

tively light), whilst the export of Wool, Timber, and other heavy goods will merely have to descend it. The cutting at the summit is 27 feet deep, and it will be practicable at a future time, by deepening this cutting, to improve the maximum gradient.

At the summit I have provided a length of 14 chains on a level, which will provide amply for sidings, and from thence to the public road I have adopted a gradient of 1 in 55.

From Section 43 to Section 26, near the bend in the Koromiko, I have laid out the line on the western side of the present road. Throughout the flats there will be room enough on the outside of the present ditch, on the cress between the ditch and the boundary of the sections, and this portion of the line will require little done to it besides clearing the ground thoroughly in order to prepare it for the ballasting.

In the lower part of the Tua Marina Valley, the whole of the flats are liable to inundation to a considerable depth. It therefore becomes necessary to carry the line in side cutting; and the western side of the valley presents great advantages over the eastern for this purpose, down to the Massacre Hill, along which the eastern side affords the only eligible route.

It is necessary, therefore, between the bend of the Koromiko and the Massacre Hill to cross the Tua Marina Valley twice. The proper situation for the lower crossing is clearly pointed out by the outline of the road: the best situation for the upper crossing admits of more consideration. The line I have selected crosses the valley above the level of the dead water in inundations, by which much expense in timber openings or viaduct is avoided.

I should have wished, however, to submit to your Honor comparative sections of one or two other crossings of the valley, but the very short time allotted to me has been so much curtailed by wet weather and by floods that I have been unable to prepare sections of these crossings. I am, however, well acquainted with the ground from previous explorations. At the lower crossing of the valley, by the Massacre Hill, a viaduct of about ten chains will be required. From the end of this viaduct the line runs to the present road, and then follows it to the bend of the Wairau River. Thence it runs in as direct a line as practicable to the Wairau River, at the upper end of the high bank. This spot affords the best site for a bridge over the river, both as regards the height of the ground, the shape and probable durability of the banks, and the position of the current. This subject has been already reported on by Mr. Fitzgibbon for the late Superintendent.

On the south-western bank of the river I have chosen the nearest practicable route following high ground to the Sandhill-road. Thence I have followed the general course of the Sandhill-road as far as Shepherd's new hotel, deviating occasionally, however, so as to take advantage as much as possible of the high ground.

A more direct route might be taken from the Wairau River to the Sandhill-road, as shown by the dotted line on the plan, by putting a viaduct across the low swamp adjoining the river. This route would also provide a suitable site for a main drain, to drain the north end of the Sandhill-road; but I am unable to give any estimate of its cost until I have surveyed it.

From Shepherd's Hotel to Blenheim I have adopted the present line of road. This affords about the most eligible crossing of the Opawa River, alongside of the present bridge, and at the same time gives great facilities for extending the line at a future time, so as to be worked economically both to the Upper Wairau districts (up the lower road by the Plough Inn, or by another route south of the swamps, which is more secure from floods) and also to the Awatere by the pass below Sixteen Valley, which not only affords the best route to the Awatere and the South as to gradient, but also passes through a considerable quantity of agricultural land.

The total length of the line to the Omaka at Blenheim is 19 miles 48 chains, or by the more direct route 19 miles 25 chains.

In making estimates for the arrangements and establishment required for working this Tramway, I do not see any necessity for providing Passenger Stations, Booking Offices, Waiting Rooms, and such like. Some sheds will be required for protecting carriages from the weather, and sidings and turn outs will be required at intervals; and by degrees, as local traffic becomes developed, additional accommodation can be provided. As for passengers, with the low speed which will be most suited to the economical working of the line, they may be taken up and set down at almost any part of the line, and instead of providing ticket clerks to collect their fares, a responsible guard will be necessary, just as in a stage coach. This guard can also attend to the whole of the light parcel traffic. For heavy goods, a foreman and staff of porters will be required according to the traffic.

The plans, sections, and estimates which I am now furnishing comprise the following:—

1. Plan, 1863, from survey of a new route from Picton Warehouse to 6 miles 0 chains.
2. Plan (Railway Plan, 1863, *modified*), from 6 miles 0 chains to 13 miles 60 chains.
3. Plan, 1863, chiefly from survey from 13 miles 60 chains to 19 miles 48 chains, at Blenheim.

On this plan I have shown the line of proposed tramway in red. The levels not having been taken, it may require some modification.

4. Section, 1863, from Picton to 6 miles 0 chain.
5. Section (Railway Section, 1861, *modified*) from 6 miles 0 chain to 13 miles 60 chains.

Estimate, Picton Tramway, 1863, first cost.

Do., do., do., annual working.

I have, &c.,

ALFRED DOBSON.

His Honor the Superintendent of the
Province of Marlborough.