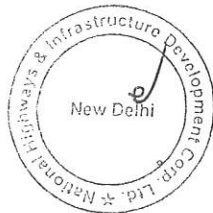


PROJECT: AUTOMATIC MULTILEVEL CAR PARKING

BILL OF QUANTITIES FOR CIVIL WORKS

S. NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT(RS)
	CIVIL WORKS				
1	EARTH WORK				
1.1	Felling trees of the girth (measured at a height of 1 m above ground level) including cutting of trunks and branches, removing the roots and stacking of serviceable material and disposal of unserviceable material and re-plantation as per the present norms at place suggested by NHIDCL. Permission for cutting tree shall be obtained by the bidder himself NHIDCL shall provide all relevant document for his purpose.				
1.1.1	Beyond 30 cm girth up to and including 60 cm girth.	Each	1		
1.1.2	Beyond 60 cm girth up to and including 120 cm girth.	Each	5		
1.1.3	Beyond 120 cm girth up to and including 240 cm girth.	Each	1		
1.1.4	Above 240 cm girth.	Each	1		
1.2	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 sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be leveled and neatly dressed and stacking of selected earth with in the premises for back filling in to the foundation, trenches as per the specification.				
	All kinds of soil	Cum	462		



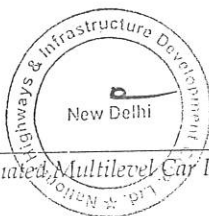
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Construction of Automated Multilevel Car Parking facility at Transport Bhatwan, 1 Parliament Street, Delhi-110 001

1.3	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 sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be leveled and neatly dressed and stacking of selected earth with in the premises for back filling in to the foundation, trenches as per the specification.				
	For lift of 1.5 m to 3.0 mtr. or part thereof in.				
	All kinds of soil	Cum	246		
1.4	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.				
	For lift of 1.5 m to 3.0 mtr. or part thereof in.	Cum	430		
1.5	Supplying and filling in plinth with Jamuna sand (good quality sand brought from outside) under floors including, watering, ramming consolidating and dressing complete as per the specification and direction of Engineer-in-charge.	Cum	90		
1.6	Supplying and filling in plinth with earth (good quality earth brought from outside) under floors including, watering, ramming consolidating and dressing complete as per the specification and direction of Engineer-in-charge.	Cum	10		
1.7	Surface dressing of the ground including removing vegetation and inequalities to achieve fairly leveled surface to lay PCC and disposal of rubbish for all leads within Client's premises.	Sqm	300		

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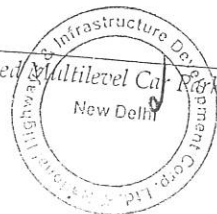


Construction of Automated Multilevel Car Parking facility at Transport Bhuvan, 1 Parliament Street, Delhi-110 001

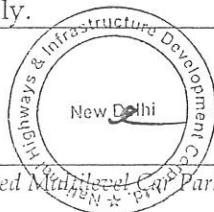
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1.8	Supplying, diluting and injecting chemical emulsion for pre-constructional anti-termite treatment and creating a continuous chemical barrier under and around the column pits, wall trenches, top surface of plinth filling, junction of wall and floor, along the external perimeter of building, expansion joints, over the top surface of consolidated earth on which apron is to be laid, surroundings of pipes and conduits etc. complete. Work to be carried out as per IS : 6313 (Part II) and to the satisfaction of the PM. (Plinth area of the building at ground floor only shall be measured for payment)	Sqm	300		
1.9	Carriage of excavated earth by mechanical transport including loading, unloading and stacking.				
	Earth				
	Lead Upto 1.0Km.	Cum	10		
	Lead 1.0Km to 2.0 Km.	Cum	10		
	Lead 2.0Km to 3.0 Km.	Cum	10		
	Lead 3.0Km to 4.0 Km.	Cum	10		
	Lead 4.0Km to 5.0 Km.	Cum	10		
	Lead 5.0Km to 10.0 Km.	Cum	10		
	Lead 10.0Km to 15.0 Km.	Cum	10		
	Lead 15.0Km to 20.0 Km.	Cum	10		
	Sub-Total	Cum	400		
2	CONCRETE AND REINFORCEMENT WORK				
2.1	Providing and laying cement concrete 1:4:8 (1 cement : 4 coarse sand: 8 stone aggregate 20 mm down) in foundation, Plinth level including required form work.	Cum	60		
2.1.1	Providing and laying cement concrete 1:3:6 (1 cement: 3 coarse sand: 6 stone aggregate 20 mm down) at all level.	Cum	5		
2.1.2	Providing and laying cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 stone aggregate 20 mm down) at all level.	Cum	14		

Construction of Automated Multilevel Car Parking facility at Transport Bhawan, 1 Parliament Street, Delhi-110 001



2.2	Providing and laying RMC of M25 grade in foundation including pump without flyash including required plasticizer.	Cum	200		
2.2.1	In superstructure at all level upto 23 m height (RMC with pump) at eight floor different level.	Cum	345		
2.2.2	Providing & laying Trimix flooring thickness shall 75mm thick with reinforced cement concrete of grade M25 with 20mm down size graded crushed stone aggregate/gravel in floors etc. laying in alternate panels of maximum 4x4mtr to required levels and followed by suction drying process including leaving dowels, pockets openings, grooves 3x12mm, side shuttering, vibrating by poker/needle vibrator surface vibrator, mechanical floating and power trowelling, curing, and rendering if required to give smooth and even surface, cutting of grooves at construction joints and filling the same with mastic sealant of approved quality including heavy duty non-metallic integrated floor hardener dosing @ 4 kg per sqm as per the manufacturers specifications (make of Fosroc/ BASF). All complete as specified and directed and including execution by specified and experienced agency.	Cum	175		
2.3	Providing & fixing Centering and shuttering including strutting, propping etc. and removal of form with water proof 12 mm thick laminated ply.				
	In Foundation	Sqm	400		
2.3.1	Providing & fixing Centering and shuttering including strutting, propping etc. and removal of form for super structure upto 23 m height in slabs, beams, columns, staircases etc with water proof 12 mm thick laminated ply.	Sqm	2300		



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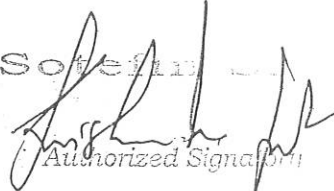
Construction of Automated Multi-Level Car Parking facility at Transport Bhawan, 1 Parliament Street, Delhi-110 001

2.4	Providing Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete upto plinth level.				
	Thermo-Mechanically Treated bars (TMT Fe - 500 grade)	MT	20		
2.4.1	Providing Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level and up to 23 mtr height.				
	Thermo-Mechanically Treated bars (TMT Fe - 500 grade)	MT	45		
	Sub-Total				
3	BRICK WORK				
3.1	Providing & laying Brick work 230mm thick with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in Cement mortar 1:6 (1 cement : 6 coarse sand)	Cum.	35		
3.2	Providing & laying Brick work 230mm thick with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in super structures up to 23 m height in Cement mortar 1:6 (1 cement : 6 coarse sand)	Cum	210		
3.3	Providing & laying Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundations and plinth in cement mortar 1:4 (1 cement : 4 coarse sand)	Sqm	5		
3.4	Providing & laying Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in superstructure above plinth level up to all floor 23 m height including placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry.	Sqm	25		
	cement mortar 1:4 (1 cement : 4 coarse sand)				

Construction of Automated Multi-level Car Parking facility at Transport Bhawan, 1 Parliament Street, Delhi-110 001

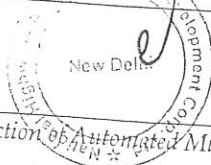


3.5	Providing and laying autoclaved aerated cement blocks masonry with 200 mm thick AAC blocks in super structure above plinth level up to 23 M height in cement mortar 1:4 (1 cement : 4 coarse sand). (Make- Magicrete/ Builttech)	Cum	120		
3.6	Providing & laying Brick work 230mm thick with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in staircase steps in Cement mortar 1:4 (1 cement : 4 coarse sand)	Cum	8		
	Sub-Total				
4	FINISHING				
4.1	Providing and applying 12-15mm thick cement plaster upto 23 m height 1:1:4 (1 cement : 1 coarse sand : 4 fine sand) on walls including chicken wire mesh at junction of masonry and concrete works and over conduits, scaffolding, leveling and curing etc complete.	Sqm	1275		
4.2	Providing and applying 18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement : 5 coarse sand) finished with a top layer 6 mm thick cement plaster 1:6 (1 cement : 6 fine sand).with making of groove as per design and detail with approved by Architect/Consultant/NHIDCL.	Sqm	935		
4.3	Providing and applying three coat of 2mm thick cement based white putty from Birla / Jk on all internal surfaces of wall as per the satisfaction of Architect/Consultant/NHIDCL.	Sqm	1275		

