

FACULTY RESIDENCES 4 BLOCKS

CONSTRUCTION OF FACULTY RESIDENCES 4 BLOCKS (PHASE-II) AT N.I.T. ROURKELA**ABSTRACT OF COST**

	DESCRIPTION	D.S.R AMOUNT	NON-DSR AMOUNT
1	CIVIL WORKS	187615889.91	51738990.62
2	PLUMBING WORKS	12635286.55	13814950.00
3	ELECTRICAL WORKS	11585513.00	10435078.00
4	SOLAR WATER HEATER	-	3000000.00
5	FIRE FIGHTING WORKS	132371.60	3972865.00
6	SOLAR ENERGY		17009476.00
7	FDA		1519250.00
	TOTAL	211969061.06	101490609.62
G.TOTAL		313459670.68	

CONSTRUCTION OF FACULTY RESIDENCES 4 BLOCKS (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	1397736.28	
II	CONCRETE WORK	4990862.00	
III	REINFORCED CEMENT CONCRETE	105907143.07	
IV	BRICK WORK	10270675.00	
V	MARBLE WORK	4527256.90	
VI	WOOD WORK	4036986.25	
VII	STEEL WORK	4971862.24	
VIII	FLOORING	16392607.91	
IX	ROOFING	3976808.05	
X	FINISHING	25781708.12	
XI	ROAD WORK	44569.54	
X	ALUMINIUM WORKS	2264869.47	
XI	WATER PROOFING	3052805.08	
XII	NON SCHEDULE ITEMS	-	51738990.62
	TOTAL	187615889.91	
	TOTAL	187615889.91	51738990.62
		A-1	A-2

BILL OF QUANTITIES						
CIVIL WORKS						
S No	Ref DSR 2012 item	DESCRIPTION	UNIT	QTY	RATE (in Rs)	AMOUNT (in Rs)
I EARTH WORK 2.0						
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 well 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	2940.00	129.35	380289.00
2	2.7	Earth work n excavation over areas (exceeding 30cm in depth, 1.5 m in width as well as 10 Sqm on plan) including disposal of excavated earth, lead upto 50 m and lift upto 1.5 m, disposed earth to be levelled and neatly dressed:				
	2.7.1	Ordinary rock	Cu.M	300.00	197.75	59325.00
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 50 m				
	2.8.1	All kinds of soil	Cu.M	1548.00	130.80	202478.40
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	156.00	212.00	33072.00
5	2.24	Extra rates for quantities of works, executed :				
	2.24.2	In or under foul position, including pumping out water as required	meter depth	2400.00	32.34	77616.00
6	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	4200.00	83.80	351960.00
	2.26	Extra for every additional lift of 1.5 m or part thereof in:				
i)	2.26.1	All kinds of soil	Cu.M	4560.00	34.60	157776.00
ii)	2.26.2	Ordinary or hard rock	Cu.M	450.24	62.00	27914.88
7	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 pavement).	cum	300.00	110.75	33225.00
8	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.				
	2.28.1	All kinds of soil.	100sqm	70.00	935.25	65467.50
9	2.32	Clearing grass and removal of the rubbish upto a distance of 50 outside the periphery of the area cleared.	100sqm	40.00	247.00	9880.00
10	2.36	Deduct for disposed soil levelled and neatly dressed.	Cu.M	50.00	-25.35	-1267.50
TOTAL [I]						1397736.28
II CONCRETE WORK 4.0						
11	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	650.00	3593.30	2335645.00
12	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, parapetx,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	15.00	5272.40	79086.00
(ii)	4.2.5	1:3:6 (1 cement :3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	Cu.M	40.00	4782.35	191294.00
13	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)	Sq.M	250.00	207.55	51887.50
14	4.12	Extra for providing and mixing proofing material in cement concrete work @ 1 Kg per 50kg of cement	per 50 kg cement	70.00	35.35	2474.50
15	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 brushesand finally with a piece of cloth lightly soaked in kerosene oil	Sq.M	250.00	96.65	24162.50
16	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 fini	Sq.M	550.00	338.75	186312.50
17	4.18	Extra for addition of synthetic polyester triangular fibre of length 12mm, effective diameter 10-40 microns and specific gravity of 1.34 to 1.40 in cement concrete/RCC /Flooring / Water retaining structures by using 125gms of synthetic polvester trian gula	Per Bag of 50 kg of Cement	40000.00	53.00	2120000.00
TOTAL [II]						4990862.00

V 8.0 MARBLE WORK						
35	8.2	Providing and fixing 18mm thick gang saw cut mirror polished pre moulded and prepolished) 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	1418.60	3083.40	4374111.24
36	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.	570.08	185.80	105920.86
37	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	Nos	168.00	281.10	47224.80
					TOTAL [V]	4527256.90
VI WOOD WORK 9.0						
38	9.15	Deduct if fixed shutters (without hinges) are provided instead of openable shutters for doors, windows or clerestory windows with:				
	9.15.1	Stainless steel butt hinges with stainless steel screws:				
	9.15.1.1	For 2nd class teak wood and other inferior class of wood shutters.	Sq.M	418.08	142.05	59388.26
39	9.31	Providing and fixing wire gauge laminated veneer lumber shutters conforming to IS : 14616, and as per TADS 15 :2001 (Part B) using galvanised wire gauge with average width of aperture 1.4 mm in both directions with wire of dia 0.63 mm as per IS :1568, for doors, windows and clerestory windows, including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws, as per directions of Engineer-in-charge:				
	9.31.1	35 mm thick shutters	Sq.M	418.08	2126.55	889068.02
40	9.40	Providing and fixing wooden moulded beading to door and windows frames with iron screws, plugs and priming coat on unexposed surface etc. complete				
	9.40.1	Second class teak wood				
	9.40.1.2	50x12 mm	R.M.	6828.08	135.70	926570.46
41	9.47	Providing and fixing nickel plated M.S. pipel curtain rods with nickel plated brackets:				
	9.47.1	20 mm dia (heavy type)	R.M.	444.08	107.10	47560.97
42	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.				
	9.48.1	Fixed to steel windows by welding.	Kg	8066.24	90.75	732043.54
43	9.51	Providing and fixing fly proof galvanised M.S. wire gauze to windows and clerestory windows using galvanised M.S. wire gage with average width of aperture 1.4 mm in both directions with wire of dia. 0.63 mm.				
	9.51.2	With 12mm mild steel U beading.	Sq.M	578.52	484.75	280437.57
44	9.90	Providing and fixing special quality chromium plated brass cupboard locks with six levers including necessary screws etc. complete (Best make of approved quality) of:				
	9.90.2	Size 50 mm	Each	504.00	147.05	74113.20
45	9.119	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	R.M.	845.04	404.60	341903.18
	9.120	Providing and fixing to existing door frames.				
46	9.120	Providing and fixing factory made panel PVC door shutter consisting of frame made out of M.S. tubes of 19 gauge thickness and size of 19 mm x 19 mm for styles and 15x15 mm for top & bottom rails. M.S. frame shall have a coat of steel primers of approved make and manufacture .M.S. frame covered with 5 mm thick heat moulded PVC 'C' channel of size 30 mm thickness, 70 mm width out of which 50 mm shall be flat and 20 mm shall be tapered in 45 degree angle on both side forming styles and 5 mm thick, 95 mm wide PVC sheet out of which 75 mm shall be flat and 20 mm shall be tapered in 45 degree on the inner side to form top and bottom rail and 115 mm wide PVC sheet out of which 75 mm shall be flat and 20 mm shall be tapered on both sides to form lock rail. Top, bottom and lock rails shall be provided both side of the panel. 10 mm (5 mm x 2) thick, 20 mm 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 7 mm (5 mm+2 mm) thick x 15 mm wide PVC sheet beading on inner side, and joined together with solvent cement adhesive. An additional 5 mm thick PVC strip of 20 mm 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 & drawing.				
	9.120.2	30 mm thick pre laminated PVC door shutters	Sq.M	231.88	2958.00	685901.04
					TOTAL [VI]	4036986.25
VII STEEL WORK 10.0						
48	10.14	Providing and fixing pressed steel door frames conforming 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 steel welded 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 and applying a coat of approved steel primer after pre treatment of the surface as directed by Engineer-in-charges:				
i	10.14.1	Profile B	R.M.	1746.08	346.75	605453.24
i	10.14.2	Profile C	R.M.	3778.20	370.00	1397934.00

49	10.16	Steel work in built up tubular trusses including cutting , hoisting , fixing in position and applying a priming coat of approved steel primer, welded and bolted including special shaped washers etc. complete.				
	10.16.3	Electric Resistance or induction butt welded tubes.	Kg	16000.00	105.85	1693600.00
50	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	5500.00	77.90	428450.00
51	10.26	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing and staircase railing including applying a priming coat of approved steel primer.				
	10.26.1	M.S. tube.	Kg	8500.00	86.45	734825.00
51(a)	10.28	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc. including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge. (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.)	kg	200.00	558.00	111600.00
				TOTAL [VII]		4971862.24

VIII FLOORING							
52	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	485.44	258.20	125340.61	
53	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	3509.56	1265.35	4440821.75	
(ii)	11.23.5	Udaipur green marble.	Sq.M	3748.36	1418.95	5318735.42	
	11.24	Extra if pre finished nosing to treads of steps of marble stone.	R.M.	899.04	197.75	177785.16	
54	11.25	Extra for marble stone flooring in treads of steps and risers using single length up to 2.00 metre.	Sq.M	364.32	230.55	83993.98	
55	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	2500.00	945.70	2364250.00	
56	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 the shade of the slabs, including rubbing and polishing complete.	Sq.M	65.00	954.10	62016.50	
57	11.31	Extra for pre finished nosing in treads of steps of kota stone / sand stone slab	R.M.	90.00	52.45	4720.50	
58	11.32	Extra for kota / stone sand stone in treads of steps and risers using single length up to 1.05 metre.	Sq.M	40.00	12.10	484.00	
59	11.36	Providing and fixing quality ceramic glazed wall tiles conforming to IS:15622(thickness to specified by the manufacture)of approved make in all colours , shades excepted burgundy, bottle green,black of any size as approved by Engineer -in-charge in skirting ,risers of steps and dado over 12 mm thick bed of cement mortar 1:3 (1 cement :3 coarse sand) and jointing with gry cement slurry @ 3.3.kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	Sq.M	4000.00	724.25	2897000.00	
60	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,laid 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	1200.00	764.55	917460.00	
				TOTAL [VIII]		16392607.91	
IX ROOFING 12.0							
61	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.	885.00	109.05	96509.25	
62	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	96.00	148.55	14260.80	
63	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	3740.00	1033.70	3866038.00	
				TOTAL [IX]		3976808.05	

X FINISHING 13.0						
64	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	1000.00	143.55	143550.00
ii	13.2.2	1:6 (1 cement: 6 fine sand)	Sq.M	40000.00	130.20	5208000.00
65	13.4	12 mm cement plaster of mix:				
	13.4.1	1:4 (1 cement: 4 coarse sand)	Sq.M	11698.64	132.10	1545390.34
66	13.9	Cement plaster 1:3 (1 cement: 3 coarse sand) finished with a floating coat of neat cement.				
67	13.9.1	12mm cement plaster	Sq.M	119.04	173.10	20605.82
	13.16	6 mm cement plaster of mix:				
	13.16.1	1:3 (1 cement: 3 fine sand)	Sq.M	11950.72	101.00	1207022.72
68	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	43232.68	83.80	3622898.58
69	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.				
	[a]	Height exceeding 10m but not exceeding 13m	Sq.M	2489.08	28.85	71809.96
	[b]	Height exceeding 13m but not exceeding 16m	Sq.M	912.64	57.70	52659.33
70	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	45000.00	83.80	3771000.00
71	13.37	White washing with lime to give an even shade:				
	13.37.1	New work (three or more coats)	Sq.M	6000.00	11.75	70500.00
72	13.42	Distempering 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	15000.00	37.35	560250.00
73	13.46	Finishing walls with Acrylic Smooth exterior paint of required shade :				
	13.46.1	New work (Two or more coats applied @ 1.67Litres/10 Sq.M over and including base coat of water proofing cement paint applied @ 2.20 Kg/10 Sq.M.	Sq.M	8047.04	67.50	543175.20
74	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	2000.00	24.70	49400.00
	13.50.3	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/steel works	Sq.M	8854.56	20.70	183289.39
75	13.68	French sprit polishing:				
	13.68.1	Two or more coats on new works including a coat of wood filler	Sq.M	423.36	137.45	58190.83
76	13.69	Polishing on wood work with ready mixed wax polish of approved brand and manufacture :				
	13.69.1	New work	Sq.M	1890.28	60.50	114361.94
77	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 Cement	3868.00	53.00	205004.00
78	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 surface even and smooth complete.	Sq.M	50000.00	76.05	3802500.00
79	13.82	Wall painting with acrylic emulsion paint, 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	15000.00	56.60	849000.00
80	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	20000.00	61.45	1229000.00
81	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	18000.00	137.45	2474100.00
					TOTAL [X]	25781708.12
XI ROAD WORK 16.0						
82	16.48	Painting road surface markeing with adequate No. of coats to IS: 164, on bituminous surface in white/yellow shade including cleaning the surface of all dirt, scales, oil, grease and foreign material etc. complete.				
	16.48.1	New work (Two or more coats)	Sq.M	37.00	95.75	3542.75
83	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	113.16	61.25	6931.05
84	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	Sq.M	11.32	536.65	6074.88
85	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	16.97	1651.20	28020.86
					TOTAL [XI]	44569.54
X ALUMINIUM WORK 21.0						
86	21.3	Providing anf fixing glazing in aluminium door ,window,ventilator shutters and partitions etc. with EPDM rubber/neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge.(Cost of aluminium saap beading shall be paid in basic item):	Sq.M	716.28	1227.80	879448.58
	21.3.3	With float glass panes of 8 mm thicknes.				

87	21.4	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge.				
	21.4.1	With stainless steel cover plate minimum 1.25 mm thickness	Nos	8.0	1953.10	249996.80
88	21.10	Providing and fixing double glazed hermetically sealed glazing in aluminium windows, ventilators and partition etc. with 6mm thick clear float glass both side, having 12mm air gap, 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.	Sq.M	298.88	3328.40	994792.19
89	21.18	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc.to be paid separately).	Sq.M	31.64	4444.75	140631.89
					TOTALX	2264869.47
XI WATER PROOFING 22.0						
90	22.7	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75 kg/sq. of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement: 5 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm				
		height including rounding of junctions of walls and slabs c) After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS: 2645 and approve by Engineer-in-charge. d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with wwater proofing compound conforming to IS: 2645 and approved by Engineer-in-charge including laying glass fibre cloth aproved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period to two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Chage:				
	22.7.1	With average thickness of 120mm and minimum thickness at khurra as 65 mm.	Sq.M	3880.52	786.70	3052805.08
					TOTAL [XI]	3052805.08

XII NON SCHEDULE ITEMS						
1	NS-1	Supplying and filling in plinth with local sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	500.00	300.00	150000.00
1(a)	N.S-1 (a)	Diluting and injecting chemical emulsion for PRE-CONSTRUCTIONAL Anti-termite treatment and creating continuous chemical barrier, wall trenches, top surface of plinth filling, along the external perimeter of building, over the top surface of consolidated earth of which apron is to be laid, surroundings of pipes and conduits etc. complete as per specification. (Plinth area of the building at ground floor only shall be measured for payment). Chlorpyrifos Emulsifiable concentrate of 20% with 1% Concentration.	Sq.M	4000.00	310.39	1241560.00
2	9a	Providing and Fixing ISI marked 35mm thick flush Prelaminated door shutter, (with 1mm thick lamination on both sides) core of block board construction with frame of 1st class hardwood and well matched Commercial 3 ply veneering and as approved by Engineer	Sq.M	945.12	2816.00	2661457.92
3	N.S-3	Brick work flyash cement brick class designation 75 above plinth level cement mortar Cement mortar 1:6 (1 cement: 6 coarse sand)	Cum	650.00	3589.32	2333058.00
4	N.S-4	Half brick work flash cement brick of class designation 75 cement mortar 1:4 (1 cement : coarse sand) including scaffolding and curing etc, complete as per specification superstructure above plinth level upto floor level cement mortar 1:4 (1 cement :4 sand) Cement mortar 1:4 (1 cement : 4 coarse sand)	Sq.M	1800.00	378.41	681138.00
5	N.S-5	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	1231.00	150.00	184650.00
6	N.S-6	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.	Sq.M	348.24	3396.00	1182623.04
7	N.S-7	Providing applying cementations Krystalline based water proofing for concrete rafts, walls, water tanks, slabs, concrete floors etc with krystol T1 system/ Dr fixet/hydrocret . The application to be done from +ve(postive) side on wet open pore concrete surface with brush @ 1Kg/Sq.M as per manufacturer specification.	Sq.M	5666.04	441.00	2498723.64
8	N.S-8	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 , Aluminum Glazing sections shall be powder coated with heat treatment on three surfaces in Ivory/Black colour using 6mm thick TOUGHENED SGG EVO Star ET 425 AURA GREEN HEAT REFLECTIVE GLASS VLT-24%, Solar Factor- 0.25 and U value- 3.72 W Sqm K of Saint-Gobain makeof 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 Aluminum 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.	Sq.M	170.40	5662.00	964804.80
9	N.S-9 (a)	Providing, supplying & fixing of glazed 2 Track -2 Panel Sliding Windows with mesh and top fixed of 450 mm made out of multi chambered uPVC sections with TPV gaskets having isolated drainage and reinforced with Galvanized Iron profiles through out the window. The outer frame having a overall size of 60 x 45 mm with reinforcement of 1 mm thickness and sash with overall size of 39 x 58 mm with reinforcement of 1.5 mm thickness. Glazing bead for fixing of glass shall be of size 20 x 18mm and coextruded with gasket. The flymesh adaptor for mesh shall be of overall size 25 x 34mm and screen sash of overall size 18.5 x 42.5 mm.Fiber Glass mesh shall be provided in mesh shutter. The outer frame for the fixed part shall have a overall size of 60 x 55 mm with reinforcement of 1 mm thickness and Glazing bead for fixing of glass shall be of size 34 x 20mm and coextruded with gasket. Windows shall be provided with 5mm thick SOLAR glass and standard hardware.Each sliding shutter shall be provided with 2nos of flat nylon rollers and 1 no powder coated die cast aluminium touch lock. Wall thickness of frame & sash shall be 2 - 2.2 mm. (Approved as per Architects &Client)	Sq.M	957.32	5312.00	5085283.84
9(b)	N.S (9b)	Providing, supplying & fixing of glazed 3Track - 2 Panel Sliding Window With Mesh of height 1500 mm made out of multi chambered uPVC sections with TPV gaskets having isolated drainage and reinforced with GI throughout the window. The sliding outer frame having a overall size of 108 x 45 mm with reinforcement of 1 mm thickness, sash with overall size of 39 x 58 mm with reinforcement of 1.5 mm thickness, mesh sash of overall size 30 x 48.5 mm reinforced with 1.5 mm of GI. Glazing bead for fixing of glass shall be of size 20 x 18mm and coextruded with gasket. Fiber Glass mesh shall be provided in mesh shutter. Windows shall be provided with 5 mm thick SOLAR glass and standard hardware .Each shutter shall be provided with 2nos of flat nylon rollers and 1 no powder coated die cast aluminium touch lock. Wall thickness of frame & sash shall be 2 - 2.2 mm. (Approved as per Architects &Client)	Sq.M	277.20	5691.00	1577545.20
9(C.)	N.S (9C)	Providing, supplying & fixing of Fixed Louvered Ventilator made out of multi chambered uPVC sections with TPV gaskets having isolated drainage and reinforced with Galvanized Iron profiles through out the window. The outer frame having a overall size of 60 x 55 mm with reinforcement of 1 mm thickness and Mullion with overall size of 74 x 60 mm with reinforcement of 1 mm thickness. Ventilator shall be provided with 4.5 mm Pin Head glass, standard hardware. Wall thickness of frame & Mullion shall be 2 - 2.2 mm (Approved as per Architects &Client)	Sq.M	113.40	5314.00	602607.60
10	N.S-10	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:	Sq.M	301.44	3502.00	1055642.88
11	N.S-11	Providing and Fixing Glass Mosaic Tiles (20x20)x4mm thick Repeated 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	Sq.M	2590.44	1396.00	3616254.24

12	N.S-12	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	174.28	1670.00	291047.60
13	N.S-13	Providing & Fixing of Danpalon 16mm thick (with minimum1040mm wide) multicell polycarbonate sheet with standing seam on both sides & double tooth snap on locking system to ensure maximum uplift capability. The panels will be UV protected and antiglare/softlight. The cross section of one cell should not be more than 4mmX4mm & weight of single panel shall not be less than 3250 per square metre. The system will be fitted on purlins with spacing as specified by manufacturer.	Sq.M	93.32	5321.68	496619.18
14	N.S-14	Providing and fixing Ceramic Tiles 395x395mm (edge cut) Rustic Premium Quality of approved colour & shade laid over 20mm thick cement mortar 1:4 (1 cement :4 Coarse sand) jointed & pointed in white cement mixed with pigment to match the shade of the tile	Sq.M	2167.20	1132.00	2453270.40
15	N.S-15	Extra for providing and laying Ceramic Glazed Tiles 400x400mm tiles in lieu of 300x300mm Tiles	Sq.M	1034.20	174.00	179950.80
16	N.S-16	Providing and fixing factory made shutters with M.S. box tubular section 75x30x1.25mm thick in windows and ventilators Side/Top/Centre Hung joints mitred and flash butt welded to pressed steel frames of windows. Item should include handles, stays, tower bolts and Glass beading & wire gauge to be measured seperately.	kg	6854.40	90.00	616896.00
17	N.S-17	Supplying and applying 2mm thick surface texture in lineal finish of approved shade Over a base course of primer over plastered surface all as specified .	Sq.M	11698.64	425.00	4971922.00
18	N.S-18	Providing and fixing 18-19mm thick commercial Ply Mr Grade UF Bounded Ply Wood fixed to frame work.	Sq.M	3905.88	1333.00	5206538.04
19	N.S-19	Prelaminated MDF Board Shutters one side laminated and other side balancing	Sq.M	1701.60	1380.00	2348208.00
20	N.S-20	Providing & fixing 25mm thick Prelaminated Flush Shutter out side Lamination other side balancing lamination with necessary screws.	Sq.M	824.16	1909.00	1573321.44
21	N.S-21	Marble in Designer Slup	R.M	48000.00	28.66	1375680.00
22	N.S-22	STAINLESS STEEL FITTINGS				
	a	Providing and fixing S.S.Sliding door bolt size 16mmx300mm finish SS Matt fixed with necessary screws etc. complete.(Makes : Ebco/Ozone/Dorma)	Nos	8.00	538.00	4304.00
	b	Providing and fixing S.S.Sliding door bolt size 16mmx250mm finish SS Matt fixed with necessary screws etc. complete.(Makes : Ebco/Ozone/Dorma)	Nos	852.00	457.00	389364.00
	c	Providing & fixing S.S. tower bolt Size 250x12mm finish SS matt with necessary screws etc., complete.(Makes : Ebco/ Ozone/Dorma)	Nos	2128.00	269.00	572432.00
	d	Providing & fixing S.S. tower bolt Size 150X12mm" finish SS matt with necessary screws etc., complete.(Makes : Ebco/Ozone/ Dorma)	Nos	1008.00	150.00	151200.00
	e	Providing & fixing S.S. tower bolt Size 100x10mm finish SS matt with necessary screws etc., complete (Makes : Ebco/Ozone/Dorma)	Nos	1792.00	135.00	241920.00
	f	Providing & fixing S.S. handle size 25x150mm with necessary screws etc., complete. (Makes : Ebco/Ozone/Dorma)	Nos	3712.00	900.00	3340800.00
	g	Providing & fixing S.S. handle size 15x100mm with necessary screws etc., complete. (Makes : Ebco/Ozone/Dorma)	Nos	2576.00	646.00	1664096.00
	h	Providing & fixing S.S. handle size 10x75mm with necessary screws etc., complete. (Makes : Ebco/Ozone/Dorma)	Nos	896.00	450.00	403200.00
	i	Providing & fixing S.S.Door Stopper size 65x2.5MM finish SS Matt with necessary Screws etc., complete.(Makes : Ebco/Ozone/Dorma)	Nos	1240.00	300.00	372000.00
	j	Providing & fixing alu. Diecast body tubluor type universal hydraulic door closer with necessary crews etc. complete. (Makes : Ebco/ Ozone/Dorma)	Nos	1240.00	991.00	1228840.00
	k	Providing and fixing slide on 2333 Hinges O cracking with necessary screws in kitchen cabinets. (Makes : Ebco/Ozone/ Dorma)	Nos	3584.00	32.00	114688.00
	l	Providing and fixing Handle C Shape SS 4" with necessary screws. (Makes : Ebco/Ozone/Dorma)	Nos	1792.00	32.00	57344.00
					TOTAL [XVI]	51738990.62

PLUMBING WORKS**SUMMARY OF COST**

S.NO	NAME OF SUB-HEAD	AMOUNT	
		DSR 2012	NON SCHEDULE
i	SANITARY INSTALLATIONS & C.P FITTINGS	2248892.80	2898880.00
ii	CI PIPES & FITTINGS	3528082.40	189440.00
iii	RAIN WATER PIPES & FITTINGS	1327689.00	74880.00
iv	WATER SUPPLY WORKS	2391703.35	10636550.00
v	EXTERNAL SEWRAGE	1608909.00	-
vi	EXTERNAL DRAINAGE	1530010.00	15200.00
	TOTAL	12635286.55	
	G.TOTAL	12635286.55	13814950.00

BILL OF QUANTITIES						
SECTION-B : INTERNAL PLUMBING WORKS						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
(i) SANITARY INSTALLATIONS & C.P FITTINGS						
DSR 2012 TEMS						
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	256.00	1848.35	473177.60
2	17.8	Providing and fixing white vitreous china pedestal for wash basin completely recessed at back for the reception of pipes and fittings	Each	256.00	894.70	229043.20
3	17.22	Providing and fixing G.I. intel connection for flush pipe connecting with W.C. pan.	Each	128.00	94.00	12032.00
4		Providing and fixing P.V.C. waste pipe for wash including P.V.C. waste fittings complete				
	17.28.1	Semi rigid pipe				
	17.28.1.1	32mm dia	Each	256.00	59.50	15232.00
	17.28.1.2	40mm dia	Each	64.00	66.45	4252.80
5	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	256.00	674.05	172556.80
6	17.33	Providing and fixing 600x120x5mm glass shelf with edges round of supported on anodised aluminium angle frame C.P. brass brackets and guard rail complete fixed with 40mm long screws, rawlplugs etc.complete.	Each	192.00	341.25	65520.00
7		Providing and fixing toilet paper holder:				
	17.34.1	CP brass	Each	128.00	250.95	32121.60
8		Providing and fixing C.P brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931				
	18.53.1	15 mm nominal bore	Each	1088.00	449.35	488892.80
9		Providing and fixing Salem Stainless Steel A ISI 304(18/8) kitchen sink as per IS 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fitting and brackets, cutting and making good the walls wherever required.				
		kitchen sink with drain board				
	17.10.1.1	510x1040 mm bowl depth 250 mm.	Each	64.00	6743.55	431587.20
10	18.21	Providing and fixing unplasticised PVC connection pipe with brass unions				
	18.21.2	45 cm length				
11	18.21.2.1	15 mm nominal bore	Each	704.00	61.70	43436.80
12	18.22	Providing and fixing C.P. brass shower rose with 15 or 20mm inlet				
	18.22.2	150 mm diameter	Each	192.00	77.85	14947.20
13	18.49	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931				
	18.49.1	a) 15 mm nominal bore	Each	64.00	397.50	25440.00
14	18.5	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	a) 15 mm nominal bore	Each	384.00	411.40	157977.60
15	18.51	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
	18.51.1	a) 15 mm nominal bore	Each	192.00	430.60	82675.20
Total C/f to Summary				Total DSR ITEMS [i]		2248892.80
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 divertor and two way angle valve[FOR EWC]	Each	128.00	500.00	64000.00
2	NS	Providing & fixing 4 mm thick SS hinged grating with rim of approved design including setting in floor with cement mortar.				
	a)	125 mm dia	Each	512.00	240.00	122880.00
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	256.00	900.00	230400.00
4	NS	Supplying and fixing Towel rail of size 600x20mm complete with bracket fixed to wooden cleats with CP brass screws.	Each	192.00	925.00	177600.00
5	NS	Providing and fixing CP brass Single lever wall mixer with spout of approved quality for Hot & cold bathing including cutting and making good the wall etc. complete.	Each	192.00	3500.00	672000.00
6	NS	Providing and fixing CP brass basin mixer of approved quality for Hot & cold water including cutting and making good the wall etc. complete.	Each	256.00	3000.00	768000.00
7		Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid 10 litre low level white vitreous china dual flushing cistern & C.P. flush bend with fittings & CI 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.				
		W.C. pan with ISI marked white solid plastic seat and lid.	Each	128.00	5000.00	640000.00
8	NS	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.				
		White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rest.	Each	64.00	3500.00	224000.00
Total C/f to Summary				Total NS ITEMS [i]		2898880.00
(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	2400.00	857.30	2057520.00
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	1500.00	207.85	311775.00
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	1900.00	112.50	213750.00
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	48.00	353.25	16956.00
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	168.00	296.35	49786.80
6	17.4	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	60.00	579.75	34785.00	
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	60.00	442.00	26520.00	
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	12.00	244.10	2929.20	
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	168.00	801.70	134685.60	
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 nominal bore	RM	280.00	367.90	103012.00	
ii	(18.10.5+18.40.5+18.78)	40 mm dia nominal bore	RM	280.00	436.60	122248.00	
iii	(18.10.6+18.40.6+18.78)	50 mm dia nominal bore	RM	850.00	527.80	448630.00	
		Total C/f to Summary			Total DSR ITEMS [ii]	3528082.40	
		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 to 300mm) 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	256.00	500.00	128000.00	
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	256.00	240.00	61440.00	
		Total C/f to Summary			Total NS Items [ii]	189440.00	
		[iii] FOR RAIN WATER:					
1	17.35	Providing and fixing soil, waste and vent pipes:					
	17.35.1	100mm dia					
	17.35.1.1	Sand cast iron S&S as per IS-1729	RM	1400.00	734.30	1028020.00	
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	1000.00	207.85	207850.00	
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	600.00	112.50	67500.00	
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	100.00	177.85	17785.00	
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	36.00	148.75	5355.00	
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	36.00	32.75	1179.00	
		Total C/f to Summary				1327689.00	
		(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	128.00	585.00	74880.00	
		Total C/f to Summary			Total DSR Items [iii]	74880.00	
		[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 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	840.00	218.65	183666.00
	ii	18.8.2	20 mm nominal outer dia pipes	RM	560.00	243.05	136108.00
	iii	18.8.3	25 mm nominal outer dia pipes	RM	336.00	297.95	100111.20
	iv	18.8.4	32 mm nominal outer dia pipes	RM	132.00	358.90	47374.80
		Internal work - Exposed on wall					
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.					
	i	18.7.2	20mm dia. nominal bore	RM	65.00	157.15	10214.75
	ii	18.7.3	25mm dia. nominal bore	RM	192.00	197.90	37996.80
	iii	18.7.4	32mm dia. nominal bore	RM	160.00	252.65	40424.00
	iv	18.7.5	40mm dia. nominal bore	RM	232.00	348.25	80794.00
	v	18.7.6	50mm dia. nominal bore	RM	185.00	514.35	95154.75
3	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)					
	i	18.17.2	32 mm nominal bore.	Each	248.00	450.90	111823.20
	ii	18.17.3	40 mm nominal bore	Each	32.00	546.05	17473.60
	iii	18.17.4	50 mm nominal bore	Each	8.00	780.60	6244.80
4	18.18	Providing and fixing ball (brass) valve of approved quality. High or low pressure, with plastic					
	i	18.18.2	20 mm nominal bore.	Each	224.00	360.20	80684.80
	ii	18.18.3	25 mm nominal bore	Each	234.00	421.65	98666.10
		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.				
i	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	40.00	1326.35	53054.00
	18.12.8	80 mm dia nominal bore	RM	25.00	1326.35	33158.75
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:				
i	18.32.1	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each	4.00	908.95	3635.80
		Total Cf to Summary			Total DSR Items [iv]	1269220.35
		NON SCHEDULE ITEMS				
		Internal work - Exposed on wall				
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.				
i		100mm dia. nominal bore	RM	65.00	850.00	55250.00
ii		150mm dia. nominal bore	RM	20.00	1000.00	20000.00
8		Providing and fixing PN 16 Butterfly valve of the following dia				
i		150mm dia. nominal bore	RM	1.00	2500.00	2500.00
9	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	20.00	325.00	6500.00
ii		80mm dia	Each	16.00	700.00	11200.00
10	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		65 mm nominal bore	Each	1.00	1500.00	1500.00
11	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 Cf to Summary			Total NS Items [iv]	5256950.00
		HOT 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	840.00	218.65	183666.00
ii	18.8.2	20 mm nominal outer dia pipes	RM	616.00	243.05	149718.80
iii	18.8.3	25 mm nominal outer dia pipes	RM	115.00	297.95	34264.25
		Internal work - Exposed on wall				
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.				
i	18.7.2	20mm dia. nominal bore	RM	128.00	157.15	20115.20
ii	18.7.3	25mm dia. nominal bore	RM	240.00	197.90	47496.00
iii	18.7.4	32mm dia. nominal bore	RM	200.00	252.65	50530.00
iv	18.7.5	40mm dia. nominal bore	RM	170.00	348.25	59202.50
v	18.7.6	50mm dia. nominal bore	RM	185.00	514.35	95154.75
3	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality(screwed end)				
i	18.17.2	32 mm nominal bore.	Each	16.00	450.90	7214.40
ii	18.17.3	40 mm nominal bore	Each	10.00	546.05	5460.50
iii	18.17.4	50 mm nominal bore	Each	108.00	780.60	84304.80
iv	18.17.5	65 mm nominal bore	Each	90.00	780.60	1073.25
v	18.17.6	80 mm nominal bore	Each	80.00	780.60	1832.95
4	18.18	Providing and fixing ball (brass) valve of approved quality. High or low pressure, with plastic				
i	18.18.2	20 mm nominal bore.	Each	112.00	360.20	40342.40
ii	18.18.3	25 mm nominal bore	Each	62.00	421.65	26142.30
		Total Cf to Summary			Total DSR Items [iv]	806518.10
		NON SCHEDULE ITEMS				
		Internal work - Exposed on wall				
5		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		65mm dia. nominal bore	RM	120.00	625.00	75000.00
ii		80mm dia. nominal bore	RM	45.00	700.00	31500.00
iii		100mm dia. nominal bore	RM	100.00	850.00	85000.00
iv		150mm dia. nominal bore	RM	20.00	1000.00	20000.00
6		Providing and fixing PN 16 Butterfly valve of the following dia				
i		150mm dia. nominal bore	RM	1.00	2500.00	2500.00
7		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		65mm dia	Each	4.00	325.00	1300.00
ii		150mm dia	Each	4.00	700.00	2800.00
8		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		65 mm nominal bore	Each	1.00	1500.00	1500.00
9		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]	5379600.00
		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	180.00	218.65	39357.00
ii	18.8.2	20 mm nominal outer dia pipes	RM	340.00	243.05	82637.00
		Internal work - Exposed on wall				
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.				
i	18.7.1	15mm dia. nominal bore	RM	65.00	133.95	8706.75
ii	18.7.2	20mm dia. nominal bore	RM	200.00	157.15	31430.00
iii	18.7.3	25mm dia. nominal bore	RM	220.00	197.90	43538.00
iv	18.7.4	32mm dia. nominal bore	RM	115.00	252.65	29054.75
v	18.7.5	40mm dia. nominal bore	RM	100.00	348.25	34825.00
3	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality(screwed end)				
i	18.17.2	32 mm nominal bore.	Each	8.00	450.90	3607.20
4	18.18	Providing and fixing ball (brass) valve of approved quality. High or low pressure, with plastic				
i	18.18.1	15 mm nominal bore.	Each	56.00	258.05	14450.80
ii	18.18.2	20 mm nominal bore.	Each	60.00	360.20	21612.00
iii	18.18.3	25 mm nominal bore	Each	16.00	421.65	6746.40
		Total C/f to Summary			Total DSR Items [iv]	315964.90
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.				
i	2.10.1.2	Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia.	RM	1240.00	165.60	205344.00
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	280.00	219.05	61334.00
i	19.1.3	200 mm diameter	RM	440.00	323.05	142142.00
	19.1.4	250 mm diameter	RM	520.00	446.15	231998.00
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	280.00	382.75	107170.00
	19.3.3	200 mm diameter	RM	440.00	449.90	197956.00
	19.3.4	250 mm diameter	RM	520.00	523.75	272350.00
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	40.00	1278.30	51132.00
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)				
	19.7.1.1	With F.P.S. bricks with class designation 75	Each	44.00	7132.00	313808.00

