

ALL INDIA INSTITUTE OF MEDICAL SCIENCES,
ANSARI NAGAR, NEW DELHI

**Tender
For**

**Construction of Hostel Block 1, 2 and 3 including Maintenance
for AIIMS within AIIMS campus, Ansari Nagar, New Delhi**

Bill of Quantity

Volume-V

JUNE 2011



HSCC (INDIA) LTD.
(CONSULTANTS & ENGINEERS FOR MEGA HOSPITALS & LABORATORIES)
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PQ No. HSCC/BU-HP-II/2010

**Construction of Hostel Block 1, 2 and 3 including Maintenance
for AIIMS within AIIMS campus, Ansari Nagar, New Delhi**

SUMMARY SHEET

TOTAL QUOTED AMOUNT (in Rs.)

1. Civil

(including PHE & Fire Fighting)

2. Electrical

3. HVAC

Total

CIVIL - WORKS

**Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within
AIIMS campus, Ansari Nagar NewDelhi.**

ABSTRACT OF COST

S.No	DESCRIPTION OF WORK	Amount
1	EARTHWORK	
2	CONCRTE WORK	
3	RCC WORK	
4	BRICK WORK	
5	DOORS & WINDOWS	
6	STEEL WORK	
7	FLOORING	
8	CEILING & ROOFING	
9	FINISHING	
10	MISCELLANEOUS	
11	DEVELOPMENT	
12	SIGNAGE	
13	DISMENTLING AND DEMOLITION	
14	COMPREHENSIVE MAINTENANCE & OPERATION	
	TOTAL	

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
1.00	EARTH WORK					
1.01	Earth work in excavation by mechanical means (Hydraulic excavator)/manual means over areas (exceeding 30cm in depth, 1.5m in width as well as 10 sqm on plan) including disposal of excavated earth, lead up to 50m and lift up to 1.5m, disposed earth to be levelled and neatly dressed.					
a)	All kinds of soil	38564.00	cum			
b)	Ordinary rock	30.00	cum			
c)	Hard rock (blasting prohibited)	30.00	cum			
1.02	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.	150.00	cum			
1.03	Filling available excavated earth (excluding rock) in trenches, plinth, sides of foundations etc. in layers not exceeding 20cm in depth, consolidating each deposited layer by ramming and watering, lead up to 50 m and lift up to 1.5 m.	12599.84	cum			

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1	2	3	4	5	6	7
1.04	Extra for every additional lift of 1.5 m or part there of in.					
a)	All kinds of soil.	28658.00	cum			
1.05	Supplying and filling in plinth with river sand under floors including, watering. ramming consolidating and dressing complete.	130.00	cum			
1.06	Extra for disposal of excavated earth for additional lead beyond 50m or part thereof upto 200m					
a)	All kinds of soil	22000.00	cum			
	Total					

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1	2	3	4	5	6	7
2.00	Concrete Work					
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)	92.00	cum			
b)	1:4:8 (1 Cement : 4 coarse sand : 8 graded stone aggregate 40 mm nominal size).	596.00	cum			
c)	1:5:10 (1 cement : 5 coarse sand : 10 graded stone aggregate 40 mm nominal size)	312.00	cum			
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)	18.00	cum			
2.03	Providing and laying damp-proof course 40mm thick with cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 12.5mm nominal size).	272.00	sqm			

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1	2	3	4	5	6	7
2.04	Extra for providing and mixing water proofing material in CC/RCC work @ 1 kg per 50kg of cement.	71.00	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.	272.00	sqm			
2.06	Providing and laying in position cement concrete 1:5:10 (1 Cement : 5 fine sand : 10 broken brick bats 40 mm nominal size) including consolidation etc all complete.	639.00	Cum			
2.07	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.					
a)	50 mm thick	419.00	Sqm			
	Total					

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1	2	3	4	5	6	7
3.00	REINFORCED CEMENT CONCRETE					
3.01	Providing and laying in position ready mixed concrete manufactured in fully automatic batching plant and transported to site of work in transit mixer for a lead up to 10kms having continuous agitated mixer, manufactured as per mix design of specified grade for reinforced cement concrete work including pumping of R.M.C. from transit mixer to site of laying , excluding the cost of centering, shuttering finishing and reinforcement including cost of admixtures in recommended proportions as per IS : 9103 to accelerate/ retard setting of concrete, improve workability without impairing strength and durability as per direction of the Engineer - in - charge. M-25 grade Reinforced cement concrete by using 380kg of cement per cum of concrete. All works up to floor V level.	15450.00	cum			
3.02	Add or deduct for providing richer or leaner mixes respectively at all floor levels.					
i)	Providing M-30 grade concrete by using 400kg of cement per cum of concrete instead of M-25 grade B.M.C/ R.M.C..	6000.00	cum			

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1	2	3	4	5	6	7
3.03	Centering and shuttering including strutting, propping etc. and removal of form(Note: The contractor shall make adequate arrangement of shuttering materials for simultaneous working at two or more floors, to achieve the targets set for completion of the structure. Nothing extra is payable on this account.) for:					
a)	Foundations, footings, bases of columns, etc. for mass concrete.	611.00	sqm			
b)	Walls (any thickness) including attached pilasters, buttresses, plinth and string courses etc.	7458.00	sqm			
c)	Suspended floors, roofs, landings, balconies and access platform.	29850.00	sqm			
d)	Shelves (Cast in situ)	528.00	sqm			
e)	lintels, beams, plinth beams. girders. bressumers and cantilevers.	26785.00	sqm			
f)	Columns, Pillars, Piers, Abutments, Posts and Struts.	17839.00	sqm			
g)	Stairs, (excluding landings) except spiral-staircases	1267.00	sqm			
h)	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.	333.00	sqm			
i)	Edges of slabs and breaks in floors and walls. Under					
i)	20 cm wide	600.00	metre			
ii)	Above 20 cm wide	30.00	sqm			
j)	Extra for shuttering in circular work for					

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1	2	3	4	5	6	7
i)	columns	15.00	Sqm			
ii)	Beams	15.00	sqm			
k)	Weather shade, Chajjas, corbels etc., including edges.	1496.00	sqm			
3.04	Extra for additional height in centering, shuttering wherever required with adequate bracing, propping etc. including cost of decshuttering 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, <i>roofs</i> , landings, beams and balconies (Plan area to be measured).	2787.00	sqm			
3.05	Reinforcement for R.C.C. work including straightening, cutting, bending, placing in position and binding all complete.					
a)	Thermo-Mechanically Treated bars	2213536.00	Kg			
3.06	Extra for R.C.C./ B.M.C/ R.M.C. work above floor V level for each four floors or part thereof.	3523.00	Cum			
3.07	Deduct for using less cement than the quantity as provided in the item of batch mix concrete/RMC as arrived as per mix design.	150.00	Qtl			
	Total					

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1	2	3	4	5	6	7
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)	512.00	cum			
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)	6105.00	cum			
4.03	Half brick masonry with F.P.S. brick of class designation 75 in foundations and plinth in.					
a)	cement mortar 1:4 (1 cement: 4 coarse sand)	741.00	sqm			
4.04	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)	34341.00	sqm			
4.05	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).	35082.00	sqm			
4.06	Extra for brick work in superstructure above floor V level for each four floors or part thereof by mechanical means by lifting material using mobile crane.	3206.00	Cum			

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1	2	3	4	5	6	7
4.07	Extra for half brick masonry in superstructure, above floor V level for every four floors or part thereof by mechanical means by lifting material using mobile crane.	15906.00	Sqm			
4.08	Brick edging 7cm wide 11.4cm. deep to plinth protection with bricks of class designation 75 including grouting with cement mortar 1:4 (1 cement : 4 fine sand)	792.00	Metre			
	Total					

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1	2	3	4	5	6	7
5.00	DOORS, WINDOWS AND FITTINGS					
5.01	Providing and fixing aluminium work for doors, windows, ventilators, partitions and louvers with extruded built up standard tubular <i>sections</i> / appropriate Z sections/ sheet strips and other modular 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 / panelling, C.P. brass / stainless steel screws, all complete as per architectural drawings and the directions of Engineer-in-charge. (Glazing and panelling to be paid for separately) :					
5.01.1	For fixed portion					
a)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	49033.00	kg			

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1	2	3	4	5	6	7
5.01.2	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)	Powder coated aluminium (minimum thickness of powder coating 50 micron)	16458.00	kg			
5.02	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/spacer 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.	10146.00	kg			
5.03	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 of engineer-in-charge.					
a)	Pre-laminated particle board with decorative lamination on both sides.	15.00	Sqm			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.04	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-in-charge. (Cost of aluminium snap beading shall be paid in basic item) :					
a)	With float glass panes of 5.50 mm thickness	3293.00	sqm			
5.06	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 brass cover plate	3.00	each			
5.08	Providing and fixing powder coated aluminium grills made out with special extruded sections fixed with suitable means approved and as directed by Engineer in Charge including all complete.	10973.00	kg			

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1	2	3	4	5	6	7
5.09	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.	3785.00	sqm			
5.10	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. 5.09 above.	3785.00	sqm			
5.11	Extra of providing vision panel not exceeding 0.1sqm in all type of flush doors. (Cost of glass excluded). Over all area of doors shutters to be measured.					
a)	Rectalgarular of square	1893.00	sqm			
5.12	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).	75.00	sqm			

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1	2	3	4	5	6	7
5.13	Extra for Providing etching on glass panes in doors, windows shutters, partition etc in desired pattern complete as per drawing and as directed.(Area of etching shall be measured for payment)	15.00	sqm			
5.14	Providing & Fixing decorative high pressure laminated sheet of plain / wood grain in gloss / matt / suede finish with high density protective surface layer and reverse side of adhesive bonding quality conforming to IS : 2046 Type S including cost of adhesive of approved quality 1.0 mm thick.	7570.00	sqm			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.15	Providing and installation of fully insulated wooden fire rated shutter of 120min. fire rating conforming to BS: 476 part 22 and IS:3614 Part II as per the prototype tested and certified by CBRI Roorkee, of 55mm thickness, comprising of 75mm x 49mm hardwood internal timber frame work, with infill of 96 kg/m3, ceramic fiber blankets, coated with VIPER FR or equivalent intumescent coating on both sides for insulation. The coated insulation shall be sandwiched between 12mm thick, Non combustible Boards (Calcium Silicate) on both sides (edge to edge on internal Hardwood frame) and clad with 3mm thick commercial ply of approved quality & 1mm thick laminate of approved brand and manufacture on both sides, with 55mm x 14mm 2nd class teak wood lipping all round the shutter.					

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1	2	3	4	5	6	7
	The shutter is suitable for mounted on the door frame, as per the item given below.. Both frame and shutter shall be fitted with fire & smoke intumescent seal of Viper or equivalent make of size 20 x 4mm on all the three sides except bottom. The pasting of the ply/veneer/laminate should be done using automatic machine and should be free from any nails or perforations. The board shall be Resistant to vermin, mould growth, minor impact, abrasion and short term water attack. The shutter shall be fixed with the frame with the help of SS 304 grade ball bearing hinges of size 100x76x2mm with necessary screws and making cut out for vision panel. Provisions/reinforcement for fixing all fixtures shall be built in on the door prior to the supply.					
a)	Single/Double Shutter	471.00	sqm			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.16	Providing and fixing door frames as per BS: 476 part 22, IS:3614 Part II as per the prototype certified by CBRI Roorkee made out of 2nd class C.P. Teak Wood frame of section 140x65mm for fire resistant doors of 120 minutes fire rating, with heat activated intumescent fire seal strips of size 20 x 4 mm(for smoke sealing) provided in grooves on all three sides of the frame with one coat of approved brand of fire retardant primer including two coats of fire retardant paint FR 881or equivalent un thinned on cleared hard wood surface of door frames (@3.5 sq.m. per litre per coat) including preperation of base surface as per recommendations of manufacturer to make the surface fire retardant, including fixing the frame with 8 nos. 100 mm long, 10 mm dia metal dash fastners complete as per directions of the Engineer in charge NOTE:- cost of fire seal strips, dash fastners are included in the item. Nothing extra shall be paid if size of any component of material exceeds the limit mentioned in the item.	912.00	Metre			
	The rebate shall be of 20mm x 57mm in Door Frame to accommodate the shutter in frame					
5.17	Providing and fixing door Co-ordinator for coordination of double leaf doors as manufactures specifications.	156.00	Each			

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1	2	3	4	5	6	7
5.18	Providing & fixing of Fire-stop Fire sealing System mortar type of approved make for sealing of floors, wall openings for the purpose of compartmentation.The FPSS consists of 225mm thick slab casted with vermuclite based cementitious compound . The FPSS system must provide min. one hour fire rating as per IS 12458-1989 having CERTIFICATION from CBRI, Roorkee for 1 hr. Fire rating.	13.00	sqm			
5.19	Providing and fixing 6 mm thick pyroswiss extra or equivalent fire rated clear toughened glass of approved make, of 120 minutes fire rating to be fixed in vision panel including cost of fire ceramic tape and moulding/beading etc all complete	16.00	sqm			
	ALUMINIUM FITTINGS					
5.20	Providing and fixing IS : 3564 marked Aluminium die cast body tubular type universal hydraulic door closer with necessary accessories and screws etc. complete.	1882.00	each			
5.21	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)	300x16 mm	5.00	each			
b)	250x16 mm	5.00	each			

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1	2	3	4	5	6	7
5.22	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)	250x10 mm	1891.00	each			
b)	150x10 mm	8839.00	each			
5.23	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	3781.00	each			
b)	100 mm	30.00	each			
5.24	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	1891.00	each			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
5.25	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).	1882.00	each			
5.26	Providing and fixing stainless steel (SS 304 grade) adjustable friction windows stays of approved quality with necessary stainless steel screws etc. to the side hung windows as per direction of Engineer in-charge complete.					
a)	255 X 19 mm	6624.00	each			
5.27	Providing and fixing 100mm brass locks (best make of approved quality) for aluminium doors including necessary cutting and making good etc. complete.	3.00	each			
5.28	Providing and fixing aluminium casement windows fastener of required length for aluminium windows with necessary screws etc. complete.					
a)	Powder coated minimum thickness 50 micron aluminium.	6957.00	each			
5.29	Providing and fixing aluminium round shape handle of outer dia 100mm with SS screws etc. complete as per direction of Engineer-in-charge					

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1	2	3	4	5	6	7
a)	Powder coated minimum thickness 50 micron aluminium	6.00	each			
5.30	Providing and fixing of UL listed fire rated single/double leaf panic exit devices tested in accordance with BS EN 1125: 1997 & BS EN 179: 1997, EN 1670 (Corrosion Resistant), & BS 476 Part 22 (for fire rating) with min. one year warrantee.					
a)	Double Leaf	156.00	each			
5.31	Providing and fixing of fire rated heavy duty door closer tested in accordance with BS:476 Part 22 for fire rating) and BS EN 1154 with minimum one year warranty.	156.00	each			
5.32	Providing and fixing fire rated mortice lock with lever handle tested in accordance with European Standard EN12209 / DIN18251 and 80mm Long cylinder to EN1303 of approved brand and manufacturer having 1 year manufacturers warranty.	156.00	each			
5.33	Providing and fixing 300 mm long stainless steel grade 304 D type pull handle with necessary screws etc. complete.	312.00	each			
	Total					

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1	2	3	4	5	6	7
6.00	Steel Works					
6.01	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 steel windows by welding.	150.00	kg			
6.02	Providing and fixing circular Hexagonal cast iron or M.S sheet box for ceiling fan clamp of internal dia 140mm, 73mm height, top lid of 1.5mm thick M.S. sheet with its top surface hacked for proper bonding , top lid shall be screwed into the cast iron / M.S. sheet box by means of 3.3mm dia. round headed screws, one lock at the corners. Clamp shall be made of 12mm dia M.S. bar bent to shape as per standard drawing.	2016.00	Each			
6.03	Structural steel work riveted, bolted or welded in built up sections, trusses and framed work, including cutting, hoisting, fixing in position and applying a priming coat of approved steel primer all complete:	2840.00	kg			
6.04	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.	1500.00	Kg			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
6.05	Providing & fixing in position SS Railing for staircase/Ramps etc made out of 304 grade 16 SWG SS pipe 50 mm dia hand rail, baluster 900 mm high 32 mm dia at 900 mm centre to centre and every turn and 3 nos 12 mm dia id rails running along the railing including other modular sections like SS end Cap, base plate connector, cover plate of required thickness and fixing arrangement etc all complete as per drawing and diagram complete with buffing and polishing etc complete.The railing shall be modular type and weld free system of approved brand and manufacture. length of railing shall be measured for payment.					
a)	Cut out/ Ramp railing (900 mm high) as per enclosed drawing	1050.00	Mtr			
6.06	Providing & fixing in position SS Railing for balconies made out of 2 Nos. 304 grade 16 SWG SS pipe 50 mm dia pipes of required length including other modular sections like SS end Cap, base plate connector, cover plate etc as required and fixing arrangement etc all complete as per drawing and diagram complete with buffing and polishing etc complete.The railing shall be modular type and weld free system of approved brand and manufacture. Length of railing shall be measured for payment.					

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
a)	Balcony railing as per enclosed drawing	1811.00	Mtr			
6.07	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)	E.R.W. tube.	2604.00	Kg			
	Total					

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.00	Flooring					
7.01	Cement concrete flooring 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate) finised 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.	1450.00	sqm			
7.02	Cement plaster skirting (up to 30 cm height) with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a floating coat of neat cement.					
a)	18 mm thick.	147.00	sqm			
7.03	Providing and fixing glass strips in joints of <i>terrazo</i> / cement concrete floors.					
a)	40 mm wide and 4 mm thick.	3625.00	Metre			
7.04	Marble stone flooring/skirting 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)	Raj Nagar White	7123.00	sqm			
b)	Udaipur green marble	10293.00	sqm			
b)	Jaisalmer stone	1333.00	sqm			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.05	18mm thick Prepolished Granite (Base Rate 120/- Sqft) in Risers, skirting and dado/wall cladding over 12mm thick bed of cement mortar 1:3 (1 cement : 3 coarse sand) and jointed with grey cement including pointing with white cement mixed with pigment matching the shade of granite stone all complete and as directed.	713.00	sqm			
7.06	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) :					
a)	25 mm thick.	3752.00	sqm			
7.07	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.	52.00	sqm			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.08	Providing and fixing 1st quality ceramic glazed wall tiles conforming to IS : 15622 (thickness to be specified by the manufacturer) of approved make in all colours, shades except burgundy, bottle green, black of any size as approved by Engineer-in-Charge in skirting, risers of steps 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.	9145.00	sqm			
7.09	Providing and laying rectified Glazed Ceramic 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.	1737.00	sqm			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.10	Providing and laying polished vitrified floor and skirting, tiles in different sizes (thickness to be specified by the manufacturer) with water absorption's less than 0.08% and conforming to IS : 15622 of approved make in all colours and shades, laid on 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) including grouting the joints with white cement and matching pigments etc., complete					
a)	Size of Tile 60x60 cm	133.00	sqm			
7.11	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 upto 0.50 sqm	15.00	sqm			
ii	Area of slab over 0.50 sqm.	480.00	sqm			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
7.12	Extra for providing edge moulding to 18mm thick Granite 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.	640.00	metre			
7.13	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.	640.00	metre			
7.14	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.	594.00	Nos			
7.15	Chequered terrazo tiles 22 mm thick with graded marble chips of size up to 6 mm in floors jointed with neat cement slurry mixed with pigment to match the shade of the tiles including rubbing and polishing complete on 20 mm thick bed of cement mortar 1:4 (1 cement :4 coarse sand) :					
	Medium shade using 50%white cement 50% ordinary cement	818.00	sqm			

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1	2	3	4	5	6	7
7.16	Granite stone flooring with 18 mm thick granite (Base Rate Rs. 120/- Sqft) stone, rectangular shape, (minimum size of stone should be 0.45 sqm and one dimension not less than 700 mm) as per drawing or as per the pattern as approved by the client/ architect/ engineer, over 20 mm thick base of cement mortar 1:4 (1 cement : 4 coarse sand) laid and jointed with grey cement slurry mixed with pigment to match the shade of stone including rubbing and polishing complete.	211.00	Sqm			
7.17	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).	491.00	Cum			
7.18	P/L 8mm thick (EN13329) laminated Flooring including skirting (class use of 23/31 AC 3 with 0.2mm thick direct pressure laminated on top) plank size 1290 X 194 mm & groove construction with edge impregnate with seal to secure long lasting joints ,secured together with the help of suitable glue, conforming to EN 13329.	202.00	Sqm			

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1	2	3	4	5	6	7
	Total					

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.00	CEILING & ROOFING					
8.01	Providing and fixing at all height false ceiling including providing and fixing of frame work made of special sections power pressed from M.S. sheet and galvanised in accordance with zinc coating of grade 350 as per IS : 277 and consisting of angle cleats of size 25mm wide x 1.6mm thick with flanges of 22mm and 37mm at 1200mm centre to centre one flange fixed to the ceiling with dash fastener 12.5mm diax40mm long with 6mm dia bolts to the angle hangers of 25x25x0.55mm of required length, and other end of angle hanger being fixed with nut and bolts to G.I. channels 45x15x0.9mm running at the rate of 1200mm centre to centre to which the ceiling section 0.5mm thick button wedge of 80mm with tapered flanges of 26mm each having clips of 10.5mm at 450mm centre to centre shall be fixed in a direction perpendicular to G.I. channel with connecting clips made out of 2.64mm diax230mm long G.I. wire at every junction including fixing the gypsum board with ceiling section and perimeter channels 0.5mm thick 27mm high having flanges of 20mm and					

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1	2	3	4	5	6	7
	30mm long, the perimeter of ceiling fixed to wall/partition with the help of rawl plugs at 450mm centre to centre with 25mm long drive-all screws @ 230mm interval including jointing and fixing to a flush finish of tapered and square edges of the board with recommended filler, jointing tapes, finisher and two coats of primer suitable for board as per manufactures specification and also including the cost of making openings for light fittings, grills, diffusers, cutouts made with frame of perimeter channels suitably fixed all complete as per drawing and specification and direction of the Engineer in Charge but excluding the cost of painting with :					
a)	12.5 mm thick tapered edge gypsum board conforming to IS: 2095- Part I.	5830.00	sqm			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.02	Providing and fixing 8mm thick clear multi wall polycarbonate sheets of approved quality and shade in desired shape in roofing including the cost of EPDM gaskets , sealing tape , aluminium profile and all necessary accessories complete as per architectural drawings and as directed by Engineer incharge. The item includes designing the complete system and supplying & getting approved from client and / or reputed engineering institue like IIT etc. The detailed shop drawings including supplying structural design calculations based on relevent codal provisions and carrying out water penetration test as per standards followed in India.					
	The whole work is to be done through reputed and approved vendor having experience in polycarbonate work in Commercial/Govt/Corporate buildings as per architectural elevation drawings including filling of joints with silicon sealent and also with masonry/RCC work, at all heights including double heights, straight or curved etc. complete in all respect. (Plan Area shall be measured for the payment) (Framing to be paid seprately)	142.00	Sqm			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.03	Providing and laying water proofing treatment to vertical and horizontal surfaces of depressed pprtions of W.C., kitchen and the like consisting of :					
i)	1st 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.)	3964.00	sqm			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
8.04	Providing and laying integral cement based water proofing treatment including preparation of surface as required for treatment of roofs, balconies, terraces etc consisting of following operations: a) Applying a slurry coat of neat cement using 2.75 kg/sqm. of cement admixed with water proofing compound conforming to IS. 2645 and approved by Engineer-in-charge over the RCC slab including adjoining walls upto 300mm height including cleaning the surface before treatment. 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 to IS : 2645 and approved by Engineer - in - charge to required slope and treating similarly the					

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	adjoining walls upto 300 mm height including rounding of junctions of walls and slabs c) After two days of proper curing applying a second coat of cement slurry using 2.75kg/ sqm of cement admixed with water proofing compound conforming to IS : 2645 and approved by Engineer-in-charge. d) Finishing the surface with 20 mm thick jointless cement mortar of mix 1:4 (1 cement: 4 coarse sand) admixed with water proofing compound conforming to IS: 2645 and approved by Engineer-in-charge including laying glass fibre cloth of approved quality in top layer of plaster and finally finishing the surface with trowel with neat cement slurry and making pattern of 300x300 mm square 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 :					
a)	With average thickness of 120mm and minimum thickness at khurra as 65 mm.	3392.00	sqm			
	Total					
9.00	Finishing					
9.01	12 mm cement plaster of mix:					
a)	1:6 (1 cement: 6 fine sand)	50354.00	sqm			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
9.02	15 mm cement plaster on the rough side of single or half brick wall of mix:					
a)	1:6 (1 cement: 6 fine sand)	72891.00	sqm			
9.03	20 mm cement plaster of mix :					
a)	1:2:2 (1 cement: 2 coarse sand:2 Fine Sand)	28494.00	sqm			
9.04	6 mm cement plaster of mix:					
a)	1:3 (1 cement: 3 fine sand)	26092.00	sqm			
9.05	Neat cement punning	150.00	sqm			
9.06	Extra for plastering exterior walls of height more than 10 m from .ground level for every additional height of. 3 m or part thereof.	18254.00	sqm			
9.07	Providing and applying plaster of paris putty of 2 mm thickness over plastered surface to prepare the surface even and smooth complete	77444.00	Sqm			
9.08	White washing with lime to give an even shade:					
a)	New work (three or more coats)	250.00	sqm			
9.09	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.	77721.00	sqm			

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1	2	3	4	5	6	7
9.10	Applying one coat of cement primer of approved brand and manufacture on wall surface:					
a)	Cement primer.	77444.00	sqm			
9.11	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/1 0 sqm.	27336.00	sqm			
9.12	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.	620.00	sqm			
9.13	Wall painting with plastic emulsion paint of approved brand and manufacture to give an even shade:					
a)	Two or more coats on new work	77444.00	sqm			
9.14	Providing and fixing 24 gauge and 18mm mesh size chicken wiremesh at junction of concrete and brick work and other locations at all heights including cutting to required size and side laps of minimum 75mm and fixing in positions with nails/screws etc. as directed and as required at site.	1300.00	sqm			

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1	2	3	4	5	6	7
9.15	Finishing walls with Acrylic Smooth exterior paint of required shade:					
a)	New work (Two or more coat applied @ 1.67 ltr/10 sqm over and including base coat of water proofing cement paint applied @ 2.20 kg/10 sqm).	1300.00	sqm			
Total						

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1	2	3	4	5	6	7
10	Miscellaneous					
10.01	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	648.00	sqm			
10.02	Designing, supplying, fabrication and installation of semi unitised Structural glazing system in the form of fixed panels, using specially designed aluminium extruded sections, mullions and transoms having 25 micron Anodising of approved colour and shade and make with mullions fixed on the RCC beams/columns through adequately designed brackets including providing masking tape on the profiles for safety against external scratches on site complete with approved silicon sealant EPDM gasket etc. to make the structural glazing air tight and water tight as per standards and as per Architect's drawings and specifications. The design to be as per BIS code for required wind pressure IS: 875 part III and use of aluminium section alloy as per IS:8147.					

