

BHEL:PS WR
TS NO : BHE/PW/PUR/BSJI-CWHT/619
PRICE BID-PART-II (VOL-II)

BOQ for Waste water holding Tank and Chemical Lab Building for 2x250MW Bhilai Exp. TPS for Balance of Plant Package:-

| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|--|-------------|-------------|---------------------------------|----------------------|---------------|
| 100 | EARTH WORK IN EXCAVATION, BACKFILLING AND DISPOSAL AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- | | | | | |
| 101 | Earth work in excavation upto 2m depth below ground level for foundation, trenches, pipe lines, storm water drains etc including setting out, clearing & grubbing, removal of debris, dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum, weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, pneumatic rock breaker/chisel attachment with poclain, etc but does not require chiselling or blasting. | CUM | 6690 | | | |

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|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 103 | Earth work in excavation for depth exceeding 2.0m but not exceeding 4.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum , weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, pneumatic rock breaker/chisel attachment with poclain etc but does not require chiselling or blasting. | CUM | 4700 | | | |
| 105 | Earth work in excavation for depth exceeding 4.0m but not exceeding 6.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum , weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, pneumatic rock breaker/chisel attachment with poclain etc but does not require chiselling or blasting. | CUM | 2635 | | | |

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|--------|---|------|------|--------------------------|---------------|--------|
| 107 | Earth work in excavation for depth exceeding 6.0m but not exceeding 8.0m below ground level for foundation, trenches, pipe lines, storm water drains etc including dewatering if required, strutting, shoring/sheet piling if required, dressing the sides, levelling to grade and ramming the bottom, stacking/disposal of surplus excavated material within a lead of 1.0 KM etc complete for all types of soils including ash, laterite, morrum , weathered rock, decomposed rock, soft rock etc which can be excavated by means of crow bar, pick axe, pneumatic rock breaker/chisel attachment with poclain etc but does not require chiselling or blasting. | CUM | 190 | | | |
| 108 | Excavation in Hard rock at any depth which cannot be removed by crow bar, pick axe, pneumatic rock breaker/chisel attachment with poclain etc but require chiselling and/or controlled blasting | CUM | 250 | | | |
| 116 | Disposal of surplus excavated earth/rock beyond an initial lead of 1km , dumping and levelling the dumped soil and levelling the area from where the material is transported, complete with all lifts as specified and directed by Engineer. | | | | | |
| (i) | From initial lead of 1 KM. & up to 2 Km. | CUM | 1200 | | | |
| (ii) | From initial lead of 1 KM. & up to 3 Km. | CUM | 1500 | | | |
| (iii) | From initial lead of 1 KM. & up to 5 Km. | CUM | 1108 | | | |

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| 117 | Extra over item no. 116(iii) for every additional lead of 1KM or part thereof for Disposal of surplus excavated earth/rock beyond 5km. | CUM | 1200 | | | |
| 118a | Filling using selected excavated materials (from stock piles) in trenches, plinths, sides of foundations and other underground structures, levelling in layers not exceeding 150 mm thickness within a lead 1KM with all lifts and including re-excavation,loading from stock pile ,carting, unloading, filling, watering and compacting/ramming each layer by manual/ mechanical means in saturated condition all complete as per specifications drawings and as directed by the engineer to achieve 90% max Standard procter density. | CUM | 7500 | | | |
| 118b | Filling using selected excavated materials (from stock piles) in trenches, plinths, sides of foundations and other underground structures, levelling in layers not exceeding 150 mm thickness from a lead 1KM to 3KM with all lifts and including re-excavation,loading from stock pile ,carting, unloading, filling, watering and compacting/ramming each layer by manual/ mechanical means in saturated condition all complete as per specifications drawings and as directed by the engineer to achieve 90% max Standard procter density. | CUM | 2000 | | | |

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|---------------|--|-------------|-------------|---------------------------------|----------------------|---------------|
| 119 | Supply and filling sand under floors, in foundation and plinths including cost of sand, transporting for all leads, loading, unloading, spreading in layers in 25cm loose thickness at all depths, watering, compaction with mechanised compaction machine or manually to minimum 80% of relative density, dressing and levelling etc complete. | CUM | 410 | | | |
| 121 | Providing and laying stone soling with specified sizes of approved quality hard rock or hand broken hard metal of sizes ranging from 63mm and down , at all position and depths below or above finished ground floor level, below foundations, below flooring, and for providing hard standing etc in one layer of approximately 225 mm thickness, hand packing, filling in interestices with sand including watering, thoroughly compacting the layer all complete as per specification and the direction of the Engineer . | CUM | 560 | | | |