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	100.00	256.75	25675.00
Total Carried to DSR Items						1608909.00
V						
EXTERNAL DRAINAGE						
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	480.00	165.60	79488.00
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	120.00	382.75	45930.00
ii	19.3.4	250 mm diameter	RM	360.00	523.75	188550.00
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	120.00	254.50	30540.00
ii	19.6.3	250 mm diameter R.C.C pipes	RM	360.00	342.45	123282.00
iii	19.6.4	300 mm diameter R.C.C pipes	RM	240.00	422.90	101496.00
iv	19.6.6	500 mm diameter R.C.C pipes	RM	195.00	722.20	140829.00
v	19.6.7	600 mm diameter R.C.C pipes	RM	120.00	1084.25	130110.00
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	Each	60.00	7007.40	420444.00
5.0	19.10.1	Extra for depth for circular manhole 0.91m internal dia at bottom with beyond 0.91m to 1.67m.				
		With FPS Bricks class designatd 75	RM	20.00	3498.25	69965.00
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	56.00	3193.50	178836.00
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	80.00	256.75	20540.00
Total Carried to DSR Items						1530010.00
NON DSR						
1		Constructing grease trap 80 x 40 x 46cm (inside) with one brick thick brick masonry wall with inlet and outlet drain with bricks of class designation 75 in cement mortar 1:4 (1 cement: 4 fine sand) plastered 12mm thick with 1:4 (1 cement: 4 coarse sand) finished with a floating coat of neat cement on inside and exposed surfaces having two stone baffled walls 34.5 cm deep and third one 19cm deep, each 40mm thick and 45 cm long embedded 2.5 cm on either side in brick masonry, 40mm thick 100 x 60 cm stone cover and 7.5 cm thick bed concrete 1:5:10 (1 cement : 5 fine sand: 10 graded stone aggregate 40mm nominal size) with 40mm flooring in cement concrete 1:2:4 (1 cement: 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size) with a floating coat of neat cement including all earth excavation, refilling and disposal of surplus earth complete as per standard design	Each	16.00	3500.00	56000.00
Total Carried to NON DSR Items						15200.00

ELECTRICAL WORKS			
SUMMARY OF COST			
S.NO	NAME OF SUB-HEAD	AMOUNT	
		DSR 2012	NON SCHEDULE
i	INTERNAL ELECTRICAL WORKS	11585513.00	10435078.00
	Total C/F To Summary	11585513.00	10435078.00

BILL OF QUANTITIES						
SECTION-C : INTERNAL ELECTRICAL WORKS						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
I						
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.				
i	1.10.2	Group B	Point	3586.00	544.00	1950784.00
2.0	1.11	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 :-				
	1.25	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	384.00	322.00	123648.00
5.0		S/F Modular type blanking plate :-				
	1.26	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	128.00	142.00	18176.00
ii	1.27.2	4 Module (125 mm x 75 mm)	Each	128.00	154.00	19712.00
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	1000.00	75.00	75000.00
ii	1.24.4	3 pin 5/6 amp. Socket outlet	Nos	1000.00	96.00	96000.00
iii	1.24.6	Telephone Socket outlet	Each	128.00	89.00	11392.00
iv	1.24.7	TV Antenna Socket outlet	Each	128.00	93.00	11904.00
v	1.24.8	Bell Push	Each	64.00	98.50	6304.00
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
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	4480.00	15.50	69440.00
10.0		S/F power plug point with all accessories :-				
	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	2112.00	288.00	608256.00
11.0		S/F power plug point with all accessories :-				
	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	528.00	366.00	193248.00
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	1622.00	141.00	228702.00
13.0		Supplying and fixing following rating, double pole, (single phase and neutral) 240 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc. as required :				
i	2.14.1	25 amps	Each	64.00	1318.00	84352.00
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, 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	2.7.4	2 + 4 way Double Door	Each	64.00	2152.00	137728.00
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	192.00	693.00	133056.00
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	2.00	6345.00	12690.00
ii	2.8.6	6 way (4 + 18), Double door, horizontal type	Each	1.00	8197.00	8197.00
iii	2.8.7	8 way (4 + 24), Double door, horizontal type	Each	64.00	8984.00	574976.00
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	1.00	1679.00	1679.00
ii	2.15.2	40 Amp.	Each	66.00	1703.00	112398.00

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	5.9	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. (Joining 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
20.0	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
21.0	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
22.0	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	676.00	39.00	26364.00
23.0	1.41	Installation, testing and commissioning of prewired, flourescent fitting / compact flourescent 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	2014.00	69.50	139973.00
24.0	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	384.00	99.00	38016.00
25.0	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	256.00	163.00	41728.00
26.0	1.51	Extra for fixing the louvers / shutters complete with frame fro exhaust fans of all sizes.	Each	256.00	68.50	17536.00
27.0		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.				
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
28.0		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	10.00	867.00	8670.00
	9.1.29	3.5 X 240 sq. mm (62mm)	Each	8.00	771.00	6168.00
	9.1.33	4 x 16 sq. mm (28mm)	Each	20.00	188.00	3760.00
	9.1.32	4 x 10 sqmm (25 mm)	Each	2.00	146.00	292.00
29.0	7.5	Laying of one number PVC insulated and PVC sheathed / XLPE power cab le 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	900.00	44.00	39600.00
30.0	7.8	Laying of one number PVC insulated and PVC sheathed / XLPE power cab le 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	650.00	16.50	10725.00
	7.8.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	RM	100.00	72.50	7250.00
31.0	8.5	Laying of one number XLPE power cab le 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
32.0		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
33.0		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
Total carried to DSR Items						Rs. 11585513.00
II) NON SCHEDULED ITEMS						
1.0		S/F power plug point with all accessories :- 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	392.00	300.00	117600.00
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	256.00	120.00	30720.00
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	256.00	125.00	32000.00
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	3360.00	30.00	100800.00
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	600.00	2400.00
6.0		Supplying and Earthing with Cu earth plate 600mm x 600 mm x 3mm 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	6000.00	48000.00
7.0		Providing & fixing 50mm x 6mm G.I. strip on surface or in recess for connections etc. as required.	Rm	100.00	150.00	15000.00
8.0		Providing & fixing 50mm x 6mm Cu. strip on surface or in recess for connections etc. as required.	Rm	100.00	1000.00	100000.00

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	384.00	250.00	96000.00
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	800.00	480000.00
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	192.00	700.00	134400.00
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	1632.00	2100.00	3427200.00
ii	1 x 28 W T5 (CRCA Body)(TMS122 M 1xTL5-28W EBT)	Each	834.00	1170.00	975780.00
iii	Bulk Head Light	Each	64.00	700.00	44800.00
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	384.00	1300.00	499200.00
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.				
	300mm sweep	Each	256.00	1413.00	361728.00
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	200.00	1407.00	281400.00
ii	3.5 Core 240 sq. mm. Armoured Aluminium cable.	RM	800.00	967.00	773600.00
iii	4 x 16 sq.mm. Armoured Aluminium cable.	RM	500.00	132.00	66000.00
iv	4 x 10 sqmm Armoured Aluminium cable.	RM	150.00	119.00	17850.00
16.0	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 supply system.				
	All Panel's outgoing's have to be equipped with KWH energy meter.				
i	External Feeder panel				
	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.				
	1 no 72 A Contactor with 24 hrs timer circuit and selector switch and pushbuttons				
	Outgoing:				
	Four (4) Each.32A TPN MCB	Set	1.00	50600.00	50600.00
ii	Meter Board Panel				
	Incoming:				
	One (1) Nos.250A TPN MCCB (35KA)				
	Metering:				
	One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
	One (1) Nos. (0-250A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
	One (1) Set of Phase Indication Lamp with 2A SP MCB.				
	Bus Bar:				
	315A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
	Outgoing:				
	1 no. 63A TPN MCCB (25KA)				
	Seventeen (17) Nos.40A TPN MCB				
	The Distribution board shall also be with and suitable housing 17 Nos. 3 phase electronic type KWHR meters and One number 40A TPN MCB after individual meter. All meters to be provided at one half of Metering Panel with transparent & locable acrylic cover. The respective MCB's shall be in another half of Metering Panel. The work should be complete including connecting Meter & MCB's by MS flexible conduits for connecting wires.	Set	4.00	500000.00	2000000.00
v	Basement Panel				
	Incoming:				
	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:				
	Three (3) Nos.40A TPN MCB				

		Three (3) Nos.25A DP MCB	Set	4.00	45000.00	180000.00
17.0		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 Coulping Unit	Each	1.00	20000.00	20000.00
	v	GI Mast (3 mtr) with guy wire kit	Each	1.00	10500.00	10500.00
18.0		Supply, Installation, testing, Commissioning of J K Maintenance Free Chemical Gel Earthing - Dual Pipe (GI) Technology of "JK CHENSODE" 3mtr long 80mm dia permanantly sealed at both the ends with the lead terminal at the top along with 50 kgs of duly filled with metallic conducting compound permanantly 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 heavyduty Polyplastic earth pit cover.	Each	2.00	20000.00	40000.00
19.0		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 Stormaster 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
		TOTAL FOR NON DSR ITEMS				10435078.00

BILL OF QUANTITIES						
SECTION-D: SOLAR SYSTEM WORKS						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
I)	NS	SOLAR WATER HEATER				
1		Providing, fixing, installation, testing and commissioning of Solar Hot Water indirect Heating system using approved type of heating liquid medium comprising of flat plate solar panels, including all interconnecting insulated GI piping, primary and secondary recirculation pumps, pressure type insulated hot water tank, sacrificial magnesium anode with steel core including valves on inlet, outlet, Y stainer and a water meter on the inlet, air release valve all mounted on galvanized MS sections complete as required with connection with existing piping. (connect the system to hot water mixing tank via 50 mm dia pipe)				
a)		Ten Sets of Minimum 1 Nos. x 500 LPD flat plate solar collector panels of 2 x 1m size approx. the panels enclosed in insulated collected boxes with single piece toughened glass 4mm thick and fixed with heat resistant gasket. The system will deliver a minimum of 5,000 Kcal per day.	Each	16.00	100000.00	1600000.00
2.00		Integrated heat exchanger with drain down vessel and control panel designed so as to have insulated M.S. Horizontal tank (Capacity 100 litres of fluid). All the value & accessories shall be suitable for an operating pressure of 4.0 Kg./Sq.m PHE. The tank to hold atleast 100 litres of fluid and be suitable as a down vessel with provision for expansion tank and venting.	Set	4.00	150000.00	600000.00
3.00		Primary circulation pump two nos. (one working+ one standby) for circulation of fluid from Solar panels to heat exchanger.	Set	4.00	40000.00	160000.00
4.00		Secondary circulation pump two nos. (one working+ one standby) for circulation of fluid from heat exchanger to hot water mixing tanks.	Each	4.00	50000.00	200000.00
5.00		Inter-connected insulated GI piping insulated with 9mm thick nitrile rubber heat resistant insulation sections (Vidoflex or equivalent) and valves with outer mechanical protection of aluminium sheet cladding.	Lot	4.00	50000.00	200000.00
6.00		Supply, Installation, Testing & Commissioning of Electrical Panels : Switchboard cubical, fabricated from 16 gauge MS sheet with dust and vermin proof construction, powder coated in approved shade. All switchgear will be identified with etched plastic identification plates for each motor. The panel shall be wired with colour coded wiring. (All interconnecting wiring/cablings panels to motors, fuses, MCB, OFF/ON indicating lights, busbars, switchgears and accessories as required.)	LS	4.00	60000.00	240000.00
		Total C/f to Summary			Total NS Items [I]	3000000.00

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, 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.				
i	4.1.1	100 mm width X 50 mm depth X 1.6 mm thickness	RM	20.00	405.00	8100.00
2.0	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
3.0		Providing and fixing ball valve (brass) of approved quality complete. (High or low pressure with plastic floats).				
	18.18.3	25 mm nominal bore	Each	4.00	421.65	1686.60
4.0		Providing and placing on terrace (at all floor levels) polyethylene water storage tank of approved brand and manufacture with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fitting and base support for tank. (@ 5.25/- per liter)				
	18.48	20000 litres capacity	Each	20000.00	6.10	122000.00
					TOTAL	132371.60
		Total C/f to Summary			Total DSR ITEMS [i]	132371.60
NON Scheduled items						
1.0		Auto DOL starter for 3.0 HP with 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.	Set	1	15000.00	15000.00
2.0		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		4 Core 4 sq. mm. Armoured Aluminium cable.	Nos.	2.00	450.00	900.00
3.0		Supply,testing and commissioning of 1100 Volt grade XLPE insulated and sheathed aluminium conductor Armoured cables including the cost of providing required gap between adjacent cables (minimum one cable dia.) and including the cost of providing identification tags etc. complete as per specification, as required.				
i		4 Core 2.5 sq. mm. Armoured Aluminium cable.	RM	20.00	85.00	1700.00
II FIRE HYDRANT & SPRINKLER SYSTEM						
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	80.00	735.00	58800.00

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).	Each	26	5940.00	154440.00
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	22	7335.00	161370.00
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	52	3837.00	199524.00
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	26	1885.00	49010.00
7.0		Providing and fixing standard fireman's axe with heavy insulated rubber handle tested for 20000 watts.	Each	22	836.00	18392.00
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	4.00	12913.00	51652.00
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	22.00	769.00	16918.00
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	22.00	6638.00	146036.00
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	4.00	4049.00	16196.00
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.				
a		80 mm dia with lever operated	Each	4.00	3904.00	15616.00
b		150 mm dia with lever operated	Each	22.00	7335.00	161370.00

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.				
a		150 mm dia	Each	1.00	17459.00	17459.00
15.0		Providing and fixing 25 mm dia gunmetal single acting air release valve with screwed inlet tested for 20Kg/Cm2.	Each	4.00	613.00	2452.00
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	22.00	278.00	6116.00
17.0		Providing and fixing 'Y' strainer with CI body and S.S. strainer for outlet of OHT lines. (Terrace Level)				
a)		150 mm dia	Each	1.00	10124.00	10124.00
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	22	8000.00	176000.00
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	22	5500.00	121000.00
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	22	6500.00	143000.00
IV		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 holdtite 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	830.00	420.00	348600.00
b)		32 mm dia	Metre	90.00	500.00	45000.00
c)		40 mm dia	Metre	60.00	600.00	36000.00
d)		50 mm dia	Metre	140.00	700.00	98000.00
e)		65 mm dia	Metre	200.00	850.00	170000.00
f)		80 mm dia	Metre	35.00	1050.00	36750.00
g)		100 mm dia	Metre	30.00	1500.00	45000.00
h)		150 mm dia	Metre	250.00	1750.00	437500.00
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 Responce Pendent type	Each	450.00	245.00	110250.00
b)		Normal Responce Upright type	Each	10.00	245.00	2450.00
c)		Normal Responce Side wall	Each	10.00	334.00	3340.00
d)		Nozzles of K value 40 and discharge 60 LPM	Each	36.00	500.00	18000.00

3.0		Providing & fixing inspecting testing assembly with drain valve arrangement as per approved drawing..				
a)		50 mm dia	Each	6.00	7251.00	43506.00
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	6.00	557.00	3342.00
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.				
c)		100 mm dia	Each	6	3235.00	19410.00
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.	Each	22	278.00	6116.00
7.0		Providing and fixing 25 mm dia gunmetal single acting air release valve with screwed inlet tested for 20Kg/Cm2.	Each	6	613.00	3678.00
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' complete				
a)		50 mm dia with lever	Each	2	948.00	1896.00
b)		65 mm dia with lever	Each	2	1031.00	2062.00
c)		80 mm dia with lever	Each	6	1115.00	6690.00
d)		150 mm dia with lever	Each	6	1394.00	8364.00
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 including surface				
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)	Cum	20.00	3841.00	76820.00
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.				
a)		Four way	Each	1.00	20260.00	20260.00
VI	FIRE PUMPS & ACCESSORIES					
		(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)				
1		Pump:				
		Providing, Fixing Supplying and fixing horizontal centrifugal pump with volute bronze impeller connected to TEFC induction motor suitable for 400/410 Volts, 3 Phase, 50 Cycles, AC supply with the following specifications:				
a)		Capacity : 450 LPM				
b)		Head : 25 m				
c)		HP : 3 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	50000.00	50000.00
		Total C/f to Summary			Total NS Items [II]	3972865.00

BILL OF QUANTITIES
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.	176		
2		Module Mounting Structure	Nos.	176		
3		Battery Bank 120V-600Ah	Nos.	60		
4		Battery Protection Panel	Nos.	1		
5		PCU 120V DC ,Three Phase 18.5 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		
I		Rating 11 KW	Set	4	4252369.00	17,009,476.00
		GRAND TOTAL				17,009,476.00

BILL OF QUANTITIES						
SECTION-L: FIRE DETECTION SYSTEM						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	QTY	UNIT	RATE	AMOUNT
		Non DSR				
		FIRE DETECTION				
1		SITC of FIRE ALARM CONTROL PANEL : Microprocessor based 2 loop fire alarm control panel fully networkable, expandable with each loop capable of taking 127 devices expandable upto 4 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 it's 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	250,000.00	250,000.00
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.	88	3,000.00	264,000.00
4		SITC of MANUAL CALL POINT : Analog, Soft Addressable, Manual Call Point with integrated Isolator, complete as required.	No.	26	3,300.00	85,800.00
5		SITC of RESPONSE INDICATORS : Local make response indicator complete as required.	No.	5	110.00	550.00
6		SITC of MONITOR MODULES : Addressable transponder / Monitor Modules complete as required.	No.	18	3,300.00	59,400.00
7		SITC of CONTROL MODULES : Addressable transponder / Control Modules complete as required.	No.	30	2,400.00	72,000.00
8		SITC of HOOTER CUM STROBES : Addressable Hooter cum Strobe complete as required.	No.	26	4,000.00	104,000.00
9		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
10		SITC of 10 W Moulded cabinet wallmount loudspeakers with following features:- Built-in 100 / 70 V LMT, steel mesh, SPL 1W/1m = 96dB, SPL@Full power = 104 dB, EASE/CATT/ULYSSYS DLL ready.compliance with IEC60268 - Part 5, BS5839 Part 8 complete with necessary mounting hardware & accessories.	No.	10	6,500.00	65,000.00
11		SITC of DSP Based Audio Controller System for Public Address & Voice evacuation with:- 2 zones, class AB wiring, 4 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 500 incidents, built in or separate amplifiers 120W 7 band parametric equalisation. Compliance with EN 60849 , BS 5839 part 8 & EN 54-16 standards	No.	1	200,000.00	200,000.00
12		Supplying and drawing Copper Conductor, MICA taped, Halogen Free of 2 x 1.5 sq.mm cable including all supports required for instalation as per requirement on surface including all end terminations complete in all respect for succesful commissioning for fire detection and PAVA system.	RM	1500	250.00	375,000.00
		TOTAL SUB HEAD LOW VOLTAGE				1519250.00

LECTURE HALL COMPLEX

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	173888223.24	97866770.46
2	PLUMBING WORKS	2597076.85	5574845.17
3	ELECTRICAL WORKS	9126330.50	18747627.00
4	FIRE FIGHTING WORKS	89893.00	8407459.00
5	HVAC	688759.00	97029000.00
6	SOLAR ENERGY	-	6530681.00
7	FDA	-	4828320.00
	SUB TOTAL	186390282.59	238984702.64
	G.TOTAL	425374985.22	

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	1561172.44	
II	CONCRETE WORK	2845003.39	
III	REINFORCED CEMENT CONCRETE	121695493.77	
IV	BRICK WORK	10019211.30	
V	STONE WORK	9023730.50	
VI	MARBLE WORK	1322496.58	
VII	WOOD WORK	227161.25	
VIII	STEEL WORK	506900.64	
IX	FLOORING	16495789.13	
X		1485468.61	
XI	FINISHING	6010690.60	
XII	ROAD WORK		
XIII	DRAINAGE	28404.35	
XIV	ALUMINIUM WORK	31108.07	
XV	WATER PROOFING	2635592.61	
XVI	NON SCHEDULE ITEMS	-	97866770.46
	TOTAL	173888223.24	97866770.46
		A-1	A-2

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)
I EARTH WORK 2.0						
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, withen a lead of 50m.				
		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		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
8	2.26	Extra for every aditional 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	DELETED					
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.				
	2.28.1	All kinds of soil.	100 Sq.M	53.92	935.25	50428.68
11	2.32	Clearing grass and removal of the rubbish upto a distance of 50 m outside the periphery of the area cleared.	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						1561172.44
TOTAL [I]						1561172.44

II CONCRETE WORK 4.0						
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, parapet,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)	Sq.M	70.21	207.55	14572.64
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	per 50 kg cement	18.26	35.35	645.32
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 brushesand finally with a piece of cloth lightly soaked in kerosene oil	Sq.M	70.21	96.65	6786.06
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	233.61	338.75	79135.39
					TOTAL	2845003.39
					TOTAL [II]	2845003.39
III REINFORCED CEMENT CONCRETE 5.0						
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 excuding 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, proppintg 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, butteresses, 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, qirders, 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
Viii	5.9.13	Vertical and horizontal fins individually or forming box louvers band, facias and eaves boards.	sqm	100.00	470.10	47010.00
ix	5.9.15	Small lintels not exceding 1.5m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like.	Sq.M	203.93	166.90	34036.64
x	5.9.16	Edges of slabs and breaks in floors and walls,				
	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, proppijng 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, landding, beams and balconies (plan area to be measured).	Sq.M	6570.78	121.65	799334.98
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 sheet 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.	R.M.	312.70	22.25	6957.58
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.	Qtl	120.00	589.80	70776.00
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 (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 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 directions of the Engineer-in-charge.				
	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	121695493.77
					TOTAL [III]	121695493.77
IV 6.0 BRICK WORK						
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	10019211.30
					TOTAL [IV]	10019211.30
V 7.0 STONE WORK						

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	9023730.50
					TOTAL [V]	9023730.50
VI 8.0 MARBLE WORK						
43	8.2	Providing and fixing 18mm thick gang saw cut mirror polished pre moulded and prepolished) 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
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	1322496.58
					TOTAL [VI]	1322496.58
VII WOOD WORK 9.0						
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.				
	9.48.1	Fixed to steel windows by welding.	Kg	34.20	90.75	3103.65
47	9.119	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 Enginner-in-Charge.	R.M.	175.65	404.60	71067.99

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 shutter).				
	9.120.2	30 mm thick pre laminated PVC door shutters	Sq.M	47.48	2958.00	140454.71
49	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	227161.25
					TOTAL [VII]	227161.25
VIII STEEL WORK 10.0						
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.				
	10.5.1	Using M.S angels 40x40x6 mm for diagonal braces	Sq.M	10.50	2551.45	26790.23
51	10.14	Providing and fixing pressed steel door frames conforming 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 stel butt hinges 2.5 mm thick with mortar guards, lock strike- plate and shoxk absorbers as specified adn 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
52(a)	10.28	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc. including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge. (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.)	kg	200.00	558.00	111600.00
					TOTAL	506900.64
					TOTAL [VIII]	506900.64
IX FLOORING						
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 ththe 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

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 the 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
						TOTAL
						16495789.13
						TOTAL [IX]
						16495789.13
X ROOFING 12.0						
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
						1485468.61
						TOTAL [X]
						1485468.61
XI FINISHING 13.0						
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
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	Sq.M	11645.18	76.05	885615.94
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.				
	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
					TOTAL	6010690.60
					TOTAL [XI]	6010690.60
XII ROAD WORK 16.0						
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 course 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	151995.60
					TOTAL [XII]	151995.60
XIII DRAINAGE 19.0						

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 design.	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	28404.35
				TOTAL	[XIII]	28404.35
CH-21.0 ALUMINIUM WORK						
89	21.4	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge				
	21.4.1	With stainless steel cover plate minimum 1.25 mm thickness	Nos	2.00	1953.10	3906.20
90	21.18	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc.to be paid separately).	Sq.M	6.12	4444.75	27201.87
					TOTAL	31108.07
				TOTAL	[XIV]	31108.07
CH-22.0 WATER PROOFING						
91	22.7	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75 kg/sq. of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement: 5 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge to required height including rounding of junctions of walls and slabs c) After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS: 2645 and approve by Engineer-in-charge. d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge including laying glass fibre cloth approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period to two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Chage:				
	22.7.1	With average thickness of 120mm and minimum thickness at khurra as 65 mm.	Sq.M	3350.19	786.70	2635592.61
					TOTAL [XIV]	2635592.61
XV NON SCHEDULE ITEMS						
1	N.S-1	Diluting and injecting chemical emulsion for PRE-CONSTRUCTIONAL Anti-termite treatment and creating continous chemical barrier, wall trenches, top surface of plinth filling, along the external perimeter of building, over the top surface of consolidated earth of which apron is to be laid, surroundings of pipes and conduits etc. complete as per specification. (Plinth area of the building at ground floor only shall be measured for payment). Chlorpyrifos Emulsifiable concentrate of 20% with 1% Concentration.	Sq.M	2630.88	310.39	816598.84
2	N.S-2	Providing and Fixing ISI marked 35mm thick flush Prelaminated door shutter, (with 1mm thick lamination on both sides) core of block board construction with frame of 1st class hardwood and well matched Commercial 3 ply veneering and as approved by Engineer	Sq.M	278.16	2816.00	783298.56

3	N.S-3	Brick work flyash cement brick class designation 75 in super structure above plinth level upto floor V level . Cement mortar 1:6 (1 cement: 6 coarse sand)	Cum	576.25	3589.32	2068345.65
4	N.S-4	Half brick work flash cement brick of class designation 75 cement mortar 1:4 (1 cement : coarse sand) including scofolding and curing etc, complete as per specification superstructure above plinth level upto floor level. Cement mortar 1:4 (1 cement : 4 coarse sand)	Sq.M	2036.51	378.41	770635.75
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 lazer beam equipment to ensure 100 per cent 'X' axis and 'Y' axis alignment.	Sq.M	482.87	7134.00	3444794.58
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	5312.00	284988.80
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	610.00	2833.76
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	150.00	76230.00
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.	Sq.M	233.21	3396.00	791975.85
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	4820.00	3935674.60
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 than84 % (for Akutex T surface)	Sq.M	3760.01	6073.40	22836014.37
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	1827.00	282856.14
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	2141.00	14953771.68

15	N.S-15	<p>ARMSTRONG FALSE CEILING</p> <p>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	1604.00	5100062.36
16	N.S-16	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(postive) side on wet open pore concrete surface with brush @ 1Kg/Sq.M as per manufacturer specification.	Sq.M	3618.83	441.00	1595904.03
17	N.S-17	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 , Aluminum 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 Aluminum 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.	Sq.M	144.07	5662.00	815710.19
18	N.S-18	Providing and applying Silicon Based Water repellent coating by brush or by spray.	Sq.M	2102.67	232.00	487819.44
19	N.S-19	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:	Sq.M	1009.10	3502.00	3533868.20
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	737.00	2273711.33
21	N.S-21	<p>WOODEN FLOORING</p> <p>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</p>	Sq.M	294.08	4913.00	1444815.04
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	1396.00	3126816.64
23	N.S-23	<p>VETRIFIED DOUBLE CHARGED</p> <p>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.</p>	Sq.M	1914.42	1670.00	3197082.43
24	N.S-24	<p>PVC FLOORING</p> <p>Providing and installing of Accolade plus impregnated PUR Vinayl 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</p>	Sq.M	147.05	2193.00	322488.11
25	NS.25	<p>CHAIR</p> <p>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 Ergo approved by Architect & Client</p>	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	62715.00	1317015.00
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	425.00	1787273.75
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	Providing Filling the Expansion joint with joint sealing compound on polyurethane based or equivalent (Dr. Fixit Pidiseal/Hydrocreate/sika/CRYTON) including a backup material like Thermocole / Celatex board inside the groove of expansion joints. The width to depth ratio of sealant should be 2:1 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.				
		50mm thick Horizontal Expansion Joint	R.M	443.88	1583.00	702662.04
31	N.S-31	Providing Filling the Expansion joint with joint sealing compound on polyurethane based or equivalent (Dr. Fixit Pidiseal/Hydrocreate/sika/CRYTON) including a backup material like Thermocole / Celatex board inside the groove of expansion joints. The width to depth ratio of sealant should be 2:1 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.				
		50mm thick Vertical Expansion Joint	R.M	594.00	1583.00	940302.00
32	N.S-32	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	300.00	64200.00
	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
33	NS-33	Supplying and filling in plinth with local sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	1627.87	300.00	488361.00
				TOTAL [XV]		97866770.46

**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
[i] SANITARY INSTALLATIONS & C.P FITTINGS						
DSR 2012 TEMS						
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 completely 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 ltr. White PVC automatic flushing cistern.	Each	7.00	11046.80	77327.60
	17.5.4	Range of four Uninal basin with 10 ltr. 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
		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					
	17.7.0.2	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
		Providing and fixing P.V.C. waste pipe for wash including P.V.C. waste fittings complete				
7	17.28.1	Semi rigid pipe				
	17.28.1.1	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		Providing and fixing toilet paper holder:				
	17.34.1	CP brass	Each	35.00	250.95	8783.25
10		Providing and fixing C.P brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931				
	18.53.1	15 mm nominal bore	Each	123.00	449.35	55270.05
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 C/f 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 divertor 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 & CI 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.				
		W.C. pan with ISI marked white solid plastic seat and lid.	Each	35.00	5000.00	175000.00
5	NS	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.				
		White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rest.	Each	12.00	3500.00	42000.00
Total C/f 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
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 to 300mm) 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
[iii]		FOR RAIN WATER:				
1	17.35	Providing and fixing soil, waste and vent pipes:				
	17.35.1	100mm dia				
	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 coller				
	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				
2	18.7	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 testing of joints complete as per direction of Engineer in charge.				
i	18.7.1	15mm dia. nominal bore	RM	5.00	133.95	669.75
ii	18.7.2	20mm dia. nominal bore	RM	20.00	157.15	3143.00
iii	18.7.3	25mm dia. nominal bore	RM	20.00	197.90	3958.00
iv	18.7.4	32mm dia. nominal bore	RM	5.00	252.65	1263.25

v	18.7.5	40mm dia. nominal bore	RM	10.00	348.25	3482.50
vi	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)				
i	18.17.2	32 mm nominal bore.	Each	4.00	450.90	1803.60
ii	18.17.3	40 mm nominal bore	Each	6.00	546.05	3276.30
iii	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				
i	18.18.1	15 mm nominal bore.	Each	9.00	258.05	2322.45
ii	18.18.2	20 mm nominal bore.	Each	1.00	360.20	360.20
iii	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.				
i	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:				
i	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:				
i	18.13.1	25 to 40 mm nominal bore	Each	4.00	277.35	1109.40
ii	18.13.2	50 to 80 mm nominal bore	Each	4.00	630.15	2520.60
		Total Cf to Summary			Total DSR Items [iv]	254027.00
		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 Cf 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				
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.				
i	18.7.3	25mm dia. nominal bore	RM	4.00	197.90	791.60
ii	18.7.4	32mm dia. nominal bore	RM	12.00	252.65	3031.80
iii	18.7.5	40mm dia. nominal bore	RM	12.00	348.25	4179.00
iv	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
i	18.17.2	32 mm nominal bore.	Each	8.00	450.90	3607.20
ii	18.17.4	50 mm nominal bore.	Each	3.00	780.60	2341.80
iii	18.17.5	65 mm nominal bore.	Each	3.00	780.60	2341.80
iii	18.17.6	80 mm nominal bore.	Each	1.00	1832.95	1832.95
iv		Total Cf 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.				
i		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.				
i	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 (1 cement : 1 fine sand) including testing of joints etc complete.				
	19.1.2	150 mm diameter	RM	110.00	219.05	24095.50
i	19.1.3	200 mm diameter	RM	90.00	323.05	29074.50
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 (1 cement 3 coarse sand) finished with a floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) 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)				
	19.7.1.1	With F.P.S. bricks with class designation 75	Each	12.00	7132.00	85584.00
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	40.00	256.75	10270.00
		Total Carried to DSR Items				272407.30
V		EXTERNAL DRAINAGE				
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 (1 cement : 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) <i>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</i>				
		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	Each	10.00	7007.40	70074.00
5.0	19.10.1	Extra for depth for circular manhole 0.91m internal dia at bottom with beyond 0.91m to 1.67m.				
		With FPS Bricks class designated 75	RM	8.00	3498.25	27986.00
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	18747627.00
	Total C/F To Summary	9126330.50	18747627.00

BILL OF QUANTITIES						
SECTION-B : INTERNAL ELECTRICAL WORKS						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
I						
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.				
i	1.10.3	Group C	Point	1690.00	664.00	1122160.00
2.0	1.11	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 :-				
	1.25	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						
	1.26	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
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
10.0		S/F power plug point with all accessories :-				
	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
11.0		S/F power plug point with all accessories :-				
	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 sensivity current Poin upto 300 miliampere 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, 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	2.7.4	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		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.				
	2.18		Each	5.00	693.00	3465.00
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
25.0	1.41	Installation, testing and commissioning of prewired, flourescent fitting / compact flourescent 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 fro exhaust fans of all sizes.	Each	24.00	68.50	1644.00
29.0		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.				
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 cab le 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 cab le 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 cab le 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
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						
1.0		S/F power plug point with all accessories :- 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
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 including laminated sheet cover, 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	1140.00	134520.00
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	763.17	381585.00
iii		3.5 X 95 sq. mm Armoured Aluminium cable.	RM	300.00	497.00	149100.00
iv		4 X 35 sq. mm Armoured Aluminium cable.	RM	200.00	214.71	42942.00
v		4 x 16 sq.mm. Armoured Aluminium cable.	RM	500.00	132.00	66000.00
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
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 supply system.				
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				
		Two (2) Each. 300A TPN MCCB				

