

**JAWAHARLAL INSTITUTE OF POST GRADUATE
MEDICAL EDUCATION AND RESEARCH**

(AN INSTITUTE OF NATIONAL IMPORTANCE)

TENDER DOCUMENT

*For the work of
Construction of Public Utility Medical Mart and Staff
Wellness Centre including modern Swimming Pool
at JIPMER, PUDUCHERRY*

PART-III-B

PRICE BID

TENDER NO. HLL/ID /14/56

October 2014

HLL LIFECARE LIMITED.

Construction of Public Utility Medical Mart & Staff Wellness Centre including modern Swimming Pool at JIPMER

SECTION I

BILL OF QUANTITIES

SI.N O	DESCRIPTION OF WORK	UNIT	UNIT RATE IN WORDS AND FIGURES	QUANTITY	AMOUNT
A	CIVIL WORK				
1	Earth work in excavation by mechanical means (Hydraulic excavator) /manual means over areas (exceeding 30cm in depth. 1.5 m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50m and lift upto 1.5m, disposed earth to be levelled and neatly dressed.				
	All kinds of soil.	CuM		4,628.00	
2	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means in foundation trenches or drains (not exceeding 1.5 m in width or 10 sqm on plan), including dressing of sides and ramming of bottoms, lift up to 1.5 m, including getting out the excavated soil and disposal of surplus excavated soil as directed, within a lead of 50 m.				
	All kinds of soil.	CuM		909.00	
3	Extra for every additional lift of 1.5 m or part thereof in excavation / banking excavated or stacked materials.				
	All kinds of soil.	CuM		3,617.00	
4	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, within a lead of 50 m :				

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	All kinds of soil				
	Pipes, cables etc. exceeding 80 mm dia. but not exceeding 300 mm dia	Metre		25.00	
5	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.	CuM		2,902.00	
6	Supplying and filling in plinth with sand under floors, including watering, ramming, consolidating and dressing complete.	CuM		492.15	
7	Clearing jungle including uprooting of rank vegetation, grass, brush wood, trees and saplings of girth upto 30 cm measured at a height of 1m above ground level and removal of rubbish upto a distance of 50 m outside the periphery of the area cleared.	100 SqM		3,800.00	
8	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :				
	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	Cum		389.70	
9	P/L cement concrete in retaining walls, return walls etc.:				
	1:1½:3 (1 cement:1½ coarse sand:3 graded stone aggregate 20 mm nominal size)	CuM		8.60	
10	Providing and laying damp-proof course 40 mm thick with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 12.5 mm nominal size).	SqM		135.60	
11	Extra for providing and mixing water proofing material in cement concrete work in doses by weight of cement as per manufacturer's specification.	Kg		3,990.00	
12	Making plinth protection 50 mm thick of cement concrete 1:3:6 (1 cement: 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) over 75mm thick bed of dry brick ballast 40 mm nominal size, well rammed and consolidated and grouted with fine sand, including finishing the top smooth.	SqM		186.00	
13	Providing and laying in position specified grade of reinforced cement				

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	concrete, excluding the cost of centring, shuttering, finishing and reinforcement - All work up to plinth level :				
	1:1.5:3 (1 cement : 1.5 coarse sand : 3 grade stone aggregate 20 mm nominal size)	CuM		39.00	
14	Reinforced cement concrete work in walls (any thickness), including attached pilasters, buttresses, plinth and string courses, fillets, columns, pillars, piers, abutments, posts and struts etc. up to floor five level, excluding cost of centering, shuttering, finishing and reinforcement :				
	1:1.5:3 (1 cement : 1.5 coarse sand : 3 graded stone aggregate 20 mm nominal size)	CuM		17.40	
15	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).				
	All works up to plinth level.	CuM		1,118.65	
	All works above plinth level up to Floor V level.	CuM		383.00	
16	Extra for providing richer mixes at all floor levels :				
	Providing M-30 grade concrete instead of M-25 grade B.M.C/ R.M.C.	CuM		794.25	
17	Add for using extra cement in the items of design mix over and above the specified cement content therein.	Quintal		80.38	

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18	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	Kg		1,22,785.00	
19	Steel reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete above plinth level.				
	Thermo-Mechanically Treated bars	Kg		44,098.00	
20	Centring and shuttering including strutting, propping etc. and removal of form for :				
	Foundations, footings, bases of columns, etc. for mass concrete	SqM		788.00	
	Suspended floors, roofs, landings, balconies, and access platforms.	SqM		1,617.00	
	Walls (any thickness) including attached pilasters, buttersesses, plinth and string courses etc.	SqM		648.00	
	Lintel beams, Plinth beams, girders, bressumers and catilevers.	SqM		2,299.00	
	Columns, pillars, piers, abutments, posts, and struts.	SqM		1,238.00	
	Stairs, (excluding landings) except spiral staircase.	SqM		47.00	
	Vertical and horizontal fins individually or forming box louvers band, facias and eaves boards	SqM		67.00	
	Weather shade, Chajjas, corbels etc., including edges	SqM		108.00	
21	Smooth finishing of the exposed surface of R.C.C. work with 6 mm thick cement mortar 1:3 (1 Cement : 3 fine sand).	SqM		4,601.00	
22	Add for plaster drip course/ groove in plastered surface or moulding to R.C.C. projections.	Metre		61.00	
23	Providing and fixing of expansion joint system related with floor location as per drawings and direction of Engineer-In-Charge. The joints system will be of extruded aluminum base members, self aligning / self centring arrangement and support plates etc. as per				

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	ASTM B221-02. The system shall be such that it provides floor to floor /floor to wall expansion control system for various vertical localtion in load application areas that accommodates multi directional seismic movement without stress to it's components. System shall consist of metal profiles with a universal aluminum base member designed to accommodate various project conditions and finish floor treatments. The cover plate shall be designed of width and thickness required to satisfy projects movement and loading requirements and secured to base members by utilizing manufacturer's pre-engineered self-centring arrangement that freely rotates / moves in all directions. The Self – centring arrangement shall exhibit circular sphere ends that lock and slide inside the corresponding aluminum extrusion cavity to allow freedom of movement and flexure in all directions including vertical displacement. Provision of Moisture Barrier Membrane in the Joint System to have watertight joint is mandatory requirement all as per the manufactures design and as approved by Engineer -in- Charge . (Material shall confirm to ASTM 6063.)				
	Floor Joint of 150 mm gap	Metre		18.29	
24	Providing and fixing of expansion joint system related with wall joint (internal/external) location as per drawings and direction of Engineer- In- Charge. The joints shall be of extruded aluminum base members, self-aligning / centering arrangement and support plates as per ASTM B221- 02. The material shall be such that it provides an Expansion Joints System suitable for vertical wall to wall/ wall to corner application, both new and existing construction in office Buildings & complexes with no slipping down tendency amongst the components of the Joint System. The Joint System shall utilize light weight aluminum profiles exhibiting minimal exposed aluminum surfaces mechanically snap locking the multicellular to facilitate movement. (Material shall confirm to ASTM 6063.)				
	Wall Joint of 150 mm gap	Metre		7.35	
25	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 5.0 in foundation and plinth in:				

