

the ordering of air-compressing plant, and the erection of power transmission-line from Nuhaka up the Kopuawhara Valley to the points from which these tunnels would be attacked were energetically pushed forward. Everything was in readiness to start the tunnels when the decision was made to stop the work.

Very substantial progress had been made with general construction operations, apart from the tunnels, and particulars of the work done are as follows :—

Kopuawhara Section (12 m. 0 ch. to 33 m. 72 ch., Wairoa chainage; length, 10 m. 72 ch.).—Clearing has been completed to 31 m. 71 ch., and 308 chains of permanent fencing have been erected.

Earthwork was proceeding very vigorously over the whole of this section until the closing-down of the work on the 14th January, 1931, a total of 104,857 cubic yards having been excavated during the period.

The culverting of the section was pushed on vigorously; 468 ft. of concrete culverts varying from 6 ft. to 18 in. in width, and 789 ft. of water-drives from 9 ft. by 9 ft. to 4 ft. 6 in. by 3 ft. were completed.

No permanent bridging has been carried out on the section, but borings for foundations at 23 m. 22 ch., 30 m. 15 ch., and 33 m. 68 ch. were made, and a service trestle was completed at 23 m. 22 ch.

Two miles of service road were formed, and 2 m. 20 ch. of metalling, and one road-bridge were completed.

There were 9 m. 60 ch. of telephone-line built, and 5 miles of 11,000-volt transmission-line were erected.

Wharerata Section (34 m. 60 ch., Wairoa chainage, to 14 m. 0 ch., Gisborne chainage; length, 9 m. 75 ch.).—Co-operative contracts for the formation have been in hand over the whole section, a total of 129,382 cubic yards having been excavated up to the time of closing down and 947 ft. of culverts and 917 ft. of water-drives completed.

The formation of the Wharerata Station yard at 14 m. 35 ch. was in hand, and several miles of service road in the Tikiwhata Valley and to the Coast Road tunnel were formed and partially metalled and culverted.

A start was made with the construction of the tunnel at 18 m. 70 ch., 114 ft. of bottom heading and 44 ft. of top heading being completed, 16½ ft. of tunnel being enlarged and lined.

Gisborne Section (14 m. 0 ch. to Gisborne; length, 14 m. 7·35 ch.).—The earthwork, which is of a light character, has been in hand over the whole section, and during the year 39,302 cubic yards have been excavated, and marram-grass has been planted where the formation passes through sandy country.

There were 120 ft. of culverts built, 65 ch. of permanent fencing completed, and the widening of the Pakowhai Stream finished.

A start had been made with the erection of the Waipaoa Bridge at 5 m. 0 ch. The protection of one bank has been completed, three test piles cast and pile-driver, derrick, &c., assembled.

General: The policy of providing good accommodation for the workers was carried on, and to date a total of 221 married quarters, 560 single huts, and a Y.M.C.A. hall have been built.

Since the works closed down clearing-up work has been in progress, all rails have been tarred or oiled, and plant overhauled, a great deal of the latter being transferred to other works.

GISBORNE—NAPIER RAILWAY.—NAPIER—WAIROA SECTION.

Putorino Section (10 m. 56 ch. to 37 m. 35 ch.; length, 26 m. 59 ch.).—This section was handed over to the Railway Department on the 6th October, 1930, and from that date maintenance and control of traffic was carried out by that Department, the whole of the Public Works organization having been moved forward to the Wairoa Section.

The work carried out for the period before handing over was in the nature of cleaning up, small jobs in station-yards, fettling, fencing, repairs, and telephone-line renewals, and the evacuation of workers' accommodation to the section farther north.

Traffic was dealt with throughout the period, and the volume was quite satisfactory.

Since the earthquake on the 3rd February, 1931, a certain amount of work has been done on behalf of the Railway Department on a portion of this section, restoring damage to the track between Waikoau and Putorino.

Wairoa Section (37 m. 35 ch. to 70 m. 67 ch.; length, 33 m. 32 ch.).—The formation work on this section is practically completed, there being only the Kotemaori Tunnel and a few cuttings and banks to complete.

Four steam-shovels have been employed during the period, and these, together with scoop teams and hand labour, accounted for the excavation of 99,500 cubic yards, the principal works being cuttings at 44 m. 23 ch., 44 m. 63 ch., 51 m. 0 ch., 51 m. 10 ch., and 52 m. 13 ch. At 51 m. 10 ch. work is being carried on in three shifts.

The southern approach to the Kotemaori Tunnel has been completed, and the side drive running parallel to this cutting has been cleaned out and made sound by judicious trimming where required.

The bottom heading through the Kotemaori Tunnel at 42 m. 15 ch. was pierced in September last, and from that date three shifts have been working from both ends enlarging and lining the tunnel. Progress at the south end since September, 1930, is 11·73 chains, and the work is completed back to 42 m. 26·31 ch. At the north end three shifts have been working on the breakdown and have completed 14½ ch. of tunnel during the year. There is 7½ ch. left to complete this tunnel, and now that the dispute in connection with tunnels generally has been finalized the work should be completed in about six months' time.