

**LADY HARDINGE MEDICAL COLLEGE & ASSOCIATED
HOSPITALS, NEW DELHI**

GOVERNMENT OF INDIA

TENDER

FOR

**Construction of Residential Units and RMO Accommodation
with Associated Services Under Phase-1 for Comprehensive
Redevelopment Plan for Lady Hardinge Medical College &
Associated Hospitals, New Delhi**

VOLUME – V

BILL OF QUANTITIES

**Civil Works & services
Electrical works**

JANUARY' 2011



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Tender No HSCC/168/PM/LHMC/RESIDENTIAL/2011

PROJECT NAME: CONSTRUCTION OF RESIDENTIAL QTRS & RMO ACCOMMODATION WITH ASSOCIATED SERVICES UNDER COMPREHENSIVE REDEVELOPMENT PLAN OF LHMC, NEW DELHI

Bill of Quantities

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	No. of buildings					
1.00	EARTH WORK					
1.01	Earth work in excavation by mechanical means (Hydraulic excavator) / manual means over areas (exceeding 30 cm in depth. 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50 m and lift up to 1.5 m, disposed earth to be levelled and neatly dressed.. Obtaining necessary statutory approvals / permissions viz drainage approval, royalty permission, debris management plan for excavation shall form part of excavation contractor's scope of work. During excavation all related records, levels shall be maintained by the contractor. All safety norms & regulation shall be strictly followed. General house keeping and surrounding area shall be kept neat and clean on a regular basis.					
a)	All kinds of soil	21350.00	Cu.m			
b)	Ordinary rock	310.00	Cu.m			
c)	Hard rock (blasting prohibited)	90.00	Cu.m			
1.02	Extra for every additional lift of 1.5 m or part there of in.					
a)	All kinds of soil.					
i)	1.5m to 3.0m	9250.00	Cu.m			
ii)	3.0m to 4.50m	1225.00	Cu.m			
iii)	4.50m to 6.00m	370.00	Cu.m			
iv)	6.0m to 7.50m	340.00	Cu.m			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
1.03	Extra for every additional lift of 1.5 m or part there of in.					
a)	Ordinary or hard rock					
i)	Lift from 1.5 to 3.0m	120.00	Cu.m			
ii)	Lift Below 3.0m to 4.50m	35.00	Cu.m			
iii)	Lift from 4.50 to 6.0m	30.00	Cu.m			
iv)	Lift Below 6.0m to 7.50m	35.00	Cu.m			
1.04	Transportation & disposal of excavated earth, rock, debris, muck at an approved location and as per local norms, with necessary statutory approvals & in consultation with Engineer Incharge.	17284.00	Cu.m			
1.05	Transportation of disposal of excavated earth beyond 50 m or part thereof beyond 1st 50 m upto 9 such additional leads	4270.00	Cu.m			
1.06	Transportation of disposal of excavated rock beyond 50 m or part thereof beyond 1st 50 m upto 9 such additional leads	61.00	Cu.m			
1.07	Close timbering over areas including strutting, shoring & packing, cavities(wherever required) etc complete (measurements to be taken of the face area timbered):					
a)	Depth not exceeding 1.50 m	1467.00	Sq.m			
b)	Depth exceeding 1.5 m but not exceeding 3.00 m	1443.00	Sq.m			
c)	Depth exceeding 3.0 m but not exceeding 4.50 m	213.00	Sq.m			
d)	Depth exceeding 4.50 m but not exceeding 6.00 m	109.00	Sq.m			
e)	Depth exceeding 6.00 m but not exceeding 7.50 m	100.00	Sq.m			
1.08	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.	3874.00	Cu.m			
1.09	Supplying & stacking of good earth at site including royalty, necessary approvals if required and carriage etc complete.(earth measured in stacks will be reduced by 20% for payment)	13730.00	Cu.m			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
1.10	Supplying and filling in plinth with river sand under floors including, watering, ramming consolidating and dressing complete.	578.00	Cu.m			
1.11	Supplying, Diluting & Injecting chemical emulsion for pre-constructional anti termite treatment & creating a continuous chemical barrier under & all round the column pits, wall trenches, basement excavation, top surface of plinth filling, junction of wall & floor, along the external perimeter of building, expansion joints, over the top surface of consolidated soil on which apron is to be laid, surroundings of pipes & conduits etc. complete with Chloropyriphos Emulsifiable Concentrate of 20 % with 1 % concentration. (Plinth Area of Building shall be measured in Sq.m for payment)	4725.00	Sq.m			
SUB TOTAL						

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
2.00	CONCRETE WORKS					
2.01	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level:					
a)	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	861.00	Cu.m			
b)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	95.00	Cu.m			
c)	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	70.00	Cu.m			
2.02	Providing and laying cement concrete in retaining walls, return walls, walls (any thickness) including attached pilasters, columns, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window sills, fillets etc. up to floor five level, excluding the cost of centering, shuttering and finishing :					
a)	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	42.00	Cu.m			
2.03	Providing and laying damp-proof course 50mm thick with cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20mm nominal size).	312.00	Sq.M			
2.04	Extra for providing and mixing water proofing material in cement concrete work @ 1 kg per 50kg of cement.	159.00	per 50 kg cement			
2.05	Applying a coat of residual petroleum bitumen of penetration 80/100 of approved quality using 1.7kg per square metre on damp proof course after cleaning the surface with brushes and finally with a piece of cloth lightly soaked in kerosene oil.	312.00	Sq.M			
2.06	Making plinth protection 50mm thick of cement concrete 1:3:6 (1 cement :3 coarse sand : 6graded stone aggregate 20mm nominal size) over 75mm bed by dry brick ballast 40mm nominal size well rammed and consolidated and grouted with fine sand including finishing the top smooth	1337.00	Sq.M			
	SUB TOTAL					

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
3.00	REINFORCED CEMENT CONCRETE					
3.01	Providing and laying in position specified grade of reinforced cement concrete excluding the cost of centering, shuttering, finishing & reinforcement. All work upto plinth protection.					
a)	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	451.00	Cu.m			
3.02	Providing and laying in position ready mixed concrete manufactured in fully automatic batching plant & transported to site of work in transit mixer for a lead upto 10 kms, having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work including pumping of RMC from transit mixer to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including Admixtures in recommended proportions as per IS 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. M-25 grade reinforced cement concrete by using 410 kg. of cement per cum of concrete. All work upto floor V level.	260.00	Cu.m			
3.03	Providing and laying in position machine batched, machine mixed and machine vibrated design mix cement concrete of specified grade for reinforced cement concrete work including pumping of concrete to site of laying but excluding the cost of centering, shuttering, finishing and reinforcement, including Admixtures in recommended proportions as per IS 9103 to accelerate, retard setting of concrete, improve workability without impairing strength and durability as per direction of Engineer-in-charge. M-25 grade reinforced cement concrete by using 410 kg of cement per cum of concrete. All work up to floor V level.	8468.00	Cu.m			
3.04	Add or deduct for providing richer or leaner mixes respectively at all floor levels.					

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
a)	Providing M-30 grade concrete by using 420 kg of cement per cum of concrete instead of M-25 grade B.M.C. / R.M.C.	8333.00	Cu.m			
b)	Providing M-40 grade concrete by using 435 kg of cement per cum concrete instead of M-25 grade B.M.C. / R.M.C.	135.00	Cu.m			
3.05	Deduct for using less cement than the quantity as provided in the item of RMC/batch mix concrete as arrived as per mix design.	1476.00	Quintal			
3.06	Centering and shuttering including strutting, propping etc. and removal of form for:					
a)	Foundations, footings, bases of columns, etc. for mass concrete.	1987.00	Sq.m			
b)	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	3500.00	Sq.m			
c)	Weather shade, Chajjas, corbels etc., including edges.	1395.00	Sq.m			
d)	Suspended floors, roofs, landings, balconies and access platform with waterproof ply 12 mm thick.	12026.00	Sq.m			
e)	Lintels, beams, plinth beams, girders, bressumers and cantilevers with water proof ply 12mm thick.	18996.00	Sq.m			
f)	Columns, Pillars, Piers, Abutments, Posts and Struts.	10955.00	Sq.m			
g)	Staircases (including landing).	955.00	Sq.m			
h)	Lintels, beams, plinth beams, girders, bressumers and cantilevers	325.00	Sq.m			
i)	Columns, Pillars, Piers, Abutments, Posts and Struts.	325.00	Sq.m			
j)	Suspended floors, roofs, landings, balconies and access platform	45.00	Sq.m			
k)	Weather shade, Chajjas, corbels etc., including edges.	25.00	Sq.m			
l)	Small lintels not exceeding 1.5m clear span. moulding as in cornices, window sills, string courses, bands, copings, bed plates. anchor blocks and the like.	225.00	Sq.m			
3.07	Providing and laying expansion strip , 1.2 m wide at specified locations in the retaining wall & slabs as shown & methodology / work sequence as mentioned on the drawing including application of an bonding agent (for bonding of old & new concrete) as per manufacturers specification.	200.00	Sq.m			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
3.08	Extra for additional height in centering, shuttering where ever required with adequate bracing, propping etc. including cost of deshuttering and decentering at all levels, over a height of 3.5 m, for every additional height of 1 metre or part thereof (Plan area to be measured)					
a)	Suspended floors, roofs, landing, beams and balconies (Plan area to be measured).	1303.00	Sq.m			
3.09	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.					
a)	Thermo-Mechanically Treated bars / Fe 500	1194000.00	kg			
3.1	Providing precast cement concrete Jali 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 6mm nominal size) reinforced with 1.6 mm dia mild steel wire including centering and shuttering, roughening cleaning, fixing and finishing in cement mortar 1:3 (1 cement: 3 fine sand) etc. complete excluding plastering of the jambs, sills and soffits. 50mm thick	501.00	Sqm			
SUB TOTAL						

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
4.00	BRICK WORK					
4.01	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in:					
a)	Cement mortar 1:6 (1 cement : 6 coarse sand)	433.00	Cu.M			
4.02	Brick work with F.P.S. bricks of class designation 75 in superstructure above plinth level up to floor V level in all shapes and sizes in :					
a)	Cement mortar 1:6 (1 cement : 6 coarse sand)	4443.00	Cu.M			
4.03	Half brick masonry with F.P.S. bricks of class designation 75 in superstructure above plinth level up to floor V level.					
a)	Cement mortar 1:4 (1 cement :4 coarse sand)	8153.00	Sq.M			
4.04	Extra for providing and placing in position 2 Nos. 6mm dia. M.S. bars at every third course of half brick masonry (with F.P.S. bricks).	7948.00	Sq.M			
	SUB TOTAL					
5.00	MISCELLANEOUS STONE WORK					
5.01	Stone work, plain in copings, cornices, string courses and plinth courses, upto 75 mm thick in Cement mortar 1:6 (1 cement : 6 coarse sand) including pointing with white cement mortar 1:2 (1 white cement : 2 stone dust) with an admixture of pigment matching the stone shade.					
a)	Red sand stone	29.00	Cu.M			
	SUB TOTAL					

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
6.00	MARBLE WORK					
6.01	Marble work gang saw cut (polished and machine cut) of thickness 18mm for wall lining (veneer work) in cement mortar 1:3 (1 cement : 3 coarse sand) including pointing with white cement mortar 1:2 (1 white cement : 2 marble dust) with an admixture of pigment to match the marble shade: (To be secured to the backing by means of cramps, which shall be paid for separately) The rate of marble will not be dependent on the Pattern.					
a)	Raj Nagar Plain white marble/ Udaipur green marble/ Zebra black marble					
i)	Area of slab upto 0.50 sqm	559.00	Sq.M			
6.02	Providing and fixing 18mm thick gang saw cut mirror polished premoulded and prepolished) machine cut for kitchen platforms, vanity counters, window sills , facias and similar locations of required size of approved shade, colour and texture laid over 20mm thick base cement mortar 1:4 (1 cement : 4 coarse sand) with joints treated with white cement, mixed with matching pigment, epoxy touch ups,including rubbing, curing, moulding and polishing to edge to give high gloss finish etc. complete at all levels.					
a)	Granite of any colour and shade					
i)	Area of slab over 0.50 sqm.	263.00	Sq.M			
6.03	Extra for providing edge moulding to 18mm thick marble stone counters, Vanities etc. including machine polishing to edge to give high gloss finish etc. complete as per design approved by Engineer-in- Charge.					
a)	Granite work.	334.00	Metre			
6.04	Extra for fixing marble /granite stone over and above corresponding basic item, in facia and drops of width upto 150 mm with epoxy resin based adhesive including cleaning etc. complete.					
		217.00	Metre			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
6.05	Extra for providing opening of required size & shape for wash basins/ kitchen sink in kitchen platform, vanity counters and similar location in marble/Granite/stone work including necessary holes for pillar taps etc. including rubbing and polishing of cut edges etc. complete.	63.00	Nos			
6.06	Mirror polishing on marble work/Granite work/stone work where ever required to give high gloss finish complete.	263.00	Sq.M			
6.07	Marble stone flooring (basic rate Rs. 294.00 per sqm) with 18mm thick marble stone (sample of marble shall be approved by Engineer-in-charge) over 20 mm (average) thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry including rubbing and polishing complete with :					
a)	Agaria White	153.00	Sq.M			
SUB TOTAL						

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
7.00	DOORS AND WINDOWS					
7.01	Providing wood work in frames of doors, windows, clerestory windows and other frames, wrought framed and fixed in position :					
a)	Second class teak wood	3.25	Cu.M			
7.02	Providing and fixing glazed shutters for doors, windows and clerestory windows using 4 mm thick float glass panes including black enamelled ISI marked M.S butt hinges with necessary screws.					
a)	Second class teak wood					
i)	35 mm thick	144.00	Sq.M			
7.03	Extra for providing frosted glass panes 4 mm thick instead of ordinary float glass panes 4 mm thick in doors, windows and clerestory window shutters. (Area of opening for glass panes excluding portion inside rebate shall be measured).	202.00	Sq.M			
7.04	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 :					
a)	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws.	1008.00	Sq.M			
b)	25mm thick (for cupboard) including ISI marked nickel plated bright finished M.S. piano hinges with necessary screws.	559.00	Sq.M			
7.05	Extra for Providing and fixing flush doors with decorative veneering					
a)	On one side in item no. 9.21	395.00	Sq.M			
7.06	Extra for providing lipping with 2nd class teak wood battens 25 mm minimum depth on all edges of shutters (over all area of door shutter to be measured) Over item no. 9.20 and 9.21.	1632.00	Sq.M			
7.07	Extra for providing vision panel not exceeding 0.1 sqm in all type of flush doors (cost of glass excluded) (overall area of door shutter to be measured) :					

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
a)	Rectangular or square.	74.00	Sq.M			
7.08	Extra if louvers (not exceeding 0.2 sqm) are provided in flush door shutters (overall area of door shutters to be measured).					
a)	Decorative type door.	151.00	Sq.M			
7.09	Providing and fixing 35mm thick wire gauze shutters using galvanised M.S. wire gauze of average width of aperture 1.4mm with wire of dia. 0.63 mm for doors, windows and clerestory windows including ISI marked bright finished or/and black enamelled M.S. butt hinges with necessary screws :					
a)	Second class teak wood.	395.00	Sq.M			
7.10	Providing and fixing wooden moulded beading to door and window frames with iron screws, plugs and priming coat on unexposed surface etc. complete :					
a)	2nd class teak wood					
i)	50x12 mm	6576.00	Metre			
7.11	Providing and fixing M.S. grills of required pattern in frames of windows etc. with M.S. flats, square or round bars etc. all complete.					
a)	Fixed to openings /wooden frames with rawl plugs screws etc.	21023.00	Kg			
7.12	Providing and fixing fly proof galvanised M.S. wire gauze to windows and clerestory windows using galvanised M.S. wire gage with average width of aperture 1.4 mm in both directions with wire of dia. 0.63 mm.					
a)	With 12 mm mild steel U beading.	2657.00	Sq.M			
7.13	Providing 40x5 mm flat iron hold fast 40 cm long including fixing to frame with 10 mm diameter bolts, nuts and wooden plugs and embeddings in cement concrete block 30x10x15cm 1:3:6 mix (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size)	6216.00	Nos			
7.14	Providing and fixing oxidised M.S. Safety chain with necessary fixtures for doors. (Weighting not less than 450 gms.)	317.00	Nos			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
7.15	Providing and fixing fibre Glass Reinforced plastic (FRP) Door Frames of cross-section 90mm x 45mm having single rebate of 32mm x 15mm to receive shutter of 30mm thickness. The laminate shall be moulded with fire resistant grade unsaturated polyester resin and chopped mat .Doorframe laminate shall be 2mm thick and shall be filled with suitable wooden block in all the three legs. The frame shall be covered with fiberglass from all sides. M.S. stay shall be provided at the bottom to steady the frame.	1688.00	Metre			
7.16	Providing and fixing to existing door frames.					
a)	30 mm thick Glass Fibre Reinforced Plastic (FRP) panelled door shutter of required colour and approved brand and manufacture, made with fire - retardant grade unsaturated polyester resin, moulded to 3 mm thick FRP laminate for forming hollow rails and styles, with wooden frame and suitable blocks of seasoned wood inside at required places for fixing of fittings, cast monolithically with 5mm thick FRP laminate for panels conforming to IS: 14856 - 2000 including fixing to frames.	467.00	Sq.M			
7.17	Providing and fixing 12mm 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 ofengineer-in-charge.					
(a)	Pre-laminated particle board with decorative lamination on both sides.	389.00	sq. m			
7.18	Providing and fixing double action hydraulic floor spring of approved brand and manufacture IS : 6315 marked, for doors including cost of cutting floors as required, embedding in floors 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.					
(a)	With stainless steel cover plate	229.00	nos.			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
7.19	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, fixed with rawl plugs and screws or with fixing clips, or with expansion hold fasteners including necessary filling up of gaps at junctions, at top, bottom and sides with required PVC/neoprene felt 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 and paneling to be paid for separately) :					
a)	For fixed portion					
i)	Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	4529.00	Kg			
7.20	For shutters of doors, windows & ventilators including providing and fixing hinges/ pivots and making provision for fixing of fittings wherever required including the cost of PVC / neoprene gasket required (Fittings shall be paid for separately).					
a)	Anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868, Minimum anodic coating of grade AC 15)	3416.00	Kg			
7.21	Providing and fixing glazing in aluminium door, window, ventilator shutters and partitions etc. with PVC/ neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-incharge . (Cost of aluminium snap beading shall be paid in basic item):					
a)	With float glass panes of 5.50 mm thickness	1396.00	Sq.M			
7.22	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.					
a)	Upto 5mm depth and 5 mm width	4717.00	Metre			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
7.23	Providing and fixing anodised aluminium (anodised transparent or dyed to required shade according to IS: 1868. Minimum anodic coating of grade AC 15) sub frame work for windows and ventilators a with extruded built up standard tubular sections of approved make conforming to IS: 733 and IS : 1285 fixed with rawl plugs and stainless steel screws etc.	3005.00	Kg	\		
7.24	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 :					
a)	250x16 mm	1110.00	Nos			
7.25	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 :					
a)	250x10mm	741.00	each			
b)	100x10mm	590.00	Nos			
7.26	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 :					
a)	125 mm	1294.00	Nos			
b)	100 mm	778.00	Nos			
7.27	Providing and fixing aluminium hanging floor door stopper ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade with necessary screws etc. complete					
a)	Twin rubber stopper	1036.00	Nos			
7.28	Providing and fixing aluminium casement stays ISI marked anodised (anodic coating not less than grade AC 10 as per IS : 1868) transparent or dyed to required colour and shade with necessary screws etc. complete.	982.00	Nos			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
7.29	Providing and fixing bright finished brass 100 mm mortice latch and lock ISI marked with six levers and a pair of anodised (anodic coating not less than grade AC 10 as per IS : 1868) aluminium lever handles with necessary screws etc. complete (Best make of approved quality).	317.00	Nos			
7.30	Providing and fixing heavy duty locks in pair of approved make for Alluminium sliding windows in approved colour anodized aluminium sections with necessary cutouts at appropriate locations and fastenings etc. complete as per the instructions of Engineer-in-charge of 150 mm long size.	1964.00	Nos			
7.31	Providing and fixing IS : 3564 marked aluminium extruded section body tubular type universal hydraulic door closer with double speed adjustment with necessary accessories and screws etc. complete.	230.00	nos.			
7.32	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 :					
(a)	Tower Bolts 150 mm	369.00	nos.			
Sub Total						