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|--------|---|------------|------------|--------------------------|---------------|--------|
| 200 | PROVIDING AND PLACING CONCRETE WORK INCLUDING COST OF LABOUR, MATERIALS AND EQUIPMENT FOR HANDLING, TRANSPORTATION, BATCHING, MIXING, PLACING, VIBRATING AND CURING, (EXCLUDING COST OF CENTERING, SHUTTERING AND REINFORCEMENT) COMPLETE AT ALL ELEVATIONS AS PER DRAWING, SPECIFICATIONS UNLESS SPECIFIED OTHERWISE AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING: | | | | | |
| 202 | Plain Cement Concrete of grade M15 as levelling course ,filling, under water retaining structures, equipment foundations, under foundations/floors etc all complete. | CUM | 10 | | | |
| 202a | Plain Cement Concrete of grade M10 as levelling course ,filling, under water retaining structures, equipment foundations, under foundations/floors etc all complete. | CUM | 160 | | | |
| 203 | Plain Cement Concrete of grade 1:2:4 as plinth protection ,etc all complete.(100 mm thik) | CUM | 15 | | | |

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|--------|--|------|------|--------------------------|---------------|--------|
| 205 | Concrete of grade M-30 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size for foundations/ superstructure at all depths/heights from finished floor level at any level, shape, position or thickness complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete. Rate shall be inclusive of all labour, materials, mixing, batching, scaffolding, curing & testing etc. as per standard specification, drawing & instruction of Engineer | CUM | 500 | | | |
| 206 | Concrete of grade M-35 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in superstructure/water retaining structure (below ground) at all heights/depths from finished floor level at any level, shape, position or thickness complete including use of plasticizer/ superplasticizer conforming to IS:9103 (latest) to achieve required slump in concrete all complete. | CUM | 3889 | | | |
| 211 | Concrete of grade M-25 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in precast works like trench covers etc including formwork/moulds for thicknesses varying from 50mm to 250mm including transportation, erection, fixing in position at all elevations and use of plasticizer wherever required all complete excluding the cost of reinforcement . | CUM | 24 | | | |

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|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 212 | Plain Cement Concrete of grade 1:3:6 under foundations, trenches , underground structures etc. all complete. | CUM | 340 | | | |
| 213 | Concrete of Grade M-20 conforming to IS:456 with coarse sand and graded hard stone aggregate 20mm nominal size in paving, underfloor, etc complete. | CUM | 100 | | | |
| 300 | SUPPLYING, FIXING AND REMOVING FORMWORK AT ANY ELEVATION INCLUDING ALL LABOUR, MATERIAL, SCAFFOLDING COMPLETE INCLUDING POCKETS ETC. AS PER SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING: | | | | | |
| 302 | Fairface form work (using commercial laminated plywood with adequate steel/wooden frame) below finished ground floor level for foundations, footings, base of columns, walls, columns, pilasters, beams, mass concrete, trenches etc for exposed concrete works. | SQM | 2290 | | | |
| 303 | Ordinary form work (reasonably good steel/ plywood surface) above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights. | SQM | 625 | | | |

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|---------------|--|-------------|-------------|---------------------------------|----------------------|---------------|
| 304 | Fairface form work (using commercial laminated plywood with adequate steel/wooden frame) above finished ground floor level for columns, beams, suspended floors, roofs, lintels, cantilevers, staircases, landings, balconies, domes, arches etc for all heights. | SQM | 4985 | | | |
| 400 | REINFORCEMENTS | | | | | |
| 402 | Taking delivery from BHEL Stores/Store yard, loading transporting to work site, unloading, Straightening, cutting, bending, placing in position at any level, binding in position of tor steel reinforcements confirming of grade Fe-500 confirming to IS:1786 including cost of binding wire, labour complete all as per specifications, drawings and as directed by Engineer. Note:- TMT rebars (reinforcement steel) shall be provided by BHEL at free of cost and agency has to draw and transport from BHEL stores/storage yard and return excess materials & waste materials to BHEL stores/storage yard as per Engineers's Instruction including all T&Ps and labours etc. complete. | MT | 319 | | | |

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|---------------|--|-------------|--------------|---------------------------------|----------------------|---------------|
| 500 | WATER PROOFING AS PER SPECIFICATIONS. | | | | | |
| 501 | Providing and mixing approved water proofing compound at the rate of (8Kg/cum) in concrete or cement mortar for works wherever specified or directed as per specification/ manufacturer's instructions, testing of samples for water proofing etc complete. | KG | 35200 | | | |
| 505 | Providing and laying 75 thick foam concrete block insulation over roofs including minimum 15 mm cement sand plaster 1:4 fished smooth over foam concrete and providing of expansion joints at intervals as per the recommendation of manufacturer. Thermal conductivity of the concrete shall not exceed 0.125 KCL/Sqmh degree C and weight shall be from 0.3 to 0.5 gm/cu.cm, all complete with fillets as per specification. | SQM | 555 | | | |

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| 507(a) | Providing and applying a high solid content liquid (Polyurethane based elastomeric water proofing membrane) with separate wearing course as per ASTM C - 898/Equivalent IS Codes. Thickness of the membrane shall be 1.5 mm(in two coats) This treatment shall include application of polymerised mastic over the roof to achieve smooth surface and primer coat. Wearing course on the top of membrane shall consist of 25 mm thick PCC (M-15) cast in panels of maximum 1.2x1.2m size and reinforced with 0.55 mm dia. galvanised chicken wire mesh and sealing of joints using sealing compound/elastomeric water proofing membrane. wearing course shall be paid separately under relevant items. | SQM | 555 | | | |
| (b) | Providing & placing wearing course on the top of water proofing membrane consisting of 25 mm thick PCC (M-15) cast in panels of maximum 1.2x1.2m size and reinforced with 0.55 mm dia. galvanised chicken wire mesh and sealing of joints using sealing compound/elastomeric water proofing membrane . | SQM | 556 | | | |
| 508 | Providing and placing screed concrete 1:2:4 conforming to IS 456 with coarse sand and graded hard stone aggregate 12.5mm/6 mm nominal size on the roof at any level or thickness to maintain the slope of 1:100 Min. | CUM | 24 | | | |

