

along the line with 7,445 ft. at Indian Bay. An interesting description of a portion of this work, including wash borings at the intake site and Falcon River crossing, appears in an article in *The Canadian Engineer* for June 4th, 1914. Mr. D. L. McLean, of the District's field staff,

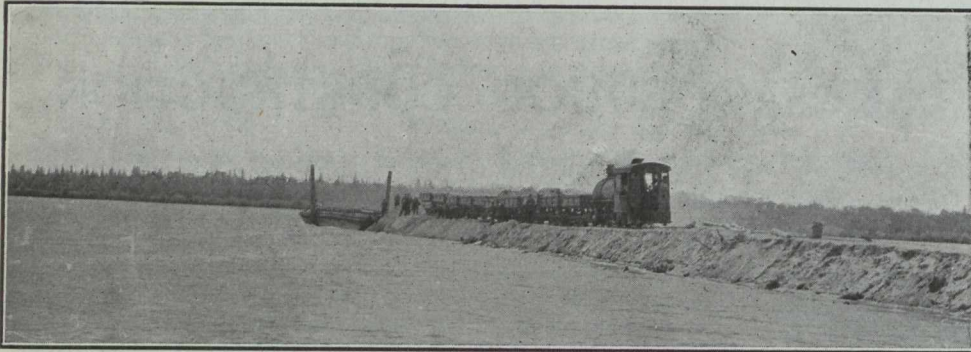


Fig. 2.—Falcon River Diversion Dyke.

there presents valuable data concerning cost of equipment and operation, etc., under extreme weather conditions.

In view of the fact that the route of the aqueduct is through undeveloped country, a railroad along the right-of-way had to be constructed for the transport of machinery and supplies. This road is of permanent construction with 60-pound rails and standard gauge. The total of 102.4 miles of track, including spurs and sidings, has been laid. The minimum curvature is 4 degrees and the maximum grade 6 inches per hundred feet. Track laying was completed by the contractors, the Northern Construction Co., of Winnipeg, Mr. A. C. McKenzie president, on December 17th, 1914. About ten miles of the railway remains to be ballasted this spring, and the road will be in shape for aqueduct construction at an early date. It parallels the centre line of the latter at a distance of about 110 ft., thus providing space between for contractors' working tracks. The railway is costing approximately \$1,200,000. The operation of it, for supplying the contractors with necessary materials, will be carried out by the Water District. Mr. J. A. Nelson has been appointed railway superintendent. Fig. 1 is a view of the track-laying machine in operation in connection with its construction.

Another feature of 1914 activities was the clearing of the aqueduct right-of-way. This was done under contract by E. J. Bawlf & Co., Winnipeg, the cost being about \$79,350. The work included the clearing of approximately 2,586 acres of land. It involved the removal of large quantities of wood and timber, for much of which there is a ready market. Other preliminary work included the construction of roads, residences, a telephone line from Winnipeg to Indian Bay, and similar works. The telephone line was built by the District to connect all the camps with the head office.

A more important feature of the attending problems of construction is the diversion dyke and channel at Falcon River, designed to prevent the inflow of muskeg colored

Falcon River water to the vicinity of the intake. These works divert it into Snowshoe Bay.

The dyke has been constructed by Tomlinson & Fleming. It is 7,500 ft. long and contains about 220,000 cubic yards of material. Fig. 2 illustrates the method of constructing it, the material being deposited between the scow and the end of the dump, and the cars, as they are emptied, being run out on the scow to provide room for those remaining to be unloaded. As shown in the illustration, dinky engines were used to haul 4-yard side-dump cars. Fig. 3 illustrates the method of loading the cars in the gravel pit.

Dredging operations for the Falcon River Diversion channel are still in progress. There is a total yardage connected therewith of about 37,000 cubic yards. Mr. C. G. Anderson is, doing the work

under contract awarded on January 15th last.

This season's work will include the construction of about 20 per cent. of the total mileage of the aqueduct itself. It is nearly 86 miles long, and will be constructed

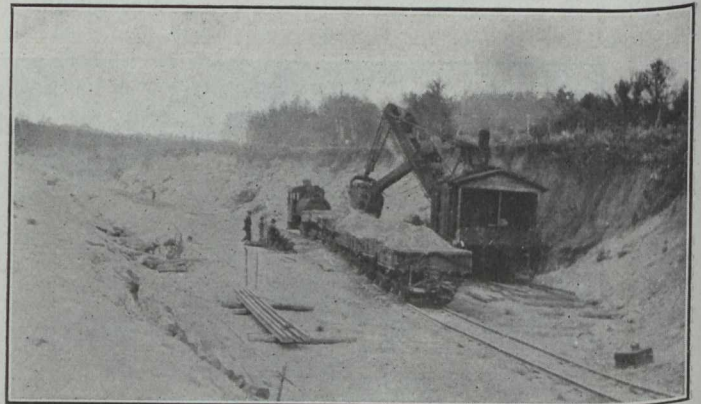


Fig. 3.—Gravel Pit—Falcon River Diversion.

of concrete, reinforced where under pressure or in cases of river crossings, etc. There will be depressed sections at five river crossings. The J. H. Tremblay Co. have a contract for a portion of the work valued at \$945,945; Thos. Pelly & Sons have another valued at \$1,301,485;

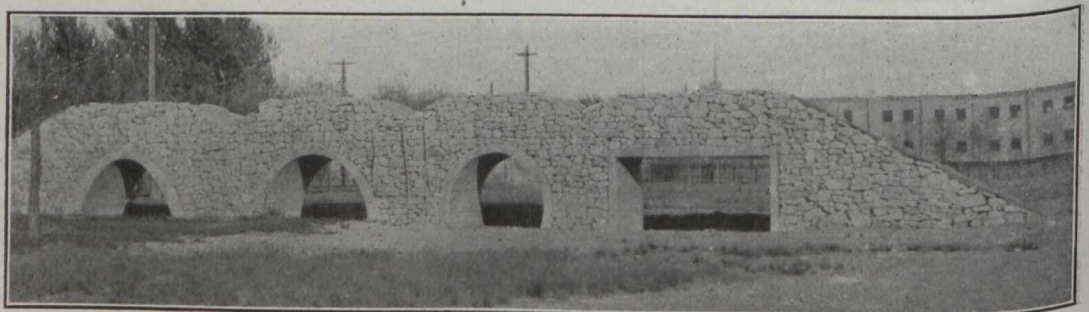


Fig. 4.—Test Sections for Aqueduct.

and the Northern Construction Co. and the Carter-Halls-Aldinger Co. have three contracts between them valued at \$1,265,680, \$1,132,010 and \$1,484,520 respectively.

The operation of the sand and gravel pits for concrete aggregate will be carried out by the Water District,