

**Name of work:**     **Repairing work in Samras Girl's Hostel at Vesu, Surat, (Repairing Toilet, Bathroom, Ductline, Flooring, Motor and Other misc.work)**

**ITEM WISE SPECIFICATION**

**Item No 1     Dismantling tiled of stone floors laid in mortar including stacking of serviceable materials and disposal of unserviceable materials with all lead and lift**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.20.23/P.148

**Item No 2     Dismantling sanitary fittings like wash basin, W.C.Pan Indian and European type, flushing tank etc. including stacking the materials with all lead and lift.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.20.00 I/P.151

**Item No 3     Dismantling C.I. pipes G.S.W.pipes and A.C. rain water pipes with fittings and clamps including stacking the materials with all lead and lift ( for any dia, of pipe)**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.20.56(i)/P.151

**Item No 4     Dismantling doors, windows, ventilators etc. (wood or steel) shutters including chowkhats architraves, holdfasts and other attachment etc. complete and stacking them within all lead and lift.(i) Not exceeding 3 Sq.M. in area.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.20.49(i)/P.150

**Item No 5     Removing the scraping of old deteriorated plaster of any thickness from wall/Rcc member including stacking of serviceable material and disposal of unserviceable material from site of work with all lead and lift.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.18.33 P.No.129 expect use level scraping of old deteriorated plaster instead of oil bound distemper

**Item No 6     Providing 20 mm thick Water proof cement plaster for sunk in single coat on brick / concrete wall for interior plastering up to floor two level finished even and smooth (ii) cement mortar 1:3 (1- cement, 3 sand) and mixing waterproofing materials of approved brand and manufacture in cement mortar in proportion recommended by the manufacture for All floor.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.17.61.(I) P.120 + 17.70 P.No.121 for all floor

**Item No 7      P & L 30x30 cm. Matt Finished Ceramic Tiles 6 mm thick in flooring treads of steps and landing laid on a bed of 12 mm thick cement mortar 1:3(1-cement:3-coarse sand)finishing with flush pointing in colour cement slurry etc. complete. Colour and Shade approved by Engineer-In-Charge**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.14.29 P.No.96 except that using for 30X30 CM. Matt Finished Ceramic Tiles 6 mm thick or ISI mark instead of white glazed tiles.

**Item No 8      Providing erecting and fixing double coated Syntex PVC. (ISI) water tank of required capacity each with all necessary fittings and connection etc. complete on terrace.**

### **1.0 MATERIAL**

#### **1.1.PVC Water tank**

PVC double coated Water tank of specified capacity and of approved in liters of approved make and quality

Net capacity shall be net volume of water stored between the lowest level of overflow and lowest specified level.

#### **1.2. Nipple**

Galvanize pipe nipple shall be of approved make and of best quality

#### **1.3. Ball valve**

Ball valve shall be of approved make and of best quality

#### **1.4. Connections**

Connections shall be of approved make and of best quality

### **2.0 WORKMAN SHIP**

**2.1.** Tank shall be approved quality and standard make. The material of tank and lead and fittings which may come in contact of water should be such that it does not impart any taste, colour or odour. It does not have any toxic effect and it does not contaminate the water. Thereby making it unpotable.

**2.2.** The tank shall be fixed properly in a level position and making all required necessary correction like inlet outlet flushing overflow and air vent. Tank shall be satisfying the standards of public health.

### **3.0 MODE OF MEASUREMENT and PAYMENT**

**3.1.** The unit rate PVC tank shall include the cost of all materials, tools and plant required for lifting to required height with all lead and lift, placing and fixing in position, all required specials and jointing adhesive compound, finishing as per direction of the Engineer-in-charge, and all other incidental expenses for producing PVC water tank work of specified diameter to complete the structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

**3.2.** The PVC water tank work shall be measured for its number limiting to specified capacity to those specified on plan or as directed. The rate shall be for a unit of one number.

**3.3.** The payment will be made on **liter basis** of the finished work.

**Item No 9**      **"Providing laying and jointing in true line and level 15mm dia. U.P.V.C. Pipe ( SCH- 40) for cold water including fittings as approved by Engineer In Charge. Pipe shall be fixed on the wall with the help of clamp at every two metre C/C or shall be concealed as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials."**

The relevant specifications of Building Booklet It. No.23.8.(A) Page No.162 shall be followed expect use level 15mm dia. U.P.V.C. Pipe ( SCH- 40) for cold water including fittings and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 20mm dia.

**Item No 10**      **"Providing laying and jointing in true line and level 25mm dia. U.P.V.C. Pipe ( SCH- 40) for cold water including fittings as approved by Engineer In Charge. Pipe shall be fixed on the wall with the help of clamp at every two metre C/C or shall be concealed as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials."**

The relevant specifications of Building Booklet It. No.23.8.(B) Page No.162 shall be followed expect use level 25mm dia. U.P.V.C. Pipe ( SCH- 40) for cold water including fittings and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 25mm dia.

**Item No 11**      **"Providing laying and jointing in true line and level 40mm dia. U.P.V.C. Pipe ( SCH- 40) for cold water including fittings as approved by Engineer In Charge. Pipe shall be fixed on the wall with the help of clamp at every two metre C/C or shall be concealed as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials."**

The relevant specifications of Building Booklet It. No.23.8.(D) Page No.162 shall be followed expect use level 40mm dia. U.P.V.C. Pipe ( SCH- 40) for cold water including fittings and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 40mm dia.

- Item No 12 Providing laying and jointing in true line and level 50mm dia. U.P.V.C. Pipe ( SCH- 40) for cold water including fittings as approved by Engineer In Charge. Pipe shall be fixed on the wall with the help of clamp at every two metre C/C or shall be cancelled as directed including necessary fittings etc. including testing of pipe and joints and fixing the same with adhesive solvent, including cost of all materials.**

The relevant specifications of Building Booklet It. No.23.8.(E) Page No.162 shall be followed expect use level 50mm dia. U.P.V.C. Pipe ( SCH- 40) for cold water including fittings and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 50mm dia

- Item No 13 Providing and fixing concealed center point to wall ceiling & floor CPVC (SDR 13.5) PIPE having National Sanitation Foundation (NSF) seal for potable water of following dia. nominal bore tube fittings and clamps including making good the wall, ceiling and floor etc. complete.[A] 15 mm.**

The relevant specifications of Building Booklet It. No.23.8.(B) Page No.162 shall be followed expect use level 15mm dia. C.P.V.C. Pipe (SDR 13.5) for Hot water including fittings and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 25mm dia.

- Item No 14 Providing and fixing concealed center point to wall ceiling & floor CPVC (SDR 13.5) PIPE having National Sanitation Foundation (NSF) seal for potable water of following dia. nominal bore tube fittings and clamps including making good the wall, ceiling and floor etc. complete. [C] 25 mm.**

The relevant specifications of Building Booklet It. No.23.8.(B) Page No.162 shall be followed expect use level 25mm dia. C.P.V.C. Pipe (SDR 13.5) for Hot water including fittings and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 25mm dia.

