the venturi tube. This design required less excavation under the tracks and assured better drainage. The gradual expansion of the section as it rises at the outlet is similar to the descent, the water entering the flume again at the same velocity with which it enters. The prevention of eddies and consequent loss of head in the syphon in addition to provision for hydrostatic pressure, and the usual stress and moments, led to some interesting details of design, arising out of an extensive preliminary investigation. When the water was turned on last September the syphon remained perfectly watertight under its full pressure.

In the construction of the Brooks Aqueduct some 25,000 cubic yards of concrete and about 4,000,000 pounds of reinforcing steel were used.

The Bassano Dam admits water to the eastern section o fthe Irrigation Block from the Bow River at Bassano. The sills of the canal head gates are about 34 1-2 feet above the previously existing level of low water in the river at this point. The dam raises the water an additional 11 feet above these sills, enabling the system to command a much larger area of land than it otherwise would, and reducing the quantity of material that had to be removed from the main canal cut, by a considerable amount.

The dam is a complete structure consisting of a long and high earthen embankment on the south bank of the river and a reinforced concrete spillway in the existing river channel, connected at its northerly end with the canal head gates.

The earthern embankment has a maximum height of about 45 feet, a total length of over 7,000 feet, and a width of base of 350 feet at its highest point. It contains about 1,000,000 cubic yards of material. The wetted slope is 4:1 and the dry slope 3:1. It has a top width of 32 feet with a free-board of 9 feet above normal water level. Its upper slope is paved with concrete slobs. There is an extension underdrainage system.