

Item No.: 11

Providing and laying rubble soling in foundation including watering and ramming complete as per structural design and depth as directed by Engineer-In-Charge.

1. Material :

The Stone should be confirm M-16.

The Water should be confirm M-1.

2. Workmanship :

- i. The relevant specification of Item No. 7.6 should be followed except that masonry without cement mortar. For watering and ramming specification of Item No. 4.24 should be followed.

3. Mode of Measurement and Payments :

- i. The rate shall be for a unit of Cu. M. basis.
- ii. Mode of measurement on Cu.M. basis of finished work.
- iii. Mode of payment on Cu.M. basis of finished work

Dy. Executive Engineer

P.I.U., Bhavnagar.

Item No. 12

Drilling of 200mm dia. Bore in over burden strata & lowering of casing pipe up to require length and further drilling of 165 dia. Bore in all type of rocky, soft and hard rock by DTH rig and fixing the bore plug etc complete, 0 to 150 Mt. depth.

Workmanship : Drilling of 200mm dia. Bore in over burden strata by boring machine & lowering of casing pipe up to require length and further drilling of 165 dia. Bore in all type of rocky, soft and hard rock by DTH rig and fixing the bore plug etc complete, 0 to 150 Mt. depth as per instruction of Engineer in charge.

Mode Of Measurement :

Mode of measurement and payment shall be done on running meter basis

Dy. Executive Engineer

P.I.U., Bhavnagar.

Item No. : 13

Providing and lowering 200mm dia. PVC 10 kg F/cm² casing pipe ISI in bore hole with necessary fitting etc. complete.

1) Materials :

The low density polythase pipe of specified diameter with 10 kgs / sq.cm working pleasure shall confirm to IS 3076-1968. The specials and fitting required shall be of best quality.

2) Workmanship :

- a) The P.V.C. pipes of specified diameter shall be fixed as directed.
- b) Above around installation of rigid P.V.C. pipe should be order taken after preparation one observed from their protection against direct sunrays and mechanical damage.
- c) Closer support springs shall be provided if recommended by the manufacture.
- d) The guide line indicated by the manufacture regarding handling, transportation, storing paying and jointing of pipes shall be kept in view clearing execution.
- e) P.V.C. pipes shall be fixed on wall with wooden plugs and suitable plastic clamps.
- f) Jointing the pipes.
 - i. The pipes and sockets shall be accurately cot. The end of the pipes and fittings should be absolutely free from dirt and dust. The outside surface of the pipes end the inside of the fittings shall then be rough seed with entry paper and than solvent cement joint. Since solvent cement is regressive to PVC core must be taken to avoid applying

excessive cement to the inside of pipe sockets as any surplus cement be wiped off after jointing. Empty solvent cementing, brushes gross as paper impregnated with cement should not be buried in the trenches. They should be gathered, not left scattered about as they can prove to be a harm to animals which may chew them.

- ii. If manufacture recommends its own method of jointing the same shall be adopted after necessary approval from engineers in charge and His Satisfied level.

3) Mode of Measurement and Payment.

The length shall be measured on running meter basis of finished work. The length shall be taken along the centre line of the pipe & fittings.

The rate shall be per unit of running meter.

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No. : 14

Constructing underground Water tank of 230 mm thick Brick masonry in C M. 1:5 for outer periphery Providing 150 mm thick R.C.C. top and bottom slab and RCC Vertical fins 15cm thick inner side of water tank with 1:2:4 mix (1 cement : 2 coarse sand : 4 coarse aggregate) also providing 40 mm thick IPS in bed over 300 mm thick BBCC (1:3:6) with inside plaster of 15 mm thick in cm 1:3 finish smooth with neat cement slurry 2.75 kg/Sq.Mt. on cement admixture with water proofing component, Fabricated Cover with Locking arrangement with lock (heavy duty) 610mm x 610mm internal dimension as approved by engineer in charge etc. complete

Materials:

Water shall confirm to M-1, Cement shall confirm to M-3, Cement mortar should be confirm to M-11, Stone aggregate shall confirm to M-12, Sand shall confirm to M-6, HYSD bars shall confirm to M 9, brick bats shall confirm to M-14. The Concrete cover shall be of best quality, tough and. The sample of the cover shall be got approved from the Engineer-in-charge.

Workmanship:

Water tank shall be constructed underground of the building as and where shown in the detailed architectural drawing. The capacity of tank shall be as shown in the drawing and as directed by the Engineer-in-charge. The RCC work of bottom slab, top slab shall be carried out with controlled cement concrete of 1:2:4 grades. The relevant specification of RCC shall be followed as per General Technical Specification booklet. The rate shall include cost of necessary centering, formwork, staging etc. required. The relevant specification for water supply shall be followed.

