

CONSTRUCTION OF LECTURE HALL COMPLEX (PHASE-II) AT N.I.T. ROURKELA**ABSTRACT OF COST**

	DESCRIPTION	D.S.R AMOUNT	NON-DSR AMOUNT
1	CIVIL WORKS	175101697.40	107813904.79
2	PLUMBING WORKS	2597076.85	5574845.17
3	ELECTRICAL WORKS	9126330.50	20310640.00
4	FIRE FIGHTING WORKS	89893.00	8407459.00
5	HVAC	688759.00	47914750.00
6	SOLAR ENERGY	-	6530681.00
7	FDA	-	4828320.00
	SUB TOTAL	187603756.75	201380599.96
	G.TOTAL	388984356.72	

CONSTRUCTION OF LECTURE HALL COMPLEX (PHASE-II) AT N.I.T. ROURKELA

CIVIL WORKS

SUMMARY OF COST

S.NO	NAME OF SUB-HEAD	AMOUNT	
		DSR 2012 items	Non Scheduled items
I	EARTH WORK	2781261.00	
II	CONCRETE WORK	2845003.39	
III	REINFORCED CEMENT CONCRETE	121648483.77	
IV	BRICK WORK	10019211.30	
V	STONE WORK	9023730.50	
VI	MARBLE WORK	1322496.58	
VII	WOOD WORK	227161.25	
VIII	STEEL WORK	395300.64	
IX	FLOORING	16495789.13	
X	ROOFING	1485468.61	
XI	FINISHING	6010690.60	
XII	ROAD WORK	151995.60	
XIII	DRAINAGE	28404.35	
XIV	ALUMINIUM WORK	31108.07	
XV	WATER PROOFING	2635592.61	
XVI	NON SCHEDULE ITEMS	-	107813904.79
	TOTAL	175101697.40	107813904.79
		A-1	A-2

Signature of N.I.T.

1 of 1
Civil Summary

Signature of Contractor

PROPOSED LECTURE HALL COMPLEX

BILL OF QUANTITIES

CIVIL WORKS

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
1	2.6	Earth work In excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30cm in depth, 1.5m in width as per as 10 sq.m on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m, disposed earth to be levelled and neatly dressed.				
	2.6.1	All kinds of soil	Cu.M	6612.79	129.35	855364.45
2	2.7	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth, 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed				
	2.7.1	Ordinary Rock	Cu.M	661.28	197.75	130768.12
3	2.8	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5m in width or 10 Sq.M on plan) including dressing of sides and ramming ob bottoms, lift upto 1.5m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50m.				
	2.8.1	All kinds of soil	Cu.M	98.03	130.80	12822.32
4	2.9	Excavation work by mechanical means (Hydraulic excavatory)/manual means in foundation trenches or drains not exceeding 1.5m in width or 10 Sq.M on plan including dressing of sides and ramming or bottoms lift upto 1.5m, including getting out the excavated soil and disposal of surplus excavated soils as directed, within a lead of 50m.				
	2.9.1	Ordinary Rock	Cu.M	9.80	212.00	2078.27
5	2.24.1	In or under water and/or liquid mud, includig pumping out water as required.	metre depth	3.20	25.87	82.78
6	2.24.2	In or under foul position,including pumping out water as required.	metre depth	3.20	32.34	103.49
7	2.25	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 , lead up to 50 m and lift up to 1.5 m.				
			Cu.M	4844.30	83.80	405952.34

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
8	2.26	Extra for every additional lift of 1.5 m or part thereof in:				
	2.26.1	All kinds of soil.				
	(i)	1.5m to 3.00m	Cu.M	1045.25	34.60	36165.65
	(ii)	3.00m to 4.50m	Cu.M	1045.25	62.00	64805.50
9	2.27	Supplying and filling in plinth with Jamuna river sand under floors including, watering, raming consolidating and dressing complete.				
10	2.28	Surface dressing of the ground including removing vegetation and in equalities not exceeding 15cm dep and disposal of rubbish, lead upto 50m and lift upto 1.5m.	Cu.M	1627.87	749.50	1220088.57
	2.28.1	All kinds of soil.	100			
11	2.32	Clearing grass and removal of the rubbish upto a distance of 50 m outside the periphery of the area cleared.	Sq.M	53.92	935.25	50428.68
			100			
			Sq.M	38.69	247.00	9556.43
13	2.36	Deduct for disposed soil levelled and neatly dressed.	Cu.M	430.00	-25.35	-10900.50
14	2.37	Supply and stacking of Fly ash conforming to IRC- 58 at site, including carriage, loading , unloading & stacking up to any lead (measured stacks will be reduced by 20% for payment).				
			Cu.M	22.00	110.75	2436.50
15	2.38	Filling with available fly ash and earth (excluding rock) in trenches or embankment in layers (each layer should not exceed 15 cm), with intermediate layer of compacted earth (Soil density of 98%) after every four layers of compacted depth of fly ash, sides & top layer of filling shall be done with earth having total minimum compacted thickness 30 cm or as decided by Engineer -in-charge, including compacting each layer by rolling/ ramming and watering, all complete as per drawing and direction of Engineer -in -charge.				
			Cu.M	18.00	83.80	1508.40
				TOTAL [I]		2781261.00

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
16	4.1	Providing and laying in position cement concrete of specified grade excluding the cost of centring and shuttering - all work upto plinth level.				
	4.1.8	1:4:8 (1 cement :4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	Cu.M	752.10	3593.30	2702520.93
17	4.2	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks.				
(i)	4.2.3	1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	Cu.M	4.25	5272.40	22425.57
(ii)	4.2.5	1:3:6 (1 cement :3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	Cu.M	3.96	4782.35	18917.47
18	4.10	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)				
19	4.12	Extra for providing and mixing water proofing material Impermo or equivalent in cement concrete work @ 1 kg per 50 kg of cement	Sq.M per 50 kg cement	70.21	207.55	14572.64
20	4.13	Applying a coat of residual petroleum bitumen of penetration 80/100 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil				
21	4.17	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement :3 coarse sand : 6 graded stone aggregate 20mm nominal size) over 75mm bed by dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth	Sq.M	70.21	96.65	6786.06
			Sq.M	233.61	338.75	79135.39
				TOTAL [II]		2845003.39

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
22	5.2	Reinforced cement concrete work in wall (any thickness) including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutment, posts and struts etc, up to floor five level excluding cost of centering, shuttering, finishing and reinforcement.				
	5.2.2	1:1.5:3 (1 cement :1.5 coarse sand :3 graded stone aggregate 20 mm nominal size)	Cum	65.00	5735.75	372823.75
23	5.9	Centring and shuttering including strutting, propping etc. and removal of form for:				
i	5.9.1	Foundations, footings, bases of columns etc. for mass concrete.	Sq.M	1035.11	166.90	172760.47
ii	5.9.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	Sq.M	4892.82	285.15	1395188.19
iii	5.9.3	Suspended floors, roofs, landings, balconies and access platform.	Sq.M	12066.22	311.20	3755007.88
iv	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	Sq.M	11019.23	262.25	2889792.12
v	5.9.6	Columns, pillars, piers, abutments, posts and struts	Sq.M	7412.56	365.60	2710032.67
vi	5.9.7	Stairs, (excluding landings) except spiral staircases	Sq.M	562.05	326.30	183397.57
vii	5.9.14	Extra for shuttering in circular work (20% of respective centring and shuttering items)				
	(a)	For Foundation [Rate=20% of 119.25=23.85]	Sq.M	917.25	33.38	30617.71
	(b)	Curved for Walls [Rate 20% of 180.40=36.08]	Sq.M	3471.24	57.03	197964.93
	(c)	For Circular Slabs [Rate 20% of 187.35=37.47]	Sq.M	12066.22	62.24	751001.58
	(d)	For Curved Beams [Rate 20% of 162.65=32.53]	Sq.M	3834.63	52.45	201126.50
	(e)	Circular sides [20% of 61.10=12.22]	Sq.M	2125.03	12.22	25967.85
	(f)	Circular Columns [20% of 238.40=12.22]	Sq.M	320.46	73.12	23431.96
ix	5.9.15	Small lintels not exceeding 1.5m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like.				
x	5.9.16	Edges of slabs and breaks in floors and walls,	Sq.M	203.93	166.90	34036.64
	5.9.16.1	Under 20 cm wide	R.M.	3821.40	99.45	380038.07
	5.9.17	Cornices and mouldings	Sq.M	73.97	495.50	36652.14
xi	5.9.19	Weather shade, Chajjas, corbels etc. including edges	Sq.M	340.02	411.10	139782.69
24	5.11	Extra for additional height in centring, shuttering where ever required with adequate bracing, propping etc. including cost of de shuttering and decentering at all levels, over a height of 3.5 m for every additional height of 1 metre or part thereof (Plan area to be measured)				
	5.11.1	Suspended floors, roofs, landing, beams and balconies (plan area to be measured).	Sq.M	6570.78	121.65	799334.98

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
25	5.22	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
	5.22.6	Thermo Mechanically Treated bars	Kg	416889.00	62.25	25951340.25
26	5.22A	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Above Plinth Level				
	5.22A.6	Thermo Mechanically Treated bars.	Kg	614930.07	62.25	38279396.86
27	5.29	Providing and fixing shet covering over expansion joints with iron screws as per design to match the colour /shade of wall treatment.				
	5.29.2	Aluminium fluted strips 3.15mm thick				
	5.29.2.1	150 mm wide	R.M.	1037.88	312.35	324181.82
28	5.30	Add or deduct for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.				
29	5.33	Providing and laying in position machine batched and machine mixed design mix M-25 grade cement concrete for reinforced cement concrete work, using cement content as per approved design mix, including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including admixtures in recommended proportions as per IS: 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. (Note :- Cement content considered in this item is @ 330 kg/cum. Excess/less cement used as per design mix is payable/recoverable separately).				
	5.33.1	All works upto plinth level.	CUM	277.83	5242.15	1456426.53
	5.33.2	All works above plinth level upto floor V level.	CUM	457.57	5781.50	2645440.96
30	5.34	Extra for providing richer mixes at all floor levels. Note:- Excess/less cement over the specified cement content used is payable /recoverable separately.				
31	5.34.1	Providing M-30 grade concrete instead of M-25 grade BMC/RMC. (Note:- Cement content considered in M-30 is @ 340 kg / Cum	CUM	146.00	63.20	9227.20
32	5.35	Add for using extra cement in the items of design mix over and above the specified cement content therein.				
33	5.37	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using cement content as per approved design mix, manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement, including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer-in-charge	Qm	120.00	589.80	70776.00

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
		(Note :- Cement content considered in this item is @ 330 kg/cum.Excess/less cement used as per design mix is payable/recoverable separately).				
	5.37.1	All works upto plinth level.	CUM	277.83	5590.60	1553236.40
	5.37.2	All works above plinth level upto floor V level.	CUM	457.57	6130.00	2804904.10
34	5.40	Providing and laying in position ready mixed M-25 grade concrete for reinforced cement concrete work, using fly ash and cement content as per approved design mix, and manufactured in fully automatic batching plant and transported to site of work in transit mixer for all leads, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work, including pumping of R.M.C from transit mixer to site of laying, excluding the cost of centering, shuttering, finishing and reinforcement, including cist if admixtures in recommended proportions as per IS : 9103 to accelerate / retard setting of concrete, improve workability without impairing strength and durability <small>as per direction of the Engineer-in-charge</small>				
	5.40.1	All works upto Plinth level.	Cu.M	2222.65	5519.40	12267694.41
	5.40.2	All works above plinth & upto Floor V Level.	Cu.M	3660.54	6059.20	22179943.97
				TOTAL [III]		121648483.77
35	6.1	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in:				
	6.1.2	Cement mortar 1:6 (1 cement: 6 coarse sand)	Cum	288.41	3316.55	956526.19
36	6.4	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to floor V level in all shapes and sizes in :				
	6.4.2	Cement mortar 1:6 (1 cement : 6 coarse sand)	Cum	1344.58	3876.15	5211793.77
37	6.13	Half brick masonry with F.P.S. bricks of class designation 75 in superstructure above plinth level up to floor V level				
	6.13.2	Cement mortar 1:4 (1 cement : 4 coarse sand)	Sqm	6788.36	476.85	3237029.47
38	6.15	Extra for providing and placing in position 2 Nos. 6mm dia. M.S. bars at every third course of half brick masonry (with F.P.S. bricks)	Sqm	9697.66	63.30	613861.88
				TOTAL [IV]		10019211.30

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
39	7.38	Stone tile work for wall lining upto 10 m height with special adhesive over 12mm thick bed of cement mortar 1:3 (1 cement :3 coarse sand) including pointing in white cement with an admixture of pigment to match the stone shade.				
	7.38.1.1.	Granite stone of any colour and shade.	Sq.M	1200.00	1466.35	1759620.00
40	7.39	Extra for stone work for wall lining on exterior walls of height more than 10m form ground level for every additional height of 3 m or part there of .				
	a)	Height exceeding 10m but not exceeding 13m	Sq.M	125.00	65.85	8231.25
	b)	Height exceeding 13m but not exceeding 16m	Sq.M	140.00	131.70	18438.00
	c)	Height exceeding 16m but not exceeding 19m	Sq.M	40.00	197.55	7902.00
41	7.40	Providing and fixing dry cladding upto 10 metre heights with 30mm thick gang saw cut stone with (machine cut edges) of uniform colour and size upto 1mx1m, fixed to structural steel frame work and/or with the help of cramps, pins etc. and sealing the joints with approved weather sealant as per Architectural drawing and direction of Engineer-in-charge. (The steel frame work, stainless steel cramps and pins etc. shall be paid for separately.)				
	7.40.1	Red sand stone	Sq.M	2703.44	1989.40	5378223.54
42	7.42	Providing and fixing adjustable stainless steel cramps of approved quality and of required shape and size adjustable with stainless steel nuts bolts and washer (total weight not less than 260 gms) for dry stone cladding fixed on frame work at suitable location including making necessary recesses in stone slab, drilling required holes etc complete as per direction of the Engineer-in-charge.				
			Each	10813.76	171.20	1851315.71
				TOTAL [V]		9023730.50
43	8.2	Providing and fixing 18mm thick gang saw cut mirror polished pre-moulded and pre-polished) machine cut for kitchen platforms, vanity counters, windows sills, facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups, including rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete at all levels.				
	8.2.2	Granite of any colour and shade				
	8.2.2.2	Area of slab over 0.50 sqm	Sq.M	416.44	3083.40	1284039.38

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
44	8.4	Extra for fixing marble / granite stone over and above corresponding basic item, in facia and drops of width up 150 mm with epoxy resin based adhesive including cleaning etc. complete	R.M.	92.00	185.80	17093.60
45	8.5	Extra for providing opening of required size & shape for wash basins / kitchen sink in kitchen platform, vanity counters and similar location in marble / Granite / stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc. complete.	Each	76.00	281.10	21363.60
				TOTAL [VI]		1322496.58
46	9.48	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. all complete.				
47	9.48.1 9.119	Fixed to steel windows by welding. Providing and fixing factory made P.V.C. door frame of size 50x47mm with a wall thickness of 5mm, made out of extruded 5mm rigid PVC foam sheet mitred at corners and joined with 2 Nos. of 150mm long brackets of 15x15mm M.S. square tube, the vertical door profiles to be reinforced with 19x19mm M.S. square tube of 19 gauge, EPDM rubber gasket weather seal to be provided through out the frame. The door frame to be fixed to the wall using M.S. screws of 65/100mm size complete as per manufacturers specification and direction of Engineer-in-charge	Kg	34.20	90.75	3103.65
48	9.120	Providing and fixing 30mm thick factory made panel PVC door shutter consisting of frame made out of M.S. tubes of 19 gauge thickness and size of 19mm . 19mm for styles and 15x15mm for top & bottom rails, M.S. frame shall have a coat of steel primers of approved make and manufacture. M.S. frame covered with 5mm thick heat moulded PVC 'C' channel of size 30mm thickness, 70mm width out of which 50mm shall be flat and 20mm shall be tapered in 45 degree angle on either side forming styles: and 5 mm thick, 95mm wide PVC sheet out of which 75mm shall be flat and 20mm shall be tapered in 45 degree on the inner side to form top and bottom rail and 115mm wide PVC sheet out of which 75mm shall be flat and 20mm shall be tapered on both sides to form lock rail. Top, bottom and lock rails shall be provided either side of the panel. 10mm (5mm x 2) thick, 20mm wide cross PVC sheet be provided as gap insert for top rail & bottom rail. paneling of 5 mm thick both side PVC sheet to be fitted in the M.S. frame welded / sealed to the styles & rails with 7mm (5mm+2mm) thick x 15mm wide PVC sheet beading on inner side, and joined together with solvent cement adhesive. An additional 5mm thick PVC strip of 20mm width is to be stuck on the interior side of the 'C' Channel using PVC solvent adhesive etc. complete as per direction of Engineer-in-charge. Manufacturer's specification n& drawing (for W.C. and bathroom door	R.M.	175.65	404.60	71067.99

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
49	9.120.2	30 mm thick pre laminated PVC door shutters	Sq.M	47.48	2958.00	140454.71
	9.42	Providing and fixing 18 mm thick ,150mm wide pelmet of flat pressed 3layer or graded wood particle board medium density grade I,IS:3087 market including top cover of 6 mm commercial ply wood conforming to IS: 303 BWR grade,nickel plated brackets including fixing with 25x3 mm M.S.flat 10 cm long and rawl plugs 50 mm long (designation 10 no) etc ,all completed.	Rm	42.00	298.45	12534.90
				TOTAL [VII]		227161.25

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
50	10.5	Providing and fixing 1mm thick M.S. sheet door with frame of 40x40x6mm angle iron and 3mm M.S. gusset plates at the junction and corners, all necessary fittings complete, including applying a priming coat of approved steel primer.				
51	10.5.1	Using M.S angels 40x40x6 mmfor diagonal braces	Sq.M	10.50	2551.45	26790.23
51	10.14	Providing and fixing pressed steel door frames confirming to IS:4351 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 50x25 mm, or base ties of 1.25mm pressed mild steelwelded or rigidly fixed 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 adh applying a coat of approved stel primer after pre treatment of the surface as directed by Engineer-in-charges:				
i	10.14.1	Profile B	R.M.	693.98	346.75	240637.57
52	10.25	Steel work 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.				
	10.25.2	In gratings, frames, guard bard ladder, railings, brackets, gates and similar works				
			Kg	1641.50	77.90	127872.85
				TOTAL [VIII]		395300.64
53	11.6	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1cement : 3 coarse sand), finished with a floating coat of neat cement				
	11.6.1	18 mm thick	Sq.M	587.13	258.20	151596.97
54	11.3	Cement concrete flooring 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate) finished with a floating coat of neat cement including cement slurry, but excluding thte cost of nosing of steps etc. complete.				
	11.3.1	40mm thick with 20mm nominal size stone aggregate.	Sq.M	294.08	280.05	82357.10
55	11.20	Chequerred precast cement concrete tiles 22 mm thick in footpath & courtyard jointed with neat cement slurry mixed with pigment to match the shade of tiles including rubbing and cleaning etc. complete on 20 m thick bed of cement mortar 1:4 (1 cement: 4 coarse sand)				
	11.20.2	Medium shade with 50% white cement and 50% ordinary cement.	Sq.M	420.86	789.55	332291.99