- Item No 15 Providing and fixing concealed center point to wall ceiling & floor CPVC (SDR 13.5) PIPE having National Sanitation Foundation (NSF) seal for potable water of following dia. nominal bore tube fittings and clamps including making good the wall, ceiling and floor etc. complete. [C] 40 mm.**

The relevant specifications of Building Booklet It. No.23.8.(B) Page No.162 shall be followed expect use level 40mm dia. C.P.V.C. Pipe (SDR 13.5) for Hot water including fittings and Pipe shall be fixed on the wall with the help of clamp at every two metre C C or shall be

concerned as directed as approved by Engineer In Charge and instead of 6 kgs sq.cm. working pressure polythene pipes of 40mm dia.

- Item No 16 Providing and fixing ball cock of approved. quality as directed.(A) Copper Metal (ii) 50mm dia.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.00.5 (A)(II) P.No.173 for 50 mm.

- Item No 17 Providing, laying and jointing in true line and level 160 diameter U.P.V.C (Type B) conforming to IS 13592-1992 with one end plain and other end socketed with rubber ring, & fittings conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed on wall using of PVC clamp of the size 160 mm diameter x 210 mm length x 196 mm height at every 2000 mm center to center or shall be concealed in walls as directed including necessary fittings such as bends, shoes etc. including testing of pipes and joints and jointed with adhesive solvent cement including cost of all materials.**

The relevant specifications of Building Booklet It. No.23.8. Page No.162 shall be followed expect use 160 diameter U.P.V.C (Type B) conforming to IS 13592-1992 with one end plain and other end socketed with rubber ring, and fittings conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed on wall using of PVC clamp of the size 160 mm diameter x 210 mm length x 196 mm height at every 2000 mm center to center or shall be concealed instead of 6 kgs sq.cm. working pressure polythene pipe

- Item No 18 Providing laying (to level or slopes) and jointing reinforced concrete Light duty non-pressure pipes I.S. class NP2 of the following internal diameter with collars and butt ends prepared for collar joints including testing of joints complete.(D) 300mm**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.24.22.(D) P.No.177

- Item No 19 Providing, laying and jointing in true line and level 75 mm dia. UPVC SWRType B pipe conforming to IS 13592-1992 with one end plain and other end socketed with rubbering and fitting conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed on wall using of PVC clamp at every 2000 mm c/c or shall be concealed in walls as directed including necessary fittings such as bends, shoes etc. including testing of pipes and joints and jointed with adhesive solvent cement including cost of all materials.**

The relevant specifications of Building Booklet It. No.23.8.(E) Page No.162 shall be followed expect use 75 mm diameter U.P.V.C (Type B) conforming to IS 13592-1992 with one end plain and other end socketed with rubber ring, and fittings conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed on wall using of PVC clamp of the size 110 mm

diameter x 149 mm length x 145 mm height at every 2000 mm centre to centre instead of 6 kgs sq.cm. working pressure polythene pipes of 50mm di

- Item No 20 Providing, laying and jointing in true line and level 110 diameter U.P.V.C (Type B) conforming to IS 13592-1992 with one end plain and other end socketed with rubber ring, & fittings conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed on wall using of PVC clamp of the size 110 mm diameter x 149 mm length x 145 mm height at every 2000 mm center to center or shall be concealed in walls as directed including necessary fittings such as bends, shoes etc. including testing of pipes and joints and jointed with adhesive solvent cement including cost of all materials.**

The relevant specifications of Building Booklet It. No.23.8. Page No.162 shall be followed expect use 110 diameter U.P.V.C (Type B) conforming to IS 13592-1992 with one end plain and other end socketed with rubber ring, and fittings conforming to ISI 14735-1999 of approved make for drainage system pipe line, pipe shall be jointed with each other with rubber lubricant, pipe shall be fixed on wall using of PVC clamp of the size 160 mm diameter x 210 mm length x 196 mm height at every 2000 mm center to center or shall be concealed instead of 6 kgs sq.cm. working pressure polythene pipes

- Item No 21 Providing and fixing in PVC SWR cowel vent 75mm dia to pipes.(B) 75mm dia.**

Item referred for providing and fixing pvc cowel vent of 75mm dia. (above 3 inch) pvc cowel ventilator for 75mm dia shall confirm to IS & shall be of best quality pvc cowel ventilator shall be fixed to pipe with joints. Item shall measured and paid on number basis.

- Item No 22 Providing and fixing in PVC SWR cowel vent 110mm dia to pipes.(B) 110mm dia.**

Item referred for providing and fixing pvc cowel vent of 110mm dia. (above 4 inch) pvc cowel ventilator for 110mm dia shall confirm to IS & shall be of best quality pvc cowel ventilator shall be fixed to pipe with joints. Item shall measured and paid on number basis.

- Item No 23 Providing and fixing PVC SWR Nahni trap IS 14735 for drain - 100 mm diameter with jali of the following nominal diameter of self cleansing design with C.I screed down or hinged grating including the cost of cutting and making good the walls.**

The relevant specifications of Building Booklet It. No.23.87 Page No.164 shall be followed expect use PVC SWR **Nahni trap** IS 14735 for drain - 100 mm diameter with jali instead of cast iron (spun)nahni trap

- Item No 24 Providing and fixing screw down bib taps of following size.(B) Brass chromium plated screws down Bib Tap. (i) 15mm dia.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.92. (A)(I) P.No.170

- Item No 25 Providing and fixing brass screw down stop tap.(A) 15mm dia.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.96 (A) P.No.171 Expect using 15 mm dia Stop tap instead of Stop cock.

- Item No 26 Providing and fixing pillar tap, capstan head, screw down high pressure with screws, shanks and back nuts. (i) 15mm dia.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.95 (A) P.No.171 except that using for 15mm dia.

- Item No 27 Provision and fixing water closet squatting orissa type W.C. pan size 580mm integral footrest and 100 mm P or S trap and including 25 mm dia CP brass flush valve and GI inlet connection etc. comp. (A) Vitreous china long pattern white or colour**

The relevant specifications of Building Booklet It. No.23.112 (A)(I) Page No.165 shall be followed including CP brass hinges and rubber buffers back plastic seat

The relevant specifications of Building Booklet It. No.23.115 (A)(I) Page No.165 shall be followed expect Provision and fixing water closet squatting orissa type W.C. pan size 580mm integral footrest and 100 mm P or S trap and including 25 mm dia CP brass flush valve and GI inlet connection etc. comp. (A) Vitreous china long pattern white or colour.

**Mode of measurement-**

The item shall be measured and paid on **Number basis** of consolidated item of work

- Item No 28 Providing and fixing chromium plated brass half trun flush cock of approved quality including fixing in pipe line etc. complete.(ii) 25mm dia.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.00.5 (A)(II) P.No.173 for 50 mm. expect use For half trun flush cock 25mm dia. instead of ball cock.(A) Copper Metal (ii) 50mm dia.

