

NORTH AUCKLAND MAIN TRUNK RAILWAY.

Huarau Northwards.

Okoro Section (24 m. 45 ch. to 38 m. 35 ch. ; length, 13 m. 35 ch.).—In anticipation of a start being made with the construction of this section north of Okaihau, a certain amount of preparatory work is being undertaken to enable workmen on the length between Huarau and Portland to be transferred on the completion of that section. This work consists of the laying-out of a temporary township, erection of huts, formation and metalling of streets, water-supply and drainage. The track is being laid from Okaihau station-yard over the already formed length to the main road, and it is proposed to complete the already partially completed formation over the next 2 miles. Surveys are being made to alter the line in several places to avoid slip country, and also to determine what measure of drainage will be necessary for bad gulleys and moving country.

Paparewa Section (90 m. 30 ch. to 92 m. 6 ch. ; length, 1 m. 56 ch.).—The formation work on this section consisted principally of clearing a large slip at the north end of Huarau Tunnel, and ordinary maintenance of the track, but the access road to Paparoa station-yard was formed and metalled and the station-yard fully ballasted. The station-building, platform, loading-bank, latrines, two 6,000-gallon water-vats, and one platelayer's cottage have also been finished. Metal was supplied to the Otamatea County Council for metalling the Paparoa-Paparoa Railway Station Road, and that work is now complete.

Mareretu Section (92 m. 6 ch. to 96 m. 20 ch. ; length, 4 m. 14 ch.).—During this winter the continuous rain water-logged the country, with the result that a heavy slip occurred in cutting at 94 m. 73 ch. and necessitated the employment of a steam-shovel to remove it. In addition, a steam-shovel was employed during the year to clear slips at 92 m. 5 ch., 92 m. 30 ch., 93 m. 39 ch., and 94 m. 79 ch. A good running "top" has been obtained on the track throughout this section. At the same time a bank at 94 m. 63 ch. was slipping every night, and great difficulty was experienced in keeping the track open for traffic. Several drainage drives are being put in to tap the seat of the trouble. The metalling of the Mareretu station-yard and approach roads has been completed, and a goods-shed, station-building, latrines, and buffer-stop erected.

Waikiekie Section (96 m. 20 ch. to 107 m. 28 ch. ; length, 9 m. 66 ch.).—A steam-shovel was employed in clearing a slip at the north end of the Mareretu Tunnel, and two work-trains have been engaged in clearing up the formation along the whole length of the section. Stone walls and drains aggregating approximately 40 chains in length have been constructed in various cuttings.

Unfortunately, during the year under review, parts of the Waikiekie Tunnel began to show serious displacement in the lining. In the portions which when excavated appeared to be sound an invert was not provided, as was done in the obviously unsound country; this necessitated a considerable portion being relined and provided with an invert. The worst portion has been completed, 201 lineal feet of lining having been renewed with heavy section concrete lining and 260 ft. with new invert.

The metalling of the Taipuha station-yard and the 2 miles of access road has been completed, and latrines have been erected and five platelayers' cottages completed during the year. The formation of the Waikiekie station-yard has been widened, trimmed, and metalled, and the approach road metalled. Latrines have been built, and shelter-shed, goods-shed, and passenger-platform completed. The Waiotira station-yard has been thoroughly stone-drained and metalled; $1\frac{1}{2}$ miles of approach road metalled, and one 6,000-gallon water-vat, turntable, and latrines constructed. Slip materials from the Kirikopuni Section were utilized to enlarge the station-yard to provide for further extensions.

Kirikopuni Section (107 m. 28 ch. to 121 m. ; length, 13 m. 52 ch.).—Although progress was much impeded during the exceptionally wet weather last winter, the unusually long summer enabled an active programme of work to be carried out, the aim being to connect the two ends of the line at Waiotira and Northern Wairoa River with the permanent or temporary tracks. The work has comprised general formation, culverts, fencing, platelaying, ballasting, accommodation for staff and workmen, permanent telephone-line, erection of bridges, and completion of the Tokatoka and Omana Tunnels. Considerable trouble was experienced with slips, and ten steam-shovels were occupied in extending the formation and removing slips. Deviations had to be made over a considerable length of the line to avoid heavy slip country, and these have proved effective. At the Pukehuia end it was found advisable to continue the policy of constructing extensive stone drains and stone walls in cuttings, and of draining cuttings and slips to prevent as far as possible any further slips. Stone for this purpose was obtained at various points on the Northern Wairoa River and barged to Pukehuia, where it was railed to the works. At the Waiotira end stone was obtained from Tauraroa Quarry. Much remains to be done in the way of drainage and the removal of slips before the formation is finally stabilized. With the exception of this the formation is practically complete to the terminus at 121 m. The rubble stone walls in the cuttings, &c., have demonstrated their value, as there has been a complete cessation of trouble where they have been erected.

The station-yards at Pikiwahine, Omana, and Pukehuia have been finished, and a large amount of formation work has been completed at the terminal station at Kirikopuni.

Considerable trouble has been experienced with the seat of various banks, particularly in the neighbourhood of the Wairoa River, where the ground is inclined to be soft and swampy. The banks have subsided into the flats, and parts of the flats alongside edges of the banks have been pushed upwards. Owing to the unstable nature of the country and its inability to withstand the superimposed weight of banks it has been found necessary to run banquettes to distribute the weight.

Without the assistance of steam-shovels little progress could have been made in completing the cuttings and deep fillings, and in the removal of the extensive slips which occurred during the year, as when the material becomes saturated and slips it assumes a consistency which renders it very difficult to deal with by hand labour.