

# **TENDER SPECIFICATION**

**BHEL: PSSR: SCT: 2181**

**FOR**

**BHEL Transit Flat, Residential Quarters  
basement and common areas renovation  
works at Ashok Nagar, Chennai.**

**VOLUME –II**

**PRICE BID**

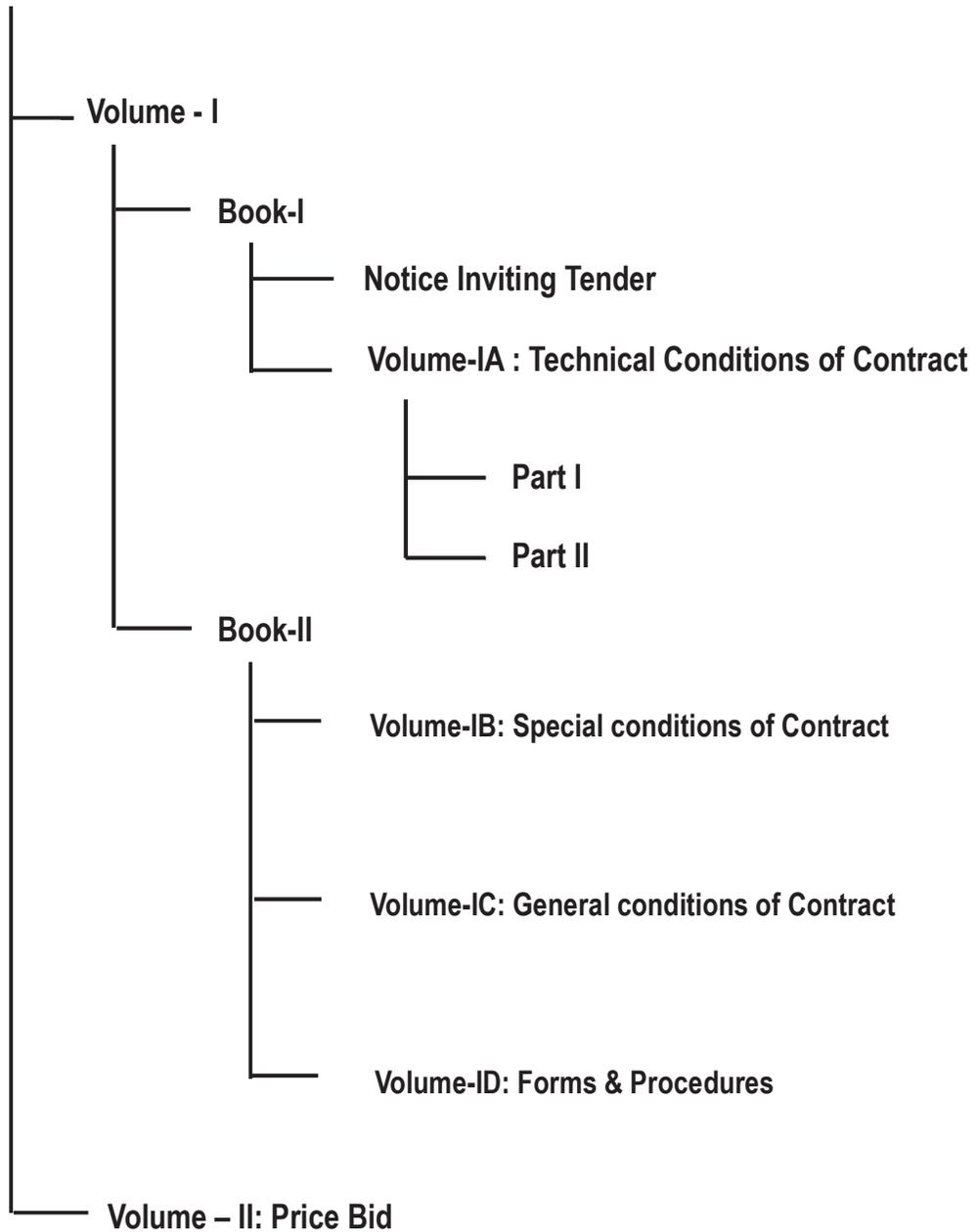


**BHARAT HEAVY ELECTRICALS LIMITED**  
(A Government of India Undertaking)

Power Sector – Southern Region  
BHEL Integrated Office Complex, TNEB Road  
Pallikaranai, Chennai - 600100

# TENDER SPECIFICATION CONSISTS OF

## Tender Specification



# NOTICE INVITING TENDER

---

| <b>CONTENTS</b>  |                       |
|--|-----------------------|
| Description  | No. of pages          |
| Part A: Instructions to the Bidders  | 01                    |
| Part B : Format for total amount (Enclosed as a separate Excel File in BHEL NIC e-Procurement portal for the subject tender) | (Separate Excel File) |
| Part C: Bill of quantities with weightage for amount of each items with respect to the total quoted price                    | 38                    |

---

# NOTICE INVITING TENDER

---

## **PART A**

### **Instruction to Bidders:**

1. The quantity indicated in the BOQ / Price bid (Part C) is approximate only and is liable for variation. Payment will be as per actual quantity executed as certified by BHEL Engineer.
  2. Tenderers are requested to affix their company seal and authorized signature in all pages.
  3. Bidders shall quote 'Total Amount' in the format enclosed as a separate Excel File in BHEL NIC e-Procurement portal for the subject tender and upload the same under 'Packet details - > Tender covers -> Finance '(Cover Type Description – Price Bid)'' and same shall be taken into account for evaluation and awarding and hence, shall be complete in all respect for the full scope of work defined in specification and in accordance with terms & conditions of the tender. Any other entry elsewhere in the price bid shall be treated as Null and Void. Quoting of rates in any other form/ formats will not be entertained.
  4. The above mentioned 'Total amount' is for the entire Bill of Quantity (BOQ) given in Part -C of the Price Bid. Total amount shall be excluding taxes.
  5. BHEL has pre-fixed the weightages for the amount of individual items of Bill of Quantity with respect to the 'Total Amount' in Part-C.
  6. Based on the pre-fixed weightages, the amount for the individual items of the Bill of Quantity shall be arrived at. This amount shall be rounded off to the nearest rupee.
  7. Based on the quantities of individual item and the amount arrived in SI No: 6 above, unit rate of individual items shall be derived. This unit rate shall be rounded off to four decimal places.
  8. Bidders to note that this is an item rate contract. Payment shall be made for the actual quantities of work executed at the unit rate arrived at as per SI No.7 above.
-