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
56	11.23	Marble stone flooring with 18 mm thick marble stone (sample of marble shall be approved by Engineer-in charge) over 20 mm (average) thick base of cement mortar 1:4 (1 cement:4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing complete with:				
(i)	11.23.2	Raj nagar plain	Sq.M	1381.98	1265.35	1748685.11
(ii)	11.23.5	Udaipur green marble	Sq.M	3110.69	1418.95	4413910.40
57	11.24	Extra if pre finished nosing to treads of steps of marble stone.	R.M.	1455.40	197.75	287805.35
58	11.25	Extra for marble stone flooring in treads of steps and risers using single length up to 2.00 metre	Sq.M	222.48	230.55	51292.76
59	11.26	Kota stone slab flooring over 20 mm (average) thick base laid over and jointed with grey cement slurry mixed with pigment to match the shade of the slab including rubbing and polishing complete with base of 1:4 (1 cement :4 coarse sand).				
	11.26.1	25 mm thick	Sq.M	4720.52	945.70	4464193.43
60	11.27	Kota stone slabs 25 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match te shade of the slabs, including rubbing and polishing complete.	Sq.M	346.68	954.10	330764.47
61	11.31	Extra for pre finished nosing in treads of steps of kota stone / sand stone slab	R.M.	197.65	52.45	10366.74
62	11.32	Extra for kota / stone sand stone in treads of steps and risers using single length up to 1.05 metre.	Sq.M	203.58	12.10	2463.32
63	11.36	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS:15622 (thickness to be specified by the manufacturer), of approved make,in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge, in skirting, risers of steps and dados over 12 mm 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	Sq.M	891.33	724.25	645543.58
64	11.37	Providing and laying ceramic glazed floor tiles 300x300mm (thickness to be specified by the manufacture) of Ist quality conforming to IS:15622 of approved make in colour such as white ,Ivory ,Grey,Fume Red Brown,laind on 20mm thick cement Mortar 1:4 (1cement:4 coarse sand) including pointing the joints with white cement and matching pigment.etc...complete.	Sq.M	450.00	764.55	344047.50
65	11.41	Providing and laying polished vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS: 15622 of approved make 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.				
(i)	11.41.2	Size of Tile 60x60cm	Sq.M	2226.28	1337.10	2976759.19
(ii)	11.41.4	Size of Tile 100x100cm	Sq.M	291.04	2246.10	653711.23

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
				TOTAL [IX]		16495789.13
66	12.21	Providing gola 75x75 mm in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 stone aggregate 10mm and down gauge) including finishing with cement mortar 1:3 (1 cement : 3 fine sand) as per standard design:				
	12.21.1	In 75x75mm deep chase	R.M.	369.86	109.05	40333.36
67	12.22	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C sheet 1mx1mx400micron, finished with 12mm cement plaster 1:3 (1 cement: 3 coarse sand) and a coat of neat cement rounding the edge sand making and finishing the outlet complete.	Each	21.00	148.75	3123.75
68	12.55	Providing and fixing Heat Resistant Terrace Tiles (300mm x 300mm x 20mm) with SRI (Solar refractive index) > 78, solar reflection >0.70 and initial emittance >0.75 on waterproof and sloped surface of terrace, laid on 20mm thick cement sand mortar in the ratio of 1:4 (1 cement :4 coarse sand) and grouting the joints with mix of White cement & marble powder in ration of 1:1, including rubbing and polishing of the surface upto 3 cuts complete, including providing skirting upto 150mm height along the parapet walls in the same manner.	Sq.M	1395.00	1033.70	1442011.50
				TOTAL [X]		1485468.61
69	13.2	15 mm cement plaster on the rough side of single or half brick wall of mix:				
i	13.2.1	1:4 (1 cement: 4 fine sand)	Sq.M	369.86	143.55	53093.58
ii	13.2.2	1:6 (1 cement: 6 fine sand)	Sq.M	13673.78	130.20	1780325.96
70	13.4	12 mm cement plaster of mix:				
	13.4.1	1:4 (1 cement: 4 coarse sand)	Sq.M	3304.20	132.10	436484.82
71	13.9	Cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement.				
	13.9.1	12mm cement plaster	Sq.M	155.32	173.10	26885.37
72	13.16	6 mm cement plaster of mix:				
	13.16.1	1:3 (1 cement: 3 fine sand)	Sq.M	10576.01	101.00	1068176.70
73	13.22	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.				
		exceeding 10m Height to 13m	Sq.M	733.33	28.85	21156.67
		exceeding 13m Height to 16m	Sq.M	733.57	57.70	42327.07

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
74	13.26	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete.	Sq.M	11645.18	83.80	975866.08
75	13.37	White washing with lime to give an even shade:				
	13.37.1	New work (three or more coats)	Sq.M	211.24	11.75	2482.07
76	13.42	Distemping with 1st quality acrylic distemper (ready mixed) of approved manufacturer, of required shade and colour complete, as per manufacturer's specification.				
	13.42.1	Two or more coats on new work	Sq.M	5822.59	37.35	217473.74
77	13.46	Finishing walls with Premium Acrylic Smooth exterior paint with Silicone additives of required shade				
	13.46.1	New work (Two or more coats applied @ 1.67 Litres/10 Sq.M over and including base coat of water proofing cement paint applied @ 2.20 Kg/10 Sq.M.	Sq.M	570.55	67.50	38512.20
78	13.50	Applying priming coat :				
	13.50.2	With ready mixed aluminium primer of approved brand and manufacture on resinous wood and plywood.	Sq.M	556.33	24.70	13741.35
	13.50.3	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/steel works.	Sq.M	88.06	20.70	1822.84
79	13.69	Polishing on wood work with ready mixed wax polish of approved brand and manufacture :				
	13.69.1	New work	Sq.M	556.33	60.50	33657.97
80	13.79	Extra for addition of synthetic polyester triangular fibre of length 6mm, effective diameter 10-40 microns and specific gravity of 1.34 to 1.40 in cement plaster/mortar by using 125gms of synthetic polyester triangular fibre for 50kgs. Cement used in cement mortar as per directions of Engineer-in-Charge.	Per Bag of 50 Kg of Cement	460.00	53.00	24380.00
81	13.80	Providing and applying white cement based putty of average thickness 1 mm, of approved brand and manufacturer, over the plastered wall surface to prepare the				
82	13.83	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grames/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.	Sq.M	11645.18	76.05	885615.94
	13.83.2	Two Coats	Sq.M	5822.59	61.45	357798.16
83	13.84	Painting with synthetic enamel paint, having VOC (Volatile Organic Compound) content less than 150 grames/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.				
	13.84.2	Two Coats	Sq.M	573.10	53.90	30890.09

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
				TOTAL [XI]		6010690.60

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
84	16.1	Preparation and consolidation of sub grade with power road roller of 8 to 12 tonne capacity after excavating earth to an average of 22.5 cm depth, dressing to camber and consolidating with road roller including making good the undulations etc. and re-rolling the sub grade and disposal of surplus earth with lead upto 50 metres.	Sq.M	120.00	61.25	7350.00
85	16.68	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M-30 grade made by block making machine with strong vibratory compaction and of approved size and design/ shape laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with coarse sand etc. all complete as per the direction of Engineer-in-charge.	Sq.M	48.00	536.65	25759.20
86	11.45	Providing and laying 500 x500 x40mm thick Turf paver (Turfpave XD) on 150 mm thick sub grade of compacted bed of 20 mm thick nominal size stone aggregate and based courde and filling with 150mm thick jamuna sand, including spreading ,well ramming ,consolidating and finishing smooth etc. all complete as per direction of Engineer-in-Charge.	Sq.M	72.00	1651.20	118886.40
				TOTAL [XII]		151995.60
87	19.16	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS: 10910 on 12mm dia steel bar conforming to IS: 1786 having minimum cross section as 23 mmx25mm and over all minimum length 263 mm and width as 165mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per direction	Each	28.00	256.75	7189.00
	19.18	Supplying and fixing C.I. cover without frame for manholes:				
	19.18.1	455x610 mm rectangular C.I. cover (light duty) the weight of the cover to be not less than 23 kg.	Each	2.00	1185.05	2370.10
88	19.4.1.1	Providing and fixing S.W gully trap with F.P.S Brick class designation 75	Each	15.00	1256.35	18845.25
				TOTAL [XIII]		28404.35

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
5	N.S-5	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc with 24 mm thick unit consist of outer glass SGG 6mm thick EVO Star ET 425 Aura Green, having 12mm air gap, and inner glass 6 mm thick clear float toughened of Saint-Gobain make with following performance. VLT-21%, Solar Factor-0.18, U value -2 .0 W/sqm K. Including providing EPDM gasket, perforated aluminium spacers, desiccants, sealant (Both primary and secondary sealant) etc. as per specifications, drawings and direction of Engineer-in-charge complete.The contractor must provide details of structural calculations of the Mullion / Transom member offered, and also provide drawings of individual profiles - Mullion, Transom, Pressure Plate, cover plate and also details of any other profiles that may be used - clearly indicating all dimensions, wall thickness and weight - kg./m. The anchoring / bracing of the curtain wall glazings to the RCC slab /beams / columns shall be done with non-corrosive galvanised brackets of approved design, (Galvanising to be done conforming to IS:4759-1996 upto 610 gms. per sqm. (80-90 micron thickness) with two numbers on each beam, including providing PVC spacers between the aluminium Mullion Member and Bracket (including providing and fixing of aluminium shims of various thickness to adjust the beam level/line variations) with dash fasteners and stainless steel bolt to provide a minimum anchoring depth of 50 - 80 mm. in the concrete and to withstand the dead load of the curtain wall as well as stresses due to wind pressure etc.The glazing framework shall be aligned for the entire height of each Mullion and for the entire width of each Transom by laser beam equipment to ensure 100 per cent IV, axis and VV, axis alignment	Sq.M	482.87	8061.00	3892415.07
6	N.S-6	Designing, Providing, Fabrication at site and installing aluminium door/ Aluminium Window/ Aluminium sliding window/Aluminium Partitions (Jindal 8830 series or equivalent) AC 15 Anodised with 101x45x2mm Aluminium frame work all around. The window should have on Mesh shutter inside along with two glass shutter, the botom track section to have milled ends to be sealed with silicone/ isobuty/ putty with 6.0mm thick non toughened ST 707 advance solar control glass complete.	Sq.M	53.65	5200.00	278980.00
7	N.S-7	Providing and fixing aluminium works for partitions with extruded built up standard tubular sections 12 mm thick prelaminated partical board with decorative lamination on both sides with float glass panes of 6 mm thickness	Sq.M	190.57	2769.00	527688.33
8	N.S-8	Providing & Fixing Float Glass 4mm thick (10Kg/Sqm) with steel beading of approved shape & section with screws in pressed steel door, window & CSW's Frames/Shutter & M.S. Tubular section shutters of doors & windows.	Sq.M	4.65	697.00	3237.91
9	N.S-9	Supplying and Fixing Drapery rods 30mm dia of M.S Pipe of thickness 1.6mm with powder coating (wooden finish) including metal brackets, rings and ends all as specified. Fixed to brick walls/RCC lintels with dash fastners.	R.M	508.20	170.00	86394.00

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
10	N.S-10	Providing and laying in position cement concrete 1:5:10 (1 cement: 5 course sand: 10 Brick aggregate 40mm nominal Size) in foundations/ sunken floors of toilets excluding the cost of centering and shuttering.	CUM	233.21	3602.00	840016.79
11	N.S-11	Supply and fixing of non OZONE make stainless steel railing with specifications SS 304 grade railing made of 38mm baluster and 38mm top rail of 1.6mm thickness with 3 mid rails of 12 OD tube connected with CNC machine made. Modular connectors fixed with dash fastners. Centre distance between each baluster shall be 1000mm. (Market Rate Item)	R.M	816.53	6161.00	5030641.33
12	N.S-12	Providing and fixing Ecophon SUPER G A with 40 mm natural square edge ,demountable panels with the option of weekly wet cleaning (Akutex T and Super G surfaces) and vacuum cleaning (Colorado surface) , manufactured from High density glass wool ,with the visible surface has an Akutex T coating , a glass fibre fabric (TEXONA)or a strong glass fibre (Super G) and the back of the tile should be covered with glass tissue . The glass wool core of the tiles should be tested and classified as non combustible according to prEN ISO 1182 .The system should have Sound Absorption NRC value of 0.9 (according to EN ISO 11654). Tiles should withstand a permanent ambient RH upto 95% at 30 * C without sagging , warping or delaminating (ISO 4611) . The light reflectance of the tiles should not be less than 84. % (for Akutex T surface)	Sq.M	3760.01	6724.15	25282837.62
13	N.S-13	Providing & fixing stainless steel pipe of 75mm dia of 1.6mm thickness of SS304 grade in balcony as shown on drawing	R.M	154.82	3171.00	490934.22
14	N.S-14	ACOUSTICAL FALSE CEILING Providing and fixing of Armstrong Mineral Fibre Acoustical Suspended Ceiling System with Fire fissured (Micro Look) edge tiles with Armstrong superfine 15mm exposed grid in module size 600x600x16mm with Bio Block Casting on the face of the tile. The grid shall be 15mm wide T-Section flanges colour white, main runner 1200mm & 600mm Cross Tees.	Sq.M	6984.48	2419.00	16895457.12

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
15	N.S-15	<p>ARMSTRONG FALSE CEILING The ceiling to be constructed of ARMSTRONG THERMATEX FEINSTRATOS VT- 15 Mineral Fiber Tiles Recess Tegular edge (VT-15 edge), Humidity Resistance Panel upto 95% RH, NRC 0.55, white colour similar to RAL 9010 of 600mm x 600mm tile of 15mm thickness laid into an exposed grid (hanging grid) system (hanging grid) of 15mm grid, consisting of main runner spaced at 1200mm centers securely fixed to the structures soffit by approved hangers at maximum 1200mm centers. There should be a minimum of 1 hanger per 1500mm of ceiling area and last hanger should not be further than 450mm from the adjacent wall.</p> <p>1200mm cross tees to be fixed between main runner at 600mm centers to form 1200mm x 600mm module & 600mm cross tees fitted centrally between 1200mm cross tees to create 600 x 600mm module.</p> <p>The product should be certified in accordance with Quality Assurance Standard to ISO 9001 and ISO 14001. The mineral panels should have RAL Seal Of Approval.</p>	Sq.M	3179.59	1815.00	5770955.85
16	N.S-16	<p>Providing applying cementations Krystalline based water proofing for concrete rafts, walls, water tanks, slabs, concrete floors etc with krystol T1 system/ . The application to be done from +ve(positive) side on wet open pore concrete surface with brush @ 1Kg/Sq.M as per manufacturer specification.</p>	Sq.M	3618.83	498.00	1802177.34
17	N.S-17	<p>Supply & fixing of structural glazing at Façade of ground plus three buildings using glazing section on direct stick mullion & transom system of which mullion shall be of 80x50x1.8 mm with notch & transom to be of 50x50x1.8 mm with notch , Aluminium Glazing sections shall be powder coated with heat treatment on three surfaces in Ivory/Black colour using 6mm thick TOUGHENED AVRA GREEN HEAT REFLECTIVE GLASS of approved colour of to be pasted with 12mm x 6 mm both side adhesive Spacer foam tape & structural silicon of Dow Corning 995 grade or it's equivalent. The Weather /water sealing of glass joints shall be done with 10 mm wide Dow Corning make weather sealant of grade 789 or its equivalent. The Mullion of Aluminium structure is to be fastened with R.C.C. Slab/beam with help of Powder coated/ Galvanized MS Brackets of 75 mm length with help of M10 x 100 mm Mechanical tempered Dash Fasteners. The job Includes all necessary hardware, cleat, Screws, nut washers etc. Complete job with all material and labour as per direction of Engineer-in-charge.</p>	Sq.M	144.07	6398.00	921743.87
18	N.S-18	<p>Providing and applying Silicon Based Water repellent coating by brush or by spray.</p>	Sq.M	2102.67	259.00	544591.53
19	N.S-19	<p>Supply and Fixing of KALZIP 65/400 "Self Supported" Secret Fix Standing Roofing System in 0.9mm Thick AA 3004 Aluminium Alloy. The general roof-construction shall comprise from bottom to top:</p>	Sq.M	1009.10	3967.00	4003099.70

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
20	N.S-20	Providing and applying of cementitious crystalline based water proofing for concrete rafts, walls, water tanks, slabs, concrete floors etc. with Krystol T1/T2 system. The application to be done from -ve (negative) side on a wet open pore concrete surface with brush @ 0.8kg of Krystol T1 & 0.8kg of Krystol T2 as per manufacturer specificatio. including making grooves of 10x15mm size on the construction joints and treating with Krystol T1 mixed with water in ratio 5:1 (5 parts of krystol T1: 1 part of clean water) as per manufacturers specification etc. and as per direction of Engineer-in-Charges. The rate also includes the cleaning of surface to be treated with air compressor wherever required.	Sq.M	3085.09	723.00	2230520.07
21	N.S-21	WOODEN FLOORING Providing and fixing wooden flooring of 25mm thick with pre laminated flat pressed three layer Engineered Hard Wood Flooring on Stage of Armstrong or equivalent make exterior grade including edge profiles as may be	Sq.M	294.08	5552.00	1632732.16
22	N.S-22	Providing and Fixing Glass Mosaic Tiles (20x20)x4mm thick Random Pattern on walls with glass Mosaic Adhesive over 12mm thick screed in cement mortar 1:4 (1Cement 4 coarse sand) tile joints pointed in neat white cement slurry mixed with pigment to match with the shade / colour of the tiles coral /cheer.	Sq.M	2239.84	1563.00	3500869.92
23	N.S-23	VETRIFIED DOUBLE CHARGED Providing & fixing Vitrified Tiles 605x605mm (R Series) Double Charged Matt Finish (Premium Quality) of approved colour & shade laid over 20mm thick Cement mortar 1:4 (1Cement :4 Coarse Sand) jointed and pointed in white cement mixed with colour to match the colour & shade of the tiles.	Sq.M	1914.42	2098.00	4016454.46
24	N.S-24	PVC FLOORING Providing and installing of Accolade plus impregnated PUR Vinyl Sheet flooring 6 feet (1.83m) wide in Rolls having a nominal total thickness of [0.08 in (2mm)] of approved colour and shade laid over smooth, flat, hard and free from moisture, grease etc. using water based adhesive like VC 31 of pidilite or similar Accolade plus shall confirm to group P of wear Resistance as per EN 660-2 Fire Resistance of more than 11KW/m2 as per ISO 9329-1	Sq.M	147.05	2481.00	364839.49
25	NS.25	CHAIR 560mm to 600mm CTC, Rocking seat with auto tip up cushion, seat depth 650mm wooden armrest with fabric upholstred and with foldable writing tablet. Chair with Cover on the back side. Single Central foot for easy house keeping : Makes - Featherlite/ Godrei/ B.P.Erago approved by Architect & Client.	Nos	2700.00	5878.00	15870600.00
26	NS.26	SCREENS Supplying, installing, Testing and commissioning of 100" motorized Matt white projection screen wall with all accessories.	Nos	21.00	72542.00	1523382.00
27	N.S-27	Final coat of ultra permasand with chips (to offer grooved finish) over a coat of ultra permasand without chips (as base coat) over a repair check with exterior grade putty over a coat of acrylic primer. (as per approved shade).	Sq.M	4205.35	471.00	1980719.85