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|---------------|--|--------------|-------------|---------------------------------|----------------------|---------------|
| 511 | Providing Anti termite chemical treatment of soil with Chloropyrifos emulsifiable concentrates (1%) conforming to IS :8944 | SQM | 396 | | | |
| 600 | Supplying & installation of premoulded joint filler in between equipment foundations, mat foundations, pile caps, walls, basement slabs etc. complete including labour, equipment and materials, sealing of joints including cost of sealing compound (Polysulfide base sealant as per is:12118) etc. complete as per specifications and drawings or as directed by Engineer for the following: | | | | | |
| 601a | 6mm thick joints. | Sq.m. | 150 | | | |
| 603 | 25mm thick joints. | Sq.m. | 150 | | | |
| 700 | M.S. EMBEDMENTS | | | | | |
| 701 | Supply , fabricating and fixing of embedments, MS inserts , pipe sleeves, guide rails, angle pieces, rungs of various diameters, plates of dimensions as required including cost of all labour, materials and equipment, transportation, loading, unloading, handling, welding, cutting, drilling, scaffolding and setting complete as per specifications, drawings and as directed by Engineer. | MT | 2 | | | |
| 800 | GROUTING AS PER SPECIFICATION FOR THE FOLLOWING: | | | | | |

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| 801 | Providing & grouting cement slurry mix at any elevation/depth with pressure pump for water retaining concrete structures , including fixing nozzles, cost of approved cement, admixture, curing, etc all complete as per specification and as directed by the Engineer. | SQM | 2000 | | | |
| 900 | DOORS, WINDOWS, VENTILATORS, LOUVERS, ROOF VENTILATORS, ROLLING SHUTTERS, PARTITIONS ETC. COMPLETE INCLUDING FRAMING, KICK PLATES, STOPPERS AS PER SPECIFICATION, DRAWINGS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- | | | | | |
| 901 | Providing and fixing Heavy Duty PVC doors of Syntex or approved equivalent make as per specification including of all fixtures and fittings as instructed by engineer incharge all complete. | SQM | 8 | | | |
| 902 | Providing and fixing steel windows/ventilators of fixed type with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision including glazing. Glazing shall be of 6.0mm thk. toughened safety glass panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete. | SQM | 19 | | | |

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|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 903 | Providing and fixing steel openable windows/ventilators with steel sections as per IS:1038, IS:1361 & IS:7452 latest revision including glazing. Glazing shall be of 4.0mm thick float glass panes including all fittings, metal beadings, hold fasts, primer painting as per specification all complete. | SQM | 26 | | | |
| 905 | Providing and fixing anodized extruded aluminium louvered ventilators conforming to IS:1948, IS:1949 fabricated from extruded sections of INDAL/JINDAL or approved equivalent having minimum 1.5mm wall thickness as per IS:1285, IS:733 and electro color coating of minimum 15 microns thickness including glazing. Glazing shall be clear float glass of 5.5mm thickness including snap fit type beading, concealed screws, fixtures, etc complete. Aluminium section shall be smooth, free of stains, straight, mitred & jointed mechanically wherever required. | SQM | 1 | | | |

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|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 907 | Providing and fixing steel single or double shutter doors. Shutters shall be of 18 gauge M.S. sheets an shall present a flush surface on the outside. The inside shall be stiffened with semi tubular edge and central stiffening rail which shall convey the lock, complete with pressed steel frame fabricated from 16G MS sheet, mortised, reinforced, drilled and tapped for hinges & locks, bolts, strikes, holdfast, adjustable floor anchors, floor tiles/weather bars etc, all fixtures of approved make, Godrej make Mortice lock with handle on both sides, primer painting as per specification. | SQM | 30 | | | |
| 913 | Providing and fixing of over head hydraulic door closers of "Yale" make or approved equivalent & quality as directed by Engineer. | NOS | 21 | | | |
| 1000 | BRICKWORK MASONRY INCLUDING SUPPLY OF MATERIAL, COST OF LABOUR, SCAFFOLDING ETC. COMPLETE AS PER SPECIFICATIONS, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- | | | | | |
| 1001 | Providing brick work in cement mortar 1:6 (1 part cement: 6 parts coarse sand) in walls, chambers in varying thickness from 230mm to 460mm at all depths, places and positions below plinth including raking out joints, curing, scaffolding etc. all complete excluding plastering and painting. | | | | | |

