

BILL OF QUANTITY- CUM - RATE SCHEDULE

Name of Project : 400/220kV Substation at Arasur.

Name of Work : Civil Works of Yard & Buildings

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
1	Carriage of surplus excavated earth beyond initial lead of 50m by mechanical transport not necessarily all the time on pucca roads, for the following additional leads including loading, unloading, dressing of excavated material etc. completed as per specifications lead upto 1.0 km.				
(a)	Earth	cum	9765	34.77	339529.05
2	Earth work in excavation over areas (Exceeding 30 cms in depth, 1.5 m in width as well as 10 sq mtrs on the plan) including disposal of the excavated earth, lead upto 100 m and lift upto 3.5 m, disposed earth to be levelled and neatly dressed:				
(a)	All kinds of soil	cum	18155	91.50	1661182.50
3	Earthwork in excavation in foundation trenches or drains (not exceeding 1.5m in width or 10 sqm on plan) including dressing of sides and ramming of bottoms, lift upto 3.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m.				
(a)	All kinds of soil	cum	5500	93.55	514525.00
4	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc in layers not exceeding 20cm in depth : consolidating each deposited layer by ramming and watering, for all lifts and all leads	cum	13890	30.25	420172.50
5	Supplying and filling in plinth with fine sand under floors including, watering, ramming consolidating and dressing complete.	Cum	240	213.3	51192.00
6	Providing labour, material, tools and equipment, safe guards and incidentals as necessary for handling, transporting, placing of approved material (sand, stone etc.) below foundation and other areas, as directed by Engineer-in-charge in layers not more than 200 mm, watering, ramming, consolidating, compacting by flooding, dressing etc. as per required slopes, levels and elevations, all complete as per specification, drawings and to the satisfaction of the engineer-in-charge				
(a)	Broken stone filling (40 mm size) with interstices filled and compacted with sand)	cum	200	400.00	80000.00
7	Filling of approved materials i/c cost of materials, labour and equipment for handling, transportation, placing and compacting as required to the required density and to the required elevations as per specification, drawings and directions of Engineer-in-Charge.				
	Broken/crushed/non crushed stone of size 40 to 60mm for placing over transformer grating.	cum	19	400.00	7600.00
8	Clearing grass and removal of the rubbish up to a distance of 50 m outside the periphery of the areas cleared	100 sqm	100	89.10	8910.00
9	Supplying chemical emulsion in sealed containers including delivery as specified				
(a)	Chloropyriphos/Lindaneemulsifiable concentrate of 20 %	Litre	100	133.35	13335.00

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
10	Diluting and injecting chemical emulsion (excluding of cost of chemical emulsion) for ANTI- termite treatment and creating a continuous chemical barrier under and around the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall and floor, along the external perimeter of the building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surroundings of pipes and conduits etc. complete as per specification (plinth area of the building at ground floor only shall be measured for payment)				
(a)	Chlorpyrifos /Lindane E.C 20 % with 1% concentration	sqm	1000	32.60	32600.00
11	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering all work upto plinth level.				
(a)	1:4:8 (1 Cement : 4 coarse sand: 8 graded stone aggregate 40mm nominal size)	cum	1950	1404.70	2739165.00
(b)	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size)	cum	10	1588.35	15883.50
(c)	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size)	cum	120	1843.00	221160.00
12	Providing and laying damp-proof course 40mm thick with cement concrete 1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 12.5mm nominal size)	sqm	160	103.80	16608.00
13	Extra for providing and mixing water proofing material "impermo" or equivalent in cement concrete work @ 1kg per 50 kg of cement	Per bag of 50 kg cement used in the mix.	2350	19.25	45237.50
14	Applying a coat of residual petroleum bitumen of penetration 80/100 of approved quality using 1.70 kg/sq. m. on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	sqm	160	29.25	4680.00
15	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centring, shuttering, finishing and reinforcement - all work upto plinth level (rafts, columns, walls & plinth beams) .				
(a)	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	cum	4530	2116.2	9586386.00
16	Reinforced cement concrete work in walls (any thickness) including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc upto floor five levels excluding cost of centring, shuttering, finishing and reinforcement .				
	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	cum	40	2351.35	94054.00
17	Reinforced cement concrete work in beams, suspended floors, roofs having slope upto 15 degree, landings, balconies, shelves, chajjas, lintels, bands, plain window sills, staircases and spiral staircases upto floor five level excluding the cost of centring, shuttering, finishing and reinforcement				
	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	cum	230	2325.93	534963.90