Waterproofing treatment as per IWP specification shall be carried out through approved agency to floors and external surfaces of water tank. The treatment comprises of injection and surface method in which injection shall be given to the floor and walls as and where found necessary by the approved agency. Thereafter a layer of waterproofing shall be laid on the floor and shall be continued along the upper side of the end i.e. side wall as well as on both the sides. Cement concrete cover of size 610mm x 610mm x 15mm of heavy duty should be fixed with cement mortar 1:1.

Mode of Measurement and Payment:

The rate includes cost of all labour, tools and materials required for satisfactory completion of this item as described above. The capacity of tank shall be worked out by taking inside clear measurement and height shall be taken from finished top of bottom slab of tank to centre of over flow pipe keeping 15cm clear, free board.

The rate shall be for unit of one liter.

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No. : 16 17 18

Providing & laying controlled cement concrete M-200 with curing etc. complete incl. the cost of form work but excluding the cost of reinforcement for R.C.C. work for G.F. & F.F.

- A. M-20 for plinth beam, copping etc.
- B. M-20 for Beam, Lintel, Chhaja etc.
- C. M-20 for Slab, Sill, Shelves.

Material and Workmanship:

The relevant specifications of item no 5.8.2 shall be followed for controlled concrete work but including the cost of formwork. Relevant specifications of item No. 9.1 shall be followed for the formwork and centering work.

1.0 Mode of measurements and payments

- 2.1 The relevant specification of item no 5.8.2 shall be followed. The item includes the cost of formwork and centering work for any cross sectional area.
- 2.2.1 The rate shall be for a unit of one cubic meter.
- 2.2.2 Mode of Measurement: on Cu.M. basis of finished concrete work.
- 2.2.3 Mode of Payment: on Cu.M. basis of finished concrete work

Dy. Executive Engineer
P.I.U., Bhavnagar

Item No.:32

Providing and laying marble stone slab flooring and skirting 18mm thick including rubbing and polishing complete for sill and jambs of doors and windows in single piece also finished the joints with pigment and white cement slurry as directed by Engineer-In-Charge.

1. Materials:

- A. **Marble Slab:** Marble stone slab shall be confirmed to M-51 of white or other of best quality and as approved by engineer-in-charge. Size of the marble stone slab shall match as per provision in the item of marble slab. Type, shape and colour of marble slab shall be approved by Engineer-In-Charge.
- B. **Cement:** Cement should be confirm M-3.
- C. **Water:** Water should be confirm M-1
- D. **Sand:** Sand should be confirm M-6
- E. **White Cement:** Cement should be confirm M-4.
- F. **Pigment:** Synthetic or natural pigments may be used in cement slurry mix to obtain with desired shades of colours.
 - (A) Black or Red or Browne pigment IS:44
 - (B) Green pigment IS:54
 - (C) Blue pigment IS:55/56
 - (D) White pigment IS:411
 - (E) Yellow pigment IS:50

2. Workmanship:

The relevant specifications of item No 14.36 shall be followed for flooring/skirting work.

3. Mode of Measurement and Payment:

- 3.1 The relevant specification of item No 14.36 shall be followed.
- 3.2.1 The rate shall be for a unit of one Sq.M.
- 3.2.2 Mode of Measurement: on Sq.M. basis of finished work.

3.2.3 Mode of Payment: on Sq.M. basis of finished work.

Dy. Executive Engineer
P.I.U., Bhavnagar

Item No. : 34

Providing and fixing sandwich type platform including supplying and fixing black granite stone 18 mm thick mirror polished stones in top and side position and vertical strip at front over 25 mm thick polished kotah stone platform fixing in top and sides and intermediate supports sandwiched fixing with cement mortar and adhesive and finishing including To make hall for fixing Kitchen/Laboratory sink, (ceiling sink) 600 mm x 450 mm x 150 mm size (as directed by engineer incharge) at required position etc complete

Polished Kotah stone 20 to 25mm thick shall be of approved size in length and width. Pieces shall not be allowed in width. Pieces in length shall be not more than 1.8mt length of as directed by Engineer-in-charge.

Specification in general for Kotah stone shall be as per item no. M-49, page no 16 of Standard Specification booklet for building works.

Necessary groove shall be made in wall polish kotah stone fixing bottom will be first laid in line & level on vertical partition. Cement mortar 1:3 (1 cement : 3 sand) shall be laid on Polished Kotah Stone and Polished Kota Stone facing top shall be laid on top in line and level.

100mm high fascia of Kotah stone shall be fixed with cement and solution Ardalite etc.

Necessary cut for sink shall be left while laying polished Kotah stone.

Necessary polishing shall be done polished Kotah stone at top and as directed by Engineer-in-charge. Edges & corners of stone shall be made round by cutting as directed. Groove made in wall shall be made good and finished with white cement mixed with pigment to match with colour of stone.

Work includes cost of materials and labour with mirror polishing complete.

Measurement shall be taken for visible top polished kota stone only in length and width

Rate shall be paid for a unit of 1 sqmt for top surface.

Mode of Measurement: on Smt basis of finished work.

Mode of Payment: on Smt basis of finished work.