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	Cement mortar 1:6 (1 cement : 6 coarse sand)	CuM		234.48	
26	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 5.0 in superstructure above plinth level up to floor V level in all shapes and sizes in :				
	Cement mortar 1:6 (1 cement : 6 coarse sand)	CuM		371.00	
27	Half brick masonry with common burnt clay F.P.S. (non modular) bricks of class designation 5.0 in superstructure above plinth level up to floor V level.				
	Cement mortar 1:4 (1 cement :4 coarse sand)	SqM		294.60	
28	Extra for providing and placing in position 2 Nos 6mm dia. M.S. bars at every third course of half brick masonry.	SqM		294.60	
29	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position with hold fast lugs or with dash fasteners of required dia & length (hold fast lugs or dash fastener shall be paid for separately).				
	Second class Teak wood	CuM		0.98	
30	Providing and fixing panelled or panelled and glazed shutters for doors, windows and clerestory windows, including ISI marked M.S. pressed butt hinges bright finished of required size with necessary screws, excluding panelling which will be paid for separately, all complete as per direction of Engineer-in-charge.				
	Second classs teak wood				
	35 mm thick panel shutters	sqm		1.82	
31	Providing and fixing panelling or panelling and glazing in panelled or panelled and glazed shutters for doors, windows and clerestory windows (Area of opening for panel inserts excluding portion inside grooves or rebates to be measured). Panelling for panelled or panelled and glazed shutters 25 mm to 40 mm thick :				
	Second class teak wood	sqm		1.82	

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32	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters :				
	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	sqm		22.10	
33	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters.				
	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	SqM		13.32	
	30 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	SqM		16.82	
34	Providing 50x50x50 mm 2nd class teak wood plugs including cutting brick work and fixing in cement mortar 1:3 (1 cement : 3 fine sand) and making good the walls etc.	Each		15.00	
3	Providing and fixing expandable fasteners of specified size with necessary plastic sleeves and galvanised M.S. screws including drilling holes in masonry work /CC/ R.C.C. and making good etc. complete.				
	50mm long	Each		27.00	
36	Providing and fixing aluminium work for doors, windows, ventilators and partitions with extruded built up standard tubular sections/ appropriate Z sections and other sections of approved make conforming to IS: 733 and IS: 1285, fixing with dash fasteners of required dia and size, including necessary filling up the gaps at junctions, i.e. at top, bottom and sides with required EPDM rubber/ neoprene gasket etc. Aluminium sections shall be smooth, rust free, straight, mitred and jointed mechanically wherever required including cleat angle, Aluminium snap beading for glazing / paneling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing, paneling and dash				-

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	fasteners to be paid for separately) :				
	For fixed portion				-
	Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	Kg		916.00	
	Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	Kg		1,019.00	
37	Providing and fixing 12 mm thick prelaminated particle board flat pressed three layer or graded wood particle board conforming to IS: 12823 Grade I Type II, in panelling fixed in aluminum doors, windows shutters and partition frames with C.P. brass / stainless steel screws etc. complete as per architectural drawings and directions of engineer-in-charge.				
	Pre-laminated particle board with decorative lamination on both sides	SqM		3.90	
38	Providing and 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 snap beading shall be paid in basic item):				
	With float glass panes of 5.50 mm thickness	SqM		189.00	
39	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.				
	With brass cover plate minimum 1.25 mm thickness	Each		4.00	
40	Providing and fixing stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineerin-				-

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	charge complete.				
	255 X 19 mm	Each		174.00	
41	Providing and fixing 100mm brass locks (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	Each		2.00	
42	Providing and fixing aluminium round shape handle of outer dia 100mm with SS screws etc. complete as per direction of engineer-in-charge				
	Anodized (AC 15) aluminium	Each		6.00	
43	Providing and fixing anodised aluminium grill (anodised transparent or dyed to required shade according to IS: 1868 with minimum anodic coating of grade AC 15) of approved design/pattern, with approved standard section and fixed to the existing window frame with C.P. brass/ stainless steel screws @ 200 mm centre to centre, including cutting the grill to proper opening size for fixing and operation of handles and fixing approved anodised aluminium standard section around the opening, all complete as per requirement and direction of Engineer-in-charge. (Only weight of grill to be measured for payment).	Kg		234.00	
44	Providing and fixing aluminium tower bolts, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :				-
	250x10 mm	Each		33.00	
	150x10mm	Each		201.00	
	100x10mm	Each		170.00	
45	Providing and fixing aluminium sliding door bolts, ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868), transparent or dyed to required colour or shade, with nuts and screws etc. complete :				
	300x16mm	Each		6.00	

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	250x16 mm	Each		17.00	
46	Providing and fixing aluminium handles, ISI marked, anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour or shade, with necessary screws etc. complete :				
	100mm	Each		46.00	
	75mm	Each		201.00	
47	Providing and Fixing factory made PVC door frame made of PVC extruded sections of size 75 mm x 53 mm, having wall thickness 2.0 mm (\pm 0.2 mm). Both verticals sides of the frame reinforced with PVC profile of cross section size 28 mm x 30 mm x 2 mm thickness (\pm 0.2 mm) and 75 mm x 200 mm long, including reinforcing both ends of the top frame with PVC profile. PVC Door Frame and PVC reinforcement profile to be mitred cut, jointed and fusion welded together, including providing and fixing 3 nos of 125 mm long stainless steel hinges to frame, fixing the frame with jamb with required nos & sizes of anchor dash fastener, all complete as per manufacturer's specification and direction of engineer in- charge.	Metre		72.60	
48	Providing and fixing 37 mm thick factory made PVC Door shutter, styles and rails made of PVC hollow extruded printed and laminated section having overall dimension 115 mm x 37 mm with wall thickness 2 mm (\pm 0.2 mm) with inbuilt beading on one side, the styles and rails mitred cut and joint at corners by inserting 2 nos PVC profile reinforcement of size 75 mm x 200 mm long with cross section size of 28 mm x 30 mm having wall thickness 2 mm (\pm 0.2 mm). Styles, rails and reinforcements to be fusion welded together. Only hinge side vertical style to be reinforced with PVC profile reinforcement in full length. Printed and laminated PVC lock rail of size 110 mm x 37 mm having wall thickness 2 mm (\pm 0.2 mm) to be welded horizontally with the vertical styles after inserting PVC profile reinforcement as in styles and rails, providing with PVC snap fit beading, panels of 100 x 20 mm printed & laminated and inserting 2 nos 6 mm dia bright steel rod horizontally with both side threaded and tightened with check nuts and	SqM		26.80	

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	washers complete, all as per manufacturer's specification and direction of engineer-in-charge.				
49	Providing and fixing aluminium extruded section body tubular type universal hydraulic door closer (having brand logo with ISI, IS : 3564, embossed on the body, door weight upto 36 kg to 80 kg and door width from 701 mm to 1000 mm), with double speed adjustment with necessary accessories and screws etc. complete.	Each		22.00	
50	Filling the gap in between aluminium frame & adjacent RCC/ Brick/ Stone work by providing weather silicon sealant over backer rod of approved quality as per architectural drawings and direction of Engineer-in-charge complete.				
	Up to 5mm depth and 5 mm width	Metre		351.50	
51	Providing and fixing M.S. fan clamp type I or II of 16 mm dia M.S. bar, bent to shape with hooked ends in R.C.C. slabs or beams during laying, including painting the exposed portion of loop, all as per standard design complete.	Each		53.00	
52	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.				
	In stringers, treads, landings etc. of stair cases, including use of chequered plate wherever required, all complete	Kg		1,321.00	
	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works	Kg		4,717.00	
53	Providing 40x5 mm flat iron hold fast 40 cm long with cement concrete block 30x10x15cm 1:3:6 mix.	each		46.00	
54	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing, staircase railing and similar works, including applying priming coat of approved steel primer.				
	M.S.tube	Kg		61.00	
55	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.				

