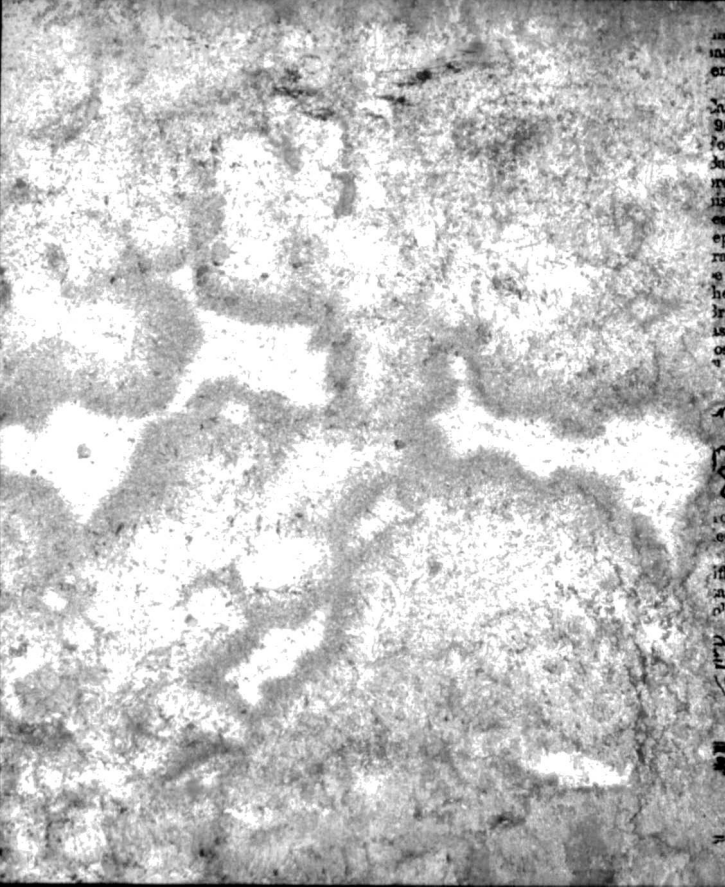

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required, will be furnished by the Resident Engineer from time to time during the progress of the works, and the Contractors are to proceed accordingly.

(c) The concrete is to be deposited in strongly put together wooden moulds, closely jointed, each mould having two sides and two ends, furnished with suitable ironwork and fastenings. The faces of the moulds are to be planed perfectly smooth and be set up absolutely square on the concrete floor of the making yard previous to depositing the concrete therein, suitable arrangements being made for preventing the bulging of the moulds or their getting out of truth during the depositing and packing of the concrete. Block moulds.

Each block shall have formed in it two holes for T head lifting bars, to produce which, tapered core pieces furnished with boxes and hard-wood bearing pieces of approved dimensions at their lower ends are to be set up within the moulds. Core pieces of the required shape to form the cavities for joggles, grout nicks, &c., and strips to form the horizontal and vertical chamfers on the front face where required, are to be fixed to the faces of the moulds, ½ inch being allowed for joints on the bed joints and side joints.

In order to ensure that the blocks shall set close in the work it is advisable that the sides of the blocks shall be made slightly hollow to the extent of ½ inch on each side; this can be affected when setting up the moulds.

The moulds are to be maintained in a serviceable condition, all damaged chamferings and core pieces being renewed as required. The dimensions of the moulds and various parts thereof must be checked over from time to time to see that no distortion or alteration in size has occurred.

(d) The floor is to be thoroughly cleaned and dried before erecting the moulds thereon. After the latter have also been well cleaned, they are to be set up as described above, the internal spaces are then to be evenly sprinkled with fine sand and the inside faces of the moulds coated with soap composition to prevent the adhesion of the concrete thereto. The concrete is then to be deposited and spread evenly within the moulds, each layer being well worked and trod in, and thoroughly packed against the sides. Two men are to be kept constantly within each mould in process of being filled to attend to the efficient working and packing of the concrete as above described, and on the completion of each block the top service thereof is to be struck off true and level, and finally floated off with a hand float. Filling moulds.

Great care is to be taken to deposit and spread this concrete with as little disturbance as possible and any hollows or defects are to be made good previous to any blocks being set.

The Contractors shall submit to the Engineers-in-Chief for approval the method by which they propose to carry out this work.

Each section thus prepared must be examined and approved by the Resident Engineer before any of the concrete blocks are set thereon, and a period of 14 days must elapse between the depositing of the concrete and the setting of any blocks thereon.

No payment will be made for any concrete deposited in excess of that shown upon the Drawings unless such excess has been ordered in writing by the Resident Engineer. Payment.

96. (*a*) The blocks throughout the work are to be carefully set by experienced block-setting divers to the required lines, levels and inclination and with the bond shown and figured on the Drawings. Special care must be taken to ensure that the foundation course is well and evenly bedded on the concrete foundation, and that the blocks are laid true and level also to the required inclination of 1 in 12. Setting blocks.

The blocks are to be set hard up, joint to joint, so as to make close work, and when in position the bag joggles are to be placed by divers in the cavities formed in the joints of the blocks.

The levels of the top of the foundation course must be carefully checked before setting any of the blocks of the upper courses thereon and any inequalities or high places must be dressed down by divers to the correct levels without additional payment.

The bond of the blocks must in all cases be carefully kept and should longitudinal creep occur of a greater extent than 6 inches or the rows of blocks get out of square with the face line, compensation courses must be made or cut to fit at the expense of the Contractors so that the correct bond and square of the work shall be preserved.

During the progress of the work the scar end must not be steeper than a block and a half scar as shown on Fig. 2, Drawing No. 10.

(*b*) No joints exceeding 1 inch in width will be permitted in any part of the works and should this width be exceeded, the blocks in question, Blocks imperfectly set.

described, and filled into strong canvas bags with bottom and top closely sewn to the sides with strong tarred twine, the top being sewn on after the concrete has been deposited in the bag.

Placing bags.

(*b*) The bags are to be filled at the scar end of the work and immediately thereafter the tops must be sewn on and the bags lowered to the divers, who will place them in the cavities formed in the blocks, and thoroughly ram them into place with an iron punner until the tops are slightly below the level of the course of the blocks which they unite. Those above low water are to be similarly placed by masons. No joggle in which the concrete is partially set, or which has been made more than 30 minutes, will be allowed to be used.

Sample bag.

(*c*) A sample bag is to be approved by the Resident Engineer with respect to quality of material and sewing. The dimensions of the bags are to be such that when rammed into the cavities they shall thoroughly fill the same, so that the blocks may be securely locked thereby.

Moulded concrete.

98. (*a*) The coping and ashlar facing of the Quay Wall are to be formed of moulded concrete, consisting of four parts of aggregate as described in Clause 88 (except that no stone shall exceed ¾ inch mesh in size), to one part of Portland cement moulded in strong wooden moulds with close joints having the inner faces planed perfectly smooth. The moulds are to be coated on the inside with soap composition to prevent adhesion of the concrete. The concrete is to be carefully deposited within the moulds, well worked in and thoroughly packed, care being taken to have the richer and finer material on the face of the block and all arrises sharp and true. Nosings are to be rubbed down with a hand float. The various blocks are to be formed to the shapes and dimensions shown upon Drawings Nos. 10, 12 and 13, allowance being made for beds and joints ¾ inch in thickness in the ashlar and 1 inch in the coping.

Coping.

(*b*) The coping may vary in length if desired from 4 feet to 6 feet, but must be so arranged that the joints shall break not less than 9 inches with those of the underlying ashlars.

The upper front edge is to be rounded to a radius of 3 inches and the bottom edge chamfered 1 inch by 1 inch as shown, the top bed being formed so as to rise from front to back at an inclination of 1 in 54 and V grooves 3 inches by 3 inches are to be formed in the centre of each side joint.

(*g*) The whole of the copings, ashlar facings, steps, landings, quoins, &c., are to be set in a full bed of 2 to 1 Portland cement mortar, the joints being well grouted in the same proportions well worked with a sword tool, the V grooves being also filled in with 2 to 1 Portland cement mortar well rammed. All face joints to be neatly pointed with neat cement. No nipper holes will be allowed in the face of any of the moulded concrete; if lewis holes are formed for the purpose of setting the same, they are to be filled solid with 2 to 1 mortar neatly finished off, so as to present the same appearance as the surrounding work. Setting.

(*h*) All moulded concrete work will be measured as described under the respective items in the Schedule of Prices for this class of work, and the Schedule Rates are to be taken to include and cover the cost of all blocks of special shapes or sizes which may be required, and also the forming of all nosings, chamfers, chases, recesses for boat holdfasts, grooves and all charges whatsoever in connection with the carrying out of the work in full accordance with the Contract Documents, and to the satisfaction of the Resident Engineer. Measurement of moulded work.

99. The moulded ashlar facing blocks referred to in the last preceding clause, are to be backed up with 7 to 1 Portland cement concrete as shown on Figs. 1 & 4, Drawing No. 10, brought up in layers as the ashlar is set. Proper and substantial shutters are to be fixed at the back so as to form the work to fair lines and to the required dimensions. Great care must be taken thoroughly to work the concrete in behind the ashlars and around the tails of the headers, and into the cavities provided in the latter, 2 to 1 Portland cement mortar being chopped in simultaneously so as to fill all voids. The concrete must be deposited in layers of 2 feet 6 inches in height and cross shutters are to be provided where necessary, so arranged as to break joint with the layer below. In fixing the cross shutters, no greater area is to be included than can be properly finished off to the full height in the one operation. All mass concrete above the level of Course "A" of the blockwork is to be deposited in the dry. During the progress of the work the scar end of the ashlar facing and concrete-in-mass is not to be steeper than an average angle of 30 degrees with the horizontal. No portion of the superstructure above the level of the top of course "A" is to be constructed until the coral rubble backing immediately in rear thereof has been completed to the full section required. Concrete-in-mass.

Ladders.

102. (*a*) Mild steel ladders are to be fixed in the face of the Quay Wall in the positions shown on Fig. 2, Drawing No. 3, or as may be required by the Resident Engineer. Full details of these ladders and the method of fixing the same are given on Drawing No. 12. The steelwork, bolts and fastenings throughout are to be heavily galvanised, the knees having been previously riveted to the sides. The bolts are to be jagged and upset, and are to be grouted up solid with neat cement in holes drilled to template in the concrete ashlar blocks.

Holdfasts.

(*b*) A cast iron galvanised holdfast, as shown on Drawing No. 12, is to be fixed in the coping at the head of each ladder, the drain holes and recess for the casting being formed in the concrete as shown.

Ladder recess.

(*c*) Recesses are to be formed in the face of the Wall for the reception of the ladders, as shown on Drawing No. 12, the ashlar blocks being moulded specially for this purpose as already described, the front edges being rounded to a radius of 1½ inches.

Holes for bolts, &c.

103. All holes or recesses for bolts of every description, rail standards, holdfasts, &c., wherever they may be required, are to be cored or drilled in the concrete for the purpose. No separate payment will be made for any such holes or recesses, the cost of which is to be taken as included in and covered by the Schedule Rates.

Drains, manholes, outlets, &c.

104. (*a*) Glazed stoneware drains, 15 inches and 12 inches diameter, leading into 30 inches diameter main drains, are to be provided in the positions shown in plan on Drawing No. 3, and in section on Drawing No. 4. The inclinations and levels shown must be considered as approximate, the exact lay-out being determined hereafter.

The pipes are to conform to the British Standard Specification No. 65, dated August, 1914, for salt-glazed ware, spigot and socket drain pipes, and are to be jointed with gasket and neat cement. All necessary bends, eyes, junctions, &c., are to be provided, and pipes must be cut to length and to fit where necessary. The bottoms of all trenches are to be thoroughly rammed and consolidated before the pipes are laid.

Owing to the possibility of breakage of the 30 inches diameter pipes during transit to the Colony, it may be more economical to manufacture stoneware or reinforced concrete pipes at Kilindini, and the Engineers-in-Chief can order either type as they may consider desirable, at the Schedule Rates specified therefor in the Schedule of Prices accompanying the Contractors' Tender.

(a) The 15 inches and 12 inches diameter drains together with the necessary manholes immediately beneath the site of warehouse No. 2, are not to be put in hand until ordered by the Engineer-in-Chief, or until such time as the construction of this warehouse is determined on. Drains under Warehouse No. 2.

105. (a) The fendering is to consist of backing pieces and rubbing pieces and is to be provided throughout the whole length of the Quay Wall, commencing at the northern end of the boat steps, but with breaks as shown where the vertical ladders occur. Fendering.

(b) Full details are given on Drawing No. 13 of the method of fixing the timbers and an alternative arrangement is likewise shown on Fig. 1. It is possible that instructions will be given to omit the lower fender and the upper fender only shall then be fixed as shown in the alternative design; in which case the Contractors shall proceed accordingly and shall have no claim against the Government for any increase in the Schedule Rates on account of the omission of the lower fender or the provision of the moulded concrete ashlar necessary for the support of the single upper fender. Alternative arrangement of fendering.

(c) The backing pieces are to be of greenheart 15 inches by 15 inches not less than 20 feet in length, fixed in recesses formed in the face of the Wall by the omission of a row of the moulded ashlar facing where each backing piece occurs, the recesses being 9 inches in depth measured from the face of the Wall. The backing pieces are to be secured by 1¼ inch diameter galvanised lewis bolts, jagged and upset, grouted with neat cement in holes cored or drilled in the concrete at intervals of 4 feet. the bolts being provided with circular galvanised washers. The holes are to be properly cleansed from all weed, slime, &c., before the bolts are fixed. The nuts and washers are to be counter-sunk into the greenheart, the holes are to be circular and subsequently filled in with greenheart plugs set in red lead. The joints between the backing pieces are to be so arranged as to come midway between the bolts. The building in of backing pieces will not be allowed. Backing pieces.

The projecting ends of the bolts are to be well protected with white lead and canvas pending the fitting of the timbers; any bolts that are broken or damaged must be replaced with new bolts, at the Contractors' expense, grouted with neat cement into holes drilled for the purpose.

bolts, with washers, built into the concrete as shown. When the adjoining cope stones have been set, the back and front joints are to be pointed with neat cement and the space between the ends of the bollards and the masonry filled in solid with 2 to 1 Portland cement grout. The surface joints must then be neatly pointed with neat Portland cement.

Coating bollards.

108. All work in connection with the bollards is to be kept immersed for not less than one hour in a mixture of Dr. Angus Smith's tar composition which during this period must be maintained at boiling point; a coating of the same material is also to be put on after fixing, the work having been previously carefully scraped and cleaned. The threads of all screws are to be protected from the tar during the process of dipping, and to be afterwards cleaned and oiled. A coating of the tar composition to be put on all the bollards once every two years until the expiration of the maintenance period by, and at the expense of, the Contractors.

Crane Road.

109. (*a*) A crane road, 15 feet gauge centre to centre of rails, is to be provided on the quay for electric cranes. Commencing immediately to the north of the boat steps, as shown on Fig. 1, Drawing No. 11, the outer rail to be laid for the full length of the wall, the inner rail, however, will terminate at the northern end of No. 2 transit shed. The rails are to consist of flat bottom steel rails, weighing 90 lbs. per lineal yard, with properly fished joints, all in accordance with the requirements of the British Standard Specification. Two guard rails, formed of 5 inches by 3 inches by ½ inch angle steel, with fished joints, are also to be provided, one on each side of each rail.

Outer rail.

