

CANADIAN
NORTHERN
QUEBEC
RAILWAY

Chateauguay and Northern Railway.

There is being added this season to the railways entering Montreal a short but important piece of line, connecting with the Great Northern Ry. at Joliette and having a magnificent entrance into Montreal from the north through Maisonneuve and Hochelaga, with a fine terminal, now under construction, at the corner of Moreau and St. Catherine sts. The Chateauguay and Northern Ry., leaving Montreal, parallels the existing line of the Montreal Terminal (Electric) Ry. on a 40-ft. right of way secured from that company for a distance of about 12 miles to Bout de L'Isle, where the terminal Ry. ends. Here the line curves to the right, leaving the Terminal line and then crossing it by means of an overhead crossing—a through girder span and concrete abutments over Park avenue—then crossing the Ottawa river, or as it is here called Rivière des Prairies, passes the village of Charlemagne and, turning north-east, runs in a straight line beside the L'Assomption river some seven miles to the town of L'Assomption. Here the line curves to the left and runs in a northwesterly direction for about 2½ miles to where it crosses, nearly at right angles, the C.P.R. main line between Montreal and Quebec and, somewhat less than a quarter mile further on, the L'Assomption river; then, curving to the right, it passes the town of L'Epiphanie, and after crossing the St. Esprit river, runs in a direct line for about 6½ miles to a crossing of the Lac Ouareau river, thence on another tangent of about 4½ miles it connects with the Great Northern Ry. in the town of Joliette.

The country through which the line passes is a level agricultural district, well settled and prosperous, intersected by numerous streams and by a number of deep gullies running to the rivers, and all open, with the exception of some three or four miles between L'Epiphanie and Joliette. The profile shows a gradual rise in the direction of Joliette but with very easy gradients, the heaviest being 0.6 ft. per 100, the sharpest curve on the line being 2°.

From an engineering point of view the feature of the line is the number and cost of the bridges compared with the length of the line, there being over 3,400 ft. of steel bridging and trestling in the 36 miles, exclusive of permanent culverts and overhead road crossings. Taking the bridges in order from Montreal, the first is Bout de L'Isle bridge, a combined railway and highway bridge across the Ottawa river, which is divided into two channels by Isle Bourbon. The bridge crosses the first or west channel by 8 spans of 140 ft. each and one of 200 ft. in the centre, together with

pump them out and deposit the concrete dry, the depth of concrete in the east channel being only 4 ft. against 16 to 21 ft. in the west channel. The superstructure for this bridge, as well as for the other bridges on the line, was supplied and erected by the Dominion Bridge Co. The 140-ft. spans are through trusses, with parallel top and bottom chords and inclined end posts, 5 panels each, the 200-ft. span at the centre of the west channel being higher at the centre of the truss. The railway, single track, is carried in the centre between the trusses, which are spaced 17 ft. 9 in. centre to centre of trusses, while the highway portion of the bridge consists of two roadways 10 ft. clear from truss to railing on each side of the bridge, carried on brackets outside of the trusses and with heavy latticed railings 4 ft. 10 in. in height, making altogether a very handsome and well-proportioned structure.

The next bridge is that over the L'Assomption river at L'Epiphanie, which consists of one 140 ft. deck truss span in the centre and two 50 ft. plate girder deck spans. The piers and abutments of this bridge are of concrete on bedrock, the piers in the river having a height of about 20 ft., the height of the truss bringing the track about 50 ft. above the bed of the river. The dimensions of the piers are 18 ft. in length with a width of 6 ft. at the top, and a batter of 1 in 24 ins. on all sides, and having rounded ends. The abutments are 20 ft. in width by 8 ft. at the bridge seat, and the slope of the embankment runs in front of them towards the piers. About a mile further on is the St. Esprit river bridge, which consists of one 75 ft. and two 30 ft. plate girder deck spans, the piers and abutments being of the same general design as those at L'Assomption and with rounded ends. The Lac Ouareau river bridge consists of one 140 ft. deck span crossing the main channel of the river, and a 50 ft. plate girder span at the easterly end with ten 30 ft. bents of steel trestle on concrete pedestals, ending with an abutment to hold the bank at the western end. The piers and abutments of this bridge are also of concrete and of the same general design as the others.

In addition to the above mentioned structures, there are a number of concrete arch culverts, 1 of 10 ft. span just outside of Montreal, and between Charlemagne and Joliette; 2 of 6 ft., 1 of 8 ft., 2 of 10 ft., 1 of 14 ft. skew arch, and at the Ruisseau Vacher a 25 ft. concrete arch culvert. The concrete is composed of one part cement, two of sand, and six of broken stone. Other small culverts are of open beam cedar.

The fencing is Page wire, with posts 16½ ft. centres, 8 ft. long, stanchion 4½ ft. above the

work, and the track is being rapidly ballasted. The rails used are 70 lbs. per yard, and 33 ft. long, 4 bolt angle plates and ties laid 22 in. centres. Owing to the flatness of the country, material to make the heavy fills at the gullies before mentioned and at the approaches to the bridges was difficult to obtain, and in some places large areas of extra land had to be acquired from which to make the fills, notably across Isle Bourbon in the Ottawa river, where the dump is required not only for the railway but for a 14 ft. roadway on each side. These roadways, however, are carried down from the west channel on a 5% grade to the centre of the island and up again on the same grade to the east channel, and also at the east and west approaches on the main land. At the Bout de L'Isle, or west end of the bridge, a 3-posts temporary trestle has been erected over 1,000 ft. long, and another at the Charlemagne end, 1,460 ft. long, is under construction. These trestles will be filled in from the ballast pit by train. Fencing and telegraph line are well under way, and were expected to be completed by the end of Nov.

Stations are located at the following points with distances between as stated:—Charlemagne, 13.5 miles from Montreal; L'Assomption, 20.6 miles; L'Epiphanie, 23.7 miles; St. Marie Salomé, 29.3 miles; Joliette, 36.2 miles. At each station a passing siding is constructed 2,200 ft. long, the station and freight house being on the main track, with a 12 ft. platform about 200 ft. long, and a spur freight track running in behind the freight house. The design adopted for the passenger stations which are now under contract, shows a building 1½ stories high, having a curved roof extending 7½ ft. over the platform all around, and with flat-topped dormer windows, the whole appearance being attractive and picturesque. There are two sizes: the smaller, 24 ft. by 40 ft., and having on the ground floor general waiting room, agent's office, baggage and express room, with 4 living rooms upstairs; and the larger, 24 by 50 ft., having in addition a ladies' waiting room on the ground floor. With the exception of the one at Charlemagne, which is to be of brick, the buildings are of wood with shingle roof, and walls covered with American clapboards 3 in. to the weather. A water tank of 60,000 gallons capacity will be located at L'Epiphanie, and another at Montreal. The Montreal terminus is at the corner of St. Catherine and Moreau Sts., where a handsome station will be built, together with the requisite terminal facilities.

The engineering staff is as follows: F. A. Hibbard, late of the Michigan Central, Chief Engineer (to whom we are indebted for these particulars); C. E. Macnaughton, R. M. Charl-

is here called L'Assomption, which consists of two 140 ft. deck truss spans in the centre and two 50 ft. plate girder deck spans. The piers and abutments of this bridge are of concrete on bedrock, the piers in the river having a height of about 20 ft., the height of the truss being about 50 ft. above the bed of the river. The dimensions of the piers are 18 ft. in length with a width of 6 ft. at the top, and a batter of 1 in 24 ins. on all sides, and having rounded ends. The abutments are 20 ft. in width by 8 ft. at the bridge seat, and the slope of the embankment runs in front of them towards the piers. About a mile further on is the St. Esprit river bridge, which consists of spans, the piers and abutments being of the same general design as those at L'Assomption and with rounded ends. The Lac Ouareau river bridge consists of one 140 ft. deck span crossing the main channel of the river, and a 50 ft. plate girder span at the easterly end with ten 30 ft. bents of steel trestle on concrete pedestals, ending with an abutment to hold the bank at the western end. The piers and abutments of this bridge are also of concrete and of the same general design as the others.

In addition to the above mentioned structures, there are a number of concrete arch culverts, 1 of 10 ft. span just outside of Montreal, and between Charlemagne and Joliette; 2 of 6 ft., 1 of 8 ft., 2 of 10 ft., 1 of 14 ft. skew arch, and at the Ruisseau Vacher a 25 ft. concrete arch culvert. The concrete is composed of one part cement, two of sand, and six of broken stone. Other small culverts are of open beam cedar.

The fencing is Page wire, with posts 16 1/2 ft. centres, 8 ft. long, standing 4 1/2 ft. above the ground. The piling for the Bout de L'Isle bridge was done on the ice during last winter, and work on the concrete and masonry was commenced in April last. On Nov. 16 we were advised that the substructure for both channels was completed. A temporary trestle was erected across the east channel to facilitate construction, and trains have been run over it. The other bridges are completed, also all the concrete culverts with the exception of Ruisseau St. Pierre, which was expected to be completed by Oct. 31. The superstructure of the Bout de L'Isle bridge was begun in July, and is now completed across the west channel with the exception of flooring and railings. On Nov. 16 three spans of the superstructure over the east channel had been erected.

The grading, which has all been done this year, is practically completed, and trucklaying is now being vigorously pushed at three points, L'Epiphanie, Joliette and from Montreal. Out of 36 miles, all but 2 1/2 miles had been laid up to Nov. 25. The company has secured a convenient ballast pit near L'Assomption, where a steam shovel is at

river at L'Epiphanie, which consists of two 140 ft. deck truss spans in the centre and two 50 ft. plate girder deck spans. The piers and abutments of this bridge are of concrete on bedrock, the piers in the river having a height of about 20 ft., the height of the truss being about 50 ft. above the bed of the river. The dimensions of the piers are 18 ft. in length with a width of 6 ft. at the top, and a batter of 1 in 24 ins. on all sides, and having rounded ends. The abutments are 20 ft. in width by 8 ft. at the bridge seat, and the slope of the embankment runs in front of them towards the piers. About a mile further on is the St. Esprit river bridge, which consists of spans, the piers and abutments being of the same general design as those at L'Assomption and with rounded ends. The Lac Ouareau river bridge consists of one 140 ft. deck span crossing the main channel of the river, and a 50 ft. plate girder span at the easterly end with ten 30 ft. bents of steel trestle on concrete pedestals, ending with an abutment to hold the bank at the western end. The piers and abutments of this bridge are also of concrete and of the same general design as the others.

In addition to the above mentioned structures, there are a number of concrete arch culverts, 1 of 10 ft. span just outside of Montreal, and between Charlemagne and Joliette; 2 of 6 ft., 1 of 8 ft., 2 of 10 ft., 1 of 14 ft. skew arch, and at the Ruisseau Vacher a 25 ft. concrete arch culvert. The concrete is composed of one part cement, two of sand, and six of broken stone. Other small culverts are of open beam cedar.

The fencing is Page wire, with posts 16 1/2 ft. centres, 8 ft. long, standing 4 1/2 ft. above the ground. The piling for the Bout de L'Isle bridge was done on the ice during last winter, and work on the concrete and masonry was commenced in April last. On Nov. 16 we were advised that the substructure for both channels was completed. A temporary trestle was erected across the east channel to facilitate construction, and trains have been run over it. The other bridges are completed, also all the concrete culverts with the exception of Ruisseau St. Pierre, which was expected to be completed by Oct. 31. The superstructure of the Bout de L'Isle bridge was begun in July, and is now completed across the west channel with the exception of flooring and railings. On Nov. 16 three spans of the superstructure over the east channel had been erected.

The grading, which has all been done this year, is practically completed, and trucklaying is now being vigorously pushed at three points, L'Epiphanie, Joliette and from Montreal. Out of 36 miles, all but 2 1/2 miles had been laid up to Nov. 25. The company has secured a convenient ballast pit near L'Assomption, where a steam shovel is at

ing and telegraph line are well under way, and were expected to be completed by the end of Nov.

Stations are located at the following points with distances between as stated:—Charlemagne, 13.5 miles from Montreal; L'Assomption, 20.6 miles; L'Epiphanie, 23.7 miles; St. Marie Salonic, 29.3 miles; Joliette, 36.2 miles. At each station a passing siding and freight house being on the main track, with a 12 ft. platform about 200 ft. long, and a spur freight track running in behind the freight house. The design adopted for the passenger stations which are now under contract, shews a building 1 1/2 stories high, having a curved roof extending 7 1/2 ft. over the platform all around, and with flat-topped dormer windows, the whole appearance being attractive and picturesque. There are two sizes: the smaller, 24 ft. by 40 ft., and having on the ground floor general waiting room, agent's office, baggage and express room, with 4 living rooms upstairs; and the larger, 24 by 50 ft., having in addition a ladies waiting room on the ground floor. With the exception of the one at Charlemagne, which is to be of brick, the buildings are of wood with shingle roof, and walls covered with American clapboards 3 in. to the weather. A water tank of 60,000 gallons capacity will be located at L'Epiphanie, and another at Montreal. The Montreal terminus is at the corner of St. Catherine and Moreau Sts., where a handsome station will be built, together with the requisite terminal facilities.

The engineering staff is as follows: F. A. Hibbard, late of the Michigan Central, Chief Engineer (to whom we are indebted for these particulars); C. E. Macnaughton, R. M. Charlton and J. O. Montreuil, Assistant Engineers in charge of three sections of the work; A. W. H. Stimpson, C.E. in charge of the draughting department at the office at Bout de L'Isle, with A. Langlois as assistant. D. J. Mullarkey is Chief Inspector.

The contractors for the greater part of the work, viz., substructure of bridges, grading, fencing, telegraph line and concrete culverts, Charlemagne to Joliette, are the F. C. Dunn & Co. J. B. Lafamme is their superintendent of works. In addition Isaac Kert has the contract for the fill on Isle Bourdon, and Schell, Bonneville and Parcell for the grading between Bout de L'Isle and LaSalle St. Maisonneuve. The balance of the work, wooden culverts, tracklaying and ballasting, is being done by the company under the superintendence of J. Rowley.

The company has every reason to be pleased with the excellent showing made in completing 36 miles of railway, with so many important and costly structures, in one season, and it is largely owing to the efforts of H. H. Melville, the Vice-President of the Company, that the work has been pushed in such a

December 1903

...upa,
...uth to
...lake,
...e the
...and
...use of
...of the
...some
...end of
...1903,
...ly.—A
...ontract

Great Northern Ry. of Canada.—It is intended to start work first thing in the spring on a branch from near L'Epiphanie, on the Chateauguay and Northern Ry., to near St. Jacques l'Achigan, about 10 miles. A Dominion subsidy was voted last session for a line between these points not exceeding 16 miles. It is also expected to start work early in the spring on the construction of a line from St. Jerome, on the G.N.Ry., to connect with the Montford and Gatineau Ry., recent-

January 1904

ly acquired by the G.N.Ry., at Morin Flats, about 16 miles. The Dominion subsidy, voted last session, for a line between these two points, is for a line not exceeding 22 miles. The next line which will be gone on with will be a line from Garneau Jct. to Quebec, for

which the Dominion Parliament has voted a subsidy covering 70 miles. This line will give the G.N.Ry. an entrance into Quebec independent of the Quebec and Lake St. John Ry. (Dec., 1903, pg. 423, and Montford and Gatineau Colonization Ry., Dec., 1903, pg. 425.)

OCEAN STEAMSHIP AGENCIES

American Line.

Quebec and Lake St. John Ry.—Surveys are being made under the direction of A. E. Doncet, Chief Engineer for the construction of a branch to La Tuque, Que. The proposed line branches from the main line, about 85 miles from Quebec, near Beaudet, and will run north-west 35 miles to La Tuque. The final reports of the surveys were expected to be received during Dec., 1903, but preliminary reports state that the work of construction will not be heavy and that gradients and curvature will be moderate. The maximum gradient opposed to traffic will be 0.6 compensated, and 1% compensated against; the curvature, with one or two exceptions, will be 4°. The branch will tap the La Tuque water power, estimated at 100,000 h.p., and the timber limits of the Upper St. Maurice river and its various branches. At the recent session of the Dominion Parliament a subsidy of \$3,200 a mile was voted towards the construction of this branch; subsidies of a similar amount per mile were also voted for the following branch lines for the Q. and L. St. J. Ry.: from Jonquieres, the present terminal of the Chicoutimi branch, to La Baie des Ha-Ha, not exceeding 20 miles, in lieu of a subsidy for 12 miles voted in 1899; for a line from Roberval, the present terminal of the main line, to the government wharf on Lake St. John, one mile; from La Bouchette to St. Audre, not exceeding 13 miles. (Sept., 1903, pg. 307.)

JANUARY 1904

Great Northern Ry. of Canada. The scheme of arrangement with the creditors of the line has been approved by the Court of Exchequer and will go into effect on the completion of the formalities. This having been completed it is expected that a commencement will be made on the construction work planned within the last two or three years. The projected extensions include the construction of a line from Shawinigan Jet. to Quebec, 50 miles, which will give the company an entrance into Quebec, independent of the Quebec and Lake St. John Ry.; a line from St. Jerome to Morin's Flats, to connect the old Montford and Gatineau line with the company's main line; and a line from Bout de l'Île to St. Jerome, which would permit of trains being run from Montreal to the terminal point of the old Montford and Gatineau Ry. It is also expected that track will be laid on the seven miles graded in 1904, between St. Epiphane and St. Jacques l'Achigan, at an early date. In Montreal the company has a site of 75 acres for terminal purposes, with a water front of 286 ft., and some negotiations have taken place with the Montreal Harbor Commissioners with the object of having a wharf erected there. (Mar., pg 93.)

MAY 1905

quired for this purpose. (Jan., pg. 77)

Quebec and Lake Huron Ry.—Application will be made next session of the Dominion Parliament for an act authorizing an extension of time for the commencement and completion of the authorized line of railway from Quebec to the mouth of French River, Ont. J. G. Langelier, Quebec, is Secretary. (May, 1903, pg. 151).

Quebec and Lake St. John Ry.—During 1902 a spur line 13 miles long was constructed from St. Andre Jct. to the Metabouchouan Pulp Co.'s mills at Metabouchouan, Que., and on Feb. 5 a deputation representing the Pulp Co. waited on the Dominion Govern-

MARCH 1904

ment to ask for the payment of the subsidy voted therefor. The officers of the Department of Railways state that the subsidy has not been earned, and further, that the line is costing more for construction than it should.

J. G. Scott, General Manager, recently stated that during the past eight years over \$1,000,000 had been expended in betterments on the line. It was possible to haul trains of 620 tons on the line now, whereas the maximum trainload was formerly 300 tons. The district had now over 50,000 settlers, and from 4,000 to 5,000 additional settlers were coming in annually. (Jan., pg. 7).

MARCH 1904

CHICAGO, ILL. (Dec., 1903, pg. 423.)

Great Northern Ry. of Canada.—In a recent interview D. B. Hanna, President, is reported as saying that it was intended to gain an independent entrance into Quebec by the construction of a line from near Shawinigan. It was formerly intended to construct a cut-off from Garneau to St. Catherines, Que., but this was abandoned, a more favorable line having been located from Shawinigan. It was also contemplated to construct a new line from Morin Flats, the present southern terminal of the Montford and Gatineau Ry., to St. Jerome, and thence in a straight line to Charlemagne, from which point the entrance into Montreal would be over the Bout de L'Île bridge of the Chateauguay and Northern Ry. This would enable the Company to operate its trains between Montreal and Quebec without going round by Joliette as at present. When the time comes, added Mr. Hanna, to extend the line further west than Hawkesbury it will be constructed up through the Ottawa district to Ottawa. We were advised, April 12, that H. J. Wicksteed, who had made a survey of the proposed line from Shawinigan to Quebec, had not completed his report and plans, and consequently it was not possible to give any definite information as to route, etc. The company is considering the adoption of electricity as a motive power for its Shawinigan branch. (Mar., pg. 75.)

JUNE 1904

Great Northern Ry. of Canada. In a recent interview D. B. Hanna, President, is reported as saying that it was intended to gain an independent entrance into Quebec by the construction of a line from near Shawinigan. It was formerly intended to construct a cut-off from Garneau to St. Catherine's, Que., but

JUNE 1904

Quebec and Lake St. John Ry.—At the last session of the Quebec Legislature two acts conferring various powers on the Q. and L. St. J. Ry. Co. were passed, including the authorization of the construction of certain branch lines and extension of time for the construction of the same. A subsidy of 4,000 acres of land a mile was granted in aid of a line from Roberval to the Dominion Government wharf on Lake St. John, one mile in length; and for a branch line 38 miles long from a point on the main line near the Jeannotte River to La Tuque, on the St. Maurice River. J. G. Scott, General Manager, has gone to England to arrange for the financing of the construction of this branch line, with a view to starting work thereon at an early date. (Jan., pg. 7.)

Quebec

July 1904

Quebec and Lake St. John Ry.—The report for the year ended Dec. 31, 1903, presented at the recent annual meeting showed that 247,905 passengers, and 318,730 tons of freight had been carried. The proceeds of the £200,000 of prior lien bonds authorized for the improvement of the company's property had been expended for the purposes specified in the statute, and it had been found necessary to supplement this out of the unexpended profits prior to the reorganization. The total expenditure to Dec. 31 had been \$991,538.42. The operating accounts profit and loss statements show that the interest on the new first mortgage and prior lien bonds had been paid, the net earnings for the year having been more than sufficient for that purpose. Following are the officers and directors for the current year: President, G. Le Moine, Quebec; 1st Vice-President, W. Hanson, Montreal; 2nd Vice-President, J. T. Ross, Quebec; other directors: T. A. Piddington, E. Beaudet, Hon. P. Garneau, Hon. J. Tessier, H. J. Beemer, C. A. Hanson, E. Hanson, F. W. Ross. The ex-officio members of the Board are: Hon. S. N. Parent, Quebec; Hon. J. A. Gagne, Chicoutimi; and G. Tanguay, M. L. A.

The holders of the prior lien bonds, of the first mortgage bonds and of the income bonds of the company met in London, Eng., June 27, for the purpose of considering the acts passed by the Quebec Legislature at its last session amending the company's charter so as to permit of a further issue of prior lien 4% bonds to an amount not exceeding £300,000, to be used, when required, for capital purposes only. J. G. Scott, General Manager, explained that the present bonded debt of the company was £200,000 of 4% prior lien bonds, £442,400 of 4% to 5% mortgage bonds, and £640,400 of 6% income bonds, secured by mortgage upon 240 miles of railway, on the valuable terminal property and docks at Quebec, and on the rolling stock. The interest on the prior lien and mortgage bonds had been regularly paid, and the directors hoped that before long they might be able to pay something on the income bonds. The receipts of the road were grow-

August 1904

face value of about \$350,000.

Great Northern Ry. of Canada.—The Quebec Legislature at its last session voted \$6,000 for debentures subscribed by the municipality of Ste. Sophie and the village of New Glasgow, Que., to aid the construction of the G.N. Ry. between St. Jerome and New Glasgow.

The Central Trust Co., New York, announced July 1 that it had not received any funds for the payment of the July coupons on the 5% 1st mortgage bonds. Under the terms of the mortgage the company has six months in which to make good the default before proceedings for foreclosure can be taken. There has been issued \$3,000,000 of common stock, and there is authority to issue \$450,000 of preference stock and \$3,000,000 of debentures. The funded indebtedness of the company consists of \$4,002,000 of 5% 1st mortgage bonds due Jan., 1950; \$274,000 of 6% Car Trust bonds due 1902-05, and \$118,000 of 5% Quebec Terminal mortgage bonds. Negotiations are in progress for the amalga-

August
1904

THE RAILWAY AND SHIPPING WORLD

mation of the G.N. Ry., and the Chateauguay and Northern Ry., recently completed between Montreal and Joliette, Que., which is operated under lease by the G.N. Ry. The plan of the amalgamation provides for paying off the floating indebtedness of the G.N. Ry., the construction of a direct entrance of the G.N. Ry. into Quebec; and the construction of a 10-mile section connecting the main line from Hawkesbury, Ont., with the Montford and Gatineau Colonization Ry.; provides for the paying off of all outstanding equipment bonds; all liens on terminals, and leaves about \$600,000 in the treasury. The security will be an absolute first mortgage of the railway, equipment and franchises without any prior liens.

August 1904

Quebec and Lake St. John, N.Y. — The extension of the line from Roberval station to the Government wharf on Lake St. John, Que., about one mile, was expected to be completed early in Sept. The route is level, with the exception of about 1,700 ft. of 1% grade compensated. The location surveys for the La Tuque branch are expected to be completed early in Oct. The length of the projected line is 38 miles, and the surveys made showed that the grade would be 1% compensated, and that the maximum curvature would be 6 degrees. It is expected that tenders for construction will be awarded at an early date, and it is desired to have the line completed and in operation by Sept.,

Sept

1904

September 1904

Q 135

Canadian Northern Ry. Construction.

The C.N. Ry. Co. has given notice that it will apply next session of the Dominion Parliament for an act extending the time fixed for the construction of the uncompleted portions of its railway, and authorizing it to lease or acquire running powers over the Great Northern Ry. of Canada, the Chateauguay and Northern Ry., the Irondale, Bancroft and Ottawa Ry., the Quebec, New Brunswick and Nova Scotia Ry., and the James Bay Ry., or any of them, or to purchase such lines or any of them, or to amalgamate with such lines or any of them.

The Great Northern Ry. of Canada will apply next session of the Dominion Parliament for an act authorizing it to lease or otherwise acquire the lines of the Chateauguay and Northern Ry., the Quebec, New Brunswick and Nova Scotia Ry., or either of them; and also empowering it to lease its lines to the Canadian Northern Ry., or to the James Bay Ry., or to give either of these companies running powers over its lines; also for the purpose of confirming an issue of consolidated bonds of the company, and authorizing the construction of a line from near Grand Mere, Que., to its terminals in Quebec city, and a branch to the Quebec Bridge.

The James Bay Ry. Co. has given notice that it will apply next session of the Dominion Parliament for an act authorizing it to change its name, and empowering it to acquire the lines of the Quebec, New Brunswick and Nova Scotia Ry.; also to extend and define the powers of the company with respect to the issue of bonds, debentures, and other securities; also empowering the company to lease its lines or leased lines, and to give the company running powers thereover; also to construct the following additional lines: from the line now under construction, south of Lake Muskoka, easterly to Montreal, passing through or near Ottawa, with branches to Ottawa and Hawkesbury, Ont.; from or near French River easterly to Montreal, passing through or near Ottawa, with branches to Ottawa and Hawkesbury, Ont.; from the company's line at or near Sudbury, thence westerly and south of Lake Nepigon to the C.N.R., west of Port Arthur, passing through or near Port Arthur, with a branch to Port Arthur.

Ry. Co., on its own account, with the aid of a guarantee of bonds by the Dominion. There is not a section or clause of this latter act giving the Government or any Commissioners power to construct any railway whatever; and the only power which the Government or its Commissioners have to construct any railway is by virtue of its agreement with the G.T.P. Ry. Co., under which a contract is made to construct the Eastern Division of the line which the G.T.P. Ry. Co. was incorporated to build. It will, therefore, be seen that there is a projected Grand Trunk Pacific Ry., to extend from Moncton to the Pacific coast, the eastern section of which, by agreement, is to be constructed by and at the cost of the Dominion of Canada, and the western section by the company. The ordinary custom of naming a railway after the corporation building it will not very well apply here, although during the construction period it may be convenient to use the name Grand Trunk Pacific Ry. for the Western Division, and the National Transcontinental Ry. for the Eastern Division.

The whole is to be operated as a single line by the G.T.P. Ry. Co., which the Globe describes as "a corporation which has entered into a contract with the Dominion Government to build the Western Division of the National Transcontinental Ry., and to operate both the Western and the Eastern Divisions as a single line." Again, to follow the usual practice of naming railways, a line, including leased lines and lines otherwise acquired, takes the name of the operating company. In this case the name would be the Grand Trunk Pacific Ry., and not the National Transcontinental Ry. Under any circumstances the latter name would be unsuitable, because the line to be constructed will neither be national or transcontinental, "from ocean to ocean," as mentioned in the act. It will not be national either in construction or operation, and it cannot be transcontinental, "from ocean to ocean," as the point of commencement, Moncton, is some miles from the shore of Northumberland Strait, in one direction, and is some miles up the Petitcodine River, which runs into Shepody Bay, which is an inlet off Chibucto Bay, which is at the head of the Bay of Fundy, an inlet off the Atlantic ocean.

David Locomotive Construction

JANUARY 1905

MAR., 1905.]

THE 1

Quebec and Lake St. John Ry.—The La Tuque branch, which will be 40 miles long, starts from La Tuque Jct., and track has been laid on it for the first mile. Work is being proceeded with during the winter. Jos. Paquet, La Tuque Jct., Que., is the contractor. Three miles of track were laid during 1904 on a projected extension from Valcartier to Gosford, 15 miles. It has not been decided when any further construction will be gone on with on this extension. (Jan., pg. 13.)

Quebec Bridge and Ry. Co.—We were

be
ion
co
wa
to
It
by
wi
by
G
th

cc

Great Northern Ry. of Canada. We were recently advised that the grading on the branch from L'Epiphanie to St. Jacques, Que., 7 miles, had been completed and that track will be laid in the spring. The contractors for the grading were Rogers & Quirk, Montreal. (Sept., 1904, pg. 313.)

MARCH 1905

Great Northern Ry. of Canada. The scheme of arrangement with the creditors of the line has been approved by the Court of Exchequer and will go into effect on the completion of the formalities. This having been completed it is expected that a commencement will be made on the construction work planned within the last two or three years. The projected extensions include the construction of a line from Shawinigan Jet. to Quebec, 80 miles, which will give the company an entrance into Quebec, independent of the Quebec and Lake St. John Ry.; a line from St. Jerome to Morin's Flats, to connect the old Montford and Gatineau line with the company's main line; and a line from Bout de l'Île to St. Jerome, which would permit of trains being run from Montreal to the terminal point of the old Montford and Gatineau Ry. It is also expected that track will be laid on the seven miles graded in 1904, between St. Epiphane and St. Jacques l'Achigan, at an early date. In Montreal the company has a site of 75 acres for terminal purposes, with a water front of 286 ft., and some negotiations have taken place with the Montreal Harbor Commissioners with the object of having a wharf erected there. (Mar., pg. 93.)

MAY 1905

Quebec and Lake St. John Ry.—Ten miles of track had been laid on the branch line under construction to La Tuque, on Oct. 31. The grading for an additional eight miles had been completed, and considerable work had been done beyond that point. The first ten miles was expected to be ready for Government inspection Dec. 6; and it is expected to have the branch completed to La Tuque, 40 miles, by Sept., 1906.

Six miles of track have been laid on the Gosford branch from Valcartier, and the ballasting had also been done. Some further grading has been done on the branch. (July, pg. 287).

December 1905

passed. (May, pg. 185.)

Quebec and Lake St. John Ry.—The annual report of the company gives details of a number of improvements commenced on the line during 1904, and which are to be completed during the current year. Among the works are the following:—The construction of a steel trestle bridge on masonry substructure over Rondeau River, at mileage 40; constructing a heavy timber bridge over the Rat River, at Chicoutimi; ballasting and widening the main line; the construction of engine sheds at Lake Edward and Chicoutimi; the erection of a coal chute at Chambord Jct.; the erection and improvement of stations and freight sheds at Roberval, Lake Bouchette, St. Jerome, St. Gedeon, Hebertville, and Chicoutimi; and the purchasing of land for additional shunting yard at the Quebec terminals. Steel rails, 70 lbs., were bought and 40 miles of the main track relaid. The lighter rails taken up will be utilized for the La Tuque branch, now under construction, and on the branch towards Gosford, the grading for which was completed in 1904. The track-laying on this latter branch was expected to be started by the end of May. It was also expected that work on the branch from Roberval to the Government wharf there, one mile in length, will be started early in June. (May, pg. 185.)

Temiskaming and Northern Ontario Ry.—

July
1905

July 1905

Quebec and Lake St. John Ry.—We were advised June 12, that grading on the La Tuque branch had been completed for six miles and was under way for eight miles more, making 14 miles from La Tuque Junction. The bridges and culverts on the first 10 miles had been completed. Track has been laid for four miles and it was expected to have the first ten miles laid and ballasted by the end of July. The engineers have not yet given up hope of having the track laid to a very short distance from La Tuque falls this season. Work was delayed considerably in the spring, and even early in June the steam shovels had to be stopped in one or two of the cuts on account of frost. The company has issued a booklet descriptive of the country which will be opened up for development by this 40 mile branch. The line passes through large areas of forest land, and touches numerous water powers, the largest of which is La Tuque falls, estimated to furnish 90,000 h.p. As soon as the line is completed it is intended to place a steamer on the St. Maurice River. The route of the

July 1905

1905.]