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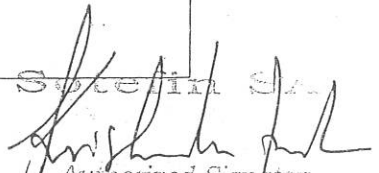
4.4	Providing and applying three or more finishing coats of acyllic emulsion paint, ICI Dulux / Asian paints of approved shade to walls and ceilings surfaces as mentioned by architect. The paint shall be applied evenly to give approved uniform matt finish. Allow for preparation of surface and one coat of primer as specified. Paint shall be laid with rollers to acquire a stippled and textured finish.	Sqm	448		
4.5	Providing and fixing Glass Reinforced Concrete (G.R.C) Screens in approved size, pattern, design, thickness and color. The Screens should be made from '53 grade' White Portland Cement manufactured by 'JK Cement' or equivalent, Quartz, Fine Silica Sand, Alkali Resistant Glass Fiber manufactured by 'Saint Gobain' or equivalent, Super Plasticizers manufactured by 'BASF' or equivalent, Polymers manufactured by 'BASF' or equivalent and U.V resistant Synthetic inorganic pigments should be used for pigmentation resistant Synthetic inorganic pigments should be used for pigmentation resistant Synthetic inorganic pigments should be used for pigmentation manufactured by 'BAYFERROX (Germany)' or equivalent. The material casting should take place in Synthetic Rubber / FRP Mould manufactured by 'Reckli' or equivalent. The fixing of Screens should be 'Dry fixing' i.e. to be done with Stainless Steel (SS - 304) 'L' shaped Clamps, dash fasteners and pins.	Sqm	825		
4.6	Providing and fixing of TOP mounted SS 304 grade railing on ramp. Railing shall have 65 mm dia stainless steel handrail and Balustter shall made up by 75 mm wide and 10 mm th stainless steel plate with suitable adjustable flange on top to fix the handrail as per the architectural drawing.	Meter	90		



4.7

Providing & Fixing of Aluminium Composite Panel Cladding using 4mm thick sheet (0.5mm + 3mm + 0.5mm) consisting of a core of 3mm polyethylene sandwiched between two skins of 0.5mm Aluminium alloy sheets with outer surface in desired color coating of PVDF paint in fully automatic coil coating process. The PVDF coated finished surface to be factory protected with self adhesive peel off foil tested to with stand at least 6 months exposure to local weathering conditions. The ACP Sheets shall be of ALUCOBOND / EUROBOND / ALU DECOR / ALSTONE make or equivalent. Complete in all respects as per the direction of engineer-in-charge. Only Skin area of ACP sheets fixed on the Building Facade Structure shall be measured on out to out basis and paid for. The Contractor shall include 1.5mm thick 38 x 38 hollow Aluminium tube for basic framework.

The anchoring / bracing of the structural glazing to the RCC Beams / Slab / Columns shall be done with 3mm thick MS brackets of Approved design, Hot Dip Galvanised or duly powder coated up to 60 micron thickness with Black Colour Berger / Nerocoat Pure Polyester powder. Hilti/Fischer make anchor fasteners shall be used providing a minimum anchoring depth of 70mm in the concrete for anchoring the bracket to withstand the dead load of the structural glazing as well as stresses due to wind pressure etc. the glazing contractor shall also make arrangements with the anchor supplier - HILTI / FISCHER to carry out RANDOM PULL OUT TESTS at site after embedding the anchor in the concrete and submit the reports to the engineer-in-charge.

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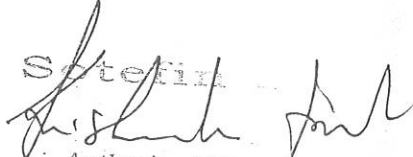
Construction of Automated Multilevel Car Parking facility at Transport Bhawan, 1 Parliament Street, Delhi-110 001



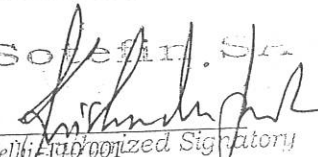
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	All screw, bolts, nuts and washers used in the structural glazing shall be only stainless steel.			
	The grooves between the ACP Panels shall be sealed by inserting Bond Breaking Backer Rod as manufactured by Supreme Industries and by application of High Performance Weather Silicone Sealant Non Staining Non Streaking as DC - 991 as manufactured by DOW CORNING or 605-S as manufactured by WACKER Silicones.			
	Aluminium composite panel cladding on external shop front	Sqm	45	
4.8	Providing and fixing M.S. structural work fabricated from standard sections, (MS rounds, flats, angles, channels etc.) including cutting to size, drilling, welding, including cost of fasteners, clamps in RCC structural members as directed, including two or more coats of synthetic paint over one coat of primer after surface preparation including cutting and making good walls/ floors etc for ACP facade work etc.	MT	3	




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4.9	Providing and applying two coats Unitile's 'Royal/Rivera' or equivalent Spectrum make in approved shade on a smooth cementsand plaster. The composition of the texture paint should consist of Acrylic Copolymer Resinscombined with Quartz, Silica, mineral aggregates, synthetic inorganic pigments, bactericide, fungicidesand various other additives, giving the product water repellent properties. The first coat to be applied bybrush or wool roller as a base coat, diluted with sufficient water and the final coat applied undilutedwith trowel and then finished with acrylic trowel to obtain the specified grooves. The thickness of bothcoats should be 1.0 to 1.5 mm. The water repellency of the product is 86 gm/m ² as per test method IS:5410 - 1969.	Sqm	825		
	Sub-Total				
5	STEEL WORK				
5.1	Providing Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and including a priming and painting coat of approved epoxy paint on surface as per specifications.	MT	105		
	Sub-Total				
6	FLOORING WORK				
6.1	Providing and laying vitrified floor tiles in different sizes 9 to 10 mm thickness with water absorption 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), includinggrouting the joints with white cement and matching pigments etc.				
	Size of Tile 600x600 mm(Basic rate- Rs 600/sqm).	Sqm	46		

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Construction of Automated Multilevel Car Parking facility at Transport Bhawan, 1 Parliament Street, Delhi-110001

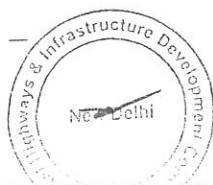


6.2	Providing and Laying of 300mm X 300mm/300X600mm ceramic tiles of (Orient or Kajaria make) or as approved colour and shade on floor and wall with 20 mm thick cement mortar 1:4(1 cement:4 coarse sand)mortar with top layer of 4mm open jointing finished with colour matching pigment (Latecrete) tile shall be laid as per the pattern shown in the drawing. (Basic rate- Rs 500/sqm).	Sqm	20		
6.3	Providing and Laying Granite stone flooring with 18 mm thick granite stone, as per sample of granite 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.(Basic rate- Rs 800/sqm).	Sqm	130		
	Sub-Total				
7	WOOD WORK				
7.1	Providing and making of single rebate hardwood (Marandi) door frame size 150 x 75 with single side rebate of 50 x 12mm , door frame shall be finished in dark walnut polish with top melamine coat, fixed to jamb with ms angle and fastners as required.	Meter	90		
7.2	Providing, Fabricating and fixing single leaf solid core flush door 35mm thick factory made, finished on both sides with 1.0 mm thick laminate of approved shade as indicated in drawing. Shutter to be lipped on all sides with 12mm thick teak wood beading. Applicable hardwares to be considered for following doors according to requirement as per detailed drawings and approval by Architect. Necessary hardware includes heavy duty 4"stainless steel hinges, door stopper in ss finish, toilet latch with status bar in case of toilet doors, dead lock with ss finished key hole.(Basic rate- Rs 850/sheet)	Sqm	40		