- Item No 29 Providing and fixing G.I. inlet connection for flush pipe with W.C. Pan**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No. 23.120. P.No.167

- Item No 30 Providing and fixing wash basin with single hole for pillar tap with C.I. Or M.S. brackers painted white including cutting holes and making good the same including pillar tap, Brass waste, stop cack , bottle trap and M I fisher union fittings :(ii) Flat back wash basin 500mm x 400mm size including all necessary fittings etc complete shade and pattern as approved by Engineer in charge.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.127. / P.No.167 +It.No.23.135(A) / P.No.168+It.No 23.136.(A)/ P.No.168 +It.No 23.96.(A)/ P.No.171+It.No.23.95 (A) / P.No.170 Expect using oval type under counter wash hand basin instead of Wash basin

- Item No 31 Providing and fixing West Pipe for Wash basin including all necessary fittings etc complete**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No. 23.120. P.No.167 Expect using West Pipe instead of flush pipe

- Item No 32**    **Providing and fixing S.W. gully trap with C.I. grating brick masonry chamber and water tight C.I. cover with frame of 300mm x 300mm size (inside) with standard weight (i) Square mouth traps (B) 150mm x 100mm size P or R type**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No. 24.19(1) P.No.176

- Item No 33**    **Constructing brick masonry chamber for underground C.I. Inspection chamber and bends with briocks having croshing strength not less than 35Kg. Cm2 in C.M. 1:5 precast RCC cover 455mm x 610mm intenal dimensions with frame (R.C.C. top slabe with 1:2:4 mix (1-cement :2- coarse sand :4-graded stone aggregate 20mm size) foundation concrete 1:5:10 inside plaster 15mm thick with cement mortar 1:3 finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete (i) Inside dimensions 455mmx 610mm and 450mm deep for single pipe line.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No. 24.44(i) P.No.183

- Item No 34**    **Constructing brick masonry chamber for underground C.I. Inspection chamber and bends with briocks having croshing strength not less than 35Kg. Cm2 in C.M. 1:5 C.I. cover with frame (Light duty) 455mm x 610mm intenal dimensions total weight of cover with frame to be not less than 38Kg. (Wt. of cover 23 Kg.) and Wt. of frame 15Kg. ) (R.C.C. top slabe with 1:2:4 mix (1-cement :2- coarse sand :4-graded stone aggregate 20mm size) foundation concrete 1:5:10 inside plaster 15mm thick with cement mortar 1:3 finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete.(i) Inside dimensions 500mmx 700mm and 450mm deep for single pipe line.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No. 24.44(ii) P.No.184

- Item No 35**    **Extra over items for every additional depth of 0.1M. of part thereof beyond 450mm depth for Brick masonry chamber.(i) for 455mm x 610mm size.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.24.46. P.No.184 except that using for **455mm x 610mm size**.

- Item No 36**    **Extra over items for every additional depth of 0.1M. of part thereof beyond 450mm depth for Brick masonry chamber.(i) for 500mm x 700mm size.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.24.46. P.No.184 except that using for **500mm x 700mm size**.

- Item No 37**    **"Providing average 20 mm thick single coat polymer plaster by removing detoriated plaster over RCC member, like column, beam, slab etc. exposing existing reinforcement including scraping by wire brush, applying rust removing chemical, rust convertor and zinc rich primer on existing reinforcement, applying polymer bonding agent on existing concrete surface including plastering in CM 1: 3 in single coat including standard quality**



**(Dr, fixit or any equivalent brand) curing compound agent and finishing with floating coat of neat cement slurry adding Polyalk Fix Prime polymer chemical as per directed by Engineer - in - charge for all floors.**

**Material:-** The water shall confirm to M-2. The cement mortar of proportion 1:3 sand confirm to M.13 with mixing of polymer additive and bonding agent of standard company and approved by Engineer in charge prior to supply at site.

**Workmanship:-**

Existing loose, weakened and damaged concrete shall be removed as directed. Entire surface shall be well washed with water. If the steel is infected by corrosion, the rust should be removed first by using rust converter (rust con) Anticorrosive paint of approved quality and shall be applied to reinforcement with brush as directed. Then cement mortar of proportion 1:3 mixed with polymer additive of approved company shall be mixed with cement mortar in recommended proportion shall be applied on required area in single layer as directed. Cement mortar shall be well mixed with polymer additive so that each particle of sand shall be used with cement slurry; Materials shall be mixed in water tight platform and shall be used within prescribed time limit.

After completion of applying cement mortar, the entire surface shall be finished with floating coat of neat cement slurry as directed. Necessary scaffolding arrangement shall be done.

Item including all labour, materials tools and plants complete the time in satisfactory manner.

**Mode of Measurement & Payment:**

The item shall be measured and rate shall be for a unit of one **SqMt.**

**Item No 38    Painting Two coats (excluding priming coat) on previously painted steel and other metal surface with enamel paint, brushing to give an even shade including cleaning the surface of all dirt, dust and other foreign matter.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.19.11 P.No.138.

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

**Item No 39    Wall painting (two coats) with plastic emulsion paint of approved brand and manufacture on undecorated wall surface to give an even shade including thoroughly brushing the surface free from mortar droppings and other foreign matter and sand papered smooth.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.18.57 / P.No.136

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

**Item No 40    Wall painting (two coats) with plastic emulsion paint of approved brand and manufacture on undecorated ceiling surface to give an even shade including thoroughly brushing the surface free from mortar droppings and other foreign matter and sand papered smooth.**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.18.57 / P.No.136 + It.No.18.60 / P.No.137

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

- Item No 41**    **Removing, Repairing and Refixing Old existing wooden door shutter including repairing the shutter/frame using Randha machine and replacing old fixture and fastening with new SS 304 grade fixtures like 3 Hinges, 1 Stoppers, 1 Aldrop , 2 Handle & 1 lock etc. and as directed by engineer in charge etc comp.**

Item including Removing, Repairing and Refixing Old existing wooden door shutter including repairing the shutter/frame using Randha machine and replacing old fixture and fastening with new SS 304 grade fixtures like 3 Hinges, 1 Stoppers, 1 Aldrop , 2 Handle & 1 lock etc. and as directed by engineer in charge etc comp.

The rate shall be for a unit of one **No**

- Item No 42**    **Removing and Refixing Old existing FRP Door Aldrop, Stoppers, Hinges & Handle etc. including Labour Charge and fixture and fastening as directed by engineer in charge etc comp.**

Item including Removing and Refixing Old existing FRP Door Aldrop, Stoppers, Hinges & Handle etc. including Labour Charge and fixture and fastening as directed by engineer in charge etc comp.

The rate shall be for a unit of one **No**

- Item No 43**    **Removing, Repairing and Refixing Old existing Main wooden door shutter including fixing New Pivot and Floor Spring repairing the shutter/frame using Randha machine and replacing old fixture and fastening with new SS 304 grade fixtures like 6 Hinges, 2 Stoppers, 1 Aldrop , 2 Nos. 30cm Handle & 1 lock etc. and as directed by engineer in charge etc comp.**

Item including Removing, Repairing and Refixing Old existing Main wooden door shutter including fixing New Pivot and Floor Spring repairing the shutter/frame using Randha machine and replacing old fixture and fastening with new SS 304 grade fixtures like 6 Hinges, 2 Stoppers, 1 Aldrop , 2 Nos. 30cm Handle & 1 lock etc. and as directed by engineer in charge etc comp.