THE

Division of the G.T. Pacific Ry., it
stood, has been surveyed through
Laurice Valley, and this branch will
apply to be taken in and so aid in
of construction.

Three miles of the Gosford branch
is completed except for the ballast-
hoped to locate a further 12 miles
branch during the current season.

243.)

Application is be

July 1905

Great Northern Ry. of Canada.—The Quebec Board of Trade has been endeavoring to ascertain when the company proposes rebuilding its shops in that city. The shops were located in the city as a principal consideration for a bonus of \$200,000; and they were burned down about two years ago. An official stated that the shops would be rebuilt, but it was impossible to give the exact date when the work would be taken in hand. (June, pg. 243.)

July 1905

the field making a reconnaissance of the same. The survey is in charge of H. M. Killaly.

Great Northern Ry. of Canada.—The proposed connection of the line with the Quebec Bridge, Quebec papers state, calls for the construction of a line $7\frac{1}{2}$ miles in length. The route will be from the bridge through St. Foy parish to a point about three miles from the city, where connection will be made with the company's independent line from Shawenegan Junction, surveys for which have been made. It is also stated that a contract for the construction of this $7\frac{1}{2}$ miles of line has been let to T. Schel, and that work will be started as soon as the line is approved.

We were advised July 6 that nothing had been settled in regard to the construction work to be undertaken upon this line in the immediate future. A number of important matters have been under consideration, but what will be done this season has not been decided. (July, pg. 286).

Windsor and Goderich Ry.—We are advised that it is expected to have the grading on this

August 1905

Great Northern Ry. of Canada.—The company's terminal tracks in Quebec have been overhauled and put in shape for the resumption of traffic to the elevator, in connection with the Quebec Transportation Co.'s steamers from Quebec to Great Britain. (Aug., pg. 351.)

September 1905

incorporating
uct a line
iver, B.C.,
B.C., with
construct
solicitors,
oters.

has had surveys made

Great Northern Ry. of Canada. The line
under construction from the Quebec bridge,
to a junction with the proposed line from
near Shawenegan Falls to Quebec, will be

(Continued on page 565.)

November 1905

year.
Mon-
ne to
given
, and
ecure

eting
e was
when
ident,
Allen;

The
zed to
South
curing
e sur-

Quebec and Lake St. John Ry.—Ten miles of track had been laid on the branch line under construction to La Tuque, on Oct. 31. The grading for an additional eight miles had been completed, and considerable work had been done beyond that point. The first ten miles was expected to be ready for Government inspection Dec. 6; and it is expected to have the branch completed to La Tuque, 40 miles, by Sept., 1906.

Six miles of track have been laid on the Gosford branch from Valcartier, and the ballasting had also been done. Some further grading has been done on the branch. (July, pg. 287).

St. Maurice Valley Ry.—A contract has been let by the St. Maurice Construction Co. to

December 1905

RAILWAY DEVELOPMENT. ^{ENQ}*(Continued from page 561.)*

about $7\frac{1}{2}$ miles in length. It will run north for about half a mile from the bridge, and then through Cote St. Francois, parallel to the highway from Quebec to Cap Rouge. At about $2\frac{1}{2}$ miles from the bridge the line turns north-east, crossing St. Foye road and going through St. Felix du Cap Rouge, and Cote St. Michel to the proposed junction. Practically the first five miles is solid rock and earth stripping, the last couple of miles being light work. The principal bridges are: mileage three, a 30 ft. span over the highway; at mileage four, and near mileage five, bridge over the Ruisseau La Soie River. The steepest gradient is $\frac{1}{2}$ of 1% and the maximum curvature 6°. Schell, Kennedy and Lowthian have the contract for this line.

The branch line between St. Epiphanie and St. Jacques l'Achigan, upon which track was laid in 1904, has been completed, and was opened for traffic Oct. 25.

The Great Northern Ry. at present secures its entrance into Quebec over the line of the Quebec and Lake St. John Ry., but has completed surveys for a direct line from Burrill's siding, mileage 85.7 from Montreal, into Quebec, so as to secure an independent entrance. The first proposal was to construct a cut-off from Garneau Jct., 97.7 miles from Montreal, to St. Catherine's, on the Q. and L. St. J. Ry., mileage 173.3 from Montreal; and a later project was to construct the line from Shawenegan Falls, 95 miles from Montreal, to Quebec. The new line from Burrill's siding to Quebec will be about 100 miles in length. The heaviest gradient going east will be one-half of 1%, and going west 0.4%; and the curvature will vary from 30 minutes to 1°. Tenders have been asked for the construction of this line. (Oct., pg. 459.)

and Quebec Ry.—The stations to

number
Point
also
railwa
N.B.;
form,
the er
as we
1.18
Fort
River
built
the n
to th
to g
(Oct
Ja
Com
gave
entr
mat
C.P.
in
Par
ed.
rail
we
int
apl
alr
Do
sha
Li
rig
po
de
70
be
wi
m
he
w
cr
C
p
n

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 40 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 Pommies (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. Schrieber, 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%, eastward, and 5-10ths of 1% westward. 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 Moricetown 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 Omineca 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).

Canadian Northern Railway Construction

Canadian Northern Quebec Ry.—At its last session of the Dominion Parliament the Great Northern Ry. of Canada, one of the lines amalgamated under the above title, was granted an extension of time for the construction of its line between St. Jerome, St. Sauveur or Lachute, and a point on the Ottawa, Northern and Western Ry., in Wright county, for a further period of five years.

A contract has been entered into between the Dominion Government and the Chateaugay and Northern Ry., another of the lines amalgamated under this title, for the construction of a railway from Hochelaga Ward, Montreal, to the Great Northern R. of Canada, near Joliette, Que., passing or near L'Assomption, together with a sp. line into that town. The total distance covered by the contract is 42 miles. The line from Montreal to Joliette, 36.0 miles has been constructed and in operation since early in 1904.

Canadian Northern Ontario Ry.—The Board of Railway Commissioners has approved plans for the construction of bridges on the Key River and Little Key River, and location plans for some miles of the R. from Sudbury northerly.

Canadian Northern Ry.—The location of the locomotive and car shops of the company is at the corner of Main and Assiniboine streets, Winnipeg, Man., and the accommodation provided there is inadequate to the growing requirements of the line. It is reported that land has been purchased at Fort Rouge with a view to erecting new locomotive and car shops at an early date.

Notice has been given that the Northern Extension Ry. has deposited plans at Ottawa for the construction of a bridge across the Assiniboine River at Winnipeg. The N.E. Ry. is a Canadian Northern Ry. char-

quarters at the Imperial Bank Building, Montreal. He was born at Westerley, R.I., Nov. 10, 1872, is a machinist by trade, has the degree of mechanical engineer from Lehigh University, and has been in the locomotive business since 1896. S. T. Callaway, heretofore Manager at Montreal, will be transferred to the American Locomotive Co.'s New York office.

Robert W. Hunt & Co., Bureau of Inspection, etc., Chicago and Montreal, announce that they have engaged the services of E. H. Lynde, who for years was connected with the Lackawanna Steel Co., in charge of its Bessemer Steel Rail Department at Scranton, Pa. He will assume direct charge of the departments of R. W. Hunt & Co.'s business which were under the immediate direction of their lately deceased partner, W. Fiero. Under the terms of the partnership, Mr. Fiero's widow and children will continue to enjoy his interests in the business for three years following his death.

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 coverts; 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, Limoilou 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 Port 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 Port 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.

The Canadian Northern Ry. was fined \$200 at North Battleford, Sask., Oct. 13, for setting fire to the prairie by sparks from a locomotive.

Canadian Northern Railway Construction.

Canadian Northern Quebec Ry.—D. D. Mann, Vice-President Canadian Northern Ry., in an interview at Ottawa, Oct. 17, stated that the line would be opened from Montreal to Quebec in 1907. The construction work between Garneau Junction and Quebec is being rapidly pushed, and the contractors state that the work already done is well up to anticipations. An injunction has been obtained restraining the St. Maurice Valley Ry. Co. from carrying its tracks across the company's lines in the vicinity of Shawinigan Falls, Que., and the question is still before the courts.

Canadian Northern Ontario Ry.—Grading is reported completed from Hawkesbury westerly to Rockland, Ont., and it is expected that trains will be running over it by May next. When this line is completed into Ottawa, the Canadian Northern Ry. will have a line in operation from Ottawa to Quebec. The eastern connections are being surveyed, one line to Toronto and another to the mouth of the French River. It is expected that contracts for some construction on one or both of these lines will be let early in 1907.

The James Bay Ry., which is one of the constituent lines of the C.N.O. Ry., has been completed to Parry Sound, and a train service with Toronto will be put in operation shortly. The trains will come into the Union Station over the G.T.R. tracks.

The buildings erected at Parry Sound, Ont., consist of an 8-stall round house with a 70 ft. turntable, and a machine shop 41 by 120 ft. Both buildings are of concrete with gravel roof. The machine shop contains forges, hammers, slotters, bolt-cutting machines, drills, planers, lathes, shapers, hand saws, rip saws, 150 ton wheel press, 84 in. wheel lathe, and 42 in. wheel borer. This shop is intended for repairs to locomotives only and was built to cover the requirements of the line pending the erection of larger shops. Whether these will be located at Parry Sound or elsewhere will be decided upon in the near future. About 80% of the grading between Parry Sound and Sudbury has been completed and it is expected to get track laid on it in 1907.

Canadian Northern Ry.—A considerable amount of betterment work has been done on the line between Port Arthur and Winnipeg during the past summer. About 500,000 new ties have been put on the roadbed, and in many places the rails have been replaced by those of heavier weight, in order to meet the requirements of the increasing traffic. At Port Arthur it is proposed to practically double the freight shed accommodation; some of the additional sheds, it is expected, will be completed this year.

According to press reports a contract had been let to A. D. McRae, for a 50-mile extension of the Oak Point branch, towards a point north of Gladstone, Man. We have been advised that this is incorrect, but that the line is to be extended northerly about 15 or 20 miles towards Lander. The work will probably be done in 1907.

It is reported that over 30 miles have been graded in a continuous line from Etomami, Sask., and that much of the grading from mileage 30 to mileage 68 has been done. Tracklaying has been started, and it is hoped to have well on to 50 miles of steel laid before the end of the year. Survey parties are in the field ahead of the graders, and it is reported to be the intention of the company to put in all 16 parties on survey on the route towards Hudson Bay.

A line is being surveyed from Prince Albert to Battleford, Sask., J. Chambers being in charge of the party. Local reports state that construction will be started in the spring with the object of reaching Shellbrook by the end of 1907.

Construction trains are in operation on the branch line northerly towards Athabasca Landing, as far as St. Albert, about seven

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 6,305,682 cubic yards, and the solid rock at 1,169,350 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.)

Canadian Northern Railway Construction.

Canadian Northern Quebec Ry.—Good progress is reported to have been made upon the construction of the line from Garpeau Junction to Quebec. The roadbed easterly to Portneuf is ready for the rails, and the piers and abutments for the bridges over the Batiscan and Ste. Anne rivers are almost completed. The work between Portneuf and Quebec is fairly heavy, and gangs of men are working throughout the winter on the rock cuttings near Portneuf, Cap Sante, St. Augustin, Les Ecureuilis, and Cap Rouge.

Canadian Northern Ontario Ry.—The contractors have several gangs of men engaged upon the rock cuttings east of Rockland, Ont., on the line from Hawkesbury to Ottawa. There are 30 trestles to be built, several of them being over 400 ft. in length, and construction on these has been delayed owing to difficulty in obtaining the necessary timber. A spur line of about a mile will be laid in L'Orignal, and spur tracks will also be constructed to the pulp mills, and the Hawkesbury Lumber Co.'s premises. The line is expected to be completed into Ottawa in Sept.

The plans for the entrance of the lines from the east into Toronto and from the James Bay section of the line are being considered by the Minister of Railways. Survey parties are in the field upon location work between Toronto and Ottawa, between Key Inlet and Ottawa, and upon various branch lines throughout western Ontario, for the construction of which authority is being asked at the current session of the Dominion Parliament.

A contract has been let to the Central Contracting Co. for the construction of the Nepigon Ry. from Nepigon, on Lake Superior, to Lake Nepigon, about 40 miles. No work has as yet been done, but the location is being revised. The Ontario Legislature will be asked at its current session to pass an act extending the time for the commencement and completion of the projected railway, and authorizing an amalgamation with the Canadian Northern Ontario Ry.

Canadian Northern Ry.—In his annual report to the Manitoba Legislature as Railway Commissioner, Premier Roblin recounted what had been done since 1896 in the way of railway construction by Mackenzie, Mann & Co. in Manitoba, Saskatchewan, Alberta, and Ontario. Referring particularly to the work done in Manitoba during 1906, he said: "Track has been laid on the branch from Emerson to the main line at Sprague. This line was completed to Ridgeville, about 10 miles east from Emerson, in 1904, and the extension now makes a line altogether 73 miles long. The line gives a new and short route from southern Manitoba to Port Arthur, Ont., and will enable the hauling of grain from the Morris-Brandon branch through the province to the main port without passing through Winnipeg, thus saving a very considerable mileage. Considerable work has also been done on the line from Oakland on the Portage la Prairie-

Delta branch, grading having been done as far as Sandy Bay on the west shore of Lake Manitoba, a distance of about 37 miles, and steel having been laid on about 17 miles thereof. It is the intention to resume construction of this work during the forthcoming spring and to carry the line further on. About 7 miles of additional steel has been laid on the Oak Point branch, which it is the intention to extend northerly along the east shore of Lake Manitoba. In addition to the foregoing, about 55 miles of grading has been done on the Brandon-Regina line, and also an additional 20 miles of grading on the Rossburn branch. Tracklaying and other work upon these lines will be prosecuted during 1907."

The Mayor of Portage la Prairie, Man., told the Council recently that he had been informed by M. H. McLeod, Chief Engineer, that it was the intention of the company to go ahead with the construction of machine shops and a 21-stall roundhouse there during the summer.

The branch line from Edmonton to Morinville, Alta., 22 miles, was opened for traffic Jan. 11.

Application is being made to the Minister of Railways to utilize the Yellowhead Pass for the company's line from Edmonton to the Pacific coast. The C.T. Pacific Ry. has also filed plans for a line through the same pass, and the two applications will likely be heard together. The location shows a line about 250 miles in length, from Edmonton to the summit, which is 3,708 ft. above sea level. (Jan., pg. 30.)

G.T.R. Betterments, Construction, Etc.

Montreal Track Elevation.—A conference has been held in Montreal between representatives of the company and the City Council respecting the elevation of the tracks in the city. W. Wainwright, General Assistant and Comptroller G.T.R., said the conference was a preliminary one for the purpose of placing the plans before the council so that they might be studied prior to an agreement being discussed. The details of the plan were being worked out by the company's engineers, and after these had been completed and a statement of the estimated cost prepared, Mr. Hays would be prepared to confer with the Council upon the whole question. The company desired to get rid of the level crossings, but as the railway was in existence before many of the streets were, it had rights which could not be sacrificed. The committee, it is understood, will arrange to visit Philadelphia and other places where a similar work of track elevation has been carried out in order to see what had been done.

Central Station, Ottawa.—A new agreement between the G.T.R. and the Government for a lease of the canal reserve at Ottawa for the purpose of a central station was signed Jan. 7. The lease is for 999 years, the rental being \$1,100 a year, to be readjusted every 21 years. The station building is to cost at least \$250,000, to be under the control of the G.T.R., but terminal facilities are to be afforded to other companies upon fair terms. The Sparks estate, which originally granted the land to the Crown for canal purposes, objected to its utilization for railway purposes, and an agreement was reached whereby the estate was to receive \$80,000 in full settlement of its claim. This sum the G.T.R. agrees to pay. Plans are to be prepared by the company and submitted to the Government for approval within six months.

Madoc to Eldorado.—The Madoc, Ont., Board of Trade has passed a resolution asking the G.T.R. to extend its line from Madoc northerly to Eldorado, about seven miles.

Stratford Shops and Station.—The improvements at the Stratford, Ont., terminals,

MAR., 1907]

THE

Quebec and Lake St. John Railway.

We are advised that Mackenzie, Mann & Co., Ltd., have secured control of the Quebec and Lake St. John Ry., the main line of which extends from Quebec to Roberval, 189 miles, with branches from Chambord Jct. to Chicoutimi, 51 miles, and from Valcartier to St. Gabriel, 4 miles; 244 miles in all.

The Great Northern Ry., one of Mackenzie, Mann & Co.'s eastern lines, and now included in the Canadian Northern Quebec Ry., has for some time past had running powers over the Q. and L. St. J. Ry. from Rivière a Pierre Jct. to Quebec City, but is now building a cut-off from near Garneau Jct. to secure a more direct route from Ottawa to Quebec. The Q. and L. St. J. Ry. has extensive and very valuable terminals in Quebec City.

The Q. and L. St. J. Ry. will no doubt be operated as part of the Canadian Northern Quebec Ry., and by the officials of that line. J. G. Scott, General Manager of the Q. and L. St. J. Ry., will probably remain in the service in some other capacity.

— Hudson Bay

3235. May 7.—Authorizing Grand Trunk Pacific Telegraph Co.'s crossing over C.P.R. tracks at West Fort William, Ont.

3236. July 3.—Ordering adoption and use at crossing of G.T.R. by C.P.R. in Yarmouth (p.), of an interlocking and derailing plant, signal system and all necessary appliances, one-half cost to be borne by each company.

3237. June 29.—Authorizing Great Northern Ry. (U.S.A.) to restore a commodity rate on vegetables from St. Paul and Duluth to Winnipeg, Man., upon one day's notice.

3238 and 3239. See pages 589 and 565.

3240. July 2.—Ordering Michigan Central Railroad Co. to construct a suitable farm crossing on the east half of lot 11, con. 5, tip of Brooke, Co. of Lambton, for George White, of Inwood, Ont.

3241. See page 581.

3242. July 3.—Authorizing National Transcontinental Ry. Commissioners to cross C.P.R. tracks near St. Basile, Que.

3243. June 4.—Authorizing Grand Trunk Pacific Ry. to take certain lands owned by J. K. Richardson.

3244. July 4.—Authorizing Department of Public Works to cross at rail level with a proposed wharf C.P.R. tracks opposite Pembroke, Ont.

3245. See page 577.

3246. May 1.—Approving of alterations in grade and other changes in connection with the G.T.R. second track between Brantford station and one mile east of Alford station, Ont.

3247. July 3.—Bell Telephone Co.'s crossing of C.T.R. at Cherry St., Toronto.

3248. July 5.—Authorizing Canadian Northern Ontario Ry. to take portions of lots 23 and 24, on plan 64, Parry Sound, Ont., for diverting Great North Road to avoid crossing by the right of way of the highway.

3249. See page 581.

Canadian Northern Ry. Construction, Etc.
St. John Valley Ry.—Ex-Premier Pugsley, of New Brunswick, is quoted as having stated that Mackenzie, Mann & Co. have received a report from their engineer as to the route of this projected line along the St. John River Valley, to St. John, N.B. The route suggested will cross a corner of Maine, but Mr. Pugsley says it will be the shortest route between Quebec and a winter port.

Canadian Northern Quebec Ry.—Construction is being progressed with at a satisfactory rate on the line between Garneau Jet and Quebec, and tracklaying is in progress. It is expected that much of the tracklaying will have been completed by the end of the year, and that the line will be fully completed and ready for operation by June, 1908. Work is being pushed between Torrette and Cap Rouge, where the road connects with the National Transcontinental Ry. The greater portion of the right of way between Quebec and the bridge terminals has been secured, most of the proprietors having come to terms with the company, while the rest will have their claims settled by arbitration.

Z. A. Lash, K.C., wrote recently to the Mayor of Quebec, stating that D. D. Mann, Vice-President, authorized him to state that the report that the company proposed to erect locomotive and car shops at Montreal, had its foundation in the fact that the company had decided to erect divisional repair shops there. Further, as soon as the direct line from Garneau Jet, was completed into Quebec it was the intention of the company to establish new shops in or near the city for the C.N.Q. Ry. and the Quebec and Lake St. John Ry., closing this latter company's present shops, and using the site for terminal purposes. The details of the plans had not yet been considered.

Canadian Northern Ontario Ry.—Some

G.T.R. Betterments, Construction, Etc.

Montreal Track Elevation.—Plans have been submitted by the G.T.R. to the Montreal City Council Committee, for the abolition of level crossings in the city, by the elevation of its lines. The cost of the project is estimated at \$5,000,000, of which it is proposed that one-half shall be borne by the city. The closing of several streets is desired by the company, and to this the committee is opposed. Negotiations are in progress with a view of some modification being agreed upon.

Ottawa Division.—The new roundhouse, coal chutes and turntable at Madawaska have been completed. Extensive dock improvements have been authorized at Depot Harbor, where a new coal plant will also be installed, and the trestle east of the terminus will be filled in. New trestles and bridges are to be put in on the Pembroke Southern Ry. (leased line), and other improvements made.

Toronto Junction Station.—A permit has been issued for the erection of a new station, to cost \$2,500, at Toronto Junction, Ont. It is to be of brick, 65 by 28 ft.

The company has charter powers to construct a line to a port on Northumberland Strait, and we are advised that the port which will probably be used is Tidnish. (July, pg. 479.)

Metabouchouan Pulp Co.—By an act passed last session of the Quebec Legislature the agreement between the shareholders and a syndicate for the reorganization of the company was confirmed, and its name was changed to that of the Metabouchouan Co. The capital was reduced to \$158,000, but the shareholders have power to increase it to \$1,000,000. The schedules attached to the act set out the property affected by the arrangement. This includes all rights and interests of the Pulp Co. in a railway to connect its works at St. Andre de l'Epouvante to its point of intersection with the Quebec and Lake St. John Ry., near Lake Bouchette, about 11½ miles, all the rights and interests of the Pulp Co. under the Do-

August
1907

the long strip will be entirely ready for steel. As it is the grades are so far advanced that the steel men could not overtake them. West of 110 mile ridge being finished, there remains 109 to be done before Battle River is reached. Scattered along this big gap are many gangs of men and teams, and the grade at the rate of a mile a day is being built. The work is much easier than through the Eagle Hills. There is but one reason to prevent proceeding with the 110 miles of steel laying, and that is that they have not the steel. There is scarcely enough for a mile at present at Asquith, but the supplies of ties on hand is almost enough to land them at the other end of the grade. As soon as it is possible to get the steel in he believes that the work of laying it will be resumed from Asquith. In the meantime the big steam shovel brought in by the construction foreman, McTaggart, will be put to work building the approach to the C.P.R. bridge at Saskatoon."

Belly River Bridge.—A contract has been let to John Gunn & Sons, Winnipeg, Man., for the construction of the abutments and the concrete substructure of the new bridge over the Belly River at Lethbridge, Alta. The concrete piling to be used in the foundation work will be supplied under a separate contract.

Revelstoke Bridge.—The new bridge which is being constructed over the Columbia River at Revelstoke, B.C., replaces a wooden structure approximately 1,070 ft. long, consisting of three 150 ft. deck, one 150 ft. through, one 100 ft. and one 120 ft. deck Howe truss spans resting on rock filled cribs, and 250 ft. of trestle approaches. The new structure will be of steel on concrete piers and abutments. There will be four 150 ft. deck and one 150 through truss spans, two 100 ft. deck plate girder spans, and two 40 ft. deck plate girder spans. The main piers are being built on the present sites of the crib piers, and are being constructed by the C.P.R. staff. The steel truss spans are being supplied by the Canada Foundry Co., Toronto, and the plate girder spans are also being manufactured in Canada. The company's staff will erect the superstructure.

Pheasant Hills Branch.—The extension of the Pheasant Hills branch from Strassburg, westerly for 40 miles, we are advised is nearly completed. The British Columbia General Contract Co. had the contract. Their line effects a junction with the Manitoba and Northwestern Ry. at Lapin, Sask. A survey party is in the field working between Regina and Saskatoon, with a view of laying out a line from Regina to some points on the Pheasant Hills branch.

Vancouver Island Betterments.—A Vancouver, B.C., dispatch states that R. Marpole, Executive Assistant, has made an announcement that a start will be immediately made on the construction of the projected extension of the Esquimalt and Nanaimo Ry. from Nanaimo to Alberni.

The Canadian Northern Townsite Co. has been incorporated under the Dominion Companies' Act, with a capital of \$250,000 and offices at Toronto, for the purpose of acquiring lands, wharves, docks, dockyards, slip, warehouses, sheds, elevators, etc.; to acquire lands for townsites, and to lay out and improve the same; to charter or otherwise acquire steam and other vessels, and to operate the same in and beyond Canada; and for other purposes incidental thereto. The provisional directors are: G. G. Ruel, G. F. Macdonnell, A. J. Mitchell, F. C. Annesley, R. T. Ormsby, all connected with the offices of Mackenzie, Mann & Co., Limited, Toronto.

Quebec and Lake St. John Railway.

The Gosford branch, extending from Lorette to Clark Settlement in the Riviere aux Pins Valley, 5.75 miles, was opened for traffic Aug. 1. The locomotive drawing the train which carried the official party over the branch was the E. Beaudette engine no. 1, which was the first to run on the old Gosford wooden railway in 1872. In the course of his speech at the public dinner, with which the event was celebrated, J. G. Scott, General Manager, said: "We are met to-day for the purpose of inaugurating a work which is the completion of a work begun in 1870. I refer to the Gosford wooden railway, built by Quebec capital raised with much difficulty by Sir Henri de Lotbiniere and M. W. Baby, with the aid of J. B. Renaud, J. Ross, Hon. P. Garneau, H. Fry and others who have since gone to their rest. As happened since with regard to the main line, the promoters of 1870 had to rely upon the energy and the financial pluck of a U.S. citizen to build the road as contractor and they secured the services of J. B. Hulbert in the same way as we 13 years later secured the services of another U.S. citizen, H. J. Beemer, to build the main line. Mr. Hulbert was ably seconded by local engineers—the late C. A. Scott, J. Sullivan, H. O'Sullivan, and the late Mr. Stocking, and the wooden railway was built. It was not a success, but it caused the construction of a much larger public work, namely, the Lake St. John Ry., which has been of untold benefit to the city of Quebec. When the Lake St. John road was undertaken it was found that the Gosford end of the road was unsuitable for a through line, and the Gosford reverted to its primeval solitude. But the wealth of timber contained in the township of Gosford, and the large population isolated in the valley of the Riviere aux Pins settlements known as St. Gabriel West, commanded attention, and the result is the construction of a branch line from Valcartier station to Gosford, the first section of which we are inaugurating to-day. Not only will this branch be valuable in exploiting the splendid hardwood lands of the township of Gosford, which will furnish an abundant supply of square birch and other timber for export at Quebec, and the best quality of fuel for the city of Quebec and for the rich parishes of Lorette, Charlesbourg and Beauport which are running short of fuel, but it will also remove from their isolation the hardy farmers of St. Gabriel West, several hundred families in number, who now cultivate the fertile lands of the Riviere aux Pins Valley, separated from civilization by a high range of mountains. For the farmers living on the north side of the Jacques Cartier River there is no bridge to cross that river for a distance of 20 miles from Valcartier to Pont Rouge. This is a terrible inconvenience, but it is going to be remedied by means of the very work we are inaugurating to-day, because one of the conditions upon which the Provincial Government has subsidized this branch is that the railway company shall construct a carriageway alongside of its bridge over the Jacques Cartier, and I have no doubt the Dominion Government will make the same stipulation when it grants its subsidy. But this section of this Gosford branch which we are inaugurating to-day is not all that has to be done. This branch must eventually be extended in one direction to the end of the settlements in the Riviere aux Pins Valley, and in the other to the first or second range of the township of Gosford in the direction of Lake Sept Isles, through lands capable of supplying enormous quantities of hardwood timber. "A capital of \$100,000 raised by Sir Henri de Lotbiniere and his associates for the Gosford Ry. has resulted in an expenditure of \$10,000,000, and in the commercial salvation of Quebec through the control of a great back country

and of the lumber trade of the two greatest rivers in the Province, the Saguenay and the St. Maurice. If Quebec people will combine again even in a small way, as before, it will not be long before we will be calling out 'all aboard for James Bay,' and Quebec will then have secured another back country larger and richer than what we have already secured." May, pg. 527.

Canadian Northern Ry. Earnings, etc.

Gross earnings, working expenses, net profits, increases or decreases over 1905-06, from July 1, 1906:

Earnings.	Expenses.	Net Profits.	Increase or Decrease.
July.. \$ 693,800	\$ 397,900	\$ 295,900	\$ 65,400 +
Aug.. 594,000	302,800	291,200	80,400 +
Sept.. 624,400	417,800	206,600	66,400 +
Oct.. 815,100	490,000	325,100	66,000 +
Nov.. 741,700	481,200	260,500	15,300 +
Dec.. 536,200	407,800	128,400	13,800 +
Jan.. 331,400	410,200	80,000	14,900 +
Feb.. 334,200	363,800	60,400	13,400 +
Mar.. 488,800	394,800	94,000	24,400 +
April 464,900	465,200	104,700	61,000 +
May.. 870,000	512,500	357,500	145,500 +
June.. 963,100	630,200	332,900	110,500 +

\$7,493,100 \$5,375,100 \$2,118,000 \$ 208,300 +
Approximate earnings for July \$935,300 against \$803,800 for July, 1906.

C.P.R. Earnings, Expenses, etc.

Gross earnings, working expenses, net profits, increases or decreases over 1905-06, from July 1, 1906:

Earnings.	Expenses.	Net Profits.	Increase or Decrease.
July \$5,067,967.84	\$3,566,150.74	\$1,501,817.10	\$73,037.12 +
Aug. 6,170,452.27	3,707,873.07	2,462,579.20	670,932.20 +
Sept. 6,152,767.15	3,714,815.82	2,437,951.33	601,621.58 +
Oct. 6,049,605.48	4,101,777.07	1,947,828.41	510,739.33 +
Nov. 6,214,381.28	3,077,160.34	3,137,220.94	80,988.97 +
Dec. 5,003,098.07	3,770,303.73	1,232,794.34	718,906.41 +
Jan. 4,005,577.07	3,657,199.40	348,377.67	718,906.41 +
Feb. 4,268,206.74	3,640,318.62	627,888.12	883,755.66 +
Mar. 6,142,010.70	3,889,174.34	2,252,836.36	401,071.74 +
Apr. 6,391,661.39	4,024,635.32	2,367,026.07	23,367.02 +
May. 6,037,135.20	4,417,777.10	1,619,358.10	131,895.28 +
June. 6,817,712.41	4,402,600.13	2,415,112.28	477,050.87 +

\$7,217,527.04 \$4,614,218.85 \$2,603,308.19 \$325,320.66 +
Approximate earnings for July \$9,000,000 against \$8,882,000 for July, 1906.

DULUTH, SOUTH SHORE AND ATLANTIC RY.—Gross earnings for June \$344,492.40; net earnings, \$88,711.38, against \$276,257.35 gross and \$80,401.08 net for June, 1906. Net earnings for twelve months ended June 30, \$901,020.17 against \$1,000,317.84 for same period, 1905-06. Approximate earnings for July, \$320,995, against \$276,213 for July, 1906.

MINERAL RANGE RY.—Gross earnings for June \$77,470.02; net earnings \$11,200.15, against \$57,271.90 gross and \$9,477.63 net for June, 1906. Net earnings for twelve months ended June 30, \$161,706.35 against \$169,260.71 for the same period 1905-06. Approximate earnings for July \$72,250 against \$50,706 for July, 1906.

MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY.—Gross earnings for June, \$1,150,790.34; net earnings \$140,774.69, against \$1,015,608.30 gross and \$425,512.27 net for June, 1906. Net earnings for twelve months ended June 30, \$5,438,530.44 against \$5,789,002.21 for the same period 1905-06. Approximate earnings for July, \$1,102,152 against \$908,330 for July, 1906.

Grand Trunk Ry. Earnings, Expenses, etc.

Subject to audit, the accounts for the half-year ended June 30, 1907, show the following results:

Gross receipts.....	\$3,581,200
Working expenses.....	2,436,508
Net receipts.....	1,144,692
Net revenue charges for the half-year, less credits.....	480,600
Balance.....	\$ 664,092
Deduct Canada Atlantic Ry. deficiency for half-year.....	287,800
Detroit, Grand Haven & Milwaukee Ry. deficiency for the half-year.....	11,000
Surplus.....	\$ 365,292

The above surplus of \$365,292 added to the balance of \$1,200 from Dec. 1, 1906, makes a total of \$1,565,292, out of which it is proposed to set aside \$20,000 to form the nucleus of the pension fund referred to by the President at the last general meeting. The balance of \$1,545,292 will admit of the payment of the dividends for the half year on the 4% guaranteed stock and 2nd and 3rd preference shares, leaving about \$124,600 to be carried forward. It is estimated that the future contributions to the pension fund will amount to about \$15,000 a year. The accounts of the G.T. Western Ry. for the year ended June 30, show a surplus sufficient to provide for the interest on the first mortgage bonds and leave a balance of about \$18,200.

