Nov. It is expected that track will be laid into Edmonton by the end of the year. C. Schreiber, consulting engineer to the Department of Railways, who returned to Ottawa Sept. 28, after an inspection of the line, said the new railway will be in full operation from Winnipeg to Edmonton by Jan. 1, 1909. A joint station with the Canadian Northern Ry. at Edmonton will, it is understood, be constructed. Between Edmonton and Wolf Creek, Alta., a distance of 127 miles, the grading is well advanced, and it is expected that the grading gangs will be within 10 miles of Wolf Creek by the end of the year. Tracklaying will be started from Edmonton westerly, Dec. 1, and will be continued to Peubina River, a distance of 65 miles. At this point a large bridge is under construction, the foundations of which it is hoped to complete by Feb. 1. The steel work for this bridge will then be completed and tracklaying pushed westward. The contract for the substructure of the bridge across Wolf Creek is expected to be let at an early date.

The company will call for tenders for the construction of 200 miles from Wolf Creek westerly at an early date, which will bring the mileage under contract well into British Columbia. Final arrangements for the route over the inner table land have not yet been

made, but it is understood that this matter was discussed between the British Columbia Government and C. M. Hays, President G.T.P.R., during the latter's visit to Victoria, Oct. 14.

Mr. Hays returned to Vancouver, B.C., from Prince Rupert, Oct. 13. He said he had been up the Skeena River as far as its confluence with the Copper River, making an inspection of the construction going on there. He was very well pleased with the progress made by the contractors, and announced that tenders would be asked at an early date for the construction of a further 100 miles easterly from Prince Rupert.

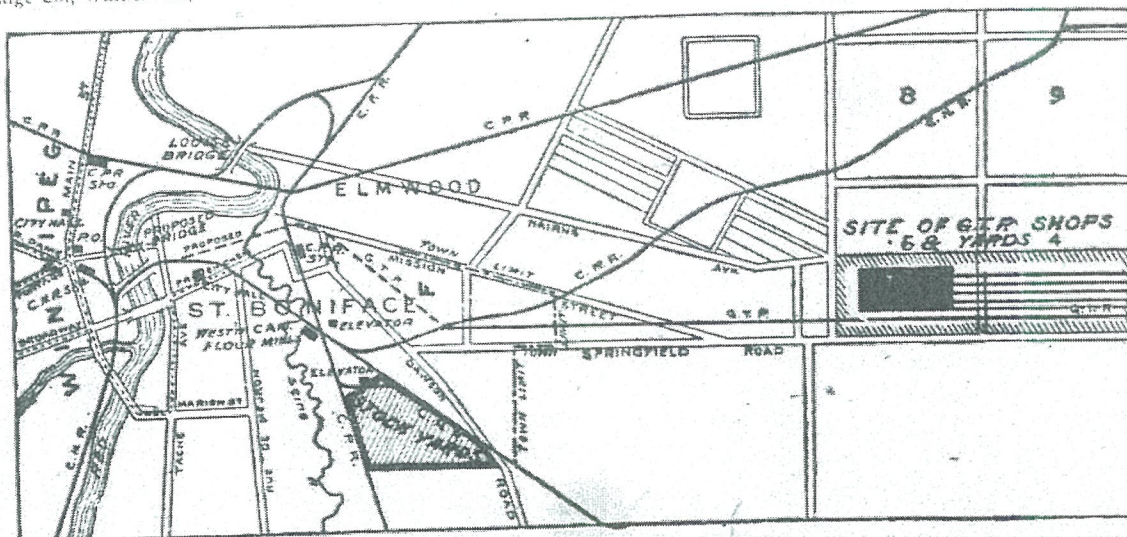
C. C. Van Arsdol, Division Engineer, who formerly had his headquarters at Edmonton, Alta., and is now located at Prince Rupert, B.C., has jurisdiction over construction from that point to the McLeod River. R. W. Jones, Division Engineer, who has transferred his staff from Saskatoon to Edmonton, closing the Saskatoon office, has had his jurisdiction extended westerly to the McLeod River.

The Toronto Globe's Ottawa correspondent wired, Oct. 20, that the G.T.P.R. proposes to construct what will be practically a second line of railway stretching right across the prairie provinces. The route as projected will start from the present main line north of Brandon, run to that city, thence west across Saskatchewan, and into the coal districts of Southern Alberta. We are advised that this is no new proposition. Probably the report has reference to some of the various branches contemplated to act as feeders to the main line and which were shown on the map we issued as a supplement in Nov., 1907.

