

Construction of culverts and water drives was well advanced in 1931, but the work has been continued and the greater part of it has been completed. Three water drives, aggregating 300 ft. in length, six pipe culverts of a total length of 240 ft., and a 4 ft. arch culvert 72 ft. long make up the completed work.

Tunnelling is the controlling feature of the south end, as there are $2\frac{1}{2}$ m. to pierce in fifteen tunnels. A certain amount of plant is on the job for the purpose, and a start has been made with the first tunnel, at 61 m. 26 ch., where 100 ft. of bottom heading has been driven, while at the Amuri Bluff tunnel, 62 m. 27 ch. to 62 m. 66 ch., which is the longest tunnel on the length, everything is in readiness for a start from the northern end. The driving of this tunnel controls the time for completion of this end of the railway, and everything has been done to expedite its commencement. Unfortunately, unlike all other tunnels on this section, it is a long way from a formed road, and before anything could be done access roads had to be formed to both ends. At the northern end this amounted to $2\frac{1}{2}$ m. and at the southern end $1\frac{1}{2}$ m. While the Amuri Bluff tunnel is being driven it is expected that all the other tunnels, together with bridge and culvert work on the whole length, can be completed.

Similar equipment is being provided for the tunnel work on this length, as previously described for the north end.

Sea protection forms quite a large part of the work along the coast from Oaro, 65 m., north to the Kahautara River, 73 m. 40 ch. There are numerous road deviations necessitated by the location of the railway, and in many of these places banks encroach on the sea a considerable distance. It is estimated that nearly 100,000 cubic yards of heavy stone up to about 6 tons and more in weight will be required for building the outside of or facing fillings. A start has been made quarrying stone at 67 m. 70 ch., and a steam crane, with two heavy-duty lorries, is engaged in getting out stone. At a later date, when the line is laid, it may be necessary to provide larger stone than 5 to 6 tons to protect the toes of the fillings in the more exposed positions, but in the meantime the stone now being quarried enables the banks to be pushed out with little chance of serious damage.

The extension of the rail-head from Parnassus has awaited the completion of the Leader River Bridge and the arrival of new permanent way. By the time rails are received we will be in a position to commence platelaying and progress for nearly 12 m. during the present year, bringing the rail-head to the Hundalee Station, 55 m. 60 ch., which is at the point where the main highway crosses the Conway River.

North of the Oaro, work has been concentrated on opening up approach cuttings to tunnel portals and six of these are in hand at present.

Westport-Inangahua Railway.—The maximum number of men employed on this work during the period was 400. Construction work is now in full swing. It was necessary firstly to concentrate on the provision of accommodation for the workmen, and, coincident with this, machinery and materials for the construction work were assembled.

The nature of the material in the tortuous Buller Gorge being largely solid rock, a number of latest-pattern air-compressors with their complementary rock-drills and air tools were imported and were placed in work as received.

Two excavators, usable either as power shovels or drag-lines, have been installed, and are doing excellent work in localities where large quantities of spoil are to be shifted. These give saving in cost of the work while speeding up completion of the early required lengths.

The machines are a smaller type than some used in other parts of the country, this being necessary because they have to be slung across the Buller River on wire-rope cableways.

A large quantity of material for construction purposes has to be transported by these same cableways, some of which are equipped with powerful transporter winches.

A feature of the job is the number of large bridges along the route, the largest of these being the Buller River Bridge close to Inangahua Junction.

This work involves sinking of concrete cylinders deep into the river-bed, and, to assist this, besides providing a means for the launching of the