

All fence-lines have been cleared, and all fencing, except 150 ch., erected. The country being rough has made the work very difficult in many places.

The 6 ft. by 4 ft. water-drives at 54 m. 51 ch. (length, 121 ft.) and 55 m. 16 ch. (length, 313 ft.) have been lined complete with face-walls. Twelve concrete culverts, of total length of 278 ft., were placed and completed.

The piers for the Mangatete Stream Bridge at 54 m. 40 ch. have all been finished, and the plate girders have been delivered at Tahora.

Seventy-pound rails have been laid from 51 m. 21 ch. to 52 m. 65 ch., and from 53 m. 47 ch. to 54 m. 30 ch.—a total of 2 m. 27 ch. The greater part of this work was done on night shift, so as not to interfere with transport.

The Mangaone Quarry was closed down in September, 1930, and all metal and sand for concrete have since been supplied from Te Wera Quarry.

The main air-line was extended from 54 m. 30 ch. to 55 m. 15 ch., thus eliminating the compressor at No. 4 tunnel. The compressor in the Mangaone Valley which had been used to boost the supply during the day was shut down on completion of No. 3 tunnel in March, 1931, and all air is now supplied by the compressor in the power-house at Tangarakau.

The power-house has run during the year without any trouble. With the completion of No. 3 tunnel the load was reduced and economies effected.

The Raekohua Road has been maintained during the year.

General.—The number of men employed on this work was 294 at the beginning of the year and 190 at the end, the average number being 261. The reduction is due to the completion of No. 3 tunnel. The programme of work suffered considerably as a result of the recent stoppage of work for a period of two months, following on the men's refusal to accept the reduced contract rates fixed in accordance with the new basic rate of pay. However, in spite of this delay, the railway should be completed by about the end of June, 1932, if all goes well.

Te Wera Quarry.—This quarry was worked continuously, except for one month when work had to cease, due to stoppage of work on the Heao Section. The total output of crushed rock was 19,904 cubic yards, the railway-works absorbing 60 per cent. of this quantity, the remainder going out on to roadworks. The average number of men employed in the quarry for the year was 20.

WELLINGTON - TAWA FLAT RAILWAY DEVIATION.

During the past year construction work on this deviation, which has a total length of 7 m. 14 ch., has been actively prosecuted. My report for the preceding year explained the method of construction of the sea-wall required to protect from wave-action the embankment which is now being built in the harbour waters as the approach to No. 1 tunnel. This sea-wall is made of 5-ton concrete blocks and of heavy stone from quarry at Horokiwi. During the year this wall was built for a distance of 22 ch. to a height of 5 ft. above high-water level; the embankment itself was made to a height of 3 ft. above high-water level for a distance of 16 ch. (2 m. 9 ch. to 1 m. 73 ch.), and brought up to formation level for half-width from 2 m. 25 ch. to 2 m. 5 ch. (NOTE.—The chainage used in this report has its zero at site of proposed Bunny Street Station.)

No. 1 tunnel of total length of 61.58 ch. is now complete. During the year the full enlargement of tunnel section and concreting of the lining represented a progress of 20½ ch.

No. 2 tunnel is 2 m. 53 ch. in length. The main heading was extended during the year 29 ch. from the south end and 26 ch. from the north end, leaving 14 ch. of heading to be completed. The pioneer heading which is being driven, as my last year's report indicated, to facilitate progress, advanced 28½ ch. from the south end and 25 ch. from the north end, the distance between headings at the end of the year being 21½ ch. The necessary connections were made between pioneer heading and main heading as progress required. Full enlargement and lining were completed for 22 ch. at the south end and 16 ch. at the north end, the total length of tunnel now completed being 68 ch. In addition, an equivalent of 8 ch. of enlargement has been completed at the south end, and has been timbered preparatory to concreting.

Progress has been made with cuttings and banks beyond No. 2 tunnel, and, except for a gap at 6 m. 72 ch., formation is now complete from 6 m. 14 ch. to 8 m. 26 ch. The road-diversion at 7 m. 30 ch. and creek-diversions at 6 m. 70 ch. and 8 m. 10 ch. were completed. Four hundred and eighty-eight lineal feet of concrete culverts were built.

Regarding bridges, the launching of steel-plate girders for bridges at 7 m. 25 ch., 7 m. 37 ch., 7 m. 51 ch., and 7 m. 63 ch. was completed, girders were bedded down and cleaned, painting is in hand, being completed at first two bridges named.

During the year the average number of men employed was 435.

MIDLAND RAILWAY.

Murchison Section (63 m. 8 ch. to 85 m.; length, 21 m. 72 ch.).—All work on the section between 63 m. 10 ch. and 67 m. 3 ch. at Gowan Station yard was completed during the previous year, but it has been maintained and departmental traffic run over it during the period.

Up till the closing-down of this railway in January of this year formation work was proceeding very vigorously, and, with the exception of several cuttings, was practically complete to 82 m.

The most important work on the section was the completion of the cutting at 67 m. 50 ch. This cutting, which governed the progress of platelaying and ballasting, was being excavated by means of a steam-shovel working two shifts, the spoil being deposited from a long trestle, and it was anticipated that it would have been completed inside six months.