Construction of Automated Multilevel Car Parking facility at Transport Bhawan, 1 Parliament Street, Delhi-110 001

	Sub-Total				
8	METALLIC CEILING				
8.1	Providing & Fixing of Armstrong GI Lay in metal ceiling System consisting of 600x600mm Lay in tiles of pre coated galvanised steel in 0.5 mm thickness in white colour with standard perforation of 2.5mm dia & open area of 16%. The tiles to be laid on Armstrong 15mm Silhoutte Black Reveal grid systems with 15mm wide T - section flanges colour white having rotary stitching on the Main Runner, 1200 mm & 600 mm Cross Tee.	Sqm	115		
	Sub-Total				
9	GLASS WORK				
9.1	Providing and fixing of 12mm tuffened glass panel of desired size , as per design/detail as show-window glass. The panels shall be fixed within aluminum concealled channels fixed in floor and ceiling with necessary rough ground for both, with a minimum expansion tolerance gap of 3mm on both sides of panel. The edges shall then be finished with absolute clear silicon. All edges of glass shall be straight polished to mirror finish. Provision shall be left for fixing of patch fittngs for fixing of glass door.	Sqm	10		
9.2	Providing and fixing of single leaf , 12mm thick tuffened glass door panel including fitting of floor spring and patch fitting of ozone 9600 make or eqv. The door shall be equipped with ss finished H-shaped handles of 600 mm length.	Sqm	2		
	Sub-Total				
10	WATER PROOFING WORK				




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10.1	<p>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/sqm 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 300 mm 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</p>				
	<p>c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed 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 of 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 3 mm deep. d) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-</p>				

	in-charge: With average thickness of 120mm and minimum thickness at khurra as 65 mm.	Sqm	320		
10.2	Providing and laying water proofing treatment in lift pit, water tanks etc., by applying cement slurry mixed with water proofing cement compound consisting of applying : a) First layer of slurry of cement @ 0.488 kg/sqm mixed with water proofing cement compound @ 0.253 kg/ sqm. This layer will be allowed to air cure for 4 hours. b) Second layer of slurry of cement @ 0.242 kg/sqm mixed with water proofing cement compound @ 0.126 kg/sqm. This layer will be allowed to air cure for 4 hours followed with water curing for 48 hours. The rate includes preparation of surface, treatment and sealing of all joints, corners, junctions of pipes and masonry with polymer mixed slurry.	Sqm	121		
10.2.1	Extra for Ad-mixture for item no. 10.2	Kg	300	10.00	
	Sub-Total				
	GRAND TOTAL				

PROJECT: AUTOMATIC MULTILEVEL CAR PARKING					
BILL OF QUANTITIES FOR PLUMBING WORKS					
S. NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT(RS)
1	SOIL, WASTE, VENT, RAIN WATER PIPES AND FITTINGS				
1.1	Providing and fixing, testing and commissioning of SWR pipe type - B soil & waste & vent pipes (IS: 13592 - 1999) including all fittings such as bends, Y-Tee, Tee, Junctions, inspection doors, with 3 mm thick rubber washer; offsets, cowls, access pieces /plugs etc clamps/structural steel supports as required/directed at site, jointing with Solvent Cement including cutting holes in walls, slabs and making good with water proofing compound mixed mortars or concrete and testing				

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Construction of Automated Multi-level Car Parking facility at Transport Bhawan, 1 Parliament Street, Delhi-110 001

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	complete.				
a)	110 mm dia (IS: 13592-1999)	Meter	10		
1.2	Providing and fixing PVC-U conforming to (IS: 14735-99) 'P' or 'S' trap of self cleansing design with or without vent arm complete in all respects including solvent cement joint cutting and making good the walls, floors & RCC work. (Floor Trap/Urinal Trap)				
a)	110 mm inlet & 110 mm outlet.	Each	2		
1.3	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/CI(LA,A) pipe including cost of Drip seal joint/lead joints etc. complete in all respect.				
a)	110 mm dia.	Each	1		
1.4	Providing, fixing and testing GI pipes Class 'C' (heavy duty) of approved make conforming to IS 1239-1982 complete with G.I. fittings such as tees, crosses, plugs, sockets, elbows, reducers, unions, sleeve pieces, check nuts etc including jointing with C.I. pipes (wherever required), cutting & making good the walls, floors, R.C.C. work etc. including cutting chases & filling the same, painting the GI pipes with two coats of bitumastic paint, wrapping with one layer of polythene tape. (for waste connection & floor drain).				
a)	50 mm dia	Meter	2		



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1.5	Providing and fixing on wall face unplasticised - Rigid PVC (6Kg) rain water pipes and unplasticised - PVC moulded fittings/accessories conforming to IS : 13592 Type A including jointing with seal ring conforming to IS : 5382 leaving 10 mm gap for thermal expansion. (i) Single socketed pipes and fixing with pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50mm hard wood plugs, screwed with M.S. screws of required length including cuttingholes in slabs, brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the slabs and wall etc. complete. The cost will include all support arrangements. The work includes commissioning of all pipe lines as per drawings and specifications and as directed by Engg-in-charge at site.				
a)	110 mm OD	Meter	135		-
b)	160 mm OD	Meter	35		-
1.6	Providing and fixing M.S. structural work fabricated from standard sections, (MS rounds, flats, angles, channels etc.) including cutting to size, drilling, welding, including cost of fasteners, clamps in RCC structural members as directed, including two or more coats of synthetic paint over one coat of primer after surface preparation including cutting and making good walls/ floors etc for grating over sump pits, tanks, drains, rungs hangers or pipe line brackets etc.	Kg	100		-
	Sub-Total				-
2	INTERNAL & EXTERNAL WATER SUPPLY PIPES AND FITTINGS				



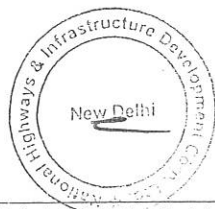
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2.1	Providing, fixing and testing in position ISI marked (IS: 1239) G.I pipes (medium class) manufactured from seamless pipes, in concealed or exposed works complete with all necessary G.I fittings i.e. sockets, elbows, tees, bends, unions, plugs and clamps including cutting chases and making good the walls (on terrace the pipes shall be supported at suitable interval and inside ducts these shall be properly clamped through duct walls). The Galvanization shall conform to IS : 4736. The work shall include the painting with two coats of anti-corrosive paints on buried and concealed pipe works and with two coats enamel paint of approved quality and shade over a coat of primer on exposed pipe works including double flanged braided building expansion joint wherever pipe crosses exp joint, complete as required by the Engg-in-charge for proper completion of the work.				
a)	15mm dia nominal bore	Meter	2		-
b)	20mm dia nominal bore	Meter	2		-
c)	25mm dia nominal bore	Meter	25		-
d)	50mm dia nominal bore	Meter	40		-
2.2	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 15-25 kg/sqcm complete.				
a)	25 mm nominal bore	Each	2		-
b)	50 mm nominal bore	Each	2		-




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2.3	Providing and fixing multi-jet magnetic drive (turbine type) water Meter conforming to IS:779 with direct reading dia in Kilo-liter with all internal part in Gun metal or brass, strainer, flanged distance pieces for easy removal, 100 mm dia burden type pressure gauge with isolation cock including necessary test certificates for the Meter from municipal authority.				
	50 mm dia	Each	1		-
2.4	Constructing brick masonry chamber with 75 class designation brick work in cement mortar 1:5 (1 cement :5 fine sand) for valves, cement conc. top slab 1:2:4 (1 cement :2 coarse sand :4 graded stone aggregate 20 mm nominal size) necessary excavation, foundation conc. 1:5:10 (1 cement :5 fine sand :10 graded stone aggregate 40 mm nominal size) & 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 including excavation, backfilling, dewatering etc.,complete:				
a)	600X600X600mm size chamber with CI cover and frame (Heavy duty) the weight of the cover to be not less than 108 kg.	Each	1		-
b)	600X600X750mm size chamber with CI cover and frame (Heavy duty) the weight of the cover to be not less than 108 kg.	Each	1		-
2.5	Providing and fixing gunmetal equilibrium float valve with S.S. rod and 2 mm thick copper float, tested for 5 Kg/Sq.cm complete including companion flanges, nuts, bolts, washer etc. complete in all respect.				
a)	50 mm dia	Each	1		-