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| | I) Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50kg/cm2. | CUM | 15 | | | |
| 1002 | Providing brick work in cement mortar 1:6 (1 cement : 6 coarse sand) in walls, chambers etc. at all heights, in thickness 230mm at all heights , places and position above plinth including raking out joints, curing, scaffolding etc complete excluding plastering and painting. | | | | | |
| | I) Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50kg/cm2. | CUM | 195 | | | |
| 1003 | Providing brick work in cement mortar 1:4 (1 cement : 4 coarse sand) in partition walls, chambers etc. in thickness 115mm at all heights, places and position above or below plinth/graded level including providing 2 Nos. 6mm dia. bar at every third layer, raking out joints, curing, scaffolding etc. all complete using fly ask lime conforming to IS 12894 with crushing strength of 7kg/cm2 and clay ash bricks as per IS 13757, minimum percentage of fly ash shall be 25%, excluding plastering as per specification. | | | | | |
| | I) Using fly ash lime bricks confirming to IS 12894 with crushing strength of 50kg/cm2. | SQM | 12 | | | |
| 1007 | Dismantling existing brick work at all level including stacking and removing the debris within a lead of 1Km., including transportation, loading, unloading, etc all complete and as directed by Engineer. | CUM | 5 | | | |

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|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 1100 | PROVIDING AND LAYING DAMP PROOF COURSE INCLUDING ALL MATERIALS, LABOUR, SHUTTERING, CENTERING, CURING ETC., COMPLETE WITH THICKNESS AS SPECIFIED/SHOWN ON DRAWINGS OR AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- | | | | | |
| 1101 | Providing and laying damp Proof Course 50mm thick 1:1.5:3 concrete (10mm and down graded aggregate) with 2% of approved admixture of water proofing compound. Two layers of hot bitumen coating 85/25 grade as per IS:702 @ 1.7Kg./sqm shall be applied before & after the DPC as per specification. | SQM | 52 | | | |
| 1200 | CEMENT MORTAR PLASTER INCLUDING MAKING GROOVES WHEREVER REQUIRED, ALL MATERIALS, SCAFFOLDING, CURING ETC. COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- | | | | | |
| 1201 | Providing 18mm thick plaster in two layers outside the building/boundary wall in cement mortar 1:6 (First layer being 12mm thick and second layer 6mm thick) on walls, finished to a smooth finish as per specification including providing 3mmx3mm size grooves at junctions of two dissimilar materials. | SQM | 650 | | | |

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| 1202 | Providing 12mm thick plaster in two layers inside the building/boundary wall in cement mortar 1:4 on walls finished to a smooth finish as per specification. | SQM | 1090 | | | |
| 1203 | Providing 6mm thick plaster on ceiling/Concrete surface in cement mortar 1:3 finished to a smooth as per specification. | SQM | 489 | | | |
| 1204 | Providing drip course of size 25 mm dia. in cement mortar 1:4 as per specifications | RMT | 120 | | | |
| 1300 | PROVIDING FINISHES, PAINTING TO CONCRETE, PLASTERED SURFACES, SURFACE PREPARATION INCLUDING ALL MATERIALS, LABOUR, SCAFFOLDING ETC. ALL COMPLETE AS PER SPECIFICATION, DRAWING AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- | | | | | |
| 1301 | Providing and applying two or more coats of white washing with lime to give an even shade on ceiling including a priming coat complete. | SQM | 494 | | | |
| 1303 | Providing and applying two or more coats of distempering with oil bound washable distemper as per IS:428 of approved brand and manufacture to give an even shade including a priming coat with distemper primer over minimum 2mm thick P.O.P. punning complete. Rate shall be inclusive of 2mm thick P.O.P. | SQM | 532 | | | |

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|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 1305 | Providing and applying two coats of Acrylic emulsion paint of approved brand and manufacture to give an even shade over 3mm thick plaster of paris punning, one coat of solvent thinnable cement primer of approved shade & quality of Berger make complete as per specifications. 3mm thick plaster of paris punning shall be paid separately under item no. 1310 | SQM | 590 | | | |
| 1310 | Providing and applying 3mm thick plaster of paris punning on walls including preparation of surface, staging, etc. to achieve a smooth even surface all complete as per specification and as directed by Engineer. | SQM | 590 | | | |
| 1311 | Providing and applying ready made Epoxy Paint over areas other than steel structure which includes concrete surface with suitable pigments of approved shade as per specification and direction of Engineer. The epoxy paint shall be a two pack material and shall be resistant to water, splash, spillage & acidic environment. The epoxy paint coating shall be of 150micron thickness over epoxy primer. | SQM | 1200 | | | |

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| 1311a | Providing and coating for footing by polyamine cured epoxy as per specification or equivalent having DFT of 125-250 microns over and above the first coat which shall be 125-250 microns with a complete DFT of 250-500 microns for foundation above grade and 400-500 microns for foundation below grade. | SQM | 3950 | | | |
| 1312 | Providing & painting all plain plastered /concrete surfaces with textured paint of approved colour of SANDTAX mat or Equivalent of required shade as directed by Engineer-in-charge. | SQM | 1160 | | | |
| 1313 | Providing and applying on all embosed plastered/concrete surface with 2 or more coats of exterior Granular/textured finish (vineratex) paint of approved make and colour with a combination of resin bonded granular finish at all heights including material, labour, scaffolding, curing etc complete as per specification and as directed by Engineer-in-charge.. | SQM | 290 | | | |
| 1400 | FLOORING AND SKIRTING INCLUDING BASE LAYER AND ALL MATERIALS, LABOUR, CURING, POLISHING ETC. COMPLETE IN ALL RESPECTS AS SHOWN ON DRAWINGS, DESCRIBED IN SPECIFICATIONS AND AS DIRECTED BY ENGINEER FOR THE FOLLOWING:- | | | | | |

