From the termination of the mode of construction last alluded to, the pier would be formed entirely of concrete blocks, except the foundation layer which would consist of bags of Portland cement concrete, carried up to a sufficient extent only to form a level bed to receive the foundation blocks.

Simultaneously with the construction of the root, the laying-out of the workyard should be proceeded with, in the manner shown on drawings Nos. 1 and 5, and described in the specification. It will be observed that the position of this yard has been determined so as to remove it as far as practicable from the influence of sand-drift. Immediately to the south-west of the southern portion of the yard, where in all probability some bare sand will be found to exist, I would recommend that this surface should be covered with quarry *débris* as the excavations are carried on, the planting of the remainder of the sands being proceeded with as early as practicable thereafter The covering of these bare patches with quarry *débris* will prevent the passage of drift-sands over that portion of the point which lies to the south-west of the workyard.

On the general drawing No. 1 I have shown by dotted lines an extension of the breakwater to the same point as indicated on the plan which accompanied my report of the 28th February 1879. I have also laid down the position of three jetties, which correspond with regard to sites, lengths, and widths with the jetties shown on the report plan last referred to. It must be borne in mind, however, that the plan now proposed will provide a fendered quay of 1,500ft. in length along the harbour-face of the pier from the inner boat-steps to the seaward termination. Jetty accommodation for berthage purposes is not therefore required in this design, as in that which accompanied my report of February, 1879, although a solid jetty formed so as to shelter the inner face of the pier would be of great service during north-east winds, and would also serve to cut off the "range" which would otherwise be experienced along the quay when the sea is coming home directly on to the work. In the absence of a jetty of this character some temporary inconvenience from wave "scend" and undulation will occasionally be experienced but, seeing that a suitable work, if placed in the position of the outermost jetty, or somewhat more to the north-east, and nearer the end of the pier, would require to possess considerable strength in order to adapt it for resisting the heavy seas to which it would be exposed, the provision of such a jetty would largely increase the expenditure, and I have therefore considered that the question of jetty-accommodation should be determined hereafter upon the completion of the pier to YY when the demands of the trade may be sufficient to justify the further outlay which would be required. In the meantime any temporary inconvenience from range during gales must be borne with.

The design for the pier has been arranged so that the permanent railways and the parapet can be completed step by step as the pier advances. It would thus be available for trade purposes as it proceeds. The steam setting-machine for laying the blocks and bags will be adapted for travelling from the shore to the outer end, after the parapet has been formed, and over special rails laid on the pier for its accommodation. I look upon it as a matter of great importance in a work of this magnitude that provision be made for its utilization as it advances seawards. In order, however, that this may be accomplished the parapet and road-surface must follow on the block-setting.

The course I would propose to adopt with regard to the supply of Portland cement is that which is observed by the Crown Agents for the Colonies in similar cases—viz., to issue invitations towards the end of each year for the supply of such cement as may be required during the then succeeding year, provision being made for the testing of each cargo according to the terms and conditions of the specification by a competent Inspector before its shipment. I am confident that by the observance of this mode of procedure not only will the cement be delivered at a less cost, but the quality will be beyond question, a sufficient quantity will be assured at all times, and disputes with the contractors cannot arise, having regard to the provisions of the specification.

The main items of special plant required in this case are—one large overhanging setting-machine, or Hercules, to be employed for placing in position the heavy blocks from the "scar" end of the work, and constructed to meet the several conditions of this case as regards "plumb, radiation, and lift, two travelling concrete-mixing machines, adapted for the block-yard as designed, and a large traveller, or Goliath, suited to the weight of the blocks and the span of the yard as now determined. The course which I unhesitatingly recommend the Board to follow for obtaining these machines, as being decidedly the best, is that competitive tenders be invited from not less than three of the firms of largest experience and highest reputation as makers of this kind of plant, the tenders being based upon drawings and specifications prepared by me for the purpose, and the lowest tender accepted. In this way the best attainable guarantee would be secured for the supply of the most effective appliances for carrying out the work, and I need not here enlarge upon the great importance of employing only such appliances, knowing, as I do, from extensive experience, how greatly the economical and expeditious execution of works of this class depends upon the use of machines specially adapted to secure the object in view

The tenders for the plant should be sent by the contractors to the Agent-General for the colony, if arrangements can be so made, and payment might be effected through him, or by a financial agent of the Board, as may be preferred.

The course which I have here indicated is that which is invariably adopted for harbour-works in the Crown colonies, and in every case experience has fully confirmed the wisdom of this course.

I have taken it for granted that, as Mr. Rees himself suggested to me, the Board will not incur the expenditure requisite for procuring the special plant until the modified design has been submitted to and approved by the Governor in Council. In order therefore, to save time whilst this is being done, I have arranged (Mr Rees concurring in the view that this is the best course under the circumstances) that the drawings for the special plant shall in the meantime be advanced to completion, and specifications prepared ready for inviting tenders, as hereinbefore indicated, immediately, that your Board may write or telegraph if they decide to act upon the recommendations hereinbefore made. I may mention that the leading features of these machines have been neces-