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
8.00	STEEL WORK					
8.01	Supplying and fixing rolling shutters of approved make, made of required size M.S. laths interlocked together through their entire length and jointed together at the end by end locks mounted on specially designed pipe shaft with brackets, side guides and arrangements for inside and outside locking with push and pull operation complete including the cost of providing and fixing necessary 27.5cm long wire springs grade No.2 and M.S. top cover of required thickness for rolling shutters.					
a)	80x1.25mm M.S. laths with 1.25 mm thick top cover.	101.00	Sq.M			
8.02	Providing and fixing pressed steel door frames confirming to IS: 4351 manufactured from commercial mild steel sheet of 1.25 mm thickness including hinges jamb, lock jamb, bead and if required angle threshold of mild steel angle of section 50x25mm, or base ties of 1.25mm pressed mild steel welded or rigidly fixed together by mechanical means, adjustable lugs with split end tail to each jamb including steel butt hinges 2.5mm thick with mortar guards, lock strikeplate and shock absorbers as specified and applying a coat of approved steel primer after pre-treatment of the surface as directed by Engineer-in-charge:					
a)	Profile B	3154.00	Metre			
b)	Profile C	1616.00	Metre			
8.03	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.					
a)	In gratings, frames, guard bar, ladder, railings, brackets, gates and similar works.	1086.00	Kg			
8.04	Providing and fixing hand rail of approved size by welding etc. to steel ladder railing, balcony railing and staircase railing including applying a priming coat of approved steel primer.					
a)	M.S. tube.	27.00	Kg			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
8.05	Providing and fixing in position collapsible steel shutters with vertical channels 20x10x2mm and braced with flat iron diagonals 20x5mm size with top and bottom rail of T-iron 40x40x6mm with 40mm dia, steel pulleys complete with bolts, nuts, locking arrangement, stoppers, handles, including applying a priming coat of approved steel primer.	98.00	Sq.M			
8.06	Providing and fixing ball bearing for rolling shutters	5.00	Sq.M			
8.07	Extra for providing grilled rolling shutters manufactured out of 8 mm dia. M.S. bar instead of laths as per design approved by Engineer-in-charge.	101.00	Sq.M			
SUB TOTAL						

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
9.00	FLOORING					
9.01	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.					
a)	40mm thick with 20mm nominal size stone aggregate.	529.00	Sq.M			
9.02	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) : (No extra payment for flooring pattern).					
a)	25 mm thick.	2319.00	Sq.M			
9.03	Kota stone slabs 25 mm thick in risers of steps, skirting, dado and pillars laid on 12 mm (average) thick cement mortar 1:3 (1 cement 3 coarse sand) and jointed with grey cement slurry mixed with pigment to match the shade of the slabs, including rubbing and polishing complete.	137.00	Sq.M			
9.04	Extra for pre finished nosing in treads of steps of Kota stone/ sand stone slab.	479.00	Metre			
9.05	Extra for Kota stone/ sand stone in treads of steps and risers using single length up to 1.05 metre .	329.00	Metre			
9.06	Providing and fixing Ist quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps and dados over 12 mm thick bed of cement Mortar 1:3 (1 cement : 3 coarse sand) and jointing with grey cement slurry @ 3.3kg per sqm including pointing in white cement mixed with pigment of matching shade complete. (No extra payment for flooring pattern).	5126.00	Sq.M			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
9.07	Providing and laying rectified Glazed Ceramic / antiskid floor tiles 300x300 mm or more (thickness to be specified by the manufacturer) of 1st quality conforming to IS : 15622 of approved make in all colours, shades, except 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 pigments etc., complete. (No extra payment for flooring pattern).	581.00	Sq.M			
9.08	Providing and laying vitrified tiles in flooring / skirting different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement : 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete. (No extra payment for flooring pattern).					
a)	Size of Tile 60x60 cm	8675.00	Sq.M			
SUB TOTAL						

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
10	FINISHING					
10.01	12 mm cement plaster of mix :					
a)	1:6 (1 cement: 6 coarse sand)	10327.00	Sq.M			
10.02	15 mm cement plaster on rough side of single or half brick wall of mix :					
a)	1:6 (1 cement: 6 coarse sand)	21524.00	Sq.M			
10.03	18 mm cement plaster in two coats under layer 12 mm thick cement plaster 1:5 (1 cement: 5 coarse sand) and a top layer 6mm thick cement plaster 1:3 (1 cement: 3 coarse sand) finished rough with sponge.					
		21213.00	Sq.M			
10.04	6 mm cement plaster of mix :					
a)	1:3 (1 cement: 3 fine sand)	9251.00	Sq.M			
10.05	Extra for plastering exterior walls of height more than 10 m from ground level for every additional height of 3 m or part thereof.					
		5167.00	Sq.M			
10.06	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete					
		41102.00	Sq.M			
10.07	Distempering with oil bound washable distemper of approved brand and manufacture to give an even shade					
a)	New work (two or more coats) over and including priming coat with cement primer.	9251.00	Sq.M			
10.08	Applying one coat of cement primer of approved brand and manufacture on wall surface :					
a)	Cement primer.	31851.00	Sq.M			
10.09	Finishing walls with textured exterior paint of required shade :					
a)	New work (Two or more coats applied @ 3.28 ltr/10 sqm) over and including base coat of water proofing cement paint applied @ 2.20kg/10 sqm.	11149.00	Sq.M			
10.10	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade:					

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
a)	Two or more coats on new work	31851.00	Sq.M			
10.11	Painting with synthetic enamel paint of approved brand and manufacture of required colour to give an even shade:					
a)	Two or more coats on new work over an under coat of suitable shade with ordinary paint of approved brand and manufacture.	3907.00	Sq.M			
10.12	French spirit polishing :					
a)	Two or more coats on new works including a coat of wood filler.	1224.00	Sq.M			
	SUB TOTAL					

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
11.00	ROAD WORK					
11.01	Earth work in surface excavation not exceeding 30 cm in depth but exceeding 1.5 m in width as well as 10 sqm on plan including disposal of excavated earth Upto 50 m and lift Upto 1.5 m, disposed soil to be leveled and neatly dressed :					
a)	All kinds of soil	22937.00	100 sqm			
11.02	Providing, hoisting and fixing up to floor five level precast reinforced cement concrete in vertical and horizontal fins individually or forming box, louvers, setting in cement mortar 1 : 2 (1 Cement : 2 crushed sand) including the cost of required centering, shuttering and finishing a smooth with 6 mm thick cement plaster 1 : 3 (1 Cement : 3 Fine Sand) on exposed surface complete but excluding the cost of reinforcement with 1 : 2 : 4 (1 Cement : 2 Crushed Sand : 4 graded stone aggregate 20 mm nominal size) (Item adopted for trench covers)	286.00	Cum			
11.03	Dismantling manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50metres lead as per direction of Engineer-in-charge :					
a)	bituminous road	527.00	Sq.M			
11.04	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 lead upto 50 metres.	16300.00	Sq.M			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
11.05	Supplying and stacking at site					
a)	90 mm to 45 mm size stone aggregate.	4405.00	Cu.M			
b)	Stone screening 13.2 mm nominal size (Type - A).	1057.00	Cu.M			
c)	Red bajri.	352.00	Cu.M			
11.06	Laying, spreading and compacting stone aggregate of specified sizes to WBM specifications including spreading in uniform thickness, hand picking , rolling with 3 wheeled road / vibratory roller 8 - 10 tonne in stages to proper grade and camber, applying and brooming requisite type of screening / binding material to fill up interstices of coarse aggregate watering and compacting to the required density .	3260.00	Cu.M			
11.07	Cutting road and making good the same including supply of extra quantities of materials i.e. aggregate, moorum screening, red bajri and labour required.					
a)	Water bound macadam.	53.00	Cu.M			
11.08	Providing and applying tack coat using hot straight run bitumen of grade 80/ 100 including heating the bitumen, spraying the bitumen with mechanically operated spray unit fitted on bitumen boiler, cleaning and preparing the existing road surface as per specifications :					
a)	On W.B.M. @ 0.75 Kg / sqm.	16300.00	Sq.M			
b)	On bituminous surface @ 0.50 Kg / sqm.	16300.00	Sq.M			
11.09	Providing and laying seal coat over prepared surface of road with bitumen heated in bitumen boiler fitted with the spray set spraying using 98 kg of bitumen of grade 80/100 and blinding surface with 0.90cum of stone aggregate of 6.7 mm size (Passing 11.2mm sieve and retained on 2.36mm sieve) per 100 sqm of road surface including rolling and finishing with power road roller all complete.	16300.00	Sq.M			
11.10	Painting road surface marking with adequate no. of coats to give uniform finish with ready mixed road marking paint conforming to IS : 164, on bituminous surface in white / yellow shade including cleaning the surface of all dirt, scales, oil, grease and foreign material etc. complete.					
a)	New work (Two or more coats).	753.00	Sqm			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
11.11	Making bell mouth opening / entrance of size 100 x 50 x 50cm for drainage pipe under footpath including providing cement concrete 1 : 3 : 6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20mm nominal size) for shape of bell mouth including plastering providing and fixing precast R.C.C./ S.F.R.C. slab including plastering with cement mortar 1 : 3 (1 cement : 3 fine sand) of 6 mm thickness on exposed surface of the slab & bell mouth including centering, shuttering & neat cement punning inside the bell mouth etc. all complete	171.00	Each			
11.12	Excavating holes Upto 0.10 cum including getting out the excavated soil. then returning the soil as deported in layers not exceeding 20 cm in depth including consolidating and deposited layer by ramming watering etc. Disposing of surplus excavated soil as directed with in a lead of 50 mm and lift Upto 1.5 m.					
a)	All kind of soil.	17.00	Each			
11.13	Providing and laying 60 mm thick factory made cement concrete interlocking paver block of M - 30 grade made by block making machine with strong vibratory compaction and of approved size and design / shape laid in required colour and pattern over and including 50 mm thick compacted bed of course sand, filling the joints with coarse sand etc. all complete as per the direction of Engineer - in - charge.	1631.00	Sqm			
11.14	Providing and laying at or near ground level factory made kerb stone of M-25 grade cement in position to the required line, level and curvature jointed with cement mortar 1:3 (1 cement: 3 coarse sand) including making joints with or without grooves (thickness of joints except at sharp curve shall not to more than 5mm) including making drainage opening wherever required complete etc. as per direction of Engineer-in-charge (length of finished kerb edging shall be measured for payment). (Precast C.C. kerb stone shall be approved by Engineer-in-charge).	185.00	Cu.m			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
11.15	Providing and laying C.C. pavement of mix M25 with ready mixed concrete from batching plant. The ready mixed concrete shall be laid and finished with screed board vibrator , vacuum dewatering process and finally finished by floating, brooming with wire brush etc. complete as per specifications and directions of Engineer-in-charge. (The panel shuttering work shall be paid for separately).	1740.00	Cu.m			
11.16	Providing and Laying U-PVC pipes (working pressure 4 kg / cm ²) Single socketed pipe 110 mm dia. Spouts of approved make, complying to relevant IS Code in force, including cutting it to the required size, removing blurr from ends, as Storm Drain Pipe from Road Pavement edge to the Adjoining Storm water drain, laid to required slope and encasing the same from all around, in Cement Concrete of Grade 1 : 2 : 4 (1 Cement : 2 Coarse Sand : 4 graded Stone aggregates 20 mm nominal size), Including, providing and fixing of centering and shuttering, including strutting, propping etc. and removal of form work, curing, backfilling of the space with selected soil available at site etc. complete as directed.	171.00	Each			
11.17	Constructing brick masonry surface drain with bricks of class designation 7.5 in cement mortar 1:4 (1 Cement : 4 coarse sand) including earth excavation , 10cm thick bed concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) and 25 mm thick cement concrete 1:2:4 (1 cement 2 coarse sand 4 graded stone aggregate 12.5 mm nominal size) for filling haunches including 12 mm cement plaster 1:4 (1 cement : 4 coarse sand) with a floating coat of neat cement inside and 12 mm thick external plaster with cement mortar 1:6 (1 cement : 6 coarse sand) including connection to existing drain and disposal of surplus earth.					
a)	30 cm Drain 50 cm average depth	2500.00	Metre			
b)	45 cm Wide drain 60 cm average depth	362.00	Metre			
c)	30 cm Drain 50 cm average depth	250.00	Metre			
d)	45 cm Wide drain 60 cm average depth	40.00	Metre			
e)	Disposal of excavated earth, lead upto 50m and lift upto 1.5m, within the site premises, disposed earth to be levelled and neatly dressed.	7574.00	Cu.M			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
11.18	<p>Providing and laying Bitumen Penetration Macadam with hard stone aggregate of quality, size and grading as specified, with bitumen of suitable penetration grade including required key aggregate as specified, mounted aggregate spreader and applying bitumen by a pressure distributor and then spreading key aggregate with the help of aggregate spreader complete including consolidation with road roller of minimum 8 to 10 tonne capacity to achieve specified values of compaction and surface accuracy :</p> <p>a) 2.5 cm premix carpet surfacing with 3 cum of stone chippings 10 mm nominal size per 100 sqm and bitumen emulsion (medium setting min. 65% bitumen contents) complying with IS : 8887-1995 using 96 kg per cum of chippings of road surface including consolidation with road roller etc complete.</p>	16300.00	Sq.M			
	Sub Total					

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
12.00	FENCING					
12.01	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.					
a)	All kinds of soil.	156.00	Cu.m			
12.02	Cement concrete (Cast in Situ) Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level :					
a)	1:2:4 (1 Cement : 2 coarse sand : 4 graded stone aggregate 40 mm nominal size).	18.00	Cu.m			
b)	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	11.00	Cu.m			
12.03	Centering and shuttering including strutting, propping etc. and removal of form work for :					
a)	Foundations, footings, bases for columns.	302.00	Sq.M			
12.04	Random rubble masonry with hard stone in foundation and plinth including levelling up with cement concrete 1:6:12 (1 cement : 6 coarse sand : 12 graded stone aggregate 20mm nominal size) at plinth level with :					
a)	Cement mortar 1:6 (1 cement : 6 coarse sand)	185.00	Cu.M			
12.05	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 6mm thick cement plaster 1:6 (1 cement : 6 fine sand).	48.00	Sq.M			
12.06	Pointing on stone work with cement mortar 1:3 (1 cement: 3 fine sand) :					
a)	Raised and cut pointing	107.00	Sq.M			
12.07	Supplying at site :					

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
a)	Welded steel wire fabric of required width rectangular mesh painted with two or more coats of enamel paint of approved shade over a coat of primer (Priming & Painting to be paid for separately).	3101.00	Kg			
12.08	Supplying at site Angle iron post & strut of required size including bottom to be split and bent at right angle in opposite direction for 10 cm length and drilling holes upto 10 mm dia. etc. complete.	810.00	Kg			
12.09	Welded steel wire fabric fencing with posts of specified material and of standard design placed and embedded in cement concrete blocks 45x45x60cm of mix 1:5:10 (1 cement:5 fine sand : 10 graded stone aggregate 40mm nominal size) every 15th post, last but one end post and corner post shall be strutted on both sides and end post on one side only and struts embedded in cement concrete blocks 70x45x50cm of the same mix, provided with welded steel wire fabric fixed between the posts fitted and fixed with G.I. staples on wooden plugs or tied to 6 mm bar nibs with G.I. binding wire (cost of posts, welded steel wire fabric, painting, earth work in excavation and concrete to be paid for separately) :	477.00	Sq.M			
Sub Total						

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
13.00	SIGNAGES					
13.01	Providing & fixing signages of varying sizes & shapes using stainless steel sheet of minimum 16G thickness brush finished including engraving / etching to any depth in English, Hindi or local language in approved type of letters of required size filled with colour as directed by the engineer, drilling holes as required in S.S. plates, fixing with S.S. screws on walls / doors. The total area of board shall be measured for payment purpose.	7200.00	sq. inch.			
13.02	Providing & fixing of external signages of varying sizes & shapes using GI sheet of atleast 19G, painting the entire board both surfaces with 1 coat of primer & 2 coats of synthetic enamel painting, lettering of approved type on board of any sizes in English / Hindi or Local language complete as per technical specifications & directions of Engineer.	150.00	Sq.ft			
13.03	Providing Retro-reflective regulatory sign board of size 900mm dia meter made out of 2mm thick aluminium sheet, face to be fully covered with high intensity encapsulated lens type retro -reflective sheeting as approved by Engineer-in-charge . Letter, symbols, borders etc. will be as per IRC - 67 with required colour scheme on the boards and with the high intensity grade A. The aluminium sheet to be riveted to M.S. frame of angle iron of size 40x40x4mm The boards will be fixed to 1 No. 50x50mm square post made of M.S. angle 50x50x4m, 4m long welded to the frame with adequate anti-theft arrangement .Sheet work to be painted with two or more coats of synthetic enamel paint over an under coat (primer) and back side of aluminium sheet to be painted with two or more coats of epoxy paint including appropriate priming coat complete in all respects as per direction of Engineer-in-charge.	17.00	Sqm			
	Sub Total					