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	40 mm thick with 20 mm nominal size stone aggregate	SqM		129.20	
56	Cement plaster skirting up to 30 cm height, with cement mortar 1:3 (1 cement : 3 coarse sand), finished with a floating coat of neat cement.				
	18mm thick	SqM		11.30	
57	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 cement mortar 1 : 4 (1 cement : 4 coarse sand) :				
	25mm thick	SqM		231.00	
58	Kota stone slabs 20 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.	SqM		26.00	
59	Providing and laying Ceramic glazed floor tiles of size 300x300 mm (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in colours such as White, Ivory, Grey, Fume Red Brown, laid on 20 mm thick cement mortar 1:4 (1 Cement : 4 Coarse sand), including pointing the joints with white cement and matching pigment etc., complete.	SqM		575.00	
60	Providing and laying vitrified floor tiles in different sizes (thickness to be specified by the manufacturer) 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), including grouting the joints with white cement and matching pigments etc., complete.				
	Size of Tile 600x600 mm	SqM		471.00	
61	Providing and fixing 1st 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	SqM		726.00	

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	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.				
62	Providing and laying Vitrified tiles in different sizes (thickness to be specified by manufacturer), with water absorption less than 0.08 % and conforming to I.S. 15622, of approved make, in all colours & shade, in skirting, riser of steps, over 12 mm thick bed of cement mortar 1:3 (1 cement: 3 coarse sand), including grouting the joint with white cement & matching pigments etc. complete.				
	Size of Tile 600x600 mm	SqM		38.00	
63	Providing and laying Vitrified tiles in floor with different sizes (thickness to be specified by the manufacturer), with water absorption less than 0.08% and conforming to IS:15622 , of approved brand & manufacturer, in all colours and shade, laid with cement based high polymer modified quick set tile adhesive (water based) conforming to IS : 15477, in average 6 mm thickness, including grouting of joints (Payment for grouting of joints to be made separately).				
	Size of Tile 600x600 mm	SqM		941.00	
64	Providing and fixing Glass mosaic tiles at finished plain wall surface of size 20 mm x 20 mm x 4 mm in all colour, design , fixing in customize design as per direction of Engineer-in- Charge. The glass mosaic tiles to be fixed on the wall surface with the help of approved adhesive applied at the rate of 2.5 kg per sqm and grouting of the same. The rate is inclusive of all operation, material and required pattern approved by Engineer-in-Charge:	SqM		277.00	
65	Extra for P/L low water absorption and antiskid endura swimming pool tiles instead of vitrified tiles of size 600x600 mm.	SqM		941.00	
66	Grouting the joints of flooring tiles having joints of 3 mm width, using epoxy grout mix of 0.70 kg of organic coated filler of desired shade (0.10 kg of hardener and 0.20 kg of resin per kg), including filling /				

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	grouting and finishing complete as per direction of Engineer-in-charge.				
	Size of Tile 600x600 mm	SqM		485.00	
67	Providing and fixing on wall face unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion, (i) Single socketed pipes.				
	110 mm diameter	Metre		68.40	
68	Providing and fixing on wall face unplasticised - PVC moulded fittings/ accessories for unplasticised Rigid PVC rain water pipes conforming to IS : 13592 Type A, including jointing with seal ring conforming to IS : 5382, leaving 10 mm gap for thermal expansion.				
a	Single push fit Coupler				
	110mm	Each		34.00	
b	Single tee with door				
	110x110x110 mm	Each		17.00	
c	Bend 87.5°				
	110 mm bend	Each		17.00	
d	Shoe (Plain)				
	110 mm Shoe	Each		17.00	
69	Providing and fixing unplasticised -PVC pipe clips of approved design to unplasticised - PVC rain water pipes by means of 50x50x50 mm hard wood plugs, screwed with M.S. screws of required length, including cutting brick work and fixing in cement mortar 1:4 (1 cement : 4 coarse sand) and making good the wall etc. complete.				
	110mm	Each		34.00	
70	Providing and fixing PTMT grating of approved quality and colour.				
	Rectangular type with openable circular lid				

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	150 mm nominal size square 100 mm diameter of the inner hinged round grating	Each		17.00	
71	Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for underground structures as directed by Engineer-in-Charge and consisting of : i) Ist layer of 22 mm to 25 mm thick approved and specified rough stone slab over a 25 mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the levelling course (levelling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. ii) 2nd layer of 25 mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. iii) Finishing top with stone aggregate of 10 mm to 12 mm nominal size spreading @ 8 cum/sqm thoroughly embedded in the 2nd layer.				
	Using rough kota stone	SqM		523.00	
72	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed portions of W.C., kitchen and the like consisting of : (i) Ist course of applying cement slurry @ 4.4 kg/sqm mixed with water proofing compound conforming to IS 2645 in recommended proportions including rounding off junction of vertical and horizontal surface. (ii) IInd course of 20 mm cement plaster 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound in recommended proportion including rounding off junction of vertical and horizontal surface. (iii) IIIrd course of applying blown or residual bitumen applied hot at 1.7 kg. per sqm of area. (iv) IVth course of 400 micron thick PVC sheet. (Overlaps at joints of PVC sheet should be 100 mm wide and pasted to each other with bitumen @ 1.7 kg/sqm).	SqM		9.00	
73	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				

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	<p>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 junction of walls and slabs c) After two days of proper curing applying a second coat of cement slurry using 2.75 kg/ sqm of cement admixed with water roofing compound conforming to IS : 2645 and approved 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 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. e) The whole terrace so finished shall be flooded with water for a minimum period of two weeks for curing and for final test. All above operations to be done in order and as directed and specified by the Engineer-in-Charge :</p>				
	With average thickness of 120 mm and minimum thickness at khurra as 65 mm.	SqM		1,333.00	
74	<p>Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25 mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions with a gap of 20 mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with cement mortar 1:3 (1 cement : 3 coarse sand) 20 mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge :</p>				
	Using rough kota stone	SqM		304.50	

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75	12mm plaster				
	1:6 (1 cement: 6 fine sand)	SqM		2,223.00	
76	15mm plaster				
	1:6 (1 cement: 6 fine sand)	SqM		2,465.00	
77	White washing with lime to give an even shade :				
	New work (three or more coats)	SqM		557.00	
78	Finishing walls with water proofing cement paint of required shade :				
	New work (Two or more coats applied @ 3.84 kg/10 sqm)	sqm		913.00	
79	Finishing walls with Acrylic Smooth exterior paint of required shade :				
	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including priming coat of exterior primer applied @ 2.20 kg/ 10 sqm)	SqM		2,018.00	
80	12 mm cement plaster finished with a floating coat of neat cement of mix :				
	1:3 (1 cement: 3 fine sand)	SqM		98.20	
81	Painting with synthetic enamel paint of approved brand and manufacture to give an even shade :				
	Two or more coats on new work	SqM		89.50	
82	Finishing with Deluxe Multi surface paint system for interiors and exteriors using Primer as per manufacturers specifications :				
a	Two or more coats applied on walls @ 1.25 ltr/10 sqm over and including one coat of Special primer applied @ 0.75 ltr / 10 sqm	SqM		5,444.00	
b	Painting wood work with Deluxe Multi Surface Paint of required shade. Two or more coat applied @ 0.90 ltr/10 sqm over an under coat of primer applied @0.75 ltr/ 10 sqm of approved brand and manufacture	SqM		112.80	
c	Painting Steel work with Deluxe Multi Surface Paint to give an even shade. Two or more coat applied @ 0.90 ltr/ 10 sqm over an under coat of primer applied @ 0.80 ltr/ 10 sqm of approved brand and manufacture	SqM		37.30	

