THE SOOLINE. C. H. RIFF.

required. (April, pg. 114.)

Minneapolis, St. Paul and Sault Ste. Marie. —We were advised, July 13, that grading had been completed and track laid to 10 miles north of Detroit, Minn., and it was expected that the line will reach Emerson, Man., at the International boundary by Nov. 1.

1904

Soo

Minneapolis, St. Paul and Sault Ste. Marie Railway.

Following are extracts from the report for the year ended June 30, 1904, presented at the annual meeting in Minneapolis, Sept. 20:

	1904.	1903.
Gross earnings from all sources	$ 7,082,153.19	$ 7,293,743.26
Operating expenses	3,746,780.49	3,719,923.63
Net earnings	$ 3,335,372.70	$ 3,573,820 63
Fixed charges, taxes, etc	1,948,126.82	1,909,323.20
Surplus earnings	$ 1,387,245.88	$ 1,664,497.43

The gross earnings as compared with the previous year decreased $211,590.07, or 2.9%, the operating expenses increased $26,857.86 and the fixed charges $38,803.62, resulting in a decrease in the net earnings of $238,447.93, or 6.6%, and in surplus of $277,251.55, or 16.6%. When the unfavorable conditions that prevailed throughout the year are considered, the result is most encouraging; a comparatively small wheat crop in 1903 was followed by a very severe winter, making operation most difficult and expensive; the heavy snowfall of the winter coupled with an abnormal

Minneapolis, St. Paul and Sault Ste. Marie Ry.

In connection with the opening of the extension of the line to the International boundary at Emerson, Man., and the inauguration of a through train service between St. Paul and Winnipeg, the probability of the erection of a union station at Emerson is under discussion. The lines interested would be the C.P.R., the M., St. P. and S.S.M. Ry., the Canadian Northern Ry., and the Great Northern Ry., U.S.

1/1905

flat cars, 11 stock cars and two pile drivers.

The C.P.R. is reported by Winnipeg, Man., papers to be about to make tests of

room, and 20 first-class cars with smoking room, which the C.P.R. is having constructed

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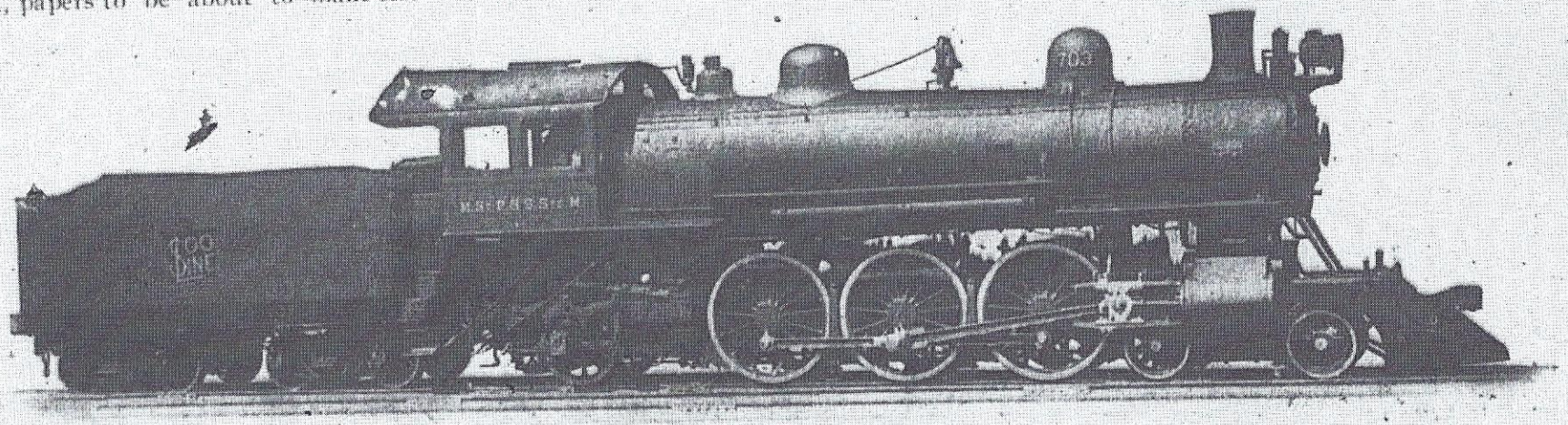


PACIFIC TYPE LOCOMOTIVE BUILT FOR THE MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY., BY THE AMERICAN LOCOMOTIVE CO.