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1	2	3	4	5	6	7
a)	System design to strictly consider for thermal movements, air infiltration, water penetration, seismic movement and structural movement. Contractor to furnish shop drawings along with sequence of work for approval of Engineer-in-charge. The minimum section shall be 131x66x2mm and per sqmt weight shall be 10kg approx., the item shall be measured and paid for actual surface area of structural glazing/aluminium composite panel supported on the frame. The work shall be carried out by the specialised agency approved by Engineer in Charge.	87.00	SqM			

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1	2	3	4	5	6	7
10.03	Extra for providing & fixing 24mm made up thickness insulated glass over above corresponding item hermetically sealed with 6mm heat strengthend toughened solar control off line coated high performance temperable glass of approved colour having reflective soft coating and 6mm clear toughned float glass inside with 12mm dry air cavity between two glass panes separated by a hollow aluminium spacer bar with twin lines of micro holes as approved filled with molecular desiccant of approved make and using primary hot meld duly and secondary polysulphide or silicon sealant of approved make all complete over above item. (U value less than 2.85w/sqm k, shading cofficent less than 0.55, solar factor less than 0.25, light transmission minimum 25%)	87.00	Sqm			

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1	2	3	4	5	6	7
10.04	Providing and laying integral cement based treatment for water proofing on horizontal surface at all depth below ground level for under ground structures as directed by Engineer-in-Charge and consisting of : i) 1st layer of 22mm to 25mm thick approved and specified rough stone slab over a 25mm thick base of cement mortar 1:3 (1 cement : 3 coarse sand) mixed with water proofing compound conforming to IS:2645 in the recommended proportion over the leveling course (leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. ii) 2nd layer of 25mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. iii) Finishing top with stone aggregate of 10mm to 12mm nominal size spreading @ 8 cudm/sqm thoroughly embedded in the 2nd layer.					
a)	Using rough kota stone.	187.00	Sqm			

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1	2	3	4	5	6	7
10.05	Providing and laying integral cement based treatment for water proofing on the vertical surface by fixing specified stone slab 22 mm to 25mm thick with cement slurry mixed with water proofing compound conforming to IS:2645 in recommended proportions with a gap of 20mm (minimum) between stone slabs and the receiving surfaces and filling the gaps with neat cement slurry mixed with water proofing compound and finishing the exterior of stone slab with cement mortar 1:3 (1 cement : 3 coarse sand) 20mm thick with neat cement punning mixed with water proofing compound in recommended proportion complete at all levels and as directed by Engineer-in-charge :					
a)	Using rough Kota stone	201.00	Sqm			
10.06	Providing the following brand new vehicle at any time for exclusive use of engineer during currency of contract.. The number of vehicles and period shall be informed by the engineer as per requirement.The rate are inclusive of services of drivers, fuel, oil, lubrication, comnsumable stores and maintenance etc complete					
a)	Indica or equivalent as required	60000.00	Km			
10.07	Water proofing treatment by Chemical Injection system(preconstruction)					

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
a)	HORIZONTAL SURFACE (RAFT SLAB)					
	A. Before the raft reinforcement is placed in position:					
	i) Applying Cement slurry (cement and polymer based water proofing compound) in proportion as per manufacturer specifications is spread on already laid PCC.					
	ii) Providing and laying 20mm thick cement mortar 1:4 (1 cement: 4 coarse sand) mixed with polymer based water proofing compound is over the slurry. Stone aggregates 12mm and down size is embedded at random.					
	iii) After 24 hours, spreading cement slurry (cement and polymer based water proofing compound) on the 1st layer of mortar.					
	iv) Providing and laying 2nd layer of 20mm thick cement mortar 1:4 (1cement:4 coarse sand) mixed with polymer based water proofing compound. Stone aggregate 12mm down is embedded at random.					
	v) After curing for two days, spreading cement slurry mixed with water proofing compound over the 2nd layer of cement mortar. Thereafter, the 3rd and final layer of 20mm thick cement mortar in 1:4 (1 cement: 4 coarse sand) mixed with water proofing compound is laid and finished smooth to receive raft foundation.					
	vi) The total thickness of the treatment from operation i to v will be about 60mm.					

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1	2	3	4	5	6	7
	B. After The reinforcement of raft is placed in position:					
	i) Providing and fixing 25mm dia GI threaded grouting nozzles of adequate length at the specified locations @ 1.50 metre c/c or as shown in the drawing all over the slab. The grouting nozzles are tied with reinforcement in such a manner as not to choke its end during concrete operations. The top of these nozzles protrudes above the raft concrete.					
	ii) After minimum 7 days of concreting, cement grout of cement and polymer based water proofing compound (non shrinkage grouting compound) in proportion as specified is injected, through these nozzles at a pressure of 2.5 to 3.0 Kg/Sq.cm.					
	iii) After grouting, top of the nozzles is cut and the space is filled with cement mortar 1:2 (1 cement: 2 coarse sand) mixed with polymer based water proofing compound. Area of raft treated shall be measured for payment					

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	(leveling course to be paid separately). Joints sealed and grouted with cement slurry mixed with water proofing compound. ii) 2nd layer of 25mm thick cement mortar 1:3 (1 cement: 3 coarse sand) mixed with water proofing compound in recommended proportions. iii) Finishing top with stone aggregate of 10mm to 12mm nominal size spreading @ 8 cudm/sqm thoroughly embedded in the 2nd layer.	3942.00	Sqm			
b)	Retaining Wall					
	i) Preparing the external surface and cement slurry mixed with polymer based water proofing compound.					
	ii) Providing and laying 25mm thick cement mortar in 1:4 (1 cement : 4 coarse sand) mixed with polymer based water proofing compound in two layers with chicken wire mesh 26 or 24 gauge 25mm size in between the two layers.					
	iii) Placing G.I. pipes at 1.5m c/c and at location as directed or indicated as in drawing and securely fastened to the reinforcement prior to shuttering and concreting or alternately by drilling holes (25mm to 32mm dia) in the concrete upto a depth as directed or as shown in the drawing all over the wall surface @ 1.50mt. c/c and as shown in the drawing. Treatment along all construction joints by providing nozzles, as above, shall also be executed.					

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	iv) Fixing 25mm dia G.I. threaded nozzles in these holes with cement mortar 1:4(1 cement: 4 coarse sand) mixed with water proofing compound.					
	v) Injecting cement grout of cement and polymer based water proofing compound (non shrinkage grouting compound) in proportion as per manufacturer specification or as specified in these nozzles at a pressure of 2.5 to 3.0 Kg/Sq.cm.					
	vi) After the grout the nozzles are cut and filled with cement mortar 1:2 mixed with polymer based water proofing compound in proportion as specified and finished smooth.					
	Area of walls treated shall be measured for payment	3360.00	Sqm			

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.08	Providing and laying APP (Atactic Polypropylene Polymer) modified prefabricated five layer 3mm thick water proofing membrane, black finished reinforced with non-woven polyester matt consisting of a coat of bitumen primer for bitumen membrane @ 0.40 ltr/sqm. by the same membrane manufacture of density at 25°C, 0.87-0.89 kg/ltr and viscocity 70-160 cps. Over the primer coat the layer of membrane shall be laid using Butane Torch and sealing all joints etc., and preparing the surface complete. The vital physical and chemical parameters of the membrane shall be as under : Joint strength in longitudinal and transverse direction at 23°C as 650/450N/5cm. Tear strength in longitudinal and transverse direction as 300/250N. Softening point of membrane not less than 150°C. Cold flexibility shall be upto -2°C when tested in accordance with ASTM, D - 5147. The laying of membrane shall be got done through the authorised applicator of the manufacturer of membrane :					
a)	3 mm thick	1320.00	Sqm			

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.09	Stone work (machine cut edges) for wall lining upto 10 m height etc. backing filled with a grout of 12mm thick cement mortar 1:3 (1 Cement : 3 coarse sand) and jointed with Cement mortar 1:2 (1 cement : 2 stone dust) including rubbing and polishing complete. (To be secured to the backing by means of cramps which shall be paid for separately)					
a)	25 mm thick Granite Stone of approved quality (Base Rate Rs 150/- per Sqft, Base rate is inclusive of polishing and/or flaming or sand blasting as required)	231.75	sqm			
b)	30 mm thick Gwalior sand stone slabs exposed face dressed and rubbed.	695.25	Sqm			
10.10	Providing and fixing adjustable stainless steel cramps of approved quality and of required shape and size adjustable with stainless steel nuts bolts and washer (total weight not less than 260 gms) for dry stone cladding fixed on frame work- at suitable location including making necessary recesses in stone slab, drilling required holes etc complete as per direction of the Engineer-in-charge.	1854.00	each			

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
10.11	Providing, cutting, bending and fixing 4mm thick aluminium composite cladding on external façade with water tight system either curved or straight or circular in plan. Skin material 0.5mm thick aluminium sheet (3005 H6) core material natural polyethylene, aluminium cladding panel to be of approved colour/shade fixed with extruded aluminium basic frame, angle cleats, weather sealants, rivets, GI brackets all as approved, using suitable chemical/anchor bolts on structural steel work including necessary accessories complete in all respects (frame work to be paid separately).					
	(Rate should be quoted considering enclosed particular specifications and provision of openable access panels for services wherever required) visible surface area shall be measured for payment. With weather silicon sealant of approved make, non-streaking/ staining weather sealant of approved make.					
	On curved or straight surfaces including cill and jambs.	232.00	Sqm			
	Total					

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11	Development					
11.01	Preparation of sub grade by 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 disposal of surplus earth lead upto 50 Metres.	4818.00	SQM			
11.02	Supplying & stacking of graded stone aggregate at site of size range.					
a)	90 mm to 45 mm	687.00	CuM			
b)	63 mm to 45 mm	609.00	CuM			
11.03	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.	918.00	Cum			

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.04	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).	459.00	Cum			
11.05	Extra for providing and mixing hard crete of approved quality as per manufacturer's specification in cement concrete.	1377.00	Litre			
11.06	Providing and laying in position bitumen hot sealing compound for expansion joints etc	11442.00	Per cm depth per cm width per m length			
a)	Using grade 'A' sealing compound.					

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.07	Providing and laying 60mm thick factory made cement concrete interlocking paver block of M -30 grade made by block making machine with strong vibratory compaction and of approved size and design/ shape laid in required colour and pattern over and including 50mm thick compacted bed of course sand, filling the joints with coarse sand etc. all complete as per the direction of Engineer-in-charge.	243.00	SqM			
11.08	Providing and laying at/ 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).	120.00	Cum			
11.09	Supplying & stacking sludge or manure at site including royalty & carriage upto 10 km (sludge measured in stacks will be reduced by 8% for payment)	189.00	Cum			

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.10	Spreading of sludge, dump manure or/and good earth in required thickness (Cost of sludge, dump manure or/ and good earth to be paid separately).	189.00	Cum			
11.11	Trenching in ordinary soil upto a depth of 60cm including removal and stacking of serviceable materials and then disposing of by spreading and neatly levelling with in a lead of 50m and making up the trenched area to proper levels by filling with earth or earth mixed with sludge or/and manure before and after flooding trench with water (excluding cost of imported earth, sludge or manure).	2250.00	Cum			
11.12	Rough dressing the trenched ground including breaking colds & uprooting weeds from the trenched are after 10 to 15 days of its flooding with water (including disposal of uprooted vegetation)	3750.00	Sqm			
11.13	Supply & sprinkling of Neem cake (at the rate of 6 kg per 100 sq. metres) and fine dressing the ground.	11250.00	Sqm.			

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Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
11.14	Supply & grassing with "Calcutta Doob" grass in rows 7.5cms, apart in either direction including fine dressing the ground to be levelled, supply and filling with good earth if needs, watering & maintenance of the lawn for 30 days or more till the grass forms a thick lawn free from weeds & fit for mowing. Anti-termite shall be applied with CHLOROPYRIPHOS (DURSBAN make or equivalent) at the rate of 2ml per litter in the first watering.	3750.00	Sqm.			
11.15	Supply of trees as per following botanical names and 4 feet height in 450 mm dia pot size:					
a)	TREES					
i	Grevillea robusta (Silver oak)	30.00	Each			
ii	Erythrina indica (Coral tree)	30.00	Each			
iii	Champne palm	30.00	Each			
iv	Alstonia Scholaris	30.00	Each			
v	Debonix regia (Gulmohar)	30.00	Each			
vi	Azadiractha indica (Neem)	30.00	Each			
vii	Ficus Benjamin	30.00	Each			
b)	SHRUBS					
i	Raphis Excelsa	30.00	Each			
ii	Yucca starlite	30.00	Each			
iii	Russelia juncia	30.00	Each			
iv	Karonda	30.00	Each			
v	Ficus longifolia	30.00	Each			
vi	Ficus black	30.00	Each			

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
vii	Galphima glauca	30.00	Each			
viii	Tabernemontana (verigated)	30.00	Each			
ix	Tabernemontana coronaria	30.00	Each			
x	Hamelia patens	30.00	Each			
	Total					

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
12	Signages					
12.01	Providing fabricating and fixing of signages of varying sizes and shapes using three mm thick PVC sheet at base with self adhesive coloured vinyl with graphicson top of glow tape complete including fixing on wall with screws and washers or hanging on ceiling with GI chain/GI Bar complete as per technical specifications and directions of Engineer.	11000.00	sq inch			
12.02	Providing and fixing of sinages of varying sizes and shapes using stainless steel sheet of minimum 16G thickness brush finish including engraving/etching of letters of required size filled with colour as desired by engineer,fixing with ss screws on walls	1500.00	sqinch			
12.03	Providing and fixing of sinages of varying sizes made of hollow aluminum sections of 150 mm width.with both hollow ends caped with suitable PVC/aluminium cover plates of required including hanging from ceiling by two adjustable suspenders of appropriate dia made of MS/GI bars ,lettering on vinyl sheet and pasting on it with pictogram complete as per technical specifications and directions of Engineer.	300.00	r/ft			

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Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
12.04	Providing and fixing of external sinages of varying sizes and shapes using GI sheet of atleast 22 G / aluminium sheet of suitable gauge complete as per technical specifications and directions of Engineer.	300.00	sqft			
12.05	Providing and fixing MS support frame for external signages made of structural steel including welding, primering, painting foundation with 1:1.5:3 cement concrete complete as per drawing, technical specifications and directions of engineer.	900.00	Kg			
12.06	Providing,fabricating and fixing neon glow signages of approved make with 100% handcraft glass tubes in letter shape of required colour of dia 9-12 mm including making the electrical wiring for illumination,transformer,connection complete as per technical specifications and directions of engineer.	150.00	sqft			
12.07	Providing,fabricating and fixing digitally printed translites(Technova) with multicolour design on roland /HP printers mounted on acrylic sheet 3mm further mounted on 22 gauge powder coated GI box with phylips /surya tubes inside including installtion on wall electric fittings etc on walls or otherwise complete .	300.00	sq ft			

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Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
12.08	Providing fabricating installation and fixing of backlit flex signages on Hanwa/star 18 ounce flex signages printed on high resolution printermounted on MS sheet on framed MS structure further fixed on 24 gauge MS /GI box with phylips/surya fittings inside including tranformers etc, electri wiring etc complete.	150.00	sqft			
12.09	Providing,fabricating installation and fixing of glass finish SS letters made of 20 gauge SS 304 sheet of required size and shape with neatly fabricated joints properly welded and grinded with all corners rubbed and polished with arrangement of screws in the letter itself for mounting on the walls including cost of screws and fixing complete as per directions of Engineer.	300.00	sqinch of each letter			
12.10	Providing fabricating and fixing of retroreflective vinyle sinages of varying sizes and shapes pasted on aluminium/GI sheet of 18 gauge with provision of fixing on MS structure complete as per technical specifications and directions of Engineer.	2000.00	sqinch			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
12.11	Providing fabricating installation and fixing of night vision sinages visible in complete darkness computer cut vinyle pasted on 3mm acrilic sheet and further fixed on wall/hanging from ceiling with the help of MS/GI rods complete as per technical specifications and directions of engineer.	300.00	sq inch			
12.12	Providing. fabricating and fixing of ACP aluminum composite plastic signs with 3 mm ACP sheet, using 1" ms pipe frame, with anti rust coating, back with G.I. and 5 sides with ACP sheet, lettering to be done with 5mm acrylic sheet and vinyls if needed backlit with Philips slim lite tube light fittings, acrylic letters to protrude out and be lit, together with a timer for switching on and off at required timings, including transportation and fixing at site as per the direction of the site engineer	300.00	sq.ft.			
12.13	Providing, fabricating and fixing of frontlit signages with solvent printing on 13 oz Hanwa/LG make flex printing on Vutek/ Sytec/ Edge print etc with UV cure inks with minimum life of 1 year for non fading, stretched on 25mm sq M.S. pipe, with 28 gauge tin sheet on the back for withstanding wind pressure with adequate lights in the front. The front lighting to be Metalite (white light) of 150 watts and Philips make to be fixed with metal arms at least 4ft protruding outside.	300.00	sq.ft.			

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
12.14	Providing, fabricating and fixing digital posters inside the hospitals on 5mm sun board sheet with 1440 dpi digital printing on Technova/ LG coated vinyl duly laminated and pasted on the sheet and fixed on the walls with help of steel studs or mirror screws as per the direction of the engineer	300.00	sq.ft.			
12.15	Providing fabricating and fixing of name plate pockets outside rooms made of 5mm opaque, milky white acrylic sheet in various sizes and with provision of fixing acrylic plates as per boq-1 on the same, the pockets should be well crafted using high quality adhesives and should be fixed on the wall with the help of screws etc. and as per the direction of the engineer.	300.00	sq.inch			
Total						

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Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
13	Demolition and Dismantling					
13.01	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material outside the site premises with all lead and lift to municipal dumping grounds as per direction of Engineer-in-charge.					
a)	In cement mortar	150.00	Cum			
13.02	Dismantling manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material outside the site premises with all lead and lift to municipal dumping grounds or as per direction of Engineer-in-charge :					
a)	Water bound macadam road	600.00	Sqm			
b)	bituminous road	600.00	Sqm			

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Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
13.03	Dismantling of existing building and other structures comprising of concrete, RCC, brick work, flooring, finishes, pavement, services etc.including taking out all doors, windows and ventilators,roofing, electrical,water supply, sanitary installations, rain water pipe with all fittings and fixtures etc. complete . The job also includes all excavations, fillings, levelling and stacking/depositing of all servicable materials at desired location and including the cost of transportation and disposal of all the unservicable materials and building rubbish/ malba to the nearest municipal dumping ground complete. The entire site of dismantled buildings/ structures shall be cleared and levelled as directed. Payment shall be made for plinth area of buildings at all floors to be dismantled.					
		132.00	Sqm			
i)	Servicable material shall be the property of the Owner and hence shall be deposited with the Owner's Store, for which nothing extra is payable. Serviceability/unserviceability of the material shall be decided by the Engineer- in-Charge and the Owner.					
ii)	An indicative drawing is enclosed here with for the convenience of bidders, However the bidders may actually verify the detail from the site. No claim on this shall be entertained.					

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.

Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
iii)	All malba and unserviceable materials obtained as a result of dismantling/demolition shall be disposed off by the bidder outside the premises to the nearest municipal dumping ground or at the bidder;s place, for which nothing extra is payable.					
iv)	The rate should include all costs involved in dismantling/demolition of the existing structures as shown in the enclosed drawing, disposal of unserviceable materials, clearing of site and taking all precautions so as not to harm the adjacent buildings and mankind in the premises.					
13.04	Felling trees of the girth (measured at a height of 1 m above ground level) including cutting of trunks and branches removing the roots and stacking of serviceable material and disposal of unserviceable material.					
a)	Beyond 60 cm girth upto and including 120 cm girth	9.00	each			
	Total					

Project Name: Construction of Hostel Block 1 , 2 and 3 including Maintenance for AIIMS within AIIMS campus, Ansari Nagar NewDelhi.