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty.  | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|-------|--|
| 1.0     | DISMANTLING OF EXISTING WORKS   | --                  |       |  |
| 1.1     | DISMANTLING OF EXISTING FLOORING/ TILES   | --                  |       |  |
| --      | Dismantling tile work in floors and walls laid in cement mortar including stacking material within 50 metres lead.<br>For thickness of tiles above 25 mm and up to 40 mm  | Sqm                 | 190   | .0010919   |
| 1.2     | DISMANTLING OF EXISTING WINDOWS DOOR & VENTILATORS  | --                  |       |  |
| --      | Taking out doors, windows and clerestory window shutters (steel or wood) including stacking within 50 metres lead of area beyond 3 sq. metres   | Each                | 62    | .0005938   |
| 1.3     | DISMANTLING OF EXISTING BRICK WALLS   | --                  |       |  |
| --      | Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge. In cement mortar | Cum                 | 20.65 | .0021569   |
| 1.4     | DISMANTLING OF EXISTING RCC WATER TANK  | --                  |       |  |
| --      | Demolishing R.C.C. work manually/ by mechanical means including stacking of steel bars and disposal of unserviceable material within 50metres lead as per direction of Engineer - in- charge.                         | Cum                 | 6     | .0010802   |
| 1.5     | DISMANTLING OF STEEL  | --                  |       |  |
| --      | Dismantling steel work in built up section in angles tees , flats & chaneln including all gusset plates bolts bolts nuts cutting revits welding etc., including dismembering & stacking within 50m lead               | Kg                  | 500   | .0001432   |
| 2.0     | MASONARY WORKS  | --                  |       |  |
| 2.1     | AAC BLOCK WORK-200MM  | --                  |       |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|------|--|
| --      | Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge.                             | Cum                 | 3    | .0012676   |
| 2.2     | AAC BLOCK WORK-100MM   | --                  |      |  |
| --      | Providing and laying autoclaved aerated cement blocks masonry with 100 mm thick AAC blocks in super structure above plinth level up to floor V level in cement mortar 1:4 (1 cement : 4 sand ). The rate includes providing and placing in position 2 Nos 6 mm dia M.S. bars at every third course of masonry work   | Cum                 | 7    | .0036184   |
| 2.3     | PLASTERING WORK  | --                  |      |  |
| --      | Prepare surface and plaster the inner surfaces of walls, R.C.C surfaces contiguous to masonry with cement mortar 1 : 4, 12mm thick using good river sand, including patch plaster etc. The rate to include apart from the above the cost of scaffolding, curing, tools and plants etc. Complete.   | Sqm                 | 48   | .0008446   |
| 3.0     | WATERPROOFING WORKS  | --                  |      |  |
| 3.1     | TOILET WATERPROOFING   | --                  |      |  |
| --      | Providing and laying water proofing treatment in sunken portion of WCs, bathroom etc., by applying cement slurry mixed with water proofing cement compound consisting of applying :  | --                  |      |  |
| --      | a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours.   | --                  |      |  |
| --      | b)Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. (The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed Slurry) | Sqm                 | 61   | .0019084   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 3.2            | TERRACE WATER TREATMENT   | --                         |             |   |
| --             | The roof tiles shall be cleaned properly by wire brush & water jetting & thereby seal the cracks or joints of tiles by using Renderoc-CS (w/p ratio is 0.36). Once the crack & joints get sealed by using Rendroc then allow it to dry. Once the surface got dried off then again clean with water & allow it to dry off & thereafter apply diluted Nitoprime-AW (Nitoprime-AW is 2 part & Water is 1-Part) over the surface by using roller brush with a coverage of 8-10 Ltrs/sqm. After 2-3 hrs Nitoprime-AW got dried off & then apply Fosroc make Brush bond Roof Guard three coat & each coat having coverage of 0.5 Ltrs/sqm. Total sum of 3 coat should be minimum 1 mm DFT & brushing of each coat is 90 degree to each other. | Sqm                        | 230         | .0113616  |
| 4.0            | FLOORING WORKS  | --                         |             |   |
| 4.1            | POLISHED GRANITE FLOORING   | --                         |             |   |
| --             | Providing and laying gang saw cut 30 mm thick, mirror polished pre moulded and pre polished machine cut granite stone of required size and shape of approved shade, colour and texture in footpath, flooring in road side plazas and similar locations, laid over 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement mixed with matching pigment, epoxy touch ups etc. complete as per direction of Engineer-in-Charge.  | Sqm                        | 265         | .0538347  |
| 4.2            | LAMINATED WOODEN FLOORING   | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|------|--|
| --      | Providing and fixing of minimum 10mm thick Laminated wooden flooring, with surface finish of Embossed in Register for EIR and Hand sculpted for HS, classification of use 32/23 with asurface abrasion resistance of class AC5 (average 4550 cycles), impact resistance of 9N ,resistance to cigarette burn with a rating of 4 (EN 438-2:05), swelling after 24 hrs in water of 8.22%, Modulus of rupture of 53.3 Newton/mm2, Internal bond 1.78 newton/mm2, surface soundness 2.0 newton/mm2 (EN 13329:2000) with a 0.2 mm thick wear layer on top of a High Density Fiber-substrate core (density ~ 948.3 Kgs/M3) of plank size 1214 mm X 141.5 mm having locking arrangement (lock strength > 670 lbs/ft) with an underlayment made of natural colour foam , with accessories like End profile, Transition profile etc. complete. It is important to ensure the sub floor on which the laminate is being laid is smooth, flat & hard & free from moisture, grease, etc. In case of uneven sub floor the same should be leveled by self leveling compound. The moisture level present in the subfloor should be less than 8% before installation of the floor.The laminate shall have Armalock locking system. It is recommended to use a water barrier of minimum of 250 microns and 2mm polyethylene foam under the planks. The installation shall be undertaken as per the manufacturers installation instructions. The work should be carried out as per patterns / design all as shown in the relevant drawings. The rate to include the cost of all leads, lifts, wastages, tools and plants, design pattern etc complete as directed by the Architects. | Sqm                 | 16   | .0012652   |
| 4.3     | VITRIFIED FLOORING- ANTI SKID  | --                  |      |  |
| --      | Providing and laying matt finished vitrified tile of size 600x600mm having with water absorption less than 0.5% and conforming to IS: 15622 of approved make in all colours and shades in laid on 20mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) in all shapes & patterns including grouting the joints with white cement mixed with matching pigments etc. complete as per direction of Engineer-in-Charge.  | Sqm                 | 169  | .0139069   |
| 4.4     | 2MM THICK LVT VINYL TILE   | --                  |      |  |
| --      | Providing and laying 2mm thick LVT Vinyl floor (thickness to be specified by manufacturer), fixing with adhesive as per manufaturer specification. The LVT flooring to be fixed at the top of exising vitrified tile flooring. Size of Tile 600x600 mm.  | Sqm                 | 155  | .0075702   |