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Water Supply & Sanitary Installation					
83	Providing and fixing water closet squatting pan (Indian type W.C. pan) with 100 mm sand cast Iron P or S trap, 10 litre low level white P.V.C. 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 rests	Each		3.00	
84	Providing and fixing white vitreous china pedestal type water closet (European type W.C. pan) with seat and lid, 10 litre low level white P.V.C. 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 :				
	W.C. pan with ISI marked black solid plastic seat and lid	Each		4.00	
85	Providing and fixing white vitreous china flat back or wall corner type lipped front urinal basin of 430x260x350 mm and 340x410x265 mm sizes respectively with automatic flushing cistern with standard flush pipe and C.P. brass spreaders with brass unions and G.I clamps complete, including painting of fittings and brackets, cutting and making good the walls and floors wherever required :				
	One urinal basin with 5 litre white P.V.C. automatic flushing cistern	Each		4.00	
86	Providing and fixing wash basin with C.I. brackets, 15 mm C.P. brass pillar taps, 32 mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever require :				
	White Vitreous China Wash basin size 630x450 mm with a single 15 mm C.P. brass pillar tap	Each		8.00	
87	Providing and fixing P.V.C. waste pipe for sink or wash basin including P.V.C. waste fittings complete.				
	Flexible pipe				

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	32 mm dia	Each		8.00	
88	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		8.00	
89	Providing and fixing 600x120x5 mm glass shelf with edges round off, supported on anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	Each		8.00	
90	Providing and fixing toilet paper holder :				
	C.P. brass	Each		6.00	
91	Providing and fixing PVC soil, waste and vent pipe t IS: 13592 of SWR quality 4Kg/Sq.cm pressure rate up to 110mm dia and 6 kg /Sq.cm pressure rated agricultural series above 110mm, including all fittings like EG: Bends, Tees, Elbows, Collars, junction, inspection doors, cowls, offsets, access pipes, jointing with rubber ring/solvent cement by application of leak proof adhesive like FRP paste including cutting holes in walls and floors making good.	Metre		119.90	
92	Providing and fixing PVC "P" or "S" floor trap self cleansing design with or without vent arm complete including cutting and making good the walls and floors.	Each		15.00	
93	Providing and fixing PTMT Bottle Trap for Wash basin and sink.				
	Bottle trap 31mm single piece moulded with height of 270 mm, effective length of tail pipe 260 mm from the centre of the waste coupling, 77 mm breadth with 25 mm minimum water seal, weighing not less than 260 gms	Each		8.00	
94	Providing and fixing PTMT Waste Coupling for wash basin and sink, of approved quality and colour.				
	Waste coupling 31 mm dia of 79 mm length and 62mm breadth weighing not less than 45 gms	Each		8.00	
	Waste coupling 38 mm dia of 83 mm length and 77mm breadth, weighing not less than 60 gms	Each		1.00	
95	Providing and fixing white vitreous china laboratory sink with C.I.				

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	brackets, C.P. brass chain with rubber plug, 40 mm C.P brass waste and 40mm C.P. brass trap with necessary C.P. brass unions complete, including painting of fittings and brackets, cutting and making good the wall wherever required :				
	Size 600x450x200 mm	Each		2.00	
96	Providing and fixing draining board with C.I. brackets including painting of brackets, cutting and making good the walls wherever required :				
	White glazed fire clay draining board of size 600x450x25 mm	Each		2.00	
97	Providing and fixing PTMT towel rail complete with brackets fixed to wooden cleats with CP brass screws with concealed fittings arrangement of approved quality and colour.				
	600 mm long towel rail with total length of 645 mm, width 78 mm and effective height of 88 mm, weighing not less than 190 gms	Each		8.00	
98	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply, including all CPVC plain & brass threaded fittings, including 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.				
	15 mm nominal outer dia Pipes	Metre		42.00	
	20 mm nominal outer dia Pipes	Metre		97.00	
	25 mm nominal outer dia Pipes	Metre		93.40	
	40 mm nominal outer dia Pipes	Metre		17.00	
99	Providing and 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 & testing of joints complete as per direction of Engineer in Charge.				

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	40 mm nominal outer dia Pipes	Metre		55.00	
	75 mm nominal inner dia Pipes	Metre		40.00	
100	Providing and fixing C.P. brass bib cock of approved quality conforming to IS:8931 :				
	15 mm nominal bore	Each		17.00	
101	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to IS:8931.				
	15 mm nominal bore	Each		26.00	
102	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet :				
	100mm diameter	Each		8.00	
103	Constructing masonry Chamber 60x60x75 cm inside, in brick work in cement mortar 1:4 (1 cement : 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) , i/c necessary excavation, foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1:3 (1 cement : 3 coarse sand) 12 mm thick, finished with a floating coat of neat cement complete as per standard design :				
	With common burnt clay F.P.S.(non modular) bricks of class designation 7.5	Each		2.00	
104	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
	25 mm nominal bore	Each		3.00	
	40mm nominal bore	Each		1.00	
105	Providing and fixing ball valve (brass) of approved quality, High or low pressure, with plastic floats complete :				

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	25 mm nominal bore	Each		2.00	
106	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end) :				
	80mm nominal bore	Each		4.00	
107	Providing and fixing gun metal non- return valve of approved quality (screwed end) :				
a	25 mm nominal bore				
	Horizontal	Each		1.00	
b	40 mm nominal bore				
	Horizontal	Each		1.00	
108	Providing and fixing uplasticised PVC connection pipe with brass unions :				
	45cm length				
	15mm nominal bore	Each		18.00	
109	Cutting holes up to 15x15 cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size), including finishing complete so as to make it leak proof.	Each		4.00	
110	Cutting holes up to 30x30 cm in walls including making good the same:				
	With common burnt clay F.P.S. (non modular) bricks	Each		10.00	
111	Making hole up to 20x20 cm and embedding pipes up to 150 mm diameter in masonry and filling with cement concrete 1:3:6 (1 cement : 3 coarse sand 6 graded stone aggregate 20 mm nominal size) including disposal of malba.	Each		6.00	
112	Providing and placing on terrace (at all floor levels) polyethylene water storage tank, ISI : 12701 marked, with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow	Per Litre		7,000.00	

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	pipes but without fittings and the base support for tank.				
113	Providing, laying and jointing glazed stoneware pipes class SP-1 with stiff mixture of cement mortar in the proportion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete :				
	100mm diameter	Metre		23.00	
114	Providing and laying cement concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) all-round S.W. pipes including bed concrete as per standard design :				
	100mm diameter S.W. Pipe	Metre		23.00	
115	Providing and fixing square-mouth S.W. gully trap class SP-1 complete with C.I. grating brick masonry chamber with water tight C.I. cover with frame of 300 x300 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				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each		22.00	
116	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 :				
	150mm dia R.C.C pipe	Metre		85.00	
117	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand) with R.C.C. top slab with 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm 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 floating coat of neat cement and making channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) finished with a floating coat of neat cement complete as per standard design :				

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	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions, total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg) :				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Each		9.00	
118	Extra for depth for manholes :				
	Size 90x80 cm				
	With common burnt clay F.P.S. (non modular) bricks of class designation 7.5	Metre		4.50	
119	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.	SqM		1,280.00	
120	Supplying and filling in plinth with moram, including watering, ramming, consolidating and dressing complete. Moorum.	Cum		246.00	
121	P/L cement concrete - all works upto plinth level :				
	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size)	Cum		82.40	
122	Providing and laying factory made kerb stone of M-25 grade jointed with cement mortar (1:3).	Cum		11.50	
123	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, of approved size, design & shape, laid in required colour and pattern over and including 50mm thick compacted bed of coarse sand, filling the joints with fine sand etc. all complete as per the direction of Engineer-in-charge.	SqM		600.00	
124	Cement concrete (1:2:4) in pavements.	CuM		65.10	
125	Providing and fixing in position pre-moulded joint filler in expansion joints. 20mm thickness	sqm		21.30	
126	Providing and laying in position bitumen hot sealing compound for expansion joints etc.				