	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					
	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:					
	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.				
		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 MCB				
		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
xii		Capacitor Panel (250 KVAR)				
		Design, fabrication, assembling, wiring, supply installation, testing and commissioning of Automatic control panel with capacitgors, 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				
		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 – 1 set				
		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
xiii		External Feeder panel				
		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:				

		1 no. 72A contactor with 24 hrs timer circuit and selector switch with push buttons				
		Four (4) Each.32A TPN MCB	Set	1.00	50600.00	50600.00
18.0		Supply, Installation, testing, Commissioning of LPI Stormmaster 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: Stormmaster 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
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 (33 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.L earth bar, earth bar, breaker featured with mechanical ON. 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 / $\sqrt{3}$ / 110 / $\sqrt{3}$ 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				
		(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				
		(e) Trip circuit supervision relay	Sets	1.00	1500000.00	1500000.00

22.0		Supply of 3 core stranded aluminium conductor 33 KV grade XLPE (UE) (Cross linked Polyethylene) insulated PVC bedded, Galvanised flat steel strip armoured cable conforming to IS : 7098 (part II with latest amendments)				
		150 sq. mm 3 core	RM	250.00	3122.00	780500.00
23.0		Design, manufacture, testing at works supply, installation, testing and commissioning at site including foundation plinth and cable trays 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% tappings in step of 1.25 bidirectional roller, diagram & rating plate, oil temperature indicator, winding temperature indicator and buccholtz 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).				
		750 KVA	No.	1.00	1350000.00	1350000.00
24.0		Supply and fixing of 33kv, 400A, 25KA/1sec, centre rotating double break isolator with earth switch on four pole structure.	No.	1.00	68250.00	68250.00
25.0	i	Supply of HT 11 KV rubber hand gloves as per relevant IS Code	Set	2.00	1000.00	2000.00
	ii	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
	iii	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
	iv	Sand Buckets-Set of Four	Nos.	1.00	2500.00	2500.00
	v	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
	vi	Mechanical foam with trolley	Set	2.00	6500.00	13000.00
	vii	Supply, installation of 1.1 KV grade ISI marked rubber mats of 1 meter width.	RM	20.00	1200.00	24000.00
	viii	Supply of standard First Aid Box. (as per relevant standard)	Nos..	1.00	1000.00	1000.00
		TOTAL FOR NON DSR ITEMS				18747627.00

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 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	89893.00
		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.				
		Bus Bar:				
		500A, TPN Al. Bus Bar of suitable length (Neutral shall be fully rated).				
		Outgoings:				
		Three (3) Nos. 250A, TPN MCCB with ON/OFF indication lamps.				
		Two (2) Nos. 32A, TPN MCB				
		Two (2) Nos.25A, DP MCB				
i		Two (2) No.Auto Star-Delta starter of 80.0 HP with 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.				
ii		One (1) No. Auto Star-Delta starter for 10.0 HP with 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.	Set	1	250000.00	250000.00
2.0		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		4 Core 4 sq. mm. Armoured Aluminium cable.	Nos.	2.00	450.00	900.00
		4 Core 2.5 sq. mm. Armoured Aluminium cable.	Nos.	4.00	350.00	1400.00
3		Supply,testing and commissioning of 1100 Volt grade XLPE insulated and sheathed aluminium conductor Armoured cables including the cost of providing required gap between adjacent cables (minimum one cable dia.) and including the cost of				
i		3.5 Core 185 sq. mm. Armoured Aluminium cable.	RM	100.00	920.50	92050.00
ii		3.5 Core 95 sq. mm. Armoured Aluminium cable.	RM	60.00	497.00	29820.00
iii		3.5 Core 50 sq. mm. Armoured Aluminium cable.	RM	60.00	295.40	17724.00
iv		4 Core 4 sq. mm. Armoured Aluminium cable.	RM	30.00	91.00	2730.00
v		4 Core 2.5 sq. mm. Armoured Aluminium cable.	RM	15.00	85.00	1275.00
II FIRE HYDRANT & SPRINKLER SYSTEM						

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).	Each	18	5940.00	106920.00
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	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.				
a		80 mm dia with lever operated	Each	4.00	3904.00	15616.00
b		150 mm dia with lever operated	Each	15.00	7335.00	110025.00
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.				
a		150 mm dia	Each	1.00	17459.00	17459.00
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)				
a)		150 mm dia	Each	1.00	10124.00	10124.00
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
		TOTAL SUMMARY				
IV		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 holdtite 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 Responce Pendent type	Each	1077.00	245.00	263865.00
b)		Normal Responce Upright type	Each	10.00	245.00	2450.00
c)		Normal Responce 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.				
			Each	12	278.00	3336.00
7.0		Providing and fixing 25 mm dia gunmetal single acting air release valve with screwed inlet tested for 20Kg/Cm2.				
			Each	3	613.00	1839.00
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' complete				
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	35000.00
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 including surface				
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 butter fly 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)	Cum	20.00	3841.00	76820.00
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.				
a)		Four way	Each	1.00	20260.00	20260.00
VI	FIRE PUMPS& ACCESSORIES					
		(All pumps should be supplied with wearing and mechaical seal. Performance curve should be approved before placing the order. All pumps should be supplied with base frame)				
1		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 conected 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.				
g)	(After surface preparations)				
h)	Material of construction: M.S				
i)	Test Pressure: 20 KG/SQ.CM.				
j)	Size of Inspection flange:450 mm dia				
k)	Height of supporting legs: 400 mm				
l)	Quantity:	Each	1	35000.00	35000.00
	Note: Contractor should submit general arrangement drawings before fabrication of vessel and ultrosonic 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 wafer 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 guage 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 conn- ected with control valve ,drain valve ,test valve and piping as per manufacturer's specifications complete in all respects.				0.00
a)	150 mm dia	Each	2	15000.00	30000.00
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.				
a)		150 mm dia	Each	1	8000.00	8000.00
20		Providing and fixing blank flanges as per table 'E' including nuts, bolts, 3mm thick rubber gasket complete in all respects.				
a)		250 mm (Suction Header)	Each	2	2000.00	4000.00
b)		300 mm (Delivery Header)	Each	2	25000.00	50000.00
		Total C/f to Summary			Total NS Items [II]	8407459.00

BILL OF QUANTITIES						
HVAC WORKS						
Sr. No.		DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
DSR ITEMS						
1.0	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	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 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	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 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	400.00	405.00	162000.00
ii	4.1.2	150 mm width X 50 mm depth X 1.6 mm thickness	RM	150.00	464.00	69600.00
iii	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
		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		Each	16.00	146.00	2336.00
6.0	7.5	Laying of one number PVC insulated and PVC sheathed / XLPE power cab le 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	600.00	44.00	26400.00
7.0	7.8	Laying of one number PVC insulated and PVC sheathed / XLPE power cab le of 1.1 KV grade 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	38.50	30800.00
	7.8.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	RM	1700.00	72.50	123250.00
TOTAL						688759.00
Total Carried to Summary						688759.00
NON DSR ITEMS						
8.0		Lower Ground floor:				
		Supply, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet 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, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet 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, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet 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, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet 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, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	2.00	2000.00	4000.00
		16 A MPCB	Nos.	1.00	1750.00	1750.00
13.0		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/ 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	45000.00	180000.00
v		Auto Star Delta starter of 10 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.	6.00	17500.00	105000.00
vi		Auto DOL starter of 3 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	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.				
		4 X 6 sq. mm	Each	16.00	125.00	2000.00
		4 X 4 sq. mm	Each	6.00	100.00	600.00
		4 X 2.5 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.				
i	3.5 Core 300 sq. mm	RM	1000.00	1407.00	1407000.00
	3.5 Core 95 sq. mm	RM	300.00	497.00	149100.00
	3.5 Core 50 sq. mm	RM	500.00	295.40	147700.00
	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
	4 X 2.5 sq. mm	RM	100.00	80.00	8000.00
16.0	HVAC Panel				
	Incoming:				
	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. 800A 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 MPCB				
	Two (2) Each. 16A TPN MCB	Set	1.00	1500000.00	1500000.00
17.0	Ventilation Panel				
	Incoming:				
	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 MPCB				
	Two (2) Each. 16A TPN MCB	Set	1.00	25000.00	25000.00
II	EQUIPMENT				
1.0	WATER CHILLING MACHINES:				
	Water Centrifugal chilling M/C :				
	Supply of Imported Water Cooled Chilling M/C of following capacity at below mentioned operating conditions with R-134a refrigerant, open drive compressor, driven by suitable KW air cooled open drip proof Sq. Cage induction motor/semi hermetic motor complete with watercooled shell & tube condenser, insulated shell and tube flooded chiller flanged connections, flow switches in condenser & chiller, refrigerant piping, Refrigerant and Oil (First Charge), Microprocessor based control panel with solid state starter & accessories etc, all mounted on common MS frame. Motor shall be suitable for 415 volts \pm 10%, 50Hz \pm 5 %, 3phase AC supply. Machines shall be suitable for				
	Condenser CDW IN - 32.2° C / 90.0 ° F				
	CDW flow - 1200 USGPM				
	FF - 0.00075 FPS				
	Max pressure drop in water circuit thru condenser - 8.5mts WC(13PSI)				
	Chiller CHW IN - 12.2° C / 54.0 ° F				
	CHW OUT - 5.55 ° C / 42.00 ° F				
	Chiller flow - 976USGPM				
	FF - 0.0025 FPS				
	Max pressure drop in water circuit thru chiller - 6mts WC(9PSI)				
	Total kw of the chiller at full load shall be less than or equal to 0.6 IKW/TR				
	The performance of the unit shall be certified in accordance with ARI standard 550/ 590.				
	The Compressor shall be able to provide 15% to 100% stepless capacity control at constant condenser entering water temperature.				
	The performance selection shall be checked with ARI by sending the computerized selection data. The tenderer is required to submit the computerized performance sheet alongwith part load data at the time of tendering				
	The System should be compatible with the BMS having the facility to perform the function thru BMS viz remote chiller start and stop, remote leaving chilled water temperature adjustment, remote current limit setpoint, remote ready to start contacts, safety shutdown contacts, run contacts etc.				
	(The system shall be complete in all respects viz Drive, lubrication sytem, evaporator, condenser, solid state starter, refrigerent sytem, controller, communication port for BMS).				
	Balance work such as port clearance all duties, freight from port to site, packing, insurance upto installing, loading, unloading, hoisting etc. as required shall be included. The chilling machine as described above shall be inline with specification.				
	For balance work (such as port clearance, all duties, freight from port to site , packing, insurance up to install, loading , unloading etc. as required shall be in Indian Rupees.				
	The price quoted for Installation, testing and commissioning of imported Centrifugal Water Chilling Machine in Indian Rupees.				
	400TR Water Cooled Centrifugal Chillers as above (3W+1S)	Nos.	4.00	8500000.00	34000000.00
2.0	PUMPS:				
2.1	Chilled Water Pumps:				
	Primary Circuit:				
	Supply, installation, testing and commissioning of end suction vertical split casing centrifugal pumps for chilled water recirculation, complete with TEFC squirrel cage motor, love-joy coupling, all mounted on common base plate with necessary accessories. Capacity of pump sets, net head is as given below. All the pumps mentioned below shall also be complete with vibration isolators (spring mounted), mechanical seals, gland drain connections, and shall be suitable for operation on 415 \pm 10% Volts, 50 Hz, 3 Phase AC power supply. The efficiency of the pump should not be less than 82%				
Note:	Total Static pressure given below is minimum required for the system. Actual static pressure shall be calculated and confirmed by the vendor at the time of bidding.				
	976USGPM x 18m head, 25HP motor (3W+1S)	NOS	4.00	175000.00	700000.00
2.2	Secondary Circuit				

	Supply, installation, testing & commissioning of end suction vertical split casing centrifugal pumps for chilled water recirculation, complete with TEFC squirrel cage motor, love-joy coupling, all mounted on common base plate, control panel for variable frequency drive, Pump logic controller, differential pressure sensor /transmitters of approved make. Complete with all accessories, making it ready for commissioning on site				
Note:	Total Static pressure given below is minimum required for the system. Actual static pressure shall be calculated and confirmed by the vendor at the time of bidding.				
	1320USGPM x 40m head, 60HP motor (1W+1S)	NOS	2.00	500000.00	1000000.00
	1920USGPM x 40m head, 100HP motor (1W+1S)	NOS	2.00	800000.00	1600000.00
2.3	Condenser Water Pump:				
	Supply, installation, testing and commissioning of double suction vertical split casing either top suction top discharge or side suction top discharge centrifugal pumps for condenser water recirculation, complete with TEFC squirrel cage motors, base plate, with suitable flexible coupling and all necessary accessories. Capacity of pump sets, nett head is as given below. All the pumps mentioned below shall also be complete with vibration isolators (spring mounted), mechanical seals, gland drain connections, and shall be suitable for operation on 415 ± 10% Volts, 50 Hz, 3 Phase AC power supply. The				
Note:	Total Static pressure given below is minimum required for the system. Actual static pressure shall be calculated and confirmed by the vendor at the time of bidding.				
	1600 USGPM x 25M head, 40HP motor (3W+1S)	NOS	4.00	200000.00	800000.00
3.0	COOLING TOWERS:				
	Supply, installation, testing and commissioning of FRP induced draught type cooling towers each complete with FRP basin having and auxiliary rectangular suction tank at the bottom. The basin shall be complete with connections for drain, overflow, makeup water, quick fill and float valve, plus hot dipped galvanised suction strainer FRP body, of sufficient strength to with stand wind velocities upto 60 m/s, vibrations and earth quakes, fan and motor assembly conforming to IP-55, protection for outdoor operation fill media of honeycomb design arranged in the suitable pattern for ease of replacement, distribution pipes consisting of PVC sprinkler pipes mounted on top of the main supply standby, sprinkler head mounted on ball bearings designed to take both radial and vertical thrust overflow pipe, ladder, vibration isolation pads, cables, controls, electrical isolator etc as per specifications and drawing.				
	400TR ,(2 X 10 H P MOTOR)	NOS	3.00	500000.00	1500000.00
3.1	Pressurized Expansion tank with site glass, Air seperator with pump & accessories				
	Supply, installation, testing & commissioning of Pressurized expansion tanks & air seperator with pump, controls, safety devices & accessories etc, mounted on MS frame				
	1000 Liters tank chilled/hot water circuit for pressure rating of 125 psi	Set	1.00	15000.00	15000.00
3.2	Condenser Water Piping:				
	Supplying, laying, fixing, testing & commissioning MS class 'C' pipes conforming to IS 1239/3589, cut to required length with necessary, clamps, supports, antivibration pads, hangers, fittings such as bends, tees, reducers etc and installed with all welded joints complete as per specification & drawings.				
	500 mm dia MS pipes (Minimum 6mm thickness)	RM	10.00	26350.00	263500.00
	450 mm dia MS pipes (Minimum 6mm thickness)	RM	180.00	23440.00	4219200.00
	250 mm dia MS pipes (Minimum 6mm thickness)	RM	140.00	8850.00	1239000.00
4.0	Supply, fixing & commissioning of valves & accessories :				
	Condenser water circuit - PN-16 rated valves				
i	Providing and fixing in position Motorised Butterfly valves				
	250 mm dia	NOS	22.00	75000.00	1650000.00
	500 mm dia	NOS	3.00	400000.00	1200000.00
	50 mm dia	NOS	6.00	28000.00	168000.00
ii	Providing and fixing in position Check valves wafer type				
	250mm dia	NOS	4.00	37500.00	150000.00
iii	Providing and fixing in position gun metal gate valve, calibrated in metric & British				
	32 mm dia	NOS	3.00	2000.00	6000.00
iv	Providing and fixing in position Flexible connection				
	250mm dia	NOS	16.00	15000.00	240000.00
v	Providing and fixing in position Manually Operated Balancing valves				
	250mm dia	NOS	7.00	22000.00	154000.00
vi	Providing and fixing in position Flow switch				
	250mm dia	NOS	4.00	12300.00	49200.00
vii	Providing and fixing in position Pot strainer with magnet				
	500mm dia (SSCPL model)	NOS	1.00	350000.00	350000.00
viii	Providing and fixing in position Mercury in glass thermometers with V groove for protection				
		NOS	14.00	500.00	7000.00
ix	Providing and fixing in position Dial type Pressure gauge with gun metal gate valve, calibrated in metric & British units				
		NOS	22.00	1000.00	22000.00
x	Providing and fixing in position Y strainer				
	250mm dia	NOS	4.00	13000.00	52000.00
5.0	Chilled Water Piping:				
	Supplying, laying, fixing, testing & commissioning MS class 'C' pipes (G.I. 'B' class for condensate drain) conforming to IS 1239/3589, cut to required length with necessary, clamps, supports, antivibration pads, hangers, fittings such as bends, tees, reducers etc and installed with all welded joints complete as per specification & drawings. Pipes shall be wrapped in factory laminated closed cell insulation of class "O" rating.				
	500 mm dia MS pipes	RM	10.00	35575.00	355750.00
	350 mm dia MS pipes	RM	240.00	15115.00	3627600.00
	300 mm dia MS pipes	RM	165.00	13655.00	2253075.00
	250 mm dia MS pipes	RM	150.00	11505.00	1725750.00
	200 mm dia MS pipes	RM	230.00	9290.00	2136700.00
	50 mm dia MS pipes	RM	15.00	1465.00	21975.00
6.0	Providing and fixing in position for Chilled water circuits - PN-16 rated valves duly insulated				
i	Providing and fixing in position Manual Butterfly valves				
	200 mm dia	NOS	28.00	30000.00	840000.00
	450 mm dia	NOS	3.00	70000.00	210000.00
ii	Providing and fixing in position Check valves wafer type				
	200mm dia	NOS	8.00	30000.00	240000.00
iii	Providing and fixing in position Flexible connection				
	200mm dia	NOS	24.00	14000.00	336000.00
iv	Providing and fixing in position Flow switch				
	200mm dia	NOS	4.00	12300.00	49200.00
v	Providing and fixing in position Y strainer				
	200 mm dia pipe	NOS	8.00	25000.00	200000.00
vi	Providing and fixing in position Dial type Pressure gauge with gun metal gate valve, calibrated in metric & British units				
		NOS	24.00	1000.00	24000.00
vii	Providing and fixing in position Mercury in glass thermometers with V groove for protection				
		NOS	8.00	500.00	4000.00
viii	Providing and fixing in position Pot strainer with magnet				

	450mm dia (SSCPL model)	NOS	1.00	315000.00	315000.00
I)	AIR CIRCULATION SYSTEM:				
1.0	AIR HANDLING UNIT:				
	Supply, installation, testing and commissioning of factory fabricated Double Skin Chilled/Hot 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 finned 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 duly 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 ur 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 specificatio n& drawing (for W.C. and bathroom door shutter),ainless steel bolt to provide a minimum anchoring depth of 50 - 80 mm. in th				
	Floor Mounted AHUs (6 Rows coil):				
	Lower Ground floor:				
	5500cfm, 11TR, 5HP, 50mmSP	Nos	1.00	330,000.00	330,000.00
	5800cfm, 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, 19TR, 5HP, 50mmSP	Nos	1.00	540,000.00	540,000.00
	Ground floor:				
	5800cfm, 17TR, 5HP, 50mmSP	Nos	1.00	348,000.00	348,000.00
	7700cfm, 29TR, 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, 38TR, 10HP, 50mmSP	Nos	1.00	900,000.00	900,000.00
2.0	Ceiling suspended AHUs (6 Rows coil):				
	First floor				
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 pump& drain pump failure alarm, pipe connections through copper pipes, Infraed, remote control, LCD display, 3 fan sped plus auto fan 4 direction air flow, auto swing louver 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	75000.00
b)	1000cfm, 2.5TR	Nos	10.00	62,500.00	625000.00
c)	600cfm, 1TR	Nos	4.00	37,500.00	150000.00
4.0	Split Type AC units				
	Supply, installation, testing and commissioning of inverter split type AC units with Hi wall indoor units complete with finned coil, fan section with motor, air filters, filter box, double drain pan, wiring & accessories, outdoor air cooled condenser units with insulated interconnected 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	26500.00
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 finned 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 finned 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 MCBs near the room units to outdoor units complete in all respect including earthing.				
	Providing, fixing and testing 25 mm /32 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 Net Sensible cooling capacity (@ 21 Deg. C +/- 2 inside temp. , RH : 50+/-5%), 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, signa galvanised brackets of approved 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
II)	PIPING:				

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, antivibration 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 "O" 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)	50mm dia MS pipes	RM	55.00	1,050.00	57750.00
h)	40mm dia MS pipes	RM	15.00	975.00	14625.00
i)	32mm dia MS pipes	RM	50.00	850.00	42500.00
j)	25mm dia MS pipes	RM	150.00	700.00	105000.00
k)	20mm 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
2.0	Providing and fixing in position Butterfly valves				
a)	80 mm dia	Nos	8.00	4,000.00	32000.00
b)	65mm dia	Nos	20.00	3,650.00	73000.00
c)	50mm dia	Nos	14.00	3,250.00	45500.00
d)	40mm dia	Nos	2.00	3,175.00	6350.00
3.0	Providing and fixing in position Ball Valve set comprising one ball valve with strainer and one valve w/o strainer				
a)	20mm dia	Set	4.00	3,000.00	12000.00
b)	25 mm dia	Set	11.00	3,500.00	38500.00
4.0	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(for dia 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 (upto 37 USGPM flow rate)	Nos	1.00	35,000.00	35000.00
	50/65/80mm dia (upto 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)	65mm dia pipe	Nos	10.00	5,000.00	50000.00
c)	50mm dia pipe	Nos	7.00	4,500.00	31500.00
d)	40mm dia pipe	Nos	1.00	4,000.00	4000.00
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	39600.00
7.0	Providing and fixing in position Mercury in glass thermometers with V groove for protection	Nos	44.00	350.00	15400.00
8.0	Providing and fixing in position Auto air purging valves				
	15 mm dia	Nos	44.00	900.00	39600.00
III)	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				
	26 SWG	SQMT	935.00	550.00	514250.00
	24 SWG	SQMT	1950.00	650.00	1267500.00
	22 SWG	SQMT	890.00	750.00	667500.00
	20 SWG	SQMT	230.00	850.00	195500.00
	18 SWG	SQMT	150.00	1,000.00	150000.00
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.	SQMT	8.00	5,500.00	44000.00
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.).				
a)	Actuator operated Smoke cum fire dampers (as per actual sizes from drawings)	SQMT	30.00	30,000.00	900000.00
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	SQMT	85.00	10,500.00	892500.00
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	SQMT	78.00	4,500.00	351000.00
6.0	Return Air Grills:				
	Supplying, installing, testing and balancing of return air grilles (Linear/single louvred) with volume control dampers of various sizes. Each grill shall have be 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).	SQMT	15.00	10,000.00	150000.00
7.0	Fresh Air Louvers:				
	Supplying, installing and balancing of fresh/exhaust air anodized aluminum intake louvers with bird screen & aluminum volume control damper, complete as per specification & drawings				
a)	Fresh Air Louvers (With bird screen & VCD)	SQMT	5.00	12,500.00	62500.00
b)	Exhaust Air Louvers (with birdscreen but Without VCD)	SQMT	2.50	6,500.00	16250.00
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	2750000.00
IV)	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.				
a)		25mm thick acoustic lining.	SQMT	500.00	450.00	225000.00
2.0		Supply, fixing & testing of Acoustic silencers in return air passage within AHU rooms capable of noise reduction by 10db				
a)		22G GSS with 50/100mm thk acoustic lining in acoustic silencers	SQMT	20.00	1,000.00	20000.00
3.0		Thermal Insulation:				
		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 & density complete as per specifications.				
a)		19 mm thick insulation.	SQMT	3100.00	500.00	1550000.00
4.0		Roof Exposed Insulation:				
		Supply, installation, testing and commissioning of 70 mm thick XPS Insulation having density of 32kg	SQMT	3325.00	1,200.00	3990000.00
V)		VENTILATION SYSTEM:				
		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.				
1.0						
a)		Axial flow fans for liftwell pressurization 8000cfm, 25mm SP, 3HP 415±10% volts 50Hz power supply	Nos	1.00	240,000.00	240000.00
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				97,029,000.00

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			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
		Non DSR				
I		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 it's 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			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 instalation as per requirement on surface including all end terminations complete in all respect for succesful commissioning for fire detection and PAVA system.	RM	4000	250.00	1,000,000.00
		TOTAL SUB HEAD LOW VOLTAGE				4828320.00

MECHANICAL SCIENCES BUILDING

CONSTRUCTION OF MECHANICAL SCIENCES BUILDING (PHASE-II) AT N.I.T. ROURKELA

ABSTRACT OF COST			
	DESCRIPTION	D.S.R AMOUNT	NON-DSR AMOUNT
1	CIVIL WORKS	266099311.80	81131324.89
2	PLUMBING WORKS	3373096.35	5477781.36
3	ELECTRICAL WORKS	12744192.50	22604351.00
4	FIRE FIGHTING WORKS	89893.00	6889415.00
5	HVAC	360960.00	71269115.00
6	SOLAR ENERGY		10541085.00
7	FDA		7729030.00
	SUB TOTAL	282667453.65	205642102.26
	G.TOTAL	488309555.90	

CONSTRUCTION OF MECHANICAL SCIENCES BUILDING (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	2136416.60	
II	CONCRETE WORK	4673168.62	
III	REINFORCED CEMENT CONCRETE	173847744.17	
IV	BRICK WORK	9657229.03	
V	STONE WORK	11475050.21	
VI	MARBLE WORK	7036110.21	
VII	WOOD WORK	647550.49	
VIII	STEEL WORK	6138669.44	
IX	FLOORING	29091843.46	
X	ROOFING	5281617.07	
XI	FINISHING	11719892.06	
XII	ROAD WORK	305257.83	
XIII	DRAINAGE	40381.50	
IX	ALUMINIUM WORK	115836.20	
X	WATER PROOFING	3932544.91	
XI	NON SCHEDULE ITEMS	-	81131324.89
	TOTAL	266099311.80	81131324.89
		A-1	A-2

MECHANICAL SCIENCES BUILDING

BILL OF QUANTITIES

CIVIL WORKS

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
I EARTH WORK 2.0						
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	2.6.1 2.7	All kinds of soil 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.	Cu.M	8956.04	129.35	1158463.52
3	2.7.1 2.8	Ordinary Rock 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.	Cu.M	895.60	197.75	177104.90
4	2.8.1 2.9	All kinds of soil 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.	Cu.M	803.50	130.80	105097.68
	2.9.1	Ordinary Rock	Cu.M	80.35	212.00	17034.20
5	2.24.1	In or under water and/or liquid mud, includig pumping out water as required.	metre depth	3.20	26.16	83.71
6	2.24.2	In or under foul position,including pumping out water as required.	metre depth	3.20	32.70	104.64
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	6955.44	83.80	582865.87
8	2.26	Extra for every additional lift of 1.5 m or part thereof in:				
i)	2.26.1	All kinds of soil	Cu.M	895.60	34.60	30987.89
ii)	2.26.2	Ordinary or hard rock	Cu.M	89.56	62.00	5552.72
9	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 pavement).	Cu.M	200.00	110.75	22150.00
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.				
	2.28.1	All kinds of soil.	100 Sq.M	60.54	935.25	56624.24
11	2.32	Clearing grass and removal of the rubbish upto a distance of 50 m outside the periphery of the area cleared.	100 Sq.M	43.59	247.00	10767.22
12	2.36	Deduct for disposed soil levelled and neatly dressed.	Cu.M	1200.00	-25.35	-30420.00
					TOTAL	2136416.60
					TOTAL [I]	2136416.60
II CONCRETE WORK 4.0						
13	4.1	Providing and laying in position cement cncrete 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	1217.91	3593.30	4376316.00
14	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, parapetx,coping, bed blocks, anchor blocks, plain window sills, fillets, etc. upto floor five level, excluding the cost of centring, shuttering and finishing:				
	4.2.3	1:2:4 (1 cement :2 coarse sand : 4 graded stone 20 mm nominal size)	Cu.M	16.36	5272.40	86256.46
	4.2.5	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	Cu.M	13.18	4782.35	63031.37
15	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)	Sq.M	191.91	207.55	39830.26
16	4.12	Extra for providing and mixing proofing material in cement concrete work @ 1 Kg per 50kg of cement as per manufacture's specification.	per 50 kg cement	49.90	35.35	1763.82
16	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.	Sq.M	191.91	96.65	18547.79
17	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	258.08	338.75	87422.91

				TOTAL	4673168.62
				TOTAL [II]	4673168.62
III REINFORCED CEMENT CONCRETE 5.0					
18	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	70.00	5735.75
19	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	386.34	166.90
ii	5.9.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	Sq.M	176.58	285.15
iii	5.9.3	Suspended floors, roofs, landings, balconies and access platform.	Sq.M	15415.75	311.20
iv	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	Sq.M	14627.78	262.25
v	5.9.6	Columns, pillars, piers, abutments, posts and struts	Sq.M	9958.47	365.30
vi	5.9.7	Stairs, (excluding landings) except spiral staircases	Sq.M	392.26	326.30
vii	5.9.14	Extra for shuttering in circular work (20% of respective centring and shuttering items)			
		For Foundation [Rate=20% of 119.25 =23.85]	Sq.M	35.00	33.38
		For Circular Slabs [Rate=20% of 187.35 =37.47]	Sq.M	50.00	62.24
		For Curved Beams [Rate=20% of 162.65 =32.53]	Sq.M	20.00	52.45
		Circular Sides [Rate=20% of 61.10 =12.22]	Sq.M	60.00	62.24
		Circular Columns [Rate=20% of 238.40 =47.68]	Sq.M	50.00	73.06
viii	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.	Sq.M	244.61	166.90
ix	5.9.16	Edges of slabs and breaks in floors and walls,			
x	5.9.16.1	Under 20 cm wide	R.M.	5268.48	99.45
xi	5.9.17	Cornices and mouldings	Sq.M	198.30	495.50
xii	5.9.19	Weather shade, Chajjas, corbels etc. including edges	Sq.M	620.22	411.10
xiii	5.9.13	Vertical and horizontal fins individually or forming box louvers band, fascia and eaves boards.	sqm	100.00	470.10
20	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, landings, beams and balconies (plan area to be measured.)	Sq.M	841.31	121.65
21	5.22	Steel 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	887456.40	62.25
22	5.22A	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Above Plinth Level.			
	5.22.6	Thermo Mechanically Treated bars.	Kg	669759.45	62.25
23	5.29	Providing and fixing sheet 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.	936.00	312.35
24	5.30	Add or deduct for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.			
			R.M.	750.20	22.25
25	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			
	5.33.1	All works upto plinth level.	CUM	579.02	5242.15
	5.33.2	All works above plinth level upto floor V level.	CUM	505.91	5781.50
26	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.			
	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	180.00	63.20
27	5.35	Add for using extra cement in the items of design mix over and above the specified cement content therein.	Qtl	350.00	589.80
28	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			
	5.37.1	All works upto plinth level.	CUM	579.02	5590.60
	5.37.2	All works above plinth level upto floor V level.	CUM	505.91	6130.00

29	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 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 directions of the Engineer-in-charge.				
	5.40.1	All works upto Plinth level	Cu.M	4632.12	5519.40	25566523.13
	5.40.2	All works above plinth & upto Floor V Level	Cu.M	4047.30	6059.20	24523400.16
					TOTAL	173847744.17
					TOTAL [III]	173847744.17
IV 6.0 BRICK WORK						
30	6.1	Brick work with common burnt clay F.P.S. (non modular) brick of class designation 7.5 in foundation and plinth in :				
	6.1.2	Cement mortar 1:6 (1Cement :6 Coarse sand)	Cum	859.17	3316.55	2849480.26
31	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	923.83	3876.15	3580903.65
32	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)	Sq.M	5688.29	476.85	2712461.09
33	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)	Sq.M	8126.13	63.30	514384.03
					TOTAL	9657229.03
					TOTAL [IV]	9657229.03
V STONE WORK						
34	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	480.00	1234.20	592416.00
35	7.39	Extra for stone work for wall lining on exterior walls of height more than 10 m from ground level for every additional height of 3 m or part there of.				
	a)	Height exceeding 10m but not exceeding 13m	Sq.M	160.52	65.85	10570.24
	b)	Height exceeding 13m but not exceeding 16m	Sq.M	142.52	131.70	18769.88
	c)	Height exceeding 16m but not exceeding 19m	Sq.M	28.50	263.40	7506.90
36	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	4055.70	1989.40	8068409.58
37	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 teh Engineer-in-charge.	Each	16223.00	171.20	2777377.60
					TOTAL	11475050.21
					TOTAL [V]	11475050.21
VI 8.0 MARBLE WORK						
38	8.2	Providing and fixing 18mm thick gang saw cut mirror polished pre moulded and prepolished) 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	2269.82	3083.40	6998758.21
39	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	80.00	185.80	14864.00
40	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	80.00	281.10	22488.00
					TOTAL	7036110.21
					TOTAL [VI]	7036110.21

VII WOOD WORK 9.0							
41	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.					
	9.48.1	Fixed to steel windows by welding.	Kg	2453.63	90.75	222666.47	
42	9.119	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.	R.M.	359.76	404.60	145558.90	
41	9.120	Providing and fixing 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.					
	9.120.2	30 mm thick pre laminated PVC door shutters.	Sq.M	94.43	2958.00	279325.12	
							TOTAL
							647550.49
							TOTAL [VII]
							647550.49
VIII STEEL WORK 10.0							
43	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.					
	10.5.1	Using M.S. angles 40x40x6 mm for diagonal braces	Sq.M	10.50	2551.45	26790.23	
44	10.6	Supplying and fixing rolling shutters of approved make, made of required size M.S laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangement for inside and outside locking with push and pull operation complete including the cost of providing and fixing necessary 27.5 cm long wire springs grade No. 2 and M.S top cover pf required thickness for rolling shutters.					
	10.6.1	80 x 1.25 mm M.S laths with 1.25 mm thick top cover	Sq.M	6.12	1840.85	11266.00	
	10.7	Providing and fixing ball bearing for rolling shutters	Each	3.00	429.85	1289.55	
45	10.9	Extra for providing grided rolling shutters manufactured out of 8 mm dia. M.S box instead of laths as per design approved by engineer in charge.(area of grill to be measured.)	Sq.M	1.44	261.35	376.34	
46	10.14	Providing and fixing pressed steel door frames conforming 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 steel welded 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 and applying a coat of approved steel primer after pre treatment of the surface as directed by Engineer-in-charge:					
	10.14.1	Profile B					
	10.14.1.1	Fixing with adjustable lugs with split end tail to each jamb	R.M.	2312.08	346.75	801713.74	
47	10.16	Steel work in built up tubular trusses including cutting , hoisting ,fixing in position and applying a priming coat of approved steel primer, welded and bolted including special shaped washers etc. complete.					
	10.16.3	Electric Resistance or induction butt welded tubes.	Kg	48990.40	105.85	5185633.58	
47(a)	10.28	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc. including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge. (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.)	kg	200.00	558.00	111600.00	
							TOTAL
							6138669.44
							TOTAL [VIII]
							6138669.44
IX FLOORING							
48	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 the cost of nosing of steps etc. complete.					
	11.3.1	40mm thick with 20mm nominal size stone aggregate.	Sq.M	12.56	280.05	3517.43	