**Part C : Bill of Quantities****Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai****at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|------|--|
| 4.5     | SCREED CONCRETE   | --                  |      |  |
| --      | Providing and laying in position cement concrete of specified grade including the cost of shuttering-at all floors. The ratio of CM 1:2:4 (1 cement : 2 sand : 4 graded stone aggregate 6mm size blue metal - upto varying thickness 40mm to 75mm. All areas to be finished with same level as per Engineer-in-Charge.  | Cum                 | 25   | .0099861   |
| 5.0     | WALLPAINITING   | --                  |      |  |
| 5.1     | WALLPAPER   | --                  |      |  |
| --      | Providing and fixing wall paper of approved make, shade, texture as directed. 100% washable, scratch resistance, peel proof, and fire retardant properties fixed with adhesive as per manufacturers specification. The wall paper should give a seamless finish. Basic Cost of wallpaper Rs.900 per Sqm.  | Sqm                 | 57   | .003049  |
| 5.2     | TEXTURED PAINTING   | --                  |      |  |
| --      | Prepare the surface free from dirt and patches of plastering and apply two coat of putty of approved brand and paint two coats of base paint and spray one coat of multi-colour paint of approved colour on the surfaces of the wall. The putty apply shall be uniform and should be to levels and lines before applying the primer. The rate to include all the above and leads, lifts, scaffolding etc. complete. Basic cost of texture paint Rs.400/-/Sqm. (Nova /Asian / Berger or equivalent ) | Sqm                 | 385  | .0104762   |
| 5.3     | CEILING PAINTING  | --                  |      |  |
| --      | Painting Acrylic emulsion paint of approved colour on Wall, as per manufacturers specification and finally painting with Two or more coats of water based emulsion paint/ plastic emulsion paint to give an even shade. The First coat shall be brush applied and the final coat shall be Roller finish. The rate shall include surface preparation and scaffolding etc. complete.  | Sqm                 | 500  | .0034844   |
| 5.4     | WALL EMULSION PAINTING-INTERIOR   | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty.  | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|-------|--|
| --      | Painting Acrylic emulsion paint of approved colour on Wall, as per manufacturers specification and finally painting with Two or more coats of water based emulsion paint/ plastic emulsion paint to give an even shade. The First coat shall be brush applied and the final coat shall be Roller finish. The rate shall include surface preparation and scaffolding etc. complete.   | Sqm                 | 1,179 | .0105355   |
| 5.5     | EXTERIOR TEXTURE PAINTING  | --                  |       |  |
| --      | Finishing Walls with Textured paint exterior paint of required shade, New work(Two or more coat applied @ 1.67ltr/10Sqm over and including primer coat of exterior primer applied @0.90 litre/10sqm  | Sqm                 | 792   | .0089786   |
| 5.6     | MOULDING   | --                  |       |  |
| --      | 12 mm thick plain cement mortar bands in cement mortar 1:4 (1 cement : 4 fine sand); size minimum 100mm width  | Rmt                 | 70    | .0007163   |
| 6.0     | PARTITONS  | --                  |       |  |
| 6.1     | SOLID PARTITON   | --                  |       |  |
| --      | Providing and fixing rigidly in position a partition using 50 x 50mm x 1.5mm Aluminium framework running both horizontally and vertically at not more than 600mm c/c both ways. The framework alternative vertical member to touch the true ceiling height from the finished floor level and fixed rigidly to the ceiling, flooring, walls or partitions. All vertical framework members shall be of a single piece without any joint as directed by the Architects The framework to be concealed with 12 mm thick MDF Board. The MDF Board will be camouflaged with 1.0mm thick laminate of approved colour and make and shade and make and grooves to be provided as shown in the drawing. MDF to Extend 100mm above the False ceiling Level. Measurement for Billing will be taken from FFL to bottom of False Ceiling Level. The rate quoted to include grouting and fixing and making up the flooring to its original condition as well as making provisions for laying conduits, switch boxes and light fittings etc. Basic Cost of Laminate : Rs. 600 /- Sqm. | Sqm                 | 24    | .0047723   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 6.2            | FULLY GLAZED PARTITION   | --                         |             |   |
| --             | Supply and Fixing of Slim Glass partition of 10mm Toughened Glass using DORMA Alexa System-45 Frames to a height of maximum 3m or as per drawing. The Fixed glass to be fixed using DORMA Alexa BP45 Profiles at Top & Bottom & Alexa SP45 at sides. The profile size to be 45x25MM to be fixed on to the floor/wall/ ceiling as per the architect design. DORMA Alexa H Junction profile to be used at all Glass to Glass vertical joints, 90 Deg L Junction Profiles / T Junction profiles / 130 Deg profile necessary as per design. In case of Glass overall panel Alexa MP45 & BP45 Overpanel Profile to be used. In case of Open glass edges EP45 End Profile to be used. The Alexa profiles shall be suitable for Glass thickness of 10/12/13.52mm. The Profile shall be matt natural anodized, the Profile Manufacturer to supply all the necessary clips, seals and fixing accessories for the system. All Profiles to be with 2 mm Gauge thickness Excluding 20 Micron of Anodizing. Approved Manufacturer: Profiles/Frames: DORMA/ equivalent<br>(Glass Make : Saint Giobain/AIS) | Sqm                        | 12          | .0050235  |
| 7.0            | FALSE CEILING  | --                         |             |   |
| 7.1            | GYPSUM BOARD   | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|------|--|
| --      | <p>Providing and fixing false ceiling at all height including providing and Fixing of frame work made of special sections, power pressed from M.S. sheets and galvanized with zinc coating of 120 gms/sqm (both side inclusive) as per IS : 277 and consisting of angle cleats of size 25 mm wide x 1.6 mm thick with flanges of 27 mm and 37mm, at 1200 mm centre to centre, one flange fixed to the ceiling with dash fastener 12.5 mm dia x 50mm long with 6mm dia bolts, other flange of cleat fixed to the angle hangers of 25x10x0.50 mm of required length with nuts &amp; bolts of required size and other end of angle hanger fixed with intermediate G.I. channels 45x15x0.9 mm running at the spacing of 1200 mm centre to centre, to which the ceiling section 0.5 mm thick bottom wedge of 80 mm with tapered flanges of 26 mm each having lips of 10.5 mm, at 450 mm centre to centre, shall be fixed in a direction perpendicular to G.I. intermediate channel with connecting clips made out of 2.64 mm dia x 230 mm long G.I. wire at every junction, including fixing perimeter channels 0.5 mm thick 27 mm high having flanges of 20 mm and 30 mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450 mm centre, with 25mm long dry wall screws @ 230 mm interval, including fixing of gypsum board to ceiling section and perimeter channel with the help of dry wall screws of size 3.5 x 25 mm at 230 mm c/c, including jointing and finishing to a flush finish of tapered and square edges of the board with recommended jointing compound, jointing tapes, finishing with jointing compound in 3 layers covering upto 150 mm on both sides of joint and two coats of primer suitable for board, all as per manufacturer specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed, all complete as per drawings, specification and direction of the Engineer in Charge but excluding the cost of painting with:</p> | --                  |      |  |
| --      | 12.5 mm thick tapered edge gypsum plain board conforming to IS: 2095- (Part I) : 2011 (Board with BIS certification marks)  | Sqm                 | 102  | .0079077   |
| 7.2     | MINERAL FIBRE FALSE CEILING   | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|------|--|
| --      | Providing and fixing of Armstrong Dune/ Equivalent Microlook Mineral Fibre Ceiling Tiles in true horizontal level false ceiling grid of system manufacture by M/s. Armstrong world industries, US / UK using hot dipped galvanized steel section, exposed surface chemically cleaned capping prefinished in backed polyester paint main Tee of size 15 x 38 x 0.33mm at every 1200mm c/c max and rotary stitched cross tee of size 15 x 38 x 0.33mm at every 1200 c/c max and 15 x 22 x 0.457mm wall angle around the wall to form grid size of 600mm x 600mm and suspending the grid using 2mm GI rod and 6mm Nylon Rawl plug at every 1200mm intervals at the main tee and laying Armstrong Prima Fine Fissured Microlook Mineral Fibre Acoustic Ceiling tiles of size 600mm x 600mm x 15mm over the formed grid, manufactured by M/s. Armstrong World Industries US / UK. The false ceiling has to be carried out to the shape lines and levels as given in the drawing. The rate to include all the above. The False ceiling is to be erected in any shape in levels as shown in drawing. No extra cost is payable for difference in shape and levels. The measurement will be taken in flat / horizontal / linear alignment. | Sqm                 | 68   | .0052408   |
| 8.0     | JOINERIES   | --                  |      |  |
| 8.1     | UPVC WINDOWS  | --                  |      |  |
| --      | Providing and fixing factory made uPVC white colour casement/casement cum fixed glazed windows comprising of uPVC multi-chambered frame, sash and mullion (where ever required) extruded profiles duly reinforced with 1.60 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), uPVC extruded glazing beads of appropriate dimension, EPDM   | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|------|--|
| --      | gasket, stainless steel (SS 304 grade) friction hinges, zinc alloy (white powder coated) casement handles, G.I fasteners 100 x 8 mm size for fixing frame to finished wall, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, mullion (if required) shall be also fusion welded including drilling of holes for fixing hardwares and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes and silicon sealant shall be paid separately) | --                  |      |  |
| --      | Casement cum fixed panel window having both end single casement panel, middle fixed panels and at top completely fixed ventilator with S.S friction hinges (350 x 19 x 1.9) made of (big series) frame 67 x 60 mm , sash 67 x 80 mm & mullion 67 x 80 mm all having wall thickness of 2.3 mm and single glazing bead/double glazing bead of appropriate dimension. (Area of window above 3.00 sqm upto 5.00 sqm).   | Sqm                 | 26   | .0103617   |
| 8.2     | UPVC VENTILATORS  | --                  |      |  |
| --      | Providing and fixing factory made uPVC white colour casement/casement cum fixed glazed windows comprising of uPVC multi-chambered frame, sash and mullion (where ever required) extruded profiles duly reinforced with 1.60 mm thick galvanized mild steel section made from roll forming process of required length (shape & size according to uPVC profile), uPVC extruded glazing beads of appropriate dimension, EPDM   | --                  |      |  |
| --      | gasket, stainless steel (SS 304 grade) friction hinges, zinc alloy (white powder coated) casement handles, G.I fasteners 100 x 8 mm size for fixing frame to finished wall, plastic packers, plastic caps and necessary stainless steel screws etc. Profile of frame & sash shall be mitred cut and fusion welded at all corners, mullion (if required) shall be also fusion welded including drilling of holes for fixing hardwares and drainage of water etc. After fixing frame the gap between frame and adjacent finished wall shall be filled with weather proof silicon sealant over backer rod of required size and of approved quality, all complete as per approved drawing & direction of Engineer-in-Charge. (Single / double glass panes and silicon sealant shall be paid separately) | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|------|--|
| --      | Casement window single panel with S.S. friction hinges (300 x 19 x 1.9 mm), made of (small series) frame 47 x 50 mm & sash 47 x 68 mm both having wall thickness of 1.9 mm and single glass panel glazing bead of appropriate dimension. (Area of window upto 0.75 sqm.)   | Sqm                 | 11   | .0045995   |
| 8.3     | PATCH FITTING DOOR   | --                  |      |  |
| --      | Providing and fixing of fixed glass door with openable shutters using 12mm thick toughened glass. The fixed glass shall be fixed in position using PT patch fittings like PT 90/ PT 92 of Dorma make. The openable doors shall be fixed using top pivot PT 24, Top patch PT 20, bottom patch PT 10, corner lock US 10 with SS cover plates. The doors shall be fixed on floor spring model BTS 75V with SS cover plate. Pull handle shall be of size 600mm height x 32mm dia TGDI H 600. Necessary holes cutouts. etc to be provided as required. Cost to include drilling, cutting, necessary sealants, transportation etc in complete. The rate to be quoted will be inclusive of all the above including the cost of scaffolding, cost of floor springs and fixing cost for supply and erection of all hardware fittings such as S.S. handle two pairs, Equivalent for each door, all as directed by the Engineer in charge of the work and concreted civil works including chipping the floor, fixing the floor springs, making good the disturbed floor, all leads and lifts transport etc., complete. The glazing will be taped with 3M Scotchcal 7725SE-324 Frosted crystal film the details shown in the relevant drawings. The Frosted crystal film is to be supplied to the correct size and shape as indicated in the relevant drawing and the film is to be precut digitally with a plotter, brought to site and pasted over the glass. Any additional details required for shaping the film is to be obtained from the Architects in advance before precut the film | Sqm                 | 5    | .0036048   |