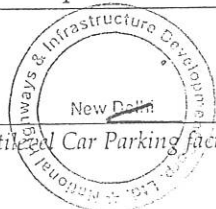
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Construction of Automated Multilevel Car Parking facility at Transport Bhawan, 1 Parliament Street, Delhi-110 001

2.6	Earth Work in Excavation of required width for water supply pipes including excavation for sockets and dressing of sides, ramming of bottom depth upto 1.5 m including getting out the excavated soil and then returning the soil as required in layer not exceeding 20 cms in depth including consolidating each deposited layers by ramming, watering etc. and disposing of surplus excavated soil as directed within a lead of 50 m. for all kinds of soil.				
a)	Pipe up to 80 mm dia	Meter	10		-
	Sub-Total				-
3	EXTERNAL SEWERAGE & S.W.DRAINAGE SYSTEM				
3.1	Road cutting 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.				
a)	Pipes 150 mm to 300 mm diameter up to 1.50 m depth	Meter	15		-
3.2	Providing, laying and jointing light duty non-pressure NP3 class S/S R.C.C. Hume pipes with collars jointing with stiff-mixture of cement mortar in the proportion of 1:2 (1 cement : 2 fine sand) including curing, testing of joints etc.				
a)	150 mm diameter RCC	Meter	15		-
3.3	Providing & laying Cement concrete 1 : 5 : 10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) 150mm thk. all-round of S. W. Pipes / RCC pipes including bed concrete as per standard design.				
a)	150 mm diameter RCC/S.W. Pipe	Meter	15		-

Construction of Automated Multilevel Car Parking facility at Transport Bhawan, 1 Parliament Street, Delhi-110 001

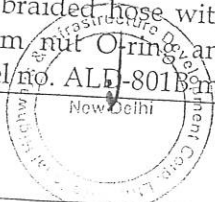
3.4	Providing and fixing square mouth S. W. Gully trap grade 'A' complete with C.I. grating, brick masonry chamber with F.P.S bricks and water tight CI cover with frame of 300 x 300 mm size (inside) the weight of cover to be not less than 4.50 kg and frame to be not less than 2.70 kg as per standard design				
a)	150 x 100 mm. size P type	Each	1		
3.5	Constructing water tight Brick masonry Rectangular Manhole with F.P.S. bricks 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) finished with a floating coat of neat cement complete as per standard design (Item includes necessary excavation, refilling and disposing of surplus excavated soil as directed within a lead of 50m).				
a)	Inside size 45 x 45 cm & 45 cm deep including SFRC cover with frame (Heavy duty)	Nos	8		
3.6	Making connection of sewer/drain line with existing manhole including breaking into & making good the wall, floors with cement concrete 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) cement plastered on both sides with cement mortar 1 : 3 (1cement : 3 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete				



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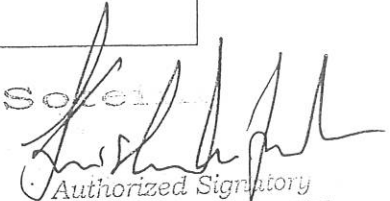
a)	For pipes 100 to 150 mm diameter-sewer connection	Each	1			
b)	For pipes 150 to 200 mm diameter - Drain Line	Each	1			
	Sub-Total					
4	CHINAWARE FIXTURES					
4.1	Supply, Installing & fixing of wall hung, washdown type WC in white ceramic with concealed fitting VGS-WHT-0118 make jaquar including coordinated seat cover Item shall be inclusive of complete plumbing works related to fixture.	Each	1			
4.2	Supply, fixing & installing of single urinal (flat back type) in white ceramic with concealed rear inlet, including all connection pipe, necessary brackets, dome grating, bottle trap etc. URS-WHT-0702 make jaquar	Each	1			
4.3	Supply, fixing & installing of wash basin with full pedestal in white ceramic, including all connection pipe, bottle trap etc. SLS-WHT-0611F make jaquar	Each	1			
4.4	Supply fixing and installation of 12 mm thick frosted toughned glass partition for urinal as per architects design. (size approx 2.5'X1.5')	Each	1			
	Sub-Total					
5	CHROME PLATED FITTINGS					
5.1	Providing and installation of pillarcock Auto closing system PRS -031- make Jaquar for washbasin.	Each	1			
5.2	Providing and installation of Bottle trap with internal partition 32mm size with 300mm and 190 mm long wall connection pipe and wall flange Model no. ADL-769L-300x190 make Jaquar	Each	1			
5.3	Providing and installation of 600 mm long braided hose with M-10X1 nipple 15 mm nut O-ring and rubbr washer Model no. ALF-801B make Jaquar	Each	1			



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5.4	Providing and installation of Angular stop cock with wall flange Model no. FLR-5053N	Each	3		-
5.5	Providing and installation Sensor based concealed type flushing unit, for URINAL, complete with control cock. Model no SNR-STAL-51077 make Jaquar	Each	1		-
5.6	Providing and installation of slim concealed cistern with floor mounted frame, installation kit and drain pipe connection set for wall hung WC. Model no. CIB-WHT-31801011XFD make Jaquar	Each	1		-
5.7	Providing and installation of control flushing plate riviera design all chrome Model no CIS-CHR-31185210X make Jaquar	Each	1		-
5.8	Providing and installation of hand shower (Health Faucet) with 8 mm dia 1Meter longflexible tube and wall hook with N.R.V (Back Flow Preventer) Model no. ADL-577 make Jaquar	Each	1		-
5.9	Providing and installation Stainless Steel round jali make Camry/Azur	Each	1		-
5.10	Providing and installation Stainless Steel Nahani trap with square jali cover. make Camry/Azur	Each	1		-
5.11	Providing and installation Robe hook. Model no ACG-1191-N make Jaquar	Each	1		-
	Sub-Total				-
6	TOILET ACCESSORIES				
6.1	Providing and installation of jumbo roll toilet-paper dispenser. HT-PNDT Make Camry	Each	1		-
6.2	Providing and installation of Push button type Soap Dispensor , with plastic shell & transparent bottle of 800ml complete with locking strap. HT-LSDW Make Camry/ Azur.	Each	1		-



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6.3	Providing and installation of Air purifier spray , micromist room freshner including aerosol can with battery & aerosol indicator lamps	Each	1		
6.4	Providing and installation of 900x600 and 6 mm thick mirror fixed with stain less steel studs on wall for wash basin.	Each	1		
	Sub-Total				
	GRAND TOTAL				

PROJECT: AUTOMATIC MULTILEVEL CAR PARKING

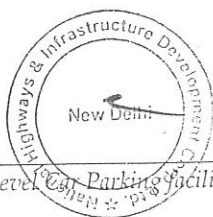
SCHEDULE OF QUANTITY FOR FIRE SUPPRESSION WORK

S. NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT(RS)
I	Fire Fighting System				
1	Providing and fixing Single headed, Stainless Steel SS 304, ISI marked oblique pattern hydrant landing valve with 80 mm dia flanged inlet and 63 mm dia instantaneous type female outlet complete with gunmetal cap and G.I. chain, twist release type plug and all accessories as per 13:5290-1983 (Type 'A')	Each	18		
2	Providing and fixing First-Aid Fire Hose Reel wall mounting swinging type complete with drum, bracket, 20 mm dia x 36M long high pressure Hose Reel tubing as per IS:444 with Gun-Metal shut-off nozzle having 5mm dia. orifice, fixing 25 mm dia Ball valve. etc., The Hose Reel shall strictly confirm to IS: 884-1985.	Each	16		
3	Providing and fixing Non-percolating flexible hose (RRL type-'A') ISI marked (IS:636) 63 mm dia x 15 M long complete with instantaneous, type gunmetal / SS, 63 mm dia. IS marked Male and female couplings (IS:903) bound and rivetted to hose pipe with copper rivets and 1.5 mm copper wire.	Each	36		
4	Providing and fixing Stainless Steel 304, 63mm dia short size branch pipes with 20 mm dia nozzles with 63mm SS instantaneous coupling ISI marked (IS: 903)	Each	18		