The rate shall be for a unit of one **No**

- Item No 44**    **Removing, Repairing and Refixing existing Alluminium window frame with glass of all size shutter/frame, replacing all old Mosquite Net fixtures with & New Mosquite Net with new locks, screws etc. including repairing the shutter/frame with Rates includes all labour charges for removing, repairing & refixing the window, all materials, transport cost, taxes etc.and as directed by engineer in charge etc complete.**

Item including Removing, Repairing and Refixing existing Alluminium window frame with glass of all size shutter/frame, replacing all old Mosquite Net fixtures with & New Mosquite Net with new locks, screws etc. including repairing the shutter/frame with Rates includes all labour charges for removing, repairing & refixing the window, all materials, transport cost, taxes etc.and as directed by engineer in charge etc complete.

The rate shall be for a unit of one **No**

**Item No 45** Removing, Repairing and Refixing existing Alluminium fix ventilation frame with glass of all size shutter/frame, replacing all old Mosquite Net , fixtures & New Mosquite Net with new locks, screws etc. including repairing the shutter/frame with Rates includes all labour charges for removing, repairing & refixing the Ventilation, all materials, transport cost, taxes etc.and as directed by engineer in charge etc complete.

Item including Removing, Repairing and Refixing existing Alluminium fix ventilation frame with glass of all size shutter/frame, replacing all old Mosquite Net , fixtures & New Mosquite Net with new locks, screws etc. including repairing the shutter/frame with Rates includes all labour charges for removing, repairing & refixing the Ventilation, all materials, transport cost, taxes etc.and as directed by engineer in charge etc complete.

The rate shall be for a unit of one **No**

**Item No 46** Providing and laying Vitrified tiles 8 to 10 mm thick , 24" x 24" in flooring treads of steps and landing laid on a bed of 12mm thick cement mortar 1:3 (1-cement : 3-coarse sand ) finishing with flush pointing in white cement.

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.14.32 P.No.97 Except **24" x 24" vitrified 10 mm thick tile 2mm thick cement mortar 1:3 (1cement : 3 coarse sand)** insfead of white glazed tiles

**Item No 47** Providing and laying Vitrified tiles 8 to 10 mm thick , 24" x 24" in skirting risers of steps and dedo on 10mm thick cement plaster 1:3 (1- cement : 3-coarse sand) and jointed with white cement slurry

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.14.32 P.No.97 Except **24" x 24" vitrified 10 mm thick tile 10mm thick cement mortar 1:3 (1-Cement : 3 coarse sand)** insfead of white glazed tiles

**Item No 48** Providing and fixing 35 mm thick flush door Single shutter, solid core with Shutter of Factory made & Stamped I.S 12823 Grade one ,Type one ,melamine faced three layred resin Flushed Door Having Decorative Lamination on both sides & 12 mm T.W.Beading Around the Door,FROM HOLDING LICENCE FOR MINIMUM 5 YEARS .and stainless steel handle and necessary Locking system of Godrej, zinc coated hinges ,fixtures & fastenings etc directed by engineer in charge. D2

#### **General**

Providing and fixing 35 mm thick flush door Single shutter, solid core with Shutter of Factory made & Stamped I.S 12823 Grade one ,Type one ,melamine faced three layred resin Flushed Door Having Decorative Lamination on both sides & 12 mm T.W.Beading Around the Door,FROM HOLDING LICENCE FOR MINIMUM 5 YEARS .and stainless steel handle and necessary Locking system of Godrej, zinc coated hinges ,fixtures & fastenings etc directed by engineer in charge.D2

All works shall be carried out as per item specifications, drawing, image and as per required condition or as directed by engineer in charge.

Also including below specify points as per following:

## **1 ANODIZED ALUMINUM BEADING**

Specification no M-31 from specification booklet for Building works

## **2 flush door shutter**

The flush door shutter shall be confirm General Technical Specification no M-30 from specification booklet for Building works

## **3 Lamination sheet(1mm thick)**

The lamination sheet (1mm thick) should be standard quality or as directed

The 1mm thick lamination sheet should be provide all visible parts of all component of Door

Lamination of 1.0mm thick in single or double shade or equivalent make of plain or textures finish, design and grooves as directed by architecture drawing.

Fixing the lamination sheets with adhesive materials like Favicol or equivalent.

Workmanship should be done with good quality.

The lamination sheet should be fixed with level and line & as per drawing and item specification.

## **4 Fixtures and Fastenings**

The Fixtures and Fastenings shall be confirm General Technical Specification for Building work booklet M-43 / P.No.19. Use Stainless steel instead of iron, brass and aluminium.

All Fixtures and Fastenings should be S.S 304

Providing and 60cm long stainless steel handle and other necessary Fastenings

## **5 Godrej Lock**

Lock should be Godrej or Standard Quality or as directed.

Providing floor lock per Door

## **Mode of Measurement**

The consolidated item shall be measured and paid on its breadth, length and height dimensions to those specified in estimate/plan or as directed.

The payment will be made on **SQMT** basis of the one complete finished

**Item No 49** Providing and fixing FRP frame size 100 x 50 mm and 35 mm thick FRP depress panel Single shutter having extra reinforcement on sides & edges in Gel coat finish. The core of the shutter & frame is to be filled up with injected fire retradat grade polyurethane foam done in situ along with embeded wooden pieces for stiffening & also taking hinges & finitures. The whole FRP frame & shutter is to be waterproof, weatherproof ,termite proof & resistance to mild acid/alkali. Rates are to be inclusive of S.S hinges with necessary

**screws & alluminum fixtures & fastenings & fartener sleeve.Colour and Shade approved by Engineer-In-Charge. D4**

## **1.0 MATERIAL**

### **1.1. FRP Frame 100x50mm**

1.5 to 2.0 mm thick fire retardent grade FRP skin in depressed panel shall be of approved make as approved by Engineer in charge

FRP skin idepressed panel shall be of water proof weather proof termite proof mild acid and alkali proof, sound proof and fire resistance

FRP frame size as per required and 35 mm shall be in standard factory made members fabricated in factory including necessary stainless steel fixtures and fastenings of approved brand and make as approved by Engineer in Charge

Whole section shall be of water proof weather proof termite proof mild acid and alkali proof, sound proof and fire resistance

The frame shall be of best quality and free from any defect

### **1.2. FRP shutter 35mm thick**

FRP Shutters of 35 mm thick in standard design of FRP and 3.12 mm hide and dandified molded wood primer coated skin on both side of shutter skin is to be confirmed to ASTMD - 1037 pressed under hot process over wood style 65 x 27 mm top and bottom rail and lock rail 125 mm x 27 mm including stainless steel hinges with necessary aluminum fixture and fastening remaining hole of portion is to be filled up with PUF and shutters is to be finished in gel coat

Whole section shall be of water proof weather proof termite proof mild acid and alkali proof, sound proof and fire resistance

The shutters shall be of best quality and free from any defect

## **2.0. S. S. FIXTURES AND FASTNINGS**

### **2.1 Hinges,**

Hinges 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

The hinges shall be of best quality and free from any defect

### **2.2 Handles,**

Handles 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

The handles shall be of best quality and free from any defect

### **2.3 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

The bolts shall be of best quality and free from any defect

### **3.0 WORKMANSHIP**

**3.1.** The Work of FRP door shall be done with extreme finishing. The FRP Shutters and granite frame shall be fixed in position in true line and level and shall be fitted as directed by Engineer in charge with all required fixtures and fastenings shall be fitted at right place as shown in the drawing and as directed by Engineer in charge.