Approximate earnings for July, \$1,001,258, against \$1,006,234 for July, 1906.

Sept., 1907]

THE RAILWAY AND MARINE WORLD

fill at Cumberland Bay is completed the work of ballasting the reconstructed line will be gone on with.

By an act passed last session of the New Brunswick Legislature, the Government (operating the line through a commission) is authorized to grant unrequired portions of the right of way for the purpose of the erection thereon of houses for the occupation of miners engaged in the collieries along the line. (May, pg. 325).

New Brunswick Southern Ry.—We are advised that new ties are being put in and the line is being reballasted, the work being in charge of J. Beckwith, heretofore of the C.P.R. engineering staff. (Aug., pg. 565).

Ottawa Union Station.—On his return to Ottawa, after his recent trip to Europe, Sir W. Laurier stated that one of the first things to engage his attention would be the pushing forward of the project of the new station and hotel which he was disappointed to find had been delayed during his absence. Subsequently the Premier had consultations with W. Wainwright, Fourth Vice-President G.T.R., and D'Arcy Scott, Mayor of Ottawa, in reference to the position of the plans. On Aug. 9, the G.T.R., which company has the duty imposed upon it of the erection of the new station, submitted plans for the same to the Department of Railways for approval. The plans which had been previously submitted have been withdrawn. The site of the new station is to be adjoining Sapper's Bridge; and the plans provide for a terminal station with accommodation not only for the G.T.R., but for the C.P.R., and any other system desiring to utilize it. The central portion of the building will be ten storeys in height, and will be laid out as an office building for the various railway lines, and for general use. The question of the erection of an hotel is in abeyance, but it is expected that some steps will be taken by the G.T.R. towards building one at an early date. (Aug., pg. 577).

Quebec and New Brunswick Ry.—Application will be made next session of the Dominion Parliament for an act reviving and continuing

of 1908 construction on the whole of the 83 miles from Port Daniel to Gaspé Basin will be well advanced. (Aug., pg. 561).

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Track has been laid this season from Chapaka, B.C., on the International boundary, to the Similkameen River, and from the river to Keremeos, 12 miles, and grading operations are in progress from Keremeos to Princeton, 45 miles. It is expected to have this part of the work completed this season. The company is also constructing come short branches to mines at Phoenix, B.C. (April, pg. 245).

Winnipeg City Power Line.—The Winnipeg Board of Control has recommended the acceptance of the tender of E. F. Kendal, Kenora, Ont., for 4,000 ties for the Point Du Bois-Lac Du Bonnet Tramway, at 30c. each; and that of J. J. Gartshore, Toronto, for 200 tons of 56-lb. rails, at \$39.25 a ton f.o.b. at Lac Du Bonnet.

The city council is considering tenders for the construction of a wooden Howe truss bridge, of 10 spans of 80 ft. each and one draw span of 160 ft., including piers and cribs, crossing the Winnipeg River at Lac du Bonnet narrows. (Aug., pg. 565).

Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—Track-laying is reported to have commenced on the cut-off from near Garneau Junction, into Quebec. The work is being carried on from Garneau Junction, and is expected to be completed this year. The cut-off is about 80 miles long, the contractors being O'Brien and Mullarkey. The new line from St. Jerome, to connect the old Great Northern Ry. of Canada with the old Montreal and Gatineau Colonization Ry., at St. Sauveur, Que., about 15 miles, has been completed and it was expected that it would be opened for traffic Aug. 19. The proposed line from Montreal to St. Jerome is expected to be constructed during 1908.

Canadian Northern Ontario Ry.—C. W. General Manager. is quoted as

to be a work for the general advantage of Canada, and for authority to construct a bridge across the St. Croix River at or near Milltown or St. Stephen, N.B. The erection of such a bridge would enable connection to be made with the Washington County Ry. Weldon and McLean, St. John, N.B., are solicitors for the company.

Niagara-Grand Island Bridge Co.—Application will be made next session of the Dominion Parliament for an act extending the time for the commencement and completion of the company's projected undertaking. This is one of the Michigan Central Rd. projects in Canada.

North-West Pacific Ry.—Application will be made next session of the Dominion Parliament for an act incorporating a company with this title, with power to construct a railway from Fort Churchill on Hudson Bay, southwesterly to the Beaver River, thence to Peace River Pass by way of Lac la Biche and Lesser Slave Lake, thence by way of Hazleton to some harbor on the Pacific Coast. Power is also sought to construct the following branch lines: From Lac la Biche to Edmonton, Alta.; from Lac la Biche to Fort McMurray, and from Green Lake to Prince Albert, Sask. Murphy and Fisher, Ottawa, are solicitors for the applicants. (See Port Simpson and Eastern Ry., May, pg. 327.)

Owen Sound and Meaford Ry.—The proposal to connect these places by rail is again being revived by the Owen Sound Board of Trade. There is a special charter owned by local interests who are desirous that the line be constructed either by the G.T.R. or the C.P.R., and there is also a proposal that the two places be connected by a line to be constructed by the Huron and Ontario Ry., an electric railway company.

Port Simpson to Peace River.—The British Columbia Legislature will be asked next session to pass an act incorporating a company to construct a line or lines of railway from Port Simpson by the most feasible route to a point on the eastern boundary of the province. The projected route is along the southwest side of Work channel to the Skeena River, the north side of this river to Hazleton, and to the junction of the Bulkley River, up the right bank of this river for eight miles to Suskewa River; on to the head of Babine Lake, Stuart Lake, McLeod Lake, Misnichinca River and Summit Lake to Pine River pass, along Pine River to Moberley Lake and thence by Peace River to the eastern boundary of the province. Power is also asked to construct branch lines and for other incidental purposes. J. P. Walls, Victoria, B.C., is solicitor for the applicants.

Quebec and Lake St. John Ry.—D. B. Hanna, President, and Z. A. Lash, K.C., one of the directors, completed a trip of inspection over the La Tuque branch, Sept. 30. The Government Inspector went over the branch subsequently, and it was expected that a regular train service would be placed in operation by the end of Oct. The branch leaves the main line at a point from Quebec and extends to the La Tuque Falls of the St. Maurice River.

Saskatoon, Saskatchewan, Peace River and Dawson Ry.—Application will be made

crossi
River
the n
crossi
miles
River
Yuko
by w
Stew
River
eral
and l
water
opera
and
appli

Ta
tend
Tana
on t
mile
by r
line
tion
The
pose
min
the
four
and
trai
cree
and
the
the
ope
ma
plic
ste
or
rite
ver
par
lin
Ma
Ta
Fa

W
lin
of
of
an
ex
of
of
ra
su
on
lin
er
wh

TI
wa
to
he
re
G
lin

aj
li
p
if
b
F

November
1907

Canadian Northern Ry. Construction.

Quebec and Lake St. John Ry.—At the recent session of the Quebec Legislature, subsidies were voted in aid of the following lines: for a branch from the main line at Charlesbourg to L'Étang, on the Montmorency River, six miles, a subsidy at the rate of 6,000 acres of land, not convertible into money, to complete 3.8 of its line from Valcartier to Ste. Catherine, a subsidy at the rate of 3,000 acres of land per mile, not convertible into money, in lieu of the subsidy voted in 1906; for a branch line from Valcartier station in the direction of Gosford tp., 3,000 acres of land per mile, not convertible into money; and for an extension of 12 miles of the Valcartier branch to Gosford tp., including a branch of 3.50 miles to Rivière-aux-Pins, in the parish of St. Gabriel West, 3,000 acres of land per mile, in lieu of the subsidy voted in 1906. In connection with the second and third lines subsidized, it is provided that the lands are granted on condition that the company shall establish a free passage by the building and maintenance of the bridge over and the approaches on both sides of the Jacques Cartier River, for foot passengers, vehicles and animals, at or near the old railway bridge over the river, according to plans to be approved by the Government.

The La Tuque branch was formally taken over from the contractors May 1, and the train service is now being operated by the company.

Canadian Northern Quebec Ry.—The Quebec Legislature, at its last session, voted a subsidy of 3,000 acres of land, not convertible into money, in aid of the construction of a railway from St. Jacques to Rawdon, and thence northerly towards Lake Archambault, not exceeding 20 miles. Also to aid in the construction of 65 miles of its line from Montreal to Grenville a subsidy of 2,000 acres of land per mile, not convertible into money.

Canadian Northern Ontario Ry.—The company is reported to have decided upon proceeding with the erection of the shops on Eastern Ave., Toronto, and plans are in prep-

Canadian Northern Ry. Construction.

John Valley Ry.—The railway subsidy act passed at the last session of the Dominion Parliament provided for the granting of financial aid towards the construction of the following lines of railway: From Westfield to St. John, N.B., not exceeding 14 miles; from Gagetown to Fredericton, N.B., not exceeding 40 miles; and from a point between Centreville and Woodstock, to a point at or near Grand Falls, N.B., not exceeding 55 miles. These subsidies cover a considerable portion of the cost of the line which the New Brunswick Legislature has authorized the Government to give a guarantee of bonds to the extent of \$15,000 a mile, and for the construction of which negotiations have been opened with Mackenzie, Mann & Co., with a view to the line becoming part of the Canadian Northern Ry. system.

Quebec and Lake St. John Ry.—The Dominion Parliament at its recent session voted subsidies in aid of the following branch lines: From Valcartier station to St. Catherine's, Que., not exceeding 3.8 miles; from Valcartier station towards Gosford, not exceeding 5.50 miles; from the end of the 35th mile of the branch to La Tuque, on the River St. Maurice, to La Tuque Falls, not exceeding five miles; and from a point on the La Tuque branch to the steamerboat landing near La Tuque, not exceeding 1.6 miles; a total not exceeding 10.9 miles. The branch to La Tuque Falls has been completed and some construction work has been done on the St. Catherine's and Gosford branches.

The subsidy voted in 1906 for the construction of a line of railway from Roberval, the present terminal of the line on Lake St. John, westerly towards James Bay, for a distance of 100 miles, was renewed. The subsidy act also provided for grants towards the construction of the following lines: From Hebertville to St. Joseph d'Alma, not exceeding 10 miles; and for a line from Chicoutimi, south or south-east, not exceeding five miles.

Canadian Northern Quebec Ry.—The Dominion Parliament last session voted a subsidy to the C.N.Q. Ry. for a line from near Garneau Jct. to Quebec, with a branch line towards the Quebec Bridge, not exceeding 83 miles, in lieu of the subsidy, for a distance not exceeding 70 miles, voted to the Great Northern Ry. of Canada in 1906. A subsidy was also voted to the C.N.Q. Ry. towards the cost of the construction of a line from Montreal, Que., to Hawkesbury, Ont., not exceeding 65 miles, and to the Great Northern Ry. of Canada, which is one of the constituent companies of the C.N.Q. Ry., towards the construction of a line from St. Jerome to Champlain (Bout de L'Île), Que., a distance not to exceed 22 miles.

In 1906 the Dominion Parliament voted a subsidy to the G.N. Ry. of Canada towards the construction of a line from or near Montreal to a point in the united townships of St. John and Hartwell, Que., not exceeding 10 miles in length; and for a line connecting its Montford and Gatineau line with the main line at St. Jerome, not exceeding 10 miles. These subsidies were renewed at the last session of the Dominion Parliament to the C.N.Q. Ry.

Several lines work is in progress upon the cut-off from Garneau Jct. to Quebec, with the branch to the Quebec Bridge, and the line to St. Jerome has been completed to the junction with the Montford branch. The extension of this branch has not yet been gone on with, and beyond Champlain nothing has been done upon the proposed lines from Montreal to St. Jerome and from Montreal to Hawkesbury.

Canadian Northern Ontario Ry.—At the last session of the Dominion Parliament a

subsidy
usual
struct
Ottawa
line.
Ry.,
W.
Mann
confe
cials
18, a
are l
C.N.C.
C.P.R.
as at
We

from
into
season
To
from
Ont.,
cent
ment
mile,
cost
line s
line t
traffic

Ni
Dont
for th
were
being
station
not
Nipiss
on th
the
from
of th
of C
miles
Lake
miles
of L
kenz
Cana
that
utiliz
nect
the C

Ca
with
Ry.
nipe
been
Kab
term
the
the
whic
on t
and
erly
the

To
Goo
the
to C
tion
been
Al
ham
the
\$13,
the
Sask
ther
from
from
Bati
Bati
mile
Bati
mile
brar
of J

Great Northern Ry. Lines in Canada.

(Continued from page 799)

the Midway and Vernon Ry., a report from Nelson, B.C., states that a project of some importance to the Boundary country has been engaging the attention of the C.P.R. and the G.N.R. officials. It is for the connection of the lines of the two companies at Midway, and the construction of a bridge across the Kettle River, as a joint work. The C.P.R. has a line planned to connect up the B.C. Southern Ry. with the Nicola, Kamloops and Similkameen Ry. at Nicola Lake, and the Midway and Vernon Ry. would connect the B.C. Southern Ry. with the C.P.R. branch now running to Vernon from Sicamous Junction. The G.N.R. line touching Midway is the Vancouver, Victoria and Eastern Ry. The three interests have had considerable difficulty in locating lines in the vicinity of Midway, and some clashes took place between construction parties some three years ago at Midway. If there is anything in the present reports, it would appear that the difficulties are in a fair way of settlement.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Plans have been approved for the proposed terminals at Vancouver, B.C., including wharfage facilities on Burrard Inlet, etc. A. Stewart, the company's Assistant Chief Engineer, and J. S. Snapp, Right-of-Way Agent, have been in the city recently in connection with the matter. Application is being made to the Board of Railway Commissioners to authorize the construction of a branch line from False Creek to Burrard Inlet. Referring to this a Vancouver paper says this notice means that the company has abandoned the old short line to Burrard Inlet over which there was such a hard fight between the Vancouver, Westminster and Yukon Ry. and the city authorities. The V.W. and Y. Ry., which sold its rights in Vancouver to the V.V. and E. Ry., contended successfully for level crossings on the line it proposed to construct. The plans also show that the company proposes to take into its construction scheme the Gore Ave. slip and to expropriate a section of foreshore adjacent thereto.

Some construction is being done in connection with the company's plans, notably the reduction of the gradient where the track comes from the east end of False Creek, and on the completion of this the work of filling the east end and the south side of False Creek will be proceeded with. Room will thus be made for a series of tracks to accommodate landing cars, and for the erection of warehouses and shops. It is hoped to complete this work during the winter, so as to enable start to be made in the spring upon the construction of the line to the water front at Burrard Inlet, where the company owns 2,000 ft. of frontage.

Victoria and Sidney Ry.—The improvements to the roadbed are practically completed, and the repairs to the dock at Sidney have been finished. (Oct., pg. 907).

Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—The cut-off which has been under construction for the past three years from near Garneau Junction into Quebec, a distance of 80 miles, is expected to be placed in operation Dec. 1. The new line opens up a lot of new territory, which is expected to prove of great value for colonization and tourist purposes, and passes through the towns of St. Casimir, Port Nud, Cap Santé, Cap Rouge and St. Foye. The C.P.R. is crossed at Lachetrotiere, about 45 miles from Quebec. By this route the company will secure a direct route between Ottawa and Quebec, and Montreal and Quebec, saving a considerable distance over its present route, via Rivière à Pierre, and the Quebec and Lake St. John Ry.

A contract has been let to J. P. Mullarkey, Montreal, for the construction of a branch of 10 miles from St. Jacques to Rawdon, Que. Rawdon was one of the points to which a considerable settlement was directed about 70 years ago, and as long ago as 1857, a company with the title of the Rawdon and Industry Ry. was incorporated to give it railway connection. The district is now better known for its attractions to tourists and hunters than for its agricultural possibilities. The line will be constructed for a considerable distance along the parish line between St. Jacques and Ste. Julienne. The right of way is being purchased, and on such portions as have been acquired gangs of men are engaged in effecting a clearing. The grading is expected to be started at once.

Canadian Northern Ontario Ry.—The line from Hawkesbury to Ottawa is expected to be completed during the winter, but it is not expected to open it for traffic until Mar. 1, 1909.

Canadian Northern Ry.—Work on the joint terminal station at Winnipeg is reported to be making satisfactory progress. The general contractors, P. Lyall & Sons, are proceeding with the piling and getting in of the concrete foundations. The Dominion Bridge Co. is preparing to put up the structural steel at the new freight sheds.

The actual hauling of freight trains was announced to be started Oct. 6, and it was expected that the operating department will take over the completed Brandon-Regina line by the end of the month, or as soon before as the Board of Railway Commissioners had given permission for it to be put in operation.

A tracklaying gang arrived at Saskatoon, Sask., Oct. 6, and went out to Delisle, the present terminus of the Goose Lake branch, to resume tracklaying. At this point there is on hand steel for laying 29 miles of track, and ties sufficient for 75 miles. The grading gang is working beyond Zolandia. W. Mackenzie, President, stated when he was recently in the district, that it was hoped to be able to complete the construction of the line to 75 miles from Saskatoon this year. The portion of the line between Saskatoon and Delisle is being ballasted. When the Board of Railway Commissioners was in Saskatoon Sept. 23, the question of the entrance into the city of this branch was discussed. The Commissioners will give the city permission to construct a footbridge across the tracks at 20th St., a subway is to be constructed at another point, at the cost of the C.N.R., and other work done. The route to be followed by the line is by the crescent on 17th St., and the Commissioners fixed the amount to be paid to property owners for the right-of-way, etc.

The branch from Dalmeny, just west of Warman, Sask., was completed Oct. 1, when steel was laid to Laird. It is said that the line will be extended a few miles further to Carleton next year. The line serves a district which has been settled for some years, and has hitherto been served by Rosthern and other stations between Warman and Prince Albert.

The contractors are making satisfactory progress with the construction of the railway and general traffic bridge across the Saskatchewan River at Prince Albert. The false work is in place, and the bridge company expects to get the actual erection work started at once.

W. Burns and E. M. Hill, of the C.N.R. engineering staff, returned to Edmonton, Alta., recently from the Brazeau River district. The Mackenzie, Mann & Co. interests own some 20,000 acres of mineral lands in that district, and the object of the engineering party's work during the sum-

mer was
animat
of rail
reporte
found,
be pos
collier
by gra
sary o
pose o
expect
undert
that c
on the
Vice-P
Oct.
the il
lands
will l
link u
is exp
end o

W.
portati
approx
Trunk
Grand
ent of
Brown
—Can

W.
ent o
Gener
has t
Mann
inten
sente
had
ager
to tl
Augu
publ
appo
time
man
Brov
on t
not
We
tion

F
east
super
C.P.
Rail
Tl
in tl
tion
Line
sion
Oct
Gut
Eas
Gen
visi

rd
road
C.P.
J
Roa
Nel

..
inte
Pac
Gaz
sup
Pac
way

C
dai
bee
Mo
at
Ro
qu

Following are some particulars of the 500 steel frame box cars which the C.P.R. has ordered from the Dominion Car and Foundry Co., Montreal, as mentioned in our last issue.

Length, inside.....	36 ft.
Width, inside.....	8 ft. 6 in.
Height, inside.....	8 ft. 0 in.
Couplers.....	Simplex
Truck bolsters.....	Simplex
Brake beams.....	Simplex
Side bearings.....	Susemihl Frictionless
Journals.....	5 in. by 9 in.
Journal boxes.....	McCord
Wheels.....	cast iron, C.P.R. standard

The Temiskaming and Northern Ontario Ry. recently received 50 steel underframe box cars. Following are chief dimensions:

Length, inside.....	36 ft. 0 in.
Width, inside.....	8 ft. 6 in.
Height, inside.....	8 ft. 0 in.
Length, outside.....	36 ft. 11 1/2 in.
Width at eaves.....	9 ft. 10 3/8 in.
Height to eaves.....	12 ft. 0 in.
Height to top of running board.....	12 ft. 6 11/16 in.
Side doors.....	7 ft. 7 3/4 in. by 6 ft. 0 in. wide
End doors.....	2 ft. 5 1/2 in. by 2 ft. 0 in. wide
Capacity.....	2,448 c. ft., 80,000 lbs.
Numbers (even nos.).....	80,000 to 80,998

The C.P.R. between Oct. 13 and Nov. 10 ordered the following rolling stock: 13 dining cars, 15 second-class cars, 10 first-class cars, 10 coaches (half ordinary passenger, half smoker), 6 baggage and smoking cars, 20 baggage and express cars, 10 mail and express cars, 22 first-class observation cars, 6 sleeping cars, 651 box cars, 29 flat cars, 11 stock cars, 4 steel coal cars, 1 snow-plow, 10 consolidation locomotives, and 1 articulated compound locomotive, at its Angus, Montreal, shops; and 9 vans at its Barnham, Que., shops.

The G.T. Pacific Ry. has ordered from the Canadian Locomotive Co., Kingston, Ont., 25 mogul locomotives, for delivery on or before July 1, 1909. Following are chief dimensions, etc.:

Total weight on drivers.....	138,176 lbs.
Total weight, engine, loaded.....	161,976 lbs.
Total weight, tender, loaded.....	143,300 lbs.
Total weight, engine and tender.....	305,276 lbs.
Total wheel base of engine.....	24 ft. 3 in.
Total wheel base of tender.....	19 ft. 1 1/2 in.
Total wheel base of engine and tender.....	53 ft. 10 in.
Total length of engine and tender.....	64 ft. 11 1/2 in.
Cylinders.....	20 by 26 in.
Driving wheels, diam.....	23 in.
Working pressure.....	200 lbs.
Capacity—water.....	7,000 U. S. gals.
Capacity—coal.....	20,000 lbs.

Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—It was announced in Montreal Nov. 11 that the company expects to have its new line between Carneau Jet and Quebec ready for operation in the spring. The contractors have been pushing the work at a rapid pace, and very little now remains to be done before the track can be declared ready for traffic. This will give the company a shorter and more direct route between Montreal and Quebec than the one it has hitherto used via Rivière à Pierre and thence over the Quebec and Lake St. John Ry.

Canadian Northern Ontario Ry.—The work making the rock cuts on the section of the company's line to Ottawa has been completed from St. Joseph's into the city. Grading has been completed on the east side of Green's Creek, and is ready for the rails. This line extends from Ottawa to Hawkesbury, Ont., where it connects with the C.N. Quebec Ry. The line is made with the C.N. Quebec Ry. between Montreal and Quebec. With respect to entrance into Ottawa, the final arrangements have not yet been completed with the city council, and no further construction work will be undertaken until this has been decided. Amended plans have been filed for the location of the line from the boundary between Russell and Carleton counties, 8.7 miles from Hawkesbury, to Hunt's bridge, 57 miles from the same point. The route lies between the Montreal road and the Ottawa River for a considerable

distance, the road through closer to property man's le Rideau. The plan The com complete

Canada

Vice-President

Nov. 11

complete

lines, so

progress

lines, an

cases of

the wh

for 1908

large su

the line

Heavier

would I

in all re

liment.

could t

vice we

expendi

reason

quired i

In re

compar

policy

been cr

of und

of a no

what n

of rad

the ut

mediat

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

settlin

Co. for leave to place wires across G.T.R. at four points in Minto tp., Ont.

5794. Dec. 7.—Dismissing application of G.T.R. for order varying order 2757 of Mar. 27, 1907, authorizing construction of branch line between Caldwell and Penetanguishene.

5795. Dec. 7.—Dismissing application of G.T.R. for an order varying order 2759 of Mar. 27, 1907, by extending time for construction of branch between Orillia and Midland, near Tiffin, Ont.

5796. Dec. 7.—Dismissing application of City of Toronto for order to vary order of the Railway Commission of the Privy Council of Mar. 11, 1902, respecting protection of Dowling and Dunn Avenues, Toronto.

5797. Dec. 7.—Inter-switching charges at Walkerville, Ont., and grain rates to Walkerville. (See pg. 31).

5798. Dec. 3.—Authorizing G.T.R. and C.N.R. to operate trains over G.T.R. crossing in Hawkesbury, Ont.

5799. Dec. 3.—Authorizing C.P.R. to construct a spur to A. T. Kelliher's premises, secs. 5 and 6, tp. 24, r. 24, w. 7th m.

5800. Dec. 7.—Dismissing application of N.O.R. for approval of its line from Billings Bridge to mileage 29, west from Ottawa, Ont.

Regulation for Erecting Mail Cranes.

The Board of Railway Commissioners has passed the following order, 5647: In pursuance of the powers conferred upon it by secs. 26, 30, and 269 of the Railway Act, and of all other powers possessed by the Board in that behalf, it is ordered that every railway company subject to the legislative authority of the Parliament of Canada, operating a railway by steam power, using mail cranes, be forbidden to erect, place or maintain, on or after Jan. 1, 1909, any mail crane along its line of railway, at a distance less than 7 ft. 13 1/2 ins. from the centre of the track to the point of the arm of the crane when in position, or at a height less than 10 ft. 10 ins. from the bottom of the rail to the top of the arm when in position. And it is further ordered that every such railway company failing or neglecting to comply with the foregoing regulation be subject to a penalty of \$100 for every such failure or neglect.

Freight Cars in Passenger Trains.

The Board of Railway Commissioners has passed the following order, 5736: In pursuance of the powers conferred upon it by secs. 26 and 269 of the Railway Act, and of all other powers possessed by the Board in that behalf, it is ordered that every railway company subject to the legislative authority of the Parliament of Canada be forbidden to handle freight cars in through main-line passenger trains, unless such freight cars are equipped with air-brakes, steel-tired wheels, and special trucks designed for use in through passenger train service. Provided, however, that every such company shall be at liberty to use such freight cars in through passenger service when its baggage cars, or freight cars, especially equipped as aforesaid, become disabled or are for use while in transit, and such cars are available to receive the baggage or freight, as the case may be, to avoid unnecessary delay in forwarding the same. At this event the cars must not be loaded beyond their marked capacity, and the speed of the train must not exceed thirty-five miles an hour. And it is further ordered that every such railway company failing to comply with the foregoing requirements shall be liable to a penalty of not exceeding \$50 for every such offence.

Canadian Northern Ry. Construction, Etc.

The Quebec and Lake St. John Ry. has filed plans for extensions of the Quebec and Lake St. John Ry. from Roberval and Chicoutimi, and it is expected that construction will be started in the spring.

Canadian Northern Quebec Ry.—At a recent meeting of the Quebec city council, a letter was read from the company, signed by W. A. Kingsland, Auditor, and H. K. Wicksteed, Chief Engineer, stating that the present yard and trackage was excessively cramped and inadequate for the requirements of the present time. The company, in view of the early opening of the direct line to Montreal, and of the Hawkesbury-Ottawa line, considered that a rearrangement of the present yard was imperative. Plans had been prepared for the solution of the difficulty. These involved the removal of the freight shed to another site and making available for passenger business six separate tracks, three for arrival and three for departure, in place of the single one now used. This arrangement involved the removal of the present shops and engine house, which were quite inadequate for the carrying on of the company's business. Plans for the company's requirements showed an area of about 20 acres to be covered with tracks and buildings. It was, in the company's opinion, impracticable and contrary to the city's interests that any such area of land within the present city limits should be devoted to this purpose, and, therefore, an outside area would have to be obtained. It was submitted that an area of land in the direction of the Beauport flats afforded the only chance for the necessary expansion of the facilities. The President had authorized progress to be made with the work, but before making a start the company desired to have the approval of the corporation to the general scheme of improvement. If the council would pass such resolutions as would enable the company to make an immediate start, the first step taken would be the erection of the car repair shop. This would have the effect of concentrating in Quebec a large amount of work now done in Shawinigan and other outside points. The letter was referred to the Finance Committee for consideration, and is being taken up in connection with the proposal to annex St. Malo and Limoileu to the city. If the amalgamation is decided upon the city council is favorable to the company's proposals, as the present agreement with the city, with respect to the location of the shops within the city, will not require to be amended. One of the conditions of the amalgamation will have to be more direct communication by means of at least one additional bridge. Dorchester bridge is a long distance away from the heart of the village, and the railway bridge has no communication except for steam and electric cars. At low water the St. Charles River, separating Limoileu from Quebec, is less than 300 ft. wide. Tracklaying on the Garneau cut-off was completed Dec. 10, but G. T. Mobs, General Freight and Passenger Agent, said it was not likely that a passenger service would be operated before the spring, although schedules had been arranged. The Department of Railways has entered into a contract with the company, under the terms of the act granting subsidies in aid of certain railways, for the construction of a line of 30 miles, from near Arundel, at the northerly terminus of the Montfort and Gatineau Colonization Ry., to the united townships of Preston and Hartwell; and for a line of 15.2 miles to connect the Montfort and Gatineau Colonization Ry. with the main line of the C.N.Q.R. at St. Jerome, Que. This latter line has been constructed. A branch line to Totogan, Man., has been opened. This is an extension of the Oakland branch, starting from Portage la Prairie, Totogan being 28 miles distant.

M. I
return
tion
Dec. 9,
span 1
at Pr
pleted,
struct
Can:
Gener
Quebe
new li
Nov. 1
put it
pletio
howev
traffic
of the
to, ad
In
compe
into
repres
counc
Riden
man's
erty
and
Hurd
about
counc
its re
built
dange
Ph
comp
into
will
W.
Dec.
exter
wood
silver
ern
The
wood
tance
gesti
tend
that
right
Ca
with
and
state
cons
Rive
Ont.
in th
in Y
alon
jecte
deve
Pi
tend
in St
A
tion,
tend
70 n
A
a su
—
a ro
to C
the
tion
1905
A
of n
rear
tion
Mor
Uni
as l
Pre
tary

Canadian Northern Ry. Construction, Etc.

Maritime Provinces.—The Premier of Nova Scotia was in Toronto Feb. 1, and following days in consultation with W. Mackenzie, president, and other C.N.R. officers. It is said that the conference had to do with railway matters in the province, and an agreement reported to have been reached which will hasten the construction of several hundred miles of steam and electric railways, and some alterations in the conditions affecting the Halifax and South-Western Ry. On Feb. 3 Mr. Murray, Mr. Mackenzie and a number of C.N.R. officers, went to Montreal and Ottawa to consult with the Dominion Government. The Nova Scotia Legislature will, it is said, be asked, at its forthcoming session, to ratify the arrangement reached.

Since the foregoing has been put in type, we have been officially advised that no agreement has been entered into for the construction of additional railways.

The Mayor of St. John, N.B., was in Ottawa early in Feb., in connection with railway matters, and met some of the C.N.R. officers. A press report from St. John states that an engineer of the city has been informed by C.N.R. officials that, failing the obtaining of rights over the Intercolonial Ry., the company will proceed with the construction of its own lines to the Atlantic coast.

Canadian Northern Quebec Ry.—The Dominion Parliament is being asked to extend the time within which the following lines may be constructed: An extension of the St. Lawrence-Rawdon branch beyond Rawdon to near Lake Archambault, Montcalm County, Quebec; a double or single line of railway from the Quebec and Lake St. John Ry., or from deep water in the harbor, and thence through the city of Quebec to the shore of James Bay, and a branch line from the main line at or near Lake St. John, through Chicoutimi and St. Amable or Ha Ha Bay, to the St. Lawrence River at or near Tadousac.

Quebec and Lake St. John Ry.—Application is being made to the Quebec Legislature for an act extending the time within which the line authorized by sec. 10, chap. 71, 4 Edward VII. may be constructed and for other purposes.

The company is locating a route for an extension from Roberval, on Lake St. John, due westerly for about 30 miles, and for a line from Chicoutimi easterly for about 10 miles.

Canadian Northern Ontario Ry.—The ques-

R
so
re
Lo
Ni
to
it
wi
th

of
th
tr
w
tr

de
w
10
bi
st
a
of
at
pr
T
M
es
se
co
ci

u
le
P
a
b
fe
7
o
b
C
F

p
s
T
s
t

e
s
s
s
s

l
c
i

Transcontinental Railway connected with that selected by C.N.Q.R. After some negotiations the difficulty was settled, and a new route surveyed for the line where the two lines previously came together. Starting from Garneau Junction, the line gradually works down to the St. Lawrence River, which is reached near Deschambault, and from that point to Cap Rouge, a distance of about 40 miles, it follows the river. There are concrete and steel bridges over Batiscan, Charest, Ste. Anne, Jacques Cartier, and Portneuf Rivers, while a smaller structure has been erected across the river at Cap Rouge. The line passes under the National Transcontinental Railway viaduct across Cap Rouge valley. The new line has been laid with 80 lb. steel rails, and is well ballasted.

In contemplation of the completion of this line the company has been replacing the 70 lb. rails on the section of the line between Montreal and St. Boniface, the section between St. Boniface and Garneau Jct., having already been relaid.

