Enclosure 3 in Appendix B.

REPORT ON THE WAIKANAE-MANAWATU SECTION OF THE WELLINGTON-MANAWATU RAILWAY.

Mr. KNORPP to the ENGINEER in CHARGE, NORTH ISLAND.

SIR,— Wellington, 29th July, 1878.

I have the honor to report that I have examined the country between the Waikanae and Manawatu Rivers, with a view to determine a route for a proposed railway. The annexed plan shows its approximate course. Foxton is the nearest place where to connect it with the Patea–Manawatu Railway; a route *viâ* Fitzherbert and Palmerston North has also been examined, and is shown on the plan. From the Waikanae its length would be about 32 miles to Foxton Wharf, and 47½ miles to Palmerston Station. For 25 miles this line would traverse easy country, at first at the foot of, and then on the low undulating terrace which stretches from near Waikanae to the Township of Fitzherbert, between the foot of the first low range of the Tararua Hills and the lakes and swamps of the sea-coast and the Manawatu River: nowhere would it rise more than 100 feet above sea level, and easy grades and curves can be obtained, with light formation. The Waikanae, Otaki, and Ohau are the principal rivers to be crossed—by four, seven, and three 60-feet spans respectively; they have shingle beds, with well-defined banks, and carry large quantities of timber in floods: piles, with heavy shoes, will drive well in all. There are also about a dozen smaller streams, which will not entail any expensive work. With the exception of the few old clearings shown, the whole country is covered with light bush; good totara grows near the sites of the Otaki and Ohau Bridges. Gravel for ballast occurs between the Waikanae and Otaki, at the Werowhanga clearing, and at the Wereroa clearing behind Horowhenua Lake.

At the 23rd mile the line branches off towards Foxton, and enters, at the 25th mile, the swamps of the Manawatu, whence heavy works of embankment and bridging will be required to get over the flooded country and the Manawatu River, for which large spans on cylinders, with a swing-bridge for navigation, will have to be provided. The river protection and reclamation will have to be continued from the wharf to the ferry.

From the 23rd mile the route to Palmerston continues on the terrace, which becomes rather more broken, especially between the 26th and 38th miles, over the Koputeroa, Te Maire, and Tokomaru streams, which may be crossed by 40-feet spans, until at the 42nd mile it reaches the east corner of Fitzherbert clearing, and then turns through the Kairanga Native Reserve, over the Kohuterawa stream (40-feet spans) to the Manawatu River, which it crosses about 2½ miles below the road bridge, and thence to Palmerston Station. Nowhere on the Palmerston route would the line rise higher than about 200 feet above sea level, and easy grades and curves can be obtained without much work. On the last portion the earthwork will be heavier, and the bridging lighter, than on the first 25 miles. The crossing of the Manawatu and the flooded country on this line will be less expensive, as 80-feet spans will be sufficient, and navigation will not have to be specially provided for.

An approximate estimate shows that the railway from Waikanae to Foxton cannot be made under £190,000, and that from Waikanae to Palmerston under £220,000, exclusive of land and stations.

In connection with these lines it may be of interest to point out that if the comparatively easy private railways, from Carnarvon to Sandon and from Sandon to Rangitawa, are made, the distance by rail between Foxton and Wanganui will be shortened by 19 miles.

I have, &c.,

C. B. KNORPP,

John Blackett, Esq., Engineer in Charge, North Island. Superintending Engineer.