**3.2.** The back of each Stone slab to be fixed shall be smeared with cement paste of matching colour and the Stone slab shall then be gently tapped against the surface, with a wooden mallet. The skirting shall be done only after the fixing is completed. Any pipes coming out of the wall through the dado or skirting shall only be at the intersection of the horizontal and vertical joints. The Stone slab shall not have staggered joints. The joints shall be true to entire line both ways and vertical joints shall be in line with joints or flooring. Stone slab shall be fixed as close as possible to the adjoining tiles and any difference in the thickness of the Stone slab shall be evened out in the cement paste so that all the tiles faces are set in conformity with one another. The skirting shall project uniformly and not more than 6 mm, thickness beyond the finished surface above. Top of skirting or dado shall be truly horizontal. The risers of steps, skirting or dado shall rest on top of treads of flooring. Wherever required the Stone slab shall be cut (saw n) and thin edges smoothened before use.

### **4.0 Mode of Measurement and Payment**

**4.1.** The unit rate of FRP door shall include the cost of all materials, cost of all necessary fixtures and fastenings, labour charges for fixing frames, doors and fixing the FRP 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

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

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

**Item No 50**     **Providing and fixing polished 18 mm thick Granite stone in Single piece with full round edge and polished of approved quality in cladding on Cill & Jambs and around the doors/ windows/ ventilation with 12 mm thick cement mortar CM (1:4) and fixing with cement slurry & adhesive including moulding of exposed edges as directed by engineering in charge etc. complete.**

### **MATERIAL**

#### **1.0 WATER**

Water Shall confirm Material Specification no M- 1

- **CEMENT**

Cement Shall confirm Material Specification no M- 3

- **SAND**

Sand Shall confirm Material Specification no M- 6

#### **4.0 Mirror polished 18 mm thick Granite stone:**

**4.1.** 18mm thick **mirror polished granite stone** shall be hard even sound, and regular in shape and generally uniform in colour. The colour of the stone shall be approved by engineer in charge. Brown coloured shall not be allowed for use. They shall be without any soft veins cracks or flaws

**4.2.** The size of the stone to be used shall be of full length single piece and required width as directed. However smaller sizes will be allowed to be used to the extent of maintaining required pattern. Thickness shall be as specified.

**4.3.** Tolerance of minus 18 mm. on accounts of chisel dressing of edges shall be permitted for length as well as breadth. Tolerance in thickness shall be  $\pm 3$  % in mm.

**4.4.** When machine cut edges are specified the exposed and the edges at joints shall be machine cut the thickness of the exposed machine cut edges shall be uniform.

**4.5.** The stones shall have mirror polished surface.

#### **5.0 WORKMANSHIP**

**5.1** Granite stone of approved quality shall be laid evenly to level and slope as directed by Engineer in charge over a bed of a base layer consisting of cement mortar 1:4 ( 1 cement: 4 coarse sand by volume).

**5.2.** Cement and sand for base layer shall be mixed in proportions of 1:4 ( 1 cement : 4 coarse sand by volume) Cement and sand shall be proportioned by volume after making due allowance for bulking. The required quantity of water shall then be added and the mortar mixed to produce workable consistency before mixing platform shall be thoroughly cleaned before changing from one type of cement to another.

**5.3.** The mixing for base layer shall be done intimately, The operation shall be carried out on clean water tight platform, and cement sand shall be first mixed dry in the required proportion to obtain uniform colour and then the mortar shall be mixed for at least two minutes after addition of water. In case of cement mortar, that has suffered because of evaporation of water the same shall be re-tempered by adding water as frequently as needed to restore the requisite consistency but its re-tempering shall be permitted only within thirty minute from the time of addition to water at the time of initial mixing.

**5.4.** Cement and sand for base layer shall be mixed in proportion as specified in the item, Cement and sand shall be proportioned by volume after making due allowance for bulking.

The required quantity of water shall then be added and the mortar mixed to produce workable consistency.

**5.5.** Curing shall be started as soon as the mortar used for finished has hardened sufficiently not to be damaged when watered. It shall be kept wet for a period of at least 7 days. During this period, it shall be suitably protected from all damages;

**5.6.** During hot weather, all finished or partly finished work shall be covered or wetted in such manner as will prevent rapid drying of the flooring work.

**5.7.** Joints of flooring shall be through and continuous throughout the building as directed by Engineer in charge

**5.8.** joints shall be filled with a stiff mixture of gray cement surly

**5.9.** The flooring work shall be finished by rubbing and mirror polishing after the the work of flooring is set properly

#### **6.0 PROPORTION OF MIX**

**6.1.** The proportion of cement and sand for base layer shall be one part of cement. 4 (four) parts of sand and shall be measured by volume.

#### **7.0 MODE OF MEASUREMENT & PAYMENT :**

**7.1.** The unit rate cladding shall include the cost of all materials, tools and plant required for mixing, laying of base layer in true level and slope as required applying & placing stones in position, compacting, finishing, curing mirror polishing, and all other incidental expenses for producing flooring work to complete the structure or its components as shown on the drawings and according to these specifications. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

The rate of cladding shall include the cost of all labour, materials tools and plant scaffolding and all incidental expenses as described herein above.

**7.2.** The cladding work shall be measured for its **length** and **width**, limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one square meter.

**7.3.** The payment will be made on **square Meter basis** of the visible work.

**Item No 51     Constructing brick masonry Grease chamber for underground C.I. Inspection chamber and bends with bricks having crushing strength not less than 35Kg. Cm<sup>2</sup> in C.M. 1:5 Two C.I. cover with frame (Light duty) 980mm x 660mm internal dimensions total weight of cover with frame to be not less than 38Kg. (Wt. of cover 23 Kg.) and Wt. of frame 15Kg. ) (R.C.C. top slab with 1:2:4 mix (1-cement :2- coarse sand :4-graded stone aggregate 20mm size) foundation concrete 1:2:4 inside plaster 15mm thick with cement mortar 1:4 finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete.(i) Inside dimensions 910mm x 610mm and 450mm deep for Three pipe line. as per directed by Engineer-in-charge.**



The relevant specification shall be followed as per General Technical specification for Building work booklet It.No. 24.44(i) P.No.183 expect use Constructing brick masonry Grease chamber for underground C.I. Inspection chamber and bends with briocks having croshing strength not less than 35Kg. Cm2 in C.M. 1:5 Two C.I. cover with frame (Light duty) 980mm x 660mm intenal dimensions total weight of cover with frame to be not less than 38Kg. (Wt. of cover 23 Kg.) and Wt. of frame 15Kg. ) (R.C.C. top slabe with 1:2:4 mix (1- cement :2- coarse sand :4-graded stone aggregate 20mm size) foundation concrete 1:2:4 inside plaster 15mm thick with cement mortar 1:4 finished smooth with a floating coat of neat cement on walls and bed concrete etc. complete.(i) Inside dimensions 910mmx 610mm and 450mm deep for Three pipe line. as per directed by Engineer-in-charge. instead of brick masonry chamber for 455mmx 610mm and 450mm deep for single pipe line.