The grading on the 11 miles of line under construction from St. Jacques to Rawdon, Que., is reported to be well advanced. J. P. Mullarkey, the contractor, stated Aug. 7 that it was expected to have the track laid this fall.

Quebec and Lake St. John Ry.—The Quebec Legislature, at its last session, granted an extension of time for the construction of a number of branch lines. The branch line authorised to be constructed from Roberval to the north-western boundary of St. Felicien, are to be commenced by July 1 and completed before Jan. 1, 1911.

Canadian Northern Ontario Ry.—The Board of Railway Commissioners has approved of location plans of the line through Gloucester and Nepean tps., Ont., from mileage 51 91 to 57 42 west

1909

THE RAILWAY AND MARINE WORLD.

Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—The seven miles of line described as the Montmorency branch, for the operation of which the Board of Railway Commissioners recently passed an order, is practically an industrial spur, connecting the Quebec and Lake St. John Ry. with the Montmorency Pulp Co.'s mills near the Montmorency Falls. Heretofore the company's logs were sent over the falls and floated out, and the spur was hurriedly constructed in the fall of 1909 in order to handle the traffic.

The work on the branch line to Rawdon, Que., has been closed down. Grading is practically completed, and some track has been laid. On the resumption of work a bridge will be constructed across the Quareau River and the branch completely.

W. D. Barclay, General Manager, is quoted as having stated in Montreal, Feb. 6, that plans had been prepared for the company's Montreal terminals, and that they are being considered by the executive at Toronto. According to what Mr. Barclay is reported to have said, the site will be a central one; the cost will be about \$5,000,000, and the work will be completed within two years.

Canadian Northern Ontario Ry.—A bill has been passed by the House of Commons authorizing the company to enter

MARCH 1910

Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—The Montmorency branch connects with the main line half-a-mile north of Hedleyville Jct., Que., and extends to the Montmorency Lumber Mills, about 1.5 miles above the falls. The branch is approximately 7.5 miles and it has been constructed particularly for the handling of shipwood for the lumber company. About 3,000 cords have been shipped since the line was opened, and it is expected to ship about 20,000 cords a year. Plans are said to be under consideration for the construction of a terminal station in Montreal. Three or four schemes are spoken of, one of them being for the purchase of the old jail at the corner of Notre Dame St. and Desmarais Ave., and its utilization, and another for an uptown site. The advantage of the old jail site is its proximity to the river front.

Canadian Northern Ontario Ry.—An Ottawa dispatch states that the difficulties in the way of securing an entrance to Ottawa beyond Hurdman's bridge seem a fair way of being adjusted, and that the new plan will involve a bridge between the C.P.R. and the G.T.R. tracks. The Supreme Court has affirmed the order of Railway Commissioners' order granting the company permission to construct sidings from the G.T.R. main line in Scarborough tp., near Toronto, to the N.E. right-of-way between Toronto and Ottawa, for the purpose of transferring construction material.

In the Ontario Legislature Mar. 10, the Minister of Public Works stated that the company had built and placed in operation 30 miles of line northerly from Sellwood Jct. to Hutton tp., and that four survey parties were in the field between the latter point and Port Huron, locating a route for further construction.

J. M. Campbell is in charge of a staff of engineers, going over the route of the Toronto-Ottawa line, easterly from Trenton, Ont., on the western section of the line between Toronto and Trenton rapid progress is being made with construction.

Wahnapiac Ry.—The Ontario Legislature incorporated a company with this title for the purpose of constructing the railway mentioned in our last issue.

MAY, 1910.]

THE

Canadian Northern Ry. Construction, Etc.

Mackenzie, President, in a recent interview in London, Eng., stated that in the company's line from Toronto to Ottawa, will be finished as far as the progress would be made with the line from Toronto in the opposite direction. On the northern section the steel is about 60 miles beyond the line. On the Western prairies about 100 miles in all will be added to the company's lines. Construction will be continued with on the line from Edmonton to Yellowhead Pass, 240 miles. This will also see the beginning of the line of 500 miles across British Columbia from the Yellowhead Pass to the coast. Further progress would be made with the line to Hudson Bay, and it is generally expected that the line will be in operation within three years.

Canadian Northern Quebec Ry.—The city council decided, April 15, to make a formal protest on the company's part to reimburse the city for the \$100,000 voted to the Great Northern Ry. of the companies taken over, upon certain conditions which it is claimed are not being observed. One of the conditions was the location of the company's workshops in the city. The question has been discussed on several occasions but no definite understanding has been reached.

General Freight and Passenger Agent is reported to have said in a speech April 14 the matter of a new line there had been under consideration for some time, but as it was of considerable magnitude, it could not be arrived at in too much haste. There were a good many arguments going on in connection with the way matters in the city and it was impossible to say what would be the result.

Canadian Northern Ontario Ry.—A great deal has been made in tracklaying on the line under construction between

JULY, 1910.]

THE RAILWAY AND MARINE WORLD.

miles west of the McLeod River, and the erection of the roundhouse and other buildings will be gone on with as soon as construction materials can be taken in.

Working from the Pacific Coast the right of way has been cleared as far as Hazelton, and it is expected that the clearing gang will have got as far as Merricetown on the Bulkeley River, 30 miles from Hazelton, early in July. The contractors have completed the approaches to the tunnel near Hazelton, and have started work on the boring. About two-thirds of the length of the Duncan Ross tunnel at Bulkeley River has been bored, and good progress is being made on the remaining 100 ft.

C. M. Hays, President G.T.P.R., passed through Winnipeg on a trip of inspection over the line June 19. In an interview he stated that the company had 12,000 freight cars ready for the unloading of the crop along its lines from Edmonton to Fort William. It was the company's intention to build a large hotel in Winnipeg.

The Board of Railway Commissioners has approved the location of the line easterly from mileage 408.69 to 434.5 in the vicinity of Fort George, B.C.

SOUTHERN TRUNK PACIFIC BRANCH LINES.

The question of the location of the line from Regina, Sask., to the International boundary, was recently discussed between the Premier of Saskatchewan and E. J. Chamberlin, Vice President and General Manager. The question at issue was whether the line should be diverted from the route located by the company so as to pass through Weyburn, as the people of that town desired. The company said it would have to abandon its extension in South Saskatchewan if this were insisted upon but offered as an alternative to build a branch from the Regina line south of Weyburn into the town and on to the International boundary, where a connection would be made with a branch of the Great Northern Ry., now terminating at Scobey, N.D. (June, pg

Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—A contract has been entered into between the company and the Dominion Government under the act granting aid to certain railways for the building of a line from near L'Epiphanie on the main line north of Montreal, by way of St. Jacques L'Achigan to Rawdon, a distance of 16 miles. This line was completed in 1909, and a regular train service is being operated over it.

With a view to making Joliette a division point a round house, and shops for the making of running repairs to rolling stock are being erected. As soon as these are completed the employees at the present shops at Shawinigan Jct., will be moved there. The dispatching of trains on the line has already been centered at Joliette, it having been found to be a more convenient point than Montreal. The Assistant Superintendent has also been transferred there from Montreal.

The C.N.R. has secured options on a considerable area of property in Montreal, in the vicinity of St. Catharine St., and press reports state that it is being acquired for terminal purposes. Some papers credit the company with having in view the boring of a tunnel under Mount Royal.

The Board of Railway Commissioners has approved the location plans of a line from Hawksbury to Montreal. The line will cross the Ottawa River and run through Carillon, St. Andrews and St. Eustache to Hochelaga and Montreal. The company now obtains an entrance into Montreal by the line built as the Chateauguay and Northey Ry., joining the Ottawa-Quebec line at Joliette, but the route now located will give a very direct line. Tenders have been asked for the building of the line.

Quebec and Lake St. John Ry.—The first three of the lines for which the Dominion Parliament voted subsidies last season, particulars of which were given in our June issue, page 485, have been built, and trains are being operated over them. We are advised in regard to the other three lines, for which subsidies were voted, that it has not yet been decided whether any construction work will be done on them this year.

Bro
awa
T
pass
of
side
C.N
way
min
the
T
ste
rou
to J
in
not
cial
mer
ord
sec
one
the
pas
and
lan
rou
eas
pro
I
We
con
law
at
is e
The
and
leat
ker
I
Ter
of
142
isti
Ry
the
On
Ry
to
ow
the
cor
pre
not
(
str
doc
wa

The International Aviation Association has been incorporated under

ear.

The C.N.R. has secured options on a considerable area of property in Montreal, in the vicinity of St. Catharine St., and press reports state that it is being acquired for terminal purposes. Some papers credit the company with having in view the boring of a tunnel under Mount Royal.

The Board of Railway Commissioners has approved the location plans of a line from Hawksbury to Montreal. The line will cross the Ottawa River and run through Carillon, St. Andrews and St. Eustache to Hochelaga and Montreal. The company now obtains an entrance into Montreal by the line built as the Chateauguay and Northey Ry., joining the Ottawa-Quebec line at Joliette, but the route now located will give a very direct line. Tenders have been asked for the building of the line.

Quebec and Lake St. John Ry.—The first three of the lines for which the Dominion Parliament voted subsidies last season, particulars of which were given in our June issue, page 485, have been built, and trains are being operated over them. We are advised in regard to the other three lines, for which subsidies were voted, that it has not yet been decided whether any construction work will be done on them this year.

Canadian Northern Ontario Ry.—Plans have been filed with the Board of Railway Commissioners showing the route of entrance of the Toronto-Ottawa line into Ottawa. Starting from the point to which the route had previously been approved—at the crossing of the Rideau River, near Nepean and Gloucester streets—it crosses almost at right angles the Bank St. extension, or Metcalf road, some distance south of Billings Bridge, by an overhead crossing; parallels the St. Lawrence and Ottawa line of the C.P.R. to Rideau Jet; crosses the G.T.R. and the C.P.R. near the second diamond, and effects a junction east of the Rideau River with the company's Montreal line, terminating for the present on Gladstone Ave.

We are advised that the sub-contractors engaged on the Don Valley-Trenton section of the line from Toronto to Ottawa, with their headquarters, are as

ea
pr
W
cc
ta
at
is
T
a
le
k
T
ol
l
is
R
th
O
R
to
O
th
c
p
n
s
d
w
y
F
b
t
q
u
F
t
l
d
t
s
r
A
r
c
r
v
f
e
t
e

July
1910

RAILWAY DEVELOPMENT.

Projected Lines, Surveys, Construction, Betterments, Etc.

Alberta and Great Waterways Ry.—The Royal Commission investigating the circumstances surrounding the granting of the charter to this company practically completed its work July 5. The report will be presented to the Legislature next session.

E. A. James, General Manager, stated in an interview July 6, that the capital received by the sale of the bonds was held in trust in the banks. The company would open negotiations with the new government as to the contract. He considered the project was a thoroughly practicable one.

The Edmonton Bulletin states that the failure of the A. & G.W.R. Co. to meet the first instalment of interest on the bonds, due last week, eliminates the company from the project. The Province of Alberta had to meet the obligations and did so. This leaves the province with \$7,400,000 with which railway construction may be secured in what sections seem best. So far, the arrangement has cost the province \$55,000.

Algoma Central and Hudson's Bay Ry.

Tenders were received to July 30 for 150,000 ties to be delivered on the main line between the crossing of the Montreal River and the Michipicoten River. Good progress is being made with the building of the connection between the Michipicoten branch at Hawk Lake Jct. and Haddon, Ont., on the C.P.R. transcontinental line. The work has been pretty well opened up, clearing gangs are making good progress and contractors are constructing their camps at various points. It is hoped to have 1,000 men at work by Sept. 1.

We are officially advised that 150,000 of these ties are to be used for the completion of the main line, the contract for which has been let to the O'Boyle Bros. Construction Co., and is now under way. Work laying from the north and south was expected to be started before the end of July. From the south end work will be laid through to the crossing of the Patehewana River, between which and the Montreal River there are several structures to be built. The object is to push through to the Montreal River in order that the construction of a bridge may be got under way.

As the work will be going down

Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—W. Mackenzie, President, and D. B. Hanna, Third Vice President, C.N.R., were present at a private meeting of the Quebec city council, July 7, to discuss the question of the location of the company's shops there. The city has been threatening to sue for the recovery of the \$200,000 bonus paid to secure the location of the shops in Quebec. Mr. Mackenzie stated that Quebec has always been held in view as the eastern terminus of the C.N.R., and when the line is in order this will be her destiny. The shops would have been built by this time had it not been for the entanglement of the affairs of the C.N.Q.R. and the Quebec and Lake St. John Ry. The latter company owned the land upon which it was proposed to build the shops, and until the existing trouble was got rid of no definite move towards the erection of shops could be made. In addition to building the shops in Quebec the company proposed to build a bridge across the St. Charles River so as to be independent of other companies, and to replace the burned grain elevator. As a result of the conference the city council decided to suspend action for some weeks.

The question of terminals in Montreal is still under consideration, and it is said that an official announcement as to the company's proposals will be laid before the city council at an early date. Local reports state that the property acquired embraces the area between St. Catherine and Sherbrooke streets, running west nearly as far as Aylmer St. and east to the property facing Bleury St.

Grading has been started on the new line from Hawkesbury, Ont., to Montreal, for which a contract has been let to J. P. Mullarkey, Montreal. As originally surveyed this line follows the Carleton and Grenville Ry., and from Grenville continues in an almost straight line to St. Eustache through St. Andrews and St. Benoit. The Cache river is to be crossed near Ste. Genevieve, but the route on Montreal Island has not been definitely settled.

Canadian Northern Ontario Ry.—W. Mackenzie, President, had a conference

Canadian Northern Ry. Construction, Etc.

The C.N.R. and St. John, N.B.— Speaking at St. John, N.B., Sept. 4, the Minister of Public Works said Mackenzie, Mann & Co., had expressed to him a strong desire to secure an outlet for their line at St. John. It had been suggested that the Intercolonial Ry. be transferred to them, but he believed that the country wished to retain that line as a government railway. If Mackenzie, Mann & Co., the Premier of New Brunswick, and himself would get together another means of meeting the wishes of the railway builders in reference to Courtenay Bay might be found.

Canadian Northern Quebec Ry.—In connection with the action instituted by the Quebec city council to recover \$200,000, the bonus paid by the city to secure the location of workshops in the city, the council Sept. 10, decided to grant an extension of time to Oct. 1, to see what the company proposed to do. The application was made by the C.N.Q. Ry. Auditor, who stated that the company would carry out its obligations to the city.

The ten mile extension of the old St. Jacques branch, into Rawdon, Que., was opened for traffic Sept. 3. In connection with this branch it is stated in Montreal papers that the company expects at some future time to extend the line to Hudson Bay. It is claimed, so the reports state, that the only available pass through the Laurentian Mountains for reaching the National Transcontinental Ry. in northern Quebec is via Rawdon, and up the tributaries of the Lac Ouareau River.

Canadian Northern Ontario Ry.—(Ap-

north
near
alter
latter
a be
\$75.0
roun
Engl
in c
cers
to h
com
men
built
the
any
J
the
a c
the
100
Que
C
pan
nea
is
also
loo
213
cut
wa
two
tha
and
all
con
ad
27
sh
lac
17
tra

Canadian Northern Ry. Construction, Etc.

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has authorized the building of a Y to connect the main line with the spur line to the St. Marc quarries in Grondines parish, Portneuf county, and the acquirement of certain lands for right of way.

A connection between the C.N.Q.R. and the National Transcontinental Ry. at River Charest, Que., has been authorized by the Board of Railway Commissioners.

Canadian Northern Ontario Ry.—An arrangement has been made, subject to sanction by the Board of Railway Commissioners, between the company and the Ottawa city council, by which the C.N.O.R. will be carried across Hurdman Road, temporarily. In a recent interview President Mackenzie stated that the company's Toronto-Ottawa line would be completed to Sydenham, within 90 miles of Ottawa, this year. In the spring the balance of the line would be taken in hand and rushed to completion. The route for this 90 miles has been approved by the Board of Railway Commissioners. As to the entrance into Ottawa, Mr. Mackenzie said the company had been terribly handicapped, but he hoped that by the spring everything would be straightened out.

Good progress is being made all along the sections of the line under construction between Toronto and Trenton, and in the vicinity of Belleville. Those in

Canadian Northern Ry.—M. H. McLeod, General Manager and Chief Engineer, recently completed an inspection of the betterment work done on the line between Port Arthur and Winnipeg during this year. The principal work done has been in the way of straightening out the track, and the building of a cut-off in the vicinity of Stanley, Ont. At the time of the inspection all the work had been completed, with the exception of about two miles of tracklaying, and this was expected to be finished by Oct. 31. Nothing more in the way of betterments would be undertaken, Mr. McLeod stated, this year.

In the course of some very extensive forest fires in northern Minnesota and the Rainy River district of Ontario, considerable damage was done to the railway at different points between Fort Frances, Ont., and Beaudette, Minn.

A permit has been granted by the Winnipeg city council for the erection of freight sheds, offices and cold storage plant, to cost about \$87,000. The buildings will be situated near the new station on Main St., at the foot of Broadway. With the exception of the office, which will be of brick, the buildings will be of steel on concrete footings. They will cover an area of 664 by 60 ft., the freight shed taking up 542 ft. of the frontage. The architect is R. B. Pratt, and the contract has been let to Carter, Halls and Aldinger.

The ballasting on Oak Point extension was expected to be completed by Oct. 31. A train service is being operated

to the C.P.R., particularly from the western boundary of range 26, between tps. 16 and 17. The question of the entry of the line into Moose Jaw has yet to be settled, not only with the city, but with the G.T. Pacific Ry.

The station at Saskatoon, Sask., illustrated on this page, and which was completed a short time ago, is located on First Ave., at the intersection of 23rd St., from which a good view of the central tower of the station, which is about 58 ft. high, can be seen. The total length of station is 218 ft., including a covered platform 40 1/4 ft. long at the end. The width is 62 ft., including canopied platform at either side. The platform on track side is 30 ft. wide, and is reduced to 14 ft. extending along main line 250 ft. both ways from centre line of building, making a total length of 500 ft. The building has full basement, with ample rooms for boilers, fuel and storage, on which is built three floors forming the central main tower, having a two storied feature extending 62 ft. on either side, with stone facade in centre. The extreme ends are one story high, with foundation strong enough to allow of them being increased by an additional floor. The main entrance to building is from First Ave. into ticket lobby, located close to ticket office, and situated between general waiting room, 29 ft. 2 ins. by 29 ft. 2 ins., and ladies' waiting room, 20 ft. by 29 ft. 2 ins., with necessary toilet rooms attached. The parcel room and baggage room, 30 ft. by 30 ft. are located convenient to gen-



Canadian Northern Railway Station at Saskatoon, Sask.

charge of construction at the latter point are said to have received instructions to get the work finished by Jan. 1. In consequence work will be rushed as fast as possible. Good progress is being made west and east of the city, and nearly all the property required in Sydney and most of that for the route in Belleville has been purchased. The Dominion Bridge Co., which has the contract for bridges over the Trent at Trenton and Moira at Belleville will commence operations immediately.

Track was reported Oct. 14 to have been laid to near Cobourg, Ont. Station buildings at Grafton and Coborne are being built, and the preliminary work for the bridge over the Trent at Trenton is under way.

The Board of Railway Commissioners has approved of plans for station buildings at Port Hope and Cobourg, and of standard plans for various buildings to be erected on the Toronto-Ottawa line.

Representatives of Parry Sound, Ont., had an interview with President Mackenzie Oct. 11, and it is said that a proposition will shortly be submitted to the town for the establishment of repair shops, and the erection of a 500,000 bushel elevator.

The Board of Railway Commissioners has approved of the location plans of the line through unsurveyed territory in the Sudbury mining division, Algoma, mileage 200 to 220, and from mileage 220 to 240, from Sudbury, Ont.

for the accommodation of the settlers by the contractors.

In connection with the company's application to the Board of Railway Commissioners for approval of its plans for building a transfer railway along certain streets in Brandon, Man., Chief Commissioner Mabee stated recently that the compensation to be paid to those whose property would be injuriously affected would have to be as the commissioners directed. The application was subsequently withdrawn.

The Board of Railway Commissioners has authorized the opening for traffic of an additional 15 miles from Ochre River to the end of steel on the Ste. Rose du Lac branch, Man., and has also approved of the location of the Goose Lake extension through tps. 30-31, ranges 11-15 and ranges 16-20, west 4th meridian, Alta.

The Minister of Railways has approved of plans for the building of a line from Regina to Moose Jaw, Sask. The plans show a line running into sections 24, 3, 21, 20 and 19 in township 17, range 21, through the same sections in 17-22, through sections 24, 23 and 22, southwesterly into 15, 17 and 18 in 17-23, along 13, 14, 15, 9, 8 and 7, in 17-24, through 1, 2, 3, 4, 5, 6, in 17-25, between the borders of 16-26 and 17-26 into Moose Jaw. The line is about two miles distant from the route approved for the G.T. Pacific Branch Lines between the same places, and is very close

eral waiting room, and the express room and offices are large enough to take care of the ever increasing express business. The exterior is built of Menomonic sand brick, moulded red brick, red mortar joints with trimmings of white Tyndall limestone, rock faced. The interior finishing throughout was selected, keeping in mind the necessity for a complete sanitary finish, as well as a good general appearance. The ticket lobby, general waiting room and toilet rooms have tile floors, base and dados, the remainder of the floors are polished maple floors. The baggage and express rooms have hardwood dados 7 ft. high. The remainder of the trim on this floor is hardwood finished mission style. From this floor are two stairs communicating with floor above, one for use of general offices of the executive and engineering staff, which occupy the north end of the first floor; the other stair to the superintendent's quarters in the south end. This floor is finished throughout in clear B.C. fir, natural finish. The superintendent's quarters are so arranged they can be turned into offices at any future date. The building is steam heated and electric lighted throughout. The toilet rooms are complete with the most up to date sanitary fittings. The canopy round the outside of the building has a complete system of fixtures to light platform, which is controlled by switches from ticket office.

Application was made Oct. 4, for the

Canadian Northern Ry. Construction, Etc.

In the course of a recent interview in Montreal, President Mackenzie said that during four and a half years the company had done nothing on its main line, but in that time it had built 1,200 miles of branch lines. This policy of keeping the branch lines well along, he said, caused the success of the C.N.R. as a freight carrier on the plains and from Lake Superior westward. There had been already laid this year about 260 miles of track in Alberta and Saskatchewan. In addition to the 60 mile contract on the Pacific section of the line, the company had also let a contract for the construction of 140 miles from Edmonton, and the work would be pushed vigorously from both ends, till the track-layers met somewhere in the Rocky Mountains in about three years time. It might be possible also about the same time to complete the connection between the head waters of Lake Superior and the St. Lawrence River.

Canadian Northern Quebec Ry.—The question of the location of the company's shops in the city will again come up for consideration at the Sept. meeting of the Quebec council.

The branch line from near L'Epiphaïne to Rawdon, 5.7 miles, has been completed and will be opened for traffic shortly. It is over 50 years ago that a railway connection was first projected at Rawdon, by the Rawdon and Industry Ry., but until the C.N.Q. Ry. built this branch line nothing was ever accomplished in the way of giving Rawdon railway connection with the outside world.

W. Mackenzie, President, left Montreal Aug. 12, after spending four days there. On Aug. 10 he had a lengthened conference with Sir Thos. G. Shaughnessy, President C.P.R., but what the subject of the conference was has not been made public. Press reports state that it had to do with an arrangement for joint terminal facilities in Montreal and Toronto, and for the settlement of a number of matters upon which the officials of the two companies in different places are not in harmony.

Canadian Northern Ontario Ry.—Work on the first section of the line

Po
tha
ga
cal
ter
of
wo
Po
sid
fle
thi
fre
Ba
ed

en
Ry
co
Ha
thi
Th
sh
Mi

Th
co
we
Ju
Ch
on
at
es
lin
an
ra

foi
ho
S.
wo
an
br
be
is

su
ed
ly
th
Al
to
ter
M
Be
an
lai
nu
gr

Canadian Northern Ry. Construction, Etc

James Bay and Eastern Ry.—The Board of Railway Commissioners has approved location plans for this projected railway between mileage 14.39 and mileage 14.93, in Ashuapauhouan tp., Lake St. John county, Que. A company with this title was incorporated last session of the Dominion Parliament to build a line from James Bay, easterly to a junction with the Quebec and Lake St. John Ry. near Roberval, Que. The provisional directors are associated with the Mackenzie, Mann & Co., Ltd.

Canadian Northern Quebec Ry.—The mayor of Quebec was reported Oct. 28, as having given instructions to the city solicitors to push the action against the company for the return of \$200,000 granted to the Great Northern Ry., one of the companies amalgamated in the C.N.Q. Ry., on condition that its shops be located in the city.

We are officially advised that the company has purchased the property at the corner of St. James St. and Dollard Lane, Montreal. It is intended to make some alterations in the existing buildings in the near future, with a view to having all the company's offices in Montreal located there. This will include the general freight and passenger department, the steamship department and the express department. The price paid for the property is said to have been \$175,000.

In an interview at Ottawa, Nov. 10, W. Mackenzie, President, said work was progressing favorably on the new section of the line between Hawkesbury, Ont., and Montreal, which it is expected will be opened for traffic next fall.

The Dominion Parliament is being asked to authorize the company to build a line from Rawdon northerly to a junction with the National Transcontinental Ry. and from St. Jerome to St. Eustache, Que.

Bay of Quinte Ry.—Application is being made to the Dominion Parliament to

Ott
Jun
mil
wit
cut
but
ver
bee
the
are
alo
ing
Su
er,
R
ms
via
Os
po
84
br
be
be
ar
la
de
a
w
w
R
or
b
p
F
b
t
C

t
c
l
l
l
l
l

JANUARY, 1911.]

TH

Canadian Northern Ry. Construction, Etc

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has authorized the opening for traffic of the branch from Hedleyville Jct., to the Montmorency Lumber Co.'s pulp mill, 7.62 miles.

James Bay and Eastern Ry.—The

FEBRUARY, 1911.]

TH

Canadian Northern Ry. Construction, Etc

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has ordered the company to provide a platform and shelter for freight and passenger traffic at Pointe Aux Trembles, Que.; to fence the property and tracks at Hochelaga terminals, and instal various protective devices along its line in Montreal. The company's application to build an extension to connect its tracks with the lines of the Montreal Harbor Commission has been referred to the Board of Commissioners.

Canadian Northern Ry. Construction, Etc

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has authorized the company to use tracks on the bridge over the St. Charles river, near Quebec, including property used in common by the Quebec Ry., Light and Power Co., and the Quebec and Lake St. John Ry., for entering Quebec, \$1,500 a year rental to be paid to the former company, and also to pay all arrears for the use of the bridge, and be responsible for its share of its maintenance and operation. The Board has also approved the extension of the yards between Moreau and Marlborough streets, and dismissed the applications for closing Robillard St., the extension of yards in Hochelaga, to cross Marlborough St., and to take certain lands on Stadacona and Marlborough streets.

Canadian Northern Ontario Ry.—The Board of Railway Commissioners has approved a revised location for a section of the line under construction in St. Andrews parish, Que., authorized the company to build an overhead bridge across the C.P.R. near Jacques Cartier Jct., mileage 49.3, south from Hawkesbury, Ont.; to lay tracks across various highways and streets, and to build bridges over creeks, on the line under construction between Toronto and Ottawa.

Plans have been filed showing the route of the proposed entrance into North Toronto for the line to Buffalo. The new line is a prolongation of the Electric Development Co.'s right of way from where it ceases at Davenport Road, north of the C.P.R., to McLennan Ave. Several streets will be closed, and the tracks will be elevated between Avenue Road and Yonge St., at both of which points subways will be built. The route from Toronto will follow the Electric Development Co.'s right of way as far as possible. The entrance into Hamilton is at present undecided, but it is said that a route paralleling the G.T.R. from Burlington to the Valley Inn has been laid out. No plans have been filed with the city authorities, although the mayor was advised Feb. 4 that they were ready, neither has any report been received from the Board of Railway Commissioners' Chief Engineer, to whom the matter was referred some time ago. Various properties have been purchased near the old N. and N.W. Ry. at Ferrie St., Queen and Greig streets, by persons said to represent the company.

The Electric Development Co. has a right of way from Hamilton to Cainsville, and the C.N.O.R. has filed plans for an entrance into Brantford over this route. (See Toronto, Niagara and Western Ry., Jan., pg. 61.)

Surveys are reported completed for a line from Rideau Jct., on the Toronto-Ottawa line, about six miles southwest from Ottawa, to Port Arthur, effecting a junction on the way with the

the
tion
Toro
the
the
vari
of t
roun
head
then
R
Legi
com
an
the
thun
ed
to
bee
an
and
had
Ral
app
des
A
ed
and
ask
for
Bay
pro
T
tha
Ma
at
tha
as
(
pre
agi
the
the
Pa
by
C.I
dis
fre
bu
mi
tol
su
ex
du
mi
ed
an
mi
te
te
19
Le
li
st
re
ha
li
st
at
st
p

MAY, 1911.]

THE

Canadian Northern Ry. Construction, Etc

Canadian Northern Quebec Ry.—The Dominion Parliament has authorized the construction of a line from Rawdon to a junction with the National Transcontinental Ry., with a branch from near Rawdon to Joliette; and a line from St. Jerome to St. Eustache, Que.

The Quebec city council is being asked to pass a resolution asking the Provincial Government not to grant any further subsidies to the C.N.Q. Ry. lines without insisting upon the company carrying out its alleged obligations with the city to construct workshops within its limits in return for a subsidy of \$200,000. It is claimed that the contract was entered into with the old Great Northern Ry., and the subsidy paid over, but that the shops were not built. The C.N.Q. Ry., is the successor of the G.N. Ry.

The Board of Railway Commissioners has ordered the company to fence its line from Hochelaga to the limits of Montreal, to erect gates at certain crossings, and to provide gatekeepers at others. The Montreal city engineer has reported in favor of the company's proposal to close Robillard St., from Marlborough to Moreau streets, for the purpose of laying additional tracks, but against the closing of Stadacona St., from Moreau St., for 600 ft. westwards.

The company is remodelling the building in Montreal at 226, 228 and 230 St. James St., corner of Dollard Lane, which it purchased recently. When the alterations are completed the rail and steamship ticket, express and other offices will be located on the ground floor, while the upper floors will be utilized for offices.

JUNE, 1911.]

THE RA

Canadian Northern Ry., Construction, Etc

Quebec and Lake St. John Ry.—A contract was entered into April 25 with the company under the Dominion act granting aid to certain railways, in respect of the construction of a line from Valcartier station to St. Catherines, Que., 3.3 miles, and for the construction of a line from Valcartier station towards Gosford, Que., a distance of 5.5 miles. Track was laid on these two lines during 1908.

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has issued an order correcting an error in the application for the approval of the location of the St. Jacques branch, from St. Jacques to Rawdon, Que.

The company has under consideration the question of terminals in Montreal, and reports in real estate circles in that city credit the C.N.Q.R. and its owners, Mackenzie, Mann & Co., with being at the back of nearly all the large property changes in the centre of the city. The latest report is that the site of the Jesuit College, on Bleury St., which has just been sold, has been secured for the terminal station.

Canadian Northern Ontario Ry.—Contracts for the construction of the remaining portion of the C.N.O.R. between Toronto and Ottawa were let May 19. The line will have a total length of about 100 miles. Its building was started two

the c
the p
Railw
the c

Th
has
the
acco
sion
the
are
a de
mach

Th
has
mon
whic
Lon
stea
toor
oy

T
Reg
pro
at
sas
tha
be
dat

A
bee
wh
sec
the
ab

is

AUGUST, 1911.]

TH

Canadian Northern Ry. Construction, Etc

Canadian Northern Quebec Ry.—We are advised that while the matter of the erection of shops at Limoulu, Que., has been under consideration for some time, no definite decision has been reached as to what will be done.

The matter of the company's terminals in Montreal is being widely talked of at present, owing to extensive purchases of land which have been made in the city, and between Montreal and the Back River by what is known at the Deayton-Shaw Syndicate. It is stated that these latter proposals will be developed for industrial plants along the route of the direct line of the C.N.Q.R. from Ottawa, and as sites for suburban residences. We are advised that it is proposed to obtain an entrance into the centre of the city by means of a tunnel under Mount Royal. The feasibility of this proposal is being investigated and plans are being prepared. So far as the laying out of terminals is concerned nothing has been decided, either as to whether the company will lay out terminals for itself or join with some other company, presumably the G.T.R.

Canadian Northern Railway Construction, Betterments, Etc,

The Canadian Northern Quebec Ry.—
The Board of Railway Commissioners has authorized the building of a 90 ft. deck plate girder bridge across the St. Charles River, at mileage 4.38 from Quebec.

