

estimates prepared. The line chosen is shown on the lithograph maps (scale one mile to lin.) recently sent down to Wellington with my memorandum 37/691 of the 12th June last, and will in every respect prove to be the most easily constructed and most advantageous line, although considerably longer than the original line running to the west of the Hikurangi Mountain and up through the Kahikatea Swamps, on the bank of the Wairua River.

Starting from the Coal-mine Station, on the Whangarei Railway, which is 343ft. above datum, or 313ft. above high-water mark, the line takes a westerly detour round the basin known as the Sodawater Flat, rising all the way with a 1-in-60 grade along a steep sidling semi-volcanic country, till at 2 miles 20 chains it gains the summit known as McDonald's Hill, 532ft. above sea. The earthworks along here will be heavy, but a good line can be got with the sharpest curve of not more than 9 chains radius. There is, however, a large supply of tufaceous rock here, which could be used for culverts, or any other building purpose.

After passing this summit the line immediately begins to descend with a 1-in-60 grade through an easy country to the Kaurihohore Station at 3 miles 20 chains, and then through rougher semi-volcanic sidling ground with a 1-in-61 grade to about 4 miles 40 chains, where the flat country known as the Hikurangi Flats begins, about 320ft. above the sea, or nearly the same height as the Coal-mine Station first started from.

At 5 miles 25 chains another station, called Mamigahahuru on the plans, will be required. There will probably be a good quantity of kauri timber carried from here, as the owners—Kauri Timber Company—of the bush to the eastward intend to start cutting soon.

From this point the line will be very easy, through open flat country, to 6 miles 40 chains, the Hikurangi Station, which is the centre of a considerable settled district. About half a mile after leaving this station the line runs up with a short 1-in-80 grade to the rise, where the limestone rocks and outcrop of coal are visible at 7 miles 60 chains, and a height of 330ft. above sea. This is a very important item in the future prospects of this line, as this coal—Hikurangi coal—is already known as a smith's coal, and is of considerably better quality than the Kamo coal, being used in Whangarei in preference, although some 3s. or 4s. a ton dearer. The seam or reef is about 10ft. thick at the outcrop, and can be traced for some three miles in a north-easterly direction. The crystallized limestone rocks will also be of some importance, and will yield a good durable building-stone, easily got and very cheaply worked. From here the line runs along easy swampy country to the Otonga Station at 11 miles, and the Whakapara River at 11 miles 22 chains, and a height of 293ft. above sea. The Otonga Station would be largely used by the settlers of the Otonga and Opuawanga districts, and should supply a considerable trade.

The Whakapara River, into which the Kaimamaku runs, will be one of the principal means of getting out the kauri timber from the Puhipuhi Forest, as all the eastern side of the bush, which is a very considerable part of it, will have to be worked by this outlet. So far as a cursory examination showed, it would be best to haul or tram the timber into the creek, float it down to the railway crossing, and there pick it up again; at any rate, it would be useless carrying the railway up into the bush, as it would have to go up the valley of the Kaimamaku, and could not rise on to high lands of the Puhipuhi bush, which are some 1,200ft. high at the upper end, close to where the silver reefs are being worked.

From the Whakapara crossing the line skirts round the base of the hills till it crosses the Wairiki Stream at 13 miles 35 chains, height 290ft. This stream rises right in the centre of the Puhipuhi Forest, and runs through the large flat some 900ft. high, which lies in the centre of the southern portion of it. The best of the kauri bush—unfortunately now partly singed by fire, and dead—lies on this flat. All this timber would have to come out by this valley, and would be picked up best just where the railway-line crosses it.

The line then continues round the foot of the hills, and reaches the Waiotu Stream at 14 miles 19 chains, height 291ft. This is the last of the main streams from the forest, and would bring down all the timber, which is not so plentiful as on the other two streams, from this side of the forest.

At 14 miles 35 chains, where the survey stops, the Hukerenui settlement and gumfield is reached, and a considerable amount of traffic would be obtained here.

The estimate of cost, forwarded to you on the 21st June last, for the whole line, complete and equipped, is £70,541 17s. 6d., divided into three sections, as follows: 0m. 0ch. to 5m. 40ch., = £30,928 1s. 9d.; 5m. 40ch. to 11m. 20ch., = 5m. 60ch. long, = £24,504 16s.; 11m. 20ch. to 14m. 35ch., = 3m. 15ch. long, = £15,108 19s. 9d. The estimate is based on laying the line with 53lb. permanent-way puriri sleepers, and the usual New Zealand railway formation widths, bridges, slopes, &c.

The detour described by this line round the head of the Hikurangi Swamp, in preference to the straight line up the swamp, is advisable; first, because it connects with all the chief settlements, then it taps the coal and limestone at Hikurangi. It will enable the timber, if driven down the streams from the forest, to be picked up before it gets spread out by the water all over the swamp; and, lastly, the line itself will be on higher ground and very much less subject to floods and consequent damage.

I may mention, in regard to the kauri standing in the bush which has been burned, that the recent rains have caused the bark to come off, and there is now sufficient accumulation round the foot of the trees to feed another fire in a dry season, which, now that the trees are dry, and the sapwood getting decayed, may cause the total destruction of the whole of this burnt timber.

Re Mr. Triphook's route.—With reference to the letter of Mr. Triphook's to the Minister suggesting a new line, I have to report that arrangements were made with Mr. Triphook to point out this line, and an examination of the country has been made.

The line shown on the tracing P.W.D. 16389, starting from Taumarere Station, on the Kawakawa Railway, and going up the Tirohanga Valley, was first examined.