Dy. Executive Engineer
P.I.U., Bhavnagar

Item No :- 35

Providing and fixing 25 mm thick polish kota stone shelves below platform, in store or in cupboards including fixing in position front edge machine cut polishing etc. complete

Polished Kotah Stone 25mm thick shall be approved quality size and specification in general for Kotah stone shall be as per Item no. M-49/ Page 16 of standards specification booklet for building works.

Polished Kotah stones are approved size shall be machine cut at front side with necessary groove shall be made in wall and polish kota stone shall be laid in line and level. Polish Kotah stone shelves shall be fixed in cement mortar 1:3 (1 cement : 3 coarse sand) size of the polished kotah stone shall be obtained as per the site measurement.

Necessary polishing shall be done to polish kotah stone top and sides and as directed by Engineer-in-charge. Outer edges of stone shall be made round by polishing as directed groove made in wall shall made good Y fixed with white cement mixed with pigments to match with colour and stone.

Work includes cost of materials and labour with polishing complete.

Measurement shall be taken for visible dimensions in length and width and shall be paid for a unit of 1 sqmt.

Mode of Measurement: on Smt basis of finished work.

Mode of Payment: on Smt basis of finished work

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No :- 36

Providing and laying water proofing treatment on terrace including applying neat cement slurry 2.75 kg/Sq.Mt. on cement admixture with water proofing component after cleaning the surface/laying cement concrete with brick bat 75mm to 100mm thick with 50% of cement mortar C.M. 1:5 to required slop including raming at junction of wall and slab after Two days of proper curing applying broken china mosaic flooring for plain and curve surface 12mm to 20mm broken piece of ceramic tile/glazed tile to be laid over 12mm thick cement mortar badding C.M. 1:3 to plain and slop and to be tempered to bring mortar crim up to surface with using white cement and including rounding of junction and extending them up to 30cm along the wall and curing with bands any pattern or design as per drawing and direction including cleaning with water and Oxalic Acid. Including 10 Years Performance Guaranty.

Material and Workmanship :

Water shall confirm to M-1 cement shall confirm to M-3. Stone aggregate shall confirm to M-12. Sand shall confirm to M-6. Bricks shall confirm to M-2. Water proofing material should be approved quality as per IS.

a) Applying and grouting a slurry cost of neat cement using 2.75 kg/sqmt. of cement admixed with proprietary water proofing compound conforming to IS 2645 over the RCC slab including Clearing the surface before treatment.

b) Laying cement concrete using broken bricks bats 25mm to 100 mm size with 50% of cement mortar 1:5 (1 Cement : 5 coarse sand) admixed with proprietary waterproofing compound conforming to IS : 2645 over 20mm thick layer of cement mortar of mix 1:4 (1 Cement : 4 coarse sand) admixed with proprietary water compound conforming to IS : 2645 to required slope and treating similarly the adjoining walls up to 300 mm height including rounding.

c) After tow days of proper curing applying a second coat of cement slurry admixed with proprietary water proofing compound conforming to IS : 2645.

d) Finishing the surface with 20 mm thick joint less cement mortar of mix 1:4 (1 Cement : 4 coarse sand) admixed with proprietary water proofing compound to IS : 2645 and finally finishing the surface with trowel with neat cement slurry.

(e) The relevant specification of item No. 14.29/page no. 84 of GTS book shall be followed except that broken glaze of Ceramic tiles are to be used. The broken pieces shall be of china of approved colour size and manufacturer and the same shall not be polished but cleaned with water with mild hydrochloric acid.

(f) Design/pattern/borders like flowers etc. may be done as required/directed by Engineer in charge.

g) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing for final test. All above operations to be done in order and as directed and specified by the engineer in charge.

Mode of Measurement and Payment.

Rate shall include all the cost of material, labour, tools etc. complete as per above described payment shall be made for an unit of one Sqmt.

Mode of Measurement on Sqmt. Area basis considering the clear measurement between two walls either sides in plan.

Mode of Payment of Sqmt. Area basis considering the clear measurement between two walls either sides in plan.

Dy. Executive Engineer
P.I.U., Bhavnagar

Item No. : 37

Providing & fixing in position aluminum Single Shutter door & partition with aluminum anodized hollow section frame of approved shade fabricated from aluminum standard section for outer frame size 101 mm x 44.5 mm (of app. wt. 1.30 kg/Rmt.) and door styles and top rail of aluminum section size 47.5mm x 44.5 mm (of app. wt. 1.14 kg/Rmt.) bottom rail & lock rail for door size 114mm x 44.5mm (of app. wt. 1.7kg/Rmt.) and providing rubber gasket and glazing clips around the glass all over including providing heavy handle, heavy lock, bracket, stoppers. 5 mm thick sheet ground glass (frosted or obscured on one side in Top panel) fixed with transparent silicon gasket & 25 mm thick particle board sheet both side 1.5mm laminated sheet of approved make fixed clips including all required materials labors and equipments as per detailed drawing as directed.