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5	Providing and fixing M.S. fire hose shaft door with frame fabricated from angle iron frame 40 x 40 x 6 mm thick, angle iron shutter 25 x 25 x 4 mm thick, 16 g M.S. sheet of fully welded construction with hinged double front door with locking arrangement and butt hinges, 15 x 3 mm lugs 10 cm long (6 Nos) embedded in cement conc. blocks (1: 3: 6 mix) or with rawl plug and screws/bolts and nuts as required, partly glass door 4 mm thick approved by local fire authority, painted with one coat of primer, stove enamelled fire red finished, "Fire Hose" written on front, suitable to accommodate 2 Nos single headed Hydrant landing valve, 1 fire hose reel, 2 nos.15m long 63mmdia hose,1-branch pipe, 1 fire-man's axe, including suitably mounted on a raised masonry platform as required. (Approx.size 0.9m x 2.1m)	Each	16		
6	Providing and fixing Weather proof hose cabinets fabricated from 16 g M.S. Sheet with full glass door and locking arrangement, suitable to accommodate 2 Nos. single headed Hydrant landing valve, 2 nos. 15 M long hose and 1 No branch pipe/ fire brigade connectors, 2 Nos. fire extinguishers. The cabinet shall be painted with one coat of primer and finished stove enamelled "Fire Red", "Fire Hose" written on front including suitably mounted on a raised masonry platform as required.(Approx 0.75m x 0.6 m x 0.3 m).	Each	2		
7	Providing and fixing Air cushion tank 250 mm dia. x 1.0 M high with dished top, made of minimum 6 mm thick M.S. pipe/plate complete with 25 mm dia. Brass Air Valve (Ball valve, pressure guage type), 25 mm dia. Stop with brass stop cock,nipple, tees, elbow and all accessories as required incl. fixing brackets.	Each	2		



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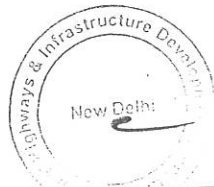
Construction of Automated Multilevel Car Parking Facility at Transport Bhawan, 1 Parliament Street, Delhi-110 001

8	SUPPLY, INSTALLATION, TESTING & COMMISSIONING of Mild Steel pipe (IS:1239 Part-I) Heavy class including cutting, threading, welding etc. bends, elbows reducers, unions, flanges, rubber gasket clamps, G.I. nuts bolts washer, hangers etc., including all necessary pipe support, cutting to size, drilling, welding / fixing and welding insert plates in RCC structural members wherever required fixing the pipe on wall / floor / ceiling using anchor fastners, G.I. pipe sleeves of higher dia shall be provided wherever the pipes are crossing the wall or floors and sealing the sleeve with glass wool and fire sealent, cutting holes in brick or RCC walls/slabs and making good the same complete including painting with one coat of primer and two or more coats of synthetic enamel paint of approved make and shade including, as directed by Engineer-in-Charge. Note : Pipes upto and 50 mm dia shall be standard threaded forged steel fittings joints, above 50mm shall be standard M.S. fittings with welded joints.				
a)	150 mm dia	Meter	78		-
b)	80 mm dia	Meter	48		-
c)	25 mm dia	Meter	25		-



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9	<p>SUPPLY, INSTALLATION, TESTING & COMMISSIONING of Mild Steel pipe (IS:1239/3589 Part-I) heavy class (6mm wall thickness) including cutting, threading, welding etc. bends, elbows reducers, unions, flanges, rubber gasket clamps, G.I. nuts bolts washer, hangers etc., including supporting / fixing the pipe on wall / floor / ceiling using anchor fastners, G.I. pipe sleeves of higher dia shall be provided wherever the pipes are crossing the wall or floors and sealing the sleeve with glass wool and fire sealent, cutting holes in brick or RCC walls/slabs and making good the same complete including painting with one coat of primer and two or more coats of synthetic enamel paint of approved make and shade including all steel work for suction and delivery headers.</p>				
10	<p>SUPPLY, INSTALLATION, TESTING & COMMISSIONING Mild Steel black pipe (IS: 1239 Part-1) heavy class including cutting, screwing, welding etc. complete with fitting viz. tees elbow, bends, flanges, reducers. etc including excavation (upto 1.5M deep). Rubble soling, sand filling upto 3 " above the pipe, back-filling with excavated earth, removal of surplus soil and providing anti-corrosive treatment (coating and wrapping) with 4 mm thick tape and holiday test check as per IS: 10221 complete as required. Note : Pipes upto and 50 mm dia shall be standard threaded forged steel fittings joints, above 50mm shall be standard M.S. fittings with welded joints.</p>				
a)	150 mm dia	Meter	50		-
b)	80 mm dia	Meter	40		-



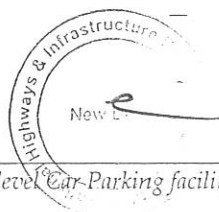
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11	Construction of brick masonry valve chamber 120x120x100 cms. (inside) with 75 class designation brick work in cement mortar 1:5 (1 cement : 5 coarse sand) for valves with C.I. surface box 60 x 45 cms.(inside) with locking arrangement and RCC roof slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) and inside plastering with cement mortar 1:3(1cement : 3 coarse sand) finished with a floating coat of neat cement as per standard design.	Each	2		
12	Supply Installation and testing slim seal Butterfly valves B190 Class (PN 1.6), (lever operated upto 150 mm and gear operated for 200mm and more) complete with 2 Nos matching flanges rubber insertion, nuts, bolts and washer etc. of following sizes				
a)	50 mm dia	Each	16		
b)	65 mm dia	Each	16		
13	Supply Installation and testing forged brass Ball valve with hard chrome plated ball inside PTFE (Teflon) seat & ring with chrome plated centre handle with female BSP threads suitable for 15 kg/sq cm. complete in all respects.				
a)	20 mm dia nominal bore	Each	16		
b)	25 mm dia nominal bore	Each	16		
14	Providing and fixing standard fireman's axe with heavy insulated rubber handle conforming to IS: 926 complete.	Each	16		
15	Providing and fixing dial type pressure gauge with ball valve and pipe at hydrant station, complete in all respects. Dial dia 100 mm, calibration 0-15 kg/sq cm. Valve shall be paid separately.				
a)	20 mm dia nominal bore	Each	16		
	Sub-Total				
		Each	16		
II	Automatic Sprinkler System.				
	SUPPLY, INSTALLATION, TESTING & COMMISSIONING OF :-				
1	15 mm dia Quartzoid bulb type G.M. Sprinkler head suitable to operate at 68 deg.C (UL/FM/LPC listed /approved)				

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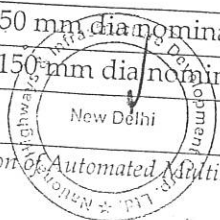
	a) Standard Pendant type in brass/chrome finish for area having no false ceiling.	Each	256		-
2	Providing and fixing Spare-Sprinkler cabinet to house atleast 40 Nos. sprinklers neatly kept in a wooden cabinet with suitable shelves having full glass front door and locking arrangement and one spanner properly fixed in the cabinet painting with enamel paint of approved make and shade to the approval of engineer.	Each	1		-
3	150 mm dia. Installation Control Valve assembly comprising of vertical wet alarm valve, including 150 mm dia butterfly valve, hydraulic alarm motor & gong, 15 mm dia. Test valve, 50 mm dia. Drain valve and all necessary trimming connections including 2 nos. pressure guages as per manufacturer 's catalogue (UL/FM/LPC/TAC listed/approved).	Each	1		-
4	Air-Cushion -Tank fabricated 250 mm dia. x 1.0 M high with dished -top,made of minimum 6 mm thick M.S.Sheet pipe/plate complete with 25 mm dia. brass Air-Valve (Ball Type). 25 mm dia. stop valve, pressure guage with brass stop cock. nipple, tees. elbows and all accessories as required including fixing brackets.	Each	2		-
5	Electrically Operated Flow Indicating Switches (vane type) including tamper switch and accessories, with potential free contact with 2 Nos. NONC. Complete.				
a)	For 150/100/80 mm line	Each	16		-
6	20 (16 working + 4 spare for future) zones annunciater Panel for flow control switches, providing Audio/Visual Indication of actuation of Automatic Sprinkler system / fault hooter etc., for each zone complete as per specifications. The panel should have interface for connection to complete controlled building management system.	Each	1		-