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
14.00	WATERPROOFING					
14.01	<p>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 20mm 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.)</p>	2908.00	Sq.M			
14.02	<p>Providing and laying water proofing treatment in overhead tank, u.g. tank stp tank, lift pit 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.</p>	1212.00	Sq.m			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
14.03	<p>Protection for treatment of exposed slab, terrace, chajja & balcony 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:</p> <p>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 300mm height including cleaning the surface before treatment.</p> <p>b) Laying brick bats with mortar using broken bricks/brick bats 25 mm to 115mm 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 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 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge.</p> <p>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 3mm 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>					

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
a)	with average thickness of 120mm & minimum thickness at khurra as 65mm	8957.00	Sq.m			
14.04	Protection for treatment for balconies/corridor					
a)	Grading for water proofing treatment with Cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	75.00	Cu.m			
	SUB TOTAL					

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
15.00	LANDSCAPING WORK					
15.01	Supplying & stacking of good earth at site including royalty & carriage up to 1km (earth measured in stacks will be reduced by 20% for payment.)	336.00	Cum			
15.02	Supplying & stacking sludge at site including royalty & carriage up to 1km (sludge measured in stacks will be reduced by 8% payment).	168.00	Cum			
15.03	Supplying & stacking at site dump manure from approved source, including carriage up to 1km (manure measured in stacks will be reduced by 8% payment):					
a)	Screened through sieve of IS designation 20mm	53.00	Cum			
b)	Screened through sieve of IS designation 16mm	53.00	Cum			
c)	Screened through sieve of IS designation 4.75mm	53.00	Cum			
15.04	Uprooting weeds from the trenched area after 10 to 15 days of its flooding with water including disposal of uprooted vegetation.	1399.00	100 sqm.			
15.05	Grassing with 'Doob' grass including watering & maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds & fit for mowing including supplying good earth if needed (the good earth shall be paid for separately).					
a)	In rows 7.5cm apart in either direction.	5596.00	100 sqm.			
15.06	Uprooting rank vegetation & weeds by digging the area to a depth of 60cm removing all weeds & other growth with roots by forking repeatedly, breaking clods, rough dressing, flooding with water, uprooting fresh growths after 10 to 15 days & then fine dressing for planting new grass, including disposal of all rubbish with all leads & lifts.	1398.00	100 sqm			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
15.07	Preparation of beds for hedging & shrubbery by excavating 60cm deep & trenching the excavated base to a further depth of 30cm, refilling the excavated earth after breaking clods & mixing with sludge or manure in the ratio of 8:1 (8 parts of stacked volume of earth after reduction by 20% : one part of stacked volume of sludge or manure after reduction by 8%), flooding with water, fling with earth if necessary, watering & finally fine dressing leveling etc. including stacking & disposal of materials declared unserviceable & surplus earth by spreading & leveling as directed, within a lead of 50m lift Upto 1.5m complete (cost of sludge, manure of extra earth to be paid for separately):	273.00	Cum			
15.08	Digging holes in ordinary soil & refilling the same with the excavated earth mixed with manure or sludge in the ratio of 2:1 by volume (2 parts of stacked volume of earth after reduction by 20% :1 part of stacked volume of manure after reduction by 8%) flooding with water, dressing including removal of rubbish & surplus earth, if any with all leads & lifts (cost of manure, sludge or extra good earth if need to be paid for separately).					
a)	Holes 1.2m dia. & 1.2m deep	295.00	Each			
b)	Holes 60cm dia. & 60cm deep	309.00	Each			
15.09	Edging with bricks laid dry length wise including excavation, refilling, consolidating with hand packing & spreading neatly surplus earth within a lead of 50m:					
a)	75 class designation					
i)	F.P.S Bricks	253.00	Metre			
b)	50 class designation					
i)	F.P.S Bricks	169.00	Metre			
15.10	Excavation in dumped stones or malba including stacking of serviceable & unserviceable material lead up to 50m & lift up to 1.5m. disposed material to be neatly dressed.	424.00	Cum			

Item No	Description Of Item	Total Qty	Unit	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
15.11	Cutting down small tree Upto 230 mm. dia. of trunk including removing of roots completely and depositing the cut- materials to respective Ward Office as directed.	4.00	Nos.			
15.12	Do- -do- large trees over 230 mm dia.	6.00	Nos.			
15.13	Cleaning the areas which are not under lawns of all debris and construction material and spreading 1" thick layer of clean, sieved red murrum and compacting the same.	5000.00	SQM			
15.14	Maintaining all the plant material-trees, shrubs, ground covers, hedge, climbers and lawn for 12 months after all the planting is completed and inspected by the landscape consultant and approved by him.	604.00	L/S			
15.15	Plantation of tree sapling, stacking of the tree sapling, preparation of tree basin, watering & maintaining till 30 days after competition plantation & replacement of casualties till 30 days (excluding the cost of the plant)	500.00	Tree			
15.16	Transplantation of the existing trees of grith of all dia. Including uprooting & shifting of the trees & placing in pit of suitable size & after transplanting, removal of excavated earth to desired location, filling of the trench taken for exposing the root system of the tree poposed to be transplanted etc. complete as directed by Engineer in charge	3.00	Nos.			
15.17	Providing, supplying, transplanting saplings upto height 1.80 M of various variety in good of various variety in good/ live condition with roots covered in good soil with polythene bags at various location in campus etc. complete as directed by Engineer in charge.	500.00	Nos.			
Sub Total						

PROJECT NAME: PROPOSED LADY HARDINGE MEDICAL COLLAGE AND ASSOCIATED HOSPITAL AT DELHI

BILL OF QUANTITIES

RESIDENTIAL BLOCK

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
A.	<u>INTERNAL PLUMBING WORK</u>				
	SUB HEAD - I - SANITARY FIXTURES				
1.0	Providing and fixing white vitreous china pedestal type water closet (European type W. C. Pan) with seat and lid, 10 litre low level white PVC flushing cistern 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.				
1.1	W.C. pan with ISI marked white solid plastic seat & lid.	287			
2	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 or fittings and brackets, cutting and making good the walls and floors wherever required.				
2.1	One urinal basin with 5 litre white PVC automatic flushing cistern	2			
3	Providing and fixing wash basin with C.I. brackets, 15mm C.P. brass pillar taps, 32mm C.P. brass waste of standard pattern, including painting of fittings and brackets, cutting and making good the walls wherever required:				
3.1	Flat back wash basin size 630 x 450 mm with a pair of 15 mm C.P. brass pillar taps.	3			
3.2	White vitreous china wash basin size 550x 400 mm with a pair of 15mm C.P. brass pillar tap.	250			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
4	Providing and fixing Stainless Steel A ISI 304 (18/8) kitchen sink as per IS 13983 with C.I. brackets and stainless steel plug 40 mm including painting of fittings and brackets, cutting and making good the walls wherever required:				
4.1	Kitchen sink 510 x 1040 bowl depth 200 mm	64			
5	Providing and fixing 600 x 450mm 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.	295			
6	Providing and fixing toilet paper holder .				
6.1	C.P. Brass	287			
7	Providing and fixing PTMT liquid soap container 109 mm wide, 125 mm high and 112 mm distance from wall of standard shape with bracket of the same materials with snap fittings of approved quality and colour weighing not less than 105 gms.	295			
8	Extra for providing and fixing CP brass exposed type push button flushing valve and 32 mm dia flushing bend complete with all respect in place of normal PVC flushing cistern with manually control device conforming to IS 7231 .	3			
9	Providing and fixing white vitreous china oval shape wash basin with CI/MS brackets painted white, 15 mm CP brass pillar taps, 32 mm CP brass waste of standard pattern, including painting of fittings and brackets cutting and making good the walls wherever required.	42			
	Counter top oval shape wash basin size 560x450 mm with centre tap hole, single 15 mm CP brass pillar tap				
10	Providing and fixing CP brass towel rail size of 600x20 mm of approved make complete with CP brackets fixed to wooden cleats with CP brass screws				
10.1	C.P. brass towel rail with two C.P. brass brackets 600 x 20 mm size.	248			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
11	Providing and Fixing, testing & commissioning of CP brass angle valve with ABS Health Faucet (complete with hook and flexible SS tube min. Length 1.0 m) as required.	287			
12	Providing and fixing CP brass twin coat hooks fixed on toilet door/wall with CP brass screws.	287			
13	Providing, fixing, testing 15mm C.P. brass wall mounted mixing fitting for Lab/kitchen sink with swinging spout complete including cutting and making good the walls where required.	60			
SUB TOTAL					

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	SUB HEAD - II - SOIL, WASTE AND VENT PIPES, RAIN WATER PIPES				
1	Providing and fixing soil, waste and vent pipes.				
1.1	100 mm dia.				
1.1.1	Centrifugally cast (spun) iron socketed pipe as per IS:3989	3276			
1.2	150 mm Centrifugally cast (spun) iron socketed pipe as per IS:3989	18			
2	Providing and fixing M.S holder-bat clamps of approved design to Sand Cast iron/ cast iron (spun) pipe embedded in and including cement concrete blocks 10x10x10 cm of 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) including cost of cutting holes and making good the walls etc.				
2.1	for 100 mm dia. pipe	1014			
3	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.				
3.1	100 mm				
3.1.1	Sand cast iron S&S as per IS-3989	166			
4	Providing and fixing plain bend of required degree.				
4.1	100 mm				
4.1.1	Sand cast iron S&S as per IS:3989	414			
5	Providing and fixing heel rest sanitary bend.				
5.1	100 mm dia				
5.1.1	sand cast iron S&S as per IS-3989	29			
6	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3mm thick, bolts and nuts complete.				
6.1	100x100x100mm				
6.1.1	sand cast iron S&S as per IS-3989	567			
7	Providing and fixing terminal guard.				
7.1	100 mm				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
7.1.1	sand cast iron S&S as per IS-3989	132			
8	Providing and fixing collar				
8.1	100 mm				
8.1.1	Sand cast iron S&S as per IS-3989	456			
9	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:				
9.1	100 mm	4526			
9.2	150mm	3			
10	Providing and fixing M.S. stays and clamps for sand cast iron / centrifugally cast (spun) iron pipes of diameter :				
10.1	100 mm	132			
11	Providing and fixing trap of self cleansing with screwed down or hinged grating with or without vent arm complete, including cost of cutting and making good the walls and floors:				
11.1	100 mm inlet and 100 mm outlet				
11.1.1	Sand cast iron S&S as per IS-3989	323			
12	Painting sand cast iron / centrifugally cast (spun) iron soil, waste vent pipes and fittings with paint of any colour such as chocolate, grey, or buff etc. over a coat of primer (of approved quality) for new work:				
12.1	100 mm diameter pipe	1892			
12.2	150 mm diameter pipe	18			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
13	Providing and fixing on wall face/Concealed unplasticised rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring confirming to IS:5382 leaving 10 mm gap for thermal expansion. (i) Single socketed pipes				
13.1	110 mm diameter (6 kg/sq. cm)	569			
13.2	160 mm diameter (6 kg/sq. cm)	358			
14	Providing and fixing on wall face/Concealed unplasticised - PVC moulded fittings/accessories for unplasticised rigid PVC rain water pipes conforming to IS:13592 Type A including jointing with seal ring confirming to IS:5382 leaving 10 mm gap for thermal expansion.				
14.1	Single tee without door				
14.1.1	110x110x110mm	152			
14.2	Bend 87.5 degree				
14.2.1	110 mm bend	136			
14.3	160 mm bend	20			
14.4	Shoe (Plain)				
14.4.1	110 mm shoe	56			
14.5	160 mm shoe	20			
15	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams	30			
16	Providing and laying cement concrete 1:2:4 (1 cement:2 coarse sand:4 graded stone aggregate 20 mm nominal size) 80 mm thick all-round the SCI/centrifugally S&S pipe diameter.				
16.1	100 mm dia	1494			
16.2	150 mm dia	22			
17	Providing and fixing G.I. pipes complete with G.I. fittings including painting, jointing, testing the cost of cutting the chases and making good the same for waste water disposal complete as per direction of engineer incharge.				
17.1	40 mm dia nominal bore (Sink, Urinal to floor trap)	858			
17.2	50 mm dia nominal bore (Floor Drain to Floor Trap)	510			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
18	Providing and fixing C.P. brass bottle trap for wash basin including CP waste fittings complete 32 mm dia complete in all respect of approved quality.	285			
19	Providing and fixing C.P. brass bottle trap for sinks & urinal basin including CP waste fittings complete 40 mm dia complete in all respect of approved quality.	2			
20	Providing and fixing clean out/floor clean out plug consist of CI bend & GI socket heavy class with cap & key for opening male threaded cap etc. including lead caulked to CI pipes complete in all respects as per drawing/ sample approved by Engineer -in - Charge FCO (floor clean out plug shall be flushed with floor finish				
20.1	100 mm dia	4			
21	Providing and fixing G.I EXTENSION PIECE for 100 mm dia floor trap formed out of main pipe (Type A) with multiple side inlets, suitable for various dia pipes, side connections, including all fixtures and fittings as per site conditions and as per standard details and water tight sealing of joints and area surrounding the grating and as directed.	323			
SUB TOTAL					