10 motor cars, and the first three will, it is

November 1906

Location was begun in Sept., 1904, and completed in April, 1905. It was made under a great many difficulties owing to the severe conditions of the winter. The location being practically all the way in a prairie country, the members of the engineering parties living in tents suffered a great many hardships owing to the numerous snow-storms and blizzards. On the prairies it is very rare to have a calm day, and with the thermometer ranging from zero to 45 deg. F. below for weeks at a time, a great deal of time was lost. On account of these conditions the practicability of doing any locating work during the winter on the prairies is very seldom counted on.

The line is remarkable in regard to its alignment and grades, there being one tangent of 50 miles and one of 40 miles, and numbers of others of 20 miles. The curvature is very light, there being but one 3-deg. curve at the extreme west end at Kenmare, two 2-deg. curves, and the rest 1-deg. and 30-min. curves, principally the latter. The gradients are very light, being three-tenths of 1% eastbound from Grano, 275 miles west from Thief River Falls; westbound gradients are principally three-tenths, with the exception

Railway Rolling Stock Notes.

The Temiskaming and Northern Ontario Ry. has received two baggage and express cars from the Crossen Car Manufacturing Co., Cobourg, Ont.

The Canadian Locomotive Co., Kingston, Ont., has delivered seven 10-wheel locomotives to the Canadian Northern Ry., and one 8-wheel locomotive to the Central Ontario Ry.

The G.T.R., between Aug. 19 and Oct. 6, added to its rolling stock: 5 standard baggage cars, 22 Richmond compound consolidation freight locomotives, and 10 ten-wheel passenger engines.

The general dimensions of the 118, and 1,000 box cars which the C.P.R. is having constructed at its Angus, Montreal, shops, are similar to those of the 102 box cars described in our Sept. issue, pg. 515.

The C.P.R. between Sept. 17 and Oct. 13, placed orders for the following rolling stock at its Angus, Montreal, shops: 2,059 box cars; 200 Hart convertible ballast cars, 38 flat cars, 11 stock cars and two pile-drivers.

The C.P.R. is reported by Winnipeg, Man., papers to be about to make tests of electricity as a motive power for its yard loco- [illegible] William, Ont. We are how-

Angus, Montreal, shops, will be 65 ft. long, and 9 ft. 10½ in. wide over sills, and will have a capacity of 40 passengers in the smoking room. There will be a wide vestibule at the smoking end, but no platform at the baggage end.

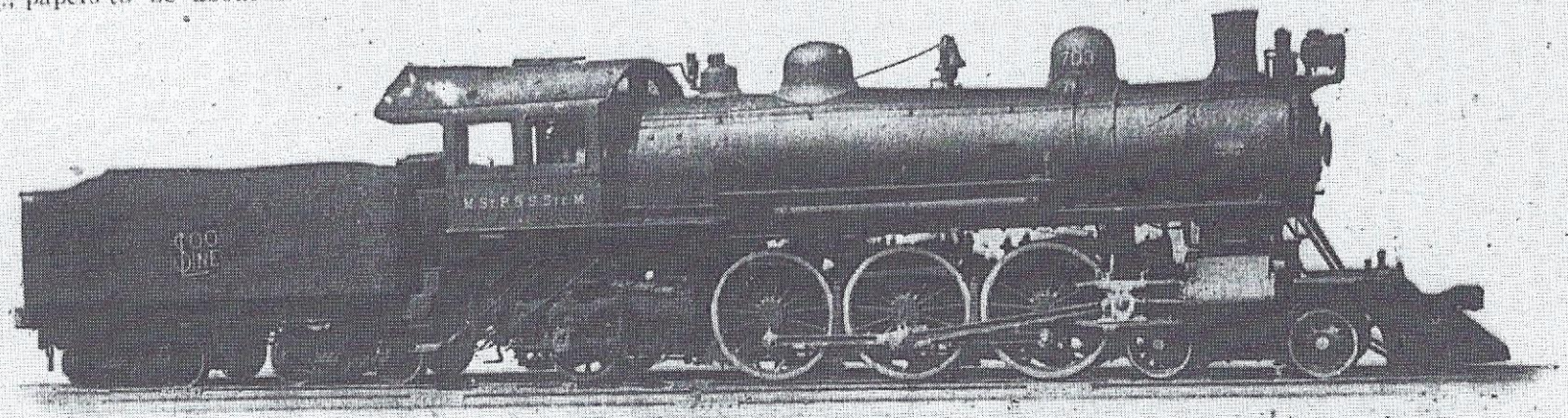
The Canadian Northern Ry. has placed an order for 500 box cars with Rhodes, Curry & Co., Amherst, N.S., in addition to the 1,000 box cars mentioned in our last issue. These cars are M.C.B. standard for 60,000 lbs. capacity, and the special equipment includes Simplex bolsters and brake beams, and Westinghouse air brakes.

