

3. A pipe 5 feet in diameter, extending from the end of the masonry of the concrete aqueduct, most of the way through streets to Victoria Park on the west side of the Red River in Winnipeg, this pipe to be of steel except under the Red River, where cast-iron pipe laid in a tunnel is recommended.

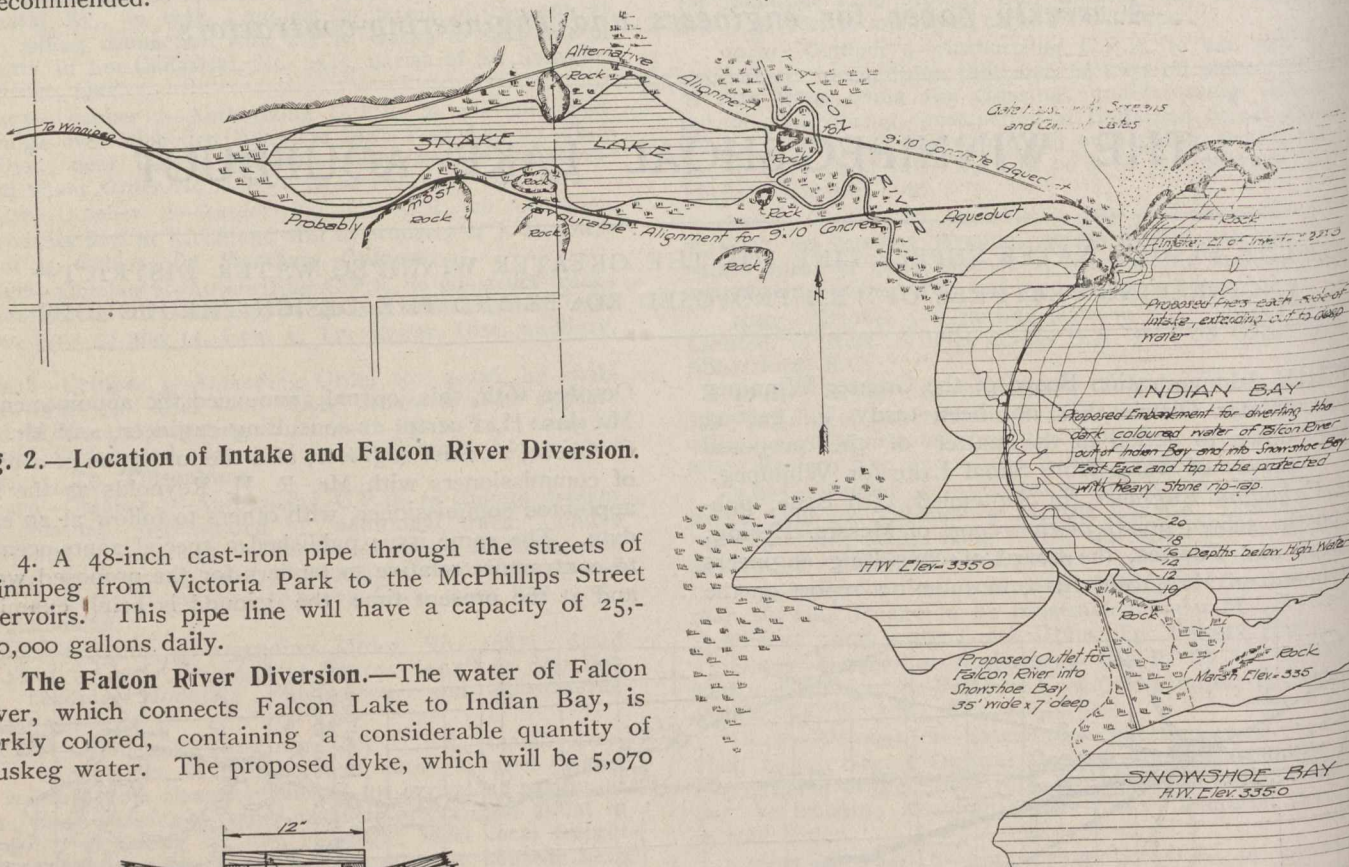
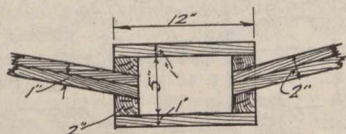


Fig. 2.—Location of Intake and Falcon River Diversion.

4. A 48-inch cast-iron pipe through the streets of Winnipeg from Victoria Park to the McPhillips Street reservoirs. This pipe line will have a capacity of 25,000,000 gallons daily.

The Falcon River Diversion.—The water of Falcon River, which connects Falcon Lake to Indian Bay, is darkly colored, containing a considerable quantity of muskeg water. The proposed dyke, which will be 5,070



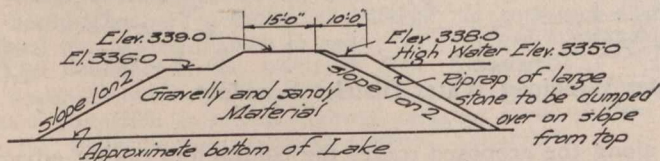
UNDERDRAINAGE AND TIMBER FOUNDATION FOR AQUEDUCT



PLANK FOUNDATIONS FOR AQUEDUCT
Where two thicknesses are required



Where a single thickness is required



TYPICAL CROSS SECTION OF DIKE FOR FALCON RIVER DIVERSION
(Looking North.)

Fig. 3.—Details of Aqueduct Foundation, and Section of Falcon River Embankment.

feet in length, is to divert this water southward to a proposed channel, 3,300 feet long, 35 feet wide and 7 feet deep, which will form an outlet through a shoulder of marshy land only a few feet above the water level, into Snowshoe Bay, where there will be no liability of this

discolored water becoming associated with the water surrounding the intake in Indian Bay. Fig. 2 illustrates this diversion, and Fig. 3 gives a typical cross-section of the proposed embankment. The report estimates the Falcon River diversion to cost in the neighborhood of \$120,700.

The Concrete Aqueduct.—The concrete aqueduct, to be 447,330 feet in length, extending from Shoal Lake to the site of a proposed reservoir, one mile east of Transcona, is shown in profile in Fig. 4, and various cross-sections are given in Fig. 5. The location of its intake, as denoted in Fig. 2, is at the northwesterly corner of Indian Bay, where the shore is of a rocky nature, and where the water is of moderately receding depth. The intake will be provided with control gates and screen chamber on shore, and will be protected from any material which may drift along the shore, by piers, on either side, extending out 150 feet into deep water. The experts' report suggests, as an alternative to these piers, the laying of a large submerged conduit to bring the water from a point, distant about 150 feet from shore. The gate and screen chamber will be of liberal area to necessitate as little fall as practicable of the water from the bay to the aqueduct. Details of the design are not in hand, except that the report recommends the use of at least two sluice gates, not less than 5 feet wide and 6 feet high, and screens with a total length of not less than 50 feet, and a height extending from the top of the aqueduct to the surface of the water.

With respect to the advisability of using concrete masonry in the construction of the aqueduct, apprehending the disintegrating effect of the presence of sulphates and sulphuretted hydrogen in certain soils, they being adverse to durability, unless the concrete is smooth, impervious, and able to resist these deteriorating agents, the experts had chemical analyses made of the muskeg