(*b*) In the case of the rail nearest the cope, the rail and guards are to be securely riveted to tranverse steel plates, 14 inches by 4 inches by ½ inch thick, and 1 foot 7 inches by 4 inches by ½ inch. These plates are to be placed alternately about 4 feet 6 inches centre to centre, the longer plate in each being secured to the mass concrete by two 1 inch diameter lewis bolts, 6 inches in length, jagged and upset, let into 2 inches diameter holes drilled for the purpose and grouted with neat cement. In all cases the plates near each end of the rail lengths are to be of the longer length. When the rails have been laid in position and bolted down they are to be grouted in solid with 2 to 1 fine concrete up to the underside of the rails, the spaces between the rail and the guards being also filled in with 2 to 1 Portland cement mortar. All to be in accordance with the details given on Figs. 5 & 7, Drawing No. 10.

(*c*) The crane road in rear of the Transit Sheds is not included in the Contract. Crane road in rear of Transit Sheds.

110. As soon as the outer crane rail has been fixed as described in the last preceding clause, the top surface of the wall is to be finished with 4 to 1 fine Portland cement concrete laid to an inclination of 1 in 54 and to the extent shown on Fig. 5, Drawing No. 10, rebates being formed for the reception of the cable trench covers. The concrete is to be worked up to a smooth surface and roller punched. Before laying this concrete the surface of the underlying concrete upon which it is to rest is to be well picked and roughed and thoroughly cleaned so as to make a perfectly satisfactory bond. Top surface of wall.

111. (*a*) The area between the back of the Quay Wall and the front of the Transit sheds will be surfaced after all settlement in the filling immediately in rear of the Wall has ceased. The method of carrying out this work will be determined hereafter, but in the meatime provision is made for the same by including the sum of £8,000 in the Schedule of Prices. Surfacing Quay.

(*b*) No obligation shall rest upon the Government to employ the Contractors in relation to the expenditure of the whole or any part of this sum and the Government reserve the right of carrying out this work themselves, in which case the sum of £8,000 shall be wholly deducted from the Contract without prejudice to the latter and without affecting the Schedule Rates in any way, and the Contractors shall have no claim against the Government on account of any such deduction. Government may carry out surfacing.

112. (*a*) The general arrangement of the roads to be constructed on the Reclamation is shown in plan on Drawings Nos. 2 and 3, and in section on Drawing No. 4. The layout as indicated is subject to modification and the Resident Engineer will in due course instruct the Contractors with regard thereto. Roads.

(*b*) The surface of the Reclamation to be occupied by the roads must be prepared to the correct levels and inclinations, and rolled with a steam roller, as specified herein for the reclaimed area, and be thoroughly consolidated previous to the depositing of the bottoming thereon. The bottoming shall consist of a layer of hard rubble stone, of the same quality Bottoming.

RAILWAYS.

Railways.

113. (*a*) The general layout of the railways on the Reclamation and the approaches thereto is shown on Drawings Nos. 2 & 3, this will however, be subject to the requirements of the Government, who reserve the right to construct the railways themselves, in which case the amounts included by the Contractors in the Schedule of Prices for the construction of the railways will be deducted from the Contract without prejudice to the latter and without affecting the Schedule Rates in any way, and the Contractors shall have no claim against the Government for any such deduction.

Government may construct railways.

Should the Contractors be required to construct the railways the Resident Engineer will, after consultation with the General Manager, instruct the Contractors as to any alteration necessary in the general layout, additional crossover roads, or any other modification, and they shall proceed accordingly, so that the railways shall be completed to suit the requirements of the Government to the satisfaction of the Engineer and in accordance with Contract Documents.

(*b*) It is understood that the Government propose, in the near future, to relay portions of the main line of the Uganda Railway with rails of a heavier section, in which case it may be possible that some of the existing permanent way material taken therefrom may become available, wholly or in part, for constructing the proposed railways on the Reclamation.

Government may supply materials.

(*c*) Previous to ordering any of the materials required for constructing the railways on the Reclamation the Contractors are to make inquiries and ascertain from the Engineers-in-Chief particulars as to the quantity, if any, of the permanent way material that the Government may have to spare and that may be suitable and available for use in connection with these railways.

Contractors to make inquiries.

(*d*) The approximate quantities of the materials required for completing the railways shown or described in the Contract Document are given in the Schedule of Prices. Should the Government supply such materials, wholly or in part, the quantities so supplied shall be valued at the Schedule Rates for each class of material so supplied, and the amount thereof shall be deducted from the Contract upon the same conditions as those described in Sub-section (*a*) of this Clause. Any materials not supplied by the Government shall be supplied by the Contractors.

Value of materials supplied by Government deducted from contract.

and two $\frac{5}{8}$ inch by $\frac{5}{8}$ inch dog spikes $4\frac{1}{2}$ inches long overall, with notches on two sides of same. Details of the screw spikes and dog spikes can be seen at the offices of the Engineers-in-Chief and the details of the bearing plates must be submitted for their approval before ordering.

(*j*) The switches, crossings, lever boxes and all fittings in connection with the same must be in accordance with those now in use on the Uganda Railway, shall comply with the requirements of the Railway Department and be to the satisfaction of the Engineers-in-Chief. Switches, crossings and lever boxes.

(*k*) The railways are not to be laid until such time as instructions are received from the Engineer. In the event of the Contractors being allowed to use the railways, only approved locomotives and wagons with proper springs will be allowed thereon, no excavated materials shall be carried over the railways and the Contractors shall at their own expense make good, to the satisfaction of the Resident Engineer, any damage to the ballast or permanent way that may be caused by their use of the railways. The Engineers-in-Chief reserve the right to withdraw permission to use the permanent way. Laying railways.

The rails for straight lines must be perfectly straight, those for curves bent to the proper arc before being laid. The joints are to come opposite to one another, and on curves, special shorter lengths of rail must be provided in order that this may be effected and that the sleepers shall be at right angles to the track.

The allowance for joints shall be $\frac{1}{4}$ inch and expansion plates must be put in at each joint and not removed until the permanent way has been finally aligned, no closing rail to be less than 12 feet in length.

The rails are to be laid with an inclination of 1 in 20 inwards, and true to the gauge of 3 feet $3\frac{3}{8}$ inches, perfectly parallel to one another and with proper super-elevation of the outer rail on curves. Round curves the gauge must be widened in accordance with the requirements and practice of the Railway Department.

The sleepers are to be properly spaced as referred to in Sub-section (*f*) of this clause and placed perfectly square to the centre line or its tangent. All holes for bolts and spikes must be bored in the sleepers and the spikes driven truly vertical.

longway of mesh by 3 inches shortway of mesh, the strands being ¼ inch by ¼ inch, weighing 15½ lbs. per yard super.

(*b*) The inner wall to be 3 inches thick throughout, the upper portion of the outer wall must be also 3 inches thick, the lower portion being 4½ inches thick forming a plinth 1½ inches by 1½ inches. The walls are to be pre-cast and made in sections of such sizes as can be conveniently bonded and handled, being set and pointed in 1 to 1 cement mortar, and at the ends and top must be checked and bonded into the columns and beams respectively. All meeting joints in the slabs are to be joggled and the arrangement of the bond of the slabs must be submitted for the approval of the Engineers-in-Chief. An air space of 2 inches clear width must be formed between the slabs, and galvanized bonding irons provided at intervals of 18 inches in all horizontal and vertical joints, this air space must be kept clear of all falling mortar and rubbish during the building of the walls. Building walls.

118. (*a*) The upper floor of the warehouse is to be in accordance with the design given on Drawing No. 14 and is to be provided with outside cantilever platforms as shown on both sides and along the full length of the building. The floor and the platforms are to be adapted for carrying a load of not less than 3 cwts. per square foot exclusive of the weight of any portions of the structure. Upper Floor of warehouse.

(*b*) The surface of this floor shall consist of a layer of 2 to 1 fine granolithic concrete 1½ inch in thickness the aggregate of which must be granite siftings passed through a ¼ inch sieve. This surfacing must be laid at the same time as the concrete of the reinforced deck, the latter being screeded not more than 3 feet in advance of the surfacing so that the two shall form one homogeneous mass. The top surface must also be screeded off to the required falls and levels and must be left till the water has dried off when it shall be lightly flushed with a hand float and finished off. Surface of upper floor.

(*c*) The surfacing of the ground floors of all sheds must also be finished with a coating of granolithic concrete 1½ inch thick as specified above. Ground Floors to be finished granolithic.

(*d*) Ten hatchways as shown on Figs. 1, 2 and 7, Drawing No. 14, each furnished with movable covers are to be formed in the upper floor of the warehouse, the floor beams adjacent to the openings being stiffened to the necessary extent, transverse trimmers being introduced as required to form the same. Hatchways.

121. (a) On the completion of the columns and flooring, the foot of each column on the ground floor of the sheds is to be surrounded with a base of 4 to 1 ordinary concrete-in-mass formed to the shape shown on Drawing No. 14, and the edges at the base of the columns on the upper floor are to be protected with angle steels as shown, being secured to concrete of columns in an approved manner, four angles on each centre column and three angles on each column in doorways. **Protection to bases of columns.**

(b) The rain water down pipes from the roof gutters are to be connected with the main drainage system in the manner indicated upon Drawings Nos. 14 & 15. **Drainage.**

122. (a) Drawing No. 14 gives general details of the reinforced concrete work, the main reinforcement of which is to consist of plain round steel bars with hooked ends. The reinforcement throughout must be so proportioned and disposed that when the structure is subjected to the full specified floor load of 3 cwts. per superficial foot the tensile stress in the steel shall not exceed 15,000 lbs. per square inch, nor the compressive stress in the outside fibre of the concrete exceed 500 lbs. per square inch. **Reinforced concrete work. General.**

(b) The Contractors shall as provided for in Clause 6 (d), prepare and submit to the Engineers-in-Chief for their consideration and approval, full and complete Working Drawings, together with calculations of stresses, showing in detail the respective reinforced members and the disposition and scantlings of the reinforcement thereof, and all other necessary particulars. **Working Drawings.**

Such modifications as the Engineers-in-Chief may consider necessary or advisable in the scantlings of the members or in the scantlings, disposition or otherwise of the reinforcement thereof in order to comply with the specified conditions in regard to maximum allowable stresses shall be made by the Contractors and the work shall be carried out in accordance therewith without in any way affecting the rates in the Schedule of Prices.

(c) The Contractors' temporary arrangements, which are to be submitted to the Engineers-in-Chief for approval under the provisions of Clause 72, shall include the method of mixing and depositing the concrete, character of moulds, shuttering, staging, temporary structures, arrangement of false work, pile driving and all other things in connection with the carrying out of the reinforced concrete work. If, during the execution of this work, any **Temporary Arrangements.**

(*e*) Subject to the Resident Engineer being entirely satisfied that perfectly solid concrete, as required under Clause 88, will be obtained, the concrete shall be mixed in the following proportions:— Proportions of concrete.

One cubic foot, or ninety pounds of cement—whichever quantity may be the greater.

One and a third cubic foot of sand.

Two and two thirds cubic feet of broken stone.

(*f*) The concrete shall be mixed in machines of approved design and capacity, and shall be regulated to supply actual requirements without producing an appreciable excess of concrete at any time. Mixing.

The materials forming each mixer charge shall be accurately measured in suitable gauge boxes, special precautions being taken, to the satisfaction of the Resident Engineer, to ensure that the proportion of cement shall never fall below the specified amount.

No hand mixing shall be permitted unless in the opinion of the Resident Engineer such procedure is unavoidable.

(*g*) The proportion of water added to the other constituents of the concrete shall not be more than sufficient to make a plastic mixture capable of being rammed into all parts of the moulds and between the members of the reinforcement, the interpretation of this requirement being entirely at the discretion of the Resident Engineer. Consistency.

124. (*a*) All moulds shall be made of sound and seasoned timber of sufficient thickness to resist the pressure of the liquid concrete without any distortion. The faces of all moulds and shuttering and the joints between contiguous timbers in the same shall be planed true and smooth, so as to prevent any leakage of liquid or the appearance on the concrete of joint strakes or unevenness. Clamps and wedges shall be used wherever practicable instead of nails, and the latter, where their use may be inevitable, shall be driven under flush and the holes stopped. Moulds and shuttering.

(*b*) The moulds shall be fixed in perfect alignment and position and shall be rigidly supported and braced in such a manner as to prevent any displacement, deflection or movement of any kind due to the weight of the structure or other causes. Fixing moulds.

(*e*) Subject to the Resident Engineer being entirely satisfied that perfectly solid concrete, as required under Clause 88, will be obtained, the concrete shall be mixed in the following proportions:— Proportions of concrete.

One cubic foot, or ninety pounds of cement; whichever quantity may be the greater.

One and a third cubic foot of sand.

Two and two thirds cubic feet of broken stone.

(*f*) The concrete shall be mixed in machines of approved design and capacity, and shall be regulated to supply actual requirements without producing an appreciable excess of concrete at any time. Mixing.

The materials forming each mixer charge shall be accurately measured in suitable gauge boxes, special precautions being taken, to the satisfaction of the Resident Engineer, to ensure that the proportion of cement shall never fall below the specified amount.

No hand mixing shall be permitted unless in the opinion of the Resident Engineer such procedure is unavoidable.

(*g*) The proportion of water added to the other constituents of the concrete shall not be more than sufficient to make a plastic mixture capable of being rammed into all parts of the moulds and between the members of the reinforcement, the interpretation of this requirement being entirely at the discretion of the Resident Engineer. Consistency.

124. (*a*) All moulds shall be made of sound and seasoned timber of sufficient thickness to resist the pressure of the liquid concrete without any distortion. The faces of all moulds and shuttering and the joints between contiguous timbers in the same shall be planed true and smooth, so as to prevent any leakage of liquid or the appearance on the concrete of joint strakes or unevenness. Clamps and wedges shall be used wherever practicable instead of nails, and the latter, where their use may be inevitable, shall be driven under flush and the holes stopped. Moulds and shuttering.

(*b*) The moulds shall be fixed in perfect alignment and position and shall be rigidly supported and braced in such a manner as to prevent any displacement, deflection or movement of any kind due to the weight of the structure or other causes. Fixing moulds.

The longitudinal bars in columns shall be straight and parallel to each other and to the sides of the moulds, the forks, ties and links connecting the same being taut so that the main bars are properly braced in every direction. The horizontal bars and horizontal portions of bent bars in parallel beams shall be straight and parallel to each other and to the sides, but not to the cambered bottoms of the beam moulds.

No bar shall be placed at a distance of less than 1½ inch from the inside of any mould, except in the case of the flooring slabs, where the distance shall not be less than 1 inch.

(*c*) Forks, links and distance bars where employed shall in all cases be of such length and be so placed as to be in actual contact with the bars which they are intended to fit, and their positions shall be exactly as shown on the working Drawings. All links shall be perfectly tight when in position and shall be a close fit around the bars which they connect. Forks, links and distance bars.

(*d*) When placing reinforcement in beams and other members, the bars shall, wherever practicable, be temporarily supported from the top of the mould, in floor moulds the reinforcement shall be supported from notches in screed boards and by the completed and partially completed portions of flooring slabs. Should it in any case, in the opinion of the Resident Engineer, become impracticable to obtain support from the top of the moulds, the bars are to be supported on small distance blocks formed of concrete and of correct height to keep the reinforcement the required distance from the face of the moulds. These distance blocks shall be 2 inches square on underside and 2½ inches square on the top and shall be composed of 3 to 1 cement mortar, their cost being taken as included in and covered by the Schedule Rates for the reinforced concrete work. On no account shall pieces of steel, blocks of wood or material other than concrete, resting on or attached to the bottom boards, be permitted to act as temporary supports for reinforcing rods during process of concreting. Temporary supports.