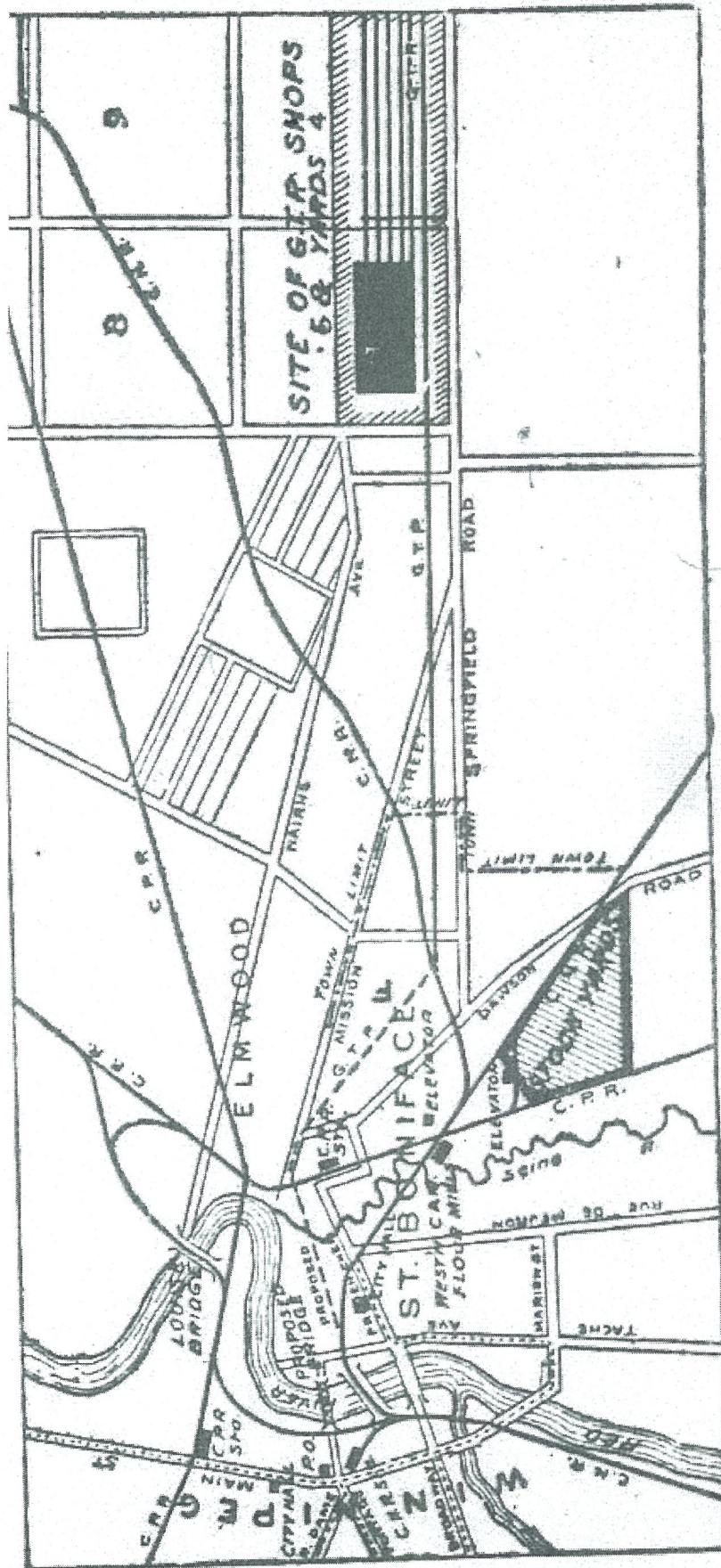
In an interview at Victoria, B.C., Oct. 14, Mr. Hays said the company eventually intended to have a branch southerly into that city, where a water frontage had already been secured. This water frontage, local reports state, was acquired at a cost of \$150,000. There were, said Mr. Hays, some details of the project to be worked out, but it was desired that the line, when constructed, would run the entire length of Vancouver Island. The general plans of the company show such a line and also a line from Vancouver, connecting with the main line at Fort George, B.C.

The company has placed an order for 15,752 tons of steel rails with the Algoma Steel Co., Sault Ste. Marie, Ont., and another for 28,695 tons with the Dominion Iron and Steel Co., Sydney, N.S. (Oct., pg. 725).

D. B. Hanna, Third Vice-President Canadian Northern Railway, expects to leave Toronto on a trip to Great Britain early in November.