Bill of Quantity

Item No	Description of Item	Qty	Unit	Rate in Figures(Rs)	Rate in Words(in Rs)	Amount in Figures(in Rs)
1	2	3	4	5	6	7
	PART-B					
14.00	Operation and Maintenance work					
<p>(The quoted rates shall become a part of financial bid and shall be considered for the purpose of evaluation of financial bids of the bidder. The employer reserves the right for placement of order for this maintenance work. However the quoted rates by the bidders shall remain binding on the bidder. The BOQ items shall be read in conjunction with a technical specification,GCC,SCC and their quoted rates shall deem to include all works/requirements in the technical specification,GCC,SCC etc. The quoted amount of PART-B (Operation and Maintenance work) should not include the amount/liabilities/provisions already covered in respect of PART -A of the work during defect liability period.)</p>						
14.01	Providing comprehensive operation and maintenance charges of whole work executed under all different head of the main contract including equipments supplied and services executed for this projects from the date of hand over / completion of work whichever is later for a period of 5 years. The comprehensive operation and maintenance charges of whole work including equipments supplied shall include all the spare parts, consumables (excluding the cost of diesel required for runing of DG sets) , manpower, periodical changes of lubricants etc including replacement/repairs of all fittings, fixtures and parts etc as required to keep the building in usable condition with least disturbance to the occupants.					
a	1st Year	1	Job			
b	2nd Year	1	Job			
c	3rd Year	1	Job			
d	4th Year	1	Job			
e	5th Year	1	Job			
	TOTAL					

ABSTRACT

Name of Work: Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

S.No.	DESCRIPTION	Amount in figures (Rs.)	Amount in words (Rs.)	Remarks
A	INTERNAL PLUMBING ,			
1.00	SANITARY FIXTURES			
2.00	SOIL, WASTE AND VENT PIPES			
3.00	WATER SUPPLY			
4.00	SEWERAGE AND DRAINAGE			
5.00	EARTH WORK			
B	EXTERNAL PLUMBING ,			
6.00	RAIN WATER PIPING			
7.00	BOREWELL			
8.00	RAIN WATER HARVESTING			
9.00	SOLAR WATER HEATING SYSTEM & RECIRCULATING SYSTEM			
10.00	WATER SUPPLY ELECTRICAL PANEL			
	TOTAL			

Design & Engineering Department							
Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)							
Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)	
1	2	3		5	6	7	
	Note: Based on the tender drawing the agency has to prepare the internal & external plumbing shop drawing and obtain the approval of the same before execution						
1.00	SANITARY FIXTURES						
1.01	Providing&fixing water closet squatting pan(Indian W.C.Pan)with 100 mm sand cast iron P or S strap,10 Litre low level white P.V.C flushing cistern with manually controled device(handle lever) conforming to IS:7231 with all fittings&fixture complete including cutting and making good the walls & floors wherever required.						
a)	White vitreous china orissa pattern W.C. pan of size 580 x 440 mm with integral type foot rests.	Each	3.0				
1.02	Providing and fixing white vitreous china pedestal type water closet (European type) with seat and lid, 10 litre low level white vitreous flushing cistern and C.P. flush bend with fittings & C.I. brackets, 40mm flush bend, overflow arrangement with specials of standard make and mosquito proof coupling of approved municipal design complete including painting of fittings and brackets, cutting and making good the walls and floors wherever required:						
a)	W.C. pan with ISI black solid plastic seat & lid.	Each	555.0				

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
1.03	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.					
a)	One urinal basin with 5 litre white PVC automatic flushing cistern	Each	3.0			
1.04	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:					
a)	White vitreous china wash basin size 550x 400 mm with a pair of 15mm C.P. brass pillar tap.	Each	555.0			
1.05	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:					
	Kitchen sink without drain board					
a)	610x510 mm bowl depth 200 mm.	Each	227.0			
1.07	Extra for using coloured W.C. pan instead of white W.C pan					
a)	Orissa pattern W.C. pan 580x440 mm	Each	3.0			
1.08	Extra for using coloured pedestal type W.C. pan (European type) with low level cistern of same colour instead of white vitreous china W.C. pan and cistern	Each	555.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
1.09	Providing and fixing superior glass (of approved quality) and of required shape and size with plastic moulded frame of approved make and shape with 6 mm thick hard board backing.					
a)	Rectangular shape 453x357 mm	Each	555.0			
1.10	Providing and fixing 600x120x5 mm glass shelf with edges round of supported and anodised aluminium angle frame with C.P. brass brackets and guard rail complete fixed with 40 mm long screws, rawl plugs etc., complete.	Each	555.0			
1.11	Providing and fixing toilet paper holder .					
a)	Vitreous china	Each	555.0			
1.12	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.	Each	3.0			
1.13	Providing and fixing water Jet Nozzle with hose pipe and haif turn CP brass angle valve to be fitted with seat cover of european water closet complete in all respect of approved quality	Each	555.0			
1.14	Providing and fixing soap tray with CP brass lid and brackets fixed to wooden cleats with CP brass screws.(Jaquar model no.1131 or equivalent model of other approved make).	Each	1102.0			
1.15	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(Jaquar model no.1111 or equivalent model of other approved make)	Each	555.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
1.16	Providing and fixing brass coat hook of approved quality and make complete with material of fixing	Each	1110.0			
1.17	Extra for providing and fixing white vitreous china oval shape wash basin in place of normal 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					
a)	Counter top oval shape wash basin size 550x470 mm with centre tap hole, single 15 mm CP brass swan neck type pillar tap	Each	2228.0			
1.18	Extra for providing and fixing white vitreous china wall hung type water closet (European type) in place of normal pedestal type water closet with white solid plastic seat and lid concealed flushing cystem 9 ltrs capacity(min) approximate size(400x300x100)comprising of SS actuating panel with dual flush with fittings ,specials of standard make(Viega,ACO,Kohler,Jaquar) and complete including painting , cutting and making good the walls and floors wherever required:	Each	555.0			
SUB TOTAL(SANITARY FIXTURES)						

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
2.00	SOIL, WASTE AND VENT PIPES					
2.01	Providing and fixing soil, waste and vent pipes.					
a)	100 mm dia.					
a i)	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	8195.0			
b)	150 mm dia					
	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	390.0			
2.02	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.					
a)	for 100 mm dia. pipe	Each	1544.0			
c)	for 150 mm dia pipe	Each	85.0			
2.03	Providing and fixing bend of required degree with access door, insertion rubber washer 3 mm thick, bolts and nuts complete.					
a)	100 mm					
a ii)	Sand cast iron S&S as per IS-3989	Each	200.0			
c)	150 mm dia					
	Sand cast iron S&S as per IS-3989	Each	15.0			
2.04	Providing and fixing plain bend of required degree.					
a)	100 mm					
a ii)	Sand cast iron S&S as per IS:3989	Each	752.0			
b)	150 mm	Each	38.0			
2.05	Providing and fixing heel rest sanitary bend.					

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
a)	100 mm dia					
a.ii)	sand cast iron S&S as per IS-3989	Each	140.0			
2.06	Providing and fixing single equal plain junction of required degree with access door, insertion rubber washer 3mm thick, bolts and nuts complete.					
a)	100x100x100mm					
a.ii)	sand cast iron S&S as per IS-3989	Each	1156.0			
2.07	Providing and fixing single equal plain junction of required degree					
a)	100x100x100mm					
a.ii)	sand cast iron S&S as per IS-3989	Each	92.0			
2.08	Providing and fixing single unequal plain junction of required degree					
a)	150x150x100 mm					
a.ii)	sand cast iron S&S as per IS-3989	Each	36.0			
2.09	Providing and fixing door piece, insertion rubber washer 3mm thick, bolts and nuts complete					
a)	100 mm					
a.ii)	sand cast iron S&S as per IS-3989	Each	130.0			
2.10	Providing and fixing terminal guard.					
a)	100 mm	Each	140.0			
a.ii)	sand cast iron S&S as per IS-3989					

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
2.11	Providing and fixing collar					
a)	100 mm					
a.ii)	Sand cast iron S&S as per IS-3989	Each	1190.0			
b)	150 mm	Each	59.0			
2.12	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:					
a)	100 mm	Each	5495.0			
c)	150 mm	Each	270.0			
2.13	Providing Drip seal joint of approved make for the sand cast iron/centrifugally cast iron pipes where the workability of lead joint can be effected due to space constraints.					
a)	100 mm	Each	2400.0			
c)	150 mm	Each	60.0			
2.14	Providing and fixing M.S. stays and clamps for sand cast iron / centrifugally cast (spun) iron pipes of diameter :					
a)	100 mm	Each	140.0			
2.15	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:					
a)	100 mm inlet and 100 mm outlet					
a.i)	Sand cast iron S&S as per IS-3989	Each	1080.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
2.16	Cutting chases in brick masonry walls for following diameter sand cast iron/centrifugally cast (spun) iron pipes and making good the same with cement concrete 1:3:6 (1 cement:3 coarse sand:6 graded stone aggregate 12.5 mm nominal size) including necessary plaster and pointing in cement mortar 1:4 (1 cement: 4 coarse sand):					
a)	100 mm diameter pipe	Metre	230.0			
2.17	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:					
a)	100 mm diameter pipe	Metre	6270.0			
c)	150 mm diameter pipe	Metre	10.0			
2.18	Providing and fixing floor drain points formed out of 65 mm dia GI elbow, including with 75mm dia Stainless Steel grating with frame, embedded in floor, all complete as directed.	Each	551.0			
2.19	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.	Each	615.0			
2.21	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.					
a)	100 mm dia	Metre	1580.0			
2.22	Providing and fixing dash fastner made of rust proof plated steel for holding the soil/waste supply pipes complete in all respect					

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
a)	Dash fastner for pipe more than 25 mm dia to 150 mm dia pipe of size 25 mm dia and 75 mm long minimum & shall be capable of taking 6 tonnes load and also include the supporting angles 35x35x5 mm/ of required size or MS bars steel structures as per drawing.	Each	250.0			
2.23	Providing and fixing floor clean out plug consist of CI bend & GI socket heavy class with Brass cap & key for opening male threaded cap etc. including lead caulked to CI pipescomplete in all respects as per drawing/ sample approved by Engineer -in - ChargeFCO (floor clean out plug shall be flushed with floor finish					
	100 mm dia	Each	35.0			
2.24	Providing and fixing clean out plug consist of GI socket/nipple heavy class with threaded pludge for opening male threaded cap etc. including lead caulked to CI pipescomplete in all respects as per drawing/ sample approved by Engineer -in -Charge					
	100 mm dia/150 mm dia	Each	920.0			
2.25	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.	Each	1070.0			
2.26	Providing and fixing cPVC. pipes complete with cPVC 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.					
a)	32 mm dia nominal bore (Wash basin to floor trap/floor drain)	Metre	1104.0			
b)	40 mm dia nominal bore (Sink,Urinal to floor trap)	Metre	3.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
b)	50 mm dia nominal bore (Floor Drain to Floor Trap)	Metre	583.0			
2.3	Providing & fixing SS floor trap grating 143x143x5mm thick screwablewith SS fixed frame of 150x150 mm size as per approved make & model	Each	1070.0			
SUB TOTAL(SOIL, WASTE AND VENT PIPES)						

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
3.00	WATER SUPPLY					
3.01	Providing and fixing Chlorinated Polyvenyl 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 1.0 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					
a)	15 mm nominal outer dia pipes (SDR-11)	Metre	440.0			
b)	20 mm nominal outer dia pipes (SDR-11)	Metre	1175.0			
c)	25 mm nominal outer dia pipes (SDR-11)	Metre	1450.0			
d)	32 mm nominal outer dia pipes (SDR-11)	Metre	1585.0			
e)	40 mm nominal outer dia pipes (SDR-11)	Metre	1120.0			
f)	50 mm nominal outer dia pipes (SDR-11)	Metre	565.0			
g)	62.5 mm nominal outer dia pipes (SDR-11)	Metre	700.0			
3.02	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.					
a)	15 mm nominal outer dia pipes (SDR-11)	Metre	6900.0			
b)	20 mm nominal outer dia pipes (SDR-11)	Metre	1280.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
c)	25 mm nominal outer dia pipes (SDR-11)	Metre	70.0			
d)	32 mm nominal outer dia pipes (SDR-11)	Metre	3.0			
3.03	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.					
	External Work					
a)	25 mm nominal outer dia pipes (SDR-11)	Metre	60.0			
b)	40 mm nominal outer dia pipes (SDR-11)	Metre	60.0			
c)	50 mm nominal outer dia pipes (SDR-11)	Metre	60.0			
3.04	Providing and fixing G.I. pipes complete with G.I. fittings and clamps, including cutting and making good the walls etc.					
	Internal Work- Exposed on walls					
b)	80 mm dia nominal bore	Metre	835.0			
c)	100 mm dia nominal bore	Metre	30.0			
3.05	Making connection of G.I. distribution branch with G.I. main of following sizes by providing and fixing tee, including, cutting and threading the pipe etc. complete including obtaining approval for connection from DJB/Municipal corporation :					
a)	50 to 80 mm nominal bore (SDR-11)	Each	6.0			
3.06	providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end)					
a)	25 mm nominal bore	Each	274.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
b)	32 mm nominal bore	Each	244.0			
c)	40 mm nominal bore	Each	110.0			
d)	50 mm nominal bore	Each	35.0			
e)	65 mm nominal bore	Each	29.0			
g)	80 mm nominal bore	Each	27.0			
3.07	Providing and fixing ball valve (brass) of approved quality, High or low pressure with plastic floats complete					
a)	20mm	Each	8.0			
3.08	Providing and fixing gun metal non-return valve of approved quality (screwed end)					
a)	80 mm nominal bore					
a.i)	Horizontal	each	4.0			
b)	100 mm nominal bore					
bi)	Horizontal	each	4.0			
3.09	Providing and fixing brass ferrule with C.I. mouth cover including boring and tapping the main					
a)	25 mm nominal bore	Each	6.0			
b)	40 mm nominal bore	Each	8.0			
3.10	Providing and fixing unplasticised PVC connection pipe with brass unions:					
a)	45 cm length					
a i)	15 mm nominal bore	Each	2830.0			
3.11	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):					
a)	80 mm diameter	each	6.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
b)	100 mm diameter					
bi)	Class I	each	4.0			
3.12	Constructing masonry chamber 30x30x50 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement: 4 coarse sand) for stop cock, with C.I. surface box 100x100x75 mm (inside) with hinged cover fixed in cement concrete slab 1:2:4 mix (1 cement: 2 coarse sand:4 graded stone aggregate 20 mm 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					
a)	With F.P.s bricks	Each	10.0			
3.13	Constructing masonry chamber 60x60x75 cm, inside with 75 class designation brick work in cement mortar 1:4 (1 cement: 4 coarse sand) for sluice valve, with C.I. surface box 100mm top diameter, 160 mm bottom diameter and 180 mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement: 2 coarse sand:4 graded stone aggregate 20 mm 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					
a)	With F.P.s bricks	each	6.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
3.14	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					
a)	15 mm nominal outer dia pipes	Metre	440.0			
b)	20 mm nominal outer dia pipes	Metre	1175.0			
c)	25 mm nominal outer dia pipes	Metre	1450.0			
d)	32 mm nominal outer dia pipes	Metre	1585.0			
e)	40 mm nominal outer dia pipes	Metre	1120.0			
f)	50 mm nominal outer dia pipes	Metre	565.0			
g)	65 mm nominal outer dia pipes	Metre	700.0			
3.15	Painting G.I. /CPVC pipes and fittings with two coats of anti-corrosive bitumastic paint of approved quality.					
a)	25 mm diameter pipe	Metre	60.0			
b)	40 mm diameter pipe	Metre	60.0			
c)	50 mm diameter pipe	Metre	60.0			
3.16	Providing and filling sand of grading zone V or coarser grade all-round the G.I./CPVC pipes in external work					
a)	25 mm diameter pipe	Metre	60.0			
b)	40 mm diameter pipe	Metre	60.0			
c)	50 mm diameter pipe	Metre	60.0			
3.17	Providing and placing on terrace (at all floor levels) polyethylene water storage tank ISI:12701 marked with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank					
	Treated water Tank and Untreated water tank	per litre	60000.0			
3.18	Providing and fixing C.P brass bib cock of approved quality.					
a)	15 mm nominal bore	Each	555.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
3.19	Providing and fixing C.P. brass long nose bib cock of approved quality conforming to IS standards and weighing not less than 810 gms. (Marck, Jaquar, othello)					
a)	15 mm nominal bore	Each	1540.0			
3.20	Providing and fixing C.P. brass angle valve for basin mixer and geyser/cisterns points of approved quality conforming to IS:8931.					
a)	15 mm nominal bore	Each	2830.0			
3.21	Providing and fixing C.P. brass stop cock (concealed) of standard design and of approved make conforming to 18:8931.					
a)	15mm nominal bore.	Each	1104.0			
3.22	Providing and fixing PTMT ball cock of approved quality, colour and make complete with Epoxy coated aluminium rod with L.P./H.P.H.D. plastic ball.					
a)	40 mm nominal bore, 206 mm long weighin not less than 690 gms	Each	6.0			
b)	50 mm nominal bore, 242 mm long weighin not less than 1240 gms	Each	6.0			
3.23	Cutting holes upto 30x30 cm in walls including making good the same					
a)	with F.P.S bricks	Each	110.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
3.24	Cutting holes up to 15x15 cm in R.C.C. floors and roofs for passing drain pipe etc. and repairing the hole after insertion of drain pipe etc. with cement concrete 1:2:4 (1 cement:2 coarse sand: 4 graded stone aggregate 20 mm nominal size) including finishing complete so as to make it leak proof	Each		180.0		
3.25	Extra for providing wash basin mixer pillar tap in place of normal pillar tap	Each		615.0		
3.26	Extra for providing divertor type shower mixer with provision for shower & single tap in place of 2Nos. concealed stop cock & 2 Nos. CP long nose bib cock complete in all respect of approved make & model	Each		555.0		
3.27	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.					
a)	15 mm diameter	Each		260.0		
b)	20 mm diameter	Each		350.0		
3.28	Providing and fixing mosquito proof coupling of approved Municipal design for scour and vent pipes for RCC overhead tanks complete in all respects					
a)	20 mm diameter	Each		10.0		
c)	40 mm diameter	Each		4.0		
d)	50 mm diameter	Each		4.0		
3.29	Providing and fixing Pressure release valve of approved quality (screwed end)					
a)	32 mm nominal bore	Each		60.0		
b)	40 mm nominal bore	Each		60.0		

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
3.30	Providing and fixing C.P. brass Overhead (Rain Fall) shower (100mm) with arm and wall flange complete including cutting and making good the walls wherever required.	Each	555.0			
3.31	Providing & fixing 9 mm thick thermal insulation tubing of elastomeric flexible material on hot water supply/return pipes having hermetic blistered closed cell structure of expanded synthetic rubber over pipes/ fitting as per manufacturer's specifications etc.complete.					
a	15 mm to 25 mm diameter	Meter	1125.0			
3.32	Supplying, fixing, testing and commissioning of storage type water heater (Geyser) etc. with Stainless steel body , copper container , automatic thermostatic control electric element, pressure release valve, M.S. nuts and bolts etc. conforming to IS: 2082					
a)	25 Litre Capacity	Each	565.0			
b)	35 litre capacity	Each				
3.35	Providing & fixing water storage cooler of approved make and brand with SS body Complete in respects.(VOLTAS/ BLUE-STAR/ USHA SHRIRAM)					
	minimum flow rate of 20 ltrs. Per hour and storage capacity 40 ltrs.	Each	50.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
3.36	Providing and fixing approved make & suitable model of R.O. plant 25 ltrs. Per hour flow rate having capacity to treat the raw water having TDS 1200 ppm and not less than 40%. The treated water should have TDS less than 100 ppm and hardness less than 50 ppm. The operating voltage to 230 volt AC +/- 10% alongwith required capacity pump and solenoid valves, dry run protection of pump, automatic tank level control, inbuilt auto flush timer for periodic flushing of membranes, hydro pneumatic tank, over voltage and over current protection with switch mode power supply system antiscaling dosing system complete in all respects including installation and fittings with the following provisions: (IONIEXCHANGE/ KENT/AQUAPROCESS/Pantair)					
a)	10 micron polypropylene sediment pre filter					
b)	10 micron bacteriostatic activated carbon block on line micron filter with 5 micron rating					
c)	3 Nos. of reverse osmosis memberane with 0.0001 micron pore size energy saving poly amide type					
d)	UV lamp of minimum capacity 25 LPM and minimum lamp wattage 9W	Each	50.0			
3.38	Supplying, assembly, erection, testing and commissioning of level controllers based on level switches and necessary auxillary circuits included in the electric panel ,,including all accessories required for the performance of the system to the satisfaction of the engineer in charge complete including providing and fixing wiring from control panel to the level switches of required size,all interconnections as required . Note : The required transformers / associated equipment shall be designed keeping in view the acrual distance of various tanks from the control panel, particularly the distance of OH soft water tank from panel. The most suitable route of sensor cable travel between the panel and the tank shall have to be worked out by the contractor according to site conditions and in consultation with engineer in charge. All cabling / switch installation should be done in an easy to maintain manner.					

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
i)	One way one tank level controller as under. To switch on the tube well pump when the level of water in the UG raw water tank is low and to cut off the pump when the level in the underground raw water tank is high. (Approx. control cable requirement - 200 meters.)	Set	2.0			
	Two way - Two tank level controller as under.					
iii)	For Treated water supply Pumps(Operating between the under ground treated water tank near the plant room and the Terrace treated water tank . (Approx. control cable requirement - 125 meters.)	Set	2.0			
iv)	For Raw water supply Pumps(Operating between the under ground Raw water tank near the plant room and the Terrace Raw water tank . (Approx. control cable requirement - 125 meters.)	Set	2.0			
3.39	Providing and fixing gun metal foot valve with stainer of approved quality/model complete in all respect.					
	80 mm dia	each	4.0			
	100 mm dia	each	4.0			
3.40	Providing and fixing double seal type D.I. Manhole cover of 560 mm clear internal diameter of over all heavy duty with locking arrangement complete in all respects.	Each	24.0			
3.41	Testing Underground tank/Terrace Water Tank for water seepage before fixing of tiles or any other finishing including pressure grouting (if required). The tank should be disinfected and cleaned before use as per instruction of Engineer-in-charge(up to 3 lac ltr capacity of each compartment of tank)	set	5.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
3.42	Supplying, installing, testing and commissioning vertical online/horizontal centrifugal pumping set with mechanical seal, C.I. volute and SS impeller & SS shaft connected to a TEFC induction motor of suitable HP for 415 volts, 3 phase, 50 cycles A.C. supply with 150 mm dia pressure gauge with gunmetal isolation cock, vibration eliminating pads, base plate wiring upto panel and equipment for water level controller to start and stop the pump automatically at predecided levels of the water in the tank with provision of protection for dry run etc. complete in all respect including Y-strainer (The shop drawing or the pumps along with its characteristics curves, model and technical data etc. are to be submitted for approval before purchase of pump).					
	Domestic water pumps (Treated water transfer&Raw water Transfer pump to terrace tank)					
	Treated water transfer pump to terrace tank					
	Capacity 100 lpm					
	Head 70M	Each	4.0			
	Raw water transfer pump					
	capacity 100 lpm & Head 70m	Each	4.0			
	SUB TOTAL(Water Supply)					

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
4.00	SEWARAGE & DRAINAGE					
4.01	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.					
a)	100 mm diameter	Metre	70.0			
4.02	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:					
a)	100 mm diameter S.W. pipe/RCC NP2	Metre	70.0			
b)	150 mm diameter S.W. pipe/RCC NP2	Metre	250.0			
c)	250 mm diameter S.W. pipe/RCC NP2	Metre	400.0			
4.03	Providing and laying cement concrete 1:5:10 (1 cement:5 coarse sand:10 graded stone aggregate 40 mm nominal size) up to haunches of S.W. pipes including bed concrete as per standard design:					
a)	150 mm diameter S.W. pipe	Metre	150.0			
b)	250 mm diameter s.W. pipe	Metre	150.0			
4.04	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:.					
a)	150x100mm size P type					
a.i)	F.P.S. Bricks class designation 75	Each	55.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
4.05	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					
a)	150 mm dia R.C.c. pipe	Metre	400.0			
b)	250 mm dia R.C.C. pipe	Metre	550.0			
4.06	Constructing brick masonry manhole in cement mortar 1:4 (1 cement : 4 coarse sand), R.C.C. top slab with 1:2:4 mix (1cement : 2 coarse sand : 4graded stone aggregate 20 mm nominal size), foundation concrete 1:4:8 (1cement : 4 coarse sand : 8graded stone aggregate 40 mm nominal size), inside plastering 12mm thick with cement mortar 1:3 (1 cement : 3 coarse sand) finished with a 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 all complete as per standard design.					
a)	Inside size 90x80 cm and 45 cm deep including C.I. cover with frame (light duty) 455x610 mm internal dimensions total weight of cover and frame to be not less than 38 kg (weight of cover 23 kg and weight of frame 15 kg):					
a i)	With F.P.S. bricks with class designation 75	Each	30.0			
4.07	Extra depth for manholes					
a)	Size 90 x 80 cm					
a i)	With F.P.S. bricks class designation 75	Metre	3.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
4.08	Constructing brick masonry circular type manhole 0.91m internal dia at bottom and 0.56m dia at top in cement mortar 1:4 (1 cement :4 coarse sand), in side 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 all complete as per standard design:					
a)	0.91 m deep with S.F.R.C. cover and frame (heavy duty, HD-20 grade designation) 560mm internal diameter conforming to I.S. 12592, total weight of cover and frame to be not less than 182kg., fixed in cement concrete 1:2:4 (1 cement: 2 coarse sand: 4 graded stone aggregate 20 mm nominal size) including centering shuttering all complete. (Excavation, foot rests and 12mm thick cement plaster at the external surface shall be paid for separately) :					
a i)	With F.P.S. bricks class designation 75	Each	35.0			
4.09	Extra depth for circular type manhole 0.91m dia (at bottom) with beyond 0.91m to 1.67 m					
a)	With F.P.S. bricks class designation 75	Metre	3.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
4.10	Constructing brick masonry circular manhole 1.22 m internal dia at bottom and 0.56 m dia at top 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 nominalsize) finished with a floating coat of neat cement complete as per standard design.					
a)	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 nominalsize) including centering shuttering all complete. (Excavation, foot rests and 12 mm tick cement plaster at the external surface shall be paid for separately)					
a.i)	With F.P.S. bricks with class designation 75	Each	8.0			
4.11	Extra depth for circular type manhole 1.22 m internal dia (at bottom) with beyond 1.68 m to 2.29 m					
a)	With F.P.S. bricks with class designation 75	Metre	2.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
4.12	Providing and fixing orange colour safety foot rest of minimum 6 mm thick plastic encapsulated as per IS: 10910 on 12 mm dia steel bar conforming to IS: 1786 having minimum cross section as 23 mm x 25 mm and over all minimum length 263 mm and width as 165 mm with minimum 112 mm space between protruded legs having 2 mm tread on top surface by ribbing or chequering besides necessary and adequate anchoring projections on tail length on 138 mm as per standard drawing and suitable to with stand the bend test and chemical resistance test as per specification mark to be visible even after fixing, including fixing in manholes with 30x20x15 cm cement concrete block 1:3:6 (1 cement : 3 coarse sand : 6 graded stone aggregate 20 mm nominal size) complete as per design.	Each	120.0			
4.13	Making connection of drain or sewer line with existing manhole including breking 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 cemnet mortar 1:3 (1 cement:3 coarse sand) finished with a floating coat of neat cement and making necessary channels for the drain etc. complete (including obtaining approval from DJB/Municipal corporation					
a)	For pipes 100 to 230 mm dia	Each	3.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)						
Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
4.14	Providing sand cast iron drop connection externally for 60 cm drop from branch sewer line to main sewer manhole including inspection and cleaning eye with chain and lid sand cast Iron drop pipe and bend encased all-round with cement concrete 1 :5:1 0 (1 cement:5 fine sand: 10 graded stone aggregate 40 mm nominal size) with all centering and shuttering required, cutting holes in walls and making good with brick work in cement mortar 1:4 (1 cement: 4 coarse sand) plastered with cement mortar 1:3 (1 cement: 3 coarse sand) on, inside of the manhole wall lead caulked joints between sand cast iron pipes and fittings, stiff cement mortar 1:1 (1 cement: 1 fine sand) joints between sand cast iron tee and S.W. pipe, making required channels complete as per standard design and specifications:					
a)	150 mm dia. sand cast iron drop connection	Each	3.0			
	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:					
	With F.P.S. bricks	Each	130.0			
4.16	Constructing brick masonry open surface drain including factory made perforated RCC cover with edge protected with MS plate of 3 mm thick with bricks of class designation 75 in cement mortar 1:4 (1 cement : 4 fine sand) including earth excavation, 10cm thick bed concrete 1:5:10 (1 cement: 5 fine sand :10 graded stone aggregate 40mm nominal size) and 25mm thick cement concrete 1:2:4 (1 cement:2 coarse sand:4 graded stone aggregate 12.5 mm nominal size) for filling hunches including 12mm cement plaster 1:4 (1 cement:4 coarse sand) with a floating coat of neat cement inside the drain, its top and exposed side including disposal of surplus earth complete as per standard design.					