126. (*a*) Before any concrete is deposited the inside of every mould shall be carefully and thoroughly cleaned out, particular attention being given to ensure that no rust, scale, chippings or other foreign material of any kind remains within the mould. The inside of the moulds shall be wetted shortly before concreting is commenced in order to prevent the absorption of moisture from the concrete, and immediately before the Depositing concrete. Cleaning moulds.

concrete is deposited the inside of the moulds shall be given a coat of soap composition.

Conveying concrete.

(*b*) The concrete shall be conveyed to the site where it is to be used in such a manner that no segregation of the materials shall occur, and if segregation should occur the concrete shall be re-mixed before use. Any concrete which cannot be placed in the moulds immediately after mixing, or which may have developed initial set, shall not be used in the works.

Filling moulds.

(*c*) The concrete shall be filled into the moulds in such manner as shall produce monolithic work to the entire satisfaction of the Resident Engineer.

The concrete shall be very carefully rammed in the moulds, and especially between and around the members of the reinforcement, in such a manner as to expel any bubbles of air and completely fill every portion of the moulds. The greatest care shall be taken to prevent any displacement of the bars, ties, links, stirrups or other members of the reinforcement adjusted and temporarily fixed in position before the commencement of the concreting, and equal care shall be taken to insert or adjust in their correct positions all such bars or members of the reinforcement as have to be inserted or adjusted in position after the depositing of the concrete has been commenced.

Breaking joint.

(*d*) When, in the opinion of the Resident Engineer, any portion of the work cannot be completed in one operation, the depositing of concrete shall terminate, in the case of beams, with a vertical face of about one-third of the span distant from either support and not over a support, and in the case of flooring panels with a vertical face along the middle of the panels between the two beams and not over a beam.

Preparing surface of set concrete.

(*e*) Before depositing fresh concrete upon or against any concrete already set, the surface of the set concrete shall be completely roughened all over with a cutting tool and thoroughly cleansed of all cement scum or other foreign matter and thereafter covered with half-an-inch thickness of one to one cement mortar immediately prior to depositing the fresh concrete. Great care shall be taken to ram the fresh concrete thoroughly, so as to amalgamate it with the mortar upon and against the set concrete.

(*f*) All concrete which has commenced to set shall be protected from shock, vibration and any influences likely to interfere with the process of setting, and no part of the reinforced concrete structure shall in any way be loaded or subjected to stress before or after the removal of the moulds until permission has been given by the Resident Engineer. All concrete moulded in dry weather shall be kept moistened for seven days and protected during that time from the direct rays of the sun. Protecting new work.

127. (*a*) Subject to the approval of the Resident Engineer, the upright side pieces of all the reinforced concrete moulds shall remain secured in position for a period of not less than three clear days from moulding. The bottom boards of flooring slabs and beams moulded *in situ* shall remain in position for 10 clear days and the bottom boards of all other members, wherever moulded, for 28 clear days from moulding. Removal of shuttering.

Whenever the work is constructed in bays of a number of beams and flooring panels the times mentioned shall be reckoned from the completion of the concreting of the last member of the bay.

(*b*) No stents or timbering which serve the purpose of supporting beams and other structural members shall be struck or removed without permission from the Resident Engineer, and the work of striking and removal after the receipt of such permission shall be conducted under the personal supervision of a competent foreman in the employment of the Contractors. Removal of supports.

(*c*) The Contractors shall be responsible for any injury to the work and any consequential damage caused by or arising from the removal and striking of moulds and supports, and any advice, permission or approval given relative to the removal and striking of moulds and supports shall not relieve the Contractors from the responsibility here defined. Contractors' responsibility.

128. (*a*) Such reinforced concrete members as may be moulded *ex situ* and subsequently built into the work shall be cast in moulds on the workyard floor and shall there remain without disturbance for a period of not less than one clear month before lifting. Members moulded *ex situ*.

(*b*) The greatest care shall be exercised in lifting or transporting any moulded members so as to avoid exposing them to any unnecessary or hurtful stresses or to damage by slings, shocks or other outside influences. While being removed suitable packings shall be used so that no chains or Conveying to site.

ropes shall come in direct contact with the concrete. Beams and other members of relatively long length shall be slung for lifting in such a manner as to prevent undue deflection.

The Resident Engineer shall have the power to reject from use in the works any reinforced concrete members which he may have reason to believe have been strained or which may have been, in his opinion, exposed to unreasonable risk of injury by faulty or negligent handling.

Fixing in position.

(*c*) Adequate provision in the nature of temporary ties, struts, &c., shall be made by and at the expense of the Contractors for securing such members as may be moulded *ex situ* when the same are fixed in place in their permanent positions in the work.

Holes for bolts, &c.

129. Holes for bolts, and rebates, sinkages, chamfers, &c., which may be provided for by the detailed working Drawings shall be moulded in the required positions during the concreting, great care being in all cases taken to provide ample cover of concrete for any reinforcement adjacent thereto.

Testing concrete.

130. While the depositing of concrete is proceeding in the reinforced concrete work, sample blocks in the form of 6 inches cubes shall be made daily from the material and shall be marked and dated for identification.

Sample cubes.

The blocks shall be rammed in a manner similar to the permanent work, and be allowed to set and mature under conditions as nearly as possible the same as those applying to the work in which the concrete is employed, and shall be examined and tested when and as may be directed by the Engineers-in-Chief in the manner provided for in Clause 88 (*j*) and (*k*) for the purpose of affording approximate information as to the condition and strength of the concrete in the work at the time of such examination or testing.

Test load.

131. (*a*) After the reinforced concrete flooring of the upper floor of the warehouse has been completed for not less than three months, or for such longer period as the Engineers-in-Chief may direct, two portions of the floor, of area not less than 40 feet by 30 feet, shall be loaded with stone ballast or other material so as to bring a load of 3 cwts. on to each square foot of the flour so covered.

Deflections.

(*b*) When under the above tests, accurate measurements of the deflections or other movements of the structure shall be made by the

Resident Engineer and the Contractors conjointly, the Contractors making at their own expense all arrangements desired by the Resident Engineer to permit the measurements to be accurately and conveniently carried out, and providing all measuring and recording instruments as may be required. The cost of such testing is to be taken as included in and covered by the Schedule Rates.

When subject to the full test load, no main or subsidiary beam or floor slab shall show a greater deflection than $\frac{1}{800}$ of its clear span.

Reconstruction of faulty work.

132. The Contractor at the written request of the Resident Engineer, shall remove and reconstruct in accordance with Clause 15, any structural members or portions of the work, which, in the opinion of the Resident Engineer, afford evidence before or after the removal of the moulds that the concrete was of inferior quality, partially set or partially segregated at the time of deposition, or was not properly deposited and sufficiently rammed in the moulds, or that any bars of the reinforcement have been omitted, incorrectly placed or displaced, or which give evidence of any fault, defect, or injury from any cause whatsoever, which, in the opinion of the Resident Engineer, may prejudicially affect the strength or durability of the structure.

Cutting steel and concrete.

133. No concrete or steel in the reinforced concrete work shall be cut in any way except by permission in writing from the Engineers-in-Chief.

Appointment of foremen, &c.

134. The Contractors shall appoint European foremen experienced in reinforced concrete construction together with leading hands for steel work, concreting and carpentry, also experienced in the like construction in sufficient numbers as will ensure the work being properly constructed.

Steelwork general.

135. (*a*) The roof trusses, purlins, corrugated sheeting, gutters, down pipes, doors, &c., are to be constructed of steel, as shown generally on Drawing No. 14, and in detail on Drawing No. 15. The roofing is to extend for a length of 3 feet beyond the gable ends of the sheds as shown.

Wind ties.

(*b*) Wind ties are to be provided on all four slopes of the two end bays of all sheds as shown on Drawing No. 14. They are to consist of 3 inches by $\frac{3}{8}$ inch steel flats, with connection plates bolted to the three end trusses.

Roof trusses.

(*c*) Roof trusses of 50 feet centres of columns will be required for the transit sheds and of 60 feet centres of columns for the warehouse, and details of the same are given on Drawing No. 15. They are generally

similar in detail throughout with the exception of the span and the height. A typical cantilever awning is shown on Fig. 1, and it may be necessary to provide for this to be fitted on the land side of the transit shed and on both sides of the warehouse or they may be ommitted altogether as shown on Fig. 4 Drawing No. 4. Instructions will be issued to the Contractors with regard to this in due course.

Galvanised corrugated sheeting.

(*d*) The roof and gable ends are to be covered with galvanised corrugated steel sheets, 18 S.W.G. in thickness, with corrugations 4 inches pitch. The horizontal joints are to have a 6 inch lap, and the vertical joints a lap of 1½ corrugations. They are to be bolted together with galvanised "Limpet" bolts, ¼ inch diameter, provided with galvanised "limpet" washers. In the horizontal joints the bolts are to be zig-zagged one bolt at each corrugation, the vertical joints being secured by bolts spaced not more than 8 inches apart. All bolts are to be placed on the top of the corrugations, and the bolt holes carefully punched. The ridge piece is also to be 18 S.W.G. as shown, of an approved pattern.

Louvres.

(*e*) The louvres along the sea sides and ends of the sheds are to be as shown on Drawing No. 15. They are to be of galvanised mild steel throughout, the frames consisting of top and bottom angles riveted to end plates, the louvre blades being flanged and rivated to the latter. They are to be attached to the concrete beams and columns by means of galvanised bent plates and 1 inch diameter galvanised lewis bolts and to the upper lattice work and each other by means of ¾ inch diameter galvanised bolts. Should the cantilever awnings be omitted as referred to in Sub-section (*c*) of this Clause, it will be necessary to fit these louvres in place of the ventilators referred to in the next succeeding Sub-section (*f*).

Ventilators.

(*f*) Ventilators are to be fixed on the landward sides of the sheds and attached to the concrete beams, columns, upper lattice work and each other with galvanised bolts all as described for the louvres. These ventilators to consist of mild steel angle frames of 4 inches by 3 inches by ¾ inch section, about 4 feet 7 inches long, over which expanded metal must be stretched and secured to the angle frames by 1½ inch by ¼ inch bars and ¾ inch diameter bolts at 9 inches pitch. The expanded metal is to be 7⅞ inches longway of mesh and 3 inches shortway of mesh with strands ¼ inch by ¼ inch and shall weigh approximately 15½ lbs. per yard super. The frame, expanded metal, bars and all bolts in connection with same must be galvanised.

(*g*) Immediately over the louvres and ventilators mild steel lattice straining beams are to be fixed between the tops of all columns on both sides of the sheds, the details being shown on Figs. 3 and 12, Drawing No. 15. These are generally 2 feet in height, but those on the sea side of the transit shed are 3 feet in height and consist of open lattice work of mild steel angles 4 inches by 3 inches by $\frac{7}{16}$ inch and 3 inches by 3 inches by $\frac{7}{16}$ with $\frac{7}{16}$ inch web plates at the ends cut to shape to fit over the saddles securing the roof trusses to the columns and bolted to the saddles and to the columns as shown. Lattice work straining beams.

Expanded metal must be fitted over the insides of these lattice frames and secured thereto, the same being galvanised, all as described for the ventilators.

(*h*) Sliding doors are to be provided as shown generally on Drawing No. 14 and in detail on drawing No. 15. They are to be sent away riveted up complete and properly packed in crates. The roller path and guides are shown on Figs. 8, 9 and 10, Drawing No. 15. Padlocks of approved quality, with three keys, for these doors are to be provided. Sliding doors.

One sliding door in each shed is to be provided with a wicket door as described upon the Drawing, and furnished with a gunmetal lock and three keys.

The channel iron guide for the bottom of the sliding doors is to be fixed to the beam referred to in Clause 116 in an approved manner.

(*j*) The gutters are to be as shown in section on the Drawings, and are to be in lengths of about 6 feet and are to be provided with holes and straps for attaching them to the purlins, and holes at the socket and spigot ends for bolting the lengths together with $\frac{7}{8}$ inch diameter galvanised bolts, the joints being made with red lead. Suitable outlets are to be provided for the down pipes, which are to be of mild steel with screw socket joints not less than $\frac{3}{16}$ inch thick and galvanised inside and outside and fitted with approved gratings, those for the valley gutters being 5 inches internal diameter and the remainder 4 inches diameter. Galvanised gutters and down pipes.

(*k*) Before proceeding with the full execution of the steelwork of the sheds, two double bays of each type of roof comprising one end of each type of shed including gable end are to be put together and erected on supports in the maker's yard in Great Britain. The bays are to be fitted complete with all purlins, wind ties, fascia angles, lattice work, louvre and expanded Erection in Great Britain.

metal frames, the parts being properly bolted together. A complete 20 feet bay of corrugated sheets with ridging, gutters and down pipes must also be fixed on each roof in position for inspection.

One pair of sliding doors, including a wicket door, is also to be framed up complete, with hangers and wheels, and tried on its runners in the presence of the Engineers-in-Chief. Any alterations or amendments which may appear advisable from the above trial erections are to be carried out in the same, and in the remainder of the work without extra charge.

Painting

(*l*) All the steelwork, except the galvanised parts, before it is put together, is to be well cleaned, scaled and coated with boiled oil put on hot. After approval, it is to be cleaned where necessary and painted with two coats of Torbay Iron Paint, or other paint of a quality to be approved by the Engineers-in-Chief previous to leaving the maker's works.

During erection at Kilindini all meeting faces, including the tops of the purlins and such like places, must be well coated with two thick coats of the above-mentioned paint, and after erection the whole of the steelwork, with the exception of the galvanised work, is to receive two further coats of similar paint, all such painting being included in and covered by the Schedule Rates.

Working Drawings

(*m*) Fully detailed working drawings and photographs of all steelwork are to be furnished in accordance with the provisions of Clause 6 (*d*) and (*e*).

Railway Station

136. It is proposed to erect a railway station and other works in connection therewith in the position shown on Fig. 4, Drawing No. 4, and on the site indicated on Drawings Nos. 2 & 3. The details of this building are as yet not decided upon as the requirements of the Railway Department and the needs of the Port are at present unknown. In the meantime a provision is made for the same by including the sum of £25,000 in the Schedule of Prices.

No obligation shall rest upon the Government to employ the Contractors in relation to the expenditure of the whole or any part of this sum, and the Government reserve the right of erecting the railway station themselves, in which case the sum of £25,000 shall be deducted from the Contract without prejudice to the latter and without affecting the Schedule Rates in anyway, and the Contractors shall have no claim against the Government on account of any such deduction.

Should the Contractors, however, be asked to construct the railway station they shall submit a detailed Schedule of Rates for carrying out this work, which, if accepted, shall be substituted for the sum above mentioned without prejudice to the Contract or the Schedule of Rates in any degree whatever, and the construction of the railway station and work in connection therewith shall proceed accordingly.

Clean down.

137. Upon completion, the whole of the work in connection with the Contract is to be thoroughly cleaned down, and generally any matters which may, in the opinion of the Engineer require attention, are likewise to be carried out, so that the work may be satisfactorily and fully completed in accordance with the Contract, the cost thereof being included in and covered by the Schedule Rates.

SCHEDULE OF PRICES.

The rates entered against the items in the following Schedule are those referred to in the Contract Documents and are for the execution of the works finished complete in every respect, as shown on and described in the Contract Documents, with or without such modifications either by way of additions or deductions, or such alterations as may be ordered in writing during progress, together with the maintenance of such works likewise as provided for in the Contract Documents.