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| 1400a | Decorative Coloured 5 mm thick ceramic tiles up to 2.10m height with border tiles in toilets/canteen and 450 mm height over platform | SQM | 120 | | | |
| 1401 b | Providing and laying 50 mm thick heavy duty cement concrete flooring using cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded). | SQM | 36 | | | |
| 1401 c | Providing & applying oil resistant paint over the IPS cement concrete flooring | SQM | 36 | | | |
| 1401 d | Providing and laying 50 mm thick heavy duty cement concrete flooring with metallic hardener pigmented topping using 12 mm thick uniform graded treated iron particles in flooring . Under layer of 38mm thick cement concrete mix 1:2:4 (1 part cement, 2 parts sand and 4 parts stone chips 12.5 mm well graded) including material such as glass strips for partion etc all complete | SQM | 45 | | | |
| 1401 e | Providing and laying precast polished heavy duty cement concrete tiles (Carborundum) of size 300mmX300mmX25mm thick of approved shade as per IS 1237, laid in floors jointed with neat cement slurry with pigment to match the shade of the tiles including rubbing and polishing complete with laying as per IS 1443. Overall thickness shall be 50mm including concrete underbed 1:2:4. | SQM | 45 | | | |

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| 1401 f | Providing and fixing 20mm thick Acid / Alkali resistant vitreous tile lining confirming to IS:4457 in flooring/Dado and shall be laid over over bitumastic lining of minimum 12mm thick (to be laid in layers of 6mm each). The tiles shall be applied with 6mm thick Potassium Silicate bedding mortar as per IS:4441 & 4443 including preparation of surface, application of bitumen primer, curing etc all complete as per specification and direction of Engineer. Min. size of tiles shall be 100x200mm. (Tiles shall be 25mm for floor & 20mm for dado) | SQM | 30 | | | |
| 1413 | Providing and laying polished Kota stone 20 mm thk in flooring including under bed of average 30mm thk of 1 part cement,2 part sand : 4 parts stone chip by volume and brought to proper level. The kota stone slabs/tiles laid over under bed, pressed and tapped down with wooden mallet to the proper level, lifted and pressed again with thick cement slurry spread over the surface with fine joint finished including pigments, curing, grinding, granite polishing etc. complete. | SQM | 70 | | | |
| 1414 | Providing and laying polished Kota stone 20 mm thk in skirting projecting 6mm from adjacent plaster including 12mm thick cement mortar bedding 1:4 all complete . | SQM | 10 | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 1421 | Providing and laying Heavy Duty dust pressed Ceramic Tiles Mat Finish of size 300x300x7mm thick of reputed manufacturer of approved finish shade and colour including mortar underbed of 1:4 of min. thickness 30mm with cement slurry etc. complete | SQM | 230 | | | |
| 1422 | Providing and laying Heavy Duty dust pressed Ceramic Tiles Mat Finish of size 600x600x10mm thick of reputed manufacturer of approved finish shade and colour including mortar underbed of 1:4 of min. thickness 30mm with cement slurry etc. complete. | SQM | 230 | | | |
| 1417 | Providing and laying 7 mm thk ceramic tiles of mat finish variety of size 300x300 from reputed manufacturer, for skirting and dado up to specified height complete as per specification including 12mm thick cement mortar bedding 1:4 all complete . | SQM | 25 | | | |
| 1700 | PROVIDING AND FIXING RAIN WATER DOWN TAKE PIPES INCLUDING 2 COATS OF APPROVED PAINT OVER A PRIMARY COAT, ALL SPECIALS AND ACCESSORIES ETC. COMPLETE AS PER SPECIFICATION. | | | | | |
| 1702 | Providing rain water down take pipes of 150mm dia carbon steel conforming ASTM A53 grade B as per specifications and encasing with M30 grade concrete including placing and fixing of reinforcement at all levels all complete and as directed by engineer- in- charge | RM | 15 | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|--|-------------|-------------|---------------------------------|----------------------|---------------|
| 1703 | UPVC down take pipes of 150mm dia as per specifications | RM | 40 | | | |
| 1704 | UPVC rain water spout 40mm dia. On Sun shed as per drawing & specifications | Nos. | 75 | | | |
| 1801 | Providing and fixing PVC water stops - 225/230mm wide | RM | 1500 | | | |
| 1802 | Providing and fixing in position 25mm wide triangular timber/plastic crack inducer below grade slab as per specification. | RM | 650 | | | |
| 1803 | Providing and fixing perforated bitumin impengrated fiber board (IS 838) in expantion joints in grade slab complete as per specification | SQM | 90 | | | |
| 1811 | Taking delivery of matrials from BHEL Stores/store yard, loading, transportation to work site, unloading, Laying of earthing mats/rods including cutting to length, welding and applying two coats of red oxide paint over welded portion etc complete as per specification and as directed by Engineer. Note:- Earthing rods shall be provided by BHEL at free of cost). Agencies are requested to quote as per item description only. | MT | 8 | | | |
