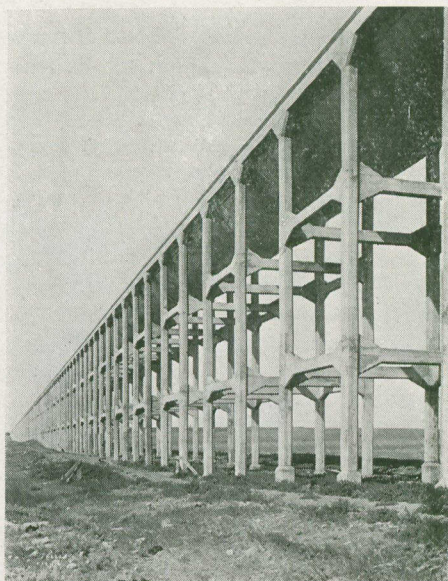


The Brooks Aqueduct of Alberta

PART of the water which reaches Lake Newell reservoir after its 30 mile course from Bassano through east branch canal, feeds the Bantry canal, which irrigates 135,000 acres of land. About 2 1-2 miles beyond the lake it is necessary to carry the water across a long flat valley on the summit of the watershed between the Bow and the Red Deer rivers. This is accomplished by a reinforced concrete flume known as the Brooks Aqueduct, completed August 31st 1914. Its construction marked an interesting departure in the matter of water transportation. It is the first aqueduct in which the hydrostatic catenary, or elastic curve, has been adopted for the shape of the water section. This form was chosen as the most suitable, as it gives a maximum hydraulic radius for the given area, and a consequent low friction head. Structurally it is very economical since, when full, the shell is in simple tension, free from sheer and bending moments. Mr. H. B. Muckleston, assistant Chief Engineer, Department of Natural Resources of the Can-



adian Pacific Railway, is responsible for the adoption of this unique design.

An interesting feature arose from the necessity of crossing the main line of the Canadian Pacific Railway, there being insufficient clearance for an overhead structure. The water is carried underneath the track by means of an inverted syphon, which gradually tapers with its decreasing elevation to a reduced section which increases the velocity of the water from 7.14 feet per second to 12.25 feet per second on the principle of

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