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
18	....do.... In arches, domes, etc.	cum	30	2246.28	67388.40
19	.....do..... in fins, etc	cum	5	2247.60	11238.00
20	Providing & fixing in position precast cement concrete trench covers, coping, roof units, fascia, RCC grills, etc., at various elevations in all kinds of work including moulding, formwork, mixing, laying out, compacting and curing, storing, transportation, erection without damage, setting in position with cement and sand mortar, grouting etc all as per specs, drawings and directions of Engr-in-Charge but excluding the cost of reinforcement, inserts, edge angles, etc, and of following grade:				
(a)	1:1.5:3	cum	150	3100.00	465000.00
21	Grouting of block outs, pockets, foundations, bolts holes and underside of base plates with ready mixed grout or grout consisting of 2 parts by weight of sand, 1 part by weight of cement including approved plasticizer, non-shrink admixture, in the required proportion as recommended by manufacturer/Engineer, including placing, curing, cleaning, surface preparation, testing, etc. complete with labour, materials, equipment, handling, testing, etc. all complete as per specifications, drawings and instructions of the Engineer.	cum	15	2800.00	42000.00
22	Centring and shuttering including strutting, propping etc and removal of form for :				
(a)	Foundations, footings, bases of columns etc for mass concrete	sqm	9000	61.10	549900.00
(b)	Walls (any thickness) including attached pilasters, buttresses plinth and string courses etc.	sqm	5000	106.40	532000.00
(c)	Suspended floors, roofs, landings, balconies and access platform	sqm	1230	111.20	136776.00
(d)	Shelves (cast in situ)	sqm	20	111.20	2224.00
(e)	Lintels, beams, plinth beams, girders, bressumers and cantilevers	sqm	1125	87.95	98943.75
(f)	Columns, pillarspiers, Abutments, Posts and Struts	sqm	7000	135.80	950600.00
(g)	Stairs, (excluding landings) except spiral-staircase	sqm	10	106.40	1064.00
(h)	Vertical and horizontal fins individually or forming box louvers band, facias and eaves board.	sqm	100	156.5	15650.00
(i)	Edges of slabs and breaks in floors and walls Under 20 cms wide	RM	30	29.90	897.00
(j)	Weather shade, Chajjas, corbels etc including edges	sqm	20	134.45	2689.00
(k)	Arches, domes, vaults upto 6m span	sqm	80	378.55	30284.00
(l)	Extra for arches, domes, vaults exceeding 6m span	sqm	80	199.65	15972.00
23	Reinforcement of RCC work including straightening, cutting, bending, placing in position and binding all complete.	Reinforcement steel shall be provided by BHEL. Hence party to quote only the labour rates for cutting bending straightening placing in position etc.in the Price schedule format.			
(a)	Cold twisted/ TMT bars	Kg	250000		
24	Brick work with F.P.S bricks of class designation 75 in foundation and plinth in				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	1750	1384.50	2422875.00
25	Extra for brick work in superstructure above plinth level up to floor five level	cum	320	206.40	66048.00

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
26	Half brick massonary with bricks of class designation 75 in foundations and plinth in :				
(a)	Cement mortar 1:4 (1 cement : 4 coarse sand)	sqm	100	174.85	17485.00
27	Extra for half brick masonry in super structure above plinth level up to floor five level	sqm	100	22.00	2200.00
28	Extra for providing and placing in position 2 Nos. 6 mm dia. M. S. bars at every third course of half brick masonry (with F. P. S. bricks)	sqm	100	23.65	2365.00
29	Supplying and fixing rolling shutters of approved make, made of required size M. S laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push & pull operation complete including the cost of providing and fixing necessary 27.5 cm long wire springs grade No. 2 and M. S top cover of required thickness for rolling shutters.				
(a)	80 x 1.25 mm M. S laths with 1.25 mm thick top cover	sqm	16	889.25	14228.00
30	Providing and fixing steel glazed doors, windows and ventilators of standard rolled steel sections, joints mitred and welded with 15X3mm lugs 10cm long, embedded in cement concrete blocks 15X10X10cm of 1:3:6 (1 cement : 3 coarse sand : 6 graditng except necessary hinges or pivots as required.ed stone aggregate 20mm nominal size) or with wooden plugs and screws or rawl plugs and screws or with fixing clips or with bolts and nuts as required, including providing and fixing of glass panes with glazing clips and special metal sash putty of approved make complete including applying a priming coat of approved steel primer, excluding the cost of metal beading and other fitting except necessary hinges or pivots as required.				
(a)	Windows side hung	sqm	12	1065.75	12789.00
31	Providing and fixing pressed steel door frames manufactured from commercial mild steel sheet of 1.25 mm thickness including hinges jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50 x 25 mm, or base ties of 1.25 mm pressed mild steel welded or rigidly mixed together by mechanical means, adjustable lugs with split end tail to each jamb including steel butt hinges 2.5 mm thick with mortar guards, lock strike-plate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-Charge.				
	Profile A	RM	22	166.35	3659.70
32	Providing, supplying, fitting, erecting and fixing in position fireproof steel doors at various levels and elevations, as per drawings, specifications and directions of the Engineer-in-charge.				
(a)	Hollow double sheet plain shutters including sound deadened by filling mineral wool inside the voids. - 45mm thk	sqm	15	1250.00	18750.00