The question of the extension of the company's yards in Hochelaga ward, Montreal, has been before the Board of Railway Commissioners on several occasions recently, and an appeal to the Supreme Court is being made against one of the Board's rulings. In this connection the Montreal city council has been recommended to delay granting roads.

The Board of Railway Commissioners has extended the time for the completion of the line across Notre Dame St., and the Montreal Street Ry. tracks.

Canadian Northern Ontario Ry.—A deed of sale has been registered in Montreal showing the transfer of 500 arpents of land in Longue Pointe ward from Mackenzie, Mann & Co., Ltd., to the C.N.O. Ry. The land adjoins the C.N.Q. Ry. near the approach to the Moreau Rd. terminal.

The bridges on the new short line which is being built from Montreal to Hawkesbury, Ont., are as follows: Riviere des Nordes, mileage 13.5 from Hawkesbury, consisting of five 55 ft., three 60 ft., deck plate girder spans, and one 24 ft. beam span on concrete piers and abutments. Rouge River, mileage 15.5 from Hawkesbury, consisting of two 40 ft. and one 85 ft. half through plate girder spans on concrete piers and abutments. Riviere des Chenes, mileage 30.7 from Hawkesbury, consisting of one 65 ft. half through plate girder span on

Canadian Northern Railway Construction, Betterments, Etc.

Quebec, New Brunswick and Nova Scotia Ry.—A Quebec press report states that the projected extension of the Canadian Northern Ry. from Quebec to Fredericton, N.B., and the Atlantic coast in Nova Scotia, for which the company holds a charter with the above title, will be abandoned if a satisfactory agreement can be made for operating rights over the Intercolonial Ry.

Canadian Northern Quebec Ry.—The Board of Railway Commissioners has authorized the company to carry its lines across Ontario, Valois, Chambly and Nicolet streets, Montreal, the crossing of the last two streets being by a double track. The company had started operations on Valois St., Sept. 23, but had to stop upon the city council obtaining an injunction pending the order of the Board, which was made Sept. 30. This crossing is being made in connection with the enlargement of the freight yards.

Upon a recent trip to Montreal, Sir Donald Mann, is reported to have said he expected to see the C.N.R. transcontinental line completed in three years. With regard to the position of Montreal, the company would have a central terminal station in the heart of the city. The question of a union station with the G.T.R. had never been discussed. An announcement as to the terminal plans, etc., would be made in due time. He favored the tunnel approach, of the feasibility of which he was assured. The plans for all this work, however, would have to be approved by the city.

Application is being made to the Dominion Parliament to incorporate the Canadian Northern Montreal Tunnel and Terminal Co. to construct and operate a railway tunnel from some point in Montreal generally westerly under Mount Royal with the necessary approaches and works; to build the necessary lines of railway to connect the tunnel with the C.N.Q. Ry., the C.N. Ontario Ry., and with the Montreal Harbor Commissioners' tracks, the undertaking to be one for the general advantage of Canada.

Press reports say the C.N.R. interests are desirous of purchasing the St. James Methodist church property in Montreal, for terminal purposes. The property has an area of 77,550 sq. ft. with four frontages. The trustees announced Oct. 9 that they would consider an offer of \$2,000,000 for the property, and this amount is said to have been put up by those desirous of making the purchase.

The Board of Railway Commissioners has authorized the building of a bridge across the main channel of Riviere des Prairies, at mileage 40 on the new line from Montreal to Hawkesbury.

The Dominion Parliament is being asked to extend the time within which certain lines authorized to be built in 1907 may be constructed.

Canadian Northern Ontario Ry.—The

location
from
York
after
dered
pare a
elimin
Avenu
This
applic
cation
being
tion o
Ott
that
shops
chase
about
ment
en or
been
Th
asked
certa
built
lowin
holm
with
near
west
Tran
Th
a su
to th
the
thor
cons
chin
Si
stati
ante
of th
fully
Corr
cath
Chil
316.
94.9
froi
T
Sud
ried
hav
Sud
En
at
Dis
visi
trik
der
are
sio
res
Sec
Di
W.
Go
2,
Se
Pr
H.
to
Co
C.
M
M
w

Canadian Northern Railway Construction, Betterments, Etc.

James Bay and Eastern Ry.—The Board of Railway Commissioners has approved revised location for this projected railway from mileage 18.2 to 19.6, in Ashuapmouchouan tp., Que.

Quebec and Lake St. John Ry.—In addition to the sections relating to finance in the act which the Quebec Legislature is being asked to pass, the company is applying for power to build branch lines from any point on its existing lines, and for an extension of time within which already authorized branch lines may be built.

Canadian Northern Quebec Ry.—The Dominion Parliament is being asked to extend the time within which the lines described in pars. c, e and f, sec. 3, chap. 73 of the statutes of 1907 may be completed. These lines are, from Quebec to Moncton, N.B., and Pugwash, N.S.; from St. Jerome towards the Ottawa, Northern and Western Ry. in Wright county, Que.; and the branches and extensions of the Chateaugay and Northern Ry. mentioned in sec. 2, chap. 75 of the Quebec statutes for 1899.

The action brought by the Quebec city council to recover from the company \$200,000 cash subsidy paid, owing to its alleged failure to comply with the condition that shops should be built in the city, was set down for hearing Nov. 3. The agreement was made with, and the subsidy paid to the old Great Northern Ry., which is now part of the C.N.Q.R. Before the action came on for hearing, an agreement was reached between the city and the company. A plan showing the layout of the company's yards at Limoulou was placed before the committee on Nov. 6, and a letter, signed by D. B. Hanna, President, was read. In this letter Mr. Hanna said while the company's plan of reorganization had not yet been ratified by Parliament, but with a desire to meet the city the company was willing to make a start on the new shops at Limoulou. The building of the roundhouse, machine shop and car shop would be proceeded with at once. It was desired, however, to have an assurance that the council would not directly or indirectly assist in the expropriation for a highway through the company's property, and would also agree to the closing of certain streets within the area acquired or sought to be acquired for yards, etc.; and that the property of the C.N.Q.R. and Quebec and Lake St. John Ry. in the city be subject to a fixed assessment of \$6,000 a year for 20 years. The company had already acquired 85 per cent. of the property proposed to be secured for yard purposes. In explaining the matter to the committee, Mr. Hanna said the buildings would be completed by Nov., 1912; as a result of the discussion it was agreed to allow the action to remain in abeyance; to approve the company's proposals as to terms, upon a report of the city engineer that a serious start had been made upon the erection of the buildings, and to deal with the question of a fixed assessment later.

A plan for the construction of a bridge over the St. Charles River was also considered. After some discussion it was agreed that further plans be submitted, the bridge to provide accommodation for two steam railway tracks, two electric railway tracks, a road for ordinary traffic, and one for foot passengers. This bridge will replace an existing one, connecting with Limoulou.

The Board of Railway Commissioners has authorized the company to build a double track across Orleans and Ste. Jean d'Arc streets, Montreal.

Montreal Terminal Plans.—It was stated unofficially in Montreal, Nov. 17,

that
tunnel
been
fore
The
pany
back
of St
tache
tion,
Laga
The
Laga
be us
hotel
porti
whol
name
plete

Ca
Dom
auth
cons
and
Caril
ville
a m
July
M
Nov.
to ti
for
Mon
Haw
istin
will
eau
new
is a
Ont
last
Not
cons
of
wor
juni
bur
ope
to
ord
10.
froi
con
bot
mis
pla
63.
127
Sud
q
tax
ton
etc.
wit
tra
mis
ing
tio
mill
Th
tp.
An
Be
ple
De
Qu
tio
pla
Wi
ha
Ot
of
rei
Lo
17
tp.
ro
of
an
bo
ar
sic
m
th
Ri

Canadian Northern Railway Construction, Betterments, Etc.

New Brunswick.—Press reports state that Sir Wm. Mackenzie and associates have secured control of 152 square miles in the oil-bearing shale districts of New Brunswick. Sir William and G. O. Ruel, of the Canadian Northern Ry. legal department, met the New Brunswick Government, Dec. 1, and are reported to have discussed the development of the property. The question of railway accommodation in these oil fields is stated to be under consideration.

Canadian Northern Quebec Ry.—A press report states that surveys are being made for a line from St. Eustache to St. Jerome, Que., 18 miles, and from St. Justin to St. Stanislas, 55 miles.

Sir Wm. Mackenzie, President C.N.R., was in Montreal, Dec. 12, and in an interview is reported to have said he would make no announcement regarding the proposed terminals there until his return from Europe. The company's representatives were at work on the details of the proposals.

Canadian Northern Ontario Ry.—The line under construction from Hawkesbury, Ont., to Montreal will run through the southern part of Two Mountains county, which is now without railway accommodation. The engineers in charge of construction opened an office in St. Eustache, Dec. 1, and work is being gone on with in that vicinity. The right of way has been cleared up to the river, and work has been started on the bridge to connect with St. Jean. A second bridge will carry the line on to Montreal Island. It is stated that a connection will be made with the G.T.C. Jacques Cartier line, so as to run trains into Bonaventure station, pending the building of the company's own terminals in Montreal. It is reported that considerably more than half the grading has been completed between St. Eustache and Hawkesbury, and it is expected to have the line completed by the end of the year. A new line from Hawkesbury into Montreal was put in operation early in 1911.

Westward from Ottawa, contracts have been let to J. P. Mulroney for building the line from Ottawa to Pembroke, 29 miles, and to Angus Sinclair, C.E., for building the line from Pembroke to Capreol, 122 miles. This will carry the line to a connection with the Toronto-Budbury line, and its extension, which will form part of the trans-

through a subsidiary, the Toronto, Niagara and Western Ry. Co., is reported to be buying right of way in and through Hamilton. Press reports state that the surveys for the westerly extension of the line are being made from Hamilton via Brantford and London to Sarnia, Ont.

Canadian Northern Ry.—A new coal dock is under construction at Port Arthur, Ont., for the Canadian Northern Coal Dock Co., at a reported cost of \$100,000. The new plant, which will have a capacity of 60,000 tons of hard coal and 250,000 tons of soft coal, will have a frontage of 650 ft. at the head of the docks. The contract was said to have been let to the Barnett-McQueen Co., Dec. 7.

An extension of the Thunder Bolt branch to Iydenville, Sask., 74 miles, has been opened for traffic. The Board of Railway Commissioners has authorized the opening for traffic of the Maryfield extension from Maryville to Bengough, Sask., of 45 miles, and the extension of the branch to Calgary from Warden, mileage 192.5, to Drumeller, mileage 172.63, Alta.

It is reported that some 400 miles of grading was completed in Alberta during 1911. The principal part of the construction has been in the Edmonton district. It was expected to complete by Dec. 31 the line to Athabasca Landing, of which 55 miles was built during the year. The other work done includes 165 miles of grading towards the Yellow-Head Pass; 20 miles of grading on a line in the direction of the Peace River; over 100 miles of grading has been done on the line from Statler via Red Deer to the Saskatchewan River and over 50 miles between the river and Rocky Mountain House; the line to Calgary has been put in operation as far as Drumeller, while the grading has been pushed for some miles further, and considerable grading has been done on the line between Strathcona and Camrose.

The town of Macleod is applying to the Alberta Legislature for the validation of a bylaw closing certain streets, avenues and lanes crossing the C.N.R. right of way, station grounds and yards, conveying certain lands to the company, and an agreement made in respect to the building of the line in the town.

Canadian Northern Pacific Ry.—M. H. McLeod, General Manager and Chief Engineer, C.N.P.R., was in Vancouver, B.C., Dec. 5. He is reported to have stated that it was proposed that the

The Canadian Northern Railway's Montreal Entrance.

One of the many problems which the Canadian Northern Ry. management has had to solve in its very romantic history has been its entry into Montreal. The problem was this: Given two rich and powerful trunk roads firmly entrenched, one of them for over 50 years, the other for 25, how is a new and struggling railway only a little over 10 years old, scarcely known to the east, except as the owner and sponsor for some 800 or 700 miles of unprofitable road in the province of Quebec, to gain a foothold in a city where property is held for miles out from its centre at so many dollars per square foot, and where the level street crossing has been condemned for 20 years or more. To come in alongside the existing roads was a matter of prohibitive cost, and it meant only destruction in existing interests everywhere. Nobody wanted it or felt the need of it, and for ten miles out at least it would be only a dead line, incapable of creating any new traffic for itself or of sharing in the existing business.

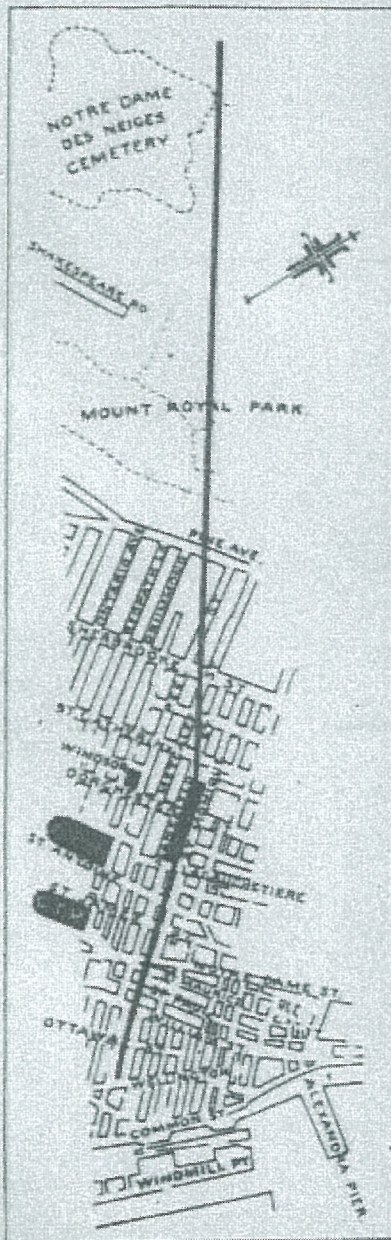
Something better than this had to be looked for. It was possible to get into the outskirts of the city no doubt, but what chance was there in such a situation of competing with the two roads above mentioned, giving the best service perhaps that any city on the continent possesses—to Toronto, to Ottawa, to Winnipeg, to Vancouver, and to every point of importance which the Canadian Northern touches. It was a central location which the occasion demanded, or nothing at all. This was the problem presented to the C.N.R. staff, and the following is an account of how it was solved, and the various steps and arguments taken and used in the solution.

The C.N.R. had a bridge over the Ottawa River at Hawkesbury, acquired through the Great Northern Ry. of Canada, and as the C.P.R. short line monopolized the south bank of the Ottawa to Vaudeville, it seemed most reasonable that the line should use this bridge and come down from the west on the north side, especially as by doing so it would have a monopoly of the trade of several small towns, such as Carillon, St. Andrews, St. Placide, St. Benoit, and a portion of that of St. Eustache. Arrived at the latter point it was obviously essential to cross the Back River, skirt along it behind the mountain, and join the existing line out of the east end of the city, and through it get access to the freight yard in Maisonneuve and the Harbor Commissioners' transfer track.

This was obviously the first step, and in itself this gave the road a fairly good position from a freight standpoint, especially as the backbone of the island was crossed at a low elevation, and by gradients only one-third of those obtaining on the C.P.R., but this was no solution of the passenger traffic problem. No one would want to travel 118 miles from Ottawa, for instance, and be landed three miles from the centre of Montreal when he could go 112 on the C.P.R. and be landed directly at that centre. But the problem had become narrowed down. The data were now. A suitable spot in the centre of the city and a line running past at a distance of six miles or so. How can the two be connected? Any bright schoolboy would answer, "Drop a perpendicular from the point on to the straight line," and this is just what the Canadian Northern did, but the line crossed over a mountain top 800 ft. high. A bold spirit said tunnel it, but the financiers shook their heads and laughed. Where was the money to come from, and if it could be got, how was the interest to be paid by a struggling road, even after it was completed? The question was a hard one to answer, and it was not fully answered until six years

after, when the question had become urgent.

But in the meantime the following arguments had been presented and weighed. First, Montreal has grown continuously up and down the narrow strip between the mountain and the river until its length is ten miles, and its breadth less than two, a most awkward shape for a city. The wealthier residents, in their effort to get away from



The Canadian Northern Railway Entrance to Montreal, showing Station Site between Mansfield and St. Monique Sts.

the dust and smoke and heat, had climbed up the slopes of the mountain to the very top and gone out to Lachine and Dorval, and had even pushed past the end of the mountain at Snowdon and Outremont; but the beautiful western slope towards the Back River remained undeveloped, because inaccessible without a long ride of 40 minutes from the business centre.

Obviously the tunnel when built would do more than bring the C.N.R.'s long distance traffic into town; it could be developed into a most important factor in the building up of a greater and more compact Montreal by bringing these desirable lands within ten minutes of the city's heart. This traffic would in itself probably be profitable, but further than this it was bound to enhance the value of the lands in question. Why should not the C.N.R. itself profit by the enhanced value? Why should the real estate men be the only gainers from a vast expenditure of money to which they would not contribute one cent? Here then was the key of the problem of financing, if only the lock would be found which it fitted, and the astute financiers very soon found the lock and opened the door of the financial safe. But this is a story by itself, and a romantic one, which will be told some day.

There were other arguments and other schemes more or less closely allied. It was proposed, for instance, to come in on the north slope of the mountain, where the cutting would be comparatively light, and where merely depressed tracks arched over with concrete and steel could be used. It was concluded that this would be cheaper, but an investigation did not show that this would be the case. It was contended that it would be more quickly constructed, and even this seemed to be doubtful for the quicker construction depended on the work being started at and carried on from a number of different points simultaneously and this entailed the piling away of an immense quantity of material through the city streets for several miles—a matter of both great difficulty and expense. Another serious drawback was that this northern route led only to an uptown station north of Phillips Square, which meant a dead end station for all time, because continuation eastward towards the river meant crossing St. James St., and the district between it and the harbor at their very busiest and most congested portions—a matter of prohibitive cost and difficulty. As a matter of fact there was only one narrow belt which could be traversed, that is between the two existing railway terminals and Victoria Square, and this belt, butting up against the canal basin on the east, happened to be one of the most attractive situations for a freight terminal in all Montreal.

This last consideration settled the choice of route. The arguments could not be controverted, and this decision narrowed the choice of a terminal passenger station down to very small limits, viz., to a site near St. Catherine St. and somewhere between Dominion Square and Beaver Hall Hill. The existence of the big St. James Cathedral on the one side, and Birks', Roxy's, and some other expensive buildings on the other, narrowed this still more; the offer of the large unbroken block of land to the east of Dorchester St., belonging to the Joseph estate, at a reasonable price, the existence of another block immediately west, covered almost entirely by second rate and old buildings, finally settled the matter and brought the choice of site to a focus.

A further consideration was the levels of the different streets to be crossed. Grade crossings of any of the main thoroughfares were not to be considered, either in the interest of the city or the railway, and it so happened that it was only on this line they could be well avoided. At the end of St. Monique St., for example, Laguchetiere is about 40 ft. above St. Antoine, and St. James about 5 ft. lower. This admits of the line coming out under the former and above the second with a sufficient clearance, and over the third with a liberal margin. St. Antoine rises south, Laguchetiere and St. James do not. So that

even the difference of a block would have made a great difference in this respect.

The above steps in the argument led then to the choice of route which may be briefly described as follows:—The line from Ottawa crosses the Rivière des Prairies or Back River, near Ste. Dorothée, to the Island of Montreal and skirts along its east or right bank to Cartierville, where a large block of land has been secured for a divisional point and shops. It then goes on in the same direction to near Jacques Cartier Jct., where the freight line mentioned above leaves the Dupont line and proceeds to a junction with the C.N. Quebec Ry. line near the Montreal Locomotive Works at Longue Point. The tunnel line, of which the profile is shown here-with, deflects sharply to the right and ascends directly towards the centre of the mountain on a gradient of 40 ft. to the mile to a point about half a mile south from the C.P.R.'s Outramont yard, where the grade reverses its direction and carries the line under the tracks of the older road and into the heart of the old volcano. At this tunnel portal will be Northmount station, and it is probable that half a mile further on there will be a shaft and an elevator down to a subterranean substation somewhere near the St. Catherine's Road. From there on, the depth below the surface becomes very great, as much as 400 ft., but it may be considered commercially practicable in the future to sink a similar shaft from the

It will be seen from the foregoing that the company's plans, while bold and somewhat original, are by no means extravagant or fanciful. A subway has been talked about for years back, approximately along the line of St. Catherine St., to relieve the surface congestion and has now become a necessity. The scheme under discussion would, as far as its suburban traffic is concerned, be supplementary to this and is designed to pass under it. Provision will be made for the transfer of passengers from one to the other without their going out of doors at all, or climbing to street level.

The tunnel will be double tracked throughout and as a matter of course will be electrically operated and well lighted. Through the rock-sections both tracks will run in the same tunnel. In the earth approaches it may be more convenient to put two separate tubes side by side, but this is unlikely, as the rock is known to be near the surface throughout.

The scheme in its entirety is expected not only to give the C.N.R. the most up-to-date terminal station in any Canadian city, but to form quite a factor in the fuller and more complete development of Montreal.

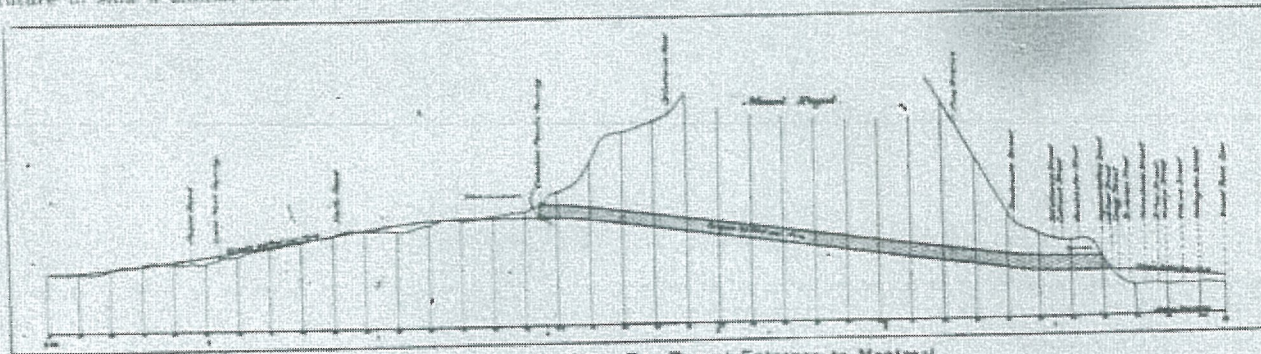
We are indebted to H. K. Wickstead, B.A.Sc., M. Can. Soc. C.E., Chief Engineer of Surveys for Mackenzie, Mann and Co., for the information contained in the above and for the accompanying plan and profile.

Great Northern Railway Lines in Canada

Fort William-Port Arthur, Ont.—It was reported in Port Arthur, Ont., Jan. 4, that an English syndicate had acquired 300 acres of land, partly within the municipality of McIntyre, and that this had been done in the Great Northern Ry. interest. Countenance is given to the report by the presence in the city of the engineers attached to the G.N.R. staff, and the fact that they have been prospecting in the neighborhood for a considerable time past, making surveys for lines converging on this property. It is stated that a line will be built to the International boundary, and an outlet at Duluth, Minn., and that another line will be built to Winnipeg to connect there with the Midland Ry. of Manitoba. Beyond these reports nothing is known of the project.

Midland Ry. of Manitoba—Midland Great Northern Ry.—The G.N.R. operates its trains from the International boundary over the Canadian Northern Ry. from Emerson, and then on to its own line from near Oak Point into the new freight terminals on Isabella St., Winnipeg. The work at the terminals was expected to be fully completed by Jan. 29.

Wenatchee to International Boundary.—It is reported that an agreement has been reached with the Washington State authorities as to the right of way for the projected line from near Wenatchee northward to Grohse, a station on one



Profile of Canadian Northern Ry. Tunnel Entrance to Montreal.

lookout station in the Mountain Park, which would allow of the abolition of the present unsightly inclined railway up the north face of the mountain. The grade again approaches the surface at Sherbrooke St., where it is some 50 ft. underground, and at St. Catherine St. about 50 ft.

Between St. Catherine and Lagache-riettes Streets on the west and east, and between St. Monique and Mansfield Streets on the north and south, will be the main station, with tracks depressed, as above mentioned, 50 ft. below street level. The station will be exactly similar in principle to the Pennsylvania R.R. Station in New York City. The line will emerge into daylight immediately after crossing Lagache-riettes St. and will then run on a high level above St. Antoine, St. James, Notre Dame St. and other streets, to near the Lachine canal basin. A freight yard will be provided for between Nazareth and Dulhouse Streets. Practically the whole of the property required for these purposes has already been acquired by the company. An elevated freight yard seems at first sight a very extravagant arrangement, but when one reflects that the amount of material to be disposed of from the east end of the tunnel and station ground will be sufficient to fill an area of 10 or 12 acres to a depth of 20 ft. the arrangement will be seen to be one of economy rather than the reverse. The company's plans, however, are not entirely settled in this respect.

DOMINION LEGISLATION.

A bill entitled "An act respecting the Canadian Northern Tunnel and Terminal Co., Ltd.," which has been introduced in the House of Commons, sets forth that the company is incorporated under The Companies Act and declares the undertaking to be a work for the general advantage of Canada. It authorizes the company to construct a tunnel for one or more railway tracks, from a point in Montreal generally westerly under Mount Royal, with the necessary approaches, air shafts and other outlets, and of tubes and terminals and works incidental to its operation, also lines to connect the company's lines with those of the C.N. Ontario Ry., the C.N. Quebec Ry. and the Montreal Harbor Commissioners. Before constructing lines along any highway, or public place, the consent of the municipality interested must be given by bylaw. Securities not to exceed \$20,000,000 may be issued. The construction of the tunnel, or railway, shall be commenced within two years after the passing of the act.

The Minister of Railways for British Columbia has approved of the increase of the directors of the Canadian North Eastern Ry. from five to seven.

The Department of Railways and Canals received tenders to Jan. 29 for the supply of 450,000 tons of bituminous coal for the Intercolonial Ry. and 15,000 tons for the Prince Edward Island Ry.

of the sections of the Vancouver, Victoria and Eastern Ry. which bends into the state, and that construction will be started within six months.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—Tenders are being asked for the dredging at the proposed new piers on the company's Burrard Inlet water front, Vancouver. It is estimated that 150,000 cubic yards of material will have to be excavated. (Jan., pg. 27.)

Grant, Smith and Co. and McDonnell, Limited. has been incorporated under the Dominion Companies Act, with a capital of \$100,000 and office at Vancouver, B.C., to carry on a railway and general contracting business, and to take over as a going concern the business of Grant, Smith and Co. and McDonnell. The provisional directors are: Grant Smith, Angus McDonnell, J. Sims, Vancouver, B.C.; E. V. Hauser, W. E. Hauser, New York city.

Manitoba Public Service Commission.—Speaking at Winnipeg, Jan. 4, Premier Roblin stated that a measure will be laid before the Legislature at the forthcoming session to establish a public service commission for the province. It is intended to bring under the control of this commission steam and electric railways, gas and electric light companies, telegraphs, telephones, elevators, and any other public utility or public service that may be considered in the interests of the people of the province.

Canadian Northern Railway Construction, Betterments, Etc.

Canadian Northern Quebec Ry.—We are officially advised that the projected line from St. Jerome to St. Eustache, Que., is an old project for which a trial line was run some years ago, but which it was not deemed advisable to build until the Montreal approaches were completed. The building of this piece of line will give a more direct connection between Montreal and the old Great Northern Ry. than at present exists. It is also expected that a cut off between St. Stanislas and St. Justin will be located during the winter. By this it is hoped to cut out some six or eight miles of the distance between Montreal and Quebec, and to eliminate heavy curves on the original Great Northern Ry. and the Laurentide Ry., bringing the entire line to a 6.4 and 6.5 standard gradient, as between Quebec and Fort Arthur. Another object of the work is to place Shawinigan Falls on the main line for passenger traffic, instead of on a branch. A trial line was run for this piece of work during 1910-11 by A. W. Whitney, and the present surveys are being made by Jno. Congdon, under the direction of H. K. Wicksteed, M. Can. Soc. C.E., Chief Engineer of Surveys.

The development of the company's plans in the vicinity of Montreal are dealt with separately on another page.

Canadian Northern Ontario Ry.—The Board of Railway Commissioners has authorized the company to use for construction purposes only, pending the completion of an interlocking plant, a crossing of the C.P.R. at Chaudiere Jct., Ottawa.

Press reports from Ottawa states that G. H. Shaw, General Traffic Manager, is negotiating with business interests in the city regarding the building of a spur line to serve the industrial concerns west of the C.P.R. tracks near Catling Ave.

The Board of Railway Commissioners has approved of revised location plans for the line through Loughborough tp., authorized the building of a branch line from Oshawa station to Oshawa town, to connect there with the projected Toronto Eastern Ry., 2.95 miles, and also authorized the building of a spur line by the G.T.R. for joint use with the C.N.O. Ry. on the Don Esplanade, Toronto.

The plans for the entrance of the company's line from Toronto into Hamilton, were expected to be filed Jan. 29. It is reported that the entire right of way has been acquired, and that over 200 houses and other buildings will have to be taken down or moved. Local reports state that the plans will give rise to considerable discussion before they are approved by the city council.

The construction of the Ottawa-Pembroke section of the line to Port Arthur, the contract for which has been let to J. P. Mullarkey, covers the building of two large bridges. That above Chata Fall, on the Ottawa River, will consist of 20 spans, while that at Portage du Fort will be somewhat smaller. The Board of Railway Commissioners has approved of the revised location of the line between mileage 162 to 176 in this section.

The Board of Railway Commissioners has also approved of revised location plans for the line between mileage 125.21 and 142.55 from Montreal, which carries the line to a point between the C.P.R. and the G.T.R. lines at Nipissing Jct., and for the location of the line between mileage 146.17 and 154 from Montreal, and between Capreol Jct., mileage 9 and 11.81. These mileages come within the contract between Oshawa and Pembroke, which Angus Sinclair has. Oshawa is at mileage 276 on the line from Toronto northerly via Gowganda Jct., and the work is to be

pushed
at go
the
it cu
colle
contr
tract
the f
work
at N
erly
TH
has
thru
betw
208
and
Sudb
Ca
port
in P
bail
con
C.N.
on t
luth
dise
and
TH
tion
446
in J
and
corn
A. e
cart
ing.
on
me
whi
Nat
mai
Haw
will
been
fall
laid
mill
Ma
gra
Cor
has
ple
Jau
wa
mil
of
tra
ly
Ba
hr
erl
De
gr
be
no
of
m
Va
w
fo
co
be
tr
at
tr
ch
m
21
w
w
m
m
V
w
tr
H
V
H
S
H
E
e

February
1912

MARCH, 1912.]

THE RA

Canadian Northern Railway Construction. Betterments, Etc.

The St. Charles and Huron River Ry. has been incorporated by the Quebec Legislature. The route proposed starts from the Quebec and Lake St. John near St. Ambrose de la Jeune Lorette to the Huron River in St. Edmond of Stoneman, about eight miles. The provisional directors are W. S. Barthe, P. M. Spaidal, W. A. Kingsland, and L. A. Cannon. Quebec, the first three of which at least are Canadian Northern Ry. officials. The proposed line is a direct off-shoot of the Quebec and Lake St. John Ry. and is projected to bring traffic to the main line in the shape of summer residents and pulp-wood.

It will run up the St. Charles river from Lorette and tap St. Charles and a very pretty country in the Laurentian mountains. The construction will be slow throughout. (Jan. pg. 23.)

Montreal Terminals.—The purchasing of land near Montreal and in the city in connection with the proposed tunnel and terminals continues. A good deal of this is for C.N.R. purposes. The land not directly required for right of way and terminal purposes has been acquired by syndicates for disposal to industrial concerns, and for residential purposes. Plans have been prepared for laying out the new town at the back of the mountain and it is stated that development work will be gone on with during the summer.

The general plans for the terminal station are being considered by the Montreal city council.

The financing of the project is reported to have been arranged, and that an issue of \$7,500,000 of bonds having been taken by J. P. Morgan's London, Eng. house.

Th
has
line
batter
tawa
Pam
Ottaw
gers
184
unusu
miles
Ont.

Ca
Boar
auth
from
way
cons
the
Com
oper
row
to 1
Syde
cont
best
pect
by 1

T
acre
out
from
Sav
Har
and
the
Feb
P
com
to 1
vias
suc
is 1

C
a s
his
fic
ed
to

aid, Oct., Sept., 1908, to Jan., 1911, in charge of design and construction of hydroelectric power plant, etc., for Merritt paper mills, Ont.; Jan. to Nov., 1911, Resident Engineer in charge of extensions, Dominion Power and Transmission Co. at St. Catharines, Ont.

Gas-Electric Motor Car for Quebec and Lake St. John Railway.