The rates given cover all costs of every kind whatsoever, including but not by way of limitation, all office charges, supervision, materials, labour, water supply, camp or location for native labour, all temporary works, the provision, maintenance, use and efficient repair of all railways, tramways, workshops, sheds, plant, machinery, locomotives, cranes, goliaths, titans, winding and other engines, blockmoulds, concrete mixing, lifting and setting plant, travellers, pile drivers, pumps, service bridges, dams, staging, jetties and wharves for shipping and landing materials, timbering, timber left in, piling, shoring, strutting, centering, shuttering, cast iron or other kentledge or weighting, tools, tackle, grabs, dredgers, tugs, barges, boats, and other floating craft, drilling machinery, blasting appliances, explosives, anchors, chains, cables, buoys, air locks, diving bells, diving apparatus, air compressors, stone crushers, artificial lighting, moulds, templates, profiles and appliances and plant of every kind and description, and the performance of all services that may be required for the proper execution, completion and maintenance of the works in full and complete accordance with the provisions of the Contract Documents, and the undertaking and discharge of all obligations and responsibilities therein defined.

The Contractors will be held to have fully considered all the conditions and requirements of the Contract Documents before entering the respective rates against the items of the following Schedule. The general directions, stipulations, particulars, descriptions of materials, &c., given in the Contract Documents are not necessarily repeated in the Schedule of Prices.

The quantities given in this Schedule are approximate only, and are to be so regarded, in accordance with the provision of Clause No. 19.

All measurements, are to be net, or as specified, applicable to finished work only as completed and fixed, notwithstanding any Trade custom to the contrary.

SCHEDULE OF PRICES.

The rates entered against the items in the following Schedule are those referred to in the Contract Documents and are for the execution of the works finished complete in every respect, as shown on and described in the Contract Documents, with or without such modifications either by way of additions or deductions, or such alterations as may be ordered in writing during progress, together with the maintenance of such works likewise as provided for in the Contract Documents.

The rates given cover all costs of every kind whatsoever, including but not by way of limitation, all office charges, supervision, materials, labour, water supply, camp or location for native labour, all temporary works, the provision, maintenance, use and efficient repair of all railways, tramways, workshops, sheds, plant, machinery, locomotives, cranes, goliaths, titans, winding and other engines, blockmoulds, concrete mixing, lifting and setting plant, travellers, pile drivers, pumps, service bridges, dams, staging, jetties and wharves for shipping and landing materials, timbering, timber left in, piling, shoring, strutting, centering, shuttering, cast iron or other kentledge or weighting, tools, tackle, grabs, dredgers, tugs, barges, boats, and other floating craft, drilling machinery, blasting appliances, explosives, anchors, chains, cables, buoys, air locks, diving bells, diving apparatus, air compressors, stone crushers, artificial lighting, moulds, templates, profiles and appliances and plant of every kind and description, and the performance of all services that may be required for the proper execution, completion and maintenance of the works in full and complete accordance with the provisions of the Contract Documents, and the undertaking and discharge of all obligations and responsibilities therein defined.

The Contractors will be held to have fully considered all the conditions and requirements of the Contract Documents before entering the respective rates against the items of the following Schedule. The general directions, stipulations, particulars, descriptions of materials, &c., given in the Contract Documents are not necessarily repeated in the Schedule of Prices.

The quantities given in this Schedule are approximate only, and are to be so regarded, in accordance with the provision of Clause No. 19.

All measurements, are to be net, or as specified, applicable to finished work only as completed and fixed, notwithstanding any Trade custom to the contrary.

Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
QUAY WALL & RECLAMATION.								
EXCAVATION.								
NOTE.—The rates for excavation apply to materials of any character that may be encountered and include all charges and contingencies whatsoever which may be involved in carrying out the work in full accordance with the Contract Documents; also the depositing of the materials derived therefrom either in the Reclamation or within the limits of Port Reitz or the lagoons in the neighbourhood as may be directed by the Engineers.								
Excavation for southern end of Quay Wall between steel sheeting and below the line of the 2 to 1 slope shown on Drawing No. 11	cub. yd.				1,300			
The measurement to be the horizontal width between the inner faces of the sheet piling by the height between the mean level of the base of the foundation and the line of the 2 to 1 slope. The measurement at the ends will be taken to vertical planes coinciding with the ends of the concrete-in-mass foundation as shown.								
Excavation for southern end of Quay Wall along the length of foundations constructed between steel sheeting but in open excavation above the line of the 2 to 1 slope shown on Drawing No. 11	cub. yd.				4,250			
The measurement to be in accordance with areas bounded by a vertical plane coinciding with the coping line of the quay wall, a slope of 1½ to 1 commencing at the back of the wall on the line of the 2 to 1 slope shown on Drawing No. 11, the said 2 to 1 slope and the agreed surface levels. The measurement at the ends will be taken to vertical planes coinciding with the ends of the concrete-in-mass foundations as shown.								
		Carried forward ...				...		

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost £	s.
	Brought forward							
3	Excavation for Quay Wall between the northern limit of the excavation measured under Items 1 and 2 and the northern termination of the concrete-in-mass foundations of the blockwork wall	cub. yd.				99,000		
	The measurement to be in accordance with areas bounded by a vertical plane coinciding with the coping line of the Quay Wall, a slope of 1½ to 1 commencing at a distance of 3 feet behind the line of the bottom course of concrete blocks as shown on Drawing No. 10, the base of the concrete-in-mass foundation and the agreed surface levels. The northern limit will be a vertical plane coinciding with the northern termination of the concrete-in-mass foundation.							
4	Excavation by dredging or otherwise to provide a depth of 33 feet at L.W.O.S.T. over the areas crossed by broken lines on Drawings Nos. 2 and 3 and to form the slopes at the northern and southern ends as shown	cub. yd.				68,000		
	The measurement for the portion in front of the wall to be the quantity lying seawards of the vertical plane adopted for the Quay Wall excavation under Items Nos. 2 and 3 and above the level of 33 feet below L.W.O.S.T. as ascertained from agreed cross sections, and to the lines shown on the Drawings for the slopes at the southern and northern ends. Materials removed below the required levels and outside the slopes shown will not be measured.							
5	Excavation for rubble apron in front of Quay Wall and below the level of 33 feet below L.W.O.S.T. from commencement of blockwork portion of wall at south end to termination of concrete-in-mass foundation at north end	cub. yd.				11,250		
	The measurement to be the quantity removed below the level of 33 feet below L.W.O.S.T. and seaward of the vertical plane adopted for Item No. 3 as ascertained from agreed cross sections.							
						Carried forward		

Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
Brought forward ...								
Excavation in cliff in rear of Reclamation, including trimming slopes to the required inclination, forming bottom to the required level and constructing a footpath down the finished slope ...	cub. yd.				900,000			
The measurement to be the quantity excavated as measured in the cliff and as ascertained from agreed cross sections, as specified in Clause 80 (f).								
Excavation in made ground of Reclamation and in area of cliff excavations in timbered trenches or otherwise for main drains, branch drains, open drains, catchpits, crane roads, shed foundations, platform walls or any other special purpose that may be required or ordered, including refilling and well ramming the refilled materials and disposal of surplus materials	cub. yd.				3,500			
The measurement to be the net area of the base of the finished permanent work by the height from the foundation level to the agreed surface level. Width for pipe trenches measured over sockets of pipes.								
Excavation in foreshore at southern end of Quay Wall to form trench to receive rubble berm as shown on Drawing No. 11	cub. yd.				200			
The measurement to be the net amount excavated in accordance with agreed cross sections.								
Pitch pine or other suitable timber in sheet piling to form steps in foundations of concrete-in-mass substructure at southern end of wall, including pile shoes and all labours	cub. ft.				1,380			
The measurement to be from the cut off level as shown on Drawing No. 11 to the point of the pile shoe as driven.								
Carried forward ...								

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	Brought forward ...								
	PORTLAND CEMENT CONCRETE.								
	NOTE.—The rates for concrete include all charges and contingencies which may be involved in carrying out the work in full accordance with the Contract Documents.								
10	Concrete-in-mass (5 to 1) deposited between the steel sheeting below the level of 1 foot 9 inches above L.W.O.S.T. in the southern end of the Quay Wall, as shown on Drawing No. 11	cub. yd.				3,000			
11	Concrete-in-mass (4 to 1) in foundation for blockwork Quay Wall deposited and prepared for reception of blockwork	cub. yd.				3,100			
12	Concrete blocks (7 to 1) in Quay Wall including all blocks of special shape or size that are shown on the Drawings or that may be ordered or found necessary as the work proceeds, set complete	cub. yd.				46,150			
13	Extra on concrete blocks for bag joggles of 4 to 1 concrete-in-mass 10 inches diameter and 2 feet long in blockwork wall of Quay, set complete ...	each				4,140			
14	Concrete-in-mass (7 to 1) deposited in superstructure of Quay Wall including all charges for forming recesses for drainage outfalls, drains to cable trench, chases for ladders and fenders and recess for boat-slips	cub. yd.				8,300			
	The measurement to be the cubical contents within the face and back lines of the superstructure as shown on the Drawings or as may be ordered, including the cube of the moulded concrete ashlar facing, recesses for fenders, ladders and drains and fine concrete facing on upper surface, but not including the cube of the coping, manhole shafts, cable trench, cable trench cover, steps and landings.								
	Carried forward								

Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
Brought forward ...								
Forming manhole shafts of main drains in superstructure of Quay Wall complete as shown	each				3			
Forming cable trench in superstructure of Quay Wall with surfaces properly prepared and levelled to receive covers	lin. ft.				1,213			
Moulded concrete (4 to 1) ashlar facing to superstructure of Quay Wall, including corbel course, all quoins and all blocks of special size or shape that are shown on the Drawings or that may be ordered as the work proceeds. Set complete, including mortar grout and pointing	sup. yd.				1,730			
(Rate extra over 7 to 1 concrete of Item No. 14.)								
The measurement to be the net superficial area of the front vertical face of the ashlar as set. The sides of ladder recesses and boathook holdfast recesses will not be measured.								
Moulded concrete (4 to 1) in steps and landings of boat steps set complete, including mortar, grout and pointing	cub. ft.				500			
Measured net as set, but no deductions made for nosings.								
Moulded concrete (4 to 1) in main coping of Quay Wall, including quoins and all copes of special size and shape which are shown on the Drawings or may be ordered as the work proceeds, set complete, including mortar, grout and pointing	cub. ft.				4,500			
Measured net as set, but no deductions made for joints, nosings, grooves or chamfers.								
Carried forward ...								

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	Brought forward ...								
20	Moulded concrete (4 to 1) in cover to cable trench in superstructure of Quay Wall, set complete, including mortar grout and pointing	cub. ft.				1,415			
	Measured net as set.								
21	Concrete-in-mass (4 to 1) 3 inches to 6 inches in thickness on surface of superstructure of Quay Wall, including well packing around and under rails, forming rebates for cable trench cover and forming back edge to a true line parallel with coping	sup. yd.				450			
	(Rate extra over 7 to 1 concrete of Item No. 14)								
	The measurement to be the net superficial area of the upper surface as laid.								
	STONE RUBBLE, CORAL RUBBLE, PUNNED FILLING & SURFACING QUAY.								
	NOTE. The rates include all charges and contingencies which may be involved in carrying out the work in full accordance with the Contract Documents.								
22	Stone rubble in approach bank at southern end of Quay Wall above the level of L.W.O.S.T. and inside the line of the berm in sizes varying from ¼ cwt. to 1 ton in weight, with slopes formed to the required inclinations, as shown on Drawing No. 11	cub. yd.				1,500			
23	Stone rubble in slope and berm in front of Quay Wall at south end of same mostly below the level of L.W.O.S.T. in sizes varying from ¼ cwt. to 1 ton in weight, with slopes formed to the required inclinations, as shown on Drawing No. 11	cub. yd.				2,000			
						Carried forward ...	...		

Item No.	Description	Unit	Schedule Rate £	s.	d.	Approximate Quantity	Approximate Cost £	s.	d.
	Brought forward ...								
20	Moulded concrete (4 to 1) in cover to cable trench in superstructure of Quay Wall, set complete, including mortar grout and pointing	cub. ft.				1,415			
	Measured net as set.								
21	Concrete-in-mass (4 to 1) 3 inches to 6 inches in thickness on surface of superstructure of Quay Wall, including well packing around and under rails, forming rebates for cable trench cover and forming back edge to a true line parallel with coping	sup. yd.				450			
	(Rate extra over 7 to 1 concrete of Item No. 14.)								
	The measurement to be the net superficial area of the upper surface as laid.								
	STONE RUBBLE, CORAL RUBBLE, PUNNED FILLING & SURFACING QUAY.								
	NOTE. The rates include all charges and contingencies which may be involved in carrying out the work in full accordance with the Contract Documents.								
22	Stone rubble in approach bank at southern end of Quay Wall above the level of L.W.O.S.T. and inside the line of the berm in sizes varying from ¼ cwt. to 1 ton in weight, with slopes formed to the required inclinations, as shown on Drawing No. 11	cub. yd.				1,500			
23	Stone rubble in slope and berm in front of Quay Wall at south end of same mostly below the level of L.W.O.S.T. in sizes varying from ¼ cwt. to 1 ton in weight, with slopes formed to the required inclinations, as shown on Drawing No. 11	cub. yd.				2,000			
	Carried forward								

Item No.	Description	Unit	Schedule Rate £	s.	d.	Approximate Quantity	Approximate Cost £	s.	d.
	Brought forward ...								
24	Stone rubble in apron in front of Quay Wall in sizes varying from ¼ cwt. to 10 cwts. in weight, with upper surface formed to the required level of 33 feet below L.W.O.S.T.	cub. yd.				9,300			
25	Coral rubble backing to Quay Wall below the level of 1 foot 9 inches above L.W.O.S.T., with slope formed to an inclination of 1 to 1	cub. yd.				37,000			
26	Coral rubble filling behind scar end at northern termination of Quay Wall to form junction between coral backing to wall and coral coating to face of northern portion of Reclamation ...	cub. yd.				3,000			
27	Coral rubble coating to seaward face of slope of filling of northern portion of Reclamation area, including roughly pitching the face of coating above the level of L.W.O.S.T.	cub. yd.				37,000			
	The measurement for Items 22 to 27 inclusive to be the quantity deposited within the specified limits as ascertained from agreed cross sections. No payment will be made for materials deposited outside the limits shown on the Drawings unless ordered to be so deposited.								
28	Punning and watering in layers not exceeding 18 inches in thickness materials obtained from the cliff excavation or other source, deposited behind the Quay Wall for a width of 54 feet measured from the rear line of the wall above the level of 1 foot 9 inches above L.W.O.S.T.	cub. yd.				31,600			
	The measurement to be the quantity deposited within the specified limits as ascertained from agreed cross sections.								
29	Provision for surfacing the area between the back of the Quay Wall and the front of the Transit Sheds after all settlement in the filling has ceased. No obligation shall rest upon the Government to employ the Contractors in relation to the expenditure of the whole or any portion of this sum ...	Provisional sum					8,000	0	0
	Carried forward								