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
	25cm drain 30cm average depth					
a)	With F.P.S bricks	Metre	250.0			
	45cm drain 75cm average depth					
b)	With F.P.S bricks	Metre	350.0			
4.17	Supply, installing, testing and commissioning vertical fully floodable type submersible drainage pump in close coupled design single stage, suitable for handling minimum 12 mm dia solids for trans ferring waste water from sump to outside the building with float switch for automatic start and stop arrangement with panel and wiring, chain and pulley, mechanical seal complete in all respect as per instruction of the Engineer in charge . (The shop drawing or the pumps along with its characteristics curves, model and technical data etc. are to be submitted for approval before purchase of pump).					
	Material of Construction (M.O.C): Corrosion Resistant in general					
	: Casing — Cast Iron					
	: Impeller — Stainless Steel					
	: Shaft — Stainless Steel					
	: Bearings — Anti friction, prelubricated ball bearings, packed with grease for life.					
	Motor: — Dry Motor with built in over load protection					
	Protection - IP68.					
	Insulation Class - F					
	Duty of each pump					
	150 LPM against 12 M head	each	16.0			
	SUB TOTAL(SEWERAGE AND DRAINAGE)					

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
5.00	EARTH WORK					
5.01	Earth work in excavation by mechanical means (Hydraulic excavator)/ manual means over areas (exceeding 30 cm in depth, 1.5 m 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.					
a)	All kinds of soil	cum	120.0			
5.02	Excavating trenches of required width for pipes, cables, etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth up to 1.5 m including getting out the excavated soil, and then returning the soil as required, in layers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed, within a lead of 50 m:					
a)	All kinds of soil					
a.ii)	Pipes, cables etc. exceeding 80 mm dia but not exceeding 300 mm dia	metre	1200.0			
5.03	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					
		cum	45.0			
	SUB TOTAL(EARTH WORK)					

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
6	RAIN WATER PIPING					
6.01	Providing and fixing to the inlet mouth of rain water pipe cast iron grating 15 cm diameter and weighing not less than 440 grams	Each	52.0			
6.02	Providing and fixing rain water ,soil, waste and vent pipes.					
a)	100 mm dia.					
a i)	Centrifugally cast (spun) iron socketed pipe as per IS:3989	Metre	1285.0			
c)	150 mm dia pipe as per IS:3989	Metre	570.0			
6.03	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.					
a)	for 100 mm dia. pipe	Each	402.0			
c)	for 150 mm dia pipe	Each	172.0			
6.04	Providing and fixing plain bend of required degree.					
a)	100 mm					
a ii)	Sand cast iron S&S as per IS:3989	Each	36.0			
c)	150 mm	Each	16.0			
6.05	Providing and fixing heel rest sanitary bend.					
a)	100 mm dia					
a.ii)	sand cast iron S&S as per IS-3989	Each	36.0			
c)	150 mm dia	Each	16.0			
6.06	Providing and fixing collar					
a)	100 mm					
a.ii)	Sand cast iron S&S as per IS-3989	Each	72.0			
c)	150 mm	Each	28.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)						
Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
6.07	Providing lead caulked joints to sand cast iron /centrifugally cast (spun) iron pipes and fittings of diameter:					
a)	100 mm	Each	399.0			
c)	150 mm	Each	168.0			
6.08	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:					
a)	100 mm diameter pipe	Metre	1280.0			
c)	150 mm diameter pipe	Metre	570.0			
	SUB TOTAL(Rain Water pipe & fitting)					

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
7.00	BOREWELL(1 No)					
7.01	Drilling by suitable rig as per IS : 2800-1979 (percussion or combination rig) or Reverse Rotary to suit site condition from ground level in all kind of soils and weathered rock including boulders (excluding rock) diameter of bore 450mm including carry out hydrological survey report before boring & getting the approval based on Hydrogeological survey before start of the work.Also getting approval from local authority if any required					
a)	0-30m	metre	60.0			
b)	30-60m	metre	60.0			
c)	60-90m	metre	60.0			
d)	90-120 m	metre	60.0			
7.02	Extra additional for drilling in Ordinary Rock if any found	metre	50.0			
7.03	Extra additional for drilling in Hard Rock if any found	metre	50.0			
7.04	Providing and lowering uPVC casing/housing pipe 200mm dia. with wall thickness 10 mm conforming to IS :12818 including sockets of standard design.	metre	140.0			
7.05	Providing & fixing uPVC screen/slotted pipe with 1.5 mm to 3mm (slots as per strata condition) including sockets of standard design as per IS: 12818/1992.					
a)	200 mm dia uPVC socketed pipe with wall thickness 10.0 mm	metre	160.0			
7.06	Providing and fixing in position threaded iron cap with locking arrangement of approved design to prevent foreign matters getting into the bore-hole as required.	Each	2.0			
7.07	Providing and laying rounded pea gravel washed & served 3 to 6 mm nominal boreas per relevant ISI code.	Cum	32.0			
7.08	Providing and laying cement concrete 1:2:4 mix for sanitary sealing of well at top.	Cum	2.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
7.09	Supplying, lowering and fixing in position reducer ,PVC bail plug with "U" hooks as per IS:2800-1964.	Each	2.0			
7.10	Development of Tubewell including testing of yield depression & quality of water (for all parameters of potable water), contractor to obtain certificate for quality for water from Competent Authority approved by client or Engineer- In -Charge.					
a)	Development of Tube well by high capacity air compressor till the clear water discharge but not more than 100 hours.	per hour	160.0			
b)	Additional development of Tube well by high an over pumping unit till complete development of tube well does not clear by maximum 100 hours air compressor	per hour	100.0			
7.11	Tranportation, mobilisation and demobilisation or drilling equipment and ancillary equipment to site including clearing and cleaning the site after completion of work.	set	2.0			
7.12	Providing and fixing brass full way valve with C.I. wheel of approved make, tested to a pressure of 21 kg/sqcm.					
a)	100 mm dia	Each	2.0			
7.13	Providing and fixing gunmetal non return valve of approved make tested to a pressure of 21kg/sqcm.					
a)	100 mm dia	Each	2.0			
7.14	Providing & fixing G.I. pipes (heavy class)confirming to IS with special fittings in external works including earthwork ,excavationin all kinds of soil including ordinary rock,refilling, painting pipes & fitting complete in all respects.					
	100 mm dia	Metre	200.0			
7.15	Providing & filling sand of grading zone V or coarser grade all around GI pipe in external work					
	100 mm dia	Metre	200.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)						
Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
7.16	Submersible pumps					
	Providing and installing submersible pump and electrical panel suitable for 8" dia casing of bore with SS impeller, high tensile SS shaft, copper wound squirrel cage wet type induction motor 2880 rpm, 415 V, 50 Hz, 3 phase A.C. supply, conforming to ISS: 8034-1976, capacity 500 litre per minute at 70-120 m head/ or suitable as per the hydrological survey report along with a directly coupled submersible type squirrel cage electric induction 5 H.P.(minimum) . motor suitable for operation on 400 V, 3 phase, 50 c.p.s. A.C. supply, water lubricated bearings and provided with pivoted segment type thrust bearings to withstand non-vertical lead with minimum wear and tear and duly fitted with device to take up the expansion of water with heating of motor, including supply, testing and commissioning of electrical panel from the same manufacturer, complete with all accessories in all respects. The contractor to obtain approval for model and make of pumpset & suitable Electrical panel after having yield report of fully developed tube well and submit actual bore strata chart.					
	including supplying laying and fixing water proof PVC insulated flat submersible cable 3x10 sqmm with end termination with its accessories. complete in all respect as required.	set	2.0			
8.17	Carrying out Electrical logging of Borewell before lowering of pipe for analysiing of water quality including Electrical logging report, calculation etc.	Job	2.0			
SUBTOTAL (BOREWELL)						

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
8.00	RAIN WATER HARVESTING(4 NOS.)					
8.01	Designing and Constructing of percolation pit cum perforated well 3000mm. dia upto 4000mm deep, 230 mm thick brick masonry work around upto 1.5 m deep with 75 class brick in cement mortar 1:4, 200 mm foundation concrete in 1:4:8 mix below brick work only, 150 mm thick precast removable RCC top slab with required steel reinforcement in cement concrete 1:2:4 mix, filled with coarse aggregate, SFRC covers, river pebbles of requisite size stone as shown in the drawing including centering and shuttering, as shown complete as per detailed drawings complete.	Each	12.0			
8.02	Drilling as per IS : 2800-1964 (with percussion or combination rig) from ground level in all kind of soils including boulders (excluding rock) diameter of bore 450mm.					
a)	0-50m	Metre	360.0			
8.03	Extra for drilling in Ordinary Rock	Metre	60.0			
8.04	Extra for drilling in Hard Rock	Metre	60.0			
8.05	Providing and lowering of 200 mm dia uPVC blank/ slotted pipe with ribs, special fittings, jointing conforming to IS 12818 - 1992.	Metre	360.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
8.06	Constructing bar screen / settling tank, of sizes 4500x2500 with suitable depth up to 2.0 m in 1: 4 Cement Mortar (one cement : 4 coarse sand) height as per site requirement, in brick masonry 350mm thick walls upto water level and 230mm thick walls above water level & upto ground level, including all excavation, 20 cm thick bed concrete in 1:4:8 (one cement 4 fine sand 8 stone aggregate 40 mm), cement plaster 1:3 (one cement :3 coarse sand) with a floating coat of neat cement as inside finish , top slab in RCC 1:2:4, including centring, shuttering and steel work, also providing and fixing D.I. manhole cover & frame of size 605mm x 450mm of weight not less than 38 kg (frame + cover) and cost of 100mm dia C.I. vent pipe with C.I. Ventilating Cowl and suitable wire mesh provision for inlet, 115mm baffle walls extending 2/3 the width spaced@500mm c/c including finishing with 1:3 cement plaster 15mm thick with floating coat of neat cement slurry , all complete in every respect as per drawing and as directed to suit site condition.	Each	12.0			
SUBTOTAL (RAIN WATER HARVESTING)						

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
9	SOLAR WATER HEATING SYSTEM & RECIRCULATION OF HOT WATER SYSTEM (1 Nos)					
9.01	Supply, installation, testing and commissioning of solar water heating system, Thermosyphon type, all complete based on Flat plat collector system (Cu-Cu Type only) comprising of but not limited to the following:					
a)	Requisite number of Flat plate collectors of 2 sq. mtr. collector area. Collector absorber plate to be made of copper tubes & copper fins only					
b)	Hot water storage tank made of stainless steel 304- food grade quality with 100 mm Glass wool insulation and cladding with 24 SWG Aluminum sheet. One temperature measuring device and suitable inlet, outlet and drain connections on the storage tank to be provided. Suitable Electrical Heater backup to be provided inside the tank along with thermostat					
c)	Heat Exchanger - Cage type Internal Heat Exchanger made of SS pipes shall be provided inside the Solar Tank. Heat exchangers shall have min. heat transfer area of 0.24 sq. mtrs. for every 100 LPD calacity. Suitable make up tank for the Heat Exchanger circuit shall also be provided					
d)	Interconnecting system piping shall consist of B Class insulated GI pipes covered with 50mm thick glasswool & clad with 26 SWG Aluminium Sheet. All Gate/Ball valves shall be of ISI make.					
e)	Electrical control panel, cabling from panel to pumps and electrical heaters shall also be provided					

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
f)	The solar collector shall be arranged on roof of building in such a way that shadow can be avoided and requisite number of MS support for collector/tanks of minimum 35x35x5 MS angle adequate for 150 Km/Hr wind speed.					
g)	Solar water heating system based on Flat plat collector system technology with output capacity of as mentioned below with hot water at 60 degree centigrade having required Nos. solar collectors as per complete item as per technical specification of make BHEL/TATA/EMMVEE. The system has to be installed by Manufacturers authorised distributors/approved specialised firms of Solar water heating of approved make. The shop drawing of the systems shall be provided by the agency as per site condition obtain the proper efficiency. The system shall be procured after obtaining the approval of shop drawings from HSCC / Engineer-in-charge. (Electric heating element shall not be provided in the system as the solar hot water system will supply the hot water to the individual geyser).					
	Solar System of Capacity 1500 Litre/day (With minimum 12 nos of Collector of 2.0 Sqm area each)	each	2.0			
i)	Solar System of Capacity 2000 Litre/day (With minimum 16 nos of Collector of 2.0 Sqm area each)	each	9.0			
9.02	Recirculation system (on return line) -Designing, Supply, Installation, Commissioning & Integration with Solar System of Recirculation System consisting of - Insulated Auxiliary Tank SS with epoxy paints (2 times the solar piping system volume) and with Electrical Backup, Pump, of requisite capacity DTC, Sensor PT100, Control Panel wiring, RS 485 mod bus communication port for BMS as per technical specification, MS standard etc. (but does not include the return piping & fitting)	each	7.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
9.03	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					
a)	15 mm nominal outer dia pipes (SDR-11)	metre	365.0			
b)	20 mm nominal outer dia pipes (SDR-11)	metre	565.0			
c)	25 mm nominal outer dia pipes (SDR-11)	metre	705.0			
d)	32 mm nominal outer dia pipes (SDR-11)	metre	595.0			
e)	40 mm nominal outer dia pipes (SDR-11)	metre	350.0			
f)	50 mm nominal outer dia pipes (SDR-11)	metre	50.0			
9.04	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.					
a)	15 mm nominal outer dia pipes (SDR-11)	metre	1006.0			
b)	20 mm nominal outer dia pipes (SDR-11)	metre				
9.05	Providing and fixing gun metal gate valve with C.I. wheel of approved quality (screwed end):					
a)	25 mm nominal bore	each	142.0			
b)	32 mm nominal bore	each	102.0			
c)	40 mm nominal bore	each	16.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)						
Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
9.06	Providing & fixing 9 mm thick thermal insulation tubing of elastomeric flexible material having hermetic blistered closed cell structure of expanded synthetic rubber over pipes/ fitting as per manufacturer's specifications etc.complete.					
a)	15 mm dia to 25 mm dia	each	2135.0			
b)	32 mm dia to 50 mm dia	each	925.0			
9.07	Providing and fixing gun metal ball valve of approved quality					
a)	15 mm nominal bore	each	256.0			
b)	20 mm nominal bore	each	110.0			
SUBTOTAL(SOLAR WATER HEATING SYSTEM & RECIRCULATING SYSTEM)						

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
10.00	WATER SUPPLY PUMP PANEL					
	Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, wall mounted type, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, powder coat painted and having following incoming and outgoing switchgears complete as required. Panel shall have IP-42 protection.					
10.01	INCOMER :					
	125 Amp 415 volts, 35 KA (Isc), FP MCCB with e/f protection thermal magnetic release having variable current settings of 0.8 to 1.0 In.					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 no. 0 to 500 V Digital voltmeter with selectot switch					
	1 to 0 to 125 Amps Digital ammeter with selector switch with one set of 125/5A C.T. s					
	BUSBARS :					
	160 Amp TPN busbars of aluminium					
	OUTGOINGS :					
i	1 Sets of following (For Tube well)					
	1 No. 40 Amp. 415/500 volts,25 KA, TPN, Moulded Case Circuit Breaker with variable current setting of 0.8 to 1.0					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)

Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
	1 to 0 to 40 Amps Digital ammeter with selector switch with one set of 40/5A CT,s.					
	Neon indicating Lamps for "ON" , "OFF" & "TRIP" indication with 2A SP control MCBs.					
ii	4 Sets of following (2 For Treated Water Pump, Untreated Water Pump)					
	1 No. 25 Amp. 415/500 volts,25 KA, TPN, Moulded Case Circuit Breaker with variable current setting of 0.8 to 1.0					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 to 0 to 25 Amps Digital ammeter with selector switch with one set of 25/5A CT,s.					
	Neon indicating Lamps for "ON" , "OFF" & "TRIP" indication with 2A SP control MCBs.					
iii	4 Set of following (for Drainage Pump)					
	1 No. 16 Amp. 415/500 volts,25 KA, TPN, Moulded Case Circuit Breaker with variable current setting of 0.8 to 1.0					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	Neon indicating Lamps for "ON" and "OFF" indication with 2A SP control MCBs.					
	WATER SUPPLY PUMP Panel as mentioned above	Set	1.0			
	STARTERS FOR THE WATER PUMPS					
	For Tube well					
	1 No. 3 Phase, DOL starter of 10 HP with thermal overload relay, Push Buttons, Single Phase Preventer and Switches etc complete as required.	Each	1.0			

Name of Work: BOQ of Plumbing work of Masjid Mod, AIIMS, New Delhi (Proposed construction of Hostel 1,2&3)						
Sl. No.	Description of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1	2	3		5	6	7
	4 Sets of following (2 For Treated Water Pump, Untreated Water Pump)					
	1 No. 3 Phase, DOL starter of 3.5 HP with thermal overload relay, Push Buttons, Single Phase Preventer and Switches etc complete as required.	Each	4.0			
	4 Set of following (Drainage Pump)					
	1 No, DOL starter of 2 HP with thermal overload relay, Push Buttons, Single Phase Preventer and Switches etc complete as required.	Each	4.0			
	Sub Total (Water Supply Electrical Panel)					
	Total					

PROJECT NAME: Proposed Hostel-1, 2 & 3 , AIIMS,Masjid Moth, New Delhi

ABSTRACT OF COST Fire Figthing

S.No	DESCRIPTION OF WORK		Amount in figures (Rs)	Amount in words (Rs)
1	FIRE FIGHTING			

PROJECT NAME: Proposed Hostel-1, 2 & 3 , AIIMS,Masjid Moth, New Delhi

Name of Works: BOQ of Fire Fighting Works

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1.00	FIRE FIGHTING SYSTEM					
1.01	Providing and laying S&S Centrifugally Cast (Spun) / Ductile Iron Pipes conforming to IS : 8329 :					
1.01.1	150 mm dia Ductile Iron Double Flanged	Metre	610.0			
1.02	Providing and laying D.I. specials of class K-12 suitable for push-on jointing as per IS : 9523					
1.02.1	Upto 600 mm dia	quintal	28.2			
1.03	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 :					
1.03.1	150 mm dia pipes	joints	270.0			
1.04	Excavating trenches of required width for pipes, cables etc including excavation for sockets, and dressing of sides, ramming of bottoms, depth upto 1.5m including getting out the excavated soil, and then returning the soil as required, inlayers not exceeding 20 cm in depth including consolidating each deposited layer by ramming, watering, etc. and disposing of surplus excavated soil as directed within a lead of 50 m					
1.04.1	Pipes, cables etc exceeding 80 mm dia but not exceeding 300 mm dia	Metre	610.0			

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1.05	Providing, fixing jointing and testing of Heavy (class - C) G.I. pipes as per relevant IS :1239/4736 with special accessories like tees, elbow, gasket, flanges, flanged joints, rubber insertion nuts and bolts including earth work excavating and trenching, wrapping pipe with 4mm thick 500mm width tar based polymeric corrosion protection tape or equivalent suitable to GI/ MS pipe line including applying uniform coat of cold pipe primer complete 1 m below the ground level, refilling in layers not exceeding 20 cm in depth consolidated each deposited layer by ramming & watering complete in all respect as per IS : 1022 (Under ground)					
a)	150 mm dia G.I. Pipe with flange joints (5.4 mm wall thickness)	Metre	60.0			
b)	80 mm dia G.I. Pipe with flange joints	Metre	30.0			
1.06	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)	200 mm dia (with Flanged joints)	Metre	20.0			
b)	150 mm dia (with Flanged joints)	Metre	415.0			
c)	100 mm dia (with Flanged joints)	Metre	80.0			
d)	80 mm dia	Metre	70.0			
e)	65 mm dia	Metre	30.0			
f)	50 mm dia	Metre	610.0			

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
g)	40 mm dia	Metre	445.0			
h	32 mm dia	Metre	315.0			
i)	25 mm dia	Metre	510.0			
1.07	Providing and fixing Single headed hydrants flanged inlet with 63 mm female instantaneous outlet of gunmetal complete with male blank caps, chains conforming to IS:5290 type A with stainless steel orifice plate (if required) to keep the pressure not more than 3.5 kg/sq.cm at any point.	Each	87.0			
1.08	Providing 63mm dia 15 m long reinforced rubber lined hose pipe conforming to IS: 636-1992 Part-II with gunmetal male & female coupling wire wound with pipe as required.	Each	122.0			
1.09	Providing and fixing 63mm dia 15 m long canvas hose pipe complete with gunmetal male & female coupling wire wound with the pipe The pipe shall confirm to IS: 4927.	Each	52.0			
1.10	Providing and fixing Gunmetal branch pipe with 20mm dia nozzle conforming to IS:903. suitable for installation connections to hose coupling etc. as required.	Each	87.0			
1.11	Providing and fixing Four way fire brigade connection housed in steel cabinet of size 900mm x 750mm x 400mm fabricated from 1.5mm thick M.S. sheet having lockable arrangement, openable glazed door with 4mm thick glass, including painting a coat of steel primer and two coats of postal red enamel paint, with necessary supports for the cabinet etc. with 150 mm dia. non return and butterfly valves complete in all respects.					

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
a)	4 Way - 150mm dia	Each	3.0			
1.12	Providing and fixing Set of "Siamese" quadruplet instantaneous fire brigade connections comprising of two gunmetal instantaneous male inlet coupling 63mm dia with plug and cap, chain bends, tees etc for inlet to the static tank.	Each	3.0			
1.13	Providing & Fixing 150 mm dia, 4 way suction coupling for firebrigade withdrawal of water from the fire tank	Each	3.0			
1.14	Providing and fixing glazed door shutter and frame for Fire hose cabinet with hold fasts (frame fabricated from 40 x 40 x 5mm and shutter from angle) 2100 mm high x 1200 mm wide x 600mm deep with locking arrangement, 4mm thick glass with M.S. flats including all accessories, painting with one coat of steel primer and two coats of postal red enamel paint complete as per drawing and as directed. The words " hose cabinet" to be painted on the box complete in all respects.	Each	61.0			
1.15	Providing and fixing Weather proof standard stand post type hose cabinet (900mm x 750 mm x 400 mm) out door type made of 1.5mm thick M.S. sheet having central opening glazed door with 4mm thick glass suitable for accommodating hydrants, 2 Nos. canvas hose pipe and branch pipe including necessary locking arrangements, painting one coat of primer and two coats of postal red enamel paint.. The shutters are to be lockable type. The words " hose cabinet" to be painted on the box.	Each	26.0			

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1.16	Providing and fixing cast iron body IS: 210 FG 220 and double flange gear simple operation type butterfly valve conforming to IS: 13095 with SS304 disc and shaft NITNLE rubber replaceable seat of the following size complete with bolts, nuts, washers and rubber insertions as per specification.					
a)	150 mm dia	Each	20.0			
b)	80 mm dia	Each	6.0			
1.17	Supplying, testing, installation & commissioning of pressure switches for pumps including necessary wiring upto the control panel.	Each	12.0			
1.18	Constructing masonry chamber 90x90x100 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, 160mm bottom diameter and 180mm deep (inside) with chained lid and RCC top slab 1:2:4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm 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.					
	with F.P.S. bricks	Each	3.0			
1.19	Supplying and Fixing First Aid Hose Reel , wall mounting swinging type complete with drum & bracket of MS construction, spray painted in Post office Red, conforming to IS 884/1995 with upto date amendments, complete with the following as required.					