49	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	746.70	258.20	192797.94
50	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 mm 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	403.35	789.55	318467.99
51	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 naqar plain	Sq.M	658.52	1265.35	833261.71
(ii)	11.23.5	Udaipur green marble	Sq.M	567.77	1418.95	805634.40
52	11.24	Extra for pre finished nosing to treads of steps of marble stone.	R.M.	576.00	197.75	113904.00
53	11.25	Extra for marble stone flooring in treads of steps and risers using single length up to 2.00 metre	Sq.M	403.54	230.55	93035.22
54	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	10377.92	945.70	9814395.21
55	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 the shade of the slabs, including rubbing and polishing complete.	Sq.M	421.95	954.10	402583.35
56	11.31	Extra for pre finished nosing in treads of steps of kota stone / sand stone slab.	R.M.	277.08	52.45	14532.85
57	11.36	Providing and fixing quality ceramic glazed wall tiles conforming to IS:15622(thickness to specified by the manufacture)of approved make in all colours , shades excepted burgundy, bottle green,black of any size as approved by Engineer -in-charge in skirting ,risers of steps and dado over 12 mm thick bed of cement mortar 1:3 (1 cement :3 coarse sand) and jointing with gry cement slurry @ 3.3.kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	Sq.M	4488.60	724.25	3250868.55
58	11.37	Providing and laying ceramic glazed floor tiles 300x300mm (thickness to be specified by the manufacture) of 1st 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	325.00	764.55	248478.75
59	11.41	Providing and laying 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	5721.09	1337.10	7649669.44
(ii)	11.41.4	Size of Tile 100x100cm	Sq.M	2382.22	2246.10	5350696.62
					TOTAL	29091843.46
					TOTAL [IX]	29091843.46
X ROOFING 12.0						
60	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	Sq.M	991.48	109.05	108120.35
61	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.	Nos	42.00	148.75	6247.50
62	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	4998.79	1033.70	5167249.22
					TOTAL	5281617.07
					TOTAL [X]	5281617.07
XI FINISHING 13.0						
63	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	1161.95	143.55	166797.92
ii	13.2.2	1:6 (1 cement: 6 fine sand)	Sq.M	23050.78	130.20	3001211.36
64	13.4	12 mm cement plaster of mix:				
	13.4.1	1:4 (1 cement: 4 fine sand)	Sq.M	5956.97	132.10	786915.74

65	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	204.84	173.10	35457.80
66	13.16	6 mm cement plaster of mix:				
	13.16.1	1:3 (1 cement: 3 fine sand)	Sq.M	14952.01	101.00	1510153.01
67	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.				
	(a)	Ht Exceeding 10.0m but not exceeding 13.0m	Sq.M	1058.72	28.85	30544.07
	(b)	Ht Exceeding 13.0m but not exceeding 16.0m	Sq.M	1058.72	57.70	61088.14
	(c)	Ht Exceeding 16.0m but not exceeding 19.0m	Sq.M	211.74	115.40	24434.80
68	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	28167.54	83.80	2360439.85
69	13.37	White washing with lime to give an even shade:				
	13.37.1	New work (three or more coats)	Sq.M	5794.34	11.75	68083.50
70	13.42	Distempering 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	19717.27	37.35	736440.03
71	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 ltr/ 10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm)	Sq.M	1631.87	67.50	110151.23
72	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	1380.80	24.70	34105.76
	13.50.3	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/steel works.	Sq.M	556.16	20.70	11512.51
73	13.69	Polishing on wood work with ready mixed wax polish of approved brand and manufacture :				
	13.69.1	New work	Sq.M	1380.80	60.50	83538.40
74	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	1500.00	53.00	79500.00
75	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 surface even and smooth complete.	Sq.M	28167.54	76.05	2142141.42
76	13.83	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.				
	13.83.2	Two Coats	Sq.M	7041.89	61.45	432724.14
77	13.84	Painting with synthetic enamel paint, having VOC (Volatile Organic Compound) content less than 150 grams/ 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	828.43	53.90	44652.38
					TOTAL	11719892.06
					TOTAL [XI]	11719892.06
XII ROAD WORK 16.0						
78	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	241.00	61.25	14761.25
79	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	96.40	536.65	51733.06
80	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 course 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	144.60	1651.20	238763.52
					TOTAL	305257.83
					TOTAL [XII]	305257.83
XIII DRAINAGE 19.0						

81	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 design.	Nos	28.00	256.75	7189.00
	19.18	Supplying and fixing C.I. cover without frame for manholes:				
82	19.18.3	560 mm diameters C.I.cover (heavy duty) the weight of cover to be not less than 108 kg.	Nos	2.00	5289.10	10578.20
83	19.4.1.1	Providing and fixing S.W gully trap with F.P.S Brick class designation 75	Each	18.00	1256.35	22614.30
					TOTAL	40381.50
					TOTAL [XIII]	40381.50
IX ALUMINIUM WORK 21.0						
84	21.4	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge				
	21.4.1	With stainless steel cover plate minimum 1.25 mm thickness	Nos	32.00	1953.10	62499.20
85	21.18	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc to be paid separately).	Sq.M	12.00	4444.75	53337.00
					TOTAL	115836.20
					TOTAL [IX]	115836.20
X WATER PROOFING 22.0						
86	22.7	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75 kg/sq. of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement: 5 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm.				
	22.7.1	height including rounding of junctions of walls and slabs c) After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS: 2645 and approve by Engineer-in-charge. d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with wwater proofing compound conforming to IS: 2645 and approved by Engineer-in-charge including laying glass fibre cloth aproved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period to two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Chage:	Sq.M	4998.79	786.70	3932544.91
					TOTAL [X]	3932544.91
XI NON SCHEDULE ITEMS						
1	N.S-1	Diluting and injecting chemical emulsion for PRE-CONSTRUCTIONAL Anti-termite treatment and creating continous chemical barrier, wall trenches, top surface of plinth filling, along the external perimeter of building, over the top surface of consolidated earth of which apron is to be laid, surroundings of pipes and conduits etc. complete as per specification. (Plinth area of the building at ground floor only shall be measured for payment). Chlorpyriphos Emulsifiable concentrate of 20% with 1% Concentration.	Sq.M	4843.56	310.39	1503392.59
2	N.S-2	Providing and Fixing ISI marked 35mm thick flush Prelaminated door shutter, (with 1mm thick lamination on both sides) core of block board construction with frame of 1st class hardwood and well matched Commercial 3 ply veneering and as approved by Engineer	Sq.M	690.40	2816.00	1944166.40
3	N.S-3	Brick work flyash cement brick class desination 75 above plinth level cement mortar Cement mortar 1:6 (1 cement: 6 coarse sand)	Cu.M	395.93	3589.32	1421119.47
4	N.S-4	Half brick work flash cement brick of class desination 75 cement mortar 1:4 (1 cement : coarse sand) including scofolding and curing etc, complete as per specification superstructure above plinth level upto floor level cemetrn mortar 1:4 (1cement :4 saand)	Sq.M	2437.84	378.41	922503.03

		Cement mortar 1:4 (1 cement : 4 coarse sand)				
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 lazer beam equipment to ensure 100 per cent 'X' axis and 'Y' axis alignment. □	Sq.M	1267.97	7134.00	9045697.98
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	140.89	5312.00	748407.68
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	568.08	2769.00	1573013.52
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	155.40	610.00	94794.00
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	1475.00	150.00	221250.00
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.	Sq.M	273.83	3396.00	929926.68
11	N.S-11	Fabrication, supply and installation of 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 900mm & 950mm high baluster	Sq.M	291.89	4820.00	1406909.80
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 than84 % (for Akutex T surface)	Sq.M	1018.49	6073.40	6185697.17
13	NS.13	Providing & Fixing stainless steel pipe of 75mm dia of 1.6mm thickness of SS304 grade on Terrace shown on drawings	Rm	252.00	1827.00	460404.00
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	1212.16	2141.00	2595234.56
15	N.S-15	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 system of 15mm grid, hanging gridconsisting 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. 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. 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.	Sq.M	7945.52	1604.00	12744614.08

16	N.S-16	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.	Sq.M	724.93	441.00	319694.13
17	N.S-17	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 , Aluminum Glazing sections shall be powder coated with heat treatment on three surfaces in Ivory/Black colour using 6mm thick TOUGHENED SGG EVO Star ET 425 AURA GREEN HEAT REFLECTIVE GLASS VLT-24%, Solar Factor- 0.25 and U-value- 3.72 W Sqm K of Saint-Gobain makeof 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 Aluminum 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	Sq.M	761.52	5662.00	4311726.24
18	N.S-18	Providing and applying Silicon Based Water repellent coating by brush or by spray.	Sq.M	3154.43	232.00	731827.76
19	N.S-19	WATER PROOFING TREATMENT WITH KRYSTOL T1+T2 SYSTEM 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 makeing 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	204.84	737.00	150967.08
20	N.S-20	Wooden Flooring (DIAS) 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 required in desired shape and size of approved colour and texture. including front cladding of stage riser 38mm thick parquet (wood block) flooring of first class teak wood laid over 25mm thick levelling layer of cement concrete 1:2:4 (1Cement :2Coarse Sand :4 Stone aggregate 10mmnominal size) to be paid separately coated with a thin layer of hot bitumen (blown type) @ 2.45 kg per sqm. including fixing blocks in position after dipping in hot bitument (blown type) upto half depth, planded, levelled smooth and finished complete	Sq.M	12.56	4913.00	61707.28
21	N.S-21	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	677.58	1396.00	945901.68
22	N.S-22	Carpetting Supplying & fixing of 4.3mm thickness heavy commercial range flocced flooring with advantage of water proof, antifungal, allergy proof sanitized, total weight 1.8 kg/m2, fire resistant, stain resistant duly installed at floor.	Sq.M	410.04	3008.00	1233400.32
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	851.70	1670.00	1422339.00
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 Fure Resistance of more than 11KW/m2 as per ISO 9329-1	Sq.M	2827.80	2193.00	6201365.40
25	N.S-25	Acid Proof Tiles Providing and fixing Acid Proof Tiles 300x300mm Premium Quality of approved colour & shade laid over 20mm thick cement mortar 1:4 (1 cement :4 Coarse Sand) jointed & pointed in white cement mixed with pigment to match the shade of the tile.	Sq.M	764.03	1084.00	828208.52
26	N.S-26	Providing & Fixing of Danpalon 16mm thick (with minimum 1040mm wide) multicell Polycarbonate sheet with standing seam on both sides & double tooth snap on locking system to ensure maximum uplift capability. The panels will be UV protected and antiglare/softlight. The cross section of one cell shoul not be more than 4mmx4mm & weight of single panel shall not be less than 3250 per square metre. The system will be fitted on purlins with spacing as specified by manufacturer.	Sq.M	1494.57	5321.68	7953623.28
27	N.S-27	CHAIRS WITH WRITING BOARD 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 Make:-Featherlite/ Godrei/ B.P Erao . approved by Architects & Client.	Nos	1140.00	5878.00	6700920.00
28	NS.28	SCREENS Supplying, installing, Testing and commissioning of 100" motorized Matt white projection screen wall with all accessories.	Nos	14.00	62715.00	878010.00

29	N.S-29	AUDITORIUM CHAIRS 535mm to 600mm CTC, Rocking seat with auto tip up cushion, seat depth 650mm. PPCP armrest with cup holder and fabric padding on top for comfort. Chair with cover on the back side. Sigle Central foot for easy house keeping. Make : Featherlight/ Godrej/ B.P Ergo . approved by Architect & Client.	Nos	255.00	9500.00	2422500.00
30	N.S.30	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	1503.57	425.00	639017.25
31	N.S.31	Providing Filling the Expansion joint with joint sealing compound on polyurethane based or equivalent (Dr. Fixit Pidiseal/Hydrocreate/sika/CRYTON) including a backup material like Thermocole / Celatex board inside the groove of expansion joints. The width to depth ratio of sealant should be 2:1 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.				
		50mm thick Horizontal Expansion Joint	R.M	360.00	1583.00	569880.00
32	N.S.32	Providing Filling the Expansion joint with joint sealing compound on polyurethane based or equivalent (Dr. Fixit Pidiseal/Hydrocreate/sika/CRYTON) including a backup material like Thermocole / Celatex board inside the groove of expansion joints. The width to depth ratio of sealant should be 2:1 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.				
		50mm thick Vertical Expansion Joint	R.M	576.00	1583.00	911808.00
33	N.S-33	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)	Nos	131.00	538.00	70478.00
	(b)	Providing and fixing S.S.Sliding door bolt size 16mmx250mm finish SS Matt fixed with necessary screws etc. complete.(Make:-Ebco/Ozone/Dorma)	Nos	263.00	457.00	120191.00
	(c)	Providing & fixing S.S. tower bolt Size 250x12mm finish SS matt with necessary screws etc., complete.(Make:-Ebco/Ozone/Dorma)	Nos	820.00	269.00	220580.00
	(d)	Providing & fixing S.S. tower bolt Size 100x10mm finish SS matt with necessary screws etc., complete. (Make:-Ebco/Ozone/Dorma)	Nos	1932.00	135.00	260820.00
	(e)	Providing & fixing S.S. handle size 25x150mm with necessary screws etc., complete (Make:-Ebco/Ozone/Dorma)	Nos	1050.00	900.00	945000.00
	(f)	Providing & fixing S.S. handle size 15x100mm with necessary screws etc., complete. (Make:-Ebco/Ozone/Dorma)	Nos	966.00	646.00	624036.00
	(g)	Providing & fixing S.S.Door Stopper size 65x2.5MM finish SS Matt with necessary Screws etc., complete.(Make:-Ebco/Ozone/Dorma)	Nos	523.00	300.00	156900.00
	(i)	Providing & fixing alu. Diecast body tubluor type universal hydraulic door closer with necessary crews etc. complete.(Make:-Ebco/Ozone/Dorma)	Nos	523.00	991.00	518293.00
34	NS-34	Supplying and filling in plinth with local sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	450.00	300.00	135000.00
				TOTAL [XV]		81131324.89

PLUMBING WORKS			
SUMMARY OF COST			
S.NO	NAME OF SUB-HEAD	AMOUNT	
		DSR 2012	NON SCHEDULE
i	SANITARY INSTALLATIONS & C.P FITTINGS	504460.20	219981.65
ii	CI PIPES & FITTINGS	481800.60	22195.93
iii	RAIN WATER PIPES & FITTINGS	1015166.00	14650.00
iv	WATER SUPPLY WORKS	279356.95	5220953.79
v	EXTERNAL SEWRAGE	309172.70	-
vi	EXTERNAL DRAINAGE	783139.90	
	TOTAL	3373096.35	
	G.TOTAL	3373096.35	5477781.36

BILL OF QUANTITIES						
SECTION-A : INTERNAL PLUMBING WORKS						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
[i] SANITARY INSTALLATIONS & C.P FITTINGS						
DSR 2012 TEMS						
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	52.00	1848.35	96114.20
2	17.8	Providing and fixing white vitreous china pedestal for wash basin completely recessed at back for the reception of pipes and fittings	Each	52.00	894.70	46524.40
3	17.22	Providing and fixing G.I. intel connection for fluse pipe connecting with W.C. pan.	Each	24.00	94.00	2256.00
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 :				
	17.4.2	Range of two half stall urinals with 5 litre P.V.C. automatic flushing cistern.	Each	8.00	8445.00	67560.00
	17.4.3	Range of three Uninal basin with 10 ltr. White PVC automatic flushing cistern.	Each	8.00	11046.80	88374.40
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	8.00	5152.40	41219.20
	17.6.3	Range of three squatting plates with 10 litre P.V.C. automatic flushing cistern	Each	8.00	6826.65	54613.20
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	40.00	435.30	17412.00
7		Providing and fixing P.V.C. waste pipe for wash including P.V.C. waste fittings complete				
	17.28.1	Semi rigid pipe				
	17.28.1.1	32mm dia	Each	52.00	59.50	3094.00
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	52.00	674.05	35050.60
9		Providing and fixing toilet paper holder:				
	17.34.1	CP brass	Each	24.00	250.95	6022.80
10		Providing and fixing C.P brass angle valve for basin mixer and geyser points of approved quality confirming to IS:8931				
	18.53.1	15 mm nominal bore	Each	84.00	449.35	37745.40
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	84.00	61.70	5182.80
12	18.5	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	a) 15 mm nominal bore	Each	8.00	411.40	3291.20
Total C/f to Summary						
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	24.00	503.10	12074.33
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	53.00	239.57	12697.22
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	52.00	907.89	47210.10
4	NS	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid 10 litre low level white vitreous china dual flushing cistern & C.P. flush bend with fittings & CI 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.				
		W.C. pan with ISI marked white solid plastic seat and lid.	Each	24.00	5000.00	120000.00
5	NS	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.				
		White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rest.	Each	8.00	3500.00	28000.00
Total C/f to Summary						
Total NS ITEMS [i]						219981.65
[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	400.00	857.30	342920.00
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
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	8.00	353.25	2826.00
5	17.39	Providing and fixing plain bend of required degree.				

	17.39.1	100 mm					
6	17.39.1.2	Sand cast iron S&S as per IS-3989	Each	8.00	296.35	2370.80	
	17.40	Providing and fixing heel rest sanitary bend					
	17.40.1	100 mm dia					
7	17.40.1.2	Sand cast iron S&S as per IS-3989	Each	8.00	342.80	2742.40	
	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					
8	17.43.1.2	Sand cast iron S&S as per IS-3989	Each	8.00	579.75	4638.00	
	17.44	Providing and fixing single equal plain junction of required degree.					
	17.44.1	100x100x100mm					
9	19.44.1.2	Sand cast iron S&S as per IS-3989	Each	8.00	442.00	3536.00	
	17.56	Providing and fixing terminal guard:					
	17.56.1	100 mm					
10	17.56.1.2	Sand cast iron S&S as per IS-3989	Each	8.00	244.10	1952.80	
	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					
11	17.60.1.1	Sand cast iron S&S as per IS-3989	Each	8.00	801.70	6413.60	
	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 nominal bore	RM	70.00	367.90	25753.00	
ii	(18.10.5+18.40.5+18.78)	40 mm dia nominal bore	RM	45.00	436.60	19647.00	
iii	(18.10.6+18.40.6+18.78)	50 mm dia nominal bore	RM	20.00	527.80	10556.00	
		Total C/f to Summary					
		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 to 300mm) 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	36.00	503.12	18112.33	
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	17.00	240.21	4083.60	
		Total C/f to Summary					
		Total NS Items [ii]				22195.93	
[iii]		FOR RAIN WATER:					
1	17.35	Providing and fixing soil, waste and vent pipes:					
	17.35.1	100mm dia					
	17.35.1.1	Sand cast iron S&S as per IS-1729	RM	1000.00	734.30	734300.00	
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	700.00	207.85	145495.00	
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	800.00	112.50	90000.00	
4	17.57	Providing & fixing coller					
	17.57.1	100 mm dia					
	17.57.1.1	Sand Cast iron S&S as per IS:1729	Each	200.00	177.85	35570.00	
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	54.00	148.75	8032.50	
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	54.00	32.75	1768.50	
		Total C/f to Summary					
		(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	25.00	586.00	14650.00	
		Total C/f to Summary					
[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	40.00	218.65	8746.00	
ii	18.8.2	20 mm nominal outer dia pipes	RM	95.00	243.05	23089.75	
iii	18.8.3	25 mm nominal outer dia pipes	RM	35.00	297.95	10428.25	
iv	18.8.4	32 mm nominal outer dia pipes	RM	18.00	358.90	6460.20	
		Internal work - Exposed on wall					
2	18.7	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 testing of joints complete as per direction of Engineer in charge.					
i	18.7.2	20mm dia. nominal bore	RM	10.00	157.15	1571.50	
ii	18.7.3	25mm dia. nominal bore	RM	20.00	197.90	3958.00	
iii	18.7.4	32mm dia. nominal bore	RM	10.00	252.65	2526.50	

iv	18.7.5	40mm dia. nominal bore	RM	10.00	348.25	3482.50
v	18.7.6	50mm dia. nominal bore	RM	15.00	514.35	7715.25
3	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality(screwed end)				
i	18.17.2	32 mm nominal bore.	Each	4.00	450.90	1803.60
ii	18.17.3	40 mm nominal bore	Each	4.00	546.05	2184.20
iii	18.17.4	50 mm nominal bore	Each	1.00	780.60	780.60
4	18.18	Providing and fixing ball (brass) valve of approved quality. High or low pressure, with plastic				
i	18.18.2	20 mm nominal bore.	Each	2.00	360.20	720.40
ii	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.				
i	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	32.00	453.55	14513.60
	18.12.8	80 mm dia nominal bore	RM	20.00	573.40	11468.00
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:				
i	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:				
i	18.13.1	25 to 40 mm nominal bore	Each	4.00	277.35	1109.40
ii	18.13.2	50 to 80 mm nominal bore	Each	4.00	630.15	2520.60
		Total C/f to Summary				
		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		65mm dia. nominal bore	RM	25.00	850.00	21250.00
ii		80mm dia. nominal bore	RM	10.00	1000.00	10000.00
10		Providing and fixing PN 16 Butterfly valve of the following dia				
i		65 mm dia. nominal bore	RM	3.00	2500.00	7500.00
i		80 mm dia. nominal bore	RM	1.00	3000.00	3000.00
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	20.00	325.33	6506.52
	ii	80mm dia	Each	16.00	699.83	11197.27
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		65 mm nominal bore	Each	1.00	1500.00	1500.00
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	400.00	4000.00	1600000.00
		Total C/f to Summary				
		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	40.00	218.65	8746.00
ii	18.8.2	20 mm nominal outer dia pipes	RM	32.00	243.05	7777.60
		Internal work - Exposed on wall				
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.				
i	18.7.1	15mm dia. nominal bore	RM	10.00	133.95	1339.50
ii	18.7.2	20mm dia. nominal bore	RM	10.00	157.15	1571.50
iii	18.7.3	25mm dia. nominal bore	RM	10.00	197.90	1979.00
iv	18.7.4	32mm dia. nominal bore	RM	10.00	252.65	2526.50
v	18.7.5	40mm dia. nominal bore	RM	25.00	348.25	8706.25
3	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality(screwed end)				
i	18.17.2	32 mm nominal bore.	Each	1.00	450.90	450.90
	18.17.3	40 mm nominal bore.	Each	4.00	546.05	2184.20
	18.17.4	50 mm nominal bore.	Each	1.00	780.60	780.60
	18.17.5	65 mm nominal bore.	Each	1.00	1073.25	1073.25
		Total DSR Items [iv]				237465.60
		Total NS Items [iv]				5220953.79

	18.17.6	80 mm nominal bore.	Each	1.00	1832.95	1832.95
4	18.18	Providing and fixing ball (brass) valve of approved quality. High or low pressure, with plastic				
i	18.18.1	15 mm nominal bore.	Each	2.00	258.05	516.10
ii	18.18.2	20 mm nominal bore.	Each	2.00	360.20	720.40
iii	18.18.3	25 mm nominal bore	Each	4.00	421.65	1686.60
		Total C/f to Summary			Total DSR Items [iv]	41891.35
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.				
i	2.10.1.2	Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia.	RM	210.00	165.60	34776.00
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	50.00	219.05	10952.50
i	19.1.3	200 mm diameter	RM	50.00	323.05	16152.50
	19.1.4	250 mm diameter	RM	110.00	446.15	49076.50
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	50.00	382.75	19137.50
	19.3.3	200 mm diameter	RM	50.00	449.90	22495.00
	19.3.4	250 mm diameter	RM	110.00	523.75	57612.50
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	4.00	1278.30	5113.20
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)				
	19.7.1.1	With F.P.S. bricks with class designation 75	Each	11.00	7132.00	78452.00
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	60.00	256.75	15405.00
		Total Carried to DSR Items				309172.70
V		EXTERNAL DRAINAGE				
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	360.00	165.60	59616.00
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	240.00	382.75	91860.00
ii	19.3.4	250 mm diameter	RM	100.00	523.75	52375.00
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	240.00	254.50	61080.00
ii	19.6.3	250 mm diameter R.C.C pipes	RM	100.00	342.45	34245.00
iii	19.6.4	300 mm diameter R.C.C pipes	RM	88.00	422.90	37215.20
iv	19.6.6	500 mm diameter R.C.C pipes	RM	55.00	722.20	39721.00
v	19.6.7	600 mm diameter R.C.C pipes	RM	46.00	1084.25	49875.50

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) <i>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</i>				
		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	Each	18.00	7007.40	126133.20
5.0	19.10.1	Extra for depth for circular manhole 0.91m internal dia at bottom with beyond 0.91m to 1.67m.				
		With FPS Bricks class designated 75	RM	20.00	3498.25	69965.00
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	44.00	3193.50	140514.00
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	80.00	256.75	20540.00
Total Carried to DSR Items						783139.90

ELECTRICAL WORKS			
SUMMARY OF COST			
S.NO	NAME OF SUB-HEAD	AMOUNT	
		DSR 2012	NON SCHEDULE
i	INTERNAL ELECTRICAL WORKS	12744192.50	22604351.00
	Total C/F To Summary	12744192.50	22604351.00

BILL OF QUANTITIES						
SECTION-B : INTERNAL ELECTRICAL WORKS						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
I						
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.				
i	1.10.3	Group C	Point	2977.00	664.00	1976728.00
2.0	1.11	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	7500.00	131.00	982500.00
ii	1.14.3	2 x 4 sq.mm. +1 x 4 sq.mm. Earth wire	RM	14500.00	162.00	2349000.00
iii	1.14.4	2 x 6 sq.mm. +1 x 6 sq.mm. Earth wire	RM	1680.00	206.00	346080.00
iv	1.14.9	4 x 6 sq.mm. + 2 x 6 sq.mm. Earth wire	RM	1000.00	358.00	358000.00
v	1.14.10	4 x 10 sq.mm. + 2 x 10 sq.mm. Earth wire	RM	2000.00	562.00	1124000.00
vi	1.14.11	4 x 16 sq.mm. + 2 x 16 sq.mm. Earth wire	RM	1500.00	789.00	1183500.00
4.0		S/F Modular type electronic fan regulator :-				
	1.25	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	720.00	322.00	231840.00
5.0		S/F Modular type blanking plate :-				
	1.26	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	770.00	142.00	109340.00
ii	1.27.2	4 Module (125 mm x 75 mm)	Each	150.00	154.00	23100.00
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	500.00	75.00	37500.00
ii	1.24.4	3 pin 5/6 amp. Socket outlet	Nos	500.00	96.00	48000.00
iii	1.24.6	Telephone Socket outlet	Each	150.00	89.00	13350.00
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	5000.00	56.50	282500.00
ii	1.21.2	25 mm.	RM	10000.00	64.50	645000.00
iii	1.21.3	32 mm	RM	1500.00	80.50	120750.00
iv	1.21.4	40 mm	RM	1500.00	106.00	159000.00
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	3000.00	15.50	46500.00
10.0		S/F power plug point with all accessories :-				
	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	365.00	288.00	105120.00
11.0		S/F power plug point with all accessories :-				
	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	725.00	366.00	266350.00
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	2010.00	141.00	283410.00
13.0		Supplying and fixing following rating, double pole, (single phase and neutral) 240 volts, residual current circuit breaker (RCCB), having a sensivity 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	123.00	1318.00	162114.00
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, 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	2.7.4	2 + 4 way Double Door	Each	8.00	2152.00	17216.00
	2.7.5	2 + 8 way Double Door	Each	2.00	2572.00	5144.00
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	40.00	693.00	27720.00

15.0	2.20	Supplying and fixing 30 amps , 415 volts, TPN, 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	24.00	693.00	16632.00
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	17.00	6345.00	107865.00
	2.8.6	6 way (4 + 18), Double door, horizontal type	Each	19.00	8197.00	155743.00
ii	2.8.7	8 way (4 + 24), Double door, horizontal type	Each	29.00	8984.00	260536.00
	2.8.8	12 way (4 + 36), Double door, horizontal type	Each	20.00	11042.00	220840.00
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	10.00	1679.00	16790.00
ii	2.15.2	40 Amp.	Each	40.00	1703.00	68120.00
	2.15.3	63 Amp.	Each	35.00	1965.00	68775.00
18.0	2.9	Supplying and fixing following way prewired vertical type TP & N MCB distribution board of steel sheet for 415 volts on surface/recess complete with loose wire box of sheet steel, dust protected, duly powder painted, inclusive of 200 amps tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's, terminal connectors for all incoming and outgoing circuits, duly prewired with adequate size of FR PVC insulated copper conductor upto the terminal connector/neutral link, earthing etc as required (But without MCB/RCCB/Isolator). (Note: Prewired vertical type MCB TPDB is normally used where 3 phase outlets are required.)				
	2.9.7	8 Way double door	Each	2.00	9606.00	19212.00
	2.9.8	12 Way double door	Each	2.00	12762.00	25524.00
19.0	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	4.00	3996.00	15984.00
20.0	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
21.0	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
22.0	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
23.0	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
24.0	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
25.0	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	928.00	39.00	36192.00
26.0	1.41	Installation, testing and commissioning of prewired, flourescent fitting / compact flourescent 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	194.00	69.50	13483.00
27.0	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	720.00	99.00	71280.00
28.0	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	16.00	163.00	2608.00
29.0	1.51	Extra for fixing the louvers / shutters complete with frame fro exhaust fans of all sizes.	Each	16.00	68.50	1096.00
30.0		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
31.0		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	42.00	867.00	36414.00
	9.1.29	3.5 X 240 sq. mm (62mm)	Each	8.00	771.00	6168.00
	9.1.33	4 x 16 sq. mm (28mm)	Each	20.00	188.00	3760.00
32.0	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	900.00	44.00	39600.00

33.0	7.8	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.				
	7.8.1	Upto 35 sq. mm (clamped with 1mm thick saddle)	RM	500.00	16.50	8250.00
	7.8.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	RM	900.00	72.50	65250.00
34.0	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
35.0		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
36.0		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
37.0	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.	12744192.50
II) NON SCHEDULED ITEMS						
1.0		Supplying & fixing following rating, three pole, 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		32 Amp.	Each	40.00	1800.00	72000.00
2.0		S/F power plug point with all accessories :- 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	769.00	300.00	230700.00
3.0		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	150.00	116.00	17400.00
4.0		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	769.00	126.00	96894.00
5.0		Supply, laying, testing and commissioning of 4 pair Cat - 6 non plenum cable of 24 AWG solid copper conductors in existing conduits.	Rm	15000.00	26.00	390000.00
6.0		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		50 pair krone	Each	4.00	602.00	2408.00
7.0		Supplying and Earthing with Cu earth plate 600mm x 600 mm x 3mm 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
8.0		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
9.0		Providing & fixing 50mm x 6mm Cu. strip on surface or in recess for connections etc. as required.	Rm	100.00	1001.00	100100.00
10.0		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	720.00	255.00	183600.00
11.0		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 uPoint to 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	300.00	803.00	240900.00
ii		150 mm. ID	RM	200.00	546.00	109200.00
12.0		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	54.00	700.00	37800.00
13.0		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	356.00	2100.00	747600.00
ii		1 X 43 w led Flat Panel (RC366B LED33-5000 PSU OD WH)	Each	521.00	9265.00	4827065.00
iii		3 x 14 W Recessed mounted Light (RC795B 3xTL-514W EBP)	Each	1119.00	5820.00	6512580.00
iv		1 x 28 W T5 (CRCA Body)(TMS122 M 1xTL5-28W EBT)	Each	147.00	1140.00	167580.00
v		2 x 28 W T5 (CRCA Body) TMS122 M 2xTL5-28W EBT	Each	44.00	1560.00	68640.00
14.0		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	720.00	1305.00	939600.00
15.0		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	16.00	1150.00	18400.00
16.0		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	1000.00	1407.00	1407000.00

ii		3.5 Core 240 sq. mm. Armoured Aluminium cable.	RM	800.00	966.68	773344.00
iii		4 x 16 sq.mm. Armoured Aluminium cable.	RM	500.00	132.00	66000.00
17.0		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	1119.00	40.00	44760.00
18.0		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 supply system.				
		All Panel's outgoings have to be equipped with KWH energy meter.				
i		Main LT Panel				
		Incoming: (Transformer)				
		One (1) Nos 1250A TPN MCCB (35KA)				
		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 & 2)				
		Two (2) Nos.800A TPN MCCB (35KA)				
		Metering:				
		Two (2) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		Two (2) Nos. (0-800A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		Two (2) Set of Phase Indication Lamp with 2A SP MCB.				
		Bus Coupler:				
		1250A, FP EDO ACB				
		Bus Bar:				
		1600A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Four (4) Each. 800A TPN MCCB				
		Three (3) Each. 500A TPN MCCB				
		Two (2) Each. 100A TPN MCCB				
		Two (2) Each. 63A TPN MCCB	Set	1.00	1850000.00	1850000.00
ii		Ground Floor Panel				
		Incoming:				
		One (1) Nos.800A FP EDO ACB				
		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 Bar:				
		1000A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Two (2) Nos. 100A TPN MCCB				
		Fifteen (15) Nos. 63A TPN MCCB				
		Seven (7) Nos. 32A TPN MCB				
		Nine (9) Nos. 32A TPN MPCB				
		Four (4) Nos. 25A DP MCB	Set	1.00	250000.00	250000.00
iii		Ground Floor UPS 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:				
		Eight (8) Nos. 40A TPN MCB	Set	1.00	50000.00	50000.00
iv		First Floor Panel				
		Incoming:				
		One (1) Nos.500A TPN MCCB				
		Metering:				
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
		One (1) Nos. (0-500A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
		One (1) Set of Phase Indication Lamp with 2A SP MCB.				
		Bus Bar:				
		630A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
		Outgoing:				
		Eight (8) Nos. 63A TPN MCCB				
		Two (2) Nos. 40A TPN MCB				
		Six (6) Nos. 32A TPN MCB				
		Five (5) Nos. 32A TPN MPCB				
		Three (3) Nos. 16A TPN MPCB				
		Four (4) Nos. 25A DP MCB	Set	1.00	200000.00	200000.00
v		First 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: Five (5) Nos. 25A TPN MCB	Set	1.00	35000.00	35000.00
vi	Second Floor Panel				
	Incoming: One (1) Nos.800A FP EDO ACB				
	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 Bar: 1000A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
	Outgoing: Two (2) Nos. 400A TPN MCCB Five (5) Nos. 63A TPN MCB Four (4) Nos. 40A TPN MCB Seven (7) Nos. 32A TPN MPCB Two (2) Nos. 16A TPN MPCB Three (3) Nos. 25A DP MCB	Set	1.00	250000.00	250000.00
vii	Second Floor UPS Panel				
	Incoming: One (1) Nos.400A TPN MCCB				
	Metering: One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch. One (1) Nos. (0-400A) 96 x 96 Sq.mm CT operated Ammeter with selector switch. One (1) Set of Phase Indication Lamp with 2A SP MCB.				
	Bus Bar: 500A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
	Outgoing: Five (5) Nos. 32A TPN MCB Six (6) Nos. 63A TPN MCCB	Set	1.00	85000.00	85000.00
viii	Third Floor Panel				
	Incoming: One (1) Nos.500A TPN MCCB				
	Metering: One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch. One (1) Nos. (0-500A) 96 x 96 Sq.mm CT operated Ammeter with selector switch. One (1) Set of Phase Indication Lamp with 2A SP MCB.				
	Bus Bar: 630A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
	Outgoing: Two (2) Nos. 200A TPN MCCB One (1) Nos. 63A TPN MCB Ten (10) Nos. 40A TPN MCB One (1) Nos. 32A TPN MCB Seven (7) Nos. 32A TPN MPCB Three (3) Nos. 25A TPN MCB Two (2) Nos. 16A TPN MPCB Three (3) Nos. 25A DP MCB	Set	1.00	200000.00	200000.00
ix	Third Floor UPS Panel				
	Incoming: One (1) Nos.200A TPN MCCB				
	Metering: One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch. One (1) Nos. (0-200A) 96 x 96 Sq.mm CT operated Ammeter with selector switch. One (1) Set of Phase Indication Lamp with 2A SP MCB.				
	Bus Bar: 250A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
	Outgoing: Four (4) Nos. 63A TPN MCCB Two (2) Nos. 32A TPN MCB	Set	1.00	65000.00	65000.00
x	Capacitor Panel (450 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 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 – 1 set				
	Bus Bars 1000 Amps TPN aluminium bus bars with coloured heat shrinkable insulated sleeves – 1 set				
	Outgoing Outgoing feeders consisting of following accessories : 2 Sets – 200 Amps TP MCCB, capacitor duty contactors & 100 KVAR heavy duty capacitors. 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. – 9 Sets	Set	1.00	500000.00	500000.00
xi		External Feeder panel				
		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:				
		1 no. 72 A contactor with 24hrs. Timer circuit and selector switch with push buttons				
		Four (4) Each.32A TPN MCB	Set	1.00	50600.00	50600.00
19.0		Supply, Installation, testing, Commissioning of LPI Stormmaster 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: Stormmaster 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
20.0		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 heavyduty Polyplastic earth pit cover.	Each	2.00	20000.00	40000.00
21.0		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
22.0	i	Design, manufacture, testing at works supply, installation, testing and commissioning at site including plinth and cable tray 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% tappings in step of 1.25 bidirec-tional roller, diagram & rating plate, oil temperature indicator, winding temperature indicator and buccholtz 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).				
	ii	750 KVA	No.	1.00	1350000.00	1350000.00
23.0	i	Supply of HT 11 KV rubber hand gloves as per relevant IS Code	Set	2.00	1000.00	2000.00
	ii	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
	iii	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
	iv	Sand Buckets-Set of Four	Nos.	1.00	2500.00	2500.00
	v	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				
		- 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
	vi	Mechanical foam with trolley	Set	2.00	6500.00	13000.00
	vii	Supply, installation of 1.1 KV grade ISI marked rubber mats of 1 meter width.	RM	20.00	1200.00	24000.00
	viii	Supply of standard First Aid Box. (as per relevent standard)	Nos..	1.00	1000.00	1000.00
		TOTAL FOR NON DSR ITEMS				22604351.00