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
33	Providing and fixing circular/hexagonal M.S. sheet ceiling fan box with clamp of internal dia. 140 mm, 73 mm height, 3 mm thick rim, top and bottom lid of 1.5 mm M.S. Sheet. Lids shall be screwed in to M. S. box by means of 3 mm round headed screws, clamps shall be made of 12 mm dia. M. S. bar bent to shape as per standard drawing with overall length as 80 cm.	Each	18	44.50	801.00
34	Providing and fixing (all dia & length) GI foundation bolts in position with help of proper templates including nuts and washers all complete as per specs, drawings & directions of Engr-in-Charge. (Mass of zinc coating = 610gms/sqm)	kg	40000	45.15	1806000.00
35	Fixing (all dia & length) foundation bolts in position with help of proper templates including nuts and washers all complete as per drawings & directions of Engr-in-Charge. (Bolts to be supplied by BHEL)	kg	3000	3.00	9000.00
36	Structural steelwork welded in built up sections like monorails, channel/beam supports for roofing & trfr/reactor gratings, edge protection angles/insert plates with lugs & framed work including providing, cutting, hoisting, fixing in position/ embedding in concrete and applying a priming coat of approved steel primer all complete.	kg	25000	24.30	607500.00
37	Steelwork welded in built up sections/framed work including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer using structural steel etc., as required.				
	In trfr/reactor gratings, frames, guard bar, ladders, railings, brackets, gates and similar works.	kg	24000	29.15	699600.00
38	Supplying & fixing commercial quality flat bottom rail including cost of all materials, labour and T&P etc., for cutting, placing in position, aligning, levelling, straightening, etc, for transformer/reactor foundations & rail tracks, etc., all as per PGCIL specifications.	kg	13000	40.00	520000.00
39	52 mm thick cement concrete flooring with "Hardcrete" 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 metallic concrete hardener consisting of mix 1: 2 (1 cement hardener mix : 2 stone aggregate 6 mm nominal size) by volume with which "Hardcrete" hardening compound of "Snowcem India Ltd" or equivalent is mixed @ 2 litre "hardcrete" per 50kg of cement including cement slurry, but excluding the cost of nosing of steps etc. complete.	sqm	230	172.40	39652.00
40	Cement plaster skirting (up to 30 cm height) with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement.				
(a)	21 mm thick	sqm	35	110.20	3857.00

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
41	Providing and fixing 1st quality ceramic glazed tiles conforming to IS : 13753 of minimum thickness 5mm of approved make like NITCO, ORIENT, SOMANY, KAJARIA or equivalent make in all colours shade except begundy, bottle green, black of any size as approved by engineer-in-charge in skirting, risers of steps and dados over 12m m thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete.				
(a)	Ceramic tile skirting	sqm	75	373.30	27997.50
42	Providing and laying ceramic glazed floor tiles 300x 300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 13755 of NITCO, ORIENT, SOMANY, KAJARIA or equivalent make in colours such as white, ivory, grey, fume, red brown, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including pointing the joints with white cement and matching pigment etc complete.	sqm	35	478.90	16761.50
43	Providing & laying polished porcelain(vitrified) floor tiles of size 500X500 with water absorption less than 1% and flexural strength not less than 30N/mm2 in all colours and shades laid on 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete.	sqm	300	1082.10	324630.00
44	.....do..... but in skirting (300mm high)	sqm	30	1100.00	33000.00
45	Providing and fixing in position 19mm polished granite for flooring in a cement mortar 1:4, $\frac{3}{4}$ " thick made to a level with plumb levellor cut to size . The joints are filled with jointing compound matching to the tiles	sqm	130	2500.00	325000.00
46	Providing and fixing in position 6" skirting with 19mm polished granite with edges bevelled to a size of $\frac{1}{4}$ ". The granite outer surface to be flushed to the plaster finish of the wall .	RM	100	375.00	37500.00
47	Providing and fixing in position granite counter with 19mm granite mounted on 3" RCC slab supported by 4 $\frac{1}{2}$ " brick wall plastered on all sides as per the drg. The shelves are made of 18mm well cut and polished white marble slab. The outer side of the brick wall and the 3" RCC slab visible in the front is finished with 19mm granite with edges moulded on the exposed end. The skirting is also finished with granite. The shutters are finished with 19mm particle finished laminate edge lipping complete.The shutters are complete with handles and locks complete. The inside of the shutter shall be painted with synthetic enamel paint.	RM	5	4500.00	22500.00
48	Providing asbestos cement 6 mm thick corrugated sheets roofing and fixing with G, I, J or L hooks, bolts and nuts 8 mm diameter G.I plain and bitumen washers complete excluding the cost of purlins, rafters and trusses : corrugated sheets.				
a)	Up to 60 degree pitch.	sqm	200	153.65	30730.00