MAP SHOWING SITE OF SHOPS TO BE ERRECTED BY THE NATIONAL TRANSCONTINENTAL RY. COMMISSION NEAR WINNIPEG.



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National Transcontinental Railway.

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C. O. Foss, District Engineer, returned to St. John, N.B., Nov. 12, from a trip of inspection over the section of the line under construction between Moncton and McGibney's. There were found to be 4,860 men, 1,203 horses and 12 steam shovels, with other plant in proportion, utilized by the six firms of contractors engaged in the 256.3 miles under his jurisdiction. The contractors have made good progress, the estimate as to the work done being as follows: Moncton to within six miles of Chipman, 50 miles, Corbett and Floesch Co., 44% completed. From the last named point to eight miles beyond Chipman, 14 miles, J. W. McManus Co., 29% completed. From the last named point to the crossing of the old Canada Eastern Ry., at a point 34 miles from Fredericton, 39.3 miles, Toronto Construction Co., 22% completed. From the last mentioned point to Plaster Rock, 66.3 miles, Toronto Construction Co., 7% completed. From Plaster Rock to Grand Falls, 31.9 miles, Willard Kitchen Co., 27% completed. From Grand Falls to the Quebec boundary about 25 miles west of Edmundston, 60.8 miles, Lyons and White, 52% completed. The first four of these contractors are working under the general contractors of the G.T. Pacific Ry., the other two having taken their contracts directly from the Transcontinental Ry. Commissioners. The work in progress covers grading, grubbing, etc., but does not include the construction of steel bridges, or the rails, both of which are supplied by the Commissioners.

At the Moncton end the roadbed has been all completed ready for the rails, and at the end of Oct., 10 miles of track had been laid. The construction of the telegraph line is in progress and it was expected that by Dec. 1, it would be ready for operation between Moncton and Canaan River. The bridge work on several sections of the first 50 miles was also reported to be making satisfactory progress.

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being concentrated on ballasting the track already laid. It was expected to resume tracklaying in a short time after he left, and to be able to lay the steel as far as the crossing of the Winnipeg River by Christmas. The grading of the whole distance to Superior, Jct., to meet the branch to Port William, under construction by the G.T. Pacific Ry., is expected to be completed by April, 1909.

GRAND TRUNK PACIFIC RY.

C. M. Hays, President G.T.P.R., on his return to Montreal, Oct. 30, from a trip of inspection as far as Prince Rupert, B.C., said he felt quite safe in declaring that he did not apprehend any conditions would arise engineering, financial or otherwise—that would prevent the line from being completed from end to end by Dec., 1911. Regular trains would be running next spring from Port William to Edmonton. Within a short time contracts would be let for another 100 miles easterly from the coast section of 110 miles, and for 200 miles further westerly from Wolf Creek, B.C., leaving a gap of 100 miles yet to be placed under contract. Prince Rupert had perhaps the finest dock on the Pacific coast, and while in British Columbia, he had concluded arrangements with the Provincial Government for the spending of \$200,000 at the terminus.

On the line between Winnipeg and Edmonton, it was expected that the bridge over the Battle River would be completed Nov. 15, which would enable tracklaying to be resumed towards the crossing of the Saskatchewan River at Clover Bar. The laying of about another 100 miles of track, will make a connection with the track laid easterly from Edmonton. At various points on the line to Battle River, works of betterment are in progress, station buildings, etc., are being put up, sidings laid down, etc. A contract has been let for the erection of a station at Wainwright, a divisional point, and ten smaller stations are to be built at intervening points.

Westerly from Edmonton the cold, rough weather has affected the progress of the work, and large numbers of men have been laid off. It was hoped that the weather would have remained sufficiently open to enable the grading to have been completed as far as the Pembina River before the close of the year, but this is now hardly to be expected.

In connection with the surveys through British Columbia, the parties working north and south met near Buckley Summit, about 70 miles north of Fraser Lake, Nov. 6.

On the contract easterly from the Pacific coast, J. W. Stewart stated in Vancouver, Nov. 10, that it was expected to be able to work all winter. "There were about 2,500 men at work, but his firm would like to be able to get twice that number to go out to the job. Arrangements were being made for sending in four steam shovels for the work in the vicinity of Inverness. At this point there is some difficulty in deciding finally on the route. The original survey follows the eastern side of Porpoise harbor and through Kane and Port Edward townships, while an alternative route across Porpoise Island is being considered. The adoption of this route would involve the construction of a swing bridge, estimated to cost \$1,000,000, over Porpoise channel. Even with the cost of this bridge the contractors state that the work can be done at less expense and a better roadbed can be provided than by following the original survey.

