which are subject to be flooded. This has had the most beneficial effect not only on the road, but on the whole of the fine district through which it runs; the flood water now runs off in one or two days, whereas before the outlets were cut it took as many weeks.

Of these, there have been cut 103 chains five feet wide, 106 chains seven feet wide, and 117 chains ten feet wide.

The number of culverts erected is 106, varying in size from 2 feet wide to 7 feet; and from 14 feet to 68 feet in length—their aggregate length is 2,315 feet.

Thirty-four bridges of a plain construction have been built, of a total length of 674 feet. These and the culverts are mostly of sound totara timber.

Horse Track.—Along the proposed railway line, Manawatu to Wanganui, the bush has been felled 1 chain wide, and cleared ½ chain wide about eight miles, leaving the main road about three miles above Palmerston, and proceeding in the direction of the Rangitikei to the Oroua River, where there is open ground. The small creeks on this line have been roughly bridged for horse traffic.

Tramway, Palmerston to Foxton.—Twenty-four and three-quarter miles. This is intended to be laid along one side of the main road already described. On this line one contract has been completed at the Palmerston end, 3 miles, 71¼ chains, with two sidings of 5 chains each. And another contract of twenty and three-quarter miles is now in progress. The sleepers are of heart of totara, the rails heart of matai.

The sleepers are laid on a raised formation close to one of the side ditches; and in the lower lands in the bush this is kept high enough to be clear of ordinary floods, but those of an extraordinary character, like that of 1871, will submerge the line for about four miles. Floods are however of rare occurrence, and the water is comparatively still during their continuance, so that no damage from them of any consequence is anticipated.

The formation of the tramway through the bush, about eight miles, is nearly completed, and sleepers and rails are laid for about three and a half miles, but not yet ballasted. The formation for the tramway in the sandy country, about thirteen miles, is completed. The gradients throughout are good, corresponding nearly to the natural face of the country which is almost level; a few short grades, not over 1 in 40, occur near the boundary line between the bush and open country.

Curves of less than 5 chains radius occur only in two or three cases where the radius is 4 chains.

The tramway will cross the Oroua on a new bridge now being erected alongside the present dray-bridge, the length of which will be 162½ feet, it will be built entirely of totara sawn or squared, already delivered at the site. The contractors for laying the tramway though working under very unfavourable circumstances as regards weather and roads deep in mud, are nevertheless prosecuting their work with energy.

WANGANUI TO CARLYLE, PATEA.

(W. Hales in charge.)

In reference to a portion of this line of road, namely, that betwen Wanganui and Waitotara, it was decided (see last year's Report) to adopt what was known as the Inland line of road, as distinguished from the Coast line; and the whole of this section, with the exception of 46 chains of forming and metalling in the descent to the Waitotara, is now completed and in good working order. The piece yet in hand is intended as an improvement on the cutting originally laid out and partly executed, which seems much too steep for safe and easy traffic.

Beyond the Waitotara a length of 3 miles 34 chains has been formed and metalled, and about five and a quarter miles formed ready for metalling; and in the town of Carlyle a contract is now in hand for forming and metalling 55 chains of road, about one-fourth of which is completed. The width of formation ranges from 20 feet to 33 feet, and that of metalling is 12 feet, being 12 inches thick in the middle. About five and a half miles of this road is made through bush.

Three bridges have been constructed on this line with approaches and embankments complete, viz., Puketotara Bridge, 69 feet long, in three spans—21½ ft., 24 ft., and 21½ ft.; Kai-iwi Bridge, 144 ft. long, in four spans—18 ft., 78 ft., 23 ft., 21 ft.; Okehu Bridge, 52½ feet long, in three spans—13½ ft., 24 ft., 13½ ft. These are all 12 feet wide in the clear, and are built substantially of sawn timber and on piled foundations. Also, one large culvert, at Ototoko Stream, 109 ft. long by 9 ft. × 8 ft. inside, piled and framed of sawn matai timber.

The following is a summary of the work completed or in progress:—

	Miles.	Chains.
Formed and metalled	21	38
Formed only	4	56
Formation in progress	1	60
Metalling „	1	20

Three bridges, total length 266 feet, by 12 feet wide
One piled culvert, 109 feet long, 8 ft. × 9 ft.
Two piled culverts, 14 feet long, 8 ft. × 10 ft.
118 box culverts, of a total length of 408 feet, and varying in size from 12 in. × 12 in. to 18 in. × 24 in.
Two stone culverts, 66 feet long, by 24 in. × 24 in.
Thirteen log culverts, total 108 feet long, varying from 2 ft. × 2 ft. to 3 ft. × 4 ft.
Twenty box culverts, in progress, 33 feet each, by 14 in. × 10 in. These are all made with 2-inch planking.

The finished work on this road is all standing very well; and, until lately, very few slips had occurred in the cuttings, but after the last wet weather small slips were rather numerous, requiring constant attention to keep the drainage open. The crossings at the Rivers Waitotara and Whenuakura, by punt and wire, are, owing to the peculiar sections of the river bed, awkward at all times, especially for coach traffic, and in times of flood not a little dangerous. I should strongly recom-