| 8.4     | ROOM DOORS   | --                  |      |  |
| a       | Providing and fixing frame & shutter of opening dimension with colour pattern as per EIC., The core to be covered with both sides pvc memberine with factory made glued door. The rates are inclusive of hardware/iron mangery etc.,   | Sqm                 | 23   | .0066864   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|------|--|
| b       | Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.<br>35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws. | Sqm                 | 35   | .0061644   |
| c       | Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).<br>Material - Second class teak wood   | Cum                 | 0.6  | .0039895   |
| 8.5     | TOILET DOORS  | --                  |      |  |
| --      | Providing and fixing frame & shutter of opening dimension with colour pattern as per EIC., The core to be covered with one side pvc memberine and another side pvc sheet with factory made glued door. Aluminium louver to be used 200x150mm at the bottom of the door shutter. The rates are inclusive of hardware/iron mangery etc.,  | Sqm                 | 29   | .0058003   |
| 8.6     | LUGGAGE RACK  | --                  |      |  |
| --      | Providing and fixing of luggage rack of 450mm in depth and 750mm in height of varying widths as per the site requirements. Unit to be made of 25mm thick MDF for top surfaces and the verticals are made out of 18mm thick MDF  | --                  |      |  |
| --      | All exposed plywood surfaces to be finished in 1.0mm thick laminate of approved colour and shade. Rear external surfaces of unit to be finished with 0.8mm thick white laminate so as the internal surfaces of the storage unit.  | --                  |      |  |
| --      | All exposed plywood edges to be finished in PVC edge banding tape to be used. Unit to have necessary locking arrangements (efficient gadgets or equivalent) handles, hardwares, tower bolt, hinges etc.   | Sqm                 | 16   | .0089308   |
| 8.7     | SS-HAND RAILS   | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|------|--|
| --      | Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc., including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete, i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge, (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.,  | Kg                  | 142  | .0055609   |
| 9.0     | MISC WORKS   | --                  |      |  |
| 9.1     | WORK STATIONS  | --                  |      |  |
| --      | Supply and Erection of Linear Workstation Dimension : 1200mm x 600mm x750mm<br>Model No: Feather lite-Synergy or Equivalent<br>Linear workstation Size: 1200 x 600D x 750Ht mm<br>System: Desking - Synergy<br>Specification Table top : 25mm thick Pre-laminate particle board E1 norms finished with 2mm PVC edge banding. Main Screen : 1050L x 450HT - 8mm thick Colored Glass Screen supported on studs<br>Return Screen : 525L x 450HT - 8mm thick Colored Glass Screen supported on studs. Modesty : Considered SQ Perforated Metal modesty of 450mm HT only for End Legs for open passage areas and not for wall areas. Under-structure : Supported on MS powder coated Colors leg with supporting beams. Wire Management : 250mm Ht Raceway with 65mm Dia Wire Manager Grommet Specifications Vertical Raceway with built in separator for power and data of size 250H x 70mm thick with provision to mount switches and sockets on laminate facia with Vertical Wire Entry cover for wire uptake from floor to raceway with 65mm Dia Wire Manager Grommet. PEDESTAL (2D+1F) SIZE: 400L x 450D x 600HT<br>Specifications: Table Top: 18mm thick pre laminated particle board ,Shutters: 18mm thick pre laminated particle board Edge: All exposed area with 2mm thick PVC edge lipping Handle: Finger groove handle Lock: Regular lock, CPU trolley, ABS keyboard tray with mouse pad | No                  | 2    | .0019815   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 9.2            | MODULAR KITCHEN  | --                         |             |   |
| --             | MODULAR KITCHEN of the area is around 200 Sqft. The rates are inclusive kitchen cabinet, kitchen slab,accessories,etc.,  | Ls                         | 1           | .0123263  |
| 9.3            | TV LEDGE   | --                         |             |   |
| --             | Providing and fixing of 18 mm thick MDF MR 303 Ledge onto wall/Partition .Top & Sides of the Ledge to be Finished with 1.0mm thick laminate top & bottom. Ledge front 100mm MDF to be extended finished with 1.0mm laminate finish | Rmt                        | 20          | .0020466  |
| 9.4            | ALUMINIUM SKIRTING   | --                         |             |   |
| --             | Providing & fixing 100 mm high Anodised extruded aluminum skirting of make: Bottom Line, Model: Modular skirting - Easy Fix 100. All complete inclusive of all corner filler pieces and other applicable accessories.              | Rmt                        | 216         | .0090424  |
| 9.5            | COLUMN PANELLING   | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|------|--|
| --      | <p>Providing and fixing rigidly in position a partition using 50 x 25 x 1.5mm thick aluminium framework running both horizontally and vertically at not more than 600mm c/c both ways. The framework alternative vertical member to touch the true ceiling height from the finished floor level and fixed rigidly to the ceiling, flooring, walls or partitions. All vertical framework members shall be of a single piece without any joint and as directed by the Architects / Bank and as per the manufacturers specification. The framework to be concealed with 12mm thick MDF board and laminate fixed on either side of the framework and up to 75mm above false ceiling all as per details in the drawing. The MDF board will be camouflaged with 1.0mm thick laminate of approved colour and shade and make and grooves to be provided as shown in the drawing. Skirting of 75mm high of approved shade to match with the shade of lamination and finished with contrast shade of lamination all as per the drawing. The rate to include for making provision for concealing of conduits, concealing for switch boxes, light fittings etc. Payment will be made from Finished Floor Level to bottom of false ceiling. No extra is payable for aluminium frame, MDF and laminate projecting above false ceiling. The G.I frame work comprising 50mmx25mmx16gauge frame work at 600mm c/c in both ways on the wall(after drilling with pneumatic driller)at required locations. 18mm thick MDF board is fixed to the framework as specified above and the MDF is camouflaged with 1.0 mm thick laminate of approved shade and all as per the drawing. The rate quoted to include all the above apart from all leads lifts,transport and scaffolding etc.,completed and as per directed by the Engineer at site. The work is to be carried out in a first class workman ship manner all as per details shown in the drawing and as directed at site etc.,</p> | Sqm                 | 12   | .0018587   |
| 9.6     | PLANTER BOX   | --                  |      |  |
| --      | <p>Providing &amp; fixing 18mm MDF plywood of approved make finished with 1.5mm thk laminate of approved shade and make covering over planter box of required size,shape with necessary support as required as shown in the drawing directed at site by Engineer-in-Charge</p>  | Sqm                 | 2    | .0004047   |
| 9.7     | ROLLER BLINDS   | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| --             | Supplying & fixing approved shade and make Effective Optimized System Roller blinds Shade consists of sanitized treated, resilient and approved sample color polyester base fabric with high tear strength, Roller Tube, Control Chain, Control Set Left Hand, Control Set Right Hand, Bracket Cover, Chain Connector, O-C Bottom Rail String for conversion Spring, Bottom End Plug, Bottom End Plug Circular, Open Bottom Rail, Tube Bearing Plug etc. | Sqm                        | 26          | .0015722  |
| 9.8            | GROUTING   | --                         |             |   |
| --             | Providing and fixing reinforcement in steel with chemical grout manufactured by M/s. Hilti or equivalent as per the manufacture specifications. Job including drilling the hole as per dia of bar grouting etc., all complete  | --                         |             |   |
| a)             | Upto 12mm dia bar  | No                         | 35          | .0042149  |
| b)             | Upto 25mm dia bar  | No                         | 30          | .0065585  |
| 9.9            | CORE CUTTING   | --                         |             |   |
| --             | Extraction of concrete core samples from identified RC members for assessment of compressive strength.<br>75 - 100mm dia & 150 - 200mm (deep) cores will be extracted. Compressive will be conducted after necessary trimming, capping, etc. as per IS-516. Profometer scanning will be carried out to idenfy peripheral bars & avoid the cutng the same.  | No                         | 20          | .0023955  |
| 9.1            | COLUMN JACKETING   | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|------|--|
| --      | <p>Strengthening structural elements with non-metallic composite fiber wrapping system comprise of uni-directional carbon fiber sheet ULTRAWRAP CF (300/400 GSM) and compatible WRAP Saturant, by dry lay-up system Surface preparation: Grinding/ moulding concrete substrate, cleaning it with wire brush removing oil, laitance if present, rounding sharp edges to min 25 mm radius etc. complete. Profiling: Applying compatible WRAP primer on prepared substrate, Filling the holes and uneven surface with thixotropic putty WRAP putty etc. complete.</p> <p>Wrapping: Wrapping the fiber sheet to structural element at desired orientation using tamping roller to avoid any air voids etc. repeat the same procedure for multiple layer with the interval of 8 hrs.Sand pasting: Applying second coat of WRAP saturant after min. 12 hrs, rectify air voids if any paste the river sand on it to make surface rough to take any further finishes Column Jacketing using Micro concreting:<br/>Providing and laying Free flow, shrinkage compensated, high strength MICROCONCRETE into the the shutter of 75mm thick all around the columns, and over bonding coat having , compressive strength of min. 45MPa as per ASTM-C-579 and flexural strength of min. 6MPa as per ASTM-C-348 for confining the concrete elements including surface preparation, fixing the chicken wire mesh with proper anchoring, etc complete.</p> <p>a. Clean the surface of column with wire brush and remove all paints and algae, etc.<br/>b. Apply carbon fibre wrapping with necessary epoxy adhesive<br/>c. Preparing the bonding surface by sprinkling sand over epoxy surface before hardening.<br/>d. Fix chicken wire mesh over column with a cover of 40 mm<br/>e. Micor concreting with GP-2 of 75 mm thickness all over the concrete surface<br/>The rate is inclusive of shuttering, scaffolding, curing, etc., all complete as instructed by Engineer in-charge.</p> | Sqm                 | 329  | .1300776   |
| 9.11    | SINTEX TANK - 20000 LIT CAPACITY  | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty.   | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|--------|--|
| --      | Supplying & Fixing of Readymade Syntex tank of 20,000 lit capacity.The Rates are inclusive of Earthwork, Refilling the same soil, fixing, Accessories, Loading , UnLoading, Lift & Lead Etc.,   | Lit                 | 20,000 | .0344206   |
| 9.12    | SHORTCRETING  | --                  |        |  |
| --      | Shotcreting R.C.C. columns, beams, walls and slabs etc. in layers with approved design mix concrete having the specified minimum characteristic compressive strength [with ordinary portland cement, coarse sand and graded stone aggregate of 10 mm maximum size in proportion as per design criteria] including the cost of centering and shuttering at edges and corners etc. as directed by Engineer- in-Charge 25mm dia weep holes to be provided wherever required.<br><br>Note: Rates shall include the providing necessary ground wires etc. The levelling gauges, if used, shall be paid for separately. Payment under this item shall be made only after proper wet curing has been done and surface has been satisfactorily evaluated by sounding/tapping with a blunt metal instrument. | --                  |        |  |
| --      | 50 mm thick in Grade M25 with cement content not less than 330 kg per cum sqm   | Sqm                 | 202    | .0117885   |
| 9.13    | CORE CUTTING IN RR MASONARY   | --                  |        |  |
| --      | Core cutting upto 75mm dia & 400mm (deep) cores will be extracted. Compressive will be conducted after necessary trimming, capping, etc as per IS-516. Profometer scanning will be carried out to idenfy peripheral bars & avoid the curing the same.   | Nos                 | 100    | .0047677   |
| 9.14    | M25 CONCRETE  | --                  |        |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty.  | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|-------|--|
| --      | Providing and laying in position ready mixed grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer-in-charge. Note:-Cement content considered in this item is @ 340 kg/cum | --                  |       |  |