A report from Edmonton, Alta., states that A. A. Parker, of Minneapolis, Minn., who arrived there from the Pine Pass country, Nov. 5, had completed a reconnaissance survey from Port Essington and Hazelmore to Edmonton, in the G.T.P.R. interests. Mr. Parker, in general terms, said the Pine Pass was suitable for the construction of a railway,

and that the country through which such a line would run was a suitable one.

G.T. PACIFIC RY. BRANCH LINE.

At a meeting of the St. John, N.B., city council, Nov. 2, a letter was read from F. W. Morse, Vice-President G.T.P.R., asking the city to submit a proposition as to what would be done to assist the company to enter St. John, and what conveyance of property for terminals at Courtenay Bay would be made. It is generally thought that the railway will be able to enter the city and reach Courtenay Bay by the same route as the Intercolonial Ry., from either Moncton or Norton, by arrangement with the Dominion Government, in which case access to Courtenay Bay could be arranged for as well. The principal difficulty is as to arranging for room for sidings and yards. Although willing to do all that is possible to assist the railway entering the city and establishing terminals there appears to be some unwillingness on the part of the city council in giving up its rights. The whole question is being considered by the council's board of public works.

The line under construction from Port William to Superior Junction, Ont., was expected to be completed, so far as tracklaying was concerned, by Nov. 15. This was the report made by Division Engineer Knowlton Nov. 3. At the end of Oct. the track had been laid within six miles of the point of junction with the main line easterly from Winnipeg, and in that six miles there were two large wooden trestles to complete. The ballasting of the branch is well in hand, and the other work of completing the line to operation is forward. It was announced Nov. 27, that the line was open for traffic.

National Transcontinental Railway.

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In a booklet published by the G.T.R., the company reviews its position and says with regard to the Eastern Division: "By the terms of the lease to the company of this portion of the railway it will be seen that the company will practically have the free use of it for seven years, and taking into account the time allowed for construction, which is fixed at seven years, no payments will be required to be made on account of rental until 1919, and since it is to pass through an entirely new and undeveloped section of the country which is now known to be rich in agricultural and mineral resources, as well as timber, it is anticipated that long before the first payment on account of rental becomes due, the company will have reaped a rich harvest from the traffic that will exist upon its completion. This section of the line between Quebec and Winnipeg will pass through what may appropriately be termed the mineral belt of eastern Canada, as in this district, adjacent to the main line, are situated the now famous Cobalt deposits, as well as nickel, copper, iron, etc., which are only awaiting the advent of the railway to be brought forth for manufacture."

The permanent rails for the N.T.R. were laid into Moncton, N.B., Dec. 1, the tracks joining the Intercolonial Ry. about a quarter of a mile from the station, and on the west-
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THE RAILWAY AND MARINE WORK

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The contracts for the last sections of one division to be placed under contract have been signed. These were let to M. P. and J. T. Davis, Quebec, and are for the following sections, tenders for which were asked Sept. 12: Districts D and E from the western end of Fauquier Bros.' Abitibi contract, westerly for 104 miles. District E, from about 60 miles west of the easterly boundary of this district easterly to the west of Fauquier Bros.' contract, north to Lake Nipigon, about 100 miles. This work is to be completed by Dec. 31, 1910. There are at present no means of communication with this district, and the contractors will themselves have to construct a wagon road northward from Jackfish Bay, on Lake Superior. This is now being surveyed, and it is expected that most of the construction in this part of Ontario will be put in hand early in the spring.

We are advised that none of the tenders recently sent in for some of the buildings at the shops to be erected near Winnipeg has been accepted. It was originally stated that the tender of T. Kelly & Sons had been accepted, but the Commissioners' Engineer reported that probably better prices could be obtained for the work if tenders were asked for the whole plant instead of for separate buildings. It is stated that tenders will be asked at an early date for the whole of the plant.

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At Cochrane, Ont., where the Temiskaming and Northern Ontario Ry. effects a junction with the N.T.R., the right-of-way has been cut out for a considerable

distance in both directions. A mono-rail line is in operation along the right-of-way for the conveyance of supplies from the crossing of the Abitibi River to the junction. The single rail is laid on ties placed 4 ft. apart, a car about 10 ft. long, supported by two wheels on one side, is used to convey the material, a horse at the side supplying the supporting as well as the motive power.