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
	36 Meter long 20 mm dia water hose Thermoplastic (Textile reinforced) Type - 2 as per IS : 12585					
	20 mm dia gun metal ball valve & nozzle.					
	Drum and brackets for fixing the equipments on wall.					
	Connection from riser with stop valve (gun metal) & M.S. Pipe	Each	61.0			
1. 20	Providing and fixing C.I. sluice valves (With cap) of approved quality complete with bolts, nuts, rubber insertions etc. (the tail pieces if required will be paid separately) Class II					
a)	200 mm dia	Each	2.0			
b)	150 mm dia	Each	13.0			
1.21	Supply, Installation, Testing and Commissioning of 100 mm dia Bourden type, Stainless Steel dial type Pressure Gauge including brass isolation valve and siphon pipe having calibration of 0 - 16 Kg / cm ² .	Each	71.0			
1.22	Supplying and Fixing of Fire Man's axe with heavy insulated rubber as per standard conforming to IS 926	Each	61.0			
1.23	Supplying and Fixing vane type waterflow switch with contacts suitable for installation on 50 mm to 150 mm dia pipeline for a service pressure upto 20 Kg/sq.cm.	Each	6.0			

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1.24	Providing, Fixing, Testing and Commissioning of Sprinkler Installation Control Valve of Cast iron body and brass / bronze working parts comprising of water motor, alarm, bronze seat clapper and clapper arm, hydraulically driven mechanical gong bell to sound continuous alarm when the Sprinkler system activates, pressure gauges, emergency releases, strainer, pressure switch, cock valve complete with drain valve and bypass, test control box, ball valves, MS pipe of required size, flanges, orifice plate, gasket etc. of size 200/150 mm dia, as required.	Each	3.0			
1.25	Supplying, Installation, Testing & Commissioning modular construction master control annunciation panel for sprinkler with provision for requirer No. of Zone (30% additional spares),eachsprinkler hydrant will have atleast 2 zone on each floor as approved by engineer.The panel shall have but not limited to the following arrangement.					
a)	Indication of Zone sprinkler					
b)	Indication of zone fault					
c)	Fire/fault hooter					
d)	Alarm cancel for fire/fault					
e)	Battery for emergency back up of 4 Hrs.	Set	3.0			
1.26	Providing and Fixing 15 mm dia gunmetal / brass quartzoid type Sprinkler Head with quartz bulb and set to operate at specified temperature.					
a)	Pendent / Upright type, 68 C, Chrome plated	Each	520.0			
b)	Side wall extended throw 20 mm dia 68 C, Chrome plated	Each	50.0			

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1.27	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	6.0			
1.28	Supply, Installation, Testing and Commissioning External Yard Hydrant Stand Post comprising of GI pipe 80 mm dia (heavy duty C class) from existing ringmain to about 1 meter above ground level and Single Headed Yard Hydrant Valve with 80 mm dia flanged inlet, instantaneous gunmetal coupling of 63 mm dia with cast iron wheel ISI marked, conforming to IS : 5290 (Type A), with ABS cap and chain etc.complete with all accessories as required.	Each	26.0			
1.29	Providing and placing on terrace polyethylene water storage tank ISI : 12701 MARKED indicating the BIS license No with cover and suitable locking arrangement and making necessary holes for inlet, outlet and overflow pipes but without fittings and the base support for tank.	Ltrs	70000.0			
1.30	Supply, erection, testing & commissioning of exit glow sign board of size 200mm x 350 mm wall mounting signage consisting of photo luminescent coating on acrylic cover	Each	110.0			

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
1.31	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	61.0			
1.32	Providing and fixing 9 liters capacity fire extinguisher water type gas pressure conforming to IS marking, fixed to wall.	Each	61.0			
1.33	Providing and fixing ABC type fire extinguishers complete in all respects.					
a)	Capacity 5.0 Kg.	Each	61.0			
1.34	Fabricating, Supplying, Installation, Testing and Commissioning Air Vessel of continuous welded construction with flanged discharge header in pump house fabricated out of 10 mm thick dished ends and 8 mm thick MS sheet, Air Release Valve, complete with drain arrangement with 25 mm dia gun metal wheel valve complete with all accessories etc. as required of the following sizes					
a)	2 Metre high and 450 mm dia suitable to operate Jockey Pump, Main Fire Pump & Diesel Engine Driven Fire Pump	Each	2.0			
1.35	Providing and fixing C.I. non-return valve complete with gunmetal seat, bolts, nuts washer & rubber insertions as required conforming to IS:5312.					

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
a)	150 mm dia	Each	14.0			
b)	80 mm dia	Each	4.0			
1.36	Supplying, installing, testing and commissioning of electric driven fire pump suitable for automatic operation consisting of the following (as per CPWD specification Part V-1985 for Fire Fighting and its amendments) (For Hydrant system & Sprinkler system).					
a)	Fire pump with stainless steel impeller, CI casing, SS shaft & mechanical seal shall be horizontal split casing centrifugal suction type multistage having following capacity and head so as to ensure a minimum pressure of 3.0 kg per square cm. at the highest and farthest out let at the specified flow complete with necessary strainer / foot valve suction side and pressure gauge on the delivery side including by pass arrangement for periodical testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.					
b)	Squirrel cage type TEFC motor suitable for operation on 415V, 10%, 3 phases 50 Hz. system of suitable HP for the above pump with synchronous speed of 1500 RPM and flexible coupling. The pump motor should conform to IS: 325-1978.					
c)	Common bed plate fabricated from mild steel channel or cast iron type.					
d)	Suitable cement concrete pump foundation & vibration damping arrangement with cushy foot mounting as required.					

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
l)	Capacity 2280 LPM and Head 75 Metres	Each	2.0			
1.37	Supplying, installing, testing and commissioning of diesel engine driven fire pump suitable for automatic operation consisting of the following (as per CPWD specifications PartV 1985.) (For Hydrant system & Sprinkler system).					
a)	Horizontal centrifugal type multi-stage, fire pump with stainless steel impeller CI casing, SS shaft & mechanical seal complete of following capacity and Head so as to ensure a minimum pressure of 3.0 kg per sq.cm. at the highest & farthest outlet at the specified flow, complete with necessary strainer pressure gauge on the delivery side etc. including by pass arrangement for periodical testing of the working of the pump set as required. The pump shall be provided with mechanical seals.					
b)	Water cooled cold starting type multi cylinder 4 stroke diesel engine, developing suitable BHP at 1500 RPM for the above pump set with automatic starting mechanism, cooling system shall be with radial cool engine, maintenance free batteries, battery charge unit, flexible coupling with the pump, common bed plate for mounting diesel engine fuel day tank fuel piping and pump and vibration damping arrangement by cushy foot mounting as required complete in all respects.					
c)	The engine shall be capable to drive the pump at 150% rated discharge at 65% head and shall be suitable for 10% overload capacity for one hour in any period of 12 hrs. continuous run.					

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
d)	Common bed plate fabricated from mild steel channel or cast iron type.					
e)	Isolation Valve					
f)	Suitable cement concrete pump foundation & vibration damping arrangement with cushy foot mounting as required.					
l)	Capacity 2280 LPM and Head 75 Metres	Each	2.0			
1.38	Supplying, installation, testing and periodic commissioning of electric motor driven automatic pressurization pump set consisting of the following (as per specification) (For Hydrant system & Sprinkler system).					
a)	Centrifugal pump of 180 LPM capacity capable of building up pressure lost in any leakage in the system against atotal head (mentioned as under) complete with C.I. casing stainless steel impellor ; mechanical seal & S.S. shaft necessary strainer, pressure gauge on delivery side etc. including by-pass arrangement for testing of the working of the pumping set as required .					
b)	Squirrel cage A.C. induction motor suitable for operation on 415 V, 10% 3 phase 50 Hz. A.C. supply and of minimum 7.5 HP,1500 RPM, for the above pump with flexible coupling as per specification and conforming to IS: 325/ 1978 and shall be TEFC type only.					
c)	Common bed plate fabricated from mild steel channel or cast iron type.					

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
d)	Suitable cement concrete pump foundation with vibration damping arrangement with cushy foot or similar mounting as per required.					
l)	Head - 75 Metres	Each	2.0			
1.39	Providing & fixing puddle flanged including 40 cm long GI pipe piece welded / threaded with MS plates 450x450x6mm thick with both end screwed / flanged					
a)	For 80 mm dia pipe	Each	4.0			
b)	for 150 mm dia pipe	Each	6.0			
c)	for 200 mm dia pipe	Each	4.0			
1.4	Supplying, installing, testing and commissioning of electric motor driven type automatic pressurisation, pump set suitable for automatic operation of terrace down comer and consisting of the following (as per CPWD specifications Part V-1985) for fire fighting and its amendmends).					
a	Fire pump with stainless steel impeller CI casing, SS shaft shall be horizontal end suction centrifugally type having a capacity of 900 LPM against a total head of 25m so as to ensure a minimum pressure of 3.0 kg/sqm at the highest and farthest out at the specified flow complete with necessary strainer with foot valve in suction side and pressure gauge on the delivery side including bypass arrangement for periodic testing of the working of the pumping set as required. The pump shall be provided with mechanical seals.(Including taking necessary approval of complete fire fighting scheme from local fire authority before and after start of work) {Agency also has to submit characteristic curve of the pumps, model & other technical data for approval before placing the order}					

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
b	Squirrel cage AC induction motor suitable for operation of 415 V ,+/-10%, 3 phase 50 HZ, AC supply and of minimum 7.5 HP,1500 RPM for the above pump with flexible coupling as per specification and conforming to IS 325-1978 and shall be TEFC type only					
c	Common base plate fabricated from mild steel channel or cast iron type					
d	Star delta suitable starter complete in all respect for automatic/manual operation of pump, start and stop push button contactor with required overload protection and single phase preventor					
e	Suitable cement concrete pump foundation with vibration damping arrangement with cushion foot mounting as required and having provision of suitable weather protection cover.	set	6.0			
B	Fire Fighting PANEL(Electrical)					
1.41	FIRE PANEL Emergency					
	Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, wall mounted type, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, powder coat painted and having following incoming and outgoing switchgears complete as required. Panel shall have IP 42 protection.					
	INCOMER :					
	320 Amp 415 volts, 35 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In.					
	R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 no. 0 to 500 V Digital voltmeter with selector switch					
	1 to 0 to 400 Amps Digital ammeter with selector switch with one set of 400/5A C.T. s					
	BUSBARS :					
	500 Amp TPN busbars of aluminium					
	OUTGOINGS :					
	1 Sets of following					
	1 No. 200 Amp. 415/500 volts,35 KA, TPN, Moulded Case Circuit Breaker with variable current setting of 0.8 to 1.0					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 3 Phase, fully automatic star-delta starter of 75 HP with thermal overload relay, Timer, Push Buttons and Auto-manual selector switch etc complete as required.					
	Single Phase preventer					
	1 to 0 to 200 Amps Digital ammeter with selector switch with one set of 200/5A CT,s.					
	1 Set of phase indicating lamp with 2A SP control MCBs					
	Neon indicating Lamps for "ON" , "OFF" & "TRIP" indication with 2A SP control MCBs.					
	2 Sets of following					
	1 No. 40 Amp. 415/500 volts,25 KA, TPN, Moulded Case Circuit Breaker with variable current setting of 0.8 to 1.0					

Item No	Description Of Item	Unit	Total Qty.	Rate (Rs) in figures	Rate (Rs) in words	Amount in figures (Rs.)
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 3 Phase, DOL starter of 10 HP with thermal overload relay, Push Buttons and Switches etc complete as required.					
	Single Phase preventer					
	1 Set of phase indicating lamp with 2A SP control MCBs					
	Neon indicating Lamps for "ON" , "OFF" & "TRIP" indication with 2A SP control MCBs.					
	1 Sets of following					
	1 No. 32 Amp. 415/500 volts,25 KA, TPN, Moulded Case Circuit Breaker with variable current setting of 0.8 to 1.0					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
	1 No. 3 Phase, DOL starter of 7.5 HP with thermal overload relay, Push Buttons and Switches etc complete as required.					
	Single Phase preventer					
	1 Set of phase indicating lamp with 2A SP control MCBs					
	Neon indicating Lamps for "ON" , "OFF" & "TRIP" indication with 2A SP control MCBs.					
	1 Set of following (in a separate cubicle)					
	One no. Diesel engine auto starting kit with all necessary relay, controls, wiring etc to start 75 HP diesel engine when electrical driven fire pump fail to					
	One no rectifier circuit, battery charger, batteries, DC Voltmeter, DC Ammeter etc.					
	FIRE PUMP Panel as mentioned above	Set	2.0			
	Sub Total					

SUMMARY OF - ELECTRICAL WORKS

S.No.	DESCRIPTION	Amount Figure (In Rs.)	In	Amount in Words (Rs.)
1	SUBHEAD 1: H.T. SUB STATION			
2	SUB HEAD 2: MAIN LT PANEL.			
3	SUB HEAD 3 : DG SET & ACCESSORIES			
4	SUB HEAD 4 : EARTHING FOR SUBSTATIONS			
5	SUB HEAD 5 :MV PANELS			
6	SUB HEAD- 6: MCB DISTRIBUTION BOARDS.			
7	SUB HEAD 7: WIRING			
8	SUB HEAD: 8 - LIGHT FIXTURE AND FANS			
9	SUB HEAD 9 : TELEPHONE SYSTEM			
10	SUB HEAD 10:CONDUITING FOR COMPUTER SYSTEM .			
11	SUB HEAD 11: CONDUTING FOR TV OUTLETS			
12	SUB HEAD 12 : FIRE DETECTION AND ALARM			
13	SUB HEAD 13: LIGHTENING PROTECTION			
14	SUB HEAD 14 : LIFTS			
15	SUB HEAD 15: LT CABLES			
16	SUB HEAD 16: EARTHING SAFETY EQUIPMENT AND MISC. ITEMS			
17	SUB HEAD 17: OUT DOOR LIGHTING			
	GRAND TOTAL FOR ALL ELECTRICAL WORKS			

BOQ FOR ELECTRICAL WORKS OF AIIMS HOSTEL(1,2,3) - NEW DELHI.

S.No.	Description.	Unit.	Total Qty	Rate in Figures (in Rs.)	Rate in words (in Rs.)	Amount in Rs.
1	2	3	5	6	7	8
	SUBHEAD 1: H.T. SUB STATION					
1.00	SUBSTATION EQUIPMENTS					
1.01	HT Panel, (Main Substation - 1)					
	Supply, erection, testing and commissioning of 8 panel, [800 A (3nos.) and 630 A (5nos.)] ,11 kV, 3 Phase, 50 Hz., metal clad, dead front, 350 MVA rupturing capacity Vacuum Circuit Breaker Incoming & Outgoings as per the detailed specifications and drawings including connections etc. complete with following in-comers and out-goings including door interlocking and expendable as required.					
A.	INCOMER :					
i)	2 No. VCB having following					
	1 No. 800A, 11kV, 3 Phase, 50Hz., metal clad, dead front, 350 MVA rupturing capacity, Fully Drawout type, Vacuum Circuit Breaker (VCB)					
	1 set of 11kV/110V Potential Transformers with HRC fuses					
	1 Set of Phase indicating lamps with HRC fuses					
	1 No. 0-15 kV Digital voltmeter with selector switch					
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY					
	Push button for ON, OFF,TRIP&TRIP circuit healthy					
	1 set of 600/5-5A Current Transformer for metering and protection					
	1 No. 0-800 digital Amps ammeter with selector switch					
	1 Set of CDG 61 (2 No. O/C, 1 No. E/F) relay					
	Digital frequency meter,Digital Tri vector meter.					
	I Set of undervoltage relay and Overvoltage relay					
	Trip circuit supervision relay,Auxiliary relays with shunt trip coil					
	I No. Master Trip relay					
	1 No. Digital Power factor meter					
	BUSBARS :					
	11kV, 350 MVA, 1000 Amps Three Phase busbars of aluminium					
B.	OUTGOINGS :					
	5 No. VCB each having following					
	1 No. 630A, 11kV, 3 Phase, 50Hz., metal clad, dead front, 350 MVA rupturing capacity, Fully Drawout type, Vacuum Circuit Breaker (VCB)					
	1 set of 11kV/110V Potential Transformers with HRC fuses					

	1 Set of Phase indicating lamps with HRC fuses				
	1 No. 0-15 kV Digital voltmeter with selector switch				
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY				
	Push button for ON, OFF,TRIP&TRIP circuit healthy				
	1 set of current transformers of suitable ratio depending upon the rating of transformer for metering and protection				
	1 No.Digital ammeter with selector switch and one set of C.T. (Rating as per SLD)				
	1 Set of CDG 61 (2 No. O/C, 1 No. E/F) relay				
	Digital frequency meter,Digital Tri vector meter.				
	1 Set of undervoltage relay and Overvoltage relay				
	Trip circuit supervision relay,Auxiliary relays with shunt trip coil				
	1 No. Master Trip relay				
	1 No. Digital Power factor meter				
	Bus Coupler				
	<i>1 No. VCB having following:</i>				
	1 No. 800A, 11kV, 3 Phase, 50Hz., metal clad, dead front, 350 MVA rupturing capacity, Fully Drawout type, Vacuum Circuit Breaker (VCB)				
	1 set of 11kV/110V Potential Transformers with HRC fuses				
	1 Set of Phase indicating lamps with HRC fuses				
	1 No. 0-15 kV Digital voltmeter with selector switch				
	1 set of indicating lamps to indicate OPEN, CLOSE, TRIP, SPRING CHARGED, TRIP CIRCUIT HEALTHY				
	Push button for ON, OFF,TRIP&TRIP circuit healthy				
	1 set of 600/5-5A Current Transformer for metering and protection				
	1 No. 0-800 digital Amps ammeter with selector switch				
	HT Panel (Main Substation - 1)as mentioned above	Set	1		

		TRANSFORMER :				
1.02		Supply, erection, testing and commissioning of Cast Rasin Dry Type 2000 KVA , 11/0.433 kV, 3 Phase, 4 wire, 50 Hz.,Dyn11 vector group, copper wound, class F insulation associated with winding temperature indicator/ controller actuated by means of resistance temperature detector embeded in LV windings, indoor type transformer , tappings for off load operation on HV side from -7.5% to +5% in steps of 2.5%, cable box at primary (HT side) and secondary end (LT side) shall be connected through busduct, complete with all fittings and accessories and confirming to IS 11171 ammended upto date, interconnection of control cables and accessories etc complete. The transformer will be as per detailed CPWD technical specifications and as required.	Each	2		
1.03		BATTERY CHARGER PANEL				
		Supply, erection, testing and commissioning of the battery charger panel complete with battery, control cabling etc. as required. Capacity of battery charger suitable for above mentioned H.T. Panels.				
		Sealed Maintenance Free (SMF) battery of suitable ampere hour capacity for above 11kV VCB panels in HT Panel Room of the building as specified above.				
		Boost and Trickle charger suitable for above items.				
		1 No. AC Voltmeter (0-500Volt)				
		1 No. DC Voltmeter				
		1 No. DC Ammeter				
		1 set of AC and DC indicating lamps				
		1 No. DC Battery charging position indicator				
		DC distribution board suitable for above application to incoming & outgoing MCBs include tripping, closing and indication etc.				
		Control cabling between DC Distribution panel to the HT panel of the Substation with suitable core 1.5 sqmm copper cable	Each	1		
1.04		BUS DUCTS :				
	i)	Supply, Installation, testing and commissioning of 3200 phase and neutral TPN, 415 V, 3 Phase, 4 Wire, sandwich construction Aluminium Bus Duct including bends, flexible joints, earth bus (2 runs of aluminium strips), supports for installation, supporting arrangements, etc. complete as per technical specifications and as required.	Mtrs.	200		

1.05		H.T. CABLE				
		Supply of following sizes of 11 kV grade multicore aluminium conductor XLPE armoured power cable as per IS : 7098.				
	i)	3 Core, 240 sq mm	Mtrs.	500		
1.06		Laying of one number 3 core XLPE power cable of grade exceeding 1.1 KV but not exceeding 11KV of size exceeding 120 sqmm but not exceeding 240 Sqmm direct into ground including excavation, sand cushioning, protective covering and refilling the trench, supply of route marker complete as required.	Mtrs.	500		
1.07		Supplying and making end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size 3 Core, XLPE aluminium conductor cable of 11kV grade as required.				
	i)	240 sqmm	Each	6		
		TOTAL FOR SUB HEAD 1: H.T. SUB STATION				

		SUB HEAD 2: MAIN LT PANEL.					
2.01		MAIN L.T. PANEL NORMAL					
		Supply, installation, testing and commissioning of LT Panel, cubicle type, totally enclosed, free standing type, dust, damp and vermin proof Panel made up of 14 SWG CRCA sheet, complete with aluminium busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, necessary interlocking, powder coat painted and having incoming and outgoing switchgears with cable alley in front as mentioned below and complete as per technical specifications and as required. The size of cable alley shall be sufficient enough to accommodate the cable sizes as mentioned in the SLD/ specifications/ drawings etc.					
		Note :					
		1. All ACBs shall have 5 NO + 5 NC contacts					
		2. All relays to operate at 240Volts, Single phase, 50Hz., AC supply through UPS. UPS is also in the scope of supply.					
		3.Digital Multifunction metre should be suitable for true RMS metering.Metre should measure line and phase voltage , current of all three phases and neutral, HZ, PF, KW, KWH, KVAR, KVARH, KVA, KVAH ,voltage and current including one set of CT. Metre should be EMI/ EMC compliant.					
A.		INCOMER:					
	i)	2 No. ACB Panels each having following:					
		1 No. 3200A, 415/500V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit & earth Fault trip including under voltage release and lockable trip push button. ACB should have Icw=Ics = 50 KA for 1 sec.					
		Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
		Push button to CLOSE the ACB.					
		R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs					
		Restricted earth faulty protection with one set of CT.					
		Digital multi function meter with one set of suitable CTs, CT shorting links, R/Y/B LED indicating lamps and 2A control SP MCBs					
		3200/5A CTs with CT shorting links for power factor improvement panel suitable for giving signal to APFCR at less than 10% of secondary ratio current					
B.		BUSBARS :					
		4000 Amps Phase TPN busbars of aluminium.					