| 1800 | MISCELLANEOUS | | | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|--|-------------|-------------|---------------------------------|----------------------|---------------|
| 1813 | Designing, providing and fixing of Heavy duty galvanised friction anchor fasteners of Hilti/Equivalent make of dia. 16mm and appropriate length in concrete (minimum grade M30) to take direct tension of minimum 1.8Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer. | Each | 11 | | | |
| 1814 | Designing, providing and fixing of Heavy duty galvanised friction anchor fasteners of Hilti/Equivalent make of dia. 20mm and appropriate length in concrete (minimum grade M30) to take direct tension of minimum 2.5Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer. | Each | 11 | | | |
| 1815 | Designing, providing and fixing of Heavy duty galvanised chemical anchor fasteners of Hilti/Equivalent make of dia. 12mm and appropriate length in concrete (minimum grade M30) to take direct tension of minimum 1.0Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer. | Each | 11 | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|--|-------------|-------------|---------------------------------|----------------------|---------------|
| 1816 | Designing, providing and fixing of Heavy duty galvanised chemical anchor fasteners of Hilti/Equivalent make of dia. 16mm and appropriate length in concrete (minimum grade M30) to take direct tension of minimum 1.6Mton including anchor fastener, materials, equipment, labour, scaffolding complete as per direction of Engineer. | Each | 11 | | | |
| 2100 | WATER SUPPLY : | | | | | |
| | Water supply pipe lines shall be concealed as per IS : 1239 of Medium grade Galvanised Mild steel tubes | | | | | |
| 2101 | Providing and fixing in position tested heavy duty type chromium plated brass long neck bib cocks including sockets, union, nut etc complete - 15mm nominal bore. | NO. | 11 | | | |
| 2102 | Providing and fixing in position heavy duty brass stop cock of approved quality including all specials etc complete as directed by Engineer - 15mm nominal bore. | NO. | 4 | | | |
| 2103 | Providing and fixing in position heavy duty brass full way valve with wheel of approved quality 25mm nominal bore. | NO. | 4 | | | |
| 2105 | Providing and fixing GI pipes complete with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - 15 mm nominal bore. | RM | 60 | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|--|-------------|-------------|---------------------------------|----------------------|---------------|
| 2106 | Providing and fixing GI pipes complete with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - 20 mm nominal bore. | RM | 40 | | | |
| 2107 | Providing and fixing GI pipes complete with GI sockets, unions, elbows, tees, nipples etc and clamps including cutting and making good the walls etc complete - 25 mm nominal bore. | RM | 20 | | | |
| 2109 | Providing and fixing GI pipes complete with GI sockets, unions, elbows, tees, nipples etc including trenching & refilling, anti-corrosive paint etc all complete (for external work) - 20mm nominal bore (N.B). | RM | 35 | | | |
| 2112 | Providing and fixing 610mmx453mmx6mm thk mirror from reputed mirror manufacturer. Mirror shall be mounted with glass adjustable revolving CP brackets etc complete with CP screws as per specification. | NO. | 7 | | | |
| 2114 | Providing and fixing 20mm dia chromium plated M.S. pipes wall mounted towel rod with C.P. Brackets etc all complete as per specification. | NO. | 10 | | | |
| 2115 | Providing and fixing C.P. soap holder mounted with C.P. screws etc complete as per specification. | NO. | 10 | | | |
| 2116 | Providing and fixing C.P. liquid soap dispenser . Dispenser shall be round and easily revolving with removable threaded nozzle and mounted on C.P. brackets etc complete as per specification. | NO. | 10 | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|--|-------------|-------------|---------------------------------|----------------------|---------------|
| 2117 | Providing & fixing P.V.C. water tank of 1000 litres capacity (Syntex or approved equivalent make) in position. The work to include making all necessary inlet & outlet pipes, fixture, ball cocks, valves etc all complete as per specification and at all heights and levels. | NO. | 1 | | | |
| 2200 | SANITARY WORKS | | | | | |
| 2201 | Supply and fixing vitreous china Wash Basin oval shaped with R.S. or C.I. brackets painted white, 15mm chromium plated brass hot & cold faucets with nylon washers, chromium plated brass chain with rubber plug 32mm chromium plated brass waste of standard pattern, 32mm dia chromium plated brass trap unions, plastic connection pipe with chromium plated nuts, cutting and making good the walls where required etc complete as per specifications | NO. | 4 | | | |
| 2202 (a) | Providing and fixing approved vitreous china acid/alkali resistant laboratory sink of size 600x400x200mm with R.S. or C.I. brackets, chromium plated brass chain with rubber plug 40mm, CP brass waste and 40mm CP brass trap with necessary union complete including painting the fittings, cutting and making good the wall where required as per specification. | NO. | 5 | | | |
| 2202(b) | Providing stainless steel kitchen sink (750mm size) as per specification. | NO. | 1 | | | |

