show that it will be impracticable to carry the foundations down to the solid bottom, then the apron of concrete in bags, Fig. 1, drawing No. 3, will be imperatively required to prevent disturbance of the footings by rebound from the sea-face, but should it, on the other hand, be shown that it is practicable to carry the foundations down to a compact bottom, and one which will not be likely to be afterwards disturbed by rebound, then the apron of the concrete in bags may be dispensed with. This question of the provision of the apron or otherwise must therefore remain in abeyance until the results of the examination above alluded to are at hand.

Concrete Blockwork.—The whole of the superstructure throughout, from the top of the bagwork (Fig. 1, drawing No. 3), and from the levelling skin of rubble (Fig. 1, drawing No. 4), in each case, to the underside of the parapet, to consist of concrete blocks of the forms and dimensions shown on the drawings, all to be chamfered on the outer face to the extent of 3in., measured vertically and horizontally (see details of the moulds, drawing No. 7) All to be laid as long and short headers, breaking joint, both vertically, as indicated on the sections, and horizontally, as on the plan (Fig. 4, drawing No. 4) The whole of these blocks above the level of the low-water course to be set in 1 to 1 Portland cement mortar, and the joints run in solid with Portland cement grout, care being taken to point the face of the joints for a suffiicient interval to insure the setting of the pointing prior to the running-in of the grout.

The concrete for the manufacture of the blocks is to be of a uniform quality, composed of eight parts of broken stone, shingle, and sand to one Portland cement, the relative quantities of the three first-named materials being proportioned so as to produce thoroughly solid work, all to be machine mixed, in the most thorough and perfect manner, gauged with fresh water and deposited within moulds or boxes of the requisite sizes and shapes, constructed in accordance with the design shown on drawing No. 7. The moulds to be carefully wrought on the inside to an even, true, and smooth surface. The sides to be secured by bolts welded to a 3in. by 3in. flat bar and travelling in slotted holes, sufficient play being provided to enable the mould to come free from the block without taking the former apart. When the moulds have been "set up," and before the concrete is deposited within them, the inside faces are to be well painted, on each occasion of their being used, with a composition of soap, boiled down to a jelly, and well rubbed into the grain of the wood, the object being to produce a smooth face and to prevent the adhesion of concrete to the mould.

The concrete materials will be conveyed to the portable mixing-machine in skips, as before described, each skip containing the materials, with the proper proportions of stone shingle, sand, and cement necessary to produce 1 cubic yard of concrete. Generally thirty revolutions of the cylinder will suffice for the proper admixture of the ingredients. Care to be taken that the concrete is thoroughly packed against the moulds so as to give uniformly clean faces to the blocks; for this purpose a man should be kept in the mould during the whole of the time that the block is being made, and he should trim the concrete as it is deposited, and thoroughly pack and work it against the sides with a shovel, so as to produce a smooth and even face when the block is stripped.

The holes for lewises of the size shown must be formed by fixing in the moulds core-pieces, tapered, and of the dimensions figured on the drawing. The blocks must be shipped or freed from the moulds at about the third day after making, and on no account are they to be lifted until at least six days have expired from the time of their manufacture, when they may be stacked by means of the steam traveller, in the manner provided for on drawing No. 5. The date of manufacture must be marked on the back of each block, with the letter of the course for which it is intended, corresponding with the letters on Fig. 1, drawing No. 3, and Fig. 1, drawing No. 4.

When the blocks are being made pieces of hard and clean rubble-stone may be placed in the heart of the mass so as to economize the concrete material, care being taken, however, that the stones are well rubbed and bedded into the concrete so as to produce perfectly solid and compact, blocks, free from interstices.

The blocks would be loaded on to trucks in the yard by means of the steam traveller and conveyed therefrom by a locomotive passing underneath the portable setting-machine at the scar end, where they would be lifted off by the latter machine and placed in position thereby The outer blocks, both on the sea- and harbour-faces, to have joggles inserted into the joints in the manner shown. Details of these joggles are given on Fig. 3, drawing No. 5 they are to consist of one part of Portland cement to six of small stone, gravel, and cement, well rammed into the moulds, and allowed to become thoroughly hard and seasoned before being placed in the work, the space between the joggles and the blocks to be run in solid with 1 to 1 Portland cement grout for those joints which are above low-water spring-tide, and in the case of those below that level, with fine gravel, packed in by divers directly the joggles have been placed in position.

Parapet.—The parapet throughout is to consist of 8 to 1 Portland cement concrete deposited *in situ* in 12ft. lengths, arranged to break joint with the blocks, a sham joint being introduced intermediately so as to show joint-lines 6ft. apart, centre to centre, along the parapet on its sea- and harbour-faces. The bull-nose course to be formed by means of a properly-shaped face-mould, wrought to a smooth surface, and coated with a composition similar to that previously described for the blocks, before the concrete is deposited. The blocks to form the upper course, on which the parapet will rest, must be provided with tooth-stones of hard, clean rubble, arranged so as to be incorporated for half their depth into the block and half into the masswork. The parapet would return around the end at the point YY unless it should be decided before the work reaches that point to prolong it further seaward in the direction of the extension shown by dotted lines on drawings Nos. 1 and 2. The parapet to be formed as the blockwork is brought up to the requisite level.

Steps.—Form four flights of boat-steps and two of parapet-steps in the positions indicated on the general plan and distorted elevation, drawing No. 2, and in accordance with the details on drawings Nos. 3 and 4, all to be made of 8 to 1 Portland cement concrete, deposited *in situ*, with fine 6 to 1 material packed against the face of the moulds to form the threads and risers.