

be reduced, and it is not improbable that the breakwater might be completed to YY, with a jetty of cribwork and rubble-stone on the lines of No. 2 for the sum of £200,000. In either of the above cases, whether the mole terminated at XX or YY, a jetty for berthing vessels would be provided, although in the former case, with a jetty on the line of No. 3, the depth alongside would be only 13ft. to 14ft. at spring-tides, and consequently the accommodation thus afforded would be limited. There is yet another mode of procedure—viz., to carry the breakwater as far as practicable for the sum of £200,000 upon the line laid down, obtaining berthage hereafter, and I should prefer this course to stopping the work at XX, with a jetty on the line of No. 3.

*Recapitulation of Recommendations.*—I have thought it desirable to go thus fully into the alternative proposals in order to anticipate points which might be raised in the colony. Briefly, however, I may summarise the recommendations as follows. If convict labour be available, and the amount to be expended on the works £200,000, then I would advise that the work should terminate at YY, with a jetty on the line of No. 2. If convict labour be not available, and the sum to be expended is also £200,000, then the breakwater should be carried as far as practicable for that amount without a jetty, in which case the work would terminate at about the point marked YY.

In addition to the mode of construction herein recommended, I have carefully considered whether the work could not be cheapened by the adoption of some other type of section, but upon taking out quantities, and preparing estimates of cost, I find that the system proposed, and before described, is undoubtedly the most economical under the circumstances.

*Drifting Sand.*—To the southward and eastward of Paretutu there is, as shown upon the plans, a considerable area of ground covered by loose sand, which, during strong westerly winds, drifts towards the bay. It will be an important preliminary step to adopt measures for preventing further accumulations, and for fixing the sand which may be on the surface. I would, therefore, recommend that the *débris* from the quarrying operations should be run out from Paretutu, in the form of a high embankment, in a southerly direction (on a line to be hereafter determined), with the view of deflecting the travel of the sand. The whole of the sand-covered area should be planted at the proper season of the year with seeds of *Arundo arenaria*, or some other species of bent grass adapted for fixing the sand. With the same objects in view, but as an additional safeguard, I would further recommend that seeds of *Pinus maritimus* should be planted, in the form of a belt, along a line running S.W. from the centre of Paretutu. In each case the seeds should be protected by a light covering of bush spread over the entire surface of the ground. If the above precautions are adopted there will be no reason to apprehend a reduction of the depth of sheltered water under the lee of the proposed work from blown sands.

*Conclusion.*—I desire, in conclusion, to express my thanks to Mr Kelly (then Chairman of the Harbour Board), as also to Mr F. A. Carrington and Mr Weston, who, at the time of my visit to New Plymouth, afforded me every assistance. Mr C. D. Irvine, Resident Engineer, and Captain Holford, Harbourmaster, attended to my wishes, and met all my requirements.

At New Plymouth, as at all the other ports inspected in New Zealand, I had the privilege of being accompanied and aided by Mr Blackett, Marine Engineer of the colony and to him my obligations are especially due. It would scarcely be justice to Mr Blackett if I omitted to mention the fact that, although he had accompanied me on my tour of inspection for some weeks previously, it was only on arrival at New Plymouth that I became aware of the circumstance of his having taken any part whatever in proposing a plan for the harbour-works at this place.

I have, &c.

The Secretary, Marine Department, Wellington, New Zealand.

JOHN COODE.

E.

ORDER OF GOVERNOR IN COUNCIL APPROVING PLANS M.D. 404, 405, 406, AND 407

JAMES PRENDERGAST Administrator of the Government.

Order in Council.

At the Government House, at Wellington, this twenty-eighth day of September, one thousand eight hundred and eighty

Present, His Excellency the Administrator of the Government in Council.

WHEREAS certain plans of a breakwater to be made at New Plymouth by the New Plymouth Harbour Board, shown as the western breakwater, as far as YY of the design A of the plans marked M.D. 253 and M.D. 255, were approved by the Governor in Council on the twelfth day of August, one thousand eight hundred and seventy-nine. And whereas it is proposed by the New Plymouth Harbour Board to alter the design of the said breakwater and build it in concrete in lieu of rubble. And whereas they have submitted plans for so doing for the approval of the Governor in Council, in accordance with the provisions of "The Harbours Act, 1878." And whereas it has been made to appear to the Governor in Council that the said works will not be or tend to the injury of navigation

Now, therefore, the Administrator of the Government of the Colony of New Zealand, by and with the advice and consent of the Executive Council of the said colony, doth hereby approve of the plans marked M.D. 404, 405, 406, and 407 for a breakwater built of concrete at New Plymouth, the breakwater to be carried out to the line marked YY on the said plan M.D. 404, the line of said breakwater being the same as that shown on the plan marked M.D. 253.

Provided, however, that the Harbour Board aforesaid may if they think fit, make that portion of the breakwater which extends to low-water mark of ordinary spring-tides in rubble, in accordance with the cross-section shown on plan M.D. 255 aforesaid.

FORSTER GORING, Clerk of the Executive Council.