The C.P.R. parlor cars, two of which are under construction at its Angus, Montreal, shops, will be 72 ft. long by 9 ft. 10½ in. wide over frames. The floor plan has not been finally approved, but it will probably provide for a side vestibule at one end and an observation platform at the other. They will be provided with armchairs, and otherwise will be similar to the dining and sleeping cars.

The dimensions and general specifications of the 20 first-class cars without smoking room, and 20 first-class cars with smoking room, which the C.P.R. is having constructed at its Angus, Montreal, shops, are indentical with those of the 15 and six similar cars [illegible] Sept. issue, pg. 515. The

made so as to dump either at the side or in the centre of the track. They are, however, made of standard length and width so as to enable them to be used for carrying rails, etc. The cars are to be of wood, 36 ft. 8 in. over end sills and 40 tons capacity; axles, 5 by 9 in., M.C.B.; journal bearings, 5 by 9 in.; trucks all steel, diamond pattern; 33 in. cast-iron wheels; Simplex body and truck bolsters, and brake beams, Susemihl side bearings, C.P.R. standard spring and Westinghouse air brake.

G. R. Joughins, Superintendent of Motive Power, Intercolonial Ry., who has been in Europe looking into the steam railway motor car situation, is said, according to an Ottawa press dispatch, to have reported favorably on those operated by the Great Western Railway in England. Each motor car is of 216 horse power, and draws four or five coaches at the rate of about 40 miles an hour. The motor car is placed in the centre with two coaches on each end and runs backwards and forwards. The train is controlled by a conductor from either end, the fireman being stationed on the motor car itself. The service given is pronounced excellent. The Canadian Government railways will in all likelihood require 10 motor cars, and the first three will, it is said, be placed in operation next spring at Halifax, Moncton, and St. John, N.B., respec- [illegible] another press report from Moncton,



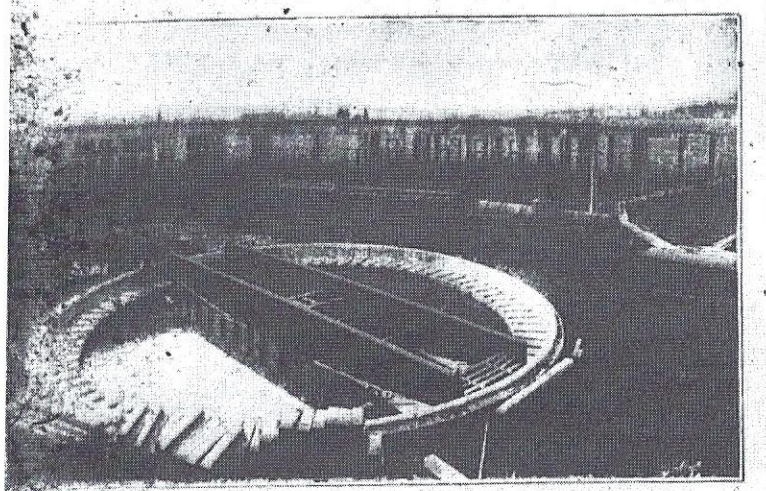
PACIFIC TYPE LOCOMOTIVE BUILT FOR THE MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY., BY THE AMERICAN LOCOMOTIVE CO.

1906

Betterments, Construction, Etc.

