

*Waiohira Section (14 m. 73 ch. to 19 m. 79 ch.).*—The cutting from 14 m. 73 ch. to 15 m. was taken out with ploughs and scoops. The cuttings and banks from 15 m. to 15 m. 47 ch. have been completed by a steam-navvy, which was also engaged for four months in obtaining material for Tauraroa Station yard. During the remaining eight months the steam-navvy excavated 23,300 cubic yards (solid measurement), an average of 140 cubic yards per day, at a cost less than that of pick-and-shovel work. Most of the material had to be carried a considerable distance, a small locomotive being employed for this purpose. Several small cuttings and banks between 15 m. 50 ch. and 16 m. 20 ch. are being formed to enable the steam navy to proceed to the larger cuttings beyond. The cutting at 17 m. 65 ch. was nearly completed with ploughs and scoops, but no earthworks are now in hand beyond 16 m. 55 ch., the number of men available being insufficient to cover the remaining length.

Good progress has been made on this line, considering the continual wet weather that has been experienced. The rainfall at Whangarei for the period was 86·7 in. Heavy slips in nearly every cutting have been very troublesome and caused a great deal of delay in the work, especially in connection with the platelaying and ballasting.

#### NORTH AUCKLAND MAIN TRUNK RAILWAY.

*Kirikopuni Section (114 m. 40 ch. to 115 m.).*—No work has been done on this section since November, 1915.

*Bickerstaffe Section (83 m. 75 ch. to 88 m. 40 ch.).*—Platelaying and ballasting have been completed, and stockyards have been erected at Maungaturoto Station. Slips from the batters of cuttings have practically ceased, but certain banks are still slipping and subsiding, requiring some attention during the year. The section generally has been maintained, and a goods and passenger service has been run between Huarau Station and Ranganui, the terminus of the opened line.

*Paparoa Section (88 m. 40 ch. to 92 m. 16 ch.).*—Platelaying in Huarau Station yard (90 m. 15 ch.) has been completed, and ballasting has been carried out to the rail-head at 91 m. 25 ch., with the exception of part of the third lift, the line being in good running-order. Quarrying and crushing of metal at Hoteo ballast-pit was discontinued at the end of September. A railway-bridge is being erected over Paparoa Road (90 m. 35 ch.). Slips in cuttings have been numerous, owing to the exceptional rainfall, but the banks, with one exception, have caused no trouble. Some fencing has been done, but posts are difficult to obtain, owing to the absence of settlers' sons at the front. Beyond the rail-head the service tramway has been working constantly conveying goods and materials to the Huarau and Golden Stairs Tunnels. At the south end of the Huarau Tunnel the reinforced-concrete approach has been completed from 91 m. 36·96 ch. to 39·52 ch., and a short length of tunnel is also completed. Headings are driven ahead, and enlargement is in progress. The ground is very rotten and wet, requiring careful mining and close timbering, while the continual wet weather has made working-conditions most difficult and unpleasant. At the north end of the tunnel sinking from the surface for the portal and wing walls have been done, and concrete placed in position. The approach cutting was taken out and timbered where necessary to hold back slips. The invert between the wing walls was then completed and breaking-down started. Two lengths of lining were completed, and excavation is proceeding ahead. The ground is similar to that at the south end, and requires careful handling.

*Mareretu Section (92 m. 16 ch. to 96 m. 38 ch.).*—The principal work in hand here is the construction of the Golden Stairs Tunnel. At the south end the approach cutting was taken out, sinking for the parapet completed, and concrete placed, wing walls and invert concreted, and breaking-down started. Concrete lining was completed from the face (93 m. 48 ch.) for a distance of 1 chain, and further excavation is in hand. Similar operations have been carried out at the north end. The ground at both ends is heavy and wet, as at the Huarau Tunnel. Apart from this tunnel, very little work has been done on this section.

Generally, the works on this line have been greatly hampered by unfavourable weather and difficulty in obtaining sufficient labour.

#### WAIUKU BRANCH RAILWAY.

Earthwork is in progress at various points up to 10 m., the work done during the year being equal to about one mile of completed line. Rails have been laid from 0 m. 19·50 ch. to 4 m. 33 ch., including sidings at Helvetia and Patumahoe Stations. The sidings at the junction (Paerata) are only partly laid. Ballasting is practically completed up to and including Patumahoe Station yard (4 m. 7 ch.), and a little beyond. Bridges have been erected at 0 m. 18 ch. and 5 m. 30 ch. Generally, satisfactory progress has been made, considering the very small number of men available.

#### HUNTLY-AWAROA RAILWAY.

This line was handed over to the Railway Department in December, 1915, but some additional work has been carried out by this Department. The Waitawhara Road, which connects Pukemiro Station with the Huntly-Raglan Road, has been formed and metalled throughout, a distance of 63½ chains, and two small bridges have been erected. Fencing, gates, and cattle-stops are being constructed at Pukemiro, and a water-service has been provided, comprising a concrete dam in the Waitawhara Stream and an hydraulic ram, with the necessary pipe-lines.

#### EAST COAST MAIN TRUNK RAILWAY.

##### *Waihi-Tauranga.*

*Athenree Section (0 m. to 12 m. 35 ch.).*—Work was continued between 2 m. and 8 m. with a small force of workmen until March, 1917, when the Engineer in local charge joined the Expeditionary Forces, and as a sufficient number of men are not available to continue economically the work was closed down.