

pensed with. In reference to the foregoing, the Secretary of the freight department of the Trunk Line Association advised us on Aug. 15 that the subject had been under consideration, but that he was not aware that any conclusive action had been taken.

The following information in regard to the above has been furnished us from an authoritative source. For some years past each of the trunk lines has appointed in the seaboard cities, such as New York, Boston, etc., what are known as "import freight agents." These men are not direct railway employees, but are, as a rule, custom house brokers and forwarders who have a connection or representation in the chief European cities such as London, Liverpool, Manchester, Paris, Berlin, Hamburg, etc. It is necessary, at a large centre like New York, that the custom house work in connection with the importations should be carried on by an organization specially adapted to the business, such as these custom house brokers have, but which the railway companies have not. In connection with their custom house duties, as stated above, they do a forwarding business, and their connection with the importing trade is so close that at times they are able to influence a good deal of traffic to the railway companies, for which, in the past, some railways have paid them a commission varying from 10 to 25% of the railway freight rate. This has of late become rather burdensome on the inland carriers, and an effort is being made to see whether or not the import freight business cannot be handled by the railway companies direct, and without the assistance of these import freight agents, and thus save the inland carriers the commission paid out in this way. So far as the shipping public or importers are concerned, it will have no bearing whatever upon them as they will neither save nor lose by the proposed change.

Canadian Northern Ry. Construction.

The Co. is reported to have acquired every foot of water front at Port Arthur, Ont., except that owned by the C.P.R., for use as wharf and dock space.

A full description of the elevator being built at Port Arthur is given on pg. 262.

Superintendent Gorrie states that the Co. will probably build a second elevator at Port Arthur, but that it could not be got ready in time to store any of this season's crops.

J. B. O'Brien, Superintendent of Construction, recently stated that the ballasting of the line from Stanley to the Atikokan river had been completed. Ballasting from Port Arthur to Stanley, Ont., has since been gone on with.

On Aug. 19 we were informed that grading and bridging had been completed to 140 miles west of Stanley, Ont., or 159 miles from Port Arthur, and that about 80% of the work had been done on the remaining 128 miles to the crossing of Rainy River. Tracklaying has been completed to 130 miles west of Stanley, and it is expected to have it completed to Rainy River in October, which will give a through line to Winnipeg. (Aug., pg. 226.)

The Rainy lake bridge work is situated across the narrows of Rainy lake, and the railway crosses five islands within the narrows, the distance between the main shores of which is $2\frac{3}{4}$ miles. In this distance there are $1\frac{1}{2}$ miles of pile trestle work in six stretches, two of about 500 ft. each, one of 1,000 ft., and one each of 1,800 ft., 1,900 ft., and 2,000 ft. The line cuttings on this work are all bare rock, and this material has been utilized in the approach fills to all this bridge work, and rock filling has been extended over the bare rock bottoms until ground suitable for piling was reached. Piles, however, are driven to some extent into the rock filling, which forms a most excellent founding. The remainder of the piling is driven into a deposit of stiff

blue clay from 12 ft. to 26 ft. in depth above the rock. The most of this bridge work is over water from 25 ft. to 42 ft. deep, and piles up to 55 ft. in length have been used. Two steam pile drivers, a steam hoist, and a large force of men have been engaged on this bridge work all this season. The work is in an advanced stage, and will be completed by the end of Sept. The contractor is J. R. Turnbull, and the work is being carried out under the supervision of T. H. White, C.E., Chief Engineer of the Ontario division. The general drawings and details for the work were prepared by H. Bannister, C.E., at Port Arthur.

The Rainy river, which forms the International boundary between Ontario and Minnesota, is crossed at right angles by one of the most modern, up-to-date pieces of bridge-work on the continent. The crossing occurs between Beaver Mills, on the Canadian side, and Beaudette, on the U.S. side, about 13 miles above the river's mouth at the Lake of the Woods. The bridge at the crossing is 1,080 ft. long between the abutments, and is divided into 6 spans—4 of which are fixed bridges 180 ft. long and two channel spans, each 160 ft. wide in the clear, and covered by a swing span of 360 ft. in length between pier centers. The current in the river at the crossing is very light; seldom exceeding 2 miles an hour, and the average depth of water at its highest stage is about 26 ft., to a very regular bottom of sand, gravel and clay. The difference between high and low water is about 6 ft.