Item No.	Description	Unit	Schedule Rate £	s.	d.	Approximate Quantity	Approximate Cost £	s.	d.
	Brought forward ...								
	FENDERING.								
	NOTE. The rates include all charges and contingencies which may be involved in carrying out the work in full accordance with the Contract Documents.								
30	Greenheart in horizontal backing pieces to fendering, sawn on all four sides, planed where necessary, including all shaping, weathering, checking, mortising, boring holes, turned hardwood plugs set in red lead and all labours whatsoever, fixed complete but exclusive of lewis bolts	cub. ft.				3,400			
31	Greenheart in horizontal rubbing pieces to fendering, sawn on all four sides, planed where necessary, including shaping, weathering, chamfering, checking, mortising and boring holes, fixed complete, including also the provision and fixing of 12 inches by 1 inch diameter galvanised coach screws with washers	cub. ft.				1,700			
32	Galvanised mild steel in 1¼ inch diameter lewis bolts, nuts and washers grouted into the wall with neat cement, fixed complete, including all covering and protection	cwt.				105			
	LADDERS, RAILINGS AND BOLLARDS.								
	NOTE. The rates include all charges and contingencies which may be involved in carrying out the work in full in accord with the Contract Documents.								
33	Galvanised mild steel in ladders, cleats and lewis bolts fixed complete, including grouting lewis bolts in position ...	cwt.				22			
	Carried forward								

Item No.	Description	Unit	Schedule Rate £	s.	d.	Approximate Quantity	Approximate Cost £	s.	d.
	Brought forward ...								
34	Galvanised cast iron in hand holdfasts for ladders fixed and grouted in position, including forming sinkages and drain holes in moulded concrete coping	cwt.				¾			
35	Galvanised mild steel in forged standards of railings at boatsteps with all necessary drilled holes, including forming holes and seatings for stumps and base plates of standards and grouting in position	cwt.				8			
36	Galvanised gas tube for handrailing 1¼ inch external diameter, 1⅛ inch internal diameter, straight and bent to curves as shown and fixed in position in standards with ¾ inch diameter galvanised pins, including pins, drilling holes in gas tube and riveting	cwt.				2½			
37	Galvanised mild steel in forged holdfasts for inclined handrailing at boatsteps, including boring holes for stumps and grouting in position	cwt.				1			
38	Galvanised mild steel in 1½ inch diameter solid inclined handrailing at boatsteps bent to required shapes, fixed complete in holdfasts with galvanised pins, including provision of pins, drilling and riveting	cwt.				2½			
39	Galvanised mild steel in boat holdfasts 1½ inch diameter jagged and upset built into moulded concrete ashlars ...	cwt.				2			
40	Cast steel bollards fixed in position, including coating, bedding in cement mortar and grouting ends, but not including concrete filling	ton				26½			
41	Mild steel in tie rods, holding-down bolts, cottars, coupling screws, nuts and washers for bollards, including coating, fixing in position and cutting, grooving or notching tails of concrete ashlars where necessary	ton				5			
	Carried forward								

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	Brought forward ...								
42	Cast iron in washer plates for tie rods and holding down bolts of bollards, including coating and fixing in position	ton				5½			
	NOTE.—The measurement for Items 33 to 42 inclusive to be the net weight of the metal fixed in the work.								
43	Concrete in-mass (7 to 1) filling to bollards struck off flush with bottom surface of casting	each				16			
	CRANE ROAD ON QUAY.								
	NOTE. The rates include all charges and contingencies which may be involved in carrying out the work in full accordance with the Contract Documents.								
44	Bed of broken stone 4 feet wide and 9 inches in thickness under cross sleepers of inner rail, including any necessary levelling, packing up and trimming that may be necessary ...	cub. yd.				105			
45	Creosoted pitch pine in cross sleepers 3 feet by 12 inches by 6 inches under longitudinal sleeper of inner rail	cub. ft.				470			
	Measured net.								
46	Creosoted pitch pine in longitudinal sleeper of inner rail 15 inches by 15 inches, including butt jointing, boring, trimming top surface to receive rail and fixing in position	cub. ft.				1,470			
	Measured net.								
47	Steel rails B.S.F.B. section in crane rail and crossings in same, 90 lbs. per yard, fixed in position, including coating and all drilling	ton				27½			
	Carried forward								

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	Brought forward ...								
48	Fishplates and fishbolts for crane rail, B.S. pattern, including fixing and coating with Dr. Angus Smith's tar composition	cwt.				27			
49	Mild steel in B.S.U. angles in guard angles for crane rails and crossings for same 5 inches by 3 inches by ½ inch, flat bar fishplates 1 foot 6 inches by 3½ inches by ½ inch and ½ inch diameter bolts for same, including all drilling, coating, laying and fixing ...	ton				24			
50	Mild steel in base plates for outer rail, including all drilling, coating, riveting and fixing	cwt.				22			
51	Mild steel in 1 inch diameter jagged and upset lewis bolts and nuts for same for securing base plates of outer rail, including drilling holes in concrete, coating, grouting and fixing	cwt.				6			
52	Galvanised coach screws, 7 inches long, ¾ inch diameter, for securing inner rail and guard rails, fixed complete ...	cwt.				17			
53	Cast iron in distance pieces with cored holes for inner rail and at crane rail crossings, including coating and fixing in position	cwt.				18			
54	Mild steel in bolts ¾ inch diameter and nuts for same through main guard angles and distance pieces of inner rail, including coating and fixing in position	cwt.				6			
	The measurements for Items 47 to 54 inclusive to be the net weight of metal fixed in the work.								
55	Filling of 2 to 1 fine concrete between crane rail and angle guards, neatly finished to smooth surface	lin. yd.				685			
	The measurements to be the length of the crane rails, each rail measured separately.								
	Carried forward								

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	Brought forward ...								
53	Extra for eyes or junctions on 15 inches internal diameter pipes	each				44			
54	Ditto ditto on 12 inches internal diameter pipes	each				88			
55	Concrete-in-mass (6 to 1) in manholes on line of main drains, away from wall, neatly finished ready to receive covers, including building in stoneware pipes and rendering where necessary ... *Measurement to be net.*	cub. yd.				100			
	Concrete-in-mass (6 to 1) in inspection pits on shed drains and on roadway drains neatly finished ready to receive covers, including building in stoneware pipes and rendering where necessary... *Measurement to be net.*	cub. yd.				110			
	Cast iron in covers for manholes on 30 inches diameter main drains with solid lids to suit opening 1 foot 10 inches by 1 foot 10 inches, including coating, bedding and fixing	cwt.				40			
	Ditto ditto but with grating covers to three manholes at the foot of cliff ...	cwt.				12			
	Cast iron in covers to inspection pits in sheds, on platforms and on quay in front of transit sheds, of an approved pattern, including coating, bedding and fixing	cwt.				15			
	Cast iron in open bar gulley covers of an approved pattern, 24 inches by 15 inches clear on 2 feet by 2 feet manholes of 15 inch and 12 inch drains, including coating, bedding and fixing...	cwt.				64			
	Galvanised mild steel flap valves for outfalls, including hinge bolts with jagged and upset ends, forming holes for same in wall and grouting, all fixed complete.	cwt.				15			
	Carried forward								

Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
RAILWAYS.								
NOTE.—The rates include all charges and contingencies which may be involved in carrying out the work in full accordance with the Contract Documents, so that the railways shall be handed over to the Government in good running order and complete in every detail.								
Ballast of broken stone as specified laid spread, levelled and formed to such shapes as may be directed, including preparing formation level, all packing, trimming, boxing up and all labours whatsoever	cub. yd.				8,600			
NOTE.—The measurement will be the net quantity deposited, the cube of the sleepers being deducted.								
Supplying only hardwood sleepers 7 feet by 9 inches by 5 inches or other approved size and special sleepers at switches and crossings	cub. ft.				26,000			
NOTE.—Measured net.								
Supplying only steel rails 50 lbs. per yard B.S.F.B. section, cut to length and drilled ready for fishplates ...	ton				440			
Supplying only British standard 4-hole fishplates 16 inches long, weighing 14½ lbs. per pair	ton				13			
Supplying only mild steel fishbolts of approved pattern, ¾ inch diameter, with nuts and washers	ton				3½			
Supplying only mild steel bearing plates weighing about 6 lbs. each of approved pattern, suitable for 50 lb. B.S.F.B. rails	ton				63			
					Carried forward			

Item No.	Description	Unit	Schedule Rate £	s.	d.	Approximate Quantity	Approximate Cost £	s.	d.
	Brought forward ...								
84	Supplying only mild steel screw spikes of approved pattern, $\frac{7}{8}$ inch diameter, and $4\frac{1}{2}$ inches long under the head ...	ton				15			
85	Supplying only mild steel dog spikes $\frac{3}{4}$ inch square and $4\frac{1}{2}$ inches long over all	ton				11			
86	Supplying only switches complete with two tongues, all sole plates, distance blocks, lever rods, distance rods, rivets, bolts and all fittings whatsoever ...	each				48			
87	Supplying only single crossings for running rails (*i.e.*, one intersection of rail and rail), complete with guard and wing rails, sole plates, packing blocks, rivets, bolts and all fittings whatsoever	each				48			
88	Supplying only diamond crossings (*i.e.*, complete set with 4 intersections of rails) complete with guard and wing rails, sole plates, packing blocks, rivets, bolts and all fittings whatsoever	each				6			
89	Supplying only cast iron switch levers of approved pattern, complete with box, lever, crank and balance weight ...	each				48			
90	Laying permanent way (single line of 2 rails), straight or curved, including fixing sleepers and bearing plates, bending and cutting rails, drilling rails where cut, fitting and fixing fishplates, bolts, screw spikes, dog spikes, etc., all labours and contingencies whatsoever	lin. yd.				9,870			
	The measurements will be the net length laid. Crossover roads will be measured from point of tongue to point of tongue. Curves measured on centre line.								
91	Extra on Item 90 for laying switches (*i.e.*, two tongues), including fitting and connecting all rods, packings, blocks, sole plates, bolts, etc., complete	each				48			
						Carried forward			

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	Brought forward ...								
92	Extra on Item 90 for laying single crossings for running rails (i.e., one intersection of rail and rail), including fitting and fixing all guard and wing rails, sole plates, packings, blocks, bolts, etc., complete	each				48			
93	Extra on Item 90 for laying diamond crossings (i.e., complete set with four intersections of rail and rail), including fitting and fixing all guard and wing rails, sole plates, packings, blocks, bolts, etc., complete	each				6			
94	Fixing only switch lever boxes of approved pattern, including all timber, sleepers, bolts, dogs, painting, etc., complete ...	each				48			
	Supplying and fixing one buffer stop at boatsteps consisting of bull-headed rails and hardwood timber beam complete to approved design, with bolts, fastenings and all coating	each				1			
	Total, carried to Summary	£							

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	SHEDS.								
	NOTE.—The approximate quantities in the following Items in connection with the transit sheds and the warehouse are respectively for one complete shed.								
	The measurements for both reinforced concrete and ordinary concrete to be the actual net quantity in the finished structure.								
	The measurement for all steel and ironwork to be the net weight of the metal used in the work.								
	TRANSIT SHED.								
	NOTE. The rates for the transit shed include all charges and contingencies involved in carrying out the work, also for all labours associated with a building of this description, and shall include all that is necessary to complete the building in every respect and in accordance with the Contract Documents.								
96	"Simplex" concrete piles of 4 to 1 concrete-in-mass driven as specified, including reinforcing top portion, provision of shoes and testing as specified	lin. ft.				2,800			
	The measurement will be the actual length of the concrete piles as completed, measured from point of shoe.								
97	Concrete-in-mass (7 to 1) around heads of foundation piles	cub. yd.				110			
	The measurement will be the net quantity deposited, the cube of the heads of "Simplex" piles and reinforced concrete beams being deducted.								
						Carried forward			

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	Brought forward ...								
98	Reinforced concrete in columns finished complete	cub. ft.				3,850			
	The measurement to be the height above the top of the 7 to 1 concrete-in-mass foundation.								
99	Reinforced concrete in horizontal beams between columns supporting hollow walls, doors, louvre frames, ventilators, etc.	cub. ft.				3,160			
100	Hollow wall in panels between columns in sides and ends of shed constructed of concrete slabs reinforced with expanded metal, with plinth course, air space 2 inches in width and galvanised bonding irons, all as specified ...	sup. yd.				820			
	The measurement to be the area of the the hollow wall on the exposed outer face as constructed, and is to include the two skins and the plinth course.								
101	Concrete-in-mass (7 to 1) in retaining wall of railway platform	cub. yd.				130			
102	Moulded concrete (4 to 1) in coping 4 inches in thickness on retaining wall of railway platform and ramps to same	cub. ft.				305			
103	Coral rubble bottoming 12 inches in thickness to form ground floor and railway platform	cub. yd.				1,650			
104	Concrete-in-mass paving to ground floor and platform, 6 inches thick, consisting of 4½ inches of 5 to 1 ordinary concrete and 1½ inches of 2 to 1 fine concrete finished granolithic, all as specified and laid in alternate sections	sup. yd.				5,100			
105	Concrete-in-mass (4 to 1) in base to receive lower mild steel channel guides of sliding doors	cub. yd.				20			
106	Concrete-in-mass (4 to 1) in protective cases around columns on ground floor	cub. yd.				20			
	Carried forward ...								

Item No.	Description	Unit	Schedule Rate £	s.	d.	Approximate Quantity	Approximate Cost £	s.	d.
	Brought forward								
107	Mild steel in roof trusses, shoe plates over columns, cantilever awning (if required), end frames, etc.	ton				75			
108	Mild steel in purlins, cleats and covers for joints in same	ton				90			
109	Mild steel in facia angle and bulb plate below eaves gutter	ton				11			
110	Mild steel in wind bracing	ton				14			
111	Mild steel in lattice braced frames between heads of columns covered with galvanised expanded metal ... ... (*Expanded metal measured separately.*)	ton				18			
112	Mild steel in B.S. channels for roller paths and lower guides of sliding doors	ton				84			
113	Sliding doors complete with rollers, hangers, bolts, locks, etc., including wicket fitted to one pair ...	pair				20			
114	Galvanised mild steel corrugated sheeting No. 18 S.W.G. on roof and gable ends, including ½ inch diameter "limpet" bolts and "limpet" washers to suit ... *The measurement to be the net area covered by the sheeting when fixed in position.*	square 100 ft.				570			
115	Galvanised mild steel corrugated ridging No. 18 S.W.G., including all necessary fastenings	lin. ft.				852			
116	Galvanised mild steel in eaves gutter, No. 10 S.W.G., including all necessary outlets, specials ends, straps and fastenings	lin. ft.				852			
117	Galvanised mild steel in valley gutter, No. 8 S.W.G., including all necessary outlets, special ends, straps and fastenings	lin. ft.				426			
			Carried forward						

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	Brought forward ...								
118	Galvanised mild steel in 5 inches diameter down pipes with screwed socket joints, bent to required curves where necessary, including all straps and fastenings and the provision of gratings over inlets	lin. ft.				230			
119	Galvanised mild steel in 4 inches diameter down pipes, all as Item 118 ...	lin. ft.				500			
	The measurement for Items 116 to 119 inclusive to be the net effective length when fixed in position.								
120	Galvanised mild steel in bars, expanded metal and bolts for securing same to lattice braced frames of Item 111 ...	cwt.				52			
121	Galvanised mild steel in angle frames of ventilators about 4 feet 7 inches by 2 feet 11 inches covered with galvanised expanded metal secured by galvanised mild steel bars and bolts, on landward side of shed	cwt.				125			
122	Galvanised mild steel in framed louvres about 4 feet 7 inches by 4 feet 2 inches, on seaward side of shed	each				84			
123	Galvanised mild steel in framed louvres about 4 feet 6 inches long by about 5 feet in height, on ends of shed ...	each				46			
124	Galvanised mild steel in hook bolts, nuts and washers for securing corrugated sheeting to purlins	cwt.				55			
125	Galvanised mild steel in bolt and lewis bolts, nuts and washers of various lengths and sizes	cwt.				40			
126	Mild steel in black bolts and lewis bolts, nuts and washers of various lengths and sizes	cwt.				120			
	Total, carried to Summary						£		