C.		BUS COUPLER :					
	i)	1 No. ACB Panels each having following:					
		1 No. 3200 A, 415/500V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & earth Fault trip including under voltage release and lockable trip push button. The ACB should have $I_{cw}=I_{cs}= 50KA$ for 1 sec.					
		1 set of indicating lamps to indicate OPEN, CLOSE, TRIP.					
		Push button to CLOSE the ACB.					
		1 Set of A meter with ASS and CTs.					
D.		OUTGOING.					
	i)	2 No. ACB Panels each having following:					
		1000 A, 415/500V, Fully Motorised, Fully Drawout type (EDO), TPN, Air Circuit Breaker with microprocessor based overload, short circuit, instantaneous & earth Fault trip including under voltage release and lockable trip push button. ACB should have $I_{cw}=I_{cs}= 50 KA$ for 1 sec.					
		Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
		Push button to CLOSE the ACB					
		R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs					
		Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
		Digital energy metre with CT					
	ii)	4 No. ACB Panels each having following:					
		800 A, 415/500V, Fully Motorised, Fully Drawout type (EDO), TPN, Air Circuit Breaker with microprocessor based overload, short circuit, instantaneous & earth Fault trip including under voltage release and lockable trip push button. ACB should have $I_{cw}=I_{cs}= 50 KA$ for 1 sec.					
		Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB					
		Push button to CLOSE the ACB					
		R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs					
		Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
		Digital energy metre with CT					
	iii)	4 Nos. MCCB as per following details / specifications:					

	500 Amp 415 volts, 50 KA (Ics) TPN MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	Digital energy metre with CT					
	iv) 2 Nos.MCCB as per following details/ specifications:					
	400 Amp 415 volts, 50 KA (Ics), TPN microprocessor based MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	Digital energy metre with CT					
	v) 4 Nos.MCCB as per following details/ specifications:					
	320 Amp 415 volts, 50 KA (Ics), TPN microprocessor based MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	Digital energy metre with CT					
	vi) 5 Nos. MCCB as per following details/ specifications:					
	250 Amp 415 volts, 50 KA (Ics), TPN microprocessor based MCCB with variable settings and having microprocessor based O/L, S/C & E/F protection release.					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					

	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	Digital energy metre with CT					
	vii) 5 Nos. MCCB as per following details/ specifications:					
	160 Amp 415 volts, 50 KA (Isc), TPN MCCB with thermal magnetic release having variable current settings .					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	Digital energy metre with CT					
	viii) 3 Nos. 63 Amp MCCB as per following specifications:					
	100 Amp 415 volts, 50 KA (Isc), TPN MCCB with thermal magnetic release having variable current settings .					
	Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.					
	Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB					
	Digital Ampere Metre of suitable range with suitable set of CT's and ASS.					
	Digital energy metre with CT					
	Main LT Panel Normal as mentioned above.	Set	1			
2.02	MAIN L.T. PANEL EMERGENCY :					
	Supply, installation, testing and commissioning of LT Panel, cubicle type, totally enclosed, free standing type, dust, damp and vermin proof Panel made up of 14 SWG CRCA sheet, complete with aluminium busbars, danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, necessary interlocking, powder coat painted and having incoming and outgoing switchgears with cable alley in front as mentioned below and complete as per technical specifications and as required. The size of cable alley shall be sufficient enough to accommodate the cable sizes as mentioned in the SLD/ specifications/ drawings etc.					
	Note :					

		1. All ACBs shall have 5 NO + 5 NC contacts				
		2. All relays to operate at 240Volts, Single phase, 50Hz., AC supply through UPS. UPS is also in the scope of supply.				
A.		INCOMER:				
	i)	2 No. ACB Panels each having following:				
		1 No. 800A, 415/500V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit & earth Fault trip including under voltage release and lockable trip push button. ACB should have Icw=Ics = 50 KA for 1 sec.				
		Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for ACB				
		Push button to CLOSE the ACB.				
		R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs				
		Digital multi function meter with one set of suitable CTs, CT shorting links, R/Y/B LED indicating lamps and 2A control SP MCBs				
B.		BUSBARS :				
		1200 Amps Phase TPN busbars of aluminium.				
C.		BUS COUPLER :				
	i)	1 No. ACB Panels each having following:				
		1 No. 800 A, 415/500V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit, Instantaneous & earth Fault trip including under voltage release and lockable trip push button. The ACB should have Icw =Ics= 50KA for 1 sec.				
		1 set of indicating lamps to indicate OPEN, CLOSE, TRIP.				
		Push button to CLOSE the ACB.				
		1 Set of A meter with ASS and CTs.				
D.		OUTGOING.				
	i)	3 Nos. MCCB as per following details / specifications:				
		400 Amp 415 volts, 50 KA (Ics) TPN MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release.				
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.				
		Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB				

		Digital Ampere Metre of suitable range with suitable set of CT's and ASS.				
		Digital energy metre with CT				
	ii)	5 Nos.MCCB as per following details/ specifications:				
		320 Amp 415 volts, 50 KA (Ics), TPN microprocessor based MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release.				
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.				
		Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB				
		Digital Ampere Metre of suitable range with suitable set of CT's and ASS.				
		Digital energy metre with CT				
	iii)	3 Nos. MCCB as per following details/ specifications:				
		200 Amp 415 volts, 50 KA (Isc), TPN MCCB with thermal magnetic release having variable current settings .				
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.				
		Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB				
		Digital Ampere Metre of suitable range with suitable set of CT's and ASS.				
		Digital energy metre with CT				
	iv)	1 Nos. MCCB as per following details/ specifications:				
		160 Amp 415 volts, 50 KA (Isc), TPN MCCB with thermal magnetic release having variable current settings .				
		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.				
		Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB				
		Digital Ampere Metre of suitable range with suitable set of CT's and ASS.				
		Digital energy metre with CT				
	v)	3 Nos. MCCB as per following details/ specifications:				
		125 Amp 415 volts, 50 KA (Isc), TPN MCCB with thermal magnetic release having variable current settings .				

		Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.				
		Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB				
		Digital Ampere Metre of suitable range with suitable set of CT's and ASS.				
		Digital energy metre with CT				
		Main LT Panel Emergency as mentioned above.	Set	1		
2.03		CAPACITOR PANEL				
		Supply, installation, testing and commissioning of M.V. cubicle type totally enclosed free standing type, dust, damp and vermin proof Capacitor Panel complete with busbars, M.V. danger notice plate, ammeter, ammeter selector switch, indicating lamps, CT's, Extra heavy duty Capacitors suitable for non linear loads upto 20% (L&T model MD-XL or equivalent), contactors suitable for capacitor switching (current limiting contactor circuit to suppress switching inrush current) interconnections with suitable capacity aluminium leads/solid aluminium strips, rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switchgears complete as required				
	A.	INCOMER :				
		1 No. 1000A, 415/500V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit & earth Fault trip including under voltage release and lockable trip push button. ACB should have $I_{cw}=I_{cs} = 50 \text{ KA}$ for 1 sec.				
		Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP.				
		R, Y & B Phase indicating lamps (LED type) with 2A control SP MCBs				
		10 steps Intelligent microprocessor based Automatic Power factor Correction relay having measurement sensitivity of 1 %.				
		Extension of incoming busbars for connection of multicore armoured aluminium cables.				
	B.	METERING :				
		1 set of digital Amp. Meter, digital Power factor meter and Digital voltmeter				
	C.	BUSBARS :				
		1500 Amp FP busbars of aluminum				
	D.	OUTGOINGS :				

	i)	3 Nos . MCCB as per following details/ specification:				
		200 Amps, 415 volts, TP, Power Contactor suitable for capacitive switching including current limiting contactor circuit to suppress switching inrush current				
		ON/ OFF delay timers for switching capacitor circuit.				
		"ON" and "OFF" LED indicating lamp and 2A control SP MCBs				
		Push button for CLOSE and TRIP				
		Extended rotary operating mechanism				
		100 kVAR super heavy duty mix dielectric low loss Capacitors suitable for non linear loads upto 20% (L&T model MD-XL ultra or equivalent)				
	ii)	5 Nos . MCCB as per following details/ specification:				
		100 Amps, 415 volts, TP, Power Contactor suitable for capacitive switching including current limiting contactor circuit to suppress switching inrush current				
		ON/ OFF delay timers for switching capacitor circuit.				
		"ON" and "OFF" LED indicating lamp and 2A control SP MCBs				
		Push button for CLOSE and TRIP				
		Extended rotary operating mechanism				
		50 kVAR super heavy duty mix dielectric low loss Capacitors suitable for non linear loads upto 20% (L&T model MD-XL ultra or equivalent)				
	iii)	1 Nos . MCCB as per following details/ specification:				
		63 Amps, 415 volts, TP, Power Contactor suitable for capacitive switching including current limiting contactor circuit to suppress switching inrush current				
		ON/ OFF delay timers for switching capacitor circuit.				
		"ON" and "OFF" LED indicating lamp and 2A control SP MCBs				
		Push button for CLOSE and TRIP				
		Extended rotary operating mechanism				
		25 kVAR super heavy duty mix dielectric low loss Capacitors suitable for non linear loads upto 20% (L&T model MD-XL ultra or equivalent)				
	iv)	1 Nos . MCCB as per following details/ specification:				
		32 Amps, 415 volts, TP, Power Contactor suitable for capacitive switching including current limiting contactor circuit to suppress switching inrush current				
		ON/ OFF delay timers for switching capacitor circuit.				
		"ON" and "OFF" LED indicating lamp and 2A control SP MCBs				
		Push button for CLOSE and TRIP				
		Extended rotary operating mechanism				

		10 kVAR super heavy duty mix dielectric low loss Capacitors suitable for non linear loads upto 20% (L&T model MD-XL ultra or equivalent)					
		Capacitor panel as mentioned above.	Set	2			
		TOTAL SUBHEAD 2: MAIN LT PANEL.					
3.00		SUB HEAD 3 : DG SET & ACCESSORIES					
		SOUND PROOF DG SETS OF 380 KVA.					
3.01		Supply, installation, testing and commissioning of sound proof (silent type) Diesel Generating set having 380 KVA Prime Power Ratings , 415 volt at 1500 RPM, 0.8 power factor suitable for 50 Hz, 3 phase system , suitable bhp, water cooled type diesel engine- alternator set mounted on common base frame, return fuel cooler, battery & battery charger, Anti Vibration mounting pads, Engine alternator safeties, electronic governor including all accessories & their wiring as per technical specification. This includes the following:					
	-	Supplying and fixing of suitable sizes High class MS pipe for DG exhaust complete with bends, elbow, flanges etc including silencer and catalytic convertor exhaust pipe for exhaust of DG sets including pollution control board norms and as required.					
	-	Supply and fixing of 50mm thick compressed mineral wool insulation (Rock wool) for D.G. exhaust pipe with 22 gauge aluminium sheet cladding etc. as required for the under mentioned dia pipe.					
	-	Supply, installation, testing and commissioning of suitable size fuel pipe for connecting diesel engine to individual day service tank including supply and fixing of required valves & filters etc. as required.					
	-	Fabrication of supports for exhaust pipe, fuel pipe or for any other purpose out of suitable M.S. structural steel including supplying and applying of enamel paint of approved shade after one coat of steel primer of reputed company.					
	-	Supplying and fixing of suitable capacity cable adapter box for alternator.					
	-	Providing and fixing oil tank of 990 litres capacity complete with suitable M.S. fabricated MS stand oil level indicator gauge tank and stand duly painted, complete with float switches etc. as required.					

	-	Factory assembled Sound proof Canopy as per pollution control board requirement to achieve noise level desired during night condition, with base frame, doors, inspection window, fresh air supply fans, light fixtures for illumination with switch, wiring for light fixtures and power sockets, etc.				
	-	Any other item required for completion of system above (D.G. set)				
		DG AMF PANEL				
	A.	DG AMF PANEL				
		Supply, installation, testing and commissioning of DG , cubicle type, totally enclosed, free standing type, dust, damp and vermin proof Panel made up of 14/ 16SWG CRCA sheet, (load bearing members 14 SWG and doors 16 SWG) ,complete with aluminium busbars, M.V. danger notice plate, interconnections with suitable capacity aluminum leads/solid aluminum strips/rods, powder coat painted and having incoming and outgoing switchgears as mentioned below and complete as required.				
		Note :				
		1. All relays to operate at 240Volts, Single phase, 50Hz., AC supply through UPS				
		2. Panel shall be suitable for manual and automatic operation (AMF) and shall be complete as required.				
	B.	Automatic Change over switch in suitable panel as a incomer :				
		One no. 800 A auto change over switch for changeover between State Electricity Board power & DG set power as approved by the Engineer In charge.				
	C.	1 No.MCCB as per following details/ specification:				
		1 No. 800A, 415/500V, Motorised, Fully Drawout type (EDO), Four Pole, Air Circuit Breaker with microprocessor based overload, short circuit & earth Fault trip including under voltage release and lockable trip push button. ACB should have Icw=Ics = 50 KA for 1 sec.				
		"ON" LED indicating lamp and 2A control SP MCB				
		Digital energy meter with one set of suitable CTs, CT shorting links.				
		Digital Ampere Metre of suitable range with suitable set of CT's and ASS.				
		Digital Volt meter with VSS & HRC fuse				
		Digital multifunction meter to show, KWH, KVAH, P.F.and frequency meter one set of suitable CTs, CT shorting links.				

	D.	PROTECTION AND AMF COMPONENTS for above mentioned DG set.					
		Over Voltage relay					
		Under Voltage relay					
		Battery charger (with trickle and boost charging).					
		DC voltmeter and ammeter.					
		DC ammeter.					
		8 window Alarm annunciator with separate hooter, accept, reset and rest push button.					
		Hooter.					
		Engine Cranking Relay.					
		Main supply voltage monitor, alternator voltmeter monitor and Engine Starting Relays.					
		Auxillary relays, timer, push button and control fuses.					
		Phase sequence relay					
	E.	ENCLOSURE :					
		Fabrication, PVC Sleeving, Control/Power Wiring and necessary electrical/ mechanical interlocking etc any other item required for proper functioning of the system complete as required.					
		DG SET WITH AMF PANEL as mentioned above	Set	2			
		TOTAL SUBHEAD 3: DG SETS					
		SUB HEAD 4 : EARTHING FOR SUBSTATIONS					
4.00		EARTHING FOR SUBSTATION :					
	4.01	Earthing with copper plate 600mmX600mmX3mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) complete as required	Set	10			
	4.02	Earthing with GI plate 600mmX600mmX6mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) complete as required	Set	18			
	4.03	Extra for using charcoal and salt for GI or copper plate earth electrode as required.	Set	28			
	4.04	Supplying and laying 25mmX5mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	200			
	4.05	Providing and fixing 25mmX5mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	220			

	4.06	Providing and fixing 25mmx5mm G.I. strip in 40mm dia G.I. pipe from earth electrode as required.	Metre	100			
	4.07	Providing and fixing 25mmX5mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	200			
	4.08	Supplying and laying 25mmX5mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	100			
	4.09	Providing and fixing 25mmx5mm copper strip in 40mm dia G.I. pipe from earth electrode as required.	Metre	75			
	4.10	Providing and laying of following sizes non pressure NP2 class (light duty) RCC pipe with collar joint with stiff mixture of cement (1 cement : 2 fine sand) including testing the joints etc. as required.					
	i	150mm dia	Metre	100			
	ii	300mm dia	Metre	150			
	4.11	Providing and fixing M.V. danger notice plate of 200mmX150mm made of mild steel, atleast 2mm thick and vitreous enamelled white on both sides and with inscription in signal red colour on front side as required.	Each	5			
	4.12	Supplying and laying of 1.1kV grade 1 metre wide anti skid chequered type rubber mat.	Metre	30			
	4.13	Supplying and laying of 12kV grade 1 metre wide anti skid chequered type rubber mat.	Metre	20			
	4.14	Supply and fixing shock treatment chart in English, Hindi and local language mounted on 5mm thick Plywood and 3mm thick plain glass front complete as required.	Set	6			
	4.15	Supplying and fixing CO2 type 9 Kg capacity trolley mounted fire extinguishers as approved by ISI complete as required.	Set	8			
	4.16	Supplying and fixing Foam type 9 ltrs capacity fire extinguishers as approved by ISI complete as required.	Set	4			
	4.17	Supplying and fixing Foam type 10 ltrs capacity fire extinguishers trolley mounted as approved by ISI complete as required.	Set	2			

4.18	Supplying, storing, handling and fixing in position First Aid Medical Box and an 'Artificial Respirator' complete as per technical specifications as required.	Each	1			
4.19	Supply and testing of 11kV ISI marked hand gloves	Set	1			
4.20	Providing & fixing rigid PVC pipe complete with fittings, clamps including trenching & refilling/ wall cutting & plastering, etc. (for cable entry) with all minor civil & mech. Works complete as required.					
	50 mm dia nominal bore	Metre	100			
TOTAL SUB HEAD 4: EARTHING FOR SUBSTATION						

SUB HEAD 5 :MV PANELS							
5.00		Supply, installation, testing and commissioning of following M.V. cubicle type totally enclosed, wall mounted type, dust, damp and vermin proof, indoor type Distribution Board/Panel complete with busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, powder coat painted and having following incoming and outgoing switchgears complete as required. Panel shall have IP-42 protection.					
	A1	HOSTEL NO. 1					
5.01		MV PANEL GROUND FLOOR - NORMAL 1 & NORMAL 2 : (HOSTEL 1)					
	a)	INCOMER:					
		500 Amp 415 volts, 35 KA (Ics) FP MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release.					
		R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		1 No. 0 to 500 Amp Digital ammeter with selector switch with one set of 500/5A C.Ts.					
	b)	BUSBARS:					
		630 Amp TPN Aluminium busbars					
	c)	OUTGOING:					
	i)	27 no. 100 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
	ii)	1 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
		MV PANEL GROUND FLOOR - NORMAL 1 & NORMAL 2 : (HOSTEL 1) as mentioned above	Set	2			
5.02		MV PANEL GROUND FLOOR - EMERGENCY 1 & EMERGENCY 2 : (HOSTEL 1)					
	a)	INCOMER:					
		400 Amp 415 volts, 35 KA (Ics) FP MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release.					

		R,Y&B phase indicating lamp (LED type) with 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
		1 No. 0 to 500 V Digital voltmeter with selector switch.				
		1 No. 0 to 400 Amp Digital ammeter with selector switch with one set of 400/5A C.Ts.				
	b)	BUSBARS:				
		630 Amp TPN Aluminium busbars				
	c)	OUTGOING:				
	i)	1 Nos. MCCB as per following details / specifications:				
		125 Amps,415 volts, TPN, 35 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings				
		"ON" LED indicating lamp and 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	ii)	2 Nos. MCCB as per following details / specifications:				
		63Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .				
		"ON" LED indicating lamp and 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	iii)	15 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.				
		MV PANEL GROUND FLOOR - EMERGENCY 1 & EMERGENCY 2 : (HOSTEL 1) as mentioned above	Set	2		
	A2	HOSTEL NO. 2				
5.03		MV PANEL GROUND FLOOR - NORMAL 1 & : (HOSTEL 2)				
	a)	INCOMER:				
		320 Amp 415 volts, 35 KA (Ics) FP MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release.				
		R,Y&B phase indicating lamp (LED type) with 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
		1 No. 0 to 500 V Digital voltmeter with selector switch.				

		1 No. 0 to 320 Amp Digital ammeter with selector switch with one set of 320/5A C.Ts.					
	b)	BUSBARS:					
		500 Amp TPN Aluminium busbars					
	c)	OUTGOING:					
	i)	15 no. 100 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
		MV PANEL GROUND FLOOR - NORMAL 1 & : (HOSTEL 2) as mentioned above	Set	1			

5.04		MV PANEL GROUND FLOOR - EMERGENCY 1 & : (HOSTEL 2)				
	a)	INCOMER:				
		320 Amp 415 volts, 35 KA (Ics) FP MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release. R,Y&B phase indicating lamp (LED type) with 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
		1 No. 0 to 500 V Digital voltmeter with selector switch.				
		1 No. 0 to 320 Amp Digital ammeter with selector switch with one set of 320/5A C.Ts.				
	b)	BUSBARS:				
		400 Amp TPN Aluminium busbars				
	c)	OUTGOING:				
		1 Nos. MCCB as per following details / specifications:				
		125 Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings. "ON" LED indicating lamp and 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
		2 Nos. MCCB as per following details / specifications:				
		63Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings . "ON" LED indicating lamp and 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	i)	15 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.				
		MV PANEL GROUND FLOOR - EMERGENCY 1 & : (HOSTEL 2) as mentioned above	Set	1		
5.05		MV PANEL GROUND FLOOR - NORMAL 2 & : (HOSTEL 2)				
	a)	INCOMER:				
		500 Amp 415 volts, 35 KA (Ics) FP MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release. R,Y&B phase indicating lamp (LED type) with 2A control SP MCB				

		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		1 No. 0 to 500 Amp Digital ammeter with selector switch with one set of 500/5A C.Ts.					
	b)	BUSBARS:					
		630 Amp TPN Aluminium busbars					
	c)	OUTGOING:					
	i)	29 no. 100 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					

		MV PANEL GROUND FLOOR - NORMAL 2 & : (HOSTEL 2) as mentioned above	Set	1			
5.06		MV PANEL GROUND FLOOR - EMERGENCY 2 & : (HOSTEL 2)					
	a)	INCOMER:					
		320 Amp 415 volts, 35 KA (Ics) FP MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release.					
		R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		1 No. 0 to 320 Amp Digital ammeter with selector switch with one set of 320/5A C.Ts.					
	b)	BUSBARS:					
		500 Amp TPN Aluminium busbars					
	c)	OUTGOING:					
	i)	29 no. 63 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					
		MV PANEL GROUND FLOOR - EMERGENCY 2 & : (HOSTEL 2) as mentioned above	Set	1			
	A3	HOSTEL NO. 3					
5.07		MV PANEL GROUND FLOOR - NORMAL : (HOSTEL 3)					
	a)	INCOMER:					
		320 Amp 415 volts, 35 KA (Ics) FP MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release.					
		R,Y&B phase indicating lamp (LED type) with 2A control SP MCB					
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.					
		1 No. 0 to 500 V Digital voltmeter with selector switch.					
		1 No. 0 to 320 Amp Digital ammeter with selector switch with one set of 320/5A C.Ts.					
	b)	BUSBARS:					
		500 Amp TPN Aluminium busbars					
	c)	OUTGOING:					
	i)	15 no. 100 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.					

		MV PANEL GROUND FLOOR - NORMAL : mentioned above	(HOSTEL 3) as Set	1			

5.08		MV PANEL GROUND FLOOR - EMERGENCY : (HOSTEL 3)				
	a)	INCOMER:				
		400 Amp 415 volts, 35 KA (Ics) FP MCCB with variable current settings and having microprocessor based O/L, S/C & E/F protection release. R,Y&B phase indicating lamp (LED type) with 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
		1 No. 0 to 500 V Digital voltmeter with selector switch.				
		1 No. 0 to 400 Amp Digital ammeter with selector switch with one set of 400/5A C.Ts.				
	b)	BUSBARS:				
		630 Amp TPN Aluminium busbars				
	c)	OUTGOING:				
		1 Nos. MCCB as per following details / specifications:				
		125 Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings "ON" LED indicating lamp and 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
		2 Nos. MCCB as per following details / specifications:				
		63Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings . "ON" LED indicating lamp and 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
	i)	12 no. 100 Amps , 415 volts, 9 KA ,Four Pole, Miniature Circuit Breaker, with ON/ OFF indication.				
		MV PANEL GROUND FLOOR - EMERGENCY : (HOSTEL 3) as mentioned above	Set	1		
5.09		LIFT PANEL EMERGENCY : (HOSTEL 1&2)				
	a)	INCOMER:				
		1 no.200Amps , 415 volts, 35 KA (lsc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings. R,Y&B phase indicating lamp (LED type) with 2A control SP MCB				

		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
		1 No. 0 to 500 V Digital voltmeter with selector switch.				
		1 No. 0 to 200 Amp Digital ammeter with selector switch with one set of 200/5A C.Ts.				
	b)	BUSBARS:				
		300 Amp TPN Aluminium busbars				
	c)	OUTGOING:				
	i)	6 Nos. MCCB as per following details / specifications:				
		63Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .				
		"ON" LED indicating lamp and 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
		LIFT PANEL EMERGENCY : (HOSTEL 1&2) as mentioned above	Set	2		
5.10		LIFT PANEL EMERGENCY : (HOSTEL 3)				
.	a)	INCOMER:				
		1 no.125Amps , 415 volts, 35 KA (lsc),four pole, Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .				
		R,Y&B phase indicating lamp (LED type) with 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
		1 No. 0 to 500 V Digital voltmeter with selector switch.				
		1 No. 0 to 120 Amp Digital ammeter with selector switch with one set of 120/5A C.Ts.				
	b)	BUSBARS:				
		200 Amp TPN Aluminium busbars				
	c)	OUTGOING:				
	i)	4 Nos. MCCB as per following details / specifications:				
		63Amps,415 volts, TPN, 25 KA Moulded Case Circuit Breaker with thermal magnetic release having variable current settings .				
		"ON" LED indicating lamp and 2A control SP MCB				
		Extended rotary operating mechanism with door interlocking with defeat feature and padlock facility. MCCB should have spreader links & phase barriers.				
		LIFT PANEL EMERGENCY : (HOSTEL 3) as mentioned above	Set	1		

		TOTAL SUB HEAD 5 : MV PANEL				
		SUB HEAD- 6: MCB DISTRIBUTION BOARDS.				
6.00		MCB DISTRIBUTION BOARD				
6.01		Supplying & fixing following way, three pole and neutral,prewired,sheet steel, MCB distribution board, 415 volts,on recess/surface complete with loose wire box, terminal blocks, tinned copper busbar, neutral link, earth bar,din bar, detachable gland plate, interconnections, phosphatized and powder painted including earthing etc.Before procurement of DB the contractor has to take approval of DB schedule/ drawing of each DB from the Electrical Engineer, HSCC, as per technical specifications and as required.(but without MCB & RCCB),				
	i	8 way (8+24), Double door	Each	4		
	ii	12 way (8+36), Double door	Each	154		
6.02		Supplying & fixing 6 Amps to 32 Amps rating, 240 volts,'B' series, miniature circuit breaker suitable for lighting & other loads of following poles in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications & as required.				
	i	Single pole	Each	4230		
	ii	Triple pole & neutral (FP)	Each	3		
6.03		Supplying & fixing following rating, four pole, 415 volts, Miniature Circuit Breaker (MCB),in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.				
	i	40 Amps	Each	3		
	ii	63 A mps	Each	67		
	iii	100 A mps	Each	91		
6.04		Supplying & fixing following rating, four pole, 415 volts,Residual Current Circuit Breaker (RCCB) having a sensitivity current upto 300 mA in the existing MCB DB complete with connections, testing & commissioning etc. as per technical specifications and as required.				
	ii	32 Amps	Each	3		
	iii	40 Amps	Each	3		
	iv	63 Amps	Each	67		
	v	100 A mps	Each	91		
6.05		Supplying and fixing Single pole Blanking plate in the existing MCB DB complete as required.	Each	1014		
		TOTAL SUB HEAD-6: MCB DISTRIBUTION BOARDS.				