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	SUB HEAD - III - WATER SUPPLY				
1	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.				
	Internal work- Exposed on wall				
1.1	15 mm nominal outer dia pipes (SDR-11)	216			
1.2	20 mm nominal outer dia pipes (SDR-11)	655			
1.3	25 mm nominal outer dia pipes (SDR-11)	1157			
1.4	32 mm nominal outer dia pipes (SDR-11)	1488			
1.5	40 mm nominal outer dia pipes (SDR-11)	474			
1.6	50 mm nominal outer dia pipes (SDR-11)	434			
2	Providing and fixing Chlorinated Polyvinyl Chloride (CPVC) pipes, having thermal stability for hot & cold water supply including all CPVC plain & brass threaded fittings i/c fixing the pipe with clamps at 1.00 m spacing. This includes jointing of pipes & fittings with one step CPVC solvent cement and the cost of cutting chases and making good the same including testing of joints complete as per direction of Engineer in Charge.				
	Concealed work including cutting chases and making good the walls etc.				
2.1	15 mm nominal outer dia pipes (SDR-11)	5378			
2.2	20 mm nominal outer dia pipes (SDR-11)	1760			
2.3	25 mm nominal outer dia pipes (SDR-11)	275			
2.4	32 mm nominal outer dia pipes (SDR-11)	75			
2.5	40 mm nominal outer dia pipes (SDR-11)	12			
3	Providing and fixing grade G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc. (Internal work):				
	Exposed on Wall				
3.1	65 mm dia nominal bore	135			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
3.2	80 mm dia nominal bore	48			
3.3	100 mm dia nominal bore	35			
4	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)				
4.1	25 mm nominal bore	67			
4.2	32 mm nominal bore	35			
4.3	40 mm nominal bore	8			
4.4	50 mm nominal bore	2			
5	Providing and fixing unplasticised PVC connection pipe with brass unions:				
5.1	45 cm length				
5.1.1	15 mm nominal bore	282			
6	Providing and fixing C.P. brass shower rose with 15 or 20 mm inlet				
6.1	100 mm diameter	248			
7	Painting CPVC/G.I. pipes and fittings with synthetic enamel white paint over a ready mixed priming coat, both of approved quality for new work.				
7.1	15 mm nominal outer dia pipes	216			
7.2	20 mm nominal outer dia pipes	655			
7.3	25 mm nominal outer dia pipes	1157			
7.4	32 mm nominal outer dia pipes	1488			
7.5	40 mm nominal outer dia pipes	474			
7.6	50 mm nominal outer dia pipes	434			
7.7	65 mm nominal outer dia pipes	135			
7.8	80 mm nominal outer dia pipes	48			
7.9	100 mm nominal outer dia pipes	35			
8	Painting G.I. /CPVC pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality.				
8.1	15 mm diameter pipe	5368			
8.2	20 mm diameter pipe	1745			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
8.3	25 mm diameter pipe	265			
8.4	32 mm diameter pipe	65			
8.5	40 mm diameter pipe	12			
9	Providing and fixing C.P brass bib cock of approved quality.				
9.1	15 mm nominal bore	254			
10	Providing and fixing C.P. brass long body bib cock of approved quality conforming to IS standards and weighing not less than 690 gms.				
10.1	15 mm nominal bore	810			
11	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make confirming to IS:8931				
11.1	15 mm nominal bore	502			
12	Providing and fixing C.P. brass angle valve for basin mixer and geyser points of approved quality conforming to IS:8931.				
12.1	15 mm nominal bore	1001			
13	Providing and fixing ball valve (brass) of approved quality, High or low pressure with plastic floats complete				
13.1	40 mm nominal bore	8			
14	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end). (for Hot Water supply)				
14.1	25 mm nominal bore	40			
14.2	32 mm nominal bore	53			
14.3	40 mm nominal bore	32			
14.4	50 mm nominal bore	18			
15	Extra for covering with nitrle rubber insulation 9 mm thick insulation for gate valve as per specification. (10% of Basic Price of Gate valve)				
15.1	25 mm nominal bore	40			
15.2	32 mm nominal bore	53			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
15.3	40 mm nominal bore	32			
15.4	50 mm nominal bore	18			
16	Providing and fixing Nitrile Rubber Insulation 9 mm thick on hot water supply/return pipes without outer mechanical protection				
16.1	15 mm dia.	1843			
16.2	20 mm dia.	870			
17	Providing and fixing nitrile rubber insulation on hot water supply / return pipes complete with fire proof outer mechanical protection on nitrile rubber insulation.				
17.1	15 mm dia. (9 mm thickness)	132			
17.2	20 mm dia. (9 mm thickness)	279			
17.3	25 mm dia. (9 mm thickness)	365			
17.4	32 mm dia. (13 mm thickness)	376			
17.5	40 mm dia. (13 mm thickness)	116			
17.6	50 mm dia. (13 mm thickness)	32			
18	Providing & fixing full way lever operated forged brass ball valve of brass body with forged brass hard chrome plated steel ball tested to a pressure not less than 10 Kg / sqcm with threaded / flanged joints complete with nuts, bolts, gaskets, washers etc.				
18.1	15 mm diameter	206			
18.2	20 mm diameter	241			
19	Providing and fixing full way lever operated forged brass ball valve of brass body with forged brass hard chrome plated steel ball, union / flange, washer, nuts & bolt. Rated to temperature of 85 deg. C and testing to a pressure not less than 10 Kg/sq.cm including covering with nitrile rubber insulation 9 mm thick insulation as per specification.				
19.1	15 mm dia.	2			
19.2	20 mm dia.	9			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
20	Providing and fixing Butter fly valve with nitrile seat and stainless steel stem with lever operation and cast iron body in powder coated finish of approved make with union/flange, washer, nuts & bolts, rated to temperature of 85°C and tested to a pressure not less than 15Kg/sq.cm. Including nitrile rubber insulation 9 mm thick insulation with proprietary fire proof protective coating against mechanical damage as per manufacturer's specification complete in all respects as required.				
20.1	65 mm dia.	4			
20.2	80 mm dia.	4			
20.3	100 mm dia.	3			
21	Extra for providing and installing INFRA-RED controlled electrically operated (220V, AC mains) automatic flushing system of approved make instead of urinals with flushing cistern. The automatic flushing system shall comprising of :				
	Light sensing device fixed in recessed metallic box with tamper resistant stainless steel outercase Solenoid valve housed in a recessed metallic box with openable cover mounted at high level (at desired height from finished floor level) complete with interconnecting control wiring in recessed PVC conduit between solenoid valve and sensing unit, including cutting and making good the walls & floor complete and all necessary fittings to make it operational as directed	2			
22	Providing and fixing in position storage type hot water electrical heaters with copper container, insulation, and stove enameled M.S jacket, thermostatically controlled immersion heater, with pilot lamp, 15/20mm dia inlet with non-return valve and 15/20mm dia outlet including making connections complete in all respect. (wall mounted with suitable M.S bolts and nuts)				
22.1	Capacity 15 liters	248			
22.2	Capacity 25 liters	2			
	SUB TOTAL				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	SUB HEAD - IV - SEWERAGE & DRAINAGE				
1	Providing laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the pro-portion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete.				
1.1	150 mm diameter	74			
1.2	200 mm diameter	15			
2	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:				
2.1	150 mm diameter S.W. pipe/RCC NP2	74			
2.2	200 mm diameter S.W. pipe/RCC NP2	15			
3	Providing and fixing square-mouth S.W. gully trap grade 'A' complete with C.I. grating, brick masonry chamber with water tight C.I. cover with frame of 300x300 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:.				
3.1	180 x 150mm size P type				
	F.P.S. Bricks class designation 75	37			
	SUB TOTAL				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
B.	<u>EXTERNAL PLUMBING WORK</u>				
	SUB HEAD - V - EXTERNAL WATER SUPPLY				
1.	Providing and fixing medium grade G.I. pipes complete with G.I. fittings including trenching and refilling etc. (external work)				
1.1	20 mm dia nominal bore	32			
1.2	25 mm dia nominal bore	40			
1.3	32 mm dia nominal bore	75			
1.4	40 mm dia nominal bore	20			
1.5	65 mm dia nominal bore	220			
1.6	80 mm dia nominal bore	1950			
2	Providing and laying S&S Centrifugally Cast (Spun)/Ductile Iron pipes confirming to is:8329:				
2.1	80 mm dia Ductile Iron Class k-7 pipes	1950			
2.2	100 mm dia Ductile Iron Class k-7 pipes	770			
2.3	150 mm dia Ductile Iron Class k-7 pipes	10			
3	Providing push-on-joints to Centrifugally (Spun) Cast Iron pipes or Ductile Iron Pipes including testing of joints and including the cost of rubber gasket				
3.1	80 mm dia pipes	836			
3.2	100 mm dia pipes	330			
3.3	150 mm dia pipes	4			
4	Providing and laying D.I. specials of class k-12 suitable for push on jointing as per IS:9523				
4.1	Upto 600 mm dia	24			
5	Providing & fixing full way lever operated forged brass ball valve of brass body with forged brass hard chrome plated steel ball tested to a pressure not less than 10 Kg / sqcm with threaded / flanged joints complete with nuts, bolts, gaskets, washers etc.				
5.1	for 20 mm nominal bore	21			
5.2	for 25 mm nominal bore	2			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
5.3	for 32 mm nominal bore	10			
5.4	for 40 mm nominal bore	8			
6	Providing and fixing full way lever operated forged brass ball valve of brass body with forged brass hard chrome plated steel ball, union / flange, washer, nuts & bolt. Rated to temperature of 85 degree C and testing to a pressure not less than 10kg/sq.cm including covering with nitrile rubber insulation 9mm thick insulation as per specification				
6.1	65 mm dia	2			
7	Providing and fixing C.I. sluice valves (with cap) complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) (Class II)				
7.1	for 80 mm nominal bore	14			
7.2	for 100 mm nominal bore	9			
7.3	for 150 mm nominal bore	2			
8	Constructing masonry Chamber 60 x 60 x 75 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement : 4 fine sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chain lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 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.				
8.1	With F.P.S. bricks	27			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
9	Constructing masonry Chamber 30 x 30 x 55 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement : 4 fine sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chain lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) necessary excavation foundation concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 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.				
9.1	With F.P.S. bricks	41			
10	Providing and filling sand of grading zone V or coarser grade around the G.I. pipes in external work.				
10.1	20 mm dia nominal bore	32			
10.2	25 mm dia nominal bore	40			
10.3	32 mm dia nominal bore	75			
10.4	40 mm dia nominal bore	20			
10.5	65 mm dia nominal bore	220			
10.6	80 mm dia nominal bore	1950			
11	Providing and fixing C.I. double acting air valve of approved quality with bolts, nuts, rubber insertions etc. complete (The tail pieces, tapers etc. if required will be paid separately)				
11.1	100 mm dia	1			
12	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up plinth level (for thrust block)				
12.1	1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	4			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
13	Providing and fixing enclosed type water meter (bulk type) conforming to IS : 2373 and tested by Municipal Board complete with bolts, nuts, rubber insertions etc. (The tall pieces if required will be paid separately)				
13.1	80 mm dia nominal bore	1			
	SUB TOTAL				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	SUB HEAD - VI - EXTERNAL SEWERAGE & DRAINAGE				
1	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5m 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 50m				
1.1	Pipes, cables etc. exceeding 80mm dia. But not exceeding 300mm dia.	930			
1.2	Pipes, Cables etc. not exceeding 300mm dia but not exceeding 600 mm	50			
2	Extra over for item no. 1.1 excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 1.5 m, but not exceeding 3 m. (Rate is over corresponding basic item for depth up to 1.5 metre)	102			
3	Extra over for item no. 1.2 excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 3 m, but not exceeding 4.5 m. (Rate is over corresponding basic item for depth up to 1.5 metre)	54			
4	Extra over for item no. 1.2 excavating trenches for pipes, cables etc. in all kinds of soil for depth exceeding 4.5 m & above (Rate is over corresponding basic item for depth up to 1.5 metre)	81			
5	Providing laying and jointing glazed stoneware pipes grade 'A' with stiff mixture of cement mortar in the pro-portion of 1:1 (1 cement : 1 fine sand) including testing of joints etc. complete.				
5.1	200 mm diameter	265			
5.2	250 mm diameter	545			
6	Providing and laying S&S centrifugally cast (spun) iron pipes (class LA) conforming to IS-1536				
6.1	200 mm dia	20			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
7	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.				
7.1	150 mm dia R.C.C pipe	50			
7.2	300 mm dia R.C.C pipe	50			
8	Providing and laying non-pressure NP3 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.				
8.1	450 mm dia. R.C.C. pipe.	50			
9	Providing and laying cement concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) around S.W./RCC pipes including bed concrete as per standard design:				
9.1	150 mm diameter	50			
9.2	200 mm diameter	265			
9.3	250 mm diameter	136			
9.4	300 mm diameter	13			
9.5	450 mm diameter	50			
10	Providing and laying cement concrete 1:5:10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) upto haunches of S.W. pipes including bed concrete as per standard design:				
10.1	250 mm diameter	409			
10.2	300 mm diameter	38			
11	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30 cm in depth 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead upto 50m and lift upto 1.5m, disposed earth to be leveled and neatly dressed. (For Manholes)				
11.1	All kinds of soil	440			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
12	Constructing brick masonry manhole cement mortar 1:4 (1 cement : 4 coarse sand) 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 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with floating coat of neat cement and making necessary channels in cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.				
12.1	Inside size 90 x 80 cm and 45 cm deep including C.I. cover with frame (light duty) 455 x 610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg)				
	With F.P.S. bricks with class designation 75	33			
12.2	Inside size 120 x 90 cm and 90 cm deep including C.I. cover with frame (medium duty) 500 mm internal diameter, total weight of cover and frame to be not less than 116 kg (weight of cover 58 kg and weight of frame 58 kg)				
	With F.P.S. bricks with class designation 75	38			
13	Extra depth for manholes				
13.1	Size 90 x 80 cm (With With F.P.S. bricks with class designation 75)	16			
13.2	Size 120x 90 Cm (With F.P.S. bricks with class designation 75)	7			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
14.	Material and labour for constructing brick masonry circular type manhole 0.91 m dia internal at bottom and 0.56 m dia at top with bricks of class designation 7.5 in cement mortar 1:4 (1 cement : 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement and foundation concrete 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 40 mm nominal size) and making necessary channel 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				
	0.91 m deep with SFRC cover and frame (heavy duty HD-20 grade designation) 560 mm internal diameter conforming to IS: 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12 mm tick cement plaster at the external surface shall be paid for separately)				
14.1	With F.P.S. bricks with class designation 75	12			
15.	Extra depth for circular type manhole 0.91m internal dia (at bottom) with beyond 0.91m to 1.67m				
15.1	With F.P.S. bricks class designation 75	5			
16.	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top with 35 class designation F.P.S brick in cement mortar 1:4 (1 cement: 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 mix (1 cement :3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	1.68 m deep with SFRC cover and frame (heavy duty HD-20 grade designation) 560 mm internal diameter conforming to IS: 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12 mm tick cement plaster at the external surface shall be paid for separately)				
16.1	With F.P.S. bricks with class designation 75	14			
17.	Extra depth for circular type manhole 1.22m internal dia (at bottom) with beyond 1.68m to 2.29m				
17.1	With F.P.S. bricks class designation 75	4			
18.	Constructing brick masonry circular manhole 1.52 m internal dia at bottom and 0.56 m dia at top with 35 class designation F.P.S brick in cement mortar 1:4 (1 cement: 4 coarse sand) inside cement plaster 12 mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement foundation concrete 1:3:6 mix (1 cement :3 coarse sand : 6 graded stone aggregate 40mm nominal size) and making necessary channel in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) finished with a floating coat of neat cement complete as per standard design.				
	2.30 m deep with SFRC cover and frame (heavy duty HD-20 grade designation) 560 mm internal diameter conforming to IS: 12592, total weight of cover and frame to be not less than 182 kg. fixed in cement concrete 1:2:4 (1 cement :2 coarse sand : 4 graded stone aggregate 20mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12 mm tick cement plaster at the external surface shall be paid for separately)				
18.1	With F.P.S. bricks with class designation 75	19			
19.	Extra depth for circular type manhole 1.52m internal dia (at bottom) with beyond 2.30m				
19.1	With F.P.S. bricks class designation 75	6			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
20	Constructing brick masonry road gully chamber 50x45x60 cm with bricks of class designation 75 in cement mortar 1:4 (1 cement : 4 coarse sand) including 500x450 mm pre-cast R.C.C. horizontal grating with frame complete as per standard design:				
20.1	With F.P.S. bricks	22			
21	Extra depth beyond 45 cm of brick masonry chamber				
21.1	For 455 x 610 mm size				
	With F.P.S. bricks	2			
22	Providing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS: 10910 on 12 mm dia steel bar conforming to IS : 1786 having minimum cross section as 23 mm x 25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specification and having manufacture's permanent identification mark to be visible even after fixing, including fixing in manholes with 30 x 20 x 15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	137			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
23	<p>Constructing Brick masonry percolation pit 3m dia and 5m deep with bricks of class designation 7.5 in cement mortar 1:6, base concrete 1:4:8 below the brick wall, including cost of necessary excavation in any type of soil, back filling as required in 20cm thick layers, dewatering if any, shuttering and shoring and disposal of surplus excavated material within 2 nos. 300mm dia borings to a depth of 50 metre (to be measured from the bottom of the percolation pit), provisioning and fixing 160mm O.D. PVC pipes, tested to 6kg/sqcm, in each bore and upto the height of 300mm above the RCC top slab. The PVC pipe shall be slotted except 3.0 metres at the top and 3.0 metres below from the bottom of the percolation pit, which shall be blind. Top of the PVC pipe shall be covered with PVC Socket & plug. Each bore around the PVC pipe shall be filled with pea gravels. The percolation pit shall be filled with river stone/pebbles as shown in drawing. The top slab shall be 150mm thick with RCC M20 including nominal reinforcement and 2 nos. of 560mm internal dia SFRC manhole covers</p>				
	<p>with frames conforming to IS:12592 (total weight of cover & frame shall not be less than 182 kg) shall be provided in the top slab. PVC encased 12mm dia steel bar Footrests shall be provided 300 centre to centre. The above shall be provided all as specified and shown on drawings 01. 300mm dia RCC pipe for inlet and overflow as shown on drawings shall be measured separately.</p>	5			
24	<p>Material & labour for constructing Silt trap of size 1500mm x 3000mm x 2000mm deep in R.C.C. walls including necessary excavation and foundation concrete 150mm thick in 1:4:8 (1 cement : 4 coarse sand : 8 graded stone aggregate of 40mm nominal size), inside plaster 12mm thick in cement mortar 1:4 (1 cement : 4 coarse sand) finished with a floating coat of neat cement, C.C. floor, RCC slab in mix 1:2:4 & RCC baffle wall including reinforcement, centering & shuttering including 12mm dia steel bar footrests etc. and SFRC manhole cover and frame of 610mm x 455mm internal dimension conforming to IS: 12592 (total weight of cover & frame shall not be less than 70 kg)</p>	5			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
25	Extra for each 1m boring or part thereof beyond 50m depth for all the two Bores including provisioning and fixing of PVC slotted pipes.	50			
26	Making connection of drain or sewer line with existing manhole including breaking into and making good the walls, 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 (1 cement : 2 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete:				
26.1	For pipes 250 to 300 mm diameter	1			
27	Constructing brick masonry surface drain with bricks of class designation 7.5 in cement mortar 1:4 (1 cement : 4 coarse sand) including earth excavation , 10cm thick bed concrete 1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size) and 25 mm thick cement concrete 1:2:4 (1 cement 2 coarse sand 4 graded stone aggregate 12.5 mm nominal size) for filling haunches including 12 mm cement plaster 1:4 (1 cement : 4 coarse sand) with a floating coat of neat cement inside the drain, its top and exposed side and 12mm thick external plaster with cement mortar 1:6 (1 cement : 6 coarse sand) including connection to existing drain and disposal of surplus earth.				
27.1	30 cm drain 50cm average depth	1270			
27.2	45 cm wide drain 60 cm average depth	35			
28	Extra for additional depth for brick masonry surface drain.				
28.1	30 cm drain 50cm average depth	108			
28.2	45 cm wide drain 60 cm average depth	6			
29	Providing and fixing in position SFRC drain covers including perforation as required over drains for the following sizes :-				
29.1	for 30 cm wide drain sleeve size 75cm x 60cm & 5cm thick	1270			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
29.2	for 45 cm wide drain sleeve size 90cm x 60cm & 8cm thick	35			
30	Making connection of storm water drain with existing manhole including breaking into and making good the walls, 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 (1 cement : 2 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete:				
30.1	For pipes 350 to 450 mm diameter	1			
31	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20 cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift upto 1.5 m.	308			
32	Removal of surplus earth by mechanical transport upto 10 K.M.	132			
SUB TOTAL					