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
49	Providing gola 75 X 75 mm in cement concrete 1 : 2 : 4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 10 mm and down gauge) including finishing with cement mortar 1 : 3 91 cement : 3 fine sand) as per standard design:				
	In 75 X 75 mm deep chase	RM	60	43.00	2580.00
50	Making khurras 45 x 45 cm with average minimum thickness of 5cm cement concrete 1:2:4 (1 cement : 2 coarse sand: 4 graded stone aggregate of 20 mm nominal size) over PVC sheet 1mx1mx400 micron, finished with 12 mm cement plaster 1:3 (1 cement : 3 coarse sand) and a coat of neat cement rounding the edges and making and finishing the outlet complete.	Nos	5	68.50	342.50
51	Providing and fixing on wall face unplasticised rigid PVC rain water pipes conforming to IS:13592 type A including jointing with seal ring conforming to IS: 5382 leaving 10mm gap for thermal expansion single socketed pipes				
	110mm diameter	RM	110	126.65	13931.50
52	Providing and fixing on wall face unplasticised PVC moulded fittings/accessories for unplasticised rigid PVC rain water pipes conforming to IS:13592 type A including jointing with seal ring conforming to IS: 5382 leaving 10mm gap for thermal expansion				
(a)	110mm coupler	each	20	81.80	1636.00
(b)	110mm bend	each	20	109.60	2192.00
(c)	110mm shoe	each	20	215.15	4303.00
53	Providing and fixing unplasticised PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50mm hard wood plugs, screwed with MS screws of required length including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc complete				
	110mm	each	60	71.00	4260.00
54	12mm cement plaster of mix				
(a)	1:6 (1 cement : 6 fine sand)	sqm	1000	44.00	44000.00
55	15mm cement plaster on rough side of single or half brick wall of mix				
(a)	1:6 (1 cement : 6 coarse sand)	sqm	1000	54.15	54150.00
56	20mm cement plaster of mix				
(a)	1: 4 (1 cement : 4 coarse sand)	sqm	100	73.90	7390.00
57	6mm cement plaster to ceiling of mix				
(a)	1:4 (1 cement : 4 fine sand)	sqm	1000	40.00	40000.00
58	12mm cement plaster finished with a floating coat of neat cement of mix 1:4 (1 cement : 4 fine sand)	sqm	8500	62.10	527850.00
59	White washing with lime to give an even shade:				
(a)	New work (three or more coats)	sqm	1000	4.65	4650.00
60	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade New work (two or more coats) over and including priming coat with cement primer.	sqm	1000	29.70	29700.00

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
61	Finishing walls with Acrylic Smooth exterior paint "Trump" of M/s Snowcem India Ltd, or equivalent of required shade:				
(a)	New work (Two or more coats applied @ 1.67 kg/10 Sq mtrs over and including base coat of water-proofing cement paint Snowcem Plus or equivalent applied @ 2.20 Kg/ 10 sq mtrs).	sqm	1000	40.85	40850.00
62	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade :				
(a)	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture.	sqm	50	37.35	1867.50
63	French spirit polishing				
(a)	Two or more coats on new works including a coat of wood filler.	sqm	5	51.80	259.00
64	Making plinth protection 50 mm thick of cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone) aggregate 20 mm nominal size) over 75 mm bed of dry brick ballast 40 mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth.	sqm	300	143.95	43185.00
65	Providing & fixing in position best quality marble partition slab for urinals, of size 610x1150mm, 20mm thick, polished on both sides & machine cut, exposed corners rounded etc., complete	sqm	2	2,000.00	4000.00
66	Preparation of subgrade by excavating earth to an average of 22.5cm depth, dressing to camber and consolidating with road roller including making good the undulations etc., and disposal of surplus earth lead upto 50m.	sqm	8600	21.50	184900.00
67	Consolidation of subgrade with power road roller of 8 to 12 tonne capacity including making good the undulations etc. with earth or quarry spoils etc. and rerolling the subgrade.	sqm	8600	0.65	5590.00
68	Extra for compaction of earthwork in embankment under optimum moisture conditions to give at least 95% of the maximum dry density (Proctor density)	sqm	8600	2.90	24940.00
69	Supplying and stacking of graded stone aggregate at site of size range				
(a)	63mm to 45mm	cum	1285	389.65	500700.25
(b)	53mm to 22.4mm	cum	1285	432.55	555826.75
70	Laying WBM with specified stone aggregate stone screening and blinding material including screening, sorting, spreading to template and consolidation with power road roller of 8 to 10 tonne capacity etc., complete (payment for stone aggregate, screenings, kankar, moorum and red bajri etc., to be made separately)				
(a)	Base course with stone aggregate 63mm to 45mm including stone screening 13.2mm size.	cum	1285	122.00	156770.00
(b)	Base course with stone aggregate 53mm to 22.4mm including stone screening 11.2mm size.	cum	1285	122.00	156770.00
71	Supplying and stacking of stone screenings/chippings at site				
(a)	13.2mm nominal size (Type A)	cum	125	470.95	58868.75