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 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 on				
	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	89893.00
Total C/f to Summary					Total DSR ITEMS [i]	89893.00
ii		One (1) No. Auto Star-Delta starter for 10.0 HP with 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.	Set	1	20000.00	20000.00
2.0		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		4 Core 4 sq. mm. Armoured Aluminium cable.	Nos.	2.00	125.00	250.00
		4 Core 2.5 sq. mm. Armoured Aluminium cable.	Nos.	4.00	85.00	340.00
3		Supply,testing and commissioning of 1100 Volt grade XLPE insulated and sheathed aluminium conductor Armoured cables including the cost of providing required gap between adjacent cables (minimum one cable dia.) and including the cost of				
iv		4 Core 4 sq. mm. Armoured Aluminium cable.	RM	20.00	91.00	1820.00
v		4 Core 2.5 sq. mm. Armoured Aluminium cable.	RM	15.00	85.00	1275.00
II FIRE HYDRANT & SPRINKLER SYSTEM						
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).	Each	15	5940.00	89100.00

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	12	7335.00	88020.00
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	30	3837.00	115110.00
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	15	1885.00	28275.00
7.0		Providing and fixing standard fireman's axe with heavy insulated rubber handle tested for 20000 watts.	Each	12	836.00	10032.00
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	1.00	20260.00	20260.00
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	12.00	769.00	9228.00
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	12.00	6638.00	79656.00
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.				
a		80 mm dia with lever operated	Each	3.00	3904.00	11712.00
b		150 mm dia with lever operated	Each	12.00	7335.00	88020.00
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.				
a		150 mm dia	Each	1.00	17459.00	17459.00
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	12.00	278.00	3336.00

17.0		Providing and fixing 'Y' strainer with CI body and S.S. strainer for outlet of OHT lines.(Terrace Level)				
a)		150 mm dia	Each	1.00	10124.00	10124.00
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	12	8000.00	96000.00
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	12	5500.00	66000.00
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	12	6500.00	78000.00
b)		Capacity 50 lit.(Trolley mounted)	Each	1	25000.00	25000.00
TOTAL SUMMARY						
IV 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 holdtite 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	4000.00	420.00	1680000.00
b)		32 mm dia	Metre	400.00	500.00	200000.00
c)		40 mm dia	Metre	500.00	600.00	300000.00
d)		50 mm dia	Metre	600.00	700.00	420000.00
e)		65 mm dia	Metre	500.00	850.00	425000.00
f)		80 mm dia	Metre	250.00	1050.00	262500.00
g)		100 mm dia	Metre	450.00	1500.00	675000.00
h)		150 mm dia	Metre	120.00	1750.00	210000.00
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 Responce Pendent type	Each	1500.00	245.00	367500.00
b)		Normal Responce Upright type	Each	600.00	245.00	147000.00
c)		Normal Responce Side wall	Each	10.00	334.00	3340.00
		Standard concealed sprinkler 68° C.	Each	10.00	334.00	3340.00
3.0		Providing & fixing inspecting testing assembly with drain valve arragement 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	4000.00	48000.00
		150 mm dia	Each	12	4250.00	51000.00

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.	Each	12	278.00	3336.00
7.0		Providing and fixing 25 mm dia gunmetal single acting air release valve with screwed inlet tested for 20Kg/Cm2.	Each	3	613.00	1839.00
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' complete in				
c)		80 mm dia with lever	Each	3	1115.00	3345.00
		100 mm dia with lever	Each	12	1115.00	13380.00
d)		150 mm dia with lever	Each	12	1394.00	16728.00
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 including surface				
a)		80 mm dia	Metre	10.00	100.00	1000.00
b)		150 mm dia	Metre	400.00	128.00	51200.00
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	9.00	5940.00	53460.00
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	9.00	1885.00	16965.00
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	9.00	4049.00	36441.00
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	18.00	3837.00	69066.00
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' 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)	Cum	20.00	3841.00	76820.00
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.				
a)		Four way	Each	1.00	20260.00	20260.00
VI		FIRE PUMPS& ACCESSORIES				
		(All pumps should be supplied with wearing and mechaical seal. Performance curve should be approved before placing the order. All pumps should be supplied with base frame)				
2		Pump:				
		Providing,Fixing Supplying and fixing horizontal centrifugal pump with volute brozne impeller connctected to TEFC induction motor suitable for 400/410 Volts, 3 Phase, 50 Cycles , AC supply with the following specifications:				
a)		Capacity : 900 LPM				
b)		Head : 30 m				
c)		HP : 10 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	50000.00	50000.00
		Note: Contractor should submit general arrangement drawings before fabrication of vessel and ultrosonic 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 wafer type non return valves PN 1.6 including nuts, bolts, 1.5 mm thick gasket companion flanges as per table 'E' etc. complete.				
b)		150 mm dia	Each	1	8500.00	8500.00
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.				
d)		150 mm dia (lever operated)	Each	1	6500.00	6500.00
12		Providing and fixing vibration elimination pads for pumps.				
a)		Type A	Set	1	3500.00	3500.00
13		Providing and fixing 25 mm dia gun metal fitting for water level indicator gauge with isolation valve at top and bottom, heavy guage 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	1	4500.00	4500.00
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	5000.00	5000.00
		Total C/f to Summary			Total NS Items [II]	6889415.00

BILL OF QUANTITIES
SECTION-F: HVAC WORKS

Sr. No.		DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
DSR ITEMS						
1.0	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	2.00	3996.00	7992.00
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 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	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 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	350.00	405.00	141750.00
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	200.00	677.00	135400.00
28.0		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	4.00	867.00	3468.00
					TOTAL	360960.00
Total Carried to Summary						
NON DSR ITEMS						
5		Ground floor:				
		Supply, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	8.00	2000.00	16000.00
6		First floor:				
		Supply, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	4.00	2000.00	8000.00
		16 A MPCB	Nos.	3.00	1750.00	5250.00
7		Second floor:				
		Supply, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	6.00	2000.00	12000.00
		16 A MPCB	Nos.	2.00	1750.00	3500.00
8		Third floor:				
		Supply, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	6.00	2000.00	12000.00
		16 A MPCB	Nos.	2.00	1750.00	3500.00
8		Ventilation:				
i		Auto Star Delta starter of 15 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	20000.00	80000.00
ii		Auto DOL starter of 7.5 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.	1.00	15000.00	15000.00
ii		Auto DOL starter of 5 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	12500.00	50000.00
iii		Auto DOL starter of 2 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	10000.00	40000.00
iv		Auto DOL starter of 1.5 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.	20.00	10000.00	200000.00
9.0		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.				
		4 X 6 sq. mm	Each	96.00	125.00	12000.00
		4 X 4 sq. mm	Each	36.00	100.00	3600.00
		4 X 2.5 sq. mm	Each	4.00	85.00	340.00
10.0		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	RM	100.00	1407.00	140700.00
		4 X 6 sq. mm	RM	2500.00	112.70	281750.00
		4 X 4 sq. mm	RM	1500.00	91.00	136500.00
		4 X 2.5 sq. mm	RM	50.00	80.00	4000.00

11.0	Ventilation Panel				
	Incoming:				
	One (1) Nos.500A TPN MCCB (35KA)				
	Metering:				
	One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
	One (1) Nos. (0-500A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
	One (1) Set of Phase Indication Lamp with 2A SP MCB.				
	Bus Bar:				
	630A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
	Outgoing:				
	Five (5) Each. 63A TPN MCCB				
	Twenty One (21) Each. 32A TPN MPCB				
	Two (2) Each. 16A TPN MPCB	Set	1.00	350000.00	350000.00
1)	AIR CIRCULATION SYSTEM:				
1.0	AIR HANDLING UNIT:				
	Supply, installation, testing and commissioning of factory fabricated Double Skinned Chilled/Hot 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 \pm 10%, 50 Hz \pm 5% AC supply, 6 Rows ARI certified cooling coil made of Aluminium finned 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 duly 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 necessary hardware, cleat, Screws, nut washers etc. Complete job with all material and labour as per direction of Engineer-in-charge. 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 anch				
	Floor Mounted AHUs (6 Rows coil):				
	Ground floor:				
	4500cfm, 10TR, 5HP, 50mmSP	Nos	1.00	360,000.00	360,000.00
	4900cfm, 11TR, 5HP, 50mmSP	Nos	1.00	392,000.00	392,000.00
	6000cfm, 13TR, 5HP, 50mmSP	Nos	1.00	480,000.00	480,000.00
	6500cfm, 17TR, 5HP, 50mmSP	Nos	1.00	520,000.00	520,000.00
	8500cfm, 18TR, 7.5HP, 50mmSP	Nos	1.00	680,000.00	680,000.00
	9500cfm, 23TR, 7.5HP, 50mmSP	Nos	1.00	760,000.00	760,000.00
	10600cfm, 24TR, 7.5HP, 50mmSP	Nos	1.00	848,000.00	848,000.00
	11200cfm, 24TR, 7.5HP, 50mmSP	Nos	1.00	896,000.00	896,000.00
	First floor				
	2600cfm, 6TR, 2HP, 50mmSP	Nos	2.00	208,000.00	416,000.00
	8350cfm, 19TR, 5HP, 50mmSP	Nos	1.00	604,000.00	604,000.00
	7600cfm, 18TR, 5HP, 50mmSP	Nos	2.00	608,000.00	1,216,000.00
	12000cfm, 29TR, 7.5HP, 50mmSP	Nos	1.00	896,000.00	896,000.00
	3400cfm, 8TR, 3HP, 50mmSP	Nos	1.00	272,000.00	272,000.00
	Second floor:				
	3200cfm, 9TR, 3HP, 50mmSP	Nos	1.00	256,000.00	256,000.00
	3300cfm, 8TR, 3HP, 50mmSP	Nos	1.00	264,000.00	264,000.00
	13000cfm, 39TR, 10HP, 50mmSP	Nos	1.00	1,040,000.00	1,040,000.00
	8300cfm, 19TR, 7.5HP, 50mmSP	Nos	1.00	664,000.00	664,000.00
	9400cfm, 29TR, 7.5HP, 50mmSP	Nos	1.00	752,000.00	752,000.00
	10000cfm, 24TR, 7.5HP, 50mmSP	Nos	1.00	800,000.00	800,000.00
	10100cfm, 25TR, 7.5HP, 50mmSP	Nos	1.00	808,000.00	808,000.00
	10850cfm, 28TR, 7.5HP, 50mmSP	Nos	1.00	868,000.00	868,000.00
	Third floor				
	3200cfm, 7TR, 3HP, 50mmSP	Nos	1.00	256,000.00	256,000.00
	3300cfm, 7TR, 3HP, 50mmSP	Nos	1.00	264,000.00	264,000.00
	5000cfm, 12TR, 5HP, 50mmSP	Nos	1.00	400,000.00	400,000.00
	5700cfm, 12TR, 5HP, 50mmSP	Nos	1.00	456,000.00	456,000.00
	5900cfm, 14TR, 5HP, 50mmSP	Nos	1.00	472,000.00	472,000.00
	10000cfm, 34TR, 7.5HP, 50mmSP	Nos	1.00	800,000.00	800,000.00
	10700cfm, 34TR, 7.5HP, 50mmSP	Nos	1.00	856,000.00	856,000.00
	11800cfm, 43TR, 7.5HP, 50mmSP	Nos	1.00	944,000.00	944,000.00
2.0	Fan coil Units				
	Supply, installation, testing & commissioning of Horizontal fan coil units, each complete with 3/4 Rows deep chilled water cooling coil, blowers, cleanable filters, main and auxiliary insulated condensate drain pans, casing, coil pipe connections through copper pipes, condensate drain connections, with required Set of ball valves with strainers (supply), without strainers (Return), canvas connections. All fan coil units shall be suitable for 220 \pm 10%volts, 50 cycles single phase power supply etc. complete as per specification.				
	Ground floor:				
a)	400cfm,1TR	Nos	19.00	10,000.00	190,000.00
b)	800cfm,2TR	Nos	4.00	12,500.00	50,000.00
c)	1200cfm,3TR	Nos	2.00	15,000.00	30,000.00
	First floor:				
a)	400cfm,1TR	Nos	18.00	10,000.00	180,000.00
b)	600cfm,1.5TR	Nos	2.00	11,500.00	23,000.00
c)	800cfm,2TR	Nos	3.00	12,500.00	37,500.00
d)	1200cfm,3TR	Nos	1.00	15,000.00	15,000.00
	Second floor:				
a)	400cfm,1TR	Nos	18.00	10,000.00	180,000.00
b)	600cfm,1.5TR	Nos	2.00	11,500.00	23,000.00
c)	800cfm,2TR	Nos	2.00	12,500.00	25,000.00

d)	1200cfm,3TR	Nos	4.00	15,000.00	60,000.00
	Third floor:				
a)	400cfm,1TR	Nos	18.00	10,000.00	180,000.00
b)	600cfm,1.5TR	Nos	4.00	11,500.00	46,000.00
d)	1200cfm,3TR	Nos	4.00	15,000.00	60,000.00
3.0	Split type AC units				
	Supply, installation, testing and commissioning of inverter based split type AC units with Hi wall indoor units complete with finned coil, fan section with motor, air filters, filter box, double drain pan, wiring & accessories, outdoor air cooled condenser units with accessories (For Server Rooms)				
a)	600cfm,1TR	Nos	1.00	25,000.00	25,000.00
b)	800cfm,2TR	Nos	6.00	28,000.00	168,000.00
c)	1200cfm,3TR	Nos	4.00	35,000.00	140,000.00
II)	PIPING:				
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, antivibration 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 "O" rating of 19mm thickness for chilled water pipes & 9mm thickness for condensate drain				
	Mild steel pipes:				
a)	300 mm dia MS pipes	RM	325.00	2,750.00	893,750.00
b)	200 mm dia MS pipes	RM	155.00	2,350.00	364,250.00
c)	150 mm dia MS pipes	RM	160.00	2,075.00	332,000.00
d)	125 mm dia MS pipes	RM	165.00	2,000.00	330,000.00
e)	100 mm dia MS pipes	RM	17.00	1,800.00	30,600.00
f)	80 mm dia MS pipes	RM	295.00	1,550.00	457,250.00
g)	65 mm dia MS pipes	RM	334.00	1,300.00	434,200.00
h)	50mm dia MS pipes	RM	190.00	1,050.00	199,500.00
i)	40mm dia MS pipes	RM	105.00	975.00	102,375.00
j)	32mm dia MS pipes	RM	370.00	850.00	314,500.00
k)	25mm dia MS pipes	RM	165.00	700.00	115,500.00
l)	20mm dia MS pipes	RM	310.00	625.00	193,750.00
m)	40 mm dia MS pipes ('B' class, for condensate drain)	RM	135.00	480.00	64,800.00
n)	32 mm dia MS pipes ('B' class, for condensate drain)	RM	350.00	400.00	140,000.00
2.0	Providing and fixing in position Butterfly valves				
a)	80 mm dia	Nos	8.00	4,000.00	32,000.00
b)	65mm dia	Nos	16.00	3,650.00	58,400.00
c)	50mm dia	Nos	22.00	3,250.00	71,500.00
d)	40mm dia	Nos	12.00	3,175.00	38,100.00
e)	32 mm dia	Nos	4.00	2,900.00	11,600.00
4.0	Providing and fixing in position Ball Valve set comprising one ball valve with strainer and one valve w/o strainer				
a)	20mm dia	Set	73.00	3,000.00	219,000.00
b)	25 mm dia	Set	28.00	3,500.00	98,000.00
5.0	Self Dynamic balancing valves (for AHU's)				
	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 shell be capable of providing 4-20 ma 2-10V DC flow feedback signal to the control system. Each valve should have 39 (for dia 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 (upto 37 USGPM flow rate)	Nos	26.00	35,000.00	910,000.00
	50/65/80mm dia (upto 113 USGPM flow rate)	Nos	23.00	50,000.00	1,150,000.00
6.0	Temperature Control cum Automatic Balancing Valves: (for FCU's)				
	Supply, Installation, testing and commissioning of 15/20 mm dia, Self-balancing, Pressure independent type dynamic balancing Valve with integrated 2 way motorised actuator in a single body. The valves for using FCU's shall be ON/OFF temperature control type. Flow regulation shall be achieved through factory preset SS cartridge and shall be capable of controlling the flow with in \pm 5% of the rated flow. The flow limiting device shall be available as plug in device for inline valve housing. The flow limiting device/cartridge should be easily removable for any maintenance/cleaning purpose from the valve body without removing the valve from the piping circuit. The valve housing shall be made out of forged brass suitable for static pressure of 1600 kPaD and actuator shall be capable of withstanding 400 kPaD shut off pressure, ON/OFF type suitable for 230V AC, 50 Hz incoming Power Supply.				
a)	15/20mm dia (upto 8 USGPM flow rate)	Nos	101.00	10,000.00	1,010,000.00
7.0	Providing and fixing in position Dial type Pressure gauge with gun metal gate valve, calibrated in metric & British units	Nos	62.00	900.00	55,800.00
8.0	Providing and fixing in position Mercury in glass thermometers with V groove for protection	Nos	62.00	350.00	21,700.00
9.0	Providing and fixing in position Auto air purging valves				
	15 mm dia	Nos	31.00	900.00	27,900.00
7.0	Buried chilled water pipes				
	Insulation of Chilled Water piping with 75mm thick, Density 24kg/cum "P" Quality Expanded polystyrene pipe section and wrapped with tarfelt, there-after covered with 2 layers of sand cement plaster 6mm thick as per specification				
	300 mm dia MS pipes	RM	500.00	4,500.00	2,250,000.00
III)	DUCTING:				
	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.				
1.0	Air-conditioning Ducting : Galvanized sheet steel				
a)	26 SWG	SQMT	1900.00	550.00	1,045,000.00
b)	24 SWG	SQMT	2000.00	650.00	1,300,000.00
c)	22 SWG	SQMT	1800.00	750.00	1,350,000.00
d)	20 SWG	SQMT	1900.00	850.00	1,615,000.00
e)	18 SWG	SQMT	250.00	1,000.00	250,000.00
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.	SQMT	10.00	5,500.00	55,000.00
3.0	Supply, installation & testing of AMCA certified & UL listed motorized smoke cum fire dampers of at least 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.).				
a)	Actuator operated Smoke cum fire dampers (as per actual sizes from drawings)	SQMT	46.00	30,000.00	1,380,000.00
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	SQMT	137.00	10,500.00	1,438,500.00
5.0	Return Air Diffuser				
a)	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	SQMT	125.00	4,500.00	562,500.00
6.0	Linear Grilles:				
	Supplying, installing, testing and balancing of continuous linear air grilles (Linear/single) of various sizes. Each grill shall have be with fixed horizontal front bar at 15 deg. deflection louvers, complete as per specification and drawing.				
a)	Powder Coated Linear Aluminium grilles without volume control damper (for Common Area).	SQMT	24.00	4,000.00	96,000.00
7.0	Return Air Grilles:				
	Supplying, installing, testing and balancing of return air grilles of various sizes. Each grill shall have be with fixed horizontal front bar at 15 deg. Deflection, complete as per specification and drawing.				
a)	Powder Coated Aluminium grilles with volume control damper (for exhaust of toilets).	SQMT	32.00	10,000.00	320,000.00
8.0	Fresh Air Louvers:				
	Supplying, installing and balancing of fresh/exhaust air anodized aluminum intake louvers with bird screen & aluminum volume control damper, complete as per specification & drawings				
a)	Fresh Air Louvers (With VCD & birdscreen)	SQMT	6.00	12,500.00	75,000.00
b)	Exhaust Air Louvers (Without VCD but with birdscreen)	SQMT	4.00	6,500.00	26,000.00
9.0	Air Measuring Stations				
	Supplying, installing 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	31.00	125,000.00	3,875,000.00
IV)	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.				
a)	25mm thick acoustic lining.	SQMT	600.00	450.00	270,000.00
2.0	Supply, fixing & testing of Acoustic silencers in return air passage within AHU rooms capable of noise reduction by 10db				
a)	22G GSS with 50/100mm thk acoustic lining in acoustic silencers	SQMT	38.00	1,000.00	38,000.00
3.0	Thermal Insulation:				
	Supplying, installing of external thermal insulation on ducts with approved sample of closed cell insulation class "O" rating, prelaminated with aluminium foil & density complete as per specifications.				
a)	19mm thick insulation.	SQMT	7100.00	500.00	3,550,000.00
3.0	Roof Exposed Insulation:				
a)	Supply,Installation, testing and commissioning of 70 mm thick XPS Insulation having density of 32kg	SQMT	6325.00	1,200.00	7,590,000.00
V)	VENTILATION SYSTEM:				
1.0	Supply,installation,testing & commissioning of AMCA certified (for air & sound performance) and UL listed direct drive Tubeaxial supply air fan . Fans shall be 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 liftwell pressurization 6000cfm, 25mmSP, 2HP 415±10% volts 50Hz power supply	Nos	2.00	180,000.00	360,000.00
2.0	Supply,installation,testing & commissioning of AMCA certified (for air & sound performance) and UL listed belt drive SISW centrifugal backward inclined type fan with weather proof cabinet . The fans shall be complete with factory installed flow monitoring station (by fan manufacturer), and shall be a standard part of fan assembly. 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 centrifugal fans with weather proof cabinet for toilet exhaust 6400, 25mm SP,2HP 415±10% volts 50Hz power supply	Nos	2.00	275,000.00	550,000.00
b)	SISW centrifugal fans with weather proof cabinet for toilet exhaust 4400, 25mm SP,1.5HP 415±10% volts 50Hz power supply	Nos	2.00	225,000.00	450,000.00
3.0	Providing, installing , testing & commissioning following direct drive Axial/Mixed flow fans for ventilation & smoke extraction as per drawings. Fans for smoke management shall be AMCA certified (for air performance), UL listed & rated for 260°C for 4hours operation. Motors shall be suitable for 415+/-10%volts, 50hz, 3phase power supply				

a)	Mixed flow exhaust fan 30000CFM,7.5 HP, 10mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in normal mode for Enterance lobby ventilation	Nos	1.00	1,000,000.00	1,000,000.00
b)	Axial flow supply fan 15000CFM,5HP, 25mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in normal mode for Entrance lobby ventilation	Nos	2.00	500,000.00	1,000,000.00
c)	Axial flow exhaust fan 15000CFM,1.5HP, 5mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in normal mode for sitting lounge ventilation	Nos	2.00	350,000.00	700,000.00
d)	Axial flow supply fan 15000CFM,5HP, 25mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in normal mode for sitting lounge ventilation	Nos	2.00	500,000.00	1,000,000.00
e)	Mixed flow supply fan 36000CFM,15HP, 40mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in fire & normal mode for corridor ventilation	Nos	4.00	1,200,000.00	4,800,000.00
f)	Axial flow exhaust fan 12000CFM, 1.5HP, 5mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in fire & normal mode for corridor ventilation	Nos	16.00	350,000.00	5,600,000.00
	Total Carried to Summary				71269115.00

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.	448		
2		Module Mounting Structure	Nos.	448		
3		Battery Bank 120V-600Ah	Nos.	150		
4		Battery Protection Panel	Nos.	1		
5		PCU 120V DC ,Three Phase 40 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		
VI		Rating 28 KW (School C Block)	Set	1	10541085.00	10,541,085.00
		GRAND TOTAL				10,541,085.00

BILL OF QUANTITIES						
SECTION-G: FIRE DETECTION SYSTEM						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	QTY	UNIT	RATE	AMOUNT
		Non DSR				
I		FIRE DETECTION				
1		SITC of FIRE ALARM CONTROL PANEL : Microprocessor based 12 loop fire alarm control panel fully networkable, expandable with each loop capable of taking 127 devices expandable upto 15 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	525,000.00	525,000.00
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.	520	3,000.00	1,560,000.00
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.	494.00	4,500.00	2,223,000.00
5		SITC of MANUAL CALL POINT : Analog, Soft Addressable, Manual Call Point with integrated Isolator, complete as required.	No.	32	3,300.00	105,600.00
6		SITC of RESPONSE INDICATORS : Local make response indicator complete as required.	No.	293	110.00	32,230.00
7		SITC of MONITOR MODULES : Addressable transponder / Monitor Modules complete as required.	No.	12	3,300.00	39,600.00
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.	32	4,000.00	128,000.00
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 & accesories.	No.	498	950.00	473,100.00
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/40Ohm, Supply Input 230/240V 50 Hz, DC 24V, Short Circuit protection, Thermal Shutdown, Overload protection, Inbuilt Ventilating Fans, THD< 0.5%, AC Dc Fuses, SNR>80 Db	No.	6	90,000.00	540,000.00
14		Supplying and drawing Copper Conductor, MICA taped, Halogen Free of 2 x 1.5 sq.mm cable including all supports required for instalation as per requirement on surface including all end terminations complete in all respect for succesful commissioning for fire detection and PAVA system.	RM	6000	250.00	1,500,000.00
		TOTAL SUB HEAD LOW VOLTAGE				7729030.00

LECTURE HALL COMPLEX

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	174040218.84	97866770.46
2	PLUMBING WORKS	2597076.85	5574845.17
3	ELECTRICAL WORKS	9126330.50	18747627.00
4	FIRE FIGHTING WORKS	89893.00	8407459.00
5	HVAC	688759.00	97029000.00
6	SOLAR ENERGY	-	6530681.00
7	FDA	-	4828320.00
	SUB TOTAL	186542278.19	238984702.64
	G.TOTAL	425526980.82	

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	1561172.44	
II	CONCRETE WORK	2845003.39	
III	REINFORCED CEMENT CONCRETE	121695493.77	
IV	BRICK WORK	10019211.30	
V	STONE WORK	9023730.50	
VI	MARBLE WORK	1322496.58	
VII	WOOD WORK	227161.25	
VIII	STEEL WORK	506900.64	
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	-	97866770.46
	TOTAL	174040218.84	97866770.46
		A-1	A-2

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)
I EARTH WORK 2.0						
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, withen 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
8	2.26	Extra for every aditional 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	DELETED					
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.				
	2.28.1	All kinds of soil.	100 Sq.M	53.92	935.25	50428.68
11	2.32	Clearing grass and removal of the rubbish upto a distance of 50 m outside the periphery of the area cleared.	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						1561172.44
TOTAL [I]						1561172.44

II CONCRETE WORK 4.0							
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, parapet,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)	Sq.M	70.21	207.55	14572.64	
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	per 50 kg cement	18.26	35.35	645.32	
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 brushesand finally with a piece of cloth lightly soaked in kerosene oil	Sq.M	70.21	96.65	6786.06	
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	233.61	338.75	79135.39	
					TOTAL	2845003.39	
					TOTAL [II]	2845003.39	
III REINFORCED CEMENT CONCRETE 5.0							
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 excuding 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, proppintg 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, butteresses, 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, qirders, 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	
Viii	5.9.13	Vertical and horizontal fins individually or forming box louvers band, facias and eaves boards.	sqm	100.00	470.10	47010.00	
ix	5.9.15	Small lintels not exceding 1.5m clear span, moulding as in cornices, window sills, string courses, bands, copings, bed plates, anchor blocks and the like.	Sq.M	203.93	166.90	34036.64	
x	5.9.16	Edges of slabs and breaks in floors and walls,					
	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, proppijng 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, landding, beams and balconies (plan area to be measured).	Sq.M	6570.78	121.65	799334.98	
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 sheet 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.	R.M.	312.70	22.25	6957.58
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.	Qtl	120.00	589.80	70776.00
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 (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 cost if admixtures in recommended proportions as per IS : 9103 to accelerate / retard setting of concrete, improve workability without impairing strength and durability as per directions of the Engineer-in-charge.				
	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	121695493.77
					TOTAL [III]	121695493.77
IV 6.0 BRICK WORK						
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	10019211.30
					TOTAL [IV]	10019211.30
V 7.0 STONE WORK						

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	9023730.50
					TOTAL [V]	9023730.50
VI 8.0 MARBLE WORK						
43	8.2	Providing and fixing 18mm thick gang saw cut mirror polished pre moulded and prepolished) 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
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	1322496.58
					TOTAL [VI]	1322496.58
VII WOOD WORK 9.0						
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.				
	9.48.1	Fixed to steel windows by welding.	Kg	34.20	90.75	3103.65
47	9.119	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 Enginner-in-Charge.	R.M.	175.65	404.60	71067.99

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 shutter).				
	9.120.2	30 mm thick pre laminated PVC door shutters	Sq.M	47.48	2958.00	140454.71
49	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	227161.25
					TOTAL [VII]	227161.25
VIII STEEL WORK 10.0						
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.				
	10.5.1	Using M.S angels 40x40x6 mm for diagonal braces	Sq.M	10.50	2551.45	26790.23
51	10.14	Providing and fixing pressed steel door frames conforming 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 stel butt hinges 2.5 mm thick with mortar guards, lock strike- plate and shoxk absorbers as specified adn 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
52(a)	10.28	Providing and fixing stainless steel (Grade 304) railing made of Hollow tubes, channels, plates etc. including welding, grinding, buffing, polishing and making curvature (wherever required) and fitting the same with necessary stainless steel nuts and bolts complete i/c fixing the railing with necessary accessories & stainless steel dash fasteners , stainless steel bolts etc., of required size, on the top of the floor or the side of waist slab with suitable arrangement as per approval of Engineer-in-charge. (for payment purpose only weight of stainless steel members shall be considered excluding fixing accessories such as nuts, bolts, fasteners etc.)	kg	200.00	558.00	111600.00
					TOTAL	506900.64
					TOTAL [VIII]	506900.64
IX FLOORING						
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 ththe 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

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
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	Sq.M	11645.18	76.05	885615.94
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.				
	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
					TOTAL	6010690.60
					TOTAL [XI]	6010690.60
XII ROAD WORK 16.0						
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 course 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 course 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	151995.60
					TOTAL [XII]	151995.60
XIII DRAINAGE 19.0						

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 design.	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	28404.35
				TOTAL	[XIII]	28404.35
CH-21.0 ALUMINIUM WORK						
89	21.4	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge				
	21.4.1	With stainless steel cover plate minimum 1.25 mm thickness	Nos	2.00	1953.10	3906.20
90	21.18	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc.to be paid separately).	Sq.M	6.12	4444.75	27201.87
					TOTAL	31108.07
				TOTAL	[XIV]	31108.07
CH-22.0 WATER PROOFING						
91	22.7	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75 kg/sq. of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement: 5 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge to required height including rounding of junctions of walls and slabs c) After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS: 2645 and approve by Engineer-in-charge. d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge including laying glass fibre cloth approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period to two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Chage:				
	22.7.1	With average thickness of 120mm and minimum thickness at khurra as 65 mm.	Sq.M	3350.19	786.70	2635592.61
					TOTAL [XIV]	2635592.61
XV NON SCHEDULE ITEMS						
1	N.S-1	Diluting and injecting chemical emulsion for PRE-CONSTRUCTIONAL Anti-termite treatment and creating continous chemical barrier, wall trenches, top surface of plinth filling, along the external perimeter of building, over the top surface of consolidated earth of which apron is to be laid, surroundings of pipes and conduits etc. complete as per specification. (Plinth area of the building at ground floor only shall be measured for payment). Chlorpyrifos Emulsifiable concentrate of 20% with 1% Concentration.	Sq.M	2630.88	310.39	816598.84
2	N.S-2	Providing and Fixing ISI marked 35mm thick flush Prelaminated door shutter, (with 1mm thick lamination on both sides) core of block board construction with frame of 1st class hardwood and well matched Commercial 3 ply veneering and as approved by Engineer	Sq.M	278.16	2816.00	783298.56

3	N.S-3	Brick work flyash cement brick class designation 75 in super structure above plinth level upto floor V level . Cement mortar 1:6 (1 cement: 6 coarse sand)	Cum	576.25	3589.32	2068345.65
4	N.S-4	Half brick work flash cement brick of class designation 75 cement mortar 1:4 (1 cement : coarse sand) including scofolding and curing etc, complete as per specification superstructure above plinth level upto floor level. Cement mortar 1:4 (1 cement : 4 coarse sand)	Sq.M	2036.51	378.41	770635.75
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 lazer beam equipment to ensure 100 per cent 'X' axis and 'Y' axis alignment.	Sq.M	482.87	7134.00	3444794.58
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	5312.00	284988.80
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	610.00	2833.76
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	150.00	76230.00
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.	Sq.M	233.21	3396.00	791975.85
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	4820.00	3935674.60
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 than84 % (for Akutex T surface)	Sq.M	3760.01	6073.40	22836014.37
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	1827.00	282856.14
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	2141.00	14953771.68