The sub-structure of this bridge work was put in by the Co., from designs by R. F. Tate, C.E., its resident engineer at Toronto, and consists of concrete piers and abutments capped with stone, and all resting on pile foundations. For the center and other piers, piles were first driven at about $2\frac{3}{4}$ ft. centers about 18 ft. into the bottom of the river, and cut off from 24 ft. to 26 ft. below high water by a circular saw on a vertical shaft. Water-tight caissons were then partly built and floated over the site of the piers, and concrete deposited to about one-third the depth of the water, the caissons being kept built above water as they were lowered. The form of the piers was then placed, and the concrete work continued to completion. The bottoms of the caissons reached their bearings on the piles about 18 ft. above pile cut-offs. The base of rail on the bridge work is 16 ft. above high water. This work was ready for the superstructure on June 13, and was carried out without any mishap of any kind under M. H. MacLeod, C.E., the Co.'s Chief Engineer of lines west of Rainy river, with R. Balfour as superintendent of the work.

The superstructure consists of steel throughout, and proportioned for the heaviest railway load consisting of two consolidation locomotives with their tenders, weighing each 285,600 lbs., followed by a train load of 4,200 lbs. per lineal foot, being class 1 of the Dominion Government specifications. They are all through single track spans. The fixed spans are of the single intersection Pratt designs, pin connections with eyebars on the lower chords and intermediate diagonals of the trusses and boxed riveted work in the top chords, and riveted work in all the other members of the bridge. The height of trusses between pins is from 27 ft. at ends to 35 ft. at middle panels. The swing span is upon the center-bearing principle, adjustable also to practically a rim-bearing one, and the arms of the swing are all rivet connected work. Pin connections are made about the central portion of the bridge, and come into use principally when the bridge is being swung. The swing will be operated by a 35 h.p. gasoline engine and gearing, placed in an operating and observatory building located between the trusses at the middle of the bridge, the floor of which is 25 ft. above the track. The height

of the swing between centers of trusses at the end is 29 ft., and at the centers 65 ft. The bridge is expected to be completed ready for operation early in Sept.

The Co.'s Chief Engineer for all lines west of Rainy river is M. H. MacLeod, with office at Winnipeg. R. J. Mackenzie is in charge of construction.

The Red river is crossed on a skew of 17° from the direction of the current, about 700 ft. below the Broadway highway bridge, between St. Boniface on the east bank and Winnipeg on the west bank, and forms a direct entrance into Winnipeg to the yards and property of the Northern Pacific Ry., now operated by the Canadian Northern Ry. This bridge work is of the most modern type throughout in every way. The river at the crossing on the line of the bridge is $932\frac{1}{2}$ ft. between abutments, and the bridge is divided into 6 spans—4 of which are fixed bridges 168 ft. long, and 2 are channel spans each 76 ft. wide in the clear at right angles to the current of the river, and covered by a skew swing span of 260 ft. in length between pier centers. The depth of water in the channel spans varies from $7\frac{1}{2}$ ft. at low water to 32 ft. at high water.

The substructure of the bridge work was put in by Kelly Bros., contractors, of Winnipeg, from designs made at Winnipeg under the supervision of M. H. MacLeod, chief engineer of the Co.'s works west of Rainy river. The abutments and piers are all first-class Ashlar masonry resting on piles throughout, 30 ft. long under abutments, and 20 ft. long under piers, driven through a formation of clay to bedrock. The foundations were put in at low water stage, water-tight timber caissons being used up to 2 ft. above low water, and the masonry begun from the floor of the caissons, and all space between the inside of the caissons and the pier proper filled with stone to the top of the latter. The heart of the center pier is a cylinder of concrete, 14 ft. in diameter. The base of rail on the bridgework is $9\frac{1}{2}$ ft. above highest water. The substructure is nearing completion, and has been carried on to date without mishap of any kind.

The superstructure is of steel throughout, and is proportioned to the same rolling loads as the Rainy river bridge, being the heaviest loading specified by the Dominion Government. They are all through single track spans, and of similar design to the Rainy river bridge, except that the swing span has rim bearing turntable and a corresponding central panel. The height of the trusses between piers on the fixed spans is 32 ft., with a horizontal top chord; and the swing spans on the arms are 32 ft. deep between chord pins, also with horizontal top chords, but the central panel is 40 ft. deep between similar points. This swing is arranged to operate both by hand or electric power. The entire bridge is expected to be completed by the middle of Sept. There will be a 5 ft. footway on one side of this bridge throughout.

The branch from St. Charles, Man., on the Portage la Prairie branch, about 9 miles south-west of Winnipeg, will not, for the present at least, be built to Carman and thence westerly, as stated last month. It will run about due south-west from St. Charles to township 6, range 2, thence west to the Bates settlement. Some 35 to 40 miles will probably be built this year. It will serve the country between the C.P.R. South-western and Gretna branches. G. H. Strevel, Winnipeg, is contractor. (Aug., pg. 226.)

There is no doubt the Co. intends to resurrect the old Winnipeg and Hudson's Bay Ry., which was built from Winnipeg north-west to the vicinity of Shoal Lake, some 45 miles, but it is not likely that anything will be done this year. It would serve a good district and will, doubtless, be an accomplished fact ere long. (Aug., pg. 226.)