

A line could be run from the 20-mile point at the crossing of Hastings Road northwards towards Eltham; but it would entail an additional mile of new line, and, besides, would run nearly parallel to the present open line. The junction should therefore be formed at Te Roti Station in such a manner that trains could run towards New Plymouth and Hawera without the necessity of shunting.

30th July, 1907.

R. W. HOLMES.

The estimates of the various routes should be increased by 15 per cent. to allow more for contingencies and for engineering and management. They will then stand in round figures as follows:—

	£
Stratford route	222,000
Hawera „	183,000
Eltham „	173,000
Te Roti „	153,000

Public Works Department, Stratford, 19th July, 1907.

Proposed Opunake Branch Railway.

Memorandum for Engineer-in-Chief, Public Works, Wellington.

I HAVE to report as follows on the above railway. Three routes have been surveyed and one examined, descriptions of which and estimates of cost, together with map of district showing location of lines, are attached.

Route.	Length.	Estimated Cost. £
Stratford	About 26½ miles	192,900
Hawera	„ 26 „	158,670
Eltham	„ 23 „	150,000
Te Roti	„ 22 „	133,000

The land bounded by the main line of railway, the slopes of Mount Egmont, and the sea, is the area a branch railway to Opunake is required to serve. It is mostly of excellent quality, and capable of being highly cultivated. Generally it may be said to be richest near the coast, and to gradually diminish in quality towards the mountain. As this country is most suitable for dairying it is principally being used for that purpose, and is closely settled. Hence the location of a railway should be such as to be as nearly as possible within reach of all of it.

This the Te Roti route fulfils, and on reference to the map herewith it is seen by the zone-lines in dotted sienna that nearly the whole of the country is within six miles of it or the main line.

It appears to me therefore that it would be the best line to construct. Furthermore it is the shortest, involves less haulage than the others, junctions with the main line at a station, and would cost the least of all the routes. If it is desired to duplicate the main line to Hawera, it could be done at small cost, the formation-work required being mostly light.

The townships of Manaia, Kaponga, Makaka, Ponehu, Pihama, and other closely settled parts could be connected with the line by light horse-tramways along the road-lines, if found desirable, and dairy-factories and creameries located or removed as would be most suitable.

By constructing either the Stratford or Hawera routes a large area of the country which is already within easy access of the main line, and which is the best-roaded, would be gone through, and much of the best land either to the north or the south would not be served.

The Eltham route is located too far north to bring all the country within equal distance of a railway. It may be objected that a reserve for this route has been made; but I think it would be readily sold to adjoining landowners, and thereby reduce the cost of the land required for the Te Roti route to £275 (as per my estimate).

G. L. COOK,
District Engineer.

OPUNAKE BRANCH RAILWAY.

Te Roti Route.

This route branches off the main line at the Te Roti Railway-station, situated about seven miles north of Hawera Township, and about four miles and a half south of Eltham, and traverses the country due west for a distance of about 14½ miles, where it curves slightly northwards, and thence runs in a straight line to Opunake Township. The line for the most part is located parallel to the Eltham route, about a mile and three-quarters further south.

A trial survey was made under the direction of Mr. Furkert, traverse-lines being run and levels taken along them throughout, also cross-sections in places. The plans have been graded and prepared by me.

The permanent location would be mostly straight, and the levels would not differ materially from those for the trial line. From Te Roti for a distance of about two miles the location would be approximately as shown by a full burnt-sienna line on plan and section. Between 14 m. 30 ch. and 15 m. on the survey chainage a departure from the straight as shown might be necessary, but further survey would show if the straight line need be departed from. Between 0 m. 15 ch. and 0 m. 65 ch. the dotted line would give a better section than the trial survey, and between 12 m. 10 ch. and 12 m. 57 ch. the straight line can be adhered to.