

Punning. Behind and around culverts and abutments of bridges, the embankments shall be wheeled in and carefully rammed.

Pitching. Where shown on drawings or longitudinal section, the slopes of embankments shall be pitched with selected limestone one foot thick.

DITCHES AND DRAINS.

Ditches and drains. 7. When the line crosses swamps of a peaty nature, catchwater drains are to be cut on the upper side of the line obliquely across the valleys, so as to tap the surface water. These ditches shall not exceed, on an average, one and one-third cubic yard per lineal yard, and are to be made at the commencement of the work, and cleaned out from time to time as may be ordered.

ROAD ALTERATIONS.

Road alterations. 8. At the places shown on the plan and section, and wherever necessary, the present roads are to be diverted.

All such diversions and road approaches to the level crossings are to be completed in a convenient, substantial, and proper manner, with the necessary drains, water tables, and side slopes. Such approaches and road diversions are to be formed with an inclination not steeper than 1 in 30 for public roads, and 1 in 20 for private roads, except where the present inclination exceeds these rates, in which case the inclination of the new road shall not exceed that of the present road, unless, in the opinion of the Engineer, a steeper is unavoidable.

Metalling. Public roads and approaches to first-class crossings are to be metalled with coarse river gravel or approved hard stone, laid on and spread as directed, so as to average 22 cubic yards per lineal chain of road. Private roads are to be metalled with coarse river gravel or broken stone of approved quality, laid on and spread as directed, so as to average 9 cubic yards per lineal chain. The whole of the metal is to be broken to pass through a two and a half inch ring.

Level crossings. Four first-class, three second-class, and three third-class crossings, with two cattle-stops to each crossing, as per Drawing No. 12, shall be constructed at public and private roads where directed. They shall be carefully placed as to line and level, and finished in strict conformity with the drawing and the notes thereon. Each level crossing shall be metalled for a length of 66 feet on each side of the centre line, as above specified for the roads, and tile or timber box drains shall be put in the formation ditches where necessary for the drainage of the line or road.

Gates. Ten pairs of malleable iron tubular or other approved gates, 12 feet wide, hung to strong posts, and furnished with bolts and padlocks, shall be provided and hung at private crossings where directed.

Cattle stops. Cattle stops, as shown in Drawing No. 12, are to be put in where directed, not exceeding twenty-five in number, besides those at level crossings.

MATERIALS.

9. Except where otherwise specified all the materials used under this Contract shall be of the following kinds and descriptions:—

Timber. All timber shall be of kauri, totara, jarrah, or other timber specially approved; it shall be heart-wood, except as shown on Drawing No. 14, and shall be straight and sound, free from shakes, large knots, and other imperfections.

Malleable iron. The whole of the straps and bolts shall be made of B.B. crown iron, or other iron of equal quality, of the dimensions shown; the whole to be finished and fixed in a workmanlike manner.

Bolts and nuts. Bolts shown or specified shall have a square head, of which the thickness shall be equal to the diameter of the bolt, and the width twice the diameter of the bolt. They are to be tapped with a good clean thread, and shall have a nut equal in size to the head of the bolt, and shall be provided with one or more washers 3 inches in diameter.

The piles of bridge over Iron Pot shall be of jarrah.

BRIDGES AND TIMBER OPENINGS.

Bridges, &c. 10. Bridges, as per detail drawings, shall be erected where shown on longitudinal section.