| a)      | Column Concrete  | Cum                 | 12    | .0059991   |
| b)      | Wall Concrete  | Cum                 | 12    | .0059991   |
| 9.15    | STEEL REINFORCEMENT  | --                  |       |  |
| --      | Providing Fabricating and erecting structural steel member using MS channel, box sections Angle materials of Tata make or equivalent as shown in the drawing including painting with one coat of primer and two coats of epoxy paint of approved colours etc., complete, the item will be paid for the quantity erected and no wastages etc., will be accounted. In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete.The shop drawing of fabrication should be prepared by the fabricator/contractor and approved by the engineer-in-charge before starting the work  | Kg                  | 3,600 | .019685  |
| 9.16    | FORMWORK   | --                  |       |  |
| --      | Providing Centering and shuttering including strutting, propping etc. and removal of form all as per norms.  | --                  |       |  |
| a)      | For Column   | Sqm                 | 95    | .0046301   |
| b)      | For Wall   | Sqm                 | 120   | .0051258   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 9.17           | PRECAST SLAB  | --                         |             |   |
| --             | Providing and fixing factory made precast RCC perforated drain covers, having concrete of strength not less than M-25, of size 1000 x 450x50 mm, reinforced with 8 mm dia four nos longitudinal & 9 nos cross sectional T.M.T. hoop bars, including providing 50 mm dia perforations @ 100 to 125 mm c/c, including providing edge binding with M.S. flats of size 50 mm x 1.6 mm complete, all as per direction of Engineer-in-charge. | Each                       | 100         | .0070978  |
| 9.18           | EARTHWORK EXCAVATION  | --                         |             |   |
| --             | Earth work in excavation by mechanical means (Hydraulic excavator) /manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lift upto 1.5m, disposed earth to be levelled and neatly dressed The rate includes disposal of excess unused earth away from site, dewatering, pumping water, strutting, shoring etc   | Cum                        | 45          | .0009019  |
| 9.19           | BACK FILLING  | --                         |             |   |
| --             | Refilling in basement and surrounding of the site with excess earth available after refilling the foundation and well watered consolidation the same in layers not exceeding 200mm depth, filling the remaining low level areas and in basement in layer of 200mm depth including watering and consolidating as directed by the Engineer in charge of the work.   | Cum                        | 31.5        | .000313   |
| 9.2            | SAND FILLING  | --                         |             |   |
| --             | Supplying and filling of spreading of river sand of approved quality in layers of 150mm thick including cost of sand, transportation for all leads, loading, unloading, spreading in layers at all depths, watering compacting to 90% max dry density as directed.  | Cum                        | 4.5         | .0004845  |
| 9.21           | PCC 1:3:6   | --                         |             |   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|------|--|
| --      | Providing and laying Plain cement Concrete 1 : 3 : 6 (one part of cement, three part of sand and six parts of good approved 20mm HBG jelly) , well mixed and placed in position and consolidated by rammer. Note:-Cement content considered in this item is @ 330 kg/cum  | Cum                 | 4.5  | .0012867   |
| 9.22    | 230MM THICK FLY ASH BRICK   | --                  |      |  |
| --      | FLY ASH BRICKWORK - Providing and laying Fly ash bricks with First quality stock Fly Ash bricks of designation 75 in cement mortar 1:6 (1 cement : 6 sand) in superstructure at all heights (230 mm thickness). The rate to be quoted will include cost of scaffolding, racking the joints to make key for plastering, instantaneous curing for a period of not less than 7 days and the rate to include all tools and plants, materials all required for first quality work etc. complete. | Cum                 | 5    | .0023056   |
| 9.23    | PAVER BLOCK   | --                  |      |  |
| a)      | Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.  | Sqm                 | 75   | .003696  |
| b)      | Taking out existing CC interlocking paver blocks from footpath/ central verge, including removal of rubbish etc., disposal of unserviceable material to the dumping ground, for which payment shall be made separately and stacking of serviceable material within 50 metre lead as per direction of Engineer-in-Charge.  | Sqm                 | 769  | .0051368   |
| c)      | Laying old cement concrete interlocking paver blocks of any design/ shape laid in required line, level, curvature, colour and pattern over and including 50 mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge. (Old CC paver blocks shall be supplied by the department free of cost).  | Sqm                 | 769  | .0157105   |
| 9.24    | 10 HP MOTOR   | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty.  | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|-------|--|
| --      | Supply , Erection Commissioning of 10HP Motor with necessary accessories   | Nos                 | 1     | .0023987   |
| 9.25    | PASSENGERS LIFT  | --                  |       |  |
| --      | Supply, Erection and Commissioning of Passenger Lift<br>1. Lift Capacity: 8pax with 68kg/ person, min. speed 0.66m/sec<br>2. No of Floors: Basement + 4 Floors + Lift Room<br>3. Lift Type: Automatic<br>4. Lift Car: Stainless Steel<br>5. Approved Make: Johnson / KONE / equivalent   | Nos                 | 1     | .087408  |
| 9.26    | ENAMEL PAINTING  | --                  |       |  |
| --      | Preparing the surface and applying 2 coats of Synthetic Enamel paint of approved colour and shade for all doors, windows and ventilators and including grills over one coat of steel / wood primer including cost of materials, Labour etc. complete as directed by the Architects.  | Sqm                 | 516   | .005919  |
| 9.27    | G.I GRATING FOR BASEMENT   | --                  |       |  |
| --      | Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. including priming coat with approved steel primer all complete. Fixed to openings /wooden frames with rawl plugs screws etc  | Kg                  | 100   | .0011108   |
| 9.28    | FLOORING FOR BASEMENT CARPARKING   | --                  |       |  |
| --      | 52 mm thick cement concrete flooring with concrete hardener topping, under layer 40 mm thick cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and top layer 12 mm thick cement hardener consisting of mix 1:2 (1 cement hardener mix : 2 graded stone aggregate 6 mm nominal size) by volume, hardening compound mixed @ 2 litre per 50 kg of cement or as per manufacturers specifications. This includes cost of cement slurry, but excluding the cost of nosing of steps etc. complete. | Sqm                 | 1,307 | .0648378   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|------|--|
| 10.0    | SANITARY FIXTURES AND CP FITTINGS  | --                  |      |  |
| 10.1.1  | Supplying, Fixing and commissioning of White colour, make and model glazed vitreous China wall mounted Water Closet constallation with concealed P-trap with flush tank ,CP flanges, solid plastic seat and lid with heavy duty CP hinges and rubber buffers and flap etc. The work shall include cutting making of walls and floors etc including necessary consumables like brass screws, CP extension nipple of approved make, dia and length, wooden plugs, white cement, sealants etc. Only drilling machines shall be used for making the holes in the walls for fixing, no wall jumper and hammer will be allowed. (Kohler or equivalent)                           | Nos.                | 2    | .0018605   |
| 10.1.2  | Supplying, Fixing and commissioning of White colour, make and model glazed vitreous China Floor mounted Water Closet constallation with concealed P-trap with flush tank, CP flanges, solid plastic seat and lid with heavy duty CP hinges and rubber buffers and flap etc. The work shall include cutting making of walls and floors etc including necessary consumables like brass screws, CP extension nipple of approved make, dia and length, wooden plugs, white cement, sealants etc. Only drilling machines shall be used for making the holes in the walls for fixing, no wall jumper and hammer will be allowed. (Model No. Kohler 17629 IN -SM-0 or equivalent) | Nos.                | 14   | .0056329   |
| 10.2.1  | Supplying fittings/fixtures and fixing of CP health faucet consisting of:<br>a) CP angle stop cock with wall flange.<br>b) PVC flexible tube of 1.0m length.<br>c) Hand operated spray unit (instant type)<br>d) CP Crutch<br>(Model No. Kohler 98100 IN -CP or equivalent)  | Nos.                | 16   | .0014884   |
| 10.2.2  | Supplying fittings/fixtures and fixing of CP health faucet consisting of:<br>a) CP angle stop cock with wall flange.<br>b) PVC flexible tube of 1.0m length.<br>c) Hand operated spray unit (instant type)<br>d) CP Crutch<br>(Model No. Kohler 97258 IN -BV or equivalent)  | Nos.                | 3    | .0008093   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 10.3           | Supplying, Fixing and commissioning of White colour, make and model vitreous china Wash basin with semi pedestal GI rag bits, 15 mm dia CP pillar cock 32mm dia CP waste coupling with plug and chain and including PVC connecting pipe, 32mm dia CP brass bottle trap, one no of 15mm dia CP angle stop cock with wall flange. The works shall include cutting in wall and making good the walls & floors. Notes: Only drilling machines shall be used for making the holes in the walls for fixing, no wall jumper and hammer will be allowed. (Model No. Kohler 24563 IN-0 or equivalent) | Nos.                       | 16          | .0063259  |
| 10.4           | Supplying and fixing of 15mm dia CP short body bib cock with CP wall flange.<br>Short Body Bib Cock Kohler 72275IN-4ND-CP  | Nos.                       | 12          | .0065864  |
| 10.4a          | Providing and fixing brass bib cock of approved quality, 20 mm nominal bore.   | Nos                        | 4           | .0000705  |
| 10.5           | Supplying and fixing of 15mm dia J type CP sink cock with swinging spout (wall mounted model) for kitchen sink with CP wall flange etc.  | Nos.                       | 4           | .0000493  |
| 10.6           | Supplying and fixing of Angle Stop Cock  | Nos.                       | 13          | .0003386  |
| 10.7           | Supplying ,fixing of White colour, make and model and size viterous china concealed soap dish including cutting and setting in walls with white cement joints making good of walls.  | Nos.                       | 20          | .0001228  |
| 10.8           | Supply and fixing of Bottle trap for the Basin area Make: KOHLER 7314IN-CP for the Guest room  | Nos.                       | 14          | .0015173  |
| 10.9           | Supply and fixing of Bottle trap for the Basin area Make: KOHLER 7314IN-BV for the Suite room  | Nos.                       | 2           | .0003535  |
| 10.1           | Supply and fixing of JULY ANGLE VLV G1/2 F13mm 2 pc per box for the Basin area Make: KOHLER 16086IN-4-BV for the Suite room  | Nos.                       | 2           | .0005581  |
| 10.11          | Supply and fixing of JULY ANGLE VLV G1/2 F13mm per box for the Basin area Make: KOHLER 16086IN-4-CPfor the Guest room  | Nos.                       | 16          | .0012912  |
| 10.12          | Supply and fixing of Toilet Tissue holder<br>Make: KOHLER 25346IN-BV for the suite room  | Nos.                       | 2           | .0004697  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 10.13          | Supply and fixing of Toilet Tissue holder<br>Make: KOHLER 5632IN-CP for the Guest room | Nos.                       | 16          | .0009675  |
| 10.14          | Supply and fixing of Towel ring<br>Make: KOHLER 5631IN-CP for the Guest room           | Nos.                       | 16          | .0012838  |
| 10.15          | Supply and fixing of Towel ring<br>Make: KOHLER 25347IN-CP for the Suite room          | Nos.                       | 2           | .0003619  |
| 10.16          | Supply & fixing of SHOWERING AREA for SUITE ROOM as mentioned below:                   | --                         |             |   |
| 10.16.<br>1    | 10 inch Contemporary square katalyst air<br>Make: Kohler 18361T-CL-BV                  | Nos.                       | 2           | .0031973  |
| 10.16.<br>2    | Auto sense TH REC B& S universal trim<br>Make: Kohler 24431IN-9FP-BV                   | Nos.                       | 2           | .0013489  |
| 10.16.<br>3    | Auto sense Termostat valve<br>Make: Kohler 20740IN-A-NA                                | Nos.                       | 2           | .0012558  |
| 10.16.<br>4    | Bath spout W/diverter , flat face 160mm<br>Make: Kohler 1038IN-BV                      | Nos.                       | 2           | .000493   |
| 10.16.<br>5    | Rain duet 3.0 Handshower<br>Make: Kohler 2471IN-BV                                     | Nos.                       | 2           | .0010233  |
| 10.16.<br>6    | Shower hose 1.5m<br>Make: Kohler 12067IN-BV  | Nos.                       | 2           | .0002326  |
| 10.16.<br>7    | handshower slide bar trim<br>Make: Kohler 8524T-BV                                     | Nos.                       | 2           | .0021378  |
| 10.16.<br>8    | Accent 610 mm single towel bar   | Nos.                       | 2           | .0004465  |

