

WELLINGTON - TAWA FLAT RAILWAY DEVIATION.

The protection of the embankment along the sea-front has been continued for a distance of 3 ch., just sufficient distance to protect the spoil from the tunnels as it is deposited into the sea. Several big blasts have been fired in the quarry, but there is unfortunately only a small percentage of the rock suitable for the sea-wall, the balance being disposed of for road metal.

The railway-bridge across the Hutt Road has been completed.

In No. 1 tunnel the heading has now been completed, 14 ch. having been done during the year under the co-operative contract system at the south end and 26 ch. by the contractors from the north end. An adit 13 ch. long was driven to expedite the progress of the heading and the tunnel enlargement. The heading was exceptionally wet, and four shifts per day have been necessary throughout the work. At both ends a small amount of enlargement and concrete lining has been done—8 ch. at the south end and 5 ch. at the north end. The full plant necessary for the more rapid progress of this tunnel is now installed, and good progress is expected under the co-operative contract system.

At No. 2 tunnel the approach cutting at the south end was completed during the year. The heading has been driven for a distance of 19 ch. at the south end, and $3\frac{1}{2}$ ch. of enlargement have also been completed. At the shaft which was completed during the year, and which is 53 ch. from the north end of the tunnel, the heading has been driven 15 ch. southwards and 17 ch. northwards; 2 ch. of enlargement have also been done here to act as a depot for receiving trucks from the faces and for plant and materials coming down the shaft. At the northern end of No. 2 tunnel 18 ch. of heading and $2\frac{1}{2}$ ch. of enlargement have been completed. The plant for this tunnel also is now ready for operating, and much greater speed should be made in the enlargement and lining.

The bridge over the Ngahauranga Gorge Road at 3 m. 29 ch. has been completed. Bridges at 6 m. 18 ch. and 6 m. 38 ch. were also completed. Foundations for the bridge-piers at 7 m. 25 ch. have been excavated, and the piers are completed for the bridges at 7 m. 37 ch. and 7 m. 63 ch. The Takapau Road overbridge is in hand.

Stream-diversions have been completed at 6 m. 46 ch., 6 m. 57 ch., and 7 m. 8 ch.

Two cuttings have been taken out beyond No. 2 tunnel, at 6 m. 18 ch. and 7 m. 45 ch. Another cutting, at 6 m. 42 ch., has been half completed.

A road-deviation at 7 m. 58 ch. has been completed, and another one, at 7 m. 30 ch., has been commenced.

Accommodation for the workmen is nearly completed. For married men seventy-four houses were erected and a further thirty are in course of construction. For single men 170 huts were erected, and also two cookhouses and four bathrooms.

Two classes of operations are now in progress in the tunnels on this railway which have not been used successfully in tunnels in this country before. These are the loading of excavated rock by means of compressed-air shovels and the placing of concrete in the lining by means of concrete-guns or pneumatic concrete-placers. It is hoped to make comparatively rapid progress by these new processes.

MIDLAND RAILWAY.

Murchison Section (63 m. 10 ch. to 86 m.; length, 22 m. 70 ch.).—The main activity on this line during the first six months of the period was the completion of the section to the end of the Gowan station-yard at 67 m. 3 ch. The formation was completed early in the year, and platelaying and ballasting was put in hand. Seven culverts were built, varying from 12 in. to 8 ft., and 14 ch. of heavy road-deviation was completed, while a further 23 ch. are in hand. In the latter half of the period the work was very much accelerated, a number of additional men being employed, and formation put in hand up to 72 m. 0 ch.

Bushfelling was completed from 67 m. 6 ch. to 67 m. 33 ch., and from 68 m. 69 ch. to 69 m. 0 ch.

The largest cutting on the section now in hand is at 67 m. 52 ch., and is being taken out with a steam-shovel and locomotive, the majority of the other cuttings being smaller and more suited to hand gangs.

All the buildings at the Gowan station-yard have been completed, and plates have been laid to 67 m., including sidings. Three lifts of ballast have been placed throughout to the end of the Gowan yard at 67 m., and the final boxing-up and finishing-off is in hand.

In order to cope with the additional men employed it was necessary to provide accommodation for 250 men at very short notice. Under the circumstances, the men were placed in tents, a cookhouse was erected, and the provision of huts is in hand.

The trial-line survey has been completed to 94 m. 7 ch. on the left bank and 93 m. on the alternative right-bank route, but practically all of this will have to be done over again owing to the alterations in the surface of the ground due to the recent earthquake. The survey of the permanent line is complete to 72 m., and is in hand for a further two miles.

WESTPORT-INANGAHUA RAILWAY.

Cascade Section (5 m. 70 ch. to 8 m. 78 ch.; length, 3 m. 8 ch.).—The only work on this section during the period has been the general maintenance and the repainting of all steel structures.

Hawk's Crag Section (8 m. 78 ch. to 18 m. 0 ch.; length, 9 m. 2 ch.).—During the period the bush was felled and cleared from 13 m. to 17 m. 4 ch. From the start of the section to the 10 m. the formation had been practically completed some years ago, and this has now been cleaned up in anticipation of platelaying.

From 10 m. to 11 m. the formation has been practically completed, with the exception of two cuttings, which are well forward. Between 11 m. and 14 m. formation is well in hand, the main obstacles being the large fillings at 11 m. 40 ch. and 12 m. 20 ch., and the tunnels at 13 m. 26 ch. and 13 m. 41 ch.