15	N.S-15	<p>ARMSTRONG FALSE CEILING</p> <p>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	1604.00	5100062.36
16	N.S-16	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(postive) side on wet open pore concrete surface with brush @ 1Kg/Sq.M as per manufacturer specification.	Sq.M	3618.83	441.00	1595904.03
17	N.S-17	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 , Aluminum 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 Aluminum 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.	Sq.M	144.07	5662.00	815710.19
18	N.S-18	Providing and applying Silicon Based Water repellent coating by brush or by spray.	Sq.M	2102.67	232.00	487819.44
19	N.S-19	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:	Sq.M	1009.10	3502.00	3533868.20
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	737.00	2273711.33
21	N.S-21	<p>WOODEN FLOORING</p> <p>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</p>	Sq.M	294.08	4913.00	1444815.04
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	1396.00	3126816.64
23	N.S-23	<p>VETRIFIED DOUBLE CHARGED</p> <p>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.</p>	Sq.M	1914.42	1670.00	3197082.43
24	N.S-24	<p>PVC FLOORING</p> <p>Providing and installing of Accolade plus impregnated PUR Vinayl 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</p>	Sq.M	147.05	2193.00	322488.11
25	NS.25	<p>CHAIR</p> <p>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 Ergo approved by Architect & Client</p>	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	62715.00	1317015.00
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	425.00	1787273.75
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	Providing Filling the Expansion joint with joint sealing compound on polyurethane based or equivalent (Dr. Fixit Pidiseal/Hydrocreate/sika/CRYTON) including a backup material like Thermocole / Celatex board inside the groove of expansion joints. The width to depth ratio of sealant should be 2:1 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.				
		50mm thick Horizontal Expansion Joint	R.M	443.88	1583.00	702662.04
31	N.S-31	Providing Filling the Expansion joint with joint sealing compound on polyurethane based or equivalent (Dr. Fixit Pidiseal/Hydrocreate/sika/CRYTON) including a backup material like Thermocole / Celatex board inside the groove of expansion joints. The width to depth ratio of sealant should be 2:1 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.				
		50mm thick Vertical Expansion Joint	R.M	594.00	1583.00	940302.00
32	N.S-32	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	300.00	64200.00
	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
33	NS-33	Supplying and filling in plinth with local sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	1627.87	300.00	488361.00
				TOTAL [XV]		97866770.46

**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
[i] SANITARY INSTALLATIONS & C.P FITTINGS						
DSR 2012 TEMS						
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 completely 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 ltr. White PVC automatic flushing cistern.	Each	7.00	11046.80	77327.60
	17.5.4	Range of four Uninal basin with 10 ltr. 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
		Providing and fixing P.V.C. waste pipe for wash including P.V.C. waste fittings complete				
7	17.28.1	Semi rigid pipe				
	17.28.1.1	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		Providing and fixing toilet paper holder:				
	17.34.1	CP brass	Each	35.00	250.95	8783.25
10		Providing and fixing C.P brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931				
	18.53.1	15 mm nominal bore	Each	123.00	449.35	55270.05
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 C/f 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 divertor 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 & CI 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.				
		W.C. pan with ISI marked white solid plastic seat and lid.	Each	35.00	5000.00	175000.00
5	NS	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.				
		White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rest.	Each	12.00	3500.00	42000.00
Total C/f 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
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 to 300mm) 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
[iii]		FOR RAIN WATER:				
1	17.35	Providing and fixing soil, waste and vent pipes:				
	17.35.1	100mm dia				
	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 coller				
	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				
2	18.7	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 testing of joints complete as per direction of Engineer in charge.				
i	18.7.1	15mm dia. nominal bore	RM	5.00	133.95	669.75
ii	18.7.2	20mm dia. nominal bore	RM	20.00	157.15	3143.00
iii	18.7.3	25mm dia. nominal bore	RM	20.00	197.90	3958.00
iv	18.7.4	32mm dia. nominal bore	RM	5.00	252.65	1263.25

v	18.7.5	40mm dia. nominal bore	RM	10.00	348.25	3482.50
vi	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)				
i	18.17.2	32 mm nominal bore.	Each	4.00	450.90	1803.60
ii	18.17.3	40 mm nominal bore	Each	6.00	546.05	3276.30
iii	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				
i	18.18.1	15 mm nominal bore.	Each	9.00	258.05	2322.45
ii	18.18.2	20 mm nominal bore.	Each	1.00	360.20	360.20
iii	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.				
i	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:				
i	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:				
i	18.13.1	25 to 40 mm nominal bore	Each	4.00	277.35	1109.40
ii	18.13.2	50 to 80 mm nominal bore	Each	4.00	630.15	2520.60
		Total Cf to Summary			Total DSR Items [iv]	254027.00
		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 Cf 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				
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.				
i	18.7.3	25mm dia. nominal bore	RM	4.00	197.90	791.60
ii	18.7.4	32mm dia. nominal bore	RM	12.00	252.65	3031.80
iii	18.7.5	40mm dia. nominal bore	RM	12.00	348.25	4179.00
iv	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
i	18.17.2	32 mm nominal bore.	Each	8.00	450.90	3607.20
ii	18.17.4	50 mm nominal bore.	Each	3.00	780.60	2341.80
iii	18.17.5	65 mm nominal bore.	Each	3.00	780.60	2341.80
iii	18.17.6	80 mm nominal bore.	Each	1.00	1832.95	1832.95
iv		Total Cf 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.				
i		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.				
i	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
i	19.1.3	200 mm diameter	RM	90.00	323.05	29074.50
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)				
	19.7.1.1	With F.P.S. bricks with class designation 75	Each	12.00	7132.00	85584.00
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	40.00	256.75	10270.00
		Total Carried to DSR Items				272407.30
V		EXTERNAL DRAINAGE				
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) <i>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</i>				
		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	Each	10.00	7007.40	70074.00
5.0	19.10.1	Extra for depth for circular manhole 0.91m internal dia at bottom with beyond 0.91m to 1.67m.				
		With FPS Bricks class designated 75	RM	8.00	3498.25	27986.00
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	18747627.00
	Total C/F To Summary	9126330.50	18747627.00

BILL OF QUANTITIES						
SECTION-B : INTERNAL ELECTRICAL WORKS						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
I						
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.				
i	1.10.3	Group C	Point	1690.00	664.00	1122160.00
2.0	1.11	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 :-				
	1.25	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 :-				
	1.26	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
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
10.0		S/F power plug point with all accessories :-				
	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
11.0		S/F power plug point with all accessories :-				
	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 sensivity current Poin upto 300 miliampere 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, 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	2.7.4	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		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.				
	2.18		Each	5.00	693.00	3465.00
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
25.0	1.41	Installation, testing and commissioning of prewired, flourescent fitting / compact flourescent 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 fro exhaust fans of all sizes.	Each	24.00	68.50	1644.00
29.0		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.				
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 cab le 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 cab le 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 cab le 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
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 cab le 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						
1.0		S/F power plug point with all accessories :- 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
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 including lamedted sheet cover, 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	1140.00	134520.00
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	763.17	381585.00
iii		3.5 X 95 sq. mm Armoured Aluminium cable.	RM	300.00	497.00	149100.00
iv		4 X 35 sq. mm Armoured Aluminium cable.	RM	200.00	214.71	42942.00
v		4 x 16 sq.mm. Armoured Aluminium cable.	RM	500.00	132.00	66000.00
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
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 supply system.				
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				
		Two (2) Each. 300A TPN MCCB				

	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					
	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:					
	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.				
		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 MCB				
		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
xii		Capacitor Panel (250 KVAR)				
		Design, fabrication, assembling, wiring, supply installation, testing and commissioning of Automatic control panel with capacitgors, 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				
		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 – 1 set				
		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
xiii		External Feeder panel				
		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:				

		1 no. 72A contactor with 24 hrs timer circuit and selector switch with push buttons				
		Four (4) Each.32A TPN MCB	Set	1.00	50600.00	50600.00
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
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 permanantly sealed at both the ends with the lead terminal at the top along with 50 kgs of duly filled with metallic conducting compound permanantly 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 Stormaster 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 (33 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.L earth bar, earth bar, breaker featured with mechanical ON. 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 / $\sqrt{3}$ / 110 / $\sqrt{3}$ 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				
		(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				
		(e) Trip circuit supervision relay	Sets	1.00	1500000.00	1500000.00

22.0		Supply of 3 core stranded aluminium conductor 33 KV grade XLPE (UE) (Cross linked Polyethylene) insulated PVC bedded, Galvanised flat steel strip armoured cable conforming to IS : 7098 (part II with latest amendments)				
		150 sq. mm 3 core	RM	250.00	3122.00	780500.00
23.0		Design, manufacture, testing at works supply, installation, testing and commissioning at site including foundation plinth and cable trays 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% tappings in step of 1.25 bidirectional roller, diagram & rating plate, oil temperature indicator, winding temperature indicator and buccholtz 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).				
		750 KVA	No.	1.00	1350000.00	1350000.00
24.0		Supply and fixing of 33kv, 400A, 25KA/1sec, centre rotating double break isolator with earth switch on four pole structure.	No.	1.00	68250.00	68250.00
25.0	i	Supply of HT 11 KV rubber hand gloves as per relevant IS Code	Set	2.00	1000.00	2000.00
	ii	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
	iii	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
	iv	Sand Buckets-Set of Four	Nos.	1.00	2500.00	2500.00
	v	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
	vi	Mechanical foam with trolley	Set	2.00	6500.00	13000.00
	vii	Supply, installation of 1.1 KV grade ISI marked rubber mats of 1 meter width.	RM	20.00	1200.00	24000.00
	viii	Supply of standard First Aid Box. (as per relevant standard)	Nos..	1.00	1000.00	1000.00
		TOTAL FOR NON DSR ITEMS				18747627.00

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 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	89893.00
		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.				
		Bus Bar:				
		500A, TPN Al. Bus Bar of suitable length (Neutral shall be fully rated).				
		Outgoings:				
		Three (3) Nos. 250A, TPN MCCB with ON/OFF indication lamps.				
		Two (2) Nos. 32A, TPN MCB				
		Two (2) Nos.25A, DP MCB				
i		Two (2) No.Auto Star-Delta starter of 80.0 HP with 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.				
ii		One (1) No. Auto Star-Delta starter for 10.0 HP with 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.	Set	1	250000.00	250000.00
2.0		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		4 Core 4 sq. mm. Armoured Aluminium cable.	Nos.	2.00	450.00	900.00
		4 Core 2.5 sq. mm. Armoured Aluminium cable.	Nos.	4.00	350.00	1400.00
3		Supply,testing and commissioning of 1100 Volt grade XLPE insulated and sheathed aluminium conductor Armoured cables including the cost of providing required gap between adjacent cables (minimum one cable dia.) and including the cost of				
i		3.5 Core 185 sq. mm. Armoured Aluminium cable.	RM	100.00	920.50	92050.00
ii		3.5 Core 95 sq. mm. Armoured Aluminium cable.	RM	60.00	497.00	29820.00
iii		3.5 Core 50 sq. mm. Armoured Aluminium cable.	RM	60.00	295.40	17724.00
iv		4 Core 4 sq. mm. Armoured Aluminium cable.	RM	30.00	91.00	2730.00
v		4 Core 2.5 sq. mm. Armoured Aluminium cable.	RM	15.00	85.00	1275.00
II FIRE HYDRANT & SPRINKLER SYSTEM						

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).	Each	18	5940.00	106920.00
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	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.				
a		80 mm dia with lever operated	Each	4.00	3904.00	15616.00
b		150 mm dia with lever operated	Each	15.00	7335.00	110025.00
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.				
a		150 mm dia	Each	1.00	17459.00	17459.00
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)				
a)		150 mm dia	Each	1.00	10124.00	10124.00
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
		TOTAL SUMMARY				
IV		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 holdtite 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 Responce Pendent type	Each	1077.00	245.00	263865.00
b)		Normal Responce Upright type	Each	10.00	245.00	2450.00
c)		Normal Responce 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.				
			Each	12	278.00	3336.00
7.0		Providing and fixing 25 mm dia gunmetal single acting air release valve with screwed inlet tested for 20Kg/Cm2.				
			Each	3	613.00	1839.00
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' complete				
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	35000.00
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 including surface				
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 butter fly 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)	Cum	20.00	3841.00	76820.00
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.				
a)		Four way	Each	1.00	20260.00	20260.00
VI		FIRE PUMPS& ACCESSORIES				
		(All pumps should be supplied with wearing and mechaical seal. Performance curve should be approved before placing the order. All pumps should be supplied with base frame)				
1		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 conected 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.				
g)	(After surface preparations)				
h)	Material of construction: M.S				
i)	Test Pressure: 20 KG/SQ.CM.				
j)	Size of Inspection flange:450 mm dia				
k)	Height of supporting legs: 400 mm				
l)	Quantity:	Each	1	35000.00	35000.00
	Note: Contractor should submit general arrangement drawings before fabrication of vessel and ultrosonic 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 wafer 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 guage 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 conn- ected with control valve ,drain valve ,test valve and piping as per manufacturer's specifications complete in all respects.				0.00
a)	150 mm dia	Each	2	15000.00	30000.00
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.				
a)		150 mm dia	Each	1	8000.00	8000.00
20		Providing and fixing blank flanges as per table 'E' including nuts, bolts, 3mm thick rubber gasket complete in all respects.				
a)		250 mm (Suction Header)	Each	2	2000.00	4000.00
b)		300 mm (Delivery Header)	Each	2	25000.00	50000.00
		Total C/f to Summary			Total NS Items [II]	8407459.00

BILL OF QUANTITIES						
HVAC WORKS						
Sr. No.		DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
DSR ITEMS						
1.0	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	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 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	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 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	100 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 50 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 cab le 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	600.00	44.00	26400.00
7.0	7.8	Laying of one number PVC insulated and PVC sheathed / XLPE power cab le of 1.1 KV grade 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	38.50	30800.00
	7.8.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	RM	1700.00	72.50	123250.00
					TOTAL	688759.00
		Total Carried to Summary				688759.00
NON DSR ITEMS						
8.0		Lower Ground floor:				
		Supply, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet 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, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet 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, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet 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, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet 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, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	2.00	2000.00	4000.00
		16 A MPCB	Nos.	1.00	1750.00	1750.00
13.0		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/ 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	45000.00	180000.00
v		Auto Star Delta starter of 10 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.	6.00	17500.00	105000.00
vi		Auto DOL starter of 3 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	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.				
		4 X 6 sq. mm	Each	16.00	125.00	2000.00
		4 X 4 sq. mm	Each	6.00	100.00	600.00
		4 X 2.5 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.				
i	3.5 Core 300 sq. mm	RM	1000.00	1407.00	1407000.00
	3.5 Core 95 sq. mm	RM	300.00	497.00	149100.00
	3.5 Core 50 sq. mm	RM	500.00	295.40	147700.00
	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
	4 X 2.5 sq. mm	RM	100.00	80.00	8000.00
16.0	HVAC Panel				
	Incoming:				
	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. 800A 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 MPCB				
	Two (2) Each. 16A TPN MCB	Set	1.00	1500000.00	1500000.00
17.0	Ventilation Panel				
	Incoming:				
	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 MPCB				
	Two (2) Each. 16A TPN MCB	Set	1.00	25000.00	25000.00
II	EQUIPMENT				
1.0	WATER CHILLING MACHINES:				
	Water Centrifugal chilling M/C :				
	Supply of Imported Water Cooled Chilling M/C of following capacity at below mentioned operating conditions with R-134a refrigerant, open drive compressor, driven by suitable KW air cooled open drip proof Sq. Cage induction motor/semi hermetic motor complete with watercooled shell & tube condenser, insulated shell and tube flooded chiller flanged connections, flow switches in condenser & chiller, refrigerant piping, Refrigerant and Oil (First Charge), Microprocessor based control panel with solid state starter & accessories etc, all mounted on common MS frame. Motor shall be suitable for 415 volts \pm 10%, 50Hz \pm 5 %, 3phase AC supply. Machines shall be suitable for				
	Condenser CDW IN - 32.2° C / 90.0 ° F				
	CDW flow - 1200 USGPM				
	FF - 0.00075 FPS				
	Max pressure drop in water circuit thru condenser - 8.5mts WC(13PSI)				
	Chiller CHW IN - 12.2° C / 54.0 ° F				
	CHW OUT - 5.55 ° C / 42.00 ° F				
	Chiller flow - 976USGPM				
	FF - 0.0025 FPS				
	Max pressure drop in water circuit thru chiller - 6mts WC(9PSI)				
	Total kw of the chiller at full load shall be less than or equal to 0.6 IKW/TR				
	The performance of the unit shall be certified in accordance with ARI standard 550/ 590.				
	The Compressor shall be able to provide 15% to 100% stepless capacity control at constant condenser entering water temperature.				
	The performance selection shall be checked with ARI by sending the computerized selection data. The tenderer is required to submit the computerized performance sheet alongwith part load data at the time of tendering				
	The System should be compatible with the BMS having the facility to perform the function thru BMS viz remote chiller start and stop, remote leaving chilled water temperature adjustment, remote current limit setpoint, remote ready to start contacts, safety shutdown contacts, run contacts etc.				
	(The system shall be complete in all respects viz Drive, lubrication sytem, evaporator, condenser, solid state starter, refrigerent sytem, controller, communication port for BMS).				
	Balance work such as port clearance all duties, freight from port to site, packing, insurance upto installing, loading, unloading, hoisting etc. as required shall be included. The chilling machine as described above shall be inline with specification.				
	For balance work (such as port clearance, all duties, freight from port to site , packing, insurance up to install, loading , unloading etc. as required shall be in Indian Rupees.				
	The price quoted for Installation, testing and commissioning of imported Centrifugal Water Chilling Machine in Indian Rupees.				
	400TR Water Cooled Centrifugal Chillers as above (3W+1S)	Nos.	4.00	8500000.00	34000000.00
2.0	PUMPS:				
2.1	Chilled Water Pumps:				
	Primary Circuit:				
	Supply, installation, testing and commissioning of end suction vertical split casing centrifugal pumps for chilled water recirculation, complete with TEFC squirrel cage motor, love-joy coupling, all mounted on common base plate with necessary accessories. Capacity of pump sets, net head is as given below. All the pumps mentioned below shall also be complete with vibration isolators (spring mounted), mechanical seals, gland drain connections, and shall be suitable for operation on 415 \pm 10% Volts, 50 Hz, 3 Phase AC power supply. The efficiency of the pump should not be less than 82%				
Note:	Total Static pressure given below is minimum required for the system. Actual static pressure shall be calculated and confirmed by the vendor at the time of bidding.				
	976USGPM x 18m head, 25HP motor (3W+1S)	NOS	4.00	175000.00	700000.00
2.2	Secondary Circuit				

	Supply, installation, testing & commissioning of end suction vertical split casing centrifugal pumps for chilled water recirculation, complete with TEFC squirrel cage motor, love-joy coupling, all mounted on common base plate, control panel for variable frequency drive, Pump logic controller, differential pressure sensor /transmitters of approved make. Complete with all accessories, making it ready for commissioning on site				
Note:	Total Static pressure given below is minimum required for the system. Actual static pressure shall be calculated and confirmed by the vendor at the time of bidding.				
	1320USGPM x 40m head, 60HP motor (1W+1S)	NOS	2.00	500000.00	1000000.00
	1920USGPM x 40m head, 100HP motor (1W+1S)	NOS	2.00	800000.00	1600000.00
2.3	Condenser Water Pump:				
	Supply, installation, testing and commissioning of double suction vertical split casing either top suction top discharge or side suction top discharge centrifugal pumps for condenser water recirculation, complete with TEFC squirrel cage motors, base plate, with suitable flexible coupling and all necessary accessories. Capacity of pump sets, nett head is as given below. All the pumps mentioned below shall also be complete with vibration isolators (spring mounted), mechanical seals, gland drain connections, and shall be suitable for operation on 415 ± 10% Volts, 50 Hz, 3 Phase AC power supply. The				
Note:	Total Static pressure given below is minimum required for the system. Actual static pressure shall be calculated and confirmed by the vendor at the time of bidding.				
	1600 USGPM x 25M head, 40HP motor (3W+1S)	NOS	4.00	200000.00	800000.00
3.0	COOLING TOWERS:				
	Supply, installation, testing and commissioning of FRP induced draught type cooling towers each complete with FRP basin having and auxiliary rectangular suction tank at the bottom. The basin shall be complete with connections for drain, overflow, makeup water, quick fill and float valve, plus hot dipped galvanised suction strainer FRP body, of sufficient strength to with stand wind velocities upto 60 m/s, vibrations and earth quakes, fan and motor assembly conforming to IP-55, protection for outdoor operation fill media of honeycomb design arranged in the suitable pattern for ease of replacement, distribution pipes consisting of PVC sprinkler pipes mounted on top of the main supply standby, sprinkler head mounted on ball bearings designed to take both radial and vertical thrust overflow pipe, ladder, vibration isolation pads, cables, controls, electrical isolator etc as per specifications and drawing.				
	400TR ,(2 X 10 H P MOTOR)	NOS	3.00	500000.00	1500000.00
3.1	Pressurized Expansion tank with site glass, Air seperator with pump & accessories				
	Supply, installation, testing & commissioning of Pressurized expansion tanks & air seperator with pump, controls, safety devices & accessories etc, mounted on MS frame				
	1000 Liters tank chilled/hot water circuit for pressure rating of 125 psi	Set	1.00	15000.00	15000.00
3.2	Condenser Water Piping:				
	Supplying, laying, fixing, testing & commissioning MS class 'C' pipes conforming to IS 1239/3589, cut to required length with necessary, clamps, supports, antivibration pads, hangers, fittings such as bends, tees, reducers etc and installed with all welded joints complete as per specification & drawings.				
	500 mm dia MS pipes (Minimum 6mm thickness)	RM	10.00	26350.00	263500.00
	450 mm dia MS pipes (Minimum 6mm thickness)	RM	180.00	23440.00	4219200.00
	250 mm dia MS pipes (Minimum 6mm thickness)	RM	140.00	8850.00	1239000.00
4.0	Supply, fixing & commissioning of valves & accessories :				
	Condenser water circuit - PN-16 rated valves				
i	Providing and fixing in position Motorised Butterfly valves				
	250 mm dia	NOS	22.00	75000.00	1650000.00
	500 mm dia	NOS	3.00	400000.00	1200000.00
	50 mm dia	NOS	6.00	28000.00	168000.00
ii	Providing and fixing in position Check valves wafer type				
	250mm dia	NOS	4.00	37500.00	150000.00
iii	Providing and fixing in position gun metal gate valve, calibrated in metric & British				
	32 mm dia	NOS	3.00	2000.00	6000.00
iv	Providing and fixing in position Flexible connection				
	250mm dia	NOS	16.00	15000.00	240000.00
v	Providing and fixing in position Manually Operated Balancing valves				
	250mm dia	NOS	7.00	22000.00	154000.00
vi	Providing and fixing in position Flow switch				
	250mm dia	NOS	4.00	12300.00	49200.00
vii	Providing and fixing in position Pot strainer with magnet				
	500mm dia (SSCPL model)	NOS	1.00	350000.00	350000.00
viii	Providing and fixing in position Mercury in glass thermometers with V groove for protection				
		NOS	14.00	500.00	7000.00
ix	Providing and fixing in position Dial type Pressure gauge with gun metal gate valve, calibrated in metric & British units				
		NOS	22.00	1000.00	22000.00
x	Providing and fixing in position Y strainer				
	250mm dia	NOS	4.00	13000.00	52000.00
5.0	Chilled Water Piping:				
	Supplying, laying, fixing, testing & commissioning MS class 'C' pipes (G.I. 'B' class for condensate drain) conforming to IS 1239/3589, cut to required length with necessary, clamps, supports, antivibration pads, hangers, fittings such as bends, tees, reducers etc and installed with all welded joints complete as per specification & drawings. Pipes shall be wrapped in factory laminated closed cell insulation of class "O" rating.				
	500 mm dia MS pipes	RM	10.00	35575.00	355750.00
	350 mm dia MS pipes	RM	240.00	15115.00	3627600.00
	300 mm dia MS pipes	RM	165.00	13655.00	2253075.00
	250 mm dia MS pipes	RM	150.00	11505.00	1725750.00
	200 mm dia MS pipes	RM	230.00	9290.00	2136700.00
	50 mm dia MS pipes	RM	15.00	1465.00	21975.00
6.0	Providing and fixing in position for Chilled water circuits - PN-16 rated valves duly insulated				
i	Providing and fixing in position Manual Butterfly valves				
	200 mm dia	NOS	28.00	30000.00	840000.00
	450 mm dia	NOS	3.00	70000.00	210000.00
ii	Providing and fixing in position Check valves wafer type				
	200mm dia	NOS	8.00	30000.00	240000.00
iii	Providing and fixing in position Flexible connection				
	200mm dia	NOS	24.00	14000.00	336000.00
iv	Providing and fixing in position Flow switch				
	200mm dia	NOS	4.00	12300.00	49200.00
v	Providing and fixing in position Y strainer				
	200 mm dia pipe	NOS	8.00	25000.00	200000.00
vi	Providing and fixing in position Dial type Pressure gauge with gun metal gate valve, calibrated in metric & British units				
		NOS	24.00	1000.00	24000.00
vii	Providing and fixing in position Mercury in glass thermometers with V groove for protection				
		NOS	8.00	500.00	4000.00
viii	Providing and fixing in position Pot strainer with magnet				

	450mm dia (SSCPL model)	NOS	1.00	315000.00	315000.00
I)	AIR CIRCULATION SYSTEM:				
1.0	AIR HANDLING UNIT:				
	Supply, installation, testing and commissioning of factory fabricated Double Skin Chilled/Hot 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 \pm 10%, 50 Hz \pm 5% AC supply, 6 Rows ARI certified cooling coil made of Aluminium finned 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 duly 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 ur 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 specificatio n& drawing (for W.C. and bathroom door shutter),ainless steel bolt to provide a minimum anchoring depth of 50 - 80 mm. in th				
	Floor Mounted AHUs (6 Rows coil):				
	Lower Ground floor:				
	5500cfm, 11TR, 5HP, 50mmSP	Nos	1.00	330,000.00	330,000.00
	5800cfm, 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, 19TR, 5HP, 50mmSP	Nos	1.00	540,000.00	540,000.00
	Ground floor:				
	5800cfm, 17TR, 5HP, 50mmSP	Nos	1.00	348,000.00	348,000.00
	7700cfm, 29TR, 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, 38TR, 10HP, 50mmSP	Nos	1.00	900,000.00	900,000.00
2.0	Ceiling suspended AHUs (6 Rows coil):				
	First floor				
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 pump& drain pump failure alarm, pipe connections through copper pipes, Infraed, remote control, LCD display, 3 fan sped plus auto fan 4 direction air flow, auto swing louver etc.condensate drain connections, with required Set of ball valves with strainers (supply), without strainers (Return), All units shall be suitable for 220 \pm 10%volts, 50 cycles single phase power supply etc. complete as per specification.				
a)	1200cfm, 3TR	Nos	1.00	75,000.00	75000.00
b)	1000cfm, 2.5TR	Nos	10.00	62,500.00	625000.00
c)	600cfm, 1TR	Nos	4.00	37,500.00	150000.00
4.0	Split Type AC units				
	Supply, installation, testing and commissioning of inverter split type AC units with Hi wall indoor units complete with finned coil, fan section with motor, air filters, filter box, double drain pan, wiring & accessories, outdoor air cooled condenser units with insulated interconnected 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	26500.00
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 finned 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 finned 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 MCBs near the room units to outdoor units complete in all respect including earthing.				
	Providing, fixing and testing 25 mm /32 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 Net Sensible cooling capacity (@ 21 Deg. C +/- 2 inside temp. , RH : 50+/-5%), 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, signa galvanised brackets of approved 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
II)	PIPING:				

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, antivibration 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 "O" 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)	50mm dia MS pipes	RM	55.00	1,050.00	57750.00
h)	40mm dia MS pipes	RM	15.00	975.00	14625.00
i)	32mm dia MS pipes	RM	50.00	850.00	42500.00
j)	25mm dia MS pipes	RM	150.00	700.00	105000.00
k)	20mm 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
2.0	Providing and fixing in position Butterfly valves				
a)	80 mm dia	Nos	8.00	4,000.00	32000.00
b)	65mm dia	Nos	20.00	3,650.00	73000.00
c)	50mm dia	Nos	14.00	3,250.00	45500.00
d)	40mm dia	Nos	2.00	3,175.00	6350.00
3.0	Providing and fixing in position Ball Valve set comprising one ball valve with strainer and one valve w/o strainer				
a)	20mm dia	Set	4.00	3,000.00	12000.00
b)	25 mm dia	Set	11.00	3,500.00	38500.00
4.0	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(for dia 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 (upto 37 USGPM flow rate)	Nos	1.00	35,000.00	35000.00
	50/65/80mm dia (upto 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)	65mm dia pipe	Nos	10.00	5,000.00	50000.00
c)	50mm dia pipe	Nos	7.00	4,500.00	31500.00
d)	40mm dia pipe	Nos	1.00	4,000.00	4000.00
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	39600.00
7.0	Providing and fixing in position Mercury in glass thermometers with V groove for protection	Nos	44.00	350.00	15400.00
8.0	Providing and fixing in position Auto air purging valves				
	15 mm dia	Nos	44.00	900.00	39600.00
III)	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				
	26 SWG	SQMT	935.00	550.00	514250.00
	24 SWG	SQMT	1950.00	650.00	1267500.00
	22 SWG	SQMT	890.00	750.00	667500.00
	20 SWG	SQMT	230.00	850.00	195500.00
	18 SWG	SQMT	150.00	1,000.00	150000.00
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.	SQMT	8.00	5,500.00	44000.00
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.).				
a)	Actuator operated Smoke cum fire dampers (as per actual sizes from drawings)	SQMT	30.00	30,000.00	900000.00
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	SQMT	85.00	10,500.00	892500.00
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	SQMT	78.00	4,500.00	351000.00
6.0	Return Air Grills:				
	Supplying, installing, testing and balancing of return air grilles (Linear/single louvred) with volume control dampers of various sizes. Each grill shall have be 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).	SQMT	15.00	10,000.00	150000.00
7.0	Fresh Air Louvers:				
	Supplying, installing and balancing of fresh/exhaust air anodized aluminum intake louvers with bird screen & aluminum volume control damper, complete as per specification & drawings				
a)	Fresh Air Louvers (With bird screen & VCD)	SQMT	5.00	12,500.00	62500.00
b)	Exhaust Air Louvers (with birdscreen but Without VCD)	SQMT	2.50	6,500.00	16250.00
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	2750000.00
IV)	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.				
a)		25mm thick acoustic lining.	SQMT	500.00	450.00	225000.00
2.0		Supply, fixing & testing of Acoustic silencers in return air passage within AHU rooms capable of noise reduction by 10db				
a)		22G GSS with 50/100mm thk acoustic lining in acoustic silencers	SQMT	20.00	1,000.00	20000.00
3.0		Thermal Insulation:				
		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 & density complete as per specifications.				
a)		19 mm thick insulation.	SQMT	3100.00	500.00	1550000.00
4.0		Roof Exposed Insulation:				
		Supply, installation, testing and commissioning of 70 mm thick XPS Insulation having density of 32kg	SQMT	3325.00	1,200.00	3990000.00
V)		VENTILATION SYSTEM:				
		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.				
1.0						
a)		Axial flow fans for liftwell pressurization 8000cfm, 25mm SP, 3HP 415±10% volts 50Hz power supply	Nos	1.00	240,000.00	240000.00
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				97,029,000.00

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
		Non DSR				
I		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 it's 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/40Ohm, Supply Input 230/240V 50 Hz, DC 24V, 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 instalation as per requirement on surface including all end terminations complete in all respect for succesful commissioning for fire detection and PAVA system.	RM	4000	250.00	1,000,000.00
		TOTAL SUB HEAD LOW VOLTAGE				4828320.00

MECHANICAL SCIENCES BUILDING

CONSTRUCTION OF MECHANICAL SCIENCES BUILDING (PHASE-II) AT N.I.T. ROURKELA

ABSTRACT OF COST			
	DESCRIPTION	D.S.R AMOUNT	NON-DSR AMOUNT
1	CIVIL WORKS	266099311.80	81131324.89
2	PLUMBING WORKS	3373096.35	5477781.36
3	ELECTRICAL WORKS	12744192.50	22604351.00
4	FIRE FIGHTING WORKS	89893.00	6889415.00
5	HVAC	360960.00	71269115.00
6	SOLAR ENERGY		10541085.00
7	FDA		7729030.00
	SUB TOTAL	282667453.65	205642102.26
	G.TOTAL	488309555.90	

CONSTRUCTION OF MECHANICAL SCIENCES BUILDING (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	2136416.60	
II	CONCRETE WORK	4673168.62	
III	REINFORCED CEMENT CONCRETE	173847744.17	
IV	BRICK WORK	9657229.03	
V	STONE WORK	11475050.21	
VI	MARBLE WORK	7036110.21	
VII	WOOD WORK	647550.49	
VIII	STEEL WORK	6138669.44	
IX	FLOORING	29091843.46	
X	ROOFING	5281617.07	

MECHANICAL SCIENCES BUILDING

BILL OF QUANTITIES

CIVIL WORKS

S No	Ref DSR 2012 item	DESCRIPTION	UNIT	TOTAL QTY	RATE (in Rs)	AMOUNT (in Rs)
I EARTH WORK 2.0						
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	2.6.1 2.7	All kinds of soil 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.	Cu.M	8956.04	129.35	1158463.52
3	2.7.1 2.8	Ordinary Rock 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.	Cu.M	895.60	197.75	177104.90
4	2.8.1 2.9	All kinds of soil 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.	Cu.M	803.50	130.80	105097.68
	2.9.1	Ordinary Rock	Cu.M	80.35	212.00	17034.20
5	2.24.1	In or under water and/or liquid mud, includig pumping out water as required.	metre depth	3.20	26.16	83.71
6	2.24.2	In or under foul position,including pumping out water as required.	metre depth	3.20	32.70	104.64
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	6955.44	83.80	582865.87
8	2.26	Extra for every additional lift of 1.5 m or part thereof in:				
i)	2.26.1	All kinds of soil	Cu.M	895.60	34.60	30987.89
ii)	2.26.2	Ordinary or hard rock	Cu.M	89.56	62.00	5552.72
9	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 pavement).	Cu.M	200.00	110.75	22150.00
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.				
	2.28.1	All kinds of soil.	100 Sq.M	60.54	935.25	56624.24
11	2.32	Clearing grass and removal of the rubbish upto a distance of 50 m outside the periphery of the area cleared.	100 Sq.M	43.59	247.00	10767.22
12	2.36	Deduct for disposed soil levelled and neatly dressed.	Cu.M	1200.00	-25.35	-30420.00
					TOTAL	2136416.60
					TOTAL [I]	2136416.60
II CONCRETE WORK 4.0						
13	4.1	Providing and laying in position cement cncrete 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	1217.91	3593.30	4376316.00
14	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, parapetx,coping, bed blocks, anchor blocks, plain window sills, fillets, etc. upto floor five level, excluding the cost of centring, shuttering and finishing:				
	4.2.3	1:2:4 (1 cement :2 coarse sand : 4 graded stone 20 mm nominal size)	Cu.M	16.36	5272.40	86256.46
	4.2.5	1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size)	Cu.M	13.18	4782.35	63031.37
15	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)	Sq.M	191.91	207.55	39830.26
16	4.12	Extra for providing and mixing proofing material in cement concrete work @ 1 Kg per 50kg of cement as per manufacture's specification.	per 50 kg cement	49.90	35.35	1763.82
16	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.	Sq.M	191.91	96.65	18547.79
17	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	258.08	338.75	87422.91

