Exclusive of the main canal, secondary canal "B" north branch is the most important waterway in the western section, as it is intended ultimately to be used for the main supply channel to the central section of the Block. After leaving the junction of its north and south branches, it follows a natural channel for about 16 miles, this channel being straightened in places by artificial cut-offs. In this distance



Metal Flume, 7 ft. dia. Secondary Canal System, Western Section.

it falls about 250 feet, the elevation of the split gates being 3,284 and of the headgates at the lower end of the natural channel, known as Weed Creek, being 3,031. At the dam on this channel the canal heads out 18 feet bed width, carrying 4½ feet of water, with 2 to 1 slopes, on a grade of .045 per cent., and extends a distance of 14 miles to a summit with an elevation of 2,998. Before crossing this summit one branch is taken off to serve lands in the vicinity of the south branch of the Crowfoot Creek. After crossing the summit it again splits; the main branch continuing on the north side of an elevated ridge until Summit Lake is reached, which is the controlling point for the central section of the Block, and where a broad low valley of about elevation 2,884 will be crossed by a siphon.

From the secondary canals the water is again taken out, and distributed through a comprehensive system of distributing ditches, which bring it to each parcel of land to be served.

In the western section of the Block the following mileage of canals has been constructed :---

	Miles.
Main canal	17
Secondary canals	254
Distributing ditches	1,329
Total	1,600

and in addition to the above there are several hundred miles of small ditches constructed by the farmers.

The structures, consisting of headgates, spillways, drops, flumes, bridges, etc., are numbered in thousands; and in their construction 10 million feet board measure of timber, and over four thousand cubic yards of reinforced concrete were used.

In constructing the system in the western section over 10 million cubic yards of material was excavated. Practically all the work was carried out under contract at prices ranging from 12½ cents to 43 cents per cubic yard; the latter price including overhaul on the heavy work. The average price was about 17½ cents per yard. The cost of timber work in place has been slightly over \$55 per thousand feet; and of reinforced concrete about \$23 per cubic yard; both figures including all material used as well as excavation, trenching, and backfilling.

Central Section.—This section contains 901,740 acres, and it was at first contemplated to irrigate about one quarter of this area. Detailed surveys, however, showed that the cost of serving such an area would be excessive, and at present it is not contemplated to serve more than about 75,000 acres of this section, with an elevation at its westerly boundary of about 2,940.

As previously intimated, this section could only be reached through an enlargement of a portion of the trunk system already constructed to serve the western section of the Block; and due consideration has been given this matter wherever possible by spreading double banks far enough apart to admit of carrying the additional amount of water which will be required.

Up to date the construction of this portion of the system has not been started.

Eastern Section.—The eastern section of the Block contains 1,156,220 acres, of which 440,000 acres are to be rendered irrigable. Most of the land is of a gently rolling character and susceptible to good drainage. The soil for the most part is a rich sandy loam overlying hard pan and shale at various depths.

The idea of the peculiar topographical conditions existing in this section is necessary before the scheme as worked out can be understood. The main watershed of the country between the Bow and the Red Deer River starts, as far as this section of the Block is concerned, at a point on the Bow river locally known as the Horseshoe Bend, about three miles south-west of Bassano, a station on the main line of the Canadian Pacific Railway \mathcal{E}_3 miles east from Calgary.



Wood Stave Pipe Syphon, 53 in. dia., 1,800 feet long. Western Section.

It parallels the river for a few miles to near the southeast corner of township 18, range 17, west Fourth Meridian, from which point it runs almost due east to a point three miles south-east of Brooks station, thence north-easterly to Tide Lake in township 19, range 11. At the Horseshoe Bend the ridge is cut across by a wide valley, which apparently is