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a	Using grade 'A' sealing compound. 20x20 mm.	sqm		213.00	
127	Providing pre – constructional anti – termite and creating a continuous chemical barrier by using chloropyrifos emulsifiable concentrate 20% with 1% concentration, footings and all – round footings, column pits, wall surface along the external perimeter of the building upto natural ground level trenches, top surface of plinth filling, junction of wall and flooring along the external perimeter of the building, surroundings of pipes and conduits etc as per IS specification and as per instruction of chemical manufacturer. The treatment shall be carried out strictly in accordance with IS:6313(part – 2).	sqm		2255	
TOTAL CIVIL WORKS (A)					
PART - B ELECTRICAL & SERVICES ESTIMATE					
I	WIRING				
1	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 medium class PVC 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.				
A	Group A	Point		307.00	
B	Group B	Point		141.00	
2	Wiring for twin control light point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface / recessed medium class PVC conduit, 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		6.00	
3	Wiring for light/ power plug with 4X4 sq. mm FR PVC insulated copper conductor single core cable in surface/ recessed medium class PVC conduit along with 2 Nos 4 sq. mm FR PVC insulated copper conductor single core cable for loop earthing as required.	Metre		260.00	

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4	Wiring for circuit/ sub main wiring along with earth wire with the following sizes of FR PVC insulated copper conductor, single core cable in surface/ recessed medium class PVC conduit as required				
A	2 X 2.5 sq. mm + 1 X 2.5 sq. mm earth wire	Metre		3,791.20	
B	2 X 4 sq. mm + 1 X 4 sq. mm earth wire	Metre		210.00	
C	2 X 6 sq. mm + 1 X 6 sq. mm earth wire	Metre		3,089.80	
D	2 X 10 sq. mm + 1 X 10 sq. mm earth wire	Metre		273.75	
E	2 X 16 sq. mm + 1 X 16 sq. mm earth wire	Metre		191.00	
F	4 X 10 sq. mm + 2 X 10 sq. mm earth wire	Metre		488.75	
g	4 X 16 sq. mm + 2 X 16 sq. mm earth wire	Metre		288.00	
5	Supplying and drawing following pair 0.5 sq mm FR PVC insulated annealed copper conductor, unarmoured telephone cable in the existing surface/ recessed steel/ PVC conduit as required.				
	2 Pair	Metre		803.00	
6	Supplying and drawing co-axial TV cable RG-6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Metre		230.00	
7	Supplying 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.				
A	20 mm	Metre		803.00	
B	25 mm	Metre		623.00	
8	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding				

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	modular plate etc. as required.				
A	Telephone socket outlet	Each		21.00	
B	TV antenna socket outlet	Each		14.00	
C	Bell push	Each		4.00	
9	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	Each		82.00	
10	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 amps modular socket outlet and 5/6 amps modular switch, connection etc. as required. (For light plugs to be used in non-residential buildings).	Each		112.00	
11	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 5/6 & 15/16 amps modular socket outlet and 15/16 amps modular switch, connection etc. as required.	Each		118.00	
12	Supplying and fixing call bell/ buzzer suitable for single phase, 230 volts, complete as required.	Each		4.00	
13	Installation, testing and commissioning of pre-wired, fluorescent fitting / compact fluorescent fitting of all types, complete with all accessories and tube etc. directly on ceiling/ wall, including connection with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable and earthing etc. as required.	Each		134.00	
14	Installation, testing and commissioning of ceiling fan, including wiring the down rods of standard length (up to 30 cm) with 1.5 sq. mm FR PVC insulated, copper conductor, single core cable etc. as required.	Each		82.00	
15	Installation of exhaust fan in the existing opening, including making good the damage, connection, testing, commissioning etc. as required.				
	Up to 450 mm sweep	Each		20.00	
16	Extra for fixing the louvers/ shutters complete with frame for a exhaust fan of all sizes.	Each		20.00	

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II	MCCB, MCB & DB'S				
17	Supplying and fixing following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)				
A	2 + 8 way, Double door	Each		10.00	
B	2 + 12 way, Double door	Each		10.00	
18	Supplying and fixing following way, horizontal type three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface/ recess, complete with tinned copper bus bar, neutral bus bar, earth bar, din bar, interconnections, powder painted including earthing etc. as required. (But without MCB/RCCB/Isolator)				
	6 way (4 + 18), Double door	Each		2.00	
19	Supplying and fixing of following ways surface/ recess mounting, vertical type, 415 volts, TPN MCB distribution board 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 (but without MCB's and incomer) as required . (Note : Vertical type MCB TPDB is normally used where 3 phase outlets are required.)				
	12 way (4 + 36), Double door	Each		18.00	
20	Supplying and fixing 5 amps to 32 amps rating, 240/415 volts, "C" curve, miniature circuit breaker suitable for inductive load of following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
	Single pole	Each		866.00	
21	Supplying and fixing single pole blanking plate in the existing MCB DB complete etc. as required.	Each		80.00	
22	Supplying and fixing following rating, double pole, 240 volts, isolator in				

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	the existing MCB DB complete with connections, testing and commissioning etc. as required.				
A	40 amps	Each		10.00	
B	63 amps	Each		10.00	
23	Supplying and fixing following rating, four pole, 415 volts, isolator in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
A	40 amps	Each		14.00	
B	63 amps	Each		6.00	
24	Supplying and fixing following rating, double pole, (single phase and neutral), 240 volts, residual current circuit breaker (RCCB), having a sensitivity current up to 300 mill amperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
a	40 amps	Each		10.00	
b	63 amps	Each		10.00	
25	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current up to 300 mill amperes in the existing MCB DB complete with connections, testing and commissioning etc. as required.				
A	40 amps	Each		14.00	
B	63 amps	Each		6.00	
26	Supplying and fixing DP sheet steel enclosure on surface/ recess along with 25/32amps 240 volts "C" curve DP MCB complete with connections, testing and commissioning etc. as required.	each		26.00	
27	Supplying and fixing TP sheet steel enclosure on surface/ recess along	each			

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	with 16/25/32amps 415 volts "C" curve TP MCB complete with connections, testing and commissioning etc. as required.			14.00	
28	Supplying and fixing 20 amps, 240 volts, SPN industrial type, socket outlet, with 2 pole and earth, metal enclosed plug top along with 20 amps "C" curve, SP, MCB, in sheet steel enclosure, on surface or in recess, with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required.	Each		26.00	
29	Providing and fixing 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		10.00	
III	EARTHING				
30	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 metre long etc. with charcoal/ coke and salt as required.	Set		8.00	
31	Supplying and laying 25 mm X 5 mm G.I strip at 0.50 metre below ground as strip earth electrode, including connection/ terminating with G.I. nut, bolt, spring, washer etc. as required. (Jointing shall be done by overlapping and with 2 sets of G.I. nut bolt & spring washer spaced at 50mm)	Metre		80.00	
32	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.	Metre		50.00	
33	Providing and fixing 25 mm X 5 mm G.I. strip on surface or in recess for connections etc. as required.	Metre		50.00	
IV	LIGHTNING CONDUCTOR				
34	Providing and fixing of lightning conductor finial, made of 25 mm dia 300 mm long, G.I. tube, having single prong at top, with 85 mm dia 6 mm thick G.I. base plate including holes etc. complete as required.	Each		16.00	
35	Jointing copper / G.I. tape (with another copper/ G I tape, base of the finial or any other metallic object) by riveting / nut bolting/ sweating and soldering etc as required.	Each		100.00	
36	Providing and fixing copper tape 20 mm X 3 mm thick on parapet or	Metre			