				TOTAL	4673168.62
				TOTAL [II]	4673168.62
III REINFORCED CEMENT CONCRETE 5.0					
18	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	70.00	5735.75
19	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	386.34	166.90
ii	5.9.2	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	Sq.M	176.58	285.15
iii	5.9.3	Suspended floors, roofs, landings, balconies and access platform.	Sq.M	15415.75	311.20
iv	5.9.5	Lintels, beams, plinth beams, girders, bressumers and cantilevers.	Sq.M	14627.78	262.25
v	5.9.6	Columns, pillars, piers, abutments, posts and struts	Sq.M	9958.47	365.30
vi	5.9.7	Stairs, (excluding landings) except spiral staircases	Sq.M	392.26	326.30
vii	5.9.14	Extra for shuttering in circular work (20% of respective centring and shuttering items)			
		For Foundation [Rate=20% of 119.25 =23.85]	Sq.M	35.00	33.38
		For Circular Slabs [Rate=20% of 187.35 =37.47]	Sq.M	50.00	62.24
		For Curved Beams [Rate=20% of 162.65 =32.53]	Sq.M	20.00	52.45
		Circular Sides [Rate=20% of 61.10 =12.22]	Sq.M	60.00	62.24
		Circular Columns [Rate=20% of 238.40 =47.68]	Sq.M	50.00	73.06
viii	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.	Sq.M	244.61	166.90
ix	5.9.16	Edges of slabs and breaks in floors and walls,			
x	5.9.16.1	Under 20 cm wide	R.M.	5268.48	99.45
xi	5.9.17	Cornices and mouldings	Sq.M	198.30	495.50
xii	5.9.19	Weather shade, Chajjas, corbels etc. including edges	Sq.M	620.22	411.10
xiii	5.9.13	Vertical and horizontal fins individually or forming box louvers band, fascia and eaves boards.	sqm	100.00	470.10
20	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, landings, beams and balconies (plan area to be measured.)	Sq.M	841.31	121.65
21	5.22	Steel 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	887456.40	62.25
22	5.22A	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete. Above Plinth Level.			
	5.22.6	Thermo Mechanically Treated bars.	Kg	669759.45	62.25
23	5.29	Providing and fixing sheet 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.	936.00	312.35
24	5.30	Add or deduct for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.			
			R.M.	750.20	22.25
25	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			
	5.33.1	All works upto plinth level.	CUM	579.02	5242.15
	5.33.2	All works above plinth level upto floor V level.	CUM	505.91	5781.50
26	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.			
	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	180.00	63.20
27	5.35	Add for using extra cement in the items of design mix over and above the specified cement content therein.	Qtl	350.00	589.80
28	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			
	5.37.1	All works upto plinth level.	CUM	579.02	5590.60
	5.37.2	All works above plinth level upto floor V level.	CUM	505.91	6130.00

29	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 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 directions of the Engineer-in-charge.				
	5.40.1	All works upto Plinth level	Cu.M	4632.12	5519.40	25566523.13
	5.40.2	All works above plinth & upto Floor V Level	Cu.M	4047.30	6059.20	24523400.16
					TOTAL	173847744.17
					TOTAL [III]	173847744.17
IV 6.0 BRICK WORK						
30	6.1	Brick work with common burnt clay F.P.S. (non modular) brick of class designation 7.5 in foundation and plinth in :				
	6.1.2	Cement mortar 1:6 (1Cement :6 Coarse sand)	Cum	859.17	3316.55	2849480.26
31	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	923.83	3876.15	3580903.65
32	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)	Sq.M	5688.29	476.85	2712461.09
33	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)	Sq.M	8126.13	63.30	514384.03
					TOTAL	9657229.03
					TOTAL [IV]	9657229.03
V STONE WORK						
34	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	480.00	1234.20	592416.00
35	7.39	Extra for stone work for wall lining on exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.				
	a)	Height exceeding 10m but not exceeding 13m	Sq.M	160.52	65.85	10570.24
	b)	Height exceeding 13m but not exceeding 16m	Sq.M	142.52	131.70	18769.88
	c)	Height exceeding 16m but not exceeding 19m	Sq.M	28.50	263.40	7506.90
36	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	4055.70	1989.40	8068409.58
37	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 teh Engineer-in-charge.	Each	16223.00	171.20	2777377.60
					TOTAL	11475050.21
					TOTAL [V]	11475050.21
VI 8.0 MARBLE WORK						
38	8.2	Providing and fixing 18mm thick gang saw cut mirror polished pre moulded and prepolished) 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	2269.82	3083.40	6998758.21
39	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	80.00	185.80	14864.00
40	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	80.00	281.10	22488.00
					TOTAL	7036110.21
					TOTAL [VI]	7036110.21

49	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	746.70	258.20	192797.94
50	11.20	Chequered 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 mm 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	403.35	789.55	318467.99
51	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 naqar plain	Sq.M	658.52	1265.35	833261.71
(ii)	11.23.5	Udaipur green marble	Sq.M	567.77	1418.95	805634.40
52	11.24	Extra for pre finished nosing to treads of steps of marble stone.	R.M.	576.00	197.75	113904.00
53	11.25	Extra for marble stone flooring in treads of steps and risers using single length up to 2.00 metre	Sq.M	403.54	230.55	93035.22
54	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	10377.92	945.70	9814395.21
55	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 the shade of the slabs, including rubbing and polishing complete.	Sq.M	421.95	954.10	402583.35
56	11.31	Extra for pre finished nosing in treads of steps of kota stone / sand stone slab.	R.M.	277.08	52.45	14532.85
57	11.36	Providing and fixing quality ceramic glazed wall tiles conforming to IS:15622(thickness to specified by the manufacture)of approved make in all colours , shades excepted burgundy, bottle green,black of any size as approved by Engineer -in-charge in skirting ,risers of steps and dado over 12 mm thick bed of cement mortar 1:3 (1 cement :3 coarse sand) and jointing with gry cement slurry @ 3.3.kg per sqm including pointing in white cement mixed with pigment of matching shade complete.	Sq.M	4488.60	724.25	3250868.55
58	11.37	Providing and laying ceramic glazed floor tiles 300x300mm (thickness to be specified by the manufacture) of 1st 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	325.00	764.55	248478.75
59	11.41	Providing and laying 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	5721.09	1337.10	7649669.44
(ii)	11.41.4	Size of Tile 100x100cm	Sq.M	2382.22	2246.10	5350696.62
					TOTAL	29091843.46
					TOTAL [IX]	29091843.46
X ROOFING 12.0						
60	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	Sq.M	991.48	109.05	108120.35
61	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.	Nos	42.00	148.75	6247.50
62	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	4998.79	1033.70	5167249.22
					TOTAL	5281617.07
					TOTAL [X]	5281617.07
XI FINISHING 13.0						
63	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	1161.95	143.55	166797.92
ii	13.2.2	1:6 (1 cement: 6 fine sand)	Sq.M	23050.78	130.20	3001211.36
64	13.4	12 mm cement plaster of mix:				
	13.4.1	1:4 (1 cement: 4 fine sand)	Sq.M	5956.97	132.10	786915.74

65	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	204.84	173.10	35457.80
66	13.16	6 mm cement plaster of mix:				
	13.16.1	1:3 (1 cement: 3 fine sand)	Sq.M	14952.01	101.00	1510153.01
67	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.				
	(a)	Ht Exceeding 10.0m but not exceeding 13.0m	Sq.M	1058.72	28.85	30544.07
	(b)	Ht Exceeding 13.0m but not exceeding 16.0m	Sq.M	1058.72	57.70	61088.14
	(c)	Ht Exceeding 16.0m but not exceeding 19.0m	Sq.M	211.74	115.40	24434.80
68	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	28167.54	83.80	2360439.85
69	13.37	White washing with lime to give an even shade:				
	13.37.1	New work (three or more coats)	Sq.M	5794.34	11.75	68083.50
70	13.42	Distempering 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	19717.27	37.35	736440.03
71	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 ltr/ 10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm)	Sq.M	1631.87	67.50	110151.23
72	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	1380.80	24.70	34105.76
	13.50.3	With ready mixed red oxide zinc chromate primer of approved brand and manufacture on steel galvanised iron/steel works.	Sq.M	556.16	20.70	11512.51
73	13.69	Polishing on wood work with ready mixed wax polish of approved brand and manufacture :				
	13.69.1	New work	Sq.M	1380.80	60.50	83538.40
74	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	1500.00	53.00	79500.00
75	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 surface even and smooth complete.	Sq.M	28167.54	76.05	2142141.42
76	13.83	Wall painting with premium acrylic emulsion paint of interior grade, having VOC (Volatile Organic Compound) content less than 50 grams/ litre, of approved brand and manufacture, including applying additional coats wherever required, to achieve even shade and colour.				
	13.83.2	Two Coats	Sq.M	7041.89	61.45	432724.14
77	13.84	Painting with synthetic enamel paint, having VOC (Volatile Organic Compound) content less than 150 grams/ 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	828.43	53.90	44652.38
					TOTAL	11719892.06
					TOTAL [XI]	11719892.06
XII ROAD WORK 16.0						
78	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	241.00	61.25	14761.25
79	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	96.40	536.65	51733.06
80	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 course 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	144.60	1651.20	238763.52
					TOTAL	305257.83
					TOTAL [XII]	305257.83
XIII DRAINAGE 19.0						

81	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 design.	Nos	28.00	256.75	7189.00
	19.18	Supplying and fixing C.I. cover without frame for manholes:				
82	19.18.3	560 mm diameters C.I.cover (heavy duty) the weight of cover to be not less than 108 kg.	Nos	2.00	5289.10	10578.20
83	19.4.1.1	Providing and fixing S.W gully trap with F.P.S Brick class designation 75	Each	18.00	1256.35	22614.30
					TOTAL	40381.50
					TOTAL [XIII]	40381.50
IX ALUMINIUM WORK 21.0						
84	21.4	Providing and fixing double action hydraulic floor spring of approved brand and manufacture conforming to IS : 6315, having brand logo embossed on the body / plate with double spring mechanism and door weight upto 125 kg, for doors, including cost of cutting floors, embedding in floors as required and making good the same matching to the existing floor finishing and cover plates with brass pivot and single piece M.S. sheet outer box with slide plate etc. complete as per the direction of Engineer-in-charge				
	21.4.1	With stainless steel cover plate minimum 1.25 mm thickness	Nos	32.00	1953.10	62499.20
85	21.18	Providing and fixing 12 mm thick frameless toughened glass door shutter of approved brand and manufacture, including providing and fixing top & bottom pivot & spring type fixing arrangement and making necessary holes etc. for fixing required door fittings, all complete as per direction of Engineer-in-charge (Door handle, lock and stopper etc to be paid separately).	Sq.M	12.00	4444.75	53337.00
					TOTAL	115836.20
					TOTAL [IX]	115836.20
X WATER PROOFING 22.0						
86	22.7	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75 kg/sq. of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300mm height including cleaning the surface before treatment. b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115 mm size with 50% of cement mortar 1:5 (1 cement: 5 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge over 20 mm thick layer of cement mortar of mix 1:5 (1 cement : 5 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge to required slope and treating similarly the adjoining walls upto 300 mm.				
	22.7.1	height including rounding of junctions of walls and slabs c) After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS: 2645 and approve by Engineer-in-charge. d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement : 4 coarse sand) admixed with wwater proofing compound conforming to IS: 2645 and approved by Engineer-in-charge including laying glass fibre cloth aproved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 3mm deep. e) The whole terrace so finished shall be flooded with water for a minimum period to two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Chage:	Sq.M	4998.79	786.70	3932544.91
					TOTAL [X]	3932544.91
XI NON SCHEDULE ITEMS						
1	N.S-1	Diluting and injecting chemical emulsion for PRE-CONSTRUCTIONAL Anti-termite treatment and creating continous chemical barrier, wall trenches, top surface of plinth filling, along the external perimeter of building, over the top surface of consolidated earth of which apron is to be laid, surroundings of pipes and conduits etc. complete as per specification. (Plinth area of the building at ground floor only shall be measured for payment). Chlorpyriphos Emulsifiable concentrate of 20% with 1% Concentration.	Sq.M	4843.56	310.39	1503392.59
2	N.S-2	Providing and Fixing ISI marked 35mm thick flush Prelaminated door shutter, (with 1mm thick lamination on both sides) core of block board construction with frame of 1st class hardwood and well matched Commercial 3 ply veneering and as approved by Engineer	Sq.M	690.40	2816.00	1944166.40
3	N.S-3	Brick work flyash cement brick class desination 75 above plinth level cement mortar Cement mortar 1:6 (1 cement: 6 coarse sand)	Cu.M	395.93	3589.32	1421119.47
4	N.S-4	Half brick work flash cement brick of class desination 75 cement mortar 1:4 (1 cement : coarse sand) including scofolding and curing etc, complete as per specification superstructure above plinth level upto floor level cemetrn mortar 1:4 (1cement :4 saand)	Sq.M	2437.84	378.41	922503.03

		Cement mortar 1:4 (1 cement : 4 coarse sand)				
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 lazer beam equipment to ensure 100 per cent 'X' axis and 'Y' axis alignment. □	Sq.M	1267.97	7134.00	9045697.98
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	140.89	5312.00	748407.68
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	568.08	2769.00	1573013.52
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	155.40	610.00	94794.00
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	1475.00	150.00	221250.00
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.	Sq.M	273.83	3396.00	929926.68
11	N.S-11	Fabrication, supply and installation of 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 900mm & 950mm high baluster	Sq.M	291.89	4820.00	1406909.80
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 than84 % (for Akutex T surface)	Sq.M	1018.49	6073.40	6185697.17
13	NS.13	Providing & Fixing stainless steel pipe of 75mm dia of 1.6mm thickness of SS304 grade on Terrace shown on drawings	Rm	252.00	1827.00	460404.00
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	1212.16	2141.00	2595234.56
15	N.S-15	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 system of 15mm grid, hanging gridconsisting 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. 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. 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.	Sq.M	7945.52	1604.00	12744614.08

16	N.S-16	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.	Sq.M	724.93	441.00	319694.13
17	N.S-17	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 , Aluminum Glazing sections shall be powder coated with heat treatment on three surfaces in Ivory/Black colour using 6mm thick TOUGHENED SGG EVO Star ET 425 AURA GREEN HEAT REFLECTIVE GLASS VLT-24%, Solar Factor- 0.25 and U-value- 3.72 W Sqm K of Saint-Gobain makeof 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 Aluminum 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	Sq.M	761.52	5662.00	4311726.24
18	N.S-18	Providing and applying Silicon Based Water repellent coating by brush or by spray.	Sq.M	3154.43	232.00	731827.76
19	N.S-19	WATER PROOFING TREATMENT WITH KRYSTOL T1+T2 SYSTEM 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 makeing 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	204.84	737.00	150967.08
20	N.S-20	Wooden Flooring (DIAS) 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 required in desired shape and size of approved colour and texture. including front cladding of stage riser 38mm thick parquet (wood block) flooring of first class teak wood laid over 25mm thick levelling layer of cement concrete 1:2:4 (1Cement :2Coarse Sand :4 Stone aggregate 10mmnominal size) to be paid separately coated with a thin layer of hot bitumen (blown type) @ 2.45 kg per sqm. including fixing blocks in position after dipping in hot bitument (blown type) upto half depth, planded, levelled smooth and finished complete	Sq.M	12.56	4913.00	61707.28
21	N.S-21	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	677.58	1396.00	945901.68
22	N.S-22	Carpetting Supplying & fixing of 4.3mm thickness heavy commercial range flocced flooring with advantage of water proof, antifungal, allergy proof sanitized, total weight 1.8 kg/m2, fire resistant, stain resistant duly installed at floor.	Sq.M	410.04	3008.00	1233400.32
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	851.70	1670.00	1422339.00
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 Fure Resistance of more than 11KW/m2 as per ISO 9329-1	Sq.M	2827.80	2193.00	6201365.40
25	N.S-25	Acid Proof Tiles Providing and fixing Acid Proof Tiles 300x300mm Premium Quality of approved colour & shade laid over 20mm thick cement mortar 1:4 (1 cement :4 Coarse Sand) jointed & pointed in white cement mixed with pigment to match the shade of the tile.	Sq.M	764.03	1084.00	828208.52
26	N.S-26	Providing & Fixing of Danpalon 16mm thick (with minimum 1040mm wide) multicell Polycarbonate sheet with standing seam on both sides & double tooth snap on locking system to ensure maximum uplift capability. The panels will be UV protected and antiglare/softlight. The cross section of one cell shoul not be more than 4mmx4mm & weight of single panel shall not be less than 3250 per square metre. The system will be fitted on purlins with spacing as specified by manufacturer.	Sq.M	1494.57	5321.68	7953623.28
27	N.S-27	CHAIRS WITH WRITING BOARD 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 Make:-Featherlite/ Godrei/ B.P Erao . approved by Architects & Client.	Nos	1140.00	5878.00	6700920.00
28	NS.28	SCREENS Supplying, installing, Testing and commissioning of 100" motorized Matt white projection screen wall with all accessories.	Nos	14.00	62715.00	878010.00

29	N.S-29	AUDITORIUM CHAIRS 535mm to 600mm CTC, Rocking seat with auto tip up cushion, seat depth 650mm. PPCP armrest with cup holder and fabric padding on top for comfort. Chair with cover on the back side. Sigle Central foot for easy house keeping. Make : Featherlight/ Godrej/ B.P Ergo . approved by Architect & Client.	Nos	255.00	9500.00	2422500.00
30	N.S.30	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	1503.57	425.00	639017.25
31	N.S.31	Providing Filling the Expansion joint with joint sealing compound on polyurethane based or equivalent (Dr. Fixit Pidiseal/Hydrocreate/sika/CRYTON) including a backup material like Thermocole / Celatex board inside the groove of expansion joints. The width to depth ratio of sealant should be 2:1 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.				
		50mm thick Horizontal Expansion Joint	R.M	360.00	1583.00	569880.00
32	N.S.32	Providing Filling the Expansion joint with joint sealing compound on polyurethane based or equivalent (Dr. Fixit Pidiseal/Hydrocreate/sika/CRYTON) including a backup material like Thermocole / Celatex board inside the groove of expansion joints. The width to depth ratio of sealant should be 2:1 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.				
		50mm thick Vertical Expansion Joint	R.M	576.00	1583.00	911808.00
33	N.S-33	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)	Nos	131.00	538.00	70478.00
	(b)	Providing and fixing S.S.Sliding door bolt size 16mmx250mm finish SS Matt fixed with necessary screws etc. complete.(Make:-Ebco/Ozone/Dorma)	Nos	263.00	457.00	120191.00
	(c)	Providing & fixing S.S. tower bolt Size 250x12mm finish SS matt with necessary screws etc., complete.(Make:-Ebco/Ozone/Dorma)	Nos	820.00	269.00	220580.00
	(d)	Providing & fixing S.S. tower bolt Size 100x10mm finish SS matt with necessary screws etc., complete. (Make:-Ebco/Ozone/Dorma)	Nos	1932.00	135.00	260820.00
	(e)	Providing & fixing S.S. handle size 25x150mm with necessary screws etc., complete (Make:-Ebco/Ozone/Dorma)	Nos	1050.00	900.00	945000.00
	(f)	Providing & fixing S.S. handle size 15x100mm with necessary screws etc., complete. (Make:-Ebco/Ozone/Dorma)	Nos	966.00	646.00	624036.00
	(g)	Providing & fixing S.S.Door Stopper size 65x2.5MM finish SS Matt with necessary Screws etc., complete.(Make:-Ebco/Ozone/Dorma)	Nos	523.00	300.00	156900.00
	(i)	Providing & fixing alu. Diecast body tubluor type universal hydraulic door closer with necessary crews etc. complete.(Make:-Ebco/Ozone/Dorma)	Nos	523.00	991.00	518293.00
34	NS-34	Supplying and filling in plinth with local sand under floors, including watering, ramming, consolidating and dressing complete.	Cum	450.00	300.00	135000.00
				TOTAL [XV]		81131324.89

PLUMBING WORKS			
SUMMARY OF COST			
S.NO	NAME OF SUB-HEAD	AMOUNT	
		DSR 2012	NON SCHEDULE
i	SANITARY INSTALLATIONS & C.P FITTINGS	504460.20	219981.65
ii	CI PIPES & FITTINGS	481800.60	22195.93
iii	RAIN WATER PIPES & FITTINGS	1015166.00	14650.00
iv	WATER SUPPLY WORKS	279356.95	5220953.79
v	EXTERNAL SEWRAGE	309172.70	-
vi	EXTERNAL DRAINAGE	783139.90	
	TOTAL	3373096.35	
	G.TOTAL	3373096.35	5477781.36

BILL OF QUANTITIES						
SECTION-A : INTERNAL PLUMBING WORKS						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
[i] SANITARY INSTALLATIONS & C.P FITTINGS						
DSR 2012 TEMS						
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	52.00	1848.35	96114.20
2	17.8	Providing and fixing white vitreous china pedestal for wash basin completely recessed at back for the reception of pipes and fittings	Each	52.00	894.70	46524.40
3	17.22	Providing and fixing G.I. intel connection for flush pipe connecting with W.C. pan.	Each	24.00	94.00	2256.00
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 :				
	17.4.2	Range of two half stall urinals with 5 litre P.V.C. automatic flushing cistern.	Each	8.00	8445.00	67560.00
	17.4.3	Range of three Uninal basin with 10 ltr. White PVC automatic flushing cistern.	Each	8.00	11046.80	88374.40
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	8.00	5152.40	41219.20
	17.6.3	Range of three squatting plates with 10 litre P.V.C. automatic flushing cistern	Each	8.00	6826.65	54613.20
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	40.00	435.30	17412.00
7		Providing and fixing P.V.C. waste pipe for wash including P.V.C. waste fittings complete				
	17.28.1	Semi rigid pipe				
	17.28.1.1	32mm dia	Each	52.00	59.50	3094.00
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	52.00	674.05	35050.60
9		Providing and fixing toilet paper holder:				
	17.34.1	CP brass	Each	24.00	250.95	6022.80
10		Providing and fixing C.P brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931				
	18.53.1	15 mm nominal bore	Each	84.00	449.35	37745.40
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	84.00	61.70	5182.80
12	18.5	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	a) 15 mm nominal bore	Each	8.00	411.40	3291.20
Total C/f to Summary						
Total DSR ITEMS [i]						504460.20
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 divertor and two way angle valve[FOR EWC]	Each	24.00	503.10	12074.33
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	53.00	239.57	12697.22
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	52.00	907.89	47210.10
4	NS	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid 10 litre low level white vitreous china dual flushing cistern & C.P. flush bend with fittings & CI 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.				
		W.C. pan with ISI marked white solid plastic seat and lid.	Each	24.00	5000.00	120000.00
5	NS	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.				
		White Vitreous china Orissa pattern W.C. pan of size 580x440 mm with integral type foot rest.	Each	8.00	3500.00	28000.00
Total C/f to Summary						
Total NS ITEMS [i]						219981.65
[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	400.00	857.30	342920.00
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
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	8.00	353.25	2826.00
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	8.00	296.35	2370.80
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	8.00	342.80	2742.40	
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	8.00	579.75	4638.00	
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	8.00	442.00	3536.00	
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	8.00	244.10	1952.80	
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	8.00	801.70	6413.60	
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 nominal bore	RM	70.00	367.90	25753.00	
ii	(18.10.5+18.40.5+18.78)	40 mm dia nominal bore	RM	45.00	436.60	19647.00	
iii	(18.10.6+18.40.6+18.78)	50 mm dia nominal bore	RM	20.00	527.80	10556.00	
		Total C/f to Summary					
		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 to 300mm) 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	36.00	503.12	18112.33	
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	17.00	240.21	4083.60	
		Total C/f to Summary					
		FOR RAIN WATER:					
[iii]							
1	17.35	Providing and fixing soil, waste and vent pipes:					
	17.35.1	100mm dia					
	17.35.1.1	Sand cast iron S&S as per IS-1729	RM	1000.00	734.30	734300.00	
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	700.00	207.85	145495.00	
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	800.00	112.50	90000.00	
4	17.57	Providing & fixing coller					
	17.57.1	100 mm dia					
	17.57.1.1	Sand Cast iron S&S as per IS:1729	Each	200.00	177.85	35570.00	
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	54.00	148.75	8032.50	
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	54.00	32.75	1768.50	
		Total C/f to Summary					
		(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	25.00	586.00	14650.00	
		Total C/f to Summary					
		WATER SUPPLY WORKS					
[iv]							
		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	40.00	218.65	8746.00	
ii	18.8.2	20 mm nominal outer dia pipes	RM	95.00	243.05	23089.75	
iii	18.8.3	25 mm nominal outer dia pipes	RM	35.00	297.95	10428.25	
iv	18.8.4	32 mm nominal outer dia pipes	RM	18.00	358.90	6460.20	
		Internal work - Exposed on wall					
2	18.7	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 testing of joints complete as per direction of Engineer in charge.					
i	18.7.2	20mm dia. nominal bore	RM	10.00	157.15	1571.50	
ii	18.7.3	25mm dia. nominal bore	RM	20.00	197.90	3958.00	
iii	18.7.4	32mm dia. nominal bore	RM	10.00	252.65	2526.50	
iv	18.7.5	40mm dia. nominal bore	RM	10.00	348.25	3482.50	
v	18.7.6	50mm dia. nominal bore	RM	15.00	514.35	7715.25	
3	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality(screwed end)					
i	18.17.2	32 mm nominal bore.	Each	4.00	450.90	1803.60	
ii	18.17.3	40 mm nominal bore	Each	4.00	546.05	2184.20	
iii	18.17.4	50 mm nominal bore	Each	1.00	780.60	780.60	

4	18.18	Providing and fixing ball (brass) valve of approved quality. High or low pressure, with plastic				
i	18.18.2	20 mm nominal bore.	Each	2.00	360.20	720.40
ii	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.				
i	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	32.00	453.55	14513.60
	18.12.8	80 mm dia nominal bore	RM	20.00	573.40	11468.00
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:				
i	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:				
i	18.13.1	25 to 40 mm nominal bore	Each	4.00	277.35	1109.40
ii	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]	237465.60
		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		65mm dia. nominal bore	RM	25.00	850.00	21250.00
ii		80mm dia. nominal bore	RM	10.00	1000.00	10000.00
10		Providing and fixing PN 16 Butterfly valve of the following dia				
i		65 mm dia. nominal bore	RM	3.00	2500.00	7500.00
i		80 mm dia. nominal bore	RM	1.00	3000.00	3000.00
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	20.00	325.33	6506.52
ii		80mm dia	Each	16.00	699.83	11197.27
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		65 mm nominal bore	Each	1.00	1500.00	1500.00
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]	5220953.79
		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	40.00	218.65	8746.00
ii	18.8.2	20 mm nominal outer dia pipes	RM	32.00	243.05	7777.60
		Internal work - Exposed on wall				
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.				
i	18.7.1	15mm dia. nominal bore	RM	10.00	133.95	1339.50
ii	18.7.2	20mm dia. nominal bore	RM	10.00	157.15	1571.50
iii	18.7.3	25mm dia. nominal bore	RM	10.00	197.90	1979.00
iv	18.7.4	32mm dia. nominal bore	RM	10.00	252.65	2526.50
v	18.7.5	40mm dia. nominal bore	RM	25.00	348.25	8706.25
3	18.17	Providing and fixing gun metal gate valve with C.I. wheel of approved quality(screwed end)				
i	18.17.2	32 mm nominal bore.	Each	1.00	450.90	450.90
	18.17.3	40 mm nominal bore.	Each	4.00	546.05	2184.20
	18.17.4	50 mm nominal bore.	Each	1.00	780.60	780.60
	18.17.5	65 mm nominal bore.	Each	1.00	1073.25	1073.25
	18.17.6	80 mm nominal bore.	Each	1.00	1832.95	1832.95
4	18.18	Providing and fixing ball (brass) valve of approved quality. High or low pressure, with plastic				
i	18.18.1	15 mm nominal bore.	Each	2.00	258.05	516.10
ii	18.18.2	20 mm nominal bore.	Each	2.00	360.20	720.40
iii	18.18.3	25 mm nominal bore	Each	4.00	421.65	1686.60
		Total C/f to Summary			Total DSR Items [iv]	41891.35
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.					
i	2.10.1.2	Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia.	RM	210.00	165.60	34776.00	
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	50.00	219.05	10952.50	
i	19.1.3	200 mm diameter	RM	50.00	323.05	16152.50	
	19.1.4	250 mm diameter	RM	110.00	446.15	49076.50	
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	50.00	382.75	19137.50	
	19.3.3	200 mm diameter	RM	50.00	449.90	22495.00	
	19.3.4	250 mm diameter	RM	110.00	523.75	57612.50	
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	4.00	1278.30	5113.20	
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)					
	19.7.1.1	With F.P.S. bricks with class designation 75	Each	11.00	7132.00	78452.00	
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	60.00	256.75	15405.00	
Total Carried to DSR Items						309172.70	
V	EXTERNAL DRAINAGE						
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	360.00	165.60	59616.00	
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	240.00	382.75	91860.00	
ii	19.3.4	250 mm diameter	RM	100.00	523.75	52375.00	
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	240.00	254.50	61080.00	
ii	19.6.3	250 mm diameter R.C.C pipes	RM	100.00	342.45	34245.00	
iii	19.6.4	300 mm diameter R.C.C pipes	RM	88.00	422.90	37215.20	
iv	19.6.6	500 mm diameter R.C.C pipes	RM	55.00	722.20	39721.00	
v	19.6.7	600 mm diameter R.C.C pipes	RM	46.00	1084.25	49875.50	
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					

ELECTRICAL WORKS			
SUMMARY OF COST			
S.NO	NAME OF SUB-HEAD	AMOUNT	
		DSR 2012	NON SCHEDULE
i	INTERNAL ELECTRICAL WORKS	12744192.50	22604351.00
	Total C/F To Summary	12744192.50	22604351.00

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.				
i	1.10.3	Group C	Point	2977.00	664.00	1976728.00
2.0	1.11	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	7500.00	131.00	982500.00
ii	1.14.3	2 x 4 sq.mm. +1 x 4 sq.mm. Earth wire	RM	14500.00	162.00	2349000.00
iii	1.14.4	2 x 6 sq.mm. +1 x 6 sq.mm. Earth wire	RM	1680.00	206.00	346080.00
iv	1.14.9	4 x 6 sq.mm. + 2 x 6 sq.mm. Earth wire	RM	1000.00	358.00	358000.00
v	1.14.10	4 x 10 sq.mm. + 2 x 10 sq.mm. Earth wire	RM	2000.00	562.00	1124000.00
vi	1.14.11	4 x 16 sq.mm. + 2 x 16 sq.mm. Earth wire	RM	1500.00	789.00	1183500.00
4.0		S/F Modular type electronic fan regulator :-				
	1.25	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	720.00	322.00	231840.00
5.0		S/F Modular type blanking plate :-				
	1.26	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	770.00	142.00	109340.00
ii	1.27.2	4 Module (125 mm x 75 mm)	Each	150.00	154.00	23100.00
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	500.00	75.00	37500.00
ii	1.24.4	3 pin 5/6 amp. Socket outlet	Nos	500.00	96.00	48000.00
iii	1.24.6	Telephone Socket outlet	Each	150.00	89.00	13350.00
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	5000.00	56.50	282500.00
ii	1.21.2	25 mm.	RM	10000.00	64.50	645000.00
iii	1.21.3	32 mm	RM	1500.00	80.50	120750.00
iv	1.21.4	40 mm	RM	1500.00	106.00	159000.00
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	3000.00	15.50	46500.00
10.0		S/F power plug point with all accessories :-				
	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	365.00	288.00	105120.00
11.0		S/F power plug point with all accessories :-				
	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	725.00	366.00	265350.00
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	2010.00	141.00	283410.00
13.0		Supplying and fixing following rating, double pole, (single phase and neutral) 240 volts, residual current circuit breaker (RCCB), having a sensivity current Poin upto 300 miliampere in the existing MCB DB complete with connections,testing and commissioning etc. as required :				
i	2.14.1	25 amps	Each	123.00	1318.00	162114.00
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, 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	2.7.4	2 + 4 way Double Door	Each	8.00	2152.00	17216.00
	2.7.5	2 + 8 way Double Door	Each	2.00	2572.00	5144.00
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	40.00	693.00	27720.00
15.0	2.20	Supplying and fixing 30 amps. 415 volts, TPN, 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	24.00	693.00	16632.00

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	17.00	6345.00	107865.00
	2.8.6	6 way (4 + 18), Double door, horizontal type	Each	19.00	8197.00	155743.00
ii	2.8.7	8 way (4 + 24), Double door, horizontal type	Each	29.00	8984.00	260536.00
	2.8.8	12 way (4 + 36), Double door, horizontal type	Each	20.00	11042.00	220840.00
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	10.00	1679.00	16790.00
ii	2.15.2	40 Amp.	Each	40.00	1703.00	68120.00
	2.15.3	63 Amp.	Each	35.00	1965.00	68775.00
18.0	2.9	Supplying and fixing following way prewired vertical type TP & N MCB distribution board of steel sheet for 415 volts on surface/recess complete with loose wire box of sheet steel, dust protected, duly powder painted, inclusive of 200 amps tinned copper bus bar, common neutral link, earth bar, din bar for mounting MCB's, terminal connectors for all incoming and outgoing circuits, duly prewired with adequate size of FR PVC insulated copper conductor upto the terminal connector/neutral link, earthing etc as required (But without MCB/RCCB/Isolator). (Note: Prewired vertical type MCB TPDB is normally used where 3 phase outlets are required.)				
	2.9.7	8 Way double door	Each	2.00	9606.00	19212.00
	2.9.8	12 Way double door	Each	2.00	12762.00	25524.00
19.0	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	4.00	3996.00	15984.00
20.0	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
21.0	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
22.0	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
23.0	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
24.0	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
25.0	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	928.00	39.00	36192.00
26.0	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	194.00	69.50	13483.00
27.0	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	720.00	99.00	71280.00
28.0	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	16.00	163.00	2608.00
29.0	1.51	Extra for fixing the louvers / shutters complete with frame fro exhaust fans of all sizes.	Each	16.00	68.50	1096.00
30.0		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.				
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
31.0		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	42.00	867.00	36414.00
	9.1.29	3.5 X 240 sq. mm (62mm)	Each	8.00	771.00	6168.00
	9.1.33	4 x 16 sq. mm (28mm)	Each	20.00	188.00	3760.00
32.0	7.5	Laying of one number PVC insulated and PVC sheathed / XLPE power cab le 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	900.00	44.00	39600.00
33.0	7.8	Laying of one number PVC insulated and PVC sheathed / XLPE power cab le of 1.1 KV grade 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	500.00	16.50	8250.00
	7.8.4	Above 185 sq. mm and upto 400 sq. mm (clamped with 40x3mm MS flat clamp)	RM	900.00	72.50	65250.00
34.0	8.5	Laying of one number XLPE power cab le 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
35.0		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