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	<u>SUB HEAD - VII - PUMPS & EQUIPMENT</u>				
1	Providing and fixing of package type skid mounted hydropneumatic system comprising of:				
(a)	Horizontal / Vertical inline single/multistage centrifugal pumping set with stainless steel SS stage casing and SS impellers with stainless steel shaft, cast iron suction & discharge casing, connected to suitable capacity TEFC ventilated induction motor 2 pole, 2900rpm, suitable for 415+10% Volts, 3 phase, 50 Hz A.C. supply.				
(b)	Pressure vessel of non corrosive FRP composite construction lined with NSF and/or FDA listed material, like high density polyethylene with fully replaceable polyurethane. Air cell burst pressure of minimum of 5 times the vessel operating pressure and cycle tested for 2,50,000 cycles.				
	No. and capacity of Pressure Vessel - 01 Nos. x 100 Ltrs.				
(c)	Electrical Control Panel including provision for cyclic operation of pumps - Pump working sequence should change after every operation. Control panel with programmable logic controller (PLC) with inbuilt PID controller , digital display with fluorescent screen, one no. 3 ph, 415±10%V, AC variable speed drive of suitable capacity rating with inbuilt EN55011 class A RFI filters, having standard function of BI loop, energy saving catching a spinning load with speed search, auto hunting jog preset speeds, controlled stop on loss of supply power loss side through, DDC injection breaking fast stop. Drive should have selectable rated input frequency 50/60 Hz and output frequency range of 0.5-32 Hz, contactors, overload relays and MCBs should conform to IEC 898-1995 standards Ammeter, voltmeter. All trip indications should blink in case of trip and panels should only be accessible through an access code.				
(d)	Electronic Pressure switches having maximum pressure and differential scale should confirming BS-6134 standards and IP55 protection class.				
(e)	Complete set system to be mounted on a common MS base frame and shall follow following duty.				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
(f)	The cost will include making necessary flanged suction and delivery headers in GI (C class)				
(g)	Motor to be of the same make as the pump (Vendor to submit performance curves and technical catalog of the proposed model for review & information)				
	The pump shall be selected for performance at best efficiency point. However, the pump selection shall be suitable for performance with set point @ + 20% of the rated head.				
1.1	Domestic: Capacity : 450 LPM Each Pump (1 Working + 1 Standby) @ 60 M head.	1			
1.2	Flushing: Capacity : 250 LPM Each Pump (1 Working + 1 Standby) @ 60 M head.	1			
2	Supply, assembly, erection, testing and commissioning of pumping system comprising the following: Vertical/Horizontal centrifugal pumps (1 Working + 1 Stand-by) with mechanical seal, SS Volute casing and SS impeller connected to suitable capacity TEFC induction motor suitable for 415 ± 10 % volts, 3 phase, 50 cycles A.C. supply with 100 mm dia. pressure gauges including MS skid and mounting of the pumps on the skid. (Motor to be of the same make as the pump)				
2.1	Pump Capacity 250 lpm, at 25 m head (1 Working + 1 Stand-by) (Pumps for boosting water supply from UG Flushing water tank for Garden Hydrant System)	1			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
3	Supply, assembly, erection, testing and commissioning of SS submersible non-clog pumps, suitable to handle basement drainage having the following capacities with vortex impeller / grinder type, complete with 3 phase squirrel cage submersible motor of required HP for 415 + 10% volts, 3 phase, 50 Hz. A.C. supply cooled by surrounding liquid, submersible cable upto main panel within the plant room, dry running preventor, G.I. guide pulling chain, all the necessary piping and accessories, valves, delivery header and magnetic switch based automatic level controller etc. as required complete in all respects. The rate will include electrical panel with cyclic operation as supplied by the manufacturers)				
	The above installation shall be complete with sump pump lifting assembly, ready made electro – galvanized MS lifting chain, GI pipe header complete with discharge manifold, flanges, tee, elbow etc. complete including GI pipe upto the top of sump and including GI union. Header shall be sized for both pump working under delivery velocity of 1.5 m/sec.				
3.1	Capacity of 500 lpm against a total head of 8m (solid handling 10-12 mm) (Pump Room Drainage and Pumps Rain Water Harvesting Pits) (1 Working + 1 Stand by)	6			
4	FILTER FEED PUMPS				
	Supply, assembly, erection, testing and commissioning of pumping system comprising the following:				
	Vertical/Horizontal centrifugal pumps (1 Working + 1 Stand-by) with mechanical seal, SS Volute casing and SS impeller connected to suitable capacity TEFC induction motor suitable for 415 ± 10 % volts, 3 phase, 50 cycles A.C. supply with 100 mm dia. pressure gauges including MS skid and mounting of the pumps on the skid. (Motor to be of the same make as the pump)				
a)	Pump Capacity 300 lpm, at 30 m head (1 Working + 1 Stand-by) (Domestic)	1			
5	MULTIGRADE SAND FILTER (Domestic)				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	Supply, assembly, erection, testing & commissioning of vertical M.S. dual media pressure filter fabricated from 6mm thick M.S plate shell and 8mm thick M.S. plate dished ends with 5mm non-toxic, non-leaching natural rubber lining (rubber lining to be tested for pin-holes by spark tester) inside complete with initial charge of filter media (Coarse silex 6-10 mm, 150 mm depth, Fine silex 1.4-2.5 mm depth 600 mm, manganese green sand 150 mm, Anthracite 0.8-1.6mm, 600 mm thick), face piping (GI, C Class), diaphragm/ball/non-return valves, accessories, painting, testing and commissioning of any under drainage system as required, complete. (Tested to 10 kg/sq cm)				
a)	Capacity : 18000 lph				
b)	Filtration rate : 18-20 M ³ /M ² /hr				
c)	Max. operating pressure : 3.5 Kg/Sq.cm				
d)	Test pressure : 5.5 Kg/Sq.cm				
e)	Minimum Size : 1.0 Mtr. Dia & 1.2 Mtr. Height	1			
6	ACTIVATED CARBON FILTER (Domestic)				
	Supply, assembly, erection, testing & commissioning of vertical M.S. Activated Carbon filter fabricated from 6mm thick M.S plate shell and 8mm thick M.S. plate dished ends with 5mm non-toxic, non-leaching natural rubber lining (rubber lining to be tested for pin-holes by spark tester) inside complete with initial charge of filter media activated carbon, face piping (GI, C Class), diaphragm/ball/non-return valves, accessories, painting, testing and commissioning of any under drainage system as required, complete. (Tested to 10 kg/sq cm)				
a)	Capacity : 18000 lph				
b)	Filtration rate : 15-17 M ³ /M ² /hr				
c)	Max. operating pressure : 3.5 kg/Sq.cm				
d)	Test pressure : 5.5 Kg/Sq.cm				
e)	Minimum Size : 1.0 Mtr. Dia & 1.2 Mtr. Height	1			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
7	Supplying, assembly, erection, testing and commissioning of magnetic level sensors and controllers, CPVC probe tube, PP actuating float and all other equipment required for the performance of the system to the satisfaction of the engineer in charge complete including providing and fixing wiring from control junction box near the UG tank to probes of required length, interconnection wiring between level controller and the concerned contactor in the starter panel as required. The level controller will perform the following functions.				
a)	To switch on the pumps (2 nos. tube well pumps, filter pumps) when the level of water in the supply water tank is low and to cut off the pump when the level in the receiving water tank is high and switch off the pumps when the level of water in the supply water tank is low.				
b)	To indicate 5 levels of water in all tanks through a control panel with LEDs				
c)	To start the pumps in a cyclic order.				
	The system shall be complete to ensure automatic quotation of pump in accordance to water level in respective tanks.	1			
8	Providing & fixing Electric control panel to open / close the solenoid valve at low / high water level through level controller in OH water tanks including armoured cabling, level controller probes & other accessories as required to operate the system automatically complete in all respects. (Equal to the no. of OHTs)	22			
9	Supplying, Installation, Testing and Commissioning of Motorized Valve of following sizes with Bypass ball Valve arrangement and Isolating Valve with weather proof MS powder coated enclosure, complete in all respects as required.				
9.1	40 mm dia	5			
9.2	32 mm dia	13			
9.3	25 mm dia	4			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
10	Providing, fixing, jointing and testing in position the following medium class G.I. pipes conforming to IS:1239 cut to required lengths including all necessary fittings (conforming to IS:1879) and specials such as bends, tees, unions, reducers, flanges & plugs etc. fixing at wall/ceiling level supported by clamps, hangers etc, (to be galvanized after fabrication) cutting hole in wall/floor/slab and making good the same good with cement concrete 1:2:4 / fire sealant complete as required.				
10.1	32 mm dia	25			
10.2	40 mm dia	50			
10.3	50 mm dia	90			
10.4	65 mm dia	75			
10.5	80 mm dia	50			
10.6	100 mm dia	25			
11	Providing two coats of Synthetic enamel paint of approved shade on pipes and supports as per pipe colour code over a coat of primer. Including painting of legends with direction arrow as per the approval of the Consultants / Project Manager.				
11.1	32 mm dia	25			
11.2	40 mm dia	50			
11.3	50 mm dia	90			
11.4	65 mm dia	75			
11.5	80 mm dia	50			
11.6	100 mm dia	25			
12	Supply, installation, testing and commissioning of tanker inlet connection complete with 80 mm dia GI inlet piping, hose inlet connection, MS cabinet enclosure (epoxy painted after fabrication), pad locking arrangement, inlet flexible hose complete with all necessary arrangement.	1			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
13	Supply, installation, testing and commissioning of ultraviolet disinfection unit. The unit shall have over 99.9% bacterial reduction from inlet to outlet. The disinfection chamber shall be constructed of SS 316L on all welded parts. The UV lamp shall be of low pressure mercury vapour type with hard glass enclosure, the sockets shall be water tight & vibration resistant. The lamp life shall be rated for 6000 hours.				
	The access to the UV lamp shall be without the need to interrupt the ballast circuit. The unit shall be provided with elapsed running time meter, non resettable to 99,999 hours. Cost shall be inclusive of electrical wiring with plug.				
13.1	Flow rate 12000 Litre/Hr	1			
14	Providing and fixing Butter fly valve Rated for PN16 pressure rating including rubber gasket, flanges, nuts, bolts, washers & painting complete as required.				
14.1	50 mm dia	10			
14.2	65 mm dia	4			
14.3	80 mm dia	14			
14.4	100 mm dia	2			
15	Providing & fixing C.I. dual plate type check valve tested to a pressure of 15Kg/sqcm. Including rubber gasket, flanges, union, nuts, bolts, washers & painting complete as required.				
15.1	50 mm dia	6			
15.2	65 mm dia	4			
15.3	80 mm dia	2			
15.4	100 mm dia	1			
16	Providing & fixing C.I. 'Y' Strainer (screwed / flanged) with stainless steel fine wire mesh perforated sheet basket with necessary flanges / union nuts, bolts & washers complete as required (on pump suction).				
16.1	50 mm dia	4			
16.2	65 mm dia	2			
16.3	80 mm dia	2			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
17	Providing and fixing in position of approved quality G.M. float valve with copper ball float and brass rods of required length suitable for pressure of 10 Kg/sqcm of the following sizes:				
17.1	50 mm dia	1			
18	WATER SUPPLY PUMP PANEL				
	Supplying, Installation, Testing and Commissioning of dust and vermin proof wall mounting type factory built sheet steel enclosed cubical panel, fabricated out of 2.0mm thick CRCA sheet, hinged doors of 2mm thick CRCA sheet, duly painted complete with Aluminium bus bars, inter-connection with solid copper conductor wires / aluminium strips, neutral links, earth bus etc. necessary metering protections & indications and mounted with the following as per specification attached as required.				
	INCOMING				
a)	125A, 4P, 35 kA rating MCCB - 01 No.				
b)	Four strip 200 Amps. Aluminium bus bar - 01 Set				
c)	(0 - 125 A) CT operated Ammeter with selector switch & 3 nos. CTs ratio 125/5A 15VA burden & accuracy class of 1.0 - 1 set				
d)	(0 -500V) voltmeter with selector switch - 1 Set				
e)	Coloured LED (Red, Yellow, Blue) phase indicating lamps with 2 Amps. control MCBs.- 1 Set of 3 Nos.				
	OUTGOING				
a)	63A, TP, 10 kA MCB along with CT operated Ammeter (0-63A), set of 3 CTs of 63A/5A, 5VA burden, 5.0 accuracy, ASS and coloured LED type (RED, GREEN) ON/OFF indication - 4 Nos.				
b)	40A, TP, 10 kA MCB along with CT perated Ammeter (0-40A), set of 3 CTs of 40A/5A, 5VA burden, 5.0 accuracy, ASS and coloured LED type (RED, GREEN) ON/OFF indication - 6 Nos.				
c)	32A, TP, 10 kA MCB along with CT operated Ammeter (0-32A), set of 3 CTs of 20A/5A, 5VA burden, 5.0 accuracy, ASS and coloured LED type (RED, GREEN) ON/OFF indication - 3 Nos.				
d)	DOL starter suitable for 5 KW motor (With SPPR, Relay, metering & indication etc.) - 4 Sets				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
e)	DOL starter suitable for 3 KW motor (With SPPR, Relay, metering & indication etc.) - 2 Sets	1			
19	PERFORATED M.S.CABLE TRAY				
	Fabricating and installing following size of perforated M.S. cable trays including horizontal and vertical bends, reducers, tees, cross members and other accessories as required and duly suspended from the ceiling with M.S. suspenders and including painting etc. as required.				
19.1	300mm width x 50mm depth x 1.6mm thickness	20			
19.2	150mm width x 50mm depth x 1.6mm thickness	60			
20	POWER CABLES (ALUMINIUM)				
	Supply, laying, fixing, testing, commissioning and end termination of following sizes of XLPE insulated PVC sheathed, armoured aluminium conductor cable of 1.1 KV grade on existing cable tray / surface as required.				
20.1	3½ core x 50 sqmm	100			
20.2	4 core x 10 sqmm	60			
20.3	4 core x 6 sqmm	50			
20.4	3 core x 6 sqmm	100			
21	GI EARTH STRIP				
	Providing and fixing 25mm x 5mm G.I. strip on surface or in recess for connections etc. as required.	50			
22	GI EARTH WIRE				
	Providing and fixing 6 SWG G.I. Wire on surface or in recess for loop earthing along with the existing cable as required.	150			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
23	SOLAR HOT WATER SYSTEM (Residential)				
	Providing and fixing Solar Hot Water indirect Heating System using approved type of heating liquid medium comprising of flat plate solar panels, including all interconnecting insulated G.I. piping, primary and secondary recirculation pumps, pressure type insulated hot water tank, sacrificial magnesium anode with steel core including valves on inlet, outlet, Y stainer and a water meter on the inlet, air release valve all mounted on galvanized MS sections complete with connection with the existing piping.				
a)	Flat plate solar collector panels of 2 x 1 m size approx. (nos. as specified below) the panels enclosed in insulated collector boxes with single piece toughned glass 4 mm thick and fixed with heat resistant gasket.				
b)	Integrated non pressurized hot water tank designed so as to have a Insulated M.S Horizontal tank (cap as specified below). Tank shall be provided with hot water inlet / outlet over flow/ drain connection with M H cover. Vent pipe connection & GI Vent pipe of adequate height / length, pressure gauge at inlet/ outlet.				
c)	Inter-connected insulated G.I. piping insulated with 9 mm thick nitrile rubber heat resitant insulation sections (Vidoflex or equiv.) and valves with outer mechanical protection of aluminium sheet cladding.				
A	Type II				
	3 no's 400ltrs 3 Solar Collector Panels	2			
	1 no's 300ltrs 2 Solar Collector Panels	2			
B	Type III				
	3 no's 400ltrs 3 Solar Collector Panels	2			
	1 no's 300ltrs 2 Solar Collector Panels	2			
C	Type IV				
	3 no's 400ltrs 3 Solar Collector Panels	4			
	1 no's 300ltrs 2 Solar Collector Panels	4			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
D	Type V	4			
	2 no's 300ltrs 2 Solar Collector Panels				
E	RMO	6			
	4 Solar Collector Panels				
	500 liters Hot Water Tank				
F	Dining	1			
	10 Solar Collector Panels				
	500 liters Hot Water Tank with no Electrical Backup				
	SUB TOTAL				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	SUB HEAD - VIII - SEWAGE TREATMENT PLANT CAPACITY 175 KLD				
I	SEWAGE TREATMENT PLANT				
	SUB HEAD - VIII - SEWAGE TREATMENT PLANT CAPACITY 175 KLD				
	SEWAGE TREATMENT PLANT				
	Planning,Designing,Detailing,Supplying, Erection,Testing and Commissioning of Package Sewage treatment plant based on FAB (Fluidised aerobic Bioreactor) technology of average flow rate of 175 cu.m/day for sewer of Residential Block of LHMC Delhi including provision of recirculation of treated sewage/effluent for the use of horticulture/flushing purposes including design and execution of all civil,structural,electrical,mechanical,plumbing and processing,ancillary equipments and works etc required to complete the package, getting approval from state pollution control board and other statutory bodies as well as from consultant (HSCC) excluding the cost of civil work (i.e civil work of inlet chamber ,oil & greese trap,Bar Screen chamber,equalisation tank,Fabb reaction tanks,Tube setteler tank,sludge chamber,filter feed tank sludge drying bed,treated water tank, sludge drying bed,equipment room /lab/office etc.same shall be covered under head civil work).				
	Note: Tentative raw sewage generation & characteristics for designing of the plant are mentioned below. The bidder has to take this own judgment for designing the system				
	Average daily flow (cum/day) : 175 CuM per day				
	pH : 5.5 - 8.5				
	BOD (5 days at 20 degree C) (mg/l) : 150-400				
	COD (mg/l) : 250-600				
	Suspended solids (mg/l): 200-400				
	Oil & grease (mg/l) :20-50				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	The treated effluent characteristics shall be as per local pollution control board standards. The treated effluent (indicative) shall have following standard:-				
	BOD : Less than 10 Mg/l				
	COD : Less than 100 mg/l				
	Suspended solids: Less than 10 mg/l				
	Oil & grease : Less than 10 mg/l				
	pH : 6.5 - 8.0				
	Bio-assay test : Survival of fish after 96 hrs 100 %				
	Odor-Odorless				
	On the basis of the above and as per site condition the detailed drawing along with design calculation (Hydraulics, process, Structure etc.) shall be submitted to HSCC for the approval of the same before the start of the work The STPhas to be designed and installed by the approved vendor (Geo Miller, Ion Exchange, Fontus, Thermax, Pollucon Technologies, AKAR Implex (P) Ltd., KWAN Environmental solution). To have flexibility in O&M and to minimize the operation cost during lean flow or when the occupancy of the campus is low, the plant shall be designed in such a way that half portion of plant can be closed for O & M without disturbing the operation of another half portion of STP.				
	All the water retaining structure shall be designed as water retaining structure as per provision of IS code and water proofing with fixed or any other approved chemical shall be carried out by approved agency with 10 year (minimum) garanty. All the unit shall be painted by epoxy or any other approved paints.				
i)	The shop drawings & design of STP shall be prepared by the agency .The process and hydraulic design & shop drawing will be approved by HSCC.The structure design shall be carried as per provision of IS code.The agency has to get their structure drawing checked and approved by IIT Delhi/Mumbai/NITE or any other govt. Engineering college approved by HSCC.	1			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
ii)	RCC Suitable size Bar Screen chamber with minimum free board 300 mm and minimum size 0.7mx0.6m and suitable size SS Bar screen is installed at suitable angle at the inlet of raw sewage sump before pumping. The unit shall be designed for peak flow - 2 nos.(min.).(Excluding civil cost)				
	Electrical & mechanical	2			
iii)	Providing and fixing non cloged submersible sewage pumping set with CI body, SS impeller and shaft coupled with totally enclosed fan cooled iniduction motor complete with HDPE double flanged/CPVC pipings, sluice valves, non return valves, fittings etc as required. Motor suitable for 415 volts, 3 phase 50Hz,1500 rpm A/c supply with control auto start float swich, cable and all fitting complete in all respect.				
	RAW SEWAGE PUMP - (4 nos min.)(2working + 2 Standbuy)	4			
	Capacity - 4500LPH (min.)				
	Head - 10-18 m				
	Solid handing - 25-50mm				
iv)	RCC Equalisation tank with hydraulic retention time Min.6 Hrs HRT of suitable Size free Board 500 mm,the effluent of equalisation tank is agitated with diffused air that is fed by an air blower, including pipe non-corrosive material and its complete system. (1 unit) (Excluding civil cost)				
a)	Mechanical & Electrical	1			
v)	RCC FAB-(4 nos. minimum) with minimum 4hr. retention time of each reactor of suitable size with Air grid CPVC pipe material of construction or corrosion resistant material,Air diffusers (fine bubble), HDPE approved make Bio media for each aeration tank,with minimum water depth of 3.5 m.(Excluding civil cost)				
a)	Electrical & mechanical	4			
vi)	ROTARY AIR BLOWERS				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	Providing and Installation of Rotary air blowers for air scouring, driver through v-belt or directly coupled through flaxble coupling. Motor shall be of suitable HP for 400-440 volts, ,1500RPM, 3 phase, alongwith air filter, non-return valve, safetyvalve, base plate and necessary air piping fittings, valves, flowmeters etc.				
	(Blower capacity and pressure head shall be suitable to meet the requirement of equalisation tank and Bio reactor suitable for average flow rate of effluent of 175cu.m per day) 6 nos.(4working +2 stand by)	6			
vii)	RCC secondary tube settler -2 nos. maximum Hydraulic loading 2.0 cu.m/sq.m/hr and with approved quality media. (2 units) minimum media height 0.7m (Excluding civil cost)				
a)	Electrical & mechanical	2			
viii)	Providing and fixing of OxiLyte (Mixed Oxidant) Generation System , based on ECA Technology, producing non toxic mixed Oxidant Slution at 1000 ppm of Oxidant Concentration or any other approved disinfection method excepted by HSCC. The solution should be at a pH 3+-0.5 suitable for 24x7 operations should produce 720L per day. The system should be supplied complete with appropriate dosing pumps , valves, piping, fittings, chemical dosing tank etc. complete in all respect.	2			
ix)	RCC supernatant tank/Filter feed tank minimum 100 cu.m capacity (1 unit) with filter feed pumps .(Excluding civil cost)				
	FILTER FEED PUMPSETS				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	Providing and installation vertical on line/ horizontal single/multistage centrifugal monoblock pumping set with CI body, SS impeller, coupled with totally enclosed fan cooled induction motor mounted on common structural base plate with all pump accessories complete as per specifications inclusive rubber vibration eliminators motor suitable for 415 volts, 1500RPM, 3 phase 50 HZ. A/c supply.				
	Type of pump - Horizontal				
	Capacity - 6000 LPH				
	Head - 30 M				
	Nos.- 2 (min.)	2			
x)	MULTI GRADE FILTER				
	Providing and installation of mild steel pressure vessel (as per IS:2825) 6 mm thick natural rubber lining fabrication standard multi grade filter complete in all respects, of total capacity 6cu.m per hour, complete with dished ends, supporting legs, manhole cover, frontal pipe work fitting with valves. Plant shall be provided with inlet, outlet pressure gauge, sample cocks, charge of filter media graded sand and internals consisting of strainers fitted on plate for collection. (No. of unit-2)				
	Dia of vessel -0.9mm (minimum.)				
	Shell thickness -6mm (minimum.)				
	Dish end thickness-8mm (minimum.)				
	Nozzie plate -10mm thick (minimum.)				
	Manhole -450mm	1			
xi)	ACTIVATED CARBON FILTER				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	Providing and installation of mild steel pressure vessel (as per IS:2825) 6 mm thick natural rubber lining fabrication standard multi grade filter complete in all respects, of total capacity 6cu.m per hour, complete with dished ends, supporting legs, manhole cover, frontal pipe work fitting with valves. Plant shall be provided with inlet, outlet pressure gauge, sample cocks, charge of approved quality activated carbon media. (No. of unit-2)				
	Dia of vessel -0.9m (minimum.)				
	Shell thickness -6mm (minimum.)				
	Dish end thickness-8mm (minimum.)				
	Nozzie plate -10mm thick (minimum.)				
	Manhole -450mm	1			
xii)	RCC sludge sump (40cu.m minimum) and submersible sludge pump set with CI body, SS impeller and shaft coupled with to a totally enclosed fan cooled iniduction motor complete with HDPED/F pipings, sluice valves, non return valves, fittings etc as required. Motor suitable for 415 volts, 3 phase 50Hz. A/c supply with control auto start float switch with return sludge line upto Bioreactor. (Excluding civil cost)				
	SLUDGE PUMP- (2 set minimum)	2			
	Capacity - 5000 LPH				
	Head - 10 m				
	Solid handing - 10mm (minimum)				
xiii)	Providing and fixing 24 plates 450 x 450mm size filter press - 1no. with suitable sludge pump and sludge tank of 2,000 ltrs. (min.) capacity alongwith piping, fittings valve etc. complete in all respects.	1			
	Filter Press Feed Pump				
	Flow rate (each) = 1500 lph				
	Head = 25 to 30 mtr				
	Quantity = 02 Nos (1w/1s)				
	Solid Handling=10mm				

