

A new spillway for the flat-topped culvert at 14 m. 28-86 ch. was constructed, also a dry stone wall to retain the filling.

At 17 m. 50 ch. a reinforced-concrete retaining-wall 120 ft. long and 25 ft. high was built to replace a mass concrete wall destroyed by the earthquake. A new reinforced-concrete spillway has also been built at this point.

All other culverts and water-drives were inspected and repaired where necessary. None of the culverts in the solid ground suffered from the earthquake.

The Westshore Bridge had been repaired shortly after the earthquake, and beyond the extension of the banks no further work was necessary on this bridge.

On the Mangakopikopiko Bridge at 11 m. 60 ch. the sliding holes were lengthened and new holding-down bolts put in to replace those sheared off by the earthquake.

The Esk Bridge, which had been extensively damaged, was repaired, pier C being entirely rebuilt, using eight new 14 in. octagonal reinforced-concrete piles 22 ft long, with a heavily reinforced pier on top. The other piers were all repaired where necessary and strengthened by means of two 6 in by 3 in. channels bolted to each face. The channels were bedded in and covered with concrete. All girder-seats were releveled and reseated, and all sliding ends reslotted and made free to move. The rails were lifted and straightened. The maximum transverse movement due to the earthquake had been $1\frac{1}{2}$ in.

Waikoau Viaduct suffered very little damage in the earthquake, practically all damage being confined to the northern abutment. This has now been repaired.

Matahoura Viaduct suffered fairly severely during the earthquake, especially the portions of the structure on the northern bank. The damage was repaired shortly after the earthquake, and no further work has been found necessary.

A considerable amount of slip material had to be removed, and banks had to be built up in the Esk Valley beyond Eskdale, the total amount shifted in the twelve months being 73,220 cubic yards.

Fences had to be repaired throughout this section and new fences built up the Esk Valley on the river side, between 14 m. and 20 m. New fencing was also required round the Westshore Embankment. Fencing has been completed, except for 3 miles of repair south of Waikoau.

The telephone-line was in bad condition throughout, and has been rebuilt from Esk River north with new poles and closer spacing on a better alignment. The work was carried out by the New Zealand Railways linesmen.

Cottages at Westshore (1), Bayview (1), and Eskdale (2), have been renovated and painted, and electric light installed. One cottage was shifted from Bayview to Eskdale and re-erected.

A considerable amount of local traffic has been carried by the departmental work trains in an effort to encourage the use of the railway. A very considerable amount of stock has been transported to the saleyards and freezing-works. The number of sheep carried has exceeded 25,000. A very considerable increase in this traffic can be anticipated once the line is opened on a regular train service.

The line from Napier to No. 1 tunnel (17 m. 50 ch.) was worked from Napier by means of a works train, no accommodation having to be found for these men. A camp was established at Waipunga, and later shifted to Waikoau, to do the work north of 17 m. 50 ch. By using the railway houses at Waikoau, tents were reduced to a minimum.

An average of 120 men has been employed on this section of the railway during the last twelve months.

Putorino-Wairoa Section (Length, 33 m. 32 ch.).—The old formation has been cleared up and slips removed throughout the greater part of this section. About 50,000 cubic yards of earthwork were involved in this work.

The platelaying was completed on this section. 70 lb. rails were laid over the length from 41 m. 75 ch. to 49 m. 53 ch., including Mohaka Viaduct and Kotemaori Tunnel.

Fences had to be repaired throughout, and at present are in an uncompleted state, being about 75 per cent. complete.

The old telephone-line was repaired to establish communication between Napier and Wairoa. A party of New Zealand Railways linesmen are proceeding to relocate throughout. They have completed a length from 37 m. 35 ch. to 45 m.

A ballast-pit was established at 49 m. 20 ch., 15 ft. below formation immediately to the right of the permanent way. The material was red metal, and screening and washing was necessary to obtain a good material. Bins capable of holding 100 cubic yards were built and elevators and a large crusher established. The daily output has averaged 80 cubic yards, which is sufficient for our purpose.

Ballast has come from three main sources: (1) Shingle-pit at Bayview; (2) ballast-pit at 49 m. 20 ch.; and (3) Wairoa River.

Bayview ballast was used in first lift from Putorino to 46 m., and as second and final lifts from Putorino to 39 m. 40 ch. Over this length there was previously a considerable amount of ballast from Waikoau pit.

Mohaka ballast has been used as first lift from 46 m. to 49 m. 30 ch. and as second lift from 42 m. to 49 m. 30 ch. No third lift has yet been put on over this length.

Wairoa River ballast has been used throughout the length from Mohaka Viaduct (49 m. 45 ch.) to Te Kumi crossing (55 m. 44 ch.). First lift had been put on from this source previous to 1931. The second lift has been completed throughout this length. The third lift is in progress, and has been completed over sections 49 m. 45 ch. to 50 m. 20 ch., 53 m. 25 ch. to 55 m. 44 ch.

Formation has been practically completed for Kotemaori and Mohaka yards.

Crossings and turnouts are fabricated and in position on temporary sleepers at Kotemaori. They are 50 per cent. completed at Mohaka.

No buildings are erected at Kotemaori.

At Mohaka there have been no new buildings erected; the 20 ft. by 30 ft. goods-shed has been shifted to its new site.