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
28	N.S-28	Supply and fixing of Stainless steel IS : 304 grade pergola made of stainless steel pipe made of 75mm dia pipes.	Each	6.00	301521.00	1809126.00
29	N.S-29	Ditto as in item above but with prelaminated particle board with decorative lamination on one side and balancing lamination on other side.	Sq.M	6.48	5150.00	33372.00
30	N.S-30	Supplying and applying Dr. Fixit Pidiseal PS 42 P, mixing the base and curing paste thoroughly using a slow speed drill machine with a suitable paddle until homogeneous and filling the joints with a suitable means starting from one end taking care at no point air is entrapped. After the completion of the filling, using suitable tool ensuring the seal is finished with proper adhesion on the two side surfaces and etc. complete				
31	N.S-31	50mm thick Horizontal Expansion Joint Supplying and applying Dr. Fixit Pidiseal PS 41G, mixing the base and curing paste thoroughly using a slow speed drill machine with a suitable paddle until homogeneous and filling the joints with a suitable means starting from one end taking care at no point air is entrapped. After the completion of the filling, using suitable tool ensuring the seal is finished with proper adhesion on the two side surfaces and etc. complete	R.M	443.88	1583.00	702662.04
32	N.S-32	50mm thick Vertical Expansion Joint	R.M	594.00	1583.00	940302.00
		STAINLESS STEEL FITTINGS				
	a.	Providing and fixing S.S.Sliding door bolt size 16mmx300mm finish SS Matt fixed with necessary screws etc. complete.(Make:-Ebco/Ozone/Dorma)	Each	52.00	538.00	27976.00
	b.	Providing and fixing S.S.Sliding door bolt size 16mmx250mm finish SS Matt fixed with necessary screws etc. complete..(Make:-Ebco/Ozone/Dorma)	Each	80.00	457.00	36560.00
	c.	Providing & fixing S.S. tower bolt Size 250x12mm finish SS matt with necessary screws etc., complete..(Make:-Ebco/Ozone/Dorma)	Each	428.00	269.00	115132.00
	d.	Providing & fixing S.S. tower bolt Size 100x10mm finish SS matt with necessary screws etc., complete.(Make:-Ebco/Ozone/Dorma)	Each	772.00	135.00	104220.00
	e	Providing & fixing S.S. handle size 25x150mm with necessary screws etc., complete..(Make:-Ebco/Ozone/Dorma)	Each	428.00	900.00	385200.00
	f	Providing & fixing S.S. handle size 15x100mm with necessary screws etc., complete.(Make:-Ebco/Ozone/Dorma)	Each	772.00	646.00	498712.00
	g	Providing & fixing S.S.Door Stopper size 65x2.5MM finish SS Matt with necessary Screws etc., complete..(Make:-Ebco/Ozone/Dorma)	Each	214.00	97.00	20758.00
	i	Providing & fixing alu. Diecast body tubluor type universal hydraulic door closer with necessary crews etc. complete..(Make:-Ebco/Ozone/Dorma)	Each	214.00	991.00	212074.00
		TOTAL [XV]				107813904.79

PLUMBING WORKS			
SUMMARY OF COST			
S.NO	NAME OF SUB-HEAD	AMOUNT	
		DSR 2012	NON SCHEDULE
i	SANITARY INSTALLATIONS & C.P FITTINGS	603176.75	323492.10
ii	CI PIPES & FITTINGS	502286.90	32557.19
iii	RAIN WATER PIPES & FITTINGS	451001.00	31644.00
iv	WATER SUPPLY WORKS	325346.70	5187151.89
v	EXTERNAL SEWRAGE	272407.30	-
vi	EXTERNAL DRAINAGE	442858.20	
	TOTAL	2597076.85	
	G.TOTAL	2597076.85	5574845.17

BILL OF QUANTITIES

SECTION-A : INTERNAL PLUMBING WORKS

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
[1]		SANITARY INSTALLATIONS & C.P FITTINGS				
		DSR 2012 ITEMS				
1		Providing and fixing wash basins with C.P. brass pillar tap, 32mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls and floors where required.				
	17.7.1	White Vitreous china Wash basin of size 630 x 450mm with a pair of 15mm C.P brass pillar taps.	Each	76.00	1848.35	140474.60
2	17.8	Providing and fixing white vitreous china pedestal for wash basin competely recessed at back for the reception of pipes and fittings	Each	76.00	894.70	67997.20
3	17.22	Providing and fixing G.I. intel connection for flush pipe connecting with W.C. pan.	Each	35.00	94.00	3290.00
4	17.5	Providing and fixing white vitreous china flat back half stall urinal of size 580x380x350 mm with white PVC automatic flushing cistern,with fittings, standard size C.P. brass flush pipe, spreaders with unions and clamps (all in C.P. brass) with waste fitting as per IS :2556, C.I. trap with outlet grating and other couplings in C.P. brass,including painting of fittings and cutting and making good the walls and floors wherever required :				
	17.5.2	Range of two half stall urinals with 5 litre P.V.C. automatic flushing cistern.	Each	7.00	8445.00	59115.00
	17.5.3	Range of three Uninal basin with 10 lr. White PVC automatic flushing cistern.	Each	7.00	11046.80	77327.60
	17.5.4	Range of four Uninal basin with 10 lr. White PVC automatic flushing cistern.	Each	1.00	13541.25	13541.25
5	17.6	Providing and fixing one piece construction white vitreous china squatting plate with an integral longitudinal flushing pipe, white P.V.C. automatic flushing cistern, with fittings, standard size G.I. / PVC flush pipe for back and front flush with standard spreader pipes with fittings, G.I clamps and C.P. brass coupling complete, including painting of fittings and cutting and making good the walls and floors etc. wherever required :				
	17.6.2	Range of two squatting plates with 5 litre P.V.C. automatic flushing cistern	Each	7.00	5152.40	36066.80
	17.6.3	Range of three squatting plates with 10 litre P.V.C. automatic flushing cistern	Each	7.00	6826.65	47786.55
	17.6.4	Range of four squatting plates with 10 litre P.V.C. automatic	Each	1.00	8272.05	8272.05
6	17.7	Providing & fixing PTMT Bottle Trap for wash basin & sink				
	17.70.2	Bottle trap 38mm single piece moulded with height of 270mm, effective length of tail pipe 260mm from the centre of the waste coupling 77mm breadth with 25mm minimum water seal, weighing not less than 266gms.	Each	39.00	435.30	16976.70
7	17.28.1	Providing and fixing P.V.C. waste pipe for wash including P.V.C. waste fittings compete				
	17.28.1.1	Semi rigid pipe 32mm dia	Each	76.00	59.50	4522.00
8	17.31	Providing and fixing 600x450 mm beveled edge mirror of superior glass (of approved quality) complete with 6 mm thick hard board ground fixed to wooden cleats with C.P. brass screws and washers complete.	Each	76.00	674.05	51227.80
9	17.34.1	Providing and fixing toilet paper holder: CP brass	Each	35.00	250.95	8783.25
10	18.53.1	Providing and fixing C.P brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931 15 mm nominal bore	Each	123.00	449.35	55270.05

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
11	18.21	Providing and fixing unplasticised PVC connection pipe with brass unions				
	18.21.2	45 cm length				
	18.21.2.1	15 mm nominal bore	Each	123.00	61.70	7589.10
12	18.51	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms.				
	18.51.1	15 mm nominal bore	Each	12.00	411.40	4936.80
		Total Cf to Summary		Total DSR ITEMS [i]		603176.75
		NON SCHEDULE ITEMS				
1	NS	Providing and Fixing C.P. brass Ablution health faucet assembly with 1.2 m long braided PVC hose with mounting bracket fixed on wall complete including diverter and two way angle valve[FOR EWC]	Each	35.00	503.10	17608.40
2	NS	Providing & fixing 4 mm thick SS hinged grating with rim of approved design including setting in floor with cement mortar.				
i		125 mm dia	Each	83.00	239.57	19884.32
3	NS	Providing & Fixing CP brass liquid soap container fixed to the wall with PVC rubber plug with C.P brass screw complete Each	Each	76.00	907.89	68999.37
4	NS	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, white vitreous china dual flushing cistern & C.P. flush bend with fittings & C/ Brackets, 40 mm 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 and floors wherever required.				
5	NS	W.C. pan with ISI marked white solid plastic seat and lid. Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast iron P or S trap, white vitreous china dual flushing cistern, including flush pipe, with manually controlled device (handle lever) conforming to IS: 7231, with all fittings and fixtures complete including cutting and making good the walls and floors wherever required.	Each	35.00	5000.00	175000.00
		White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot	Each	12.00	3500.00	42000.00
		Total Cf to Summary		Total NS ITEMS [i]		323492.10
[ii]		CI PIPES & FITTINGS				
		DSR 2012 ITEMS				
1	17.35	Providing and fixing soil, waste and vent pipes :				
	17.35.1	100 mm dia.				
	17.35.1.2	Centrifugally cast (spun) iron socket & spigot (S&S) pipe as per IS: 3989	RM	320.00	857.30	274336.00
2	17.58	Providing lead caulked joints to sand cast iron/centrifugally cast (spun) iron pipes and fittings of diameter:				
	17.58.1	100 mm	Each	200.00	207.85	41570.00
3	17.37	Providing and fixing M.S. holder-bat clamps of approved design to Sand Cast iron/cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) including cost of cutting holes and making good the walls etc.				
	17.37.1	For 100 mm dia. pipe	Each	150.00	112.50	16875.00

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
4	17.38	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.				
	17.38.1	100 mm				
	17.38.1.2	Sand cast iron S&S as per IS-3989	Each	16.00	353.25	5652.00
5	17.39	Providing and fixing plain bend of required degree.				
	17.39.1	100 mm				
	17.39.1.2	Sand cast iron S&S as per IS-3989	Each	16.00	296.35	4741.60
6	17.40	Providing and fixing heel rest sanitary bend				
	17.40.1	100 mm dia				
	17.40.1.2	Sand cast iron S&S as per IS-3989	Each	16.00	342.80	5484.80
7	17.43	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.				
	17.43.1	100x100x100mm				
	17.43.1.2	Sand cast iron S&S as per IS-3989	Each	16.00	579.75	9276.00
8	17.44	Providing and fixing single equal plain junction of required degree.				
	17.44.1	100x100x100mm				
	19.44.1.2	Sand cast iron S&S as per IS-3989	Each	16.00	442.00	7072.00
9	17.56	Providing and fixing terminal guard:				
	17.56.1	100 mm				
	17.56.1.2	Sand cast iron S&S as per IS-3989	Each	16.00	244.10	3905.60
10	17.60	Providing and fixing trap of self cleansing design with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors :				
	17.60.1	100 mm inlet and 100 mm outlet				
	17.60.1.1	Sand cast iron S&S as per IS-3989	Each	47.00	801.70	37679.90
11	18.10 & 18.11	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc. (Internal work) Concealed pipe including painting with anti corrosive bitumastic paint, cutting chases and making good the wall (for Waste Conn. from WB/Urinals/Sinks)				
i	(18.10.4+18.40.4+18.78)	32 mm dia nomina bore	RM	110.00	367.90	40469.00
ii	(18.10.5+18.40.5+18.78)	40 mm dia nominal bore	RM	60.00	436.60	26196.00
iii	(18.10.6+18.40.6+18.78)	50 mm dia nomina bore	RM	55.00	527.80	29029.00
		Total C/f to Summary		Total DSR ITEMS [ii]		502286.90
		NON SCHEDULE ITEMS				
1	NS	Providing and fixing G.I Inlet fitting with maximum 3 inlets 32, 40 or 50 mm size fabricated from 100 mm dia G.I pipes(approx. length=150mm) and welded G.I sockets, fixed to CI trap with lead caulked joint and set in cement concrete as per standard drawing including cost of Bitumastic paint complete.	Each	48.00	503.12	24149.78
2	NS	Providing & fixing 100X50 mm. dia. G.I elbow (drain point) in the toilet floor including 100 mm dia. C.P. waste jali complete as required.	Each	35.00	240.21	8407.41
		Total C/f to Summary		Total NS Items [ii]		32557.19

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
		FOR RAIN WATER:				
		Providing and fixing soil, waste and vent pipes:				
1	17.35	100mm dia				
	17.35.1					
	17.35.1.1	Sand cast iron S&S as per IS-1729	RM	500.00	734.30	367150.00
2	17.58	Providing lead Caulked joints to sand cast iron/centrifugally cast (spun) iron pipes & fittings of diameters.				
	17.58.1	100 mm	Each	200.00	207.85	41570.00
3	17.37	Providing & fixing M. S. holder - bat clamps of approved design to sand Cast iron/cast iron (spun) pipe embedded in & including cement concrete blocks 10*10*10cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size). Including cost of cutting holes&making good the walls etc.				
	17.37.1	For 100 mm dia pipe	Each	250.00	112.50	28125.00
4	17.57	Providing & fixing collar				
	17.57.1	100 mm dia				
	17.57.1.1	Sand Cast iron S&S as per IS:1729	Each	50.00	177.85	8892.50
5	12.22	Making khurras 45x45 cm with average minimum thickness of 5 cm cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate of 20 mm nominal size) over P.V.C sheet 1mx1mx400micron, finished with 12mm cement plaster 1:3 (1 cement: 3 coarse sand) and a coat of neat cement rounding the edge end making and finishing the outlet complete.	Each	29.00	148.75	4313.75
6	12.44	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams	Each	29.00	32.75	949.75
		Total C/f to Summary				451001.00
		(NON-DSR)				
1	NS	Providing and fixing cast brass clean out plug with suitable insert keys for opening in brass cap, male threaded joint/reducer with G.I. socket caulked to Pipe/fittings of CI pipe /Floor trap including cost of lead joints etc. complete in all respect.				
	i	100 mm dia.	Each	54.00	586.00	31644.00
		Total C/f to Summary		Total DSR Items [iii]		31644.00
[iv]		WATER SUPPLY WORKS				
		DSR 2012 ITEMS				
		COLD WATER SUPPLY:				
		C.P.V.C PIPES				
1	18.8	Providing & fixing Chlorinated polyvinyl Chloride (CPVC) Pipes, having thermal stability for hot & cold wter supply, includign all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in charge.				
		Concealed work , including cutting chases and making good the walls etc,				
i	18.8.1	15 mm nominal outer dia pipes	RM	105.00	218.65	22958.25
ii	18.8.2	20 mm nominal outer dia pipes	RM	80.00	243.05	19444.00
iii	18.8.3	25 mm nominal outer dia pipes	RM	65.00	297.95	19366.75
		Internal work - Exposed on wall				

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
2	18.7	Providing & fixing Chlorinated polyvinyl Chloride (CPVC) Pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in charge.				
	18.7.1	15mm dia. nominal bore	RM	5.00	133.95	669.75
	18.7.2	20mm dia. nominal bore	RM	20.00	157.15	3143.00
	18.7.3	25mm dia. nominal bore	RM	20.00	197.90	3958.00
	18.7.4	32mm dia. nominal bore	RM	5.00	252.65	1263.25
	18.7.5	40mm dia. nominal bore	RM	10.00	348.25	3482.50
	18.7.6	50mm dia. nominal bore	RM	20.00	514.35	10287.00
3	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality(screwed end)				
	18.17.2	32 mm nominal bore.	Each	4.00	450.90	1803.60
	18.17.3	40 mm nominal bore	Each	6.00	546.05	3276.30
	18.17.4	50 mm nominal bore	Each	2.00	780.60	1561.20
4	18.18	Providing and fixing ball (brass) valve of approved quality. High or low pressure, with plastic				
	18.18.1	15 mm nominal bore.	Each	9.00	258.05	2322.45
	18.18.2	20 mm nominal bore.	Each	1.00	360.20	360.20
	18.18.3	25 mm nominal bore	Each	2.00	421.65	843.30
		External work				
5	18.9	Providing & fixing Chlorinated polyvinyl Chloride (CPVC) Pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, This includes jointing of pipes & fittings with one step CPVC solvent cement , trenching , refilling and testing of joints complete as per direction of Engineer in charge.				
	18.9.7	62.5 mm dia. nominal inner dia pipes	RM	100.00	1326.35	132635.00
6	18.12	Providing and fixing G.I. pipe complete with G.I fittings including trenching and refilling etc.				
	18.12.7	65 mm dia nominal bore	RM	26.00	453.55	11792.30
	18.12.8	80 mm dia nominal bore	RM	18.00	573.40	10321.20
7	18.32	Constructing masonry Chamber 30X30X50 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 Cement : 4 Coarse sand) for stop cock, with C.I. surface box 100*100*75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 Cement : 2 Coarse sand : 4 graded stone aggregate 20mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40mm 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:				
	18.32.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	1.00	908.95	908.95
8	18.13	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including cutting and threading in the pipe etc. complete:				
	18.13.1	25 to 40 mm nominal bore	Each	4.00	277.35	1109.40
	18.13.2	50 to 80 mm nominal bore	Each	4.00	630.15	2520.60
		Total C/f to Summary		Total DSR Items [iv]		254027.00

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
		NON SCHEDULE ITEMS				
		Internal work - Exposed on wall				
9		Providing & fixing Chlorinated polyvinyl Chloride (CPVC) Pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in charge.				
i		100mm dia. nominal bore	RM	5.00	850.00	4250.00
10		Providing and fixing PN 16 Butterfly valve of the following dia				
i		100mm dia. nominal bore	RM	1.00	2500.00	2500.00
11	NS	Providing and fixing Puddle flanges fabricated out of 600mm long GI/MS pipe welded with 6mm thick M S plates along with flanges of suitable size and properly fixed in walls and top slabs of OHT / UGT complete.				
i		50mm dia	Each	10.00	325.33	3253.26
ii		80mm dia	Each	8.00	699.83	5598.63
12	NS	Providing & fixing of hand lever operated forged brass body full way ball valve type isolating valve having forged brass hard chrome plated mirror finish ball, steel handle with PVC grip, teflon seat, screwed ends tested to a pressure of 15 kg/sqcm complete.				
i		50 mm nominal bore	Each	1.00	1350.00	1350.00
13	NS	Providing and fixing 600 mm long MS Heavy Class puddle flanges fabricated out of 6 mm thick M.S. plates of suitable size properly fixed in walls & top slab of tanks of following diameters				
i		25 mm dia	Each	400.00	1500.00	600000.00
ii		32 mm dia	Each	400.00	2000.00	800000.00
iii		50 mm dia	Each	400.00	2500.00	1000000.00
iv		80 mm dia	Each	400.00	3000.00	1200000.00
v		100 mm dia	Each	400.00	3500.00	1400000.00
vi		150 mm dia	Each	40.00	4000.00	160000.00
		Total C/f to Summary		Total NS Items [iv]		5176951.89
		FLUSHING WATER SUPPLY:				
		C.P.V.C PIPES				
1	18.8	Providing & fixing Chlorinated polyvinyl Chloride (CPVC) Pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in charge.				
		Concealed work, including cutting chases and making good the walls etc,				
i	18.8.1	15 mm nominal outer dia pipes	RM	70.00	218.65	15305.50
ii	18.8.2	20 mm nominal outer dia pipes	RM	40.00	243.05	9722.00
iii	18.8.3	25 mm nominal outer dia pipes	RM	55.00	297.95	16387.25
		Internal work - Exposed on wall				

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
2	18.7	Providing & fixing Chlorinated polyvinyl Chloride (CPVC) Pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in charge.				
	18.7.3	25mm dia. nominal bore	RM	4.00	197.90	791.60
	18.7.4	32mm dia. nominal bore	RM	12.00	252.65	3031.80
	18.7.5	40mm dia. nominal bore	RM	12.00	348.25	4179.00
	18.7.6	50mm dia. nominal bore	RM	20.00	514.35	10287.00
3	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality(screwed end)				
	18.17.1	25 mm nominal bore.	Each	4.00	372.95	1491.80
	18.17.2	32 mm nominal bore.	Each	8.00	450.90	3607.20
	18.17.4	50 mm nominal bore.	Each	3.00	780.60	2341.80
	18.17.5	65 mm nominal bore.	Each	3.00	780.60	2341.80
	18.17.6	80 mm nominal bore.	Each	1.00	1832.95	1832.95
		Total C/f to Summary		Total DSR Items [iv]		71319.70
		NON DSR				
1		Providing & fixing Chlorinated polyvinyl Chloride (CPVC) Pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and testing of joints complete as per direction of Engineer in charge.				
		80mm dia. nominal bore	RM	12.00	850.00	10200.00
		Total C/f to Summary		Total DSR Items [iv]		10200.00
IV		EXTERNAL SEWERAGE				
1.0	2.10	Excavating trenches of required width for pipes, cables, etc., including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering etc. and disposing of surplus excavated soil as directed, with in a lead of 50 m:				
		All kinds of soil.				
	2.10.1.2	Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia.	RM	200.00	165.60	33120.00
2.0	19.1	Providing, laying and jointing glazed stone ware 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.				
	19.1.2	150 mm diameter	RM	110.00	219.05	24095.50
	19.1.3	200 mm diameter	RM	90.00	323.05	29074.50