		SUB HEAD 7: WIRING				
7.00		WIRING				
7.01	i	Wiring for light point/fanpoint/ exhaust fan point/call bell point with 1.5 sq.mm. PVC insulated, fire retardant low smoke (FRLS) copper conductor cable, single core/ multi strand, in steel conduit (Including supplying & recess laying of MS conduit and accessories) including the following and complete as required.				
	ii	Supplying and Fixing Modular type switches (modular Bell push in case of call bell points) in suitable size modular metal boxes, base plate & modular cover plates, space for fixing electronic fan regulator in case of fan point wiring & space for fixing 5A socket on the board etc.				
	iii	Supplying and fixing Hexagonal fan Boxes with 3 mm thick hylem sheet covers in case of Fan Points				
	iv	Supplying & Fixing Ceiling Rose in case of Exhaust Fan Points etc.				
		Note :				
		i) Unless otherwise specified all the conduiting work to be done in recess				
		Point wiring as mentioned above	Point	8063		
7.02	i	Wiring for twin control light points with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable in MS conduit (including supplying and recess laying of MS conduit) including the following and complete as required.				
	ii	Supplying and Fixing Modular type two numbers 2 Way switches in suitable size modular metal boxes, base plate & modular cover plates etc.				
		Note :				
		i) Unless otherwise specified all the conduiting work to be done in recess				
		Wiring for twin control light points as mentioned above	Point	208		
7.03		Wiring for 5A light plugs with 1.5 sq.mm. PVC insulated, FRLS copper conductor cable including one number 1.5 sq.mm. PVC insulated, copper conductor cable for earthing in surface/recessed ISI marked MS conduit (including supply and recess laying of ISI marked MS conduit) as per technical specifications and as required.	Point	1553		
		5 A light plug wiring same as above but plug point is in the switch board itself.	Point	45		

7.04		Wiring for computer points (Three sockets & one switch) with 2.5 sq.mm. PVC insulated, FRLS copper conductor cable including one number 2.5 sq.mm. PVC insulated, copper conductor cable for earthing in surface/recessed MS conduit (including supply and recess laying of conduit) as per technical specifications and as required.	Point	588		
7.05		Wiring for 16 amp power plug with 2X4 sqmm PVC insulated, FRLS copper conductor, single core/multi strand cable in surface/recessed MS conduit (including supply and recess laying of MS conduit with all accessories) along with 4 sqmm PVC insulated, copper conductor, single core/multi strand cable for loop earthing etc per technical specifications & as required.				
		Directly from MCB-Distribution Board to the Socket Outlets	Point	1486		
7.06		Wiring for 20 amp power plug with 2X4 sq.mm. PVC insulated, copper conductor, single core cable in surface/recessed ISI marked MS conduit (including supply and recess laying of ISI marked MS conduit with all accessories) along with 1X4 sqmm PVC insulated, copper conductor, single core cable for loop earthing, as per technical specifications & as required.	Point	258		
7.07		Wiring for submain/ circuit wiring with following sizes of PVC insulated, copper conductor single core/multi strand cable in recessed steel conduit (including supply & laying of recessed conduit) as required.				
	i)	2X2.5 Sqmm with 1 No. 2.5 sqmm PVC insulated, copper conductor for earthing.	Metre	11042		
	ii)	4X16 Sqmm with 2 nos 16 sq mm PVC insulated, copper conductor for earthing.	Metre	1843		
	iii)	4X25 Sqmm with 2 nos 25 sq mm PVC insulated, copper conductor for earthing.	Metre	2082		
7.08		Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing 3 pin 5/6 amps. modular socket outlet with shutters and 5/6 amps. modular type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required.	Each	1563		
7.09		Supplying and fixing suitable module modular metal box on surface or in recess including providing and fixing 6 pin 15/16 A modular socket outlet with shutters and 15/16 A modular switch, base plate, modular cover plate, connections, etc. and all civil works complete as required.	Each	1486		

7.10	Supply and fixing following 20 Amps, 240 volts, 2P+E, Industrial Socket Outlet (with plugs) in a metal box with 20 SP MCB in a sheet steel cover on surface or recess complete with all accessories including connections, testing and commissioning etc. as required.	Each	258			
7.11	Supply, Installation, Testing & Commissioning 63 Amps, TPN MCCB in a sheet steel enclosure, extended rotary operating mechanism complete with all accessories as required.	Each	10			
7.12	Supplying and fixing suitable Module metal box on surface or in recess including providing and fixing three nos 3 pin 5/6 amps. modular socket outlet with shutters and one no. 10 amps. modular type switch, base plate, modular cover plate, connections etc. and all civil works 'complete as required. (For computer Points)	Each	588			
7.13	Supplying, providing & fixing cordless musical bell, batteries etc of approved make complete as required.	Each	236			
TOTAL SUBHEAD: 7- WIRING						

SUB HEAD: 8 - LIGHT FIXTURE AND FANS							
8.00		LIGHT FIXTURES AND FANS					
8.01		Supply of following light fixture with high efficiency electronic ballast, starter, capacitor, reflector, diffuser, MS body /housing holder etc. complete with all fixing accessories as required.					
	i	1X28 watt box type flourescent light fixture (Philips TMS 122M 1XTL5 B8 W EBT or approved equivalent) (136b/136bw)	Each	1837			
	ii	2X28 watt box type flourescent light fixture with reflector (Philips TMS 122M2XTL528 W EBT or approved equivalent) (236b)	Each	301			
	iii	1X36watt surface mounted flourescent light fixture (Philips TCS 6051XTLD 36W IC MI or approved equivalent) 136smo1	Each	15			
	iv	1X36watt recess mounted flourescent light fixture (Philips TBS 0501XTLD36 W EBE MI or approved equivalent) 136RMO1	Each	1336			
	v	2X TL5 28 watt recess mounted mirror optics flourscent light fixture (Philips TBS 669M 2XL528 W EBP D6 or approved equivalent). (236 RMO1)	Each	25			
	vi	2 X36watt surface mounted flourescent light fixture (Philips TCS 398 2XTLD 36 W EBE HIL D6 or approved equivalent) 236SMO1	Each	115			
8.02		Supply of following compact flourescent light fixture with electronic ballast, starter, capacitor, yellow light lamps, reflector, diffuser, MS body/housing holder etc. complete with all fixing accessories as required.					
	i	1x9 watt Bulk Head light fixture (Philips FXC 101 1XPL-S/2P11 W ACO or approved equivalent) BH	Each	97			
	ii	1X18 watt new drumlight round downlight fixture with CFL lamp (Decon 03UA 01 or approved equivalent) DL1	Each	390			
	iii	2 X 11 watt surface mounted mirror optics (Philips FCS 518 2XPLS/2P 11 W I 240 V OR EQUIVALENT) (211CFLRECT)	Each	451			
	iv	2X10 watt Mirror top (Decon 05UB or approved equivalent) (w toilet)	Each	588			

	v	Surface mounted Batten holder (Plastic) with 13 watt CFL	Each	15		
	vi	1x15 watt GLS lamp in wall recessed fixture (Decon 54VW, in die cast aluminium or approved equivalent) used as a night lamp NLWM	Each	230		
	vii	2X42 watt recessed mounted down light fixture with decorative PBT housing (Philips FBH225 2XPLT/4P42WHFP 240V or approved equivalent)	Each	12		
	viii	1X13 watt wall bracket with polycarbonate diffuser and CFL lamp (Decon 05UK RIB or approved equivalent) WB1/WB2	Each	544		
8.03		Supply of following ceiling fans (Crompton Greaves High Breeze or approved equivalent) complete with double ball bearing, motor, blades, downrod, canopies, capacitor, modular type electronic fan regulator, suitable for operation on 230 volts, 50 Hz., 1 phase, AC supply complete as required				
	i	900 mm sweep	Each	10		
	ii	1200 mm sweep	Each	1411		
8.04		Supply of 900 RPM, 225 mm heavy duty exhaust fan suitable for single phase 230 volts, 50 Hz., AC supply complete with motor, louvers/shutters etc. complete as required.	Each	566		
8.05		Supply of 450 mm sweep, crompton greaves model high flow 18" wall mounted fan complete with double ball bearing, motor, blades, capacitor etc suitable for single phase 230 volts, 50 Hz., AC supply, complete as required.	Each	20		
8.06		Installation, testing and commissioning of prewired, flourescent fittings of all types, complete with all accessories and tube etc. directly on ceiling/wall, including connections with 1.5 sq.mm. PVC insulated, FRLS copper conductor, single core/ multi strand cable etc. as required.	Each	3629		
8.07		Installation, testing and commissioning of prewired, compact flourescent lamp fixture (CFL fxtures)of all types, complete with all accessories and lamp etc. directly on ceiling/wall, including connections with 1.5 sq.mm. PVC insulated, FRLS copper conductor, single core/ multi strand cable etc. as required.	Each	2327		

8.08		Installation, testing and commissioning of ceiling fan and modular type electronic fan regulator(Electronic regulator to be fixed in switch board) including wiring the down rod and connection with 1.5 sqmm FR PVC insulated, copper conductor single core/multi strand cable including providing & fixing phenolic laminated sheet cover on the fan box, etc. as required.	Each	1421			
8.09		Installation, testing and commissioning of exhaust fan up to 450 mm sweep in the opening, including making the hole to suit the size of the above fan including , fixing of louvers/ shutters with frame making good the damages etc. as required.	Each	566			
8.10		Installation, testing and commissioning of wall mounted fan up to 450 mm sweep including supply and fixing wall bracket arrangement complete as required.	Each	20			
		TOTAL SUBHEAD 8 : LIGHT FIXTURE & FANS					

		SUB HEAD 9 : TELEPHONE SYSTEM					
9.00		TELEPHONE SYSTEM					
9.01		Wiring for telephone point with Supply & laying two pair 0.5 Sq. mm solid, annealed copper conductor insulated with high density polythlene. The insulated cores twisted to form pairs, helically wrapped with polyester tape, over all insulation of FR PVC, unarmoured telephone cable in MS conduit (including supply & recessed laying of M.S. conduit), including providing & fixing of two module modular metal box on recess with following pair cord outlet, connections etc. complete as required. This also includes conduiting, wiring from floor Tag blocks to individual telephone outlets.					
	i	1 pair cord outlet (Jack Type)	Point	700			
	ii	2 pair cord outlet (Jack Type)	point	85			
9.02		Supplying, Installation, testing and commissioning of following sizes of telephone distribution board in M.S. hinged type lockable box duly painted complete with Krone type tag block etc. including terminations of cable as required.					
	i	500 Pair	Each	2			
	ii	250 Pair	Each	4			
	iii	150 Pair	Each	1			
	iv	30 Pair	Each	5			
	v	20 Pair	Each	40			
9.03		Supplying and drawing of following pairs .5 mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured telephone cable on surface/tray with saddels etc. complete as required.					
	i	100 Pair	Metre	110			
	ii	30 Pair	Metre	120			
	iii	20 Pair	Metre	1560			
9.04		Supplying and drawing of following pairs .5 mm dia annealed bare copper conductor Polythene insulated, core twisted into pairs armoured jelly filled telephone cable in the existing trench/ hume pipe/ GI pipe etc with saddels etc. complete as required.					
	i	100 Pair	Metre	8500			
	ii	50 Pair	Metre	500			
		TOTAL : SUB HEAD 9:TELEPHONE SYSTEM					
		SUB HEAD 10:CONDUITING FOR COMPUTER SYSTEM .					
10.00		CONDUITING FOR COMPUTER SYSTEM .					

10.01		Supply and fixing of following sizes of rigid PVC conduit alongwith the accessories in recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required				
	i	20 mm dia	Metre	11760		
	ii	25 mm dia	Metre	2940		
10.02		Supplying and fixing two module modular plate (suitable for RJ-45 computer socket) with GI box complete as required.	Each	588		
		TOTAL SUB HEAD: 10 CONDUITING FOR COMPUTER SYSTEM				
		SUB HEAD 11: CONDUITING FOR TV OUTLETS				
11.00		CONDUITING FOR TV OUTLETS				
11.01		Supply and fixing of following sizes of MS conduit alongwith the accessories in surface/recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required				
	i	20 mm dia	Metre	5280		
	ii	25 mm dia	Metre	1056		
11.02		Supplying and fixing 2 module modular metal box in recess with modular cover plate including fixing 1 no. coaxial TV outlet connection and all accessories complete as required	Each	528		
11.03		Supply and drawing Coaxial TV Cable RG - 6 grade, 0.7 mm solid copper conductor PE insulated, shielded with fine tinned copper braid and protected with PVC sheath in the existing surface/ recessed steel/ PVC conduit as required.	Metre	100		
		TOTAL SUB HEAD 11: CONDUITING FOR TV OUTLETS				
		SUB HEAD 12 : FIRE DETECTION AND ALARM				
12.00		FIRE DETECTION AND ALARM SYSTEM				
12.01		Supply and drawing of following sizes of PVC insulated FRLS copper conductor single core cable in surface/recessed MS conduit (including Supplying and fixing of MS Conduit) complete as required.				
	i	2X1.5 sqmm	Metre	26690		

12.02		Supply, installation, testing and commissioning of the following addressable type fire detection and alarm accessories as per technical specification & complete with connections etc. as required.				
	i	Optical type Smoke Detector	Each	1110		
	ii	Heat Detector	Each	25		
	iii	Manual Break Glass Unit in MS enclosure	Each	64		
	iv	Fire Alarm Bell / Hooter of suitable range to cover the complete floor, in MS enclosure.	Each	64		
	v	Response indicator	Each	518		
12.03		Supply, Installation, testing and commissioning of 6 loop microprocessor based addressable type networkable Fire Detection & Alarm Panel complete with inbuilt power supply, battery charger with SMF batteries for minimum 24 hours back-up. The panel shall have a communication module and HI 485 network card. The panel should have rectifier, loop card, minimum 80 character LCD unit to indicate fire/ fault signals with address including external/ internal printer to print the details complete as per technical specifications and requirement of Local Fire Authority and as required.	Set	2		
12.04		Supply, Installation, testing and commissioning of 3 loop microprocessor based addressable type networkable Fire Detection & Alarm Panel complete with inbuilt power supply, battery charger with SMF batteries for minimum 24 hours back-up. The panel shall have a communication module and HI 485 network card. The panel should have rectifier, loop card, minimum 80 character LCD unit to indicate fire/ fault signals with address including external/ internal printer to print the details complete as per technical specifications and requirement of Local Fire Authority and as required.	Set	1		
12.05		Supply testing and commissioning of isolator module as per specifications.	Set	297		
12.06		Supply, Installation, testing and commissioning of addressable control modules.	Each	24		
12.07		Supply, Installation, testing and commissioning of addressable monitor modules.	Each	6		
12.08		Supply, Installation, testing and commissioning of flow switch	Each	3		

12.09	Supplying, drawing, connecting, testing & commissioning of 4 core, 1.5 sq. mm ,1100 volts FRLS copper conductor with PVC armoured cable with steel brading for mechanical protection and over all shielded with aluminium myler tape complete as required.	Metre	1000			
12.10	Supply, installation, testing and commissioning of 24 zone microprocessor based talkback master control panel with LCD display , inbuilt battery charger and battery space .The panel should have LCD and LED display for zone wise calling , & fabricated with 16 SWG sheet metal housing with red paint .	Each	2			
12.11	Supply, installation, testing and commissioning of 8 zone microprocessor based talkback master control panel with LCD display , inbuilt battery charger and battery space .The panel should have LCD and LED display for zone wise calling , & fabricated with 16 SWG sheet metal housing with red paint .	Each	1			
12.12	Supply, installation, testing and commissioning talkback unit with telephone handset in 16 SWG red body housing with locking protection.	Each	56			
	TOTAL SUB HEAD 12 : FIRE DETECTION AND ALARM					
	SUB HEAD 13: LIGHTENING PROTECTION					
13.00	LIGHTENING PROTECTION					
13.01	Earthing with 600 mm X 600 mm X 6 mm thick GI plate including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) complete as required.	Set	20			
13.02	Extra for using charcoal and salt for GI or copper plate earth electrode as required.	Set	20			
13.03	Providing and fixing of lightening conductor finial, made of 25mm. dia. 300mm., long GI tube, having single prong at top, with 85 mm. dia. 6 mm. thick GI base plate including holes etc. complete as required.	Each	40			
13.04	Providing and and fixing GI tape 20mm X 3 mm thick on parapet or surface of wall for lightning conductor as required. (For horizontal runs).	Metre	584			

13.05	Providing and and fixing GI tape 20mm X 3 mm thick on parapet or surface of wall for lightning conductor as required. (For vertical runs).	Metre	672			
13.06	Providing and fixing testing joint, made of 20mmX3mm thick GI strip, 125 mm. long, with 4 no.'s of GI bolts, nuts, check nuts, bar shaddles, and spring washers etc. complete as required.	Each	20			
13.07	Providing and laying GI tape, 32 mm X 6 mm thick, from test joint upto earth electrode directly in ground as required.	Metre	300			
TOTAL SUB HEAD 13: LIGHTENING PROTECTION						

		SUB HEAD 14 : LIFTS				
14.01		Design, manufacture, supply, installation, testing and commissioning of following 8 passenger (544 kg) lift , serving different floors in the lift shaft including lift well pressurization. The lift should be BMS compatible ie; it should have modbus/ BACnet output. The lift should be as per detailed specification/ drawing enclosed as required and as under:				
	-	Speed : 1.5 MPS				
	-	Travel: As per architectural drawing.				
	-	Controller: A.C. variable voltage & variable frequency				
	-	Automatic rescue device complete with dry maintenance free batteries as required.				
	-	Operation: Microprocessor based single automatic push button/ simplex selective collective/duplex collective selective with / without attendant.				
	-	415 V, 3 phase, 50 Hz, 4 wire system				
	-	Type of doors: a) Car : Power operated, centre opening for passenger lift horizontal sliding stainless steel scratch proof. (b) Landing doors: Stainless steel scratch proof. Lift car door and landing doors shall have a fire resistance of one hour.				
	-	A hand rail guide not less than 600 mm long at 900 mm above floor level .				
	-	Mirror of suitable size to be fixed inside the lift car.				
	-	Voice announcement system in the car to announce the position of the elevator in the hoistway as the car passes or stops at a floor served by the elevator.				
	-	Telephone with minimum two connections one at operator's room and other at guard/ security room and the emergency signal with re-chargeable batteries as source of supply be made in the lift car.				
	-	Toe guard, PA speaker, IR curtain on full height, two phase fireman's drive control/ switch and potential free contacts etc to be provided in the lift.				
		Various 8 Passenger Lift serving following floors , stops & openings as mentioned below:				
	i	Floors : B+G+10 (Total twelve floors) , 12 stops & 12 openings	Each	4.00		
	ii	Floors : G+10 (Total eleven floors) , 11 stops & 11 openings	Each	4.00		
	iii	Floors : B1+B2+G+5 (Total eight floors), 8 stops & 8 openings	Each	2.00		
		TOTAL SUB HEAD 14: LIFTS				
		SUB HEAD 15: LT CABLES				
15.00		LT CABLES				

15.01		Supply of following sizes of 1.1 kV grade multicore aluminium conductor PVC sheathed armoured AYFY cable as per IS 1554.					
	i	3.5 Core 25 Sqmm.	Metre	155			
	ii	3.5 Core 50 Sqmm.	Metre	145			
	iii	3.5 Core 70 Sqmm.	Metre	146			
	iv	3.5 Core 95 Sqmm.	Metre	1147			
	v	3.5 Core 150 Sqmm.	Metre	347			
	vi	3.5 Core 185 Sqmm.	Metre	1022			
	vii	3.5 Core 240 Sqmm.	Metre	1110			
	viii	3.5 Core 300 Sqmm.	Metre	1250			
	ix	3 Core 4 Sq mm	Metre	146			
	x	2 Core 10 Sq mm	Metre	1000			
	xi	2 Core 16 Sq mm	Metre	900			
15.02		Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc. as required					
	i	Size not exceeding 25 sq.mm	Metre	1301			
	ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	Metre	1438			
	iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	Metre	3729			
15.03		Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade direct in the existing RCC/ Hume/Stoneware/Metal pipe as required					
	i	Size not exceeding 25 sq.mm	Metre	200			
	ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	Metre	270			
	iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	Metre	240			
15.04		Laying of one number PVC insulated and PVC sheathed power cable 1.1kV grade on surface or on existing cable tray complete as required.					
	i	Size not exceeding 25 sq.mm	Metre	45			
	ii	Size exceeding 25 sq.mm but not exceeding 120 sq.mm	Metre	85			
	iii	Size exceeding 120 sq.mm but not exceeding 300 sq.mm	Metre	95			
15.05		Supplying and making end termination with suitable size Copper lugs including double compression glands of following sizes of 1.1. kv grade multicore aluminium conductor PVC insulated and PVC sheathed					

	i	3.5 Core 25 Sqmm.	Each	18			
	ii	3.5 Core 50 Sqmm.	Each	16			
	iii	3.5 Core 70 Sqmm.	Each	6			
	iv	3.5 Core 95 Sqmm.	Each	8			
	v	3.5 Core150 Sqmm.	Each	4			
	vi	3.5 Core 185 Sqmm.	Each	12			
		3.5 Core 240 Sqmm.	Each	12			
	vii	3.5 Core 300 Sqmm.	Each	10			
	viii	3 Core 4 Sq mm	Each	34			
	ix	2 Core 10 Sq mm	Each	18			
	x	2 Core 16 Sq mm	Each	30			
15.06		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 :-					
	i	150 mm. width x 50 mm. depth x 1.6 mm. thickness	Metre	300			
	ii	300 mm. width x 62.5 mm. depth x 2.0 mm. thickness	Metre	60			
	iii	450 mm. width x 62.6 mm. depth x 2.0 mm. thickness	Metre	150			
	iv	600 mm. width x 62.6 mm. depth x 2.0 mm. thickness	Metre	150			
		TOTAL SUB HEAD 15 : LT CABLES					
		SUB HEAD 16: EARTHING SAFETY EQUIPMENT AND MISC. ITEMS					
16.00		EARTHING, SAFETY EQUIPMENTS AND MISC. ITEMS					
16.01		Earthing with copper plate 600mmX600mmX3mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) complete as required	Set	6			
16.02		Earthing with GI plate 600mmX600mmX6mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) complete as required	Set	16			
16.03		Extra for using charcoal and salt for GI or copper plate earth electrode as required.	Set	22			
16.04		Earthing with GI earth pipe 4.5 mtr long, 40 mm dia including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. (but without charcoal or coke and salt) as required.	Set	3			

16.05		Earthing with GI earth pipe 4.5 mtr long, 40 mm dia including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc. with charcoal and salt as required.	Set	3			
16.06		Supplying and laying 25mmX5mm GI strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	330			
16.07		Providing and fixing 25mmX5mm GI strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	60			
16.08		Providing and fixing 25mmx5mm G.I. strip in 40mm dia G.I. pipe from earth electrode as required.	Metre	20			
16.09		Providing and fixing 25mmX5mm Copper strip on surface/on existing cable trench/RCC pipe/GI pipe or in recess for earth electrode as required.	Metre	330			
16.10		Supplying and laying 25mmX5mm Copper strip at 0.5m below ground level as strip earth electrode, including soldering etc. as required.	Metre	90			
16.11		Providing and fixing 25mmx5mm copper strip in 40mm dia G.I. pipe from earth electrode as required.	Metre	60			
16.12		Providing and laying of following sizes non pressure NP2 class (light duty) RCC pipe with collar joint with stiff mixture of cement (1 cement : 2 fine sand) including testing the joints etc. as required.					
	i	150mm dia	Metre	310			
	ii	300mm dia	Metre	450			
16.13		Providing and fixing M.V. danger notice plate of 200mmX150mm made of mild steel, atleast 2mm thick and vitreous enamelled white on both sides and with inscription in signal red colour on front side as required.	Each	10			
16.14		Supplying and laying of 1.1kV grade 1 metre wide anti skid chequered type rubber mat.	Metre	85			
16.15		Supply and fixing shock treatment chart in English, Hindi and local language mounted on 5mm thick Plywood and 3mm thick plain glass front complete as required.	Set	10			