1.0 MATERIAL

1.1 Aluminum standard section

Aluminum alloy used in the manufacture of extruded Door section shall confirm to I S designation HEA-WP of I S 733-1975 and also Designation WVG –WP of I S 1285-1975 section shall be as specified in the drawing and design

All sections shall be Free from any scratches or holes or any damages on surface. All section shall have finished luster surface on all sides

1.1.1 size of outer frame shall be of Banko Alu. Ltd. 44.5 x 101.6 x 1.65 mm size having minimum wt. 1.30 Kg per meter

1.1.2. The size of top member shall be of Banko Alu. Ltd. 44.50 mm x 47.50 mm having minimum wt 1.14 Kg per meter

1.1.3. The size of the bottom rail and lock rail shall be of Banko Alu. Ltd. 114 mm x 44 .50 mm x 2.5 mm having minimum weight 1.707 kg per meter

1.2 Laminated Particle board sheet

Particle board sheet should be laminated both side. Laminated sheet shall be of Greenlam Industries Ltd., 1.5 mm thickness and of approved make. Particle board shall be free from any scratches or holes or any damages on surface. and shall have finished luster surface on both sides

1.3 Ground glass (frosted or obscured on one side)

The ground glass shall be of approved make having thickness of 5 mm. The glass shall be clear and free from scratches and cracks. The glass shall be provided on the top and should be a frosted or obscured on one side.

1.4. Glassing clips

Glassing clips shall be of Banko Alu. Ltd. size 19.00 x 17.20 x .09 mm. shall be free from any scratches or holes or any damages on surface. All section shall have finished luster surface on all sides.

1.5. Rubber Gasket

Rubber gasket shall be of Vargin Co. 0.328 Kg/Mt. weight, free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

1.6. Fixtures

1.6.1 Handles

8" size aluminium handles shall be of S. Kumar American Co. free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

1.6.2 Bolts

All bolts shall be of approved make. shall be free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

1.6.3 Lock

Lock shall be brass 4 lever of Godrej Co. free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

1.6.4 Stoppers

6" (Six inch) aluminium stopper shall be Glider Co. free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

1.7 Workmanship

The Work of aluminum door shall be done with extreme finishing. The particle board shall be fixed in the bottom panel and glass shall be fitted on top panel as directed by Engineer in charge using glazing clips and rubber gaskets as required. All the fixtures and fastenings shall be fitted at right place and as directed by Engineer in charge. Floor spring shall be fitted properly so as to align the door properly and shall be given trial of opening and closing properly.

1.8 Mode of Measurement & Payment:

1.8.1. The unit rate of aluminum door shall include the cost of all materials, cost of anodizing, cost of all necessary fixtures and fastenings, labour charges for fixing frames, doors and fixing the door in wall at the place shown in drawing and as instructed by Engineer in charge, all tools and plant required for assembling and fixing in position, finishing as per direction of the Engineer-in-charge, and all other incidental expenses for preparing door frame and shutter of specified size to complete the door structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and making walls good by plaster patch colour etc as required

1.8.2. The door shall be measured for its width and height, limiting dimensions to those specified on plan or as directed.

1.8.3. The rate shall be for a unit of one square meter.

Dy. Executive Engineer
P.I.U., Bhavnagar

Item No. : 38

Providing and fixing window having extruded aluminum Colour anodized section frame horizontal Three track member size 92mm x 31.75mm x 1.30mm (of Jindal Section no:8688,@ Wt.1.07 Kg/mt), vertical member of size 92mm x 31.75mm x 1.50mm (of Jindal Section no:8933,@ Wt. 1.06 Kg/mt) with sliding shutters of horizontal member size 40 mmx18mm x1.29mm (of Jindal Section no:8947@ wt.of 0.456 Kg/mt), vertical member of size 40mm x 18mm x 1.29 mm (of Jindal Section no:8949 @

wt.of 0.456Kg/mt/ with 5 mm thick transparent bronze colour tinted float glass in Two Shutters and 0.71mm G.I. Mosqeto mesh in One shutter and Mosqeto mesh shutter should be covered half portion of window with powder coated aluminum fittings and fixtures and transparent silicon sealant glass fixing to frame as per details etc

1.0 MATERIAL

1.1 Aluminum standard section

Aluminum alloy used in the manufacture of extruded Door section shall confirm to I S designation HEA-WP of I S 733-1975 and also Designation WVG –WP of I S 1285-1975 section shall be as specified in the drawing and design

All sections shall be Free from any scratches or holes or any damages on surface. All section shall have finished luster surface on all sides

1.1.1 size of outer frame shall be of Banko Alu. Ltd. 44.5 x 101.6 x 1.65 mm size having minimum wt. 1.30 Kg per meter

1.1.2. The size of top member shall be of Banko Alu. Ltd. 44.50 mm x 47.50 mm having minimum wt 1.14 Kg per meter

1.1.3. The size of the bottom rail and lock rail shall be of Banko Alu. Ltd. 114 mm x 44 .50 mm x 2.5 mm having minimum weight 1.707 kg per meter

1.2 Laminated Particle board sheet

Particle board sheet should be laminated both side. Laminated sheet shall be of Greenlam Industries Ltd., 1.5 mm thickness and of approved make. Particle board shall be free from any scratches or holes or any damages on surface. and shall have finished luster surface on both sides

1.3 Ground glass (frosted or obscured on one side)

The ground glass shall be of approved make having thickness of 5 mm. The glass shall be clear and free from scratches and cracks. The glass shall be provided on the top and should be a frosted or obscured on one side.