St. Charles Shops.—The negotiations [illegible] the fixing of taxation on the [illegible] property at this point, has been [illegible] agreed to on a basis of $1,000, [illegible] period of 20 years. The company [illegible] for extensive improvements [illegible] to the shops, and desired to [illegible] assessment fixed before the work [illegible]

[illegible] Round House, etc.—The round [illegible] machine shop recently built at [illegible] near Toronto, contains 30 stalls, each [illegible] wide at the inner circle, and 26 ft. at [illegible] circle. Each stall is 82 ft. long, [illegible] into three sections, and carried on [illegible] columns. The entire structure is built [illegible] concrete, reinforced with Kahn trussed [illegible] The interior columns are 14 in. square, [illegible] contain each four 1 x 1½ in. trussed bars. [illegible] diagonals of these steel members are [illegible] horizontal in order to obtain the effect [illegible] ping. Angle guards were placed in all [illegible] in order to prevent chipping. The [illegible] in the outer circle are T shape, [illegible] a pilaster on the outside, and at the [illegible] time supplying recesses for keeping [illegible] walls between columns. The [illegible] at these points allow for expansion [illegible] contraction. In designing the columns [illegible] interior circle, it was feared that loco[illegible] striking the outside floors would [illegible] the concrete columns which carried [illegible] For this reason these columns so that if an excessive load were placed upon any one portion the same would be distributed over the adjoining panels. Anchors for carrying steam pipes and controlling individual smoke stacks over locomotives were placed in the concrete while the same was green. The machine shop roof is constructed similarly to the round house, using a series of beams about 12 ft. [illegible] spanned with a 4 in. concrete slab. These are also reinforced with Kahn trussed bars. The illustrations on this page show the method of construction.



G.T.R. ROUND HOUSE AT MIMICO, ONT., IN PROCESS OF CONSTRUCTION.

Guelph Improvements.—The Guelph, Ont., City Council had before it July 4 the decision of the Board of Railway Commissioners to allow the G.T.R. to expropriate Jubilee Park for station extension purposes. The formal order has not been issued, but the decision is causing considerable comment in the city. It is said to be likely that a joint station will be built for the use of the G.T.R. and the C.P.R.

Paris Station.—Negotiations are in progress with the Town Council for the erection of a new station at Paris, Ont., at a point nearer the town than the present one.

Brantford Station and Improvements.—The new station was completed and occupied early in July, and the removal of the old building was expected to be completed by the end of the month.

After further discussion a new agreement has been made between the Brantford, Ont., City Council, and the G.T.R., respecting improvements at that point. The new agreement was reached July 11, and the necessary papers are being prepared. Under the agreement the company will construct subways under Niagara and Albion streets, an overhead crossing of the Paris road, lay a switch to Holmedale

C.P.R. Betterments, Construction, Etc.

St. John to Montreal.—Surveys are being made with a view of reducing gradients on the Eastern and Atlantic Divisions between St. John, N.B., and Montreal.

Toronto-Sudbury Line.—The contract for the construction of the portions of the Toronto-Sudbury branch between Bolton and Coldwater, and between Severn Bridge and Parry Sound has been let to G. S. Deeks & Co., of Toronto, and the section between Coldwater and the Severn River, 12 miles, to Battle, Conlon and Armstrong, of Thorold, Ont. The total distance covered by these contracts is 128 miles. It is expected that the line between Bolton and the Severn River will be in operation by Dec. 1, and the rest of the line into Parry Sound, next summer. It was expected to have the grading between Romford and Byng Inlet completed by the end of July, but it had not been decided July 10 when track-laying would be commenced. No contracts have been let for the portion of the line between Parry Sound and Byng Inlet, but it is intended to let contracts for this to enable work to be proceeded with in the fall. (July, pg. 307).

Wahnapitae Improvements.—The rail level of the line in the vicinity of Wahnapitae, Ont., is being raised several feet in connection with the gradient improvement along the line in this division. The station and platform has been raised about 6 ft. to conform to the new level.

Fort William to Winnipeg Second Track.—The company has decided to proceed at once with the construction of a second track from Fort William to Winnipeg, about 426 miles. Some years ago the work of lengthening sidings and adding new ones was taken in hand, and most of these latter were so constructed that they could be worked in with a second track when such became necessary. Later on some preliminary rock work, etc., in the vicinity of Kenora (Rat Portage), Ont., was taken in hand, the contractors being Foley Bros., Larson & Co., which firm has now secured the contract for the second track construction. A good deal of the work, such as widening existing embankments and train work will be done by the C.P.R. itself, but such work as the widening of existing cuts and the construction of new lines where better alignment and easier gradients can be obtained, will be done by the contractors. The heaviest work will be the 60 miles east and the 40 miles west of Kenora. The new

1905

THE ROUND HOUSE AT MIMICO, ONT., IN PROCESS OF CONSTRUCTION.