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
(b)	11.2mm nominal size (Type B)	cum	125	465.10	58137.50
72	Providing and fixing coloured vitreous china pedestal type water closet (European type W.C pan) with seat and lid, 10 litre, low level flushing cistern with fittings & CI/MS brackets, 40mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete including painting of fittings and brackets cutting and making good the walls & floors wherever required				
(a)	W.C pan with ISI marked coloured solid plastic seat and lid with vitreous china flushing cistern & CP flush bend.	Nos.	3	2,702.35	8107.05
73	Providing and fixing coloured vitreous china flat back half stall urinal of 580X380X350 with 10 litre PVC automatic flushing cistern, Parryware/Hindware/Seabird/Orient (Coral) with fittings, standard size CP brass flush pipe, spreaders with unions and clamps all in CP, brass with waste fittings as per IS: 2556 CI trap with outlet grating and other couplings in CP, brass including painting of fittings and cutting and making good the walls and floors wherever required.				
(a)	Range of three half stall urinals	Nos.	1	5,484.15	5484.15
74	Providing and fixing coloured vitreous china wash basin with C.I/M.S brackets, 15 mm C.P brass pillar taps, Kingston/Gem/Techno/Parko, 32 mm C.P brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required :				
	Coloured vitreous China Wash basin size 630 x 450 mm with a single 15 mm C.P brass pillar taps.	Nos.	3	964.50	2893.50
75	Providing and fixing Saleem Stainless steel A ISI 304 (18/8) Kitchen sink as per IS 13983 with C.I brackets, and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the wall wherever required :				
(a)	Kitchen sink with drain board				
(l)	510 x 1040 mm bowl depth 178mm	Each	1	2164.15	2164.15
76	Providing and fixing PVC waste pipe for sink or wash basin including PVC waste fittings complete :				
(a)	Flexible pipe				
(i)	32 mm dia.	Nos.	5	31.05	155.25
(ii)	40 mm dia.	Nos.	1	33.25	33.25
77	Providing and fixing CP brass toilet paper roll holder.	Nos.	3	83.65	250.95
78	Providing & fixing in position towel rail of approved make of 600mm length, 25mm dia with a pair of brackets or flanges fixed to wall with necessary screws, plugs, etc., all as specified & directed.	Nos.	3	108.80	326.40
79	Providing & fixing in position towel ring of approved make and diameter with bracket or flange fixed to wall with necessary screws, plugs, etc., all as specified & directed.	Nos.	3	244.55	733.65
80	Providing & fixing approved make double type coat & hat hooks with flanges, fixed to wall / shutter, etc. with necessary screws, washers & plugs all as specified & directed.	Nos.	10	100.00	1000.00

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
81	Providing & fixing CP/PP liquid soap holder of approved make to the wall with necessary CP /PP brackets, CP screws, washers, plugs etc. all as specified & directed.	Nos.	3	200.00	600.00
82	Providing & fixing in position 100mm dia vitreous chinaware half round channel of approved make to correct grade, level, opening for floor trap below urinals set in CM 1:3 & pointed using white cement etc., complete.	RM	10	300.00	3000.00
83	Providing and fixing in position best quality approved make 6mm bevelled edge mirror of size as mentioned below mounted on 12mm thick water proof plywood backing and hardwood beading alround and mirror fixed to the backing with 4 Nos. of CP cap screws & washers, including fixing the mirror to the wall with necessary screws, plugs & washers etc., complete.				
(a)	Size 1000X600	Nos.	3	700.00	2100.00
84	Providing and fixing GI pipes complete with GI fittings and clamps, including cutting and making good the walls etc. (internal works)				
(a)	Exposed on wall / terrace				
(i)	15mm dia nominal bore.	RM	3	62.65	187.95
(ii)	32mm dia nominal bore.	RM	20	123.80	2476.00
(iii)	50mm dia nominal bore.	RM	40	203.00	8120.00
(iv)	65mm dia nominal bore.	RM	15	300.00	4500.00
(v)	80mm dia nominal bore.	RM	11	400.00	4400.00
(b)	Concealed pipe including painting with anticorrosive bitumastic paint, cutting chases and making good the wall.				
(i)	20mm dia nominal bore	RM	20	102.40	2048.00
(ii)	25mm dia nominal bore	RM	5	120.00	600.00
(iii)	32mm dia nominal bore	RM	10	200.00	2000.00
(iv)	40mm dia nominal bore	RM	25	250.00	6250.00
85	Providing and fixing GI pipes complete with GI fittings including trenching and refilling etc. (External works)				
(a)	25mm dia nominal bore.	RM	80	88.8	7104.00
(b)	80mm dia nominal bore.	RM	200	270.15	54030.00
86	Providing and fixing gun metal ball valve of following sizes with operating lever conforming to IS specification				
(a)	20 mm nominal bore	Nos.	10	150.00	1500.00
(b)	32 mm nominal bore	Nos.	8	230.85	1846.80
(c)	50 mm nominal bore	Nos.	2	427.15	854.30
87	Providing and fixing gun metal non-return valve of approved quality (screwed end)				
(a)	50 mm nominal bore				
(i)	Horizontal.	Nos.	2	519.05	1038.10
88	Providing and fixing uplasticised PVC connection pipe with brass unions. Of 15mm diameter and 450mm length.	Nos.	5	31.80	159.00
89	Providing & fixing in position PVC floor traps of self cleansing design with outlet size of 75mm diameter of approved make, including making connection with PVC soil/waste pipes using rubber gaskets, embedding the trap in 150 mm thick PCC 1:2:4, providing & fixing of top tile & strainer of CP or PVC on top of the trap etc., complete all as specified & directed.	Nos.	10	500.00	5000.00