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
3.0	19.3	Providing and laying cement concrete 1 : 5 : 10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) upto haunches of S.W. Pipes including bed concrete as per standard design.				
i	19.3.2	150 mm diameter	RM	110.00	382.75	42102.50
	19.3.3	200 mm diameter	RM	90.00	449.90	40491.00
4.0	19.4.2.1	Providing and fixing square mouth S. W. Gully trap grade `A` complete with C.I. grating brick masonry chamber with F.P.S bricks and water tight CI cover with frame of 300 x 300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design				
		150 x 100 mm. size P type	Each	6.00	1278.30	7669.80
5.0	19.7	Constructing brick masonry manhole in cement mortar 1 : 4 (1 cement : 4 coarse sand) RCC top slab with 1 : 2 : 4 mix (1 cement : 2 coarse sand : 4 grade stone aggregate 20mm nominal size); foundation concrete 1:4:8 mix (1 cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size) inside plastering 12 mm thick with cement mortar 1:3 (1cement 3 coarse sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 (1cement : 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) finishd with a floating coat of neat cement complete as per standard design				
	19.7.1	Inside size 90 x 80 cm & 45 cm deep including CI cover with frame (light duty) 455 x 610mm internal dimension total wt. of cover & frame to be not less than 38 kg (wt. of cover 23 kg and wt. of frame 15 kg)				
6.0	19.7.1.1	With F.P.S. bricks with class designation 75	Each	12.00	7132.00	85584.00
	19.16	Providing and fixing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910 on 12 mm dia. steel bar conforming to IS: 1786 having minimum cross section as 23 mm x 25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacturer's permanent identification mark to be visible even after fixing, including fixing in manholes with 30 x 20 x 15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.				
		Total Carried to DSR Items	Each	40.00	256.75	10270.00
V		EXTERNAL DRAINAGE				272407.30

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
1.0	2.10	Excavating trenches in all kind of soil of required width for pipes. including excavation for sockets and dressing of sides, ramming of bottoms, including getting out the excavated soil & then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating Each deposited layer by ramming, watering, etc & disposing of surplus excavated soil as directed within a lead of 50m.				
		up to 1.50 m depth				
i	2.10.1.2	Pipes 80 mm to 300 mm diameter	RM	191.00	165.60	31629.60
2.0	19.3	Providing and laying cement concrete 1 : 5 : 10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) upto haunches of RCC Pipes including bed concrete as per standard design.				
i	19.3.2	150 mm diameter	RM	85.00	382.75	32533.75
ii	19.3.4	250 mm diameter	RM	106.00	523.75	55517.50
3.0	19.6	Providing and laying non-pressure NP2 Class (light duty) R.C.C. pipes with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1cement :2 fine sand) including testing of joints etc complete.				
i	19.6.2	150 mm diameter R.C.C pipes	RM	85.00	254.50	21632.50
ii	19.6.3	250 mm diameter R.C.C pipes	RM	106.00	342.45	36299.70
iii	19.6.4	300 mm diameter R.C.C. pipe	RM	86.00	422.90	36369.40
iv	19.6.6	500 mm diameter R.C.C pipe	RM	52.00	722.50	37570.00
v	19.6.7	600 mm diameter R.C.C pipe	RM	40.00	1084.25	43370.00
4.0	19.9.1.1	Constructing brick masonry circular type manhole 0.91m internal dia at bottom and 0.56m dia at top in cement mortar 1 : 4 (1 cement : 4 coarse sand), inside plastering 12 mm thick with cement mortar 1:3 (1cement 3 coarse sand) finished with a floating coat of neat cement, foundation concrete 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channels in cement concrete 1:2:4 (1cement : 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) finishd with a floating coat of neat cement complete as per standard design				
		0.91 m deep with SFRC cover and frame (heavy duty, HD-20 grade designation) 560 mm internal diameter conforming to IS : 12592, total weight of cover and frame to be not less than 182 Kg fixed in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12 mm thick cement plaster at the external surface shall be paid for separately) with F.P.S.bricks class designation 75				
5.0	19.10.1	Extra for depth for circular manhole 0.91m internal dia at bottom with beyond 0.91m to 1.67m.	Each	10.00	7007.40	70074.00
		With FPS Bricks class designated 75	RM	8.00	3498.25	27986.00

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
6.0	19.27.1	Constructing brick masonry road gully chamber 50 x 45 x 60 cm with bricks of class designation 75 in cement mortar 1:4 (1 cement : 4 coarse sand) including 500 x 450mm precast RCC horizontal grating with frame complete as per standard design With FPS bricks	Each	12.00	3193.50	38322.00
6.0	19.16	Providing and fixing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS : 10910 on 12 mm dia. steel bar conforming to IS: 1786 having minimum cross section as 23 mm x 25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specifications and having manufacturer's permanent identification mark to be visible even after fixing, including fixing in manholes with 30 x 20 x 15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	Each	45.00	256.75	11553.75
		Total Carried to DSR Items				442858.20

ELECTRICAL WORKS

SUMMARY OF COST

S.NO	NAME OF SUB-HEAD	AMOUNT	
		DSR 2012	NON SCHEDULE
i	INTERNAL ELECTRICAL WORKS	9126330.50	20310640.00
	Total C/F To Summary	9126330.50	20310640.00

BILL OF QUANTITIES						
SECTION-B : INTERNAL ELECTRICAL WORKS						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
DSR ITEMS						
1.0		Point wiring in PVC conduit, with modular type switch :-				
		Wiring for light point/fan point/exhaust fan point/call bell point with 1.5 sqmm FR PVC insulated copper conductor single core cable in surface / recessed PVC conduit, with modular switch, modular plate, suitable GI box and earthing the point with 1.5 sqmm FR PVC insulated copper conductor single core cable etc. as required.	Point	1690.00	664.00	1122160.00
2.0	1.11	Group C Wiring for twin control light point with 1.5 sqmm FR PVC insulated copper conductor single core cable in surface / recessed PVC conduit, with 2 Way modular switch, modular plate, suitable GI box and earthing the point with 1.5 sqmm FR PVC insulated copper conductor single core cable etc. as required.	Point	20.00	710.00	14200.00
3.0		Sub main wiring in PVC conduit :-				
		Wiring for Submain/ Circuit wiring alongwith earth wire with the following sizes of PVC insulated, copper conductor single core cable in surface/ recessed PVC conduit as required.				
i	1.14.2	2 x 2.5 sq.mm. +1 x 2.5 sq.mm. Earth wire	RM	12500.00	131.00	1637500.00
ii	1.14.3	2 x 4 sq.mm. +1 x 4 sq.mm. Earth wire	RM	3500.00	162.00	567000.00
iii	1.14.4	2 x 6 sq.mm. +1 x 6 sq.mm. Earth wire	RM	1680.00	206.00	346080.00
iv	1.14.11	4 x 10 sq.mm. + 2 x 10 sq.mm. Earth wire	RM	2000.00	562.00	1124000.00
v	1.14.12	4 x 16 sq.mm. + 2 x 16 sq.mm. Earth wire	RM	2000.00	789.00	1578000.00
4.0		S/F Modular type electronic fan regulator :-				
		Supply and fixing of stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	Each	351.00	322.00	113022.00
5.0		S/F Modular type blanking plate :-				
		Supply and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Each	10.00	22.00	220.00
6.0		S/F MODULAR BOXES, BASE & COVER PLATE :-				
		Supplying and fixing following size / modules, GI box along with modular base & cover plate for modular switches in recess etc as required				
i	1.27.1	1 or 2 Module (75 mm x 75 mm)	Each	326.00	142.00	46292.00
ii	1.27.2	4 Module (125 mm x 75 mm)	Each	50.00	154.00	7700.00
7.0		S/F MODULAR TYPE SWITCH / SOCKET :-				
		Supplying and fixing following modular switch / socket on the existing modular plate & switch box including connections but excluding modular plate etc as required				
i	1.24.1	5/6 amps switch	Nos	250.00	75.00	18750.00
ii	1.24.4	3 pin 5/6 amp. Socket outlet	Nos	250.00	96.00	24000.00
iii	1.24.6	Telephone Socket outlet	Each	46.00	89.00	4094.00
8.0		Supply and fixing of following sizes of medium class PVC conduit along with accessories in surface/recess including cutting the wall and making good the same in case of recessed conduit as required :				
i	1.21.1	20 mm.	RM	3500.00	56.50	197750.00

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
ii	1.21.2	25 mm.	RM	10000.00	64.50	645000.00
iii	1.21.3	32 mm	RM	2500.00	80.50	201250.00
iv	1.21.4	40 mm	RM	1000.00	106.00	106000.00
v	1.21.5	50 mm	RM	200.00	135.00	27000.00
9.0		Supply and drawing telephone wire of following pair, 0.5 sq.mm. FR PVC insulated copper conductor, unArmoured telephone cable in the existing surface / recessed conduit as required.				
	1.18.2	2 Pair	RM	2300.00	15.50	35650.00
		S/F power plug point with all accessories :-				
10.0	1.31	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 1 nos. 3 pin 5/6 amps modular socket outlet and one no. 5/6 amps modular switch, connection, painting etc. as required.	Each	98.00	288.00	28224.00
		S/F power plug point with all accessories :-				
11.0	1.32	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing 6 pin 15/16 & 5/6 amps modular socket outlet and 15/16 amps modular switch, connection, painting etc. as required.	Each	155.00	366.00	56730.00
12.0		Supplying and fixing 5 amps. to 32 amps. rating, 240 volts 'C' series, miniature circuit breaker (MCB)suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
i	2.10.1	Single pole	Each	644.00	141.00	90804.00
13.0		Supplying and fixing following rating, double pole, (single phase and neutral) 240 volts, residual current circuit breaker (RCCB), having a sensitivity current Poin upto 300 milliampere in the existing MCB DB complete with connections,testing and commissioning etc. as required :				
i	2.14.1	25 amps	Each	21.00	1318.00	27678.00
14.0		Supplying and fixing following way, prewired SP & N MCB distribution board of sheet steel for 240 volts,on surface /recess, complete with loose wire box,terminal blocks,duly prewired with suitable size FR PVC insulated copper conductor upto terminal din bar, finned copper bus bar,neutral link, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. as required (But without MCB /				
i	2.7.4	2 + 4 way Double Door	Each	13.00	2152.00	27976.00
	2.7.5	2 + 8 way Double Door	Each	8.00	2572.00	20576.00
15.0	2.18	Supplying and fixing 20 amps, 240 volts, SPN, industrial type socket outlet, with 2 poles and earth metal enclosed plug top along with 20 amps. "C" series, SP MCB in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket outlet, and complete with connections, testing and commissioning etc. as required.	Each	5.00	693.00	3465.00

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
16.0		Supplying and fixing following way, prewired TP & N MCB distribution board of sheet steel for 415 volts, on surface /recess, complete with loose wire box, terminal blocks, duly prewired with suitable size FR PVC insulated copper conductor upto terminal din bar, tinned copper bus bar, neutral link, earth bar, din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc. as required (But without MCB / RCCB / Isolators)				
i	2.8.5	4 way (4 + 12), Double door, horizontal type	Each	15.00	6345.00	95175.00
	2.8.6	6 way (4 + 18), Double door, horizontal type	Each	10.00	8197.00	81970.00
ii	2.8.7	8 way (4 + 24), Double door, horizontal type	Each	4.00	8984.00	35936.00
	2.8.8	12 way (4 + 36), Double door, horizontal type	Each	0.00	11042.00	0.00
17.0		Supplying & fixing following rating, four pole (three phase & neutral), 415 volts residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
i	2.15.1	25 Amp.	Each	5.00	1679.00	8395.00
ii	2.15.2	40 Amp.	Each	20.00	1703.00	34060.00
	2.15.3	63 Amp.	Each	6.00	1965.00	11790.00
18.0	5.4	Earthing with GI earth plate 600mm x 600 mm x 6mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc, with coke and salt) as required.	Set	8.00	3996.00	31968.00
19.0	5.8	Supplying and laying 25 mm x 5 mm. Copper strip at 0.50 M. below ground as strip earth electrode, including connection/ terminating with GI nut, bolt, spring ,washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of brass nut bolts & spring washer spaced at 50 mm)	RM	64.00	680.00	43520.00
20.0	5.9	Supplying and laying 25 mm x 5 mm. G.I. strip at 0.50 M. below ground as strip earth electrode, including connection/ terminating with GI nut, bolt, spring ,washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of GI nut bolts & spring washer spaced at 50 mm)	RM	64.00	97.50	6240.00
21.0	5.14	Providing & fixing 25mm x 5mm Copper. strip on surface or in recess for connections etc. as required.	RM	200.00	766.00	153200.00
22.0	5.15	Providing & fixing 25mm x 5mm G.I. strip on surface or in recess for connections etc. as required.	RM	200.00	120.00	24000.00
23.0	2.21	Providing and fixing M.V. danger notice plate of 200mmx150mm made of mild steel, atleast 2mm thick and vitreous enamelled white on both sides and with inscription single red colour on front side as required.	Each	8.00	121.00	968.00
24.0	1.35	Erection of wall bracket / ceiling fittings of all sizes and shapes containing upto two GLS lamps per fitting, complete with all accessories including connections etc. as required.	Each	76.00	39.00	2964.00

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
25.0	1.41	Installation, testing and commissioning of prewired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tubes etc. directly on ceiling / wall, including connection with 1.5 sq. mm. PVC insulated, copper conductor, single core cable etc. as required.	Each	684.00	69.50	47538.00
26.0	1.45	Installation, testing and commissioning of ceiling fan including wiring the down rod of standard length (upto 30 cm.) with 1.5 sq. mm. FR PVC insulated, copper conductor, single core cable, including providing and fixing phenolic laminated sheet cover on the fan box etc. as required.	Each	351.00	99.00	34749.00
27.0	1.50.1	Installation of exhaust fan upto 450 mm sweep in the existing opening, including making the hole to suit the size of the above fan, making good the damage, connections, testing, commissioning etc. as required.	Each	24.00	163.00	3912.00
28.0	1.51	Extra for fixing the louvers / shutters complete with frame for exhaust fans of all sizes.	Each	24.00	68.50	1644.00
29.0		Supplying, fabricating and installing following size of perforated pre painted M.S. cable trays with perforation not more than 17.5% in convenient sections, joined with connectors suspended from the ceiling with M.S. suspenders including bolts and nuts, painting suspenders etc. as required.				
i	4.1.1	100 mm width X 50 mm depth X 1.6 mm thickness	RM	100.00	405.00	40500.00
ii	4.1.2	150 mm width X 50 mm depth X 1.6 mm thickness	RM	100.00	464.00	46400.00
iii	4.1.3	300 mm width X 50 mm depth X 1.6 mm thickness	RM	80.00	677.00	54160.00
30.0		Supplying & making indoor end terminations with brass compression gland and aluminum lugs for following sizes of PVC insulated and PVC sheathed/ XLPE aluminium conductor cable of 1.1 KV grade as required.				
	9.1.30	3.5 X 300 sq. mm (70mm)	Each	24.00	867.00	20808.00
	9.1.27	3.5 X 185 sq. mm (57mm)	Each	4.00	616.00	2464.00
	9.1.24	3.5 X 95 sq. mm (45mm)	Each	6.00	366.00	2196.00
	9.1.21	3.5 X 35 sq. mm (32mm)	Each	4.00	223.00	892.00
	9.1.33	4 x 16 sq. mm (28mm)	Each	20.00	188.00	3760.00
31.0	7.5	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size in the existing RCC/HUME/METAL pipe as required.				
	7.5.4	Above 185 sq. mm and upto 400 sq. mm	RM	1000.00	44.00	44000.00
32.0	7.8	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on cable tray as required.				
	7.8.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	RM	200.00	16.50	3300.00
	7.8.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	RM	300.00	38.50	11550.00
	7.8.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	RM	500.00	72.50	36250.00
33.0	8.5	Laying of one number XLPE power cable of 33 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required.				
	8.5.2	Above 120 sq. mm. and upto 400 sq. mm.	Metre	250.00	231.00	57750.00

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
34.0		Supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required.				
	10.7.3	240 sq. mm.	Set	3.00	14225.00	42675.00
35.0		Supplying and making outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 33 KV grade as required.				
	10.7.3	240 sq. mm.	Set	1.00	19128.00	19128.00
36.0	18.12	Providing and fixing G.I. pipe complete with G.I fittings including trenching and refilling etc.				
	18.12.7	65 mm dia nominal bore	RM	50.00	453.55	22677.50
	18.12.8	80 mm dia nominal bore	RM	50.00	573.40	28670.00
		Total carried to DSR Items			Rs.	9126330.50
II) NON SCHEDULED ITEMS						
		S/F power plug point with all accessories :-				
1.0		Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess, including providing and fixing Two nos. 3 pin 5/6 amps modular socket outlet and One no. 5/6 amps modular switch, connection, painting etc. as required.	Each	326.00	300.00	97800.00
2.0		Supply and installation of plug-in-type telephone socket outlet with 1.2mm thick outlet box and cover plate complete as required in 3 module plate (1 socket with 2 blank plate).				
		RJ - 11	Each	46.00	116.00	5336.00
3.0		Supply, installation, testing and commissioning of Cat - 6 flush mounted information outlets wired according to T568B standard with a faceplate. The plastic shall be high impact, flame retardant & UL-rated thermoplastic with minimum insulation.				
		Single surface mount/recessed box with jacks (RJ-45) I/O	Each	326.00	126.00	41076.00
4.0		Supply, laying, testing and commissioning of 4 pair Cat - 6 non plenum cable of 24 AWG solid copper conductors in existing conduits.	RM	3260.00	26.00	84760.00
5.0		Supplying, fixing, connecting & testing of Telephone Tag Block krone type in a suitable size 1.6 mm thick dust and vermin proof Sheet steel enclosure duly painted by synthetic enamel over anti corrosive primer, lockable and hinged cover with provision for cable through glands complete in all respects.				
i		40 pair krone	Each	4.00	602.00	2408.00
6.0		Supplying and Earthing with Cu earth plate 600mm x 600 mm x 3 mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc, with coke and salt) as required.	Set	8.00	6010.00	48080.00
7.0		Providing & fixing 50mm x 6mm G.I. strip on surface or in recess for connections etc. as required.	Rm	100.00	111.00	11100.00
8.0		Providing & fixing 50mm x 6mm Cu. strip on surface or in recess for connections etc. as required.	Rm	100.00	1001.00	100100.00

