

to allow the formation, which is in general very soft, to settle and become hard before the gravel is applied; by this means a much less quantity of gravel will be required, and the work will be more permanent and substantial.

Working sections have been prepared for the formation of about five and a quarter miles of road north of Carlyle, leaving only about one mile next the town not yet prepared, and the work will be put in hand when the weather is more favourable.

The whole line of made road is in fair order, with the exception of a few chains at Manawapou, where considerable slips have occurred in the long side-cuttings, and which will yet give trouble, and necessitate the employment of a small working party during the winter.

Though much remains to be done on this line of road, it will be evident that great improvements have been made, when it is considered that the coach has continued to run almost regularly between Wanganui and New Plymouth, the great obstacle to its regularity being the rivers, which are now in course of being bridged, and some of which in time of fresh, are extremely dangerous, and at times a complete bar to traffic of any kind.

ROADS IN WESTLAND.

(C. Y. O'CONNOR in charge.)

The general scheme of these roads was to form a main trunk line between Greymouth and Ross, with a branch road joining the Christchurch and Hokitika Road; and the report below, describing the road in subdivisions, will show how much of this has been accomplished since the beginning of the work in June, 1871. Greater progress might have been made under a more favourable season, the character of which may be judged of, when it is known that the rainfall for eight months, up to February, averaged four-tenths of an inch per day. This also increased the cost of the work, which was additionally enhanced by the very high rate of wages prevailing in Westland.

The trunk line as designed, and necessarily passing over some rough country, serves not only its purpose as such, but fulfils that usually served by local roads—that of connecting all the principal mining centres, mostly situated inland—and this, probably, at a cheaper rate than if a road had been constructed over easier ground near the beach, with branch lines to those centres of population.

Greymouth to Omotomoto.—Two miles eleven chains. This proceeds from Greymouth up the left bank of the Grey, and is mostly in side-cutting on the side of a steep hill; the formation width will be $14\frac{1}{2}$ feet, with metalling 10 feet wide and 9 inches thick. The work includes 171 chains of bush clearing; rock excavations, 3,900 cubic yards; clay, 16,500 cubic yards; retaining walls, 240 cubic yards; 124 feet of culverts, 34 in number; turnouts, 21 chains.

Of this, 111 chains of bush have been cleared, 500 yards of road excavated, and 8,400 yards of clay, equivalent to about 41 chains of road, completed. The cost of the above line is £3,350, or about £1,567 per mile.

Omotomoto to Marsden—eleven miles three chains—and alternative line, *Greymouth to Marsden direct*.—The first of these lines was surveyed, and plans and specifications prepared for contract by December, 1871. It is at an average distance of four miles from the beach, and traverses a hitherto almost unknown bush country the greater part of its course. For three miles, the average gradient will be 1 in 10 in steep side-cutting. The estimated cost of a 12-foot metalled road from the termination of road last described is £15,900.

The second line was only blazed throughout, and barometer levels were taken. Its average distance from the beach is a mile and a-half; the grades are easy, and the distance would be 9 miles 51 chains, giving an estimated cost of a 12-foot metalled road of £11,100.

No work has yet been done on either of the above described lines.

Marsden to Hohonu.—Seven miles seventeen chains. Crossing the New River close to Marsden, this road ascends one side of an intervening ridge, and descends on the other side to the Greenstone, attaining a maximum altitude on the ridge of 650 feet. The formation will be 17 feet, and the metalling 12 feet wide and 12 inches thick. The amount of work and progress made is shown below:—

	Total Quantity.	Quantity Completed.
Clearing heavy timbers	490 chains	473
Clearing heavy scrub	77 chains	77
Earthwork	51,422 cub. yds.	42,100
Retaining walls	290 cub. yds.	50
Drains	311 chains	270
Culverts, 48	246 lin. ft.	220
Bridges, one lattice 108 ft., three plain 20 ft., 113 ft., 50 ft.	291 lin. ft.	130
Metalling	577 chains	370
Turnouts	45 chains	40

The whole cost of the above will be £9,752 17s. 8d., or about £1,352 a mile; the work completed is equivalent to 430 chains of finished road.

Arahura to Stafford.—Three miles sixty-three chains; all completed by 17th March last. The line of country is easy, with moderate grades. Formation width throughout, 17 feet; metalling, 12 ft. by 12 in. thick. The work included clearing of heavy timber, 206 chains, and of scrub, 65 chains; earthwork, 13,132 cubic yards; drains, 368 chains; 30 culverts, in all 251 feet; bridges, one lattice, 45 feet, and the completion of a 60-foot truss bridge over Waimea Creek, and 16 chains of turnouts. The cost was £3,415 8s. 2d., or about £902 per mile. The whole is now in good repair, and is being maintained under contract.

Hokitika to Kamieri.—One mile sixty-seven chains; all completed on 1st December, 1871. Its course is nearly parallel to the Hokitika River, over easy flat country. Formation and metalling as before. The work included the clearing of 147 chains of heavy timber; earthwork, 3,000 cubic yards;