

the housing of workmen and staff were kept up-to-date, sanitation, drainage, electric lighting, roading, &c., all being provided. The cookhouse erected and equipped by the Department has been run throughout the year by a contract caterer, who has maintained a fine service and organization, resulting in an entire absence of complaints from the workmen. The activities of the Y.M.C.A., which is subsidized by the Department, have made a wonderful difference to the life of this isolated camp, and given both the men and their families a marked social interest, which has tended to retain a better class of workman.

LAKE COLERIDGE.

The year covered by my last report marked the completion of construction work in connection with the enlargement of the Lake Coleridge Station, with the exception of pressure grouting, which had been commenced in No. 2 tunnel. This work had to be discontinued at the beginning of the year now under review, as the tunnel had to be put into commission. On the 6th October, 1926, No. 2 tunnel was again drained, and three shifts were employed on grouting-work for a period of three months, during which time a distance of 63 ch. of tunnel was grouted, two cement-guns being in use. Cement mortar was forced under pressure into any open ground that existed behind the concrete lining of the tunnel, and during the course of the work a quantity of approximately 1,000 cub. yd. of grout was used.

RIVER IMPROVEMENT AND PROTECTIVE WORKS.

WAIROA RIVER.

Tokatoka Stop-banks.—During the year the reconstruction or enlargement of the original inadequate stop-banks built for protection of the Rauwai Flats, on the Wairoa River, against tidal action has progressed steadily. Work is being done with a Bucyrus drag-line excavator, which excavated during the year 70,000 cub. yd., completing $4\frac{1}{2}$ m. of stop-bank.

The foreshore is subject to erosion from waves and current-action, and protection by laying a covering of rock spalls is necessary. During the year a contract was let for the supply and delivery of 10,000 cub. yd. of spalls as the first instalment of this work, and at the end of the year the contract was three-fourths complete.

WAIHOU AND OHINEMURI RIVERS.

This major work of rivers improvement and protection of adjoining lands from flooding has again made substantial progress this year.

Ohinemuri River.—The clearing of both banks and the bed of the river from the heavy growth of willows, stumps, and snags that obstructed it is completed. The reconstruction of the Ohinemuri River Traffic-bridge at Paeroa in reinforced concrete and steel is in hand. The bulk of the difficult foundation work is finished, good progress being made.

Lower Waihou River.—The main activity has been centred on the Lower Waihou River. The construction of the main stop-bank has proceeded steadily; two suction dredges, one electrically and one steam operated, being employed, together with one Ruston drag-line excavator, which follows behind the suction dredges, cleaning up the river-bank and soiling the stop-bank. For the year a total of $3\frac{1}{2}$ m. of stop-bank of heavy cross-section has been built, requiring 450,000 cub. yd. of earthwork. Major improvement work has been done on the Hikutaia, Omaku, and Onetai Streams, tributaries of the Waihou River, the work consisting of willow-clearing, enlarging and straightening the channels, and building stop-banks, a second Ruston drag-line excavator being in use for this work. Willow clearing operations are now in hand on the Lower Waihou River, two steam-driven log-hauling plants being in use. Two large reinforced-concrete culverts with flood-gates have been built on this section.

TAIERI RIVER.

This work, designed to protect the Taieri Plains from flooding by the Taieri and Waipori Rivers, has made substantial progress during the last year. The essential feature is stop-bank construction, and two drag-line excavators and a suction dredge have been regularly in commission, the latter for portion of the year only. The total length of stop-bank made in the year covered by this report is 8 m., entailing the placing of 262,000 cub. yd. of earthwork, the total figures since the works commenced being 17 m. of embankment and 605,000 cub. yd. of earthwork. A commencement has been made cutting an extension of the contour channel from its present outlet to the new outlet on the reconstructed stop-bank system.

The earthwork on the Taieri Plains has now reached the stage where a substantial measure of additional protection is available from the stop-banks system on the right bank of the Taieri River between Outram and Lake Waipori.

A contract has been let for the supply from England of three low-head pumping units to be installed in a pumping-station to be erected alongside Lake Waipori for dewatering the plain. The nominal capacity of this pumping-station will be 90,000 gal. per minute, or 240 cub. ft. per second.

MARINE.

LIGHTHOUSES.

Piako River Leading-lights.—The original oil-burning leading-lights have been replaced by a small automatic flashing acetylene-burner mounted on a reinforced-concrete pile dolphin.

Kahurangi Point.—This light has now been converted from an oil-burning watched light to an automatic flashing light on the Dalen principle. The installation was completed during the year, but an additional burner is being provided, and will be installed on arrival.