**Item No 52 Providing & erecting open well horizontal mono block pump set with cast iron body, complete for three phase submersible motor having [C] For 3 HP 3 phase open well horizontal mono block pump set suitable for 85 LPM to 270 LPM @ 11 mtr to 33 mtr head suitable for 50/65 mm dia delivery pipe Cat.II**

This work shall consist of Supplying and installing of 3 HP 3 phase open well horizontal mono block pump set suitable for 85 LPM to 270 LPM @ 11 mtr to 33 mtr head suitable for 50/65 mm dia delivery pipe Cat.II as approved by the Engineer in charge..

#### **Monoblock pump set**

- 1.0 Monoblock pump set** of specified capacity and of I.S.I. mark of approved brand and make and quality shall be supplied
- 1.1 Specification of item no 9.4.2 of Electrical S O R Item form specification booklet of Electrical work shall be followed for this item

#### **2.0 WORKMAN SHIP**

**2.1. Monoblock pump set** shall be of approved quality and as per IS standard make. Material used in manufacturing tank shall be confirming to relevant IS code.

**2.2.** The **Monoblock pump set** shall be fitted and installed properly in a desired position and making all required necessary connection as specified and as directed by the Engineer in charge.

#### **3.0 MODE OF MEASUREMENT and PAYMENT**

**3.1.** The unit rate of Monoblock pump set shall include the cost of all materials, tools and plant required for fitting, the same to specified position as per drawings, and as directed by Engineer in charge. It shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

**3.2.** The Monoblock pump set shall be measured in **Number**.

3.3. The payment will be made on number basis of the finished work.

**Item No 53 Providing & erecting open well horizontal mono block pump set with cast iron body, complete for three phase submersible motor having [I] For 20 HP 3 phase open well horizontal mono block pump set suitable for 1750 LPM to 1150 LPM @ 33 to 51 MTR head suitable for 65 /80 mm dia delivery pipe Cat.II**

This work shall consist of Supplying and installing [I] For 20 HP 3 phase open well horizontal mono block pump set suitable for 1750 LPM to 1150 LPM @ 33 to 51 MTR head suitable for 65 /80 mm dia delivery pipe Cat.II

#### **Monoblock pump set**

**2.0 Monoblock pump set** of specified capacity and of I.S.I. mark of approved brand and make and quality shall be supplied

1.1 Specification of item no 9.4.2 of Electrical S O R Item form specification booklet of Electrical work shall be followed for this item

#### **2.0 WORKMAN SHIP**

**2.1. Monoblock pump set** shall be of approved quality and as per IS standard make. Material used in manufacturing tank shall be confirming to relevant IS code.

**2.2.** The **Monoblock pump set** shall be fitted and installed properly in a desired position and making all required necessary connection as specified and as directed by the Engineer in charge.

#### **3.0 MODE OF MEASUREMENT and PAYMENT**

**3.1.** The unit rate of Monoblock pump set shall include the cost of all materials, tools and plant required for fitting, the same to specified position as per drawings, and as directed by Engineer in charge. It shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

**3.2.** The Monoblock pump set shall be measured in **Number**.

**3.3.** The payment will be made on number basis of the finished work.

**Item No 54 Supplying & erecting approved make motor control cubical panel [Star delta] made from 16G CRCA sheet duly epoxy powder painted inside and outside with hinged doors and locking with suitable size of ON - OFF isolator (AC 3 / 23 duty) main fuses. Digital volt and current meter (in a single unit) with micro controller based control unit and current sensing single phasing preventer electronic overload protection, over voltage (Programmable) protection and under voltage (Programmable) protection, prod less dry run protection programming facility for setting of all parameter like overload current, high**

**voltage limit, low voltage limit, dry run limit with digital indication on seven segment LED display for any fault like over load, high voltage, low voltage, dry running single crimped, electronic star delta timer, feather touch start / stop push buttons to be erected on angle iron frame. Grouted on wall the contactors will be of L& T, Siemens , BCH make only) (A) S/D up to 7.5 H.P.**

This work shall consist of Supplying & erecting approved make motor control cubical panel [Star delta] made from 16G CRCA sheet duly epoxy powder painted inside and outside with hinged doors and locking with suitable size of ON - OFF isolator (AC 3 / 23 duty) main fuses. Digital volt and current meter (in a single unit) with micro controller based control unit and current sensing single phasing preventer electronic overload protection, over voltage (Programmable) protection and under voltage (Programmable) protection, prod less dry run protection programming facility for setting of all parameter like overload current, high voltage limit, low voltage limit, dry run limit with digital indication on seven segment LED display for any fault like over load, high voltage, low voltage, dry running single crimped, electronic star delta timer, feather touch start / stop push buttons to be erected on angle iron frame. Grouted on wall the contactors will be of L& T, Siemens , BCH make only) (A) S/D up to 7.5 H.P.

**3.0 motor control cubical panel** of specified capacity and of I.S.I. mark of approved brand and make and quality shall be supplied

1.1 Specification of item no 9.5.2 of Electrical S O R Item form specification booklet of Electrical work shall be followed for this item

## **2.0 WORKMAN SHIP**

**2.1. motor control cubical panel** shall be of approved quality and as per IS standard make. Material used in manufacturing tank shall be confirming to relevant IS code.

**2.2.** The **motor control cubical panel** shall be fitted and installed properly in a desired position and making all required necessary connection as specified and as directed by the Engineer in charge.

## **3.0 MODE OF MEASUREMENT and PAYMENT**

**3.1.** The unit rate of penal set shall include the cost of all materials, tools and plant required for fitting, the same to specified position as per drawings, and as directed by Engineer in charge. It shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

**3.2.** The **motor control cubical panel** shall be measured in **Number**.

**3.3.** The payment will be made on number basis of the finished work.

**Item No 55 Supply, installing, testing and commissioning of Normax make CI heavy duty ball type foot valve with flanges, nut bolts, gaskets etc. with necessary complete accessories. 50mm dia.**

The item includes Supply, installing, testing and commissioning of Normax make CI heavy duty ball type foot valve with flanges, nut bolts, gaskets etc. with necessary complete accessories. 80 mm dia.

The Material Selection and consolidated item shall be carried out as directed by Engineer in charge

The item shall be measured and paid on Number basis.

**Item No 56 Drilling in soil with lowering of pipes concrete sealing including gravel packing clay breaking and development of bore with air compressor by required capacity vertical test etc. complete including the cost of benimeter 250mm dia.**

#### **GENERAL**

The work shall consist of Drilling of 250 mm diameter bore hole for 250 mm diameter ERW UPVC pipe up to required depth in over burden strata (maximum up to 30 meters or up to the depth and further drilling of 165 mm diameter bore hole in remaining rocky or sandstone strata up to 100 mtr. Depth or as suggested by Geologist Hydrologist

Only trained personnel shall be employed for construction and supervision

#### **1.0 DRILLING**

**1.1** Drilling shall be of 250mm diameter bore hole for 250 mm diameter ERW UPVC pipe up to required depth in over burden strata (maximum up to 30 meters or up to the depth as suggested by Engineer in Charge or Geologist Hydrologist) and further drilling of 165 mm diameter bore hole in remaining rocky or sandstone strata up to 100 meter Depth or suggested by Geologist Hydrologist. The drilling shall be done by the **down the hole hammer** type drilling Rig and lowering 165 200 mm diameter ERW UPVC Pipes, Bore cap shall have to be provided by the Contractor Free of Cost. The carting of pipes and other materials etc. shall be carried out by contractor with all lead and lift to the site of work at his own cost.