The contracts for the last sections of one division to be placed under contract have been signed. These were let to M. P. and J. T. Davis, Quebec, and are for the following sections, tenders for which were asked Sept. 12: Districts D and E from the western end of Fauquier Bros.' Abitibi contract, westerly for 104 miles. District E, from about 60 miles west of the easterly boundary of this district easterly to the west of Fauquier Bros.' contract, north to Lake Nipigon, about 100 miles. This work is to be completed by Dec. 31, 1910. There are at present no means of communication with this district, and the contractors will themselves have to construct a wagon road northward from Jackfish Bay, on Lake Superior. This is now being surveyed, and it is expected that most of the construction in this part of Ontario will be put in hand early in the spring.

We are advised that none of the tenders recently sent in for some of the buildings at the shops to be erected near Winnipeg has been accepted. It was originally stated that the tender of T. Kelly & Sons had been accepted, but the Commissioners' Engineer reported that probably better prices could be obtained for the work if tenders were asked for the whole plant instead of for separate buildings. It is stated that tenders will be asked at an early date for the whole of the plant.

GRAND TRUNK PACIFIC RY.

A summary of the work done on the construction of the section of the N.T.R., which is being constructed by the G.T. Pacific Ry., shows that the laying of track on the 666 miles from Winnipeg to the Battle River had been completed; as well as on the branch line from Fort William to Superior Junction, Ont., 188 miles, and that trains were being operated on both sections. The erection of the bridge over the Battle River was completed Dec. 15, and track laid over it. This will enable tracklaying to be resumed on the completed roadbed towards Edmonton, Alta. It is intended to have the line completed and opened for traffic as far as Edmonton by the fall. Grading has also been completed to the end of the Prairie section at Wolfe Creek, 129 miles west of Edmonton, and 916 miles west of Winnipeg.

For operating purposes the section of the line recently opened for traffic between Winnipeg, Man., and Wainwright, Alta., has been designated the Prairie Division.

The G.T.P. Ry. Co. will make application next session of the Dominion Parliament for an act ratifying and confirming an agreement dated June 6, 1908, made between itself and the Midland Ry. of Manitoba, respecting joint facilities at Portage la Prairie, Man.

A station building is under construction at Watrous, Sask., by the Carter-Halls-Aldinger Co., of Winnipeg, which has also contracts for the erection of stations at Biggar and Wainwright.

The location survey for the main line between Edmonton and Prince Rupert was reported to have been completed Nov. 26. The parties working in the vicinity of Fort George, B.C., were the last in the field, and they came out to Ashcroft Nov. 26. It is probable that during the summer some surveys will have to be undertaken for the revision of the surveys just

completed. R. P. Bishop, one of the engineers, states that the line has been located for part of the distance through the Nechaco district, into which many settlers were going. The surveyed route crosses the Fraser River just above Fort George, and follows the south shore of the Nechaco River nearly to Fraser Lake. Thence it skirts the south shore of Fraser Lake as far as Stella. From there two lines have been laid out.

Large quantities of equipment continue to be shipped from Vancouver to Prince Rupert, B.C., for Foley, Welch and Stewart, the contractors for the building of the G.T.-P.R. easterly. Among the plant are two steam shovels to be used on the laying out of the terminal yard at Prince Rupert. The work of laying out the townsite is being rapidly proceeded with, preparatory to opening it up in May, in accordance with the agreement with the B.C. Government.

In a recent interview C. M. Hays, President G.T.P. Ry., said he expected that the company's easy gradients—not more than 21 ft. to the mile going west—would in a few years twist around a great portion of the wheat export trade of the northwest, and with the opening of the Panama Canal in 1914, Canada would send wheat to Europe and Asia by way of the Pacific Ocean. He looked forward to seeing Prince Rupert one of the great wheat ports of the world.

G.T. PACIFIC BRANCH LINES.