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
9.0		S/F of hexagonal fan box with hexagonal side of approx. 80 mm.in length fabricated from 14 SWG M.S. sheet incorporating with 10 mm. dia. M.S. round bar duly bent for supporting fan hanger painted with red oxide and screwing arrangement with wiring conduit laid in the R.C.C. roof before concreting along with supply of all materials, labour, T&P etc. for proper completion of work.	Each	351.00	255.00	89505.00
10.0		Supply, laying, jointing, testing and commissioning of ISI marked (IS : 14930, part 2) H.D.P.E. (DWC) Double wall Corrugated pipe for cable laying having corrugation on outer wall and plain smooth surface at inner side including transportation uPointo the site, jointing, providing and fixing all fittings i.e. sockets, couplers, reducers, end caps etc to complete the works in all respects.				
	i	300 mm. ID	RM	600.00	803.00	481800.00
	ii	150 mm. ID	RM	200.00	546.00	109200.00
11.0		Supply of wall mounted mirror light fixtures complete as per standard item with copper wiring and GLS / CFL lamps as required as per the standard catalogue item approved by engineer-in-charge.				
	i	1 x 11 W	Each	76.00	700.00	53200.00
12.0		Supply of wall / ceiling surface mounted T5 fluorescent tube light luminaires with all accessories as per standard item ballasts, starters, capacitor, control gear box, including required each fluorescent tube etc complete as required as per the standard catalogue item as approved by engineer-in-charge . power factor shall not be less than 0.95 and THD shall be less than 10%				
	i	1 x 18 watt (BBS170 1xDLED -5000 PSU WH) 15 W LED Downlighter	Each	108.00	2100.00	226800.00
	ii	1 x 28 W T5 (CRCA Body)(TMS122 M.1xTL5-28W EBT)	Each	118.00	1170.00	138060.00
	iii	1 X 43 w led Flat Panel (RC366B LED33-5000 PSU OD WH)	Each	458.00	9265.00	4243370.00
	iv	3 x 14 W Recessed mounted Light (RC795B 3xTL-514W EBP)	Each	127.00	5820.00	739140.00
	v	4 x 14 W Recessed mounted Light (RC795B 4xTL-514W EBP)	Each	428.00	6000.00	2568000.00
13.0		Supplying of 240V, 1 phase Ceiling Fans complete with suitable length down rod as required. The fan should be five star rating as per BEE.				
	i	1200mm sweep	Each	351.00	1305.00	458055.00
14.0		Supplying of 240V, 1 phase Exhaust fans with 1.5 Sqmm insulated copper conductor wires for connections complete as required. The exhaust fan should be five star rating as per BEE.				
		450mm sweep	Each	224.00	1150.00	257600.00
15.0		Supplying testing & commissioning for following size of XLPE aluminium conductor armoured cable of 1.1 KV grade as required.				
	i	3.5 Core 300 sq. mm. Armoured Aluminium cable.	RM	1050.00	1407.00	1477350.00
	ii	3.5 X 185 sq. mm Armoured Aluminium cable.	RM	500.00	920.00	460000.00
	iii	3.5 X 95 sq. mm Armoured Aluminium cable.	RM	300.00	497.00	149100.00
	iv	3.5 X 35 sq. mm Armoured Aluminium cable.	RM	200.00	228.00	45600.00
	v	4 x 16 sq.mm. Armoured Aluminium cable.	RM	500.00	151.00	75500.00
16.0		Erection of wall bracket / ceiling fittings of all sizes and shapes containing three/four lamps per fitting, complete with all accessories including connections etc. as required.	Each	555.00	40.00	22200.00

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
17.0		Design, fabrication, assembling, wiring, supply installation, testing and commissioning of Following Panels, fabricated out of 14/16 Gauge CRCA sheet steel in cubicle compartmentised modular construction complete with supporting rigid structure, interconnections, aluminium bus bar strip with heat shrinkable colour coded current density of bus bar 0.8 A per sqmm Identification on all breakers & MCCB to indicate the area they serve. Degree of protection IP 42, earthing hinged doors with 2.5 sqmm tinned braded copper wire, free standing floor mounted with removable Gland Plates on top & bottom of the panel, all mounting plates shall be GI sheets. Panels shall be treated with all anticorrosive process before powder coating as per specifications and final approved shade. Galvanised hardwares with zinc passivation shall be used in fabrication of panels 2 Nos. earthing terminals shall be provided for all distribution panels. Panels shall be suitable for 415 V, 3 Phase, 4 Wire, 50Hz				
i		Main LT Panel				
		Incoming: (Transformer)				
		One (1) Nos. 1250A FP ACB EDO Type				
		Metering:				
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		One (1) Nos. (0-1250A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		One (1) Set of Phase Indication Lamp with 2A SP MCB.				
		Incoming: (DG 1)				
		One (1) Nos.800A TPN MCCB (35KA)				
		Metering:				
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		One (1) Nos. (0-800A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		One (1) Set of Phase Indication Lamp with 2A SP MCB.				
		Bus Coupler:				
		Two (2) Nos. 1600A, FP ACB EDO Type				
		Bus Bar:				
		4000A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Two (2) Each. 800A FP ACB EDO Type				
		Three (3) Each. 160A TPN MCCB				
		Four (4) Each. 100A TPN MCCB				
		Three (3) Each. 63A TPN MCCB	Set	1.00	1750000.00	1750000.00
ii		Lower Ground Floor Panel				
		Incoming:				
		One (1) Nos.100A TPN MCCB				
		Metering:				
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		One (1) Nos. (0-100A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		One (1) Set of Phase Indication Lamp with 2A SP MCB.				
		Bus Bar:				
		160A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Three (3) Nos. 40A TPN MCB				

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
		Six (6) Nos. 32A TPN MPCB				
		Four (4) Nos. 25A TPN MCB				
		Three (3) Nos. 25A DP MCB	Set	1.00	40000.00	40000.00
iii		Lower Ground Floor UPS Panel				
		Incoming:				
		One (1) Nos.25A DP MCB				
		Metering:				
		One (1) Nos. (0-240V)				
		One (1) Nos. (0-25A)				
		One (1) Set of Phase Indication Lamp				
		Bus Bar:				
		40A,DP aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Two (2) Nos. 16A DP MCB	Set	1.00	8500.00	8500.00
iv		Ground Floor Panel				
		Incoming:				
		One (1) Nos. 100A TPN MCCB				
		Metering:				
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		One (1) Nos. (0-100A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		One (1) Set of Phase Indication Lamp with 2A SP MCB.				
		Bus Bar:				
		125A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Three (3) Nos. 40A TPN MCB				
		Four (4) Nos. 25A TPN MCB				
		Six (6) Nos. 32A TPN MPCB				
		Two (2) Nos. 25A DP MCB				
		One (1) Nos. 16A DP MCB	Set	1.00	25000.00	25000.00
v		Ground Floor UPS Panel				
		Incoming:				
		One (1) Nos.25A DP MCB				
		Metering:				
		One (1) Nos. (0-240V)				
		One (1) Nos. (0-25A)				
		One (1) Set of Phase Indication Lamp				
		Bus Bar:				
		40A,DP aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Three (3) Nos. 16A DP MCB	Set	1.00	8500.00	8500.00
vi		First Floor Panel				
		Incoming:				
		One (1) Nos. 100A TPN MCCB				
		Metering:				

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		One (1) Nos. (0-100A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		One (1) Set of Phase Indication Lamp with 2A SP MCB.				
		Bus Bar:				
		125A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Four (4) Nos. 40A TPN MCB				
		Six (6) Nos. 32A TPN MPCB				
		Two (2) Nos. 25A TPN MCB				
		Four (4) Nos. 16A DP MCB	Set	1.00	25000.00	25000.00
vii		First Floor UPS Panel				
		Incoming:				
		One (1) Nos.40A TPN MCB				
		Metering:				
		One (1) Nos. (0-500V)				
		One (1) Nos. (0-40A)				
		One (1) Set of Phase Indication Lamp				
		Bus Bar:				
		63A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Two (2) Nos. 25A TPN MCB				
		Two (2) Nos. 16A DP MCB	Set	1.00	8500.00	8500.00
viii		Second Floor Panel				
		Incoming:				
		One (1) Nos.160A TPN MCCB				
		Metering:				
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		One (1) Nos. (0-160A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		One (1) Set of Phase Indication Lamp with 2A SP MCB.				
		Bus Bar:				
		200A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Two (2) Nos. 63A TPN MCCB				
		Five (5) Nos. 40A TPN MCB				
		Six (6) Nos. 32A TPN MPCB				
		Two (2) Nos. 25A DP MCB				
		One (1) Nos. 16A DP MCB	Set	1.00	40000.00	40000.00
ix		Second Floor UPS Panel				
		Incoming:				
		One (1) Nos. 63A TPN MCCB				
		Metering:				
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		One (1) Nos. (0-63A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		One (1) Set of Phase Indication Lamp with 2A SP MCB.				

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
		Bus Bar:				
		100A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Two (2) Nos. 40A TPN MCB				
		Two (2) Nos. 32A TPN MCB	Set	1.00	65000.00	65000.00
x		Third Floor Panel				
		Incoming:				
		One (1) Nos.160A TPN MCCB				
		Metering:				
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		One (1) Nos. (0-160A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		One (1) Set of Phase Indication Lamp with 2A SP MCB.				
		Bus Bar:				
		200A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Three (3) Nos. 63A TPN MCCB				
		Two (2) Nos. 40A TPN MCB				
		Four (4) Nos. 32A TPN MPCB				
		Two (2) Nos. 25A DP MCB				
		One (1) Nos. 16A DP MCB	Set	1.00	40000.00	40000.00
xi		Third Floor UPS Panel				
		Incoming:				
		One (1) Nos. 63A TPN MCCB				
		Metering:				
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		One (1) Nos. (0-63A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		One (1) Set of Phase Indication Lamp with 2A SP MCB.				
		Bus Bar:				
		100A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Two (2) Nos. 40A TPN MCB				
		Two (2) Nos. 32A TPN MCB	Set	1.00	65000.00	65000.00
x		Capacitor Panel (250 KVAR)				
		Design, fabrication, assembling, wiring, supply installation, testing and commissioning of Automatic control panel with capacitors, fabricated out of 2 mm thick CRCA sheet steel in cubicle compartmentised modular construction, free standing floor mounted. Cable gland plates shall be provided on top the panels. Panels shall be treated with all anticorrosive process before powder coating as per specifications and final approved shade. 2 Nos. earthing terminals shall be provided for all distribution panels. Panels shall be suitable for 415 V, 3 Phase, 4 Wire, 50Hz supply system. Galvanised hardwares with zinc passivation shall be used in fabrication of panels.				
		Incoming				

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
		800 Amps FP electrically operated fully drawout type air circuit breaker as per specification and with following accessories:				
		96 x 96 sqmm 0-800 A digital Ammeter with selector switch, CTs				
		Phase indicating light shall be protected by 2 Amps SP MCBs – 3 sets				
		Power factor compensating relay (including power factor meter) in 7 steps for automatic cut off or add on capacitor units to keep the power factor at 0.97 with variation of loads. All associated auxiliary contactors / relays / timer / auto manual selector switches to be provided				
		Bus Bars				
		1000 Amps TPN aluminium bus bars with coloured heat shrinkable insulated sleeves – 1 set				
		Outgoing				
		Outgoing feeders consisting of following accessories :				
		3 Sets – 160 Amps TP MCCB, capacitor duty contactors & 50 KVAR heavy duty capacitors.				
		4 Sets – 63 A TP MCCBs, capacitor duty contactors & 25 KVAR heavy duty capacitors.				
		Auto Manual Selector switch push button and indicating lamps. – 11 Sets	Set	1.00	500000.00	500000.00
xi		External Feeder panel with timer and contractor				
		Incoming:-				
		(1) No. 63A FP MCCB (35 KA).				
		Metering:				
		One (1) No. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		One (1) No. (0-63A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		One (1) Set of Phase Indication Lamp with 2A SP MCB.				
		Bus Bar:				
		100A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Four (4) Each.32A TPN MCB	Set	1.00	25000.00	25000.00
18.0		Supply, Installation, testing, Commissioning of LPI Stormaster ESE type advance lightning protection complete with the lightning air terminal - Configured as a Spheroid which is comprised of separate electrically isolated 4 panels surrounding an Earthed Central Finial. The Insulation material used to electrically isolate the panels shall be comprised of a base polymer which provides high Ozone & UV resistance with di-electric strenght of 24-38 KV/mm tested as per NFC 17-102 & IEC 60-1:1989. The ESE terminal shall not contain any electronic circuits or any moving parts for its operation. The ESE terminal shall be tested & certified by CPRI (Central Power Research Institute, Govt of India) for the impulse current of 45 KA (8/20 micro sec) with 5 positive & 5 negative impulse. The ESE terminal shall be approved by DGMS (Director General of Mines Safety), Govt of India.				
i		Model: Stormaster 60	Each	1.00	175000.00	175000.00
ii		LPI Upper Termination Kit	Each	1.00	30000.00	30000.00
iii		LPI Lower Termination Kit	Each	1.00	4500.00	4500.00
iv		FRP Mast (2mtr) with Inline Coupling Unit	Each	1.00	20000.00	20000.00
v		GI Mast (3 mtr) with guy wire kit	Each	1.00	10500.00	10500.00

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
19.0		Supply, Installation, testing, Commissioning of J K Maintenance Free Chemical Gel Earthing - Dual Pipe (GI) Technology of "JK CHENSODE" 3mtr long 80mm dia permanently sealed at both the ends with the lead terminal at the top along with 50 kgs of duly filled with metallic conducting compound permanently sealed at both the ends with the lead terminal at the top along with 50 kgs of "RESLOW" grounding minerals duly tested & certified by CPRI. The earth pit chamber shall be of heavy duty Polyplastic earth pit cover.	Each	2.00	20000.00	40000.00
20.0		Supply, Installation, testing, Commissioning of specially designed lightning current LPI High Voltage Shielded Cable (HVSC) 7 layer cable consisting of Inner Core, Concentric Conductor (copper), Inner binding tape, Insulation material, Metallic screen, Outer binding tape, Outer sheath with the nominal cross sectional area of 50 sq.mm & overall diameter of 37mm with the insulation resistance of 1830 M Ohm-km, tested for 200 KV as per IEC 600601 connected to the Stormmaster terminal with the factory upper termination & connected to the earth pit with the lower terminal kit to safely route the lightning current.	Rm	80.00	4000.00	320000.00
21.0		H.V. PANEL (11 KV - VCB PANEL) Supply, installation, testing & commissioning of indoor type floor mounted metal clad, IP 52, 33 KV VCB panel with 3 nos VCB (1 incomer and 2 out goings), totally enclosed & fully interlocked, horizontal drawout, horizontal isolation type breaker as per IS : 13118, as ammended upto date and additional specifications, having capacities as mentioned below, single break, trip free mechanism, motorised charged and auto closing breaker suitable for use on 33 KV, 3 Phase, 50 Hz A. C. supply with short circuit fault level of 1000 MVA, complete with self contained, fully interlocked, rack in and rack out mechanism, air insulated but encapsulated Aluminium alloy bus bars of suitable fault level, G.I. earth bar, earth bar, breaker featured with mechanical ON / OFF indicator with hand trip device, spring release coil, shunt trip coil, control voltage of 24 Volt DC, TNC, LED type indicating lamps for phases and trip conditions and auxiliary switch of 6 NO + 6 NC and equipped with following switchgears and accessories.				
		The panel should be suitable for connections for up to 3 x 300 sq.mm XLPE 33 KV cable (cable entry from bottom), end termination with heat shrinkable jointing material etc. as required. (The Cost of end termination not included in this item)				
		power pack (1 working & 1 standby) with 220 Volt AC input & 24 Volt DC continuous output suitable for indicating lights & closing / tripping / indication of 3 Nos. HT panel boards with 2 Nos. 12 Volts each maintenance free batteries of suitable AH each, charging unit, capacitor bank for emergency delivering for trip system complete with suitable capacity of Ammeter & Voltmeter i/c connections with 2.5 sq.mm FRLS insulated copper conductor cable etc. including DC DB consisting of 8 nos 32 Amp DP MCB's for DC supply distribution to panels as required.				
		Incoming - 1 No. 630 Amp. VCB with followings -				
		(a) 1 set (3 nos) 33 KV / v3 / 110 / v3 Volts drawout type PT Class 0.5 accuracy and 100 VA burden with 1 No. Voltmeter (0-36 KV), analog type, selector switch for voltmeter and protection fuses/MCB for HT metering.				
		(b) 3 nos. dual core dual ratio CTs of ratio 200/100/5/5A of 15 VA burden and accuracy class-0.5 for metering and class 5P10 for protection.				
		(c) 1 No. - (0-200A) Ammeter, analog type with selector switches.				
		(d) Master trip relay				

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
		(e) Trip circuit supervision relay				
		(f) Microprocessor based numerical relay with IDMT setting for O/L, E/F and S/C protection.				
		(g) Restricted earth fault relay				
		(h) Over and Under voltage relay.				
		(i) Timer and TNC switch				
		Outgoing - 2 Nos. - 630 A VCB with followings in each breaker -				
		(a) 3 nos. dual core dual ratio CTs of ratio 200/100/5/5A of 15 VA burden and accuracy class-1 for metering and class 5P10 for protection.				
		(b) (0-200A) Ammeters, dual scale analog type & selector switches for ammeters.				
		(c) Microprocessor based numerical relay with IDMT & instantaneous element for O/L, E/F and S/C protection.				
		(d) Master trip relay				
22.0		(e) Trip circuit supervision relay Supply of 3 core stranded aluminium conductor 33 KV grade XLPE (E) (Cross linked Polyethylene) insulated PVC bedded, Galvanised flat steel strip armoured cable conforming to IS : 7098 (part II with latest amendments)	Sets	1.00	1500000.00	1500000.00
23.0		240 sq. mm 3 core Design, manufacture, testing at works supply, installation, commissioning, testing and commissioning at site 33 KV/440V, 3 phase, 50 Hz, delta/star connected, outdoor type following sizes of transformers, oil immersed ONAN cooled, complete with all fittings such as oil conservator, silica gel breather, thermometer, explosion vent, Local ON LOAD tap changer with RTCC for +5% & -15% tapplings in step of 1.25 bidirectional roller, diagram & rating plate, oil temperature indicator, winding temperature indicator and buchohltz relay with wiring upto marshalling box, lifting lugs, first filling of oil, weather proof HT cable box, LT bus duct disconnecting chamber minimum 8 mm thick non magnetic gland plate etc. complete as per specification including 10% extra oil in non returnable drum for topping up as required. (The transformer shall be subject to all tests specified in the specifications and test certificates shall be produced).	RM	250.00	6500.00	1625000.00
24.0		750 KVA DIESEL GENERATING SETS Supply, erection, connecting testing and commissioning of following silent type 3 phase 415 volts 50 cycle per second 1500 RPM complete with engine alternator, radiator etc. The engine shall be complete with flywheel to suit flexible coupling with guard, air cleaner, fuel pump, variable speed governor, fuel filter, lube oil filter, pump and cooler starter water pump, battery charging generator, voltage regulator, 24 volt charged batteries of adequate capacity and instrument panel comprising switch with key, lube oil temperature gauge, lube oil pressure gauge, water temperature gauge, battery charging ammeter, safety control for low lube oil pressure and high cooling water temperature with tripping. The cost should be inclusive of the Acoustic enclosure also.	No.	1.00	2000000.00	2000000.00
24.1						