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	surface of wall for lightning conductor complete as required.(For horizontal run)			125.00	
37	Providing and fixing copper tape 20 mm X 3 mm thick on parapet or surface of wall for lightning conductor complete as required.(For vertical run)	Metre		125.00	
38	Providing and fixing testing joint, made of 20 mm X 3 mm thick copper strip, 125 mm long, with 4 nos. of tinned brass bolts, nuts, chuck nuts and spring washers etc. complete as required.	Each		16.00	
39	Providing and laying copper tape 32 mm X 6 mm from earth electrode directly in ground as required.	Metre		90.00	
40	Providing and laying G.I. tape 32 mm X 6 mm from earth electrode directly in ground as required.	Metre		50.00	
V	MV CABLE LAYING				
41	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required.				
	Up to 35 sq. mm	Metre		550.00	
42	Laying and fixing of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1 KV grade of following size on wall surface as required.				
	Up to 35 sq. mm (clamped with 1mm thick saddle)	Metre		100.00	
43	Supplying and making cable route marker with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) of size 60 cm X 60 cm at the bottom and 50 cm X 50 cm at the top with a thickness of 10cm including inscription duly engraved as required.	each		70.00	
VI	MV CABLE JOINTING & END TERMINATION				
44	Supplying and making end termination with brass compression gland and aluminium lugs for following size of PVC insulated and PVC sheathed / XLPE aluminium conductor cable of 1.1 KV grade as required.				
	3½ X 35 sq. mm (32mm)	Each			

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				4.00	
VII	POLE ERECTION				
45	Erection of metallic pole of following length in cement concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) foundation including excavation and refilling etc. as required.				
	Above 6.5 metre and up to 8.0 metre	Each		11.00	
VIII	LV PANEL WELLNESS				
46	Supply, Installation, Testing & Commissioning of Utility panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system with bus bars extendable on both sides, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following switchgears, metering instruments and accessories as per specification.				
	INCOMER				
	1 No. 400A, TPN, Isolator				
	BUSBARS				
	1 Set of 400 Amp TPN bus bars of high conductivity electrolytic quality Aluminium alloy.				
	INSTRUMENTS				
	1 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	3 Nos. 63A, SPN, C curve, MCB	Job		1.00	
	3 Nos of SPARE				
	LV PANEL MEDIMART				
47	Supply, Installation, Testing & Commissioning of Utility panel, cubicle type, made out of 2mm thick CRCA sheet, totally enclosed, IP42, free standing, floor mounting, dust and vermin proof, powder coated, indoor, compartmentalised, suitable for operation on 3 phase and neutral, 415 V, 50Hz AC system with bus bars extendable on both sides, including internal wiring with suitable size wires, rotary handle, spreaders etc. The panel shall include supply & installation of following				

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	switchgears, metering instruments and accessories as per specification.				
	INCOMER				
	1 No. 250A, TPN, Isolator(MCCB)				
	BUSBARS				
	1 Set of 250 Amp TPN bus bars of high conductivity electrolytic quality Aluminium alloy.				
	INSTRUMENTS				
	2 No 3 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	8 No 1 phase Digital Multi function meter to read V, A, F with Acc class 1.				
	2 No 3 phase 4 wire CT operated energy meter, 5-10A, Acc. Class 1.				
	8 No 1 phase 2 wire CT operated energy meter, 5-10A, Acc. Class 1.				
	Set of phase indicating lamps, LED type, RYB. (All incomings)				
	Set of 2A 10kA C curve SP control MCB (All incomings)				
	Set of 200/5A, Class 1.0, 10VA, Cast Resin CT for metering. (All incomings)				
	OUTGOING - 3 Nos				
	SPARE				
	2 Nos. 63A, TPN, C curve, MCB				
	8 Nos. 40A, SPN, C curve, MCB	Job		1.00	
	Cables				
48	Supply of following size 1.1 KV grade XLPE insulated, PVC sheathed, armoured Aluminium conductor power cable conforming to IS 7098 (Part 1) amended up to date.				
	3.5C x 35 sqmm	m		550.00	
IX	LIGHTS & FANS				
49	Supply of 2x28W, indoor surface mountable fluorescent CRCA sheet steel power coated body light fixture, 28W T5 lamp, electronic HPF ballast, lamp holder, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required	nos		110.00	
50	Supply of 2x18 W, indoor surface mounted mirror optic CFL CRCA powder coated body light fixture, pre-anodised aluminium reflector,	nos		41.00	

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	CRCA powder coated frame, 18 W CFL lamps, open type copper ballast, prewired complete with all necessary accessories suitable for operation on 230V, 50Hz AC supply as required				
51	Supply of 300mm sweep, metal blades with safety guard suitable for single phase 230 volt, 50Hz AC supply complete with motor, capacitor and all accessories as required complete.	nos		34.00	
52	Supply of 1200 mm sweep min three star rated ceiling fan complete with motor, double ball bearing, blades, canopy, 30 cm down rod and without speed regulator suitable for 230 V 50 HZ, AC supply confirms to IS 374/1979 as required complete.	nos		68.00	
X	DATA & NETWORKING WORKS				
53	Supply & drawing Cat 6E cable in the existing surface / recessed steel / PVC conduit including connection to outlet as required.	m		623.00	
54	Supplying and fixing modular RJ 45 computer socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.	Nos		25.00	
55	Supplying and fixing following Telephone krone module in box made of plastic including hinged door, krone module with connection etc. as required.			-	
	20 pair krone module	Nos		2.00	
XI	Safety Equipments				
56	Supply and providing 6 mm thick & 1 m wide electrical grade chequered type rubber mat to withstand 3.3 KV dielectric strength conforming to IS 5429/ 1969.	m		5.00	
57	Supply and providing First Aid Chart duly framed and placed in a conspicuous location for clear vision.	Each		2.00	
58	Supply of 15" long rubber Hand gloves 15KV grade of approved make	Pair		2.00	
XII	SMOKE DETECTION & FIRE ALARM SYSTEM (ADDRESSABLE)				
59	Supply, Installation & Testing of GE / Morley make addressable Photoelectric type Smoke detector for below false ceiling with base plate.	Nos		84.00	
60	Supply, Installation & Testing of GE / Morley make addressable	Nos			

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	photoelectric type Heat detector with base plate			8.00	
61	Supply, Installation & Testing of Response Indicator	Nos		24.00	
62	Supply, Installation & Testing of Addressable type Electronic Hooter complete with line matching transformer & connected to the main control panel amplifier to produce alter / evacuation tone for public	Nos		8.00	
63	Supply, Installation & Testing of of Addressable type Manual Call Point with a glass cover marked " IN CASE OF FIRE BREAK GLASS"	Nos		14.00	
64	Supply, Installation, Testing & commissioning of Fault Isolator module	Nos		11.00	
65	Supply of Cable (2cx 1.5 Sq mm cu Ar Cable) (Red colour only) with necessary accessories and hardware etc.	Rmt		700.00	
66	Laying of Cable (2cx 1.5 Sq mm cu Ar Cable) on surface with necessary accessories and hardware etc. as required	Rmt		1,000.00	
67	Supply, Installation, Testing & commissioning of Two Loop non - expandable addressable type Fire Alarm Panel with Battery backup with capacity for 99 addressable devices including event logging facility, printing facility, interface feature & including all necessary hardware & accessories, etc. complete as required. (GE / Morley) FOR WELLNESS CENTER	Nos		1.00	
68	Supply, Installation, Testing & commissioning of Two Loop non - expandable addressable type Fire Alarm Panel with Battery backup with capacity for 99 addressable devices including event logging facility, printing facility, interface feature & including all necessary hardware & accessories, etc. complete as required. (GE / Morley)FOR MEDIMART	Nos		1.00	
XIII	WATER PUMP				
69	Supply, Installation, testing & commissioning of Horizontal Monobloc pump set having CI casing & CI impeller, suitable rated 3 phase electric motor complete with all required accessories for discharge of 200 lpm and head 15m. The system shall have Pressure guage on delivery line with isolation cock, level controller. Pumps should be inclusive of vibration elimination pads, base frames etc. The motor	ltr		10,000.00	

