

similar structure at Piripiri, concrete foundations for which are in progress; and a contract for construction and erection of ironwork has been placed with Messrs. J. and A. Anderson. A number of concrete abutments to bridges have been built. At the Waitangi, near Napier, the piers are complete for two new bridges; five of the spans have been erected, and material is coming to hand for the remainder. This work has been seriously retarded through delays in supply of the required timber.

Wellington District: A large quantity of bridge-repairs has been done, also renewals in ironbark and other strengthening, completing a number of bridges up to a higher standard.

Christchurch District: The Rakaia, Ashburton, and Rangitata Bridges have had additional piers driven where required. The reconstruction of the Ashburton Bridge has been continued. This work has been much delayed for want of timber. The strengthening of the two Rangitata bridges is in progress.

Dunedin District: The strengthening of the Clutha Bridge has been commenced, and will be completed during current year. New foundations for the Waiareka Creek Viaduct, near Totara, have been laid. The Little Kuri Bridge, near Hampden, has been completely rebuilt. Piers of the Upper Waitaki Bridge have been strengthened.

Invercargill District: The Pukerau Bridge has been rebuilt to new standard, also several others on the main line. Five bridges on the Tapanui Branch, six on the Waimea Plains Branch, two on the Kingston line, and one on Orepuki Branch have been rebuilt. Twenty-one timber culverts have been renewed in concrete.

Greymouth Section: The Brunner Suspension-bridge had the cables thoroughly cleaned and tarred. Considerable renewals were effected in the horse-track and footway. The north approaches of the Arahura Bridge were heavily protected with rock, decking of bridge repaired, and new cart approach constructed. The iron plates and rivets in the Teremakau Bridge, which showed a tendency to abnormal corrosion, have been cleaned and painted. This work was commenced last financial year, and was completed in this.

Westport Section: Deadman's Creek Bridge has had extensive renewals and strengthening. Orowaiti, Wareatea, and Rapid Creek Bridges have been renewed in ironbark up to new standard. Similar work has been in progress on the Waimangaroa Bridge.

Nelson Section: The Wairoa Bridge has been substantially strengthened.

Picton Section: The Picton Viaduct has had extensive renewals of the piers in ironbark. The Wairau Bridge has had two of the 60 ft. spans rebuilt, and the piers newly braced with iron. The Opawa Bridge has had four of the 30 ft. spans renewed in ironbark, together with the decking.

Besides the above specially enumerated works, a large number of other bridges have received lesser repairs and renewals.

*Supplies of Ironbark.*—Early last year the supply of bridge timber became very unsatisfactory both in quality and rate of supply. It was therefore arranged to send the Inspecting Engineer to the timber-producing districts of New South Wales and Queensland. While there he was able to make fresh arrangements, which give promise of placing the supply on a satisfactory basis; and the timber since received has been of superior quality. Arrangements have been made for the inspection of the timber in Australia through the courtesy of the Public Works Department of New South Wales.

*Fences.*—The fencing on the railways now amounts to 3,056 miles, showing an addition during the year of fifty-one miles.

A large number of cattle-stops and gates have been renewed.

*Water-services, Signals, &c.*—Very extensive repairs, improvements, and extensions of water-services have been undertaken during the year, and the supplies have been largely increased. Still further extensions of water-services are required to meet increasing demands for the watering of locomotives. A special report on the subject of signals and interlocking, by the Signal and Electrical Engineer, is appended.

*Wharves.*—At Port Chalmers the Export Wharf renewals were continued, a further length being renewed in ironbark. A portion, also, of the approach to the George Street Wharf has been repaired. Considerable repairs of structure and decking have been done at the Greymouth Wharf. Some repairs have been effected to the merchandise wharf and coal-staiths at Westport. The most important work under this head has been the reconstruction of the Nelson Wharf, about one-third of which has been rebuilt in ironbark. This work has been much retarded by delay in supply of timber.

*Buildings.*—A very large amount of work has been done on railway buildings. Increasing age of the wooden buildings tends to increase the expenditure under this heading.

*Miscellaneous Improvements.*—The principal works under this head were the deviation of the line at Patea, superseding the old viaduct; removing engine-shed from Patea to Hawera; shifting and alterations of station at Cross Creek; and alterations to station-buildings, Wellington and Dunedin. New sidings have been put in at ten stations; eight houses removed from old to new sites; twenty houses have had additions built to them; and thirty-one houses have been supplied with coppers or wash-houses. At various stations there have been erected three new shelter-sheds; twenty-one stations have had extra rooms, offices, and other enlargements; four stations have been supplied with new lighting appliances; three platforms extended; five sheep- and cattle-yards extended, &c.; two new coal sheds and yards; and four new signals have been erected, besides a number of minor works.

*Additions to Open Lines.*—The following are some of the principal works in hand during the year:—

Auckland—Wheel drop-pit. Ellerslie—Enlargement of office. Frankton—Oil-engine and pump. Mount Rex—Shelter-shed. Morrinsville—New signals. Palmerston North—Extensive alterations and additions to yard and sidings, including new cattle-yard; addition to engine-shed and pits; new