1.4. Glassing clips

Glassing clips shall be of Banko Alu. Ltd. size 19.00 x 17.20 x .09 mm. shall be free from any scratches or holes or any damages on surface. All section shall have finished luster surface on all sides.

1.5. Rubber Gasket

Rubber gasket shall be of Vargin Co. 0.328 Kg/Mt. weight, free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

1.6. Fixtures

1.6.1 Handles

8" size aluminium handles shall be of S. Kumar American Co. free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

1.6.2 Bolts

All bolts shall be of approved make. shall be free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

1.6.3 Lock

Lock shall be brass 4 lever of Godrej Co. free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

1.6.4 Stoppers

6" (Six inch) aluminium stopper shall be Glider Co. free from any scratches or holes or any damages on surface. and shall have finished luster surface on all sides

1.7 Workmanship

The Work of aluminum door shall be done with extreme finishing. The particle board shall be fixed in the bottom panel and glass shall be fitted on top panel as directed by Engineer in charge using glazing clips and rubber gaskets as required. All the fixtures and fastenings shall be fitted at right place and as directed by Engineer in charge. Floor spring shall be fitted properly so as to align the door properly and shall be given trial of opening and closing properly.

1.8 Mode of Measurement & Payment:

1.8.1. The unit rate of aluminum door shall include the cost of all materials, cost of anodizing, cost of all necessary fixtures and fastenings, labour charges for fixing frames, doors and fixing the door in wall at the place shown in drawing and as instructed by Engineer in charge, all tools and plant required for assembling and fixing in position, finishing as per direction of the Engineer-in-charge, and all other incidental expenses for preparing door frame and shutter of specified size to complete the door structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and making walls good by plaster patch colour etc as required

1.8.2. The door shall be measured for its width and height, limiting dimensions to those specified on plan or as directed.

1.8.3. The rate shall be for a unit of one square meter.

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No. : 41

Providing and fixing 50mmX 30mm teak wood frame and 18mm thick water proof plywood shutters for kitchen cabinet including using approved Formica on both side of shutter and teakwood decorative batten patti in shutter border with necessary fixtures and fastenings including polishing work etc. complete and direction of engineer in charge

Materials

Indian Teak Wood Frame should be confirming to 10.1, Plywood for shutter shall confirm to M-37 except that it should be water and termite proof. Laminated sheet should be 0.8mm thick of approved make, quality, and color.

Fixture fastening shall be Stainless Steel.

Fixture fastening should be are in the Technical specification booklet as specified in tabular form.

Workmanship

The work shall be carried out as per pattern and design shown in a drawing.

Mode of Measurement and Payment:

Measurement shall be done on a sqmt basis. Payment shall be done for unit of one sqmt

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No.: 43

Providing and fixing bright finish brass hydraulic door closer of ISI brand with necessary accessories and screws etc. complete as per direction of Engineer in charge.

Materials:

Hydraulic door closer shall be of ISI brand.

Workmanship:

As per item no 12.4 page no 72

Mode of measurement and payment :

As per item no 12.4 page no 72

Measurement will be: on No. basis

Payment will be made: on No. basis

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No: 51

Providing and fixing G.I. railing for Balconies, Terrace Parapet, ramp, Stair etc. 90CM Heigh with Top hand rail 50mm Diameter Round Pipe, 20 x 20mm square bars Balusters @ spacing 10cm c./c. as per approved pattern including cutting, bending, welding, fixing and applying three coats of approved brand of primer and two coat of paint etc. complete as directed by engineer-in-charge

Material and Workmanship:

The work shall be carried out as per item no 11.4(A) page no 39 except that structural steel should be used for the fabrication of railing at different locations as per instruction of Engineer-in-charge.

Mode of measurement and payment:

As per item no 11.4(A) page no 39

Measurement will be: on Rmt. Basis

Payment will be made: on Rmt basis

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No. : 52

Providing and fixing to wall 6 kgs/sqcm working pressure polythene pipes of the following outside diameter low density complete with special flange compression tyde fitting wall clips etc. complete.110mm dia.

4) Materials :

The low density polythase pipe of specified diameter with 6kgs/sqcm working pleasure shall confirm to IS 3076-1968. The specials and fitting required shall be of best quality.