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	shall be provided with suitable rating DOL starter with O/L relay, single phase preventer, over & under voltage relay.				
70	Supply, Installation, testing & commissioning of Horizontal Monobloc pump set having CI casing & CI impeller, suitable rated 3 phase electric motor complete with all required accessories for discharge of 200 lpm and head 15m. The system shall have Pressure guage on delivery line with isolation cock, level controller. Pumps should be inclusive of vibration elimination pads, base frames etc. The motor shall be provided with suitable rating DOL starter with O/L relay, single phase preventer, over & under voltage relay.	ltr		5,000.00	
71	Providing and fixing 32mm NB PVC pipe conforming to IS Standards (pressure 10kg/cm2) complete including all fittings, fixtures, cutting, chasing in walls and making good the walls, testing of joints, concealing the pipes wherever required complete with all required accessories.	No		11.00	
72	Providing and fixing 32mm NB gun metal gate valve with CI wheel of IS marked approved quality (Screwed End) with all required accessories.	Metre		125.00	
XIV	YARD LIGHTING				
73	Supply & installation of Hot dipped Galvanised tubular swaged pole of 90 micron zinc coating with tensile strength 410 Mpa of overall length 9 Mtrs long single arm swan neck as per IS 2713. The pole shall have outside dia & thickness as 140x5.40, 115x4.5, 89x3.25mm, & sectional length 5.00+2+2 Mtrs along with 300 x 300 x 10 mm MS base plate welded at bottom. The pole shall have planting depth of 1.5 mtr & erected in PCC 1:2:4. The pole shall be provided with suitable size polycarbonate loop in loop out box. The loop in loop out box shall have 3 phase power connector or bus bar of required current rating for loop in loop out of cable, 4A C curve SP MCB. Required dia GI pipe shall be provided in the foundation for taking cable in & out from the pole. The cost of the civil foundation shall be measured along with civil items.	Each		10.00	
74	Supply & installation of Hot dipped Galvanised tubular swaged pole of 90 micron zinc coating with tensile strength 410 Mpa of overall length 9 Mtrs long double arm swan neck as per IS 2713. The pole shall have outside dia & thickness as 140x5.40, 115x4.5, 89x3.25mm, & sectional	Each		2.00	

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	length 5.00+2+2 Mtrs along with 300 x 300 x 10 mm MS base plate welded at bottom. The pole shall have planting depth of 1.5 mtr & erected in PCC 1:2:4. The pole shall be provided with suitable size polycarbonate loop in loop out box recessed in PCC foundation itself. The loop in loop out box shall have 3 phase power connector or bus bar of required current rating for loop in loop out of cable, 4A C curve SP MCB. Required dia GI pipe shall be provided in the foundation for taking cable in & out from the pole. The cost of the civil foundation shall be measured along with civil items.				
75	Supply & installation of integral, IP65, Post top luminaire with diecast aluminium powder coated housing, UV stabilized polyethylene bowl suitable for 1x70W MH lamp. The light fitting shall be mounted on 0.5m length pole, pole base, with all necessary accessories including 70W MH lamp for gate light. The cost of the civil foundation shall be measured along with civil items (Philips HPS360 IxMHNTD70W GR (antique silver) or equivalent)	Each		2.00	
76	Supply, installation, testing & commissioning of IP66,150W MH street lighting, with die cast aluminium housing, anodised aluminum reflector, toughened glass, stainless steel toggle, heavy duty copper ballast, pf capacitor, 1x150W MH lamp etc as required. The light fitting shall be suitably installed with all required accessories to poles. The item shall include 3C x 1.5 sqmm PVC insulated copper unarmoured cable for connecting between the luminaire and the loop in loop out box. (Similar to Wipro WSH 71150 or equivalent).	Nos		10.00	
	Electrical panel for Fire Protection System				
77	Design, fabrication, assembling, wiring supply, installation, testing and commissioning of motor control centre.	Set		1.00	
XV	Cable & Cable trays for Fire protection system				
78	Supplying & installing of 1100 volt grade PVC insulated copper conductor armoured cables as per specification in existing trenches, cable trays ducts over bed of sand, clamped to wall with suitable clamps, saddles fixing bolts including connecting testing and commissioning.	Lot		1.00	
79	Supply & installing of bare copper tapes / wires including all necessary fixing accessories and effecting connections as EPR specifications	Lot		1.00	

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80	Copper / Aluminium Conductor Armoured cables form panel to motors & other equipments inside the pump room	Lot		1.00	
81	Air Release Valve 25nb	Nos.		2.00	
XVI	FIRE HYDRANT SYSTEM				
82	Supply, Installing, jointing, testing and commissioning of following sizes of MS/GI EWR Heavy 'C' Class pipes conforming to IS 1239 with painting (Tata / Jindal make)				
	For wet riser system - MS ERW "C" heavy class pipe				
	100 mm dia	Mtrs.		25.00	
83	Supply, Installing, jointing, testing in trenches the following sizes of MS / GI ERW class "C" (heavy class) pipes conforming to IS 1239 (Tata / Jindal make) with Wrapping & coating				
	100 mm dia	Mtrs.		50.00	
84	Providing & fixing of butterfly valve (suitable for test pressure of 15 kg / sqm) with flanges, nut bolts, gaskets and necessary pad locking arrangement complete required.				
	100 mm dia	No.		2.00	
85	Providing & fixing gun metal Fire Hydrant single landing valve with 80 mm N.B. flanged inlet, brass spindle controlled 63 mm dia female instantaneous outlet type. G.M. coupling, blank cap, chain, twist release type lug & all accessories conforming to IS:5290. Including fixing with anchor fastener and flanged tapping from wet riser and providing pressure gauge with gun metal ball valve complete as required.	Nos.		6.00	
86	Providing and fixing in position 2 nos. flexible canvass rubber lined hose reels 63 mm dia with adapter, branch pipe and nozzle and storing them in metal cabinets with lockable glass shutters and fixing the metal cabinet at ground level in a location where it can be easily spotted including painting etc. complete. (as per IS 636)				
	7.5 m length (Mid landing)	Nos.		2.00	

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87	Supply & installing 63 mm dia instantaneous pattern branch short gunmetal pipe, 20 mm dia nozzle conforming to IS 903, suitable for inter connection to hose pipe coupling complete as required.	Nos.		2.00	
88	Providing & fixing indoor type hose lockable cabinet frames fabricated from 40 x 40 x 5 angle iron sections and 16 gauge MS sheet with full front glass door and locking arrangement, suitable to accommodate landing valves, 15 m long hoses, first-aid hose reel and branch pipe nozzle & fire mans' axe. The cabinet frame shall be painted with one coat of primer and two or more coats of synthetic enamel paint of approved make and shade of as required (Approx 2.1 m (high) x 0.9 m (wide) x 0.6 m (deep)). The item shall be complete of MS housing with front door.	Nos.		7.00	
	(Cost shall be inclusive of providing break glass box containing key for the cabinet along with hammer).				
89	M.S. Hose cabinet stand mounted type fabricated out of M.S. sheet of 16 swg. with glass fronted (4mm thick glass with rubber beeding) door and size of the cabinet shall be 600mm x 750 mm x 250 mm cabinet shall be painted with paint of P.O. Red and marked on the front as " FIRE HOSE"	Nos.		6.00	
	(Cost shall be inclusive of providing break glass box containing key for the cabinet along with hammer).				
90	Providing and fixing standard fireman's axe with heavy rubber handle.	Nos.		12.00	
91	Providing & fixing swinging type First Aid hose reel in red colour drum with 36 mts long and 20 mm dia heavy duty "DUNLOP"rubber water hose, 20 mm dia globe valve stop cock, terminating with G.M. coupling & nozzle of 6mm outlet with shut off valve conforming to IS 8090 - 1976 complete with MS socket for tap-off, drum and brackets (including painting) for fixing on wall with anchor fastener, bolts & nuts conforming to IS:884-1969 complete as required.	Nos.		7.00	