Round House, etc.—The round machine shop recently built at near Toronto, contains 30 stalls, each wide at the inner circle, and 26 ft. at outer circle. Each stall is 82 ft. long, into three sections, and carried on columns. The entire structure is built crete, reinforced with Kahn trussed The interior columns are 14 in. square, ontain each four 1 x 1½ in. trussed bars. diagonals of these steel members are horizontal in order to obtain the effect ping. Angle guards were placed in all in order to prevent chipping. The in the outer circle are T shape, a pilaster on the outside, and at the time supplying recesses for keeping walls between columns. The at these points allow for expansion contraction. In designing the columns interior circle, it was feared that loco- striking the outside doors would the concrete columns which carried For this reason these columns made of three channels filled with con- and anchored to same. This construc- decided upon, as it is contended that column would not break, but would

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made of three channels filled with con-
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was decided upon, as it is contended that
column would not break, but would
shift off its foundation if struck by
motive. Doors were fastened directly
channels. On the side not contain-
channel, were placed ½ x 1½ in. trussed
as a reinforcement. Radial lines of
reinforced concrete girders were placed be-
columns at a height of about 20 ft.
from top at the outer circle, and 24 ft.
at the inner circle. Seven longitudinal
of reinforced concrete beams were
between the girders and columns.
beams and girders were reinforced with
trussed bars in the bottom, and over
supports they were invariably made con-
with inverted bars. Each beam
in the bottom at least two bars full
and one bar about two-thirds the
at the bottom in the centre and raised

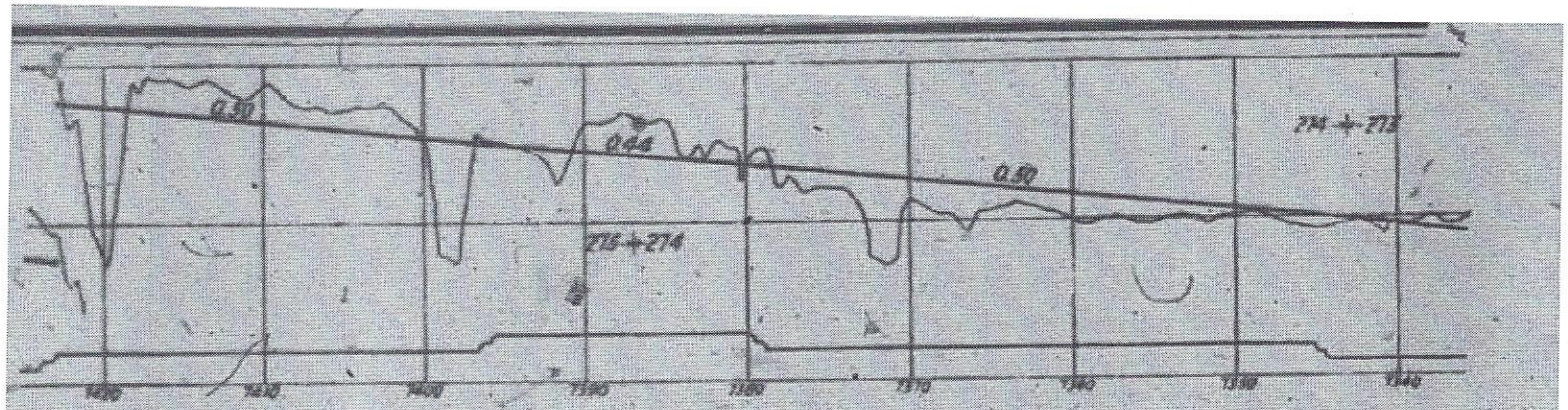
363
1905

Aimico

next session of the

Minneapolis, St. Paul and Sault Ste. Marie Ry. A regular service has been opened on the new line between Bismarck and Minot, N.D. An amendment to the company's charter has been filed in Wisconsin, permitting it to construct a branch from Brooton, north-west to Superior, Minn., 180 miles. (Sept., pg. 659).

10/1907



PROFILE, MILEPOST 275 TO MILEPOST 278, M., ST. P. AND S. S. M. RY.

There must, of course, be a head governing

municipality.

Minneapolis, St. Paul and Sault Ste. Marie Construction Works.

