

broken into fairly good blocks for protective purposes. A 3-ton electric crane was installed at the quarry for loading the stone on to motor-lorries. 5 ch. of sea-wall have now been completed with this stone.

The bridge over the Hutt Road at 2 m. 40 ch., giving access from the first tunnel to the reclamation, was put in hand at an early stage, and the whole of the concrete piers have now been completed. For some of these, cylinder piers founded below sea-level were required. Steel-plate girders are under order for this bridge. The bridge at 3 m. 29 ch. over the Ngahauranga Gorge Road was also put in hand. All piers are completed, and two 50 ft.-span plate girders have been placed in position.

There are two tunnels on the railway-deviation. No. 1 tunnel, commencing at 2 m. 41 ch. and ending at 3 m. 26 ch., is 66 ch. in length; No. 2 tunnel, commencing at 3 m. 40 ch. and ending at 6 m. 14 ch., is 2 m. 54 ch. in length. A contract was let to drive a bottom heading through No. 1 tunnel last October. When the contractor had driven 212 ft. at the south end the Department took over the work at this end in order that the enlargement and lining should be commenced immediately. A co-operative contract has been let for this work. From the north end the contractors have driven the heading back to 3 m. 8.64 ch., a distance of 17.36 ch. In No. 2 tunnel no work has yet actually been done at the south end, but 10,000 cub. yd. have been excavated from the approach cutting and filled into the reclamation behind the sea-wall. Preparations have been made to sink a shaft to No. 2 tunnel at 5 m. 41 ch., and a start will be made immediately on the sinking. At the north end of No. 2 tunnel the approach cutting is complete, and the driving of a 10 ft. by 8 ft. heading is in hand. Plant for the whole of the tunnel-work has been ordered, and most of it should be on the ground by the end of October.

Excavation for the abutments to a small bridge at 6 m. 18 ch. is in hand, and preparatory work has been done for the piers and abutments to another small bridge at 6 m. 38 ch.

Accommodation is being provided for all the shift-men at both ends of the tunnel. A contract has been let for thirty married men's huts at Khandallah, and thirty-seven single huts have been erected. At Tawa Flat, fifty single huts have been completed, and tenders are being called for fifteen married men's huts. A good many huts for married men will be available in three or four months' time from the Auckland-Westfield Railway Deviation, and these will be transferred to Tawa Flat.

All the necessary workshops, stores, dining-rooms, bathhouses, &c., have been erected.

#### MIDLAND RAILWAY.

*Murchison Section* (63 m. 10 ch. to 86 m.; length, 22 m. 70 ch.).—Work on this section has been vigorously prosecuted as far as 67 m. 5 ch., the end of the Gowan station-yard. The formation has been completed with the exception of cuttings at 64 m. 79 ch., 66 m. 0 ch., and 66 m. 12 ch. Every effort is being made to complete these cuttings, double shifts being worked on two of them, and it is anticipated that they will be finished in about four months. All culverts have been built from 64 m. 58 ch. to 67 m. 5 ch., and 15 ch. of road-deviation completed. The formation of the Gowan station-yard and access road has been completed, and contracts let for the erection of the station buildings. The concrete fronts to station platform and loading-ramp have been completed. The permanent-way material is on the ground, and the completion of platelaying and ballasting will be put in hand shortly. It is anticipated that all work will be completed and the section ready to hand over to the Railway Department by the end of the ensuing year.

#### WESTPORT-INANGAHUA RAILWAY.

*Cascade Section* (5 m. 70 ch. to 8 m. 78 ch.; length, 3 m. 8 ch.).—The principal work on this section has been the completion of ballasting and bridge-work, so that the Railway Department might take over and run a goods service from the Cascade Co.'s coal-bins as soon as the company were in a position to operate. Ballasting was completed, 1,195 cub. yd. being placed on the length, and the line boxed in and brought into first-class running-order. A retaining-wall was erected at 6 m. 13 ch., and the bridge at 8 m. 7 ch., consisting of two 40 ft., two 30 ft., and two 20 ft. span steel girders on concrete piers was completed. A siding was put into the coal company's bins early in the year, and a regular output has been maintained. An engine-shed and blacksmith's shop was erected at Te Kuhu a, while the accommodation was increased by a new cottage and several single huts.

*Hawk's Craig Section* (8 m. 78 ch. to 14 m. 0 ch.; length, 5 m. 2 ch.).—Bushfelling and clearing was completed from 10 m. 40 ch. to 13 m. 0 ch. Good progress is being made with the formation, and during the early portion of the period the work was carried on by parties of relief workers, but as soon as it was definitely decided to prosecute the work vigorously the relief parties were merged into regular co-operative gangs and the number of workmen gradually increased. The section is manned from the 9 m. to 11 m. 0 ch., and further development is in hand beyond that. At 9 m. 0 ch., test pits were sunk to ascertain the depth of foundations necessary for the Cascade Creek Bridge, this work being considerably hampered by floods. At 9 m. 50 ch. a light temporary bridge was erected for the transport of materials, and the foundations for the permanent bridges investigated. A temporary bridge is also in hand at 11 m. 45 ch., and a concrete culvert at 9 m. 59 ch.

The preliminary work necessary to the start of a large undertaking such as the active prosecution of this line has involved a great deal of work. Two main camps have been established alongside the main road at Ohika, opposite 10 m. 40 ch., on the railway, and the other at Tiroroa, opposite 12 m. 0 ch. At the former, five married men's cottages, forty-seven single huts, with cookhouse and bathhouse, have been completed; while at the latter there are nine married men's cottages, sixty-three single huts, cookhouse, and bathhouse. A school with provision for thirty children, a store, and office have also been erected as well as the necessary sanitary equipment for camps of this size.