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	WAREHOUSE.								
	NOTE.—The rates for the warehouse include all charges and contingencies involved in carrying out the work, also for all labours associated with a building of this description, and shall include for all that is necessary to complete the building in every respect and in accordance with the Contract Documents.								
127	"Simplex" concrete piles of 4 to 1 concrete-in-mass driven as specified, including reinforcing top portion provision of shoes and testing as specified	lin. ft.				11,000			
	The measurement to be the actual length of pile as completed measured from point of shoe.								
128	Concrete in mass 7 to 1 around heads of foundation piles	cub. yd.				225			
	The measurement will be the net quantity deposited. The cube of the heads of the "Simplex" piles and reinforced concrete beams being deducted.								
129	Reinforced concrete in columns finished complete	cub. ft.				9,700			
	The measurement to be the height above the top of the 7 to 1 concrete in mass foundation.								
130	Reinforced concrete in horizontal beams between columns, supporting hollow walls, doors, louvre frames, ventilators, etc.	cub. ft.				4,800			
131	Reinforced concrete in upper floor and projecting platforms, including all beams carrying same, finishing surface with granolithic concrete as specified, formation of hatchway openings and such other openings as may be necessary	sup. yd.				6,230			
	The measurement to be the net area constructed. Hatchways, stair wells, and columns being deducted.								
						Carried forward			

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	Brought forward ...								
132	Hollow wall in panels between columns in sides and ends of shed constructed of concrete slabs reinforced with expanded metal, with plinth course, air space 2 inches in width and galvanised bonding irons, all as specified *The measurement to be the area of the of the hollow wall on the exposed outer face as constructed, and is to include the two skins and the plinth course.*	sup. yd.				1,580			
133	Concrete-in-mass (7 to 1) in retaining wall of railway platforms	cub. yd.				260			
134	Moulded concrete (4 to 1) in coping 4 inches in thickness on retaining wall of railway platforms and ramps to same	cub. ft.				610			
135	Coral bottoming 12 inches in thickness to form ground floor and railway platforms	cub. yd.				2,020			
136	Concrete-in-mass paving to ground floor and platforms, 6 inches thick, consisting of 4½ inches of 5 to 1 ordinary concrete and 1½ inches of 2 to 1 fine concrete finished granolithic, all as specified and laid in alternate sections	sup. yd.				6,280			
137	Concrete-in-mass (4 to 1) in base to receive lower mild steel channel guide of sliding doors	cub. yd.				20			
138	Concrete-in-mass (4 to 1) in protective bases around columns on ground floor	cub. yd.				35			
139	Stairs of reinforced concrete between ground floor and upper floor, including all stringers, supports, etc.	each				2			
140	Galvanised mild steel in fixed and movable stanchions and in handrails around staircase wells and on flights of stairs, including galvanised cast iron sockets let into floor, drilling holes in steel, etc., all fixed complete ...	cwt.				22			
	Carried forward								

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost £	s.	d.
	Brought forward ...								
141	Mild steel in movable hatchway covers and frames for same of chequered plating, joists, angles, etc., including all necessary fitting, fixing, bolts, lifting handles, coating, etc., fixed complete in place	cwt.				120			
	(NOTE.—The quantity is provisional only.)								
142	Mild steel in roof trusses, shoe plates over columns, cantilever awning, end frames, etc.	ton				93			
	(NOTE.—Allowance has been made in quantities for one cantilever awning.)								
143	Mild steel purlins, cleats and covers for same	ton				110			
144	Mild steel in facia angle and bulb plate below eaves gutter	ton				11			
145	Mild steel in wind bracing	ton				1½			
146	Mild steel in lattice braced frames between heads of columns covered with galvanised expanded metal	ton				17½			
	(Expanded metal measured separately.)								
147	Mild steel in B.S. Channels for roller paths and lower guides of sliding doors	ton				17			
148	Sliding doors of ground floor, complete with rollers, hangers, bolts, locks, etc., including wicket fitted to one pair ...	pair				20			
149	Sliding doors of upper floor, complete with rollers, hangers, bolts, locks, etc.	pair				20			
	Carried forward								

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	Brought forward ...								
150	Galvanised mild steel corrugated sheeting, No. 18 S.W.G., on roof and gable ends, including ½ inch diameter "limpet" bolts and "limpet" washers to suit	square 100 ft.				710			
	The measurement to be the net area covered by the sheeting when fixed in position.								
151	Galvanised mild steel corrugated ridging, No. 18 S.W.G., including all necessary fastenings	lin. ft.				852			
152	Galvanised mild steel in eaves gutter, No. 10 S.W.G., including all necessary outlets, special ends, straps and fastenings	lin. ft.				852			
153	Galvanised mild steel in valley gutter, No. 8 S.W.G., including all necessary outlets, special ends, straps and fastenings	lin. ft.				426			
154	Galvanised mild steel in 5 inches diameter down pipes with screwed socket joints, bent to required curves where necessary, including all straps and fastenings and the provision of gratings over inlets	lin. ft.				430			
155	Galvanised mild steel in 4 inches diameter down pipes all as Item 154 ...	lin. ft.				960			
	The measurement for Items 151 to 155 inclusive to be the net effective length when fixed in position.								
156	Galvanised mild steel in bars, expanded metal and bolts for securing same to lattice braced frames of Item 146 ...	cwt.				45			
157	Galvanised mild steel in angle frames of ventilators about 4 feet 7 inches long by about 3 feet high covered with galvanised expanded metal secured by galvanised mild steel bars and bolts, on ground floor at landward side of shed	cwt.				140			
	Carried forward								

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	Brought forward ...								
158	Galvanised mild steel in angle frames of ventilators, all as Item 156, but about 4 feet 7 inches long by about 3 feet 8 inches high, on upper floor at landward side of shed	cwt.				130			
159	Galvanised mild steel in framed louvres, about 4 feet 7 inches long by about 5 feet 4 inches high, on ground floor, on seaward side of shed	each				84			
160	Galvanised mild steel in framed louvres, about 4 feet 6 inches long by 5 feet 4 inches high, on ground floor at ends of shed	each				48			
161	Galvanised mild steel in framed louvres, about 4 feet 7 inches long by 3 feet 8 inches high, on upper floor at seaward side of shed	each				84			
162	Galvanised mild steel in framed louvres, about 4 feet 7 inches long by about 3 feet 6 inches high, on upper floor at ends of shed	each				48			
163	Galvanised mild steel in hook bolts, nuts and washers, for securing corrugated sheeting to purlins	cwt.				75			
164	Galvanised mild steel in bolts and lewis bolts, nuts and washers of various lengths and sizes	cwt.				55			
165	Mild steel in black bolts and lewis bolts, nuts and washers, of various lengths and sizes	cwt.				125			
166	Mild steel in protection angles at base of columns of upper floor	cwt.				45			
167	Extra for reinforced concrete in which 50 per cent. of the sand employed has been obtained by crushing approved sandstone rock from cliff excavations as provided for in Clause 123 (*c*) ...	cub. ft.				Rate only			
	Total, carried to Summary	**£**							

Item No.	Description.	Units.	Schedule Rate. £	s.	d.	Approximate Quantity.	Approximate Cost. £	s.	d.
	ENGINEERS' LOCAL ACCOMMODATION.								
168	Provision, equipment, furnishing, renewals and maintenance for the duration of the Contract of Quarters for Engineering Staff, as specified in Clause 73 of Contract	lump sum				1			
	NOTE.—This sum is made up as follows:—								
	One double storied house for Resident Engineer £.....								
	Two houses for Assistant Engineers ... ... £.....								
	Two similar houses for Inspectors ... ... £.....								
	One barrack for native Clerks ... ... £.....								
169	Ditto ditto of Resident Engineer's Office, as specified in Clause 74 of Contract	lump sum				1			
170	Ditto ditto of Inspectors' Cabins, as specified in Clause 75 of Contract ...	each				2			
	Total, carried to Summary ... ... £								
171	Provisional sum in accordance with Clause 136 for the cost of the proposed Railway Station						25,000	0	0
	Total, carried to Summary ... ... £						**25,000**	**0**	**0**

DAYWORK.

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.
	LABOUR				
	NOTE.—The following rates include the use, repair and sharpening of tools, the use of consumable stores, the use and repair of stagings, wharves, workshops, plant, floating craft and appliances of all descriptions, office charges and supervision by the Contractors' agent, staff, foremen and gangers.				
172	Diver whilst engaged under water, to cover the use of apparatus and boat with crew for same, pumpers and signalmen	hour			
173	Mason	"			
174	Mason's labourer	"			
175	Bricklayer	"			
176	Bricklayer's labourer	"			
177	Carpenter	"			
178	Carpenter's labourer	"			
179	Smith	"			
180	Smith's striker	"			
181	Plumber	"			
182	Plumber's labourer	"			
183	Painter or Glazier	"			
184	Fitter	"			

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.
185	Fitters' Labourer	hour			
186	Riveter	"			
187	Plater	"			
188	Platelayer	"			
189	Pile Driver	"			
190	Crane Driver	"			
191	Stationary Engine Driver	"			
192	Locomotive Driver	"			
193	Timberman	"			
194	Boatman	"			
195	Labourer	"			
196	Boy	"			
	NOTE.—In Items 172 to 196 the Contractors are to state the nationality of the men referred to, and in cases where two or more nationalities are to be employed in one capacity a separate rate is to be entered against each.				
	PLANT				
197	Locomotive, including driver, fireman and rope runner if required, fuel, water and all consumable stores ...				
198	Portable steam crane, 1½ tons, including driver, fireman and banksman if required, fuel, water and all consumable stores	"			

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.
199	Portable steam crane, 3 tons, including driver, fireman and banksman if required, fuel, water and all consumable stores	hour			
200	Ditto ditto 5 tons ditto	,,			
201	Ditto ditto 8 ,, ditto	,,			
202	Ditto ditto 10 ,, ditto	,,			
203	Ditto ditto 12 ,, ditto	,,			
204	Ditto ditto 15 ,, ditto	,,			
205	Ditto ditto 20 ,, ditto	,,			
206	Goliath crane, 20 tons, including driver, fireman, banksman, fuel, water and all consumable stores	,,			
207	Portable engine, including driver, fireman, fuel, water and all consumable stores	,,			
208	Steam or electric pumps of any type, delivering 2,000 gallons per hour, including attendance, power, fuel, water and all consumable stores	,,			
209	Ditto ditto 5,000 gallons per hour ditto ...	,,			
210	Ditto ditto 10,000 ,, ,, ditto ...	,,			
211	Ditto ditto 20,000 ,, ,, ditto ...	,,			
212	Ditto ditto 50,000 ,, ,, ditto ...	,,			
213	Steam or motor launch, including attendance, fuel and all charges	,,			

Item No.	Description.	Unit.	Schedule Rate. £	s.	d.
	MATERIALS				
	NOTE.—The following rates cover the provision, only, delivered on the site of the works of the materials described, the quality of the latter being in every case the best of its respective kind and to the full approval of the Resident Engineer.				
214	Sand obtained from Andromache Reef or other approved site	cub. yd.			
215	Sand obtained from cliff excavations	"			
216	Sand obtained by crushing approved sandstone to less than ¼ in. gauge	"			
217	Broken stone of varying size, to form a satisfactory aggregate for reinforced concrete when mixed with sand and cement	"			
218	Ditto ditto for ordinary concrete ditto ditto	"			
219	Stone rubble in lumps of ½ cwt. and upwards	"			
220	Coral rubble ditto ditto	"			
	NOTE.—Any materials or stores other than the foregoing shall be paid for at rates to be arranged by the Resident Engineer on the basis of the invoice price, including freight, insurance and handling expenses, delivered on the Works at Kilindini, plus 25% for Contractors' administration charges, profit, etc.				

SUMMARY OF COST.

Cost of Quay Wall and Reclamation, as per page 124	£			
Cost of Railways, as per page 127	£			
Cost of two single storey Transit sheds at £ each, as per page 131	£			
Cost of one double storey warehouse, as per page 136	£			
Cost of Engineer's local accommodation, as per page 137	£			
Provisional sum for cost of proposed Railway Station, as per page 137	£	25,000	0	0
TOTAL AMOUNT OF TENDER	£			
Provision for cost of extra work in accordance with the conditions of Clause 20 (*c*) 5 per cent. on above Total	£			
	£			
The Contractors must here enter the amount for which they will be willing to construct a second Warehouse in accordance with the conditions of Clause 114 (*b*). The total being taken from the Schedule specified to be attached to the Tender	£			

BOND REFERRED TO IN CONTRACT.

Know all men by these Presents that we

of

in the County of and

of in the County of and

of in the County of are held

and firmly bound to

all of Whitehall Gardens in the City of Westminster the Crown Agents for the Colonies (hereinafter referred to as "the Crown Agents") in the penal sum of ten thousand pounds of lawful money of Great Britain such sum to be paid to the Crown Agents or the survivors or survivor of them or the executors or administrators of such survivor their or his Attorneys or Attorney at Whitehall Gardens aforesaid. For which payment to be well and truly made we bind ourselves and each of us and any two or more of us and the (successors) heirs executors and administrators of us and each of us and any two or more of us jointly and severally by these presents sealed with our seals.

Dated the day of 192 .

Whereas by a Contract bearing even date with the above-written Bond and made between the Crown Agents acting for and on behalf of the Government of Kenya Colony and Protectorate of the one part and the above bounden

(hereinafter called "the Contractors")

of the other part the Contractors have contracted and agreed that they the Contractors will in such manner within such periods and to such satisfaction construct execute complete and maintain such works as in the said Contract are mentioned and also will perform the other obligations imposed on the Contractors by the said Contract.

And whereas the original of such Contract duly executed by the Contractors is for better identification annexed to and bound up with these presents.

And whereas before and as one of the Terms upon which the said Contract was made it was expressly agreed between the parties thereto and the said and that the Contractors and the said and as Sureties for the Contractors should enter into the above-written Bond conditioned as hereinafter mentioned.

Now the Condition of the above-written Bond or Obligation is such that if the Contractors shall well and truly perform and observe all the agreements conditions and stipulations which under or by virtue of the said Contract or any Award made under the provisions therein contained ought on their part to be performed or observed and shall from time to time and at all times hereafter at their own costs and charges save harmless and keep indemnified the said Government and the Crown Agents and each of them from all actions suits losses charges damages and expenses which the Government or the Crown Agents or any of them shall or may bear sustain or incur for or by reason of the non-observance or non-performance or breach of any of the said agreements conditions and stipulations in the said Contract contained or referred to and on the part of the Contractors to be performed or observed then the above-written Bond or obligation shall be void or otherwise shall remain in full force and effect.

Provided always And it is hereby declared that all the rights and remedies of the said Government and Crown Agents respectively under the above-written Bond are to be deemed cumulative and in addition to and not in substitution for their respective rights and remedies under the said Contract and that the rights of the said Government and the Crown Agents against the said and or either of them and their or either of their (successors) heirs executors or administrators shall not be prejudiced or affected by and any alteration which may be made by agreement between the parties to the said Contract in the terms thereof or in the nature of the work to be executed or obligations to be performed thereunder or by time being granted to the Contractors or by any other indulgence or forebearance towards the Contractors in connection with the said Contract which but for this provision might release the said Sureties from liability under the said Bond.

Signed Sealed and Delivered by the above-named

TENDER.