**Part C : Bill of Quantities****Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 10.16.9        | Accent single robe hook<br>Make: Kohler 25349IN-BV                   | Nos.                       | 2           | .0001302  |
| 10.16.10       | Floor drain<br>Make: Kohler 7275IN-BV                                | Nos.                       | 2           | .0002326  |
| 10.16.11       | Linear floor drain wind 600<br>Make: Kohler 97741T-NA                | Nos.                       | 2           | .0013024  |
| 10.16.12       | July inline stop valve trim<br>Make: Kohler 16097IN-BV               | Nos.                       | 2           | .0001395  |
| 10.16.13       | inline stop valve g3/4 G 19mm<br>Make: Kohler 16089IN-NA             | Nos.                       | 2           | .0001954  |
| 10.16.14       | mastershower elbow shower arm  | Nos.                       | 2           | .0005581  |
| 10.17          | Supply & fixing of SHOWERING AREA for Guest room as mentioned below: | --                         |             |   |
| 10.17.1        | Rainduet round 203mm rainhead<br>Make: 73198IN-CP                    | Nos.                       | 9           | .0035583  |
| 10.17.2        | July Thermostatic 3 way shower column<br>Make: 9974IN-C9-CP          | Nos.                       | 9           | .0213501  |
| 10.17.3        | Awaken B110 Multi mode handshower<br>MAKE: 72421IN-CP                | Nos.                       | 9           | .0027583  |
| 10.17.4        | TOWEL BAR<br>MAKE: 5630IN-CP   | Nos.                       | 9           | .0008331  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|------|--|
| 10.17.5 | Floor drain<br>Make: Kohler 7275IN-CP  | Nos.                | 9    | .0007535   |
| 10.17.6 | Linear floor drain wind 600<br>Make: Kohler 97741T-NA  | Nos.                | 9    | .0060722   |
| 10.17.7 | July inline stop valve trim<br>Make: Kohler 16097IN-CP   | Nos.                | 9    | .0005044   |
| 10.17.8 | inline stop valve g3/4 G 19mm<br>Make: Kohler 16089IN-NA   | Nos.                | 9    | .0008791   |
| 10.17.9 | Supplying & fixing of bath shower glass cabinet of approved make. The rates are inclusive of fixing, accessories etc,  | Sqm                 | 48   | .019536  |
| 11.0    | CPVC PIPES AND FITTINGS (INTERNAL AND EXTERNAL WATERSUPPLY):   | --                  |      |  |
| 11.1    | Providing & fixing of CPVC pipes conforming to ASTM standard including all CPVC fittings like tees, elbows, bends, unions, coupling, reducer tees, collars etc. The work shall include cutting jointing with solvent cement pressure testing the joints / pipeline for 10 kg/sq.cm hydraulic pressure, for 4 hours etc., making holes, including chasing in solid block masonry walls with groove cutting machine to required width and depth, making bores in walls, foundations and RCC slabs, making good the walls and bores in CC or CM1:3 as applicable, clearing the debris, grouting of concealed pipes, MS hooks for fixing pipes and making good the walls and floors. Also with necessary clamps and support for ceiling hung system in side area, etc. | --                  |      |  |
| --      | INTERNAL (CONCEALED IN WALL): COLD WATERSUPPLY   | --                  |      |  |
| a)      | 20 mm dia (SDR-11)   | Rmt                 | 20   | .0003397   |
| a)      | 25 mm dia (SDR-11)   | Rmt                 | 20   | .0004072   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty.   | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|--------|--|
| c)      | 32 mm dia  | Rmt                 | 10     | .000263  |
| d)      | 40 mm dia  | Rmt                 | 10     | .0003564   |
| e)      | 50 mm dia  | Rmt                 | 10     | .0004736   |
| 11.2    | Providing and placing on terrace (at all floor levels) polyethylene water storage tank, IS : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.   | Lit                 | 10,000 | .0055771   |
| --      | ELECTRICAL WORKS   | --                  |        |  |
| 12.0    | Wiring of light, fan, 6A sockets and exhaust fan points  | --                  |        |  |
| --      | Supply and Wiring for light points with 2 runs of 1.5 Sqmm FRLS, single core, multistrand copper wire (For phase and neutral) with one run of 1.5 Sqmm PVC insulated, single core, stranded, copper wire for earthing (green colour) in 20mm dia FRLS PVC conduit, 2mm thick (ISI marked) with concealed in wall by chase cutting, All necessary accessories including supplying and fixing 6A single pole modular switch housed in manufacturers zinc passivated MS box with cover plate. | --                  |        |  |
| 12.1    | 1 light controlled by 1 switch   | No                  | 106    | .0056701   |
| 12.2    | 2 lights controlled by 1 switch  | No                  | 34     | .0022931   |
| 12.3    | 3 lights controlled by one switch  | No                  | 5      | .0004302   |
| 12.3A   | 2 Way lights controlled by 2 switch  | No                  | 34     | .0023722   |
| 12.4    | Same item 12.1, but for 6A switched sockets including supply and fixing of switched sockets in independent locations (Raw power)   | No                  | 50     | .0026746   |
| 12.5    | Same as item no12.4, but socket and switch mounted in light control switch box   | No                  | 60     | .001535  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|------|--|
| 12.6    | Exhaust fan point with 6A switch & socket  | No                  | 8    | .0004465   |
| 12.7    | Call bell point with call button, rest button, buzzer and display  | No                  | 8    | .0005023   |
| 12.8    | Ceiling fan point with step type electronic regulator and anchor fan hook  | No                  | 10   | .000814  |
| 12.9    | 2way Ceiling fan point with step type electronic regulator and anchor fan hook   | No                  | 8    | .0007442   |
| 12.9A   | Supply and laying of 2 R 2.5+1R 1.5 Sqmm FRLS stranded copper wire (one for earth, green colour) in 20mm dia FRLS PVC conduit, 2mm thick (ISI marked) concealed in wall by chase cutting for circuit mains from LDBs to switch boxes   | Rmt                 | 700  | .0061864   |
| 12.9B   | Supply and laying of 2 R 2.5+1R 1.5 Sqmm FRLS stranded copper wire (one for earth, green colour) in 20mm dia FRLS PVC conduit, 2mm thick (ISI marked) concealed in wall by chase cutting for circuit mains from ELDBs to switch boxes  | Rmt                 | 400  | .0035351   |
| 13.0    | Wiring of light, fan, 6A sockets and exhaust fan points  | --                  |      |  |
| --      | Supply and Wiring for light points with 2 runs of 1.5 Sqmm FRLS, single core, multistrand copper wire (For phase and neutral) with one run of 1.5 Sqmm PVC insulated, single core, stranded, copper wire for earthing (green colour) in existing PVC conduit, with concealed in wall by chase cutting necessary. All necessary accessories including supplying and fixing 6A single pole modular switch housed in manufacturers zinc passivated MS box with cover plate. | --                  |      |  |
| 13.1    | 1 light controlled by 1 switch   | No                  | 106  | .0046839   |
| 13.2    | 2 lights controlled by 1 switch  | No                  | 49   | .0026211   |
| 13.3    | 3 lights controlled by one switch  | No                  | 5    | .0003488   |
| 13.3A   | 2 Way lights controlled by 2 switch  | No                  | 34   | .002214  |
| 13.4    | Same item 13.1, but for 6A switched sockets including supply and fixing of switched sockets in independent locations (Raw power)   | No                  | 55   | .0024303   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| <b>Ref.No.</b> | <b>Description</b>   | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|--|----------------------------|-------------|---|
| 13.5           | Same as item no13.4, but socket and switch mounted in light control switch box   | No                         | 1           | .0000221  |
| 13.6           | Exhaust fan point with 6A switch & socket  | No                         | 8           | .0003535  |
| 13.7           | Call bell point with call button, rest button, buzzer and display  | No                         | 8           | .0004372  |
| 13.8           | Ceiling fan point with step type electronic regulator and anchor fan hook  | No                         | 10          | .000721   |
| 13.9           | 2way Ceiling fan point with step type electronic regulator and anchor fan hook   | No                         | 8           | .0004465  |
| 13.9A          | Supply and laying of 2 R 2.5+1R 1.5 Sqmm FRLS stranded copper wire (one for earth, green colour) in existing PVC conduit ,concealed in wall by chase cutting for circuit mains from LDBs to switch boxes                                   | Rmt                        | 900         | .0062794  |
| 13.9B          | Supply and laying of 2 R 2.5+1R 1.5 Sqmm FRLS stranded copper wire (one for earth, green colour) in existing pvc conduit, concealed in wall by chase cutting for circuit mains from ELDBs to switch boxes                                  | Rmt                        | 600         | .0041863  |
| 14.0           | Telephone/ TV cables   | --                         |             |   |
| 14.1           | Supply and installation of 25 mm dia FRLS PVC conduit 2 mm thick, ISI marked medium grade to be laid on wall, and partitions from main Hub to all work stations and from main tel junction to all work stations as marked in the drawing.  | Rmt                        | 750         | .0031397  |
| 14.2           | Supply and installation of 20 mm dia FRLS PVC conduit 2 mm thick , ISI marked medium grade to be laid on wall, and partitions from main Hub to all work stations and from main tel junction to all work stations as marked in the drawing. | Rmt                        | 350         | .001221   |
| 14.3           | Supply and installation of 2-pair telephone tinned copper cable 0.5mm dia copper conductor PVC insulated through the above mentioned conduit and terminations at both ends   | Rmt                        | 1,100       | .0025582  |
| 14.4           | Supply and installation of RJ-11 telephone socket mounted in manufacturers zinc passivated MS box  | No                         | 20          | .0004651  |