5) Workmanship :

- g) The P.V.C. pipes of specified diameter shall be fixed as directed.
- h) Above around installation of rigid P.V.C. pipe should be order taken after preparation one observed from their protection against direct sunrays and mechanical damage.
- i) Closer support springs shall be provided if recommended by the manufacture.
- j) The guide line indicated by the manufacture regarding handling, transportation, storing paying and jointing of pipes shall be kept in view clearing execution.
- k) P.V.C. pipes shall be fixed on wall with wooden plugs and suitable plastic clamps.
- l) Jointing the pipes.
 - iii. The pipes and sockets shall be accurately cot. The end of the pipes and fittings should be absolutely free from dirt and dust. The outside surface of the pipes end the inside of the fittings shall then be rough seed with entry paper and than solvent cement

joint. Since solvent cement is regressive to PVC core must be taken to avoid applying excessive cement to the inside of pipe sockets as any surplus cement be wiped off after jointing. Empty solvent cementing, brushes gross as paper impregnated with cement should not be buried in the trenches. They should be gathered, not left scattered about as they can prove to be a harmed to animals which may chew them.

- iv. If manufacture recommends it's own method of jointing the same shall be adopted after necessary approved from engineers in charge.

6) Mode of Measurement and Payment.

The length shall be measured on running meter basis of finished work. The length shall be taken along the centre line of the pipe & fittings.

The rate shall be per unit of running meter.

Dy. Executive Engineer
P.I.U., Bhavnagar

Item No 56. 57. 58.

Providing and fixing PVC Valves of the following nominal bore tube fitting of ISI marked.

- (A) 15 mm Dia.
- (B) 25 mm Dia.
- (C) 40 mm Dia.
- (D) 50 mm Dia.
- (E) 65 mm Dia.
- (F) 75 mm Dia.

Workmanship:

Pvc valve shall be of IS standard and should be fixed as per instruction of Engineer in charge.

Mode of measurements and payments

Measurement: on Each basis.

Dy. Executive Engineer
P.I.U., Bhavnagar

Item No. 59

Providing and fixing PTMT Material Based Bib cock of 15 mm Dia. Complete with Necessary Fixtures.

1.0 Materials

1.1 15 mm. dia. PTMT material-based bib cock. Bib cock shall be best Indian make and lid quality.

2.0. Workmanship

2.1. The PTMT material-based bib cock 15 mm. dia, as specified above shall be fixed as directed. The threaded portion shall be smeared with white or red lead and around will, Li few turns of fine-spun yarn round the screwed end of the pipe. The bib cock shall be than screwed all fixed to water tight position

3.0. Mode of measurements & Payment:

3.1 The rate includes cost, of all labour, materials tools and plant etc. required for satisfactory completion of this item.

3.2. The rate shall be for a unit of one number.

Dy. Executive Engineer
P.I.U., Bhavnagar

Item No. 63

Providing and fixing in position cowl went to "U" PVC pipes with all material and labour complete as per the instruction of Engineer in charge. (B) 110mm dia.

Material :

Cowl Went of 110mm dia to UPVC pipes shall be of IS standard and should be fixed as per instruction of Engineer in charge.

Mode Of Measurement :

Mode of measurement and payment shall be done on No. basis.

Dy. Executive Engineer
P.I.U., Bhavnagar

Item No. : 65

Providing and fixing white or coloured glazed china vitreous china Orrissa type w.c pan of size 580 x 440 mm including providing and fixing vitreous china 100 mm size 'P' or 'S' trap including providing and jointing the trap with pan and soil pipe in CM (1:1) as per direction of engineer in charge.

Material:

white or coloured glazed china vitreous china Orrissa type w.c pan of size 580 x 440 mm with P- or S trap. It shall be conform to M-62. in CM: 1:1

Workmanship:

The **vitreous china Orrissa type W.C. pan** shall be fixed in a proper position as per drawing. It should be fitted in such a way that no leakage should be found either on lower level floor or out side wall. Each pan shall have sufficient holes and integral flushing ring for ease in cleaning. Soil pipe should be fitted in such a way with proper gradient towards outlet with uniformity.

Mode of Measurement and Payment:

The rate includes cost of all labour, materials, tools and plant and other equipment required for satisfactory completion of this item, as described in item.

The rate shall be for an unit of one number.

Mode of measurement: on No basis

Mode of Payment: on No basis.

Dy. Executive Engineer
P.I.U., Bhavnagar

Item No. : 68

Providing and fixing stainless steel kitchen sink (600X450X150) of approved make with stainless steel basket waste pipe with waste connection complete including cutting and making good the walls and floors wherever required complete as per direction of engineer-in-charge.