**1.2.** Drilling work shall be carried out at the sites directed by the Engineer in Charge. The diameter of the hole shall be 200 mm 215 mm in over burden strata and 165mm diameter in Rocky and Sandstone strata up to over all specified depth of 100 meters or as per suggested by Engineer in Charge or Geologist Hydrologist. The Drilling shall be carried out in over burden strata up to maximum 30 Meters or up to the depth as

suggested by Engineer in Charge or Geologist Hydrologist. If further drilling can not be done due to overburden up to 30 meters, or in rocky and Hard or Sandstone strata due to Mechanical failure up to specified depth the drilling shall have to be stopped in consultation with Engineer-in- charge and no payment shall be made for such drilling carried out by the Contractor.

**1.3.** The 175 200mm diameter ERW UPVC pipes should be lowered by the contractor in over burden strata. Contractor as desired by the Engineer in charge will carry out the jointing of pipes. Necessary jointing materials, steel bended plates etc. should be provided by the Contractor at his own cost.

## **2.0 DRILLING OPERATION**

**2.1.** The Drilling operation for drilling of Bores should be carried out by suitable rig to satisfy following.

**2.2.** For Drilling Through overburden

1. The diameter of the bore in the over burden shall be sufficient for insertion of 200mm diameter ERW UPVC casing pipes with the joints and leaving sufficient annular space for grouting the casing pipe with sticky clay or local soil etc. Annular space between bore hole and casing pipe should be filled up with sticky clay on local materials etc

2. After completion of overburden strata, the bore should drilled up to 0.15 meters. In rocky Hard Sandstone strata So that casing pipes can be properly embedded in the Rocky Hard Sandstone formation.

3. After the casing pipe is embedded in the rock, the same is to be ground with materials like sticky clay or local materials etc. so, as to avoid leaking of drain water in the bore.

4. Drilling of 250 mm diameter bore in over burden strata is compulsory up to 30 mtrs. Or as directed by Engineer in Charge or as suggested by geologist Hydrologist.

(A) For Drilling Through Rock

**2.3.** Bore through rocks shall be of 165mm diameter and the total depth from the ground level of the bore shall up to 100 meters. or as per the recommendation of the Hydrologist Jr. Geologist.

## **3.0. LOWERING OF CASING PIPES**

**3.1.** Casing pipes shall be properly socketed welded and forewed so as to ensure a continuous length lowered through the over burden, so as to reach at least 0.15 meter. Inside the hard rock. The length of casing pipes should be kept such that at least 0.30 meters. remains projected above the Ground Level After completion of the work at site the top of the casing pipes shall have to be closed either by a screwed or by welded cap plug (if required for HP Installation ) unless pump is fitted immediately after completion of the bore.

**3.2.** The casing pipe shall be lowered in such a manner so that it remains vertical so as to ensure installation of pump.

1. After completion of the bore the Contractor shall have to arrange for testing the yield of the bore by V notch at his own cost in presence of the Engineer in charge or his authorized representative. No extra payment shall be made for such testing.

2. The depth of bore to be drilled as per the recommendation of Jr. Geologist Hydrologist shall be less or more depth. If the bore required to be drilled beyond the specific depth 100 meters. The contractor shall be bound to carry out such work at the rate mentioned in Schedule B .

3. All the tools and tackles or plants and other suitable machinery required for work for drilling developing gauging etc. for the Tube well shall be provided by the Contractor at his own cost at the site of work.

4. Is case of any item not covered by the specifications stated herein the Contractor shall carry out such work strictly, according to written instructions of Engineer in charge, which will be binding to the contractor and shall have to carry out such work at Departmental Schedule. The rate shall be mutually agreed up on, however the decision of the Engineer in charge will be final.

5. During the Drilling Operation, if the water bearing strata found at a depth lesser than estimated depth the Executive Engineer or his representative shall have authority to instruct the Contractor to stop the work for reduction in the quantity of the work, the Contractor shall not be eligible for any compensation.

6. If the bore is required to be drilled above the specified depth the Contractor shall be bound to carry out such additional work including drilling providing and lowering of casing pipes as may be necessary. The relevant specification regarding drilling providing and lowering pipe, taking yield test and strata sample etc. shall also apply in case of such additional work. The rates for a additional work be paid as per the rate fixed.

7. Lowering and fixing of housing and casing shall be carried out in workman like manner. The contractor shall be responsible for workman compensation in case of any

accident. In case of dispute or overlooked items the decision of the concerned Executive Engineer shall be final and binding to the Contractor.

8. No further drilling of bore wells is allowed, if more than two bores will remain untested at a time. This clause will be applicable without any prejudice (i.e. compensation for delay)

9. The contractor shall clear the site before of the work and after completion of the work and shall hand over the bore with final finishing of the work. As directed by the Engineer in charge which shall have to be done by the Contractor at his own cost.

10. The approach roads to site of work may be Kachha roads and contractor shall have to make his own arrangements for repairing of the road and maintain the same for transporting his materials and equipment at his cost which shall be utilized by the department for inspection etc. purpose.

11. The list of the locations, where bore well are to be drilled will be provided on finalization of Tender and Similarly, the actual site of work will be given to the contractor by the Geologist or Engineer-in – charge from the respective Mechanical division Sub Division.

12. If a well is rejected on account of faulty workmanship or negligence on the part of the Contractor as well as if the verticality is not within the permissible limit the bore shall be rejected and the Contractor shall have to drill a new bore including lowering pipes etc. at his own cost.

13. If, further drilling can not be carried out due to encountering the sticky clay or over burden beyond limits (i.e. beyond 30 meters.) or in rocky sandstone up to specified suggested depth in a such a case the decision of the Engineer in Charge or recommendation of Hydrologist will be binding to the Contractor as finalized by Engineer in Charge and or Geologist Hydrologist.

14. The Contractor will have to make arrangement at his own cost for cleaning of bore hole, if filled up by clay, sand, dust and boulders etc.

15. If bore is not completed up to design recommended depth due to Mechanical failure or any other reason, no payment shall be made for such abandoned bore.

16. On completion of drilling work up to the required depth, the bore is to be developed and cleaned by suitable capacity air compressor up to the sand free discharge or for minimum one hour.

17. The Contractor will have to make arrangement at his own cost for .....

(A) Rig Vehicles, Machineries etc.

(B) Facilities for moving bulky materials.

(C) Realizing the Transporting Materials.

(D) Keeping in custody Department Materials until finally taken over by the office –in-charge of the work.

(E) Repairing to the damages caused in the process of the executing works.

(F) Approach road to the site.