**Part C : Bill of Quantities****Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai****at BHEL PSSR7**

| <b>Ref.No.</b> | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|----------------|---|----------------------------|-------------|---|
| 14.5           | Supply and installation of 20-pair tel krone block housed in engineering plastic box with hinged and lockable transparent cover   | No                         | 1           | .0002791  |
| 14.6           | Supply and installation of Rg-6 TV socket mounted in manufacturers zinc passivated MS box   | No                         | 16          | .0003572  |
| 14.7           | Supply and installation of RG-6 TV cable through the above mentioned conduit and terminations at both ends  | Rmt                        | 650         | .0022675  |
| 15.0           | Light fittings and fans   | --                         |             |   |
| 15.1           | Supply , Installation including assembling, testing and commissioning of bulkhead light fitting   | No                         | 20          | .0010931  |
| 15.2           | Supply,Installation testing and commissioning of 10W LED Wall mounted lighter   | No                         | 30          | .0016745  |
| 15.3           | Supply , Installation including assembling, testing and commissioning of 20 W LED box type fixture to be fixed directly on wall/ceiling   | No                         | 48          | .0024336  |
| 15.4           | Supply , Installation including assembling, testing and commissioning of 11W LED surface Ceiling mounted fixture  | No                         | 55          | .0034537  |
| 15.5           | Supply, Installation including assembling, testing and commissioning of 36W LED surface / recess mounted fixture  | No                         | 29          | .0017536  |
| 15.6           | Supply , Installation including assembling, testing and commissioning of 9W LED wall mounted fixture or mirror  | No                         | 19          | .0009721  |
| 15.7           | Supply , Installation including assembling, testing and commissioning of 100W LED Ceiling mounted chandelier fixture  | No                         | 3           | .0004884  |
| 15.8           | Supply , Installation including assembling, testing and commissioning of 18W LED post top lantern fixture with 5.5 mtr long 40 mm M.S pipe powder coated with mcb control wp gear box. All civil works are included | No                         | 20          | .0200012  |
| 16.0           | Supply and installation of exhaust fans & Ceiling fans  | --                         |             |   |
| 16.1           | Supply and installation of 300mm dia low duty exhaust fan with auto gravity louvre  | No                         | 16          | .0022327  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|------|--|
| 16.2    | Supply and installation of 1200mm sweep ceiling fan  | No                  | 35   | .004884  |
| 16.3    | Installation of Existing 1200mm sweep ceiling fan  | No                  | 10   | .0001628   |
| 17.0    | Distribution Boards  | --                  |      |  |
| 17.1    | LDB  | --                  |      |  |
| --      | Supply and installation of double door IP:43 4-way TPN MCB 7 segment type DB with following. The same shall be concealed to the wall<br>1 no incomer feeder fitted with 40 A 4-pole MCB<br>3 nos incomer feeder fitted with 40 A 2-pole RCBO with 30ma sensitivity<br>12 nos of 6/10 A (4 nos per phase) SP MCBs as outgoing feeders   | No                  | 3    | .0032862   |
| 17.2    | ELDB   | --                  |      |  |
| --      | Supply and installation of double door IP:43 12-way SPN MCB type DB with following. The same shall be concealed to the wall<br>1 no incomer feeder fitted with 25 A 2-pole RCBO with 100ma sensitivity<br>8 nos of 10 A SP MCBs as outgoing feeders  | No                  | 1    | .0004428   |
| 17.3    | PDB  | --                  |      |  |
| --      | Supply and installation of double door IP:43 6-way TPN MCB 7 segment type DB with following. The same shall be concealed to the wall<br>1 no incomer feeder fitted with 63 A 4-pole MCB<br>3 nos incomer feeder fitted with 63 A 2-pole RCBO with 100ma sensitivity<br>18 nos of 16/20 A (6 nos per phase) SP MCBs as outgoing feeders | No                  | 3    | .0041165   |
| 17.4    | Supply and installation of 63A MCB with M.S enclosure.The same shall be concealed to the wall for 10 hp motor  | No                  | 1    | .0001395   |
| 17.5    | DB   | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|------|--|
| --      | Supply and installation of double door IP:43 6-way TPN MCB 7 segment type DB with following. The same shall be concealed to the wall<br>1 no incomer feeder fitted with 63 A 4-pole MCB<br>3 nos incomer feeder fitted with 63 A 2-pole RCBO with 100ma sensitivity<br>18 nos of 6/16/20 A (6 nos per phase) SP MCBs as outgoing feeders | Nos                 | 1    | .0013489   |
| 17.6    | CDB  | --                  |      |  |
| --      | Supply and installation of double door IP:43 4-way TPN MCB 7 segment type DB with following. The same shall be concealed to the wall<br>1 no incomer feeder fitted with 40 A 4-pole MCB<br>3 nos incomer feeder fitted with 40 A 2-pole RCBO with 30ma sensitivity<br>12 nos of 6/10 A (4 nos per phase) SP MCBs as outgoing feeders     | Nos                 | 1    | .0010931   |
| 17.7    | LIFT DB  | --                  |      |  |
| --      | Supply and installation of double door IP:43 4-way TPN VDB with following. The same shall be concealed to the wall<br>1 no incomer feeder fitted with 63 A 4-pole MCB<br>40A TP MCB-2<br>8 nos of 6/16/20 A SP MCBs as outgoing feeders  | Nos                 | 1    | .0013722   |
| 17.8    | COMMON SERVICE DB  | --                  |      |  |
| --      | Supply and installation of double door IP:43 4-way TPN VDB with following. The same shall be concealed to the wall<br>1 no incomer feeder fitted with 100 A 4-pole MCCB 25 Ka<br>63A TP MCB-1 40A TP MCB - 2<br>4 nos of 16/20 A SP MCBs as outgoing feeders   | Nos                 | 1    | .0016512   |
| 18.0    | Supply and installation MCB housed in powder coated MS boxes to be fixed on wall for controlling A/C units and motor starter   | --                  |      |  |
| 18.1    | 20 A DP MCB with M.S enclosure for A/C control   | No                  | 21   | .0010744   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|------|--|
| 18.2    | 20 A 3 pin socket with M.S enclosure  | No                  | 21   | .0010744   |
| 18.3    | 25 A DP MCB with M.S enclosure for INVERTER and motor controls  | No                  | 4    | .0002232   |
| 18.4    | DOL Starter with M.S enclosure for 2 nos 1.5 HP and 1 nos 5 HP pumps  | No                  | 3    | .0004954   |
| 18.5    | Star and Delta starter with M.S enclosure for 10 HP pumps   | No                  | 1    | .0004884   |
| 19.0    | Switch Boards   | --                  |      |  |
| 19.1    | Meter board   | --                  |      |  |
| --      | Supply, erection, testing and commissioning of cubicle type switch board wall mounted, fabricated with 16 Swg CRCA sheets with the following  | --                  |      |  |
| --      | The panel will have 3 compartments with bolted doors. The bottom compartment will have 3 nos 200 A porcelain cut out fuses, and 125A neutral link, the middle chamber will be left free for mounting EB meter. The middle chamber will have a view window made of 3mm thick acrylic sheet. The top compartment will be fixed with 1 no test terminal block. 200A tpn mccb 25kA (EB meter board) | Set                 | 1    | .0027397   |
| 19.3    | MSB   | --                  |      |  |
| --      | Supply, erection, testing and commissioning of cubicle type switch board wall mounted, fabricated with 16 Swg CRCA sheets with the following  | --                  |      |  |
| --      | Bus bar chamber consisting of 25x10 mm electrolytic quality copper busbars supported on SMC for phases and 25x3mm for neutral. The busbars shall have colour coded PVC sleeving. The fault level shall be 25 Ka for 1 second.   | --                  |      |  |
| --      | Metering cubicle consisting of 1 no microprocessor controlled meter for reading all the electrical parameters like voltage, current, Kw, etc (Socomec EM-VIFP), LED type RYB indication lamps, 3 nos of resin cast CTs of ratio 125/5A class-1, 15 Va   | --                  |      |  |
| --      | 1 no incomer feeder fitted with 1 no 125 A TP+N MCCB, 25 ka   | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|------|--|
| --      | 4 nos 63A T+PN MCCB and 3nos 40A T+PN MCCB, 25 ka as outgoing feeders  | --                  |      |  |
| --      | Panel will have a ring main earth bus with copper strip of size 25x3mm. All the switch frames and cubicles shall be connected to this earth which will be finally interconnected to external earth grid. The panel shall be powder coated to siemens grey shade. All internal wiring shall be carried out with adequate size copper wires. A detachable gland plate shall be fixed on the top of the cable alley for cable terminations. All MCCBs shall be fitted with front operating handle with door interlock | No                  | 1    | .0068631   |
| 20.0    | Power wiring   | --                  |      |  |
| 20.1    | Supply and installation of 6/16A modular type switched socket housed in manufacturers zinc passivated MS box to be concealed on the wall   | No                  | 3    | .0001325   |
| 20.2    | Supply and installation of 16A modular type switch & socket housed in manufacturers zinc passivated MS box to be concealed on the wall IN independent ocation for geysors  | No                  | 16   | .0008186   |
| 20.3    | Supply, installation, testing and commissioining of 2R 2.5+ 1R 1.5 Sqmm FRLS multistranded copper wire in 20mm dia FRLS PVC conduit 2 mm thick (ISI marked) from PDB to 16A switched socket power circuits   | Rmt                 | 600  | .0055817   |
| 20.4    | Supply, installation, testing and commissioining of 2R 4+ 1R 2.5 Sqmm FRLS multistranded copper wire in 20mm dia FRLS PVC conduit 2 mm thick (ISI marked) from PDB to Indoor A/C units (Note: 4 Sqmm cu socket has to be crimped in all termination)   | Rmt                 | 600  | .0076749   |
| 20.5    | Supply, installation, testing and commissioining of 2R 2.5+ 1R 1.5 Sqmm FRLS multistranded copper wire in existing PVC conduit with concealed in wall by chase cutting, from PDB to 16A switched socket power circuits   | Rmt                 | 600  | .0044653   |
| 20.6    | Supply, installation, testing and commissioining of 2R 4+ 1R 2.5 Sqmm FRLS multistranded copper wire in existing conduit with concealed in wall by chase cutting, from PDB to Indoor A/C units (Note: 4 Sqmm cu socket has to be crimped in all termination)   | Rmt                 | 600  | .0064189   |
| 21.0    | UG cable and sub main  | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description   | Unit of Measurement | Qty. | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|---|---------------------|------|--|
| 21.1    | Laying of 3.5x120 Sqmm AL AR xlpe cable to be clamped on wall with GI clamps/ laid in excavated trenches etc for tneb cable   | Rmt                 | 150  | .0013257   |
| 21.2    | Supply and laying of 3x2.5 Sqmm copper ar cable to be clamped on wall with GI clamps/ laid in excavated trenches etc for motor and external post top lantern light                                | Rmt                 | 400  | .0062329   |
| 21.3    | Supply and laying of 4x10 Sqmm copper ar cable to be clamped on wall with GI clamps/ laid in excavated trenches etc for 10 hp motor   | Rmt                 | 50   | .0022094   |
| 21.4    | Supply and laying of 3x6 Sqmm copper ar cable to be clamped on wall with GI clamps/ laid in excavated trenches etc for 10 hp motor  | Rmt                 | 20   | .0007907   |
| 21.5    | Terminations of following cable with SIBG glands and copper crimping sockets and earthing of glands with copper clip and connecting the same to earth grid with 14 Swg copper wire                | --                  |      |  |
| a)      | 3.5 x 120 Sqmm  | No                  | 10   | .0005581   |
| a)      | 3 x 2.5 Sqmm  | No                  | 50   | .000814  |
| c)      | 4 x 10 Sqmm   | No                  | 2    | .0000465   |
| d)      | 3 x 6 Sqmm  | No                  | 4    | .0000837   |
| 22.0    | Sub main  | --                  |      |  |
| 22.1    | Supply and laying of 4R 6+2R 2.5 SQMM FRLS CU wire in 2no 25 mm pvc conduit , 2 mm thick (ISI marked) with concealed in wall by chase cutting, All necessary accessories are included             | Rmt                 | 75   | .0031397   |
| 22.2    | Supply and laying of 4R 10+2R 4 SQMM FRLS CU WIRE in 2no 25 mm pvc conduit (ISI marked) , 2 mm thick (ISI marked) with concealed in wall by chase cutting, All necessary accessories are included | Rmt                 | 75   | .0040119   |
| 23.0    | Earthing  | --                  |      |  |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai**