Materials:

Stainless steel sink, 40mm CP brass waste coupling with rubber plug and chain shall confirm to M-P9 and 40 mm P.V.C. waste pipe shall confirm to M-P28

Workmanship:

The SS. Kitchen sink shall be supported on a pair of M.S. or CI brackets, fixed in C.M. 1:3 coarse sand). The M.S. or C.I. brackets shall confirm to IS: 775-1972. The wall plaster on the rear shall be cut to the

rest the top edge of the sink, over it. After fixing the sink, the plaster shall be made good and the surface finished to match with the existing one.

The C.P. brass trap shall and union shall be connected to 40mm dia., nominal bore galvanized mild steel waste pipe which shall be suitably bent towards the wall and which shall discharge into a 'P' trap leading to a gully trap or direct into the gully trap on the ground floor and shall be connected to a waste pipe through a floor trap on the upper floors. C.P. brass trap and union may not be provided where surface drain or a floor trap is placed directly under the sink and the waste is discharge to it vertically down.

The height of the front edge of the skin from the floor level shall be 80 cm. Or as shown in drawings.

Mode of Measurement and Payment:

The rate includes cost of all labour, materials, tools and plant and other equipment required for satisfactory completion of this item, as described in item.

The rate shall be for an unit of one number. Mode of measurement: on No basis

Mode of Payment: on No basis.

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No. : 69

Providing and fixing (600 x 450 x 200 mm) size vitreous china laboratory sink with CI or MS brackets painted white including cutting holes in walls and making good the same including providing and fixing 40mm dia CP waste coupling rails providing fixing PVC waste pipe etc. complete.

1.0 MATERIAL

1.1. LABORATORY SINK

Laboratory sink pan shall be of best quality as approved by engineer in charge size of the laboratory sink shall match as per provision in the item of laboratory sink. type and shape and colour of the laboratory sink shall be approved by Engineer in charge.

1.1.2 Laboratory sink shall be of white porcelain first quality best Indian make. The size of the laboratory sink shall be as specified in the item laboratory sink shall be of one piece construction with continued over flow arrangements. All internal angles shall be designed so as to facilitate cleaning. Each laboratory sink shall have single tap hole or two holes as specified. shall have a circular waste hole which is either rebated or beveled internally with 65 mm diameter at top and 10 mm depth to suit the waste fitting.

The necessary stud slot to receive the bracket on the underside of the basin shall be provided.

1.2. C P Brass waste

C P Brass waste shall be of best quality as approved by engineer in charge having 40 mm dia. Meter

2.0. WORKMANSHIP

2.1. Laboratory sink shall be fixed on the wall as and where directed. The Laboratory sink shall be supported on a pair of M.S. or C.I. brackets fixed in C.M. 1:3 (1 cement : 3 sand). The bracket shall conform to I.S. 775 – 1962. The wall plaster on the rear shall be cut to rest the top edge of the Laboratory sink. After fixing the Laboratory sink plaster shall be made good and surface finished to match the existing one.

2.2. The brackets shall be painted white with ready – mixed paint.

2.3. The trap and union shall be connected to 32 mm dia waste pipe which shall be suitably bent towards the wall and which shall discharge into an open drain leading to a gully trap or direct in to gully-trap on the ground floor and shall be connected to a waste pipe through a floor trap on the upper floors.

2.4. The height of the front edge to the wash basin from the floor level shall be 80 cms.

2.5. The necessary inlet, outlet, connections and fittings shall be fixed.

2.6. The payment of fittings shall be made separately under separate items.

3.0. Mode of Payment: Mode of payment for each Basis.

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No. : 73

Construction Septic Tank as per design and drawing with R.C.C. slab in C.C. 1 : 2 : 4 including excavating , filling bed concrete C.C. 1:4:8 ,0.15 mt. thick with brick masonry wall 0.23 m thick in C m 1 : 5 Including finishing with cement plaster 15 mm thick in C M 1 : 4 inside and 20mm thick double coat plaster at out side , also fixing of two numbers of men hole cover 450 X 600 mm size in slab as directed by Engineer-In-Charge. In side dimension 3.70 x 1.50 x 1.50 mt.

Materials:

The mortar shall confirm to M-11, The brick shall confirm to M-15, Stone aggregate shall confirm to M-12, The brickbats shall confirm to M-14, HYSD bar shall confirm to M-19. Rubbles shall be best quality and of size 65mm to 90mm and obtained from approved quarry. The CI pipes and fitting shall confirm to M-68 p19. The CI cover shall confirm to IS:1725. The cover shall be of best foundry grey meal, tough and close grained. The sample of the cover shall be got approved from Engineer-in-charge

Workmanship:

The relevant specification of item no. 4.0.0(a) shall be followed for excavation.

The relevant specification for lean concrete, RCC work, reinforcement, masonry work and plaster work shall be followed respectively as specified in the item.

The rubble of specified size shall be filled as per detail in the drawings. The CI cover and CI pipes with cowl shall be fixed in proper position, as shown in detail drawing. The inlet T-connection of RCC 250mm pipe shall be provided. The necessary opening in the intermediate wall shall be provided as per detailed drawing. Intermediate T connection of RCC 250mm pipes are also provided. The precast RCC jali 10 cm thick and of required size shall be fixed in lats but one chamber below rubble.