The Lake Superior Branch, extending from Fort William to Superior Jet., on the main line from Winnipeg to Moncton, N.B., was opened for traffic Nov. 27, and is being operated as the Lake Superior Division. The mileages of the different station points are: Westfort, Fort William, 0.0; C.P.R. crossing, 0.6; Albe, 7.4; Baird, 13.21; Crest, 20.90; Dona, 26.42; Ellis, 32.83; Flett, 38.82; Griff, 45.72; Horne, 51.05; Dexter, 56.94; Linke, 62.34; Jakes, 67.83; Knowlton, 99.57; Oscar, 107.31; Petry, 114.34; Quorn, 121.99; Reba, 127.07; Snowdon, 134.45; Tannin, 139.14; Unaka, 145.28; Valora, 151.72; Weke, 160.26; Hunt, 166.60; Yonde, 170.80; Larn, 178.05; Alcona, 185.23; Superior Junction, 188.77. The branch is being used for the purpose of taking in supplies for the construction of the main line, and it will not be until the completion of the main line from Winnipeg, that there will be any other than contractor's traffic over it. A contract has been entered into with the Department of Railways, under the terms of the act granting subsidies in aid of certain railways, for the construction of a branch line from the National Transcontinental Ry. to Port Arthur and Fort William, Ont., a distance not exceeding 220 miles. The ratepayers of Fort William were asked to vote Jan. 1, in favor of a by-law to raise \$12,000 by means of debentures to pay for a portion of the right-of-way secured by the city for the G.T.P.R. in the city. (Dec., 1908, pg. 873.)

Press reports state that work is proceeding on the construction of a Government telegraph line from Athabasca Landing, Alta., northerly, and that it will be carried to Little River, 75 miles, this winter, and continued to the Lesser Slave Lake later in the year. A sum of \$10,000 was voted at the last session of the Dominion Parliament for the extension of this line towards Peace River Landing, by way of the south side of Lesser Slave Lake. The distance between the extreme points in question is about 290 miles, and the line to be strung under this appropriation is about 70 miles. The poles, wire, etc., is being distributed along the route during the winter in readiness for erection early in the spring. It is probable that a further sum will be voted at the next parliamentary session.

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National Transcontinental Railway.

The estimates submitted to the House of Commons provide for \$20,000,000 for account of surveys and construction on the National Transcontinental Ry. during the ensuing financial year.

In connection with the question of classification of work it was stated in the Commons, Jan. 27, that C. Schreiber, Consulting Engineer of the Railway Department, had been agreed upon by the Chief Engineer of the National Transcontinental Ry., and the Chief Engineer of the G.T. Pacific Ry., as arbitrator.

Reports as to construction in New Brunswick show that with the exception of a mile or two, the right-of-way for the 255 miles through the province is all cleared. A good deal of grading has been done, and several sections of track have been laid. It is intended to lay out a division yard at Lake Napaddogan, 118 miles from Moncton, and 137 miles from the Quebec boundary.

An arrangement has been made between the G.T. Pacific Ry. and Foley, Welch and Stewart, by which the latter has taken over and will complete the contract for a section of 150 miles in the vicinity of the Abitibi River, which the G.T. Pacific Ry. sublet to the J. H. Reynolds Construction Co.

Tenders will be received to Mar. 19, for the construction and erection complete, of shops a short distance east of Winnipeg.

GRAND TRUNK PACIFIC RY.

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GRAND TRUNK PACIFIC RY.

The Dominion Parliament is being asked to approve an agreement made Dec. 1, 1908, between the C.P.R. and the G.T. Pacific Ry. for terminals, etc., at Fort William, Ont. The agreement provides for the use by the G.T.P.R. of certain sections of the C.P.R., within Fort William, to connect the lines of the two companies, for 999 years; and for the use by the C.P.R. of certain sections of the G.T.P.R. within Fort William. The agreement fixes the terms which each company is to pay for the use of the sections, which are denominated joint sections, such terms being calculated upon a percentage of the cost. The schedule attached to the agreement sets out in detail the boundaries of the area within which the joint sections are situated.

Another bill before the Dominion Parliament affects the subsidy payable by the Ontario Government in respect of the construction of the Lake Superior branch. The agreement provides that the company shall not grant any secret special rates or rebates; that road material for the municipalities or the Provincial Government shall be carried at actual cost of handling; that no agreement for the lease or transfer of the line to any other company shall be made without the consent of the Provincial Government, and that if the Dominion Government shall at any time take over the line, the company shall pay over the amount of the cash subsidy, and the amount or value of the land grant given by the province. The bill is being held back at the instance of the Minister of Railways.

Press reports from Winnipeg stated recently that the company was making preparations to erect a 12-story office building there. We are officially advised that there is no truth in the report. Accommodation for the company's offices is to be provided in the Fort Garry station now under construction.

A third bill before Parliament is for the purpose of ratifying an agreement signed June 6, 1908, between the G.T.P.R. and the Midland Ry. of Manitoba for the purpose of constructing a union station and other joint facilities in Portage la Prairie, Man. The station and freight shed are being erected by the G.T.P.R., and the use of the facilities will be granted to the Midland Ry. upon terms set out in the act.

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