GENTLEMEN,

Having examined the fifteen sheets of Drawings, Form of Contract, Specification and Schedule of Prices, and Form of Bond hereto annexed, relating to the proposed construction of a Quay Wall and other works at Kilindini Harbour in Kenya Colony and Protectorate, and having also visited and examined the site of the proposed works, or caused it to be visited on our behalf by a competent and reliable person, and having acquired all requisite information relating thereto as affecting this Tender, we, the undersigned, hereby offer to construct, execute, complete and maintain the proposed works in strict accordance with the Contract Documents, or with such alterations, additions or curtailments of such works as may from time to time hereafter be determined and ordered in writing, at the rates entered by us against the respective items in the Schedule of Prices.

We undertake to complete and deliver the whole of the work within the period of , reckoned from the date of the receipt of an intimation from you that this Tender has been accepted.

In the event of our being requested by the Government within 12 months previous to the completion of the works to proceed with an extension of the same, as referred to in Clause 10 (*d*) of the Form of Contract, we should be willing to carry out such extension works at a general reduction of per cent. on the Schedule Rates as set down in this Tender.

We also undertake, in the event of this Tender being accepted, to execute when called upon by you to do so, a Contract for the due execution and maintenance of the said works in the terms of the Contract Documents hereto annexed, which may be altered and added to in such manner as you may require for the purpose of adapting it to the circumstances of this Tender.

And we propose and for your approval as Sureties for the due performance of the said Contract in the sum of £10,000, and undertake to execute and procure the execution by such Sureties as may be approved, of a Bond for this sum in the form hereto annexed when required by you to do so.

And in the event of any of the conditions upon which you accept this Tender not being complied with, or in the event of our failing to execute or procure the execution as aforesaid of either such Contract or Bond for fourteen days after the same respectively shall have been left with, or posted to us at the address given below for that purpose, we hereby authorise you to rescind the acceptance of this Tender, but this provision is to be without prejudice to any other rights or remedies you may have in respect of such failure.

In consideration of the trouble and expense incurred by you in examining and considering this tender, we further undertake that the same shall not be withdrawn by us before the expiration of ninety days from the date hereof but shall remain binding upon us and may be accepted at any time before the expiration of such ninety days.

Dated this day of 19

Signature

Address

To

The Crown Agents for the Colonies,
4, Millbank,
London, S.W.1.

For Instructions to persons Tendering, see next page.

INSTRUCTIONS TO PERSONS TENDERING.

1. The Drawings, Specification and all other Contract documents can be inspected, by appointment, at the offices of Messrs. Coode, Matthews, Fitzmaurice & Wilson of No. 9 Victoria Street, Westminster, S.W. 1. Uncoloured copies of the Drawings, with the exception of the Admiralty Chart, can be obtained from Messrs. Norton & Gregory of Castle Lane, Buckingham Gate, S.W. 1, on payment and on production to them of the invitation from the Crown Agents to tender.

2. The Contractor must obtain for himself on his own responsibility and at his own expense all the information which may be necessary for the purpose of making a Tender and entering into the Contract, and must examine the above mentioned documents and inspect and consider the site and surroundings.

3. The Contractor must satisfy himself as to the nature of all existing works and buildings, and as to the nature of the existing roads or other means of communication and access to and egress from the site and works, the available accommodation as regards land (whether without or within the site) and the buildings that may be required for temporary purposes in connection with the execution, construction, completion, or maintenance of the works, and must make his own enquiries as to the work-yard sites and depôts and as to the acquisition of such additional sites and areas as may be necessary for temporary purposes for executing, constructing, completing, and maintaining the works.

4. He must also, notwithstanding that borings have been made by or on behalf of the Government of Kenya Colony and Protectorate make local and independent enquiries as to the nature of the ground to be excavated, foreshores and sea-bed on which the works are to be constructed and the dredging carried out, the set, strength and action of the tides and currents, the means of obtaining sand, coral, stone, or other local materials required for the works and generally obtain his own information on all matters that may in any way affect the General Conditions and the Schedule of Prices.

Any neglect or failure on his part to obtain reliable information on the spot upon these or any other matters affecting the General Conditions shall not relieve him from any risks or liabilities or from the entire responsibility for the completion of the works.

5. The quantities given in the Schedule of Prices are approximate and the Contractor must satisfy himself with regard to the general accuracy of the quantities given calling attention on his Tender to any quantities with which he may materially differ and shall provide accordingly in the Schedule Rates. The Schedule of Prices with accompanying quantities fully priced, carried out at the Schedule Rates, cast and totalled, is to accompany the Contractors' Tender and no Tender will be considered valid unless accompanied by such Schedule with a price affixed to each individual item therein.

6. It will be necessary for the Contractor at his own cost to erect such housing accommodation as will be required by his staff and employees and the nature and extent of such accommodation is indicated in the General Conditions. Due provision must therefore be made for the same in the Schedule Rates.

7. In the event of illness of an epidemic nature breaking out, the Contractor will be required to carry out such orders, arrangements or regulations as may be issued by the Government with a view to checking and stamping out the same. No payment will be made to the Contractor on account of any expense to which he may be put in carrying out any such orders and he must make provision accordingly in the Schedule Rates.

8. It is possible that the works contemplated by the General Conditons may be extended at some future time, the dotted line on Drawings Nos. 1 and 2 showing the nature of such extension. The line is subject to revision but the Contractor is to state in his Tender the reduction (if any) he is willing to make in the Schedule Rates for such extension subject to his receiving from the Government of Kenya Colony and Protectorate not less than 12 months previous to the actual completion of the Contract notice of the intention of proceeding with such extension.

9. The Contractor will be required, should the Government so desire, to erect, furnish and maintain quarters for the officers comprising the Engineering staff, as detailed in the General Conditions. Provision must therefore be made by the Contractor in the Schedule of Prices under the appropriate items therefor. A similar observation applies to the offices and cabins to be erected for the Resident Engineer and Staff as detailed in the General Conditions.

10. The Contractor whose Tender is accepted will be required to execute a Contract embodying the General Conditions, Specification and the Schedules thereto, and he will be required to find satisfactory sureties to the extent of £10,000 for the proper performance of the work.

11. The Contractor is to state on his Tender and attach thereto a special Schedule of the Rates with the quantities monied out, cast and totalled at which he will be willing to construct a double floored warehouse in the position shown by dotted lines on Drawings Nos. 2 and 3 and of the measurements and nature indicated in the Contract Documents.

12. He must also satisfy himself as to the sources of supply and sufficiency of the different materials referred to in the General Conditions or Specification or indicated on the Drawings, and of water for the works, and must examine and consider all other matters and all possible and probable contingencies and generally must obtain his own information on all matters affecting the execution, construction, completion, and maintenance of the works, and all matters which may influence him in making his Tender and fixing the several prices therein.

13. No claim for additional payment beyond the prices or rates in the Schedule of Prices, or other the prices or rates to be determined by the Engineer as in the General Conditions mentioned, will be entertained, nor shall the Contractor be entitled to make any claim on the ground of any representation, or on the ground that the Contractor was supplied with information or given any promise or guarantee by any person (whether in the employ of the Crown Agents or of the Engineers-in-Chief or not) nor shall any failure on his part to obtain all necessary information for the purpose of making his tender and fixing the several prices and rates therein relieve him from any risks or liabilities in connection with or for the due fulfilment of the Contract.

14. Should there be any doubt or obscurity as to the meaning of any of the Contract documents, or as to anything to be done or not to be done by the accepted Contractor, or as to these Instructions, or as to any other matter or thing, the person tendering must set forth such doubt or obscurity in writing and submit the same not later than one week before the date fixed for the delivery of Tenders to the Crown Agents for the Colonies.

15. Neither the Engineers-in-Chief, the Resident Engineer, nor any member or servant of the Crown Agents has any authority to make any representation or explanation to persons tendering as to the meaning of the Indenture of Contract, General Conditions, Specification, Schedule of Prices, Drawings or other documents or as to anything to be done or not to be done by the accepted tenderer for the works, or as to these Instructions, or as to any other matter or thing, so as to bind the Crown Agents or bind or fetter the judgment or discretion of the Engineer in the exercise by him of his powers and duties under the Contract.

16. The Crown Agents are desirous that the greatest expedition should be used in the execution, construction and completion of the works (provided always that the works are soundly and properly constructed and completed to the satisfaction of the Engineer) and in order to induce the Contractor to use such great expedition the Crown Agents are willing to pay the bonus for expedition mentioned in the General Conditions; but, inasmuch as the bonus must or may depend upon the proper allowance of time to the Contractor for delays of various kinds, the Crown Agents can and will only pay such bonus provided the Engineers-in-Chief are sole judges as to the extension or extensions of time (if any) to which they may consider the Contractor entitled and as to whether any bonus is due to the Contractor, and, if so, the amount thereof.

17. The Engineers-in-Chief in giving their decision with respect to a claim for bonus (if any), and in respect of all other matters in which their decision is made final by the terms of the Contract documents, or any of them, shall act independently and entirely unfettered by the Crown Agents.

18. Attention is especially directed to the following among other clauses in the General Conditions indicating what matters are covered by and included in the several prices and rates affixed to the different items, namely:—Nos. (*inter alia*) 9 (*b*) (*c*), 16 (*d*), 18 (*a*) (*b*) (*c*) (*d*), 19 (*a*) (*b*), 20 (*a*) (*b*), 22 (*c*), 24 (*c*), 26 (*j*), 27 (*b*) (*c*), 28 (*a*) (*b*), 30 (*a*) (*c*), 37 (*b*), 51, 55 (*a*), 57 (*j*), 62 (*a*), 69, 71 (*b*), 73 (*b*), 74 (*a*), 75, 78 (*c*) (*d*) (*h*) (*j*), 80 (*f*), 86, 88 (*b*), 98 (*b*), 103, 105 (*b*), 109 (*c*), 113 (*b*), 114 (*b*), 115 (*d*), 122 (*b*), 123 (*c*), 125 (*d*), 131 (*b*), 135 (*l*), 137, and to the statement at the head of the "Schedule of Prices" and the rates therein must be consistent throughout. Attention is also directed to the provisions of Clauses 83 (*c*), 111 (*b*), 113 (*a*) and 136.

19. Neither the Government nor the Crown Agents undertake any responsibility whatever for the accuracy of the Contract documents, or of any statement contained therein, or of the approximate quantities given in the Schedule of Prices, or of any other information supplied by the Crown Agents or by or on behalf of the Government with respect to the said works.

ALPHABETICAL INDEX.

A

	PAGE
"A" course of blocks	76
Access to works for Port Officers	31
Accidents. Contractors' responsibility for	34
Accommodation for Engineers	29
Accumulations to be removed	64
Accuracy of particulars not guaranteed	8
Advances in excess of requirements. No	20
do. No other	20
do. on materials	19
do. Rates for	19
[illegible] for lifting and setting blocks	74
Agent. Contractors'	24
Agreement of surface levels	9
Alterations and extras	14
do. do. Written instructions for	14
Appointment of foremen	20, 105
Approach bank. Rubble	67
Apron. Excavation for	62
do. Rubble	67
Approval by Engineer not to absolve Contractors	53
Approval. Certificates do not signify	19
Arbitration clause	38
Arrangement of special rates	14
Articles of value found	33
Ashlar facing	78
do. Special	78
Assistance to Resident Engineer	30, 58
Attendants and watchmen for office	58

B

	PAGE
Backing pieces	83
Bag joggles in concrete blocks	76, 77
Ballast for railways. Formation and	90
Bankers and turnings	71
Bases of columns. Protection to	97
Beams. Tie, in sheds	94
Bearing plates for railways	90
Berms. Excavation for	62
Block moulds	73
do. Filling	73
Blockmaking floor	51
Blocks. [illegible] for lifting and setting	74
do. concrete. Preparation of	72
do. course. A	76
do. Daily return of	74
do. Damaged	74
do. Rejected for damaged	76
do. Imperfectly set	75
do. not square or honeycombed	74
do. Payment for	76
do. Setting	75
do. Special	72
Boat holdfasts	80
Boats	59
do. Crews for	59
Bolts	49
do. Holes for, in concrete	84
do. do. in reinforced concrete	104
Bollards	84
do. Coating	85
Bonus for expedition	36
Borings	9
Boring tackle	59
Bottoming for roads	87
Breaking joint in reinforced work	102
Bribery	25
Building walls of sheds	95
Buildings. Removal of	5
Buoys. Light	32
do. Mooring and mark	32
do. Relaying	33

C

	PAGE
Cabins for Inspectors	58
Cable trench	[illegible]
Capstans. Excavation for	63
Carrying out tests	41
Casks for cement and packing	43
do. Marking and shipment of	45
Cast iron	49
Cast steel	49

C *continued*

	PAGE
Cement	42 *et seq.*
do. testing shed	57
do. do. apparatus	57
Certificate statements	18
do. of completion	35
Certificates, &c., to be final	38
do. do. not signify approval	19
Chainmen and messengers	58
Clean down	109
Cleaning moulds	101
Clearing and levelling sites of workyards	26
Cliff excavation	64
Coating bollards	85
Colony, The	3
Columns, Protection to bases of	97
Commencement of works	9
Completion certificate	35
do. Date for	35
do. Extra	38
Concrete blocks, Preparation of	72
do. Conveying	102
do. Depositing	72
do. materials	68 *et seq.*
do. mixing by hand	71
do. do. machine	71
do. Moulded	77 *et seq.*
do. Proportions of materials in	69
do. Protection of green	80
do. Roughing	80
do. Testing	70, 104
do. to be deposited in layers	79
Concrete in mass	79
do. foundations	74
Condemned materials to be removed	22
Contingencies, Rates to cover all	16
Contract Documents	3
Contract Documents, Differences between	8
do. do. Execution of work in conformity with	16
do. do. supersede previous documents	10
Contract, The	4
Contractor, Cost of	33
do. Extent of	4
do. Includes all necessary operations	5
do. not to be sublet	6
do. to be an English Contract	39
Contract to be substituted for any previous contract	38
do. Works not included in	5
Contractors, The	3
Contractors' Agent	24
do. office and dwellings	27
do. to arrange for supply of stone, sand and coral	47
do. to check quantities	16
do. to keep excavations clear	62
do. to make enquiries about rails, &c.	89
do. to preserve the peace	24
do. to guide for second wave horse	94
do. to remove obstructions to slipping	12
do. to satisfy themselves as to nature of materials	61
do. responsible for accidents	31
do. responsible for settlement in filling	65
do. responsible for reinforced concrete	105
do. staff	24
do. subordinate staff	21
do. workyards	25, 51
do. do. Clearing and levelling	2
do. do. Costs of	25
do. do. Leases for	26
do. do. maintenance and clearance	27
do. do. Scheme to be submitted	27
Conveying concrete	102
Coping	77
Coral	47
do. backing to wall	66
do. do. Payment for	66
do. do. Section of	66
do. facing to Reclamation	67
do. do. may be omitted	67
do. do. Pitching to	67
do. filling	67
do. Supply of	47
Corrugated sheeting, Galvanized	106
Cost of contract	39
do. equipment	33
Crews for boats	58
Crane road	85 *et seq.*
Crossings, Level	88

C *continued*

	PAGE
Crossings, switches and lever boxes	91
Crown Agents, The	3
Cubes of concrete for testing	70, 104
Curb to roadway, Concrete	88
Currents and water lines	8
Customs' duties	31
Cutting steel and concrete	105