Mode of Measurement and Payment:

The rate includes cost of all labour and materials required for satisfactory completion of this item as described above.

The rate shall be for an unit of one number.

Mode of measurement: on No basis of finished work.

Mode of Payment: on No basis of finished work.

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No. : 76

Providing and fixing brass chromium plated surgical handle cock of approved size 15 mm dia. etc complete.

Materials and Workmanship :

The work shall be carried out as per Item No. 23.92(A) of SOR except that CP Surgical handle cock of approved make shall be used in place of bib tap.

Mode of Measurement and Payment:

As per Item No. 23.92(A) of SOR

Mode of measurement: On No. basis

Mode of Payment: On No. basis

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No. : 76

Providing and fixing brass chromium plated surgical handle cock of approved size 15 mm dia. etc complete.

Materials and Workmanship :

The work shall be carried out as per Item No. 23.92(A) of SOR except that CP Surgical handle cock of approved make shall be used in place of bib tap.

Mode of Measurement and Payment:

As per Item No. 23.92(A) of SOR

Mode of measurement: On No. basis

Mode of Payment: On No. basis

Dy. Executive Engineer

P.I.U., Bhavnagar.

Item No.: 83

Providing, fixing, testing and commissioning of ABC type 6 Kg Fire Extinguisher Mono Ammonium Phosphate Powder 50, Stored Pressure Type, Pressure Gauge, Controllable discharge mechanism Class A rating 3A & Class B rating 21B as per IS 15683 ISI MARK (ABC Dry Chemical Powder - MAP 50%).

MEASUREMENT & PAYMENT:

Measurements of the work shall be on following basis:-

Valve shall be measured on No basis

Mode of Payment: on No basis

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No.: 84

Providing and fixing, testing and commissioning of CO2 type Fire Extinguisher of capacity 4.5 kg filled with Co2 Gas as per IS 15222 with controll discharge mechanis, fitted with Hose & Horn applicable on Class B fire rating 21B confirms to IS 15683 bearing ISI mark. Co2 cylinder as per IS 7285 . .

MEASUREMENT & PAYMENT:

Measurements of the work shall be on following basis:-

Valve shall be measured on No basis

Mode of Payment: on No basis

Dy. Executive Engineer

P.I.U., Bhavnagar

Item No.: 85

Providing and fixing framing of round hollow pipes (C Class G.I. Pipe) for compound gate as per pattern suggested by Engineer-In-Charge including providing ornamental MS Grill between pipes for

gate including cutting, welding, jointing and fixing in position on site including 3 coat primer and 2 coat of oil paint etc. complete

Materials:

- 1) **Galvanised iron pipes:** 40mm Galvanised iron pipes shall be the medium type and or required diameter and shall comply with I.S. 1239-1979. The specified diameter of the pipes shall refer to the inside diameter of the bore. Screw and all galvanised iron fittings shall be of the standard "R" or equivalent make.
- 2) **M.S. Grill:** All structural steel shall confirm to I.S. 226-1965. The steel shall be free from the defects mentioned in I.S. 226-1975 and shall have a smooth finish. The material shall be free from loose mill scale, rust pits or other defects affecting the strength and durability. Rivet bars shall confirm to I.S. 1148-1973.
- 3) **Oil Paints:** Oil paints shall be of the specified colour and shade, and as approved. The ready mixed paints shall only be used. However, if ready mixed paint or specific shade or tint is not available, white ready mixed paint with approved stainer will be allowed. In such a case, the contractor shall ensure that the shade of the paint so allowed shall be uniform.

Workmanship:

40mm G.I. pipes should be provided as a frame of Gate and M.S. Grill shall be prepared as per the drawings or as directed by for fixing as a Compound Wall Gate. The grill shall be fabricated to the designs and pattern shown in the drawings and the weight shall be as directed, and the joints shall be riveted or welded as shown in the plans or as directed. The grill so formed shall be fixed in to the G.I. pipe frame of the shutter of gate before they are erected in position. The surface to be painted shall be cleaned of all rust, scale, dirt and other foreign matter sticking to it with wire brush, steel wool, scrapers, sand paper etc. after the preparation of surface, the priming coat shall be applied immediately. The brushing operations are to be adjusted to the spreading capacity advise by the manufacturer of the particular primer. After the primer dry completely apply first coat of oil paint as suggested and approved by the Engineer-In-Charge. Each coat shall be allowed to dry completely and lightly rubbed with very fine grade of sand-paper loose particle brushed off before next coat is applied.

Mode of Measurement and Payment:

The rate includes cost of all labour, materials, tools and plant and other equipment required for satisfactory completion of the work, as described in item.

The rate shall be for One Sq.M.

Mode of measurement: on Sq.M. basis

Mode of Payment: on Sq.M. basis.

Dy. Executive Engineer
P.I.U., Bhavnagar