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7	SUPPLY, INSTALLATION, TESTING & COMMISSIONING of Mild Steel pipe (IS:1239 Part-I) heavy class including cutting, threading, welding etc. bends, elbows reducers, unions, flanges, rubber gasket clamps, G.I. nuts bolts washer, hangers etc., including supporting / fixing the pipe on wall / floor / ceiling using anchor fastners, G.I. pipe sleeves of higher dia shall be provided wherever the pipes are crossing the wall or floors and sealing the sleeve with glass wool and fire sealent, cutting holes in brick or RCC walls/slabs and making good the same complete including painting with one coat of primer and two or more coats of synthetic enamel paint of approved make and shade including all steel work. Note : Pipes upto and 50 mm dia shall be standard threaded forged steel fittings joints, above 50mm shall be standard M.S. fittings with welded joints.				
a)	150 mm dia	Meter	135		-
b)	65 mm dia	Meter	130		-
c)	50 mm dia	Meter	48		-
d)	40 mm dia	Meter	72		-
e)	32 mm dia	Meter	192		-
f)	25 mm dia	Meter	512		-
8	Supply Installation and testing forged brass Ball valve with hard chrome plated ball inside PTFE (Teflon) seat & ring with chrome plated centre handle with female BSP threads suitable for 15 kg/sq cm. complete in all respects.				
a)	20 mm dia nominal bore	Each	13		-
b)	25 mm dia nominal bore	Each	13		-
9	Supply Installation and testing slim seal Butterfly valves B190 Class (PN 1.6), (lever operated upto 150 mm and gear operated for 200mm and more) complete with 2 Nos matching flanges rubber insertion, nuts, bolts and washer etc. of following sizes				
a)	50 mm dia nominal bore	Each	13		-
b)	150 mm dia nominal bore	Each	15		-

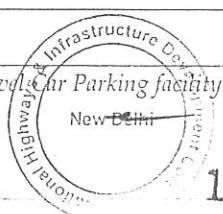
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10	Supply Installation and testing C.I. Dual plate wafer type non-return valves (PN 1.6) complete with 2 Nos. matching flanges, rubber insertion, nuts, bolts and washer etc. of following sizes.				
a)	150 mm dia	Each	2		-
11	Providing and fixing 25 mm dia inspecting & testing assembly with gunmetal valve, gunmetal sight glass, bypass valve & connected to drain line.	Each	16		-
12	Providing and fixing dial type pressure gauge with ball valve and pipe at hydrant station, complete in all respects. Dial dia 100 mm, calibration 0-15 kg/sq cm. Valve shall be paid separately.				
a)	20 mm dia nominal bore	Each	13		-
	Sub-Total				
III	Portable Chemical Fire Extinguishers. Exact Qty shall be as per placement.				
1	SUPPLY & FIXING OF ISI (IS:15683) marked Water type stored pressure (stored pressure) type capacity 9 ltrs. with gun-metal cap and nozzle and complete in all respects including initial fill and wall suspension bracket. Capacity 9 ltrs.	Each	16		-
2	SUPPLY & FIXING OF ISI marked (IS:15683) Portable fire Extinguisher, Carbon-dioxide type flat base including valve, discharge hose of not less than 10 mm dia. 1m long & complete in all respects including initial fill with CO2 gas confirming to IS:307-1966 filled to a filling ratio of not more than 0.667of not more than 0.667and wall suspension bracket.				
a)	Capacity 4.5 Kg	Each	2		-
3	SUPPLY & FIXING OF ABC dry powder conforming to IS:15683, stored pressure type fire extinguishers (Mono ammonium phosphate confirming to IS 14609) minimum 85% effective discharge, finished externally with red enamel paint and fixed to wall with brackets, complete, with internal charge.				
a)	Capacity : 5 kg (Min Jet length 4.0 m)	Each	16	0.00	160.00
	Sub-Total				160.00

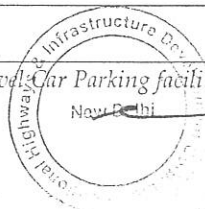
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1.03	Supplying & fixing 5 amps to 32 amps rating 240 volts C series, Miniature Circuit Breaker suitable for lighting loads of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
i	Single Pole	Each	96		-
1.04	Supply & fixing of single pole blanking plate in the existing MCB DB complete etc. as required	Each	10		-
1.05	Providing & fixing of M.V. danger notice plate of 200 mm x 150 mm, made of mild steel, at least 2 mm thick, and vitreous enamelled white on both sides, and with inscription in single red colour on front side as required.	Each	10		-
	Sub-Total				-
2.0	CIRCUIT CUM POINT WIRING				
2.01	Wiring for light point/ fan point/ exhaust fan point/ call bell point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface/ recessed steel conduit with modular switch modular plate suitable GI box and earthing the point with 1.5 sq.mm FR PVC insulated copper conductor single core cable etc.as required.				
	Group C	Point	150		-
2.02	Wiring for twin light point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface/ recessed steel conduit with 2 way modular switch modular plate suitable GI box and earthing the point with 1.5 sq.mm FR PVC insulated copper conductor single core cable etc.as required.	Point	2		-
2.03	Wiring for power plug points with 2 x 4 sq.mm. FR PVC insulated, Cu. Conductor, single core cable in surface/ recessed steel conduit along with 1 No. 4sq.mm. FR PVC insulated copper conductor single core cable etc. as required.	Meter	400		-

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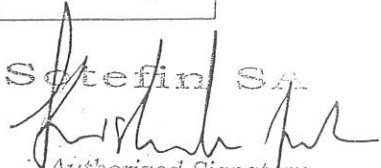
2.04	Wiring for light/ power plug with 4X4 sq. mm FR PVC insulated copper conductor single core cable in surface/ recessed steel conduit alongwith 2 Nos 4 sq. mm FR PVC insulated copper conductor single core cable for loop earthing as required.	Meter	80		
2.05	Wiring for circuit/ submain wiring alongwith earth wire with the following size of PVC Insulated copper conductor single core cable in surface/ recess Steel conduit as required.				
i	2x 1.5 sqmm+ 1x 1.5 sqmm earth wire	Meter	550		
ii	2x 2.5 sqmm+ 1x 2.5 sqmm earth wire	Meter	100		
iii	2x 6 sqmm+ 1x 6 sqmm earth wire	Meter	100		
iv	4x 6 sqmm+ 2x 6 sqmm earth wire	Meter	100		
v	2x 10 sqmm+ 2x 6 sqmm earth wire	Meter	250		
vi	4x 10 sqmm+ 2x 10 sqmm earth wire	Meter	50		
2.06	Supplying and fixing suitable size GI box with modular plate and cover in front on surface or in recess including providing and fixing 3 pin 5/6 Amp modular socket outlet, and 5/6 A modular type switch, connections painting etc. as reqd, for Light plug point.(For light plugs to be used in non residential buildings.)	Each	10		
2.07	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 Amp modular socket outlet and 15/16 A modular type switch, connections painting etc. as reqd. (for power sockets)	Each	32		
2.08	Supplying and fixing of Stepped type electronic fan regulator on the existing modular plate & switch box including connections but excluding modular plate etc. as reqd.	Each	2		
2.09	Supply & fixing of Call bell/ Buzzer suitable for A.C. single phase, 230 volts complete as required	Each	1		



Construction of Automated Multilevel Car Parking facility at Transport Bhawan, 1 Parliament Street, Delhi-110 001

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2.10	Supplying and fixing 20 Amps. 240 Volts SPN industrial type socket outlet, with 2 pole and earth metal enclosed plug top along with 20 A 'C' series SP MCB in sheet steel enclosure, on surface or in recess with chained metal cover for the socket outlet complete with connections testing and commissioning etc. as reqd, for A.C. outlet	Each	5		
2.11	Supplying and fixing metal box of following sizes (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including painting etc as required.				
i	150 mm X 150 mm X 60 mm deep	Each	10		-
ii	200 mm X 150 mm X 60 mm deep	Each	10		-
	Sub-Total				-
3.0	LOW CURRENT SERVICES				
3.01	Supplying and drawing following pair 0.5 sq mm FR PVC insulated annealed copper conductor, unarmored telephone cable in the existing surface/ recessed steel/ PVC conduit as required.				
	2 Pair	Meter	100		-
3.02	Supplying and fixing of following sizes of steel conduit along with accessories in surface / recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
i	20 mm dia.	Meter	100		-
3.03	Supplying and fixing metal box of following sizes (nominal size) on surface or in recess with suitable size of phenolic laminated sheet cover in front including painting etc as required.				
	200mm x 125 mm x 60 mm deep	Sets	5		-