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92	Supply & installing gun metal fire brigade connection (suction collecting head) consisting of 4 nos. 63 mm dia instantaneous type male coupling with built-in check valves, 1 no. 150 mm dia sluice valve, 1 no. 150 mm dia non-return valve and 150 mm dia flanged outlet complete with bolts, nuts and rubber insertins as required and as per IS 904 1963	No.		1.00	
93	Supply & installing gun-metal Fire brigade suction hose coupling (draw-out connection) with nut for female coupling as per IS 902-1974 complete with 100 mm dia GI suction pipe and 100 mm dia foot valve (to be connected to static tank). Provision of GI drop pipe and foot valve shall be made in all the fire water static storage tank (4 nos) (GI pipe to be paid separately through appropriate item while cost of foot valve to be included.)	No.		1.00	
XVII	PORTABLE CHEMICAL FIRE EXTINGUISHER				
94	Supply, installation, testing and commissioning of following types of extinguisher with provision of wall bracket (fixed with anchor fastner).				
	ISI marked (IS:940) portable chemical fire extinguisher, water (gas pressure) type capacity 9 litres with gun metal cap and nozzle and complete in all respects including initial fill and wall suspension brackets	Nos		4.00	
95	ISI marked (IS:2171) Co2 water type fire extinguishers Fire Extinguisher with Gun Metal cap and nozzle and complete in all respects including initial fill and wall suspension bracket				
	2 Kg	Nos		4.00	
96	Providing and fixing in position ABC type fire extinguishers of 5 liters capacity each.	Nos		4.00	
97	Supplying and installing at approved location approved make fire buckets of 24 gauge galvanized steel sheet, standard 9 litre capacity and of round bottom shape, painted white inside and red outside and black on the bottom, inscribed with letters "FIRE" in black and	Nos		3.00	

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	gold. Cost shall be inclusive of providing MS stand duly painted over a coat of primer.				
	TOTAL ELECTRICAL & SERVICES WORKS (B)				
	PART - C SWIMMING POOL (ELECTRICAL AND PLUMBING)				
1	Supply installation testing and commissioning of Modular swimming pool equipments listed as follows in all respect complete including statutory approval and drawings				
	To provide plumbing and electrical drawings only.	Lot		1.00	
2a	FILTRATION EQUIPMENT				
	Filters				
	TOTALLY ANTI - CORROSIVE Polyester+ Fiber glass filter Fitted with Pressure gauge collector arms and diffuser made from unplasticized PVC Bobbin wound	Nos		2.00	
	Filtration velocity = 50m ³ /hr/m ²				
	Maximum working pressure = 1.5kg/cm ²				
	Diameter = 1100 mm.				
	Flow rate = 43 m ³ /hr Make :AQUIONICS				
	Multiport Valve - Manual	Nos		2.00	
	6 way Multiport Valve for filtration, backwash, rinse, close and recirculation, with connections to the filter complete Connection size : 1.5"				
	Make : AQUIONICS				
	Filter media :Supply of filter media for Filter tank	Kgs		1,400.00	
	Re-circulating Pumps	Nos		2.00	
	Recirculating monobloc centrifugal pump of Capacity 3 HP pump with pre filter.				
	Make : KRIPSOL/ EQUIVALLANT				

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	Plumbing in filter room	Ls		1.00	
	a) Providing Frontal piping for filter				
	b) Providing CI valves in filter room				
	c)MS Supports & Base plate for supports of plumbing, valves, pump and piping Make : Finolex/SUPREME				
2b	FLOW FITTINGS FOR AND POOL ACCESSORIES				
	Pool Drain				
	Main drain made up of SS 4 " Make :AQUIONICS/EQUIVALENT	Nos		2.00	
	Floor Inlets				
	Return inlet in ABS - Multiflow and external thread 2"				
	Make : AQUIONICS/EQUIVALENT	Nos		15.00	
	Gratings				
	Polypropylene grating of 10" size white color	Rmtrs.		80.00	
	Ladders				
	Main Pool ladders, Made in AISI - 316 - 4 step	Nos		2.00	
	Main Pool ladders, Made in AISI - 316 -3 step	Nos		2.00	
	External Plumbing				
	Supply and laying of pipes lines from swimming pool to filter room Pipes to be used are IS 4985 10 Kg/cm2 Make: Supreme/Finolex	Ls		1.00	
2c	MAINTENANCE ACCESSORIES				
	SS Trolley suction sweeper with				
	Vacuum head with rollers				
	Make : AQUIONICS/ EQUIVALENT	Nos		1.00	
	Extensible handles for cleaning attachments in				
	anodized aluminium which can be adapted to the				
	entire range of cleaning equipment, brushes, leaf				

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	skimmers and scoops, 6mts. Long				
	Make : AQUIONICS/ EQUIVALLENT	Nos		1.00	
	Transparent plastic vacuum hose 1 1/2" dia				
	18mts Long including hose cuffs for connection to				
	suction inlets.				
	Make : AQUIONICS/ EQUIVALLENT	Nos		1.00	
	Deep bag net made in polypropylene and white polyester netting				
	clip connection				
	Make :AQUIONICS/ EQUIVALLENT	Nos		1.00	
	Curved brushes for pool basins and scum liners				
	Make : AQUIONICS/ EQUIVALLENT	Nos		1.00	
	Test kit for free chlorine & pH				
	Make : AQUIONICS/ EQUIVALLENT	Nos		1.00	
	Painting: Painting of pipes with different colours to indicate				
	flow of water from inlets and outlets	Ls		1.00	
	Supply of TR 90 chlorine granules for start up	Ls		1.00	
2d	ERRECTION, INSTALLATION, TESTING & COMMISSIONING	Ls		1.00	
	Training of client staff for one week	Ls		1.00	
	Maintenance manual: Issue of Maintenance manual with warrantee certificate	Ls		1.00	
2e	UNDERWATER ILLUMINATION				

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	" STANDARD" model underwater lights 12 V LED lights nichless made in ABS Plastic Make Dazzel/Aqua	Nos		12.00	
	ELECTRICAL WORKS				
2f	Cabling from pump to panel board housing driver using 4 sq mm CABLES with necessary conduiting, Make Finolex Cables	LS		1.00	
	Cabling for under water lights from pool driver in the housing which shall be with in 20 ft from the pool				
	TOTAL SWIMMING POOL (ELECTRICAL AND PLUMBING) (C)				
	Part D PRE- CONSTRUCTION ACTIVITES				
1	Preparation and submission of plans based on the concept of plans to the local bodies and get approvals thereof	LS		1.00	
2	Preparation of working drawings and getting approval of clients and issue 'Good for Construction" drawings	LS		1.00	
3	Preparation of Structural design and drawings including proof-checking through Pondichery Engineering College.	LS		1.00	
4	Geo-Technical investigation for foundation design	LS		1.00	
5	Preparation of as built drawings including getting occupation certificate (all activities connected with all NOC's included).	LS		1.00	
	TOTAL PRE- CONSTRUCTION ACTIVITES (D)				
	GRAND TOTAL (A+B+C+D)				