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
xv)	Electrical works (including supply, installation and termination of cables of suitable size as per HP of all pumps with all structural supports, clamps and cable trays as per approved design/specifications,installation will be as per relevant Indian standard and CPWD specification alongwith control cable of suitable size).(1 lot). Any other electrical and mechanical item required to complete the work.	1			
xvi)	Providing and fixing digital type flow meter ,energy metre ,pressure guage & level controller etc. complete in all respects. (1 no.)	1			
xviii)	Sludge drying beds (5.0X10.0X1.8) suitable Nos (minimum size) (complete civil & mechanical work) excluding civil cost.	1			

Sl. No.	Description of Item	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
xix)	Pump room drainage sump pump for plant room.				
a)	Non clogging type submercible pumps capable of handling solids up to 25 mm having C.I. casing & CI impeller complete with all accessories, motor of required capacity, Pressure gauge on delivery line with isolation cock, level controller (with wiring) to control the level of sump automatically. Pumps shall have following duty: (Make : JS/Salmson/Grundfos)excluding civil cost.				
a)	Plant Room Sump Pumps				
	Flow rate (each) = 15000 lph				
	Head = 8-10 Mtr				
	Qty = 02 Nos (1W/1S)	1			
	SUB TOTAL				
	TOTAL				

NAME OF WORK: ESTIMATES OF FIRE FIGHTING WORK FOR LADY HARDING MEDICAL COLLEGE, NEW DELHI						
BILL OF QUANTITIES						
RESIDENTIAL BLOCK						
Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
1.00	Sub Head - I - (Wet Riser and Sprinkler System - Pumping Equipments)					
1.01	Supplying, Installation, Testing and Commissioning of Electric Driven Terrace Pump suitable for auto operation and consisting of following: complete in all respect as required.					
a)	Horizontal type, multistage centrifugal end suction type split casing pump of cast iron body & bronze impeller with stainless steel shaft, mechanical seal and flow of 450 lpm at 35 Mtr head confirming to IS:1520.					
b)	Suitable HP (Minimum 7.5 / 10.0 HP) squirrel cage induction motor TEFC type suitable for operation on 415 volts, 3 phase 50 Hz. AC with IP 55 class of protection for enclosure, horizontal foot mounted type with Class-'F' insulation, confirming to IS:325.					
c)	M.S. fabricated Common base frame, flexible coupling, coupling guard, foundation bolts and pressure gauge with valve etc. Suitable cement concrete foundation duly plastered with anti vibration pads.etc. complete as per manufacturer's design & standards and as per detailed specifications.	Each	4			
1.02	Fabricating, Supplying, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header on the top of each riser fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve complete with suitable drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes					
a)	1.2 Metre high and 250 mm dia	Each	8			
SUB TOTAL						

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
2.00	Sub Head - II (Motor Control Panels)					
2.01	Fabrication, Supplying, Installation, Testing & Commissioning of Electrical Motor Control Panel for Terrace Pumps of cubical construction, feeder pillar type double door floor/wall mounted, fabricated out of 2mm. thick CRCA sheet, compartmentalised with hinged lockable doors, dust and vermin proof, powder coated of approved shade after 7 tank treatment process, cable alley, interconnection with solid aluminium strip / single core PVC Insulated FRLS copper conductor cable, having suitable mountings for switchgears and accessories and internal control & power wiring with suitable rating PVC insulated FRLS copper conductor, earth terminals, numbering etc. complete in all respects, suitable for operation on 415 V, 3 phase 50 HZ AC supply with enclosure protection class IP 42 with suitable rating aluminium bus bar as required.					
	Incoming					
a)	MCCB, 4 Pole, 40 A, 25 KA (with adjustable thermal magnetic release and (ICS = 25 KA upto 433 V) - 1 Nos.					
b)	Digital Ammeter (0 - 60 A),96 mm. sq. CT operated with selector switch with 3 Nos. CT's of ratio 60/5 A, 10 VA burden and accuracy of class 1.0 - 1 Set					
c)	Digital Volt Meter (0-500 V) 96 mm. sq. with selector switch and HRC control fuses - 1 Set.					
d)	Phase Indicating coloured LED (RYB) with control fuses - 1 Set					
	Outgoing					
e)	Fully Automatic Star Delta Starter suitable for Terrace Pump (Minimum 7.5 / 10 HP capacity) complete with over load protection, current sensing type single phase preventer complete with all accessories and wiring etc. as required - 1 Set					
f)	Selector switches for Auto / Manual operation, Local / Remote operation from Fire Pump House / OFF and ON / OFF / TRIP indications - 1 Set	Sets	4			
	SUB TOTAL					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
3.00	Sub Head - III - (Hydrants and Sprinklers)					
3.01	Supplying and fixing 2 way 63 mm instantaneous Fire Brigade Inlet Connection (FBIC) comprising of gunmetal body and gunmetal instantaneous male inlet coupling confirming to IS:904 with plug and cap with chain as required with nuts & bolts and high pressure rubber gasket, suitable for 150 mm dia MS pipe connection etc. complete as required.	Nos.	8			
3.02	Supplying and Fixing First Aid Hose Reel , wall mounting swinging type complete with drum & bracket of MS construction, spray painted in Post office Red, confirming to IS 884/1995 with upto date amendments, complete with the following as required.					
(a)	36 Meter long 20 mm dia water hose Thermoplastic (Textile reinforced) Type - 2 as per IS : 12585					
(b)	25 mm dia gun metal ball valve & nozzle.					
(c)	Drum and brackets for fixing the equipments on wall.					
d)	Connection from riser with stop valve (gun metal) & M.S. Pipe	Each	40			
3.03	Supplying and Fixing of Weather Proof Hose Cabinet suitable for external yard hydrant / FBIC fabricated out of 2 mm thick M.S. sheet with 6 mm thick glazed glass door in front having locking arrangements, suitable to accommodate external hydrant with butterfly valve, 2 nos 15 Mtr. long hose reels, branch pipe / FBIC with all the necessary pipes, accessories, fittings etc., mounted on wall or raised brick platform and duly painted with PO Red externally and white internally with synthetic enamel paint, sign writing etc. complete in all respects as required at site and having minimum following dimensions.					
a)	900 mm x 600 mm x 500 mm deep	Each	8			
	SUB TOTAL					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
4.00	Sub Head - IV - (Fire Extinguishers)					
4.01	ISI Marked Portable Chemical Fire Extinguisher, Water (Gas pressure) type capacity 9 ltrs. with gun-metal cap. and nozzle and complete in all respects including initial fill and wall suspension bracket.	Each	86			
4.02	Providing and fixing fire extinguisher of carbon dioxide type consisting of brand new high pressure steel cylinder bearing IS: 7285 mark and having the approval of controller of explosives Nagpur, wheel type valve bearing IS:3224 mark internal discharge tube, 1 meter long high pressure discharge hose, non conducting horn, suspension bracket, fully charged bearing IS: making fixed to wall as directed.					
a)	4.5kg capacity cylinder	Each	86			
	SUB TOTAL					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
5.00	Sub Head - V - (Piping, Valves and Accessories)					
5.01	Supplying and laying S&S centrifugally cast (spun) / Ductile iron pipes conforming to IS: 8329					
a)	100 mm dia Ductile Iron class K-9	Metre	40			
5.02	Providing & Laying D.I. Specials of class K-12 suitable for mechanical jointing as per IS:9523					
a)	Upto 600 mm dia	quintal	1			
5.03	Providing push-on-joints to centrifugally (Spun) cast iron pipes of ductile iron pipes including testing of joints and including the cost of rubber gasket					
a)	100 mm dia Ductile Iron class K-9	Each	17			
5.04	Heavy class G.I. pipes conforming to IS with accessories like tees, elbows, flanged joints, rubber insertion, nuts, bolts or welded joints including fixing the pipe with suitable flat iron strip clamps/brackets, structural members, dash fastener, cutting hole and chases in walls, floor, R.C.C. slab etc. and making good the same, including painting pipes and fittings with a primer coat of steel primer and two coats of postal red enamel paint etc. complete as required. (All the fitting i.e. tee /elbow, Valve shall be joint the pumps will flanged joints)					
a)	100 mm dia (with Flanged joints)	Metre	256			
5.05	Supplying, Installation, Testing and Commissioning of Butterfly valves of PN 1.6 rating of following sizes with nitrile Bronze / G.M. seat duly ISI marked and stainless steel stem with lever/gear operation and cast iron body in powder coated finish for fire fighting application complete in all respects confirming to IS: 13095 as required.					
a)	100 mm dia	Each	8			
b)	65 mm dia	Each	4			
c)	50 mm dia	Each	4			
5.06	Providing, Installation, Testing and Commissioning of double flanged cast iron Non-Return Valve , PN 1.6 of following sizes confirming to IS : 5312 complete with rubber gasket, GI bolts, nuts, washers etc. as required.					
a)	100 mm dia	Each	4			
b)	50 mm dia	Each	4			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
5.07	Supply, Installation, Testing and Commissioning of 150 mm dia Bourden type, Stainless Steel dial type Pressure Gauge including brass isolation valve and siphon pipe having caliberation of 0 - 16 Kg / cm ² .	Each	20			
5.08	Supplying, Installation, Testing and Commissioning of CI body flanged (both ends) type serviceable suction / Y strainer with (stainless steel / brass mesh) conforming to relevant IS specifications amended upto date complete including providing and fixing nuts, bolts, washers, gaskets etc. complete as required.					
a)	65 mm dia	Each	4			
	SUB TOTAL					

