

*Wairoa River Bridge (Te Reinga Falls).*—The timber for this bridge has been ordered, and the ironwork manufactured in Wellington.

*Wairoa River Bridge (Te Teko).*—The erection of this ferro-concrete bridge is in hand. The piers are practically complete, and one span has been erected; also false-work for two more spans.

*Hapuku River Bridge.*—A tender was accepted in July, 1913, for the erection of this bridge, which will eventually carry the South Island Main Trunk Railway as well as road traffic. It comprises six 100 ft. Howe trusses on cylinder piers and concrete abutments. The work is making fair progress. A considerable amount of work in the construction of approaches has also been arranged for.

*Big Wanganui Flood-damage.*—Very extensive protective works have been constructed at the Big Wanganui River.

*Taramakau River Bridge.*—A contract was let in June, 1913, for the erection of three 80 ft. and one 41 ft. spans. Later it was decided to add another 41 ft. span in lieu of protective works. The work was delayed for some time through non-arrival of timber, but has since made good progress.

*Lower Shotover Bridge.*—This bridge is not yet completed, the work having been delayed by various circumstances.

*Clutha River Bridge (Luggate).*—Two sets of reinforced-concrete cylinders have been made, and one pair of cylinders sunk to the required depth. Two concrete abutments have been completed, and temporary staging erected across the river. The 200 ft. and 100 ft. truss spans are being manufactured in Dunedin, and nearing completion. The work is being carried out by contract, under the Vincent County Council, the Department assisting in various ways.

*Balclutha Traffic Bridge.*—This bridge is being extended so as to give more water-opening, and one span is being raised to allow more clearance for the river-steamers. Two sets of concrete cylinders have been sunk, and one pile pier erected.

*Waiau River Bridge (Tuatapere).*—Slow progress is being made with this bridge.

*Balclutha Protective Works.*—The Department is proceeding with the raising of the stop-bank which protects the town of Balclutha, and inserting a puddle core therein. This is a work of some magnitude, and is progressing satisfactorily.

*Mataura River Protective Works (Waipounamu).*—Stone walls and gabion groynes are being constructed in order to divert the Mataura River from a new channel formed during a recent flood into the former course.

*Protective Works, Otago.*—Surveys have been made and plans and reports prepared in connection with flood-damages at Gore, Mataura, Barnago Settlement, &c.

#### IRRIGATION.

##### *Otekaike Settlement.*

The contract for the cutting of 6 miles of race on the eastern side of the river is almost finished. All the siphons except one have been put in. Some improvements have been made at the headworks.

##### *Ida Valley Scheme.*

All plant, &c., was fixed in position at the Manorburn dam site and the excavation taken out. Owing to bad weather and unforeseen delays the concreting was not commenced until after New Year. Since then 3,787 cubic yards of concrete has been placed in position. In May work was discontinued, frosty weather having set in.

Over 2,000 cubic yards of sand was carted from a pit 5 miles distant. A good deal of stripping was required here, the sand-deposits being patchy.

To obtain stone for crushing a drive was put in at the quarry adjoining the dam-site, with chambers, and a large blast shattered the rock sufficiently to enable it to be quarried easily and cheaply. Given a favourable season, this dam should be completed before next winter.

The excavation for the diverting-weir in Moa Creek was finished, but no concreting was done, everything being concentrated at the Manorburn dam while the fine weather lasted.

The work on Black's No. 3 main race was actively pushed on during last winter and early spring, over 10 miles of race being constructed. At the same time the German Hill race, for the right side of the valley, was started from Moa Creek flume, and the first mile (in broken rock) practically completed, also some plough-and-scoop work beyond.

The excavation on the Bonanza race was continued last winter and during June of this year, and the race has been closely examined, and a scheme of enlargement worked out in detail. The work on this race has been hampered considerably by the winter weather.

The programme for this year will comprise the completion of the Manorburn dam, the Moa Creek and Poolburn weirs, the various main races, and possibly some of the distributaries.

During the irrigation period water was sold to several farmers in the valley.

##### *Manuherikia—Alexandra—Clyde Scheme.*

*Construction.*—Contracts for two sections of race in the Manuherikia Gorge have been prepared and tenders invited.

*Survey.*—After two long trial lines had been run a final one was decided upon some 32 ft. higher than the first scheme. The intake of the new race is about three-quarters of a mile above the site originally selected. This new race commands a much larger area than the first one—viz., over 7,000 acres, besides about 1,500 acres on Galloway Flat.

The main race is about 21½ miles in length to a point at the head of Brennan's Gully, where it will divide into two or three long distributaries to irrigate (1) Dunstan Flat, from Manuherikia to Alexandra; (2) the Waikerikeri Flats, and flats near Clyde; and (3) the top of the moraine above Dunstan Flats.

A great many contours were run in connection with the distribution of water to the various properties. The irregular nature of the ground, with long, flat spurs and gullies, isolated knolls and ridges, entails a good deal of work in locating distributaries. For the first 10 miles the irrigable areas