

The erection of the 50 ft. 4 in. automatic spillway-gates, involving careful work in fitting the steel rubbing strip, the construction of the gates themselves, as well as the concreting of siphon-towers and the fitting and adjusting of all mechanical controls, screens, &c., was successfully carried out, the automatic action being entirely satisfactory.

The spillways have been concreted and plastered, and the filling on the extreme ends of core-walls on both banks has been completed and faced with spalls or rough concrete. The shaft-control house has been built, and the three 50 ft. steel truss footbridges between towers have been erected and painted.

The installation of the necessary motors for mechanical control, the permanent wiring and lighting of the shaft and towers, and the water-level indicator have all been satisfactorily completed. All construction plant, machinery, tramways, water-supply, and electric light and power fittings have been dismantled, overhauled and transported to Mangahao for transfer. All service buildings and accommodation, with the exception of a caretaker's cottage, two buildings for the use of visitors, and several that have been purchased by private individuals, have been either dismantled or sold for removal.

In spite of the fact that the dam was ready to hold water in December, it did not fill until early in April owing to the very dry summer experienced.

Generally speaking, in spite of the hazardous nature of the undertaking and the number of floods experienced during erection, only a comparatively small amount of time and material was lost.

WAITAKI RIVER.

Following extended and careful investigations, a decision was made to develop, as the next source of supply of power for the South Island, a hydro-electric station on the Waitaki River at a point situated four miles above Kurow. At the end of May last a commencement was made to set up the construction organization of staff and workmen for the building of this important station. The erection of workmen's housing and of accommodation for staff and offices was at once begun. Surveys were made for a service railway connecting the existing railway-line to Kurow with the works, and construction of this line will be at once put in hand, so that all material for construction purposes will be transported thereon without need for transshipping at Kurow. Construction plant is being assembled and the work planned with a view to concentrating on the difficult foundation work in the Waitaki River. By the end of June seventy workmen were employed on the preliminary works.

RIVER IMPROVEMENT AND PROTECTIVE WORKS.

WAIROA RIVER.

Tokatoka Stop-banks.—During the year the work of protecting the foreshore of the Wairoa River against tidal and wave erosion, with consequent destruction of the stop-banks, was continued. Approximately 32,000 cub. yd. of rock spalls were laid as a carpet along the foreshore between Ruawa. and Awaroa River, including a distance of 15 ch. up the latter stream from its junction with the Wairoa. Stop-banks were also strengthened where necessary, and two 3 ft. culverts were placed.

WAIHOU AND OHINEMURI RIVERS.

The works involved in this scheme for rivers improvement and the protection of adjoining lands from flooding has again made substantial progress this year, and are now approaching the stage when completion is in sight. The main work has been done this year on the Lower Waihou River, and a summary of the work carried out is as follows: Stop-bank construction by suction dredges, 6 m. 62 ch.; soiling stop-banks by use of Ruston drag-line excavators, 6 m. 23 ch.; clearing and trimming berms by use of Ruston drag-lines, 4 m. 9 ch.; clearing willow growths by log-haulers and stump-extractors, 7 m. The stop-bank and clearing-work on the Komata, Hikutaia, and Omahu streams that flow into the Lower Waihou River has been completed.

During the year five culverts of 3 ft. and 4 ft. diameter, with flood-gates, have been constructed. For drain improvement and maintenance work a light type of drag-line has been purchased and is now completing the improvement of drain H.

The Ohinemuri River Bridge, Paeroa, with concrete piles and piers, steel-plate girders, and concrete deck, of total length of 300 ft., is complete. The old bridge, which had about reached the end of its life, and of which the superstructure came below maximum flood-level, has been removed. This work constitutes a noteworthy improvement to the Borough of Paeroa.

The important dredging and associated plant in use on this work has been maintained in good condition.

TAIERI RIVER.

This work, designed to protect the Taieri Plains from flooding by the Taieri and Waipori Rivers, has again made substantial progress during the year. A number of incomplete sections of the main bank have been made good by drag-line or suction-dredge operations, and the only portion of the main bank not constructed is a section of some 20 ch. fronting Waipori Lake and adjoining the new pumping-station. This section of bank is in hand, but the gap cannot be finally closed till the new pumping-station is complete and in operation.