D

Damaged blocks	74, 76
Damages for delays	36
Date for completion	35
Datum	8
Day Labour, Work executed by	15
Day work returns	15
Definition of permanent work	10
Delay, Damages for	36
Delegation of powers	4
Depositing concrete	72
do. reinforced concrete	101
Differences between Contract Documents	8
Dimensions of structures, Variation in	11
do. do. to be determined by Engineer	11
Discrepancies	8
Disposal of dredgings	63
do. material from cliff excavation	64
Dispute, Settlement of	38
Distance bars, forks and links	101
Disturbed or damaged blocks	76
Diving apparatus	58
Doors, Sliding, in sheds	107
Down pipes and gutters, Galvanized	107
Drainage of sheds	97
Drains, Excavation for	63
do. manholes, outlets, &c.	81
do. Open	82
do. under warehouse No. 4	83
Drawings	6
do. of office to be submitted	57
do. supplied to Contractors	7
do. to be kept on works	7
do. Working	7, 97, 108
do. Workyard, to be submitted	52
Dredging	63
do. accumulations to be removed	64
do. Disposal of dredgings	63
do. Measurement of	64
do. to be to satisfaction of Resident Engineer	63
Dwellings for Contractors' staff	27

E

Engineer, The	3
Engineer, The Resident	3
Engineers' accommodation	29
do. offices	30
Engineers-in-Chief, The	3
Engineers-in-Chief's delegate powers	4
Entry, Power of	4
Equipment, Cost of	33
do. to be at Contractors' risk	30
Erection in Great Britain, Shed roofs	107
Errors in measurement to be corrected	10
Excavation	60 *et seq.*
do. at Southern end of wall	61
do. Contractor to keep clear	62
do. for apron and berm	62
do. for drains, capstans, &c.	63
do. in cliff	64
do. do. Disposal of materials from	64
do. do. Measurement of	63
do. Payment for	61
do. Responsibilities of Contractors for	60
do. Timber left in	63
Execution of works	9
Expenses, Recovery of	38
Extension of time	30
do. of works, Possible	15
Extent of Contract	4
Extra tools on cement	42
Extra work, Provision for cost of	17
Extras and alterations	14
do. Written instructions for	14

F

	PAGE
Face of northern portion of reclamation	65
Facilities for execution of excepted works	6
do. for testing cement	46
Failure to maintain works	37
Fastenings for railway	90
Fees for testing cement	46
Fences and lights	[illegible]
Fencing	[illegible]
do. Removal of	[illegible]
Fendering	83
Festivals of natives to be regarded	29
Filling block moulds	73
do. in reclamation	65
do. Panned	68
do. reinforced concrete mould	102
Final completion	[illegible]
Fishplates and rails	90
Floating plant. Lighting and watching	33
Foot irons	83
Foreman. Appointment of	21, 106
Foreshore surface	[illegible]
Formation and ballast for railway	90
Forks, links and distance bars	101
Fresh water	37
Foundations. As to work laid in	70
do. Engineer to determine depth of	11
do. of concrete-in-mass	74
do. Piles in	94
do. Variations in levels of	11

G

Galvanized corrugated sheeting	106
do. gutters and down pipes	107
do. ladder	81
do. work	50
Gauges, measures and screens for concrete	[illegible]
General Manager. The	[illegible]
Government. The	[illegible]
do. &c., not personally liable	[illegible]
do. may carry out surfacing of quay	87
do. do. construct railways	89
do. do. supply material for railways	89
do. officials to have access to labour locations	28
Government railways. Use of	26
do. regulations	30
Ground floor of sheds	96
do. do. to be finished granolithic	96
Gutters and down pipes. Galvanized	107

H

Handing over completed portion of work	35
Handrail (Inclined)	80
Handrailing	80
Hatchways in warehouse	95
Holdfasts	81
Holes for bolts, &c.	81, 104
Housing for native labour	28

I

Imperfect work. Removal of	14
Inclined handrail	80
Injury to persons and property	31
Inspection and sampling	41
do. before shipping	[illegible]
do. of materials before shipment	21
do. of works	14
do. Facilities for underwater	50
Inspectors, cabins	58
Insurance of plant	23
Interpretation of terms	2
Iron and steel. Advances on	20
do. Working	48
do. Cast	49
do. Wrought	48

J

Jetty. Temporary	26, 27
Joggle-bag. Sample	77
Joggles. Bag	76
do. Placing	77

L

	PAGE
Labour. Local, &c.	28
Labour and materials	21
Ladders	81
Landings and steps	78
Latrine arrangements	34, 56
Laying railways	91
Leases	26
Level crossings	88
Levels. Agreement of surface	9
Lever boxes, switches and crossings	91
Light buoys	32
Lights and fences	32
do. on staging	31
do. watchmen, &c.	31
Lighting and watching floating plant	32
do. works	10
Links, distance bars and forks	100
Local labour, &c.	28
do. regulations	28
do. tests	41
Long period tests on cement	46
Loose cores	80
Louvres	106

M

Maintenance. Failure to	37
Maintenance of office	37
do. plant	37
do. works	[illegible]
Manholes	82
Manufacturers to be approved. Names of	42
Marginal notes	40
Marking casks and shipment of cement	45
Materials. Advances on	19
do. and labour	21
do. and workmanship to be of best quality	11
do. Condemned, to be removed	22
do. for railways, value deducted	89
do. for reinforced concrete	98
do. Inspection before shipment	21
do. to become property of Government	21
do. Sampling and testing	21
do. Weighing	50
Measurement. Errors in, corrected	19
do. Monthly	17
do. of dredging	64
do. of excavation in cliff	65
do. Notice of	17
do. Work to be done by	17
Measures, gauges and screens	72
Medina cement	70
Members of Government not personally liable	39
Members. Reinforced, moulded	103
Men. Returns of	33
Messengers and chainmen	58
Metal drums for cement	45
Metalling. Road	88
Misconduct of staff and employees	25
Mixing concrete by hand	71
do. do. machine	71
Month	3
Monthly measurements	17
Mooring and mark buoys	32
Moulds and shuttering	99, 101, 102
Moulds. Block	73
do. Filling	73
Moulded concrete	77
do. do. Measurement of	79
do. do. Setting	79

N

Names of manufacturers to be approved	42
Native labour. Local and	28
do. Contractor to preserve the peace	29
do. Festivals to be regarded	29
do. Government officials to have access to locations for	28
do. Housing for	28
do. Provisions	28
do. Restrictions as to [illegible] and [illegible]	[illegible]
do. Restrictions as to spirituous liquors	29
No advances in excess of requirements	20
No other advance	20
No partially set materials to be used	70

N—*continued.*

	PAGE
Notice of measurement to Contractors	17
Notices on Agent. Serving	21
Number of piles in shed foundations	93

O

	PAGE
Office. Resident Engineer's	30, 54
Offices. Contractors	27
Omitted particulars	8
Open drain at foot of cliff	82
Opening out work	13
Order of procedure	60
Outlets through wall for drains	82
Overpayment	19

P

	PAGE
Painting steelwork of sheds	108
Parcels of cement for sampling	43
Partially set materials not to be used	70
Particulars. Accuracy of, not guaranteed	8
do. of assistance to Resident Engineer	58 *et seq.*
do. omitted	8
Patterns	49
Payment	17
do. for blocks	76
do. do. coral backing	66
do. do. excavation	61
do. do. rubble stone and coral	68
Penalties. Recovery of	38
Permanent work. Definition of	10
Permanent works	60 *et seq.*
Persons. Injury to, and property	39
Photo printing apparatus	55
Photographs of iron and steelwork	7
do. Progress	33
Piles. Number of in sheds	93
do. Reinforcing shed	93
do. Simplex foundation	93
do. Staging	51
do. Testing	94
Pipes. Stoneware	82
Pitching face of coral slope	67
Plant	
do. Insurance on	22
do. Maintenance of	23
do. Removal of	23
do. Returns of	34
do. Sunken	
do. to become property of Government	22
Platforms at sheds	96
Police	31
Port Authorities' regulations	30
do. dues	31
do. Officers. Access to works	31
Portion of work completed. Clearing site of	33
do. do. Maintenance of	33
do. do. to be handed over	35
Power of entry	41
Powers. Delegation of	
Preparing surfaces of set concrete	102
Procedure. Government have power to vary order of	60
do. Order of	60
do. Statement as to	60
Progress photographs of works	33
Proportions of materials in concrete	69, 99
do. may be modified	69
Protecting new reinforced work	103
do. work in tideway	70
Provision as to native labour	38
do. for cost of extra work	17
Punned filling	

Q

	PAGE
Quantities, approximate only	16
do. Contractors to check	16
Quay. Surfacing of	87
Quarters for Engineers	
do. for Engineering staff	
do. Maintenance and renewals of	
do. to become property of Government	

R

	PAGE
Railings	80
Rails	50
do. and fishplates	90
Railway Engineer. The	8
do. station	108
Railways. Laying	91
do. on reclamation	89
do. Temporary	35
do. to be to approval of Railway Engineer	92
do. Use of Government	26
Rates for advances on materials	19
do. to be inclusive	15
do. to cover all contingencies	16
do. to cover settlements in reclamation	16
do. to cover Royalties, rents and claims	16
Reclamation filling	65
do. Northern portion. Face of	65
do. Temporary Banks	65
Reconstruction of faulty work	105
Recovery of penalties, &c., from Contractors	38
Regulations as to native labour	38
do. Government	30
do. Local	31
do. Port Authorities	30
Reinforced concrete. Debonding	101
do.	98
do. Materials for	98
do.	103
do.	99
do.	97
do. Steel for	100
do. Testing	104
do. Test load for	104
Reinforcement	100
do. Placing	100
Relieving piles	93
Relaying buoys	33
Removal of buildings	
do. imperfect work	
do. plant	
do. temporary works	32
do. shuttering	101
do. supports	103
Rents. Rates to cover	16
Resident Engineer. The	3
Resident Engineer. Assistance to	30
do. do. may reject materials	20
do. do. Office for	30, 54
Responsibilities of Contractors for accidents	
Responsibilities of Contractors for excavations	31
Restriction as to arms and ammunition	66
do. do. spirituous liquors	29
Retention fund	
Returns of blocks. Daily	
do. iron and plant	
Riveting	
Road. Crane	
do. metalling	
Roads. Bottoming for	
do. on reclamation	
do. Temporary	
do. to be kept open	
Roller punning	81
Roof trusses	78
Roughing concrete before depositing	105
Royalties. Rates to cover	16
Rubbing pieces to fendering	81
Rubble approach bank and slope	67
do. apron	
do. stone	67

S

	PAGE
Salt water. Use of	72, 99
Sample cubes for testing	70, 101
Samples	17, 69
Sampling and inspection	41
do. and testing material	
Sand	
do. and shingle	
do. Supply of	
Schedule of Prices	
Schedule of Prices	
Schedule Rates	
Schedule Rates cover cost of temporary works	
do. do. to be inclusive	
do. do. to cover cost of testing	41

S—*continued*

	PAGE
Scheme for workyard, to be submitted	27
Screens, measures, gauges, &c.	72
Section of coral backing	66
Serving notice on agent	24
Setting blocks	75
do. moulded boudrolle	79
do. out works	43
do. Time of, cement	43, 98
Settlement in Reclamation	65
do. of disputes	88
Sheds	92 *et seq.*
Shipments of cement. Marking	44
Shipments. Contractor to remove	[illegible]
do. Charges for	12
do. lists	21
Shuttering and moulds	99
Simplex piles	95
Sleepers	90
Sliding doors	107
Soda. No. with cement	71
Sounding rods	59
Special blocks	72
Specification. The	3
Special rates. Arrangement of	14
Staff. Contractor's	24
do. do. Agent	24
do. do. do. Serving notice on	24
do. do. Bribery	25
do. do. Misconduct of	25
do. do. subordinate	24
Stairways in warehouses	96
Stagings. Temporary	54
do. do. Lights on	31
Statement as to procedure	60
do. of consignments	45
Station. Railway	108
Steel and wrought iron	47, 48
do. cast	49
do. reinforcement	100
Steelwork in sheds	105 *et seq.*
Steps and landings	78
Stone for concrete	47
do. do. Quality of	69
do. from cliffs	[illegible]
do. Supply of	47
do. Rubble	46
do. Size of crushed	69
Stoneware pipes	81
Storage of cement at Kilindini	45
Straining beams. Lattice work	107
Sunday work	10
Sunken plant	23
Surface. Agreement of levels	[illegible]
do. Foreshore	[illegible]
do. of upper floor	95
do. of wall	87
do. of quay	87
Suspension of works	11
Switches, crossings and lever boxes	91

T

	PAGE
Telephones	27, 51
do. Lights, &c.	[illegible]
Temporary banks for reclamation	[illegible]
do. jetty	26, 97
do. railways, loading, &c.	25
do. works. Blockmaking floor	51
do. do. Contractor's responsibilities	51
do. do. Fencing	51
do. do. General	10, 51, 97
do. do. Rates to cover	[illegible]
do. do. Removal of	[illegible]
do. do. Removal of fences, &c.	[illegible]
do. do. Stagings	53
do. do. Workyard	[illegible]
Terms. Interpretation of	[illegible]
Test load on reinforced concrete	101
do. pieces	[illegible]
Testing cement after delivery	[illegible]
do. do. Facilities for	[illegible]
do. do. Fees for	[illegible]
do. concrete cubes	70, 101
do. materials and sampling	[illegible]
do. piles in shed	91
Tests. Carrying out	[illegible]
do. Local	[illegible]
do. of cement. Long period	[illegible]
do. of cement. Extra	[illegible]
Tideway. Protecting work in	70
Tie beams in sheds	[illegible]
Timber	[illegible]
do. left in work	62, 63
Time. Extension of	36

T—*continued*

	PAGE
Tools, boring and sounding tackle	59
Traffic. Works not to interfere with	12
Trench. Cable	84
Trolley lines	57
Trolleys	59

U

	PAGE
Underwater inspections. Facilities for	59
Upper floor of warehouse	95
do. do. Surface of	95
Use of Government railways and wharves	26
Use of salt water	72, 98

V

	PAGE
Variations in level of foundations or dimensions of structures	11
Value of materials for railways deducted	89
Ventilators in sheds	106

W

	PAGE
Wall. Coral backing to	66
do. Surface of quay	87
Walls of sheds	94
do. do. Building	95
Washing sand and stone	47, 69
Watchmen. Lighting and, on floating plant	32
do. &c.	31
do. Resident Engineer's Office	58
Water. Fresh	57, 98
do. lines and currents	8
do. Salt. Use of	72, 98
do. supply	34
Warehouse. Contractors to quote for second	93
do. No. 2. Drains under	84
Warehouse. Upper floor of	95
Weekly returns	33
do. statement of cement in stock	46
Weighing materials, &c.	50
Welds	49
Wharf. Use of Government	26
Wind ties	105
Work. Contractors to maintain portion of, taken over	35
do. Definition of permanent	10
do. executed by day labour	15
do. Galvanized	50
do. laid in foundations. As to	10
do. Opening out	13
do. Portion of, when completed to be handed over	35
do. Protecting, in tideway	70
do. Removal of imperfect	14
do. Sunday	10
do. to be done by measurement	17
Working drawings	7, 97, 108
do. iron and steel	48
Workmanship to be of best quality	41
"Works." The"	3
Works. Access to, for Port Officers	31
do. Clean down	109
do. Commencement of	9
do. Execution of	9
do. Facilities for execution of excepted	6
do. Failure to maintain	37
do. Lighting	10
do. Inspection of	11
do. not included in Contract	5
do. not to interfere with traffic	12
do. Setting out	13
do. Suspension of	11
do. Temporary	10, 51, 97, 110
do. that may be excepted from Contract	[illegible]
do. to be carried on by night and day if necessary	10
do. to be properly carried out to satisfaction of the Engineer	10
Workyards. Clearing and levelling site of	25
do. Contractors	25, 51
do. Drawings of, to be submitted	[illegible]
Wrought iron and steel	47, 48