was located. From the river crossing to the mine the line is heavy, and at mile $7\frac{1}{2}$ there is a timber trestle 900 ft. long, 80 ft. high, located on a 12 deg. curve and a 1.75 per cent. grade. Up to this point the grade is 2 per cent. maximum, from here to the mine site it is 21/2 per cent., 12 deg. being the maximum curve. Very large expenditures are being made by the company in opening the mine, and in addition to a plant for treating the siderite ore a model mining town is being built. This branch is laid with 80 lb. A. S. C. E. rail, with tie plates on all curves, and is most substantially built in all respects, except that timber and piles were used in bridging.

On July 15th the sub-contractors on the Hawk Lake-Hobon section finished the grading. These sub-contractors were Murdock Brothers on the lower 19 miles, and Cavicchi & Pegano on the upper 11 miles. The work was quite heavy, the grading quantities being 732.033 cu. yds. classified, 261,269 cu. yds. solid rock, 94,378 cu. yds. loose rock, and 377,286 cu. yds. common excavation. In addition there was 20,178 cu. yds. over break in rock cuttings, and overhaul amounting to 1,500,-000 cu. yds. About 3,000,000 ft. B. M. of bridge timber, 40,-000 lineal feet of piling, 170,000 ft. B. M. of culvert timber, requiring their rebuilding, delayed the erection, but track was laid over the viaduct in October, 1911.

In the meantime track laying had progressed on the north end, the gap being closed about the middle of June, 1912. The slow progress made in track laying is due principally to the excessive amount of bridging and trestling on this line. Between the "Soo" and Josephine Junction there is about 16,000,-000 ft. B. M. of bridge timber in 140 structures, besides 100,-000 lineal feet of piling. Some of these bridges are very large, and as all the bridge timber used, excepting a few thousand feet cut in the country, is British Columbia fir, it is necessary to build these bridges from the end of steel.

The old line from Sault Ste. Marie to Hawk Lake Junction is through a most difficult country to build in, and while the location secured was good on the whole, the line is badly handicapped with heavy grades and sharp curvature. To improve this grade and alinement would require extensive relocating, which for the present is not contemplated. The route, however, is very picturesque and travelers have a treat in rugged scenery awaiting them on the opening for traffic of the Algoma Central north of the "Soo."

While the above work was progressing south of Hobon, a location was

220,000 lbs. of bridge iron, 291 cu. yds. of dry stone masonry, 423 cu. yds. of cement masonry and other small items were required for this work

The rock work was exceptionally well done, as the specificationsonly allowed common excavation for over break, and all the time the work was in progress this was enforced. On final estimate, however, a fair

the bridge work nection from the the Michipicoten done this year.



Laying Track on Algoma Trestle.

amount of over break was given as solid rock. Track laying and some ballasting was done this year, and On January 10th, was completed. 1912, track was connected up giving a railway con-Canadian Pacific into the mines of Some ballasting was also district.

Work on the main line completion progressed slowly from June, 1910, to May, 1911, at which time track had reached the Montreal River, mile 911/2 north of the "Soo." Here a steel viaduct 1,550 ft. long and 130 ft. high located at the head of the falls 150 ft. high had to be built. This viaduct was designed in 1902 by Boller & Hodge, New York and was erected under contract by the Canadian Bridge Company. There are 1,745 tons of steel in this viaduct, and as the alinement is on a curve at each end, it was a very interesting piece of erection. The viaduct consists of tower girders supported on steel legs with concrete pedestal piers and end abutments. There are 13 30-ft. and 1 40-ft. tower girders situated on an island in the middle of the river. The intermediate girders consist of 1 85ft., 5 75-ft., 10 60-ft., and 2 30-ft. spans. The structure is designed under the Dominion Government specifications, class I loading. Some poor work in concreting the piers

ing engineer, had charge of the locating with Sanford Hazelwood and W. H. Wilkie in charge of the parties The route traversed by this line is through rough country for 30 miles north of the Canadian Pacific, but north of this the line enters the great clay belt of northern Ontario, and the grading work is light. The south 30 miles, however, bring up the average cost of this line to about \$30,000 per mile, including track and structures.

The crossings of the Canadian Pacific and the Canadian Northern Ontario extension (under construction) are made at grade. There are very few bridges on this 100 miles, and none at all of any size excepting a bay crossing of Oba Lake, where four pile trestles were driven, one of them being 1,302 ft. long, with deck 10 ft. above the water. The balance of the bridging consists of pile structures, the largest being the crossing of the Mattawishquia River, 700 ft. long, near Hearst at the junction with the National Transcontinental. The grading quantities on this 100 miles will be, approximately, 360,000 cu. yds. solid rock, 250,000 cu. yds. loose rock, 1,500,-000 common excavation, and 3,500,000 cu. yds. overhaul. About 80,000 lineal feet of piling and 1,500,000 ft. B. M. bridge timber are required. Corrugated ingot iron pipe is used principally for culverts, there being a few of native tim-

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made north to

the Transconti-

nental Railway at

the new town of

Hearst (or Grant)

the first division

point west of

Cochrane, IOI

miles north of

the Canadian Pa-

cific. This loca-

tion is on the

same grades and

curvature as that

of the Hawk

Lake-Hobon sec-

tion, viz., o.6 per

cent. compensat-

ed grade and 6

deg.

curves.

Whitman,

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locat-