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
90	Supplying, laying, jointing & fixing in position under floor against wall in chases PVC SWR drainage pipes, specials & rubber rings of approved make conforming to IS:13592 (4 kg/sq.cm.) and IS:5382 for sockets as per manufacturer's specification including cutting the pipes to the required lengths, necessary excavation, chasing & restoring to the original condition, testing etc., (Specials at junctions of lateral pipe & vertical stack must have access doors for inspection).				
(a)	75 mm	RM	30	150.00	4500.00
(b)	110 mm	RM	20	200.00	4000.00
91	Constructing masonry chamber 60 x 60 x 75 cm, inside with 75 class designation brick work in cement mortar 1:5 (1 cement : 5 fine sand) for sluice valve, with CI surface box 100 mm. Top diameter, 160 mm bottom dia and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1cement : 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick finished with a floating coat of neat cement complete as per standard design. with FPS bricks.				
(a)	With FPS bricks.	Nos.	3	2,187.65	6562.95
92	Painting GI pipes and fittings with synthetic enamel white paint over a ready mixed priming coat, both of approved quality for new work.				
(a)	32mm dia nominal bore.	RM	20	5.85	117.00
(b)	50mm dia nominal bore.	RM	40	8.15	326.00
(c)	65mm dia nominal bore.	RM	15	15.00	225.00
(d)	80mm dia nominal bore.	RM	11	25.00	275.00
93	Painting GI pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality.				
(a)	50mm dia nominal bore.	RM	50	4.15	207.50
94	Providing and filling sand of graded zone V or coarser grade alround the GI pipes in external work.				
	50mm dia nominal bore.	RM	50	17.40	870.00
95	Providing and fixing GI union in GI pipe including cutting and threading the pipe and making long screws etc. complete (new work)				
(a)	32 mm nominal bore.	Nos.	10	85.20	852.00
(b)	40 mm nominal bore.	Nos.	8	111.85	894.80
(c)	50 mm nominal bore.	Nos.	5	159.55	797.75
(d)	65 mm nominal bore.	Nos.	1	286.20	286.20
96	Providing and placing on terrace (at all floor level) polyethylene water storage tank of approved brand and manufacture 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. (2Nos of 2000litres capacity each)	per litre capacity	4000	3.95	15800.00
97	Providing and fixing CP brass bib cock of approved quality conforming to IS :8931.	Nos.	4	163.75	655.00
(a)	15 mm nominal bore.				

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
98	Providing and fixing CP brass angle valve for basin mixer and geyser points of approved quality conforming IS :8931	Nos.	2	185.80	371.60
(a)	15 mm nominal bore.				
99	Providing, laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the proportion of 1:1 (1cement :1 fine sand) including testing of joints etc. complete.				
(a)	150mm diameter.	m	100	111.60	11160.00
100	Providing and laying cement concrete 1:5:10 (1 cement :5 coarse sand : 10 graded stone aggregate 40 mm nominal size) around S.W pipes including bed concrete as per standard design.				
(a)	150mm diameter.	m	100	233.35	23335.00
101	Providing and fixing square-mouth SW gully trap grade 'A' complete with CI grating brick masonry chamber with water tight C.I. cover with frame of 300X300 size (inside) the weight of cover to be not less than 4.5 Kg and frame to be not less than 2.70 Kg as per standard design				
(a)	100 x 100 mm size p type				
(i)	With FPS Bricks class designation 75	Nos.	3	489.20	1467.60
102	Providing and laying non-pressure NP3 class (light duty) RCC pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 cement: 2 fine sand) including testing of joints etc., complete.				
	250mm dia. RCC pipe	RM	50	250.00	12500.00
	300mm dia. RCC pipe	RM	105	400.00	42000.00
	600mm dia. RCC pipe	RM	20	800.00	16000.00
103	Constructing brick masonry manhole in cement mortar 1:4 (1 cement :4 coarse sand) RCC top slab with 1:2:4 mix (1 cement : 2coarse sand : 4 graded stone aggregate 20 mm nominal size) foundation concrete 1:4:8 mix (1cement : 4 coarse sand :8 graded stone aggregate 40 mm nominal size) inside plastering 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement: 2 coarse sand :4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design.				
(a)	Inside size 90 x 80 cm and 60 cm deep including CI cover with frame (light duty) 455 x 610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg). With FPS Bricks class designation 75.				
(i)	With F.P.S. bricks with class designation 75.	Nos.	4	2,998.40	11993.60
(b)	Inside size 120 x 90 cm and 90 cm deep including CI cover with frame (medium duty) 500mm internal diameter total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg)				
(i)	With FPS Bricks class designation 75.	Nos.	1	5,340.65	5340.65
104	Extra for depth for manhole				
(a)	Size 120 x 90 cm				
(i)	With FPS Bricks class designation 75.	m	1.00	2,039.15	2039.15