36.0		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	
37.0	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.	12744192.50	
II) NON SCHEDULED ITEMS							
1.0		Supplying & fixing following rating, three pole , 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		32 Amp.	Each	40.00	1800.00	72000.00	
		S/F power plug point with all accessories :-					
2.0		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	769.00	300.00	230700.00	
3.0		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	150.00	116.00	17400.00	
4.0		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	769.00	126.00	96894.00	
5.0		Supply, laying, testing and commissioning of 4 pair Cat - 6 non plenum cable of 24 AWG solid copper conductors in existing conduits.	Rm	15000.00	26.00	390000.00	
6.0		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		50 pair krone	Each	4.00	602.00	2408.00	
7.0		Supplying and Earthing with Cu earth plate 600mm x 600 mm x 3mm 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	
8.0		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	
9.0		Providing & fixing 50mm x 6mm Cu. strip on surface or in recess for connections etc. as required.	Rm	100.00	1001.00	100100.00	
10.0		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	720.00	255.00	183600.00	
11.0		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 upto 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	300.00	803.00	240900.00	
ii		150 mm. ID	RM	200.00	546.00	109200.00	
12.0		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	54.00	700.00	37800.00	
13.0		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	356.00	2100.00	747600.00	
ii		1 X 43 w led Flat Panel (RC366B LED33-5000 PSU OD WH)	Each	521.00	9265.00	4827065.00	
iii		3 x 14 W Recessed mounted Light (RC795B 3xTL-514W EBP)	Each	1119.00	5820.00	6512580.00	
iv		1 x 28 W T5 (CRCA Body)(TMS122 M 1xTL5-28W EBT)	Each	147.00	1140.00	167580.00	
v		2 x 28 W T5 (CRCA Body) TMS122 M 2xTL5-28W EBT	Each	44.00	1560.00	68640.00	
14.0		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	720.00	1305.00	939600.00	
15.0		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	16.00	1150.00	18400.00	
16.0		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	1000.00	1407.00	1407000.00	
ii		3.5 Core 240 sq. mm. Armoured Aluminium cable.	RM	800.00	966.68	773344.00	
iii		4 x 16 sq.mm. Armoured Aluminium cable.	RM	500.00	132.00	66000.00	
17.0		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	1119.00	40.00	44760.00	
18.0		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 braided 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 hardware 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 supply system.					
		All Panel's outgoing have to be equipped with KWH energy meter.					

i	Main LT Panel					
	Incoming: (Transformer)					
	One (1) Nos 1250A TPN MCCB (35KA)					
	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 & 2)					
	Two (2) Nos.800A TPN MCCB (35KA)					
	Metering:					
	Two (2) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.					
	Two (2) Nos. (0-800A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.					
	Two (2) Set of Phase Indication Lamp with 2A SP MCB.					
	Bus Coupler:					
	1250A, FP EDO ACB					
	Bus Bar:					
	1600A, TPN aluminium bus bar of suitable length with colour coded sleeves.					
	Outgoing:					
	Four (4) Each. 800A TPN MCCB					
	Three (3) Each. 500A TPN MCCB					
	Two (2) Each. 100A TPN MCCB					
	Two (2) Each. 63A TPN MCCB	Set	1.00	1850000.00	1850000.00	
ii	Ground Floor Panel					
	Incoming:					
	One (1) Nos.800A FP EDO ACB					
	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 Bar:					
	1000A, TPN aluminium bus bar of suitable length with colour coded sleeves.					
	Outgoing:					
	Two (2) Nos. 100A TPN MCCB					
	Fifteen (15) Nos. 63A TPN MCCB					
	Seven (7) Nos. 32A TPN MCB					
	Nine (9) Nos. 32A TPN MPCB					
	Four (4) Nos. 25A DP MCB	Set	1.00	250000.00	250000.00	
iii	Ground Floor UPS 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:					
	Eight (8) Nos. 40A TPN MCB	Set	1.00	50000.00	50000.00	
iv	First Floor Panel					
	Incoming:					
	One (1) Nos.500A TPN MCCB					
	Metering:					
	One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.					
	One (1) Nos. (0-500A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.					
	One (1) Set of Phase Indication Lamp with 2A SP MCB.					
	Bus Bar:					
	630A, TPN aluminium bus bar of suitable length with colour coded sleeves.					
	Outgoing:					
	Eight (8) Nos. 63A TPN MCCB					
	Two (2) Nos. 40A TPN MCB					
	Six (6) Nos. 32A TPN MCB					
	Five (5) Nos. 32A TPN MPCB					
	Three (3) Nos. 16A TPN MPCB					
	Four (4) Nos. 25A DP MCB	Set	1.00	200000.00	200000.00	
v	First 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:					
	Five (5) Nos. 25A TPN MCB	Set	1.00	35000.00	35000.00	
vi	Second Floor Panel					
	Incoming:					
	One (1) Nos.800A FP EDO ACB					
	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 Bar:					
	1000A, TPN aluminium bus bar of suitable length with colour coded sleeves.					
	Outgoing:					
	Two (2) Nos. 400A TPN MCCB					
	Five (5) Nos. 63A TPN MCB					
	Four (4) Nos. 40A TPN MCB					
	Seven (7) Nos. 32A TPN MPCB					
	Two (2) Nos. 16A TPN MPCB					
	Three (3) Nos. 25A DP MCB	Set	1.00	250000.00	250000.00	
vii	Second Floor UPS Panel					
	Incoming:					
	One (1) Nos.400A TPN MCCB					
	Metering:					
	One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.					

		One (1) Nos. (0-400A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.					
		One (1) Set of Phase Indication Lamp with 2A SP MCB.					
		Bus Bar:					
		500A, TPN aluminium bus bar of suitable length with colour coded sleeves.					
		Outgoing:					
		Five (5) Nos. 32A TPN MCB					
		Six (6) Nos. 63A TPN MCCB	Set	1.00	85000.00	85000.00	
viii		Third Floor Panel					
		Incoming:					
		One (1) Nos.500A TPN MCCB					
		Metering:					
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.					
		One (1) Nos. (0-500A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.					
		One (1) Set of Phase Indication Lamp with 2A SP MCB.					
		Bus Bar:					
		630A, TPN aluminium bus bar of suitable length with colour coded sleeves.					
		Outgoing:					
		Two (2) Nos. 200A TPN MCCB					
		One (1) Nos. 63A TPN MCB					
		Ten (10) Nos. 40A TPN MCB					
		One (1) Nos. 32A TPN MCB					
		Seven (7) Nos. 32A TPN MPCB					
		Three (3) Nos. 25A TPN MCB					
		Two (2) Nos. 16A TPN MPCB					
		Three (3) Nos. 25A DP MCB	Set	1.00	200000.00	200000.00	
ix		Third Floor UPS Panel					
		Incoming:					
		One (1) Nos.200A TPN MCCB					
		Metering:					
		One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.					
		One (1) Nos. (0-200A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.					
		One (1) Set of Phase Indication Lamp with 2A SP MCB.					
		Bus Bar:					
		250A, TPN aluminium bus bar of suitable length with colour coded sleeves.					
		Outgoing:					
		Four (4) Nos. 63A TPN MCCB					
		Two (2) Nos. 32A TPN MCB	Set	1.00	65000.00	65000.00	
x		Capacitor Panel (450 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					
		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 – 1 set					
		Bus Bars					
		1000 Amps TPN aluminium bus bars with coloured heat shrinkable insulated sleeves – 1 set					
		Outgoing					
		Outgoing feeders consisting of following accessories :					
		2 Sets – 200 Amps TP MCCB, capacitor duty contactors & 100 KVAR heavy duty capacitors.					
		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. – 9 Sets	Set	1.00	500000.00	500000.00	
xi		External Feeder panel					
		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:					
		1 no. 72 A contactor with 24hrs. Timer circuit and selector switch with push buttons					
		Four (4) Each.32A TPN MCB	Set	1.00	50600.00	50600.00	

19.0		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	
20.0		Supply, Installation, testing, Commissioning of J K Maintenance Free Chemical Gel Earthing - Dual Pipe (GI) Technology of "JK CHENSODE" 3mtr long 80mm dia permanantly sealed at both the ends with the lead terminal at the top along with 50 kgs of duly filled with metallic conducting compound permanantly 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 heavyduty Polyplastic earth pit cover.	Each	2.00	20000.00	40000.00	
21.0		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 Stormaster 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	
22.0	i	Design, manufacture, testing at works supply, installation, testing and commissioning at site including plinth and cable tray 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% tappings in step of 1.25 bidirec-tional roller, diagram & rating plate, oil temperature indicator, winding temperature indicator and buccholtz 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).					
	ii	750 KVA	No.	1.00	1350000.00	1350000.00	
23.0	i	Supply of HT 11 KV rubber hand gloves as per relevant IS Code	Set	2.00	1000.00	2000.00	
	ii	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	
	iii	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	
	iv	Sand Buckets-Set of Four	Nos.	1.00	2500.00	2500.00	
	v	Supplying of first aid box with cover made out of 16 SWG MS sheet of size 450 mm x 600 mm x 200 mm. The box shall be made of fire resistant material and shall be painted with fire resistant paint. The box shall be made of fire resistant material and shall be painted with fire resistant paint.					
		- 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	
	vi	Mechanical foam with trolley	Set	2.00	6500.00	13000.00	
	vii	Supply, installation of 1.1 KV grade ISI marked rubber mats of 1 meter width.	RM	20.00	1200.00	24000.00	
	viii	Supply of standard First Aid Box. (as per relevent standard)	Nos..	1.00	1000.00	1000.00	
		TOTAL FOR NON DSR ITEMS				22604351.00	

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 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 on				
	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	89893.00
Total C/f to Summary					Total DSR ITEMS [i]	89893.00
ii		One (1) No. Auto Star-Delta starter for 10.0 HP with 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.	Set	1	20000.00	20000.00
2.0		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		4 Core 4 sq. mm. Armoured Aluminium cable.	Nos.	2.00	125.00	250.00
		4 Core 2.5 sq. mm. Armoured Aluminium cable.	Nos.	4.00	85.00	340.00
3		Supply,testing and commissioning of 1100 Volt grade XLPE insulated and sheathed aluminium conductor Armoured cables including the cost of providing required gap between adjacent cables (minimum one cable dia.) and including the cost of				
iv		4 Core 4 sq. mm. Armoured Aluminium cable.	RM	20.00	91.00	1820.00
v		4 Core 2.5 sq. mm. Armoured Aluminium cable.	RM	15.00	85.00	1275.00
II FIRE HYDRANT & SPRINKLER SYSTEM						
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).	Each	15	5940.00	89100.00

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	12	7335.00	88020.00
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	30	3837.00	115110.00
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	15	1885.00	28275.00
7.0		Providing and fixing standard fireman's axe with heavy insulated rubber handle tested for 20000 watts.	Each	12	836.00	10032.00
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	1.00	20260.00	20260.00
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	12.00	769.00	9228.00
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	12.00	6638.00	79656.00
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.				
a		80 mm dia with lever operated	Each	3.00	3904.00	11712.00
b		150 mm dia with lever operated	Each	12.00	7335.00	88020.00
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.				
a		150 mm dia	Each	1.00	17459.00	17459.00
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	12.00	278.00	3336.00

17.0		Providing and fixing 'Y' strainer with CI body and S.S. strainer for outlet of OHT lines.(Terrace Level)				
a)		150 mm dia	Each	1.00	10124.00	10124.00
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	12	8000.00	96000.00
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	12	5500.00	66000.00
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	12	6500.00	78000.00
b)		Capacity 50 lit.(Trolley mounted)	Each	1	25000.00	25000.00
TOTAL SUMMARY						
IV 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 holdtite 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	4000.00	420.00	1680000.00
b)		32 mm dia	Metre	400.00	500.00	200000.00
c)		40 mm dia	Metre	500.00	600.00	300000.00
d)		50 mm dia	Metre	600.00	700.00	420000.00
e)		65 mm dia	Metre	500.00	850.00	425000.00
f)		80 mm dia	Metre	250.00	1050.00	262500.00
g)		100 mm dia	Metre	450.00	1500.00	675000.00
h)		150 mm dia	Metre	120.00	1750.00	210000.00
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 Responce Pendent type	Each	1500.00	245.00	367500.00
b)		Normal Responce Upright type	Each	600.00	245.00	147000.00
c)		Normal Responce Side wall	Each	10.00	334.00	3340.00
		Standard concealed sprinkler 68° C.	Each	10.00	334.00	3340.00
3.0		Providing & fixing inspecting testing assembly with drain valve arragement 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	4000.00	48000.00
		150 mm dia	Each	12	4250.00	51000.00

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.	Each	12	278.00	3336.00
7.0		Providing and fixing 25 mm dia gunmetal single acting air release valve with screwed inlet tested for 20Kg/Cm2.	Each	3	613.00	1839.00
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' complete in				
c)		80 mm dia with lever	Each	3	1115.00	3345.00
		100 mm dia with lever	Each	12	1115.00	13380.00
d)		150 mm dia with lever	Each	12	1394.00	16728.00
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 including surface				
a)		80 mm dia	Metre	10.00	100.00	1000.00
b)		150 mm dia	Metre	400.00	128.00	51200.00
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	9.00	5940.00	53460.00
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	9.00	1885.00	16965.00
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	9.00	4049.00	36441.00
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	18.00	3837.00	69066.00
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' 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)	Cum	20.00	3841.00	76820.00
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.				
a)		Four way	Each	1.00	20260.00	20260.00
VI		FIRE PUMPS& ACCESSORIES				
		(All pumps should be supplied with wearing and mechaical seal. Performance curve should be approved before placing the order. All pumps should be supplied with base frame)				
2		Pump:				
		Providing,Fixing Supplying and fixing horizontal centrifugal pump with volute brozne impeller connctected to TEFC induction motor suitable for 400/410 Volts, 3 Phase, 50 Cycles , AC supply with the following specifications:				
a)		Capacity : 900 LPM				
b)		Head : 30 m				
c)		HP : 10 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	50000.00	50000.00
		Note: Contractor should submit general arrangement drawings before fabrication of vessel and ultrosonic 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 wafer type non return valves PN 1.6 including nuts, bolts, 1.5 mm thick gasket companion flanges as per table 'E' etc. complete.				
b)		150 mm dia	Each	1	8500.00	8500.00
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.				
d)		150 mm dia (lever operated)	Each	1	6500.00	6500.00
12		Providing and fixing vibration elimination pads for pumps.				
a)		Type A	Set	1	3500.00	3500.00
13		Providing and fixing 25 mm dia gun metal fitting for water level indicator gauge with isolation valve at top and bottom, heavy guage 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	1	4500.00	4500.00
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	5000.00	5000.00
		Total C/f to Summary			Total NS Items [II]	6889415.00

BILL OF QUANTITIES
SECTION-F: HVAC WORKS

Sr. No.		DESCRIPTION OF ITEM	UNIT	QTY	RATE	AMOUNT
DSR ITEMS						
1.0	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	2.00	3996.00	7992.00
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 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	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 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	350.00	405.00	141750.00
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	200.00	677.00	135400.00
28.0		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	4.00	867.00	3468.00
					TOTAL	360960.00
Total Carried to Summary						
NON DSR ITEMS						
5		Ground floor:				
		Supply, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	8.00	2000.00	16000.00
6		First floor:				
		Supply, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	4.00	2000.00	8000.00
		16 A MPCB	Nos.	3.00	1750.00	5250.00
7		Second floor:				
		Supply, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	6.00	2000.00	12000.00
		16 A MPCB	Nos.	2.00	1750.00	3500.00
8		Third floor:				
		Supply, Instalation, Testing & Commissioning of following capacity TPN box made of 1.6mm thick sheet steel enclosure duly painted with powder coating, making connections, earthing etc. as required.				
		32 A MPCB	Nos.	6.00	2000.00	12000.00
		16 A MPCB	Nos.	2.00	1750.00	3500.00
8		Ventilation:				
i		Auto Star Delta starter of 15 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	20000.00	80000.00
ii		Auto DOL starter of 7.5 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.	1.00	15000.00	15000.00
ii		Auto DOL starter of 5 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	12500.00	50000.00
iii		Auto DOL starter of 2 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	10000.00	40000.00
iv		Auto DOL starter of 1.5 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.	20.00	10000.00	200000.00
9.0		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.				
		4 X 6 sq. mm	Each	96.00	125.00	12000.00
		4 X 4 sq. mm	Each	36.00	100.00	3600.00
		4 X 2.5 sq. mm	Each	4.00	85.00	340.00
10.0		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	RM	100.00	1407.00	140700.00
		4 X 6 sq. mm	RM	2500.00	112.70	281750.00
		4 X 4 sq. mm	RM	1500.00	91.00	136500.00
		4 X 2.5 sq. mm	RM	50.00	80.00	4000.00

11.0	Ventilation Panel				
	Incoming:				
	One (1) Nos.500A TPN MCCB (35KA)				
	Metering:				
	One (1) Nos. (0-500V) 96 x 96 Sq.mm voltmeter with control MCB & selector switch.				
	One (1) Nos. (0-500A) 96 x 96 Sq.mm CT operated Ammeter with selector switch.				
	One (1) Set of Phase Indication Lamp with 2A SP MCB.				
	Bus Bar:				
	630A, TPN aluminium bus bar of suitable length with colour coded sleeves.				
	Outgoing:				
	Five (5) Each. 63A TPN MCCB				
	Twenty One (21) Each. 32A TPN MPCB				
	Two (2) Each. 16A TPN MPCB	Set	1.00	350000.00	350000.00
1)	AIR CIRCULATION SYSTEM:				
1.0	AIR HANDLING UNIT:				
	Supply, installation, testing and commissioning of factory fabricated Double Skinned Chilled/Hot 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 \pm 10%, 50 Hz \pm 5% AC supply, 6 Rows ARI certified cooling coil made of Aluminium finned 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 duly 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 assemb 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 anch				
	Floor Mounted AHUs (6 Rows coil):				
	Ground floor:				
	4500cfm, 10TR, 5HP, 50mmSP	Nos	1.00	360,000.00	360,000.00
	4900cfm, 11TR, 5HP, 50mmSP	Nos	1.00	392,000.00	392,000.00
	6000cfm, 13TR, 5HP, 50mmSP	Nos	1.00	480,000.00	480,000.00
	6500cfm, 17TR, 5HP, 50mmSP	Nos	1.00	520,000.00	520,000.00
	8500cfm, 18TR, 7.5HP, 50mmSP	Nos	1.00	680,000.00	680,000.00
	9500cfm, 23TR, 7.5HP, 50mmSP	Nos	1.00	760,000.00	760,000.00
	10600cfm, 24TR, 7.5HP, 50mmSP	Nos	1.00	848,000.00	848,000.00
	11200cfm, 24TR, 7.5HP, 50mmSP	Nos	1.00	896,000.00	896,000.00
	First floor				
	2600cfm, 6TR, 2HP, 50mmSP	Nos	2.00	208,000.00	416,000.00
	8350cfm, 19TR, 5HP, 50mmSP	Nos	1.00	604,000.00	604,000.00
	7600cfm, 18TR, 5HP, 50mmSP	Nos	2.00	608,000.00	1,216,000.00
	12000cfm, 29TR, 7.5HP, 50mmSP	Nos	1.00	896,000.00	896,000.00
	3400cfm, 8TR, 3HP, 50mmSP	Nos	1.00	272,000.00	272,000.00
	Second floor:				
	3200cfm, 9TR, 3HP, 50mmSP	Nos	1.00	256,000.00	256,000.00
	3300cfm, 8TR, 3HP, 50mmSP	Nos	1.00	264,000.00	264,000.00
	13000cfm, 39TR, 10HP, 50mmSP	Nos	1.00	1,040,000.00	1,040,000.00
	8300cfm, 19TR, 7.5HP, 50mmSP	Nos	1.00	664,000.00	664,000.00
	9400cfm, 29TR, 7.5HP, 50mmSP	Nos	1.00	752,000.00	752,000.00
	10000cfm, 24TR, 7.5HP, 50mmSP	Nos	1.00	800,000.00	800,000.00
	10100cfm, 25TR, 7.5HP, 50mmSP	Nos	1.00	808,000.00	808,000.00
	10850cfm, 28TR, 7.5HP, 50mmSP	Nos	1.00	868,000.00	868,000.00
	Third floor				
	3200cfm, 7TR, 3HP, 50mmSP	Nos	1.00	256,000.00	256,000.00
	3300cfm, 7TR, 3HP, 50mmSP	Nos	1.00	264,000.00	264,000.00
	5000cfm, 12TR, 5HP, 50mmSP	Nos	1.00	400,000.00	400,000.00
	5700cfm, 12TR, 5HP, 50mmSP	Nos	1.00	456,000.00	456,000.00
	5900cfm, 14TR, 5HP, 50mmSP	Nos	1.00	472,000.00	472,000.00
	10000cfm, 34TR, 7.5HP, 50mmSP	Nos	1.00	800,000.00	800,000.00
	10700cfm, 34TR, 7.5HP, 50mmSP	Nos	1.00	856,000.00	856,000.00
	11800cfm, 43TR, 7.5HP, 50mmSP	Nos	1.00	944,000.00	944,000.00
2.0	Fan coil Units				
	Supply, installation, testing & commissioning of Horizontal fan coil units, each complete with 3/4 Rows deep chilled water cooling coil, blowers, cleanable filters, main and auxilliary insulated condensate drain pans, casing, coil pipe connections through copper pipes, condensate drain connections, with required Set of ball valves with strainers (supply), without strainers (Return), canvass connections. All fan coil units shall be suitable for 220 \pm 10%volts, 50 cycles single phase power supply etc. complete as per specification.				
	Ground floor:				
a)	400cfm,1TR	Nos	19.00	10,000.00	190,000.00
b)	800cfm,2TR	Nos	4.00	12,500.00	50,000.00
c)	1200cfm,3TR	Nos	2.00	15,000.00	30,000.00
	First floor:				
a)	400cfm,1TR	Nos	18.00	10,000.00	180,000.00
b)	600cfm,1.5TR	Nos	2.00	11,500.00	23,000.00
c)	800cfm,2TR	Nos	3.00	12,500.00	37,500.00
d)	1200cfm,3TR	Nos	1.00	15,000.00	15,000.00
	Second floor:				
a)	400cfm,1TR	Nos	18.00	10,000.00	180,000.00
b)	600cfm,1.5TR	Nos	2.00	11,500.00	23,000.00
c)	800cfm,2TR	Nos	2.00	12,500.00	25,000.00

d)	1200cfm,3TR	Nos	4.00	15,000.00	60,000.00
	Third floor:				
a)	400cfm,1TR	Nos	18.00	10,000.00	180,000.00
b)	600cfm,1.5TR	Nos	4.00	11,500.00	46,000.00
d)	1200cfm,3TR	Nos	4.00	15,000.00	60,000.00
3.0	Split type AC units				
	Supply, installation, testing and commissioning of inverter based split type AC units with Hi wall indoor units complete with finned coil, fan section with motor, air filters, filter box, double drain pan, wiring & accessories, outdoor air cooled condenser units with accessories (For Server Rooms)				
a)	600cfm,1TR	Nos	1.00	25,000.00	25,000.00
b)	800cfm,2TR	Nos	6.00	28,000.00	168,000.00
c)	1200cfm,3TR	Nos	4.00	35,000.00	140,000.00
II)	PIPING:				
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, antivibration 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 "O" rating of 19mm thickness for chilled water pipes & 9mm thickness for condensate drain				
	Mild steel pipes:				
a)	300 mm dia MS pipes	RM	325.00	2,750.00	893,750.00
b)	200 mm dia MS pipes	RM	155.00	2,350.00	364,250.00
c)	150 mm dia MS pipes	RM	160.00	2,075.00	332,000.00
d)	125 mm dia MS pipes	RM	165.00	2,000.00	330,000.00
e)	100 mm dia MS pipes	RM	17.00	1,800.00	30,600.00
f)	80 mm dia MS pipes	RM	295.00	1,550.00	457,250.00
g)	65 mm dia MS pipes	RM	334.00	1,300.00	434,200.00
h)	50mm dia MS pipes	RM	190.00	1,050.00	199,500.00
i)	40mm dia MS pipes	RM	105.00	975.00	102,375.00
j)	32mm dia MS pipes	RM	370.00	850.00	314,500.00
k)	25mm dia MS pipes	RM	165.00	700.00	115,500.00
l)	20mm dia MS pipes	RM	310.00	625.00	193,750.00
m)	40 mm dia MS pipes ('B' class, for condensate drain)	RM	135.00	480.00	64,800.00
n)	32 mm dia MS pipes ('B' class, for condensate drain)	RM	350.00	400.00	140,000.00
2.0	Providing and fixing in position Butterfly valves				
a)	80 mm dia	Nos	8.00	4,000.00	32,000.00
b)	65mm dia	Nos	16.00	3,650.00	58,400.00
c)	50mm dia	Nos	22.00	3,250.00	71,500.00
d)	40mm dia	Nos	12.00	3,175.00	38,100.00
e)	32 mm dia	Nos	4.00	2,900.00	11,600.00
4.0	Providing and fixing in position Ball Valve set comprising one ball valve with strainer and one valve w/o strainer				
a)	20mm dia	Set	73.00	3,000.00	219,000.00
b)	25 mm dia	Set	28.00	3,500.00	98,000.00
5.0	Self Dynamic balancing valves (for AHU's)				
	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 shell be capable of providing 4-20 ma 2-10V DC flow feedback signal to the control system. Each valve should have 39 (for dia 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 (upto 37 USGPM flow rate)	Nos	26.00	35,000.00	910,000.00
	50/65/80mm dia (upto 113 USGPM flow rate)	Nos	23.00	50,000.00	1,150,000.00
6.0	Temperature Control cum Automatic Balancing Valves: (for FCU's)				
	Supply, Installation, testing and commissioning of 15/20 mm dia, Self-balancing, Pressure independent type dynamic balancing Valve with integrated 2 way motorised actuator in a single body. The valves for using FCU's shall be ON/OFF temperature control type. Flow regulation shall be achieved through factory preset SS cartridge and shall be capable of controlling the flow with in \pm 5% of the rated flow. The flow limiting device shall be available as plug in device for inline valve housing. The flow limiting device/cartridge should be easily removable for any maintenance/cleaning purpose from the valve body without removing the valve from the piping circuit. The valve housing shall be made out of forged brass suitable for static pressure of 1600 kPaD and actuator shall be capable of withstanding 400 kPaD shut off pressure, ON/OFF type suitable for 230V AC, 50 Hz incoming Power Supply.				
a)	15/20mm dia (upto 8 USGPM flow rate)	Nos	101.00	10,000.00	1,010,000.00
7.0	Providing and fixing in position Dial type Pressure gauge with gun metal gate valve, calibrated in metric & British units	Nos	62.00	900.00	55,800.00
8.0	Providing and fixing in position Mercury in glass thermometers with V groove for protection	Nos	62.00	350.00	21,700.00
9.0	Providing and fixing in position Auto air purging valves				
	15 mm dia	Nos	31.00	900.00	27,900.00
7.0	Buried chilled water pipes				
	Insulation of Chilled Water piping with 75mm thick, Density 24kg/cum "P" Quality Expanded polystyrene pipe section and wrapped with tarfelt, there-after covered with 2 layers of sand cement plaster 6mm thick as per specification				
	300 mm dia MS pipes	RM	500.00	4,500.00	2,250,000.00
III)	DUCTING:				
	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.				
1.0	Air-conditioning Ducting : Galvanized sheet steel				
a)	26 SWG	SQMT	1900.00	550.00	1,045,000.00
b)	24 SWG	SQMT	2000.00	650.00	1,300,000.00
c)	22 SWG	SQMT	1800.00	750.00	1,350,000.00
d)	20 SWG	SQMT	1900.00	850.00	1,615,000.00
e)	18 SWG	SQMT	250.00	1,000.00	250,000.00
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.	SQMT	10.00	5,500.00	55,000.00
3.0	Supply, installation & testing of AMCA certified & UL listed motorized smoke cum fire dampers of at least 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.).				
a)	Actuator operated Smoke cum fire dampers (as per actual sizes from drawings)	SQMT	46.00	30,000.00	1,380,000.00
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	SQMT	137.00	10,500.00	1,438,500.00
5.0	Return Air Diffuser				
a)	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	SQMT	125.00	4,500.00	562,500.00
6.0	Linear Grilles:				
	Supplying, installing, testing and balancing of continous linear air grilles (Linear/single) of various sizes. Each grill shall have be with fixed horizontal front bar at 15 deg. deflection louvers, complete as per specification and drawing.				
a)	Powder Coated Linear Aluminium grilles without volume control damper (for Common Area).	SQMT	24.00	4,000.00	96,000.00
7.0	Return Air Grilles:				
	Supplying, installing, testing and balancing of return air grilles of various sizes. Each grill shall have be with fixed horizontal front bar at 15 deg. Deflection, complete as per specification and drawing.				
a)	Powder Coated Aluminium grilles with volume control damper (for exhaust of toilets).	SQMT	32.00	10,000.00	320,000.00
8.0	Fresh Air Louvers:				
	Supplying, installing and balancing of fresh/exhaust air anodized aluminum intake louvers with bird screen & aluminum volume control damper, complete as per specification & drawings				
a)	Fresh Air Louvers (With VCD & birdscreen)	SQMT	6.00	12,500.00	75,000.00
b)	Exhaust Air Louvers (Without VCD but with birdscreen)	SQMT	4.00	6,500.00	26,000.00
9.0	Air Measuring Stations				
	Supplying, installing 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	31.00	125,000.00	3,875,000.00
IV)	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.				
a)	25mm thick acoustic lining.	SQMT	600.00	450.00	270,000.00
2.0	Supply, fixing & testing of Acoustic silencers in return air passage within AHU rooms capable of noise reduction by 10db				
a)	22G GSS with 50/100mm thk acoustic lining in acoustic silencers	SQMT	38.00	1,000.00	38,000.00
3.0	Thermal Insulation:				
	Supplying, installing of external thermal insulation on ducts with approved sample of closed cell insulation class "O" rating, prelaminated with aluminium foil & density complete as per specifications.				
a)	19mm thick insulation.	SQMT	7100.00	500.00	3,550,000.00
3.0	Roof Exposed Insulation:				
a)	Supply,Instalation, testing and commissioning of 70 mm thick XPS Insulation having density of 32kg	SQMT	6325.00	1,200.00	7,590,000.00
V)	VENTILATION SYSTEM:				
1.0	Supply,installation,testing & comissioning of AMCA certified (for air & sound performance) and UL listed direct drive Tubeaxial supply air fan . Fans shall be 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 liftwell pressurization 6000cfm, 25mmSP, 2HP 415±10% volts 50Hz power supply	Nos	2.00	180,000.00	360,000.00
2.0	Supply,installation,testing & comissioning of AMCA certified (for air & sound performance) and UL listed belt drive SISW centrifugal backward inclined type fan with weather proof cabinet . The fans shall be complete with factory installed flow monitoring station (by fan manufacturer), and shall be a standard part of fan assembly. 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 centrifugal fans with weather proof cabinet for toilet exhaust 6400, 25mm SP,2HP 415±10% volts 50Hz power supply	Nos	2.00	275,000.00	550,000.00
b)	SISW centrifugal fans with weather proof cabinet for toilet exhaust 4400, 25mm SP,1.5HP 415±10% volts 50Hz power supply	Nos	2.00	225,000.00	450,000.00
3.0	Providing, installing , testing & commissioning following direct drive Axial/Mixed flow fans for ventilation & smoke extraction as per drawings. Fans for smoke management shall be AMCA certified (for air performance), UL listed & rated for 260°C for 4hours operation. Motors shall be suitable for 415+/-10%volts, 50hz, 3phase power supply				

a)	Mixed flow exhaust fan 30000CFM,7.5 HP, 10mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in normal mode for Enterance lobby ventilation	Nos	1.00	1,000,000.00	1,000,000.00
b)	Axial flow supply fan 15000CFM,5HP, 25mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in normal mode for Entrance lobby ventilation	Nos	2.00	500,000.00	1,000,000.00
c)	Axial flow exhaust fan 15000CFM,1.5HP, 5mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in normal mode for sitting lounge ventilation	Nos	2.00	350,000.00	700,000.00
d)	Axial flow supply fan 15000CFM,5HP, 25mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in normal mode for sitting lounge ventilation	Nos	2.00	500,000.00	1,000,000.00
e)	Mixed flow supply fan 36000CFM,15HP, 40mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in fire & normal mode for corridor ventilation	Nos	4.00	1,200,000.00	4,800,000.00
f)	Axial flow exhaust fan 12000CFM, 1.5HP, 5mm SP of 4hrs fire rating at 260°C, 75db noise lvl at 1.5mts from fan, in fire & normal mode for corridor ventilation	Nos	16.00	350,000.00	5,600,000.00
	Total Carried to Summary				71269115.00

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.	448		
2		Module Mounting Structure	Nos.	448		
3		Battery Bank 120V-600Ah	Nos.	150		
4		Battery Protection Panel	Nos.	1		
5		PCU 120V DC ,Three Phase 40 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		
VI		Rating 28 KW (School C Block)	Set	1	10541085.00	10,541,085.00
		GRAND TOTAL				10,541,085.00

BILL OF QUANTITIES						
SECTION-G: FIRE DETECTION SYSTEM						
Sr. No.	DSR 2012	DESCRIPTION OF ITEM	QTY	UNIT	RATE	AMOUNT
		Non DSR				
I		FIRE DETECTION				
1		SITC of FIRE ALARM CONTROL PANEL : Microprocessor based 12 loop fire alarm control panel fully networkable, expandable with each loop capable of taking 127 devices expandable upto 15 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	525,000.00	525,000.00
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.	520	3,000.00	1,560,000.00
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.	494.00	4,500.00	2,223,000.00
5		SITC of MANUAL CALL POINT : Analog, Soft Addressable, Manual Call Point with integrated Isolator, complete as required.	No.	32	3,300.00	105,600.00
6		SITC of RESPONSE INDICATORS : Local make response indicator complete as required.	No.	293	110.00	32,230.00
7		SITC of MONITOR MODULES : Addressable transponder / Monitor Modules complete as required.	No.	12	3,300.00	39,600.00
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.	32	4,000.00	128,000.00
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 & accesories.	No.	498	950.00	473,100.00
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/40Ohm, Supply Input 230/240V 50 Hz, DC 24V, Short Circuit protection, Thermal Shutdown, Overload protection, Inbuilt Ventilating Fans, THD< 0.5%, AC Dc Fuses, SNR>80 Db	No.	6	90,000.00	540,000.00
14		Supplying and drawing Copper Conductor, MICA taped, Halogen Free of 2 x 1.5 sq.mm cable including all supports required for instalation as per requirement on surface including all end terminations complete in all respect for succesful commissioning for fire detection and PAVA system.	RM	6000	250.00	1,500,000.00
		TOTAL SUB HEAD LOW VOLTAGE				7729030.00