

From the south end of the Waiau-Tikiwhata Tunnel at 33 m. 36-50 ch. a bottom heading was driven a distance of 9 ch. 60 links. Towards the end of the year the enlargement to full dimensions was commenced.

At the portal of this tunnel a fitting and blacksmith's shop was constructed and plant installed to carry out necessary repair and maintenance work to construction plant.

The installation of an 800-cubic-foot compressor unit was almost completed, and the portable machine at present supplying the tunnel and workshop will be available shortly for transfer to another tunnel party.

A very considerable amount of work was carried out in connection with the provision of accommodation for workmen. This included the renovation of fifty-six old-type married quarters and ninety-five single men's quarters, as well as the construction of eighty new-type married quarters and the erection of 136 single men's tent accommodation, complete with floors, sidewalls, and chimneys. Seventy-six standard washhouses were constructed.

Cookhouses were built at Waikokopu No. 2 Camp, No. 4 Camp, and No. 5 Camp.

A new cottage for the Resident Nurse was erected at No. 3 Camp.

At each of the five camps, shower-rooms and washing-rooms were provided, and at No. 4 and No. 5 Camps drying-rooms were also provided.

The 11,000-volt power-line connected to the Wairoa Power Board's supply at Opoutama was carried through to Bartlett's, and each camp was reticulated and power and light laid on to all accommodation. Suitable transformer stations were installed in each camp. At Opoutama complete metering and switching equipment was erected.

A Y.M.C.A. hall, with canteen and billiard-room, was established at No. 5 Camp (33 m.). At Waikokopu and No. 4 Camp (31 m. 25 ch.) smaller buildings, containing billiard-room, canteen, and reading-room only, were erected. The original building at No. 3 Camp (29 m. 40 ch.) was destroyed by fire in April last. A new hall, with billiard-room, canteen, reading-room, social hall, and post-office, is now practically ready for occupation.

A new stores building and carpenters' shop were erected at No. 3 Camp, and repairs and renewals effected in the case of other service buildings.

Two foot suspension bridges were erected over the Kopuawhara River to give access to work on the side of the stream opposite the service road.

The clearing of willows from the Kopuawhara River has been completed from opposite 28 m. 40 ch. to service road bridge, a distance of $1\frac{1}{2}$ m.

The maximum number of men employed on this section was 470, in February, but the number at the end of the period was down to 385.

Wharerata Section (Length 9 m. 17 ch.).—At the beginning of the period one of the major problems was to erect accommodation rapidly in order to employ workmen at the desired rate. With the assistance of the Gisborne Workshop, and in spite of the difficulty of obtaining sufficient materials, good progress was made. The number of men employed was increased from seventy-two at the 1st July to 462 at the 9th October, and reached a maximum of 535 men in January, 1937. The number at the end of the period was 458.

With the exception of 45 ch. of the Coast Road to the Waiau Valley all access roads, aggregating 475 ch., have been metalled.

Culverts on the section are mostly completed, except for a number of small culverts between 19 m. and 35 m. 43 ch., which can be constructed more easily when the formation is further advanced. 314 lineal feet of concrete-pipe culvert from 1 ft. to 3 ft. in diameter have been completed during the year.

Four water-drives 6 ft. by 4 ft., aggregating 655 lineal feet, and one drive 7 ft. by 5 ft. have been excavated and lined with concrete.

Substantial progress has been made with formation work. The rugged nature of the country and difficult access precluded the employment of heavy excavating machinery to any great extent.

Two Diesel shovels have, however, been employed on cuttings in the Waikoura Valley and at 19 m. 38 ch. to 47 ch.

In the Waikoura Valley formation has been completed between 15 m. 19 ch. and the tunnel portal at 17 m. 51 ch., with the exception of cuttings at 15 m. 57 ch. and 17 m. 43 ch., and the embankment from 16 m. 6 ch. to 46 ch., which will be formed with tunnel spoil.

A short deviation of the centre-line and a stream-diversion at 17 m. 6 ch. saved the removal of large slips which occurred while construction work was suspended.

The heavy cuttings and the 100 ft. embankment in the Wharekakaho Valley are nearing completion, including the approach cutting to the south portal of the Waikoura Tunnel at 18 m. 42 ch.

From 19 m. 2 ch. to 19 m. 46 ch. formation is practically completed except for the 80 ft. embankment at 19 m. 30 ch.

From 19 m. 46 ch. to 20 m. 36 ch. occurs the heaviest earthwork on the section. The country which appeared somewhat treacherous proved better than anticipated; 38 ch. out of the 70 ch. have been completed, and a further 20 ch. are well advanced.

In the Tikiwhata Valley formation work has been confined to the approach cuttings to the tunnels, and cuttings at 35 m. 54 ch. and 65 ch.

Of the 6 m. 58 ch. of formation on this section, 3 m. 34 ch. have been completed. Earthwork completed amounts to 322,425 cubic yards, or 62 per cent. of the estimated total of 521,425 cubic yards.

The tunnelling-work is not as far advanced as was anticipated, owing to the difficulty of procuring tunnelling machinery. Nevertheless, considerable progress has been made.

The country which is to be pierced by the three larger tunnels consists of good stable sandstone, and warranted the adoption of the "American" or arched system of timbering, which has not previously been used for single-track tunnels in this country. This type of timbering enables the whole face of