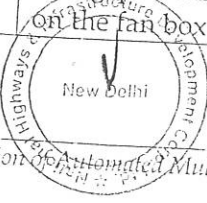

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Construction of Automated Multi Level Car Parking facility at Transport Bhawan, 1 Parliament Street, Delhi-110 001



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3.04	Supplying and fixing of modular Telephone socket outlet on the existing Modular plate & switch including connection and modular plate etc. as required.	Each	5			
3.05	Supply and fixing of following size/ modules, GI box along with modular base & cover plate for modular switch/ regulator in recess, including connection as required.					
	1or 2 module (75mmx 75mm)	Each	5			
	Sub-Total					-
4.0	FIXING OF LIGHT FIXTURE & FAN					-
4.01	Installation, testing & commissioning of pre-wired, fluorescent fitting / compact fluoroscent fitting of all type, complete with all accessories & tubes etc. directly on ceiling / wall, including connection with 1.5 sq.mm. FRLS PVC insulated, copper condutor, single core cable and earthing etc. as required.	Each	50			
4.02	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube etc., including supplying and fixing ball and socket arrangement, 2 no. down rods of 20 mm dia X 1.6 mm thick steel conduit upto 30 cm length, painting and wiring the down rods and connection with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable and earthing etc as required.	Each	95			
4.03	Installation, testing & commissioning of ceiling fan including wiring the down rods of standard length (upto 30 cm) with 1.5 sq.mm FRLS PVC insulated, copper conductor, single core cable, including providing and fixing phenolic laminated sheet cover on the fan box etc. as reqd.	Each	2			



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4.01	Providing and fixing circular / hexagonal M.S sheet ceiling fan box with clamp of internal dia 140 mm, 73 mm height, 3 mm thick rim, top and bottom lid of 1.5 mm M.S sheet. Lids shall be screwed into M.S box by means of 3 mm round headed screws, clamps shall be made of 12 mm dia M.S bar bent to shape as per standard drawing with over all length as 80 cm.	Each	2		-
	Sub-Total				-
5.0	LT CABLES				
5.01	Supplying & making of end terminations with brass compression gland and Al. lugs for following sizes of PVC insulated and PVC sheathed/ XLPE Al. conductor cable of 1.1 KV grade as required.				
i	3½ X 120 sq. mm (45mm)	Each	6		-
ii	3½ X 150 sq. mm (50mm)	Each	6		-
	Sub-Total				-
6.0	EARTHING AND MISCELLANEOUS ITEMS				
6.01	Earthing with G.I. earth Plate 600mm x 600mm x 6mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal or coke and salt as required.	Sets	10		-
6.02	Earthing with Cu. earth Plate 600mm x 600mm x 3mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal or coke and salt as required.	Sets	4		-
6.03	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	Meter	25		-



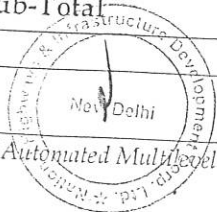
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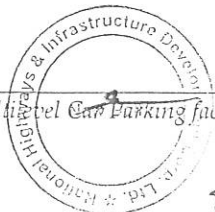
6.04	Providing and fixing 25 mm X 5 mm G.I. strip in 40 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	Meter	200		
6.05	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	Meter	20		
6.06	Providing and fixing 25mm x 5mm GI Strip on surface or in recess for connections etc. as required.	Meter	300		
6.07	Providing and fixing 6SWG dia GI Wire on surface or in recess for loop earthing as required.	Meter	100		
6.08	Supplying 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 & nuts, painting suspe				
i	150 mm width X 50 mm depth X 1.6 mm thickness	Meter	200		
	Sub-Total				
7.0	FIRE ALARM AND DETECTION SYSTEM.				
7.01	Supplying and fixing of following sizes of MS conduit along with the accessories in surface / surface including painting in case of surface conduit in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.				
i	25 mm dia.	Meter	625		
7.02	Supplying and drawing following sizes of PVC insulated FRLS copper conductor single core cable in the existing surface / recessed steel conduit as required.				
i	2 x 1.5 sq.mm .	Meter	630		
	Sub-Total				



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8.0	MAIN DISTRIBUTION BOARDS, SUB DISTRIBUTION BOARDS & DISTRIBUTION BOARDS				
8.01	Design, Fabrication, Supply, Erection, Testing and commissioning of Powder coated Main Distribution Panel fabricated out of 14 guage CRCA sheet steel in cubical, compartmentallised, free standing floor /wall mounted, dust and veMeterin proof, with reinforcement of suitable size angle iron, channel, T-iron or flats as required. Cable gland plates shall be provided on top as well as bottom of the panels. Panels shall be treated with all anti-corrosive process before painting as per specification. Panels shall be suitable for 415V, 3-Phase, Four wire, 50 Hz supply complete with earth bus and lifting hooks as required in case of large panels. Approval shall be taken for each panel before fabrication. (All hardware like nuts and bolts used shall be Galvanized and Zinc passivated)				
i	MAIN DISTRIBUTION BOARDS				
	INCOMER				
	1 nos. 250A 415V, TPN 4P MCCB of 25kA with O/C, S/C & E/F release.				
	1 no. Digital multifunction meter (V+A+Hz) with a set of cast resin CTs 200/5A.				
	1 Set of phase indicating lamp with MCB.				
	BUS BARS:				
	300A TPN bus bars of aluminium alloy.				
	OUT GOING:				
	2 nos. 125A 415V, TPN MCCB of 25kA.				
	2 nos. 63 A 415V, TPN MCCB of 25kA.				
	12 nos. 25A to 63 A 415V, 4PTPN MCB of 25kA.	Set	1		



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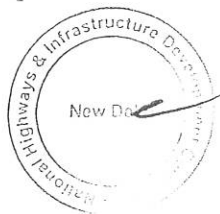
8.02	Supplying & fixing following rating 240 volts, 2 Pole RCBO in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
i	40A DP RCBO	Each	10		-
8.03	Supplying & fixing following rating 415 volts, Four Pole RCBO in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
i	63A FP RCBO	Each	2		-
	Sub-Total				-
9.0	LOW CURRENT SERVICES				
9.01	Supply, installation, testing and commissioning of following krone type tag blocks enclosed in MS enclosure of suitable size with lockable cover.				
i	10 pair Tag block	Each	1		-
9.02	Supply and laying of following sizes of 0.61 mm diameter tinned copper conductor (ATC) PVC insulated and PVC sheathed aMeteroured on surface/cable tray or through existing trench/pipe etc. completed as required.				
i	10 pair cable	Meter	50		-
9.03	Supplying and laying PVC pipe (heavy duty-6Kg Pr. class) under the road crossings, including making of joints complete with excavation of suitable size of trenches, refilling & removal of surplus soil.				
i	80 mm dia pipe	Meter.	10		-
	Sub-Total				-
10.0	SUPPLY OF LIGHT FIXTURES				
10.01	Supply of following fans & Light fittings with Electronic Ballast (THD<10%, HF-P), starter, control gears, lamps holder, transfoMeterer etc. as called for and flexible wires as required for fixing including providing of Lamps as required.				

