

# The Canadian Engineer

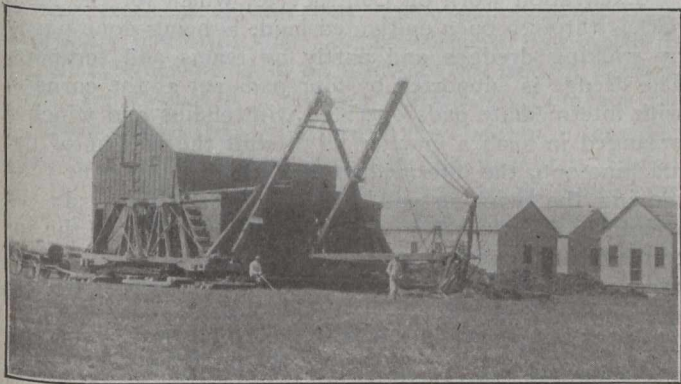
*A weekly paper for Canadian civil engineers and contractors*

## THE GREATER WINNIPEG AQUEDUCT

Methods of Construction of the Arches and Inverts—Railroad Will Be Permanent—This Year's Schedule Calls for Completion of 85% of the Concrete Work—Two Important Contracts Yet to Be Let

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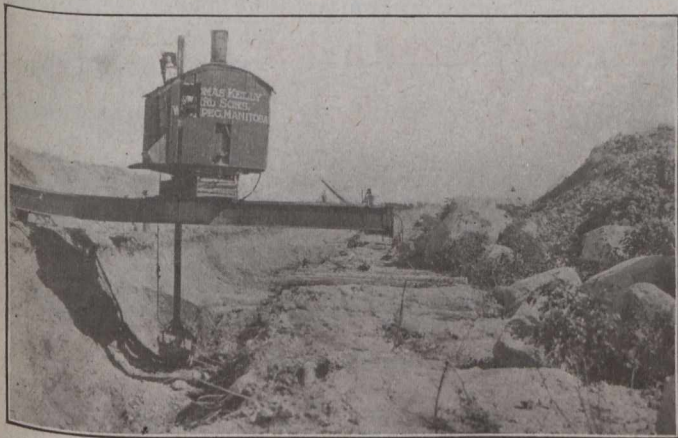
**G**REATER WINNIPEG, as an organization for the purpose of constructing the aqueduct, comprises the city of Winnipeg, the city of Saint Boniface, the town of Transcona, the municipality of Saint Vital, and part of the municipalities of Fort Garry, Assiniboia, and



“Walking” Dredge Excavating Trench on Contract 30

part of East and West Kildonan. This territory is known as the Greater Winnipeg Water District.

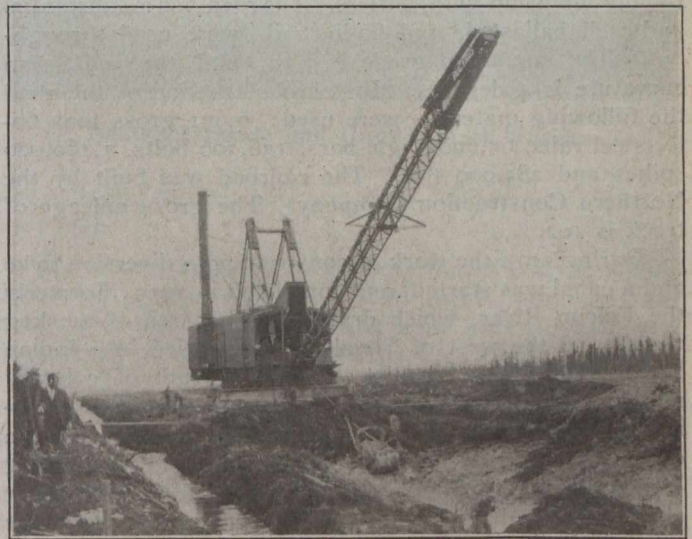
The scheme, which is nearing completion, is to bring water by gravity from Indian Bay, an arm of Shoal Lake,



Shovel, With Extra Long Arm, on Contract 31

itself a portion of the Lake of the Woods, to Winnipeg, and nearby municipalities. The distance is approximately 100 miles and the greater portion of the country through which the aqueduct passes was of an inaccessible nature.

The cost of the physical portions of the completed undertaking will be approximately \$13,050,000. The main construction features of the scheme are a standard gauge constructional railroad having 111 miles of permanently established trackage, a dyke at Indian Bay 7,000 ft. long and containing 230,000 yds. of material, a telephone system which cost \$32,000, an intake at Indian Bay, 96.5 miles of aqueduct including seven river crossings which are built as inverted syphons, a tunnel under the Red River lined with 5 ft. cast-iron pipe, and a 48-in. cast-iron pipe line from the Red River to the McPhillips Street reservoir in Winnipeg. The completed aqueduct will be capable of delivering 85,000,000 gallons



Dragline Excavator on Contract 34

of water daily, or enough for the needs of the district until the population of 850,000 is reached.

The district supplies all cement and aggregate to the contractors and is thus able to control and vary the quantity of cement and aggregate in the mixture as desired. The cement is contracted for yearly and the aggregate is obtained from two pits and a rock-crushing plant, which are operated by the district.

The mixture which is used at present is 3 bags (262½ gross lbs.) of Portland cement to 18 cubic feet of loose aggregate containing its natural moisture. This mixture is approximately the same as the standard 1:2:4 mix which is usually specified for water-tight work.