PROJECT NAME: PROPOSED LADY HARDINAGE MEDICAL COLLAGE AND ASSOCIATED HOSPITAL AT DELHI						
Bill of Quantities For Internal Electrical Work						
Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
1	METERBOARD / DISTRIBUTION BOARDS					
1.01	Supplying, fixing, testing and commissioning of M.V. cubical type totally enclosed dust, dump and vermin proof Meter Boards complete with bus bars, MV danger notice plate, space for Electric Type KWH meter in the separate compartment with lockable lock and glass inspection window, indicating lampeds, Interconnection with suitable capacity aluminium strips/rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having space for following incoming and outgoing MCBs MCCBs and KWH meters complete as required and as shown in the schematic diagram.					
i)	Meter Board - 1 & 2 (Type-II & III)					
	INCOMER :					
	1 no. 125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamps with MCB					
	BUS BARS:					
	300A TPN bus bars of aluminium alloy.					
	OUT GOING:					
	15 nos. 40A, 240Volts, Ics=10kA, DP MCB with space for dual type, site programmable electronic direct kWh meter.					
	2 no. 20A, 240Volts, Ics=10kA, DP MCB.	Set	2			
ii)	Meter Board - 1 & 2 (TYPE-IV)					
	INCOMER :					
	1 no. 200A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamps with MCB					
	BUS BARS:					
	300A TPN bus bars of aluminium alloy.					
	OUT GOING:					
	15 nos. 40A, 415Volts, Ics=10kA, 4P MCB with space for dual type, site programmable electronic direct kWh meter.					
	1 no. 20A, 240Volts, Ics=10kA, DP MCB.	Set	2			
iii)	MDB - (L+P) Located at Gr. Floor (RMO Quarter)					
	INCOMER :					
	1 no. 250A, 415Volts, Ics=25kA, 4P MCCB.					
	1 set of Phase indicating lamps with MCB					
	1 no. Digital type Multifunction Meters to show kWh, kVAH, P.F. and Frequency.					
	BUS BARS:					
	400A TPN bus bars of aluminium alloy.					
	OUT GOING:					
	3 no. 25A, 240Volts, Ics=10kA, DP MCB.					
	3 no. 100A, 415Volts, Ics=16kA, TP MCCB.					
	4 no. 125A, 415Volts, Ics=16kA, TP MCCB.	Set	2			
iv)	SDB (1st & 2nd Floor) (RMO Quarter)					
	INCOMER :					
	1 no. 125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamps with MCB					
	BUS BARS:					
	300A TPN bus bars of aluminium alloy.					
	OUT GOING:					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	3 no. 25A, 240Volts, Ics=10kA, DP MCB.					
	3 no. 100A, 415Volts, Ics=16kA, TP MCCB.	Set	4			
v)	SDB (Third Floor) (RMO Quarter)					
	INCOMER :					
	1 no. 125A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamps with MCB					
	BUS BARS:					
	300A TPN bus bars of aluminium alloy.					
	OUT GOING:					
	3 no. 20A, 240Volts, Ics=10kA, DP MCB.					
	3 no. 25A, 240Volts, Ics=10kA, DP MCB.					
	3 no. 100A, 415Volts, Ics=16kA, TP MCCB.	Set	2			
vi)	MDB (L+P) - Dining					
	INCOMER :					
	1 no. 63A, 415Volts, Ics=25kA, 4P MCCB					
	1 set of Phase indicating lamps with MCB					
	BUS BARS:					
	150A TPN bus bars of aluminium alloy.					
	OUT GOING:					
	3 nos. 20A, 240Volts, Ics=10kA, DP MCB.					
	2 nos. 40A, 240Volts, Ics=10kA, DP MCB.					
	2 no. 25A, 415Volts, Ics=10kA, 4P MCB.					
	2 no. 40A, 415Volts, Ics=15kA, 4P MCCB.	Set	1			
	Sub Total					
2	DISTRIBUTION BOARDS					
2.01	Supplying and fixing of following way, single pole and neutral, sheet steel, MCB distribution board, 240 volts, on surface / recess, complete with loose wire box, terminal blocks, duly prewired with suitable size of FR PVC insulated copper conductor up to terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnection, phosphatized and powder painted including earthing etc. as required (But without MCB/RCCB/Isolator).					
i)	2+4 Way Double door	No.	2			
ii)	2+8 Way Double door	No.	20			
iii)	2+12 Way Double door	No.	50			
2.02	Supplying and fixing following rating, double pole, (single phase and neutral), 240 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc as required.					
i)	25Amps	No.	19			
ii)	40 Amps	No.	53			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
2.03	Supplying and fixing of following way, three pole and neutral, sheet steel, MCB distribution board, 415 volts, on surface / recess, complete with loose wire box, terminal blocks, duly prewired with suitable size of FR PVC insulated copper conductor up to terminal blocks, tinned copper busbar, neutral link, earth bar, din bar, detachable gland plate, interconnection, phosphatized and powder painted including earthing etc. as required (But without MCB/RCCB/Isolator).					
i)	4 way (4+12), double door type.	No.	3			
ii)	6 way (4+18), double door type.	No.	30			
2.04	Supplying, installation, testing and commissioning of surface/recessed mounting, vertical type, 415 volts, TPN MCB distribution board of sheet steel, dust protected, duly phosphatized and powder painted, inclusive of 200 amp tinned copper busbar, common neutral link, earth bar, din bar for mounting MCB's, detachable gland/ knock out plate and with 100 amps, 10 KA MCCB as incomer interconnection between incomer MCCB and bus bars of following ways (but without MCB) as required.					
i)	8 way with 100 amps. MCCB as incomer.	No.	16			
2.05	Supplying and fixing following rating, four pole, (three phase and neutral), 415 volts, residual current circuit breaker (RCCB), having a sensitivity current upto 300 milliamperes in the existing MCB DB complete with connections, testing and commissioning etc as required.					
i)	40 Amps	No.	33			
2.06	Supply and fixing 5 Amp to 32 Amp rating 240 volts, 'B' series, miniature circuit breaker suitable of lighting and other load following poles in the existing MCB DB complete with connections, testing and commissioning etc. as required.					
i)	Single Pole	No.	1728			
	Sub Total					
3	POINT WIRING					
3.01	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 1.5sq.mm FR PVC insulated copper conductor single core cable etc as required .					
i)	GROUP-A	Point	780			
ii)	GROUP-B	Point	2548			
iii)	GROUP-C	Point	70			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
3.02	Wiring for twin control light point with 1.5 sq.mm FR PVC insulated copper conductor single core cable in surface/recessed steel conduit, 2 way modular type switch, modular plate, suitable GI box and earthing the point with 1.5sq.mm FR PVC insulated copper conductor single core cable etc as required.	Point	56			
3.03	Wiring for light/power plug with 2x4sq.mm FR PVC insulated	Metre	3810			
3.04	Wiring for circuit/sub main wiring along with earth wire with the following size of FR PVC insulated copper conductor, single core cable in surface/ recessed steel conduit as required					
i)	2 x 1.5 sq.mm + 1 x 1.5 sq.mm	Metre	13750			
ii)	2 x 6.0 sq.mm + 1 x 6.0 sq.mm	Metre	5860			
iii)	2 x 10 sq.mm + 1 x 10 sq.mm	Metre	500			
iv)	4 x 6 sq.mm + 2 x 6 sq.mm	Metre	850			
v)	4 x 16 sq.mm + 2 x 16 sq.mm	Metre	800			
3.05	Supply 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 amp modular switch, connection, painting etc as required.	each	1322			
3.06	Supply 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 amp modular socket outlet and 15/16 amp modular switch, connection, painting etc as required.	each	527			
3.07	Supplying and fixing 3 pin, 5 amp.celling rose on the existing junction box/wooden block including connection etc as required	each	75			
3.08	Supply and fixing 32 Amp. 240 volts SPN industrial type socket outlet with twp pole and earth metal enclosure plug top along with 32Amp. C series SP MCB in sheet steel enclosure on surface in recess with chain metal cover for the socket outlet and complete with connection testing and commissioning etc. as required.	each	278			
3.09	Supply and fixing stepped type electronic fan regulator on the existing modular plat switch box including connection but excluding modular plate etc as required.	each	620			
3.10	Supplying and fixing call bell / buzzer suitable for D.C / A.C single phase, 230 volts, complete as required.	each	188			
3.11	Deigning fabricating, installing and commissioning of floor / ceiling junction boxe fabricating out of 2 mm thick C.R.C.A steel sheet in following sizes with cover plate of 3 mm thickness painted from inside as well as outside with proper knock outs for conduits.					
i)	150 mm x 150 mm x 60 mm	Set	55			
ii)	200 mm x 150 mm x 60 mm	Set	29			
	Sub total					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
4	LOW CURRENT SERVICES					
4.01	Supplying and fixing of following size of steel surface/recessed Including cutting the wall and making good the same in case of recessed conduit as required					
i)	20mm	Metre	2660			
ii)	25mm	Metre	1830			
iii)	32mm	Metre	930			
4.02	Supply and fixing metal box of following size / modules, GI box along with modular base & cover plate for modular switches in recess etc as required.					
i)	1 or 2 Module (75mm X 75mm)	each	997			
4.03	Supplying and drawing following pair, 0.5 sq.mm FR PVC insulated copper conductor, unarmoured telephone cable in the existing surface/ recessed steel/ PVC conduit as required.					
i)	2 Pair	Metre	3625			
4.04	Supply and laying of following sizes of 0.61 mm diameter tinned copper conductor (ATC) PVC insulated and PVC sheathed unarmoured on surface/ cable tray or through existing trench/pipe etc. completed as required.					
i)	10 Pair	Metre	1060			
ii)	20 Pair	Metre	300			
4.05	Supplying and drawing co-axial TV cable RG-11 grade, 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	250			
4.06	Supplying and drawing co-axial TV cable RG-6 grade 0.7mm solid Cu. 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	1850			
4.07	Supply and laying of following sizes of CAT - 6 computer data cable tinned copper conductor (AT & T) PVC insulated cable in existing recessed steel conduit completed as required including the termination at both end complete as required.	Metre	1900			
4.08	Supplying and fixing following modular switch /socket on the exiting modular plate & switch box including connection but excluding modular plate etc as required .					
i)	Telephone socket outlet	each	380			
ii)	T.V. outlet	each	309			
iii)	Computer data outlet	each	308			
4.09	Supplying, testing and commissioning of following sizes of telephone Krone type distribution Board in P.V.C hinged type box duly painted complete with tag block etc. including termination's of cables etc. as required.					
i)	10 Pair	Set	30			
ii)	20 Pair	Set	8			
iii)	80 Pair	Set	2			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
iv)	140 Pair	Set	2			
4.10	Deigning fabricating, installing and commissioning of floor / ceiling junction boxe fabricating out of 2 mm thick C.R.C.A steel sheet in following sizes with cover plate of 3 mm thickness painted from inside as well as outside with proper knock outs for conduit:					
i)	150 mm x 150 mm x 60 mm	Set	51			
ii)	200 mm x 150 mm x 60 mm	Set	25			
4.11	Supplying and fixing of following way splitter for Cable TV system in Box.					
i)	6 way	Set	33			
	Sub total					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
5	SUPPLYING OF LIGHT FIXTURES & FANS					
5.01	Supply of following light fixture with Electronic ballast, capacitor, lamp, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
i)	1 x 28 watt box type surface mounting type fluorescent light fixture complete with all accessories as required (eq to Philips Cat. No. TCH 207 1 X TL5-28W HF)	No.	716			
ii)	2 x 28 watt mirror optics surface mounting type fluorescent light fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers etc. complete with all accessories as required (Eq. To Philips cat. no TCS 350/228 C5 HF).	No.	18			
5.02	Supply of following light fixture with Electronic ballast, capacitor, lamp, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
i)	2 x 11 watt mirror optics surface mounting type CFL fixture in white finish with anodized high purity aluminium reflector, serrated aluminium cross louvers complete with control gear and all accessories as required (eq. To Philips cat. no. FCS518/211).	No.	108			
ii)	1x 9 watt outdoor bulkhead surface mounting light fixture complete with glass cover, wire guard, gasket, holder, GLS lamp etc. as required (Eq to Philips cat. No. NXC 101).	No.	333			
iii)	1 x 11 watt surface mounting type CFL fixture in white finish with cover and reflector complete with control gear and all accessories as required (eq. To Philips cat. no. FMS 200 / 211).	No.	1012			
5.03	Supply of following sizes of ceiling fan complete with double ball bearing. motor, blades, down rod, canopy, capacitor, regulator etc. suitable for operation on 230 volts 50 Hz A.C. supply complete as required.					
i)	Size 1200mm.	No.	618			
ii)	Size 1400mm.	No.	15			
5.04	Supply of 450mm dia wall mounted fan complete with double ball bearing. motor, blades, canopy, capacitor, regulator etc. suitable for operation on 230 volts 50 Hz A.C. supply complete as required.	No.	10			
5.05	Supply of following sizes of heavy duty exhaust fan suitable for single phase 230 volts, 50 Hz AC supply complete with motor, capacitor, louvers / shutters etc. complete as required.					
i)	230mm dia., 1400 RPM Exhaust fan.	No.	355			
ii)	450mm dia., 1400 RPM Exhaust fan.	No.	12			
	Sub-Total					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
6	RECEIVING AND FIXING OF LIGHT FIXTURES & FANS					
6.01	Installation, testing and commissioning of prewired fluorescent/compact fluorescent fittings, of all types complete with all accessories and tube etc. directly on ceiling / wall, including connections with 1.5 sq.mm.FR PVC insulated, copper conductor, single core cable etc. as required.	No.	2163			
6.02	Installation, testing and commissioning of ceiling fan and regulator including wiring the down rod of standard length (Up to 30 cm.) with 1.5 sq.mm. PVC insulated copper conductor single core cable etc. as required.	No.	643			
6.03	Installation of exhaust fan up to 230mm sweep in the existing opening including making the hole to suit the size of the above fan, making good the damage, connections, testing, commissioning etc. as required.	No.	367			
6.04	Extra for fixing the louvers / shutters complete with frame for exhaust fan of all sizes.	No.	367			
	Sub-Total					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
7	EARTHING AND MISCELLANEOUS ITEMS.					
7.01	Earthing with G.I. earth plate 600mm x 600mm x 6mm thick including accessories & providing mansony enclosure with cover plate having locking arrangement and watering pipe etc (but without or coke and salt). complete as required.	Each	10			
7.02	Extra using charcoal and salt for G.I. or copper plate earth. electrode as required.	Each	10			
7.03	Supplying and laying 25 mm x 5 mm G.I. strip at 0.50m. below ground level as strip earth electrode, including soldering etc. as required.	M.	250			
7.04	Providing and fixing 25mm x 5mm GI strip in 40 mm dia GI pipe from earth electrode as required.	M.	250			
7.05	Providing and fixing 25mm x 5mm GI strip on surface or in recess for connection etc. as required.	M.	500			
7.06	Providing and fixing MV 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 signal red colour on front side.	Each	20			
	Sub-Total					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
8	LT CABLE					
8.01	Supply of the following size XLPE insulated PVC sheathed aluminium conductor armoured cables as per IS:7098(part-1)					
i)	3 1/2 x 50 sq.mm	Metre	300			
8.02	Laying and fixing of following sizes XLPE insulated and PVC sheathed aluminium armoured conductor cable of 1.1 KV grade in following sizes on surface as required.					
i)	from 25 up to 120 sq.mm	Metre	300			
8.03	Supplying and making end termination with brass compression glands and aluminium lugs for following sizes of PVC insulated and PVC Sheathed/XLPE aluminium conductor cable of 1.1. kv grade as required.					
i)	3 1/2 x 50 sq.mm	Set	12			
	Sub-Total					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
10	LIFTS AND ELEVATORS					
10.01	Supplying, fixing, testing and commissioing of 8 Passangers lift, Duplex , speed 1 meter / sec, varaiaable voltage varaiaable frequency drive, microprocessor based duplex collective selective control with provision of attendant control operation, 4 stop and 4 opening, Stainless steel car enclosure in hair line finish, flourscent light and fans, Automatic car entrance center opening door in stain less steel hairlines finish, The car entrance shall be vaiable frequency door drive with infrared beam safety (fire rated door), Landing with Automatic centre opening door stain less steel hairline finish (fire rated door), Indicator for all landing floor positioning indicator for all landing, Emergency light and alarm, fireman switch intercom, Overload indicator in car (Audiovisual type), Automatic rescue device, Floor position indicator along with dirictional indicator at all landing, Brasual fixtures in COP & LOP.	Set	4			
	Sub total					