The Q. and L. St. J. Ry. has recently ordered from the General Electric Co., Schenectady, N.Y., a gas-electric car to be operated between Quebec and Lake St. Joseph, where the company has a summer hotel. While this will be the first of its kind in Canada, there have been several of like construction on United States lines, their peculiar field of adaptability being on branch steam lines where the volume of traffic does not warrant a frequent train service. It is stated that the total cost of operation and maintenance of these cars only runs up to from 18 to 20¢ per mile.

These gas-electric cars are independent train units, self-contained in every particular. The power is derived from a gasoline engine direct-connected to a generator in the cab of the car. This electric power is transmitted to electric

Fredericton and Grand Lake Coal and Railway Co.

The Fredericton and Grand Lake Coal and Ry. Co. was incorporated by the New Brunswick Legislature in 1910, with A. R. Slipp, H. P. Timmerman, C. F. Chestnut, H. W. Woods, A. B. Wilmet, D. K. Hazen and P. Glaser as provisional directors, to build a line from the Intercolonial Ry. near Gibson to Minto, to connect there with the New Brunswick Coal and Ry. Co.'s line from Norton. The company was given very general powers for developing the country along the line, was authorized to acquire the New Brunswick Coal and Railway Co.'s line and to make agreements for running rights with the C.P.R., the Fredericton and St. Marys Bridge Ry., the Intercolonial Ry., and with any other railway that may build in a connection with the National Transcontinental Ry. The company was also authorized to build a line from its line in the parish of St. Marys to Marysville, and such other branches as might be necessary for the development of the country through which the line passes.

In 1911 the Legislature passed an act, which became effective April 13, 1911, having for its object the granting of further aid for the development of the coal areas in the counties of Queens and Sunbury. The act provided that a rail-

the F. and G. L. Coal and Ry. Co. and the Provincial Government with a view to the construction of the line mentioned. During the progress of the negotiations Sir Thos. Tait secured control of the company, and after some time the negotiations were brought to a successful issue, arrangements having been made for the variation of the terms mentioned in the act of 1911, in several directions.

The Legislature has under consideration a Government measure amending the act of 1911, in accordance with the terms agreed upon in the negotiations. The important alterations are that the starting point of the line shall be Gibson, on the Intercolonial Ry., instead of Gibson on the C.P.R.; that the line is to be leased by the C.P.R. or other company for 99 years; that the New Brunswick Coal and Ry. Co.'s line is to be leased for a similar period, instead of for 99 years; and that 50,000 tons of coal are to be purchased every year for 10 years, instead of 100,000 tons a year for some period to be agreed upon. The other provisions which are amended deal with the manner in which the guaranteed bonds shall be issued, and the funds produced reach the company.

Derailment on Curves is discussed in a paper by Arthur Rogers published by the Institution of Civil Engineers, in which the author reaches the conclusion

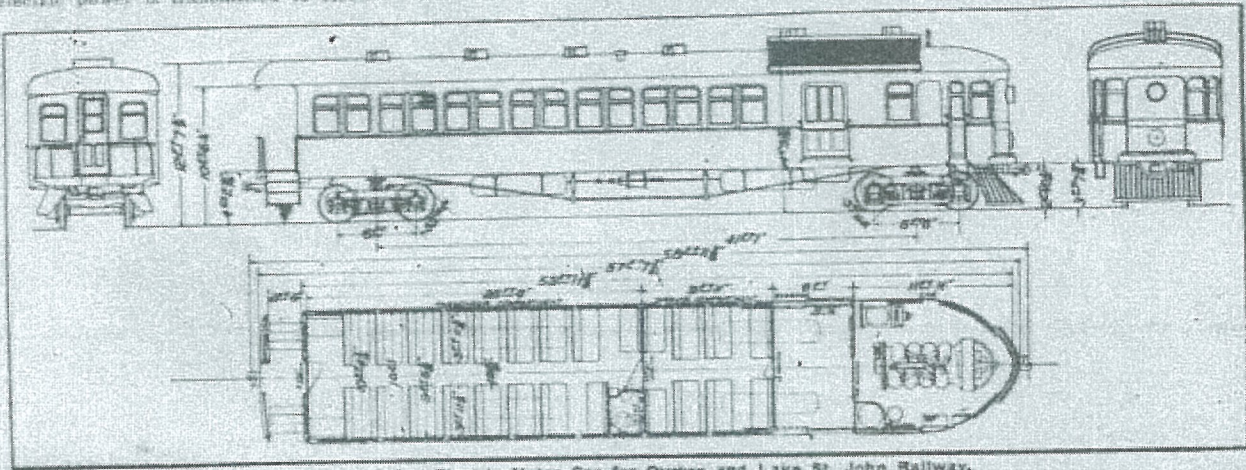


Diagram of Gas-Electric Motor Car for Quebec and Lake St. John Railway.

motors on the two axes of the truck under the cab, there being no direct mechanical drive. This truck carries from 100 to 150 lbs. of the car weight, and is of the self-aligning type. The car is operated from the forward or cab end through a controller. Motors, control and generator comprise the complete power drive, making a simpler arrangement than a mechanical drive.

The car is divided into four compartments: passenger, smoking, baggage and cab. The general particulars are:

Length over couplers	54 ft. 11 1/2 in.
Length over platform	57 ft. 7 1/2 in.
Length, body	53 ft. 1 1/2 in.
Length, passenger compartment	25 ft. 4 in.
Length, smoking compartment	9 ft. 11 in.
Length, baggage compartment	4 ft. 6 in.
Length, cab	11 ft. 11 in.
Width, over all	10 ft. 4 1/2 in.
Width, inside	9 ft. 4 1/2 in.
Height, over all	14 ft. 3 1/2 in.
Height, roof	12 ft. 7 1/2 in.
Height, coupler	4 ft. 10 1/2 in.
Height, floor	4 ft. 3 1/2 in.
Wheel base, car	41 ft. 1 in.
Wheel base, driving truck	6 ft. 8 in.
Wheel base, trailing truck	8 ft.
Wheels, diameter	33 in.
Car weight	40.5 tons
Seating capacity	78

The car on delivery is to be run from Toronto to Tranton, Ont., out of which point it is to operate for some time prior to being sent down to the Quebec-St. Joseph service.

way should be built from the C.P.R. at Gibson to Minto, connecting there with the New Brunswick Coal and Ry. Co.'s line, and that the Government would guarantee the bonds of any company building such a line to the amount of \$15,000 a mile. A first mortgage of the railway, buildings and rolling stock was to be given to the Government as security for the bonds, and no guarantee of the bonds of any company was to be entered into unless the Dominion Government provided a subsidy on the usual conditions, up to \$6,400 a mile; until a contract had been entered into with the C.P.R. or some other railway for the base of the line for 99 years, at a rental, payable to the province to satisfy the interest and redemption fund of the bonds, of 40% of the gross earnings of the line; that the company leases from the province for 99 years at a rental of 50% of the net earnings the New Brunswick Coal and Ry. Co.'s line, which extends from Norton on the Intercolonial Ry. to Minto; and to take for a period to be agreed upon 100,000 tons of coal mined in Queens and Sunbury counties. If the percentage of earnings of the two lines paid as rental to the Government was more than sufficient to pay the interest on the bonds, it was to be returned to the company building the line.

During 1911 negotiations were carried on between the provisional directors of

that a locomotive is likely to overturn at a critical velocity lower than that at which the overturning will be caused by centrifugal forces alone. He points out that under certain conditions, where centrifugal forces are likely to cause overturning at 71 miles an hour, the effect of the drawbar pull and of unbalanced forces in the locomotive is to make the curve dangerous at 53 miles, particularly if brakes are applied. He also concludes that superelevation should never begin on a tangent, since its effect is to set up a lateral swaying of the locomotive, which, on reaching a sharp curve at high speed, may reduce the adhesion between the inner wheels and rail enough to cause derailment.

The G.T.R. management is reported, according to a Montreal dispatch, to have decided to grant the railway telegraphers' request for extra pay for Sunday work.

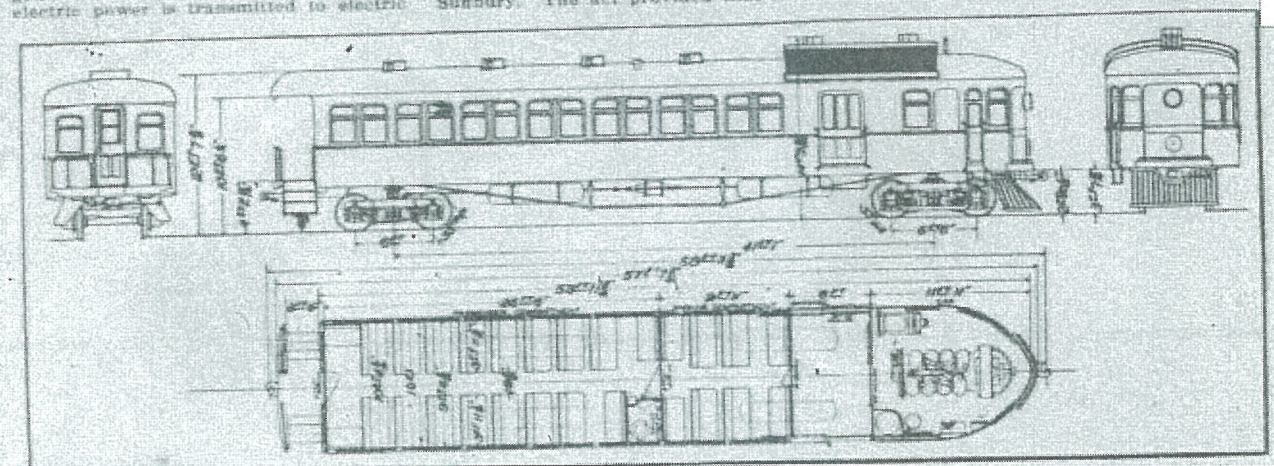
The Safety Car Heating and Lighting Co., in its monthly pamphlet, gives details of its general car lighting equipment, especially such as is required for lighting dining cars.

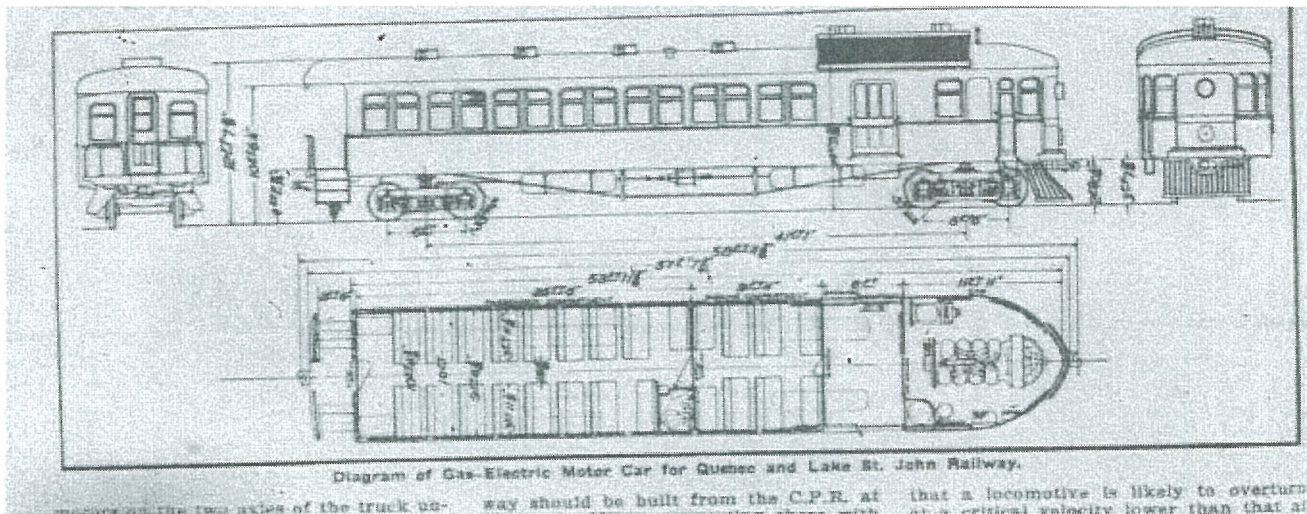
A tracklaying record comes from Northern Nigeria, where, on the Baro Kano Ry., under British engineers, 6 1/4 miles of main track and 1,200 ft. of siding were laid with rails in one day.

particular. The power is derived from a gasoline engine direct-connected to a generator in the cab of the car. This electric power is transmitted to electric

motors and for further aid for the development of the coal areas in the counties of Queens and Sunbury. The act provided that a rail-

a paper by Arthur Rogers presented to the Institution of Civil Engineers, in which the author reaches the conclusion





The C.P.R. locomotive was in regular service last October, while the Pennsylvania one, as far as can be ascertained, was not working before the end of November.

The writer is indebted to the C.P.R. Motive Power Department for the information contained in the foregoing.

Canadian Northern Quebec Railway Locomotive House and Shops at Quebec.

The Canadian Northern Quebec Ry. is building a roundhouse and shops at Quebec for joint use with the Quebec and Lake St. John Ry. The location is on the outskirts of the city, just across the St. Charles River, at a point where the two railway lines come together in the old village of Limoulin, which was absorbed by the city a couple of years ago.

The site, which is practically level, occupies some 20 acres laid out in the manner indicated in the accompanying ground plan. Electricity for both power and lighting purposes is distributed to all the buildings from outside sources.

for locomotive repairs. It is a reinforced concrete building 52 x 153 ft., provided with both standard and narrow gauge tracks down the centre, the latter connecting with the narrow gauge system in the roundhouse. One corner of the shop is partitioned off for the boiler room and contains the heating apparatus and the necessary auxiliary equipment. All the machine tool equipment is to be contained in the machine shop, with none in the drop pit part of the roundhouse, this being the reason for these two buildings being located adjacent to each other. The machinery from the old shops is to be installed, together with a considerable quantity of new machinery to cope with the increasing rolling stock.

The Casting Shop or foundry is housed in a concrete building, 55 x 50 ft., located parallel to the machine shop with an intervening space of 50 ft. It is to be equipped with the latest in foundry appliances.

The Stores are located in a 50 x 170 ft. concrete building in line with the casting shop. It is to be fitted with shelves and racks for easy access to the supplies. The storekeeper's and officials' offices are located at the front of the building on one side of the central en-

required at present and in the near future the shops will be of sufficient capacity to meet all demands.

Self Clearing Ash Pans for Locomotives.

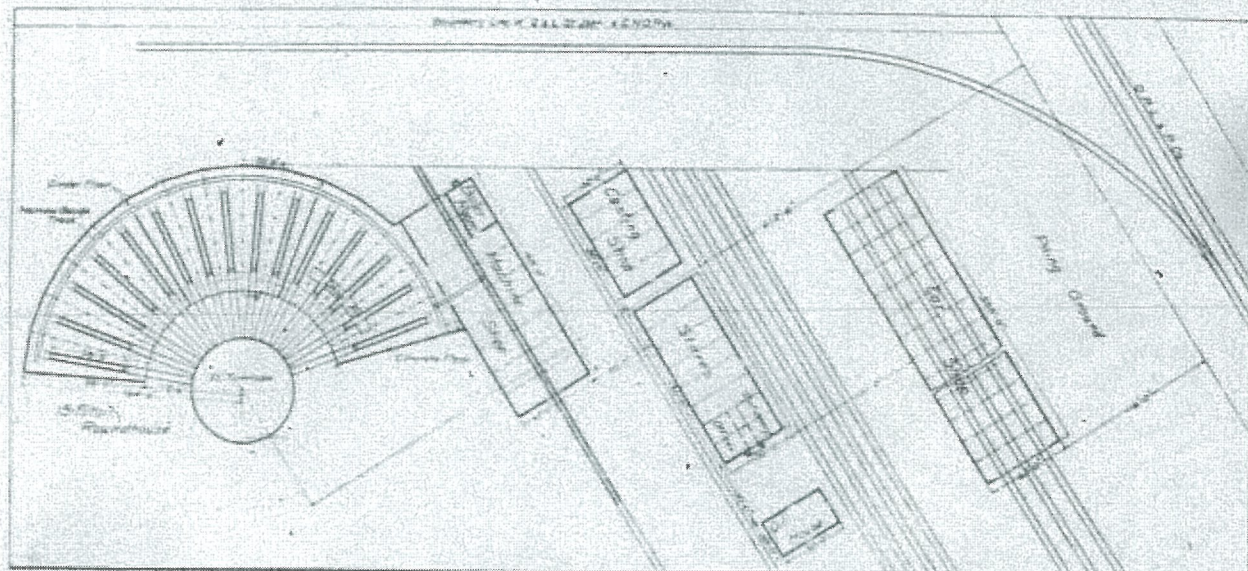
Mention was made in The Railway and Marine World for March that the Board of Railway Commissioners had passed an order requiring that all railways under its jurisdiction must by Dec. 31, 1913, equip their locomotives with ash pans that may be dumped without the necessity of any employee going under the locomotive to do so. In order to ascertain the extent to which dumping ash pans are used in Canada, we communicated with the larger railways and have elicited the following information:—

The Canadian Pacific Ry. has about 25% of its locomotives equipped with a standard type of self-clearing ash pan.

The Grand Trunk Ry. has a number of locomotives of all sizes equipped with ash pan cleaning devices.

The Canadian Northern Ry. has practically none of its locomotives equipped, but has the matter under consideration.

The Temiskaming and Northern Ontario Ry. has only four of its 40 locomotives equipped, and no decision has



Canadian Northern Quebec Ry. Locomotive House and Shops at Quebec.

The grounds are piped with city water, which with steam and compressed air piping, is carried in a tunnel connecting all the buildings with a central power station in which will be located all the heating apparatus, compressors and water pumps.

All the buildings are single story, constructed throughout in a fireproof manner of reinforced concrete. Entrance to all the buildings from the tracks is from the lower end.

Roundhouse.—A 15 stall roundhouse is located at the left end of the grounds. It is divided into three 5 stall sections by two fire walls, with communication between the sections through doors at the rear. A 75 ft. turntable provides access to all the stalls. The two sections to the left have cinder floors, while the third is laid with concrete for washout purposes. This latter section also has a connecting drop pit under three of its stalls, each equipped with hydraulic rams for lowering driving wheels, etc. Around the rear wall of the roundhouse there is a narrow gauge track for the carrying of parts, leading into the machine shop by means of a couple of small turntables.

Machine Shop.—Along the right edge of the roundhouse is the machine shop

trance. A similar division on the other side of the entrance forms a stationary store room.

The Oil House, 30 x 50 ft., is in line with the stores building, but 50 ft. in front, designed in the most approved manner. Self-measuring oil pumps located along the side walls, connect with the oil supply tanks in the basement, where they are away from disturbing influences. The whole structure is of reinforced concrete.

The Car Shop, located 100 ft. to the right of the last row of structures, is a reinforced concrete building, 65 x 350 ft., extending some distance below the position indicated as its end in the plan. There are three repair tracks extending the length of the building. One end of the shop is to be set aside for the necessary wood-working machinery.

PLING GROUNDS.—Alongside the car shop there is a strip of land 115 ft. wide for timber, car repair parts, and sundry outdoor stores.

The shops as at present planned are not very extensive, as the intention is to only handle such rolling stock there as terminates at that point. This will include the Quebec and Lake St. John Ry. and the eastern end of the Canadian Northern Quebec Ry. For the purposes

been arrived at as to what type will be adopted.

The Wabash Rd. has practically all the locomotives on its Canadian lines equipped, two types being in use. For shallow ashpans, the swipe system is used, by which the ashes are blown out by steam pressure, while a self dumping ashpan is applied on the deeper types of pans.

Largest Railway Terminal in Germany.—The central station at Frankfurt which has heretofore held the record for size among the railways terminals in Germany, must now give place to the station at Leipzig, which has been building for the last nine years and has just been completed at a cost of \$34,000,000, an outlay represented not so much by ornament and decoration as by enormous size for the accommodation of freight as well as passenger traffic.

During Feb. 12 employees were killed and 31 injured in the course of their work connected with the operation of Canadian railways. Of the fatalities, five were due to persons being run over, three to being crushed between cars, two to derailments, and one each to being struck by a train and to falling material.

Canadian Northern Railway Constr

Quebec and Lake St. John Ry.—The Quebec Legislature has granted 2,000 acres of land per mile for the following lines:—From Valcartier to St. Catharines, a 4½ mile branch from Valcartier towards Gosford, and to extend a branch line 12 miles to Valcartier.

St. Charles and Haron River Ry.—The Dominion Parliament has voted a subsidy for the building of a line from Indian Lorette on the Quebec and Lake St. John Ry., along the valley of the St. Charles River to Stoneham, 7.5 miles. The Quebec Legislature has granted 2,000 acres of land a mile for the same line.

James Bay and Eastern Ry.—The Quebec Legislature has voted 4,000 acres of land a mile for the 30 miles of this line from Roberval, westerly towards James Bay, now under construction.

Canadian Northern Quebec Ry.—W. A. Kingsland, Auditor C.N.Q. Ry., is reported as having stated in Quebec, April 11, that the work of laying out tracks and building the shops at Limoulin, Quebec city, will be re-started May 1, and pushed to completion, and that when the Canadian Northern transcontinental line was completed the terminals at Cap Rouge, where the company has a mile of river frontage for development, will be arranged. A complete description of the Limoulin shops appears on another page.

A subsidy has been voted by the Dominion Parliament in aid of the building of a line from near Arundel to Preston and Hartwell tips, not exceeding 10 miles.

Subsidies have been voted by the Quebec Legislature as follows:—To the Great Northern Ry., one of the C.N.Q.R. constituent companies, 2,000 acres of land a mile for a line from St. Sauveur to St. Jerome, 15 miles; and to the C.N.Q. Ry., 2,000 acres a mile for 10 miles of line in Montserrat county; 2,000 acres a mile for 25 miles from near Montreal to a junction with the C.N.Q. Ry. near Grenville; 2,000 acres a mile for 22 miles from Quebec to Garneau Jet, with a five mile branch to the Quebec bridge, and a 7½ mile line from Limoulin to the Montmorency river.

Canadian Northern Montreal Tunnel and Terminal Co.—In a recent interview Sir Wm. Mackenzie is reported to have stated that the company's act of incorporation having been passed, a start would be made on the tunnel and connecting lines immediately. The contract with the C.N.R. calls for the completion of the tunnel before the end of 1912.

S. P. Brown, Chief Engineer of the tunnel construction, who is located in Montreal, and is working on the final plans, is reported as having stated that the tunnel will be a double track one, with a diaphragm wall between the two tracks. It will be about three miles long, but it is not expected that it will present any serious engineering difficulties. The geological formation promises good conditions, and although the rock will vary considerably, water is the only difficulty which may be expected. The tunnel will be lined with concrete, the thickness of which will vary as conditions require. Work is expected to be started May 1 at both ends of the tunnel, and it is hoped to complete the tunnel in less than the 500 days estimated.

Lake
from
thence
and re
law

Tor
A larg
been
side J
purch
yards.
Plas
for th
North
C.P.R.
At

been
plans
counc
forme
rents.
Col
depart

com
plan
pas
nee

C
rep
a. l
Ord
N

The
has
cat
mil
Ott
in
dir
401
mil
aga

bu
the
Eu
ins
mil
str

loc
Po
2
Po

loc
for
lin
19
bu
th
by
Sa
hy
ch

str
co
or
ni
in

an
co
a.
li
th
th
et
W
w
la
B
of

Quebec and Lake St. John Railway Gas Electric Car.

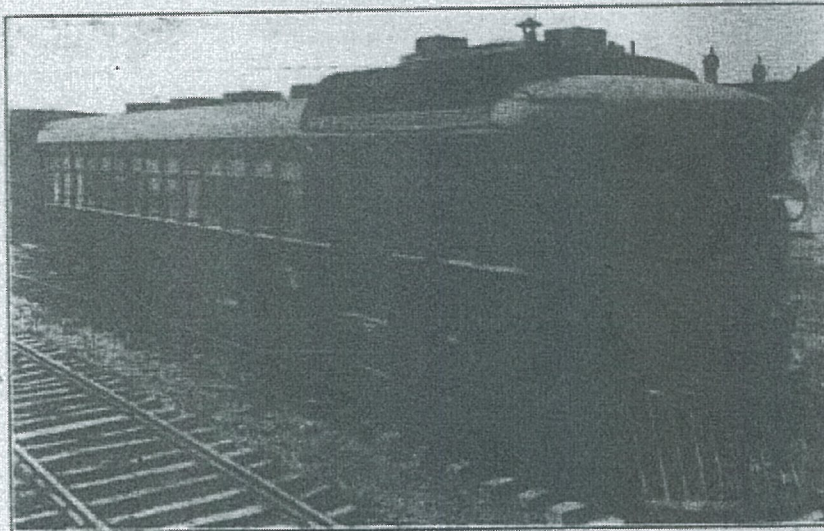
The last issue of The Railway and Marine World contained a complete description of the gas electric car which the Canadian Northern Ry. Co. has procured for use on one of its subsidiary lines, the Quebec and Lake St. John Ry., to run between Quebec and Lake St. Joseph, 22 miles, the company having a summer hotel at the latter point. The description was accompanied by a diagram showing the front, side and rear elevations and the floor plan. An illustration of the car's exterior appears on this page.

The car reached Toronto on April 10, and on the following day made a trip on the C.N.O.R. Toronto-Sudbury line from Toronto to Richmond Hill, 21 miles, with the chief executive officers and a number of officials of the C.N.R. and others. On April 12 it was run over the C.N.O.R. line from Toronto to Tren-

The bridge being built by the C.P.R. to connect Strathcona and Edmonton, Alta., is progressing rapidly, all the masonry having been completed, and the steel work is in course of erection.

It is a steel span bridge 2,500 ft. long from face to face of ballast walls of the end abutments. This distance is made up of three 218 ft. centre spans across the river, 10 tower spans each from 30 to 50 ft. long, and 14 open spans each from 30 to 100 ft. long. The main spans over the river are supported on concrete piers which measure approximately 115 ft. from the base of rail to the footing, the latter in one instance extending to a depth of approximately 40 ft. below the river surface. The approach trestles on each bank are carried on concrete pedestals built up on concrete piling.

The bridge is to carry steam and electric railway and vehicular traffic. The railway deck on the top of the structure carries three tracks, one for C.P.R. trains and the other two for electric railway service. The roadway deck is located 20 ft. below the railway tracks, and



Quebec and Lake St. John Ry. Gas Electric Car.

...and a number of officials and consists of a reinforced concrete roadway

MAY
1912

Canadian Northern Railway Construction, Betterments, etc.

Quebec and Lake St. John Ry.—A deputation waited on the Quebec Government, recently, to urge the building of a five mile extension of the company's Gasford branch. W. A. Kingsland, representing the company, stated that in view of the subsidies voted by the Legislature, he did not think there would be any hesitation on the part of the company in building the line. There were certain preliminary steps needful, and as soon as the necessary data were obtained, arrangements would be made for starting construction.

Canadian Northern Quebec Ry.—Work has been resumed on the erection of the shop buildings at Lemieux, Que., and it is expected that they will be ready for occupancy in November. As soon as the change has been made, the present shops, adjacent to the Q. and L. St. J. Ry. station, will be demolished, and the land so cleared will be utilized for other purposes.

The company has under consideration the extensions of terminal yards, etc., in view of the completion of its trans-continental line in 1914, and negotiations are in progress with the city on various matters in connection therewith. D. B. Hanna, Third Vice President, C.N. Ry., is expected in the city, to take up matters in connection with the project with the city council.

Montreal Tunnel and Terminal Construction.—We are advised that plans and details for the construction of the proposed tunnel under Mount Royal, and the terminals in Montreal, have not yet been approved by the Board of Railway Commissioners. The general plans for the terminals are the subject of negotiations with the Montreal city council, and there are several questions in connection with them which will be argued before the Commission. The company proposes to start operations on the west end of the tunnel before anything is done in the city. The only contract let to the date we were advised, is one for core boring to the Eddy-Burland Development Co., Ottawa. While it is expected that the company will do a good deal of the tunnel work itself, it is very probable that a contract may be let for work at the west end to a company which has a novel device for tunnel excavation.

The Minister of Railways has approved of the tunnel and terminal plans between the back of the mountain and Lagachetiere St., leaving the Board of Railway Commissioners to settle the location of the remaining distance to the water front. This latter section involves the elevated tracks to which the Montreal city council objects.

Plans are being studied with a view of operating all traffic through the tunnel by electricity. W. C. Lancaster, the engineer, who has the work in hand, is quoted as stating that 120 ton electric locomotives will probably be used, capable of making 70 miles an hour. Electricity will also be used on the suburban lines to be operated in connection with the main line. A press report states that it is likely that the line between Montreal and Ottawa will be electrically operated, but we are advised that this is not correct, as it will be a steam road.

Construction work was started May 24, and preparation is being made for the starting up of the boring plant. Six air compressors with a 400 h.p. motor plant are being installed. Electricity will be supplied by the Montreal Light, Heat and Power Co., according to a statement made at that company's annual meeting, June 5, by the President, H. T. Holt, who said that the company had not only secured the contract for power for tunnel driving, but also for the power to operate trains through the tunnel.

Montreal-Ottawa-Port Arthur Line.—The Board of Railway Commission-

ers has approved revised location plans for the line in Ross tp., mileage 62.09 to 66.19; mileage 69.15 to 71.08; mileage 75.53 to 75.62, and mileage 267.2 to 271.1 from Ottawa. An effort is being made to have the line carried through Pembroke, and as a compromise it was decided to have a route surveyed through Churchville. The Board of Railway Commissioners has also approved revised location plans for the line through Davis tp., at Callander, through Pedley tp.; location plans through unsurveyed territory in Thunder Bay district, between mileage 363 and 393, and mileage 399.21 to 404.46, Sudbury Junction, and revised location plans between mileage 449.55 and 451.63, from Port Arthur. It has also authorized a temporary connection with the C.P.R. at Dalzell station, Thunder Bay district, Ont., for construction purposes only.

The question of the location of the line through North Bay, Ont., has been practically settled, a new agreement having been reached, under which certain subways will be built, and watchmen provided at certain level crossings by the company.

The Board of Railway Commissioners has authorized the company of connect its line under construction with the C.P.R. at Meadowsdale, 15 miles west of North Bay, Ont., for construction purposes only, for six months from May 28.

Track laying was started at the Port Arthur end of the line in May, and District Engineer Hazen is reported as stating that the laying of steel would be going on in earnest by the end of June.

W. M. Everill, of the Railways Department, Ottawa, is acting as Inspecting Engineer for the department between Ruel and Port Arthur, Ont.

Canadian Northern Ontario Ry.—Construction is reported to be proceeding at a satisfactory rate on the line under construction into Ottawa from Toronto. An official inspection of the line was made recently by the company's officers and G. A. Mountain, Chief Engineer of the Board of Railway Commissioners, the special train carrying the party running as far east as Enterprise. A train service was put in operation as far as Napanee, June 14.

Press reports state that plans are being prepared for improving the Brockville, Westport and North Western Ry., which is owned by C.N.O. Ry. interests, and is being operated as a branch line. It is proposed to relay 40 miles with new ties and steel and to bring it up to the C.N.O.R. standard. The point of junction is about 35 miles north of Brockville, to which point the grading on the Toronto-Ottawa line has been completed, and it is expected that tracklaying will be started in June. The grading beyond this point to Ottawa is well advanced.

The company has made very extensive purchases of land in the vicinity of Leaside Jet, near Toronto, for yard and terminal purposes, and a site for a model city.

We are advised that it is extremely probable a start will be made this season, from the Toronto end, on the company's projected line from Toronto to Niagara Falls, and that the route to be followed will be mainly along the Electrical Development Co.'s right of way, on which is the power transmission line between Niagara Falls and Toronto. In connection with this projected construction the Board of Railway Commissioners has authorized the crossing of the C.P.R. spur line from Islington to Mimico, an interlocking plant to be installed at the cost of the C.N.O. Ry.

The plans for the entrance into Hamilton were filed at the end of May, and the city council has had them, as well as the alternative route suggested by F.

L. Somerville, consulting engineer, under consideration. There has been considerable discussion, and it is said that the several railway companies whose lines enter the city are arranging to discuss the question of the erection of a union station and some rearrangement of routes.

The question of the route of the line from Hamilton to Niagara Falls, and from Hamilton to Windsor, is under consideration, and considerable speculation is being raised in various towns owing to the visits of people representing Mackenzie, Mann and Co. The firm is interested both in the steam line and electric feeders for the same, but where the one begins and the other ends cannot be definitely gauged from the negotiations with the various public authorities. That there will be a steam line from Toronto to Hamilton and Niagara Falls, and a line from Toronto to Windsor, whether as an independent line, or as a branch of the Toronto-Niagara Falls line, is pretty certain. All the other lines to be built will probably be electric. Talk seems to be indicated by a recent statement of Sir Wm. Mackenzie, who is quoted as stating that the steam line will be carried into London from the east, connecting with the London and Port Stanley Ry., for a lease of which the company would make an offer. The line would run through Delaware and on to Detroit.