#### **4.0. MODE OF MEASUREMENT and PAYMENT**

4.1. Drilling work shall be measured in its depth for each class of strata, limited to the dimensions shown on the drawing or as directed by the Engineer-in-charge. Drilling over increased diameter or depth shall be deemed as convenience for the contractor in executing the work and shall not be measured and paid for separately.

4.2. The contract unit rate for the item shall be paid in full for carrying out the required operations including

4.3. Setting out and fixing bench marks and centre lines stones.

4.4. Removal of all logs, stumps, grubs and other deleterious matter and obstructions for placing the foundations including trimming of bottoms of excavations

4.5. Foundation sealing, dewatering including pumping;

4.6. All labour, materials, tools equipment, safeguards and incidentals necessary to complete the work to the specification.

4.7. The drilling work shall be measured for its depth, limiting dimensions to those specified on plan or as directed. The rate shall be for a unit of one Rmt

#### **Item No 57 Supplying slotted PVC pipes of approved quality at site of work confirming to IS. 1239/1974 180mm dia.**

The PVC pipes shall be of 180 mm dia and shall conform to the I.S. 4985. The pipes shall be lowered in the 250 mm dia. bore hole as slotted pipe and shall be properly socketed and forwarded so as to ensure a continuous length lowered through the over burden. The length of slotted pipe should be kept such that at least 0.30 meters. remains projected above the Ground Level. After completion of the work at site the top of the slotted pipe shall have to be closed either by a screwed or by welded cap plug

The item shall be measured as finished work in position in running meter.

The rate shall be for a unit of one **running meter**.

#### **Item No 58 Supplying PVC plain pipes of approved quality at site of work confirming to IS. 1239/1974 180mm dia.**



The PVC pipes shall be of 180 mm dia and shall conform to the I.S. 4985. The pipes shall be lowered in the 250 mm dia. bore hole as plain pipe and shall be properly socketed and forwarded so as to ensure a continuous length lowered through the over burden. The length of plain pipe should be kept such that at least 0.30 meters. remains projected above the Ground Level. After completion of the work at site the top of the slotted pipe shall have to be closed either by a screwed or by welded cap plug

The item shall be measured as finished work in position in running meter.

The rate shall be for a unit of one **running meter**.

**Item No 59 Providing and erecting ISI marked PVC insulated PVC Sheathed Flat flexible Submersible copper cable approved make of following Size. (B) 3 Core x 4.0 Sq. mm.**

The work shall be carried out for Supply , installation, testing and commissioning of approved make of PVC insulated and sheathed shielded 3cx2.5 sq mm copper armoured FRLS cable. The cable shall confirm all the requirement given in Specification for Electric work.

The cable shall be of Finolex / Heavell's / Delton / PrimeCab IS standard of approved make.

The consolidated item shall be carried out as directed by Engineer in charge.

The rate shall be for a unit of **Rmt.**

**Item No 60 Supplying submersible pump set suitable for bore of 150 mm. dia. or more having three phase motor capacity not more than 7.5 H.P. with following capacity .. (B) ( 8 stage) 390 to 350 LPM discharge at 62 to 70 mtrs. head respectively suitable for 50mm dia. delivery pipe Cat.III**

**General**

This work shall consist of furnishing and placing Supplying submersible pump set suitable for bore of 150 mm. dia. or more having three phase motor capacity not more than 7.5 H.P. with following capacity .. (B) ( 8 stage) 390 to 350 LPM discharge at 62 to 70 mtrs. head respectively suitable for 50mm dia. delivery pipe Cat.III

**Submersible pump set** of specified capacity and of I.S.I. mark of approved brand and make and quality shall be supplied

**1.1.** Specification of item no 9.4.1 of Electrical S O R Item form specification booklet of Electrical work shall be followed for this item

**2.0 WORKMAN SHIP**

**2.1. Submersible pump set** shall be approved quality and as per IS standard make. Material used in manufacturing tank shall be confirmed to relevant IS code

**2.2.** The **Submersible pump set** shall be fitted and installed properly in a desired position and making all required necessary connection as specified and as directed by the Engineer in charge

### **3.0 MODE OF MEASUREMENT and PAYMENT**

**3.1.** The unit rate of **Submersible pump set** shall include the cost of all materials, tools and plant required for fitting the same to specified position as per drawings, and as directed by Engineer in charge. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

**3.2.** The **Submersible pump set** shall be measured in Number,  
The rate shall be for a unit of **one Number**.

**Item No 61**    **Lowering of submersible motor pump set at the depth of following ,complete with required. Nos. and size of casing pipes erected by means of proper chain pulley block & pipe wrenches after checking of threads of each pipe with coupling to take the load of the pump set and pipe assembly filled up with water (B)Above 60 mtrs. and Up to 120 mtrs.**

#### **General**

This work shall consist of furnishing and placing Lowering of submersible motor pump set at the depth of following ,complete with required. Nos. and size of casing pipes erected by means of proper chain pulley block & pipe wrenches after checking of threads of each pipe with coupling to take the load of the pump set and pipe assembly filled up with water (B)Above 60 mtrs. and Up to 120 mtrs.

**Lowering of submersible motor pump set** of specified capacity and of I.S.I. mark of approved brand and make and quality shall be supplied

**1.2.**        Specifiction of item no 9.6.18 of Electrical S O R Item form specification booklet of Electrical work shall be followed for this item

### **2.0 WORKMAN SHIP**

**2.1.** **Lowering of submersible motor pump set** shall be approved quality and as per IS standard make. Material used in manufacturing tank shall be confirmed to relevant IS code

**2.2.** The **Lowering of submersible motor pump set** shall be fitted and installed properly in a desired position and making all required necessary connection as specified and as directed by the Engineer in charge

### **3.0 MODE OF MEASUREMENT and PAYMENT**

**3.1.** The unit rate of **Lowering of submersible motor pump set** shall include the cost of all materials, tools and plant required for fitting the same to specified position as per drawings, and as directed by Engineer in charge. They shall also include the cost of making, fixing and removing of all scaffolding and forms required for the work.

**3.3.** The **Lowering of submersible motor pump set** shall be measured in Number, The rate shall be for a unit of **one Number**.

**Item No 62 Providing and fixing to wall ceiling and floor HDP pipes tubes (medium grade) of the 50mm nominal bore, tube, fittings and clamps include. Making good the wall ceiling and floor.(F) 50mm dia.**

This work shall consist of Providing and fixing to wall ceiling and floor HDP pipes tubes (medium grade) of the 50mm nominal bore, tube, fittings and clamps include. Making good the wall ceiling and floor.of standard quality and make as approved by engineer in charge. The pipe shall be fitted with submersible pump and shall be lowered in bore well as directed by the Engineer.

The item shall be measured and paid on **running meter** basis.

**Item No 63 Providing and fixing gun metal cock of non return full way wheel valve.(F) 50mm dia**

The relevant specification shall be followed as per General Technical specification for Building work booklet It.No.23.99 (E) P.No.171.expect use the 50mm dia instead of 40mm dia

**Signature of Contractor**

**Deputy Executive Engineer  
Surat (R&B) Sub Division 1  
Surat**

**Executive Engineer  
Surat (R&B) Division 1  
Surat**