16.16		Supplying and fixing CO2 type 4.5 Kg capacity fire extinguishers as approved by ISI complete as required.	Set	14		
16.17		Supplying, storing, handling and fixing in position First Aid Medical Box and an 'Artificial Respirator' complete as per technical specifications as required.	Each	3		
16.18		Supply and testing of 11kV ISI marked hand gloves	Set	3		
16.19		Providing & fixing rigid PVC pipe complete with fittings, clamps including trenching & refilling/ wall cutting & plastering, etc. (for cable entry) with all minor civil & mech. Works complete as required.				
		50 mm dia nominal bore	Metre	370		
		TOTAL SUB HEAD 16: EARTHING, SAFETY EQUIPMENT AND MISC. ITEMS				
		SUB HEAD 17: OUT DOOR LIGHTING				
17.00		OUT DOOR LIGHTING				
17.01		Supply, erection, testing and commissioning of external swaged steel tubular pole with following specifications & items :				
	i	9.0 Mtrs. high swaged steel tubular pole (Single arm of suitable length each around 1.5 Metre), the construction of the pole shall be as per IS 410 SP-33 with base plate 450mmX450mmX6mm complete as per requirement with two coats of spray paints (shade as approved)				
	ii	1X150 watts street light fixture with 150watts high pressure sodium vapour (HPSV) lamp complete with control gear, acrylic cover cover etc. and its wiring with 2X4 sq.mm. PVC insulated, FRLS copper conductor and 1,5 sqmm PVC insulated, FRLS copper earth wire from control box complete as required - 1 No. (Philips SPX 086/150 or approved equivalent)				
	iii	Suitable size 32 A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 6A DP MCB complete as required - 1 Set				
	iv	Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry				
	v	<i>Providing foundation including excavation, shuttering, alignment of poles, casting etc. including lean concrete at the bottom as per CPWD/ BIS specifications.</i>				
	vi	The above installations shall be completed as CPWD specifications and as required				
	A.	Steet Tubular Poles(9M) Single Arm as mention above	Set	50		

	B.	Steet Tubular Poles (9M) same as above but for Double Arm as mention above	Set	25			
17.02		Supply, installation, testing and commissioning of external post top lantern with following accessories and complete as required :					
	i)	4m high (3.3m above ground) 50mm dia GI pole as approved, adopting socket at top for fixture mentioned below, base plate 300 x 300 x 6mm and provision for mounting junction box etc. - 1 set.					
	ii)	Supply, installation, testing and commissioning of Post top lantern with 70W HPSV lamp (Philips SPC 106/70(I) HPF or equivalent) and its wiring with 2 x 2.5 sq.mm PVC insulated copper wire and 1.5 sqmm PVC insulated copper earth wire from control box - 1 set.					
	iii)	Suitable size 20A DP MS Control box with 2 no. incoming and outgoing terminals and 2 nos. tap-out terminal with 1 nos. 5A HRC fuses complete 1 set.					
	iv)	Suitable number(s) 40mm dia Class-B GI Pipe(s) from above control box to upto 0.5 metre below ground level for power cable entry					
	v)	Providing 400x400x1000mm deep 1:3:6 ratio cement concrete including excavation shuttering alignment of poles casting etc. including 100mm thick lean concrete shall be provided at the bottom					
		Supply, installation, testing and commissioning of external post top lantern as mentioned above	Set	10			
17.03		Supply, installation, testing and commissioning of bollard lamps 1X18 watts CFL (Philips HCS360 1XPL-C/2P 18W GR Sonara bollard in gree color or equivalent) control box - 1 set.	Each	50			

17.04	Supply, installation, testing and commissioning of bollard lamps 1X18 watts CFL (Philips HCS 370 1XPL-L 18W GR Lumos bollard in green color or equivalent) control box - 1 set.	Each	50			
17.05	Road Lighting Panel					
	Supply, installation, testing and commissioning of following outdoor type with canopy, IP-54 protected M.V. cubicle type totally enclosed, free standing type, dust, damp and vermin proof, MV Panel, busbars, M.V. danger notice plate, interconnections with suitable capacity aluminium leads/solid aluminium strips/rods, connection of incoming and outgoing cables with thimbles, stove enamelled painted and having following incoming and outgoing switchgears complete as required.					
	INCOMER:					
	1 No. 63 Amp 415 volts, TPN Switch Disconnecter Fuse Unit with HRC Fuses					
	1 Set of phase indicating lamp with HRC fuses					
	1 Set of photo sensor & 100A TP contactor with neutral link (for street lights control) .					
	BUSBARS:					
	100 Amp TPN Aluminium busbars					
	OUTGOING:					
	10 Nos. 32 Amp 415 volts, DP MCB					
	Feeder Pillar as mention above	Set	5			
17.06	Spiral earthing made out of 6 SWG GI wire , 50mm Dia, 115 turns closely wound ,1.5 mtr below ground, earth pit of 350 Dia., 1.5 mtr depth including providing charcoal and salt for earthing at alternate layers of 300 mm depth (total 3 layers),connections etc. complete as required.	Set	25			
	TOTAL SUB HEAD 17: OUTDOOR LIGHTING					
	GRAND TOTAL FOR ALL ELECTRICAL WORKS					

Bill of Quantities - For Hostel-1, Hostel-2, Hostel-3 ventilation works at AIIMS NEW DELHI						
Item No.	Description	Qty	Unit	Rate In Rs (in Figure)	Rate in Rs (in Words)	Amount (Rs.)
1	2	3	4	5	6	7
The prices are to be quoted in the below mentioned form and shall include the supply, installation, testing & commissioning at site of all the equipments, ancillary materials as specified and all such items what so ever which may be required to fulfill the intent and purpose as laid down in the specifications and or the drawings.						
The tenderer shall quote rates in figures and in words under column 5&6 and extend amount to column 7						
1.0	Centrifugal Fans					
	Supply, installation, testing and commissioning of double width double inlet class I CENTRIFUGAL FANS for ventilation system. Each fan shall be complete with TEFC type IP 55 motor with class F insulation, belt drive, pulley mounted on motor & fan shaft, belt guard, motor mount, casing and vibration isolators as per specifications and shop drawings.All expose fan shall be covered with GI housing as per approved shop drawings to protect fan and motors from weather.Fan motor shall be suitable for 3 Phase, 415+/- 10% V, 50Hz AC supply . Fan shall be complete with gravity louvers.					
	(for Hostel -1)					
	For Basement (Fresh Air Fans)					
1.1	Air Quantity : 10000 CFM (for normal ventillation) Static Pressure :40 mm wg	1	Nos.			
1.2	Air Quantity : 15000 CFM (for emergency) Static Pressure :40 mm wg	1	Nos.			
	(for Hostel -2)					
	For Basement (Fresh Air Fans)					
1.3	Air Quantity : 11800 CFM (for normal ventilation) Static Pressure :40 mm wg	1	Nos.			
1.4	Air Quantity : 17700 CFM (for emergency) Static Pressure :40 mm wg	1	Nos.			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	<i>(for Hostel -3)</i>					
	For Basement (Fresh Air Fans)					
1.5	Air Quantity : 51500 CFM (for normal ventilation) Static Pressure :40 mm wg	2	Nos.			
1.6	Air Quantity : 77200CFM (for emergency) Static Pressure :40 mm wg	2	Nos.			
2.0	Axial Flow fans (Fire rated)					
	Supply, installation,testing and commisioning of axial flow fans to provide mechanical ventilation, Each fan shall be complete with permanent split capacitor or shaded pole IP55 TEFC motor with class H insulation motor , mounting plate and accessories like belt guard, drive packages etc as required. All expose fan shall be covered with GI housing as per approved shop drawings to protect fan and motors from weather.Quoted rate shall be including of vibration isolators as per specifications. Fan motor shall be suitable for 3 Phase, 415+/-10% V, 50Hz AC supply . Fan shall be complete with gravity louvers.					
	<i>(for Hostel -1)</i>					
2.1	Duty: Smoke Spill / Ventilation Fan Air Quantity : 10000 CFM (fresh air) Static Pressure : 40 mm wg Fan shall be 250 deg C, 2 hours fire rated.	1	Nos.			
2.2	Duty: Smoke Spill / Ventilation Fan Air Quantity : 15000 CFM (in case of fire) Static Pressure : 40 mm wg Fan shall be 250 deg C, 2 hours fire rated.	1	Nos.			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	<u>(for Hostel -2)</u>					
2.3	Duty: Smoke Spill / Ventilation Fan Air Quantity : 11800 CFM (Normal ventilation) Static Pressure : 40 mm wg Fan shall be 250 deg C, 2 hours fire rated.	1	Nos.			
2.4	Duty: Smoke Spill / Ventilation Fan Air Quantity : 17700 CFM (in case of fire) Static Pressure : 40 mm wg Fan shall be 250 deg C, 2 hours fire rated.	1	Nos.			
	<u>(for Hostel -3)</u>					
2.5	Duty: Smoke Spill / Ventilation Fan Air Quantity : 25750 CFM (in normal condition)) Static Pressure : 40 mm wg Fan shall be 250 deg C, 2 hours fire rated.	4	Nos.			
2.6	Duty: Smoke Spill / Ventilation Fan Air Quantity : 38600 CFM (in case of fire) Static Pressure : 40 mm wg Fan shall be 250 deg C, 2 hours fire rated.	4	Nos.			
3.0	Tube Axial Flow fans Supply, installation,testing and commisioning of tube axial flow fans as shown in drawings, Each fan shall be direct driven.. Fan motor shall be suitable for 3 Phase, 415+/- 10% V, 50Hz AC supply . Fan shall be complete with gravity louvers.					
	<u>(for Hostel -1)</u>					
3.1	Duty: Lift well pressurisation Air Quantity : 9000 CFM Static Pressure : 30 mm wg	2	Nos.			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
3.2	Duty: Lift well pressurisation Air Quantity : 8250 CFM Static Pressure : 30 mm wg	2	Nos.			
3.3	Duty: Lift lobby pressurisation Air Quantity : 9000 CFM Static Pressure : 30 mm wg	1	Nos.			
3.4	Duty: Lift lobby pressurisation Air Quantity : 10000 CFM Static Pressure : 30 mm wg	1	Nos.			
	<u>(for Hostel -2)</u>					
3.5	Duty: Lift well pressurisation Air Quantity : 9000 CFM Static Pressure : 30 mm wg	2	Nos.			
3.6	Duty: Lift well pressurisation Air Quantity : 8250 CFM Static Pressure : 30 mm wg	2	Nos.			
3.7	Duty: Lift lobby pressurisation Air Quantity : 9000 CFM Static Pressure : 30 mm wg	1	Nos.			
3.8	Duty: Lift lobby pressurisation Air Quantity : 10000 CFM Static Pressure : 30 mm wg	1	Nos.			
	<u>(for Hostel -3)</u>					
3.9	Duty: Lift well pressurisation Air Quantity : 6000 CFM Static Pressure : 30 mm wg	2	Nos.			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
3.10	Duty: Lift lobby pressurisation Air Quantity : 4000 CFM Static Pressure : 30 mm wg	1	Nos.			
4.0	Inline Fans/ Propeller Fans Supply, installation, testing and commissioning of Inline Fans as shown in drawings and as per equipment schedule . Each fan shall be complete with centrifugal blowers, totally enclosed fan cooled motor. Fan motor shall be suitable for single phase, 220 +/- 6% V, 50 Hz AC supply. Item shall be complete with starter & cabling. Inline Fans					
	<u>(for Hostel -1)</u>					
4.1	Air Quantity :100 CFM Static Pressure :15 mm wg	20	Nos.			
	<u>(for Hostel -2)</u>					
4.2	Air Quantity :100 CFM Static Pressure :15 mm wg	2	Nos.			
5.0	Propeller fans Supplying, installing, testing and commissioning of direct driven Propeller fan for exhaust air as shown in drawings. Each fan shall be complete with permanent split capacitor or shaded pole motor, mounting plate, accessories like wire guard, bird screen and fixed louvers for weather protection as required. Fan selection arrangement and Electrical characteristics shall be as follows:					
	<u>(for Hostel -1)</u>					
5.1	150 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	170	Nos			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
5.2	225 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	18	Nos			
	<u>(for Hostel -2)</u>					
5.3	150 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	330	Nos			
	<u>(for Hostel -3)</u>					
5.4	150 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	60	Nos			
5.5	225 mm dia 900 RPM fan suitable for 220 +/- 10% volts, 50 Cycles, 1 Phase AC Supply	10	Nos			
6.0	GSS DUCTING Supply, installation, testing and balancing of G.S.S ducting of following thickness including necessary supports, hangers, nut bolts, gaskets, splitter dampers, vanes canvass connections etc.Firerated ducts shall be fabricated from 1.25 mm thk GI sheets of 275 GSM irrespective of duct size.(All accessories shall be suitably fire rated for 250 deg C for 2 hrs)complete as per specifications & drawings:					
6.1	1.25 mm (18 G) GSS	2500	Sqm.			
6.2	1.0 mm (20 G) GSS	500	Sqm.			
6.3	0.80 mm (22 G) GSS	800	Sqm.			
6.4	0.63 mm (24 G) GSS	1000	Sqm.			
7.0	VOLUME CONTROL DAMPERS					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
7.1	Supply, installation and testing of volume control dampers of GI sheet, box type to be provided in ducts complete with suitable links, levers and quadrants for manual control of air volume and air balancing as per specifications and drawings.	24	Sqm.			
8.0	GRILLES					
8.1	Supply, installation, testing and balancing of powder coated extruded M.S. Air Grilles with / without volume control dampers.					
8.1.1	Supply air grilles in single louvers with volume control dampers.	50	Sqm.			
8.1.2	Exhaust air grilles in single louvers without volume control dampers.	50	Sqm.			
8.1.3	Painted metal jali with M.S. frames for the duct termination in the blower room.	15	Sqm.			
9.0	Fresh Air Louvers with bird screen					
9.1	Supply, installation, testing and commissioning of fresh air opening comprising of powder coated extruded aluminium louvers with bird screen, projection with frame and volume control damper with lever mounting arrangement etc. as per specifications and drawings.	10	Sqm.			
10.0	VENTILATION FAN DISTRIBUTION PANELS					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	Supply, installation, testing and commissioning of AHU panel suitable for 415 V, 3 phase, 4 wires, 50 Hz power distribution system. The panel shall be cubicle non draw out type free standing floor mounting sheet metal enclosed flush front with aluminium busbars, separate earth bus bars to be provided throughout the length of the panel. The incoming & outgoing feeder breakers, fuses, indicating lamps etc. shall be accommodated in a modular multirack arrangement. The painting shall be done as per relevant codes as specified in the specifications. Adequate size cable tray shall be provided all round the panel and in the back for each cable bending and termination. The outgoing feeders inside the panel shall be connected through solid bus bar. Flexible cable links are not acceptable. Bus bars shall be provided with sleeves or heat resistant insulated paint. The panel shall be suitable for cable entry from top. The panel shall be fabricated after the approval of fabrication drawings. All the panels shall have minimum 20% spare capacity.					
	i) All doors to have pad locking and shrouding arrangement.					
	ii) All switches to be heavy duty type base mounted having operating handle.					
	<i>(for Hostel -1)</i>					
10.1	AHP B1					
	INCOMER					
	1 Nos. 160 Amp 415 volts, 36 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In. Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB. Ampere Metre of suitable range with suitable set of CT's and ASS.					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	1 set phase indication lamps with control fuses.					
	1 no. voltmeter with VSS.					
	1 no. ammeter with ASS and CTs.					
	250 A TPN Aluminium conductor bus bar dully sleeved.					
	OUTGOING					
	9 Nos. 32 Amp 415 volts, 30 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0; In.Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB.Ampere Metre of suitable range with suitable set of CT's and ASS.					
	2 Nos. 32 Amp 415 volts, 9 KA FP MCB with on-off indication.					
	Complete panel as above	1	Nos.			
	(for Hostel -2)					
10.2	AHP B2					
	INCOMER					
	1 Nos. 200 Amp 415 volts, 36 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0; In.Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB.Ampere Metre of suitable range with suitable set of CT's and ASS.					
	1 set phase indication lamps with control fuses.					
	1 no. voltmeter with VSS.					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	1 no. ammeter with ASS and CTs.					
	250 A TPN Aluminium conductor bus bar dully sleeved.					
	OUTGOING					
	9 Nos. 30 Amp 415 volts, 35 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In.Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB.Ampere Metre of suitable range with suitable set of CT's and ASS.					
	2 Nos. 32 Amp 415 volts, 9 KA FP MCB with on-off indication.					
	18 Nos. 16 Amp 415 volts, 15 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In.Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB.Ampere Metre of suitable range with suitable set of CT's and ASS.					
	Complete panel as above	1	Nos.			
	(for Hostel -3)					
10.3	AHP B3					
	INCOMER					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	1 Nos. 250 Amp 415 volts, 50 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0; In.Extended rotary operating mechanism with door interlock; with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. Indicating lamps with 2A; protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB. Ampere Metre of suitable range with suitable set of CT's; and ASS.					
	1 set phase indication lamps with control fuses.					
	1 no. voltmeter with VSS.					
	1 no. ammeter with ASS and CTs.					
	300 A TPN Aluminium conductor bus bar dully sleeved.					
	OUTGOING					
	3 Nos. 125 Amp 415 volts, 36 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0; In.Extended rotary operating mechanism with door interlock; with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. Indicating lamps with 2A; protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB. Ampere Metre of suitable range with suitable set of CT's; and ASS.					
	4 Nos. 63 Amp 415 volts, 30 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0; In.Extended rotary operating mechanism with door interlock; with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers. Indicating lamps with 2A; protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB. Ampere Metre of suitable range with suitable set of CT's; and ASS.					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	4 Nos. 16 Amp 415 volts, 15 KA (Isc), FP MCCB with thermal magnetic release having variable current settings of 0.8 to 1.0 In.Extended rotary operating mechanism with door interlock with defeat feature and padlock facility. MCCB should be with spreader link and phase barriers.Indicating lamps with 2A protection MCBs to indicate OPEN, CLOSE, TRIP for MCCB.Ampere Metre of suitable range with suitable set of CT's and ASS.					
	Complete panel as above	2	Nos.			
11.0	FAN STARTER PANELS					
11.1	(for Hostel -1)					
11.1.1	FAN STARTER PANEL					
	OUTGOING :					
	1 No. 32 Amps TP+NL MCCB 10 KA for 10 HP Motor with Star Delta Starters for motor with thermal overload protection,single phase preventor,spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button,ammeter with ASS and CTs for fan motor as required.	3	Nos			
11.1.2	FAN STARTER PANEL					
	OUTGOING :					
	1 No. 32 Amps TP+NL MCCB 10 KA for 7.5 HP Motor with Star delta Starters for motor with thermal overload protection,single phase preventor,spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button,ammeter with ASS and CTs for fan motor as required.	1	Nos			
11.1.3	FAN STARTER PANEL					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	OUTGOING :					
	1 No. 32 Amps TPN MCCB 10 KA for 5 HP Motor with DOL Delta Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, ammeter with ASS and CTs for fan motor as required.	4	Nos			
11.2	<i>(for Hostel -2)</i>					
11.2.1	FAN STARTER PANEL					
	OUTGOING :					
	1 No. 32 Amps TP+NL MCCB 10 KA for 10 HP Motor with Star Delta Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, ammeter with ASS and CTs for fan motor as required.	3	Nos			
11.2.2	FAN STARTER PANEL					
	OUTGOING :					
	1 No. 32 Amps TP+NL MCCB 10 KA for 7.5 HP Motor with Star delta Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, ammeter with ASS and CTs for fan motor as required.	1	Nos			
11.2.3	FAN STARTER PANEL					
	OUTGOING :					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	1 No. 32 Amps TPN MCCB 10 KA for 5 HP Motor with DOL Delta Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, ammeter with ASS and CTs for fan motor as required.	4	Nos			
11.2.4	FAN STARTER PANEL					
	OUTGOING :					
	1 No. 32 Amps TPN MCCB 10 KA for 1/5 HP Motor with DOL Delta Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, ammeter with ASS and CTs for fan motor as required.	3	Nos			
11.3	<i>(for Hostel -3)</i>					
11.3.1	FAN STARTER PANEL					
	OUTGOING :					
	1 No. 125 Amps TP+NL MCCB 30 KA for 40 HP Motor with Star Delta Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, ammeter with ASS and CTs for fan motor as required.	1	Nos.			
11.3.2	FAN STARTER PANEL					
	OUTGOING :					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	1 No. 125 Amps TP+NL MCCB 30 KA for 30 HP Motor with Star delta Starters for motor with thermal overload protection,single phase preventor,spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button,ammeter with ASS and CTs for fan motor as required.	1	Nos			
11.3.3	FAN STARTER PANEL					
	OUTGOING :					
	1 No. 63 Amps TP+NL MCCB 30 KA for 20 HP Motor with Star delta Starters for motor with thermal overload protection,single phase preventor,spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button,ammeter with ASS and CTs for fan motor as required.	2	Nos			
11.3.4	FAN STARTER PANEL					
	OUTGOING :					
	1 No. 63 Amps TP+NL MCCB 30 KA for 15 HP Motor with Star delta Starters for motor with thermal overload protection,single phase preventor,spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button,ammeter with ASS and CTs for fan motor as required.	2	Nos			
11.3.5	FAN STARTER PANEL					
	OUTGOING :					

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
	1 No. 16 Amps TP+NL MCCB 10 KA for 3 HP Motor with DOL delta Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, ammeter with ASS and CTs for fan motor as required.	2	Nos			
11.3.6	FAN STARTER PANEL					
	OUTGOING :					
	1 No. 16 Amps TP+NL MCCB 10 KA for 2 HP Motor with DOL delta Starters for motor with thermal overload protection, single phase preventor, spare NO_NC contacts for interlocking, ON-OFF indication lamps with push button, ammeter with ASS and CTs for fan motor as required.	1	Nos			
12.0	CABLING					
	Supplying, laying, effecting proper connections, testing & commissioning of following size of 1.1 kv PVC insulated aluminium conducting armoured cables as per BS :7846 (Fire Survival Cable) laid underground/cable tray/on surface of wall/hume pipe etc. & termination with brass compression glands as required.					
12.1	3.5 C X 25 sq. mm Cable	150	Metre			
12.2	4 C X 16 sq. mm. Cable	600	Metre			
12.3	4 C X 10 sq. mm. Cable	800	Metre			
12.4	4 C X 6 sq. mm. Cable	800	Metre			
12.5	3 C X 6 sq. mm. Cable	500	Metre			
12.6	4C X 4 sq. mm. Cable	1000	Metre			
12.7	3C X 4 sq. mm. Cable	500	Metre			
12.8	3C X 2.5 sq. mm. Cable	320	Metre			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
13.0	CABLE TRAYS					
	Supply & installation of following sizes of perforated MS cable trays including horizontal & vertical bends, reducers, tees, cross members and other accessories as required and duly supported from the ceiling/wall/floor with MS suspenders/supports and including painting etc. as required					
13.1	150 mm widthx50 mm deep x1.6 mmthickness	250	Metre			
13.2	100 mm widthx50 mm deep x1.6 mmthickness	150	Metre			
14.0	EARTHING					
14.1	Earth pits with GI earth plate of size 600mmx600mmx6mm thick including all accessories , down watering GI pipes 40mm dia and providing masonry enclosure with cover plate having interlocking arrangement and watering pipe etc. with charcoal (of or coke and salt) complete as required	5	Set			
14.2	Providing & fixing GI earth strip 40mm x 6mm on surface or in recess for earth connections etc. as required	100	Metre			
14.3	Providing and fixing GI earth strip on walls/ trenches complete as per specifications and as required.					
14.3.1	38mmx 6mm	40	Metre			
14.3.2	25mm x 3mm	30	Metre			
14.4	Providing and fixing earth wire of complete as per specifications as required.					
14.4.1	8 SWG wire	250	Metre			

Item No. 1	Description 2	Qty 3	Unit 4	Rate In Rs (in Figure) 5	Rate in Rs (in Words) 6	Amount (Rs.) 7
15.0	CONTROL CABLING					
	Supply, laying, effecting proper connections, testing & commissioning of 1.5 sq.mm. PVC insulated copper multicore cables (fire survival) from Fan's and AC equipments to related areas					
15.1	27 core cable	200	Metre			
15.2	19 core cable	100	Metre			
15.3	14 core cable	200	Metre			
15.4	10 core cable	100	Metre			
15.5	6 core cable	120	Metre			
15.6	5 core cable	120	Metre			
	TOTAL FOR HVAC WORKS					