**at BHEL PSSR**

| Ref.No. | Description  | Unit of Measurement | Qty.  | Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount |
|---------|--|---------------------|-------|--|
| 23.1    | Supply, installation, testing and commissioning of cast iron pipe electrode 100mm dia 3 Mt long, 12mm thick as per IS-3043 complete with all accessories like watering funnel, clamps etc.The same to be installed in a pit 3 Mt deep and filled with alternate layers of charcoal, salt mixed with river sand. A brick work masonry shall be constructed of size 300x300x150mm and cement plastered at both inside and outside walls. A 3mm thick cast iron plate with frame work shall be placed over the chamber (2 nos for general earthing) | No                  | 3     | .0016047   |
| 23.2    | Supply and installation of 25x3 mm copper strip to interconnect the earth pits with SSB and other equipments   | Rmt                 | 75    | .003663  |
| 24.0    | CCTV Cables & Camera   | --                  |       |  |
| 24.1    | Supply and installation of 25 mm dia PVC conduit, ISI marked medium grade to be laid on wall, with concealed and chase cutting, All necessary accessories are included   | Rmt                 | 375   | .0013082   |
| 24.2    | Supply and installation of 20 mm dia PVC conduit, ISI marked medium grade to be laid on wall,with concealed and chase cutting, All necessary accessories are included  | Rmt                 | 175   | .0004477   |
| 24.3    | Supply and installation of 64 channel NVR TURBO(Hikvision & Secureye)  | No                  | 1     | .0026281   |
| 24.4    | Supply and installation of 2 MP Camera ODU 20 Mtr range Bult IP (Hikvision & Secureye)   | No                  | 8     | .0013024   |
| 24.5    | Supply and installation of 2 MP Camera IDU 20 Mtr range Bult IP (Hikvision & Secureye)   | No                  | 18    | .0029304   |
| 24.6    | Supply and installation of 8 port full gigabit poe switch (Hikvision & Secureye)gg   | No                  | 5     | .0010465   |
| 24.7    | Supply and installation of 6 TB Hard disk (segate/wd)  | No                  | 2     | .0014419   |
| 24.8    | Supply and installation of cat-6 CCTV cable (d-link)   | Rmt                 | 1,800 | .0082051   |
| 24.9    | Supply and installation of 4U Rack(Hikvision & Secureye)   | No                  | 5     | .0011163   |
| 24.1    | Supply and installation of BNC Enclosure (pvc box) & INC (Hikvision & Secureye)  | No                  | 40    | .0005581   |

**Part C : Bill of Quantities**

**Tender Specification for BHEL Transit Flat, Residential Quarters basement and common areas renovation works at Ashok Nagar, Chennai  
at BHEL PSSR**

| <b>Ref.No.</b>         | <b>Description</b>  | <b>Unit of Measurement</b> | <b>Qty.</b> | <b>Weightage for amount of each item (Nearest to the 7 decimal points) w.r.t the total amount</b> |
|------------------------|---|----------------------------|-------------|---|
| 24.11                  | Supply and installation of 32 inch TV (Panasonic)   | No                         | 1           | .001907   |
| 24.12                  | Commissioning charges   | Ls                         | 1           | .0016512  |
| 25.0                   | Existing wiring   | --                         |             |   |
| 25.1                   | Removing of Existing wiring, switches, switch boxes, light fittings, fans, exhaust fan, dbs & main switch in three floors (6900 sq feet area) and to be handed over to the client | Ls                         | 1           | .001628   |
| <b>TOTAL Weightage</b> |   |                            |             | 0.9999941   |