

drains, 206 chains; 10 culverts, in all 101 feet; one 45-foot log bridge; metalling, 147 chains; and 11 chains of turnouts.

The cost was £1,822 6s., or about £999 per mile; it is in good repair, and is under contract for maintenance.

*Kanieri to Ross.*—Fourteen miles fifty-five chains, commencing on the south bank of the River Hokitika, which is crossed by a punt kept by a private individual. The course of this road lies about two miles distant from the sea, and crosses a succession of ridges, some of which are 300 feet high.

At the Hokitika end, for 7 miles 71 chains, the formation, for economy, is specified as 12 feet, and metalling as 8 feet wide and 8 in. thick; the remaining distance to Ross, 6 miles 64 chains (first prepared for contract) as 17 feet, and metalling 12 feet and 12 in. thick. The work is divided into fourteen contracts, ten of which have been let. The cost of these, with the estimated value of the remaining four added, will be £12,340 4s. 3d., or about £840 a mile. The work executed is equivalent to 5 miles and 17 chains of road completed, including a mile and a half open for traffic at the Ross end. The amounts of works required on this section are as follows:—

	Total.	Quantity completed.
Clearing heavy timber ... ..	1159 chains	650
Clearing scrub ... ..	18 "	18
Earthwork ... ..	24,428 c. yds.	14,500
Drains ... ..	926 chains	370
Culverts, 76 ... ..	428 lin. ft.	190
Bridges 7 — 87 ft., 35 ft., 57 ft., 19 ft., 29 ft., plain;		
" 2 — 34 ft., lattice ... ..	295 "	90
Metalling ... ..	1,176 chains	290
Turnouts ... ..	85 "	21

*Branch Road from Christchurch Road to the Greenstone Road.*—Four miles sixty-five chains, all completed by end of May, 1872. This is a connecting link between the Canterbury Road and the trunk road of the County, joining the latter at a point nearly midway between Hokitika and Greymouth, the ground offering great facilities for the junction. The formation is 17 feet, and the metalling 12 feet wide and 12 inches thick, and the total cost £3,598 1s., or about £748 a mile. It is in good repair throughout. Its construction involved the following work—viz., clearing of heavy timber, 290 chains; scrub, 95 chains; earthwork, 7223 cubic yards; drains, 445 chains; culverts, 24 = 74 feet in line of road; metalling, 385 chains; with 30 chains of turnouts.

#### WATER RACES.

*Waimea District Water Supply.*—The survey for this was completed 11th May. It is thirty-two miles long, the line being carried into the heart of this district, and thence to all the surrounding workings of importance. Two reservoirs, respectively 48 and 29 acres in extent, have also been surveyed at the head.

An approximate estimate of the amount of each kind of work required is as follows:—

300 chains of piping, with an average pressure of 110 feet.
200 " fluming, averaging, 17 feet high.
700 " boxing or tunnelling.
1,360 " ditching.

Apparently a much cheaper undertaking, and one more likely to be remunerative, would be to make the main race alone, which would be fifteen miles thirty-four chains of conduit, made up as follows:—

260 chains piping as before.
125 " fluming, averaging 17 feet.
400 " boxing or tunnelling.
449 " ditching.

The attached diagram is a reduction from the working plans.

*Greymouth Protection Works.*—It will be remembered that these were undertaken after the occurrence of a flood in the River Grey, the destructive effects of which on the river banks and to property in the town of Greymouth were unexampled, and which convinced those who were interested in the conservation of the town and the roads connected with it, that nothing less than works of the most substantial character would resist the action of floods of like extent for the future. The necessity for these works was duly reported on, and their execution approved of, and no time was lost in putting them in hand. They consist of:—

1. *Quay Wall along River Bank from the Maori Cemetery to Tainui Street.*—Twenty-five chains in length. This will be built with the largest stones that can readily be procured from the adjacent limestone hill; the average height being about 22 feet and the average width about 9 feet, the base being kept wide and sloping, to resist the action of the river.

It is calculated to be of material assistance in the construction of a railway, and the delivery of coal from the Brunner Mine, as well as serving its more immediate object—that of preserving the town of Greymouth from absolute destruction. About one-fifth of the work, including outlay for plant, has been completed for the sum of £1,504 8s. 4d. of which the Native Trust has already contributed £999 4s. 8d., the total estimate being £6,000.

2. *Strengthening the Wharf from Tainui Street to Boundary Street.*—This work was commenced on 27th May, and its cost is being defrayed out of the loan of £4,000 made to the Corporation of Greymouth by the General Government—about one-sixteenth of the whole work contemplated has been completed, at a cost of £58 14s. 9d., the estimate being £1,000.

3. *Wharf—Boundary Street to Johnston Street.*—This work is also being executed out of the loan as above. It is composed of three rows of piles with intervals of 14 feet. The face piles are driven in line with the existing wharf, and the back rows approach nearly to the face of the river bank,