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
		Costs allowed shall include full clay oil tank/piping, Acoustics Enclosure, AMF Panel with Change Over Switch arrangement suitable for Cable connections from transformer with required number of runs as per SLD etc.				
i		380 KVA	Nos.	1.00	2500000.00	2500000.00
24.2		DG Exhaust				
i		SITC of following sizes of MS pipes of thickness 5.2 mm including all accessories and MS/GI supports as required.				
		150 MM (NB) MS ERW Pipe	RM	70.00	2000.00	140000.00
ii		S&F of 50 MM thick mineral wool insulation (of 93 Kg. per cubic meter density) over the exhaust pipes of following diameter so that the temprature at the surface of pipe should not exceed 50 degree centigrade.				
		150 MM (NB) MS ERW Pipe	RM	70.00	350.00	24500.00
iii		SITC of following sizes of SS Flexible Exhaust bellows for the following pipes				
		150 MM (NB) MS ERW Pipe	Nos.	2.00	7000.00	14000.00
iv		S&F of 50 MM thick mineral wool insulation (of 93 Kg. per cubic meter density) over the silencers of one generator so that the temprature at the surface of pipe should not exceed 50 degree centigrade.				
		For 380 KVA DG Set	Nos.	2.00	8000.00	16000.00
v		S&F of miscellaneous Structural Support for exhaust pipes chimney of 30 meter	Kg	9000.00	50.00	450000.00
vi		Supply of HT 11 KV rubber hand gloves as per relevant IS Code	Set	2.00	1000.00	2000.00
vii		Supply and fixing CO2 type fire extinguisher conforming to IS 2876 with cylinder duly charged of capacity 4.5 kgs including fixing clamps brackets, bolts and nuts etc. as required.	Nos.	4.00	3500.00	14000.00
viii		Supplying of fire buckets of 9 litres capacity quality painted white from inside and red from outside and having inscription "FIRE" in white conforming to IS 2546-1974 duly amended upto date as required.	Nos.	4.00	5000.00	20000.00
ix		Sand Buckets:-Set of Four	Nos.	1.00	2500.00	2500.00
x		Supplying of first aid box with cover made out of 16 SWG MS sheet of size 450 mm x 600 mm x 200 mm and painted with two coats of enamel paint over one coat of steel primer and having inscription "FIRST AID BOX" in white and a red cross of suitable size with following items:				
		- 1 No. band-aid bandage 150mm				
		- 1 No. Savlon soap 100 ml				
		- 1 No. Bottle betadine 30 ml				
		- 1 No. Roll cotton				
		- 1 No. Packet dressing material	Set	1.00	1500.00	1500.00
		Mechanical foam with trolley	Set	2.00	6500.00	13000.00
xi		Supply, installation of 1.1 KV grade ISI marked rubber mats of 1 meter width.	RM	20.00	1200.00	24000.00
xii		Supply of standard First Aid Box. (as per relevant standard)	Nos..	1.00	1000.00	1000.00
		TOTAL FOR NON DSR ITEMS				20310640.00

**BILL OF QUANTITIES
FIRE PROTECTION WORKS**

Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
I		SUB HEAD (I) :- ELECTRICAL				
		DSR ITEMS				
1.0		Supplying and making end terminations with brass compression glands and aluminium lugs for following size of PVC insulated and PVC sheathed/XLPE aluminium conductor cable of 1.1 KV grade as required.				
i	9.1.27	3.5 Core 185 sq. mm. Armoured Aluminium cable.	Nos.	4.00	616.00	2464.00
	9.1.21	3.5 Core 95 sq. mm. Armoured Aluminium cable.	Nos.	4.00	714.00	2856.00
	9.1.19	3.5 Core 50 sq. mm. Armoured Aluminium cable.	Nos.	8.00	601.00	4808.00
2.0		Supplying, fabricating and installing following size of perforated pre painted M.S. cable trays with perforation not more than 17.5% in convenient sections, joined with connectors suspended from the ceiling with M.S. suspenders including bolts and nuts, painting suspenders etc. as required.				
i	4.1.1	100 mm width X 50 mm depth X 1.6 mm thickness	RM	100.00	405.00	40500.00
	4.1.4	101 mm width X 50 mm depth X 1.6 mm thickness	RM	50.00	677.00	33850.00
3.0	7.7	Laying and fixing of One number PVC insulated and PVC Sheathed/XLPE power cable of 1.1 kV grade of following size				
	7.7.1	Upto 35 sq. mm (clamped with 1 mm thick saddle)	RM	30.00	19.50	585.00
	7.7.3	Above 95 sq. mm and upto 185 sq. mm (clamped with 25/40 x 3mm)	RM	70.00	69.00	4830.00
		Total C/f to Summary		Total DSR ITEMS [i]		89893.00
		NON Scheduled items				
1		Fire Fighting Panel				
		(Location: - Pump Room)				
		Incoming:				
		One (1) Nos.400A,TPN MCCB with microprocessor based O/L, S/C and E/F releases.				
		Metering, Indication & Protection:				
		1 Sets of (0-500 Volt) 96 x 96mm Voltmeter with control fuses and 3 way selector switch.				
		1 Sets of (0-400 Amps) 96 x 96mm CT operated Ammeter with 3 way selector switch and 630/5A, CL-1, 10VA CT.				
		1 Sets of phase indicating lamps with Fuse.				

1.0	Providing, fixing, testing and commissioning of above ground M.S. C-Class Heavy Duty Pipes as per IS : 1239 (upto 150 mm dia.) and IS :3589 (upto 200 mm dia. And above) including cutting, screwing, welding etc. and providing all structural work fabricated from standard sections, (M.S. rounds, angles, channels etc.) and fittings like flanges, bends, tees, elbows, reducers, clamps, hangers, fasteners etc. including cutting, drilling, welding, cutting holes and chases in bricks /RCC walls/ slabs complete with painting of one coat of rich zinc primer and 2 or more coats of synthetic enamel paint of approved make / shade complete as per specification.				
i	150 mm dia.	RM	80	1750.00	140000.00
ii	80 mm dia.	RM	70	1050.00	73500.00
iii	25 mm dia.	RM	15	420.00	6300.00
2.0	Providing and Fixing M.S. pipe to I.S. 1239 (Medium duty) complete with all fittings like, unions, couplings, bends, elbows, tees, offsets, reducers, flanges as per table 'E' etc. to complete the work as per the requirement at site including painting with two coats of synthetic enamel paint , cutting and making good the walls complete. (for drain pipe).The cost shall include the MS/GI structural supports as per approved drawings and specifications.				
a)	80 mm dia	Metre	60.00	735.00	44100.00
3.0	Providing and fixing ISI marked S.S fire hydrant valve 80 mm inlet with single outlet and fitted with 63 mm dia instantaneous female coupling on the outlet complete including companion flange as per table "E", pvc blank cap and chain, nuts, bolts and 3 mm thick compressed asbestos gasket at locations as per drawings (inlet flange to I.S.5290 1969 Class C).				
4.0	Providing and fixing first aid fire hose reel drum wall mounting & swinging type fitted with 20 mm dia 36.5 m long high pressure hose to I.S. 5132 with 5 mm outlet SS nozzle with shut off valve (I.S. 884-1969). Name of Manufacturer should be embossed on the drum.	Each	18	5940.00	106920.00
		Each	15	7335.00	110025.00

5.0	Providing and fixing 63 mm dia 15 m long EPDM lined fabric hose including SS male and female instantaneous type coupling approved by fire authority, machine wound with copper wire complete in all respects. Hose shall conform to I.S. 636 Type II and coupling to I.S. 903-1975 with ISI certification	Each	36	3837.00	138132.00
6.0	Providing and fixing standard short size S.S branch pipe with SS nozzle 16 mm dia outlet with standard instantaneous type 63 mm dia coupling. (ISI marked).	Each	18	1885.00	33930.00
7.0	Providing and fixing standard fireman's axe with heavy insulated rubber handle tested for 20000 watts.	Each	15	836.00	12540.00
8.0	Providing & fixing gunmetal collecting head with 63 mm dia instantaneous type inlet and 150 mm dia flanged outlet with (including check valve and butterfly valve) for fire brigade connection to fire risers (I.S. 904-1965) complete in all respects with companion flanges, nuts, bolts, gaskets, etc.				
a)	Four way	Each	4.00	20260.00	81040.00
9.0	Providing, fixing, testing & commissioning of MS air cushion tank on top of each riser fabricated from 6mm thick MS plate, 200 mm in diameter and 1.2 m in height with dished ends fabricated from 8mm thick MS plate with Air release valve with stop cock, flanged inlet connection and drain arrangement with 25mm dia valve, pressure gauge with gun metal stop cock complete with all accessories as required and conforming to IS 4736-1968. (The cushion tank should be suitable for rated working pressure.	Each	3.00	12913.00	38739.00
10.0	Providing and fixing brass ball valve full bore type with lever and screwed female ends. (20 kg/sq.cm)				
a)	25 mm dia full bore type	Each	15.00	769.00	11535.00

11.0	Providing and fixing fully glazed fire hose cabinet door 2000x800 mm depth fabricated with 20x20x3 mm and 40x20x3 mm hollow box sections mounted with 3 Nos 100 mm M.S. anodised butt hinges on M.S. angle frame of 45x45x5 mm size with hold fasts fixed to wall with PCC (1:2:4) blocks 100x100x100 mm including hasp and steeple for locking with pad lock arrangement, 4 mm thick clear float glass panel "FIRE HOSE" written on it with fire red, stove enamelled red paint to M.S. sections, black paint on inner side of lower glass panel complete as per approved detail.	Each	15.00	6638.00	99570.00
12.0	Providing and fixing fire hose cabinet fabricated from 16 gauge M.S. sheet with single or double glazed front door and pad locking arrangement, painted Fire Red with Stove enamelled paint Fire Hose written on front including necessary supports approximate size 750x600x250 mm deep (to house two lengths of canvas hose with couplings, branch pipe and nozzle at terrace)	Each	3.00	4049.00	12147.00
13.0	Providing and fixing cast iron butterfly valves of PN 1.6 rating complete with bolts, nuts, 3 mm thick compressed asbestos gasket, companion flanges as per table "E" complete in all respects.	Each	4.00	3904.00	15616.00
a	80 mm dia with lever operated	Each	15.00	7335.00	110025.00
b	150 mm dia with lever operated	Each			
14.0	Providing and fixing C.I. double flanged horizontal dual plate wafer type non return valves PN 1.6 including washer, nuts, bolts, 3 mm thick compressed asbestos gasket companion flanges as per table "E" complete.	Each	1.00	17459.00	17459.00
a	150 mm dia	Each			
15.0	Providing and fixing 25 mm dia gunmetal single acting air release valve with screwed inlet tested for 20Kg/Cm2.	Each	3.00	613.00	1839.00

16.0	Providing and fixing dial type pressure gauge with isolation cock and chrome coated copper pipe on main header Dial diameter 150 mm celebration 0-15/ Kg/Cm2.	Each	15.00	278.00	4170.00
17.0	Providing and fixing 'Y' strainer with CI body and S.S. strainer for outlet of OHT lines.(Terrace Level)	Each	1.00	10124.00	10124.00
a)	150 mm dia	Each			
18.0	Providing, fixing, testing and commissioning of SS Flexible Belows double flanged as below:				
a)	150 mm dia.	Each	4.00	6638.00	26552.00
III	HAND APPLIANCES (INTERNAL)				
	Note: All extinguishers shall carry ISI mark.				
1	Providing and fixing water based CO2 type extinguishers consisting of welded M.S. cylindrical body, squeeze lever discharge valve 30 cms long high pressure discharge hose, discharge nozzle, suspension bracket, ISI marked as per IS:934 finished externally with red enamel paint and fixed to wall with brackets complete with internal charges.				
a)	Capacity 9 lit.	Each	15	8000.00	120000.00
b)	Capacity 22.5 kg.(Trolley mounted)	Each	1	15000.00	15000.00
2	Providing and fixing CO2 extinguisher consisting of seamless MS cylindrical body squeeze lever discharge valve, internal discharge tube, 30 cms long high pressure discharge hose, discharge nozzle ISI marked as per IS 2878 including fixing with dash fasteners etc. complete.				
a)	Capacity 4.5 Kg	Each	15	5500.00	82500.00
3	Providing and fixing mechanical foam type (ISI marked) fire extinguishers consisting of welded M.S. cylindrical body squeeze lever discharge valve 30 cm long high pressure discharge hose, discharge nozzle, suspension bracket as per ISI marked finished externally with red enamel paint and fixed to wall with brackets complete with internal charger.				
a)	Capacity 9 lit.	Each	15	6500.00	97500.00
b)	Capacity 50 lit.(Trolley mounted)	Each	1	25000.00	25000.00
IV	TOTAL SUMMARY				
	SPRINKLER SYSTEM (INTERNAL)				

1.0	Providing and Fixing M.S. pipe to I.S. 1239 (Heavy class) complete with all fittings like, unions, couplings, bends, elbows, tees, offsets, reducers, flanges as per table 'E' etc. to complete the work as per the requirement at site including painting with two coats of synthetic enamel paint , cutting and making good the walls complete. Pipe upto 50 mm dia will be with threaded joints with holdlrite and 65 mm dia and above will be with welded joint. The cost shall include the MS/GI structural supports as per approved drawings and specifications.				
a)	25 mm dia	Metre	1740.00	420.00	730800.00
b)	32 mm dia	Metre	270.00	500.00	135000.00
c)	40 mm dia	Metre	300.00	600.00	180000.00
d)	50 mm dia	Metre	420.00	700.00	294000.00
e)	65 mm dia	Metre	325.00	850.00	276250.00
f)	80 mm dia	Metre	240.00	1050.00	252000.00
g)	100 mm dia	Metre	96.00	1500.00	144000.00
h)	150 mm dia	Metre	590.00	1750.00	1032500.00
2.0	Providing and fixing 15 mm Chrome plated gunmetal sprinkler head with quartz bulb and set to operate at specified temperature pendent/upright/ side wall as per instruction.				
	Temperature of operation 68 deg. C K-80				
a)	Normal Response Pendent type	Each	1077.00	245.00	263865.00
b)	Normal Response Upright type	Each	10.00	245.00	2450.00
c)	Normal Response Side wall	Each	10.00	334.00	3340.00
3.0	Providing & fixing inspecting testing assembly with drain valve arrangement as per approved drawing..				
a)	50 mm dia	Each	3.00	7251.00	21753.00
4.0	Providing and fixing brass ball valve full bore type with lever and screwed female ends. (20 kg/sq.cm)				
a)	25 mm dia	Each	3.00	557.00	1671.00
5.0	Providing and fixing electrically operated flow indicating switches System Sensor or Potter brand in sprinkler branch line on each floor with necessary junction box installed in accessible place.				

	80 mm dia	Each	3	3235.00	9705.00
c)	100 mm dia	Each	12	3235.00	38820.00
6.0	Providing and fixing dial type pressure gauge with isolation cock and chrome coated copper pipe on main header Dial diameter 150 mm celebration 0-15/ Kg/Cm2.				
7.0	Providing and fixing 25 mm dia gunmetal single acting air release valve with screwed inlet tested for 20Kg/Cm2.	Each	12	278.00	3336.00
8.0	Providing and fixing cast iron butter fly valves of PN 1.6 rating complete with bolts, nuts, 3 mm thick compressed asbestos gasket, companion flanges as per table 'E'	Each	3	613.00	1839.00
c)	80 mm dia with lever	Each	18	1115.00	20070.00
	100 mm dia with lever	Each	12	1115.00	13380.00
d)	150 mm dia with lever	Each	21	1394.00	29274.00
9.0	Providing, fixing, testing and commissioning of SS Flexible Belows double flanged as below:				
a)	150 mm dia.	Each	4.00	2231.00	8924.00
V	EXTERNAL FIRE HYDRANT				
1.0	Excavating trenches of required width for pipes, etc. including excavation for sockets and dressing of sides in hard/dense soil, ramming of bottom, depth upto 1.5 m including getting out the excavated soil and then returning the soil as required in layers not exceeding 200mm in depth including consolidating each deposited layer by ramming, watering, and disposal of surplus excavated soil as directed within a lead of 100 m.				
a)	Pipes, upto 300 mm dia	Cum	100.00	279.00	27900.00
2.0	Providing and fixing M.S pipes conforming to IS. 1239 heavy duty including all fittings like couplings, bends, elbows, offsets, blind flanges, plugs, tees, flanges (flanges as per table E), etc. threaded or welded (all type) joints as per detailed specifications as required, with a coat of red oxide primer and two or more coats of synthetic enamel paint of approved colour, cutting holes and chases in brick or RCC walls or floors and making good complete .				

a)	80 mm dia		Metre	10.00	1050.00	10500.00
b)	150 mm dia		Metre	200.00	1750.00	350000.00
3.0	Providing and applying one coat of 4 mm thick 'PYPKOTE' or COATEK anti rust pipe protection including approved primer as per manufacturers specifications and lap of 25 mm and fusing lam to make an impermeable layer on pipes in trenches or on structural/masonry members complete					
a)	80 mm dia		Metre	10.00	100.00	1000.00
b)	150 mm dia		Metre	200.00	128.00	25600.00
4.0	Providing and fixing ISI marked S.S fire hydrant valve 80 mm inlet with single outlet and fitted with 63 mm dia instantaneous female coupling on the outlet complete including companion flange as per table "E", pvc blank cap and chain, nuts, bolts and 3 mm thick compressed asbestos gasket at locations as per drawings (inlet flange to I.S.5290-1969 Class C).		Each	4.00	5940.00	23760.00
5.0	Providing and fixing standard short size S.S branch pipe with SS nozzle 16 mm dia outlet with standard instantaneous type 63 mm dia coupling.(ISI marked).		Each	4.00	1885.00	7540.00
6.0	Providing and fixing fire hose cabinet fabricated from 16 gauge M.S. sheet with single or double glazed front door and pad locking arrangement, painted Fire Red with Stove enamelled paint Fire Hose written on front including necessary supports approximate size 750x600x250 mm deep (to house two lengths of canvas hose with couplings, branch pipe and nozzle)(Including cabinet M.S.structure support with primer & painting etc.)		Each	4.00	4049.00	16196.00
7.0	Providing and fixing 63 mm dia 15 m long EPDM lined fabric hose including SS male and female instantaneous type coupling approved by fire authority, machine wound with copper wire complete in all respects. Hose shall conform to I.S. 636 Type II and coupling to I.S. 903-1975 with ISI certification.		Each	8.00	3837.00	30696.00
8.0	Providing and fixing cast iron butterfly valves of PN 1.6 rating complete with bolts, nuts, 3 mm thick compressed asbestos gasket, companion flanges as per table 'E' complete in all respects.					

a)	80 mm dia with lever	Each	4.00	1115.00	4460.00
b)	150 mm dia with lever	Each	2.00	1394.00	2788.00
9.0	Providing and fixing anchor blocks of concrete 1:2:4 mix (1 cement : 2 coarse nominal size) for Fire pipe including necessary excavation, shuttering and centring, curing complete.(For irrigation line)				
10.0	Providing & fixing gunmetal collecting head with 63 mm dia instantaneous type inlet and 150 mm dia flanged outlet with (including check valve and butterfly valve) for fire brigade connection to fire risers (I.S. 904-1965) complete in all respects with companion flanges, nuts, bolts, gaskets, etc.	Cum	20.00	3841.00	76820.00
a)	Four way	Each	1.00	20260.00	20260.00
VI	FIRE PUMPS & ACCESSORIES				
1	(All pumps should be supplied with wearing and mechanical seal. Performance curve should be approved before placing the order. All pumps should be supplied with base frame) Providing and Fixing Wet Riser Pump and Sprinkler Pump Supplying and fixing single/double stage horizontal centrifugal pumping set with volute bronze impeller connected to a TEFC induction motor suitable for 410/440 volts, 3 phase , 50 cycles AC supply as per the details given below:				
a)	Capacity : 2850 LPM				
b)	Head : 100 meter				
c)	HP : 75 HP or as required.				
d)	No of stages : single/double				
e)	RPM : 2900				
f)	Mover : Electric Motor driven.				
g)	Material of Construction/Specification				
h)	Shaft & Sleeve: S.S- 410				
i)	Impeller : Bronze				
j)	Casing : CI				
k)	Bearing : Grease lubricated				
l)	Seal : Mechanical Seal				
m)	Quantity :	Set	2	450000.00	900000.00
2	Jockey Pump:				

