

The section was vigorously prosecuted, however, and completed and handed over to the Railway Department in May, 1928. Generally speaking, construction on the sections between Huarau—Waiotira—Kirikopuni was carried out under considerable difficulty owing to the unstable condition of the country generally.

Tunnels, of which there was 8,000 ft., had to be very heavily timbered when being driven, and the heaviest section of concrete lining developed by the Department had to be used to resist the earth-pressures. In many cuttings the total amount of earthwork shifted exceeded by two or three times the original estimated quantities, due to the slipping of batters and the heaving of the bottom. Extensive stone walls had to be built throughout a number of cuttings to stabilize the batters. The total length of bridging was 3,000 ft.

The cost of construction between Huarau and Kirikopuni was £2,358,501.

KAIHU VALLEY RAILWAY EXTENSION.

(From Tarawhati, at 19 miles 17 chains, to Donnelly's Crossing, at 23 miles 71 chains, a distance of 4 miles 54 chains.)

In 1920 the formation was practically complete, and the rails were laid to 21 miles 8 chains. A goods service was started to Aranga at 21 miles 10 chains in September, 1920, and this was extended to Donnelly's Crossing in October, 1921; the work then remaining to be completed consisted of permanent bridging and erection of station-buildings. The line was handed over to the Railway Department on 5th February, 1923.

The total length of bridging on this section was 186 ft., of which 60 ft. required a double track.

Expenditure to 31st October, £91,484.

WAIPU BRANCH RAILWAY.

(Length, 16½ miles.)

This line extends from Oakleigh, on the Whangarei Branch Railway, to Waipu, a distance of about 16½ miles.

In 1920 the formation was in hand for a length of 7 miles, and work was continued until 1924, the formation being then mainly completed for 10½ miles. It was then decided that owing to changing transport conditions an up-to-date highway would be more suitable for the traffic offering. This policy was given effect to, and the road was completed in 1926.

WHANGAREI BRANCH RAILWAY.

(Length, 19 miles 75 chains.)

This line extends from Kioreroa to the junction of the North Auckland Main Trunk at Waiotira. In April, 1920, 5 miles 28 chains of this section were handed over to the Railway Department, and, except for a gap of approximately a mile, rails had been laid and formation completed to Waiotira. Owing, however, to the large amount of slips and subsidences which took place throughout the section, continual maintenance was necessary to an extent almost commensurate with the construction of a new line. Large quantities of earthwork had to be taken out of many of the large cuttings, and heavy dry stone retaining-walls built in many sections. In consequence of these works the line was not actually completed and handed over to the Railway Department until 29th November, 1925.

The cost of construction from Kioreroa to Waiotira was £420,464, and the expenditure from 31st March, 1920, to 31st March, 1928, was £138,627.

WAIUKU BRANCH RAILWAY.

(Length, 12 miles.)

This line branches from the North Auckland Main Trunk Railway at a point 50 chains south of Paerata Station to Waiuku, a distance of 12 miles.

In 1920 this line had been handed over to the Railway Department to Patumahoe, 4 miles 20 chains, and the platelaying was complete to Glenbrook Station, at 7 miles 2 chains, the formation being in hand to 11 miles.