In many respects the most notable piece of railroad construction in the U.S. in 1905 was the building of the Thief River Falls extension of the Minneapolis, St. Paul and Sault Ste. Marie Ry. Starting at Thief River Falls, Minn., on the Minneapolis-Winnipeg line of this road, it runs almost directly west through the counties of Red

principally [illegible]

of the gradients getting out of the Red River valley and the Moose River valley, 20 miles east of Kennare, which are five-tenths of 1 %. The line is well built with roadbeds in cuts 30 ft. wide and embankments 16 to 20 ft. wide, depending on their heights. The grading and construction work was let to Winston Bros. Co., of Minneapolis, the latter part of March, 1905, to be finished by Oct. 15, the company furnishing all bridge and culvert material.

At the east end of the line the country was

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unicipality.

Minneapolis, St. Paul and Sault Ste. Marie Construction Works.

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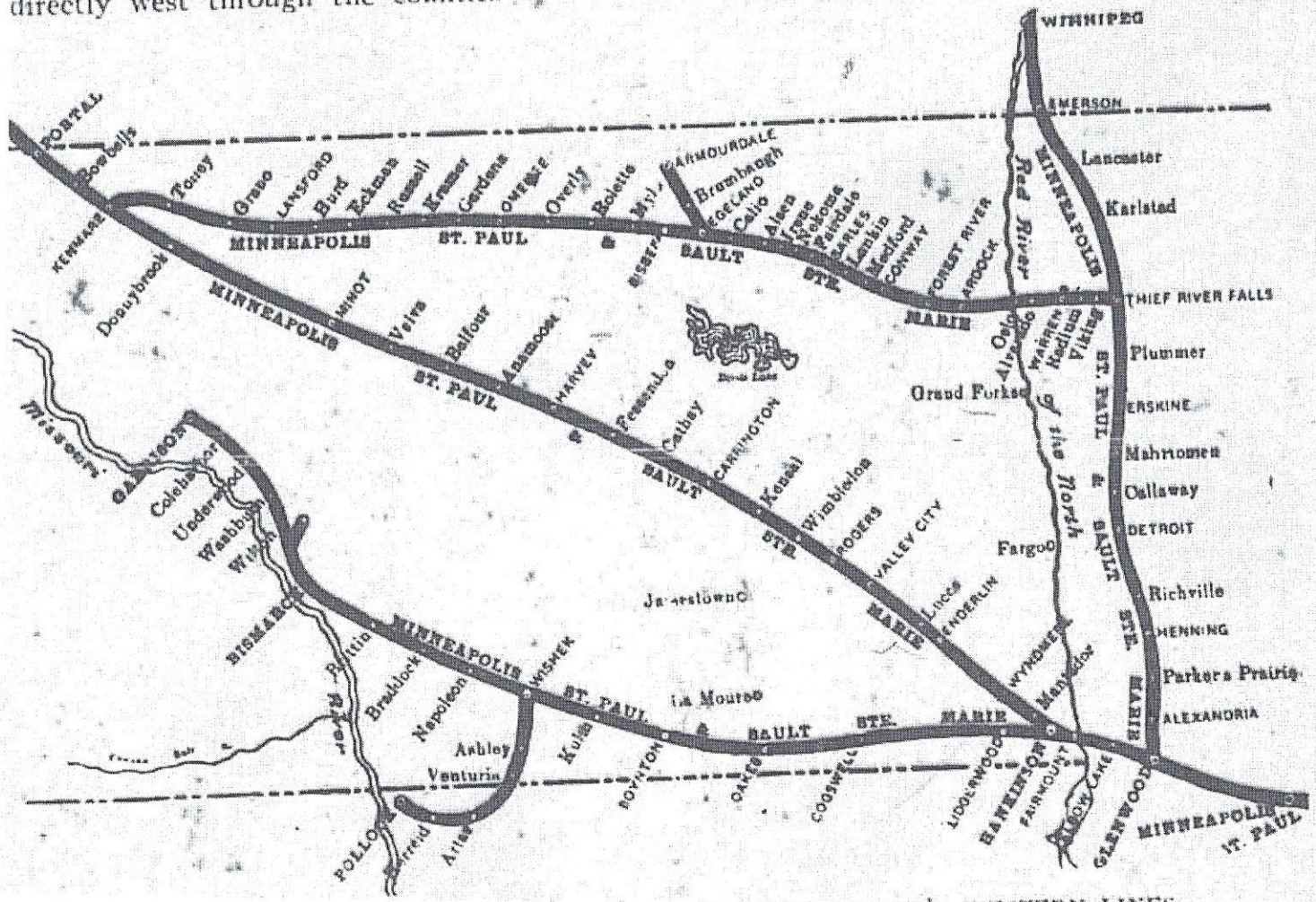
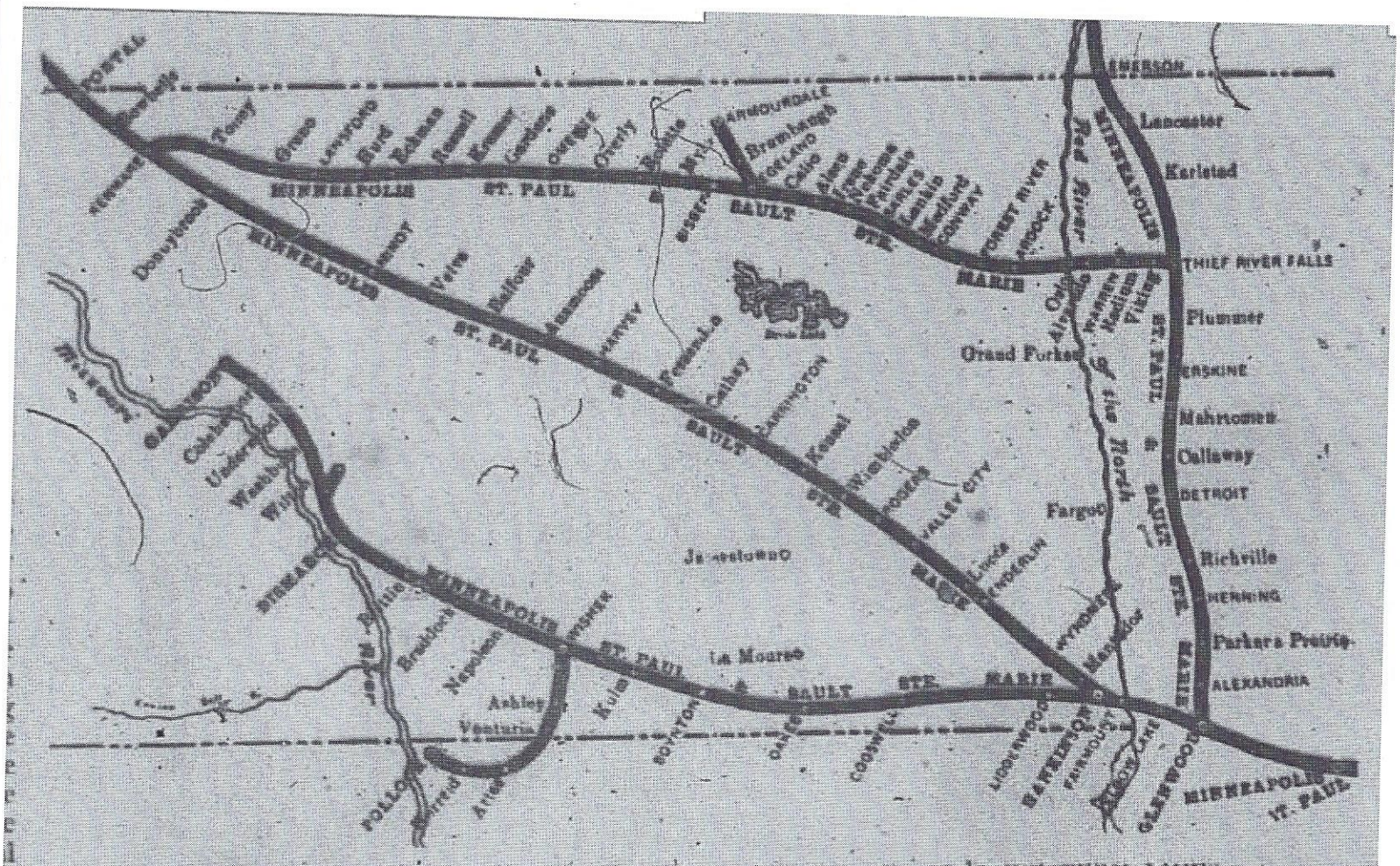


... WESTERN LINES.



MINNEAPOLIS, ST. PAUL AND SAULT STE. MARIE RY. CO.'S WESTERN LINES.

very flat, wet and without drainage, neces sitating practically all material being hauled on the first 15 miles with extreme hauls of 1½ miles where it was contemplated being