		Providing,Fixing Supplying and fixing horizontal centrifugal pump with volute brozne impeller connected to TEFC induction motor suitable for 400/410 Volts, 3 Phase, 50 Cycles , AC supply with the following specifications:				
a)		Capacity : 280 LPM				
b)		Head : 100 m				
c)		HP : 15 HP approx. or As required.				
d)		RPM : 2900				
e)		Mover : Electric Motor driven				
f)		Material of Construction:				
g)		Shaft & Sleeve : S.S- 410				
h)		Impeller : Bronze				
i)		Bearing : Grease lubricated				
j)		Seal - Mechanical seal.				
n)		Quantity :	Set	1	100000.00	100000.00
3		Providing,Fixing Diesel Engine Driven Fire Pump Fixing single stage horizontal centrifugal pumping set of the following specifications including vibration elimination pads and six cylinder , heat exchanger cooled engine with pressure reducing valve complete.				
a)		Capacity : 2850LPM				
b)		Head : 100 m				
c)		BHP : 180 approx. or As required.				
d)		RPM : 1450/2000 (pump and engine)				
e)		Mover : Diesel Engine.				
f)		Material of Construction:				
g)		Shaft & Sleeve : S.S- 410				
h)		Impeller : Bronze				
i)		Bearing : Grease, lubricated				
j)		Seal - Mechanical seal.				
m)		Quantity :	Set	1	500000.00	500000.00
4		Air Vessel for Fire Pump:				
		Providing,Fixing of air vessel of the following specifications				
a)		Diameter : 450 mm				
b)		Shell Thickness: 10 mm				
c)		Dish Ends : 12 mm				
d)		Height : 2000 mm				
e)		Finishing: Two coats of red enamel paint over primer out side				

f)	and two coats of epoxy coating inside. (After surface) preparations)							
g)	Material of construction: M.S							
h)	Test Pressure: 20 KG/SQ.CM.							
i)	Size of Inspection flange:450 mm dia							
j)	Height of supporting legs: 400 mm							
k)	Quantity:	Each	1	35000.00				35000.00
l)	Note: Contractor should submit general arrangement drawings before fabrication of vessel and ultrasonic test report to be submitted on supply of vessel and test to be conducted at the presence of Plumbing-In-Charge.							
5	Providing and fixing cast iron dual plate water type non return valves PN 1.6 including nuts, bolts, 1.5 mm thick gasket companion flanges as per table 'E' etc. complete.							
a)	80 mm dia	Each	1	16500.00				16500.00
b)	150 mm dia	Each	4	20000.00				80000.00
c)	250 mm dia	Each	1	22500.00				22500.00
6	Providing and fixing cast iron butterfly valves conforming to PN1.6 I.S.13095 with "Lever" or gear operated, bolts, nuts, 3 mm thick insertion rubber gasket complete including companion flange as per Table 'E' all complete.							
a)	50 mm dia (lever operated)	Each	1	4500.00				4500.00
b)	80 mm dia (lever operated)	Each	1	5000.00				5000.00
c)	100 mm dia (lever operated)	Each	3	6500.00				19500.00
d)	150 mm dia (lever operated)	Each	9	8000.00				72000.00
e)	200 mm dia (gear operated)	Each	3	10500.00				31500.00
f)	250 mm dia (gear operated)	Each	5	13500.00				67500.00
7	Providing and fixing resilient rubber neoprene lined single vibration elimination connection with unit control suitable for raw water upto 45 deg.C. temperature working pressure 20 kg/sqcm.							
a)	80 mm dia	Each	1	5500.00				5500.00
b)	100 mm dia	Each	1	7000.00				7000.00
c)	150 mm dia	Each	3	8500.00				25500.00
d)	200 mm dia	Each	3	10000.00				30000.00

8	Providing and fixing black steel pipes IS 1239 (Heavy class) including all fittings like anchor fasteners, couplings, bends, elbows, flange, tees, etc. Welded or flanged joints as required, painting as per specifications. cutting holes and chases complete. The cost shall include the MS/GI structural supports as per approved drawings and specifications.					
a)	50 mm dia	Metre	10	750.00	7500.00	
b)	80 mm dia	Metre	8	1100.00	8800.00	
c)	100 mm dia	Metre	8	1500.00	12000.00	
d)	150 mm dia	Metre	80	2250.00	180000.00	
e)	200 mm dia (IS-3589)	Metre	10	2650.00	26500.00	
9	Providing and fixing black steel pipes to I.S. 3589 (7 mm thick) including all fittings fabrication of fitting like, anchor fasteners, couplings, bends, elbows, tees, etc. welded or flanged joints as required, painting as per specifications, cutting. The cost shall include the MS/GI structural supports as per approved drawings and specifications.					
a)	250 mm dia (Delivery Header)	Metre	10	2650.00	26500.00	
b)	300 mm dia (Suction Header)	Metre	10	3150.00	31500.00	
10	Providing and fixing dial type pressure gauge with isolation cock and chrome coated copper pipe on main header Dial diameter 150 mm celebration 0-20/ sq.cm.	Each	5	400.00	2000.00	
11	Providing and fixing electrically operated dual type pressure switches with threaded connection for pressure vessel, complete suitable for 0-20 Kg/Sq.cm.	Each	4	8000.00	32000.00	
12	Providing and fixing vibration elimination pads for pumps.					
a)	Type A (for Jockey pumps)	Set	1	5000.00	5000.00	
b)	Type B (Main fire pumps)	Set	2	6000.00	12000.00	
c)	Type C (for diesel pump)	Set	1	6000.00	6000.00	
13	Providing and fixing 25 mm dia gun metal fitting for water level indicator gauge with isolation valve at top and bottom, heavy gauge transparent polythylene tube of approx. 5 m length with colour indicator float clamped to teak board 100 mm wide x20 mm with graduation in KL.	Each	2	6500.00	13000.00	

15	Providing and fixing liquid level controller for fire pump to cut off in case low level of water in tank including cables,panel ,etc. and making necessary connection to panel and commissioning.	Each	1	2500.00	2500.00
16	Providing and fixing gunmetal installation valve with turbine type automatic alarm to be connected with control valve ,drain valve ,test valve and piping as per manufacturer's specifications complete in all respects.	Each	2	15000.00	30000.00
a)	150 mm dia				0.00
17	Providing and Fixing bucket type suction strainer with M.S.flanged connection 750 mm dia and 900 mm deep suitable for 5700 lpm discharge fabricated from 8 mm thick M.S. plate and stainless steel 304 grade 60 mesh with S.S.Stiffnes complete including companion flanges etc. suitable for 250 dia inlet and 250 dia outlet including inside with rubberised paint and outside withtwo coats of enamel paint of approved shade after surface preparation.	Each	2	25000.00	50000.00
18	Providing and fixing Diesel engine driven pump exhaust ,M.S pipe class 'A'150 mm dia including fitting like flanges,bends,reducers ,etc. 50 mm thick glass wool insulation,aluminium cladding 21 gauge thick ,necessary excavation ,fixing of silencer connection at engine exhaust necessary supports ,backfilling ,cutting and making good bird proof and weather proof flap complete in all respects as directed.	Rmt	25	3500.00	87500.00
19	Providing and fixing C.I. foot valve including nuts, bolts, 1.5 mm thick compressed asbestos gasket, complete and companion flanges as per table "E" in all respects.	Each	1	8000.00	8000.00
a)	150 mm dia				
20	Providing and fixing blank flanges as per table 'E' including nuts, bolts, 3mm thick rubber gasket complete in all respects.	Each	2	2000.00	4000.00
a)	250 mm (Suction Header)				
b)	300 mm (Delivery Header)				
			Total NS Items [II]		8407459.00

BILL OF QUANTITIES

HVAC WORKS

Sr. No.	DSR ITEMS	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
1.0	5.4	Earthing with GI earth plate 600mm x 600mm x 6mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with coke and salt) as required.	Set	4.00	3996.00	15984.00
2.0	5.9	Supplying and laying 25 mm x 5 mm. G.I. strip at 0.50 M. below ground as strip earth electrode, including connector/terminating with GI nut, bolt, spring, washer etc. as required. (Joining shall be done by overlapping and with 2 sets of GI nut bolts & spring washer spaced at 50 mm)	RM	20.00	97.50	1950.00
3.0	5.15	Providing & fixing 25mm x 5mm G.I. strip on surface or in recess for connections etc. as required.	RM	200.00	120.00	24000.00
4.0		Supplying, fabricating and installing following size of perforated perforated pre painted M.S. cable trays with perforation not more than 17.5% in convenient sections, joined with connectors suspended from the ceiling with M.S. suspenders including bolts and nuts, painting suspenders etc. as required.				
	4.1.1	150 mm width X 50 mm depth X 1.6 mm thickness	RM	400.00	405.00	162000.00
	4.1.2	150 mm width X 60 mm depth X 1.6 mm thickness	RM	150.00	464.00	69600.00
	4.1.3	300 mm width X 50 mm depth X 1.6 mm thickness	RM	300.00	677.00	203100.00
5.0		Supplying & making indoor end terminations with brass compression gland and aluminum lugs for following sizes of PVC insulated and PVC sheathed/ XLPE aluminium conductor cable of 1.1 KV grade as required.				
	9.1.30	3.5 X 300 sq. mm (70mm)	Each	16.00	867.00	13872.00
	9.1.24	3.5 X 95 sq. mm (45mm)	Each	4.00	366.00	1464.00
	9.1.22	3.5 X 50 sq. mm (35mm)	Each	14.00	262.00	3668.00
	9.1.20	3.5 X 25 sq. mm (28mm)	Each	16.00	191.00	3056.00
	9.1.33	4 X 16 sq. mm (28mm)	Each	8.00	188.00	1504.00
	9.1.32	4 X 10 sq. mm (25mm)	Each	16.00	146.00	2336.00
6.0	7.5	Laying of one number PVC insulated and PVC sheathed/ XLPE power cable of following size in the existing RCC/HUME/ METAL pipe as required.				
	7.5.4	Above 185 sq. mm and upto 400 sq. mm	RM	600.00	44.00	26400.00
7.0	7.8	Laying of one number PVC insulated and PVC sheathed/ XLPE power cable of following size in the existing RCC/HUME/ METAL pipe as required.				
	7.8.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	RM	350.00	16.50	5775.00
	7.8.2	Above 35 sq. mm and upto 95 sq. mm (clamped with 25x3mm MS flat clamp)	RM	800.00	28.50	22800.00
	7.8.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x2mm MS flat clamp)	RM	1700.00	72.50	123250.00
		Total Carried to Summary				688759.00
8.0		NON DSR ITEMS				
		Lower Ground floor:				
		Supply, installation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick steel steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	5.00	2000.00	10000.00
9.0		Ground floor:				
		Supply, installation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick steel steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	5.00	2000.00	10000.00
10.0		First floor:				
		Supply, installation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick steel steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	4.00	2000.00	8000.00
11.0		Second floor:				
		Supply, installation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick steel steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	5.00	2000.00	10000.00
12.0		Third floor:				
		Supply, installation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick steel steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	2.00	2000.00	4000.00
13.0		16 A MPCB	Nos.	1.00	1750.00	1750.00
		Ventilation:				
	i	Auto Star Delta starter of 100 HP with required rating MCCB/ MPCB having single phasing prevention arrangement, O/L relays, ammeters with CTs, ON/OFF/Trip indication lamps and push buttons, potential free contacts for remote operation in each feeder as required.	Nos.	2.00	100000.00	200000.00
	ii	Auto Star Delta starter of 60 HP with required rating MCCB/ MPCB having single phasing prevention arrangement, O/L relays, ammeters with CTs, ON/OFF/Trip indication lamps and push buttons, potential free contacts for remote operation in each feeder as required.	Nos.	2.00	80000.00	160000.00
	iii	Auto Star Delta starter of 40 HP with required rating MCCB/ MPCB having single phasing prevention arrangement, O/L relays, ammeters with CTs, ON/OFF/Trip indication lamps and push buttons, potential free contacts for remote operation in each feeder as required.	Nos.	4.00	60000.00	240000.00

IV	Auto Star Delta starter of 25 HP with required rating MCCB/ MFCB having single phasing prevention arrangement, O/L relays, ammeters with CTs, ON/OFF/Trip indication lamps and push buttons, potential free contacts for remote operation in each feeder as required.	Nos.	4.00	45000.00	180000.00
V	Auto Star Delta starter of 10 HP with required rating MCCB/ MFCB having single phasing prevention arrangement, O/L relays, ammeters with CTs, ON/OFF/Trip indication lamps and push buttons, potential free contacts for remote operation in each feeder as required.	Nos.	6.00	17500.00	105000.00
VI	Auto DOL starter of 3 HP with required rating MCCB/ MFCB having single phasing prevention arrangement, O/L relays, ammeters with CTs, ON/OFF/Trip indication lamps and push buttons, potential free contacts for remote operation in each feeder as required.	Nos.	4.00	10000.00	40000.00
14.0	Supplying & making indoor end terminations with brass compression gland and aluminum lugs for following sizes of PVC insulated and PVC sheathed/ XLPE aluminium conductor cable of 1.1 KV grade as required.	Each	16.00	125.00	2000.00
	4 X 6 sq. mm	Each	6.00	100.00	600.00
	4 X 4 sq. mm	Each	12.00	85.00	1020.00
15.0	Supplying, testing & commissioning for following size of XLPE aluminium conductor armoured cable of 1.1 KV grade as required.	RM	1000.00	1407.00	1407000.00
	3.5 Core 300 sq. mm	RM	300.00	457.00	149100.00
	3.5 Core 95 sq. mm	RM	500.00	285.40	142700.00
	3.5 Core 25 sq. mm	RM	300.00	188.70	56610.00
	4 X 16 sq. mm	RM	200.00	151.90	30380.00
	4 X 10 sq. mm	RM	600.00	140.70	84420.00
	4 X 6 sq. mm	RM	350.00	112.70	39445.00
	4 X 4 sq. mm	RM	150.00	91.00	13650.00
16.0	HVAC Panel	RM	100.00	80.00	8000.00
	Incompleting				
	Two (2) Nos. 1600A FP ACB EDO Type				
	Metering:				
	Two (2) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
	Two (2) Nos. (0-1600A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
	Two (2) Set of Phase Indication Lamp with 2A SP MCB.				
	Bus Coupler:				
	2000A, FP ACB EDO Type				
	Bus Bar:				
	2000A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
	Outgoing:				
	Four (4) Each, 600A TPN MCCB				
	Four (4) Each, 250A TPN MCCB				
	Four (4) Each, 125A TPN MCCB				
	Four (4) Each, 63A TPN MCCB				
	Six (6) Each, 32A TPN MCCB				
17.0	Two (2) Each, 16A TPN MCB	Set	1.00	1500000.00	1500000.00
	Ventilation Panel				
	Incompleting				
	One (1) Nos. 63A TPN MCCB (35KA)				
	Metering:				
	One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
	One (1) Nos. (0-63A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
	One (1) Set of Phase Indication Lamp with 2A SP MCB.				
	Bus Bar:				
	100A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
	Outgoing:				
	Four (4) Each, 32A TPN MCCB				
	Two (2) Each, 16A TPN MCB	Set	1.00	25000.00	25000.00
II	AIR REGULATION SYSTEM:				
1.0	AIR HANDLING UNIT: Supply, installation, testing and commissioning of factory fabricated Double Skin Chilled/Water sectionalized Air-handling unit horizontal type fabricated out of extruded aluminium section with 0.6mm pre-plasticized / pre-coated Galvanised steel sheet outside & 0.6mm plain Galvanised steel sheet inside with blower section comprising plenum/plug type AMCA certified blower (for air & sound performance), direct drive TEFC type motor with Variable Frequency Drive, suitable for operation on 415 volts ± 10%, 50 Hz + 5% AC supply, 6 Rows ARI certified cooling coil made of Aluminium lined Copper tube with coil section, thermostat, pre-filter section with nonwoven synthetic media of 10micron particle size with an efficiency of 90%, stainless steel drainpan made out of 22 G sheet duty insulated, motor and belt drive package with belt guard, safety switch etc. without face and bypass dampers. The AHU panels shall be insulated with 23mm thick & 36 Kg/m ³ density PU foam. The motor & blower assembly is as per direction of Engineer-in-charge. 15mm wide PVC sheet beading on inner side, and joined together with solvent cement adhesive. An additional 5mm thick PVC strip of 20mm width is to be stuck on the interior side of the 'C' Channel using PVC solvent adhesive etc. complete as per direction of Engineer-in-charge. Manufacturer's specifications drawing (for W.C. and bathroom door shutter).	Nos	1.00	330,000.00	330,000.00
	Floor Mounted AHUs (6 Rows coil).				
	Lower Ground floor.				
	5500cftm. 11TR. 3HP. 50mmSP				

	5900cfm, 14TR, 5HP, 50mmSP	Nos	1.00	348,000.00	348,000.00
	7700cfm, 26TR, 5HP, 50mmSP	Nos	1.00	462,000.00	462,000.00
	7700cfm, 25TR, 5HP, 50mmSP	Nos	1.00	462,000.00	462,000.00
	9000cfm, 18TR, 5HP, 50mmSP	Nos	1.00	540,000.00	540,000.00
	Ground floor:				
	5900cfm, 17TR, 5HP, 50mmSP	Nos	1.00	348,000.00	348,000.00
	7700cfm, 26TR, 5HP, 50mmSP	Nos	1.00	462,000.00	462,000.00
	7700cfm, 23TR, 5HP, 50mmSP	Nos	1.00	462,000.00	462,000.00
	7700cfm, 25TR, 5HP, 50mmSP	Nos	1.00	462,000.00	462,000.00
	13500cfm, 40TR, 10HP, 50mmSP	Nos	1.00	810,000.00	810,000.00
	First floor:				
	5000cfm, 17TR, 5HP, 50mmSP	Nos	1.00	300,000.00	300,000.00
	11200cfm, 22TR, 5HP, 50mmSP	Nos	1.00	672,000.00	672,000.00
	7000cfm, 23TR, 5HP, 50mmSP	Nos	1.00	420,000.00	420,000.00
	Second floor:				
	4200cfm, 11TR, 5HP, 50mmSP	Nos	1.00	252,000.00	252,000.00
	7000cfm, 20TR, 5HP, 50mmSP	Nos	1.00	420,000.00	420,000.00
	9500cfm, 25TR, 7.5HP, 50mmSP	Nos	1.00	570,000.00	570,000.00
	14600cfm, 41TR, 10HP, 50mmSP	Nos	1.00	876,000.00	876,000.00
	18000cfm, 50TR, 10HP, 50mmSP	Nos	1.00	1,080,000.00	1,080,000.00
	Third floor:				
	3500cfm, 10TR, 3HP, 50mmSP	Nos	1.00	210,000.00	210,000.00
	7500cfm, 22TR, 7.5HP, 50mmSP	Nos	1.00	450,000.00	450,000.00
	15000cfm, 39TR, 10HP, 50mmSP	Nos	1.00	900,000.00	900,000.00
2.0	ceiling suspended AHUs (6 Rows coil):				
a)	4500cfm, 12TR, 5HP, 40mm SP	Nos	1.00	270,000.00	270,000.00
3.0	CASSETTE TYPE UNIT				
	Supply, installation, testing & commissioning Hydronic Ceiling Cassette type units, each complete with 2 Rows deep chilled water cooling coil, multi blade centrifugal fan, cleanable filters, insulated condensate drain pans with drain pumps, drain pump failure alarm, pipe connections through copper pipes, infrared remote control, LCD display, 3 fan speed plus auto fan 4 direction air flow, auto swing lower etc. condensate drain connections, with required Set of ball valves with strainers (supply), without strainers (Return). All units shall be suitable for 220 ± 10% volts, 50 cycles single phase power supply etc. complete as per specification.				
a)	1200cfm, 3TR	Nos	1.00	75,000.00	75,000.00
b)	1000cfm, 2.5TR	Nos	10.00	62,500.00	625,000.00
c)	600cfm, 1TR	Nos	4.00	37,500.00	150,000.00
4.0	Split Type AC units				
	Supply, installation, testing and commissioning of inverter split type AC units with HI wall indoor units complete with lined coil, fan section with motor, air filters, filter box, double drain pan, wiring & accessories, outdoor air cooled condenser units with insulated inter-connected copper piping with wiring, MS stand etc and all accessories, complete as required (For UPS Rooms)				
	600cfm, 1.5 TR	Nos	1.00	26,500.00	26,500.00
5.0	Air cooled Split type Precision cooling units (PEX) for control rooms of computerized equipment:				
	Supply, installation, testing and commissioning of split type Air-conditioning unit complete in all respect as required, comprising of following:				
	Air cooled condensing unit consisting copper tube aluminium lined condenser coil, air cooled by suitable size low speed fan, all mounted in heavy gauge sheet steel enclosure with protective painting.				
	Evaporating Unit consisting of copper tube aluminium lined high transfer cooling coil, refrigerant distributor and thermostatic expansion Valve along with blower, filters and drain pan all in heavy gauge sheet steel metal enclosure with protective painting.				
	Installation, testing and commissioning of insulated liquid and suction copper refrigerant piping of adequate size along with necessary fittings to interconnect the condensing unit and the evaporating unit. (Average length 10.0 mtrs. per unit).				
	Providing and fixing M.S. structural support for condensing unit with vibration isolator pad in-between support and structure and vibration isolation suspender and pads for evaporating units.				
	Complete electrical work for the above units including interconnecting cabling/wiring from the MCCBs near the room units to outdoor units complete in all respect (including earthing).				
	Providing, fixing and testing 25 mm Ø2 mm dia. PVC drain piping for condensate complete with all fittings including 2 layers of 6 mm thick of polyurethane sheet over PVC pipe. (Average length 5.0 mtrs per unit).				
	Direct expansion refrigerant units with following Nat Sensible cooling capacity (@ 21 Deg. C +/- 2 inside temp, RH: 50-55%), Bottom/Top discharge type, Precision DEX unit consisting of "In-Floor" EC fans for higher power savings, Intelligent energy logic (team mode, load sharing modes, cascade effect etc.) based controller to insure that all PEX units work together as a single system to cater to the load, all units should reduce fan speed together at part load for power savings, Inlet filter section EU-4, unit should be able to deliver high cfm per TR, A-type cooling Coil, Heater banks and Infrared Humidifier should be part of the PEX unit for steam generation within seconds to achieve precise & faster relative humidity inside the space, condensate drain pan, graphical display of RH and temp., programmable control & recording unit, The unit shall be suitable for operation on 415±10% V 50 Hz AC supply. The Display panel shall display date, time, actual & set values, operating conditions, signalling sizes: ved design, (Galvanising to be done conforming to IS:4759				
a)	10 TR	Nos	2.00	600,000.00	1200000.00
b)	8 TR	Nos	1.00	480,000.00	480000.00
III	AIR ZONE SYSTEM:				