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
105	Providing MS foot rests including fixing in manholes with 20 x 20 x 10 cm cement concrete blocks 1:3:6 (1 cement :3 coarse sand :6 graded stone aggregate 20 mm nominal size) as per standard design.				
(a)	With 20 x 20mm square bar.	Nos.	25	84.20	2105.00
106	Providing and fixing anodised aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular and other sections of approved make conforming to IS:733 and IS : 1285, anodised transparent or dyed to required shade according to IS : 1868. (Minimum anodic coating of grade AC 15) fixed with rawl plugs and screws or with fixing clips, or with expansion hold fastners including necessary filling up of gaps at junctions at top, bottom and sides with required PVC/neoprene felt etc and joined mechanically wherever required including cleat angle, Aluminium snap beading for glazing / panelling, C.P. brass/stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge (Glazing and panelling to be paid for separately)				
(a)	For fixed portion.	kg	500	188.20	94100.00
(b)	For shutters of doors, windows and ventilators including providing and fixing hinges/pivots and making provision for fixing of fittings wherever required including the cost of PVC/neoprene gasket required (Fittings shall be paid for separately)	kg	500	198.50	99250.00
	SECTION FOR AL. WINDOWS:				
	2 Shutters gutter bottom section- 61.85X37X45.5 WS 1027, 1.058 Kg/mt, side and top section 61.85X31.75, WS 1029, 0.650 Kg/mt, shutter sections, one side and both side open 40X18X10 WS 1023, 0.43 Kg/mt, Interlock sections 40X18X26.5X10, WS 1022, 0.530 Kg/mt, with 4 mm plain float glasses, PVC gaskets, Nylon wheels, Aluminium handles cum locks. Jindal/ Indal/ Hindalco make				
	SECTION FOR AL. DOORS:				
	2-1/2 X 1-1/2 sections for outer frame for fixed partition 63.5 X 38.1 X 1.5 mm, DP 1212, 0.700 Kg/mt, with glazing clips 17.27 X 19.05 X 1 mm, 0.098 Kg/mt, (equivalent section) with 5 mm plain float glasses and rubber gasket with bottom three feet pre-laminated sheet of 12 mm thick of colour grey, ivory. Jindal/Indal/ Hindalco make				
	SECTION FOR AL. PARTITION:				
	outer frames 2-1/2 X 1-1/2, 63.5 X 38.10 X 1.5 mm, DP 1212, 0.700 Kg/mt, to work as fixed partition & door with door verticals 44.45 X 47.62 X 1.5 mm, DP 2022, 0.850 Kg/mt, top and centre pieces				
107	Providing & fixing 12mm thick prelaminated 3 layer medium density (exterior grade) particle board Grade I, Type II conforming to IS: 12823 bonded with phenol formaldehyde synthetic resin of approved brand and manufacture in panelling fixed in aluminium doors with CP brass/ stainless steel screws etc., all complete as per architectural drawings & directions of Engineer-in-charge				
(a)	Prelaminated particle board with decorative lamination on one side and balancing lamination on other side.	sqm	10	615.55	6155.50

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
108	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions, etc., with PVC/neoprene gasket, etc., complete as per the architectural drawings and directions of Engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic item).				
(a)	With glass panes of 4.0mm thickness (weight not less than 10.0 Kg/sqm)	Sqm	50	413.90	20695.00
(b)	With glass panes of 5.50 mm thickness (weight not less than 13.75 kg/sqm)	Sqm	150	525.75	78862.50
109	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS:6315 marked "hardwyn" make(Model 3000) or equivalent for doors including cost of cutting floors as required, embedding in floors and cover plates with brass pivot and single piece MS sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge				
(a)	With stainless steel cover plate.	each	8	1,626.85	13014.80
110	Providing and laying cement based water proofing treatment of roofs, balconies, terraces etc consisting of following operations:				
(a)	Applying and grouting a slurry coat of neat cement using 2.75 kg/m ² of cement admixed with proprietary water proofing compounds conforming to IS: 2645 over the RCC slab including cleaning the surface before treatment.				
(b)	Laying cement concrete using broken bricks/brick bats 25mm to 100mm size with 50% of cement mortar 1:5 (1 cement : 5 coarse sand) admixed with proprietary water proofing compound conforming to IS: 2645 over 20mm thick layer of cement mortar of min 1:5 (Cement : 5 coarse sand) admixed with proprietary water proofing compound conforming to IS: 2645 to required slope and treating similarly the adjoining walls upto 300mm height including rounding of junctions of walls and slabs.				
(c)	After two days of proper curing applying a second coat of cement slurry admixed with proprietary water proofing compound conforming to IS: 2645.				
(d)	Finishing the surface with 20mm thick joint less cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with proprietary water proofing compound conforming to IS: 2645 and finally finishing the surface with trowel with neat cement slurry and making of 300 x 300 mm square.				
(e)	The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-charge.				
	With average thickness of 120 mm and minimum thickness at khurra at 65 mm.	sqm	800	282.80	226240.00
111	Providing and installing PVC sealing strip at all elevations including the cost of all labour, materials, equipment, cutting, bending, placing, jointing, splicing, anchors etc. complete as per drawings				
(a)	225 mm wide with a central bulb and at least 20 bibs and a thickness of 8 mm.	RM	200	300.00	60000.00
112	Providing & fixing sun film to windows/doors of AC rooms as per specifications, drawing & directions of Engineer-in-Charge.	sqm	100	250	25000.00