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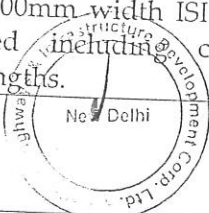
i	1 x 28 watt surface/wall mounting type fluorescent light fixture complete with all accessories as required (Wipro cat. no. WRF 81128 SG) or Equivalent make	Each	145		-
ii	1x11 watt surface mounted CFL down lighter complete with 1 no. 11 watts CFL lamp as required (Wipro cat. no WRP 21111) or Equivalent make	Each	5		-
iii	1x9W outdoor bulkhead surface mounting light fixture complete with glass cover, wire guard, gasket, holder, GLS lamp etc. as required (Wipro cat. no. WKP 14109) or Equivalent make	Each	5		-
iv	Providing, fixing, testing and commissioning of Propeler Exhaust Fan 300X300 MM SIZE for lift presrization	Each	1		-
10.02	Supply of following sizes of ceiling fan complete with double ball bearing. motor, blades, downrod, canopy, capacitor, regulator etc. suitable for operation on 230 volts 50 Hz A.C. supply complete as required.				
i	Size 1200mm.	Each	2		-



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10.03	Split Type AC Unit: Air cooled Hi-Wall Split AC Units complete with indoor & outdoor units, 134 A refrigerant or equivalent, integral refrigerant piping duly insulated with closed cell insulation, vibration isolating pads and wiring between indoor and outdoor unit, complete uPVC drain piping including fitting and inverter based compressor with 5 star rating etc., including other accessories as required and as per specifications. The units shall be suitable for operation on 230 Volts, 50 cycles, 1 phase AC supply. Units shall be complete with first charge of oil & refrigerant. The work shall include Power cabling from Outdoor Units upto the voltage stabilizers, with necessary PVC conduiting & cable trunking etc. as per requirement of electrical specifications. 2 TR (1W+1 S)	Each	2			
	Sub-Total					-
11.0	LT CABLES					
11.01	Supply of following sizes of XLPE/ PVC insulated Aluminum/ Copper conductor strip/ wire AMeteroured, overall PVC sheathed 1.1 KV grade cables confoMetering to relevant IS code and technical specifications.					
i	3.5C x 150 sq.mm.	Meter	75			-
ii	3.5C x 120 sq.mm.	Meter	100			-
iii	1 x 50 sq.mm PVC insulated FR multi stranded copper conductor.	Meter	10			-
	Sub-Total					-
12.0	EARTHING AND MISCELLANEOUS ITEMS					
12.01	Supplying and fixing of non-skid rubber mat of 1.1 KV dielectric strength 900mm width ISI approved as required including cutting to required lengths.	Meter	2			-

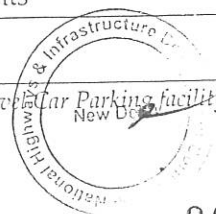


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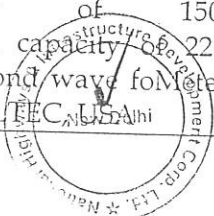
12.02	Supplying of 1.1 KV hand gloves as required.	Pairs	1			-
12.03	Supplying of first aid box as approved complete with standard kit as prescribed by Indian Red Cross.	Each	1			-
12.04	Supplying and fixing of shock treatment chart written in English and Local language duly framed in glass as required.	Each	1			-
12.05	Supplying, fabrication and installation of MS fabricated cable support / ladder type cable tray cable tray / light fixture supports including welding grouting and painting etc. as required.	Kg	150			-
12.06	Supplying and fixing of shock treatment chart written in English and Hindi duly framed in as required.	Each	2			-
	Sub-Total					-
13.0	FIRE ALARM AND DETECTION SYSTEM.					
13.01	Supplying and fixing of following fire alarm and detection accessories complete with connection etc. as required.					
i	Manual Break Glass Units.	Each	16			-
ii	Fire Alarm Bell / Hooter.	Each	16			-
iii	Smoke Detectors.	Each	70			-
iv	Response indicator	Each	2			-
v	Control relay module	Each	2			-
13.02	Supply, Installation, testing and commissioning of 8 Zone Microprocessor base Main Fire Detection & Alarm Control Panel with PA system including Amplifier and Mic complete with 12 hrs SMF batteries, battery charger and in accordance with the specification and as per requirement of local fire Authorities. Note:- Parking system supplier to make his own arranged to give constant power supply to his parking equipments	Set	1			-

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	SUB-TOTAL				
14.00	LIGHTNING ARRESTOR				
14.01	Supplying, Erection, Installation, Testing & commissioning of ESE type Lightning Protection complete with the Lightning Air TeMeterinal - Configured as a. Insulation material used to electrically isolate the panels shall be comprised of a base polymer which provides high Ozone & UV resistance with a di-electric strength of 24-38 kv/mm & ESE teMeterinal shall with-stand a minimum Switching Impulse Voltage of 500 KV tested as per NFC 17-102 & UNE 21-186 to be installed at the roof of and the centre of the building with the protection. Make: TERRA STREAMER, ALLTEC - USA	Each	1		
14.02	Supplying, Erection, Installation, Testing & commissioning of Test Link Joint Kit in a IP 55 weather proof enclosure of suitable dimension and approved make & design.	Each	1		
14.03	Supplying, Erection, Installation, Testing & commissioning of FRP Mast with GI Mast Note : FRP Mast at Top Minimum 1.25 Mtr with GI Mast 4 Mtr along with G.I. mast (Total 5 Mtr std mast reqd. for mounting the teMeterinal & adaptor to mount the Air TeMeterinal with Coupler/reducer, Multi strand stray wires, Joints, Clamps & Accessories.	Each	1		
14.04	Supplying, Erection, Installation, Testing & commissioning of Lightning Strike Recorder / counter (6 digits display) of not resistible type in an IP 67 enclosure with the minimum sensitivity of 1500A & maximum capacity of 220KA (8/20 micro second wave foMeter) tested - Make: ALLTEC USA	Each	1		



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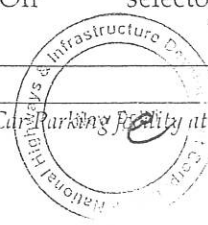
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14.05	Supplying, Erection, -- Installation, Testing & commissioning of Down conductor Recommended : 70 Sqr mm insulated copper Flexible cable for lightning current dissipation to earth with necessary Fixing Clamp, Connector accessories etc.	Each	75			
14.06	Supplying, Erection, Installation, Testing & commissioning of Alltec Make (UL Listed) copper bonded 3 mtr long 17.2 mm dia as per RDSO spec.with terrafill (TF-50) Mouser booster compound 2 Bag.	Each	2			-
14.07	Supplying, Erection, Installation, Testing & commissioning of Polyplastic Earth pit cover	Each	1			-
14.08	Installation & Commissioning price include Base plate with base mast and accessories	Each	1			-
	Sub-Total					-
15	DG SET					
15.01	Supplying, installation, erection, testing and commissioning of Air cooled Diesel Engine with rated capacity of 125 KVA at 0.8 P.F., 1500 RPM. 4 stroke , multicylinder coupled to brush less type 415 volts 50 cycle/second self excited alternator completed with cushy pads, domestic silencer exhaust pipe complete with Alternator auxiliaries, radiator, 24 volts chargeable battery including initial charging of batteries, control panel in sound proof canopy complete as per specification.	Set	1			-
15.02	Supply fixing testing and commissioning of Auto Main Failure including auto by-pass panel for the 125 KVA DG set as per specification and requirement.					
i	1 No 63 Amp, 4 pole MCCB with electromagnetic release for O/C & E/F and shunt trip.					-
ii	Auto/Manual/Test/Off selector switch					

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Construction of Automated Multilevel Car Parking Facility at Transport Bhawan, 1 Parliament Street, Delhi-110001



iii	2 Nos over voltage relay, 2 Nos reverse power relay and 2 Nos under voltage relay.				
iv	3 Sets of current transfoMeterers 15 P 10 accuracy for protection and 15 VA class-1 for metering				
v	Energy analyzer unit to indicate current voltage frequency power factor and KWH				
vi	Indicating lamps for load on mains and load on set.				
vii	Fuse for instruments				
viii	Battery charger complete with transfo Meters/rectifier, D.C. voltmeter and ammeter, selector switch for trickle, off and boost and current adjustment.				
	Mains supply failure monitor				
	Supply failure timer				
	Restoration timer				
	Control unit with three impulse automatic engine start/stop and failure to start lockout.				
	Impulse counter with locking and reset facility.				
	ON/OFF/Control circuit switch with indicator				
	Audio/Video annunciation for				
	High water temperature				
	Low lubricating oil pressures				
	Engine over speed				
	Engine fails to start				
	Full load/maximum load warning	Set	1		
	Sub-Total				
	GRAND TOTAL				

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PROJECT: AUTOMATIC MULTILEVEL CAR PARKING					
BILL OF QUANTITIES FOR PARKING EQUIPMENT					
S. NO.	DESCRIPTION	UNIT	QTY	RATE	AMOUNT(RS)



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