1.0	Supply, installation, testing, commissioning and handing over of the imported Air Ozone System (UL listed for smoke & fire - UL 2043) for maintaining indoor Air Quality. The components of the system must be in strict conformity with the specifications and shall be including freight from Airport to site, Insurance, Lifting, Shifting etc. as required. Single phase power supply for the Ozone Generators will be provided near the controller by others. The prices to include all connected wiring between the duct mounted ozone generator, VOC sensor / Controller. The power supply to the Ozone monitor will be provided near the respective equipment by others. But the wiring between the ozone monitor / switch and controller will be included in the scope.					
	Duct mounted ozone generators suitable for the following floor area mentioned in the basis of design.					
	Lower ground Floor					
a)	Lecture hall - 7700 CFM	SET	2.00	613,600.00		1227200.00
b)	Discussion Room - 5800 CFM	SET	1.00	590,800.00		590800.00
c)	Common Room - 5500 CFM	SET	1.00	590,800.00		590800.00
d)	Multi-purpose hall - 9000 CFM	SET	1.00	677,300.00		677300.00
	Ground Floor					
a)	Lecture hall - 7700 CFM	SET	3.00	613,600.00		1840800.00
b)	Network Room - 13500 CFM	SET	1.00	677,300.00		677300.00
c)	Lecture hall - 5800 CFM	SET	1.00	590,800.00		590800.00
d)	First Floor					0.00
e)	Lecture hall - 7000 CFM	SET	1.00	613,600.00		613600.00
f)	Lecture hall - 5000 CFM	SET	1.00	590,800.00		590800.00
	Second Floor					
a)	Lecture hall - 7000 CFM	SET	1.00	613,600.00		613600.00
b)	Lecture hall - 4200 CFM	SET	1.00	561,600.00		561600.00
c)	Lecture hall - 14600 CFM	SET	1.00	723,000.00		723000.00
d)	Lecture hall - 18000 CFM	SET	1.00	772,300.00		772300.00
e)	Multi-purpose hall - 9500 CFM	SET	1.00	677,300.00		677300.00
	Third Floor					
a)	Lecture hall - 3500 CFM	SET	1.00	561,600.00		561600.00
b)	Lecture hall - 7500 CFM	SET	1.00	613,600.00		613600.00
c)	Multi-purpose hall - 15000 CFM	SET	1.00	677,300.00		677300.00
	IV					
1.0	Chilled Water & Condensate Drain Piping: Supplying, laying, fixing, testing & commissioning MS class 'C' pipes (G.I. 'B' class for condensate drain), valves, strainers and accessories cut to required length with necessary clamps, supports, annularization pads, hangers, fittings such as bends, tees, reducers, flanges etc and installed with all welded joints complete as per specification & drawings and insulated with factory laminated closed cell insulation of class 'C' rating of 19mm thickness					
	Mild steel pipes:					
a)	250 mm dia MS pipes	RM	60.00	2,500.00		150000.00
b)	200 mm dia MS pipes	RM	20.00	2,350.00		47000.00
c)	125 mm dia MS pipes	RM	20.00	2,000.00		40000.00
d)	100 mm dia MS pipes	RM	10.00	1,800.00		18000.00
e)	80 mm dia MS pipes	RM	65.00	1,550.00		100750.00
f)	65 mm dia MS pipes	RM	75.00	1,300.00		97500.00
g)	50 mm dia MS pipes	RM	55.00	1,050.00		57750.00
h)	40 mm dia MS pipes	RM	15.00	975.00		14625.00
i)	32 mm dia MS pipes	RM	50.00	850.00		42500.00
j)	25 mm dia MS pipes	RM	150.00	700.00		105000.00
k)	20 mm dia MS pipes	RM	20.00	625.00		12500.00
l)	40 mm dia MS pipes ('B' class, for condensate drain)	RM	60.00	480.00		28800.00
m)	32 mm dia MS pipes ('B' class, for condensate drain)	RM	60.00	400.00		24000.00
	Providing and fixing in position Butterfly valves					
a)	80 mm dia	Nos	8.00	4,000.00		32000.00
b)	65 mm dia	Nos	20.00	3,650.00		73000.00
c)	50 mm dia	Nos	14.00	3,250.00		45500.00
d)	40 mm dia	Nos	2.00	3,175.00		6350.00
	Providing and fixing in position Ball Valve set comprising one ball valve with strainer and one valve w/o strainer					
a)	20 mm dia	Set	4.00	3,000.00		12000.00
b)	25 mm dia	Set	11.00	3,500.00		38500.00
	Self Dynamic balancing valves					
	Supply, installation, testing and commissioning of electronic, Self-balancing, Pressure independent type dynamic balancing Valve with integrated 2 way modulating Control valves in a single body. The valves accept 2-10V DC or 4-20 ma and shall be capable of providing 4-20 ma 2-10V DC flow feedback signal to the control system. Each valves should have 39(or dai below 40mm & flow upto 22GPM) & 51 (for dia. above 25 mm size & flow more than 22 GPM) adjustable maximum flow rate setting to enable flow limitation and balancing to the coil or zones that the valves are controlling. all actuators shall be microprocessor based with a self-calibrating feature. The actuator shall be capable of accepting 2-10V DC, 4-20 ma electric signal. The valve actuator shall be equipped to provide actual flow feedback signal to the BMS/control system. The flow feedback provision shall be permanently available on the actuator. The minimum close off pressure of actuator must be 1.5 times shut off head of pump as per specifications of following sizes:					
	25/32/40mm dia (Up to 37 USGPM flow rate)	Nos	1.00	35,000.00		35000.00
	50/65/80mm dia (Up to 113 USGPM flow rate)	Nos	21.00	50,000.00		1050000.00
5.0	Providing and fixing in position Y strainer					
a)	80 mm dia pipe	Nos	4.00	5,500.00		22000.00
b)	65 mm dia pipe	Nos	10.00	5,000.00		50000.00

c)	50mm dia pipe	Nos	7.00	4,500.00	31,500.00
d)	40mm dia pipe	Nos	1.00	4,000.00	4,000.00
6.0	Providing and fixing in position Dial Type Pressure gauge with gun metal gate valve, calibrated in metric & British units	Nos	44.00	900.00	39,600.00
7.0	Providing and fixing in position Mercury in glass thermometers with V groove for protection	Nos	44.00	350.00	15,400.00
8.0	Providing and fixing in position Auto air purging valves	Nos	44.00	900.00	39,600.00
V	DUCTING:				
1.0	Sheet Metal Duct: Supplying, fabricating, installing and testing of factory fabricated sheet metal ducting complete as per SMACNA with splitter damper, duct damper, vanes etc. as per specifications and approved shop drawing complete as required.				
a)	Air-conditioning Ducting : Galvanized sheet steel	SOMT	935.00	550.00	514,250.00
	24 SWG	SOMT	1950.00	650.00	1,267,500.00
	22 SWG	SOMT	890.00	750.00	667,500.00
	20 SWG	SOMT	230.00	650.00	1,955,000.00
	18 SWG	SOMT	150.00	1,000.00	1,500,000.00
2.0	Supplying, installing, and testing of GI volume control damper within ducts to be provided with suitable links, levers and quadrants for manual control of volume of air flow and for proper balancing of the air distribution system as per approved shop drawings.				
3.0	Supply, installation & testing of UL listed smoke cum fire dampers of atleast 90 minute fire rating and as per the specifications as detailed earlier in the relevant sections. The fire dampers shall be located in the supply/return air ducts/walls, at all fire rated crossovers (shaft/walls etc.).	SOMT	8.00	5,500.00	44,000.00
a)	Actuator operated Smoke cum fire dampers (as per actual sizes from drawings)	SOMT	30.00	30,000.00	900,000.00
4.0	Supply Air Diffuser: Supplying, fixing and balancing of square supply air diffusers, air distribution grid for straightening the air flow through the collar and register and removable key-operated volume control dampers. Complete as per specification and drawing				
a)	Powder Coated Aluminium square diffuser with volume control damper	SOMT	85.00	10,500.00	892,500.00
5.0	Return Air Diffuser: Supplying & fixing of square return air diffusers, air distribution grid for straightening the air flow through the collar and register without volume control dampers. Powder Coated Aluminium square diffuser without volume control damper				
6.0	Return Air Grilles: Supplying, installing, testing and balancing of return air grilles (Linear/single louvred) with volume control dampers of various sizes. Each grill shall have with fixed horizontal front bar at 15 deg. deflection, complete as per specification and drawing.				
a)	Powder Coated Linear Aluminium grilles with volume control damper (for exhaust of toilets).	SOMT	15.00	10,000.00	1,500,000.00
7.0	Fresh Air Louvers: Supplying, installing and balancing of fresh/exhaust air, anodized aluminum intake covers with bird screen & aluminum volume control damper, complete as per specification & drawings				
a)	Fresh Air Louvers (With bird screen & VCD)	SOMT	5.00	12,500.00	62,500.00
b)	Exhaust Air Louvers (With birdscreen but Without VCD)	SOMT	2.50	6,500.00	16,250.00
8.0	Air Measuring Stations: Supplying, installing, testing and commissioning of air measuring stations in each AHU room for fresh air comprising factory built honeycomb air straightener, volume control damper with 230/24 Volts modulating actuator, air pressure pickups and factory calibrated controller	Nos	22.00	125,000.00	2,750,000.00
VI	INSULATION:				
1.0	Acoustic Lining of Ducts: Supplying & fixing of rigid fibre glass acoustic lining within supply air ducts as per the specifications. All ducts shown cross hatched on the approved shop drawings shall be provided with acoustic lining of fibre glass insulation as per the specifications. 25mm thick acoustic lining.				
a)	Supply, fixing & testing of Acoustic silencers in return air passage within AHU rooms capable of noise reduction by 10db	SOMT	500.00	450.00	225,000.00
2.0	22G GSS with 50/100mm thick acoustic lining in acoustic silencers				
a)	Supplying, installing of external thermal insulation on supply & return air ducts with approved sample of closed cell insulation class "O" rating, prelaminated with aluminium foil & densely complete as per specifications.	SOMT	20.00	1,000.00	20,000.00
3.0	19 mm thick insulation.				
a)	Supply, installation, testing and commissioning of 70 mm thick XPS Insulation having density of 32kg	SOMT	3100.00	500.00	1,550,000.00
4.0	Supply, installation, testing and commissioning of 70 mm thick XPS Insulation having density of 32kg	SOMT	3395.00	1,200.00	3,990,000.00
VII	VENTILATION SYSTEM:				
1.0	Supply, installation, testing & commissioning of UL listed direct drive Tubeaxial fan. Fans shall be AMCA certified for air performance and suitable for installation in any position (Horizontal or Vertical). The motor shall be suitable for 415 V±10% volts three phase 50 cycle, AC supply. The fans shall strictly adhere to the attached Specifications.				
a)	Axial flow fans for litwell, pressurization 6000cfm, 25mm SP, 3HP, 415-10% volts 50-Hz power supply	Nos	1.00	240,000.00	240,000.00
2.0	Supply, installation, testing & commissioning of UL listed belt drive SISW centrifugal backward inclined type fan with weather proof cabinet. The fans shall be AMCA certified for air performance. The motor shall be suitable for 415 V±10% volts three phase 50 cycle, AC supply. The fans shall strictly adhere to the attached Specifications.				

a)	SISW fans with weather proof cabinet for toilet exhaust 7200, 25mm SP,3HP 415±10% volts 50HZ power supply	Nos	1.00	300,000.00	300000.00
b)	SISW fans with weather proof cabinet for toilet exhaust 8000, 25mm SP,3HP 415±10% volts 50HZ power supply	Nos	2.00	350,000.00	700000.00
Total Carried to Summary					47,914,750.00

BILL OF QUANTITIES
SECTION-F: SOLAR ENERGY

Sr. No.	DSR 2012	Item Description	Unit	Qty	Unit Rate in Rs.	Amount in Rs.
A		Bill of Quantities				
1		Solar Panel 12V-125Wp	Nos.	272		
2		Module Mounting Structure	Nos.	272		
3		Battery Bank 120V-600Ah	Nos.	90		
4		Battery Protection Panel	Nos.	1		
5		PCU 120V DC ,Three Phase 25 KVA AC	Nos.	1		
6		D.C Distribution Board	Nos.	1		
7		AC Breaker Box with Auto Change Over and six numbers output	Nos.	1		
8		PV Aarray Junction Boxes	Lot	1		
9		Main Junction box	Nos.	1		
10		DC Cables set	Set	1		
11		Earthing	Set	1		
12		Lighting Arrestors	Set	1		
13		Accessories-Danger, Display boards etc	Lumpsum	1		
V		Rating 17 KW	Set	1	6530681.00	6,530,681.00
		GRAND TOTAL				6,530,681.00

BILL OF QUANTITIES						
SECTION-G: FIRE DETECTION SYSTEM						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	QTY	UNIT	RATE	AMOUNT
		Not DSR				
		FIRE DETECTION				
1		SITC of FIRE ALARM CONTROL PANEL: Microprocessor based 7 loop fire alarm control panel fully networkable, expandable with each loop capable of taking 127 devices expandable upto 10 loop, 8 line x 40 character alpha-numeric liquid crystal display. The panel shall be soft addressable type. The Panel should be able to store 10,000 log events in its memory. The panel shall be able to give pin point location of all fire / fault conditions. Further, the panel must be able to automatically switch off respective control switches when ever any alarm is triggered. The panel shall have in built rectifier, Loop cards, LCD unit to indicate Fire / Fault Signal with address and analog output, option of built in printer to log all fire or fault events complete in all respects, integral SMF lead acid batteries with sealed cells of 24 V capable of running for a minimum of 8 hours with integral battery charger complete as required and as per specification VDS & CNBOP approved.	No.	1	425,000.00	425,000.00
2		SITC of REPEATER PANEL:- With 2 line / 40 characters alpha numeric LCD display of FACP status information with commands such as reset and mute, complete as required.	No.	1	36,000.00	36,000.00
3		SITC of HEAT DETECTORS: Analogue, Soft Addressable, Intelligent heat detector with decentralized intelligence, automatic function self-test, CPU Failure mode, alarm and data memory, alarm indicator and with In-built Isolator, complete with base as required.	No.	270	3,000.00	810,000.00
4		Supply, installation, Testing and Commissioning of MULTICRITERIA DETECTORS: Analog, Soft Addressable, Intelligent, Multicriteria detector with decentralized intelligence with integral optical detector and heat detector, Dual Optical with Forward and Backward scattering & One Thermal Chamber type and with In-built Isolator, complete with base as required.	Nos.	271.00	4,500.00	1,219,500.00
5		SITC of MANUAL CALL POINT: Analog, Soft Addressable, Manual Call Point with integrated Isolator, complete as required.	No.	15	3,300.00	49,500.00
6		SITC of RESPONSE INDICATORS: Local make response indicator complete as required.	No.	57	110.00	6,270.00
7		SITC of MONITOR MODULES: Addressable transponder / Monitor Modules complete as required.	No.	15	3,300.00	49,500.00
8		SITC of CONTROL MODULES: Addressable transponder / Control Modules complete as required.	No.	35	2,400.00	84,000.00
9		SITC of HOOTER CUM STROBES: Addressable hooter cum Strobe complete as required.	No.	15	4,000.00	60,000.00
10		SITC of SIREN: Local make Addressable siren with high intensity having range of 1. km for out door application etc. complete as required.	No.	1	7,500.00	7,500.00
11		SITC of 6 W recessed ceiling mounted speakers with following features:- Built-in 100 / 70 V LMT, metal speaker with metal grill, SPL 1W/1m = 92dB, SPL @ Full power = 97 dB, 180 deg dispersion, frequency range 120-17, 500 Hz as per BS 6840 complete with necessary mounting hardware & accessories.	No.	259	950.00	246,050.00
12		SITC of DSP Based Audio Controller System for Public Address & Voice evacuation with:- 8 zones, class AB wiring, 16 monitored speaker circuits, On-panel display & zone keys, 5 audio inputs, Integrated & monitored Fireman microphone, Digital message players up to 45 min for Automatic Voice Evacuation, Event log incident data records upto 2047 incidents, amplifier monitoring with switchover to back up amplifier. Compliance with EN 60849 , BS 5839 part 8 & EN 54-16 standards	No.	1	475,000.00	475,000.00
13		SITC of 480 watts RMS Class AB Audio Power Amplifier with following features: 480W RMS , amplifier output 100V/70V/0Ohm, Supply Input 230/240V 50 Hz, DC 28V, Short Circuit protection, Thermal Shutdown, Overload protection, Inbuilt Ventilating Fans, THD< 0.5%, AC Dc Fuses, SNR>80 Db	No.	4	90,000.00	360,000.00
14		Supplying and drawing Copper Conductor, MICA taped, Halogen Free of 2 x 1.5 sq.mm cable including all supports required for installation as per requirement on surface including all end terminations complete in all respect for successful commissioning for fire detection and PAVA system.	RM	4000	250.00	1,000,000.00
TOTAL SUB HEAD LOW VOLTAGE						4828320.00