

Three sites have been suggested for a bridge crossing the Waitemata Harbour. These are indicated upon the plan forwarded herewith and marked M.D. 5354/I [not printed], and are thereon marked "A," "B," and "C" respectively. Site A, known as the Point Chevalier-Kauri Point site, is the only one on which detailed soundings have been made. These were made some years ago under the supervision of Mr. W. H. Hamer, and the longitudinal section shown on the accompanying plan (marked M.D. 5354/I) [not printed] has been plotted from the information then obtained. The length of a bridge upon this site would be some 10,600 ft., or about 2 miles. Site B, between Point Erin and Northcote Point, is about 5,000 ft. in length; whilst site C, between the north-west corner of the Freeman's Bay reclamation and Northcote Point, is approximately 1 mile in length.

The sections B and C are only approximate, having been plotted from the soundings given on the Admiralty Chart as being nearest to the sites, but are accurate enough for the preliminary rough sketch-plans, which have been prepared with a view to ascertaining a tentative design upon which approximate estimates of cost could be founded. Taking into consideration the relative cost of the deep-water piers required to that of the superstructure, the sketch design shown, having two cantilever spans of 900 ft. over the deep-water channel, with spans of 250 ft. for the remaining portions of the bridges, has been adopted as being sufficiently near the most economical spans for the purpose of this inquiry.

As the bridge proposed would cross the fairway of the Auckland Harbour, the views of the harbour authorities carry great weight and must be carefully considered. We therefore record a summary of the views of the Harbourmaster, Captain H. H. Sergeant, as given in evidence: (a.) A considerable amount of large steamer traffic now goes up and down the harbour to the Sugar Company's wharf at Chelsea (forty-nine steamers in 1920). (b.) There is a possibility that the portion of the harbour-front between Chelsea and Kauri Point may be required in the future as a naval coal-depot, in which case large-steamer traffic up the harbour would be much increased. (c.) In view of deep water obtaining close inshore from Chelsea to and above Kauri Point, and the fact that the Harbour Board own a large area of land abutting on the waterfront there, nothing should be permitted that would prevent the practical use of such deep-water frontage. (d.) Any bridge to be erected so as not to interfere with the traffic should have at least 80 ft. to 100 ft. clearance above high-water level, or else should be provided with a movable span of ample width, to permit of the passage of large vessels. (e.) If a bridge has to be constructed, site A is the most suitable as interfering to the least extent with the traffic of the port.

Site A, considered as the site of a bridge to afford rapid access between Auckland City and the suburbs of Birkenhead, Northcote, Takapuna, and Devonport, would be practically of little value, but it would give a more direct and shorter railway and road route to the country north of Auckland. The saving in length, assuming the construction of a new railway-line to join the existing line at or near Kaukapakapa, is stated to be some 18 miles as compared with the existing railway via Helensville to the north; but, in the absence of any surveys or definite information having been put before us, we are unable to say if the saving would be as is stated, or whether such a line is practicable from the point of view of gradients and other engineering considerations. As the traffic that will be brought into Auckland when the North Main Trunk line is completed and connected with Whangarei will be considerably increased in volume, we suggest that the routes from Kauri Point and from Northcote to Kaukapakapa, or other suitable point, on the existing northern line should be surveyed and investigated, as it may be found that, even if saddled with part of the cost of a bridge across the Waitemata, such a route, by reason of its saving of distance, opening up of a new suburban district, and obtaining better grades and alignment, might be worthy of consideration in preference to undertaking heavy works for the improvement of the existing route through Helensville.

As a means of giving access to the rapidly-growing suburbs on the north side of the harbour, a bridge on site B offers much greater facilities than one on site A, although, to make it of value to Devonport and the district lying between that borough and Takapuna, there would be required very considerable additional