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|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 2203 | Providing and fixing colour glazed vitreous china European type water closet with siphon, open front solid plastic seat and plastic cover, low level 12.5 litre glazed vitreous china flushing cistern (same colour as WC) with valveless fittings, necessary C.P connections etc complete as per specification and directed by Engineer. | NO. | 2 | | | |
| 2204 | Providing and fixing colour glazed vitreous indian type Orissa pattern (580x440mm) water closet with flushing cistern with valveless fittings, necessary C.P connections etc complete as per specification and directed by Engineer. | NO. | 1 | | | |
| 2205 | Providing and fixing wall type glazed vitreous china urinals with photo voltaic control flushing system with flush pipes, lead pipes, gratings, traps and necessary C.P. fittings all complete as per specifications. | NO. | 2 | | | |
| 2206 | Supply, laying and jointing 75mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications. | RM | 70 | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|--|-------------|-------------|---------------------------------|----------------------|---------------|
| 2207 | Supply, laying and jointing 100mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications. | RM | 45 | | | |
| 2208 | Supply, laying and jointing 150mm dia heavy duty cast iron pipes including bends, branches and all other necessary fittings, lead caulking, a coat of bituminous paint, M.S holder bats/clamps, cutting and making good the walls and floors, jointing, testing etc all complete and as per specifications. | RM | 20 | | | |
| 2216 | Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - 100x100mm P or S Type. | NO. | 3 | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|--|-------------|-------------|---------------------------------|----------------------|---------------|
| 2217 | Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - 150x100mm P or S Type. | NO. | 3 | | | |
| 2218 | Providing and fixing square mouth S.W Gully trap grade 'A' complete with CI grating, brick masonry chamber and water tight CI cover with 300x300mm (inside) the weight of cover to be not less than 4.53 Kg and frame to be not less than 2.72 Kg as per drawing and specifications etc all complete size - 150x150mm P or S Type. | NO. | 2 | | | |
| 2219 | Construction of road /yard gullies in 250TH brickwork - 750mm deep with cement concrete M-20 grade foundation, including reinforcement, 12mm cement mortar (1:3) plastering both inside and outside, M.S. rungs @ 250 c/c, C.I. Grating along with frames as per IS standards including necessary earthwork in excavation, backfilling etc complete as per drawings/specifications. | NO | 2 | | | |
| 2220 | Providing and fixing C.I. floor traps with C.P jalli complete as per specification. | NO | 12 | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|--------|---|------|------|--------------------------|---------------|--------|
| 2300 | Structural Steel Works :- All items for fabrication work should include fabrication, welding and application of one coat primer paint at shop and one intermediate coat after erection, welding & alignment, preparation of detailed fabrication drawings based on engineering drawings and as per specifications inclusive of all necessary quality test to the satisfactions of engineer/customer including appointment of a separate agency, approved by BHEL for preparation of detailed fabrication drawing, review and approval of fabrication drawings in consultation with BHEL for the following: | | | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|----------|---|------|------|--------------------------|---------------|--------|
| 2301 (a) | Taking delivery of steel from BHEL Stores/store yard, loading, transportation, unloading at work site, fabrication, erection, alignment, welding , two coat primer painting (one coat of inorganic zinc primer at shop + one coat after erection - total DFT 100 micron of approved make) of Structural steel. Structural steel made from mild steel conforming to IS:2062, pipes conforming to IS: 1161/IS: 1239, chequered plate conforming to IS: 3052 and mild steel rounds at all elevations involving roled sections (including mild steel rounds), built up sectons fabricated out of plates, rolled sections and combination of plates and rolled sections, in columns, beams, gantry girders, bunkers, silos hoppers, roof trusses, portals, laced purlins, space frames, shear connectors, hankers, struts, monorails, galleries, stiffeners, wall beams, sheeting runners, brackets, stub columns, bracings, cleats, trestles, base plates, splice plates, chequered plate flooring, decking and seal plates, diaphragm, steel frame grid over false ceiling, walkway platforms, ladders, stairs, stringers, | MT | 5 | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| | treads, landings, toeplates, edge angles, embedments, lugs, posts, stays, louvers, lacings, gusset plates, safety chains for walkways adjacent to crane girders etc. collection of steel from stores, transportation, straightening , making cutting plan, cutting, bending, rolling, grinding, drilling, bolting, erection bolts & nuts (weight erection bolts & nuts to be paid separately under STNO. 2310(i), assembly, edge preparation, preheating (& use of low hydrogen/radiogenic electrodes as per specification), post heating, testing of welders, inspection of welds, visual inspection, non destructive and special testing of welders, inspection of welds, visual inspection, non destructive and special testing, rectification and correction of defective welding works, production test plate, inspection and testing, erection scheme, protection against damage in transit stability of structures, installation of temporary structures (Scaffolding, Access ladders, working platforms etc.), | | | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|--------|---|------|------|--------------------------|---------------|--------|
| | setting column bases, dismantling and removal of all temporary structures (Scaffolding, Access ladders, working platforms etc.), setting column bases, surface preparation with sand blasting as per specification, touch up painting (touch up painting of 75-100 micron of organic zinc or zinc rich/inhibiting epoxy as per specifications), dismantling and removal of temporary structures | | | | | |
| | (weight of temporary structure not payable) complete with all labor, materials, electrodes and other consumables equipment testing (mechanical and non destructive), preparation of fabrication drawings joint design calculations and all other general and special requirements. all other activities required for completion of the work including return of surplus/waste steel materials to BHEL store etc. as per specification, drawings and instructions of the Engineer. Note:- Structural steel shall be provided by BHEL at free of cost and agency has to draw and transport from BHEL stores/storage yard and return excess materials & waste/scrap materials to BHEL stores/storage yard as per Engineering's Instruction including all T&Ps and labours etc. complete. | | | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 2301(b) | Providing & application of chlorinated rubber finish paint of approved make and colour in coats of minimum 50 micron (DFT) over steel sections already having primer coats (as per ST NO. 2301a) at all elevations to achieve an even shade with all materials, labour, equipment, handling, including protection and cleaning, scaffolding etc. complete as per specification, drawings and instructions of the Engineer. | MT | 5 | | | |
| 2302 | Supplying, fabrication , transportation, erection and alignment of factory made MS Gratings(40 mm thk.) with steel conforming to IS:2062 at all elevations including preparation of design drawings and fabrication drawings in flooring, platforms, retaining walls, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads, fixing clamps etc. complete with other fittings and fixtures including all taxes, duties, transportation, packing, grinding, drilling, bolting (supply of permanent grade 'C' mild steel bolts and nuts to be paid separately under ST NO. 2309(i)), all welding, edge preparation, blast cleaning of steel surfaces to near white metal surface (Sa 2 1/2) followed by two coats of red oxide zinc-chromate primer and two coats of approved colour, enamel finish paint, testing, complete as per specifications, drawings and instructions of the Engineer. | MT | 2 | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 2303 | Supplying, fabrication , transportation, erection and alignment of factory made MS Gratings including Hot Dip Galvanising with minimum coating of ZINC 610g/Sqm as per IS: 4759 & other relevant codes etc. complete with steel conforming to IS:2062 at all elevations including preparation of design drawings and fabrication drawings in flooring, platforms, drain and trench covers, walk-ways, passages, staircases with edge binding strips and anti-skid nosing in treads, fixing clamps etc. complete with other fittings and fixtures including all taxes, duties, transportation, packing, grinding, drilling, bolting (supply of permanent grade `C' mild steel bolts and nuts to be paid separately under ST NO. 2309(i)), all welding, edge preparation, blast cleaning of steel surfaces to near white metal surface (Sa 2 1/2) followed by two coats of red oxide zinc-chromate primer and two coats of approved colour, enamel finish paint, testing, complete as per specifications, drawings and instructions of the Engineer. | MT | 2 | | | |
| 2309 | i) Supplying and fixing in position of permanent mild steel bolts (class 4.6 as per IS : 1367 and grade `C' as per IS: 1363) and nuts, washers etc. up to and inclusive of 39 mm diameter and upto 300mm long for structural steel work complete as per specification, drawings and instructions of the Engineer. | Quintal | 1 | | | |