PROJECT NAME: PROPOSED LADY HARDINAGE MEDICAL COLLAGE AND ASSOCIATED HOSPITAL AT DELHI

Bill of Quantities For External Electrical Work

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
1.00	HT PANEL BOARD FOR 11 KV SUBSTATIONS					
1.01	11 KV THREE HT PANEL BOARD (RESIDENTIAL AREA SUBSTATION -1 & 2)					
	Supplying, erection, testing and commissioning of 630A, 11KV, 3 phase, 50 Hz. metal clad, dead front, 3 Board, VCB Panel, 350MVA repturing capacity having one incoming, and two outgoing as per specification and requirement.	Set	2			
	Sub-Total					
2.00	TRANSFORMER FOR 11KV/433 VOLTS SUBSTATIONS					
2.01	Supplying,, erection, testing and commissioning of 1000 KVA, 11 KV/ 433 volt, 3 phase, 4 wire 50 Hz. Dry Type cast resin copper wound Transformer for indoor duty with + 5 %, - 15% ON LOAD tap changer with cable box at primary and secondary end shall be co	Set	2			
2.02	Supplying,, erection, testing and commissioning of 400 KVA, 11 KV/ 433 volt, 3 phase, 4 wire 50 Hz. Dry Type cast resin copper wound Transformer for indoor duty with + 5 %, - 15% ON LOAD tap changer with cable box at primary and secondary end shall be con	Set	2			
	Sub-Total					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
3.00	11 KV CABLE / LT CABLE					
3.01	Supplying and laying of 3C x 240 sq.mm XLPE Al. armoured cable, 11 kV grade in Trench as per specification	Metre	200			
3.02	Supplying, fixing, testing and commissioning of 11 kV heat shrinkable, push on type cable end joint kit for indoor use at cable end of size 3 core 240 sq.mm. completed as per specification	Set	12			
3.03	Supply of the following size XLPE insulated PVC sheathed aluminium conductor armoured cables as per IS:7098(part-1)					
i	3 1/2 x 300 sq.mm	Metre	900			
ii	3 1/2 x 240 sq.mm	Metre	300			
iii.	3 1/2 x 185 sq.mm	Metre	500			
iv.	3 1/2 x 150 sq.mm	Metre	400			
v.	3 1/2 x 120 sq.mm	Metre	50			
vi.	3 1/2 x 95 sq.mm	Metre	200			
vii.	3 1/2 x 70 sq.mm	Metre	200			
viii.	3.5 x 50 sq.mm	Metre	300			
ix.	4 x 35 sq.mm	Metre	300			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
x.	4 x 25 sq.mm	Metre	200			
xi.	4 x 16 sq.mm	Metre	1500			
3.04	Laying and fixing of following sizes XLPE insulated and PVC sheathed aluminium armoured conductor cable of 1.1 KV grade in following sizes in Ground as required.					
i	upto 25 sq.mm	Metre	1700			
ii	from 120 upto 400 sq.mm	Metre	3150			
3.05	Supplying and making end termination with brass compression glands and aluminium lugs for following sizes of PVC insulated and PVC Sheathed/XLPE aluminium conductor cable of 1.1. kv grade as required.					
i	3 1/2 x 300 sq.mm	Set	14			
ii	3 1/2 x 240 sq.mm	Set	22			
iii.	3 1/2 x 185 sq.mm	Set	12			
iv.	3 1/2 x 150 sq.mm	Set	12			
v.	3 1/2 x 120 sq.mm	Set	4			
vi.	3 1/2 x 95 sq.mm	Set	6			
vii.	3 1/2 x 70 sq.mm	Set	10			
viii.	3.5 x 50 sq.mm	Set	6			
ix.	4 x 35 sq.mm	Set	10			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
x.	4 x 25 sq.mm	Set	8			
xi.	4 x 16 sq.mm	Metre	30			
3.06	Supply and making cable route marker with cement concrete 1:2:4 (1 cement : 2 course sand: 4 graded stone aggregate 20mm nominal size) of size 60 cm x 60cm at the bottom and 50cm x 50cm at the top with a thickness of 10 cm including inscreption duly engra	Each	50			
3.07	Supply and making cable route marker with 10cm x 10cm x 5mm thick G.I. plate with inscription thereon, bolted/ welded to 35mmx35mm 6mm angle iron, 60cm long and fixing the same in ground as required.	Each	20			
	Sub-Total					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
4.00	EARTHING AND MISCELLANEOUS ITEMS.					
4.01	Supply, Installation, Testing & Commissioning of long life, Maintenance Free Electrolytic Earthing System with 30 year service warranty with 10 feet Vertical "K" Type Copper Not less than 2" (50.8mm) ID and not less than 0.08" (2.03mm) wall thickness, whi	Each	10			
4.02	Supply, Installation, Testing & Commissioning of long life maintenance Free Electrolytic Earthing System with 30 year service warranty 10 feet Vertical GI electrode Not less than 2" (50.8mm) ID and not less than 0.08" (2.03mm) wall thickness, which shall	Each	26			
4.03	Supplying and laying 25 mm x 5 mm G.I. strip at 0.50m. below ground level as strip earth electrode, including soldering etc. as required.	Metre	100			
4.04	Providing and fixing 25mm x 5mm GI strip in 40 mm dia GI pipe from earth electrode as required.	Metre	50			
4.05	Providing and fixing 25mm x 5mm GI strip on surface or in recess for connection etc. as required.	Metre	100			
4.06	Providing and fixing 25mm x 5mm copper strip in 40 mm dia GI pipe from earth electrode as required.	Metre	50			
4.07	Providing and fixing 25mm x 5mm copper strip on surface or in recess for connection etc. as required.	Metre	100			
4.08	Providing and fixing 50mm x 6mm G.I strip in 80 mm dia GI pipe from earth electrode as required.	Metre	20			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
4.09	Providing and fixing 50mm x 6mm copper strip in 80 mm dia GI pipe from earth electrode as required.	Metre	20			
4.10	Providing and fixing 50mm x 6mm GI strip on surface or in recess for connection etc. as required.	Metre	50			
4.11	Providing and fixing 50mm x 6mm copper strip on surface or in recess for connection etc. as required.	Metre	50			
4.12	Providing and fixing 4.0 mm dia copper wire on surface or in recess for loop earthing alongwith existing surface / recessed conduit / submain wiring/ cable as required.	Metre	800			
4.13	Providing and fixing 6 SWG dia. GI wire on surface or in recess for loop earthing alongwith the existing surface / recessed conduit/ submain wiring / cable as required.	Metre	2000			
4.14	Providing and fixing MV 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 signal red colour on front side.	Each	50			
4.15	Supplying, fabrication and installation of MS fabricated cable support / ladder type cable tray cable tray / light fixture supports including welding groutig abd painting etc. as required	Kg	1000			
4.16	Supplying of non-skid rubber mat 12 mm thick and 900mm width ISI approved as required including cutting to required lengths	Metre	20			
4.17	Supplying of fire bucket painted red with stand and approved quality conforming to IS:254/1974	Each	2			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
4.18	Supplying and fixing danger plate 440 Volt, written in three languages as required	Each	10			
4.19	Supplying and fixing carbondioxide fire extinguisher type 4.5 kgs capacity of approved make with wall mounting bracket as	Each	10			
4.2	Supplying of first aid box as approved complete with standard kit as prescribed by Indian Red Cross.	Each	2			
4.21	Supplying and fixing of shock treatment chart written in English and Local language duly framed in glass as require.	Each	2			
	CABLE TRAYS					
4.22	Fabricating and installation following sizes of perforated MS cable Trays including horizontal and vertical bends, reducers, tees, cross members and others accessories as required and duly suspended from the ceiling with MS suspenders and including painti					
i.	100 mm width x 50 mm deep x 1.6 mm thickness.	Metre	100			
ii.	150 mm width x 50 mm deep x 1.6 mm thickness.	Metre	50			
iii.	300 mm width x 50 mm deep x 1.6 mm thickness.	Metre	50			
iv.	450 mm width x 50 mm deep x 2 mm thickness.	Metre	30			
	Sub-Total					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
5.00	BUS DUCT					
5.01	Supply, delivery, erection testing and commissioning of sandwich type insulated 415 V, 3 Phase, 4 wire, Aluminium Bustrunking including bends, flexible, end joints, earth bus etc. complete as required as per specification.					
i.	1600 Amp.	Metre	25			
	Sub-Total					
6.00	D.G. SET					
6.01	Supplying, installation, erection, testing and commissioning of water cooled Diesel Engine with rated capacity of 62.5 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	Set	1			
6.02	Supplying, installation, erection, testing and commissioning of water cooled Diesel Engine with rated capacity of 82.5 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	Set	1			
6.03	Supply, fixing and commissioning 990 ltrs capacity 16 SWG MS steel, Disel oil Tank with manhole, PVC gauge, inlet and outlet connections with gate valve, drain plug, piping between tank and engine vent etc. mounted on suitable MS staging to maintain gravi	Each	2			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	Sub-Total					
7.00	MAIN LT PANELS, FEEDER PILLARS, MAIN DISTRIBUTION BOARDS					
	Supplying, installation, testing and commissioning of M.V. cubical type totally enclosed dust, dump and vermin proof Main Distribution Boards / LT Panel and synchronising panel complete with bus bars, MV danger notice plate, Digital type Multifunction me					
7.01	Main LT Distribution Panel (Near play Ground)					
i	Main LT Distribution Panel (Near play Ground)					
	INCOMING:					
	2 nos. 800A 660V, 4P 50kA EDO ACB with Microprocessor based release having Overload, Short circuit and Earth fault Protection with Overvoltage and undervoltage protection.					
	2 nos. 0-500V Digital type Voltmeter with selector switch.					
	2 nos. 0-800A Digital type Ammeter with selector switch with CT's 800/5A					
	2 nos. Digital type Multifunction Meters to show KWH, KVAH, P.F. and Frequency.					
	2 sets of phase indicating lamps with MCB protection.					
	2 sets of indicating lamp to indicate OPEN, CLOSE, TRIP.					
	2 nos. Restricted earth fault relays.					
	2 nos. Tripping or Trip Free relays.					
	2 nos. Reverse Power relays.					
	2 nos Trip Circuit Supervision relays.					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	BUSBARS:					
	1000A TPN bus bars of aluminium alloy.					
	BUS COUPLER :					
	1 no. 800A 660V, 4P 50kA EDO ACB with Microprocessor based release having Overload, Short circuit and Earth fault Protection with overvoltage, undervoltage protection and ON/OFF/TRIP Indications with MCB.					
	OUTGOING:					
	2 nos. 250A 660V, TPN MCCB of 35kA with ON/OFF/TRIP Indicating Lamps with MCB					
	4 nos. 400A 660V, TPN MCCB of 35kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	2 no. 250A 660V, TPN MCCB of 35kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	4 nos. 63-100A 660V, TPN MCCB of 35kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB	Set	1			
ii.	Capacitor Panel - 1 & 2					
	INCOMER :					
	1 No 250A 660 Volts, TP MCCB					
	1 no. 0-250A Digital type Ammeter with selector switch with CT's 250/5A					
	1 Set of phase indicating lamp with MCB					
	BUS BARS:					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	400A TPN bus bars of aluminium alloy.					
	OUT GOING:					
	3 nos. 25kVAR capacitor bank with 63A TP MCCB and Contactor, one set of indicating Lights and Push Buttons.					
	2 nos. 12.5kVAR capacitor bank with 40A TP MCB and Contactor, one set of indicating Lights and Push Buttons.					
	1 nos. 10kVAR capacitor bank with 32A TP MCB and Contactor, one set of indicating Lights and Push Buttons.					
	2 nos. 5kVAR capacitor bank with 16A TP MCB and Contactor, one set of indicating Lights and Push Buttons.					
	1 no. Electronic type Auto matic power factor correction relay.	Set	2			
iii.	Feeder Pillar-1 (Type-II Residence)					
	INCOMING:					
	1 nos. 250A 660V, 4P MCCB of 35kA					
	1 set of phase indicating lamps with MCB protection.					
	BUSBARS:					
	400A TPN bus bars of aluminium alloy.					
	OUTGOING:					
	3 nos. 160A 660V, TP MCCB of 25kA	Set	1			
iv.	EM. SDB (RMO Quarters)					
	INCOMING:					
	1 nos. 125A 660V, 4P MCCB of 35kA with electronic trip unit for overload, short circuit and earth fault protection.					
	1 no. 0-500V Digital type Voltmeter with selector switch.					
	1 no. 0-150A Digital type Ammeter with selector switch with CT's 150/5A					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	1 no. Digital type Multifunction Meters to show KWH, KVAH, P.F. and Frequency.					
	1 set of phase indicating lamps with MCB protection.					
	1 sets of indicating lamp to indicate OPEN, CLOSE, TRIP.					
	BUSBARS:					
	300A TPN bus bars of aluminium alloy.					
	OUTGOING:					
	3 nos. 63A 660V, TPN MCCB of 25kA					
	2 nos. 40A 230V, DP MCB of 10kA					
	4 nos. 20A 230V, DP MCB of 10kA	Set	1			
v.	MDB (Common Services)					
	INCOMING:					
	1 nos. 400A 660V, 4P MCCB of 35kA with electronic trip unit for overload, short circuit and earth fault protection.					
	1 no. 0-500V Digital type Voltmeter with selector switch.					
	1 no. 0-400A Digital type Ammeter with selector switch with CT's 400/5A					
	1 no. Digital type Multifunction Meters to show KWH, KVAH, P.F. and Frequency.					
	1 set of phase indicating lamps with MCB protection.					
	1 sets of indicating lamp to indicate OPEN, CLOSE, TRIP.					
	BUSBARS:					
	600A TPN bus bars of aluminium alloy.					
	OUTGOING:					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	11 nos. 40-63-100A 660V, TPN MCCB of 25kA					
	1 nos. 125A 660V, TPN MCCB of 25kA					
	2 nos. 160A 660V, TPN MCCB of 25kA	Set	1			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
7.02	Main LT Distribution Panel (ESS-6) Near Servant Quarter					
i.	Main LT Distribution Panel (ESS-6) Near Servant Quarter					
	INCOMING:					
	2 nos. 1600A 660V, 4P 50kA EDO ACB with Microprocessor based release having Overload, Short circuit and Earth fault Protection with Overvoltage and undervoltage protection.					
	2 nos. 0-500V Digital type Voltmeter with selector switch.					
	2 nos. 0-1600A Digital type Ammeter with selector switch with CT's 1600/5A					
	2 nos. Digital type Multifunction Meters to show KWH, KVAH, P.F. and Frequency.					
	2 sets of phase indicating lamps with MCB protection.					
	2 sets of indicating lamp to indicate OPEN, CLOSE, TRIP.					
	2 nos. Restricted earth fault relays.					
	2 nos. Tripping or Trip Free relays.					
	2 nos. Reverse Power relays.					
	2 nos Trip Circuit Supervision relays.					
	BUSBARS:					
	2000A TPN bus bars of aluminium alloy.					
	BUS COUPLER :					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	1 no. 1600A 660V, 4P 50kA EDO ACB with Microprocessor based release having Overload, Short circuit and Earth fault Protection with overvoltage, undervoltage protection and ON/OFF/TRIP Indications with MCB.					
	OUTGOING:					
	2 nos. 630A 660V, TPN MCCB of 50kA with ON/OFF/TRIP Indicating Lamps with MCB					
	2 nos. 800A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	2 nos. 630A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	3 nos. 400A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	1 no. 160A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB					
	2 nos. 125A 660V, TPN MCCB of 50kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB	Set	1			
ii.	300kVAR Capacitor Panel - 1 & 2					
	INCOMER :					
	1 No 630A 660 Volts, TP MCCB					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	1 no. 0-600A Digital type Ammeter with selector switch with CT's 600/5A					
	1 Set of phase indicating lamp with MCB					
	BUS BARS:					
	800A TPN bus bars of aluminium alloy.					
	OUT GOING:					
	3 nos. 50kVAR capacitor bank with 125A TP MCCB and Contactor, one set of indicating Lights and Push Buttons.					
	5 nos. 25kVAR capacitor bank with 63A TP MCCB and Contactor, one set of indicating Lights and Push Buttons.					
	2 nos. 12.5kVAR capacitor bank with 40A TP MCB and Contactor, one set of indicating Lights and Push Buttons.					
	1 no. Electronic type Auto matic power factor correction relay.	Set	2			
iii.	EM. Panel (ESS-6)					
	INCOMING:					
	1 nos. 160A 660V, 4P MCCB of 35kA with electronic trip unit for overload, short circuit and earth fault protection.					
	1 no. 0-500V Digital type Voltmeter with selector switch.					
	1 no. 0-150A Digital type Ammeter with selector switch with CT's 150/5A					
	1 no. Digital type Multifunction Meters to show KWH, KVAH, P.F. and Frequency.					
	1 set of phase indicating lamps with MCB protection.					
	1 sets of indicating lamp to indicate OPEN, CLOSE, TRIP.					
	BUSBARS:					
	300A TPN bus bars of aluminium alloy.					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	OUTGOING:					
	4 nos. 100A 660V, TPN MCCB of 25kA with electronic trip unit for overload, short circuit and earth fault protection and set of CT's., Multi Function meter and ON/OFF/TRIP Indicating Lamps with MCB	Set	1			
iv.	EM. SDB Type-V residence					
	INCOMING:					
	1 nos. 100A 660V, 4P MCCB of 35kA with electronic trip unit for overload, short circuit and earth fault protection.					
	1 no. 0-500V Digital type Voltmeter with selector switch.					
	1 no. 0-100A Digital type Ammeter with selector switch with CT's 100/5A					
	1 no. Digital type Multifunction Meters to show KWH, KVAH, P.F. and Frequency.					
	1 set of phase indicating lamps with MCB protection.					
	1 sets of indicating lamp to indicate OPEN, CLOSE, TRIP.					
	BUSBARS:					
	150A TPN bus bars of aluminium alloy.					
	OUTGOING:					
	3 nos. 63A 660V, TPN MCCB of 25kA					
	2 nos. 40A 230V, DP MCB of 10kA					
	5 nos. 16A 230V, DP MCB of 10kA	Set	1			
v.	EM. SDB (RMO Quarters)					
	INCOMING:					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	1 nos. 100A 660V, 4P MCCB of 35kA with electronic trip unit for overload, short circuit and earth fault protection.					
	1 no. 0-500V Digital type Voltmeter with selector switch.					
	1 no. 0-100A Digital type Ammeter with selector switch with CT's 100/5A					
	1 no. Digital type Multifunction Meters to show KWH, KVAH, P.F. and Frequency.					
	1 set of phase indicating lamps with MCB protection.					
	1 sets of indicating lamp to indicate OPEN, CLOSE, TRIP.					
	BUSBARS:					
	150A TPN bus bars of aluminium alloy.					
	OUTGOING:					
	3 nos. 63A 660V, TPN MCCB of 25kA					
	2 nos. 40A 230V, DP MCB of 10kA					
	4 nos. 20A 230V, DP MCB of 10kA	Set	1			
vi.	Feeder Pillar-1 (Type-III Residance)					
	INCOMING:					
	1 nos. 400A 660V, 4P MCCB of 35kA					
	BUSBARS:					
	600A TPN bus bars of aluminium alloy.					
	OUTGOING:					
	3 nos. 160A 660V, TP MCCB of 25kA	Set	1			
vii.	Feeder Pillar-2 (Type-IV Residance)					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	INCOMING:					
	1 nos. 630A 660V, 4P MCCB of 35kA					
	BUSBARS:					
	600A TPN bus bars of aluminium alloy.					
	OUTGOING:					
	3 nos. 314A 660V, TP MCCB of 25kA	Set	1			
viii.	Feeder Pillar-3 (Type-V Residence)					
	INCOMING:					
	1 nos. 800A 660V, 4P MCCB of 35kA					
	BUSBARS:					
	1000A TPN bus bars of aluminium alloy.					
	OUTGOING:					
	3 nos. 400A 660V, TP MCCB of 25kA	Set	1			
ix.	Feeder Pillar-4 (Servent Quarters)					
	INCOMING:					
	1 nos. 125A 660V, 4P MCCB of 35kA					
	BUSBARS:					
	300A TPN bus bars of aluminium alloy.					
	OUTGOING:					
	3 nos. 100A 660V, TP MCCB of 25kA	Set	1			
7.03	Supplying, delivery, erection testing and commissioning of the following for metering and protection.					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
a.	Lead acid 24 V storage battery of suitable ampere hour capacity suitable for 33 kV Panels in HT panel room.					
b.	Float Trick charger suitable for above items for 30 volts DC.					
c.	DC distribution board suitable for above application to including tripping, closing and indication etc.					
d.	Control cabling between DC distribution panel to the HT panel with cable size 4c x 1.5 sq.mm copper cable .					
e.	Control cabling between Transformer and panel using armoured PVC insulated copper conductor of appropriate cores for indication and alarm etc.	Set	2			
	Sub-Total					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
8.00	E.P.A.B.X					
8.01	Supply, fixing, testing and commissioing of 100 Pair Armoured Jelly Filled Cable in existing hume pipe or duct or HDP pipe.	Rmt	200			
8.02	Supply, fixing, testing and commissioing of 300 Pair Armoured Jelly Filled Cable in existing hume pipe or duct or HDP pipe.	Rmt	100			
8.03	Supply, fixing, tsting and commissioing of HDPE pipe, 40mm.	Rmt	200			
8.04	Supply, fixing, tsting and commissioing of HDPE DWC duct, 120mm.	Rmt.	100			
8.05	Supply, fixing, tsting and commissioing of Couplers for HDPE DWC duct, 120mm.	Rmt.	20			
8.06	Supply, fixing, tsting and commissioing of ISDN EPABX system for Housing - TEC/DOT approved equipped as below and expandable upto 800 ports as per specification and requirement.:					
	Duplication of CPU, Controller card Power Supply					
	DC Power supply operated					
	ADSL, HDSL, VDSL & wifi ready					
	ISDN PRI lines (30 Ch.)					
	Digital Phones - 24 nos.					
	Analog Phones - 600 nos.					
	4 Ports Voice Mail System					
	FCBC with duplication with battery bank for 4 hrs back up	Set	1			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	Sub-Total					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
9.00	EXTERNAL LIGHTING					
9.01	8 mtrs GI High pole					
i.	Supply, fixing and commissioning of octagonal poles of 8 mtrs high bottom diameter 145mm and top diameter 80mm, 3mm thick Hot Dip Galvanized to give average 65 micron thickness with single arm bracket 1000mm long complete with civil work and specification	Each	70			
ii.	Supply, fixing and commissioning of octagonal poles of 8 mtrs high bottom diameter 145mm and top diameter 80mm, 3mm thick Hot Dip Galvanized to give average 65 micron thickness with double arm bracket 1000mm long complete with civil work and specification	Each	2			
9.02	Supply, fixing and commissioning of 16 mtr high High Mast e Hot Dip Galvanized to give average 65 micron thickness complete as per specification.	Each	4			
9.03	Supply, fixing and commissioning of 50mm dia 4 mtrs. High Class - B GI pole octagonal poles complete as required.	Each	72			
9.04	Supply, fixing, testing and commissioning of 1 x 150 watt HPSV GEN X Pole mounting type light with lamp fixture, heat resistance & toughened glass cover, Precision optics reflector etc.complete with all accessories as required complete similar to. (Cat No	Each	74			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
9.05	Supply, fixing, testing and commissioning of 1 x 400 watt HPSV Pole mounting type light with lamp fixture, heat resistance & toughened glass cover, Precision optics reflector etc.complete with all accessories as required complete similar to. (Cat No.1 x 4	Each	24			
9.06	Supply, fixing, testing and commissioning of 1 x 18 watt CFL out door decorative bollard luminaire, complete all accessories including acrylic cover, anodised aluminum louvers and powder coated aluminum housing, Height 3ft.(Cat no.GE CFL E 1x18 BO L(ELVIS	Each	10			
9.07	Supply, fixing, testing and commissioning of 1 x 80 watt out door weather poof luminaire.power coated housing with all accessories as required similar to(Eq. To G.E cat. no GE P E 1 x 80).	Each	6			
9.08	Supply, fixing, testing and commissioning of 1 x 70 watt Post Top Lantern similar to (Eq. To G.E SE 1X70 PO HDP).	Each	72			
9.09	Supplying, installation, testing and commissioning of M.V. cubical type totally enclosed dust, dump and vermin proof EX. Light Feeder Pillar for outdoor duty-1 complete with canopy and lockable doors bus bars, MV danger notice plate, Digital type Multifun					
i.	EX. Light Feeder Pillar for outdoor duty					
	INCOMER :					
	1 no. 125A 660 Volts, TP MCCB 25kA with Thermal magnetic trip unit and ON, OFF, TRIP Indicating lamps.					
	1 no. 110A 4P Contactor with timer					

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
	1 set of Phase indicating lamps with MCB					
	BUS BARS:					
	300 A TPN bus bars of aluminium alloy.					
	OUT GOING:					
	20 nos. 20A DP MCB of 10kA.					
	5 nos. 25A TPN MCB of 10kA.	Set	2			
9.10	Supply of the following size XLPE insulated PVC sheathed aluminium conductor armoured cables as per IS:7098 (part-1)					
i.	3 1/2 x 50 sq.mm	Metre	100			
ii.	4 x 25 sq.mm	Metre	100			
iii.	4 x 16 sq.mm	Metre	100			
iv.	2 x 16 sq.mm	Metre	3000			
v.	2 x 6 sq.mm Copper Cable	Metre	250			
9.11	Laying and fixing of following sizes XLPE insulated and PVC sheathed aluminium armoured conductor cable of 1.1 KV grade in following sizes in Ground as required.					
i)	up to 25 sq.mm	Metre	1500			
ii)	from 25 up to 120 sq.mm	Metre	40			
9.12	Laying of one number additional XLPE power cable of 1.1 KV grade of following sizes direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required.					
i	upto 25 sq.mm	Metre	1000			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
ii.	from 25 upto 120 sq.mm	Metre	40			
9.13	Laying of one number XLPE power cable of 1.1 KV grade of following sizes in the existing RCC/HUME/STONEWARE/METAL pipe as required.					
i	upto 25 sq.mm	Metre	450			
ii.	from 25 upto 400 sq.mm	Metre	10			
9.14	Laying of one number XLPE power cable of 1.1 KV grade of following sizes in the existing masonry open duct as required.					
i	upto 25 sq.mm	Metre	500			
ii.	from 25 upto 120 sq.mm	Metre	10			
9.15	Supplying and making outdoor end termination with brass compression glands and aluminium lugs for following sizes of PVC insulated and PVC Sheathed/XLPE aluminium conductor cable of 1.1. kv grade as required.					
i.	3 1/2 x 50 sq.mm	Set	4			
ii.	4 x 25 sq.mm	Set	8			
iii.	4 x 16 sq.mm	Set	8			
iv.	2 x 16 sq.mm	Set	30			
v.	2 x 6 sq.mm Copper Cable	Set	20			

Item No	Description Of Item	Unit	Total Qty	Rate in Figures (Rs)	Rate in Words	Amount in Fig (Rs)
9.16	Earthing with G.I. Earth pipe 4.5 mtr. Long x 40mm dia. including accessories & providing masonry enclosure with cover plate having locking arrangement and watering pipe etc(but without or coke and salt). complete as required.	Set	20			
9.17	Extra using charcoal and salt for Pipe earth electrode as required.	Set	20			
9.18	Providing and fixing 6 SWG dia. GI wire on surface or in recess for loop earthing along with the existing surface / recessed conduit/ sub main wiring / cable as required.	Metre	5000			
Sub-Total						

Construction of Residential units and RMO Accommodation with Associated Services under phase-1 for Comprehensive Redevelopment Plan for Lady Hardinge Medical College & Associated Hospitals (LHMC), New Delhi-110001

SUMMARY

- 1. Cost of Civil Works & Services.** **Rupees**

CIVIL & RCC

PLUMBING

FIREFIGHTING

- 2. Cost of Electrical Works.**

INTERNAL ELECTRICAL

EXTERNAL ELECTRICAL

Discount

Total Cost :-

(Signature of the Bidder)