

With only finishing work left, the number of men working on the job has been reduced to 90, although the average number employed during the year was 200. A large number of men and families were transferred to Mangakino Camp.

Mangakino Village and Road Access.—The Tokoroa-Maraetai Access Road (16 miles) has been top-course metalled and primed for an additional $7\frac{1}{2}$ miles, and a further $8\frac{1}{4}$ miles of sealing has been completed.

Four miles of base-course metalling has been done on the Whakamaru access road (right bank).

The Whakamaru access road (left bank) has been formed for 2 miles to Mangakino Stream, and base-course metalling has been completed over this length. At Mangakino Stream bridge a start has been made with piers B and C, and falsework for span BC is under erection.

At Mangakino, construction of the village is now well advanced. One mile of streets has been formed, 4 miles of streets have been metalled, and $\frac{1}{2}$ mile of light sealing has been completed during the year. Twenty-eight staff cottages and 156 married workmen's cottages have been built; the total number of married men's quarters completed is now 310. All cottages have been connected to water, power, and sewerage services.

Community buildings finished during the year are as follows: five two-roomed school class-rooms; one hall shifted from Karapiro and re-erected; fire-brigade station shifted from Karapiro and re-erected; post-office; bus terminal office; grocery shop; 36 ft. by 20 ft. prefabricated hospital hut; and a garage and service station. Buildings in course of construction are a shopping block, cottage hospital, and the departmental office.

A third camp, to accommodate 200 single men, complete with cookhouse, recreation-hut, bathhouse, ablutions, &c., has been finished; and a fourth single men's camp is in hand.

Works buildings have been transferred from Karapiro and re-erected at Mangakino as follows: electricians' shop, 60 ft. by 24 ft.; plumbers' shop, 60 ft. by 24 ft.; Adams' truss for steel-fabrication shop, 100 ft. by 60 ft.; works office, 40 ft. by 24 ft. (at Maraetai Dam site); works garage; investigation core shed; and job workshops.

The foundations and concrete floor for a large unloading-shed at Tokoroa rail-head are complete, and the steel frame is being erected.

Maraetai Development.—Very considerable progress has been made, although the strike that commenced in March last retarded the work.

Main effort has been concentrated on the 25-ft.-diameter diversion tunnel, where work is proceeding from both inlet and outlet ends. Tunnelling-conditions have been unusually difficult because of the inflow of water (which has all to be pumped out into the river) and the broken nature of the country, especially in some lengths of the tunnel. At present 7,000 gallons per minute are being pumped from the outlet end and 1,500 gallons per minute from the inlet end, though flow from the outlet end was much greater at one stage, when the provision of adequate pumping plant was a source of anxiety. Grouting the surrounding country extensively, using cement and bitumen, has proved effective in reducing the inflow of water. In spite of these difficulties, 685 ft. of tunnel have been excavated to full size and 450 ft. of concrete lining have been completed (except for invert), and an additional 100 ft. of arch lining have been concreted.

The excavation of the tunnel-gate shaft, 12 ft. 6 in. by 31 ft. 6 in. and 118 ft. deep, is complete and concreting is in hand.

A heading down the sloping leg of the spillway has been excavated to its junction with the diversion tunnel, and the junction is being excavated and concrete-lined.

Excavation for the dam abutment on the left bank of the river is now complete above river-level and excavation of the right abutment has been started.

Curtain walls of cement grout injected into the crevices of the country rock are to extend for some distance out from the wings of the dam. The effectiveness of such