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|---------------|--|-------------|-------------|---------------------------------|----------------------|---------------|
| | ii) Supply and fixing in positing of high strength structural bolts (of property class 8.8 and product grade `C' as per IS: 1367) and conforming to IS: 3757 and high strength structural hardened and tempered nuts (of property class `8' as per IS:1367) conforming to IS:6623 with hardened and tempered washers as per IS:6649 etc. up to and inclusive of 39 mm diameter and upto 300 mm long for structural steel work complete as per specification, drawings and instructions of the Engineer. | Quintal | 1 | | | |

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|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 2313 | Design, supply, fabrication, erection of stoplog gates as per specification with embedments required, lifting beams, special tools & plants, spare parts for three years, machining, casting, all materials such as structural steel, cast steel, stainless steel, brass used for seals, rubber seals, gears, ball and roller bearing, branch bushings, greasing, bolts, nuts, lugs, threaded fastners etc., cleaning, sand blasting, hot double dip galvanised with minimum coating of zinc 750 gms/sqm., following by an application of etching primer and dipping in black bitumen as per B.S. 3416, erection along with a second stage concreting to true plumb and levels, submission of drawings / fabrication drawings for engineers approval etc., all complete as per specifications and approved drawings. The leakage through rubber seal shall not be more than 5 lit/min/metre length of seal under maximum head.(only weight of structural steel including embedments shall be considered for payment purpose) | MT | 10 | | | |

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| ST. NO | Description | Unit | Qty. | RATE IN RS (In Figure) | Rate in Words | Amount |
|---------------|---|-------------|-------------|---------------------------------|----------------------|---------------|
| 2314 | Providing & fixing Galvanized MS ladder Rungs of various diameter in concrete walls as per drawings , specification and as directed by Engineer | MT | 2 | | | |
| 2315 | Providing & fixing 32 mm nominal bore medium class Galvanized MS handrailing (including supply of materials by bidders) | MT | 2 | | | |
| | Total of All above Items in Rs | | | | | |
| | Total of All above Items in Words (Rs | | | | | |