Canadian Northern Ry.—Sir, Wm. Mackenzie, President, returned to Toronto, June 23, after a trip to the Pacific coast. He reached Victoria, B.C., June 4, and after an interview with the Premier, left for the east a couple of days later. In the course of his trip he is reported to have stated that it was expected to have the line completed through from coast to coast by 1914. The question of a ferry service to connect the lines on the mainland with those on Vancouver Island had not been considered. The building of a second track between Port Arthur and Winnipeg was a necessary work, and would be undertaken, but he could not state just exactly when it would be started.

Efforts are being made along the route of the branch line now terminating near Gundfint, near the International boundary line between Ontario and Minnesota, to induce the company to extend it; if not to complete it into Duluth, as originally proposed.

It is expected that the work of completing the Duluth, Winnipeg and Pacific Ry., a subsidiary of the C.N.R. in the U.S., will be so far advanced as to enable it to be opened for traffic July 1. The line extends from Virginia to Duluth, Minn., and completes the through connection between the Canadian Northern Ry. main line at Fort Frances, Ont., and Duluth. A contract is reported to have been let to J. Roy, Duluth, for the erection of a freight and passenger office there.

A contract for the construction of a section of the Winnipeg and Northern branch of the C.N.R. has been let, we are advised, to the Western Construction Co., Winnipeg.

M. H. MacLeod, General Manager and Chief Engineer, is quoted as stating that the company proposes to build the new yard at St. Boniface, Man., with its own forces.

The train shed at the Fort Garry, Winnipeg, union station, is practically completed and is being used.

The Board of Railway Commissioners has approved of an agreement between the C.P.R. and the C.N.R. for the provision of joint facilities in Regina, Sask.

We are advised that no information is available with respect to the branch line which press reports state is to be built from Regina to a junction with the Goose Lake line at Rosetown, Sask. A second report states that the junction point with the Goose Lake line will be Kindersley.

Canadian Northern Railway Construction, Betterments, etc.

James Bay and Eastern Ry.—The Board of Railway Commissioners has approved of location plans for this line in Roberval tp., Que.

Grading on the line from outside Roberval was on July 13, reported to have been practically completed to Chute a l'Ours, about 30 miles, and track laying will be started Aug. 1. J. P. Mullarkey is the contractor. It is said that the line will be extended along the valley of the Ashuapmouchouan River, and through the Chibougamou country, to Nottaway Bay or James Bay.

Montreal Tunnel and Terminal Construction.—The company's plans for the tunnel from the north side of LaSalle St. to the new town on the western side of Mount Royal, were approved by the Board of Railway Commissioners, July 11. The question of the overhead viaduct from LaSalle St. to the harbor front was left over in order that the Montreal city council might have a further opportunity to study the plans submitted.

Preliminary work in sinking shafts at the city end of the tunnel was started July 13, and it was expected that boring operations would be started by July 30. It is estimated that 1,000,000 cubic yards of material will be excavated from the tunnel, and an additional 500,000 cubic yards from the excavations for the central station.

The Montreal city council gave consideration, July 21, to the company's plans to connect the tunnel up with the station in the east end at Moreau St. The route to some extent parallels the LaSalle, Jacques Cartier and Maisonneuve Rys., and in approving it, the council reserved rights as to crossings of all present and future streets. This matter will be dealt with later on.

Montreal-Ottawa-Port Arthur Line.—

that these will be completed in the spring.

Canadian Northern Ontario Ry.—The Board of Railway Commissioners has authorized the operation of traffic over the line from Toronto to Deseronto, Ont., resending previous orders. Work is well advanced on the line to Sydenham, which includes the cut offs on the Bay of Quinte Ry., the contract for which is being carried out by Angus Sinclair. From Sydenham to Ottawa, 90 miles, J. P. Mullarkey, is carrying out the contract for the greater part of the work. Ewen Mackenzie having completed the grading on the 20 miles from mileage 180 to 200. On this 20 miles track is reported to have been laid from Ottawa to the Rideau River, and track is also being laid westerly from Sydenham. Another track laying gang is preparing to start work at Forfar, where the line crosses the Brockville, Westport and Northern Ry.

A route map has been approved by the Minister of Railways for the company's projected line easterly from North Toronto for 7.2 miles.

Sir Wm. Mackenzie is reported as having recently stated that the company's plans included the laying out of large yards and shops at Leaside Jct., and smaller shops on the Rideau River, near Ottawa. The principal shops of the company would be those at Leaside Jct., near Toronto, and at Port Mann, B.C. A new building for the head offices would be erected in Toronto. The union station to be erected at North Toronto by the C.P.R. would be the company's principal station in the city, although a few of the trains might run into the Front St. station.

The Minister of Railways has approved of a route map for the company's proposed line through the counties of Lincoln and Welland, Ont.

Canadian Northern Ry.—The new

area. The construction headquarters of the Northern Construction Co., which has charge of the contract for the line from Kamloops to the Yellowhead Pass for itself and Foley, Welch and Stewart, advised us recently as follows:—McDonald Bros., who have a subcontract for the first 20 miles from Kamloops northeasterly, have practically completed the grading. The next 10 miles was sublet to Boyd and Craig, who have about two months' work yet to do to complete. The next 30 miles has been sublet to Murdoch and Co., who have made good progress during the three months they have been at work. There are about 500 men, including station gangs on this section. The sub-contract for the next 100 miles has been sublet to Twohy Bros. Co., who have two complete steam shovel plants on the ground and are busy taking in supplies, making two complete trips a week. Twohy Bros.' own steamboat goes up the Fraser River as far as mileage 160. The remaining mileage to the Albride summit, it was expected would be sublet at an early date.

Press reports state that contracts have been let for the ten bridges described on pg. 337 of our last issue as follows:—Substructures for seven of the bridges, Armstrong and Morrison, Vancouver, B.C.; substructure for one bridge, John Galt Engineering Co., Winnipeg; substructure for two bridges, C. F. Graff, Seattle, Wash., has the option of a refund at certain prices. The Dominion Bridge Co. has the contract for six of the superstructures, and the Canadian Bridge Co., Walkerville, Ont., the contract for the other four.

Surveys are being made for a branch line from Kamloops through Vernon to Kelowna, at which point a terminal site of 17 acres fronting on Okanagan Lake has been acquired. Press reports state that tenders will shortly be asked for the building of the line.

Press reports state that a contract has

Canadian Northern Railway, Construction, Betterments, Etc.

James Bay and Eastern Ry.—The Board of Railway Commissioners has approved of location plans for a further section of this line, now under construction from Roberval, Que., at the terminus of the Quebec and Lake St. John Ry., between mileage 30.7 and 31.4.

Canadian Northern Quebec Ry.—Application is being made to the Board of Railway Commissioners for approval of location plans for a line from Rawdon to St. Donat, Montcalm county, about 40 miles. Surveys are reported to have been completed for the line from Rawdon through Chertsey, Sta. Emille and Notre Dame de Mercie.

Montreal Tunnel and Terminal Co.—It was expected, Sept. 12, that the negotiations between the company and the city authorities with respect to the lines between the tunnel portal and the water front would result in an arrangement being arrived at by the end of the month. It is said that the plan will provide for an overhead line from the station at Leguachetiere street to the water front, as proposed by the company, to be built of steel and concrete, and that the track will be laid in a material which is calculated to reduce the noise of the traffic to a minimum. The overhead construction of the line to the water front, the company's representatives informed the board of control, is an essential part of the plans, as it is intended to carry the line across the river to the south shore at some future time.

It was reported Sept. 13 that boring of the tunnel was progressing at the rate of 20 ft. a day at the back of the mountain and 15 ft. a day on the city side. A 240 ft. shaft is being driven in the vicinity of Maplewood Ave., Westmount, and as soon as this has reached the level it will be possible to have four gangs at work driving the tunnel. It is expected that 20 ft. a day will be driven by each gang.

Montreal-Ottawa-Port Arthur Line.—The

station as far as the west Don river, which will be crossed by means of the present bridge, which is to be double-tracked. Immediately east of this the C.N.O. Ry. will deviate, and its own tracks will branch out, that to the north passing under the C.P.R. tracks about 200 yards to the west of the C.P.R. Don bridge, and then connect with the existing line where it emerges over the Don valley, while the Ottawa-Toronto line will run easterly, crossing the Don river on a steel girder bridge about 500 yards farther down the river than that of the C.P.R., after which the line will run out towards the present line, connecting with it in close proximity to the G.T.R. Scarboro Junction station.

In connection with the line west of Toronto it is reported that contracts will be let for the section from Toronto to Hamilton at an early date, and that grading will be completed this year from Poplar Plains road, North Toronto, to the west side of the Humber river at Lambton. The final questions in connection with the route to and through Hamilton are being rapidly settled, and there is little doubt, Hamilton city officials state, that contracts will shortly be let for the work. As to the company's construction intentions from the Niagara peninsula westerly to Windsor and Sarnia, there are numerous rumors. While the company has engineers in the field looking over routes, nothing definite has been decided as to what lines to build or what places they will serve, except that a line will be built from the vicinity of Hamilton via Brantford and London. Sir Wm. Mackenzie is reported as stating that the Toronto-Hamilton line will be started soon, and that it will be pushed forward towards Niagara Falls in the spring, that the surveys have all been completed and that construction will be rushed. He added that the company has not been purchasing land at Windsor for terminal purposes, as

Sir Wm. Mackenzie is reported to have stated in Calgary, Alta., Sept. 3, that he expected track would be laid into that city by Nov. 16. The grading was completed right into the city, and the track-laying gang had got to within 57 miles of the city. The line is coming in on the Second street west side of the south end. Sir William added that a large dead-end station would be built.

The Board of Railway Commissioners has approved of the station site and track layout at Calgary. Plans of the several buildings proposed to be erected have been submitted to the Calgary city council. Press reports state that a contract has been let to John Gunn and Sons, Winnipeg, for the building of the superstructure of a bridge across the Bow river in Calgary.

We are officially advised that a contract has been let to the Northern Construction Co. for the building of the Calgary-Macleod branch. The Board of Railway Commissioners has approved location plans for the line through Macleod, mileage 102.95 to 104.26.

Grading is being proceeded with on the line from Oliver to St. Paul de Metis, about 11 miles being practically ready for the track. It is expected to have 20 miles graded by the end of the season.

Another branch line out of Edmonton, on which grading is being done, starts from Onoway in the direction of the Peace river. The right of way is cleared to the crossing of the Athabasca river, and it is expected to have track laid to Whitecourt, 32 miles from Onoway, by the end of the year.

The Board of Railway Commissioners has authorized the opening for traffic of the line from Morinville to Athabasca Landing, Alta., 72 miles, and a train service was put in operation Sept. 2.

West of Edmonton to the British Columbia boundary, grading has been completed to Hinton, 175 miles west of Edmonton, and track has been laid to Entwistle. The superstructure of the high level bridge

Canadian Northern Railway Construction, Betterments, Etc.

Canadian Northern Quebec Ry.—It is expected that the new car and machine shops at Limoilon, a suburb of Quebec, will be completed by Nov. 30. Nothing definite has yet been decided as to the company's terminals in Quebec, but negotiations are going on between the city and the company, and how they will turn out depends a good deal upon what will be done by the Dominion Government in connection with the terminals for the National Transcontinental Railway. The C.N.Q. Ry. has a large area of land at Cap Rouge, and it is said that this is to be developed for the company's steamships harbor.

Canadian Northern Montreal Tunnel and Terminal Co.—Supplemental letters patent have been granted under the Dominion Companies Act increasing the capital from \$50,000 to \$5,000,000.

The shaft at Maplewood Ave. is reported completed, and preparations are being made for starting driving the tunnel north and south from it. This will make four headings at work driving.

The Montreal city council is in favor of the Board of Railway Commissioners deciding the question of the overhead line from LaGauchetiere street to the water front.

Montreal-Ottawa-Port Colborne Line.—The Board of Railway Commissioners has approved of location plans for the line through Jacques Cartier and Hochelaga counties and part of Montreal, mileage 43.56 to 55.23 from Hawkesbury.

It is expected that the grading on the section of the line out of Ottawa to Fitz

Canadian Northern Railway, Co

James Bay and Eastern Ry.—The Board of Railway Commissioners has approved revised plans for the line mileage 20.43 to 21.40 from Roberval, Que. This line is under construction, J. P. Mullarkey being the contractor. Considerable grading has been done, but no track has been laid.

Canadian Northern Quebec Ry.—Application is being made to the Dominion Parliament to extend the time for the building of the projected line from Rawdon northerly to a junction with the National Transcontinental Ry., having a branch to Joliette, and the projected line from St. Jerome to St. Eustache, and to authorize the building of the following additional lines:—From Montreal, crossing the St. Lawrence river opposite the city, and from thence to Levis; and from some point on such line east of the St. Lawrence river to St. Rose Jct., thence to near Sherbrooke or Lennoxville.

Application is being made to the Quebec Legislature to confirm an agreement between the city of Quebec and the company regarding the new shops at Limoilon which are practically completed.

Route plans have been approved by the Minister of Railways for 12 miles westerly from Huberdeau, Que., the present terminus of the old Montford and Gatineau Colonization Ry.; and from Rawdon, the present terminal of L'Épiphanie branch, to St. Donat, Que., 42 miles.

Canadian Northern Montreal Tunnel and Terminal Co.—The Board of Railway Commissioners has approved of location plans in Montreal from station 134+79.7, La gauchetière street, to station 447+17.9.

Sir Donald Mann visited the tunnel works Dec. 19, and is reported to have expressed himself thoroughly pleased with the progress being made. The total length of the tunnel under Mount Royal, from the northern portal to Dorchester street, Montreal, will be 3.5 miles. The heading from the northern end has already been driven 1000 ft., and the heading from Dorchester street 500 ft. A shaft 238 ft. deep has been sunk immediately at the back of the mountain, and headings are being driven therefrom in both directions. Two additional shafts are to be dug, so that four additional headings may be driven. It is expected to have the tunnel driven by the end of 1913, and ready for the operation of trains by the end of 1914. From the southern portal to the St. Lawrence river the track will be an elevated one, the exact location and plan of the structure is under consideration by the Board of Railway Commissioners. From the waterfront to a point six miles north of the northern portal the tunnel the line will be operated by electricity.

Montreal-Ottawa-Dartmouth Line. The

Canadian Northern Railway Construction, Betterments, Etc.

Quebec and Lake St. John Ry.—The old machine and other workshops at the rear of the Q. and L. St. J. Ry. station, St. Andrew St., Quebec, have been demolished, and the site is being laid out as additional yard room. The new tracks to be laid will give accommodation for 120 cars.

Canadian Northern Quebec Ry.—Press reports state that in connection with the removed extension of the line easterly from Quebec to the Labrador coast, it is intended to build a line from Quebec to Sherbrooke, connecting with the line of the Boston and Maine Rd., which terminates there.

Canadian Northern Montreal Tunnel and Terminal Co.—Reviewing the work completed during the twelve months that have elapsed since the tunnel work was started, S. P. Brown is reported to have said, July 8:—"On July 8, 1912, the first shovelful of earth was removed, the work starting at the western portal. On July 31 the shaft at Maplewood avenue was commenced and driven downward for 240 ft. On Aug. 3 workmen commenced to dig the Dorchester St. shaft. Since then the western portal has been linked with the Maplewood avenue shaft and the tunnel driven further cityward until the men are working somewhere beneath the centre of the cemetery. A continuous boring, 7,350 ft. long, has been completed. From Dorchester St. also rapid progress has been made. A distance of 1,400 ft. has been completed in the terminal site between Cathcart and Latour streets. From Cathcart St. mountainward 3,700 ft. is the length of the hole to date, and the workmen are blasting almost directly under the high level reservoir. Nine feet by 12 are the dimensions of the excavation now being made, but in many places 'breakups' have been made. That is, the preliminary boring has been extended to its full height and width. 1,800 ft. have been completed in this manner and have attained the dimensions of the completed tunnel, 30 by 21½ ft. We expect to have the tunnel pierced from portal to portal by the middle of Jan., 1914, and by the end of Oct., 1914, the base will be extended to its full dimensions and the tunnel practically completed."

ed in the triangle made by the convergence of the two lines. The line is under construction from this point to the junction with the line running northerly from Toronto, but this section will not be completed until next year. Track has been laid for 150 miles westerly from near Sudbury, and for 127 miles easterly from Port Arthur, on the remaining section of the line, and gangs are laying steel to connect the two sections. These gangs are working easterly from the Port Arthur end, westerly from the Sudbury end, and in both directions from Obo, the point of junction with the Algoma Central and Hudson Bay Ry. A sub contract for tracklaying has been let to Robertson Bros. Seven ballast trains are being operated. It is expected to have the track laid and the ballasting completed so that the line may be put in operation in the fall. The buildings on the line are being erected by the Imperial Construction Co., Toronto. J. H. Montgomery, Manager. There will be divisional buildings at four points, together with 82 stations, and 82 tool houses.

Under the act passed last session of the Dominion Parliament the Government has entered into a contract with the Canadian Northern Ontario Ry., for the building of the line from Ottawa to Port Arthur, Ont., 910 miles.

Canadian Northern Ry.—In an interview at Toronto, July 8, Sir William Mackenzie is reported to have said that as soon as the Company's transcontinental line was put in operation, attention would be given to the building of a second track from Port Arthur to Winnipeg.

The St. Boniface, Man., City Council, July 14, approved plans for the erection of a new station on Des Meurons St., near Provencher Ave., to cost \$35,000.

It is reported that about nine miles of grading is required to complete the branch line from Prince Albert to Battleford, Sask., which it is expected to finish this year.

Satisfactory progress is being made on the construction on the extension which will give a direct line from Saskatoon, Sask., to Calgary, Alta. Track has been laid to Anderson Creek, where an 11 span bridge, 1,000 ft. long, is being built.

end of June there was only a stretch of 30 miles, between the point reached by the Twohy gangs, and that reached from Tete Jaune by the gangs employed by Palmer Brothers and Hemming, the sub contractors working westerly.

Location plans for the branch line through the town of Vernon, have been approved by the British Columbia Government.

It was expected to have tracklaying completed on the Lulu Island branch, July 30, so as to have it in operation early in August.

The necessary bonds have been deposited with the City of Vancouver under the False Creek reclamation agreement; the Dominion Government has granted permission to fill in the centre of the creek, and final steps are being taken by the City Council to hand over the property to the Company. Speaking at a public meeting in Vancouver, recently, the Premier said he had been advised that the proceeds of the \$10,000,000 of terminal bonds guaranteed by the B. C. Legislature, were available for the immediate starting of this work of reclamation.

Vancouver Island Lines.—The Premier in a recent speech at Vancouver, stated that he had been advised that the section of the line on Vancouver Island, extending from Victoria to Alberni, would be turned over to the operating department early in 1914.

Tenders are under consideration for the building of the following lines: From Victoria to Deadman's River, five miles; and from Regina Ave., Victoria, to Union Bay, Saanich peninsula, 15.35 miles. The work to be done includes clearing, grubbing, grading, bridges, trestles, culverts, masonry and fencing. (July, pg. 335.)

Dominion Railway Subsidy Agreements

The Dominion Government has entered into agreements with the following companies, granting aid for the construction of lines, as mentioned:—

Canadian Northern Alberta Ry.—June 23—from Edmonton, Alta., to British Columbia boundary, at, or in, the Yellow Head Pass, 230 miles.
Canadian Northern Ontario Ry.—June 23—from Ottawa to Port Arthur, 910 miles; and from Toronto to Oshawa, 250 miles.
Northern New Brunswick and Sea

ack

August, 1913.

Canadian Northern Railway Mount Royal Tunnel:

By S. P. Brown, M. Am. Soc. C.E., Chief Engineer, Canadian Northern Montreal Tunnel and Terminal Co., Ltd.

The C.N.R. is now operating about 5,000 miles of track in Manitoba, Saskatchewan and Alberta, besides its Eastern lines. It also has about 2,500 miles under construction that when completed in 1914 will make it a transcontinental system, with Vancouver, on the Pacific, and Montreal as its main eastern distributing point. When this work is finished it will be important to have proper terminal facilities already prepared in the main eastern point, and, with this in view, the Canadian Northern Montreal Tunnel & Terminal Co., Ltd., was incorporated to make the necessary developments in and about the city of Montreal.

Montreal has a population of about 600,000 and is the main eastern seaport during the busiest part of the year. The business and financial part of the city is largely concentrated in a narrow strip of land between the St. Lawrence River and Mount Royal, which is already so congested that the resident section is gradually spreading up and down the river and around the mountain into Westmount and Outremont. Mount Royal forms a very positive barrier between the people living back of the mountain and the business portion of the city.

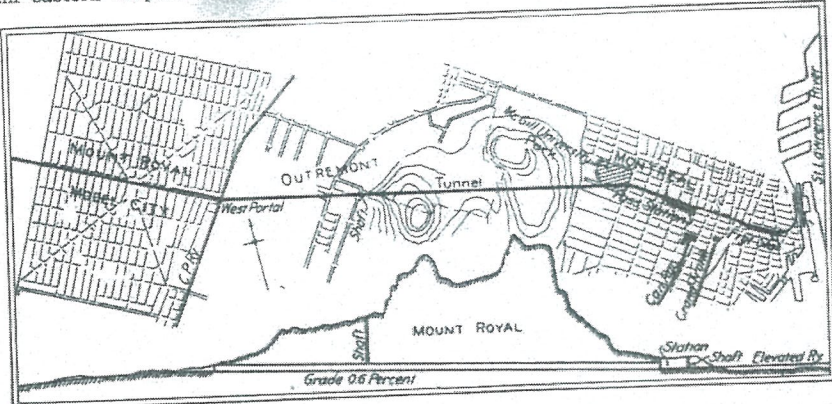
General Features of Project.

The natural location of the business centre of Montreal, between Mount Royal and the river, made the problem of entry at first appear complicated. To enter from either end of this strip meant a detour that was undesirable, and might have resulted in two separate stations for the eastbound and westbound traffic. A study of the topography and economic distribution of the city and island showed that a tunnel was the logical, as well as the economical, method of entry. It was found that the railways coming from the west could be brought from a convenient site for yards, shops, etc., near the Back River to a junction point with the Quebec lines near the present Jacques Cartier Union Railway (C.T.R.) and thence at a very flat grade to a tunnel portal at its crossing with the C.P.R. belt line, about a mile from the Outremont yard. Thence the line will pass through a twin tunnel 3.25 miles long, down a 0.6% grade to a passenger terminal in the very centre of Montreal.

From the main passenger terminal the tracks may be extended across to the lower town on a viaduct at a level grade to connect with a viaduct along the harbor front, proposed by the Harbor Commissioners of Montreal, and a possible

bridge across the St. Lawrence River. Such an extension would also include in the commercial part of the town an elaborate freight distributing depot, a department to which the C.N.R. is giving most serious thought at present. In connection with this freight department, large sorting and transfer yards are being developed back of the mountain and east of the city, where most of its shunting and mechanical part of the freight transference will be accomplished.

Back of the mountain, in the broad, gently sloping country, including some of the most fertile farms in Eastern Canada, the C.N.R. saw an opportunity for the site of a new city. With this in view, the Canadian Northern Montreal Land Company, Ltd., was incorporated



Plan and Profile of Mount Royal Tunnel.

to purchase this farming country and develop it as part of the general scheme of financing.

The New Model City.

The city of Mount Royal, or as it is locally termed, the "model city," is laid out on a rectangular plan, with four diagonal boulevards radiating from the railway station, which forms the centre of the town site. There is also a meandering boulevard connecting a series of parks and playgrounds distributed over the city, in general midway between the central park and the station site and the city limits. The land, consisting of a gently sloping plane, makes the situation ideal for drainage and sanitation. The streets will be paved principally with asphalt and macadam, the stone for which will be taken from the tunnel excavation. Street car service and lighting have already been arranged for with local companies in Montreal, which assures excellent service, and through trolley connections with Outremont, Westmount and Montreal proper are contemplated. The lots are being sold under very rigid building restrictions, as it is desired to produce a quarter of town for the better class of people who are rapidly being crowded out of the more desirable parts of Montreal, as well as for the city's rapidly growing population. A short multiple unit train service through

the tunnel will bring the Mount Royal station within a very few minutes of the main passenger terminal in the city proper and trolley cars will tie the street car lines of the "model city" with those of Outremont and Montreal. A small freight yard near the west portal of the tunnel will serve for the delivery of local freight and express and for the manipulation of multiple unit trains during the rush hours. The entire terminal scheme is to be utilitarian from the Back River to the waterfront. The idea is to produce structures and developments that will be attractive to the eye and so designed and disposed as to be self supporting in themselves without the assistance of the ordinary railroad traffic.

Tunnel History.

To the writer the most interesting part of the study of tunnels is its history. From the days of the cave man, through those of the Egyptians, Chaldeans, Romans and Europeans of modern times, the evolution has continued. The changes in the tunnel itself are small but the methods of excavation and construction have changed beyond recognition. The Lake Fucinus tunnel driven in the Abruzzi, during the reign of Claudius, 4 ft. wide, and 3½ miles long, took 10 years to build, and employ 10,000 men. To expedite this work, shafts and inclines were sunk at intervals of 100 ft. deep.

As a comparison the present Mount Royal tunnel is practically the same length; the heading, however, is about 9 ft. high by 12 ft. wide, over 50% larger than the Lake Fucinus tunnel. It has one intermediate shaft about 240 ft. deep and another about 50 ft. deep at Dorchester St., which is at present acting as the eastern portal. The first heading was started on July 8, 1912, and since that time the shafts have been sunk and over 2 miles of heading driven on the tunnel line, besides more than $\frac{1}{4}$ mile at the shafts and in the terminal sites. The reason of this great difference in speed is method and equipment.

In the Lake Fucinus tunnel they used crowbars, chisels, picks, shovels, and possibly drills and saws with cutting edges of corundum. Most of the progress, however, was made by "fire setting," i. e., by building fires against the face of the heading until the rock was highly heated and then dashing cold water or acid, such as vinegar, on it to break the ground. Condemned criminals and prisoners were used in this work, as the death rate was terrific.

Compare this with modern tunnel prac-

tice using electricity, compressed air and high explosives, which, combined with highly perfected machinery and carefully systematized forces, produce speed and economy that would have seemed incredible even a couple of generations ago.

and the main volcanic intrusions.

Tunnel Location.

The location of the tunnel under Mount Royal was more or less established by the location of the passenger terminal in Montreal and the model city at the

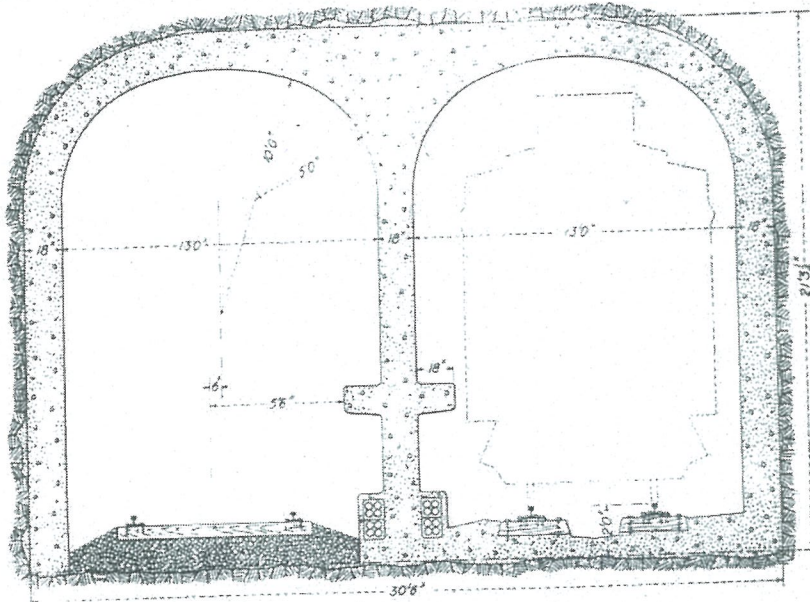
one possible between the two main objective points that could be devised to avoid surface obstructions and take advantage of the geological formation, as far as it is able to be anticipated. It is believed that while much of the breccia and part of the limestone will require masonry lining similar to that required in soft ground, much of the limestone, inclined as it is to the present tunnel line, will require only a centre wall for safe support; in the essexite no centre wall will be required except for ventilation and purposes of safety in case of derailment or accident. This gives, economically, an extremely good tunnel line, which, with the exception of one curve under the McGill University grounds, is all on a tangent and at only sufficient grade to insure proper drainage.

Tunnel Cross Section.

A twin tunnel cross section has been adopted for three main reasons—economy in excavation and construction, ease and economy in ventilation, and safety in case of accident or derailment. The outside wall clearance is coincident with the clearance for new structures in the New York Central terminal work in New York and in excess of the clearance of the Pennsylvania Lines East of Pittsburgh.

A high headroom, almost the same as that of the Detroit River tunnel, was adopted, on account of the probability of a high voltage overhead contact circuit. The flattened three centred arch was adopted to allow for the sway of the pantograph and on account of the stratification of the rock where much of the lining will occur.

The walkway is made narrow, so that people will be forced to pass along it in single file, thus avoiding the danger of crushing and panic. The normal clearance at the walkway edge is 2 in. greater



Cross Section of Twin Tubes, Mount Royal Tunnel.

and one realizes how the usages have changed.

When the obstacles confronting those early tunnel diggers, however, are considered, we can but be filled with the sincerest admiration for the confidence, courage and perseverance that made the accomplishment of such great works possible. Their immature systems, methods and appliances required genius to produce success, and the stories of their early struggles form far more thrilling romances than one can find in the most visionary novel of today.

Mount Royal Geology.

Mount Royal is an intrusion of igneous rock forced upward through the original bed of Trenton limestone. There have evidently been several stages of eruption or intrusion, as both the limestone and main igneous bodies are broken and cut by a multitude of dikes and sheets of different and varied character, and evidently of later origin.

The two principal rocks to be encountered on the present line are Trenton limestone, slightly tilted upward toward the mountain, and essexite, which is the main intrusion of igneous rock. The Trenton limestone, at a considerable depth, is quite hard and crystalline, and except where silicious or too much cut up by dikes is a very good tunneling rock. At the city end the limestone was very soft and rather blocky for the first 2,000 ft., with occasionally earth in the heading roof. As the cover increased the rock became harder and more cut by dikes. At present it is quite hard and becoming slightly crystalline, the dikes causing the only difficulty in the tunneling. The essexite is very hard, but aside from this as a good tunneling rock. The most difficult tunnel rock is a volcanic breccia, which when cut by dikes is so badly broken and blocky that it is extremely hard to drill, does not shoot well, and will require almost continuous masonry lining. This is especially common near the junction of the limestone

back of the mountain. It was, of course, known that the heart of the mountain was of hard, igneous essexite, as above described, which, with breccia, also showed outcroppings in a ridge near the western portal. While this lower ridge



Mount Royal Tunnel—Breakup, Showing Jumbo Timbers in Heading.

of hard rock and breccia could not have been avoided without seriously affecting the layout of the model city, a portion of the hard rock in the centres of the mountain could have been avoided had it been considered expedient.

The line finally adopted is the shortest

than that of the normal high passenger platform adopted in the terminal, which is somewhat greater than that allowed on the New York Central and Pennsylvania lines about New York. The walkway edge also coincides with clearance lines (outside of the platform) of the Penn-

sylvania Lines East of Pittsburgh, including the through lines between New York and Pittsburgh. Underneath the walkway is a continuous refuge niche, except at splicing chambers, where trackmen may sit on the duct bench at the bottom of the dividing wall and be absolutely protected from passing trains.

Excavation.

