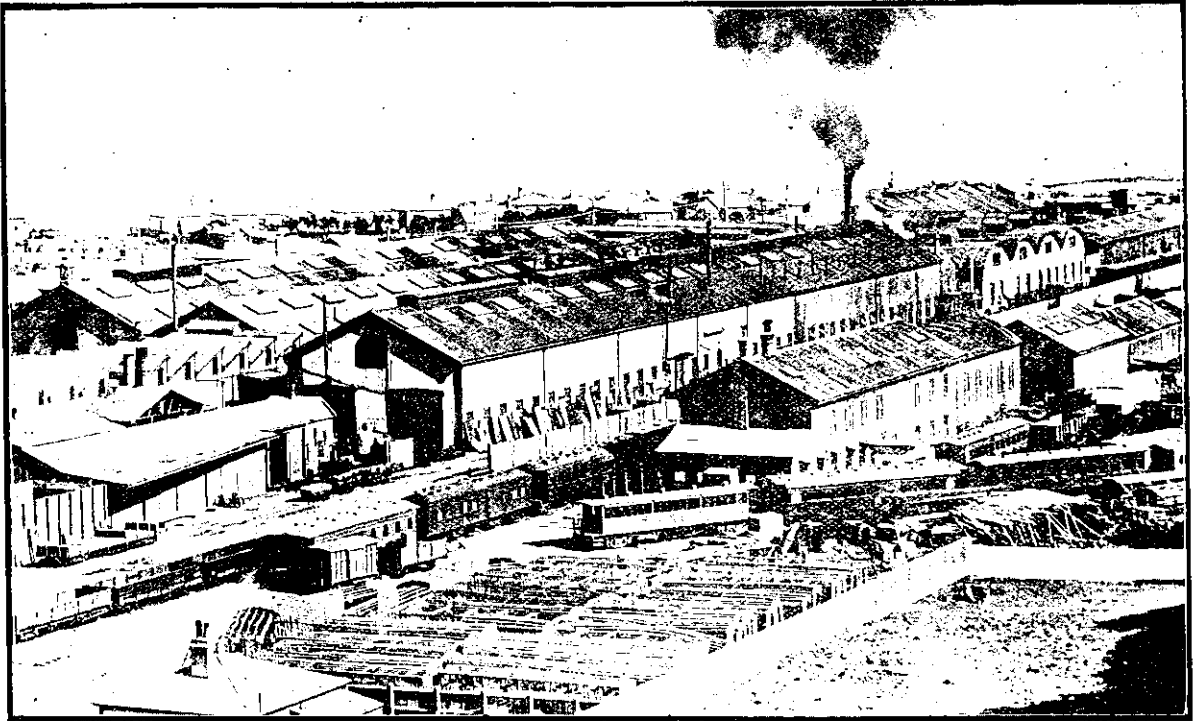


Railway Grade Problem

The Routes out of Wellington. Engineers report on alternative projects

Wellington provides the railway engineer with a fairly stiff problem. Its splendid deep water harbour is surrounded on all sides by steep hills, and even the promising outlet via the Hutt Valley eventually ends in a sharp rise over the Rimutaka, with

several alternative routes have been suggested to overcome the rise to Johnsonville, but a report furnished by the Chief Engineer of the Public Works Department (Mr. R. W. Holmes) shows that, after all, the existing line affords the best grade.



PETONE RAILWAY WORKSHOPS.

A general view of this important railway workshops, where the specialty is car and waggon construction.

its gradient on the far side of one in fifteen. The rapid growth of traffic following the opening of the North Island Main Trunk route to Auckland, and the diversion of the Hawke's Bay traffic through the Manawatu has piled a heavy load upon the section between Wellington and Palmerston North, and the day is not far distant when some relief by way of duplications, or the building of an alternative line for part of the distance, will have to be faced.

Between Wellington and Paekakariki the load of trains is governed by a grade of 1 in 35 out of Wellington—a serious limitation—but beyond Paekakariki, the gradients are easy, the ruling grade being one in 100. South bound trains from Paekakariki have to climb a grade of 1 in 53 to reach Johnsonville, after which the grade is favourable. Sev-

Mr. Holmes' report to the Minister of Public Works is accompanied by a plan on which is outlined the existing railway, and the suggested alternatives. This we reproduce on the opposite page. Mr. Holmes states:—

Prior to the construction of the present railway the whole of the country between Wellington and Waikanae was explored, and several trial lines were surveyed. On the small scale tracing attached hereto are indicated the existing railway between Wellington and the Upper Hutt, also that between Wellington and Waikanae, and lines of surveys made and marked respectively Nos. 1, 2, 3, and 4, part of No. 4 being ultimately adopted for the present railway.