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
113	Constructing septic tank, upflow filter and soak pits all complete as per PGCIL dwg nos C-ENGG-STD-CRB-SINGLE PLUMB-226 & 227, specification & directions of Engineer in charge.	Set	1	150,000.00	150000.00
114	Providing & fixing chain link fencing including all allied activities, all complete as per PGCIL specification (Clause 8.0, Technical Specification Section: Civil Works C/ENGG/SPEC/CIVIL Rev No:06), drawing and directions of Engineer-in-charge. (Rate shall be inclusive of all items like chainlink fence, galvanised tubular posts, flats, PCC. painting etc.)	RM	140	1400.00	196000.00
115	Providing & fixing gate including all allied activities, all complete as per PGCIL specification (Clause 8.0, Technical Specification Section: Civil Works C/ENGG/SPEC/CIVIL Rev No:06), drawing and directions of Engineer-in-charge. (Rate shall be inclusive of all items like pipes, rollers, painting, RCC, etc.)	No	2	40000.00	80000.00
116	Providing antiweed treatment and stone spreading including all allied activities all complete as per PGCIL specification (Clause 4.0, Technical Specification Section: Civil Works C/ENGG/SPEC/CIVIL Rev No:06) and directions of Engineer-in-charge.(Rate shall be inclusive of all items like deweeding, preparation of subgrade, PCC 1:5:10, cement slurry of mix 1:6 and 100mm uncrushed/crushed/broken stone, etc..	sqm	33000	160.00	5280000.00
117	Supply, delivery, installation, testing, commissioning of following capacity dewatering pumps all complete as per PGCIL specification & directions of Engineer in Charge.				
(a)	5 HP	No	2	15,000.00	30000.00
(b)	0.5 HP	No	2	10,000.00	20000.00
				TOTAL:	35577350.65

118	Construction of store				
a	Open store (as per specs & drgs enclosed with NIT) Qty may vary as per site requirement	Sq.m	5000		
b	Closed store 200 Sqm (As per drg & specs enclosed with NIT) (Party to quote lumpsum price against this item)	No	1	Lumpsum	
119	For item of works which are required for successful completion of work but not covered in above BOQ items, but are covered under DSR-2002, the quoted figure at serial no "a" of price schedule format shall be applicable and binding to the bidder .	--			

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
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BILL OF QUANTITIES FOR UNDER GROUND EARTHING AND ELECTRODES

S. No	Description	Unit	Quantity (Arasur)	Rate	Amount
1	<p>Unloading, storing and laying of 40 mm dia MS Rods at a depth of -----600----- mm measured from the top of FGL (either top of gravel or top of land as the case may be) for bringing out risers just below gravel level near the equipment foundations as per requirement including following works:</p> <ul style="list-style-type: none"> - excavation of trenches - laying of MS rod - welding of rods (refer Drg No. TB-STD-316-Rod Welding Rev 00 for Welding details of rods) - backfilling of soil for bringing out pig tail risers of 40 dia MS rod (approximately 2000) for equipments. Risers shall be raised from the earthmat (at 600 mm depth) to 150 mm above ground level to the nearest point of the equipment. This shall include all cutting, bending, welding, fixing, application of zinc rich paint on cutting surface, etc to the main earthmesh. - any other work necessary to complete the laying of earthmat <p>(40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- -----30-----% at contract stage.)</p>	MT	25		
2	<p>Fabrication & laying of Auxiliary Mat of 40 mm Dia MS Rods at a depth of 300 mm from top of FGL including excavation & backfilling as per Drg No. TB-STD-316-Auxiliary mat Rev 00.</p> <ul style="list-style-type: none"> - any other work necessary to complete the laying of earthmat <p>(40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- -----30-----% at contract stage.)</p>	Nos.	90		
3	<p>Installing of Pipe Electrode(to be driven - 3.0 Mtr) as per Drg. No. TB-STD-316-Pipe Electrode Rev 00 including following works:</p> <ul style="list-style-type: none"> - excavation - installing the pipe electrode with alternate layers of Coke & charcoal, salt - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work <p>(GI Pipe, Nuts, Bolts & Washers and funnel with wire mesh will be supplies by BHEL. Quantity may vary by +/- -----50-----% at contract stage).</p>	Nos.	6		

S.NO	Description of Item	Unit	Quantity	Unit Rate (Rs)	Amount (Rs)
4	Installing of 40 mm diameter Rod Electrode with test pit as per Drg. No. TB-STD-316-Rod Electrode Rev 00 including following works for reactors and transformers: <ul style="list-style-type: none"> - excavation - installing the rod electrode - backfilling and compaction - Casting the Test Pit with Cast Iron covers - any other work necessary to complete the work (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- -----30-----% at contract stage)	Nos.	4		
5	Installing of 40 mm diameter Rod Electrode without test pit including following works: <ul style="list-style-type: none"> - excavation/hammering of rod in earth - installing the rode electrode - backfilling and compaction - any other work necessary to complete the work (40 Diameter MS rod will be supplied by BHEL Quantity may vary by +/- -----30-----% at contract stage)	Nos.	100		
Total Rs.					