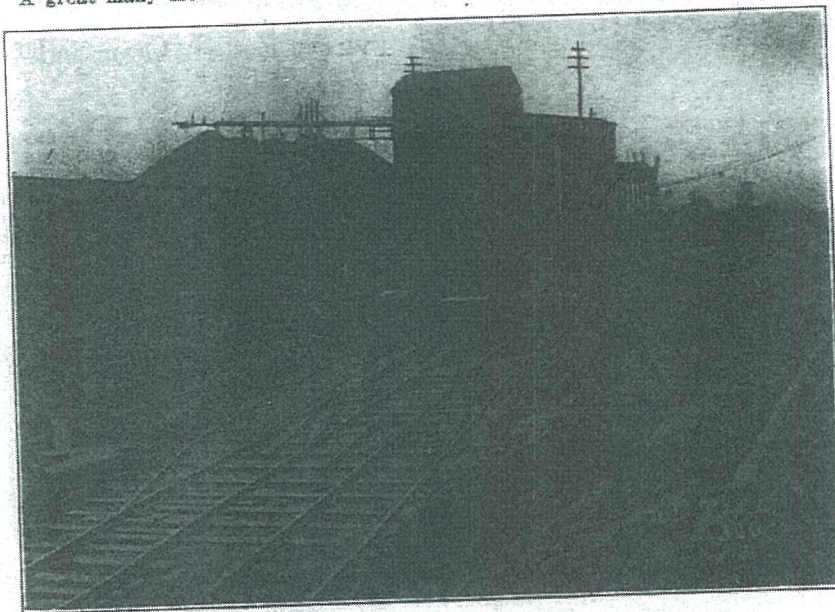
The method of excavation adopted is perhaps more European than American, although a close analysis would show it to be the resultant of several systems. In modern tunnel practice, lines of demarcation and sectionalism that were quite distinct only a comparatively few years ago are gradually becoming lost, so that an engineer is apt to select a combination of several systems which he considers wisest for his ground and structure. The things that stand out most sharply in all tunnels where great progress has been made and which are principally European in origin are: First, the opening heading is always comparatively small and usually in the bottom of the section; second, a horizontal bar is used to support the drills instead of columns; and, third, short rounds are drilled and shots are fired often. Every little economy in time is practised, and all delays, no matter how trifling, are analyzed and corrected, when possible. Workmen are given a bonus for extra progress above the specified minimum, and machinery, such as drill carriages, is used where it is found advantageous.

European engineers, like our Western miners, like to get under the muck, so that much of it falls into the cars by gravity instead of having to be lifted in. Sometimes this is accomplished by stopping, and sometimes by driving a top heading directly above the bottom heading. The one important point is to

rock, for by this method the heading can be driven on rapidly and the timbering work and full sized section developed with care and without hurry in many places simultaneously along the line.

A great many mechanical drilling, ex-

centre heading, with break ups at intervals where the full sized tunnel section is developed. The heading is driven by the horizontal bar method. In one heading, where very hard rock is encountered, requiring extra heavy drills, a drill car-



Mount Royal Tunnel—West Portal, Crushing Plant and Tipple.

cavating and mucking apparatus have been devised, and in some cases they were found to work advantageously, but where the space is confined and delays serious, the laborer, with his pick and shovel, is usually employed. One man

riage is used with a mechanical muck carrier for loading the cars. In this drill carriage the drill bar is supported on a beam which can be extended 20 ft. ahead of the carriage over the muck pile and has also a vertical and lateral movement to accommodate the heading.

On the city end outside conditions are very disadvantageous. The city of Montreal has never had any previous experience in underground excavation, so that blasting that would be hardly noticeable in New York, for instance, is considered quite serious. For this reason under the city proper, where the cover was light, no blasting was allowed between 11 p.m. and 7 a.m.; the holes in the heading were reduced to 36 and 42 in. in depth, including the cut, and the powder was reduced to a mere "trace."

The effect of all this on heading progress was not so serious as might have been expected. While the holes were short, the rounds were fired so often that an average progress of about 17 ft. a day was maintained. In approaching the mountain, where 5 ft. cut holes could be used, the average progress was about 20 ft. per day.

Record Tunnel Progress.

During the month of May, just ended at this writing, as the rock cover had very much increased, shooting was allowed at night, which very much improved the heading progress. In this way, a total of 810 ft. of 8 x 12 ft. heading were driven in the 31 working days immediately following May 1. This, the writer believes, is the best tunneling record yet made in a hard rock heading.

A greater record than the above was made in the Loetschberg tunnel in Switzerland, where 1,013 ft. of 6.5 x 10 ft. heading were driven in one month through soft triassic limestone. An excellent record was also made last year in Arizona, where 799 ft. of 8 x 8 ft. heading were driven in 31 working days through granite porphyry sufficiently hard to drill well and in general stand without timbering. Neither of these



Mount Royal Tunnel—Heading. Observe Drills on Horizontal Bar and Water Attachment to Drills.

keep the bottom heading open for traffic at all times, so that the heading progress is never materially affected. The full size excavation can be carried on over jumbo timbers at as many places as necessary to keep up with the heading.

A bottom heading in bad ground, if possible, is even more desirable than in

can handle a good deal of muck in his shift, shoveling off slick sheets into low cars. At present muckers in the Mount Royal tunnel heading are handling 15 cu. yd. of muck per man per eight hour shift.

Bottom Heading Method.

The method of excavation adopted in the Mount Royal tunnel is a bottom

rocks can be creditably compared in hardness with the diked Trenton limestone now being excavated in the Mount Royal tunnel. However, as the rock encountered in the Loetschberg tunnel was sufficiently hard to require the use of air drills, that progress of 1,913 ft. will undoubtedly stand as a world's record for a long time, and certainly stands as a monument to good tools, good management, and good men.

The rock in the Dorchester St. heading of the Mount Royal tunnel, while not so hard as it is back of the mountain, is a very good Trenton limestone, which makes an excellent concrete stone, being sharp and not too high in lime. All stone coming from the tunnel is being crushed and what is not used by the company is being sold for massive and reinforced concrete, principally in Montreal.

The break ups, as they are called, where the full sized tunnel is excavated, are opened at as many intervals as desired. This excavation is extremely cheap and rapid. In one break up about 200 cu. yds. are now being excavated per day with two shifts of drillers. Jumbo timbers are framed into the headings at the break ups, so that the heading traffic is never interfered with, and the bulk of the break up muck drops into the cars by gravity. It is to permit the use of a fairly broad gauge double track at these break ups that the Mount Royal headings are driven 8 to 10 ft. high by 12 ft. wide.

While so large a cross-section very materially reduces the progress of the headings driven each month, it very greatly increases the economy of further excavation and construction. Back of the mountain, where the very hard rock is encountered and the drill carriage is in use, the heading averages about 10 x 12.5 ft., and the May progress was 510 ft. in 27 working days. At the city end, where the record was made, it was permitted to reduce this to about 8 x 12 ft. in order to assist the progress. It is expected to remove most of the benches below the level of the jumbo timbers with a steam shovel.

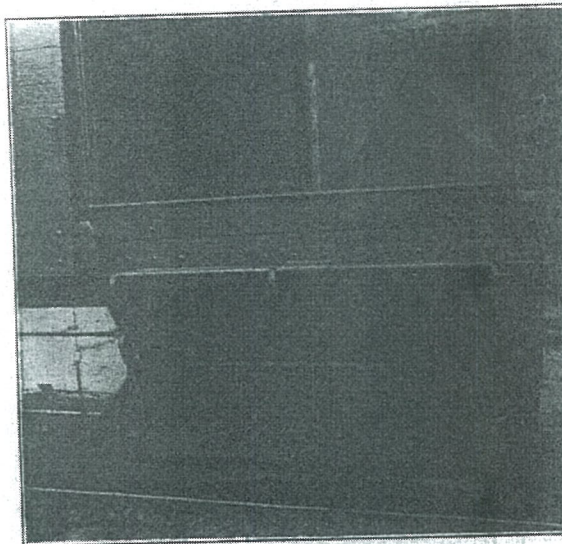
consists of R. F. tendent, West; F. intendent, East; cal and Mech; Fisher, Tunnel l son, Engineer of

Hopper Bott

Ever since grain box cars, the grain door has been a difficult problem till recently it has been a finished part of grain door is on



securely as a body, is always will not be does not obstruct room when no able first cost. A grain



Car With Steel Hopper Open.

As this work is being done by Mackenzie, Mann & Company, Ltd., who also represent the Canadian Northern Ry., every opportunity for economy may be taken advantage of. The job organization covering both design and construction

there will be detected, will be in close lining of grain that there are problems in

Canadian Northern Railway Construction, Betterments, Etc.

Quebec and Lake St. John Ry.—The old machine and other workshops at the rear of the Q. and L. St. J. Ry. station, St. Andrew St., Quebec, have been demolished, and the site is being laid out as additional yard room. The new tracks to be laid will give accommodation for 120 cars.

Canadian Northern Quebec Ry.—Press reports state that in connection with the rumpled extension of the line easterly from Quebec to the Labrador coast, it is intended to build a line from Quebec to Sherbrooke, connecting with the line of the Boston and Maine Rd., which terminates there.

Canadian Northern Montreal Tunnel and Terminal Co.—Reviewing the work completed during the twelve months that have elapsed since the tunnel work was started, S. P. Brown is reported to have said, July 8:—"On July 8, 1912, the first shovelful of earth was removed, the work starting at the western portal. On July 31 the shaft at Maplewood avenue was commenced and driven downward for 240 ft. On Aug. 3 workmen commenced to dig the Dorchester St. shaft. Since then the western portal has been linked with the Maplewood avenue shaft and the tunnel driven further cityward until the men are working somewhere beneath the centre of the cemetery. A continuous boring, 7,350 ft. long, has been completed. From Dorchester St. also rapid progress has been made. A distance of 1,400 ft. has been completed in the terminal site between Cathcart and Latour streets. From Cathcart St. mountainward 3,700 ft. is the length of the hole to date, and the workmen are blasting almost directly under the high level reservoir. Nine feet by 12 are the dimensions of the excavation now being made, but in many places 'breakups' have been made. That is, the preliminary boring has been extended to its full height and width, 1,800 ft. have been completed in this manner and have attained the dimensions of the completed tunnel, 30 by 21½ ft. We expect to have the tunnel pierced from portal to portal by the middle of Jan., 1914, and by the end of Oct., 1914, the base will be extended to its full dimensions and the tunnel practically completed."

ed in the triangle made by the convergence of the two lines. The line is under construction from this point to the junction with the line running northerly from Toronto, but this section will not be completed until next year. Track has been laid for 150 miles westerly from near Sudbury, and for 127 miles easterly from Port Arthur, on the remaining section of the line, and gangs are laying steel to connect the two sections. These gangs are working easterly from the Port Arthur end, westerly from the Sudbury end, and in both directions from Obo, the point of junction with the Algoma Central and Hudson Bay Ry. A sub contract for tracklaying has been let to Robertson Bros. Seven ballast trains are being operated. It is expected to have the track laid and the ballasting completed so that the line may be put in operation in the fall. The buildings on the line are being erected by the Imperial Construction Co., Toronto, J. H. Montgomery, Manager. There will be divisional buildings at four points, together with 82 stations, and 82 tool houses.

Under the act passed last session of the Dominion Parliament the Government has entered into a contract with the Canadian Northern Ontario Ry., for the building of the line from Ottawa to Port Arthur, Ont., 910 miles.

Canadian Northern Ry.—In an interview at Toronto, July 8, Sir William Mackenzie is reported to have said that as soon as the Company's transcontinental line was put in operation, attention would be given to the building of a second track from Port Arthur to Winnipeg.

The St. Boniface, Man., City Council, July 14, approved plans for the erection of a new station on Des Meurons St., near Provencher Ave., to cost \$35,000.

It is reported that about nine miles of grading is required to complete the branch line from Prince Albert to Battleford, Sask., which it is expected to finish this year.

Satisfactory progress is being made on the construction on the extension which will give a direct line from Saskatoon, Sask., to Calgary, Alta. Track has been laid to Anderson Creek, where an 11 span bridge, 1,000 ft. long, is being built. ----- this is contemplated tracklaying

end of June there was only a stretch of 30 miles, between the point reached by the Twohy gangs, and that reached from Tete Jaune by the gangs employed by Palmer Brothers and Hemming, the sub contractors working westerly.

Location plans for the branch line through the town of Vernon have been approved by the British Columbia Government.

It was expected to have tracklaying completed on the Lulu Island branch, July 30, so as to have it in operation early in August.

The necessary bonds have been deposited with the City of Vancouver under the False Creek reclamation agreement; the Dominion Government has granted permission to fill in the centre of the creek, and final steps are being taken by the City Council to hand over the property to the Company. Speaking at a public meeting in Vancouver, recently, the Premier said he had been advised that the proceeds of the \$10,000,000 of terminal bonds guaranteed by the B. C. Legislature, were available for the immediate starting of this work of reclamation.

Vancouver Island Lines.—The Premier in a recent speech at Vancouver, stated that he had been advised that the section of the line on Vancouver Island, extending from Victoria to Alberni, would be turned over to the operating department early in 1914.

Tenders are under consideration for the building of the following lines from Victoria to Deadman's River, five miles; and from Regina Ave., Victoria, to Union Bay, Saanich peninsula, 15.5 miles. The work to be done includes clearing, grubbing, grading, bridges, trees, culverts, masonry and fencing (July, pg. 335.)

Dominion Railway Subsidy Agreements.

The Dominion Government has entered into agreements with the following companies, granting aid for the construction of lines, as mentioned:—

Canadian Northern Alberta Ry.—June 23—from Edmonton, Alta., to British Columbia boundary, at, or in, the Yellow head Pass, 230 miles.
Canadian Northern Ontario Ry.—June 23—from Ottawa to Port Arthur, 910 miles; and from Toronto to Ottawa, 250 miles.
Northern New Brunswick and Seaboard

Canadian Northern Railway

Quebec and Lake St. John Ry.—The old machine and other workshops at the rear of the Q. and L. St. J. Ry. station, St. Andrew St., Quebec, have been demolished, and the site is being laid out as additional yard room. The new tracks to be laid will give accommodation for 120 cars.

Canadian Northern Quebec Ry.—Press reports state that in connection with the rumored extension of the line easterly from Quebec to the Labrador coast, it is intended to build a line from Quebec to Sherbrooke, connecting with the line of the Boston and Maine Rd., which terminates there.

Canadian Northern Montreal Tunnel and Terminal Co.—Reviewing the work completed during the twelve months that have elapsed since the tunnel work was started, S. P. Brown is reported to have said, July 8:—"On July 8, 1912, the first shovelful of earth was removed, the work starting at the western portal. On July 31 the shaft at Maplewood avenue was commenced and driven downward for 240 ft. On Aug. 3 workmen commenced to dig the Dorchester St. shaft. Since then the western portal has been linked with the Maplewood avenue shaft and the tunnel driven further cityward until the men are working somewhere beneath the centre of the cemetery. A continuous boring, 7,350 ft. long, has been completed. From Dorchester St. also rapid progress has been made. A distance of 1,400 ft. has been completed in the terminal site between Cathcart and Latour streets. From Cathcart St. mountainward 3,700 ft. is the length of the hole to date, and the workmen are blasting almost directly under the high level reservoir. Nine feet by 12 are the dimensions of the excavation now being made, but in many places 'breakups' have been made. That is, the preliminary boring has been extended to its full height and width. 1,800 ft. have been completed in this manner and have attained the dimensions of the completed tunnel, 30 by 21½ ft. We expect to have the tunnel pierced from portal to portal by the middle of Jan., 1914, and by the end of Oct., 1914, the base will be extended to its full dimensions and the tunnel practically completed."

Canadian Northern Ontario Ry.—The

August 1913

[December, 1911]

Canadian Northern Railway Construction, Betterments, Etc.

Quebec and Lake St. John Ry.—We are officially advised that the company is building under the St. Charles and Huron River Ry.'s charter a line from Lorette station up the St. Charles River Valley to Stoneham, Que., at the mouth of Huron River, 7.5 miles. The line was located about two years ago by S. S. Oliver, and the location was revised early this year by — Morrison. A contract for grading has been let to a Quebec firm and grading is being done. The principal traffic on the line will be pulpwood. (May, 1912, pg. 231.)

Canadian Northern Ontario Ry.—The Board of Railway Commissioners has authorized the building of an interchange track with the C.P.R., near Ottawa.

The coal handling plants at Rideau Jct., Hornepayne and Capreol, on the Montreal-Ottawa-Port Arthur line, were reported, Nov. 12, to be practically completed.

The Port Arthur, Ont., City Council on

work in progress at Vancouver, that the present contract covers the erection of a sea wall, located 300 ft. west of Main St. bridge, for the purpose of enclosing the head of False Creek, which is being reclaimed by the company for the purpose of its terminals. This contract has been let to A. G. Creelman and Sons, Vancouver, and covers the building of a reinforced concrete sea wall, with two slips for the accommodation of steamships. It is expected that the work can be completed in five or six months. The reclamation work on False Creek itself is being carried on by the Pacific Dredging Co., which is dredging a channel for the Dominion Government from Main St. to English Bay. The material dredged from this channel is being deposited on the False Creek flats, through a pipe line. The C.N.R. has at present an area of 64 acres, contained within a temporary bulkhead completely filled in and ready for the laying of

It was intended to erect a tempor

Alberta Public Utility Commissioners

G. H. Bulyea, who has been appointed chairman, Alberta Public Utilities Commission, was born at Gagetown, N.B., Feb. 1, 1859, and was educated at Queens College Grammar School, Gagetown, and at the New Brunswick University, graduating B.A. therefrom in 1878. After teaching in the Sunbury County Grammar School, he moved to Manitoba in May, 1882, and in March, 1883, to Qu'Appelle, Sask., where he engaged in mercantile business. He was elected a member of the Northwest Council in 1884, and in 1898 was appointed Administrator of the Yukon District, remaining that position only a few months. He was re-elected to the Northwest Council at the next general election, being subsequently appointed Minister of Agriculture; and Feb., 1903, was appointed Minister of Public Works. On the creation of the province of Alberta, he was appointed Lieutenant-Governor, Sept. 1, 1896, and was appointed for a second term which expired recently.

... second member of the co

1913

January, 1914.]

CANADIAN

Canadian Northern Railway Constr

James Bay and Eastern Ry.—The first section of this railway is under construction from Roberval, Que., the northerly terminus of the Quebec and Lake St. John Ry., 30 miles northerly. We are officially advised that grading upon this is well advanced. J. P. Mullarkey, Montreal, is the contractor, and A. F. Stewart, Chief Engineer of Construction, Mackenzie, Mann & Co., Ltd., is in charge of the work.

Canadian Northern Quebec Ry.—The extensions and branch lines located, but not yet finally passed for construction are:—Huberdeau Argenteuil county, Que., to St. Remi, 11 miles, and from Rawdon to St. Donat, 40 miles. These lines are projected for the purpose of opening up new territory lying between the old Great Northern Ry. and the old Montford Colonization Ry., both of which are now part of the C.N.Q.R. Another charter also amalgamated with the C.N.Q.R., is the Quebec, New Brunswick and Nova Scotia Ry., under which it is proposed to build a line from Quebec Bridge to Woodstock, N.B.

Canadian Northern Montreal Tunnel and Terminal Co.—The headings of the tunnel being driven under Mount Royal, to give the C.N.R. an entrance into Montreal, were joined on Dec. 10. The heading is 8 by 12 ft., and the work of enlargement to 22 by 30 ft. is being gone on with.

Plans have been filed in Montreal showing a revision of the location of the line to connect the tunnel with the St. Lawrence water front. These have been approved by the Board of Railway Commissioners.

The Central Ontario Ry. is asking the Dominion Parliament for an extension of time within which to complete the line from its present northerly terminus to a junction with the C.P.R. at some point between Sudbury Jct. and Callander station, Ont.

Canadian Northern Ontario Ry.—A mixed

4 of
the s
act a
tee th
lines
the
\$13,00
a sho
auth
guar
the

A
inter
the
further
par.
3, st
210
line
ule
north
100,
east
for
line
wan

men
stan
A
the
The
is 1
inte
of t
pro
in
sta
be
par
nor
I
nec
tio
bor
lin
so

The Military Concentration Camp at Valcartier.

On the outbreak of war the Canadian Militia Department, in anticipation of the acceptance by the mother country of the offer of Canadian troops for service abroad, proceeded to lay out a concentration camp at Valcartier, Que., 16.2 miles from Quebec, on the Quebec and Lake St. John Ry., now part of the Canadian Northern Ry. system, where the troops might be placed in condition to be effective in assisting the British arms. To handle the large contingent promised by this country special railway facilities were required in a great hurry, and the railway officials proceeded immediately to put in such railway accommodation as would meet the requirements. The accompanying plan shows the railway facilities provided, the solid lines showing the existing tracks, and the dotted lines the track-laid for military purposes. Three miles of track were laid in a week.

At Valcartier station the old Gosford branch of the Q. and L. St. J. Ry. leaves the main line. The site selected is in the

camp station is located at mileage 15, near the east end of the cut off.

At this point the railway is particularly well supplied with siding accommodation for holding trains in readiness. The Gosford branch at the west end has no passenger service, so that it may be used as a long siding if required, and in the meantime there is a large amount of siding provided some distance along this line at a large lumber mill, the sidings for which will be utilized. This accommodation is in addition to the three sidings at Valcartier station.

For the handling of troops from points west of Quebec the Q. and L. St. J. Ry. has a good connection a short distance outside Quebec city. Both the Canadian Northern Quebec Ry. and the Q. and L. St. J. Ry. run into Quebec from the north over tracks that parallel each other for some distance near the city. A switch at the point where these lines meet transfers the traffic from the C.N.R. to the line to the camp, side-tracking a passage through Quebec.

Since the accompanying plan was made, several additional sidings have been laid. On the north side of the main line, just east of the old station sidings, there has been laid a double end siding, 1,644 ft. long. Just west of the east end loading platform siding, near the camp station, two 1,200 ft. sidings have been laid on the north side of the cutoff track, between which there has

Order re Locomotive Defects.

The Board of Railway Commissioners has issued general order 131 under date of July 6, as follows:—

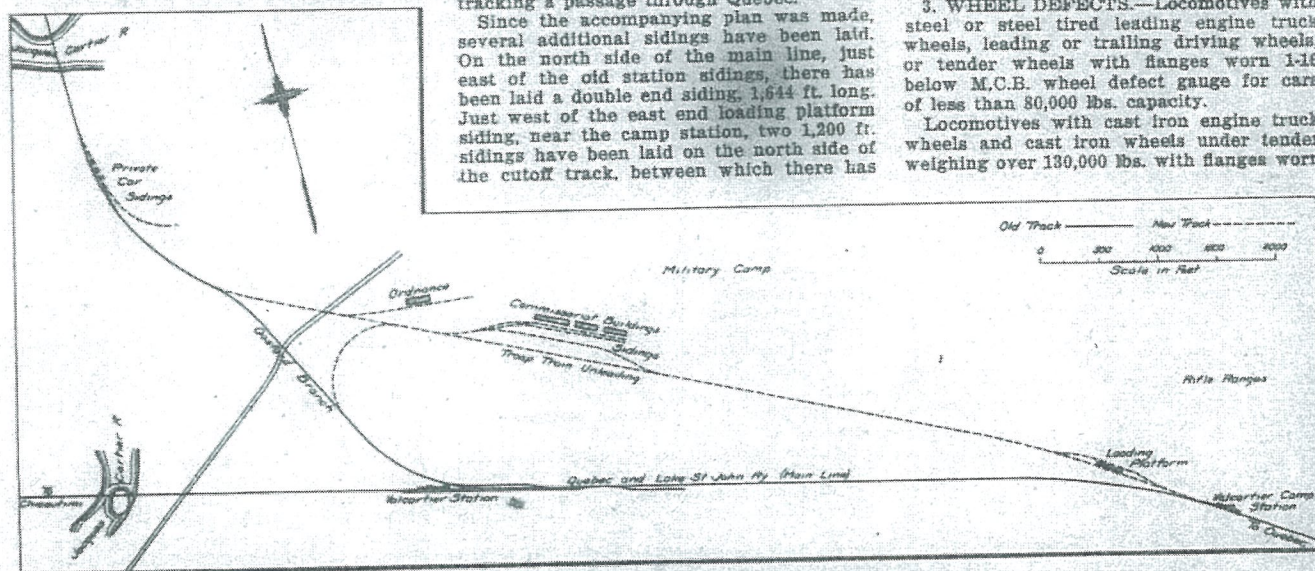
Re locomotive defects, and circular 127, Feb. 24, submitted by direction of the Board to railway companies for their consideration, upon reading replies to the circular, filed by the railway companies, and the reports of the Board's operating officers, the railway companies, after various meetings and discussions, consenting to the adoption of the regulations particularly set out in this order, it is ordered that locomotives be not allowed to leave terminals, or be used at terminals, in traffic service, on which any of the following defects exist, namely:—

1. STEAM LEAKS from any part of the locomotive which render it impossible for engineer to see signals in sufficient time to enable him to bring his train to a stop within the required distance.

2. AIR BRAKES on locomotives or tenders not in serviceable condition.

3. WHEEL DEFECTS.—Locomotives with steel or steel tired leading engine truck wheels, leading or trailing driving wheels, or tender wheels with flanges worn 1-16 below M.C.B. wheel defect gauge for cars of less than 80,000 lbs. capacity.

Locomotives with cast iron engine truck wheels and cast iron wheels under tender weighing over 130,000 lbs. with flanges worn



Railway Connections for the Valcartier Military Concentration Camp.

area bounded by this line on the west, and by the main line on the south. As the main railway connection to the camp, a line 8,800 ft. long was laid from mileage 15.05 to a point on the Gosford branch, and a little west of midway in this line, three sidings were laid as the main transfer point, one of these sidings being double ended, the other two entering only from the west. Several additional sidings are being laid. A 12 degree loop from the west end of the sidings is connected back into the Gosford line in the return direction, so that the traffic may make a return loop back to Quebec, providing an effective means of giving an uninterrupted service in the immediate vicinity of the camp. On this siding the Militia Department has erected three commissariat buildings, each 48 ft. wide, two 300 ft. long, and the third 200 ft. long.

To the west of these three sidings another blind siding has been laid, on which the Militia Department has erected an ordnance building, 48 by 200 ft. A double ended siding has also been laid near the east end of the military cut off, where an unloading platform has been erected. Beyond the west end of the cut off a double ended sid-

been built a loading platform 380 ft. long, and at the stub ends of the sidings there are 40 ft. end loading ramps. At the west end of the cutoff an additional siding has been laid paralleling the ordnance siding, and at the stub end of the older siding a further building, 300 by 36 ft., has been built by the Militia Department. On the north side of the commissariat siding, between the switch and the buildings, an additional unloading platform, 320 ft. long, has been built. Additions have also been made to the private car sidings.

The engineering work was done by C. H. N. Connell, Engineer of Maintenance of way, C.N.R., and all the railway arrangements in connection with the camp are in charge of F. M. Spidal, General Superintendent, Quebec Grand Division, assisted by W. A. Kingsland, Auditor.

The C.N.R. has carried a large number of troops from Toronto and other points west of Quebec to Valcartier, and on Aug. 24 started a direct passenger service leaving Toronto daily, except Sunday, at 9.20 a.m., via Ottawa, Joliette and Shawinigan Jct., arriving at Valcartier the following morning at 10.23. Westbound trains leave

1-16 below M.C.B. defect gauge for cars of 80,000 lbs. capacity, or over.

Locomotives with cast iron wheels under tender weighing 130,000 lbs. or less, with flanges worn 1-16 below M.C.B. defect gauge for cars of less than 80,000 lbs. capacity.

Locomotives with truck or tender wheels having shelled out or flat spots over 2 1/4 ins. long, or so numerous as to endanger the safety of the wheel.

Steel tires on locomotives worn hollow 3/4 in. in depth, or which are worn below safe limit of thickness. Railway companies to file with the Board their standard limit of thickness of tires on all classes of locomotives, for approval.

Flat or shelled out spots on locomotive driving wheels 3 ins. long.

4. SPRINGS.—Locomotives with defective springs on any part of locomotive or tender which are unable to carry their respective weights when locomotive is standing.

And it is further ordered that the railway companies be required, on or before Jan. 1, 1915, to equip their locomotives with double windows in the front of the cabs.

Canadian Northern Railway Construction, Betterments, Etc.

Canadian Northern Quebec Ry.—The locomotive house at Longue Pointe, Montreal, was destroyed by fire Oct. 30, with three locomotives, and a quantity of machinery. The loss is placed at \$150,000.

Montreal Tunnel and Terminal Co.—It is reported that about a mile of the excavation necessary to complete the tunnel to its full depth has been done and that

ways, completed a visit of inspection over the lines under construction, Nov. 17. S. H. Sykes, who accompanied Mr. Ferguson on the trip, is reported to have said track is now laid to 82 miles west of Yellowhead Pass, and it was expected to complete the tracklaying to the bridge site at mileage 85 west of the Pass, Nov. 20. The erection of the bridge at this point is expected to

Dec. 7, to decide upon the raising of funds for the completion of the railway, by the issue of bonds, and to approve of the form of mortgage to be given to secure the payment of the same.

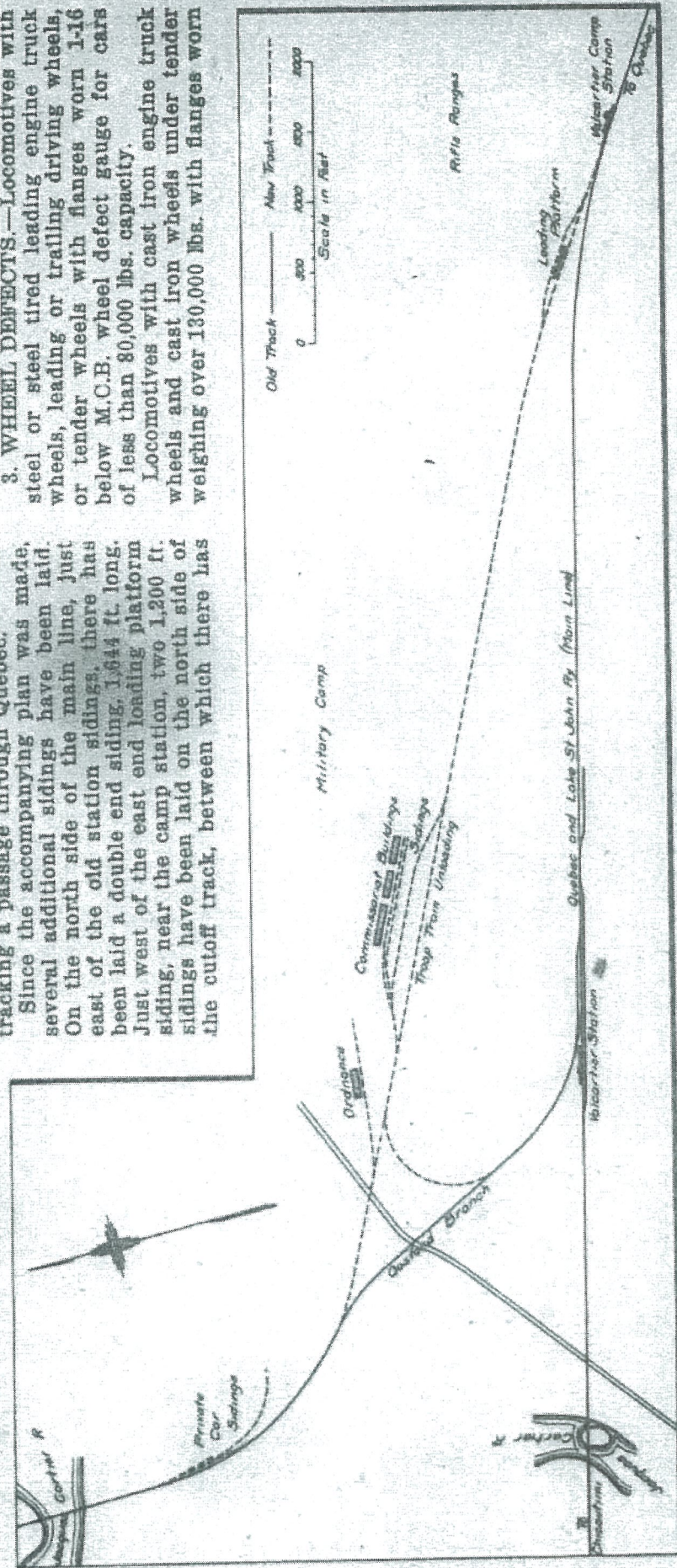
Ottawa and New York Ry.—The Dominion Parliament is being asked to authorize the company to lease its line to the New York Central and Hudson River Ry.

St. Lawrence and Adirondack Ry.—Application is being made to the Dominion Parliament for authority to lease the company's

tracking a passage through Quebec.
 Since the accompanying plan was made, several additional sidings have been laid. On the north side of the main line, just east of the old station sidings, there has been laid a double end siding, 1,344 ft. long. Just west of the east end loading platform siding, near the camp station, two 1,200 ft. sidings have been laid on the north side of the cutoff track, between which there has

3. WHEEL DEFECTS.—Locomotives with steel or steel tired leading engine truck wheels, leading or trailing driving wheels, or tender wheels with flanges worn 1-16 below M.C.B. wheel defect gauge for cars of less than 80,000 lbs. capacity.

Locomotives with cast iron engine truck wheels and cast iron wheels under tender weighing over 130,000 lbs. with flanges worn



Railway Connections for the Valcartier Military Concentration Camp.

